Poster Session III

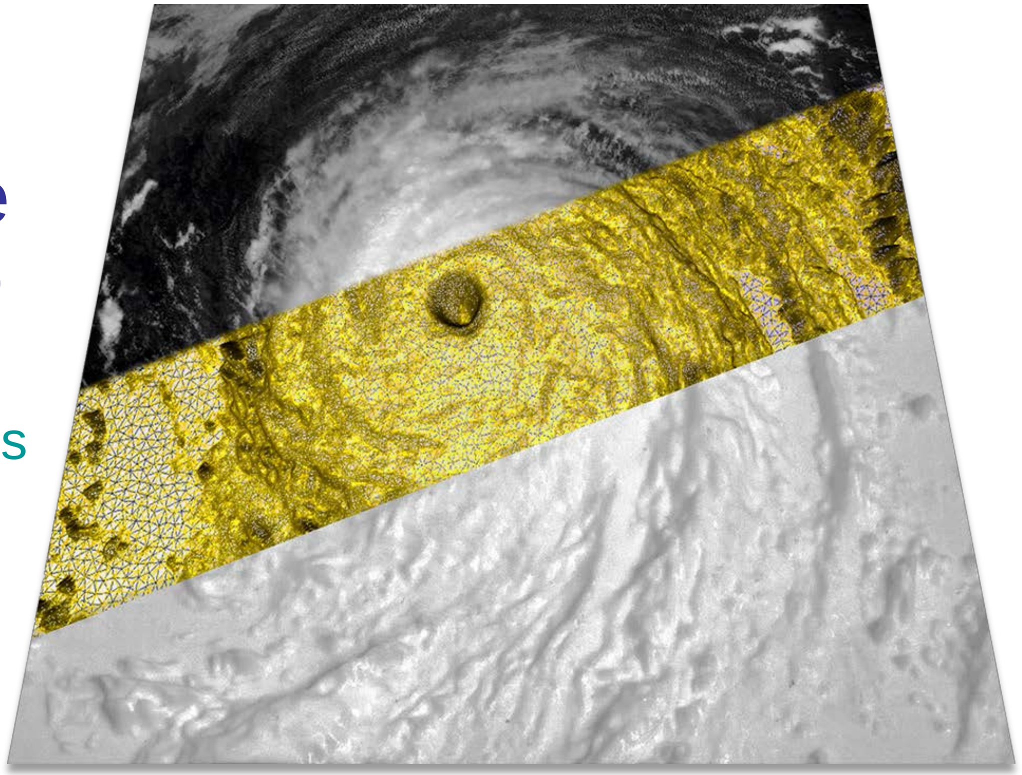
Thursday April 30, 2015

10:30 AM & 3:15 PM

3-D Printing with CLASS: Making Models for Education and Outreach Using Satellite Weather Imagery

Francis Reddy
Syneren Technologies Corp.
Arlington, VA

- GOES infrared and visible imagery in NOAA’s CLASS archive can be transformed into models for 3-D printing
  - Hold a hurricane in your hands
  - Low-cost software converts pixel values into a printable digital mesh
  - Models of Julio, Sandy and Katrina freely available



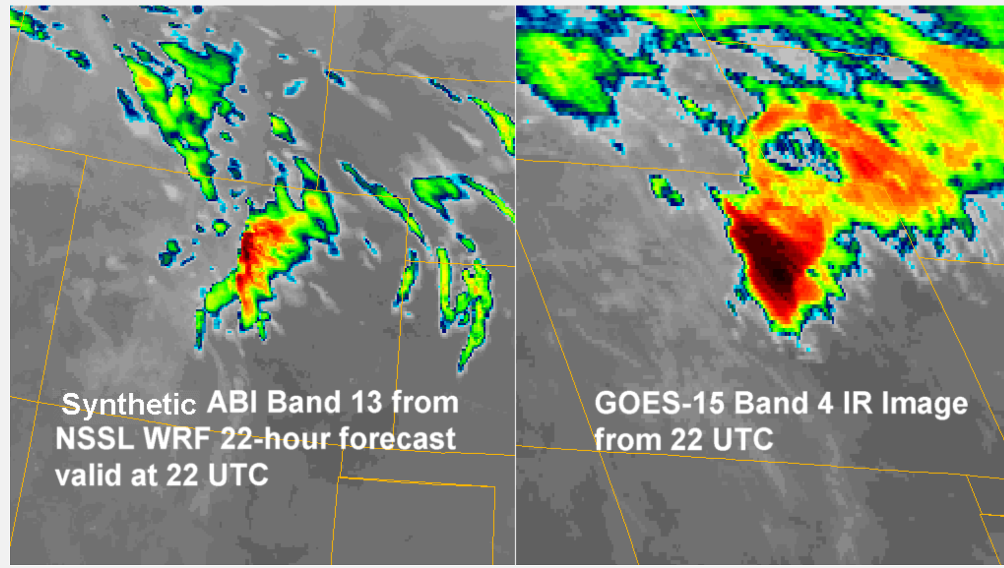
Katrina: GOES image, digital mesh, and 3D print

Poster
3-1

Synthetic Satellite Imagery: A New Tool for GOES-R User Readiness and Cloud Forecast Visualization

Dan Lindsey, NOAA/NESDIS/STAR/RAMMB, Fort Collins, CO
Louie Grasso and Dan Bikos, CIRA

- Synthetic satellite imagery is being generated from high resolution NWP model output
- The data is used as :
  - A proxy for GOES-R ABI data
  - A tool for preparing NWS forecasters for what GOES-R ABI bands will look like
  - A visualization tool for forecasters to easily see clouds in the high resolution model forecasts
- This poster will summarize the work on synthetic satellite imagery and provide examples of its many uses and benefits



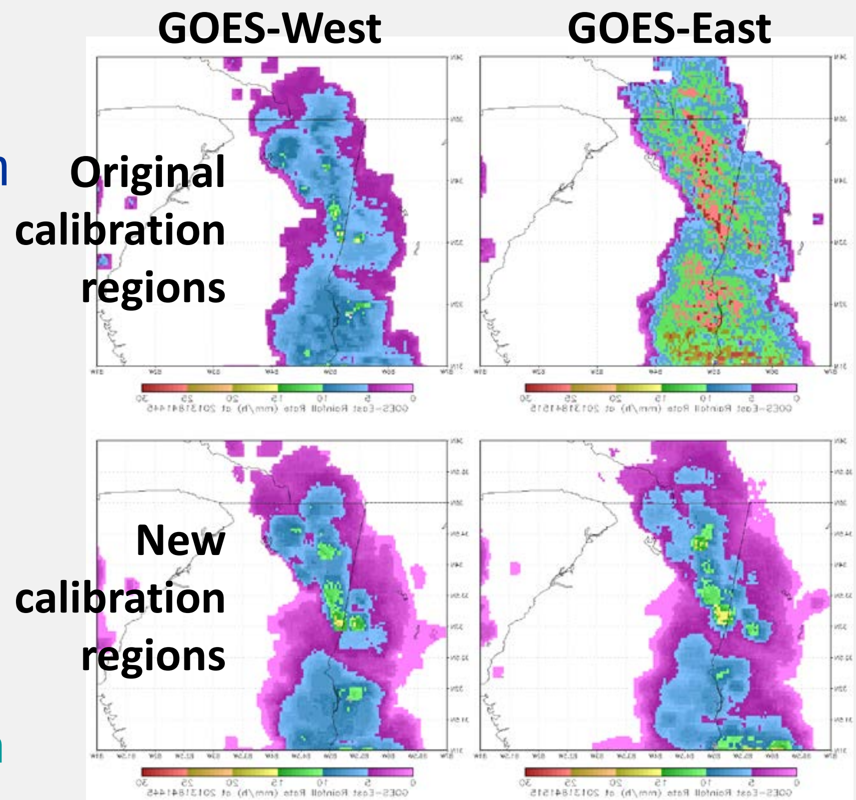
Comparison between synthetic ABI band 13 (left) and observed GOES-15 band 4 (right) from 24 Nov. 2012

Poster #
3-4

Improvements to SCaMPR Rainfall Rate Algorithm

Yan Hao[1], Robert J. Kuligowski[2] and Yaping Li[1]
[1]IMSG at NOAA/NESDIS/STAR, College Park, MD
[2]NOAA/NESDIS/STAR, College Park, MD

- SCaMPR (the GOES-R Rainfall Rate algorithm) is a GOES-IR based algorithm that is dynamically calibrated in real time using LEO-based MW rain rates
- Recent and ongoing improvements:
  - Correcting for sub-cloud evaporation using NWP model relative humidity
  - Employing smaller calibration regions to improve consistency
  - Testing gauge-corrected Q3 radar data in the calibration data set



Improved rain rate consistency

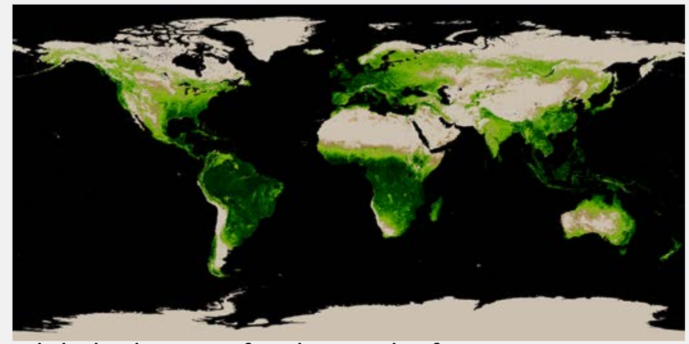
Poster # 3-5

Green Vegetation Fraction (GVF) derived from SNPP-VIIRS sensor

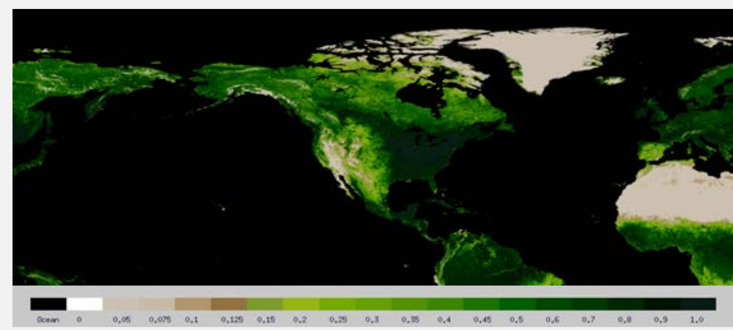
Zhangyan Jiang[1,2], Marco Vargas[1], Junchang Ju[1,2], Ivan Csiszar[1]

[1] NOAA/NESDIS/STAR, College Park, MD. [2] AER inc. Lexington, MA

- The SNPP VIIRS GVF system produces a global 4-km resolution GVF map and a regional 1-km GVF map once a day
  - Represents the fractional area of the grid cell covered by live (green) vegetation
  - VIIRS GVF accuracy, precision and uncertainty were lower than the specifications
  - VIIRS GVF was tested in the NCEP Global Forecast System and showed improvements of forecasts



Global 4-km GVF for the week of 20140419-20140425



Regional 1-km GVF for the week of 20140809-20140815

Poster # 3-6

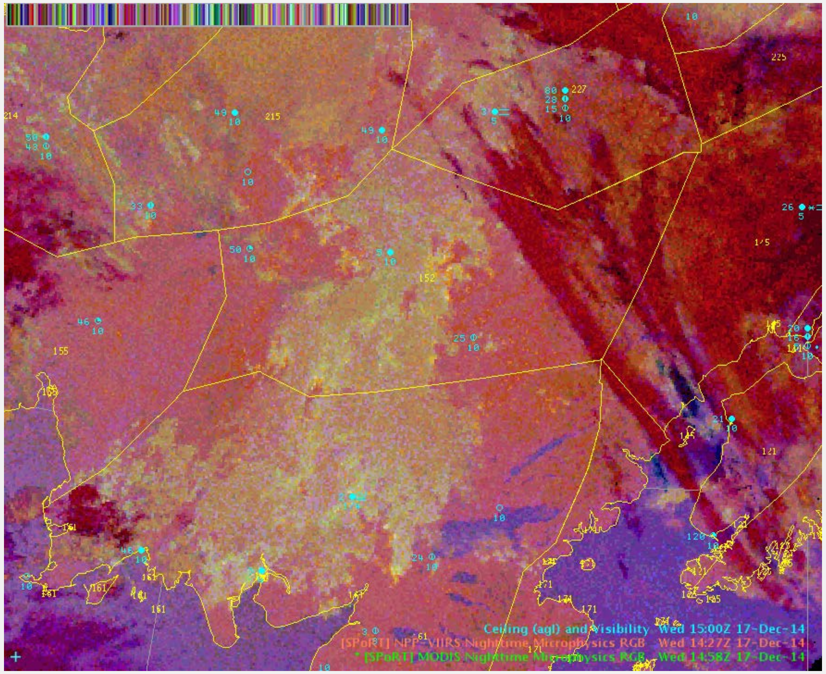
Two New Multi-Spectral Composite Satellite Products and Their Use by NWS Alaska Region in Aviation Forecasting

Eric Stevens[1], Kevin Fuell[2], Lori Schultz[2], and Matt Smith[2]

[1] Geographic Information Network of Alaska (GINA), [2] University of Alabama in Huntsville, at NASA's Short-term Prediction Research and Transition Center (SPoRT)

MODIS and VIIRS Direct Broadcast Data from GINA used by SPoRT to generate RGBs for the NWS

- EUMETSAT's nighttime and 24hr microphysics RGB products used for aviation and public forecasting
- Useful for analysis of clouds and fog and as a precursor to future GOES-R/-S capabilities
- Builds upon and provide more information than the traditional infrared channel differencing "fog product"



SPoRT RGB Nighttime Microphysics product, screen capture from operational AWIPS2 at NWS Forecast Office, Fairbanks, Alaska, Dec 17, 2014

Poster #
3-7

The Unique Radiometric Calibration Trending Behavior of the GOES Imagers and Sounders

Authors: Kenneth Mitchell (ASRC Federal), Merrisa Griffin (HTSI), J. Paul Douglas (ASRC Federal)

The subtitle for this poster could be given as *"what you see is **NOT** what you get"*. That is, the variable radiometric environment of the GOES instruments on-orbit that is displayed in this poster is NOT what users find in the radiometrically stable radiances (and temperatures) contained in the delivered GOES L1b products. And this transition, from unstable to stable, is due to the application of the very responsivity coefficients that are displayed in this poster (the process called calibration).

Specifically, the poster seeks to:

1. Provide users with a feel for the (variable) trending behavior of the GOES Imager and Sounder radiometric responsivities over yearly (and shorter) timescales
2. Provide short explanations for the origin of the displayed responsivity variability; and
3. Categorize the various causes of the responsivity variability either as intrinsic instrument behavior or as due to commanded instrument operations which seek to maximize overall radiometric performance of the GOES instruments throughout the year.

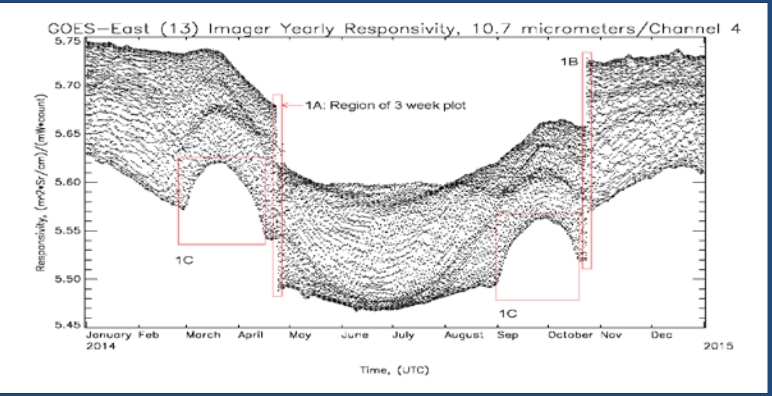


Figure 1: GOES-East (13) Imager Yearly Responsiviity in Channel 4

1. Note **intrinsic** behavior in the annual and seasonal trends of the maxima and minima responsivities
2. Note responsivity jumps at the equinoxes due to **commanded** changes to the detector temperatures

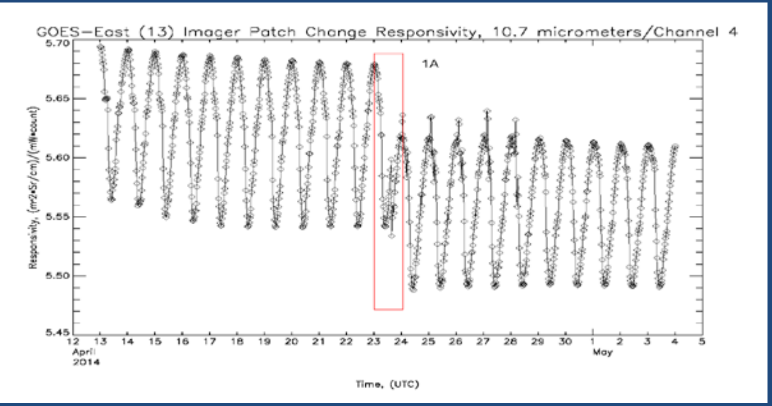


Figure 2: GOES-East (13) Imager 3 week Responsivity in Channel 4 around a Detector Temperature Control Change

1. Note **intrinsic** diurnal variability of the responses due to orbital-modulated diurnal temperature effects on the instrument components and electronics

Stereo Cloud Top Height Products for the GOES-R Era

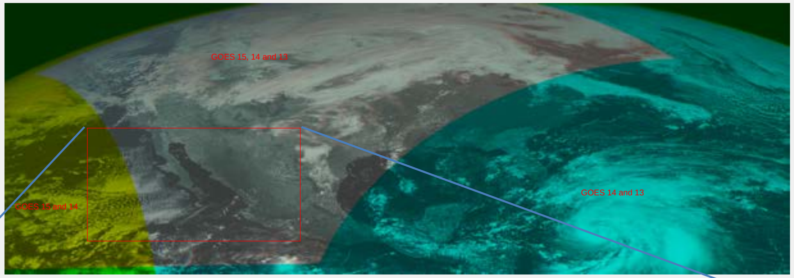
Houria Madani[1], James L. Carr[1]

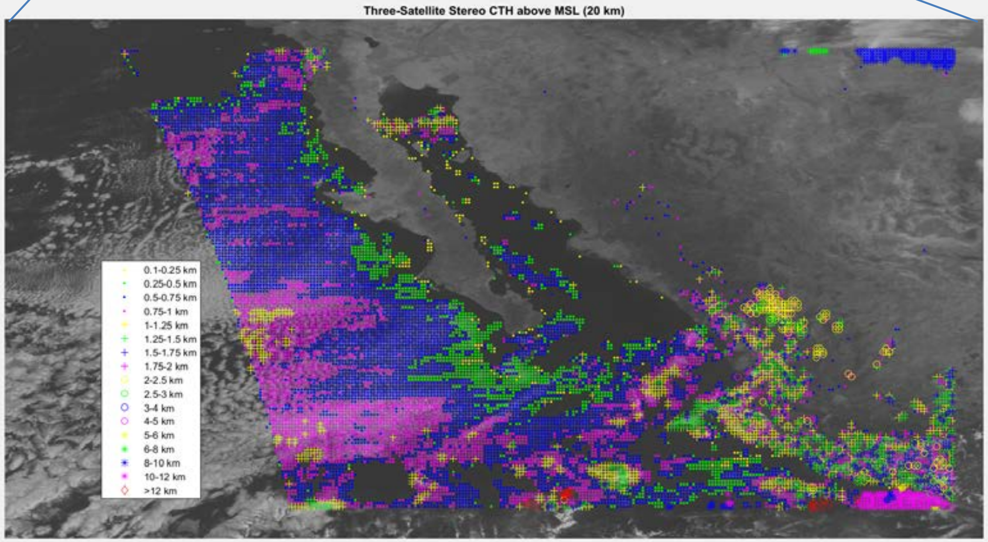
1. Carr Astronautics, Greenbelt, MD

The Stereo Cloud Top Height (CTH) product is based on matching images of the same or similar spectral bands acquired quasi-simultaneously by GOES satellites from two or three different vantage points.

Once GOES-R is launched and operated at a central location, a near-full disk stereo-CTH product can be made. With two operational GOES satellites and coverage from another satellite such as TEMPO, a full CONUS stereo-CTH product can be made. We have generated a stereo-CTH product during hurricane Sandy when all 3 GOES satellites were operating as shown in the upper right figure.

Stereo-CTH values are shown in the lower right figure for the subset defined by the red box above. The Stereo-CTH has finer horizontal resolution than 10 km and better measurement accuracy than 500 m.





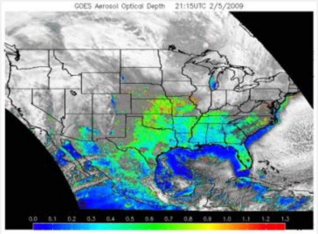
CARR ASTRONAUTICS
Science at work

Poster #3.9

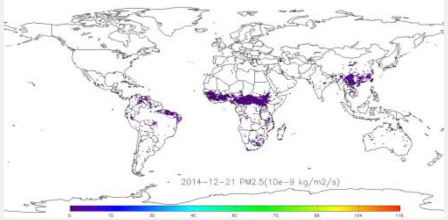
NOAA / NESDIS Air Quality Satellite Products

Liqun Ma, Shobha Kondragunta, Zhaohui Cheng, Hanjun Ding,Jian Zeng, Pubu Ciren, Chuanyu Xu, Mark Ruminski, Xaioyang Zhang, Hai Zhang

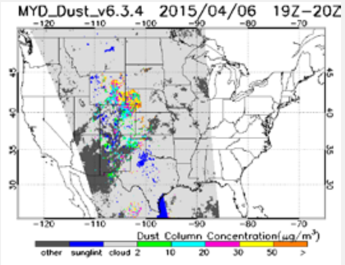
- NOAA/NESDIS is operating, developing, and hosting numerous satellite-derived products for use by the air quality community. Current operational air quality products are:
  - GOES Aerosol, Smoke, and Smoke Emissions Products(GASP)
  - Automated Smoke Detection and Tracking Algorithm(ASDTA)
  - MODIS Dust Mask Algorithm Product
  - Blended Fire & Smoke Products - Hazard Mapping System (HMS)
  - Global Biomass Burning Emissions Product (GBBEP)
  - Automated Biomass Burning Algorithm (ABBA)
  - AVHRR Fire Detects from the Fire Identification, Mapping and Monitoring Algorithm (FIMMA)
  - Hosted products(VIIRS AOT, MODIS Fire Point, MODIS Aerosol, Aura OMI Aerosol Index)



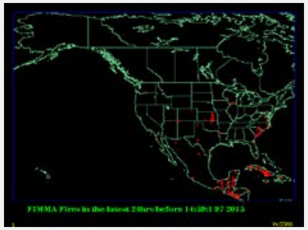
GASP



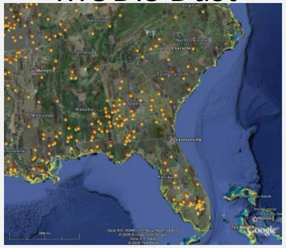
GBBEP



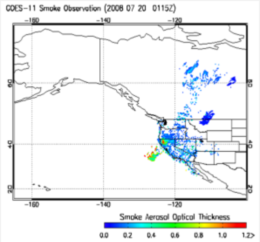
MODIS Dust



FIMMA



HMS

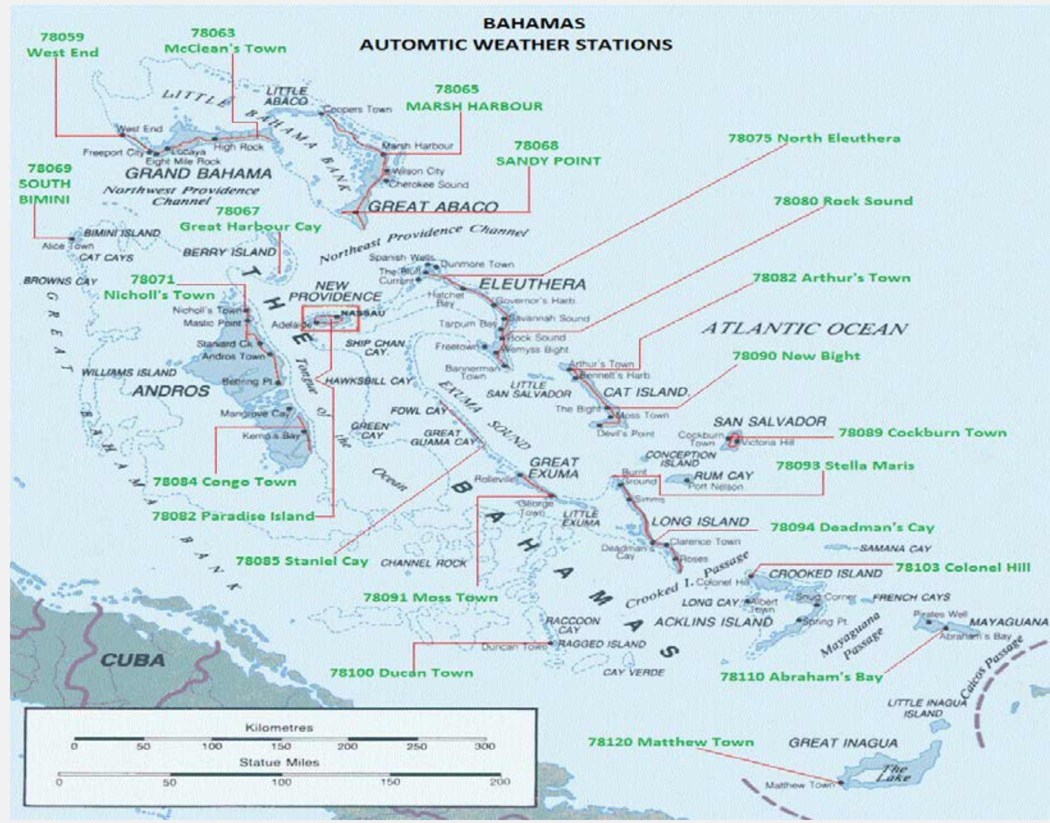


ASDTA

Poster # 3-11

THE CARIBBEAN GOES SATELLITE
GREGORY G. GIBSON

NOAA/NESDIS
BAHAMAS

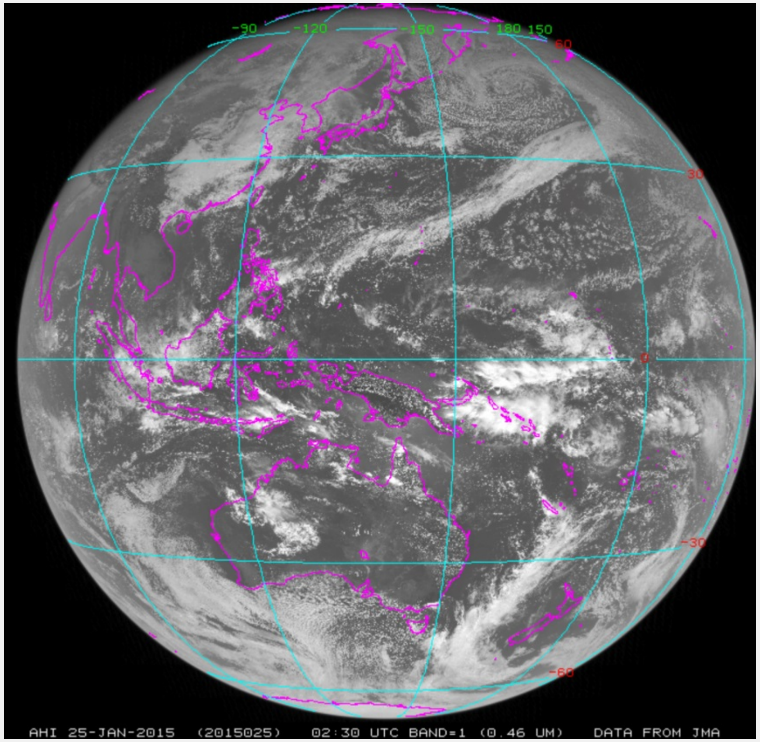


Poster #
3.12

Access to GOES-R Satellite Data and Products with McIDAS and Mobile Apps

D. Santek, R. Dengel, S. Batzli, D. Parker, N. Bearson
University of Wisconsin-Madison
Madison, WI

- McIDAS readiness for GOES-R data
  - ADDE servers for ABI channel data, Level 2, Level 2+ products
  - ADDE server for GLM data
  - McIDAS-V access to GOES-R data and products
  - Access to GOES-R data and products in RealEarth and mobile apps
  - McIDAS-X and McIDAS-V access to Himawari-8 AHI data



Himawari AHI band 1 (0.46 μ)

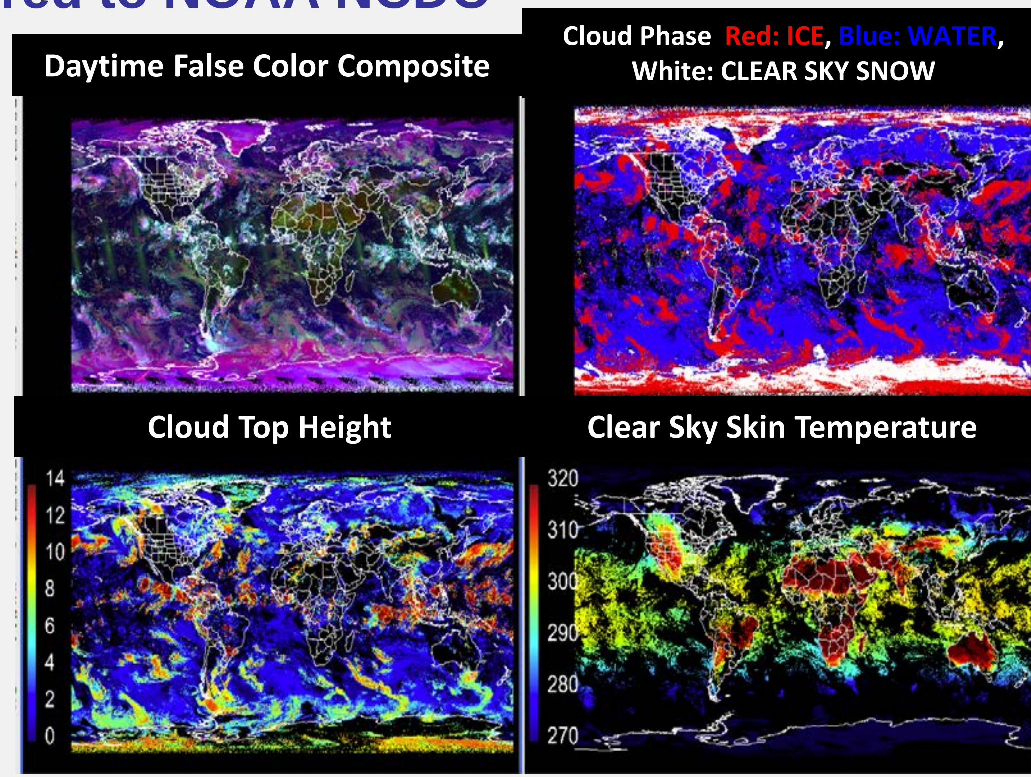
Poster # 3-14

A CERES-Consistent Cloud Property Climate Data Record Using AVHRR Observations

Patrick Minnis

NASA Langley Research Center

- **New Climate Data Records of AVHRR Cloud Property Retrievals and Shortwave Channel Reflectance have been developed at NASA LaRC and are currently being delivered to NOAA NCDC**
  - Cloud detection and retrieval method consistent with methods used with MODIS for the NASA CERES program
  - Shortwave calibration referenced to Aqua MODIS
  - Products include cloud mask, phase, height, optical depth, effective particle size, overshooting cloud top detection, broadband radiation, and skin temp
  - Validation indicates accuracy of cloud mask: 86%, cloud phase: 90%, cloud top height: ~1.5 km, and skin temperature: 0.6 (SST) to 2 K (LST)



Poster # 3-16

Land Product Characterization System (LPCS) for analysis and validation of ABI and VIIRS land products

Kevin Gallo[1], John Dwyer[2], Steve Foga[3], Calli Jenkerson[3], Ryan Longhenry[2] and Greg Stensaas[2]
[1]NOAA/NESDIS, [2]U.S. Geological Survey, [3]Stinger Ghaffarian Technologies

- LPCS automatically blends satellite products for analysis.
  - Validation and characterization of GOES-R ABI and JPSS/VIIRS land products are required.
  - A web-based system under development for validation and characterization of ABI and VIIRS data/products that facilitates access and use of land products from multiple sensors (e.g., Landsat and MODIS).

LPCS home page and sensor product comparison example.

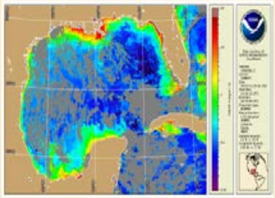
Poster # 3-17

NOAA'S OPERATIONAL OCEAN COLOR PRODUCTS FROM THE OSPO COASTWATCH OKEANOS SYSTEM

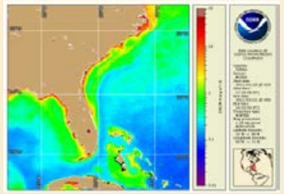
Poster # 3.18

Banghua Yan, Ian Simpson, Edmond Rodriguez and Antonio Irving
NOAA/NESDIS/OSPO/Satellite Products and Services Division

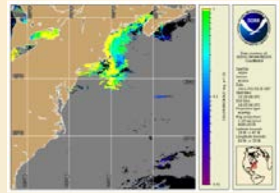
Operational Ocean Color Products



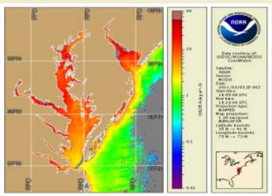
Daily chlorophyll concentration



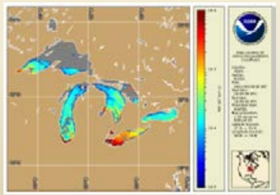
Bimonthly-mean chlorophyll concentration



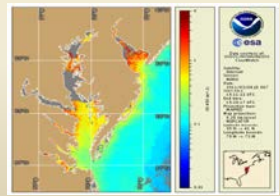
New algal growth (Positive chlorophyll concentration anomaly)



Chesapeake Bay daily chlorophyll concentration



Suspended sediment proxy (Remote sensing reflectance at 667 nm)



Water turbidity(Diffuse attenuation coefficient at 490 nm)

Products Users and Applications

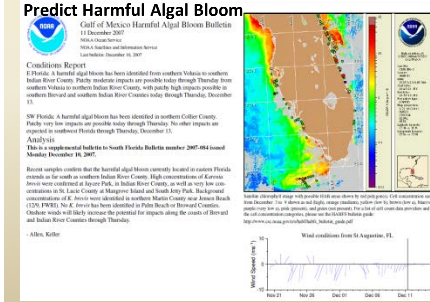
Users

- National Ocean Service & NESDIS
- NOAA ocean forecast model
- Federal, state and local marine scientists, and coastal managers
- Fisheries managers
- General public

Applications

- Track potential harmful algal blooms
- Assess air quality through marine isoprene fluxes
- Assess water quality
- Assess habitat
- Review ocean features

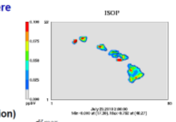
Predict Harmful Algal Bloom



Estimating marine Isoprene Emissions

- Overall emission flux into the atmosphere (Palmer and Shaw, 2005):

$$E_{iso} = K_{AS} * (C_W - H * C_A)$$
$$\Rightarrow E_{iso} = K_{AS} * C_W$$



- Determine C_W (Marine isoprene concentration)

$$C_W = \frac{P - L_{MIX}}{\sum k_i C_{X_i} + k_{BIOL} + k_{AS}/Z_{ML}} \Rightarrow C_W = \frac{\int^{H\max} EF * \ln(PAR)^2 dh - L_{MIX}}{\sum k_i C_{X_i} + k_{BIOL} + k_{AS}/H_{\max}}$$

(Palmer and Shaw, 2005) (Revised based on Gantt et al.)

- Derive H_{max}: $H\max = (-\ln(\frac{2.5}{I_0}) / K_{490})$ (Gantt et al. 2009)

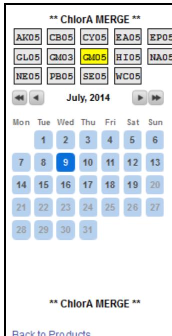
I_0 – ground radiatioin; K490 – defuse attenuation coefficient in water

(Refer to D. Tong in NOAA Air Resources Laboratory)

➢ New OSPO Okeanos Operational Web-Based QA Monitoring Tool

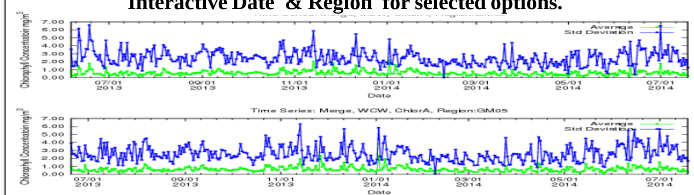
(*http://www.ospo.noaa.gov/Products/ocean/color/index.html*)

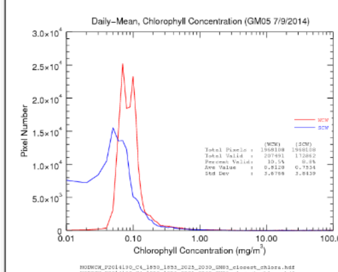
- Monitor the availability and quality of operational ocean color (OC) products in near real time (NRT) mode
- Monitor time series of operational OC product statistics
- Detect suspicious OC products in NRT mode
- Monitor the ingest, process, generation, and distribution of Okeanos system in NRT mode
- Monitor the performance and stability of the system in NRT mode



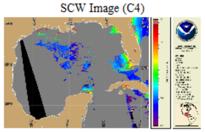
An example of QA Tool: Monitor suspicious products

Interactive Date & Region for selected options.

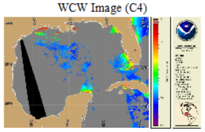




SCW Image (C4)



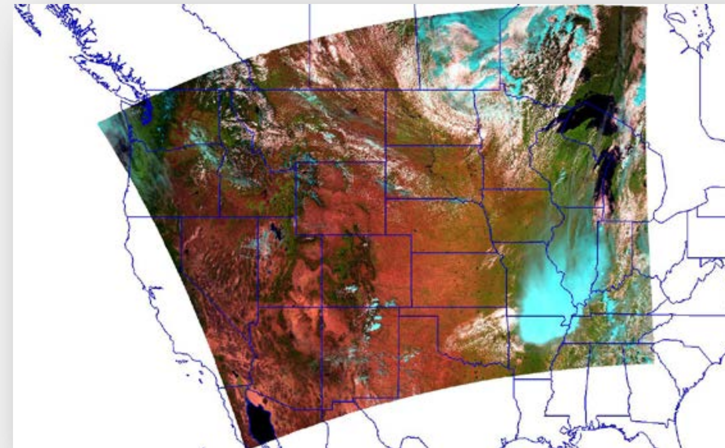
WCW Image (C4)

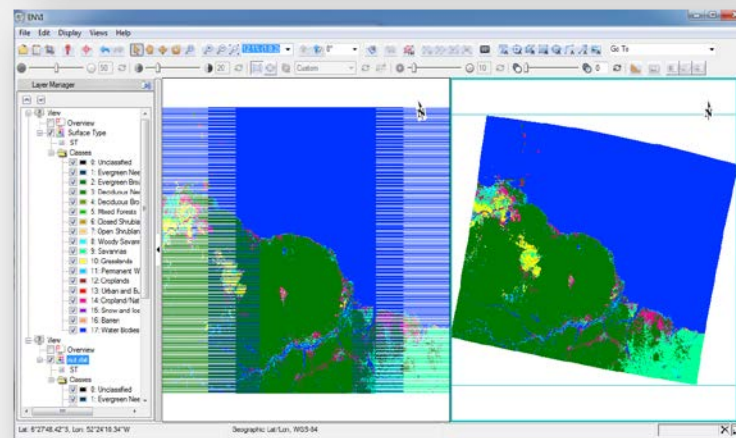


Ingest and Analysis of NPP-VIIRs Data from the NOAA CLASS System: Radiometric Calibration, Bow Tie Correction and Derived Dataset support in the ENVI COTS Software

ENVI image analysis software now supports VIIRS data from the NOAA CLASS system allowing users to open VIIRS Sensor Data Records (SDRs) in a point and click user interface with no a priori information about the dataset or the file format. Options for opening and processing the data include:

- **Automatically opening I-bands, M-bands, Day-Night-Band (DNB), and the Near-Constant-Contrast (NCC) Environmental data record (EDR)**
- **Automatic calibration to radiance, reflectance, brightness temperature or albedo (depending on the data product)**
- **Optional Swath-to-Grid geocorrection with elimination of bow-tie deletion artifacts for SDRs**
- **Automatic granule merging to remove swath gap lines for (EDRs)**
- **Opening derived EDRs such as Aerosol Optical Thickness, Land Surface Temperature, Ocean Color/Chlorophyll, Sea Surface Temperature, Surface Type, and Vegetation Indices**
- **Scripting processes for working with many NPP-VIIRS scenes**





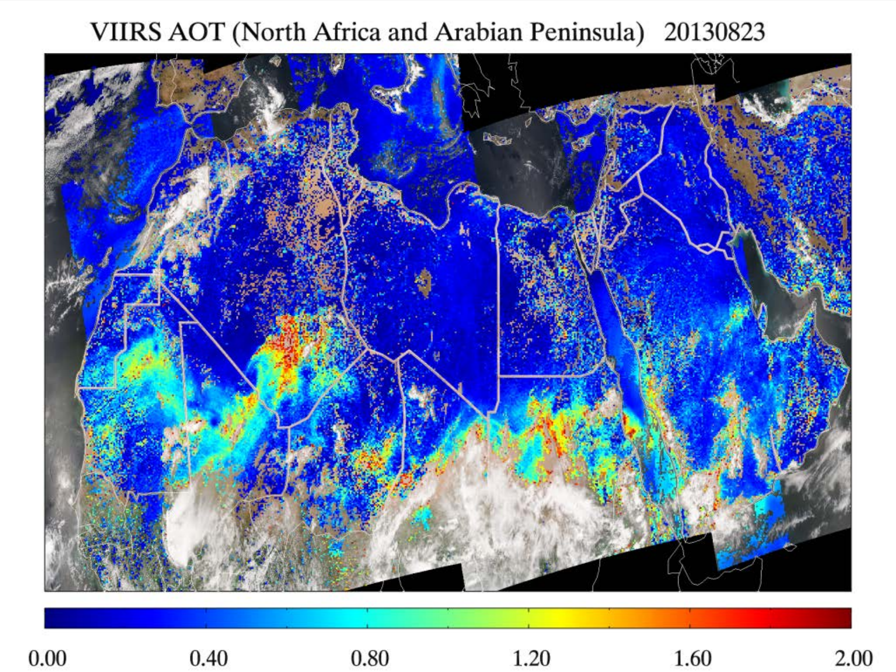
Poster #
3.20

Development of surface reflectance ratios database for VIIRS AOT retrieval over land

Hai Zhang[1], Hongqing Liu[1], Shobha Kondragunta[2], Istvan Laszlo[2], Lorraine Remer[3], Jingfeng Huang[4], Stephen Superczynski[5]

1. IMSG at NOAA, 2. NOAA NESDIS, 3. UMBC, 4. UMD, 5. SRG

- VIIRS surface reflectance ratios between selected bands were derived from the lower bound of the 2-year corrected TOA reflectances with a spatial resolution of 0.1º
- VIIRS AOT retrieval using global surface reflectance ratios database improves AOT retrieval accuracy and data coverage
  - Retrieve AOT over bright surface with good accuracy, where current operational retrieval algorithm cannot retrieve AOT
  - Improve AOT retrieval accuracy over dark surface



Poster # 3.24

Recent additions to the Community Satellite Processing Package (CSPP) from algorithm developers at NOAA

James E. Davies & collaborators

Space Science and Engineering Center/University of Wisconsin-Madison, WI

- CSPP supports the Direct Broadcast (DB) meteorological and environmental satellite community through packaging and distribution of science software that now includes:
  - **Microwave Integrated Retrieval System (MIRS)**
  - **NOAA Unique CrIS/ATMS Processing System (NUCAPS)**
  - **Advanced Clear-Sky Processor for Oceans (ACSPO)**

REQUIREMENTS: SYSTEM + MISSION & ANCILLARY DATA

		CSPP_MIRS	CSPP_NUCAPS	CSPP_ACSPO
OPERATING SYSTEM		CentOS-6 64-bit Linux (or other compatible 64-bit Linux distribution)*		
		1GB RAM + 1GB DISK	1GB RAM + 4GB DISK	8GB RAM + 5GB DISK
Additional Software (not provided with package)		✗	LFTP; a sophisticated ftp/http client and a file transfer program supporting a number of network protocols** http://lftp.yar.ru/	
SOFTWARE SITE		http://cimss.ssec.wisc.edu/cspp/		
RELEASE DATE / VERSION [NOAA version]		20-Mar-2014 / v1.0 [v9.2]	23-Feb-2015 / v1.0 [v1r0]	07-Apr-2015 / v1.0 [v2.31]
MISSION DATA	NOAA-15 to NOAA-17	✗	✗	AVHRR ✓
	NOAA-18 & NOAA-19	AMSU-A +MHS ✓	✗	AVHRR ✓
	Metop-A & Metop-B	AMSU-A +MHS ✓	✗	AVHRR ✓
	Aqua & Terra	✗	✗	MODIS ✓
	Suomi-NPP	ATMS ✓	ATMS+CrIS ✓	VIIRS ✓
ANCILLARY DATA	SERVER SITE	http://jpssdb.ssec.wisc.edu/cspp_v_2_0/ancillary/		
	National Center for Environmental Prediction (NCEP) Global Forecast System (GFS) 1 degree resolution	✗	✓	✓
	Canadian Meteorological Center (CMC) 0.2 deg global sea surface temperature analysis	✗	✗	✓
PROCESSES ARCHIVE DATA? (i.e. non Direct Broadcast)		✓	✓	✓

*Ubuntu works fine too

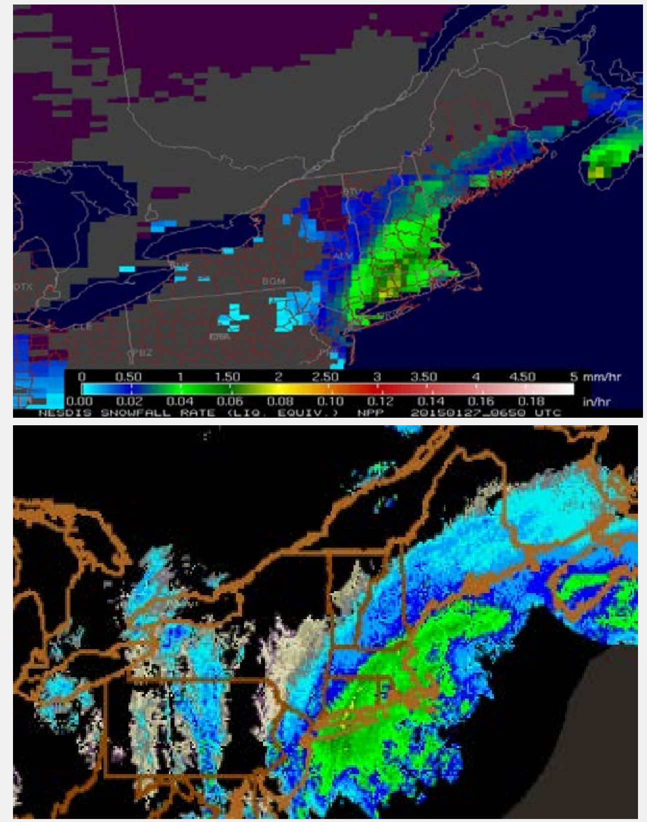
**Only required for automatic fetching of remote ancillary data

Poster #
3-28

ATMS/AMSU Snowfall Rates during the 2014-15 Winter Season

Huan Meng[1], Cezar Kongoli[2], Jun Dong[2], Ralph Ferraro[1], Bradley Zavodsky[3]
[1] NOAA/NESDIS/Center for Satellite Applications and Research
[2] Cooperative Institute for Climate and Satellites (CICS), University of Maryland
[3] NASA/Short-term Prediction Research and Transition Center (SPoRT)

- ATMS and AMSU Snowfall Rate (SFR) products were evaluated in the 2014-2015 winter season
  - AMSU SFR is operational at NESDIS. First season ATMS SFR became available
  - SFR assessment at several NWS Forecast Offices, effort led by NASA/SPoRT
  - Use direct broadcast data from UW/CIMSS and UAF/GINA
  - Case studies



ATMS SFR (top) and composite radar reflectivity (bottom) during 2015 New England Blizzard

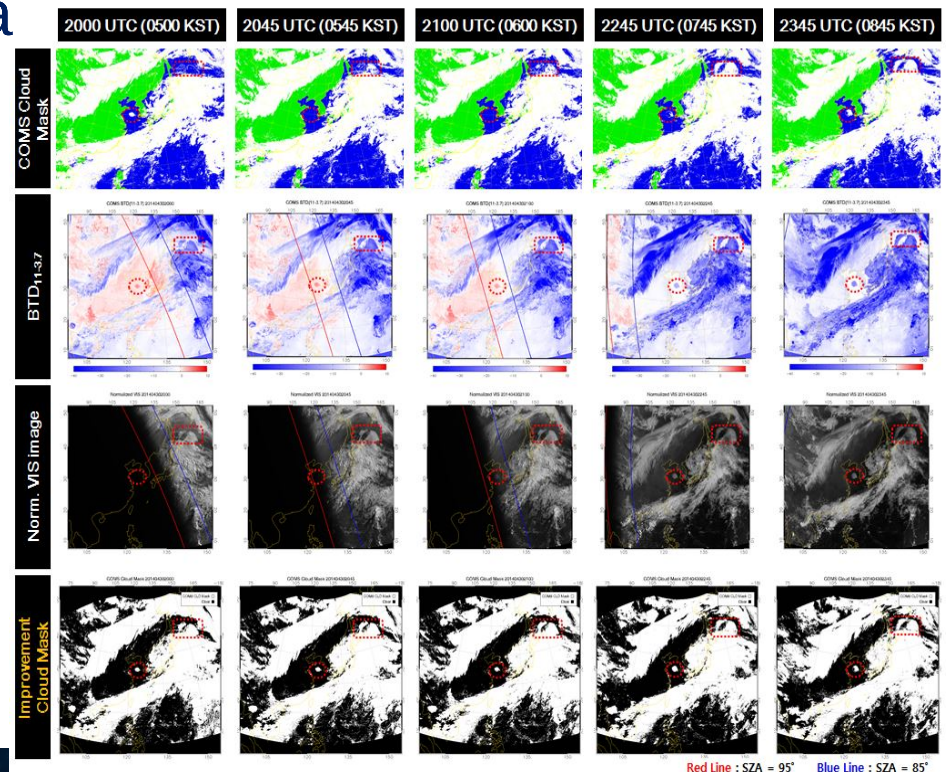
Poster # 3-31

Improvement of Cloud Detection with COMS in the Day-Night Transition Area

Byung-il Lee, Hyungmin Park, Sung-Rae Chung
Satellite Planning Division, NMSC/KMA, Republic of Korea, bilee01@korea.kr

❖ We will improve the operational COMS CLD algorithm to solve discontinuity in transition area

- Operational CLD Algorithm consists of several tests
  - Single channel threshold test
  - Dual channel BTD test
  - Homogeneity test
  - Sun-glint test
- Improved Algorithm
  - Introduced normalized visible reflectance
  - Applied dynamic threshold (11-3.7μm) in transition regions



Poster # 3.32

Selenographic Coordinate Mapping of Lunar Observations by GOES Imager

Poster # 3-33

Xi Shao (ERT Inc., UMD), Xiangqian Wu (NOAA/NESDIS/STAR), Fangfang Yu (ERT Inc.)

- Lunar calibration for solar bands has been an important part of trending the instrument radiometric performance.
- The lunar disk-equivalent irradiance has been used to trend the on-orbit degradation of the GOES imager and its performance is largely affected by the uncertainties in lunar phase and libration.
- The lunar view by GOES imager provides opportunity to perform radiometric calibration of GOES imager using lunar radiances of selected locations on the Moon.
- In this study, algorithms and procedures are developed. Both controlling point and landmark matching are applied to determine rotation angles and three consecutive rotations are performed to map onto selenographic coordinates.
- Lunar observations of GOES-12 are processed and ROIs are identified. Lunar phase angle-dependence of lunar radiances at ROIs are analyzed.
- Lunar radiance depends strongly on Sun-Moon-Satellite geometry and knowledge of BRDF of lunar surface help trending radiometric performance of GOES imager.

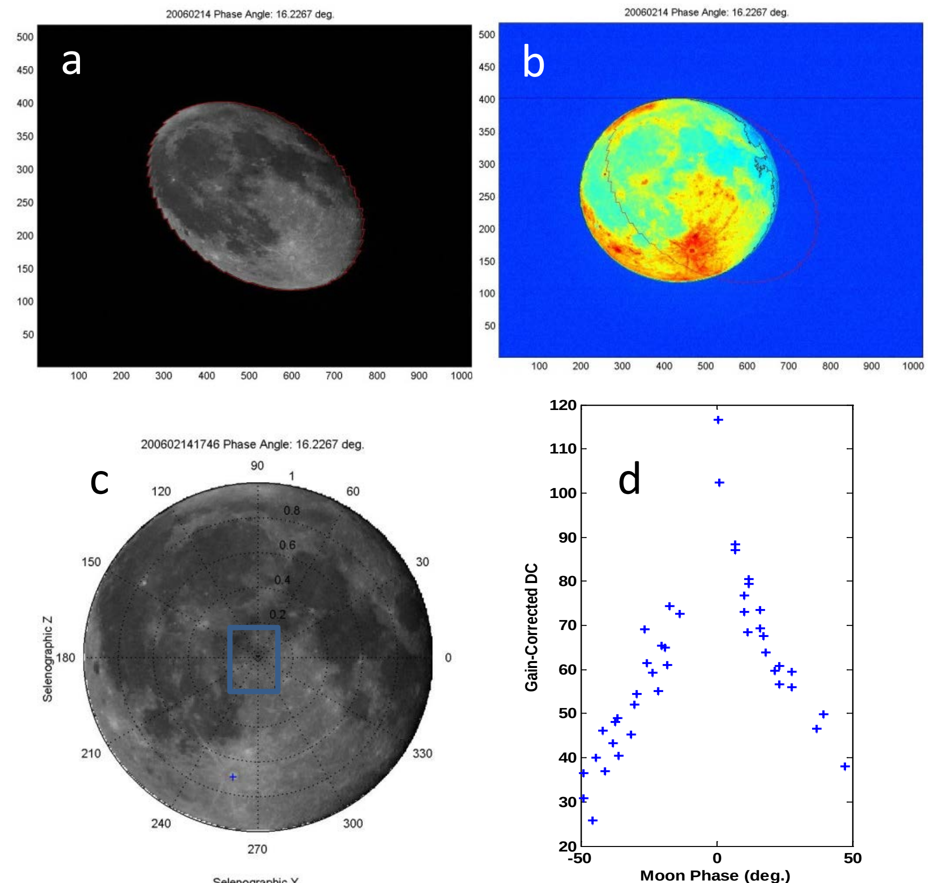
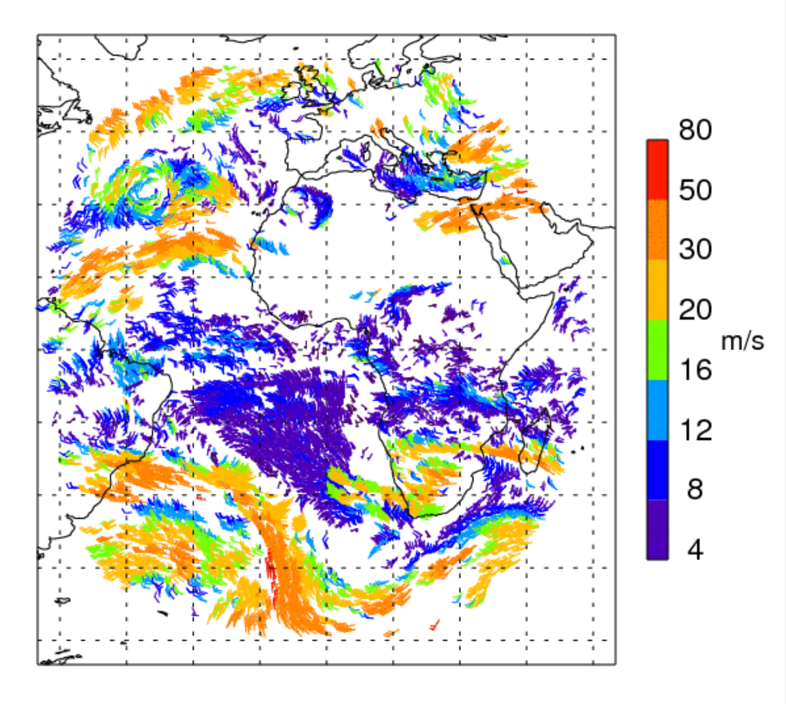


Figure: (a) lunar observation by GOES-12; (b) Image processing performed to scale lunar image to a disk; (c) Mapped lunar image in selenographic coordinate; (d) Lunar radiance vs. moon phase angle around moon center

GOES-R Atmospheric Motion Vectors Future Use in NCEP GFS

Sharon Nebuda[1], Jim Jung[1,2], David Santek[1], Jaime Daniels[3], Wayne Bresky[4]
[1]CIMSS UW Madison WI, [2]JCSDA College Park MD [3]NOAA/NESDIS STAR College Park MD,
[4]IM Systems Group Rockville MD

- Proxy ABI Wind Data has been tested in NCEP GFS
  - Applying the new Nested Tracking Algorithm to Meteosat SEVIRI data generated proxy ABI AMVs
  - Quality control procedures have been established
  - Seasonal runs assimilating this data in GFS have shown neutral to small positive impact on the forecast skill



IR AMV wind barbs 12Z 12 Dec 2013
Color indicates speed

Poster # 3.37

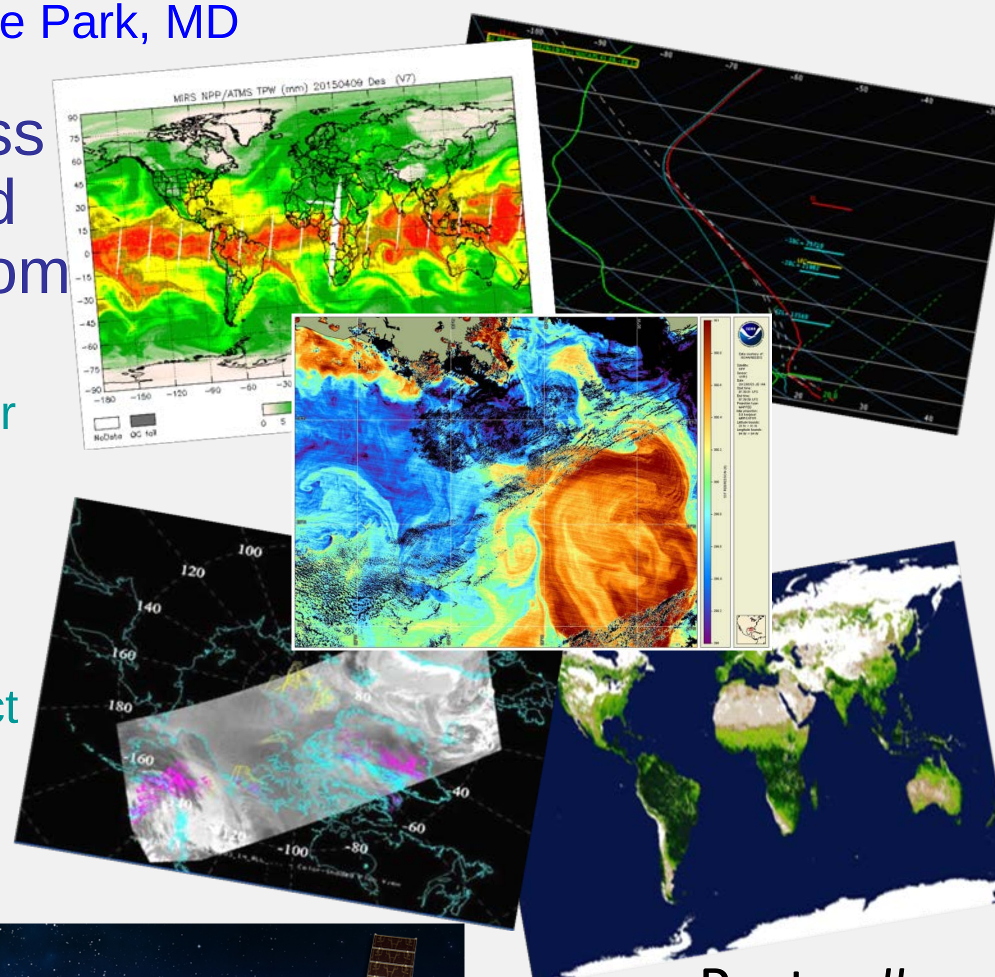
S-NPP Operational Products at NOAA/NESDIS/OSPO

Shuang Qiu and Antonio Irving

NOAA/NESDIS/OSPO Satellite Products Branch (SPB)

College Park, MD

- OSPO provides timely access to atmospheric, oceanic, and land surface satellite data from S-NPP
  - Advanced Clear Sky Processor for Oceans - SST
  - Green Vegetation Fraction
  - Microwave Integrated Retrieval System – ATMS
  - NOAA Unique CrIS ATMS Product System
  - VIIRS Polar Winds
  - Blended Snow and Ice IMS V3
  - Blended SST



Poster # 3.39

JPSS CGS Handling of SMD

Hårek Gamst, Kenneth Pettersen: Kongsberg Spacetec AS

- SMD data receivers
- JPSS SMD Hubs

– Reliable data capture & delivery
– Data consolidation
– Extensive reporting
– Multi mission
– Data driven operations
– Standardization & configurability

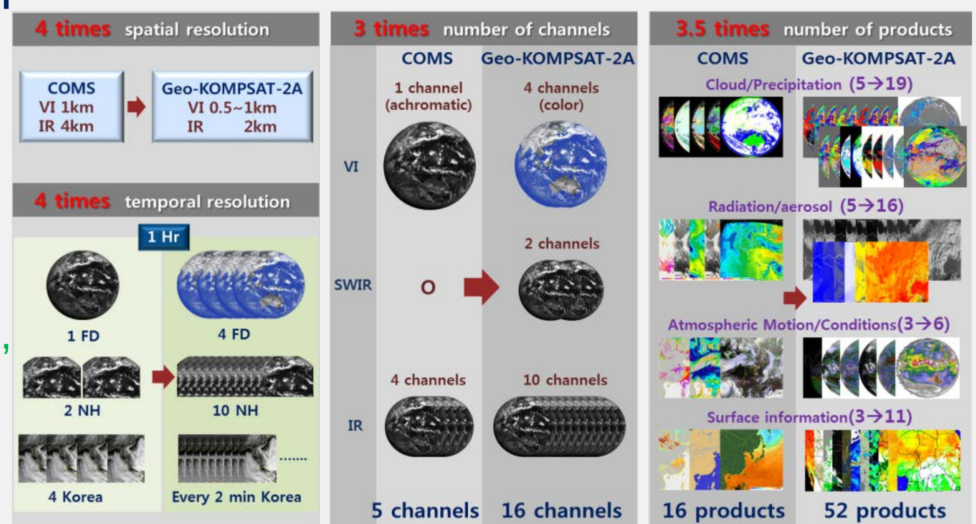
Poster #
3-40

Status and Future Plan of Development of Meteorological Products through Korean Geo-KOMPSAT-2A Satellite

Sung-Rae Chung, Byung-il Lee, Tae-Myung Kim, Eun-Bin Park & Jae-Gwang Won
Satellite Planning Division, NMSC/KMA, Republic of Korea, csr@korea.kr

❖ The AMI on the GK2A will be launched in 2018 which is followed on COMS. The 52 meteorological products will be developed and have greatly improved over the COMS products.

- Development schedule
  - 2014~2016 : Algorithm development
  - 2017~2018 : Validation and Operation
- 4 algorithm groups/52 products
  - Cloud/Precipitation, Radiation/Aerosol,
  - Atmosphere/Aviation, Scene/Surface



COMS 16 products vs. GK2A 52 products

Group	Meteorological Products (16 → 52)
Cloud/Rain	CTT, CTP, CTH, CP, CT, CA, COT, CER, LWP, IWP, RR, CLH, PoR, RP
Radiation/Aerosol	DADP, DAOD, ADP, AEP, AOD, VAP, VIS, RAD, RSR, DSR, OLR, ASR, ULR, DLR
Atmosphere/Aviation	AMV, VTP, VHP, AII, TPW, TFTD, CI, OT, Icing, SO2D, TOZ
Scene/Surface	CLD, SST, LST, FOG, FF, VI, FVC, LSE, SAL, SC, SD, SI, OC

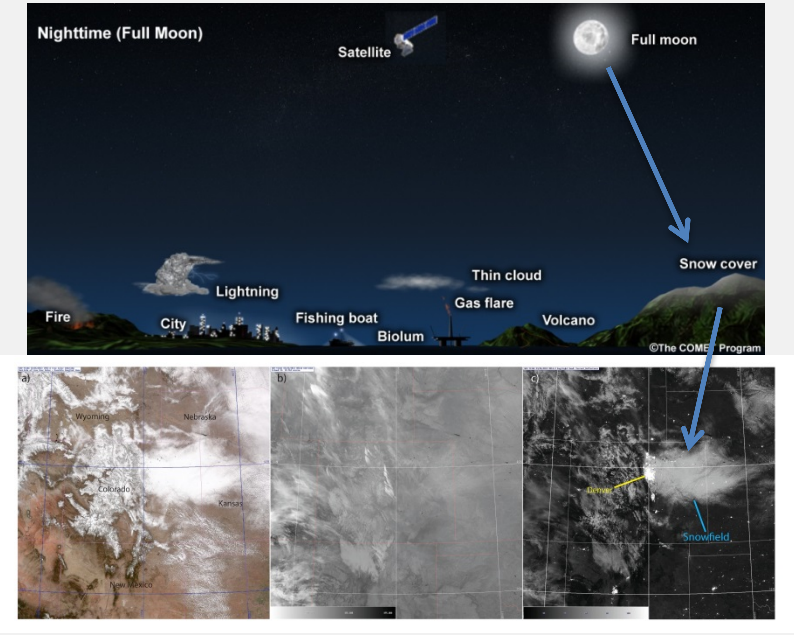
Poster # 3.42

Not-So Silent Night: Suomi NPP's Day/Night Band Makes Waves as a Disruptive Technology for Characterization of the Nocturnal Environment

Steven D. Miller

Cooperative Institute for Research in the Atmosphere
Colorado State University; Ft. Collins

- The Day/Night Band (DNB) has exceeded performance expectations, and revealed unforeseen capabilities.
- This poster provides a sampling of nocturnal parameters sensed by the DNB and their relevance to research and operations:
  - Lunar reflectance
  - Emissive sources, both natural and anthropogenic



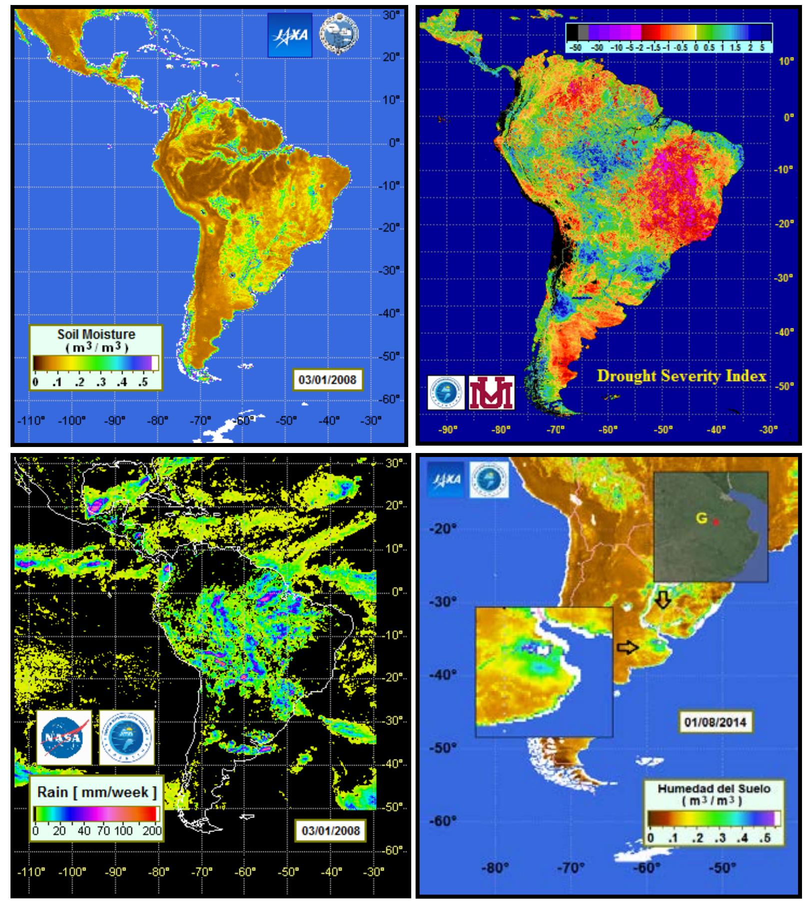
Daytime visible, nighttime infrared, and DNB views of a snow field in northeast Colorado illustrates the utility of lunar reflectance to reveal composition.

Poster #
3-43

Verification of Soil moisture Estimations from AMSR-E and AMSR-2

Gloria Cristina Pujol
Argentina National Meteorological Service

- The usefulness of AMSR-E and AMSR-2 daily soil moisture estimations for Argentine Pampas was explored.
- Global retrievals of daily soil moisture estimation from AMSR-E and AMSR-2 under wet and dry conditions were analyzed.
- Drought Severity Index (DSI) derived from MODIS, rain from observational data and retrievals from TRMM were also used for comparing.

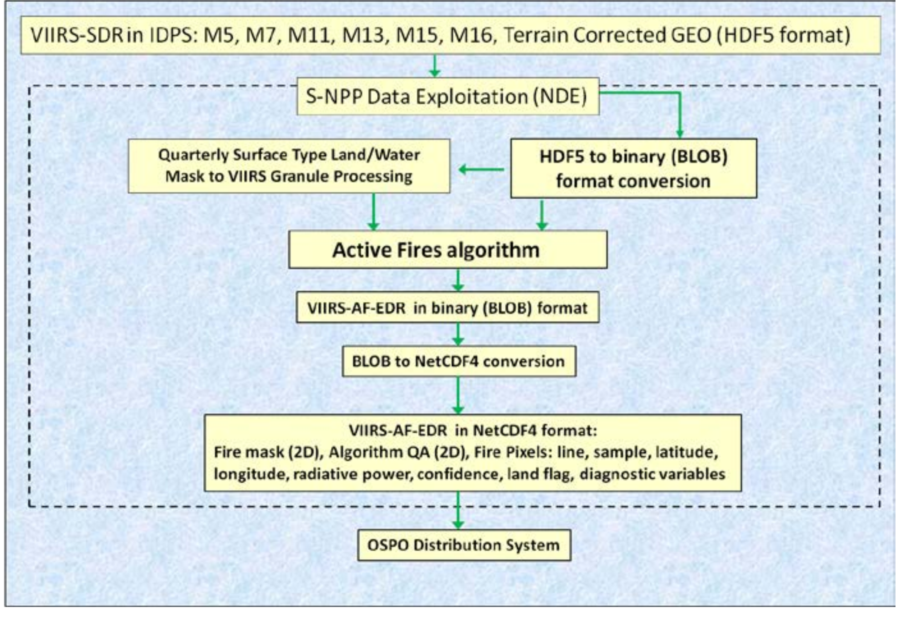


Poster #
3.47

VIIRS Active Fires algorithm integration in NPP Data Exploitation (NDE) environment: research to operations

Marina Tsidulko[1], Walter Wolf[2], Ivan Csiszar[2], Louis Giglio [3], Wilfrid Schroeder [3]
(1)IMSG at NOAA/NESDIS/STAR, College Park, MD, (2) NOAA/NESDIS/STAR, College Park, MD,
(3)University of Maryland, College Park, MD

- The current IDPS version of the VIIRS Active Fire algorithm runs over land and produces a list of fire detections in a sparse array format.
- The University of Maryland (UMD) enhanced version of the algorithm:
  - provides additional outputs including the Fire Radiative Power (FRP) of each fire pixel and a new attribute to describe land for each pixel (Fire Mask).
  - has global coverage including water
  - planned to be implemented in the NDE development environment
  - initially will run on S-NPP data and is planned to create the J1 product in the future
- The final product is in NetCDF-4 format and will be available for users through the OSPO distribution system.



Poster #
3.48

ALASKA DIRECT BROADCAST

G. Bryson, J. Cable, J. Dabney, C. Dierking, T. Heinrichs, S. Macfarlane, E. Stevens, G. Wirth
Geographic Information Network of Alaska, Geophysical Institute, University of Alaska Fairbanks, Fairbanks, AK

Increase satellite data acquisition, near-real time processing, and system redundancy by

- Installing a new 3.0 m antenna
- Deploying NRT processing and distribution capabilities at the NESDIS Fairbanks Command & Data Acquisition Station (FCDAS) in Fairbanks, AK

Poster # 3.52

Geographic Information Network of Alaska

EXISTING
Big Dog Antenna
3.6 m
X-band

NEW
Sandy Dog Antenna
3.0 m
X, L, S-band

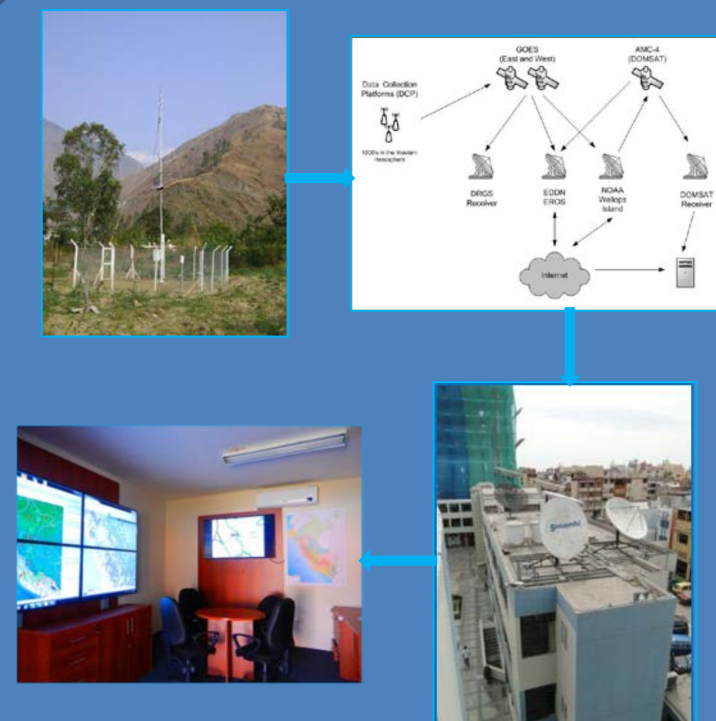
Meteorological Data Monitoring

Jorge Chira

National Meteorology and Hydrology Service of Peru

The Peruvian Weather Service monitors its Automatic Weather Stations (AWS) network with GOES 13 satellite transmission; through the Meteorological Data Monitoring Center.

- The Monitoring Center, controls the daily data transmitted from all AWS and defines the performance of each one of them, for an optimal maintenance and recovering program.



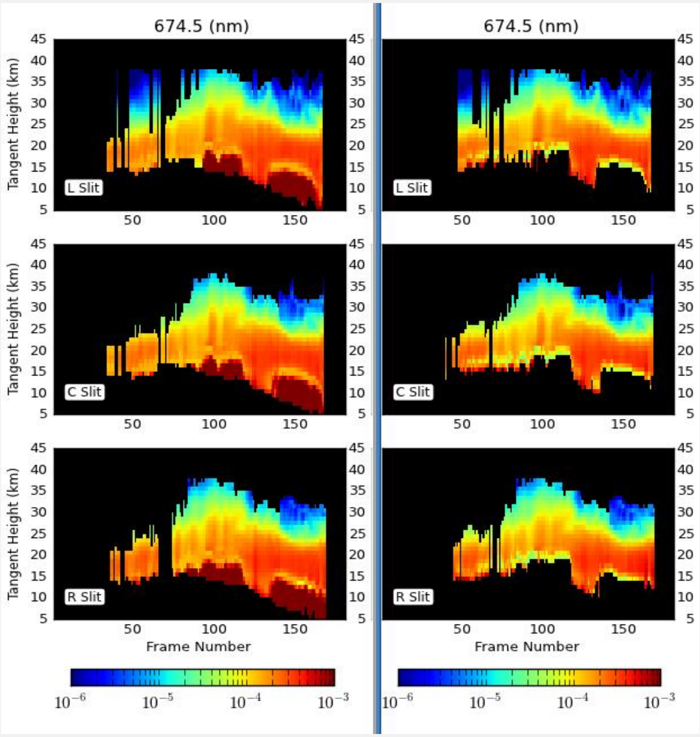
Data Monitoring Flow

Poster #
3-54

OMPS Limb Profiler (LP) aerosol extinction algorithm development -- Robert Loughman[1], Ernest Nyaku[1], P.K. Bhartia[2] and Nick Gorkavyi[3]

[1]Hampton University, Dept. of Atmospheric And Planetary Science, Hampton, VA
[2]NASA Goddard Space Flight Center / [3]SSAI, Greenbelt, MD

- The OMPS LP orbit offers great sensitivity to aerosols, particularly in the NH
  - Efforts are underway to simplify the OMPS LP aerosol retrieval and make its residuals easier to interpret
  - The updated algorithm uses the Chahine method to retrieve aerosol properties at 675 nm, with an improved radiative transfer model
  - Retrieval quality depends on improved stray light characterization



Retrieved aerosol extinction profiles (674.5 nm)

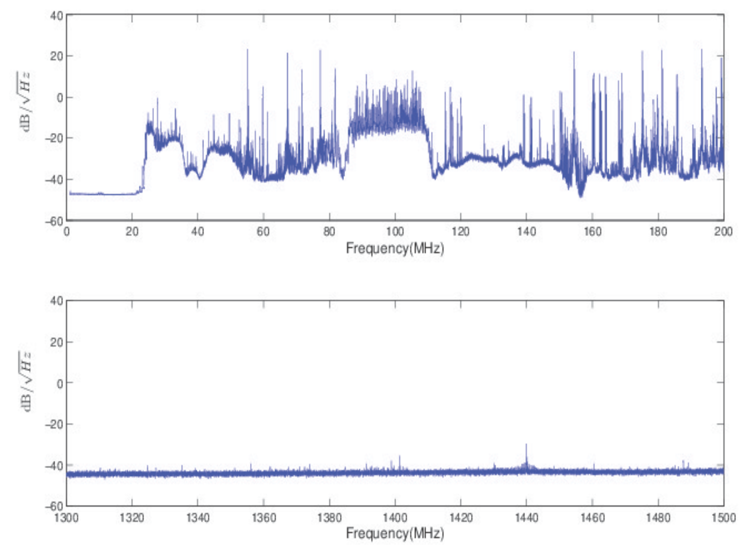
Poster #
3.57

Low Cost NOAA Satellite Signal Receiver for the Characterization of Astronomical Sites

Gary Flores[1], Ericson Lopez[1], Luis Tituaña[1], Edwin Mena[1], Daniel Vera[1], Jairo Armijos[1] & Enrique Lascano[2]
Quito Astronomical Observatory of National Polytechnic School [1] and Ecuadorian Space Institute,[2] Quito, Ecuador

Astronomical sites can be characterized using low cost, satellite receiver built as university project.

– The radio system, developed at Quito Astronomical Observatory, was used to sensing interference in the frequency ranges: I (1-200 MHz) and II (1300-1400 MHz).
– In the I range, many spectral features (contamination) were found.
– While, the noise amplitude is low enough, as ~2 dB/sqrt(Hz) in the II range.
– Therefore, radio emission from astrophysical sources, in the 1300-1500 MHz range, would be not affected by radio interferences.



Radio spectra at Jerusalem Park, near Quito, Ecuador

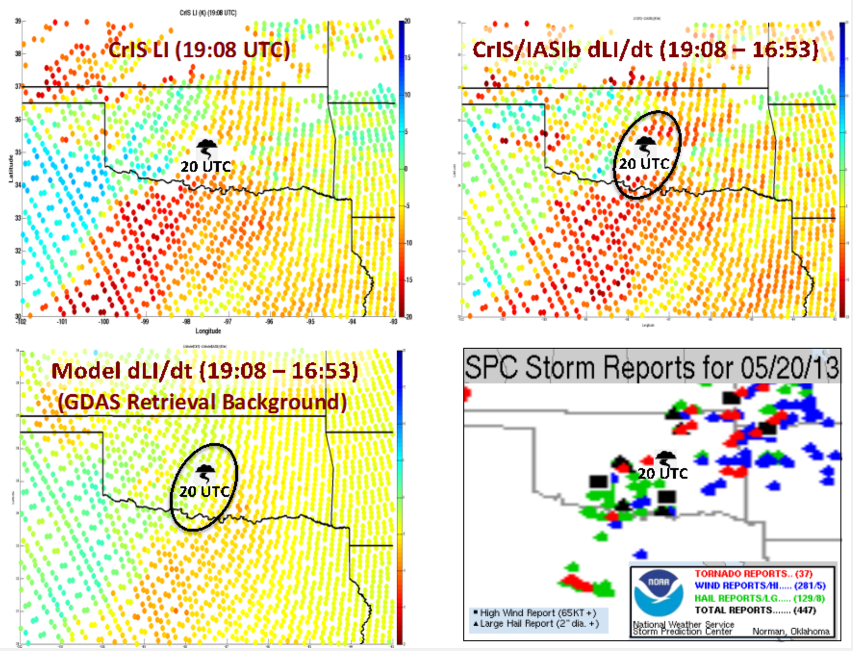
Poster #
3.59

Suomi NPP CrIS and MetOp IASI Sounding Validation

William L. Smith Sr.

SSEC University of Wisconsin - Madison
Madison, WI

- CrIS and IASI Soundings Can Improve Severe Storm Forecasts
  - Diurnal changes of thermodynamic conditions antecedent to severe convective weather can be observed with the combination of CrIS and IASI vertical soundings
  - Data from three airborne missions have been used to validate the accuracy of CrIS & IASI soundings and their potential forecast utility



Stability Change dLI/dt) Prior to Tornado Outbreak Observed During 2013 SNPP Cal/Val-1 airborne Mission

Poster # 3-60

2015 NOAA Satellite Conference
Greenbelt Marriott

Poster Sessions I, II & III
(Annapolis Room)
Poster # Locations

Thank you to all poster presenters!