

Monday, September 1012 – 6 pm **Early Registration****Tuesday, September 11**12 – 4 pm **Early Registration**6:30 – **WELCOME RECEPTION | Luau Gardens**
8:30 pm**Wednesday, September 12**6:00 am **BREAKFAST | Luau Gardens** at leisure from 6:00 am to 7:15 am7:30 **EXHIBITION AND POSTER ROOM | Jade-Plumeria Ballroom****CONFERENCE OPENING | Aulani Ballroom**Jeanne Unemori Skog
*President & CEO, Maui Economic Development Board***INVOCATION**Reverend Kealahou Alikea, *Keawala'i Congregational Church***WELCOME REMARKS** (via video)Daniel K. Inouye, *United States Senator***KEYNOTE ADDRESSES****Introductions**Colonel L. Kirk Lewis, Ret.
*Senior Analyst, Institute for Defense Analyses*Major General Ted F. Bowlds
*Commander, Air Force Research Laboratory, Wright-Patterson Air Force Base*Major General William L. Shelton
*Commander, Joint Functional Component Command for Space, U.S. Strategic Command, and the Commander, 14th Air Force (Air Forces Strategic-Space), Air Force Space Command*Lieutenant General Michael A. Hamel
*Commander, Space and Missile Systems Center, Air Force Space Command*9:30 **BREAK**9:50 **SESSION PRIMERS***Chairs will provide highlights of their session***TELESCOPES AND INSTRUMENTATION***Session Chair, Kira Abercromby, ESCG / Jacobs*10:30 Historical Trends in Ground-Based Optical Space Surveillance System Design
*Michael Shoemaker, The Boeing Company*The DRDC Ottawa Space Surveillance Observatory
*Brad Wallace, Defence Research and Development Canada*Carbon Fiber Reinforced Polymer Telescope Program at the Naval Research Laboratory
*Sergio Restaino, Naval Research Laboratory*11:30 **LUNCHEON | South Pacific Ballroom**12:30 pm **TELESCOPES AND INSTRUMENTATION (continued)**A 1.2m Deployable, Transportable Space Surveillance Telescope Designed to Meet AF Space Situational Awareness Needs
*John McGraw, University of New Mexico*Measurement Astrophysics and the AF Space Surveillance Mission
*John McGraw, University of New Mexico*Large-Aperture, Three-Mirror Telescopes for Near-Earth
*Mark Ackermann, Sandia National Laboratories*Tunable Wide Band Infrared Detector Array for Space Situational Awareness
*Jonathan Andrews, Naval Research Laboratory*USAF Academy Fast-tracking Telescope
*Geoff Andersen, USAF Academy*2:10 **BREAK**2:30 The Pan-STARs Survey Telescope Project
*Nick Kaiser, Institute for Astronomy, University of Hawaii*Autonomous Low Earth Orbit Satellite and Orbital Debris Tracking Using Mid Aperture COTS Optical Trackers and High Speed Imaging Systems
*Brad Ehrhorn, RC Optical Systems, Inc.*Design of an Imaging Infrared Spectrograph Using Compact Dyson Lenses
*David Gutierrez, The Aerospace Corp.*Fast Holographic Wavefront Sensor
*Geoff Andersen, USAF Academy*Space Surveillance One Photon at a Time
*Jeffrey Bloch, Los Alamos National Laboratory*4:10 **ADJOURN**4:15 – 6:15 **EXHIBITION AND POSTER PRESENTATIONS | Jade-Plumeria Ballroom**
*Posters listed on back of program*6:30 **AMOS SITE CAPABILITIES TUTORIAL | Aulani Ballroom**
*AMOS, AFRL/Det 15*7:30 **IMAGING THROUGH TURBULENCE TUTORIAL**
*Michael Roggemann, Michigan Technological University*Sep 12 **wednesday****Thursday, September 13**6:00 am **BREAKFAST | Luau Gardens** at leisure from 6:00 am to 7:15 am7:30 **EXHIBITION AND POSTER ROOM | Jade-Plumeria Ballroom****TELESCOPES AND INSTRUMENTATION (continued) | Aulani Ballroom**Initial Lab and Sky Test Results for the Teledyne Imaging System's H4RG-10 CMOS-Hybrid 4k Visible Array for Use in Ground- and Space-based Astronomical and SSA Applications
*Bryan Dorland, US Naval Observatory*Advanced Integrated Multi-Sensor System - An Integrated Approach for Space Surveillance
*Shiang Liu, The Aerospace Corporation*Digital Signal Processing Techniques for the GIFTS SM EDU
*Jialin Tian, SSAI***MODELING, ANALYSIS, AND SIMULATION***Session Chair, Jeff Houchard, Pacific Defense Solutions, LLC*Hawaiian Atmospheric Forecasting Utilizing the Weather Research and Forecast Model
*Kevin Roe, Maui High Performance Computing Center*Application of Improved LEO Scattering Physics to Modeling Radiant Emission from Spacecraft Emanations
*William Dimpfl, The Aerospace Corporation*Satellite Maneuver Detection Using Two-line Elements Data
*Thomas Kelecy, Boeing LTS Inc.*Assessing Space and Satellite Environment and System Security
*Gary Haith, Referentia Systems Inc.*9:30 **BREAK**9:50 **MODELING, ANALYSIS, AND SIMULATION (continued)**Satellite Survivability Module
Jim Russell, Ball Aerospace & Technologies Corp.~~Time Domain Performance Simulations of Active Tracking Developments at SOR and MSSS~~
~~*Edwin Pease, Tau Technologies*~~Nonlinear Optical Phase Conjugation Amplifier for Remote Object Tracking, Imaging and Discrimination
*Vladimir Markov, MetroLaser, Inc.*TASAT Simulations of NASA Image Satellite to Predict the Spin Rate
*V. S. Rao Gudimetla, AFRL/DESM***ATMOSPHERICS***Session Chair, Kelly Hammett, Air Force Research Laboratory*Measurements of the Short Term Variability of r_0
*L. William Bradford, Boeing LTS Inc.*11:30 **LUNCHEON | South Pacific Ballroom**12:30 pm **ATMOSPHERICS (continued)**Measurement of Atmospheric Turbulence over a Horizontal Path Using the Black Fringe Wavefront Sensor
*Richard Tansey, Advanced Technology Center, Lockheed Martin*LIDAR System for Monitoring Atmospheric Turbulence Profiles
*Gary Gimmestad, Georgia Tech Research Institute*Cross-path LIDAR for Turbulence Profile Determination
*Mikhail Belenkii, Trex Enterprises Corporation*Observational and Modeling Study of Mesospheric Bores
*Pamela Loughmiller, Embry-Riddle Aeronautical University***ASTRONOMY AND ASTRONOMICAL CATALOGS***Session Chair, Tamara Payne, Boeing LTS Inc.*Astrometric Support for Space Situational Awareness and Space Control: The US Naval Observatory
*Jonathan White, US Naval Observatory*2:10 **BREAK**2:30 **ASTRONOMY AND ASTRONOMICAL CATALOGS (continued)**Preliminary Astrometric Results from PS1
*David Monet, US Naval Observatory*Application of MODTRAN to Planetary Atmospheres
*Lawrence Bernstein, Spectral Sciences, Inc.*Photometric Color Conversions for Space Surveillance Sensors
*Joseph Scott Stuart, MIT Lincoln Laboratory*Enhancing the Science Return of the Spitzer Warm Mission
*Kenneth Mighell, National Optical Astronomy Observatory*SAMM-2: A Rapid, Modular and Extensible All-Altitude VIS-IR Background Scene Generator
*Raphael Panfili, Spectral Sciences, Inc.*4:10 **ADJOURN**Sep 13 **thursday****Friday, September 14**6:00 am **BREAKFAST | Luau Gardens** at leisure from 6:00 am to 7:15 am7:30 **EXHIBITION AND POSTER ROOM | Jade-Plumeria Ballroom****ORBITAL DEBRIS | Aulani Ballroom***Session Chair, Thomas Schildknecht, Astronomical Institute, University of Bern*Analysis of the 2007 Chinese ASAT Test and the Impact of its Debris on the Space Environment
*T.S. Kelso, Center for Space Standards & Innovation*LEO Observation and Orbit Determination by Optical Telescope and Radar
*Chikako Hirose, Japan Aerospace Exploration Agency*Space Debris Observation Programs in JAXA
*Atsushi Nakajima, Japan Aerospace Exploration Agency*Optical Studies of Space Debris at GEO - Survey and Follow-up with Two Telescopes
*Patrick Seitzer, University of Michigan*An Attempt to Observe Debris from the Breakup of a Titan 3C-4 Transtage
*Ed Barker, NASA/Johnson Space Center*Challenges Related to Discovery, Follow-up, and Study of Small High Area-to-mass Ratio Objects at GEO
*Thomas Schildknecht, Astronomical Institute, University of Bern*Phase Functions of Deep-Space Orbital Debris
*Matt Hejduk, AFSPC/A9L (RABA Technologies)*9:50 **BREAK**10:10 **NON-RESOLVED OBJECT CHARACTERIZATION***Session Chair, Matt Hejduk, Titan Corporation/RABA Technologies*The Space-Based Calibration of Optical Systems and HF Radars Using the Precision Expandable Radar Calibration Sphere
*Paul Bernhardt, Plasma Physics Division, Naval Research Laboratory*Remote and Ground Truth Spectral Measurement Comparisons
*Kira Abercromby, ESCG / Jacobs*Monitoring Variations to the Near-Earth Space Environment during High Solar Activity Using Orbiting Rocket Bodies
*Eileen Ryan, New Mexico Institute of Mining and Technology*First Light from the MAUI Space Experiment
*Rainer Dressler, Air Force Research Laboratory*11:30 **LUNCHEON | South Pacific Ballroom**12:00 pm **AKAMAII STUDENT SYMPOSIUM | Aulani Ballroom**12:30 **NON-RESOLVED OBJECT CHARACTERIZATION (continued)**IR Spectrophotometric Observations of Geosynchronous Satellites
*Mark Skinner, Boeing*Algorithms for Hyperspectral Signature Classification in Non-resolved Object Characterization Using Tabular Nearest Neighbor Encoding
*Mark Schmalz, University of Florida*A New Spin on Spin Polarimetry
*Mark Pesses, Science Applications International Corporation*Space Object Characterization Studies and the Magdalena Ridge Observatory's 2.4-meter Telescope
*Eileen Ryan, New Mexico Institute of Mining and Technology*Satellite Characterization: Angles and Light Curve Data Fusion for Spacecraft State and Parameter Estimation
*Moriba Jah, Oceanit Laboratories, Inc.*2:10 **BREAK**2:30 Satellite Monitoring, Change Detection, and Characterization Using Non-Resolved Electro-Optical Data from a Small Aperture Telescope
*Tamara Payne, Boeing LTS Inc.*Separating Attitude and Shape Effects for Non-resolved Objects
*Doyle Hall, Boeing LTS Inc.*Super Resolved Harmonic Structure Function for Space Applications
*Richard Dikeman, Lockheed Martin Hawaii*3:30 **ADJOURN**5:00 **LUAU DINNER AND SHOW | Luau Gardens**Sep 14 **friday**

Saturday, September 15

6:00 am BREAKFAST | Luau Gardens at leisure from 6:00 am to 7:15 am

7:30 EXHIBITION AND POSTER ROOM | Jade-Plumeria Ballroom

IMAGING | Aulani Ballroom

Session Chair, Charles Matson, Air Force Research Laboratory

Diversity Image Restoration with Dynamically Changing Magnification, Rotation, and Translation
David Gerwe, Boeing

Accelerating Convergence of Iterative Image Restoration Algorithms
James Nagy, Emory University

Numerical Studies of the Value of Including Pupil Intensity Information in Multi-frame Blind Deconvolution Calculations for Data Measured in the Presence of Scintillation

Michael Roggemann, Pacific Defense Solutions

High-resolution Imaging through Strong Turbulence
Douglas Hope, University of Hawaii

Evaluation of a Maximum-likelihood Based Multi-frame Blind Deconvolution Algorithm Using Cramer-rao Bounds
Charles Beckner Jr., Air Force Research Laboratory

High Contrast Imaging at 3-5 Microns
Philip Hinz, Steward Observatory

9:30 BREAK

9:50 IMAGING (continued)

Recovering Saturated Pixels Blurred by CCD Image Smear
Keith Knox, Boeing LTS Inc.

PCID and ASPIRE 2.0 - The Next Generation Of AMOS Image Processing Software
Charles Matson, Air Force Research Laboratory

Laboratory Imaging of Satellites and Orbital Appearance Estimation
David Wellems, Applied Technology Associates

ADAPTIVE OPTICS

Session Chair, Robert Fugate, Air Force Research Laboratory

Advanced Adaptive Optics for Detection of Extrasolar Planets
Bruce Macintosh, Lawrence Livermore National Laboratory (invited)

Focal Plane and Non-linear Curvature Wavefront Sensing for High Contrast Coronagraphic Adaptive Optics Imaging
Olivier Guyon, Subaru Telescope

11:30 LUNCHEON | South Pacific Ballroom

12:30 pm ADAPTIVE OPTICS (continued)

High-contrast Adaptive Optics on the 200-in. Telescope at Palomar Mountain
Richard Dekany, Caltech Optical Observatories

Progress with Adaptive Optics Testbeds at the UCO/Lick Observatory Laboratory for Adaptive Optics
Donald Gavel, UCO/Lick Observatory, UC Santa Cruz

Closed-loop Results from the MMT's Multi-Laser Guide Star Adaptive Optics System
Michael Lloyd-Hart, University of Arizona

The Sodium LGS Brightness Model over the SOR
Jack Drummond, AFRL/DES

The First Light of the Subaru Laser Guide Star Adaptive Optics System
Hideki Takami, Subaru Telescope, National Astronomical Observatory of Japan

2:10 BREAK

2:30 ADAPTIVE OPTICS (continued)

An Operations and Maintenance Overview of the Gemini North Artificial Guide Star Laser
Robert Wyman, Gemini Observatory

Adaptive Optical System Atmospheric Turbulence Generator Test-bed
Christopher Wilcox, Naval Research Laboratory

Open Loop Performances of a High Dynamic Range Reflective Wavefront Sensor
Jonathan Andrews, Naval Research Laboratory

Compensating Atmospheric Turbulence Effects at High Zenith Angles with Adaptive Optics Using Advanced Phase Reconstructors, and Post-detection Image Reconstruction
Michael Roggemann, Michigan Technological University

Atmospheric Turbulence Compensation of Point Source Images Using Asynchronous Stochastic Parallel Gradient Descent Technique on AMOS 3.6 m Telescope
Mikhail Vorontsov, US Army Research Laboratory

Adaptive Optics Performance over Long Horizontal Paths: Aperture Effects in Multi-conjugate Adaptive Optical Systems
Svetlana Lachinova, University of Maryland

4:30 ADJOURN

Sunday, September 16

7:30 am Optional MHPCC and MSSS Tour (departs from Wailea Marriott)

Sep 15 saturday

posters

Spectral Imaging of Mercury's Sodium Exosphere Using AEOS
Jeff Baumgardner, Center for Space Physics, Boston University

ESC Track Fusion Demonstration Tool for Distributed Environments
Christopher Cox, Raytheon Integrated Defense Systems

Testing the MCS Deconvolution Algorithm on Infrared Data
Michael Egan, NGA/IB

The Laser Guide Star System for Adaptive Optics at Subaru Telescope
Yutaka Hayano, Subaru Telescope, National Astronomical Observatory of Japan

Image Reconstruction by Aperture Diversity Blind Deconvolution
Mario Ivanov, Royal Military College of Canada

Missing in Action? Evaluating the Putative Absence of Impacts by Large Asteroids and Comets during the Quaternary Period
W. Bruce Masse, Los Alamos National Laboratory

An Algorithm-independent Analysis of the Quality of Images Produced Using Multi-frame Blind Deconvolution Algorithms
Charles Matson, USAF/AFRL

Derivation and Application of a Global Albedo Yielding an Optical Brightness to Physical Size Transformation Free of Systematic Errors
Mark Mulrooney, NASA-JSC/ MEI Tech

Atmospheric Neutral Density Experiment Mission Update
Andrew Nicholas, Naval Research Laboratory

Anuene: A New Tool for Studying Unresolved Objects
Lewis Roberts, The Boeing Company

Optical Properties of Multi-Layered Insulation
Heather Rodriguez, ESCG / Jacobs Sverdrup

The effects of Gray Scale Quantization and Saturation on MFBD and Bispectrum SSA Image Reconstructions
Michael C. Roggemann, Pacific Defense Solutions, and Michigan Technological University

Ultra-lightweight CFRP Optical/IR Telescopes for Deployable Applications
Robert Romeo, Composite Mirror Applications, Inc.

Efficient Velocity Matched Filter for Optical Detection of Faint Satellites
Brian Shucker, MIT Lincoln Laboratory

Narrow Line-width, High-energy, 2-micron Laser for Coherent Wind Lidar
Upendra Singh, NASA Langley Research Center

An Assessment of the January 2007 Chinese ASAT Test on the LEO Environment
David Talent, Oceanit Laboratories, Inc.

The Generation of a Tsunami from the Impact of a Massive Comet Impact in the Indian Ocean
Robert Weaver, Los Alamos National Laboratory

The Militarily Critical Technologies Program's Developing Science and Technologies List
Raymond Wick, Institute for Defense

Spectral Imaging of Io's Neutral Cloud Source Region Using AEOS
Jody Wilson, Boston University / Center for Space Physics

featured exhibitors

Air Force Research Laboratory, Detachment 15

Analytical Graphics, Inc. (AGI)

The Boeing Company

CoorsTek Technical Ceramics

FLIR Systems

Oceanit

Office of Aerospace Development, State of Hawaii

Pacific Disaster Center

Rayleigh Optical Corporation

RC Optical Systems, Inc.

Science Applications International Corporation (SAIC)

Sierra-Olympic Technologies, Inc.



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