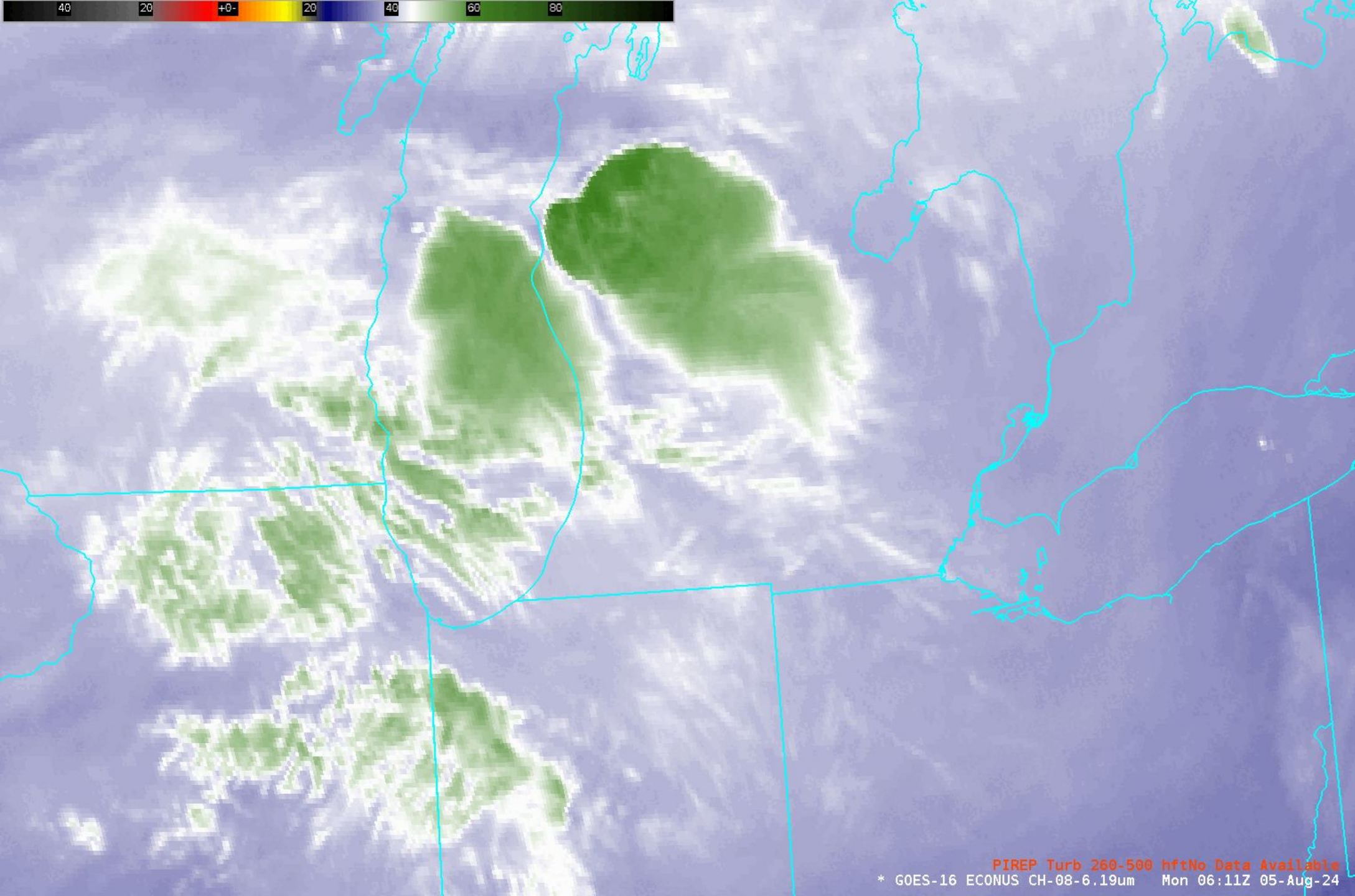
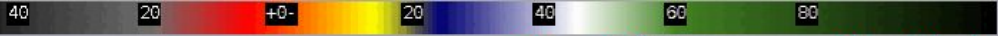


GeoXO Imager (GXI) Update

NOAA's Satellite Applications Symposium Series:
Weather
August 2024

NOAA
National Weather Service

Jordan Gerth, Office of Observations



PIREP Turb 260-500 hft No Data Available
* GOES-16 ECONUS CH-08-6.19um Mon 06:11Z 05-Aug-24



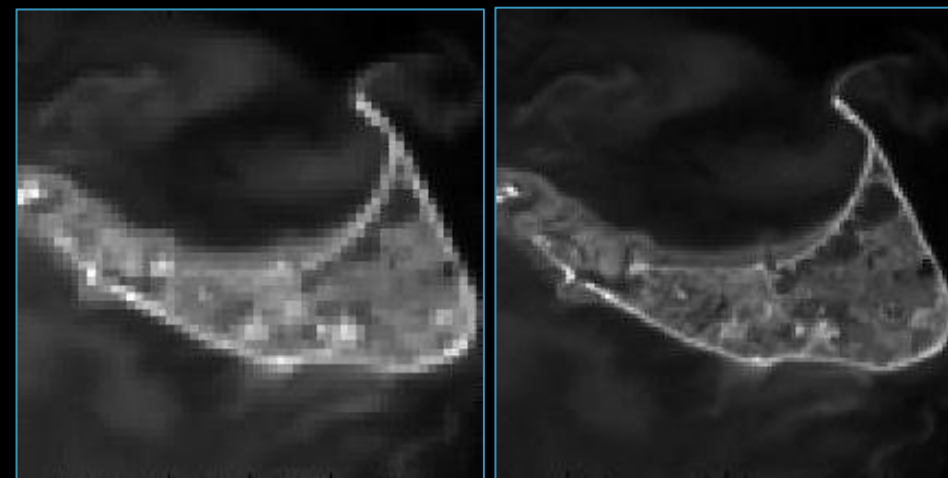
GOES-R ABI versus GeoXO Imager (GXI)

ABI CONFIGURATION			
Wavelength (μm)	Band	GSD	
VNIR	0.47	Band 1	1 km
	0.64	Band 2	0.5 km
	0.865	Band 3	1 km
	1.378	Band 4	2 km
	1.61	Band 5	1 km
	2.25	Band 6	2 km
MWIR	3.9	Band 7	2 km
	6.185	Band 8	2 km
	6.95	Band 9	2 km
	7.34	Band 10	2 km
	8.50	Band 11	2 km
LWIR	9.61	Band 12	2 km
	10.35	Band 13	2 km
	11.20	Band 14	2 km
	12.30	Band 15	2 km
	13.30	Band 16	2 km



GXI CONFIGURATION			
Wavelength (μm)	Band	GSD	
VNIR	0.47	Band 1	0.5 km
	0.64	Band 2	0.25 km
	0.865	Band 3	0.5 km
	0.91	Band 4	1 km
	1.378	Band 5	2 km
	1.61	Band 6	1 km
	2.25	Band 7	1 km
	3.9	Band 8	1 km
MWIR	5.15	Band 9	1 km
	6.185	Band 10	2 km
	6.95	Band 11	1 km
	7.34	Band 12	2 km
	8.50	Band 13	2 km
LWIR	9.61	Band 14	2 km
	10.35	Band 15	1 km
	11.20	Band 16	2 km
	12.30	Band 17	2 km
	13.30	Band 18	2 km

Nantucket Island at ABI 0.5km vs GXI 0.25km Resolution



What's not changing

- No loss of any current spectral bands
 - Therefore, no loss of any current RGBs
- Certain IR bands will continue at 2 km
- Overall scan rate
- Same position of spacecraft and resulting parallax

GX1 CONFIGURATION			
	Wavelength (μm)	Band	GSD
VNIR	0.47	Band 1	0.5 km
	0.64	Band 2	0.25 km
	0.865	Band 3	0.5 km
	0.91	Band 4	1 km
	1.378	Band 5	2 km
	1.61	Band 6	1 km
MWIR	2.25	Band 7	1 km
	3.9	Band 8	1 km
	5.15	Band 9	1 km
	6.185	Band 10	2 km
	6.95	Band 11	1 km
	7.34	Band 12	2 km
LWIR	8.50	Band 13	2 km
	9.61	Band 14	2 km
	10.35	Band 15	1 km
	11.20	Band 16	2 km
	12.30	Band 17	2 km
	13.30	Band 18	2 km



What is changing

- Two new spectral bands
 - 0.91 μm (except Himawari-10 will retain green)
 - 5.15 μm
 - Band numbers will therefore change
- Improved spatial resolution
 - Red visible down to 0.25 km
 - IR down to 1 km

GXI CONFIGURATION			
	Wavelength (μm)	Band	GSD
VNIR	0.47	Band 1	0.5 km
	0.64	Band 2	0.25 km
	0.865	Band 3	0.5 km
	0.91	Band 4	1 km
	1.378	Band 5	2 km
	1.61	Band 6	1 km
MWIR	2.25	Band 7	1 km
	3.9	Band 8	1 km
	5.15	Band 9	1 km
	6.185	Band 10	2 km
	6.95	Band 11	1 km
	7.34	Band 12	2 km
LWIR	8.50	Band 13	2 km
	9.61	Band 14	2 km
	10.35	Band 15	1 km
	11.20	Band 16	2 km
	12.30	Band 17	2 km
	13.30	Band 18	2 km



What can't change anymore

- The instrument specifics for GXI are largely set
 - No low-light imaging
 - No green band

GXI CONFIGURATION			
	Wavelength (μm)	Band	GSD
VNIR	0.47	Band 1	0.5 km
	0.64	Band 2	0.25 km
	0.865	Band 3	0.5 km
	0.91	Band 4	1 km
	1.378	Band 5	2 km
	1.61	Band 6	1 km
MWIR	2.25	Band 7	1 km
	3.9	Band 8	1 km
	5.15	Band 9	1 km
	6.185	Band 10	2 km
	6.95	Band 11	1 km
	7.34	Band 12	2 km
LWIR	8.50	Band 13	2 km
	9.61	Band 14	2 km
	10.35	Band 15	1 km
	11.20	Band 16	2 km
	12.30	Band 17	2 km
	13.30	Band 18	2 km

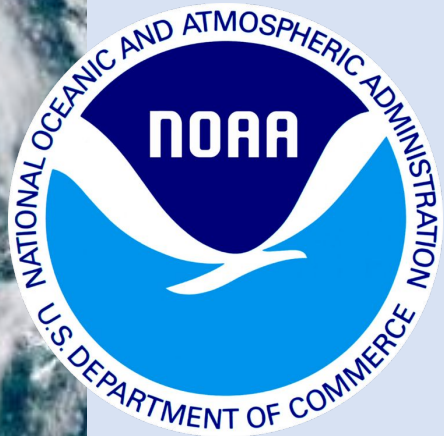


What could change yet

- Scan strategy
 - Mesoscale sectors (size, frequency, etc.)
 - 2.5-minute “CONUS”?
- Derived products
- Blended or fused products with other instruments

GXI CONFIGURATION			
	Wavelength (μm)	Band	GSD
VNIR	0.47	Band 1	0.5 km
	0.64	Band 2	0.25 km
	0.865	Band 3	0.5 km
	0.91	Band 4	1 km
	1.378	Band 5	2 km
	1.61	Band 6	1 km
MWIR	2.25	Band 7	1 km
	3.9	Band 8	1 km
	5.15	Band 9	1 km
	6.185	Band 10	2 km
	6.95	Band 11	1 km
	7.34	Band 12	2 km
LWIR	8.50	Band 13	2 km
	9.61	Band 14	2 km
	10.35	Band 15	1 km
	11.20	Band 16	2 km
	12.30	Band 17	2 km
	13.30	Band 18	2 km





GeoXO Imager (GXI) Update

NOAA's Satellite Applications Symposium Series:
Weather
August 2024

NOAA
National Weather Service

Jordan Gerth, Office of Observations