

25th Advanced Maui Optical and Space Surveillance Technologies Conference (AMOS 2024)

Maui, Hawaii, USA
17 - 20 September 2024

Volume 1 of 3

ISBN: 979-8-3313-0836-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by Maui Economic Development Board, Inc.
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact Maui Economic Development Board, Inc.
at the address below.

Maui Economic Development Board, Inc.
1305 N. Holopono Street, Suite 1
Kihei, Hawaii 96753
USA

Phone: 1.808.875.2300
Fax: 1.808.879.0011

www.medb.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

2024 AMOS CONFERENCE PROCEEDINGS

SPACE DEBRIS

Co-chaired by Heather Cowardin, NASA JSC and Zach Gazak, SSC / SZGA

Analysis of Darkened Fragments Resulting from Laboratory Hypervelocity Experiments	16
<i>Heather Cowardin, NASA JSC</i>	
Resilience of LEO Constellations to Accidental and Intentional Fragmentation Events	30
<i>Mark Sturza, Viasat</i>	
Cislunar Missions End-of-Life Disposal Strategies	50
<i>Joshua Wysack, BAE Systems</i>	
Recent Evolution of the Sub-Catalogue Space Debris Population in High-Altitude Orbital Regions	62
<i>Thomas Schildknecht, University of Bern, Astronomical Institute</i>	
OD-SSA Activity at NASA's Heliophysics Division.....	75
<i>Reinhard Friedel, NASA Headquarters</i>	

SPACE DOMAIN AWARENESS SYSTEMS & INSTRUMENTATION

Co-chaired by Jeff Sherk, The Aerospace Corporation and Stacie Williams, HQ U.S. Space Force

A Surprising Boost in Starlink Satellite Brightness at Optical Wavelengths During the Day	87
<i>Sarah Caddy, Australian Astronomical Optics - Macquarie University</i>	
Passive Radio Frequency Techniques & Demonstration for Space Domain Awareness	105
<i>Zachary Leffke, Virginia Tech National Security Institute</i>	
Novel Phased Array Laser Radar Architecture for Satellite Imaging and Identification	125
<i>James Leger, University of Minnesota</i>	
POLSA Sensor Network Capabilities Under Different Operating Modes	135
<i>Tomasz Zubowicz, POLSA</i>	
The GSSAC Mission System: A New Solution for Space Objects Cataloguing From DLR	154
<i>Alfonso Sancho, GMV</i>	
Ultra-Fast Real-Time Target Recognition Using a Shift, Scale, and Rotation Invariant Opto-Electronic Joint Transform Correlator	163
<i>Xi Shen, Northwestern University</i>	

Physics Guided Machine Learning for Wavefront Sensing on a Hybrid Optical Telescope 173
Fabien Baron, Georgia State University

Power of Persistence: Persistent Custody Through Repurposed Meteorite Trackers and
 Observation Processing at Real-Time Rates and Volume 181
Joseph Diamond, Peraton

Re-Entry Event Prediction Through the Analysis of Optical Sensor Data Gathered from a
 Worldwide Network of Telescopes 191
Krzysztof Kaminski, Astronomical Observatory of the Adam Mickiewicz University

Featured Presentation

Space Logistics Drives SDA Architecture 204
*Col. Jeremy A. Raley, Space Vehicles Directorate, Air Force Research Laboratory (AFRL)
 & Col. Joseph J. Roth, Space Systems Command Detachment 1, U.S. Space Force*

MACHINE LEARNING FOR SDA APPLICATIONS

Co-chaired by Jeff Sherk, The Aerospace Corporation and Stacie Williams, HQ U.S. Space
 Force

Backbone Architectures for Space Domain Awareness 205
Kyle Merry, Sandia National Laboratories

Regularizing Training of Physics Informed Neural Networks (PINNs) for Cislunar Orbit
 Determination via Transfer Learning 219
Gregory Badura, Georgia Tech Research Institute

Action-Free Inverse Reinforcement Learning for Evaluating Satellite Similarity and Anomaly
 Detection..... 243
David Witman, Slingshot Aerospace

Resolved Hyperspectral Imaging 259
Kimmy Chang, SSC/SZGA

Rapid and Uncertainty Quantified Orbital Propagation Using Uncertainty-Aware AI 275
Kevin Vanslette, Raytheon BBN

Integrating LLMs with SatSim for Enhanced Satellite Tracking and Identification 288
Enrique De Alba, EO Solutions

Building Trust in Human-Machine Teaming for Autonomous Space Sensing 303
Garrett Fitzgerald, U. S. Space Force

ASTRODYNAMICS

Co-chaired by **Tom Kelecý**, Space Enthusiast and **Geoff Lake**, BAE Systems

2024 Best Paper Award

Minimum Observation Methods of Initial Maneuver Determination.....	317
<i>Sam Wishnek, BAE Systems</i>	
Early Classification of Space Objects Based on Astrometric Time Series Data	334
<i>Giovanni Lavezzi, Massachusetts Institute of Technology</i>	
A Novel Stochastic Unscented Transform for Robust State Estimation Enabling Enhanced Space Domain Awareness	350
<i>Gerardo Rivera, West Virginia University</i>	
Leveraging Corkscrew Patrol Orbits to Improve Custody of Closely Spaced Objects	363
<i>Erin Griggs, Trusted Space, Inc.</i>	

CONJUNCTION / RENDEZVOUS AND PROXIMITY OPERATIONS

Co-chaired by **Jeff Aristoff**, Slingshot Aerospace and **Mariel Borowitz**, Office of Space Commerce / Georgia Tech

Contextual Predictive Model for Early Identification of High-Covariance Conjunctions	381
<i>Timothy Olson, Slingshot Aerospace</i>	
A Novel Stochastic Unscented Transform for Probabilistic Drag Modeling and Conjunction Assessment	394
<i>Rachit Bhatia, West Virginia University</i>	
How to Categorize an Avoidance Maneuver: Untangling the Iridium Experience	411
<i>Ryan Shepperd, Iridium</i>	
Real-Time Conjunction Assessment and Collision Avoidance of Satellites for Concurrent Avoidance Negotiation Based on Comparative Analysis of Passive Ranging Method and Traditional Sources	412
<i>Shawn Seunghwan Choi, SpaceMap</i>	

Featured Presentation

Victus Nox: Tactically Responsive Space - Space Domain Awareness Mission.....	440
<i>Jason Altenhofen, USSF Space Systems Command and Gregory Less, Millenium Space Systems</i>	

SATELLITE CHARACTERIZATION

Co-chaired by **Jeff Aristoff**, Slingshot Aerospace and **Mariel Borowitz**, Office of Space Commerce / Georgia Tech

Multi-Layered Machine Learning for Rapid LEO Object Characterization Leveraging Global Radar Data	441
<i>Harry She, LeoLabs</i>	
Advancing Geosynchronous Satellite Classification Utilizing Spectral Data via Fine-Tuned Pretrained Deep Learning Models	459
<i>Chad Mello, United States Air Force Academy</i>	
Transformer Models for Efficient EO/IR Signature Generation.....	475
<i>Nathan Highsmith, Modern Technology Solutions, Inc.</i>	
Multi-Phenomenology Fusion for Satellite Identification	495
<i>Trevor Putman, Johns Hopkins Applied Physics Lab</i>	
High-Resolution Radar Imaging of Space Objects.....	506
<i>Simon Anger, German Aerospace Center (DLR)</i>	
Super-Resolution Object Characterization in Low Earth Orbit (SROC LEO)	517
<i>Stacey Jones, O Analytics, Inc.</i>	
Centroiding Caused Errors in Tracking and Adaptive Optics	533
<i>Joshua Garretson, U. S. Space Force</i>	

SPACE DOMAIN AWARENESS

Co-chaired by **Ayla Reed**, AFRL/RDSM and **Robert 'Lauchie' Scott**, Defense R&D Canada

Space Debris and Nuclear Strategic Stability: Collision Risks and Attribution Potential in GEO	546
<i>Roohi Dalal, Outer Space Institute</i>	
Automated, Collaborative Applications to Close Kill Chain Gaps	556
<i>Greg Furlich, University of Colorado Boulder, Center for National Security Initiatives</i>	
A Technical Comparison of the Public SSA Services in the United States and the European Union.....	571
<i>Mariel Borowitz, National Oceanic and Atmospheric Administration</i>	
Developing Optical Sensor Constellation Architectures for Space Domain Awareness through Model-Based Trade Studies.....	586
<i>Mitchell Kirshner, Steward Observatory, University of Arizona</i>	

A Decomposition Algorithm for Optimal Selection and Placement of Heterogeneous Sensors to Holistically Satisfy Mission.....	602
<i>Michael Bynum, Sandia National Laboratories</i>	
Post-Maneuver UCT Correlation Using Multi-Source Data Streams	615
<i>Gavin Hofer, Katalyst Space Technologies</i>	
A Multi-Agent Trust Framework for Fusing Subjective Opinions with Imperfect Understanding in Space Domain Awareness Using the Scruff AI Framework	635
<i>Matthew Wilkins, L3Harris</i>	
Extending the Quality Standards for Non-Traditional Sensors: A Pathway to Increased Data Utilization.....	653
<i>Steven Paligo, a.i. solutions, Inc.</i>	
Resection of Long-Range Sensor Models for Mono and Stereo Exploitation of Non-Earth Imagery	659
<i>Reuben Settergren, BAE Systems</i>	
Integration of Air and Space Traffic Management: Establishing Criteria for Tracking of Debris Objects Prior to Uncontrolled Reentry	667
<i>Michael Kezirian, University of Southern California</i>	

SPACE-BASED ASSETS

Co-chaired by **BT Cesul, Umbra** and **Orlando Diaz, NASA Ames Research Center**

Completion and Test of a Compact, Extremely Accurate Star Tracker	677
<i>Stephen Fox, IERUS Technologies, Inc</i>	
Event-Based Sensor Noise Modeling for Space Domain Awareness	692
<i>Rachel Oliver, Air Force Institute of Technology</i>	
The Use of Flyby Space-to-Space Non-Earth Imagery to Rapidly Identify and Characterise Unknown Objects	709
<i>James Allworth, HEO</i>	
Concept of Operation and Initial Performance Summary of the NorthStar Space-Based Optical SSA System	718
<i>Daniel O'Connell, NorthStar</i>	
Wide Field of View (FOV) Imagers for Co-Orbiting Object Detection.....	738
<i>Randa Qashoa, York University</i>	
Experimental Results from On-Orbit Edge-Deployed AI Detection of Resident Space Objects Using Computer Vision	748
<i>Paul Day, Booz Allen Hamilton</i>	

Featured Presentation

Joint Commercial Operations (JCO) Introduction and Way Forward.....	763
<i>Barbara Golf, U.S. Space Force</i>	

ATMOSPHERICS/SPACE WEATHER

Co-chaired by **Mary Ellen Craddock**, Northrup Grumman Corporation and **Shaylah Mutschler**, Space Environmental Technologies

Atmospheric turbulence profiling with the Laser Communication Relay Demonstration experiment and RINGSS at Table Mountain Facility, California	783
<i>Marcus Birch, Australian National University</i>	
Detection and Tracking of Space Objects in Conjunction with Ground and Satellite-Based Sensors	789
<i>Paul Bernhardt, University of Alaska</i>	
Operational Space Weather Forecasts to Support Satellite Operations	798
<i>Sean Elvidge, University of Birmingham</i>	
Harnessing Satellite Constellations as Signals of Opportunity for Atmospheric Forecasting and Enhanced Space Situational Awareness	806
<i>David Fitzpatrick, University of Colorado, Boulder</i>	

CISLUNAR SDA

Co-chaired by **John Iannamorelli**, The Charles Stark Draper Laboratory and **Jaime Stearns**, Air Force Research Laboratory (AFRL) Space Vehicles Directorate

Applications of Poincare Search Maps for Space-Based Cislunar SDA Detection.....	815
<i>Raymond Wright, BAE Systems</i>	
Cislunar Surveillance Optimization and Key Region Identification	830
<i>Surabhi Bhaduria, Purdue University</i>	
Simultaneous Observation Association and Maneuver Reconstruction for Non-Keplerian Initial Orbit Determination Using Nonlinear Programming	850
<i>Casey Heidrich, University of Colorado Boulder</i>	
An Adaptive Approach to the Initial Orbit Determination Problem in the Cislunar Regime Using Machine Learning	866
<i>Juan Ojeda Romero, Johns Hopkins Applied Physics Lab</i>	
Cislunar Initial Orbit Determination Using Sensor and Measurement-Centric Admissible Regions	886
<i>Queenique Dinh, University of Colorado Boulder</i>	

Efficient Cislunar Multi-Target Tracking with Adaptive Multi-Fidelity Propagation	908
<i>Benjamin L. Reifler, The University of Texas at Austin</i>	

2024 Best Student Paper Award

Reachability Analysis of Low-Thrust Cislunar Spacecraft Using State Transition Tensors.....	918
<i>Ethan Foss, Stanford University</i>	

Cislunar Orbit Determination with Passive RF Sensors	930
<i>François Thevenot, Safran Data Systems</i>	

POSTER PRESENTATIONS

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

Extreme Gradient Boosting and Deep Learning Models for the Classification of Synthetic Space Debris Light Curves.....	950
<i>Anne Adriano, University of Waterloo</i>	

SDA TAP Lab Using Commercial Technology to Avoid Operational Surprise	964
<i>Sean Allen, SSC/SZG</i>	

Design of Wide Angle and Large Aperture Optical System of a Lidar Sensor for Characterization of Space Debris Particles	971
<i>Davud Asemani, The Aerospace Corporation</i>	

Optimizing GEO Belt Observation Through Analytical Methods and the Traveling Salesman Problem	985
<i>Shashanka Athigiri, Digantara Research and Technologies</i>	

Utilising Australian National Infrastructure to Support Cislunar Space Domain Awareness....	995
<i>Timothy Bateman, UNSW Canberra Space</i>	

Guiding Lunar Growth: Architectural Solutions for Space Traffic Management.....	1005
<i>Michael Bilka, BAE Systems</i>	

A Benchtop Simulator for Evaluating Astronomical Observations with Object Generation and Point Spread Function Engineering	1015
<i>Megan Birch, Georgia Tech Research Institute and Georgia State University</i>	

Exploring the Impact of Compliance with Maneuvering Guidelines for Space Traffic Management.....	1029
<i>Mariel Borowitz, Georgia Institute of Technology</i>	

Learned Initial Orbit Determination from Simulated Electro Optical Observations	1045
<i>Alexander Cabello, EO Solutions Corp</i>	

Error Analysis of Bulk-Density Measurements for Metal-Type Debrisat Fragments	1058
<i>Cesar Carrasquilla, University of Florida</i>	
Concept of the Korean Optical Space Surveillance Telescope System NSOS_Beta for Monitoring the High-Altitude Orbit Region	1068
<i>Jin Choi, Korea Astronomy and Space Science Institute (KASI)</i>	
The Falcon Telescope Network: A Newly Upgraded Global Array of Optical Telescopes.....	1075
<i>Francis Chun, USAF Academy, Department of Physics and Meteorology</i>	
Adaptive Sensor Tasking Strategies for Tracking Non-Cooperative Cislunar Space Objects	1084
<i>Jeremy Correa, Katalyst Space Technologies</i>	
Enhanced Heuristic Algorithm for Optimal Cislunar Space Situational Awareness Architecture	1096
<i>Jacob Dahlke, Air Force Institute of Technology (AFIT)</i>	
Towards an All-Orbit Optical Data Service Provisioning Based on ArianeGroup Helix System	1115
<i>Thibault de la Villegeorges, ArianeGroup</i>	
Attitude Determination and Monitoring of 3-Axes Controlled Satellites With Photometric Observations.....	1126
<i>Adrián de Andrés, GMV</i>	
Robust Strategies for Incorporating Parameter Uncertainty in Constrained Admissible Regions	1139
<i>Thomas Dearing, Arka Group</i>	
Optimal Control-Based Track-to-Track Correlation with Optical Measurements	1152
<i>Alessia De Riz, Politecnico di Milano</i>	
Neural Network Enhanced Numerical Propagation to Enhance SSA/SDA.....	1164
<i>Duane DeSieno, Data Fusion & Neural Networks, LLC</i>	
Machine Learning for Space Domain Awareness Sensor Scheduling	1183
<i>Neil Dhingra, Auria</i>	
Automated 6DOF Satellite Pose Estimation From Resolved Ground-Based Imagery.....	1196
<i>Thomas Dickinson, AFIT/CI, Rochester Institute of Technology Center for Imaging Science</i>	
Machine Learning for E-O Data and Imagery Event Detection.....	1205
<i>John Ebeling, Data Fusion & Neural Networks, LLC</i>	

An Investigation of Impulsive-Maneuver Transfers from L3, L4 and L5 to Earth-Orbit	1216
<i>Evangelina Evans, University of Colorado at Boulder</i>	
Initial Orbit Determination from Ambiguous TDOA and FDOA Measurements of Passive Radio Frequency Signals.....	1229
<i>Benjamin Feuge-Miller, Applied Research Laboratories, The University of Texas at Austin</i>	
Passive Radar for Launch and Re-Entry Support	1248
<i>Daniel Finch, Silentium Defence</i>	
Joint Commercial Operations (JCO) – Integrated Space Operations with Event Ledgers.....	1254
<i>Joseph Gerber, Tech7</i>	
A Common Task Framework for Testing and Evaluation at the Space Domain Awareness Tools, Applications, and Processing Lab	1272
<i>Imène Goumiri, Lawrence Livermore National Laboratory</i>	
High-Fidelity Electro-Optical Space Domain Awareness Scene Simulator	1279
<i>Christopher Griffith, The Aerospace Corporation</i>	
Data-Driven Identification of Main Behavioural Classes and Characteristics of Resident Space Objects in LEO Through Unsupervised Learning.....	1288
<i>Marta Guimaraes, Neuraspace</i>	
Photometric Attitude Estimation Using Gaussian Process Regression	1301
<i>Ryui Hara, Kyushu university</i>	
Multi-Frame Observation-to-Orbit Association for Angles-Only Measurements	1314
<i>Cameron Harris, EO Solutions</i>	
SOM-erizing Cislunar Orbits: Classification of Cislunar Orbits Using Self-Organizing Maps (SOMs)	1324
<i>Denvir Higgins, Lawrence Livermore National Laboratory</i>	
Architecture of a Distributed Space Traffic Coordination System	1345
<i>Christopher Kebschull, OKAPI:Orbits</i>	
An Update on the UK Cross-Government SDA Requirements, in Support of the UK's SDA Strategy.....	1357
<i>Emma Kerr, Dstl</i>	
A Comprehensive Approach to Optimized Cislunar Architecture Design Utilizing Capacity ..	1361
<i>Justin Kim, BAE Systems, Inc.</i>	
Analysis of Persistent Detection Corridors for Cislunar Space Situational Awareness	1374
<i>Michael Klonowski, University of Colorado at Boulder</i>	

Photometric Patterns as a Key for Determining the Orientation of the Rotation Axis of RSO	1393
<i>Oleksandr Kozhukhov, National Space Facilities Control and Test Center of State Space Agency of Ukraine</i>	
Detection in Deep Space from the Southern Hemisphere of Near Earth Objects Using a Combined Radar/Optical System.....	1410
<i>Ed Kruzins, UNSW Canberra Space</i>	
Multi-Objective Multi-Perspective Numerical Optimization of Collision Avoidance Maneuvers Using Differential Evolution	1419
<i>Naman Ladhad, Digantara Research and Technologies Private Limited, India</i>	
On-chain Validation of Tracking Data Messages (TDM) Using Distributed Deep Learning on a Proof of Stake (PoS) Blockchain	1429
<i>Yasir Latif, Space Protocol</i>	
Metric Tensor Fields along Trajectory Solution Surfaces for Astrographic Map-Making.....	1439
<i>Garrick Lau, University of Colorado Boulder</i>	
Conceptual Design of Mission Scheduling Software for Small Satellite Constellation	1445
<i>Kimoon Lee, University of Science and Technology (UST)</i>	
Development of Reference Scenarios and Supporting Inputs for Space Environment Modeling	1456
<i>Miles Lifson, The Aerospace Corporation</i>	
Debris Tracking Laser Network.....	1473
<i>Jose Miguel Lozano, GMV</i>	
The TraCSS Consolidated Pathfinder: Leveraging Commercial Capability in LEO	1482
<i>Sandra Magnus, Office of Space Commerce</i>	
An Efficient Collision Analysis Framework Enabling Real-Time Spacecraft Self-Protect.....	1496
<i>Jordan Maxwell, Scout Space Inc</i>	
CubeSat Radar Cross-Section Measurement Campaign	1509
<i>Matt Mayne, Dstl</i>	
Autonomous Trajectory Planning for Cislunar Space	1524
<i>Brian McCarthy, a.i. solutions, Inc</i>	
High-Fidelity Light Curve Simulation and Validation Using Empirical Data	1537
<i>Tristan Meyer, German Aerospace Center (DLR)</i>	
Recovery of Periodic Signals in Event Camera Data: Theory and Empirical Results	1551
<i>Mark Moretto, North Carolina State University</i>	

Paper Designing a Representation Learning Method for Wavefront Estimation from Focal Plane Speckle Images	1562
<i>Nick Murphy, Georgia State University</i>	
ML-Driven Optimal Design of Multispectral Instruments for the Characterization of Resident Space Objects	1572
<i>Kedar Naik, BAE Systems, Space & Mission Systems</i>	
Preliminary Study of Hyperspectral Unmixing Analysis Associated to Resident Space Objects Using DIRSIG™	1592
<i>Aryzbe Najera, University of Texas at El Paso</i>	
Multi-Perspective Multi-Modal PoL Characterization of LEO Objects	1600
<i>Rithwik Neelakantan, Digantara Research and Technologies Private Limited, India</i>	
Event-based Vision Sensor Physics-Based Digital Twin for Tuning SSA Use	1617
<i>Masashi Nishiguchi, Purdue University</i>	
Deep Reinforcement Learning Applications to Space Situational Awareness Scenarios.....	1630
<i>Benedict Oakes, University of Liverpool</i>	
ML-Based Photometric Fingerprinting at Scale for LEO Satellite Monitoring.....	1644
<i>Timothy Olson, Slingshot Aerospace</i>	
Dynamic EO/IR Satellite Signature Prediction with High-Fidelity MuSES Simulation.....	1656
<i>Corey Packard, ThermoAnalytics, Inc.</i>	
Enhancing the Pointing Accuracy Using Adaptive Terminal Sliding Mode Control for Satellite With Single Gimbal VSCMG	1672
<i>Mayur Vijay Pawar, MIT Art, Design and Technology University, Pune</i>	
Enhancing Unknown Near-Earth Object Detection with Synthetic Tracking and Convolutional Neural Networks	1681
<i>Kevin Phan, EO Solutions</i>	
Poland's Evolving Space Law: Assessing Space Debris Mitigation and Remediation in the European Context	1691
<i>Malgorzata Polkowska, Lomza Academy</i>	
Motion Hypothesis Satellite Detection for Cislunar Spacecraft	1699
<i>Kaitlyn Raub, InTrack Radar Technologies, Inc.</i>	
The Resonant Structure of xGEO and Implications for Cislunar Domain Awareness	1715
<i>Aaron J. Rosengren, University of California San Diego</i>	

Exploring Soliton Enhancement for Ground-Based Detection of Lethal Non-Trackable Space Debris.....	1735
<i>Kristine Rosfjord, InTrack Radar Technologies</i>	
Detecting Satellites with Object Detection: Challenges of Implementing Deep Learning Techniques for Space-based Images	1745
<i>Shane Ryall, Defense Research & Development Canada</i>	
Data Insights, Pedigree, and Automation for Space Domain Awareness	1756
<i>Oliver Schultz, Lockheed Martin</i>	
Optimizing the Radar Network Architecture for LEO Space Domain Awareness	1767
<i>Jack Schuss, SpaceEM</i>	
Catalog of US Launched Objects for Active Debris Removal.....	1786
<i>Patrick Seitzer, University of Michigan</i>	
Monitoring of Rendezvous & Proximity Operations With SST and SDA Techniques Combination	1793
<i>Jaime Serrano, GMV</i>	
Satellite Pattern-of-Life Identification Challenge: Competition Design and Results	1807
<i>Peng Mun Siew, Massachusetts Institute of Technology</i>	
Architecting a Decision Support System for Continuing Supervision of Commercial In-Space Servicing	1827
<i>Jacqueline Smith, MIT</i>	
Challenges in Orbital Debris Modeling: A Comparative Analysis of NASA SBM and Space Fence Data.....	1848
<i>Tory Smith, USSF/MIT</i>	
Autonomous, Hybrid Space System Fault and Anomaly Detection, Diagnosis, Root Cause Determination, and Recovery	1865
<i>Richard Stottler, Stottler Henke Associates Inc.</i>	
Dragster 2.0: An Operations-Ready Framework for Neutral Density Assimilation.....	1881
<i>Rachel Stutz, Orion Space Solutions</i>	
Attitude Determination Model Input Parameters Constraints for the Restitution of Tumbling Motion of Defunct Satellites from Photometric Data	1891
<i>Henri Tarrieu, Aldoria</i>	
Estimating Physical Properties of 3U CubeSat's Rotation Based on Photometric Observations and Solar Illumination Modeling	1908
<i>Takuro Tsuchikawa, Mitsubishi Electric Corporation</i>	

Feasibility Study of Spaceborne Pulsed Laser System Removing Small Debris Objects in Near-Earth Orbits	1920
<i>Shigeaki Uchida, Henan University of Science and Technology</i>	
Project Luciole: A Wide-Field, High-Cadence Uncued System for Comprehensive Tracking of Decimeter-Sized LEO Objects	1927
<i>Denis Vida, University of Western Ontario</i>	
Analysis of Receiver Position and Velocity Uncertainty on Passive RF Cislunar SSA Architectures	1945
<i>Kullen Waggoner, Air Force Institute of Technology</i>	
Low Signal to Noise State Space Modelling Using Simulation Based Inference	1957
<i>Ingo Waldmann, Spaceflux</i>	
An Australian Experimental SDA System: RED STAR.....	1963
<i>Kruger White, Defence Science and Technology Group, Australia</i>	
MOCAT on Temporal Analysis and Quantification for Policies in Space Sustainability	1981
<i>Di Wu, MIT</i>	
Operational Responses to LEO Satellite Orbital Decay during the 25th Solar Cycle Maximum	2000
<i>Chen Yap, Planet Labs PBC</i>	
Space Weather Effect via Periodic Photometric Observations of Geostationary Satellites ...	2009
<i>Matej Zigo, Comenius University in Bratislava, Slovakia</i>	

APPENDIX

Conference Program.....	2015
List of Participants.....	2035