Reality

- The satellite launch is more than a year away and usage of actual imagery is no earlier than 1.5 years away.

- Due to budget cuts, many offices have reduced staff

so the training…

- Must be relevant
- Must be short (15-20 minutes or less)
- Must be interesting

How do we encourage curiosity?

- Find a way to utilize the "sparks" in the offices.

- Find a way to utilize the satellite experts in the office.

- Highlight interesting examples from other satellites or model generated.

Do you have suggestions on how to encourage curiosity?

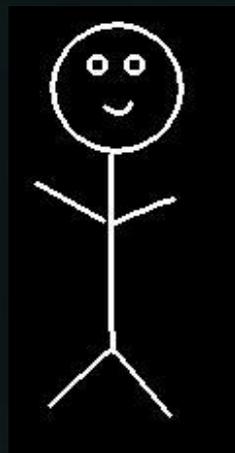# How do we identify experts in the field?

Reworded:

What does it take to be an expert?

- Practice: 10,000 hours
- 3.5 hours/day * 365 days/year
- ~ 10 years

Satellite Imagery

- GOES: Relatively consistent over past 20 years
- With persistent viewing, develop "intuitive" knowledge over time.
- How many satellite experts do we have out there?

Ah ha!

Presenting some basic information…

- Do you like lists, pictures, graphs, or all 3?

This link has the lists and pictures:

http://www.goes-r.gov/spacesegment/abi.html

The following slides show them.

List format

Schmit et al, 2005

TABLE 1. Summary of the wavelengths, resolution, and sample use and heritage instrument(s) of the ABI bands. The minimum and maximum wavelength range represent the full width at half maximum (FWHM or 50%) points. [The Instantaneous Geometric Field Of View (IGFOV).]
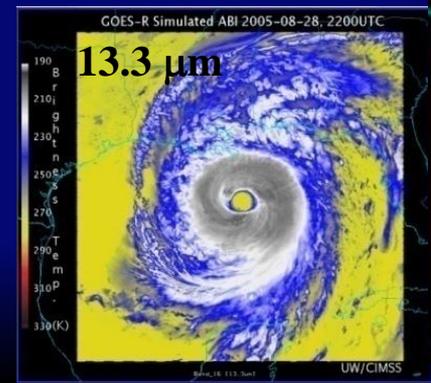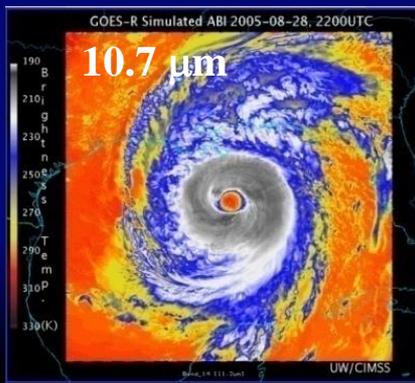
Future GOES imager (ABI) band	Wavelength range (μm)	Central wavelength (μm)	Nominal subsatellite IGFOV (km)	Sample use	Heritage instrument(s)
1	0.45–0.49	0.47	1	Daytime aerosol over land, coastal water mapping	MODIS
2	0.59–0.69	0.64	0.5	Daytime clouds fog, insolation, winds	Current GOES imager/sounder
3	0.846–0.885	0.865	1	Daytime vegetation/burn scar and aerosol over water, winds	VIIRS, spectrally modified AVHRR
4	1.371–1.386	1.378	2	Daytime cirrus cloud	VIIRS, MODIS
5	1.58–1.64	1.61	1	Daytime cloud-top phase and particle size, snow	VIIRS, spectrally modified AVHRR
6	2.225–2.275	2.25	2	Daytime land/cloud properties, particle size, vegetation, snow	VIIRS, similar to MODIS
7	3.80–4.00	3.90	2	Surface and cloud, fog at night, fire, winds	Current GOES imager
8	5.77–6.6	6.19	2	High-level atmospheric water vapor, winds, rainfall	Current GOES imager
9	6.75–7.15	6.95	2	Midlevel atmospheric water vapor, winds, rainfall	Current GOES sounder
10	7.24–7.44	7.34	2	Lower-level water vapor, winds, and SO_2	Spectrally modified current GOES sounder
11	8.3–8.7	8.5	2	Total water for stability, cloud phase, dust, SO_2 rainfall	MAS
12	9.42–9.8	9.61	2	Total ozone, turbulence, and winds	Spectrally modified current sounder
13	10.1–10.6	10.35	2	Surface and cloud	MAS
14	10.8–11.6	11.2	2	Imagery, SST, clouds, rainfall	Current GOES sounder
15	11.8–12.8	12.3	2	Total water, ash, and SST	Current GOES sounder
16	13.0–13.6	13.3	2	Air temperature, cloud heights and amounts	Current GOES sounder/GOES-12+ imager

Image Format

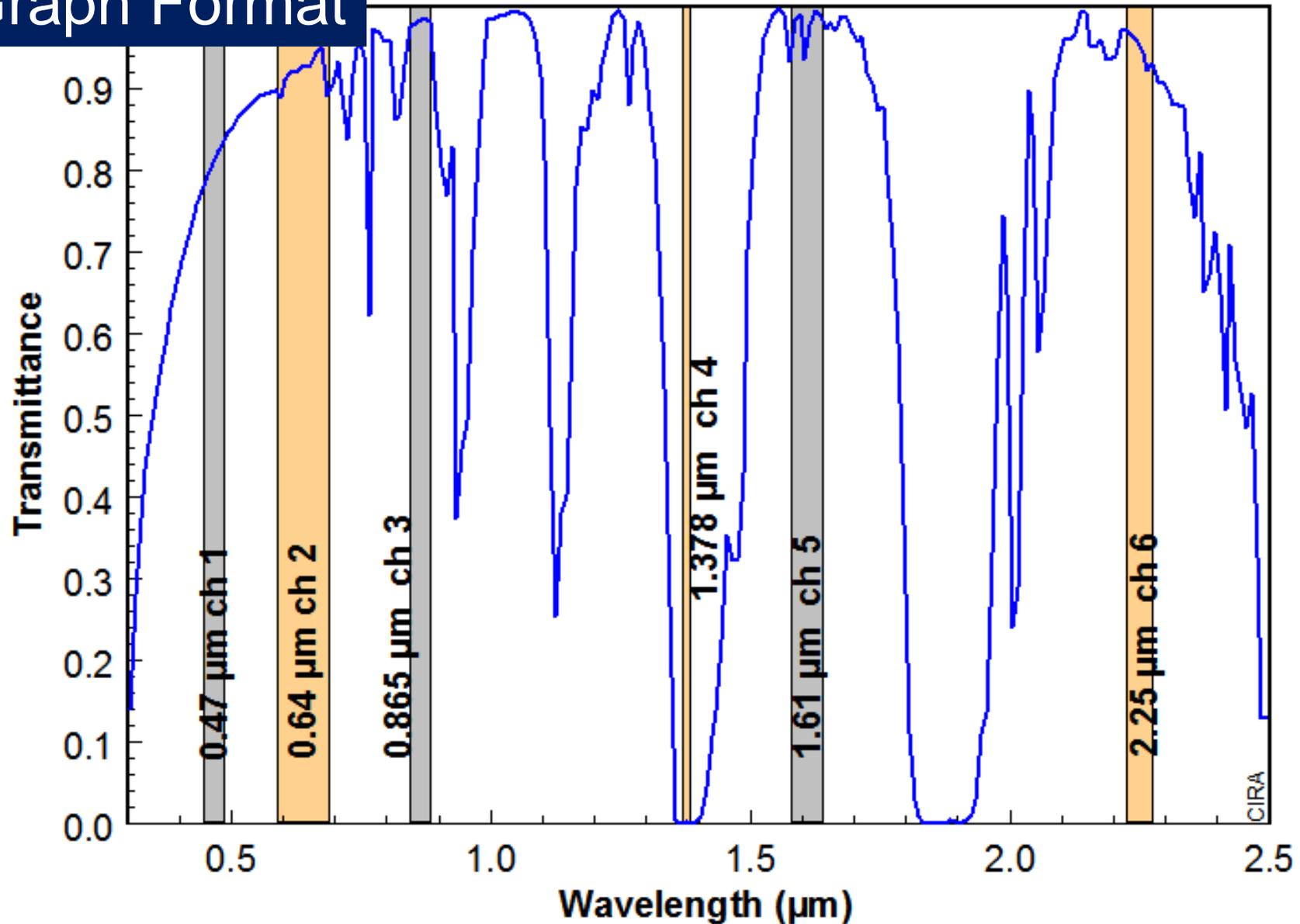AWG Proxy ABI Simulations of Hurricane Katrina

NOAA/NESDIS STAR and GOES-R Imagery Team
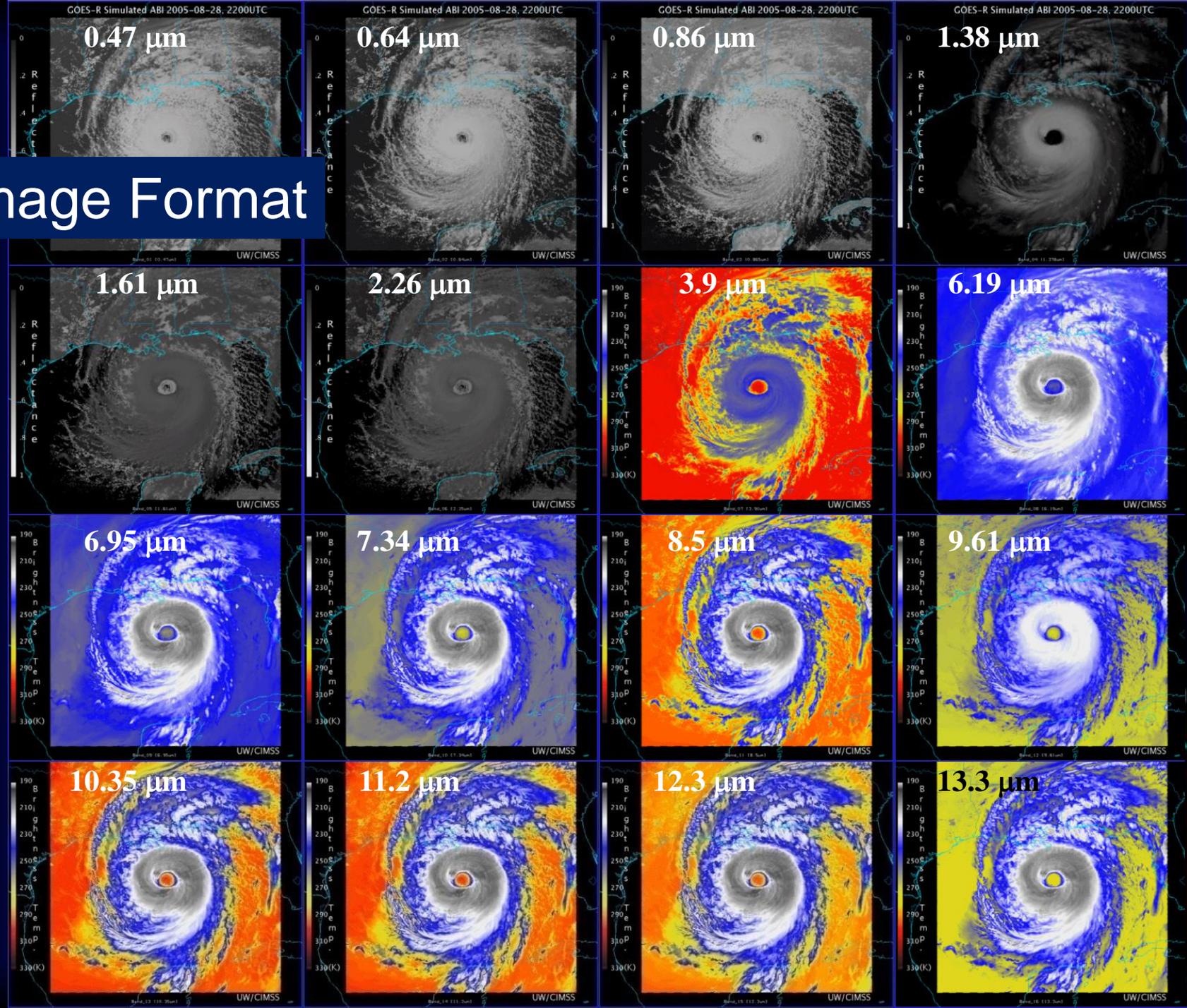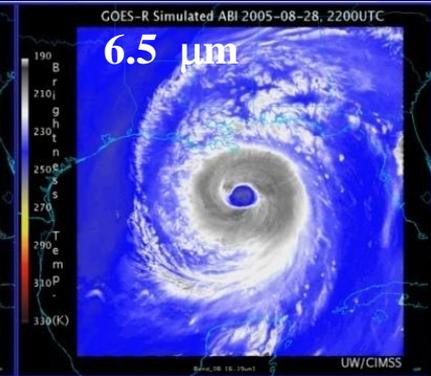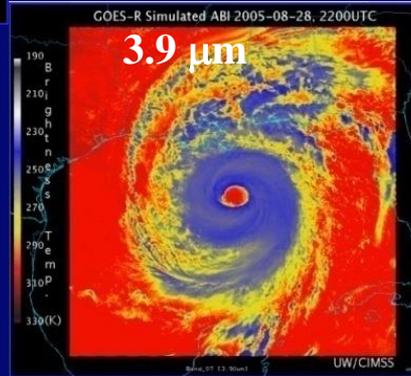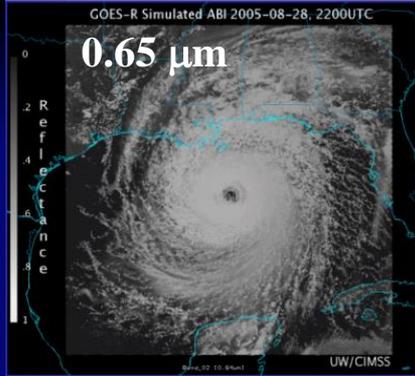
Compare with the current GOES

Visible to Near Infrared

launch 2016

Graph Format

GOES-R ABI channels
Advanced Baseline Imager (ABI)

Transmittance

0.47 μm ch 1
0.64 μm ch 2
0.865 μm ch 3
1.378 μm ch 4
1.61 μm ch 5
2.25 μm ch 6

CIRA

Wavelength (μm)

Spectral interval = full width at half maximum

Visible to Near Infrared
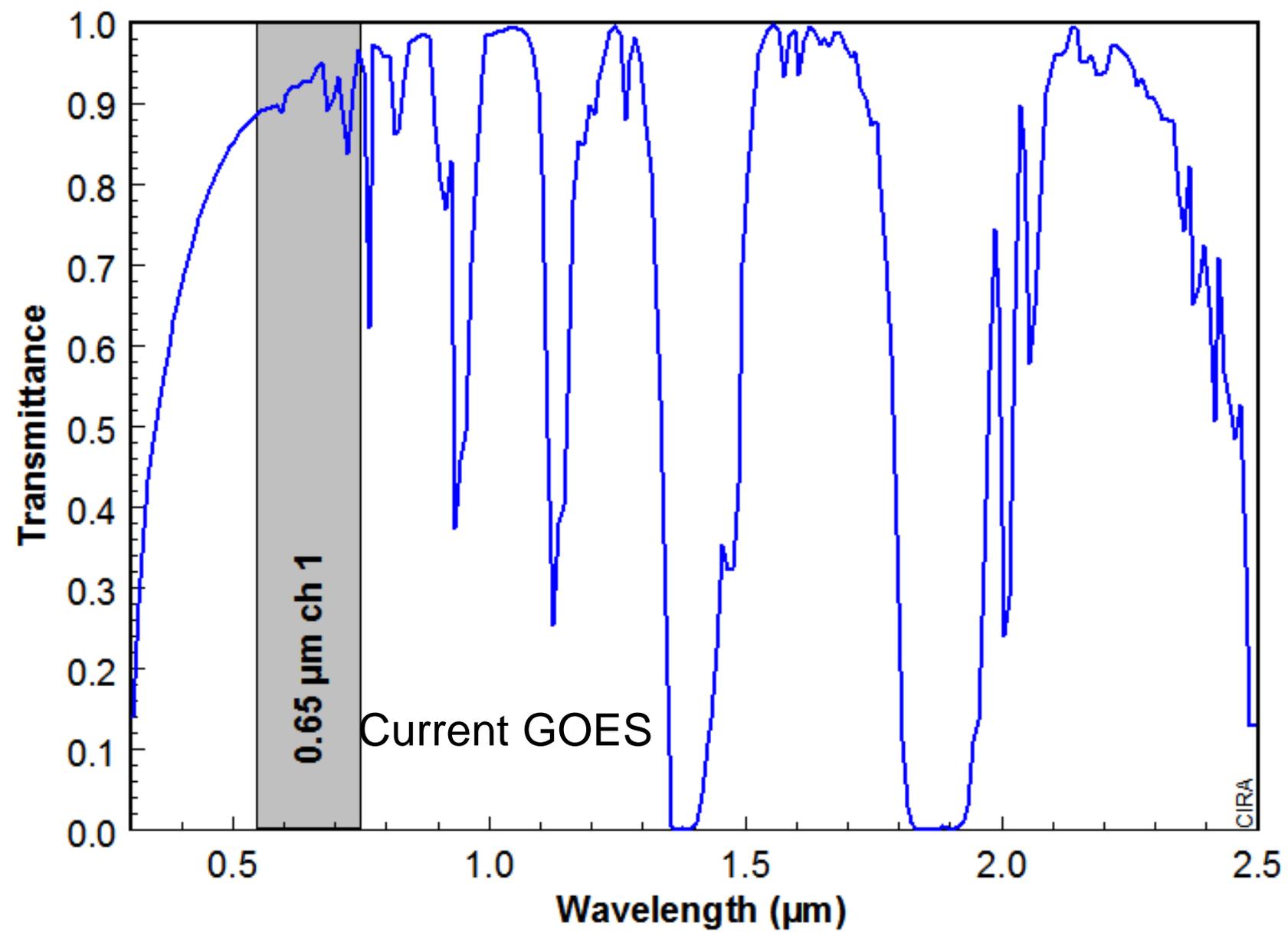
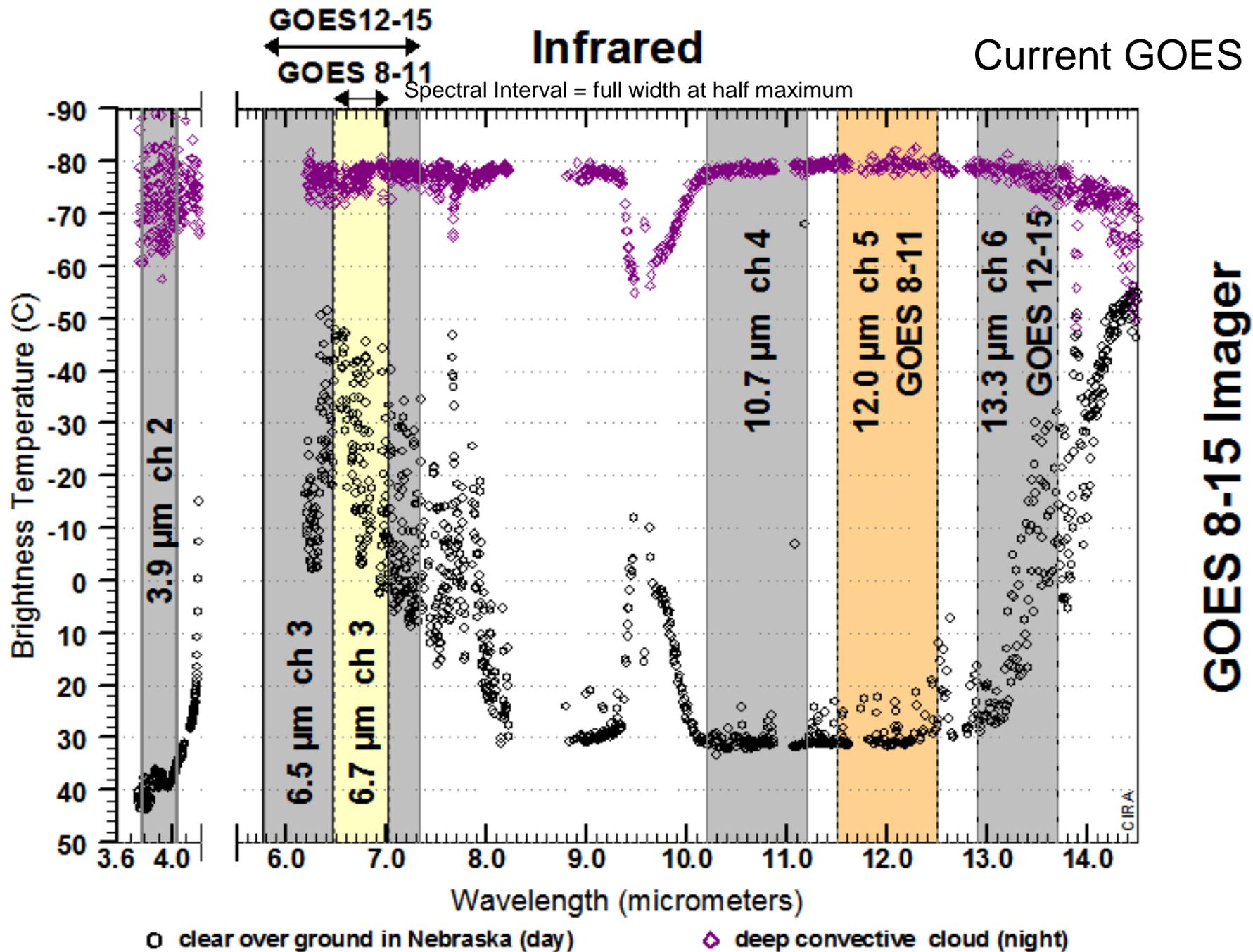Spectral interval = full width at half maximum
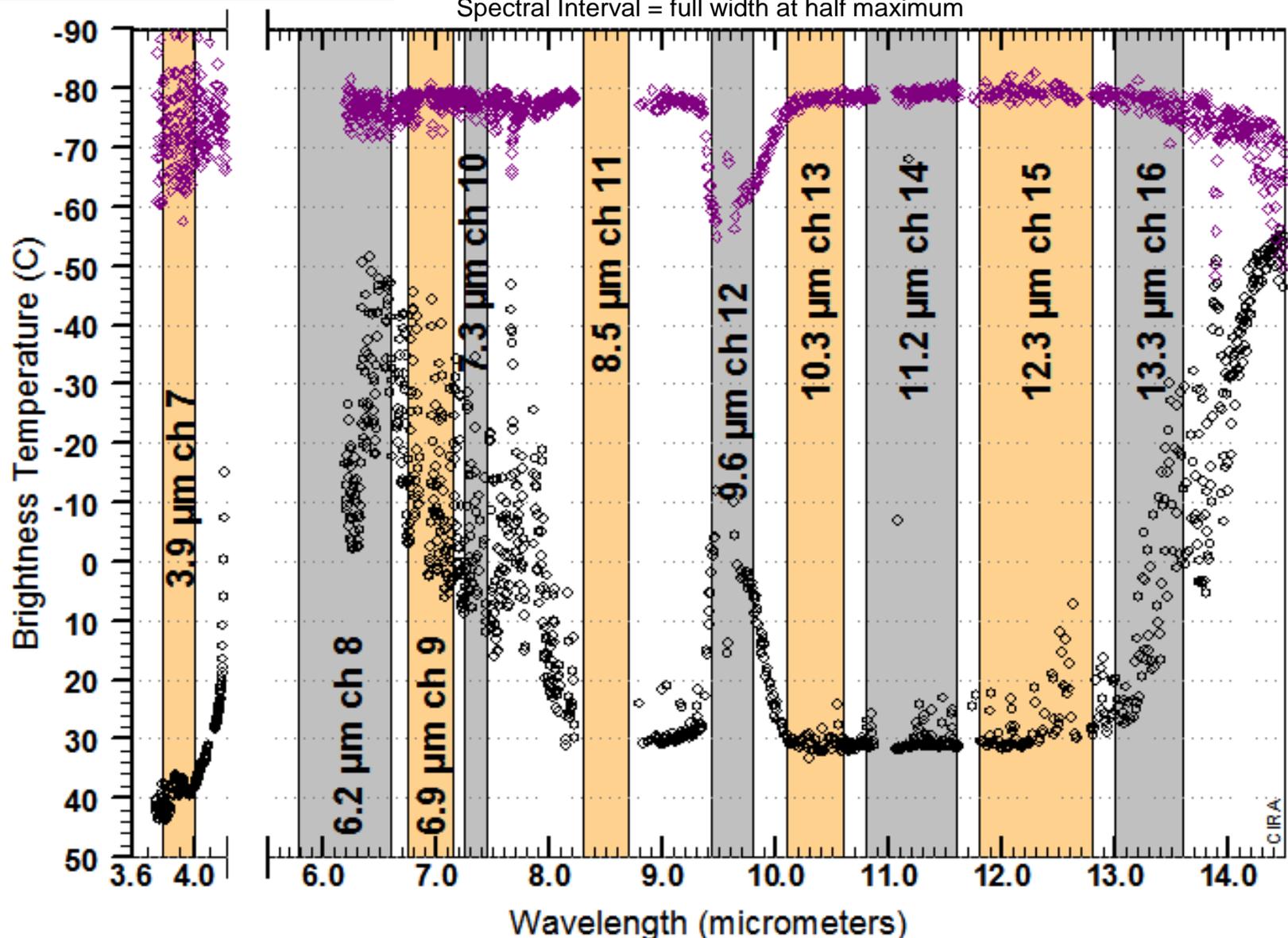
Graph Format

Infrared

launch 2016

Spectral Interval = full width at half maximum

GOES-R ABI channels
Advanced Baseline Imager (ABI)

Brightness Temperature (C)

Wavelength (micrometers)

○ clear over ground in Nebraska (day)   ◇ deep convective cloud (night)

Infrared — Current GOES — GOES 8-15 Imager

GOES12-15
GOES 8-11
Spectral Interval = full width at half maximum

Brightness Temperature (C) vs Wavelength (micrometers)

Channels: 3.9 μm ch 2, 6.5 μm ch 3, 6.7 μm ch 3, 10.7 μm ch 4, 12.0 μm ch 5 GOES 8-11, 13.3 μm ch 6 GOES 12-15

O clear over ground in Nebraska (day)   ◇ deep convective cloud (night)
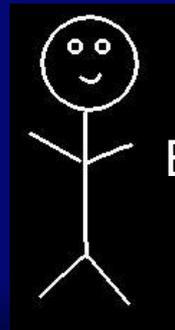
Presenting the information…

- Do you like lists, pictures, graphs, or all 3?

- Of course it is best to put the information in context… (coming soon)

- Start thinking about how you would present to..

Intern   Skilled   Expert