

7th NOAA TBPG Workshop

College Park, MD

April 5-6, 2016

Roundup Presentation
GOES-R Proving Ground (GRPG)
Presented by
Steve Goodman, NOAA NESDIS



GOES-R: LAUNCHING OCTOBER 2016

Science Workshop, October 10
Broadcasters Workshop, October 12
Teachers Workshop, October 13-14
Launch, October 13

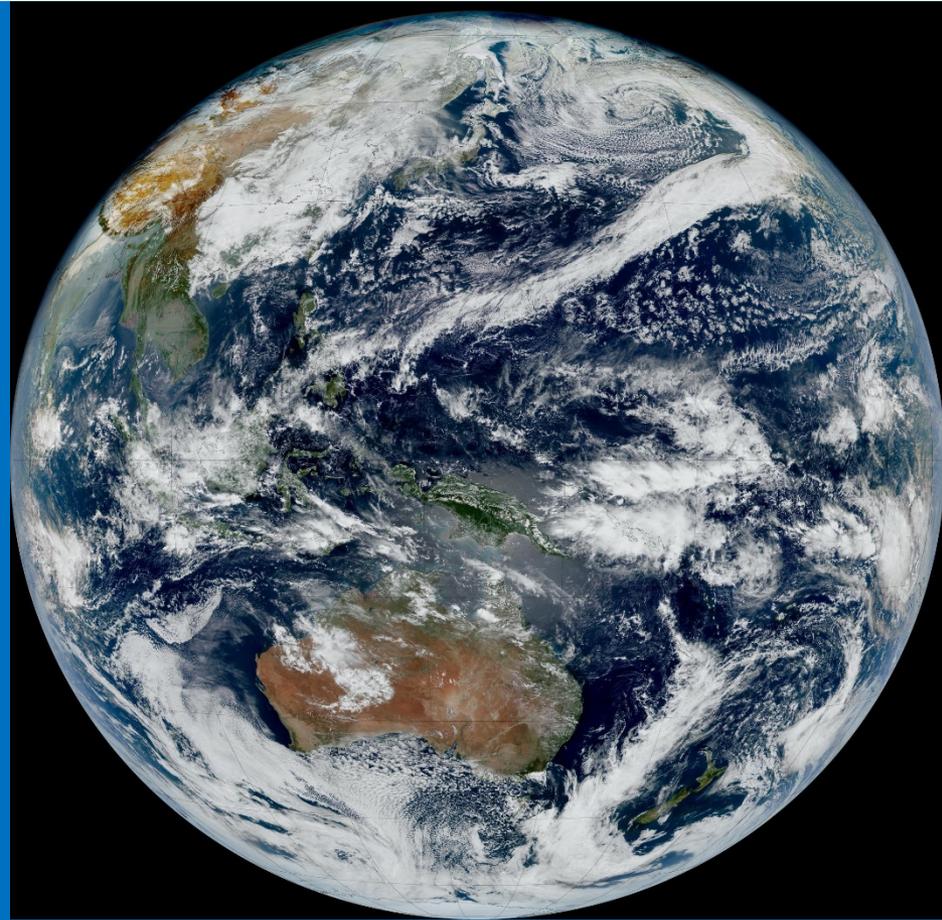


FY15 Highlights

GRPG

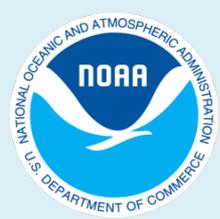
Advanced Himawari Imager (AHI) Evaluations:

- AHI very similar to GOES-R series Advanced Baseline Imager (ABI), AHI replaced MTSAT in December
- Operational coverage for NWS Pacific Region
- Testing impacts to volcanic ash and cloud analysis
- Provided full resolution Himawari imagery for Proving Ground demonstrations
- Performance validation of a dozen GOES-R algorithms underway using Himawari imagery as proxy for the ABI



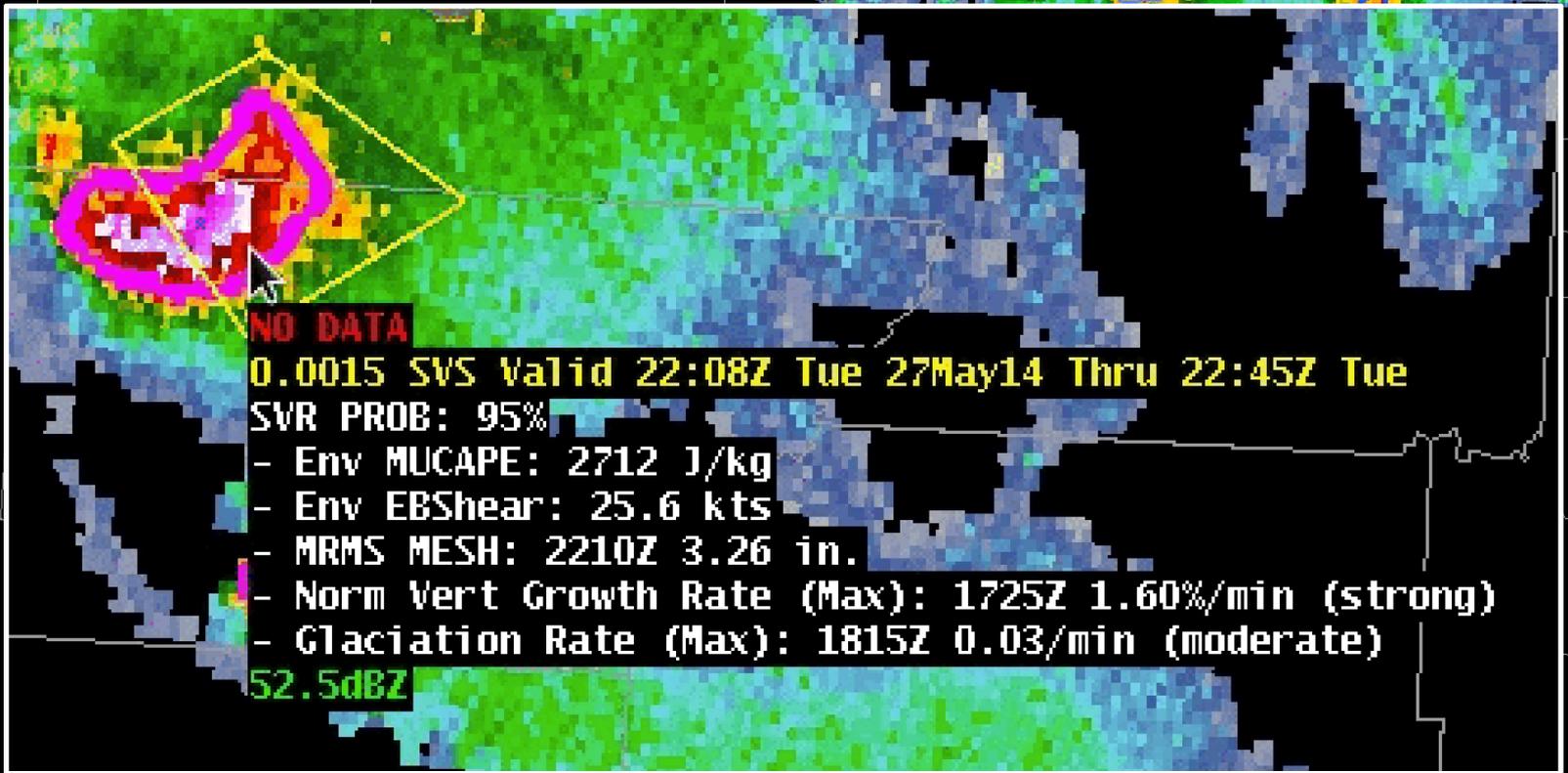
***Himawari-8 True Color RGB
Composite from January 25, 2015.***

S. Miller (CIRA) on behalf of the GOES-R AWG Imagery Team



FY15 Highlights

GRPG





FY15 Highlights

GRPG

21-Aug-2014 1200 UTC

**GOES-14 SRSOR Vis and IR
incorporated into SPC
operational NAWIPS**

*“The 1-min data gives a more **continuous depiction** of how meteorological features are evolving, versus the ‘snapshot’ approach of coarser temporal resolution images.”*



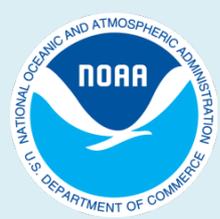


FY15 Transition Metrics

GRPG

Table 1. GOES-R product assessments at 7 NOAA Testbeds

Facility	Major Tests Conducted	Transitioned to Operations	Recommended for Trans. to Operations	Advanced to Experimental Testing Phase
GRPG	Total: 20			
	Himawari Derived Motion Winds		1	
	Himawari Radiances		1	
	Himawari Cloud Products		1	
	Probability of Severe Model		1	
	Meso rapid scan (GOES-14 1-min proxy for ABI)	1		
	VolAsh	1		
	Nearcasting Model			1
	Cloud Cover Layres		1	
	RGB Airmass			1
	GOES-R RGB Nighttime Microphysics Product			1
	Dust RGB			1
	Hurricane Intensity Extimate (Advanced Dvorak)			1
	Aerosol Particle Size		1	
	Ice Concentration		1	
	Ice Age/Thickness		1	
	Ice Motion		1	
	Convective Initiation			1
	Overshooting Top Detection			1
	Lightning Jump Algorithm			1
	Lightning Detection- GLM gridded flash extent density			1



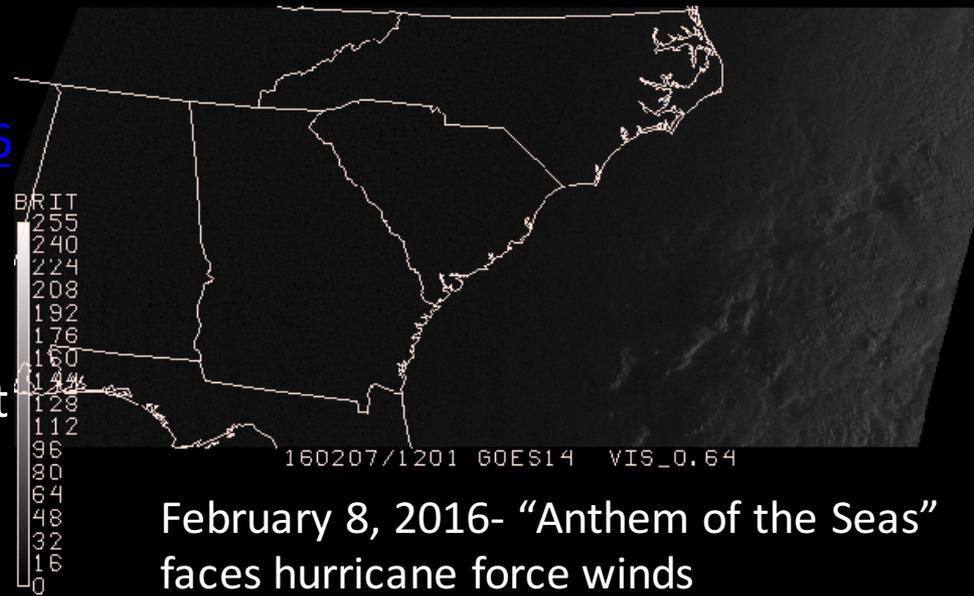
FY16 Activities

GRPG

SRSOR plans for 2016 include February 1-25 and April 18-May 13: VORTEX-SE and Nor'Easters

http://cimss.ssec.wisc.edu/goes/srsor2016/GOES-14_SRSOR.html

GOES-14 provided very unique data and offered a glimpse into the possibilities that will be provided by the ABI on GOES-R in one minute mesoscale imagery



February 8, 2016- "Anthem of the Seas" faces hurricane force winds

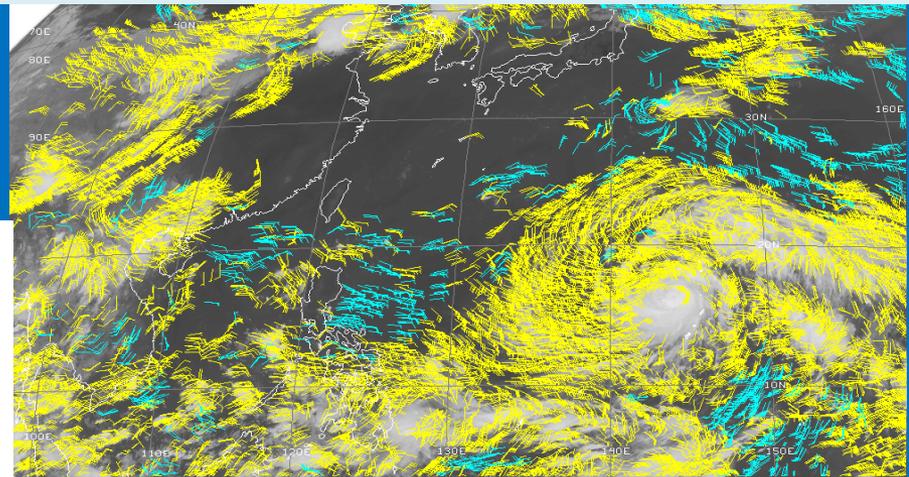
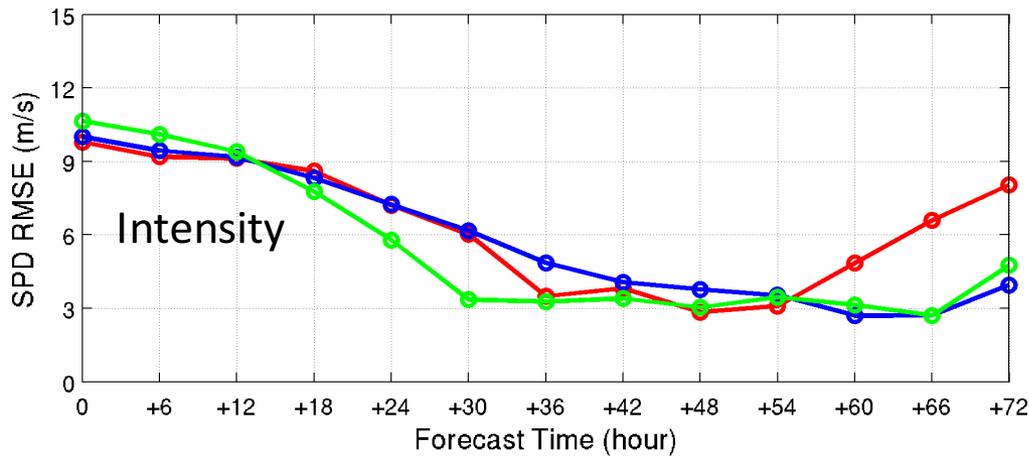
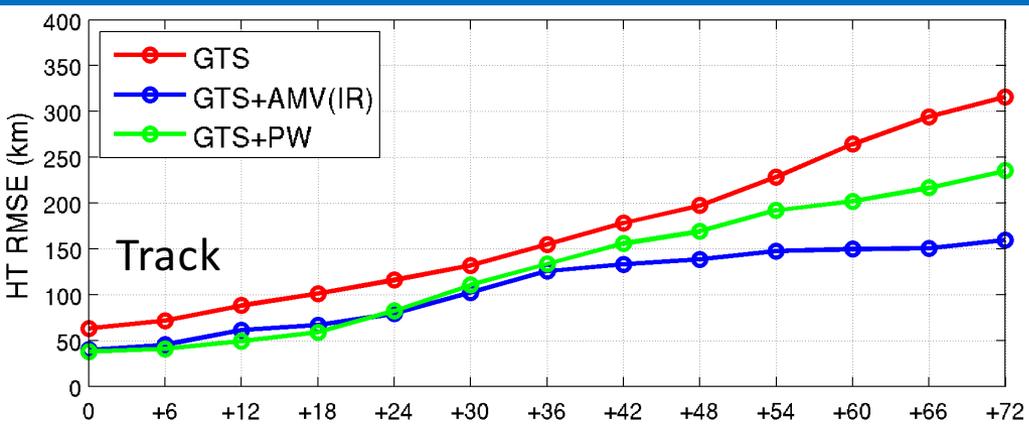
"HOWEVER THIS MORNINGS PASSES MISSED OUTER NT2 WATERS WHERE HIGHEST WINDS ASSOCIATED WITH DEVELOPING LOW WERE OCCURRING. BOTH THE 12Z GFS AND 12Z ECMWF ARE INITIALIZING TWO SURFACE LOWS OVER SOUTHEASTERN EDGE OF OUTER ZONES ANZ920 AND ANZ910. BASED ON THE ESTIMATED LOW POSITIONS FROM THE GOES 1 MIN SUPER RAPID SCAN IMAGERY TODAY...IT APPEARS THAT THE 12Z ECMWF HAS A BETTER 18Z POSITION AT LEAST WITH SECOND CENTER INVOLF 37N70W AT 18Z. 12Z GFS IS ABOUT 1 TO 2 DEGREES NE OF ECMWF POSITION." ~Clark (Feb. 9, 2016)



FY16 Activities

GRPG

Himawari-8 AHI Data and Assimilation for Typhoon Soudelor (August, 2015)





Best Practices/Lessons Learned

GRPG

The most successful part of the Proving Ground at MPS continues to be the confidence that the forecasters have gained in using and analyzing these new satellite products. For example, the **RGB Air Mass product is being used routinely at all four centers and the forecasters and analysts are mentioning its use in the official forecast products.** In addition, the **GOES-14 SRSORs and convective products have earned their way into the forecaster's routines** and the feedback usually includes the “can we ask for more SRSOR data” or “I can't wait to see the Geostationary Lightning Mapper imagery over the oceans.” This is surely a sign that the Proving Ground efforts are having a significant impact on forecast operations at OPC, SAB, TAFB, and WPC.



Best Practices/Lessons Learned

GRPG

Many forecasters found that **animating the satellite imagery while integrating it with other decision aids revealed important insight on how the atmosphere was evolving**, which allowed them to anticipate and predict short-term trends. During most simulations, participants expressed that they were able to internally assimilate the imagery with ease. **However, when forecasters were asked how easy the imagery was to use in convective warning operations, the feedback was mixed.** Some forecasters felt that it was difficult to incorporate the satellite imagery with radar data while issuing convective warnings, while others believed that with sufficient **training and experience the satellite imagery would be invaluable in warning operations.** Participants unanimously agreed that in order for forecasters to understand how to accurately interpret atmospheric processes using 1-min satellite imagery, the development and delivery of timely, effective training resources is essential. Many forecasters felt these training materials need to focus on effective practices, be layered to maximize forecaster retention, and be integrated into the NWS Distance Learning Operations Course. The evaluation at the OPG led to seven findings and ten recommendations that focused on preparing NWS forecasters to use high-temporal satellite imagery in the GOES-R era.