2015 Satellite Proving Ground at the National Hurricane Center Tropical Analysis and Forecast Branch

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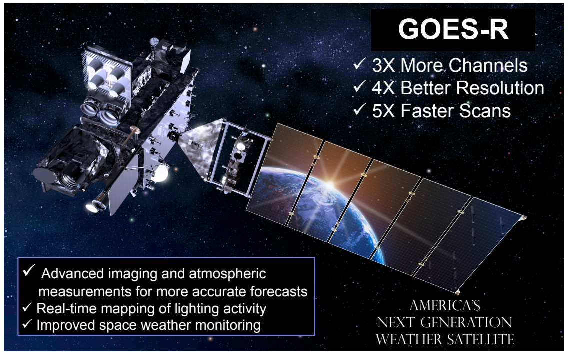

Figure 1. The Geostationary Operational Environmental Satellite-R Series

Comparison GOES-R Series ABI vs Current GOES		
Attribute:	**ABI**	**Current Imager**
Spectral Coverage	16 bands	5 bands
Spatial Resolution		
0.64 µm VIS	0.5 km	~ 1 km
Other VIS/N-IR	1.0 km	N/A
Bands (> 2 µm)	2 km	4 km
Spatial Coverage		
Full Disk	4/hr (Every 15 min)	Scheduled 3 hrly
CONUS	12/hr (Every 5 min)	4/hr (Every 15 min)
Mesoscale	Every 30 sec	N/A
VIS Reflective Bands		
On-orbit Calibration	YES	NO

Table1. The Advanced Baseline Imager (ABI), a multi-channel passive radiometer, will include 2 VIS, 4 N-IR and 10 IR channels

Winter Demonstration Products

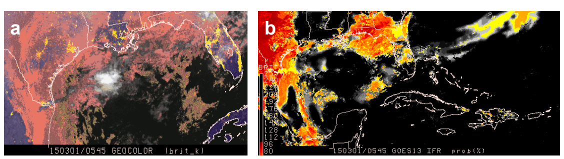

Figure 3. GeoColor imagery (Fig. 3a) provides a seamless transition between day and night with ice clouds appearing white in both day/night, while low clouds are enhanced for fog and low stratus identification at night (pinkish hue). The Fog/Low Stratus (FLS) imagery (Fig. 3b) identify cloudy regions with ceilings less than 1,000 ft and/or surface visibilities less than 3 miles (IFR), and ceilings less than 500 ft and/or visibilities less than 1 mile (LIFR). The FLS is a blended product merging satellite, NWP model, daily SST, and static ancillary data. This product works day/night and provides fog probability even when multiple cloud layers are present.

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Satellite Proving Ground for Marine, Precipitation, and Satellite Analysis at TAFB:

Preparing forecasters for the advanced capabilities of GOES-R is essential to the success of the mission!

Figure 2. a) ATLC 7°N-31°N W of 35°W including Caribbean and GoM, **NE PAC** Equator-30°N E of 140°W and from Equator-3.4°S E of 120°W, and **SE PAC** 3.4°S-18.5°S E of 120°W **b)** 32 zones ATLC S of 31°N W of 55°W and from 7°N-19°N between 55°W-64°W **c)** Equator to 32°N

Tropical Waves Tracking and Analysis

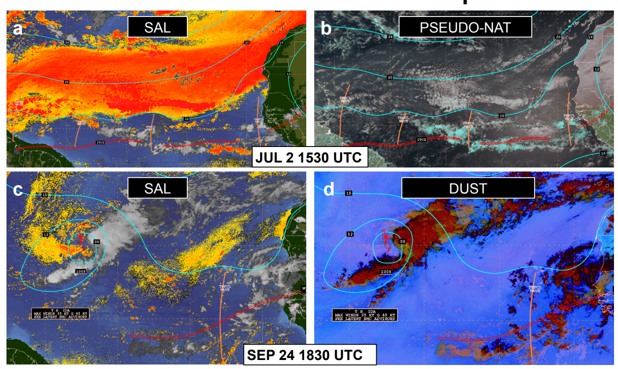
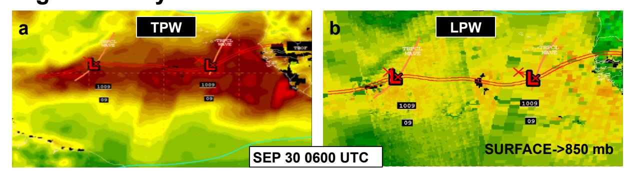


Figure 4. RGB Composites. Extensive and constant Saharan Air Layer (SAL) dry air (Fig. 4a) and dust (Fig. 4b) contributed to the overall weak tropical waves pattern of the 2015 Hurricane Season. Dry air (Fig. 4c) and dust (Fig.4d) intrusion along with strong shear weakened TS IDA to a TD



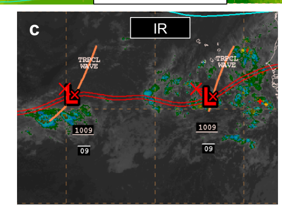


Figure 5. CIRA Layer PW (LPW) Imagery (Fig. 5b) show tropical waves embedded in a moderate moist environment whereas the Total PW (TPW; Fig. 5a) depict high moisture. LPW also better represent areas of dry air devoid of convection as shown by the enhanced IR (Fig. 5c)

Convective Products

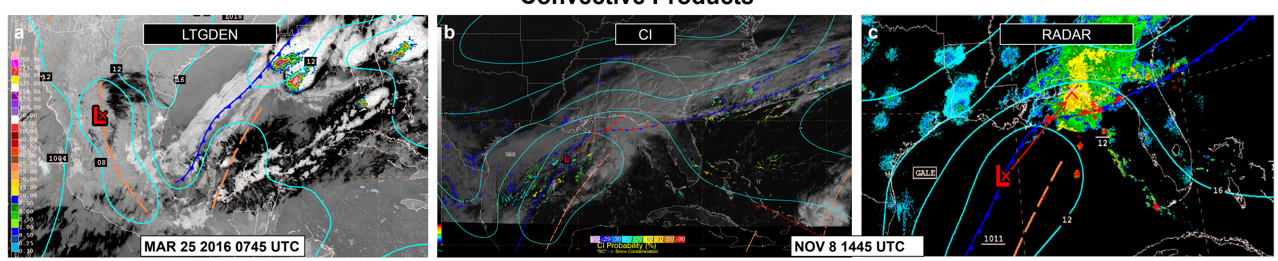


Figure 6. The GOES Lighting Density (GLD-360; Fig. 6a) and Convective Initiation (CI; Fig. 6b) products have assisted forecasters in diagnosing the threat for heavy rain in offshore and high seas waters where radar data (Fig. 6c) is not available. The CI product fuses GOES and NWP fields to provide a probability of convection within the next 2 hours (nowcast). The GLM will collect the frequency, location and extent of total lighting discharges to identify intensifying thunderstorms and tropical cyclones. Figure 6a shows strong offshore supercells producing severe thunderstorms ahead of a cold front with the strongest updrafts being delineated by the pink and purple shades of the product scale. This storm may have been producing strong waterspouts and dangerous winds for mariners.