DANGER AT SEA: DIAGNOSING AND COMMUNICATING THE THREAT FOR STRONG MARITIME THUNDERSTORMS

Michael J. Folmer
(UMCP/ESSIC/CICS)
Satellite Liaison at OPC/SAB/TAFB/WPC
Contributions from:
Alexandra Stinner (USCGA), Joseph Sienkiewicz (OPC), Hugh Cobb (NHC/TAFB), Christy Schultz (NOAA Corp), Scott Rudlosky (NESDIS/STAR), Steve Goodman (GPO)

94th AMS Annual Meeting
02/05/14
OPC Forecast Functions

Atlantic High Seas    Pacific High Seas
Atlantic Offshore    Pacific Offshore
Outlook (Medium Range)
Special Project Support
  • Antarctica NMFS
  • USCG Arctic (with AR)
  • Japan
Tropical Analysis and Forecast Branch (TAFB)

- **Year round (24/7/365) products**
  - Marine forecasts (graphical and text) and discussions (MIM)
  - Surface analyses and discussions (TWD)
  - Aviation forecasts and warnings (backup responsibilities) **
  - Satellite-derived rainfall estimates

- **Hurricane Season**
  - Tropical cyclone intensity estimates using Dvorak technique
  - Media support to NHC (English, Spanish, French)
  - Radar tracking of tropical cyclones
  - Forecast support to Hurricane Specialists (Marine)
EXPLOSIVE CYCLOGENESIS

OFFSHORE CONVECTION
- Lightning Strike Density

LOW CLOUDS AND FOG

OCEANOGRAPHIC PRODUCTS
NOAA/NWS Marine Responsibility

WARNINGS
Hurricane Force Storm
Gale

High Seas - HSF
Offshore - OFF
Coastal - CWF

METAREA XII
METAREA XVI
METAREA IV
November 7, 2012 Nor’easter
GOES-13 Infrared overlaid with OT Magnitude
Day-Night Band
Unique use at WPC and SAB
Coupled with the Overshooting Top Detection (Bedka)

VIIRS LWIR AND OTD

VIIRS DNB AND OTD

Courtesy of CIMSS and NASA SPoRT
Large MCC (04/02 - 04/04)
GOES-13 Infrared overlaid with (Vaisala) GLD-360 Lightning Density
Unusual Pacific Offshore Event
GOES-15 WV overlaid with (Vaisala) GLD-360 Lightning Strikes
June 12-13, 2013 “Derechoes”
GOES-14 SRSOR 1-min Visible overlaid with (Vaisala) GLD-360 Lightning Strikes
June 12-13, 2013 “Derechoes”
GOES-14 SRSOR 5-min Visible overlaid with (Vaisala) GLD-360 Lightning Density
June 13, 2013 “Derecho”
Ocean Perspective
January 21-22, 2014
Clipper/Nor’easter
January 21-22, 2014
Clipper/Nor’easter
The WPC, OPC, and SAB have progressed from using basic satellite channels to new satellite techniques with help from the Satellite Proving Ground.

The main uses of satellite imagery at these centers is to compare current conditions with NWP initialization and current conditions.

New GOES-R and JPSS satellite products are assisting current operations, well ahead of launch time.

Future direction: Continue to explore new satellite techniques that will enhance operations and lessen forecast errors.
Proving Ground for Marine, Precipitation, and Satellite Analysis

OPC Facebook Page

GOES-R/JPSS National Centers Perspective Blog