



The Satellite Analysis Branch Hazard Mitigation Programs and Preparing for the GOES-R and JPSS Future



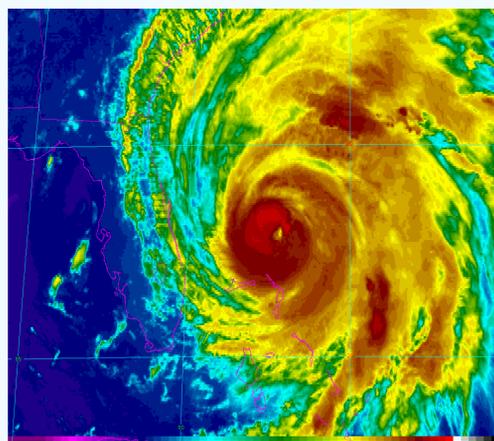
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Satellite Analysis Branch

The Satellite Analysis Branch (SAB) serves as the operational focal point for real-time imagery products and multi-disciplinary environmental analyses within NOAA Satellite and Information Service (NESDIS). The Branch's primary mission is to use cutting edge satellite analysis techniques needed to support disaster mitigation and warning services for U.S. federal agencies and the international community. Environmental analyses are provided to National Weather Service (NWS) Warning and Forecast Offices, National Center for Environmental Prediction (NCEP), and to oceanographic and other environmental users of NESDIS satellite products.

The SAB is staffed 24x7 to monitor and distribute products related to volcanic eruptions, ash extent and movement, global tropical cyclone analysis, wildfire detection and smoke emissions monitoring, and heavy precipitation nowcasting and analysis. This poster presents an overview of SAB and our collaborations with the GOES-R and JPSS Proving Grounds.



Hurricane Irene Aug. 2011



Mid Atlantic Flooding Sept. 2011

Satellite Analysis Branch Precipitation Program

The SAB provides quantitative satellite-derived precipitation estimates (SPENES) and satellite trend guidance to the NWS when heavy convective rain threatens to produce flash flooding over the lower 48 states, Puerto Rico, and Hawaii. Support is also provided for heavy rain and snow associated with winter storms, and for heavy lake effect snow. In addition to the quantitative satellite precipitation estimates, the SPENES message includes a discussion of satellite trends and briefings to the Hydrometeorological Prediction Center (HPC).

GOES and Polar satellite imagery play an important role in determining possible flash flooding. The GOES-R and JPSS satellite platforms will play even a larger role in this process of determining the potential for flash flooding. The capability to have satellite imagery ingesting every five minutes or every one minute during RSO routines for GOES-R and newly designed microwave instruments on JPSS platforms and multiple new algorithms and products from both satellites, will be a great benefit to us and our users.

Precipitation Products available at:
<http://www.ssd.noaa.gov/PS/PCPN/>

Satellite Analysis Branch Smoke and Fire Program

The SAB produces a graphical analysis of fire hotspots and smoke utilizing data from GOES instruments, Polar orbiting instruments, and other non-NOAA satellites. Satellite analysts examine automatically derived hotspots and perform a quality control procedure, removing points that are felt to be false detects and adding points that the automated algorithms have not detected through visual analysis. Fires producing detectable smoke are noted and information is supplied as input to an air quality forecast model run by the NWS. The analysis is 365 days a year around over the contiguous 48 states, Hawaii, Mexico and southern Canada. Seasonal analyses are done over Alaska and the rest of Canada during the active fire season. The main focus and interest in the program over the last few years has been locating areas of smoke depicted with an approximation of density using GOES imagery. The temporal resolution of GOES imagery makes it ideal for locating smoke and possibly dust. The hope of both GOES-R and JPSS is the capability of analyzing more than just smoke, but determining aerosol speciation with the associated height level using higher resolution data.

Smoke and Fire Products available at:
www.osdpd.noaa.gov/ml/land/hms.html

The Smoke and Fire Product



Satellite Analysis Branch Tropical Program

The SAB derives the position and intensity of tropical disturbances around the world using the internationally recognized Dvorak technique and cutting edge technologies provided by various research groups. Position and intensity estimates are derived every six hours. They are disseminated electronically via FTP (ftp://ftp.tpc.ncep.noaa.gov/atcf) through the Automated Tropical Cyclone Forecast to the Tropical Prediction Center, via the Satellite Products and Service Division (SPSD) Home Page to the Central Pacific Hurricane Center (CPHC). The tropical program relies heavily on GOES and POES satellite imagery during the development and weakening process of tropical systems. GOES-R and JPSS will provide additional satellite data and products to help focus on these important trends. Overall, this should help improve forecast intensities and position confidence during the life cycle of a tropical system.

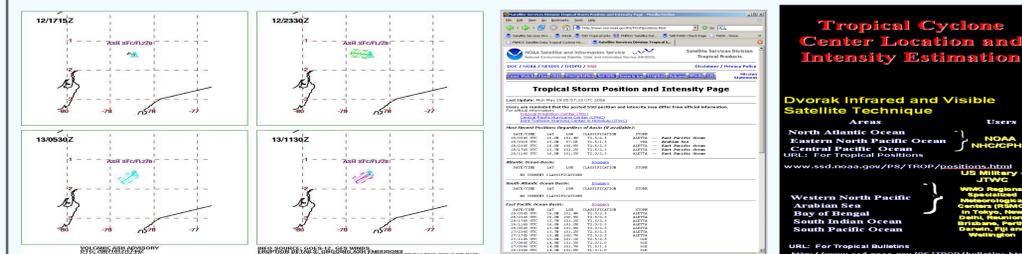
Tropical Products available at:
www.ssd.noaa.gov/PS/TROP

Satellite Analysis Branch Volcanic Ash Program

A Global volcanic ash monitoring program at SAB began in the 1970's and became official in 1987. The Washington Volcanic Ash Advisory Center (WVAAC) was established in 1997 in agreement with the International Civil Aviation Organization (ICAO).

The main source of satellite imagery is GOES. Of any program at SAB, having additional satellite imagery during the GOES-R era will be critical. A majority of the volcanoes in the Washington VAAC area of coverage are not ash active, but can become active quite quickly. Higher Temporal resolution over the continental US, Central and South America will be important for us and to our users. Also, new products testing during the GOES-R and JPSS Proving Ground for ash heights and aerosol speciation will be of great benefit.

Volcanic Ash Products available at:
www.ssd.noaa.gov/VAAC/



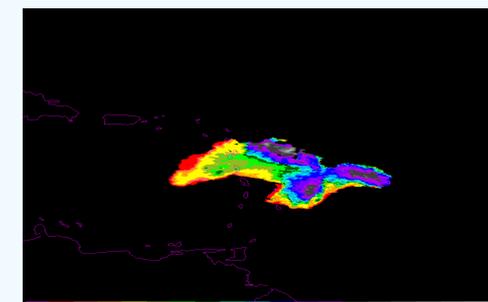
The Volcanic Ash Product

The Tropical Product

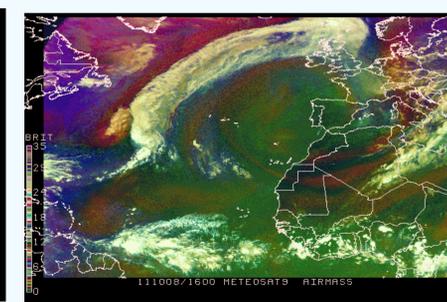
GOES-R and JPSS Proving Ground Goals

The overall goal of SAB for both the GOES-R and JPSS Proving Grounds is making sure our satellite analyst and users are ready for the future. SAB is making sure of this in several ways:

1. Working with both proving ground committees to come up with a plan to test and monitor GOESR and JPSS simulated imagery and products.
2. Working with the "Satellite Champion" to ingest, educate and evaluate imagery and products for GOES-R and JPSS.
3. By having the "Satellite Champion relay the evaluations, concerns and changes that are requested by the forecaster/satellite analyst.
4. To have a "Satellite Champion" for JPSS located at College Park, MD
5. Providing requirements needed by the user and introducing them to our SPSD User Service team.
6. Others?



SEVIRI products are now available via McIDAS



SEVIRI RGB Airmass Product