

## PROGRAM

# 48<sup>th</sup> ANNUAL AAS GUIDANCE, NAVIGATION & CONTROL CONFERENCE

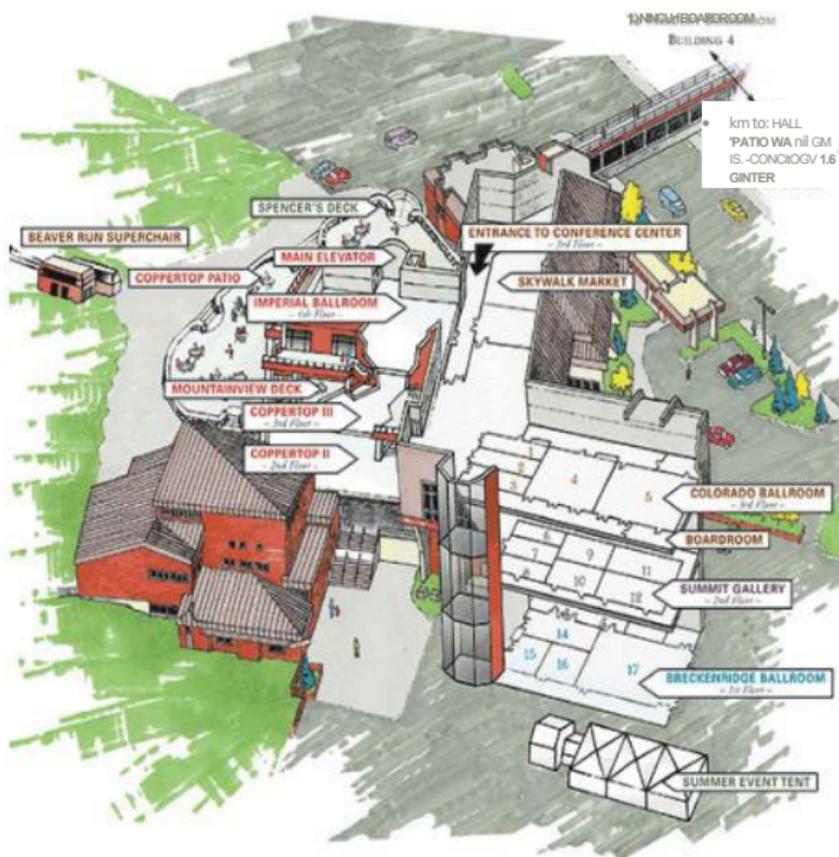
January 30<sup>th</sup> to  
February 4<sup>th</sup>, 2026



# Conference Location

## BEAVER RUN CONFERENCE CENTER Breckenridge, Colorado

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



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## Conference Registration

Friday 5:00 to 8:00 PM  
Daily 6:30 to 10:00 AM and 4:00 to 6:00 PM

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## Registration Questions

Michelle Barath 303-887-7724  
Amy Delay 303-731-9876

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## 48<sup>th</sup> Annual AAS Guidance, Navigation & Control Conference Chairperson

Stephen Lutgring  
BAE Systems, Inc.  
303-939-7809

[stephen.lutgring@baesystems.us](mailto:stephen.lutgring@baesystems.us)

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## Wi-Fi Access

Select “[Beaver Run Meeting 1](#)” wireless network.  
Open a browser window  
Enter voucher code: [conferencewifi](#)

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## Conference Website

<https://aas-rocky-mountain-section.org/>

Online Program and Pre-print Paper  
Access read-only

[2026 AAS Rocky Mountain GN&C  
Conference](#)



QR Code for Online Program

## **Conference Schedule Overview**

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### **Friday January 30<sup>th</sup>**

Conference Registration	5 – 8 pm
Welcome Reception	6 – 9 pm

### **Saturday January 31<sup>st</sup>**

Breakfast	6:15 – 7 am
Morning Session	7 – 10:30 am
Event for College Students	10:30 am – 12 pm
NASA Astronaut for Children	4 – 5 pm
Technical Exhibits	5 – 8 pm

### **Sunday February 1<sup>st</sup>**

Breakfast	6:15 – 7:00 am
Morning Session	7 – 10:30 am
Poster Session Break	8:30 – 9 am
Tutorial (w/ break for lunch)	11am – 12:30 pm
Pioneers Session	1 – 3:30 pm
Afternoon Session	4 – 7 pm
Casino Night	7 – 9:30 pm

### **Monday February 2<sup>nd</sup>**

Breakfast	6:15 – 7:00 am
Morning Session	7 – 10:30 am
Poster Session Break	8:30 – 9 am
Tutorial (w/ break for lunch)	11 am – 1:30 pm
Afternoon Session	4 – 7 pm
Social Event	7:15 - 8:15 pm

### **Tuesday February 3<sup>rd</sup>**

Breakfast	6:15 – 7:00 am
Morning Session	7 – 10:30 am
Tutorial (w/ break for lunch)	11 am – 3 pm
Afternoon Session	4 – 7 pm

### **Wednesday February 4<sup>th</sup>**

Breakfast	6:15 – 7 am
Morning Session	7 – 10:30 am

**SATURDAY, JANUARY 31<sup>ST</sup>  
7AM CONFERENCE OPENING**

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**S01 - Student Innovations  
Session**

**7:00 AM - 10:30 AM**

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, perceived technical readiness level, applicability and field-ability 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 monetary awards.

**National Chair:** Nathan Collins (USAFA Department of Astronautics) and David Geller (Utah State)

**Local Chair:** David Chart (Anduril Industries) and Ian Gravseth (BAE Systems, Inc.)

**AAS-26-011** *Trajectory Design Based on Lobe Dynamics for Resilience Against Missed Thrust Events in Cislunar Space*

Shunta Oi\*, Yosuke Kawabata, Naoki Hiraiwa, Satoshi Ikari, Ryu Funase and Shinichi Nakasuka

**AAS-26-012** *LOS-Aware Beacon Placement for State Estimation via Continuous Parameterization of Discrete Spacecraft Geometry*

Ruthvik Bommena\* and Robyn Woollands

**AAS-26-013** *Tackling Target Model Uncertainties in Vision-Based Relative Pose Estimation*

Giacomo Battaglia\*, Anthea Comellini, Francesco Capolupo and Paolo Panicucci

**AAS-26-014** *Consensus Based Task Allocation for Angles-Only Local Catalog Maintenance of Satellite Systems*

Harrison Perone\* and Christopher Hays

**AAS-26-015** *Robust Guidance for Cislunar Spacecraft under Sensor and Thrust Uncertainty*

Saturday, January 31<sup>st</sup>

Kristen Amarell\*, Daniel Scheeres, Jay McMahon and  
Michele Carpenter Streetman

**AAS-26-016** *Higher-Order Quadratic Control for Spacecraft  
Pursuit-Evasion Games*

Jacob Wolf\* and Keith LeGrand

**AAS-26-018** *A Higher-Order Autonomous Navigation Filter for  
Nonlinear Dynamics and Non-Gaussian  
Distributions*

Aaron Liao\* and Kenshiro Oguri

**Special thanks for sponsoring the  
student paper competition prizes goes  
to:**

**BAE Systems, Inc.**

**Analytical Mechanics Associates**

**Solar MEMS Technologies**

**Special Event for College Students**

**Cosmic Careers Mixer**

**Imperial Ballroom**

**10:30am – 12:00pm**

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Have burning questions about what it takes to get hired into your dream GNC job? Curious what life is like on the other side of your degree? This event will provide college students with the opportunity to network with professionals in various roles and experience within their careers.

Interested in sharing your insights with the next generation of professionals? Contact Alexandra Dukes, [alexandra.m.dukes@lmco.com](mailto:alexandra.m.dukes@lmco.com) or find me at the conference on Friday!

**Local Chairpersons**

Alexandra Dukes, Lockheed Martin Space

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**Special Event for Children of Conference  
Attendees at 4 PM**

**Imperial Ballroom**

**NASA Astronaut, Robert Behnken**

This presentation will inspire our next generation of engineers by offering kids the opportunity to interact with an astronaut who flew two STS missions and once aboard the SpaceX Dragon 2!

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## **TECHNICAL EXHIBITS (Colorado Ballroom)**

**Saturday 5:00 PM – 7:00 PM**

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, and include 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!

### **Organizers**

Jake Crouse, BAE Systems, Inc.

Bryan Helgesen, Sierra Space

Kristina Forystek, Innovation RM

Graeme Ramsey, Lockheed Martin

### **Exhibitors**

**Advanced Space**

**Astranis**

**ATTX**

**Beyond Gravity Austria**

**Blue Canyon Technologies**

**Cube Space**

**ESI**

**Exail**

**Honeywell**

**InnaLabs**

**Jena Optronik GmbH**

**Kayan Space**

**KinetX/Intuitive Machines**

**Kyocera AVX**

**Lockheed Martin Space**

**MathWorks**

**Moog CSA**

**Motiv Space Systems**

**Rakon**

**Space Dynamics**

**Laboratory (Utah)**

**Sierra Space**

**Sodern**

**Spirent Federal**

**Tensor Tech**

**Texas A&M**

**Veoware**

**SUNDAY, FEBRUARY 1<sup>ST</sup>  
MORNING SESSIONS**

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**S02 - Autonomy in GN&C**

**7:00 AM - 10:30 AM**

Satellite constellations are nothing new, but the sizes, scales, and configurations of modern Distributed Satellite Systems (DSS) are reaching unprecedented levels of scope and complexity. These configurations include constellations, swarms, and various fractionated architectures. Recent demonstrations of these DSS systems show that handling the planning, coordination and operations associated with large-scale constellations is a critical logistical problem that must be addressed for continued effective application of these systems. In addition to the logistical challenges, large and small multi-spacecraft systems must also work through autonomous operational complexities such as formation flying, fractionation, docking, structural assembly, tethering, station keeping for sparse aperture configurations and on-orbit servicing and reconfiguration. Some key system and subsystem challenges for autonomous operations include resource management, health management, task management and decision making, formation control, rendezvous management, expanded autonomous control, on-orbit calibration, station keeping, space traffic management, and human-interfaces. All these topics have a direct impact on GN&C and must be considered when architecting the GN&C system. All papers related to these topics are welcome.

**National Chair:** Islam Hussein (Trusted Space, Inc.), Hanspeter Schaub (University of Colorado) and Jekan Thangavelautham (University of Arizona)

**Local Chair:** Holly Borowski (Trusted Space, Inc.) and Matt Sandnas (Trusted Space, Inc.)

**AAS-26-021** *Stochastic State Transition Tensor Differential Dynamic Programming for Cislunar Trajectories*  
Dillon Waxman\* and Jay McMahan

**AAS-26-023** *Improving Multi-Agent Satellite Safety via Convex-Concave Control Barrier Functions*  
Vignesh Sivaramakrishnan\* and Sean Phillips

- AAS-26-024** *Embedded System Identification and Controller Tuning*  
Daniel Hernandez\* and Evan Sperber
- AAS-26-025** *Shielding against the unsafe: Evaluation of shielded deep reinforcement learning training approaches for autonomous spacecraft*  
Lorenzo Mantovani\* and Hanspeter Schaub
- AAS-26-026** *Real-Time Robust MPC for Autonomous Proximity Operations*  
Ahmed Atallah and Aaron J. Rosengren\*
- AAS-26-027** *Distributed Observation Scheduling and Sensor Fusion for Large Agile Constellations*  
Nicholas Niziolek\*, Ryan Draves, Nolan Stevenson, Nolan Ales, Eli Jones, Eric Frew and Nisar Ahmed
- AAS-26-028** *Implementing Adaptive Control for Autonomous Spacecraft Operations in Cislunar Space*  
Dylan Clay\* and Henry Pernicka

## S03 - Small Body Exploration

7:00 AM - 10:30 AM

Recent years have witnessed a remarkable surge in the landscape of planetary exploration missions to asteroids, comets, and other small solar system objects, with several new endeavors currently underway. This surge has driven significant advancements and innovations in the practical application of optical navigation, sensors, modeling, and autonomy that are essential to accomplish demanding mission objectives. From intricate task of characterizing a small body post-arrival to complexities of operating in a micro-gravity environment, and in some cases executing surface navigation, these tasks are at the core of such missions. This session solicits contributions showcasing GN&C experiences, successes, lessons learned, and future challenges associated with the exploration of asteroids, comets, and other small bodies.

**National Chair:** Jason Leonard (KinetX) and Jay McMahon (University of Colorado Boulder)

**Local Chair:** Anubhav Gupta (In Orbit Aerospace, Inc. & University of Colorado Boulder) and Daniel Kubitschek (Univ of Colorado - LASP)

- AAS-26-031** *Japan's Successive Missions to the Asteroid Belt and Beyond Using a Series of Small Spacecraft*  
Yuki Takao\*, Takato Morishita, Ryudo Tsukizaki, Kazutaka Nishiyama, Masanori Matsushita, Yuto

Nakagawa, Tetsuya Kusumoto, Naoya Ozaki and Osamu Mori

- AAS-26-032** *Conceptual Study of Asteroid Deflection for the Hayabusa2# Rendezvous Mission*  
Shota Kikuchi\*, Daniel Scheeres, Yuya Mimasu, Yuichi Tsuda, Takanao Saiki, Makoto Yoshikawa and Masanori Kanamaru
- AAS-26-033** *Non-Principal Axis Rotation Estimation using Keypoint Matching for the OSIRIS-APEX Mission to Asteroid Apophis*  
Derek Nelson\*, Jason Leonard, Vanessa Myhaver, Erik Lessac-Chenen, John Pelgrift and Coralie Adam
- AAS-26-034** *Autonomous Visual Active Slam for Close Proximity Operations to Small Bodies Combining Goal-Oriented Guidance and Graph-Based Navigation*  
Pietro Califano\*, Alban Beshaj, Felice Piccolo, Antonio Rizza, Francesco Topputo and Paolo Panicucci
- AAS-26-035** *Research on Simultaneous Optimal Design Method for Observation Feature Point Placement and Descent Trajectory Using Metaheuristic Techniques*  
Kent Yoshikawa\*
- AAS-26-036** *Conceptual design of a risk reduction mission in preparation for capturing a quasi-moon into permanent Earth orbit.*  
Leonard Vance\*, Jekan Thangavelautham and Erik Asphaug
- AAS-26-037** *Impactor Deployment and Data-Relay Trajectory Design at Didymos and Dimorphos*  
Noble Hatten\*, Isaac Saedi-Marghmaleki, Ronald Ballouz, Daniella DellaGiustina, Kevin Walsh, Veronica Bray and Angela Marusiak
- AAS-26-038** *Preliminary Guidance Analysis: Hayabusa2's Landing on the Fast-Rotating Asteroid 1998 KY26*  
Tomohiro Ishizuka\*, Naoya Ozaki, Shota Kikuchi, Yuichi Tsuda and Stephanie Lizy-Destrez

## **POSTER SESSION BREAKS**

**Sunday & Monday  
8:30-9:00 AM**

Brady Young, Lockheed Martin  
[brady.young@lmco.com](mailto:brady.young@lmco.com)

Drew Englemann, Space Robots R&D  
[drew.engelmann@space-robots.co](mailto:drew.engelmann@space-robots.co)

Covering a wide variety of unique GN&C topics, this year's interactive Poster session falls on Sunday and Monday during the morning presentation sessions mid-point break. All Posters will be hosted by the authors during these two timespans and conference attendees will vote for their favorite Poster. The winner will be announced at the Monday night social event. Although the Posters will be on display for the full conference, conference attendees are highly encouraged to engage with the Poster hosts and cast their vote during the Sunday/Monday Poster session breaks.

## Tutorial

### Advanced Monte-Carlo Methods

11:00am-12:30pm

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**Format:** Lecture

**Presenter:** Mark Pittelkau, Aerospace Control Systems, LLC, VA

**Requirements:** None

This tutorial will discuss advanced Monte-Carlo methods which are used for verifying the performance of a system with epistemic and aleatory uncertainties, to estimate the sensitivity of the system to uncertainties, to optimize a system and its operation, to obtain insight, and many others. Measures of accuracy of Monte Carlo estimates are defined and the fundamental limitation of Crude Monte Carlo is analyzed. Variance reduction methods for rare-event probability estimation are introduced, including two adaptive Importance Sampling methods, the Variance Minimization method, and the Cross-Entropy method. The Score Function method for sensitivity analysis, response surface analysis, screening, and the inverse problem are also introduced. This tutorial will be accessible to most GN&C engineers. The student will learn new concepts, statistics, advanced Monte Carlo methods, sampling methods, and stochastic optimization.

A self-served lunch buffet will be provided from 12:00pm-12:30pm.

## S04 - Pioneers in GN&C

1:00 PM - 3:30 PM

This session will be reflections on the experiences of technologists who pioneered technology solutions in the Aerospace community from sounding rockets through human space flight to today's commercial applications.

**National Chair:** Neil Dennehy (JHU APL)

**Local Chair:** Shawn McQuerry (Lockheed Martin)

**AAS-26-041** *Hal Laning and the Origins of Flight Control Software at the MIT Instrumentation Laboratory*  
John Tylko\*

*Talk on James McQuerry*  
Shawn McQuerry\*

**AAS-26-042** *Transit: The Development of the World's First Satellite Navigation System*  
Neil Dennehy\*

**AAS-26-043** *Atlas V*  
John Reed\*

**SUNDAY, FEBRUARY 1<sup>ST</sup>  
AFTERNOON SESSIONS**

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**S05 - Using AI/ML in GN&C**

**4:00 PM - 7:00 PM**

As Guidance, Navigation and Control algorithms become increasingly autonomous, there is a natural progression towards incorporating Artificial Intelligence (AI) and Machine Learning (ML) technologies into the capabilities of today's autonomous systems. When combined with established systems and control theory, AI and ML algorithms can harness the wealth of information available from data obtained by sensors and cyberphysical systems over time. This session will highlight research and demonstrations focused on the theory and methods of learning, control, and computational intelligence for GN&C systems. Some example topics for this session include novel applications of AI systems in traditional GN&C systems, performance comparisons between classical GN&C methods and ones that leverage AI or ML, demonstrations of design and/or test of GN&C systems that utilize ML, and techniques and challenges for the verification and validation (V&V) of systems incorporating these technologies.

**National Chair:** Ben Bycroft (The Aerospace Corporation)

**Local Chair:** Kip Gwin (BAE Systems, Inc.) and Hank Steadman (Lockheed Martin Space)

**AAS-26-051** *Enabling Next-Gen Space Domain Awareness: Autonomous In-Situ Segmentation of Satellite Sub-Systems*

Timothy Chase\*, Aneesh Heintz, Seth Patterson, Dominic Mazza and Fredy Monterrosa

**AAS-26-052** *Autonomous Space-Based Imaging: Reinforcement Learning Scheduling with Downlink Latency and Resource-Aware Actions*

Daniel Huterer Prats\* and Hanspeter Schaub

**AAS-26-053** *Comparing Probabilistic Roadmaps and Reinforcement Learning for Relative Motion Inspection of Space Objects*

Mark Stephenson\* and Hanspeter Schaub

**AAS-26-054** *Hybrid BiLSTM Thermospheric Density Forecasting for Atmospheric Differential-Drag Planning in Very-Close Satellite Formations*

Mina Khalilzadeh Fathi\*

**AAS-26-056** *Exploring an AI/ML Approach to Automating the Transition from the Circular Restricted Three-Body Problem to Higher-Fidelity Solutions, Part 3*

Marisa Exnicious\*, Peggy Fidelman, Cody Short, Mari Kinzly and Franco Criscola

## **S06 - Advances in Propulsion and Slosh Dynamics**

**4:00 PM - 7:00 PM**

The development of advanced propulsion technologies is critical for enabling spacecraft platforms ranging from cubesats to ambitious human and robotic space exploration missions. Innovative developments in chemical, electric, nuclear, and propellantless propulsion will provide higher performance and greater operability, enabling new approaches ranging from launch to interstellar travel. Additionally, understanding slosh dynamics—the behavior of liquid fuel within a spacecraft's tank during various phases of flight—is crucial for spacecraft stability and control. The movement of liquid fuel can significantly impact a spacecraft's attitude and trajectory, making it essential to develop systems that mitigate these effects to ensure mission success. This session will highlight advanced propulsion technologies, slosh dynamics methodology and enabling subsystems matured by NASA, DoD, industry, and academia.

**National Chair:** Jeff Brouwer (Blue Origin), Will Gerken (Blue Origin), Jonathan Jones (NASA) and Jeffrey Sheehy (NASA)

**Local Chair:** Adam Bernstein (Lockheed Martin Space), Emanuel Grella (Analytical Mechanics Associates (AMA)), Tayler Quist (Blue Origin) and Uday Shankar (JHU Applied Physics Laboratory)

**AAS-26-061** *Geosynchronous Transfer Orbit Rideshares to Near Earth Asteroids Using the STAR™-S 15-24V Concept*

William Benson\* and Noah Gold

**AAS-26-062** *Progress of the Integrated Rotating Detonation Engine Systems Project*

Thomas Teasley\*

**AAS-26-063** *Modeling Induced Control Torques Due to Propellant Slosh in Microgravity for Cylindrical Tanks*

Charles Reynerson\* and Jay Wright

- AAS-26-065** *Progress Towards Standardized Slosh Validation Cases*  
Jed Storey\* and Brandon Marsell
- AAS-26-066** *Rapid Estimation of Baffle Slosh Damping in Arbitrary 3D Tank Geometries Using Finite Element Analysis*  
Logan Walters\*
- AAS-26-067** *Implementation of a Slosh Mechanical Model during Spacecraft Docking and Approach – Part 2*  
William Elke\*

## Social Event

### Casino Night

Sunday 7:00pm – 9:30pm  
Breckenridge Ballroom

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Brought to you by Casino Party USA

- 2x Roulette
- 2x Craps
- 4x Blackjack
- 3x Texas Hold'em

Family Members of conference attendees are welcome! (However only conference attendees are eligible for prizes; family members cannot compile chips with attendee)

**PRIZES!** Chips will be exchanged for raffle tickets at the end of the event (9:30) with prize winners determined in the following 15 minutes. Prizes include a Breckenridge Ski Day Pass, AAS Logo items, and more.

A light dinner buffet will be provided.

**MONDAY, FEBRUARY 2<sup>ND</sup>  
MORNING SESSIONS**

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**S07 - Advances in GN&C  
Software**

**7:00 AM - 10:30 AM**

Successful GN&C system performance is often dependent on innovative algorithms and software. This session is open to all development processes and systems ranging from vehicle code used to operate the spacecraft system, novel algorithms, ground software used for operations/analysis, or simulations/frameworks used to test, validate, or develop GN&C systems. The intent is to include current best practices as well as challenges in future software development.

**National Chair:** Paul Graven (Cateni) and Patrick Kenneally (Laboratory for Atmospheric and Space Physics (LASP))

**Local Chair:** Heidi Hallowell (BAE Systems, Inc.) and Egbert Maben (Blue Origin)

**AAS-26-071** *WarpWare: A Scalable and Modular Software Framework for End-to-End Mission Development*  
Alexander Jackson\* and Alex Reynolds

**AAS-26-072** *Building Better Magnetic Torque Rod Attitude Control using Lookahead Momentum Control*  
Jacob Willis\*

**AAS-26-073** *Time-Optimal 6-DOF Solar Sail Deep Space Trajectory Optimization with Sequential Convex Programming*  
Keegan Bunker\*, Nathan Gall, Yue Yu and Ryan Caverly

**AAS-26-074** *A Graphical Framework for Reaction-Wheel Feasibility in GN&C*  
Anubhav Gupta\*

**AAS-26-075** *Performance Characterization of a Discrete CMG Array Dynamics Modeling Framework for use in Real-Time Control Applications*  
Jameson Lee\* and Tim Hindle

**AAS-26-076** *Approach to Satellite Control in the CMG Gimbal Space to Maximize Satellite Data Collection*  
David Bailey\*

**AAS-26-077** *Spacecraft Backsubstitution Dynamics for Prescribed Motion Branching with Single-Axis Dynamic Sub-Components*  
Leah Kiner\* and Hanspeter Schaub

**AAS-26-078** *Simulation of Generally Articulated Spacecraft for GN&C Algorithm Design and Validation*  
Juan Garcia-Bonilla\* and Hanspeter Schaub

## **S08 - Advances in GN&C Hardware**

**7:00 AM - 10:30 AM**

Many programs depend on heritage hardware, but the future is advanced by those willing to design and implement new and novel architectures, technologies, and algorithms to solve GN&C problems. This session is open to papers with topics ranging from theoretical technologies to innovative solutions using existing hardware technologies. These hardware technologies typically involve GN&C sensors or actuators that will advance the state of the art, reduce the cost of applications, and speed the convergence to hardware, numerical or design trade solutions.

**National Chair:** Steeve Kowaltschek (European Space Agency)

**Local Chair:** Teagan Northrup (BAE Systems, Inc.) and Devin Stancliffe (Lockheed Martin)

**AAS-26-081** *Honeywell's HG4937SRS-RH Rate Sensor for Extended Duration Space Missions*  
Donald Horkheimer\* and Jon Shick

**AAS-26-082** *ASTRIX NS – IMU: Exail's compact & Space-qualified IMU for demanding spacecraft and environments*  
Louis Dutheil\*, Stephan Theil, Alexis Azoura, Aurélien Dupuis, Mike Sleet and Jeremy Bek

**AAS-26-083** *ARIETIS-NS Gyro in Flight Behaviour on Board ADS Platforms*  
Alberto Torasso, Busra Erdogan\*, Eric Desplats, Alexandre Jullien, Romain Septier and Steeve Kowaltschek

**AAS-26-084** *RVS® 3000-X LIDAR – A Glimpse into the Future of LIDAR-based RPO*  
Christoph Schmitt\*

- AAS-26-085** *AirWheel - a Reaction Wheel with a Gas Bearing supplied with Ultrasonic Pumps*  
Anja Nicolai\*, Heiko Jahn, Roy Brefeld, Florian Liebold, Stefan Heindel, Adrian Stroschke, Robert Martin Krüger and Sebastian Scheiding
- AAS-26-086** *Supertorquer: High-Temperature Superconducting Magnets for Spacecraft Control*  
Max Arshavsky\*
- AAS-26-087** *ASTRO© HP: High Performance Star Tracking on Constellation Class Footprint*  
Sebastian Colditz\*, Reinhard Berger, Martin Griebel, Steffen Hahn, Steffen Schwarz and Uwe Schmidt
- AAS-26-088** *Feedback from Sodern's HYDRA Star Tracker for JUICE*  
Thomas Chassagne\*, Damien Piot and Gregory Benicourt

## **S09 - RPOD, Relative Navigation and State Estimation**

**7:00 AM - 10:30 AM**

Autonomous rendezvous, proximity operations, and docking (RPOD) systems are key enablers for many different types of spacecraft and missions including commercial servicing of existing spacecraft, orbital debris removal, on-orbit refueling, the next generation of space tugs and asteroid missions, or returning humans to the moon to establish a sustained presence. Some would say the heart of the GN&C system required for supporting these RPOD missions is the N: or relative navigation and state estimation. Many design challenges of spacecraft development, such as the need to minimize mass and volume, as well as computational footprint, has generated new, exciting, and innovative solutions to the relative navigation problem. This session explores aspects of enabling technologies for relative navigation, state estimation, and computer vision to support this class of mission.

**National Chair:** Liz Billman (Sierra Space) and Bo Naasz (NASA)

**Local Chair:** Jim Carrillo (Blue Origin) and Laura Henderson (Blue Origin)

- AAS-26-091** *Multi-Sensor Calibration Method for Formation-Flying Relative Navigation Under Thermo-*

***Mechanical Variations***

Tomoki Mochizuki\*, Satoshi Ikari, Ryu Funase and Shinichi Nakasuka

**AAS-26-092 *Lidar inspection of an unknown space object: experimental results***

Adam Vigneron\*, Brianna Hines, Daan Singh and Steve Ulrich

**AAS-26-093 *Covariance Sensitivity Analysis for Optimizing Feature Placement in Pose Estimation Applications***

Ali Hasnain Khowaja\* and Manoranjan Majji

**AAS-26-094 *Bayesian Optimization for Informative Excitation Design for Estimation of Inertia Parameters in Spacecraft Rendezvous & Docking***

Himadri Basu\* and Ricardo Sanfelice

**AAS-26-095 *Recovery of Cooperative Satellite Orientation and Range from Semi-Resolved Passive Color Imagery***

Alexis Munguía\*, Leonard Vance, Sean Phillips and Jekan Thangavelautham

**AAS-26-097 *Integrated Onboard Autonomous Collision Avoidance***

Alfredo Locarini, Dario Modenini, Giacomo Curzi\*, Stefano Cicalò, Christian Monaldi, Virginia Angelini, Mattia Chiappalone, Alessia Bertolucci, Francesca Guerra, Lia Francesconi, Enrico Testi, Gianni Pasolini, Enrico Paolini, Stefano Palmiotto, Albino Carbognani, Orr Cohen and Louis Walpot

## **POSTER SESSION BREAKS**

**Sunday & Monday  
8:30-9:00 AM**

Brady Young, Lockheed Martin  
[brady.young@lmco.com](mailto:brady.young@lmco.com)

Drew Englemann, Space Robots R&D  
[drew.engelmann@space-robots.co](mailto:drew.engelmann@space-robots.co)

Covering a wide variety of unique GN&C topics, this year's interactive Poster session falls on Sunday and Monday during the morning presentation sessions mid-point break. All Posters will be hosted by the authors during these two timespans and conference attendees will vote for their favorite Poster. The winner will be announced at the Monday night social event. Although the Posters will be on display for the full conference, conference attendees are highly encouraged to engage with the Poster hosts and cast their vote during the Sunday/Monday Poster session breaks.

## Tutorial

### Space Mission Modeling and Analysis Workshop

**11:00am-1:30pm**

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**Format:** Hands-on workshop

**Presenter:** Manny Martinez and Ossi Saarela (MathWorks)

**Requirements:** Laptop; MATLAB online access with required software will be provided. A (free) MathWorks account is required to access software

In this hands-on workshop, MathWorks product experts will walk you through a series of online exercises. These guided exercises will give you the opportunity to write and run your own code using Aerospace Toolbox and Blockset and learn how, with minimal coding, you can use the toolbox to streamline your satellite-related workflows. Key Highlights: Brief overview of Aerospace Toolbox and Blockset; Hands-on exercises using MATLAB Online where you will: set up and launch a satellite scenario viewer, compute and visualize the visibility access between a satellite and a ground station, and, incorporate Aerospace Blockset and Simulink for higher fidelity satellite orbit propagation.

A self-served lunch buffet will be provided from 12:00pm-12:30pm.

**MONDAY, FEBRUARY 2<sup>ND</sup>  
AFTERNOON SESSIONS**

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**S10 - Advances in Navigation**

**4:00 PM - 7:00 PM**

Advances in Position, Navigation, and Timing (PNT) seek to push the boundaries of spacecraft navigation and timing technology. Proliferation of large-scale constellation deployments in Earth orbit and the need for maintaining a safe orbital environment for all operators require new PNT techniques and robust architectures to complement the existing ground based and GNSS systems. Lunar, interplanetary, and interstellar mission concepts require novel ways for collecting and processing observations from non-traditional sources. In this session, we explore novel and advanced ground-based, space-based, and autonomous spacecraft PNT approaches. Of particular interest are methods for inter-satellite navigation, lost-in-space scenarios, and new filtering techniques for processing radio and optical observations, pulsar observations, and other deep space signals of opportunity. Expanded lunar exploration and long term habitation requires new techniques, algorithms, and technology to enable in-situ autonomous navigation in cislunar space. Proposals for deployment of a lunar-centric time reference are driven by a need to understand how this timing implementation will impact navigation design in terms of time transfers, stability characterization, and development of timing standards that enable an integrated PNT capability. It also remains important to understand how these approaches and solutions scale or evolve to support more complex Mars missions, including transit, landing, and surface operations.

**National Chair:** Evan Anzalone (NASA Marshall Space Flight Center) and Michael Thompson (The Aerospace Corporation)

**Local Chair:** Lee Barker (Lockheed Martin Space), Jastesh Sud (Blue Origin) and Jessica Yerdon (Lockheed Martin Space)

**AAS-26-102** *Single-Beacon Positioning via Radiometry Ranging*  
Andrea Pizzetti\*, Paolo Panicucci and Francesco Topputo

**AAS-26-103** *Maneuver-Based Scale Estimation in Visual SLAM for Autonomous Asteroid Exploration*  
Claudio Matarrese\*, Pietro Califano, Felice Piccolo and Paolo Panicucci

- AAS-26-104** *Partial-State Fusion for Distributed Simultaneous Localization and Tracking*  
Simone Semeraro\*, Keith LeGrand and Jackson Kulik
- AAS-26-105** *Beyond Earth: A GNSS Receiver Tailored for all Earth orbits and Cislunar Space*  
Heinz Reichinger\*, Adrian Girschik and Hilmar Pirker
- AAS-26-107** *Advances in GA-EMS Autonomous Navigation System for Low Lunar Satellites*  
Rusty Anderson\* and Randy Wells
- AAS-26-184** *Safe Maneuver Planning with Cubature-based Risk Measures of Non-Gaussian Distributions in Nonlinear Systems*  
Daniel Qi\* and Kenshiro Oguri

## **S11 - New Space and Cislunar Exploration**

**4:00 PM - 7:00 PM**

In recent years, the exploration and habitation of the Moon and other extraterrestrial bodies has become increasingly popularized in the government, academic, and commercial aerospace communities. The exploration, development, and settlement of these bodies requires substantially more innovation in GN&C technologies beyond what is currently used in Earth's orbit. The challenges in this domain often require technological advances from a diverse set of sub-fields such as space flight GN&C, landing, autonomous surface operations, human-machine interfaces, and many others. This session focuses on such innovation, describing the challenges and solutions developed within the community.

**National Chair:** Christopher D'Souza (NASA - Johnson Space Center) and Jerry Krassner (Independent Consultant)

**Local Chair:** Mitchell Hebert (Draper) and Jeff Parker (Advanced Space, LLC)

- AAS-26-111** *Robust Trajectory Design for Earth-to-Lunar Orbit Transfers via Sequential Convex Programming*  
Hiroataka Sekine\*, Kenshiro Oguri, Yosuke Kawabata and Ryu Funase
- AAS-26-112** *Flexible Servicing Network Optimization in Cislunar Space*  
Ansh Jha\* and Vishala Arya

- AAS-26-113** *An Adaptive Gaussian Mixture Approximation for Recursive Bayesian Smoothing of Nonlinear Systems*  
Aditya Desai\*, Benjamin Schneiderheinze, Andrea De Vittori and Keith LeGrand
- AAS-26-114** *Sustaining a Very Low Lunar Orbit*  
Jeff Parker\*, Alex Willebrand, Charles Cain, Veronica Rankowicz, Ethan Kayser and Bradley Cheetham
- AAS-26-115** *Lunar Surface Navigation using Sparse Opportunistic Measurement Sources*  
Evan Anzalone\*, Jaycie Eaton and Peter McDonough
- AAS-26-117** *QUO VADIS - Trajectory Design Evaluation of a Small Satellite Mission to Venus*  
Niklas Meyners\*, Elizabeth Klioner, Julian Bartholomäus, Clément Jonglez, Yagmur Denizler and Enrico Stoll

## **S12 - RPOD, Guidance/Targeting and Trajectory Design**

**4:00 PM - 7:00 PM**

Autonomous rendezvous, proximity operations, and docking (RPOD) systems are key enablers to supporting objectives such as commercial servicing of existing spacecraft, orbital debris removal, on-orbit refueling, the next generation of space tugs and asteroid missions, or returning humans to the moon to establish a sustained presence. As many of our missions recently are going beyond low-earth orbit, the need to minimize propellant usage or time to rendezvous has generated new and exciting trajectories and guidance/targeting algorithms. This session explores aspects of enabling technologies for guidance and targeting, optimal trajectory design, control, and safety of flight to support this class of mission.

**National Chair:** Jack Brazzel (NASA Johnson Space Center) and Sam Pedrotty (NASA Johnson Space Center)

**Local Chair:** DeAnn Redlin Sanders (Blue Origin) and Brady Young (Lockheed Martin Space)

- AAS-26-121** *Astrographic Native Metric Spaces using Riemannian Geometry*  
Garrick Lau\* and Marcus Holzinger

- AAS-26-123** *Optimal Solution of the Constrained Pursuit Evasion Game*  
Filippo Sangiorgi\*, Filippo Mascellani, Andrea De Vittori and Michele Maestrini
- AAS-26-124** *Transforming Proximity Operations and Docking Systems : modular tabletop testbed design and experiments*  
Deep Parikh, Manoranjan Majji and Mattheus Fry\*
- AAS-26-126** *Efficient Spacecraft Operational Passive Safety Assessment About Circular Chiefs*  
Hakim Lachnani\* and Kevin Schroeder
- AAS-26-098** *Probability of Collision Between Two Rigid Bodies*  
Luke Murphy\* and Manoranjan Majji
- AAS-26-096** *Comparing Orbital Conjunctions to MOID*  
David Lujan\*, Jordan Maxwell and Ryan Blay

Monday, February 2<sup>nd</sup>

**Social Event**

**Social Bingo Cocktail Hour**

**Monday 7:30pm – 8:30pm**

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Come join your GN&C colleagues for a networking and panel session. This event will focus on the future of the GN&C workforce and what is needed to develop a strong workforce, today and in the future. Audience questions are encouraged.

Heavy appetizers will be served.

**TUESDAY, FEBRUARY 3<sup>rd</sup>  
MORNING SESSIONS**

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## **S13 - Image Processing for Spaceborne Navigation**

**7:00 AM - 10:30 AM**

Image Processing (IP) is a critical step in many GN&C and ADCS algorithms, including attitude determination from star cameras and optical navigation from imaging sensors. Applications occur in various mission phases including interplanetary cruise, planetary orbit, proximity operations, descent and landing, and surface operations. An image from a visible, IR, LIDAR, or similar sensor can offer a wealth of information about a space vehicle's navigation state, but this information must be distilled into measurements that can be ingested by a navigation algorithm. Therefore, the success of algorithms which rely on image data depends on how effectively these algorithms perform IP---defined here as the process of extracting the salient pieces of information from an image in the presence of noise, clutter, and other real-world issues. This session is dedicated to papers that explore the relationship between IP algorithms and the broader problem of GN&C. Topics include IP algorithms; feedback/ feedforward between IP and GN&C; uncertainty quantification of IP outputs, processing of IP outputs to improve navigation, hosting platforms/architectures between CPUs, FPGAs, GPUs, and other processing units; IP techniques base on AI and ML; challenges with on-board real-time IP; on-board rendering; testing, verification, and validation of IP algorithms; and lessons learned from past experiences.

**National Chair:** Coralie Adam (KinetX | AAS), Simone D'Amico (Stanford University) and Kevin Kobylka (National Aeronautics and Space Administration)

**Local Chair:** Erin Griggs (Trusted Space, Inc.) and Ellis King (Blue Origin)

**AAS-26-131** ***KXIMPy: A GIANT Expansion Pack for Optical Navigation***

John Pelgrift\*, Derek Nelson, Vanessa Myhaver, Erik Lessac-Chenen, Eric Sahr and Coralie Adam

**AAS-26-132** ***Automating the Camera Calibration Routine to Enable Precision Optical Navigation***

Kevin Zhang\*, John Christian and Courtney Mario

**AAS-26-133 *Intuitive Machines Optical Camera Calibration and Tuning***

Jacob Puritz\*, Giovanni Molina, Lillian Hong, John Pelgrift, Mike Hansen, Coralie Adam and Timothy Crain

**AAS-26-135 *Synthetic Lunar Imagery for Optical Navigation: From IM-1 and IM-2 Missions to IM-3 and Beyond***

Lillian Hong\*, Joshua Jan, Delores VanHoose, Giovanni Molina, Jacob Puritz, Thomas Smith, Jason Hartmann and Timothy Crain

**AAS-26-136 *Optical Navigation Performance for the Nova-C Spacecraft: Visual Odometry and Line-of-Sight-to-Surface***

Giovanni Molina\*, John Pelgrift, Derek Nelson, Jacob Puritz, Lillian Hong, Mike Hansen, Coralie Adam and Timothy Crain

**AAS-26-138 *Advancing Spacecraft Autonomy for Interplanetary Transfers: Outcomes from the EXTREMA Project***

Paolo Panicucci\*, Fabio Ornati, Eleonora Andreis, Andrea Pizzetti and Francesco Toppoto

## **S14 - GN&C Verification and Validation**

**7:00 AM - 10:30 AM**

Guidance, Navigation, and Control (GNC) of aerospace systems is growing more complex as mission demands for improved performance and autonomy become more of the norm. The Verification and Validation (V&V) process is perhaps the most costly and lengthy element of a GNC system development life cycle. Consequently, there is a need for innovative, rigorous and efficient V&V processes for the anticipated advanced GNC algorithms.

Abstracts are sought in the following specific areas: modernized fast and efficient GNC V&V approaches, methods, and techniques; Artificial Intelligence-based (e.g., Machine Learning) approaches for GNC V&V; advanced sensitivity and robustness analysis methods and techniques; optimization-based approaches for both standard and probabilistic robustness metrics (for not only performance but stability metrics as well); techniques for extracting complementary information from robustness and sensitivity analysis; fast and efficient sample-based sensitivity analysis techniques; model reduction methods and techniques through sensitivity analysis; uncertainty quantification in spacecraft dynamics systems modelling; potential 'spin-in' GNC V&V approaches, methods, and techniques from the non-space domain (e.g., autonomous air, terrestrial, and underseas vehicles) that could become

steps on a V&V technology development roadmap for space-domain applications; educational and training approaches for GNC V&V to improve the awareness and preparedness of the industrial workforce; lessons learned from past missions; and real-world benchmark problems the GNC community of practice can use to demonstrate the application of new and emerging V&V methods and techniques for advanced GNC algorithms.

**National Chair:** Christopher D'Souza (NASA - Johnson Space Center) and Neil Dennehy (JHU APL)

**Local Chair:** Hank Steadman (Lockheed Martin Space)

**AAS-26-141** *Steering Law Validation on a Spherical Air-Bearing based Testbed for an ADCS employing two Variable-Speed Single-Gimbal Control Moment Gyroscopes*

Jen Hao Cheng\*, Kai Kuo Liao, Po Hsun Yen and Shang Jung Lee

**AAS-26-143** *Advancing Ground Tests for Hypersonics: Test as You Fly*

Richard Barrow\*

**AAS-26-145** *Uncertainty Quantification for Monte Carlo Performance Verification*

Mark Pittelkau\*

**AAS-26-146** *The Outcomes of the Second Inter-Agency GNC V&V Workshop: Finding, Observations and Recommendations for the GNC Engineering Community of Practice*

Neil Dennehy\*

**AAS-26-147** *Europa Clipper GNC Verification & Validation*

Paul Brugarolas\*, Bryan Kang, Johnny Lam, William Sanchez, Jean-Francois Castet, Todd Brown and Joan Noonan

**AAS-26-148** *Digital and Robotic Twinning For Validation of Proximity Operations and Formation Flying*

Emily Bates\*, Zahra Ahmed, Aviad Golan Peretz, Pol Francesch Huc, Antonio Rizza, Samuel Low, Toby Bell, Gregory Zin and Simone D'Amico

## Tutorial

### Modeling and Control of Large Flexible Space Structures

11:00am-3:00pm

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**Format:** Lecture and hands-on tutorial

**Presenter:** Daniel Alazard, Francesco Sanfedino (ISAE-SUPAERO, Toulouse, France), and Ossi Saarela (The MathWorks)

**Requirements:** Laptop; MATLAB online access with required software will be provided. A (free) MathWorks account is required to access software

During this tutorial session the attendees will have a hands-on training on (i) the modeling tool SDTlib used to create under MATLAB/SIMULINK the 6 degrees of freedom model of a large flexible spacecraft, fully parametrized according to the uncertain or varying parameters, (ii) the robust attitude control of the uncertain model to meet multi-objective specifications using the MATLAB Robust Control Toolbox. The objective of this training is to show how these tools can be used to take into account V&V considerations as soon as possible in the design process and very early in the preliminary design phase.

A self-served lunch buffet will be provided from 12:00pm-12:30pm.

**TUESDAY, FEBRUARY 3<sup>rd</sup>  
AFTERNOON SESSIONS**

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## **S15 - Small Satellite GN&C**

**4:00 PM - 7:00 PM**

As small satellites, including CubeSats, NanoSats, and ESPA-class platforms, take on increasingly complex roles in defense, science, and commercial missions, advancements in Guidance, Navigation, and Control (GN&C) are critical to enabling precision, autonomy, and mission success. This session invites contributions on the design, testing, and implementation of GN&C systems for small spacecraft. Topics of interest include precision attitude control, autonomous navigation, fault-tolerant GN&C systems, formation flying, and in-space maneuvering. This may include innovations in onboard sensors and actuators, software algorithms, real-time GN&C processing, and operational concepts that push the boundaries of current smallsat capabilities. Submissions that share lessons learned from flight missions or on-orbit experiments are especially encouraged. Research efforts from students and academic teams working on relevant GN&C challenges are also welcome.

**National Chair:** Scott Palo (University of Colorado Boulder)

**Local Chair:** Kenzie Harrison (Blue Canyon Technologies), Devon Sanders (Blue Canyon Technologies) and Elvis Silva (Blue Canyon Technologies)

**AAS-26-151** *Advanced Multi-Disciplinary GNC Techniques for Mitigating High-Precision Pointing Jitter*  
Sandeep Chojar\* and Rusty Anderson

**AAS-26-152** *Sliding Mode Control with Chattering Reduction for Spacecraft Pose Tracking Based on Dual Quaternions*  
Suryamshu Ramesh\*, Dongeun Seo and Sergey Drakunov

**AAS-26-153** *Cislunar Spacecraft System Optimization for Uncooperative Target Tracking Subject to State Uncertainty*  
Haru Tidmore\*, Ian Down and Manoranjan Majji

**AAS-26-154** *Attitude Control and Aerodynamic Disturbance Estimators for Small Satellites Flying in VLEO*  
Drew Engelmann\* and Rich Powers

**AAS-26-155** *Continuous Low-Altitude Lunar Coverage Using Solar-Sail-Controlled Near-Circular Orbits*  
Aidan Puno\*, Andrew Heaton and Alisha Crawley

**AAS-26-156** *PID Control Combining Disturbance Computations for Attitude Control of Tranche 2 Tracking Layer Satellite*  
Daero Lee\*, Peter Merrick and Lorenzo Molina

**AAS-26-157** *Tracking Non-Cooperative Targets subject to Intermittent Measurements*  
Edward Jung\*, J Humberto Ramos and Maruthi R. Akella

## **S16 - Entry, Descent & Landing GN&C**

**4:00 PM - 7:00 PM**

Entry, descent, and landing technologies enable surface exploration of celestial bodies and the safe return of payloads to Earth. Recent advances in powered flight guidance and in atmospheric entry systems have improved landed mass capability to the Moon and Mars, and has made the reuse of launch vehicle first stages commonplace on Earth. Continued advancements through the collaboration of government, industry, and academia will enable even more ambitious capabilities and missions in the future. This session provides a venue for discussing advanced entry vehicles, as well as guidance, navigation and control technologies for powered and unpowered descent and landing systems. Topics include precision navigation and targeting, novel guidance and control methodologies, hazard avoidance, and controlled landings.

**National Chair:** Swati Mohan (NASA Jet Propulsion Laboratory)

**Local Chair:** AJ Berning (Blue Origin) and Anubhav Gupta (In Orbit Aerospace, Inc. & University of Colorado Boulder)

**AAS-26-161** *Development, Verification, and Flight of a Wind-Based EDL Targeting Methodology*  
Alex Reynolds\* and James Tabony

**AAS-26-162** *Robust Skip Entry Guidance Through a Probabilistic Indicator Function*  
Grace Calkins\*, David Woffinden and Jay McMahon

- AAS-26-163** *Landing-Coordinate-Error Guidance and Pitch Control for Re-entry without Lateral Authority*  
Anubhav Gupta and Ishaan Patel\*
- AAS-26-164** *Performance Improvement In End-to-End Trajectory Optimization For High-Mass Mars Landing Missions*  
Christopher Davami\*, Ping Lu, Aaron J. Rosengren, Breanna Johnson, Daniel Scharf and Connor Noyes
- AAS-26-165** *Using Wasserstein Distributionally Robust Control for Spacecraft Powered Descent*  
Zachary Donovan\* and Jay McMahon
- AAS-26-166** *Lidar-based Hazard Detection Performance Analysis for Precision Lunar Landing*  
Courtney Mario\*
- AAS-26-167** *Verification and Validation of Lunar Landing Dynamics Models Against Apollo 11 for Artemis Human Landing System Applications*  
Rekesh Ali\*, Adam Slagle, Alessandro Mordasiewicz, Juan Orphee and Peter McDonough

**WEDNESDAY, FEBRUARY 4<sup>th</sup>  
MORNING SESSIONS**

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## **S17 - Recent Experiences**

**7:00 AM - 10:30 AM**

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 Chair:** J. Russell Carpenter (NASA GSFC), Mike Moreau (NASA GSFC) and Sam Thurman (NASA Jet Propulsion Laboratory)

**Local Chair:** Jim Chapel (Lockheed Martin Space) and Devin Stancliffe (Lockheed Martin)

**AAS-26-171** *Europa Clipper Spacecraft GNC Overview and Early Flight Performance*

Timothy Lui and Johnny Lam\*

**AAS-26-173** *Getting Back Up: Flight Experiences of the IM-1 and IM-2 Lunar Landing Missions and Improvements for IM-3.*

Timothy Crain\*, Trent Martin and Jack Fischer

**AAS-26-174** *Analysis and Flight Validation of Momentum-Biased Attitude Stability During Open-Loop Deployment on NISAR*

Aditya Rallapalli, Ashok Kumar Kakula, Martin Cacan, David Bates and Oscar Alvarez-Salazar\*

**AAS-26-175** *Europa Clipper Spacecraft In-Flight Structural Flexible Mode Identification*

Timothy Lui\*, Johnny Lam, Gurkopal Singh, William Sanchez and Bradley Taylor

**AAS-26-176** *Jupiter Radiation Effects on the Honeywell MIMU*

Cameron Baldwin\* and Jay St. Pierre

**AAS-26-177** *ULA's Vulcan Centaur Launch System Certification*

John Reed\*

**AAS-26-178** *Sampling the Edge: Robotic Operations Power Perseverance's Ascent of Jezero Crater Rim*

Vandi Verma\*

**AAS STEM-SCAPE Event**  
**(separate from main conference)**  
**Saturday 2/21/2026 9am – 4pm**  
**BAE Systems, Inc.; 1735 Range St, Boulder,**  
**CO 80301**

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The 2026 STEM-SCAPE event will be held at a separate date and venue from the main conference. If you are local to Colorado and interested in volunteering or know students who would be interested in the event, please contact the STEM-SCAPE Chairs.

We will be hosting an annual STEM event for hundreds of 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. The keynote speaker 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. This event is made possible by the charitable donations and support from Lockheed Martin, BAE Systems, Inc. and CU Boulder.

This year we will be hosting a new second STEMSCAPE in the Grand Junction area planned for Fall. If you are local to the Grand Junction area and interested in learning more about how you or your company can help support the event, please contact Alexandra Dukes.

**Special thanks to BAE Systems, Inc. for  
sponsoring the AAS STEM-SCAPE Event**

**Local Chairpersons**

Alexandra Dukes, Lockheed Martin Space  
Erik Diaz, BAE Systems, Inc.

**Interested in volunteering?**

Email - [alexandra.m.dukes@lmco.com](mailto:alexandra.m.dukes@lmco.com) &  
[erik.hernandezdiaz@baesystems.us](mailto:erik.hernandezdiaz@baesystems.us)



**2026 Planning Committee Honorable Mentions:**

Amy Delay

Michelle Barath

Yohannes Tilahun

Lockheed Martin Space

Lockheed Martin Space

BAE Systems, Inc.

Please join us next year for the 2027  
AAS GN&C Conference

