

PROGRAM

38th ANNUAL AAS GUIDANCE & CONTROL CONFERENCE

January 30th to
February 4th, 2015

FRIDAY, JANUARY 30TH

7:00 AM Check in 8:00 AM Session

CLASSIFIED SESSION

**Classified Advances in G&C and
Classified Recent Experiences**

(TOP SECRET // SI//TK // NOFORN)

Pre-registration by Jan 3, 2015 is required and will be controlled (walk-ins will NOT be admitted). Attendees must register for the entire AAS conference to be eligible to attend classified sessions. Contact a local chairperson for more information.

Location of Classified Session:

**Ball Aerospace
10 Longs Peak Drive
Broomfield, CO 80021**

National Chairpersons

Darrell Zimbelman, Dept. of the Air Force
Robert McClelland, SSI

Local Chairpersons

Kyle Miller, Ball Aerospace & Technologies Corp. (303) 533-4348,
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Lisa Hardaway, Ball Aerospace & Technologies Corp. (303) 939-4335,
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Traditional Conference Located at:

BEAVER RUN CONFERENCE CENTER

Breckenridge, Colorado

Room check-in at the Beaver Run Resort
front desk 4:00 PM daily.

Conference Registration

Friday 5:00 to 8:00 PM

Daily 6:30 to 10:00 AM and 4:00 to 6:00 PM

Daily

7:00-10:00 AM

Poster Session

Held in Break Room during Breakfast

The Poster Session offers a unique forum for authors and interested parties to discuss relevant topics. Posters do not require an accompanying written paper. However, authors who wish to have their work published in the proceedings can submit a written paper along with the poster. The Poster Session will be available for viewing every day in the main conference room.

Local Chairpersons

Alex May, Lockheed Martin Space Systems Company (303) 977-6620
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15-001 **Multi-spacecraft Autonomous Positioning System: Conceptual Architecture, Simulation Analysis, Hardware Testing, and Continued Development**

Evan Anzalone (NASA MSFC)

- 15-002 **Avoiding High-Gain Antenna Occlusions and Flops in Mars Science Laboratory Operations**
Stephen F. Peters, C. Anthony Vanelli, William C. Allen, Steven M. Collins, James F. Montgomery, Evgeniy Sklyanskiy (NASA JPL)
- 15-003 **An Error Budget for Pointing at Surface Features from Close Range**
Stephen F. Peters (NASA JPL)
- 15-004 **Methodology for the In-Flight Estimation of Collected Regolith Sample Mass on the OSIRIS-REx Mission**
Michael Skeen, Alexander May, Ryan Olds, Timothy Linn (Lockheed Martin)
- 15-005 **Two-Axis Fast Mirror Technology**
Islam Shawki (Raytheon)
- 15-006 **CubeSat Proximity Operations Demonstration (CPOD) Mission: Concept of Operations for Miniaturized Rendezvous, Proximity Operations, and Docking**
Jason J. Westphal, Christopher W. T. Roscoe, Marco Villa, Ehson Mosleh, and Dean R. Hawes (Applied Defense)
- 15-007 **Generalized Covariance Minimization Algorithm for the Continuous Extended Kalman Filter for Nonlinear Plants and Sensor Models**
Kevin Hernandez, James D. Turner (Texas A&M University)

- 15-008 **State Transition Matrix Propagation for Perturbed Orbital Motion Using Modified Chebyshev Picard Iteration**
Julie Read, John L. Junkins, and Ahmad Bani-Younes (Texas A&M University)
- 15-009 **Parallel Modified Chebyshev Picard Iteration for Orbit Catalog Propagation and Monte Carlo Analysis**
Brent Macomber, Austin Probe, Robyn Woollands, and John L. Junkins (Texas A&M University)
- 15-010 **OSIRIS-REx Asteroid Contact Dynamics From First Principles**
Will Hafer (Lockheed Martin)

perceived technical readiness level, applicability and fieldability to near-term systems, clarity of written and verbal delivery, number of completed years of schooling and adherence to delivery schedule. The session will be limited to 8 papers with the top 3 papers receiving awards.

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David Geller, Utah State University
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Jeff Bladt, Ball Aerospace & Technologies Corp. (303) 939-5971
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15-011 **Attitude Control System Design for Multi-Mode Proximity Operations and Imaging with a 6U Cubesat**

Francisco J. Franquiz, Bogdan Udrea, Luis A. Sanchez, Shane T. Stebler (Embry-Riddle)

15-012 **Aerodynamic Passive Attitude Control: A New Approach to Attitude Propagation and a Nano-satellite Application**

J. Micah Fry (Utah State University)

15-013 **Performance Assessment of Horizon-Based Optical Navigation Techniques**

Andrew Liounis, Alexander Entekin, Josh Gerhard, John Christian (West Virginia University)

15-014 **Small Body Gravity Field Estimation Using Liaison Supplemented Optical Navigation**

Siamak Hesar, Jeffrey S. Parker, Jay McMahan, George H. Born (University of Colorado)

15-015 **Hardware-in-the-Loop Validation of Sensing and Algorithms for Autonomous Decent and Landing**

Austin Probe, Dylan Conway, Brent Macomber, Clark Moody, John L. Junkins (Texas A&M University)

15-016 **Active Control Detection**

Clark K. Moody, Dylan Conway, Austin Probe, John E. Hurtado (Texas A&M University)

15-017 **Experimental Validation of an Inertia-Free Controller and a Multiplicative EKF for Pose Tracking and Estimation Based on Dual Quaternions**

Alfredo Valverde, Nuno Filipe, Michail Kontitsis, Panagiotis Tsiotras (Georgia Tech)

15-018 **Analysis of Astrodynamical State Variable Formulations**

Christopher Shelton (Utah State University)

**SATURDAY, JANUARY 31ST
7AM CONFERENCE OPENING
BY IAN GRAVSETH**

Session I 7:15-10:15 AM

Student Innovations in GN&C

This session embraces the wealth of research and innovative projects related to spacecraft GN&C being accomplished in the university setting. Papers in this session address hardware/software research as well as component, system or simulation advances. Papers submitted must have a student as the primary author and presenter. Papers will be adjudicated based on level of innovation, complexity of problem solved,

10:30 AM-4:00 PM

Inaugural AAS STEM-SCAPE Event

In 2015, we will be hosting an inaugural STEM event for one hundred high school students of diverse background from across the Denver metropolitan area. The event, called AAS STEM-SCAPE for "Student Career Arcs to Professional Engineers," will trace the elements of a successful career journey in aerospace including High School and University education, initial employment and ultimately a rewarding profession. Our keynote speaker is Dr. Neil Dennehy, NASA Fellow, who will be followed by a STEM career panel. The event concludes with a short design project that will be co-led with student volunteers from the University of Colorado. If you are interested in volunteering at the event, please contact our Education Committee planning POCs:

Michael Drews(michael.e.drews@lmco.com)
Kristen Francis (kristen.francis@lmco.com).

Special Event for Children of Conference Attendees at 4 PM

NASA Astronaut, Joe Tanner

This presentation will inspire our next generation of engineers by offering kids the opportunity to interact with an astronaut who flew four STS missions!

Session II 5:00-8:00 PM

Technical Exhibits

The Technical Exhibits Session is a unique opportunity to observe displays and demonstrations of state-of-the-art hardware,

design and analysis tools, and services applicable to advancement of guidance, navigation, and control technology. The latest commercial tools for GN&C simulations, analysis, and graphical displays are demonstrated in a hands-on, interactive environment, including lessons learned and undocumented features. Associated papers not presented in other sessions are also provided and can be discussed with the author. Come enjoy an excellent complimentary buffet and interact with the technical representatives and authors. This session takes place in a social setting and family members are welcome!

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Lis Garratt, Ball Aerospace & Technologies Corp. (303) 335-4416
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SUNDAY, FEBRUARY 1ST

Session III 7:00-10:00 AM

Roadmaps and Future Mission Concepts

As part of their individual strategic planning efforts NASA, DoD, ESA and other worldwide civilian and national defense space agencies have created, or are in the process of creating roadmaps, for both their advanced GN&C technologies and for their future payload (e.g. sensors and instruments), missions and systems. These international civilian and military space agencies are devoting energy to systematically and strategically plan their GN&C technology investments. In parallel related activities these agencies are also performing studies and analyses to assess

their future system objectives, from both the perspectives of technological readiness and programmatic feasibility, as part of the process of formulating ambitious future mission concepts. While many of these future mission concepts are notional it is clear that several will require significant innovation and the first-time infusion of emerging technologies to satisfy challenging GN&C system engineering requirements. In this session the authors will present papers on GN&C technology roadmaps, future mission concepts and their inter-relationship.

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Local Chairperson

Scott Mitchell, Ball Aerospace & Technologies Corp. 303-939-4386
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15-041 APNM spacecraft: An EP-based versatile mission concept with a single integrated GNC solution for active multi-debris removal and satellite commercial servicing

Guillame Pionnier & P-N. Gineste
(AIRBUS Defence and Space)

15-042 Looking Back and Looking Forward: Reprising the Promise and Predicting the Future of Formation Flying and

- Spaceborne GPS Navigation Systems**
Frank Bauer & Neil Dennehy
(Emergent/NASA Engineering & Safety Center)
- 15-043 **Industry Perspective on Space Universal Modular Architecture (SUMO) concepts applied to Momentum Control Components**
Tim Hindle and Tim Hintz
(Honeywell)
- 15-044 **Future Micro-PNT Technology Applications in GPS/IMU Integration**
Walter E. Lillo, Scot L. Osburn, and Manorama Gollakota
(Aerospace Corp.)
- 15-045 **A Miniature, Low-Power Star Tracker for Precision Pointing Nanosatellites**
Darren W. Rowen , Alexander C. Utter , Richard M. Dolphus , Eddson M. Alcid and Evan R. Ulrich (Aerospace Corp.)
- 15-046 **An Overview of the NASA Space Communications and Navigation (SCAN) Roadmap**
Jim Schiers (NASA HQ HEOMD SCaN Office)
- 15-047 **Agilitoid-Based Design Analysis of Next Generation Attitude Control Systems**
Mark Karpenko, Jeffery T. King, Steven R. Crews, and I. Michael Ross (Naval Postgraduate School)

- 15-048 **A Survey of Guidance, Navigation, and Control Technologies for Future Planetary Science Missions**
Ed Riedel & Mimi Aung (JPL)

Session IV 2:00-4:00 PM
Space Debris

Although many methods of monitoring and detecting debris for avoidance purposes are already in place, space debris continues to be a growing issue within the aerospace community. This session will focus on characterization of the current debris environment and will also discuss ongoing or future efforts for debris mitigation that may be underway or are proposed.

National Chairpersons

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John Abrams, Analytical Mechanics Associates, Inc 303- 953-1016 x102
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- 15-051 **Trajectory Optimization for a Solar Electric Propulsion Orbital Debris Removal Ferry**

- M. Duchek (Analytical Mechanics Associates)
- 15-052 **Falco: An Affordable Orbital Debris Removal Mission Simplified by Use of a Passive Despin Device**
R. Rohrschneider, R. Arentz, I. Gravseth, B. Landin, L. Guy, R.Schweickart (Ball Aerospace)
- 15-053 **Performance Optimization Study for Touchless Electrostatic Spacecraft De-Spin Operations**
D. Stevenson, H. Schaub
(University of Colorado)
- 15-054 **Evolutionary Optimization of a Rendezvous Trajectory for a Satellite Formation with an Orbital Debris Hazard**
D. Hinckley Jr., D.Hitt (University of Vermont)
- 15-055 **The ADCS of a Rendezvous and Docking Technology Demonstrator Mission Target Satellite with Unusual Requirements**
Nicolai , et al (Astrofeine)

MONDAY, FEBRUARY 2ND

DUAL MORNING SESSIONS

Session V 7:00-10:00 AM

In Space Propulsion Innovations

Technology innovations in the area of space propulsion have become prominent recently with notable DOD, NASA, and industry

investment in green propellant thrusters, cryogenic propellant storage, high-power electric propulsion systems, and propellantless propulsion. Additionally, trends toward employing small spacecraft for an increasing range of applications are driving demand for efficient propulsion technologies for high-mobility micro/nano/picosatellites. This session will highlight emerging propulsion hardware and systems and their GN&C implications that address diverse implementations such as fine pointing for science spacecraft, low-thrust cargo transfer, high-thrust Earth and Mars departure, and descent to / ascent from planetary bodies.

National Chairpersons

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15-051 **New Developments in Conventional Propulsion**
Olwen M. Morgan, Fred C. Wilson (Aerojet Rocketdyne)

15-052 **The Air Force Research Laboratory's In-Space Propulsion Program**
Brian E. Beal (AFRL)

15-053 **Green Propellant Infusion Mission Program Development and Technology Maturation**

Chris McLean, Brian Marotta (Ball Aerospace)

15-054 **Advances in Propellantless In-Space Propulsion Technologies**

Les Johnson (NASA MSFC)

15-055 **System Implications for GN&C and High Power SEP Spacecraft**

Steven Overton, Joe Cassady, Kevin Kelleher (Aerojet Rocketdyne)

15-056 **Guidance, Navigation, and Control Considerations for Nuclear Thermal Propulsion**

Michael Houts (NASA MSFC)

15-057 **On the Implementation of Microelectrospray Propulsion Systems in CubeSat-Class Spacecraft**

Matt Sorgenfrei, Matt Nehrenz (NASA ARC), Rob Thomas (NASA GRC)

15-058 **Development and Characterization of a Monopropellant Microthruster with CubeSat Attitude Control Applications**

M. Ryan McDevitt (GreenScale Technologies), Darren L. Hitt (University of Vermont)

Session VI 7:00-10:00 AM

Advances in GN&C Hardware

Many programs depend on heritage, but the future is advanced by those willing to design

and implement new and novel architectures and technologies to solve the GN&C problems. This session is open to papers with topics concerning GN&C hardware ranging from theoretical formulations to innovative systems and intelligent sensors that will advance the state of the art, reduce the cost of applications, and speed the convergence to hardware, numerical, or design trade solutions. *Note: Advances in GN&C software are covered in Session IX.*

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15-061 **GOES-R Dual Isolation**
Doug Freesland (Various)

15-062 **ASTRO APS Star Tracker Operations on AlphaSat**
Uwe Schmidt, Boris Pradarutti (Jena-Optronik GmbH)

15-063 **HYDRA JUICE Star Tracker**
Benoit Gelin (Sodern)

15-064 **ESTADIUS: A Daytime Accurate Attitude Estimation System for Stratospheric Balloons, Based on Gyro-stellar Measurement**
Johan Montel (CNES, Thales-Services)

15-065 **USAFA's EyasSat3 and Hamster Ball: Innovative Tools for Practical, Hands-on Attitude Dynamics and Control Education**

Dave Richie (USAFA)

15-066 **XACT – A New Generation of Nano GN&C Technology**

Daniel Hegel (Blue Canyon Technologies)

15-067 **CryoSat-2 : In-Orbit Star Tracker Improvements**

Nic Mardle (ESA)

DUAL EVENING SESSIONS

Session VII 4:00-6:00 PM

Recent Experiences I

This session focuses on recent experiences in spaceflight GN&C, providing a forum to share insights gained through successes and failures. Discussions typically include GN&C experiences ranging from Earth orbiters to interplanetary spacecraft. This session is a traditional part of the conference and has shown to be most interesting and informative.

National Chairpersons

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Ellis King, Charles Stark Draper Laboratory
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15-081 **Thermally Constrained Fuel-Optimal ISS Maneuvers**

S. Bhatt (Draper Lab), A. Svecz, (Rice University), A. Alaniz, Jiann-Woei Jang (Draper Lab), L. Nguyen (NASA/JSC), P. Spanos (Rice University),

15-082 **Optical Inspection of a Non-Cooperative Satellite**

T. Karlsson, E. Gröndahl, R. Larsson, P. Bodin (OHB Sweden)

15-083 **Global Precipitation Measurement Mission Launch and Commissioning**

N. R. Davis, K. D. DeWeese, J. R. O'Donnell, Jr., M. F. Vess, G. L. Welter (NASA/GSFC), Hao Ton (ASRC Federal)

15-084 **NEOSSat: Microsatellite Based Space Situational Awareness**

S. Thorsteinson, (Royal Military College of Canada), R. Scott, B. Wallace (Defence R&D Canada)

15-085 **Three Mid-Mission Improvements to Mars Science Laboratory Surface Attitude Estimation Accuracy**

S. F. Peters, S. M. Collins, C. A. Vanelli, M. L. Robinson, J. F. Montgomery, S. C. Johnson (NASA/JPL)

Session VIII

4:00-6:00 PM

Low-Thrust Mission Planning

The Low-Thrust Trajectories Mission Planning session offers an exciting opportunity to examine the state of the art in low-thrust mission design. The session focuses on the applications of low-thrust technology to enable new classes of missions, such as Dawn's mission to Vesta and Ceres, Hayabusa II's mission to asteroid 1999 JU3, the Asteroid Redirect Mission (ARM) concepts, and even GOCE's mission in a very low Earth orbit. Low-thrust missions involve new and different challenges, compared to conventional missions, due to the extended burn durations and the interactions of the spacecraft with the propulsion system. Solar electric propulsion technology is advancing rapidly and the mission design community is working to discover the new opportunities it provides.

National Chairpersons

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15-081 **Mission Design for a Crewed Earth-Venus-Mars Flyby**

Mission Using Solar Electric Propulsion

Stijn De Smet (University of Colorado Boulder)

15-082 **Finite Horizon Continuous Thrust Guidance for Interplanetary Transfers**

Robyn Woollands (Texas A&M)

15-083 **Low-Energy, Low-Thrust Transfers Between Earth and Distant Retrograde Orbits about the Moon**

Jon Herman (University of Colorado)

15-084 **Linear Covariance Analysis for Proximity Operations around Asteroid 2008EV5**

Cinnamon Wright (NASA / JSC)

15-085 **SEP-Enabled ESPA-Class Satellite for Near-Earth Applications**

William Deininger (Ball Aerospace)

Advances in GN&C Software

The GN&C hardware is often dependent on successful and innovative GN&C software. This session is open to all GN&C software ranging from on orbit software used to drive or process data, ground software used for operations or simulation software used to test, validate or develop GN&C systems. This session aims to highlight GN&C software from all aspects. *Note: Advances in GN&C hardware applications are covered in Session VI.*

National Chairpersons

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Michael Osborne, Lockheed Martin Space Systems Company
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15-091 **Lattice Boltzmann Method for Spacecraft Propellant Slosh Simulation**

Jeb Orr (Draper)
Joseph Powers (NASA Marshall)
Hong Yang (CFD Research Corp)

15-092 **TARANIS: AOCs Overview and Flexible Mode Issues During Orbit Maneuver**

J. Lefebve, E. Bellouard, L.

Boissier, S. Tremolieres, S. Mary, C. Bastien-Thiry (CNES)

15-093 **A Study of Optical Navigation Measurements for Cislunar Navigation**

Shane Robinson, Christopher D'Souza (NASA Johnson)
John Christian (West Virginia University)

15-094 **Piloting and Guidance Algorithms for Autonomous Landing**

Carlos Norberto Pérez Montenegro, Enrico Canuto (Politecnico di Torino)

15-095 **Attitude Determination and Control Approach to Achieve Co-Located Microwave Radiometer and GPS Radio Occultation Measurements on a Nanosatellite**

Weston Marlow, Anne Marinan, Kathleen Riesing, Tam Nguyen, Kerri Cahoy, James Byrne, Andrew Kennedy, Ryan Kingsbury, Zachary Decker, Timothy Cordeiro, Stephen Shea (MIT), Rebecca Bishop, James Bardeen, David Ping, Susan Lui, Tamitha Mulligan (Aerospace Corp)

15-096 **Advances in ORION's On-Orbit Guidance and Targeting System Architecture**

Sara Scarritt, Shane Robinson (NASA Johnson)

15-097 **Airborne Simulation of Launch Vehicle Dynamics**

Jeb Orr (Draper)
Christopher Miller, Curtis Hanson

NETWORKING EVENT 6:00-7:30 PM

In lieu of the traditional banquet, a generous appetizer buffet will be provided on Monday evening. This will be an opportunity for conference attendees and guests to network with each other, and the event will also include the presentation of the student paper.

**TUESDAY, FEBRUARY 3RD
DUAL MORNING SESSIONS**

Session IX 7:00-10:00 AM

(NASA Dryden)

Eric Gilligan (NASA Marshall)

- 15-098 **High Angular Rate Determination Algorithm Based on Star Sensing**
F. Curti, D. Spiller (DIAEE-ARCAlab), S. Bucucci, F. Boldrini (Selex ES), G. Sechi (ESA)

Session X 7:00-10:00 AM
Proximity Operations

Proximity operations imply maneuvering of a vehicle near another body. This session aims to explore the GN&C aspects of spacecraft operations in the vicinity of other spacecraft, including maneuvering, rendezvousing, and docking, and landers maneuvering near planetary surfaces. Papers may include GN&C algorithms, system studies, space and test flight experience, and sensors that provide the necessary data for proximity operations.

National Chairpersons

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Local Chairpersons

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Reuben Rohrschneider, Ball Aerospace & Technologies Corp. 303-939-7197
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- 15-111 **RAVEN: An On-Orbit Relative Navigation Demonstration Using International Space Station**

Visiting Vehicles

Matthew Strube, John Van Eepoel (NASA-GSFC), Eugene Skelton (Lockheed Martin), Ross Henry (NASA-GSFC), Christopher D'Souza (NASA-JSC)

- 15-112 **A 6-DOF Pose Initialization Strategy for LIDAR-Based Non-Cooperative Navigation**
John O. Woods, John A. Christian, Thomas Evans (West Virginia University)

- 15-113 **Guidance, Navigation, and Control Algorithms for Cubesat Formation Flying**
Christopher W.T. Roscoe, Jason J. Westphal, Stephen Lutz (Applied Defense Solutions, Inc.), Trevor Bennett (University of Colorado)

- 15-114 **Comparison of Approaches to Relative Navigation Using Global Positioning During Flight of the Cygnus Spacecraft**
Alex Manka (Orbital Sciences Corp.)

- 15-115 **A New Peripheral Docking Target for the International Space Station**
Chris Foster (Jacobs)

- 15-116 **A Sampling-Based Approach to Spacecraft Autonomous Maneuvering with Safety Specifications**
Joseph A. Starek (Stanford University), Brent Barbee (NASA-GSFC), Marco Pavone (Stanford University)

- 15-117 **Angles-Only Navigation Range Observability During Orbital Rendezvous and Proximity Operations**
David K. Geller (Utah State University), T. Alan Lovell (Air Force Research Lab)
- 15-118 **Nonlinear Representations of Satellite Relative Motion Equations Using Spherical Transformations**
Alex Perez (Utah State University), T. Alan Lovell (Air Force Research Lab)

Session XI 4:00-7:00 PM

Small Body Proximity Operations

GN&C operations in weak gravitational environments are mission-enabling for innovative science missions to small bodies such as asteroids and comets. GN&C in this environment is challenging due to the unusual navigation data types, non-conservative force modeling for guidance and trajectory prediction and the precision required for hyperbolic flyby, hovering, landing, and sample return operations. This session explores the GN&C challenges, designs, predicted performance and recent experiences for a variety of current and planned missions to small bodies.

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- 15-121 **Flyby-only science operations for an asteroid exploration mission**
Dan Scheeres, S. Van wal, ,
(University of Colorado), S.
Tardivel, (NASA / JPL)
- 15-122 **Rosetta Navigation at Comet Churyamov-Gerasimenko**
Shyamkumar Bhaskaran, Stephen
Broschart, Don Han, Bill Owen,
Nick Mastrodemos, Ian Roundhill,
Brian Rush, Jonathon Smith (JPL),
David Surovik (University of
Colorado)
- 15-123 **Optical Navigation for the Rosetta mission**
Nickolaos Mastrodemos, William
Owen Jr., Brian Rush (JPL)
- 15-124 **The Application of Optical Based Natural Feature Tracking to OSIRIS-REx Asteroid Sample Collection**
Ryan Olds , Alex May, Reid
Hamilton (Lockheed Martin SSC),
Courtney Mario (Draper
Laboratories), Chris Debrunner
(Lockheed Martin MFC),
- 15-125 **Updated OSIRIS-Rex Touch-And-Go (TAG) Analysis with Expected Performance**
Kevin Berry (NASA), Michael C.
Moreau, (NASA GSFC) Peter
Antreasian (KinetX, Inc.) Alex

May, Brian Sutter (Lockheed Martin
SSC)

- 15-126 **Flash LIDAR Based Ranging and Surface Contact Time Prediction for the OSIRIS-REx Mission**
Oliver Walthall, Keith Mahoney
(Lockheed Martin SSC)
- 15-127 **The Small-Body Dynamics Toolkit and associated close-proximity navigation analysis tools at JPL**
Stephen Broschart (JPL), Matthew
Abrahamson, Shyam Bhaskaran,
Eugene G. Fahnestock, Reza
Karimi, Gregory Lantoine, Thomas
A. Pavlak, (JPL), Loic Chappaz
(Purdue University)
- 15-128 **Real-Time Mapping and Localization under Dynamic Lighting for Small-Body Landings**
Dylan Conway, John Junkins
(TAMU)

WEDNESDAY, FEBRUARY 4TH

Session XII 7:00-10:00 AM

Recent Experiences II

This session focuses on recent experiences in spaceflight GN&C, providing a forum to share insights gained through successes and failures. Discussions typically include GN&C experiences ranging from Earth orbiters to interplanetary spacecraft. This session is a traditional part of the

conference and has shown to be most interesting and informative.

National Chairpersons

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