

AMOS Conference 2026

PROGRAM



AMOS Conference is an in-person event with virtual attendance options and kicks off with a number of virtual and in-person Technical Short Courses in various Space Situational/Domain Awareness-related disciplines. The three plenary program days open with Keynote Addresses and SSA Policy Forum discussions followed by Technical Presentations covering a range of broad topical areas relating to SSA/SDA, all streamed live to the virtual conference platform. Posters are available in digital format and are accompanied by on-demand presentation videos. A select number of posters are invited for in-person presentation during the evening poster sessions.

Please note all dates/times listed are Hawaii Standard Time (HST). Agenda is subject to change.

Program at a Glance

FRI Sep 11 **Virtual Platform Open to Registered Attendees**

On-Demand Launch | Digital Poster Presentations

SUN Sep 13 – **EMER-GEN® Program** (separate registration fee required)
TUE Sep 15 On-site Registration

MON Sep 14 **Virtual Technical Short Courses** (separate registration fee required)

TUE Sep 15 **Exhibitor Load-in**
In-person Technical Short Courses (separate registration fee required)
Welcome Reception | Co-sponsored by KBR

WED Sep 16 **Conference Opening & Cultural Invocation**
Opening Keynote Address
AMOS Policy Forum | *Much Ado About Tracking: Navigating Dual-Use SSA*
Featured Presentation | *Brian Weeden*
Technical Session | *Astrodynamics*
Featured Presentation | *Colonel Russell Teehan*
Technical Session | *Space-Based Assets*
Technical Session | *Atmospherics & Space Weather*
Technical Session | *Conjunction/RPO*
Poster Session + Exhibit and Networking Reception
Women & Allies in SDA

THU Sep 17 **Keynote Address** | *Michael Nicolls*
AMOS Policy Forum | *Where Does Basic SSA Service Begin and End?*
Featured Presentation
Technical Session | *Satellite Characterization*
Featured Presentation | *Colonel Max Yates and Enrico Jeantete*
Technical Session | *Cislunar SDA*
Technical Session | *AI for SDA Applications*
Poster Session + Exhibit and Networking Reception

FRI Sep 18 **Keynote Address**
AMOS Policy Forum | *Mind the Gap: Coordinating Launch, Tracking, and Re-entry*
Technical Session | *Space Domain Awareness*
AMOS Student Space Exploration Day

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Featured Presentation | *Barbara Golf*
Technical Session | *SDA Systems & Instrumentation*
Technical Session | *Space Debris*
Featured Presentation | *EMER-GEN® Outcomes*
Conference Closing & Awards Ceremony
Pau Hana Reception | *Co-sponsored by L3Harris*

Sunday 13 September – Tuesday 15 September



EMER-GEN®

The 9th annual EMER-GEN® is a joint initiative of the AMOS Conference and SGAC. The program is designed especially for young professionals and students enthusiastic about careers in space. Separate registration required. Visit www.emer-gen.com to learn more.

02:00
PM HST

06:00
PM HST

ON-SITE REGISTRATION | *Aulani Ballroom Foyer*

Monday 14 September

02:00
PM HST

06:00
PM HST

ON-SITE REGISTRATION | *Aulani Ballroom Foyer*

VIRTUAL TECHNICAL SHORT COURSES: *In-person and virtual short courses are offered this year. Separate registration fee required for each half-day course. Virtual short courses are “live” with the ability to interact with the instructor and attendees in real-time. Virtual courses will not be recorded. Access links will be provided to registrants closer to the course date.*

08:00
AM HST

12:00
PM HST

VIRTUAL COURSE A | *The Probability of Collision Controversy* | *Online Room-1*

VIRTUAL COURSE B | *Optical Modeling and Simulation for SSA/SDA* | *Online Room-2*

12:00

01:00

BREAK | *Explore the AMOS Virtual Venue and Digital Poster Hall*

01:00
PM HST

05:00
PM HST

VIRTUAL COURSE C | *Introduction to Data Driven Analytics and Applications to SSA* | *Online Room-1*

VIRTUAL COURSE D | *Real-Time Conjunction Assessment and Optimal Collision Avoidance: Theory, Algorithms, and Implementation of Own SSA/STM Software* | *Online Room-2*

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Tuesday 15 September

07:00
AM HST

06:00
PM HST

ON-SITE REGISTRATION | Aulani Ballroom Foyer

IN-PERSON TECHNICAL SHORT COURSES: *In-person and virtual short courses are offered this year. Separate registration fee required for each half-day course. In-person short courses will not be livestreamed for virtual attendance, nor will they be recorded.*

08:00
AM HST

12:00
PM HST

IN-PERSON COURSE 01 | Panchromatic, Multi-spectral, Spectroscopy and Polarimetry Data Collection and Image Processing for Non-resolved Space Object Characterization

IN-PERSON COURSE 02 | Observing and Characterizing Space Debris

IN-PERSON COURSE 03 | Telescopes and Optics: An Introduction to Optical SSA

IN-PERSON COURSE 04 | Applied Multi-Sensor Fusion for Enterprise-Level SDA: Deriving Coherent, Time-Relevant Operational Insight from EO, Passive RF and Heterogeneous Data Sources

IN-PERSON COURSE 05 | Architecting the Future of SDA: Implementing MOSA for Rapid Innovation

12:00

01:00

BREAK | *Explore the AMOS Virtual Venue and Digital Poster Hall. Pick up lunch at one of the many locations on-site or next door at the Shops at Wailea.*

01:00

05:00

IN-PERSON COURSE 06 | Deep Learning & Large Language Methods for Space Domain Awareness

IN-PERSON COURSE 07 | Resource-Constrained Sensor Scheduling for Space Domain Awareness: A Scenario-Based Interactive Workshop

IN-PERSON COURSE 08 | Uncertainty Propagation for Space Situational Awareness

IN-PERSON COURSE 09 | Foundational Cislunar Education

IN-PERSON COURSE 10 | Hands-On Space Mission Analysis: Building Voice-Controlled AI Agents for GMAT, SatSim, and SDA Image Processing

06:00

07:30

WELCOME RECEPTION | Luau Gardens

Join us for an oceanfront reception at sunset as we welcome the AMOS 'ohana back to the island while listening to music by the U.S. Air Force Band of the Pacific.

Co-sponsored by



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PROGRAM



Wednesday 16 September

The three-day plenary program will be livestreamed in its entirety to the virtual conference platform, with on-demand playback available in 24-48 hours. All registered attendees are encouraged to visit the virtual Exhibit Hall and Digital Poster Hall to review materials and interact with sponsors and poster presenters.

06:00 AM HST	07:30 AM HST	BREAKFAST AT LEISURE <i>Luau Gardens</i>
07:30	07:45	CONFERENCE OPENING <i>Haku/Pikake Ballroom</i> Leslie Wilkins , President & CEO, Maui Economic Development Board, Inc. CULTURAL INVOCATION
07:45	08:30	OPENING KEYNOTE ADDRESS
08:30	09:30	AMOS POLICY FORUM Much Ado about Tracking: Navigating Dual-Use SSA <i>The technologies used for civilian SSA can also be used to monitor military satellites or space assets of adversarial nations. This is especially true for some of the new in-space SSA constellations. As well, there is an increasingly blurred line between inspector satellites and SSA satellites. Finally, as the USG continues to turn to space as a service model, this makes the line between what is/not a military space capability amorphous. This panel will discuss considerations for SSA operators and providers and what the current state is of policies and governance mechanisms, with the goal of providing clarity to both sides for how to allow this evolution to continue while also ensuring a stable, predictable space environment for all.</i> <u>Moderated by:</u> Victoria Samson , Chief Director, Space Security and Stability, Secure World Foundation
09:30	10:00	EXHIBITION AND NETWORKING BREAK <i>Exhibit Hall + Conference Platform</i> Explore the Exhibit Hall on-site and online. Interact with our conference partners, view demos, access resources, schedule meetings, and more.
09:30 AM HST	07:00 PM HST	EXHIBITION HOURS FOR THE DAY
10:00	10:20	FEATURED PRESENTATION Evolution of SSA Capabilities to Support SDA and S/TM <i>Haku/Pikake Ballroom</i> Brian Weeden , Director of Civil and Commercial Policy, The Aerospace Corporation
10:20	10:30	POSTER PITCHES Listen to selection of poster presenters give a 30-second pitch on why you should come and view their poster presentation.

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10:30	11:45	<p>ASTRODYNAMICS Co-chaired by Laura Pirovano, NorthStar Earth & Space and Paul Schumacher, AFRL (retired)</p> <p><i>Physics-informed Machine Learning for Initial Orbit Determination</i> Sean Wolfe, University of Toronto</p> <p><i>Uncertainty Quantification in Physics-Informed Orbit Determination for Space Domain Awareness</i> Andrea D'Ambrosio, The University of South Florida</p> <p><i>From Covariance Reduction to Decision Value: An Information-Theoretic Framework for Dynamic SSA Scheduling</i> Thomas Higginbotham, Kestrel Intelligence</p> <p><i>Turning Uncorrelated Tracks into Catalogued Objects: An Operational Approach to Track Association Using Commercial SSA Data</i> Laura Pirovano, NorthStar Earth & Space</p> <p><i>From Cislunar to Translunar: A Spatiography for Space Domain Awareness</i> Anjali Rawat, Virginia Tech</p>
11:45 AMHST	12:45 PMHST	LUNCH Lokelani Ballroom
12:45	01:05	<p>FEATURED PRESENTATION TBD Haku/Pikake Ballroom</p> <p>Colonel Russell Teehan, Portfolio Architect, Air Force Space and Missiles System Center</p>
01:05	01:15	<p>POSTER PITCHES Listen to selection of poster presenters give a 30-second pitch on why you should come and view their poster presentation.</p>
01:15	02:45	<p>SPACE-BASED ASSETS Co-chaired by BT Cesul, Umbra and Neil Dhingra, BlackSky</p> <p><i>Experimental Evaluation of Space-Based Search Operations Using NEOSSat</i> Laurenne Tynski, Department of National Defence/Government</p> <p><i>Automated On-Demand High-Resolution Low-Latency Space-to-Space Imagery for SDA</i> Neil Dhingra, BlackSky</p> <p><i>Multi-Phenomenology Collection with Non-Earth Imagery and Ground-based Sensors for Resident Space Object Characterization and Behavior Tracking</i> Stuart Bartlett, HEO</p> <p><i>Towards Autonomous Space Situational Awareness at the Edge: Flight Results from NASA Starling</i> Justin Kruger, Era Drive</p>

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Characterization of GNSS Interference in LEO over Europe
Kian Bostani Nezhad, Technical University of Denmark

Increasing Optical Tracking Opportunities for LEO Satellites Using Cooperative Active Event-Based Sensing: Experimental Validation with MOLA and OTTER
Francisca Parra, AFIT/CIG

02:45 03:05 **EXHIBITION AND NETWORKING BREAK** | *Exhibit Hall + Conference Platform*
Explore the Exhibit Hall on-site and online. Interact with our conference partners, view demos, access resources, schedule meetings, and more.

03:05 03:15 **POSTER PITCHES**
Listen to selection of poster presenters give a 30-second pitch on why you should come and view their poster presentation.

03:15 04:15 **ATMOSPHERICS & SPACE WEATHER**
Co-chaired by **Piyush Mehta**, West Virginia University and **Shaylah Mutschler**, Space Environment Technologies

Understanding Thermospheric Modelling Uncertainty and Variability in Very-Low Earth Orbits
Oscar Rodriguez Fernandez, OKAPI: Orbits GmbH

Revealing Orbital and Atmospheric Responses to Solar activity (ROARS): A Constellation of Small Satellites for Space Weather Monitoring
Ravinda Desai, University of Warwick

Forecasting Drag-Influenced Trajectories using Upstream Space Weather
Mia Tian, Massachusetts Institute of Technology

Large-Scale Validation of Satellite Lifetime Predictions Using Forecasted Space Weather
Scott Shambaugh, Leonid Space

04:15 05:30 **CONJUNCTION/RPO**
Co-chaired by **Zach Funke**, University of Colorado Boulder and **Jonathan Kadan**, SSC/SYD 85/BI Odyssey Systems

Observability-Aware Estimation and Control for Angles-Only Relative Orbit Navigation
Ryoichiro Kaga, Kyushu University

From Detection to Classification: A Semi-Supervised Framework for Satellite Maneuver Characterization in LEO Using TLE Data
Maya Harris, Massachusetts Institute of Technology

SSA-Uncertainty-Aware Safety-Shielded ES-TD3 for Autonomous Station-Keeping and Collision-Risk Mitigation in LEO
Hyunji Lee, University of Science and Technology (UST)

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Tactically Responsive Space (TacRS): Successes and Challenges, VICTUS HAZE, and the Necessity of an RPO Threat Response Capability

George Eberwine, USSF Space Systems Command SYD 89 – Space Safari

Starlink's Approach to Low-Latency Collision Avoidance for Autonomous Satellite Constellations

Michael Hoot, SpaceX

05:30 07:00

EXHIBITION AND POSTER SESSION | Exhibit Hall | Sponsored by **MITRE**
Posters co-chaired by **Pat Patterson**, Space Dynamics Laboratory and **Matthew Stevenson**, LeoLabs

Meet select poster presenters while enjoying a beverage and interacting with exhibitors and fellow attendees.

08:00 10:00

WOMEN & ALLIES IN SPACE DOMAIN AWARENESS | Pacific Terrace Rooftop
Desserts, dancing, and networking under the stars.
Limited to first 300 guests. Separate registration required.

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Thursday 17 September

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06:00
AM HST

07:30
AM HST

BREAKFAST AT LEISURE | Luau Gardens

07:30

08:00

KEYNOTE ADDRESS | Haku/Pikake Ballroom

Introduction by **Ian Christensen**, Senior Director, Private Sector Programs, Secure World Foundation



Michael Nicolls
SVP Starlink, SpaceX

08:00

09:00

AMOS POLICY FORUM | **Where Does Basic SSA Service Begin and End?**

Government space safety systems are in the process of defining and operationalizing basic SSA and space safety services. Programs such as TraCSS and EU-SST have been working jointly to research and map alignment between offerings as the baseline services are defined. At the same time, a United Nations Expert Group is seeking to establish basic space traffic coordination principles at the international level; and a leading satellite operator has announced a system to provide free of charge certain public SSA services based on information collected through operations. Throughout all of these, a still-emerging commercial SSA industry is working to build out value-added services and products based on SSA information and analysis. This discussion will center on the question of what is the basic minimum SSA information or service that should be provided as free or public good and the models for doing so, while at the same time enabling commercial or fee-based services to develop.

Moderated by:

Ian Christensen, Senior Director, Private Sector Programs, Secure World Foundation

09:00

09:30

EXHIBITION AND NETWORKING BREAK

Exhibit Hall + Conference Platform

Explore the Exhibit Hall on-site and online. Interact with our conference partners, view demos, access resources, schedule meetings, and more.

09:00
AM HST

07:00
PM HST

EXHIBITION HOURS FOR THE DAY

09:30

09:50

FEATURED PRESENTATION | Haku/Pikake Ballroom

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09:50	10:00	POSTER PITCHES Listen to selection of poster presenters give a 30-second pitch on why you should come and view their poster presentation.
10:00	11:30	SATELLITE CHARACTERIZATION Co-chaired by Heather Cowardin , NASA and Marcus Holzinger , University of Colorado Boulder <i>Model-Free Spin State Characterization of Resident Space Objects Using Time Series of Radar Cross Section Measurements</i> Maria Alessandra De Luca , Politecnico di Milano <i>Space Object Classification of Light-Curve Features Using Bayesian Neural Networks</i> Kimberly Kinateder , Applied Optimization <i>Characterizing Analyst Set Objects Using Unresolved Light Curve and Space Debris Laser Ranging Measurements</i> Liam Robinson , Purdue University <i>Transformer-Based Resident Space Object (RSO) Characterization from Photometric Time Series Observations</i> Steven Rossland , University of Colorado Boulder <i>Detecting Structural Changes in Satellites Using Tracked EO Image Sequences</i> Enrique De Alba , EO Solutions <i>Adversarial Satellite Maneuver Prediction using Historical Pattern of Life and Hybrid Machine Learning</i> Rithwik Neelakantan , Digantara Industries Private Limited
11:30	12:30 PMHST	LUNCH <i>Lokelani Ballroom</i>
12:30	01:00	FEATURED PRESENTATION Forging United States Space Superiority: A Collaborative Framework Securing Space from vLEO Thru Cislunar <i>Haku/Pikake Ballroom</i> Colonel Max Yates , SML & Chief, Space Electro-Optics Division, AFRL/RDS Enrico Jeantete , Director, Innovation and Prototyping Division, SSC/SYD 89/SD
01:00	01:10	POSTER PITCHES Listen to selection of poster presenters give a 30-second pitch on why you should come and view their poster presentation.

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01:10 02:40

CISLUNAR SDA

Co-chaired by **Mark Bolden**, Trusted Space, Inc. and **Jaime Stearns**, Space Rapid Capabilities Office

The PHANTOMECHOES - Cislunar Experiment
Simon George, Defence Science and Technology Laboratory

Constellation Design for Autonomous Cislunar Navigation and Target Tracking Using Relative Measurements
Ryan Menges, University of Colorado Boulder

Observability Considerations for Cislunar Angles-Only Relative Navigation
Andrea López, University of Colorado Boulder

Operational Considerations for Cislunar Uncertainty Propagation with Multi-Fidelity Models
John Gaebler, KBR

Feasibility Study of Optical Space Situational Awareness from Sun-Earth L1
Erik Payton, University of Maryland, College Park

Trajectory Characterization Capabilities of Hamiltonian Normal Forms
Carson Hunsberger, The Pennsylvania State University

02:40 03:00

EXHIBITION AND NETWORKING BREAK | Exhibit Hall + Conference Platform

Explore the Exhibit Hall on-site and online. Interact with our conference partners, view demos, access resources, schedule meetings, and more.

03:00 05:15

AI FOR SDA APPLICATIONS

Co-chaired by **Heather James**, Kitware, Inc. and **Justin Fletcher**, USSF SSC/SZG

Improving Low-SNR RSO Learned Detection Through Detectability-Aware Sampling and Loss Scaling
Kevin Phan, EO Solutions

A Feasibility Study on Scientific Machine Learning in Detecting and Characterising Satellite Manoeuvres
Olivia Widjaja, University of New South Wales - Canberra

Transformer Networks for Spaceborne Detection of Temporarily Bound Objects
M. Reza Emami, University of Toronto Institute for Aerospace Studies

Responsive Autonomous RSO Imaging and Catalog Maintenance Using Reinforcement Learning Across Orbital Regimes
Daniel Huterer Prats, University of Colorado Boulder

Classical to Neural: Quantitative Assessment of Detection Processing Architectures for Dim-Object Detection Across Space Surveillance and Adjacent Sensing Domains
Christopher Grant, Hyperion Vector Systems

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A Transformer-Based Framework for Generalized Maneuver Detection and Reconstruction

Matteo Rosa, Politecnico di Milano

Model-Based Multi-Agent Reinforcement Learning for Strategic Satellite Constellation Scheduling and Maintenance

Ryan Herchig, IERUS Technologies, Inc

Argus: Satellite Streak Detection with a Frozen Vision Transformer Backbone

Zachary Phaneuf, Cloudstone Innovations

A Code World Model Large Language Assistant for Quantitative Policy Reasoning From Monte Carlo Orbital Debris Simulation

Tyler Barr, XDLab Embry-Riddle Aeronautical University

05:15

06:45

EXHIBITION AND POSTER SESSION | Exhibit Hall | Sponsored by  **ANDURIL**

Posters co-chaired by **Pat Patterson**, Space Dynamics Laboratory and **Matthew Stevenson**, LeoLabs

Meet select poster presenters while enjoying a cocktail and interacting with exhibitors and fellow attendees.

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Friday 18 September

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06:00 AM HST 07:30 AM HST **BREAKFAST AT LEISURE** | Luau Gardens

07:30 08:00 **KEYNOTE ADDRESS** | Haku/Pikake Ballroom

08:00 09:00 **AMOS POLICY FORUM** | **Mind the Gap: Coordinating Launch, Tracking, and Re-entry**
As launch operations increase in tempo and become more routine occurrences, the need to address a number of operational challenges in the integration of SSA information into launch operations become more acute. These issues including addressing and reducing the “COLA gap;” clarifying the respective roles of satellite and launch operators in identification and tracking immediately after separation; improving SSA information related to re-entry of space objects and launch vehicles; and addressing growing questions around the integration of launch activities into air traffic operations. This panel will discuss current policy and operational efforts to address these issues and examine where progress has been made to date. It will also look at how best to improve integration of launch operations into national and international space traffic coordination systems.

Moderated by:
Alex Shi, Senior Program Analyst, Secure World Foundation

09:00 09:30 **EXHIBITION AND NETWORKING BREAK** | Exhibit Hall + Conference Platform

Explore the Exhibit Hall on-site and online. Interact with our conference partners, view demos, access resources, schedule meetings, and more.

09:00 AM HST 04:00 PM HST **EXHIBITION HOURS FOR THE DAY**

09:00 AM HST 01:00 PM HST **STUDENT SPACE EXPLORATION DAY** | Ilima Ballroom + Exhibit Hall
The AMOS Conference welcomes Maui County middle school students and their STEM educators to explore careers in space and visit exhibit booths for hands-on STEM activities.

09:30 11:45 **SPACE DOMAIN AWARENESS**
Co-chaired by **Jeremy Raley**, L3Harris and **Ayla Reed**, 15th Space Surveillance Squadron (MD2)

The Epistemic Support-Point Filter (ESPF): Possibilistic Space Object State Estimation Under Ignorance
Moriba Jah, University of Texas at Austin

Fallback Autonomy for Space Domain Awareness in Mega-Constellations
Daniel Reynolds, U.S. Space Force

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Stargaze: SpaceX's Space Situational Awareness System
Javier Roa Vicens, SpaceX

Synthetic In-track Fence Tracking (SIFT) for Cathemeral Electro-optical Planar Search Tasking in LEO
James Herring, Slingshot Aerospace

From Ground-Based Telescopes to the Operations Center: CCSDS TDM v2.0 Conventions for Continuous Optical SSA Data Exchange
Mariusz Slonina, Polish Space Agency

Satellite Maneuver Detection and Propulsion Classification through Multimodal Sensor Fusion
Phillip Schmedeman, US Space Command

Electro-Optical and Passive Radio-Frequency Data Fusion for In-Space Anomaly Detection
Benoit Philbert, NorthStar Earth & Space, Inc.

A Hybrid Orbital-Socio-Technical Framework for Context-Aware Threat Assessment in Space Domain Awareness
Tiffany Phan, University of Texas at Austin

Establishing an Automated Pattern of Life Method for Manoeuvre Anomaly Detection in GEO
Cameron Webb, DSTG

11:45 12:45
 PM HST LUNCH | *Lokelani Ballroom*

12:45 01:05 **FEATURED PRESENTATION** | **TBD** | *Haku/Pikake Ballroom*

Barbara Golf, U.S. Space Force, Strategic Advisor for SDA, Space Systems Command

01:05 02:50 **SDA SYSTEMS & INSTRUMENTATION**
Co-chaired by **Brett Hokr**, EO Solutions and **Jim Shell**, Novarum Tech, LLC

Enhanced Radar Imaging in Space Surveillance Applications
Simon Anger, German Aerospace Center (DLR)

Unintended Satellite Emissions for Expeditionary Space Domain Awareness (SDA)
Walter Keller, Nokomis, Inc.

A Primer for Expeditionary Space Domain Awareness
Greg Furlich, University of Colorado Boulder

Low-Earth Orbit (LEO) Optical Camera Installation (LOCI) – An Operational Network of Wide-Field, Fixed Point-of-View, Optical Surveillance Sensors
Laurence Blacketer, Raytheon UK

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All-Sky Astronomical Surveys for Automated Cislunar SSA
Greg Sallaberry, Lawrence Livermore National Laboratory

NASA's Infrared Telescope Facility: A New Research Instrument for Continuous Thermal Infrared Monitoring of Geostationary Satellites
Sarah Caddy, University of Melbourne

Spectroscopic Characterization of GEO Satellites Using MKIDs
Serkay Olmez, MIT Lincoln Laboratory

02:50 03:10 **EXHIBITION AND NETWORKING BREAK** | Exhibit Hall + Conference Platform

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03:10 04:10 **SPACE DEBRIS** | Haku/Pikake Ballroom
Co-chaired by **Chris Kunstadter**, Triton Space LLC and **Darren McKnight**, LeoLabs

Synthetic Space Debris Populations from Break-Up Events
Lorenzo Olivieri, University of Padova

Independent Radar Detection and Characterization of the CZ-6A Breakup Debris cloud in LEO: Insights from EISCAT UHF Beam-park Campaigns
Subashree Balakrishnan, Digantara Industries Private Limited

Improving Satellite-Operation Efficiency Using Conjunction Data Message (CDM) Frequency Prediction
Yuichi Furukawa, NEC Aerospace Systems, Ltd.

Observation and Characterization of Satellite and Debris Re-entries with the Global Meteor Network
Tam Do, University of Western Ontario

04:10 04:25 **FEATURED PRESENTATION** | **EMER-GEN® Outcomes**

04:25 04:45 **CONFERENCE CLOSING & AWARDS CEREMONY**
In collaboration with the Space Surveillance Technical Committee of the [American Astronautical Society](#) (AAS), the AMOS Conference recognizes outstanding efforts in the field of Space Situational/Domain Awareness by presenting the annual AMOS Conference Best Paper and Student Awards. Also awarded are a series of Poster Awards.

05:00 06:30 **PAU HANA RECEPTION** | Kahoolawe Lawn
Commemorate the end of the 27th AMOS Conference with live music, cocktails, and friends as we say *Aloha* and *A Hui Hou!*

Sponsored by  **L3HARRIS™**
FAST. FORWARD.

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Digital Poster Presentations | Access Starts Sep 11

All posters are available in digital format this year and are accompanied by brief presentation videos in the virtual conference platform's Poster Hall. Interact with poster presenters online. The online Poster Hall opens Sep 11.

*A select number of posters are invited for in-person presentation during the Poster Sessions, as indicated with a (**) double asterisk.*

Quantitative Policy Assessment Using MOCAT-MC and Large Language Model for Space Debris Governance
Kyah Adams, XDLab Embry-Riddle Aeronautical University

Doppler-Only Orbit Determination with Physics-Informed Neural Networks and High-Fidelity Dynamics
Benedikt Aigner, Universität der Bundeswehr München

*An Observability Driven Architecture for Orbit and Telescope Selection in Cislunar Space Based Surveillance ***
Chingiz Akniyazov, The University of Auckland, Te Pūnaha Ātea – Space Institute

*Design of Co-operative On-Orbit Radar Observation Scenarios for Mega-Constellations in VLEO ***
Leah-Nani Alconcel, University of Birmingham

*Deep Reinforcement Learning for Autonomous Docking: A 12-DOF Coupled Dynamics Approach with J2 Perturbation ***
Onur Aytekin, Turkish Air Force

*Extending the Georgia Tech Research Institute Goniometer (GT-RIG) System Towards Polarimetric BRDF Capabilities ***
Gregory Badura, Georgia Tech Research Institute

*Operationalizing the Ionosphere: A Cloud-Native Framework for Real-Time Rocket Detection using GNSS Receiver Network ***
Austin Barrow, Hyperios Technologies

SatLight: A Python Package for High-Fidelity Light Curve Simulation
Lily Beesley, University of Birmingham

*Enhancing LEO Orbit Determination and Predictions with High-Fidelity Atmospheric Density Uncertainty Modeling ***
Rachit Bhatia, CesiumAstro

Event-based Warning of Impending Satellite Streak Contamination
James Blake, University of Warwick

*EU SST – TraCSS Joint Study on Operational Information Exchange ***
Mariel Borowitz, Office of Space Commerce

*Multi-Sensor Data Fusion for Enhanced Cislunar Space Domain Awareness Using Radar and Optical Observations ***
Lucas Bottero, Embry-Riddle Aeronautical University

SpaceCortex: FPGA-Accelerated Edge Compute for SDA and Trusted Mission Autonomy
Jim Brock, Web Sensing

*ORCHESTRA: Coordinated SDA Scheduling ***
Dustin Burchett, MITRE

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*ACORN: Atmospheric Clouds for Optical SSA with Realistic Nuisances ***

Alexander Cabello, EO Solutions

*Updates to Stingray: Photometric Survey of the GEO Belt ***

Tanner Campbell, University of Arizona

Performance Assessment of a Distributed Multi-Operator Space-Based Optical Sensor Network for Space Domain Awareness

Benedetta Margrethe Cattani, Ecosmic

Robust Navigation Filter with Manoeuvre Detection and Estimation

Benedetta Margrethe Cattani, Ecosmic

Enhancing Emergent Satellite Data for Non-Earth Imaging

Yu-Yen Chang, Turion Space

Boosting On-Sky RSO Detection Performance by Optimizing Weight Initialization with Simulated Imagery

David Chaparro, EO Solutions

*Operational Space-Based SSA from Short-Arc Optical Data: Pipeline Performance, Practical Cases, and Lessons Learned ***

Marcello Chiariello, ARCA Dynamics

Coupled Image-Radon Reasoning for Robust Faint Streak Detection in Optical Space Surveillance with Deep Learning

Chee-Kheng Chng, Adelaide University

Narrow-Shell Stochasticity in Source-Sink Models of the LEO Environment

Jaewon Choi, POSTECH

BRAHE Telescope System (Beyond surveillance for space risk of the Korean High Earth orbit region): A Ground-Based Optical Surveillance System for the Korean High Earth Orbit Region

Jin Choi, Korea Astronomy & Space Science Institute (KASI)

Assessing the Environmental Consequences of a Large-Scale Breakup Event in Cislunar Space: NRHO and ELFO case studies

Giacomo Colombatti, University of Padua

Polarimetric Signatures for GEO Satellite Characterization: Experimental Campaign and Modeling

Giuseppe Crescenzo, Officina Stellare S.p.A.

*Physics-Informed Extreme Learning Machines for Covariance Estimation in High-Fidelity LEO Orbit Determination ***

Fabian Dallinger, Universität der Bundeswehr München

*Aperture-X: Physics-Informed Aperture Feature Learning for Robust Photometry ***

Kimmy De Alba, SSC/SYD 85/BI

*Tiered Autonomy with Astrodynamics-Validated Execution for Large Language Model Agents ***

Enrique De Alba, EO Solutions

*The Radar Constrained Admissible Region for Multi-Hypothesis Filtering ***

Thomas Dearing, ARKA Group

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Assessing Space Debris Observability: Measurement Uncertainty and Software Dataflow Considerations

Marthe D'Hooghe, arcsec

*Preliminary Design of a "Black-Box" Diagnostics Suite for Remote, Real-Time Satellite Failure Attribution ***

Nancy Diallo, Stanford University

*Empirical Evaluation of Automated Sensor Calibration Impact on Orbit Determination Accuracy ***

Joseph Diamond, Peraton Labs

Distributed Position, Navigation, and Timing for Constellation Synchronization in GNSS-Denied Environments

James DiCorcia, Cambrian Works Inc.

*Planning and Processing Pipeline for Satellite Observations Using Large Aperture Astronomical Telescopes ***

Aishling Dignam, NOIRLab

Hybrid NSGA2-Neural ODE for Multi-Objective Scientific Machine Learning

Anthony Dills, Dills Analytic LLC

*Correlation of Realistic Electro-Optical Measurements for Cislunar Initial Orbit Determination ***

Queenique Dinh, University of Colorado Boulder

*Characterizing Micro-scale Thermal Vulnerabilities in Orbital and Terrestrial SDA Sensors ***

Ryan Dorrill, Rhea Space Activity

*Finding Lost Satellites ***

Stefan Doucette, InTrack Radar Technologies, Inc.

*GPU-Accelerated Astrodynamics World Models for Spacecraft Rendezvous and Proximity Operations ***

Duncan Eddy, Stanford University

From Platforms to Pipelines: Modeling SDA Architectures with Data Transformation Graphs

Braden Eichmeier, Ten One Aerospace

Neuromorphic Small-Object Detection for Low-SWaP Space Domain Awareness Architectures

Camden Ertley, Southwest Research Institute

Quantization Methodology Survey for Space Debris Detection Models

Amanda Fetzer, AFRL Space Vehicles Directorate

Dual-Step Physics-Informed Neural Network for Generalized Rapid Orbit Determination

Phillip Fishbein, Applied Optimization

Deep Learning Based Classification of Resident Space Objects from High-Rate Wide-Field Photometric Observations

Kai Garcia, Cloudstone Innovations

*Data Fusion for a Space Catalog with Heterogeneous Sensor Data Rate ***

Yvan Gary, CNES

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Impacts of Sudden Stratospheric Warmings on Magnetosphere-Ionosphere-Thermosphere Coupling and LEO Space Domain Awareness

Federico Gasperini, Orion Space Solutions

An Edge Computing Image Reduction and Track-Before-Detect Pipeline for Autonomous Space-Based SDA

Alex Geringer-Sameth, Lawrence Livermore National Laboratory (LLNL)

*Autonomous Inspection of a Spinning Satellite in Low Earth Orbit ***

Afrah Ghedira, University of Colorado Boulder

Toward Improved Physical Modeling of Resident Space Object Photometric Behavior Using Space-Based Observations

Noemi Giammichele, NorthStar Earth & Space, Inc.

Characterization of Rocket Body Light Curves Observed with the Falcon Telescope Network

Timothy Giblin, i2 Strategic Services LLC

*Space-CORE: A Conceptual Framework for Integrated Multi-Physics Modeling to Enhance Space Domain Awareness and Mission Assurance ***

Zachary Gibson, Air Force Research Laboratory

Effects of Automatic Model Calibration on Operational Orbit Accuracy for Data Fusion

Tim Glinski, LSAS Tec

*GEOStare 2.0: LEO to GEO SDA with Wide Field Surveillance ***

Nathan Golovich, Lawrence Livermore National Laboratory

Physics-Informed Representation Learning for Satellite Behavior Characterization Across the Geosynchronous Regime

Christopher Gramling, United States Military Academy

In-Situ Laser Ablation For Mitigation of Millimeter-To-Decimeter Orbital Debris

Connor Gray, AstroSweep

Operational Impact of Fourier-based Drag Coefficient Modelling on VLEO Conjunction Assessment During Space Weather Events

Bhanu Chandana Gunti, Digantara

Characterization of the SCION Visible Sensitive InGaAs Camera for Broadband VIS to SWIR Imaging

Ravi Guntupalli, Teledyne

*First-Principles Particle-in-Cell Investigation of Electromagnetic Signatures of Orbiting Bodies in Low-Earth Orbit ***

Amy Haft, University of Colorado / Smead Aerospace Engineering Sciences Dept.

Radiation-Driven Tissue Remodeling Dynamics Revealed by Acoustic Radiation Force-Induced Displacement-Based Anisotropy

Md Walid Hassan, University of Hawaii at Manoa

*Reachability-Informed Custody Metrics for Rapid Space Surveillance Tracking and Catalogue Maintenance ***

Casey Heidrich, University of Colorado Boulder

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From Data to Insight: Entity Relationship Mapping for Space Domain Awareness Using the SPINIFEX Tool

Jun Heo, Defence Science and Technology Group (Australia)

An Economic Framework for Satellite Conjunction Evaluation and the Value of Track Updates

Daniel Herbst, BBN Technologies

Scaling Orbital Dynamics to the Laboratory: An Industrial-Robot Hardware-in-the-Loop RPO Testbed for Small Satellites

Shawn Higbee, Lawrence Livermore National Laboratory (LLNL)

Mapping Cislunar Stability Landscapes Under Full N Body Dynamics

Denvir Higgins, Lawrence Livermore National Laboratory (LLNL)

*Stochastic Dynamics of LEO Near Full Capacity ***

Harsha Honnappa, Purdue University

Nonlinear Operating Boundaries in Closed-Loop Optical Tip-and-Cue SDA Payloads

Calinda Huang (Yew), SRI International

42SAGA: An Education Platform for Space Natives Using Digital Twins

Hyeonoh Hur, SPACEMAP Inc.

*Initial Simulation and Roadmap for ISAL: Inverse Synthetic Aperture Laser Radar for Enhanced Space Situational Awareness ***

Taku Izumiyama, IHI Corporation

SDA TAP Lab Texas Scalable AI and Knowledge Graph Based Fusion Methods for Big Data Space Domain Awareness

Moriba Jah, University of Texas at Austin

*TRR-ST: Tiny Recursive Reasoning for Multi-Agent Sensor Tasking in Space Domain Awareness ***

Amit Jain, Massachusetts Institute of Technology

*Flow Matching for Multi-Agent Sensor Tasking: A Generative Approach to Coordinating Ground-Based Optical Sensors for Space Domain Awareness ***

Amit Jain, Massachusetts Institute of Technology

The SWAFS Modernization of IRI

Kyle Johnston, Peraton

*HARMONIA-ID: Cross-Modal Identification of Non-Cooperative Space Objects Using Standardized Interface Signatures ***

Wanjiku Chebet Kanjumba, University of Florida

*On-Orbit Reconfigurable Flash Lidar using Liquid Crystal Polarization Gratings ***

Robert Karl, Advanced Scientific Concepts

A Review of Laser-Based Debris Mitigation, Orbital Modelling, and Edge AI for Autonomous Satellite Defense.

Roman Karpenko, Tallinn Technical University

*Edge-Deployable Physics-Informed and Quantum Assisted Neural Networks for Real-Time Autonomous Orbit Prediction ***

Alex Khan, BosonQ Psi (BQP)

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*Distributed Optimal Task Scheduling of LEO Constellations for Ground Based Assets ***

Hongseok Kim, The University of Texas at Austin

*Inclination-Aware 2D Source-Sink Modeling for Long-Term Projection of the LEO Collision Environment ***

Jaewoo Kim, Korea Advanced Institute of Science and Technology

*Chance-Constrained Belief-Space Maneuver Planning for Autonomous Conjunction Avoidance Under Uncertainty ***

Grace Kim, Stanford Intelligent Systems Laboratory

Predicted Conjunction Fingerprints of Starlink's One Million Satellites

Douglas Deok-Soo Kim, SPACEMAP Inc.

Quantifying the Specular-to-Diffuse Transition: Spectral HDR and BRDF Mapping of Surface Morphology Effects for SDA Modeling

Moses Kodur, Surface Optics Corp

Modeling the Impact of Orbit Prediction Uncertainty on Conjunction Screening in LEO

Vatasta Koul, Kyushu Institute of Technology and The Institute of Statistical Mathematics

Determination of the Spacecraft Rotation Axis' Orientation Based on Photometric Observations

Oleksandr Kozhukhov, National Space Facilities Control and Test Center of State Space Agency of Ukraine

*Custody-First Maneuver Reconstruction in Low-Cadence Observation Environments ***

Tatsuyoshi Kurumiya, EO Solutions

*Infrared Dim-Object Detection Training Data from NASA Archival Imagery: A Multi-Domain Framework with Initial SSA Results ***

Geoffrey Lake, Icebox Engineering

*Domain-Adversarial Training to Reduce Temporal and Cross-Site Shift in GEO Classification from Unresolved Spectral Data ***

George Landon, Cedarville University

Dynamic Sensor Noise Modeling for Precision Orbit Determination and Space Domain Awareness

Yasir Latif, Space Protocol

*DreamSat-Bench: Development and Initial Testing of a Testbed for AI-Based Pose Estimation from 3D Reconstruction ***

Giovanni Lavezzi, Massachusetts Institute of Technology

A Real-Time Onboard Processing and Autonomy Common AI/ML Software Interface for Space Domain Awareness

Bennie Lewis Jr., University of Central Florida

Snapshot Hyperspectral Imager for Space Domain Awareness

Haosheng Lin, HI-Spectral LLC

Conjunction Analysis of Satellites for Collision Avoidance using Quantum-Inspired Algorithms

Rut Lineswala, BosonQ Psi

OB-ASTRA: Enabling Autonomous Onboard Collision Avoidance for Future SSA/SDA Operations

Alfredo Locarini, Nautilus - Navigation in Space Srl

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*Advancing Cislunar SSA/SDA: Autonomous Distributed Data Communication Scheduling and Link Optimization ***
Rakshith Mandayam, Stottler Henke Associates, Inc.

Foresight: A Future Facing Benchmark Framework for Space Computer Vision
Abe Martin, Space Dynamics Laboratory

*Performance Assessment of Track-Before-Detect Algorithms and Post-Search Refinement Methods ***
Sophia Matthews, University of Maryland, College Park

Designing Effective Space Sensor Constellations: A General Constellation Observation Simulation Framework Applied to Geostationary Space Object Tracking
Peter McGill, Lawrence Livermore National Laboratory (LLNL)

Observations of Satellites from an Event-Based Sensor on the International Space Station
Matthew McHarg, Space Physics and Atmospheric Research Center, United States Air Force Academy

*Benchmarking Space Object Characterization Utilities ***
Darren McKnight, LeoLabs

Quasi Real-Time Detection and Characterization of Uncooperative Launches Using Optimized Sensor Networks and Boost-Phase Trajectory Estimation
Keiran McNally, GMV

*Scaling GEO Satellite Spectral Classification with Observation-Level Learning for Automated Ingestion Pipelines ***
Chad Mello, U.S. Air Force Academy

*The AI Librarian: Building a Modern Data Library & Unlocking the Power of Data Federation with an Agentic AI Broker ***
Devon Messecar, Space Systems Command - Global Mission Data Dominance

*Predictive Space Domain Awareness Through Multi-Source Open-Source Intelligence Fusion and Large Language Models ***
Bryan Minor, Privateer

*Advancing Cis-Lunar Mission Navigation with Ground-Based Radio Telescope Networks ***
Guifre Molera Calves, HENSOLDT

Learning to Coordinate: Reinforcement Learning for Autonomous Tasking of GEO Sensor Constellations
Trier Mortlock, Lawrence Livermore National Laboratory

*Global Atmospheric Density Corrections using Sparse Trajectory Observations ***
Jordan Murphy, Slingshot Aerospace

*Optimal Multispectral Filters for AI-Assisted Subpixel Material Characterization of Resident Space Objects ***
Kedar Naik, BAE Systems Space and Mission Systems

*Observation-Driven Adaptation of Reduced-Order Thermospheric Density Models ***
Sriram Narayanan, West Virginia University

*Mixed-Fidelity Photometric Inversion for Tumbling Defunct Satellites with Unknown Articulation State ***
Girish Narayanan, The University of Auckland, Te Pūnaha Ātea - Space Institute

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Ground-Based Differential Orbit Updates for XGEO Objects: A Practical Performance Study

Glenn Nestell, Air Force Institute of Technology

*Real-Time Solar Glint Detection for CubeSat-Based Space Situational Awareness ***

Kanthanakorn Noysena, National Astronomical Research Institute of Thailand (NARIT)

Neutron-3: A Distributed CubeSat Swarm for Three-Dimensional Radiation Field Reconstruction in Cislunar Space

Miguel Nunes, Hawaii Space Flight Laboratory

HyTI-2: A Cryogenic LWIR Hyperspectral Instrument for High-Duty-Cycle Space Domain Awareness

Miguel Nunes, Hawaii Space Flight Laboratory

*Small-Aperture Ground-Based Spectroscopy for LEO Object Type Identification: Acquisition, Bench References, and Type-Level Results ***

Hiroshi Oda, Japan Aerospace Exploration Agency (JAXA)

Using the Swift Observatory Rescue Mission for Operational SDA Model Validation

William Oldroyd, Katalyst Space Technologies

*On-Orbit Data Verification of Synthetic Event Generator ***

Rachel Oliver, Air Force Institute of Technology

Coordination of Tethered Agents for Capture of Tumbling Orbital Debris

Bogachan Ondes, University of Florida

Storm-proofing LEO Cataloguing: Operational Mitigation of Space Weather-Driven Drag Uncertainty

Alejandro Pastor, GMV

*Assessing Space Object Interactions in Low Earth Orbit Using Conceptual Spaces ***

Cedric Petion, The University of Texas at Austin

Efficient Physics-Informed Burst Restoration for Satellite Identification Under Atmospheric Turbulence

Taylor Phan, Clemson University

*Pointing the Way: Deep Reinforcement Learning on Unordered Sets for Optimal Boresight Tasking ***

Collin Phillips, Virginia Tech National Security Institute

LIASSON: Development of Luck Is A Skill for Serendipitous Observation Networks

Collin Phillips, Virginia Tech National Security Institute

Enhancing Space Domain Awareness through Probabilistic Forecasting of Satellite Maneuvers

Zach Pollmiller, Headquarters CFC

*U.S. Space Command SSA Sharing Program Update and SPD-3 Implementation ***

Christian Ramos, US Space Force

*Constellation-Level Observability and Estimation Stability for Space Situational Awareness in the Cislunar Three-Body Regime ***

Mohammed Irfan Rashed, Hawaii Space Flight Lab, University of Hawaii at Manoa

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Improving Correlation for RPO Events in GEO With Machine Learning Photometric Fingerprinting

Clarice Reid, Slingshot Aerospace

*High-resolution spectra of GEOs using a Whopshel on the USAFA one-meter telescope ***

Benjamin Roth, U.S. Air Force Academy

*Photometric Observations of Small Cislunar Targets: The Case of the CAPSTONE CubeSat and Implications for Characterization ***

William Ryan, New Mexico Tech/MRO

*Concurrent Frame-based and Event-based Optics as a Tool for Pattern-of-Life Characterization ***

Nicolas San Miguel, MIT Lincoln Laboratory

*Conjunction Risk Assessment in the Early Orbit Phase under Large and Poorly Characterized Uncertainty ***

Manuel Sanjurjo-Rivo, NorthStar Earth & Space

LWIR Sensors in Optical SDA Networks

Aster Saul, Virginia Tech National Security Institute

Combining Agnostic Light Curve Inversion Methods for the Reconnaissance of LEO Objects

Stefan Scharring, DLR

*Developing Space Situational Awareness Networks with Historical Weather and Remote Sensing Data ***

Charles Schramka, Massachusetts Institute of Technology

*Robust EO/IR Glint Estimation Using Deep Neural Networks ***

Micajah Schweikert, Modern Technology Solutions, Inc.

Observation of Nonlinear Waves Induced by a Charged Object in Both Flowing and Stationary Low Density Plasmas

Earl Scime, West Virginia University

*MACHINA Tactical Persistent Monitoring: UCT Track, Triage, and Graduation ***

Connor Segal, EO Solutions

*Autonomous Satellite Maneuver Analysis Using Domain Ontology and LLM-Based Reasoning ***

Jaedong Seong, Korea Aerospace Research Institute

*Dynamic Launch Nominals for Off-Nominal Launch Conditions: A Constraint-Bounded Enumeration Framework for Enhanced Space Domain Awareness ***

Anirudh Sharma, Digantara

Operationally Practical Conjunction Metrics for Models

Ryan Shepperd, Iridium

*Dynamics-Informed Ephemeris Interpolation for Conjunction Assessment: A Comparative Study of Classical and Propagation-Based Methods ***

Navraj Singh, Slingshot Aerospace

Sensor Tasking Leveraging the Normal Forms of the Elliptic Restricted Three-Body Problem

Puneet Singla, The Pennsylvania State University

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*Multi-Target Bistatic L-Band Radar Observations of GEO Satellites with the Parkes 64-m Telescope ***
Ken Smart, CSIRO

*Seeing SSA from Greenland: Detecting and Classifying RSOs with an Arctic Telescope ***
Kristian Aalling Soerensen, Technical University of Denmark

*A Practical Trade Assessment of Cislunar Space Surveillance Orbits ***
Warren Soh, Honeywell Aerospace

*Architecting Interoperability: A Requirements Blueprint for a Formal Semantic Model of Satellite Behavior ***
Haley Solera, Massachusetts Institute of Technology

Designing an Edge-Enabled Automation Pipeline with Algorithmic and Rule-Based Quality Flagging of Satellite Spectral Images
Brandon Son, United States Air Force Academy

*Passive RF for Space Domain Awareness: From Theoretical Bounds and Low-Complexity Signal Processing to Field Validation in Time Synchronization and OD Data Fusion ***
Saehan Song, Korea Aerospace Research Institute

Decision Support for Space Debris Remediation Enterprises via Two-Stage System Optimization under Various Future Scenarios
Minchan Song, KAIST

Mapping Quasi-Chaotic Lunar Transport Pathways in the Earth-Moon System using an Ephemeris Model
Jeremiah Specht, Air Force Institute of Technology

Improving Resident Space Object Intelligence with Huntsman's Multispectral Imaging System
Lee Spittler, Macquarie University

*Complete and Total Satellite Autonomy for SDA Applications, an In-Space Experiment ***
Richard Stottler, Stottler Henke Associates, Inc.

E-STAR: Design and Stratospheric Demonstration of an Event-Based Star-Field and Resident Space Object Imaging Payload
Vithurshan Suthakar, York University

Robust Angle Tracklet Generation and Fusion with Visual Magnitude Feature Discrimination
Steven Szklany, Anduril

*Extending Observation Arcs and Maneuver Detection for Non-Cooperative Objects in Cislunar Space with Visible and Thermal Infrared Sensors ***
Shinsuke Takahashi, University of Southern California

*Evaluating Optical Sensor Networks for SSA: Custody Maintenance and Performance for RSOs in LEO ***
Ellen Tate, Sustainable Space Solutions Northumbria (3S Northumbria)

Demonstration of a Low-Cost LWIR CubeSat Sensor Architecture for Distributed Thermal Space Domain Awareness
Noah Thompson, Hawaii Space Flight Lab, University of Hawaii at Manoa

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A Critical Assessment of Space Data Message Standards and Their Application to Space Force and Partner Missions

Daniel Tippie, MD2

A Power-Scalable, Spectrally Engineered Sodium Guide Star Laser Platform Enabling Polychromatic Tip/Tilt-Resolved Beacons

Thomas Tongue, TOPTICA Photonics Inc

Passive RF for Satellite Identification and Characterization using Radio Frequency Machine Learning

Maymoonah Toubeh, Virginia Tech National Security Institute

*Federated Conjunction Assessment: A Framework for Reconciling Multiple Risk Assessment Solutions ***

Eliot Toumey, Omitron, Inc.

Assessing Trackability in the Cislunar Domain: Methodological Foundations for Reliable Space Object Tracking

Nicolò Trabacchin, Center of Studies and Activities for Space

Deriving SSA/SDA Sensor Requirements with Discriminative Adversarial Networks

Andrew Tudor, Advanced Mission Systems, Raytheon Intelligence and Space

Analysis of Polarization Signatures of Geosynchronous Satellites

Gavin Unterreiner, United States Air Force Academy

*Developing Signature Analytics for RSO Identification from Unresolved Imaging using Machine Learning ***

Miguel Velez-Reyes, The University of Texas at El Paso

SDA Benchmarking for On-orbit Edge AI Computing

Victor Vergara, AeroVironment Inc.

*ASTRA-Net: A Hybrid CNN Detection and Poisson Labeled Multi-Bernoulli Tracking Framework for SSA using Star Trackers ***

Thijs Verhaeghe, Royal Military Academy

*New Methods for Predicting Atmospheric Drag Effects on LEO Satellites ***

Mark Vincent, Raytheon

Proactive Satellite Threat Detection Through Physics-Informed Pattern of Life Analysis Across All Orbital Regimes

Ingo Waldmann, Spaceflux

Detecting Resident Space Objects in the Deeper, Wider, Faster Astronomical Survey

Tallulah Waterson, Swinburne University of Technology

Tuning Process Noise Magnitude in Estimation Filters using Autonomous Multiple Model Approach

Charles J. Wetterer, KBR

*High-Precision Satellite Tracking with a Low-Cost Dual-Telescope Optical Parallax System ***

Phineas Whitlock, University of Warwick

*Non-Myopic, Information Driven Sensor Tasking for Distributed Catalogue Maintenance in Space Domain Awareness ***

Jason Williams, Whiplight Signals

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Anomalous Actor Detection Using Self-Similarity of Multi-Resolution Temporal Sequences

David Witman, Slingshot Aerospace

*Results and Conclusions from the COLA Gap Pathfinder ***

Robert Wolff, Dept of Commerce Office of Space Commerce

SSAPy in the Loop: TLE-Driven Orbit Anomaly Detection with Autoencoders and Isolation Forests

Travis Yeager, Lawrence Livermore National Laboratory

Beyond Homotopy Path Explosion: Fusing Deep Learning with Algebraic Geometry for Noise-Robust Angles-Only Orbit Determination

Jun Yoshida, NEC Corporation

*In-Situ Low-Lunar Orbit Optical Observation and Cataloging Feasibility ***

Anthony Zara, Advanced Space, LLC

Dichotomizing Temporarily Bound Objects Using Capture States

Shuhan Zheng, University of Toronto Institute for Aerospace Studies

*Regime-Adaptive Joint State-Drag Estimation for Multi-Sensor Orbit Determination in Terminal Decay ***

Tomasz Zubowicz, Polish Space Agency