

GOES: IMAGERY, DATA AND INFORMATION

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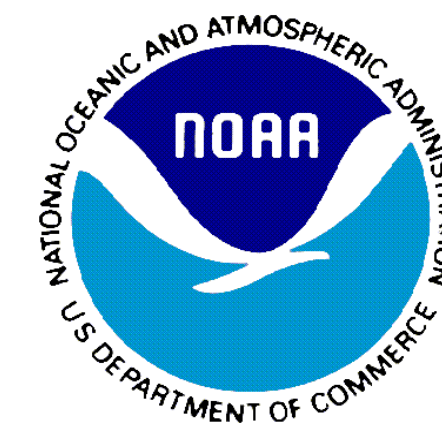
With help from many, many others!

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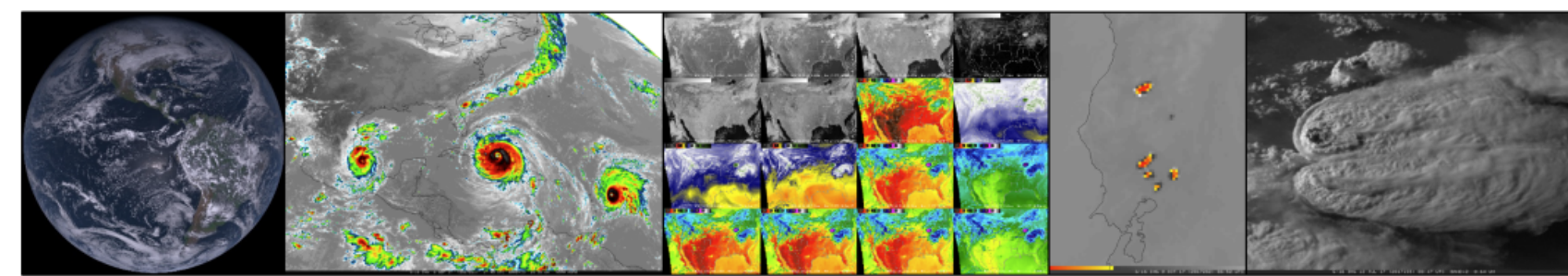
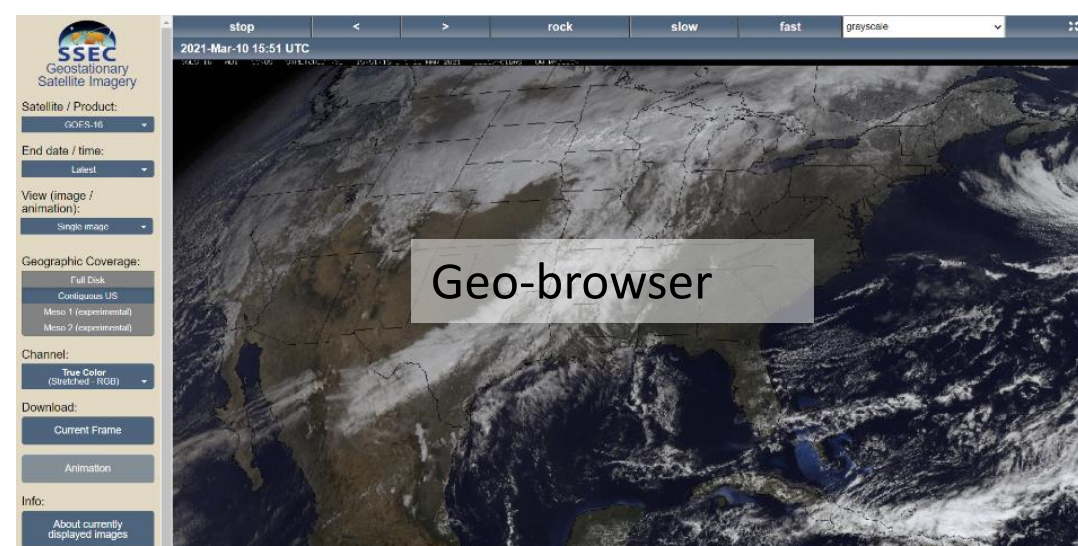
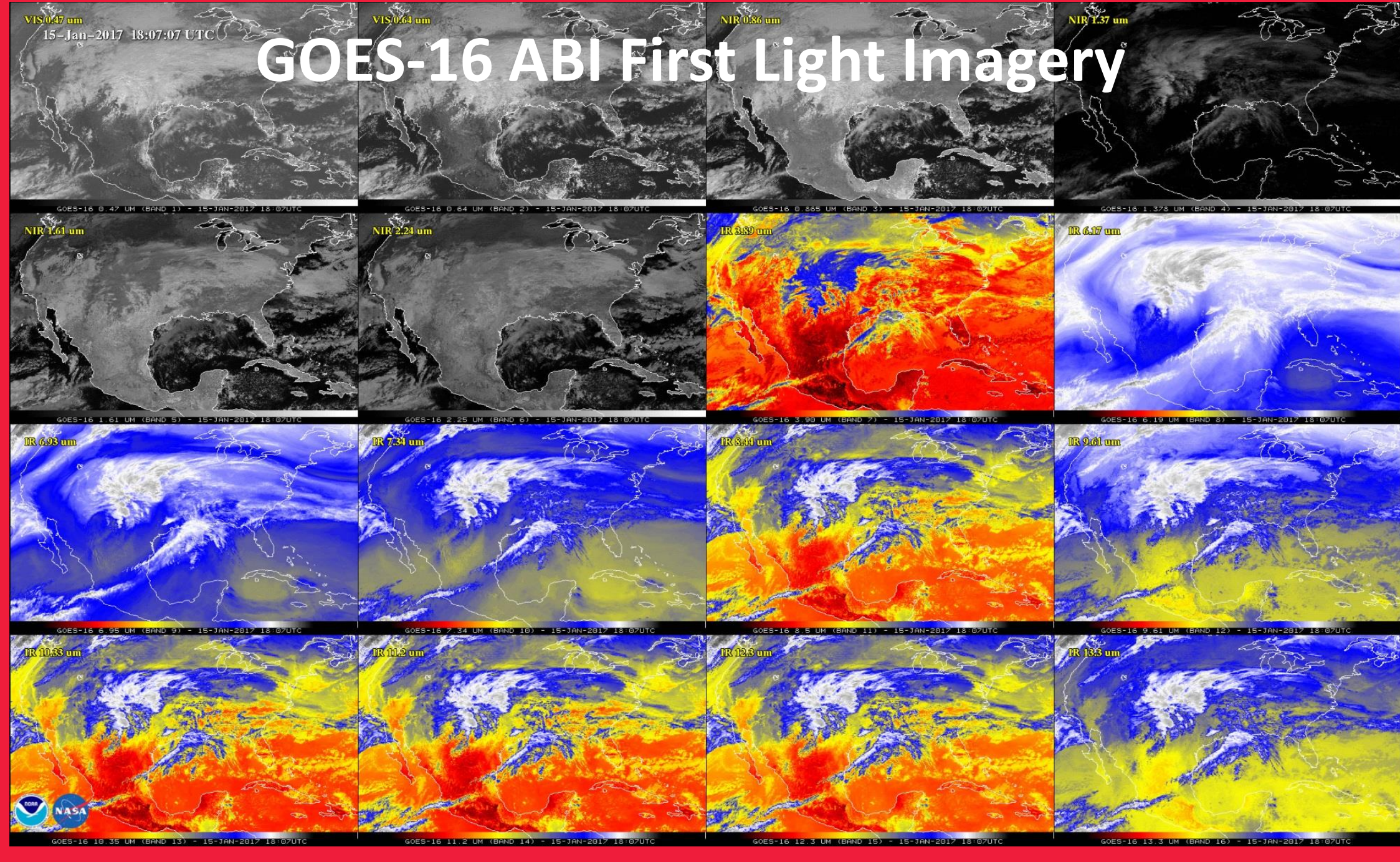
2 NOAA/NESDIS/STAR Advanced Satellite Products Branch (ASPB); Madison, WI USA

<http://cimss.ssec.wisc.edu/goes/goesdata.html>



GOES-R / GOES-16

GOES-16 ABI First Light Imagery



- GOES ABI (Advanced Baseline Imager) Realtime Imagery
- NOAA STAR ABI Image Viewer (can save animated gif) GOES-16 GOES-17 plus a hurricane "finder" page
 - SSEC Geo Browser All bands, Meso1 Meso2, and CONUS and Full Disk, plus a "spectral" (all channels) loop (can save animated gif) and GOES-17
 - reg imagery (SSEC Real Earth TM) All bands, CONUS, and Full Disk, and both meso-scale sectors (can save animated gif) and GOES-17
 - UW/Madison AGS Many sectors (including Southern Wisconsin) and several enhancements and GOES-17
 - RANDM Slider GeoColor all bands and all sectors (can save animated gif) and GOES-17
 - GOES ABI imagery (CIRA) Meso-scale sectors plus Colorado and Central Plains
 - Colors of Display Select bands for the three domains, plus sub-regional and localized sectors (can save animated gif) GOES-17
 - Geosphere US view, several options
 - Earth Satellite Data FD, CONUS, Meso, etc
 - Meso-Chlor 16 bands and RGB images over Chile & band fact sheets in Spanish: [BU 2345678910111213141516](#)
 - DNPE CPTEC Brazil's DSAF All ABI bands, plus select Level 2 derived products, over South America and the full disk. (can save animated gif)
 - Environment Canada Both GOES-East and -West. Several sectors and animations
 - MMN (Mexico) Several sectors
 - USAM (Mexico) Several sectors, Plus GLM and SUTV
 - NASA's Marshall Space Flight Center CONUS and Full Disk sectors GOES-17
 - Emilio Aguinaldo University - Daytona Beach Meteorology Many sectors, several bands. Plus GLM and radar
 - Tropical Tides Many sectors (including Alaska) and Central Pacific GOES-17
 - CIMSS Tropical case with several bands, plus microwave imagery, etc
 - SSEC Geo Browser GOES-16 and -17 in the Mollweide projection (can save animated gif)
 - Connection, Chemistry, and Climate Research Group in the School of Meteorology at the University of Oklahoma
 - CMS Enhanced Data Display (experimental)
 - Cool real-time 3D Satellite (spacecraft and imagery) viewer from SSEC GOES-16 and GOES-17
 - Zoom Earth
 - GOES-16 ABI imagery from a DIY GRB receiving system by @space2002 and @H_Net, FD, CONUS and Meso-scale
 - GOES-16 ABI imagery from SMN Argentina @SMN_Argentina, for various sectors and select bands
 - CSPZ GeoSatellite from UW SSEC
 - GOES-16 Global ISCCP-PI Browser System for more information. Also see the HURSAT imagery archive based on ISCCP-B1 data
 - GOES from @space University of Albany, SUNY of the GRIDSAT grid over several domains
 - Satellite Imagery and Cloud Products Data from NASA Langley
 - WorldView from NASA (add layer, search on GOES, select layer, click on movie icon to custom tuning (thru over 1 day) to get 10min intervals)

- GLM (Geostationary Lightning Mapper)
- NOAA STAR GOES-16 ABI w. GLM Image Viewer CONUS ABI w. GLM GLM FED (Flash Event Density) + GeoColor
 - GLM real-time data (SPOT)
 - GLM and ABI real-time data (SSEC Real Earth TM) for Groups and Group Density
 - GLM via SLIDER (CIRA)
 - Worldwide ABI (C-band) and GLM (including gridded products) can save animated gif
 - 2017 GOES-16 paper by S. Rudlosky et al. 2018 GOES-16 paper by S. Rudlosky et al.
 - GLM Ground System Status and Product Performance Guide for Data Users

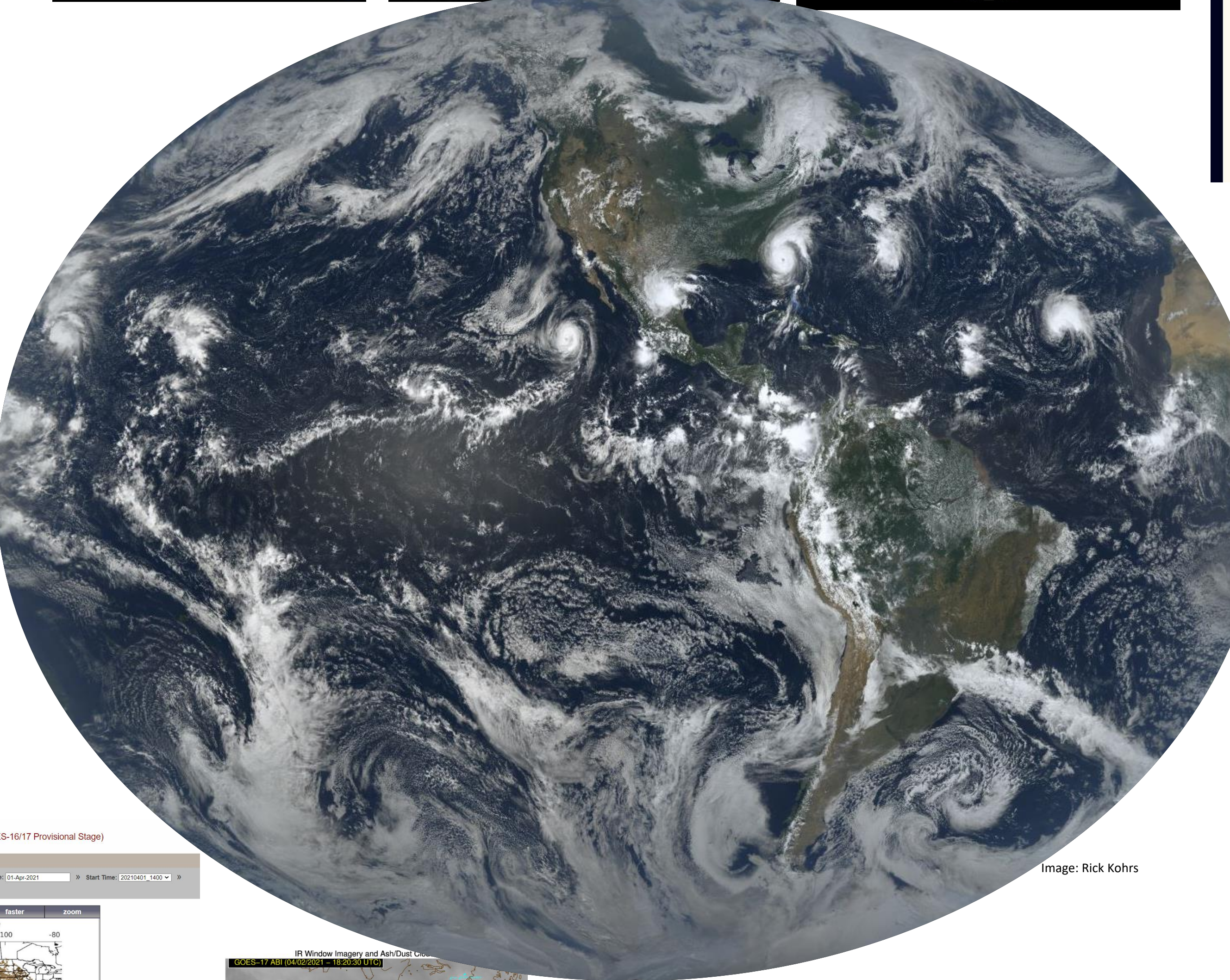
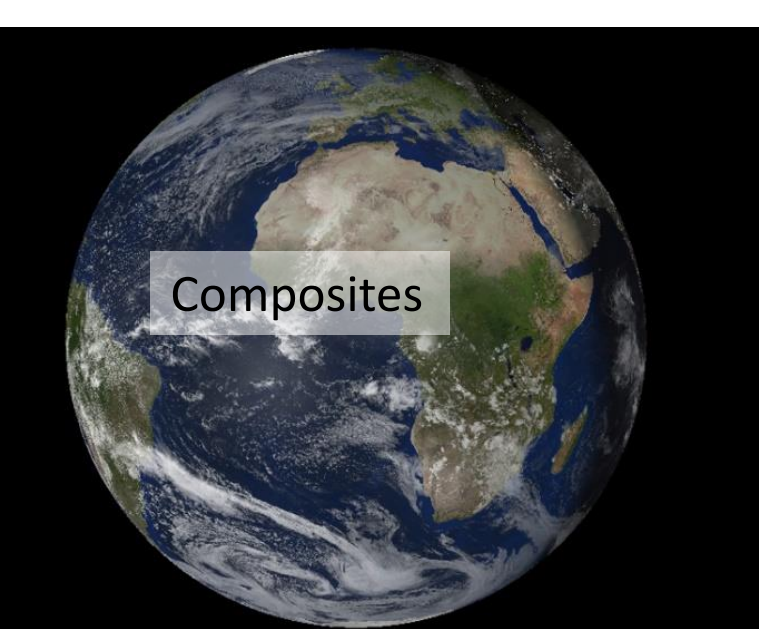
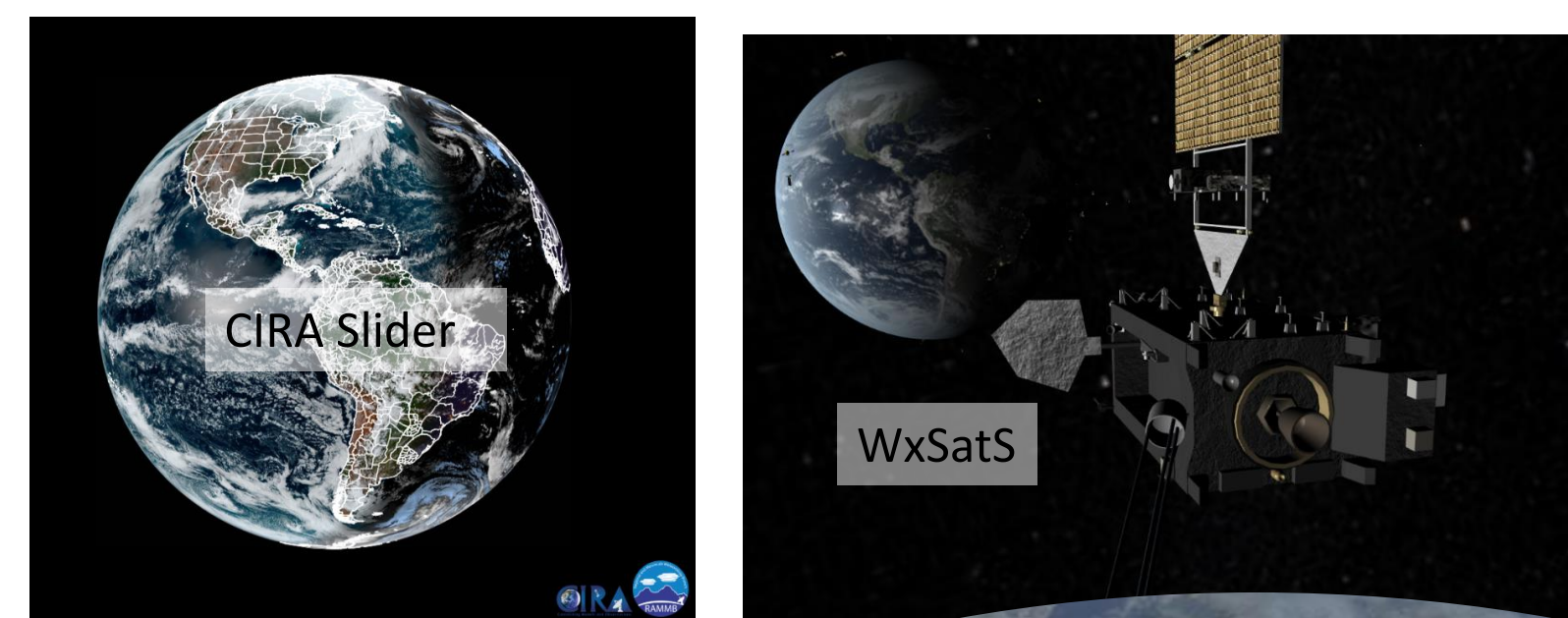
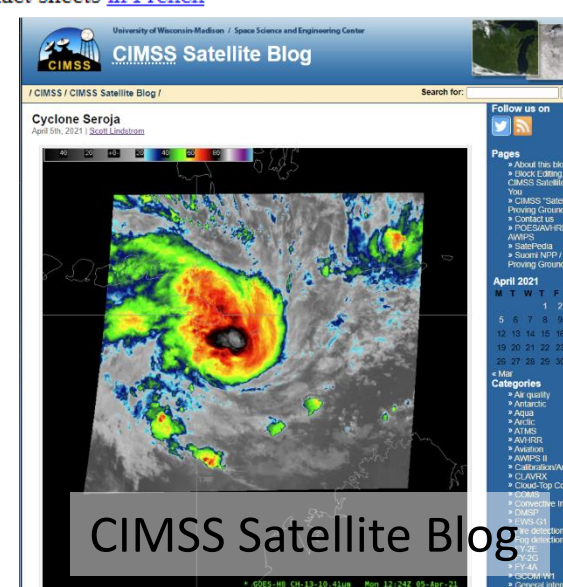
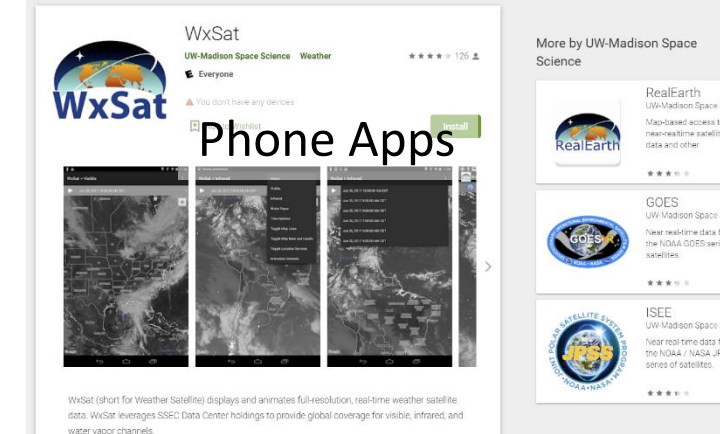
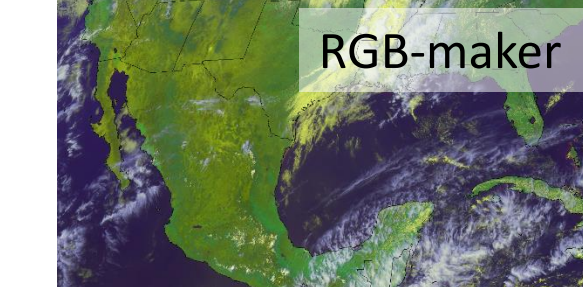
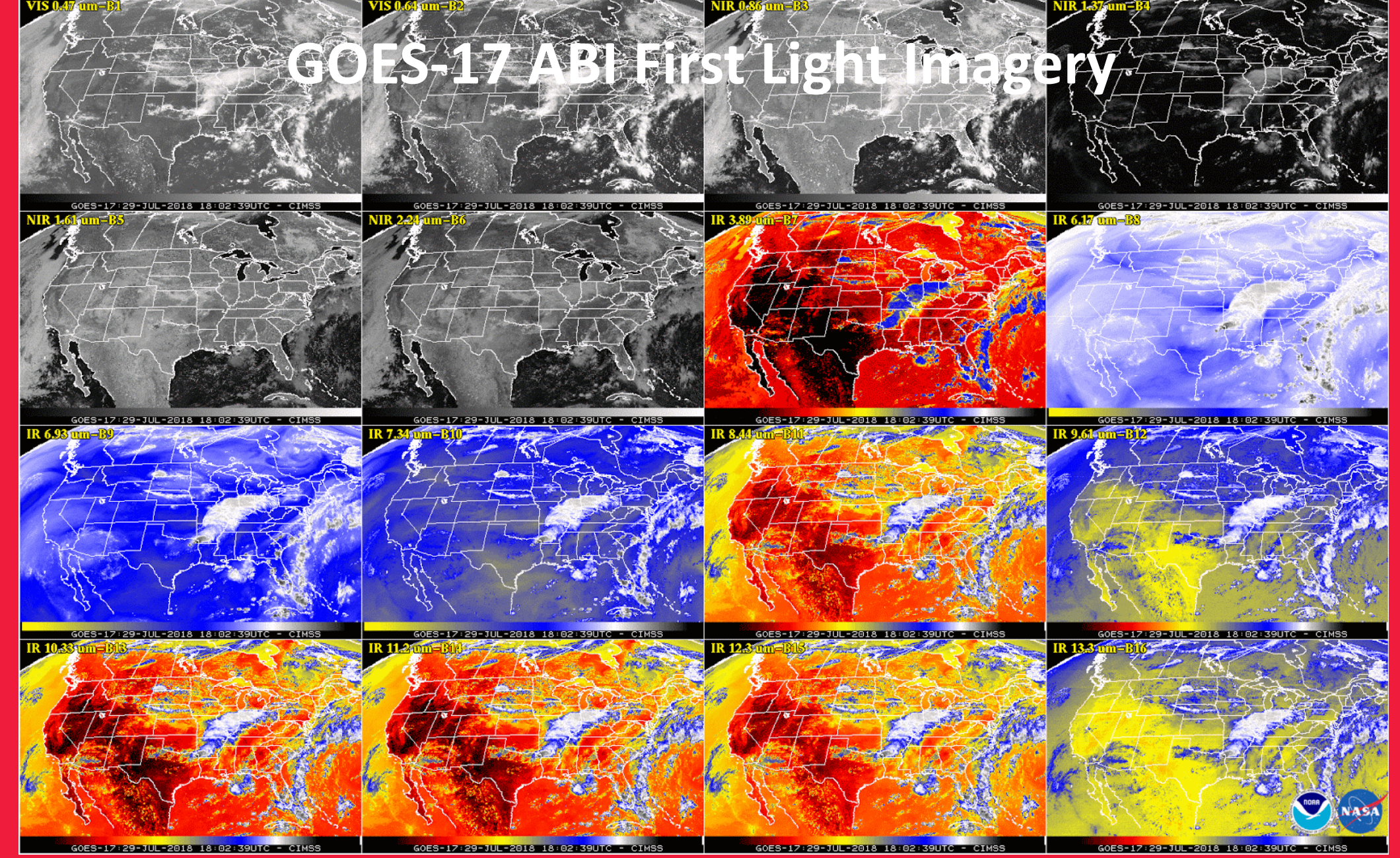


Image: Rick Kohrs

GOES-S / GOES-17

GOES-17 ABI First Light Imagery



GOES Calibration

- NOAA STAR GOES-16/17 calibration page Cal Event Log
- CIMSS Imagery 16-band, time difference imagery 16-panel of the ABI for both CONUS and Full Disk and GOES-17
- GOES-16/17 Comparisons for regions from both the FD and CONUS sectors
- GOES Spectral Response Functions Plots and files GOES-16/17 and other GOES, plus Planck coefficients, also from the CWG
- GOES-16 and GOES-17 ABI Channel Wavelength Functions Both static and real-time. Use the training video
- Product Performance Guide for Level 1b and CMV GOES-16 and GOES-17 and PS-PVR materials GOES-16 and GOES-17

GOES ABI Data

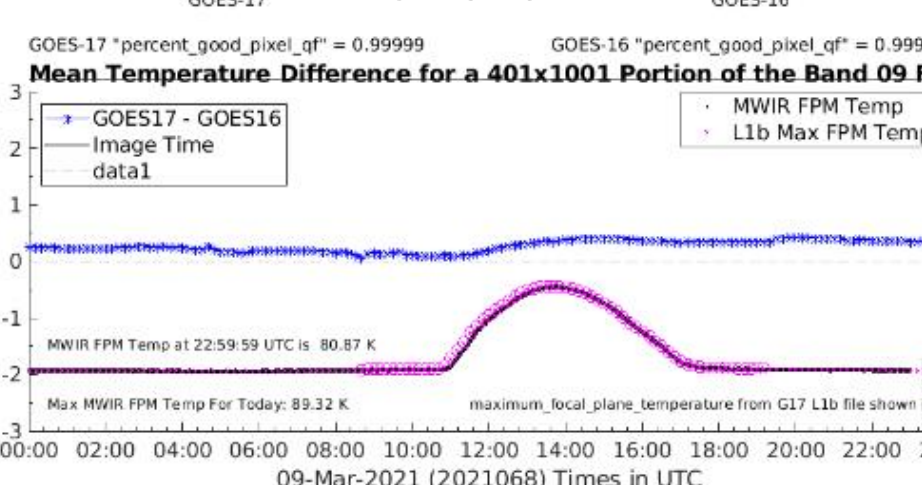
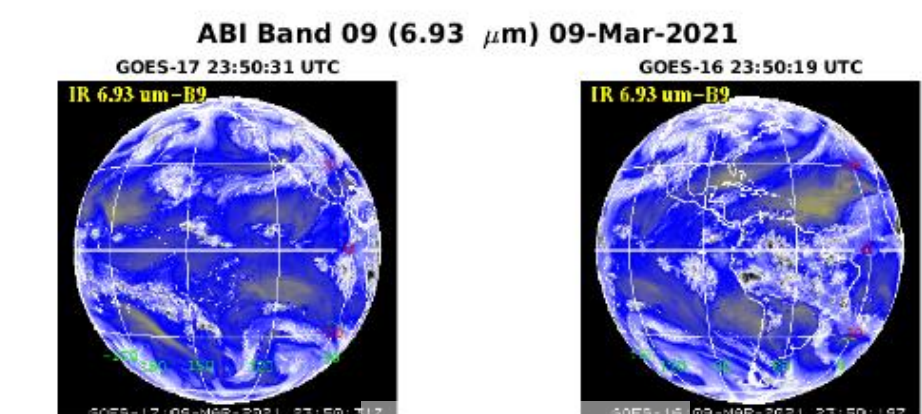
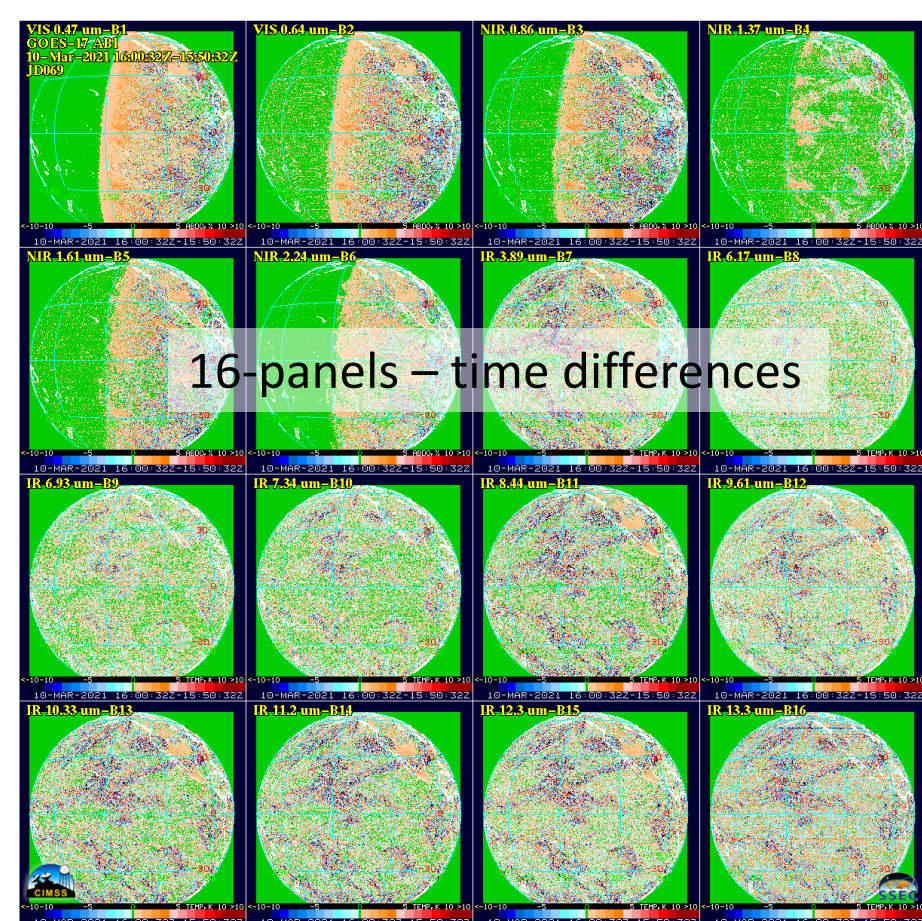
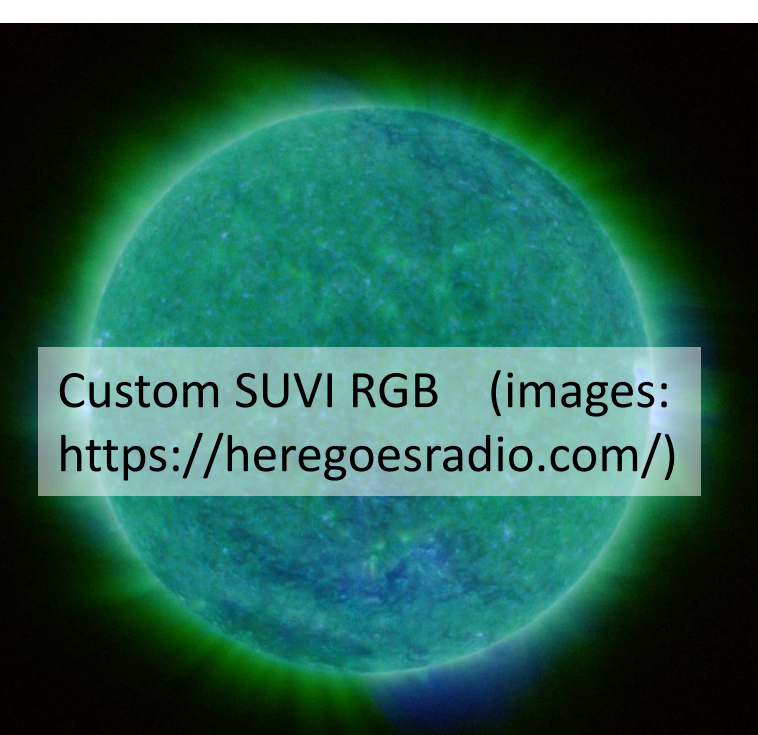
- NOAA CLASS (GRABIPD) for both GOES-16 or GOES-17 radiances and imagery. Need to register. More info and video on how to access
- GOES-R Series Data in the NOAA Big Data Project (including derived products) including via the AWS
- Geostic Cloud Platform for GOES-16 ABI
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- Amazon AWS and OCC GOES-16 or -17 data fetcher from @blvlocksk (Click on the Products pull-down menu)
- OCC Environmental Data Commons for GOES-16 and -17 data
- UNIDATA Publicly Accessible Metadata Archive system (LEAD UNIDATA UCAR.EDU)
- SSEC Satellite Data Services Inventory (UW-Madison)
- GEOSTICcan Americas, and a huge part of GEOSTICcan

GOES Space Weather

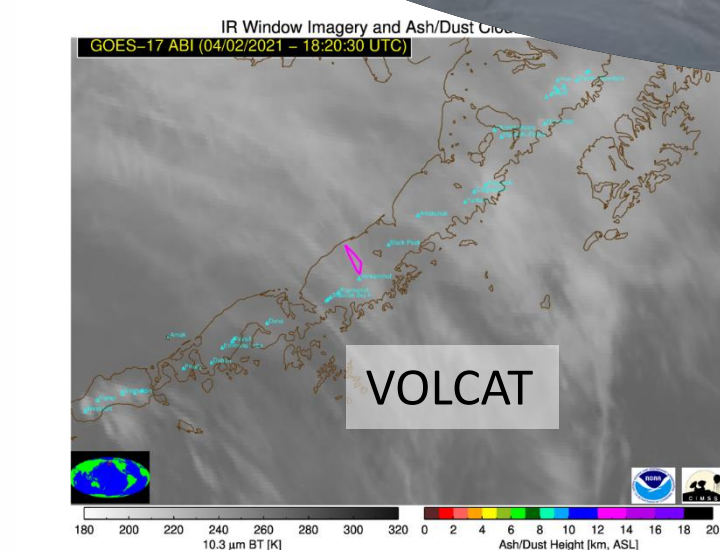
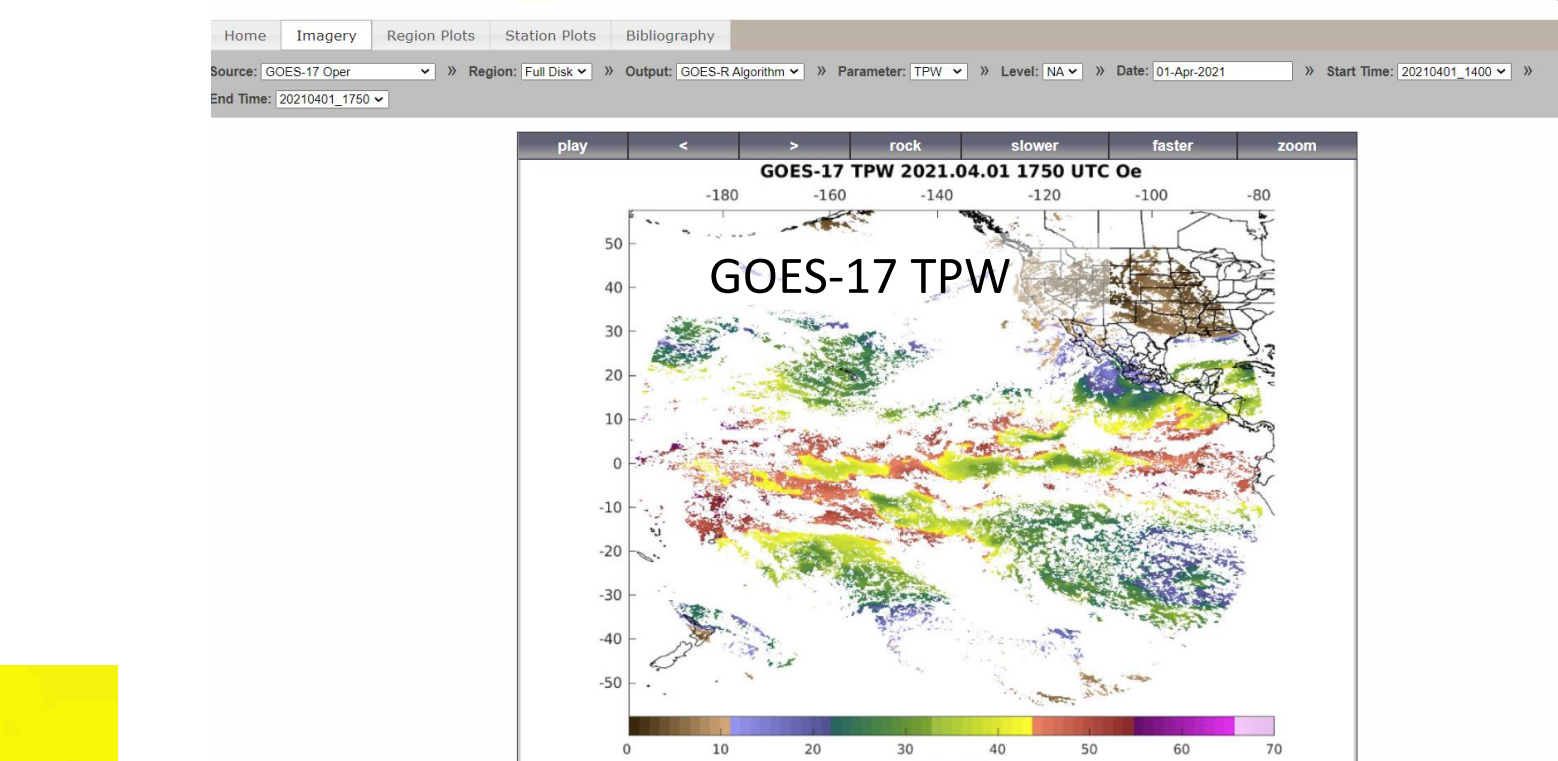
- GOES-R Series Space Weather Data
- GOES-16 SUTV imagery from the Space Weather Prediction Center (SWPC)
- GOES-16 SUTV imagery from a DIY GRB receiving system by @space2002 and @H_Net, and a SUTV daily RGB maker
- GOES-16 SUTV First Light RGB-maker small and large
- GOES-17 SUTV First Light RGB-maker (Preliminary, non-operational)
- Meso Space Weather info
- Cool GOES-16 SUTV animations Full Solar routine and Large solar flare and Partial Solar Eclipses

(Free) Software

- MDIAS.V (UW-Madison)
- UET Satellite Information Fingerprinting Tool (UW-Madison). More info
- Python notebook displays ABI data from @blvlocksk
- SSEC HYPER use sample in python based CPT-Data Most recent version of the code
- GOES-16 Manipulation Tools from GNC-A
- Manipulation GOES-17 with GDAL from the OCC
- Increased Data Access (IDA) (CONIDA)
- CSPZ Geo Community Satellite Processing Package for Geostationary Data GeoGrid Software Package
- Increased Data Access (IDA) (CONIDA)
- Energy from NASA Goddard
- Python GOES-16 ABI Example
- Imagery image manipulation
- Software for Manipulating Displaying NORCE Data list from UNIDATA
- Weather and Climate Toolkit (WCT) from NOAA/NCEI
- Reformer's Guide to GOES-R Series Data Resources compiled by Danielle Looos, GOES-R Product Readiness and Operations



CIMSS GOES/GOES-R LAP Validation Tool (GOES-16/17 Provisional)



Level 2 - Derived Products, etc.

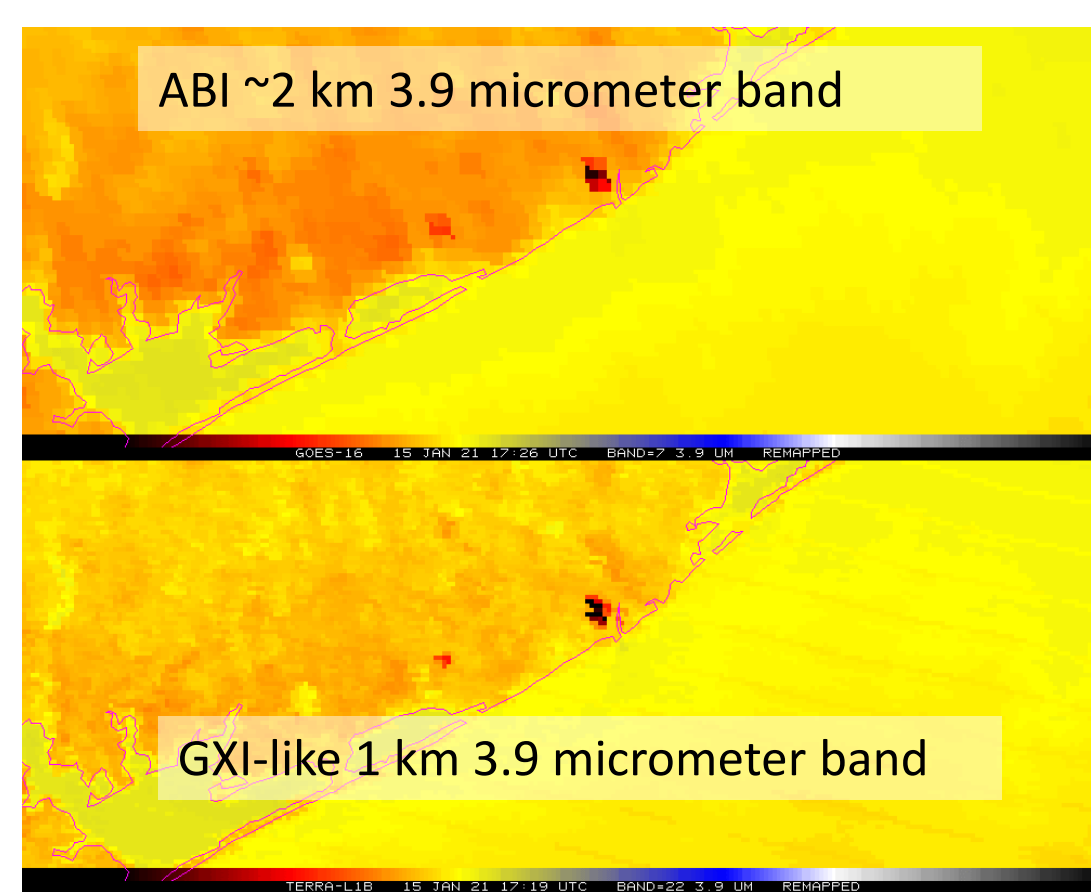
- NOAA CLASS Products Archive Cloud properties: SST, TFW, etc. (ACIA for cloud heights) (GOES-16) Product Quality info
 - NOAA NCEI's Archive Information Request System (AIRS) Clouds (ACIA for cloud heights, LST, SST, TFW, etc. (GOES-16 and GOES-17)
 - GOES-R Series Level 2 Data in the NOAA Big Data Project (including derived products)
 - GOES-R Series Cloud Product Evaluation (GOES-16/17 and other sensors)
 - Sounding Validation Tool TFW, rainfall, parameters, etc. (GOES-16 provisional, GOES-17 beta stage)
 - NOAA CIMSS Volcanic Cloud Monitoring Web Portal Both LEO and GEO imagery (research)
 - NOAA CIMSS ProbSevere a statistical model that predicts the probability that a storm will produce severe weather in the near-term (research)
 - Arctic Watch from NOAA STAR
 - GOES-16 or -17 Derived winds from NOAA STAR
 - Area counts from @blvlocksk
 - Amazon AWS and OCC GOES-16 or -17 Level 2 data fetcher from @blvlocksk
 - CIMSS experimental radiance product
 - Trade and Climate Toolkit (WCT) from NOAA/NCEI to view L2 products
- JMA's ABI (Western Pacific, Eastern Asia, Australia, etc.) Imagery
- ABI links including RGB quick links
 - KMA's ABI (Western Pacific, Eastern Asia, Australia, etc.) Imagery and Products
 - Imagery and RGB composites from the AMI on GK2A operated by KMA
 - Derived products (Satellite Rainfall, clouds, land-sea surface, Aerosol/AMV, aviation, radiances) from the AMI on GK2A operated by KMA

What's Next?

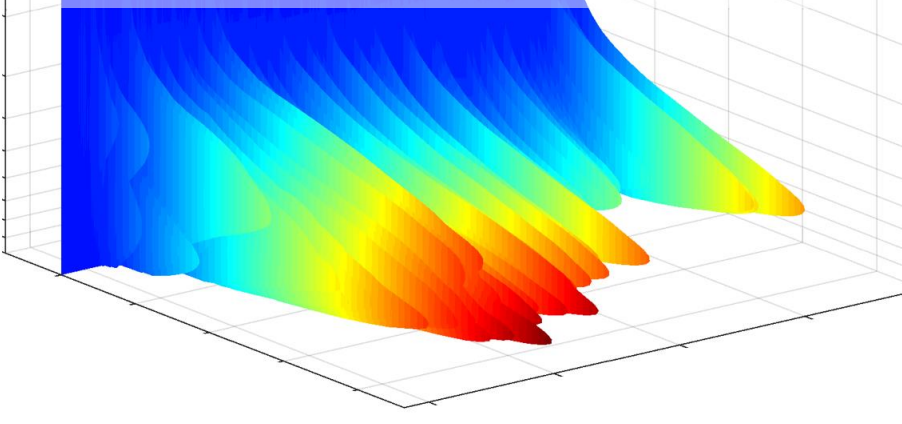
- GOES-T Launch
- GOES-18 operational
- GOES-U Launch

GeoXO

- Next Generation Imager
- Second Generation Geo Lightning Mapper
- Hyperspectral Sounder
- Atmospheric Composition sensor
- Ocean Color sensors
- Improved Space Weather Instruments
- <https://www.nesdis.noaa.gov/GEO-XO>



GXS LW q Weighting Functions



Links and References

Official GOES-R:
CIMSS GOES-R:
CIMSS GOES-R Page of Links:
CIMSS Satellite Blog:

<http://www.goes-r.gov/>
<http://cimss.ssec.wisc.edu/goes-r/>
<http://cimss.ssec.wisc.edu/goes/goesdata.html>
<http://cimss.ssec.wisc.edu/goes/blog/>

Schmit, T. J., P. Griffith, M. M. Gunshor, J. M. Daniels, S. J. Goodman, and W. J. Lebar, 2017: A closer look at the ABI on the GOES-R series. Bull. Amer. Meteor. Soc., 98, 681-698, doi:10.1175/BAMS-D-15-00230.1.

GOES-R Series: A New Generation of Geostationary Environmental Satellites
<https://www.elsevier.com/books/the-goes-r-series/goodman/978-0-12-814327-8>

