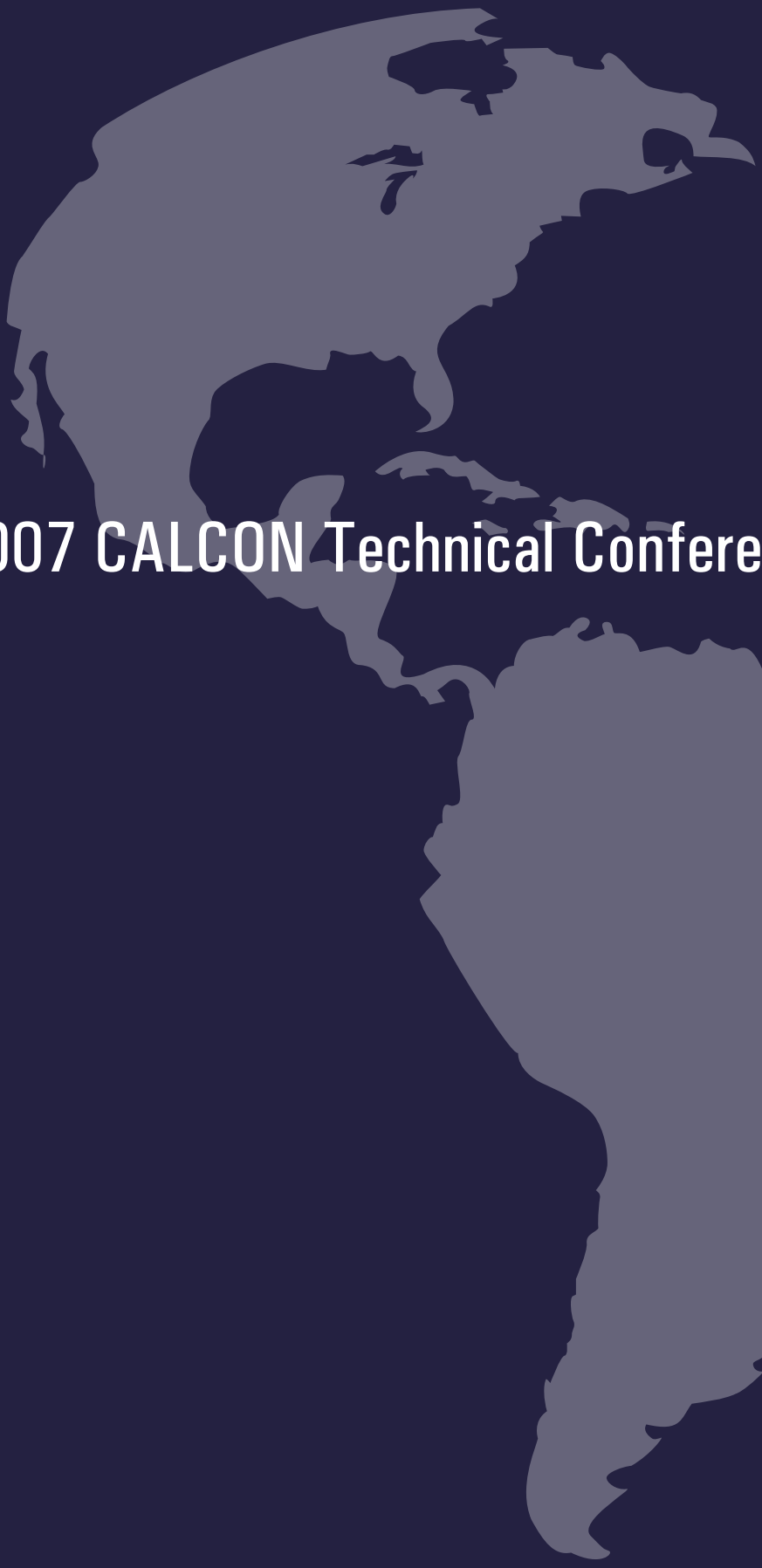
2007 CALCON Technical Conference



calcon

September 10–13, 2007

Utah State University
Eccles Conference Center
Logan, UT, USA

www.spacedynamics.org/
conferences/calcon

Program

Conference Agenda

Monday, September 10, 2007

12:00 PM–1:00 PM
Registration

1:00 PM–5:30 PM
Pre-Conference Workshop at SDL: Uncertainty Analysis and Budgeting for Ground-Based Radiometric Calibration

- Creating and Maintaining a Radiometric Measurement Accuracy Error Budget
  Tom Murdock and Christopher Cooper—Frontier Technology, Incorporated
- System-Level Radiometric Uncertainty Case Study
  Joel Cardon—USU/Space Dynamics Laboratory
- Calibration Testing Uncertainty Analysis: Linking the Absolute Cryogenic Radiometer at NIST to Test Facilities Used to Calibrate Remote Sensors
  Adriaan Carter—National Institute of Standards and Technology

Tuesday, September 11, 2007

7:30 AM–8:15 AM
Registration/Continental Breakfast

8:15 AM–8:30 AM
Conference Welcome/Introduction of Keynote Speaker: Michael Pavich–Director, USU/Space Dynamics Laboratory

8:30 AM–9:15 AM
Keynote Address: Dr. Alfred Powell, Jr.—NOAA/NESDIS

9:15 AM–10:05 AM
Technical Session: Calibration of Operational Environmental Satellite Sensors

- On-Orbit Radiometric Performance of the CERES Radiometers Aboard the Aqua and Terra Spacecraft
  Kory Priestley—NASA Langley Research Center
- Five-Years On-Orbit Performance of Aqua MODIS Thermal Emissive Bands
  Brian Wenny—Science Systems and Applications Inc.

10:05 AM–10:35 AM
Refreshment Break

10:35 AM–11:55 AM
Technical Session: Calibration of Operational Environmental Satellite Sensors (cont.)

- Vicarious Calibration of Aqua and Terra MODIS
  Jeffrey Czapla-Myers—Optical Sciences/University of Arizona
- The Calibration of AVHRR Visible Dual Gain using Geostationary Satellites as a MODIS Calibration Transfer Medium
  David Doelling—Science Systems and Applications Inc.
- A Technique to Reduce Uncertainties of SNO-estimated Intersatellite Calibration Biases at Microwave Radiometer Surface Channels and its Application to MetOP AMSU-A
  Robert Iacovazzi, Jr.—Earth Resources Technology, Inc.
- Calibration of Archived GEO Vis-channel Images Using the Moon
  Tom Stone—US Geological Survey

11:55 AM–12:55 PM	Lunch Provided
12:55 PM–2:45 PM	**Technical Session:** Instrument System and Subsystem Level Pre-launch to On-orbit Calibration and Characterization Approaches • New Calibration Technique using a Programmable Spectral Engine with a Supercontinuum Fiber Laser Joseph Rice—National Institute of Standards and Technology • System Level Pre-launch Calibration of Onboard Solar Diffusers Robert Barnes—Science Applications International Corporation • MODIS Pre-launch and On-orbit Calibration Jack Xiong—NASA Goddard Space Flight Center • The On-Orbit Calibration of SeaWiFS: Revised Temperature and Gain Corrections Gene Eplee—Science Applications International Corporation • Ground Calibration of the Geosynchronous Imaging Fourier Transform Spectrometer (GIFTS) for Hyperspectral Atmospheric Remote Sensing Deron Scott—USU/Space Dynamics Laboratory
2:45 PM–3:30 PM	Poster Viewing/Refreshment Break
3:30 PM–5:10 PM	**Technical Session:** Instrument System and Subsystem Level Pre-launch to On-orbit Calibration and Characterization Approaches (cont.) • Preliminary Radiance Validation from Ground-based Sky-viewing Comparisons of the Geosynchronous Imaging Fourier Transform Spectrometer (GIFTS) and the Atmospheric Emitted Radiance Interferometer (AERI) Robert Knuteson—University of Wisconsin, Space Science and Engineering Center • High Accuracy, Spectrally Resolved IR Radiances for the CLARREO Climate Mission Hank Revercomb—University of Wisconsin, Space Science and Engineering Center • On-orbit Absolute Temperature Calibration for CLARREO Fred Best—University of Wisconsin, Space Science and Engineering Center • SOFIE Supplemental Ground Calibration Overview Scott Hansen—USU/Space Dynamics Laboratory • Characterization of WISE Harri Latvakoski—USU/Space Dynamics Laboratory
5:30 PM–6:30 PM	Space Dynamics Laboratory Tour
Free Evening	Free Evening

cal con

Wednesday, September 12, 2007

7:30 AM–8:00 AM
Continental Breakfast

8:00 AM–9:50 AM

Technical Session: Validation of Remote Sensing Systems

- Validation of Ultraviolet and Visible Remote-Sensor Radiometry using Antarctic Snow
  Glen Jaross—Science Systems and Applications, Inc.
- Evaluation of Automatic Weather Station Surface Air Temperatures at Dome Concordia in Antarctica for Calibration Validation of Polar-Orbiting Satellite Radiometers
  Denis Elliott—Jet Propulsion Laboratory
- The Physical Foundations Underpinning On-Orbit SI Traceability in the Thermal Infrared for CLARREO
  John Dykema—Harvard University
- Validating Remote Sensing Observations using GPS Radio Occultation
  Anthony Mannucci—JPL/Caltech
- Radiometric and Spectral Validation of Infrared Atmospheric Sounding Interferometer (IASI) Observations
  David Tobin—University of Wisconsin, Space Science and Engineering Center

9:50 AM–10:35 AM
Poster Viewing/Refreshment Break

10:35 AM–12:45 PM

Technical Session: Solar, Lunar, and Stellar Radiometric Measurements

- Application of Ground Observations of Stellar Sources to On-Orbit Sensor Calibration
  Ray Russell—The Aerospace Corporation
- NIST Stars: Absolute Stellar Radiometry Tied to NIST Standards
  Gerald Fraser—National Institute of Standards and Technology
- Optical Power Comparison Between Ground-Based SORCE/TIM and NIST Detector
  David Harber—LASP/University of Colorado
- Absolute Ultraviolet Irradiance of the Moon from SORCE SOLSTICE
  Martin Snow—LASP/University of Colorado
- On-orbit Solar Calibrations using the Clouds and Earth's Radiant Energy System (CERES) In-flight Mirror Attenuator Mosaic (MAM) Calibration System
  Robert Wilson—Science Systems and Applications Inc.
- Lunar Side Slither: A Novel Approach for IKONOS Relative Calibration
  Martin Taylor—GeoEye

12:45 PM–1:45 PM
Lunch Provided

1:45 PM–3:35 PM

Technical Session: Calibration of Microwave Sensors

- Brightness-Temperature Standards at Microwave to Terahertz Frequencies
  David Walker—National Institute of Standards and Technology
- Radiometric Validation of the Microwave Temperature and Moisture Sounders (AMSU and MHS) on the MetOp, Aqua, and NOAA Satellites Using the NPOESS Aircraft Sounder Testbed-Microwave (NAST-M) Sensor
  Laura Jairam—Lincoln Laboratory/MIT

- Addressing Calibration Issues of Conically Scanning Microwave Radiometers
  Shannon Brown—Jet Propulsion Laboratory

- SSMIS Field of View Analysis using GRASP
  David Thompson—The Aerospace Corporation

- Traceability of CLARREO GPS Radio Occultation Measurements to the International Definition of the Second
  Stephen Leroy—Harvard University

3:35 PM–4:05 PM — Refreshment Break

4:05 PM–5:35 PM — **Technical Session:** Specialized Calibration Equipment

- The TSI Radiometer Facility (TRF) for Absolute Calibrations of Total Solar Irradiance Instruments
  Karl Heuerman—LASP/University of Colorado

- Infrared Calibration Development at Fluke Corporation Hart Scientific
  Frank Liebmann—Fluke Corporation Hart Scientific Division

- Hyperspectral Image Projector using a Supercontinuum Fiber Laser
  Joseph Rice—National Institute of Standards and Technology

- Spectral Irradiance Responsivity Calibration of InSb Radiometers with the Improved IR-SIRCUS at NIST
  Jinan Zeng—National Institute of Standards and Technology

6:00 PM–8:30 PM — Barbeque at Guinavah Campground

Thursday, September 13, 2007

No Exhibits Available

7:30 AM–8:00 AM — Continental Breakfast

8:00 AM–9:50 AM — **Technical Session:** Calibration Concepts and Applications

- Star-Based Monitoring of GOES Imager Visible-Channel Responsivities
  I-Lok Chang—American University, QSS Group, Inc.

- Estimation Theory Applied to the Uncertainty Analysis of a Novel Method for Determining Sensor Non-Linearity
  Eric Kintner

- Benchmark Climate Observations from CLARREO: Spectrally Resolved Radiance, the Climate Record, and the Development of Quantitative Constraints on Climate Model Forecasting
  Jim Anderson—Harvard University

- Field Calibration of SW and MW IR Sensors
  George Rossano—The Aerospace Corporation

- Performance of a Hand Held Reflectometer for In Situ Emissivity Measurements
  Michael Beecroft—Surface Optics Corporation

9:50 AM–10:20 AM

Refreshment Break

10:20 AM–12:30 PM

Technical Session: Critical Calibrations and Novel Characterizations of Components, Subsystems, and Systems

- GIFTS Line Shape and Off-Axis Wavenumber Shift Calibration
  Mark Esplin—USU/Space Dynamics Laboratory
- Four-Point Radiometric Calibration Technique for Mid-Wave FTS Imagers
  Philippe Lagueux—Telops
- Optical Properties of Cryo-deposited Water-ice Films at Low Pressure
  Keith Olson—The Aerospace Corporation
- Fixed Pattern Noise Correction
  David Pollock—The University of Alabama in Huntsville
- NFIRE Track Sensor Payload Ground Calibration Overview
  Joseph Tansock—USU/Space Dynamics Laboratory
- Radiation Thermometry of Objects with Temperature > 20 deg C using Short-wave Infrared Detectors
  Howard Yoon—National Institute of Standards and Technology

12:30 PM–1:15 PM

Lunch Provided

1:15 PM–2:15 PM

Technical Session: Traceability of Absolute Radiometry and Remote Sensing

- Metrological Basis for SI-traceable Radiance Measurements on the CLARREO Climate Benchmark Satellite Platform
  Jonathan Gero—Harvard University
- Spectrally Resolved Calibration of Flat Plate Blackbody Sources and Targets in the Thermal Infrared at NIST
  Sergey Mekhontsev—National Institute of Standards and Technology
- NIST TXR Validation of Scanning HIS Radiances and a UW-SSEC Blackbody
  Joe Taylor—University of Wisconsin, Space Science and Engineering Center

1:15 PM–6:00 PM

Special US-Only Restricted Session

- Recent Checkout Test and Radiometric Calibration Activities Associated with the AEDC 7V Chamber Sensor Test Facility
  Randy Nicholson—Aerospace Testing Alliance (ATA)
- Northrop Grumman Advanced Sensor Test and Integration Facility
  Richard Williams—Northrop Grumman Corporation
- MODIS and VIIRS Optics Comparison
  Eugene Waluschka—NASA
- Identification of High-Scatter Pixels on VIIRS for Remote Sensing
  Stephen Mills—Northrop Grumman Space Technology
- Laboratory Testing of Interference Filters to Assess Potential for Optical Cross-talk
  Peter Fuqua—The Aerospace Corporation

- Complexity of Obtaining Representative Spectral Out-of-Band Contributions in the VIIRS Program
  Kris Clark—Lincoln Laboratory/MIT
- Performance Impact of Spectral Band Registration on Radiometric Precision
  Carl Fischer—Lincoln Laboratory/MIT
- Design of the VIIRS Solar Diffuser Earth Shine Rejection Screen
  James McCarthy—Northrop Grumman Corporation
- Low Uncertainty Measurements of Bidirectional Reflectance Factor on the NPOESS/VIIRS Solar Diffuser
  Kristen Lessel—Las Cumbres Observatory Global Telescope Network
- Expected On-orbit Calibration Performance of CrIS
  Hank Revercomb—University of Wisconsin, Space Science and Engineering Center
- Pre-Flight ILS Testing of the CrIS Interferometer on NPOESS
  Howard Motteler—University of Maryland Baltimore County
- ATMS Calibration
  Bjorn Lambrigtsen—Jet Propulsion Laboratory
- On-Orbit Field-of-View Calibration of the Advanced Technology Microwave Sounder
  William Blackwell—Lincoln Laboratory/MIT

Exhibit Descriptions

Exhibit Hours

Tuesday, September 11
9:30 AM–4:30 PM

Wednesday, September 12
9:30 AM–4:30 PM

Thursday, September 13
Exhibits Closed

Exhibit Layout

USU Eccles Conference Center
Updated August 17, 2007