

CPHC & WFO Honolulu GOES-R Products Testing

WFO Honolulu &
Central Pacific Hurricane Center
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July 30, 2014

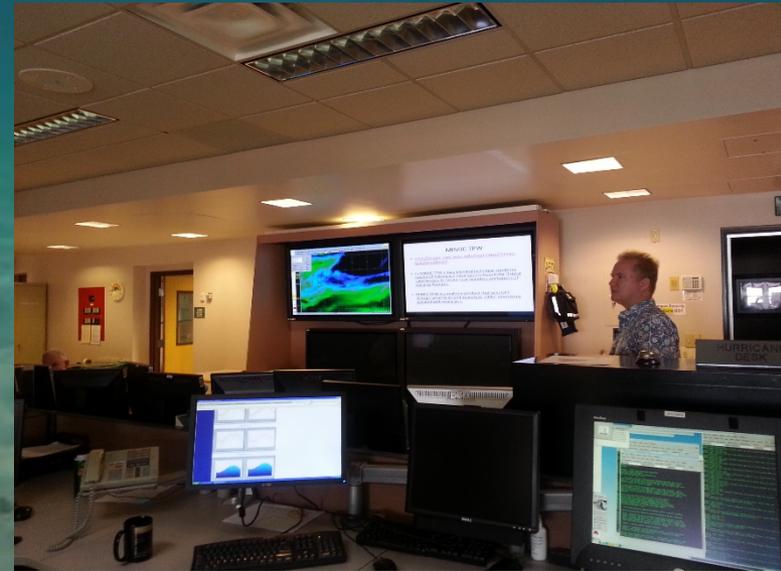


Products under Evaluation:

- VIIRS imagery
- MIMIC-TPW
- CRAS model
- CIMSS convection suite
 - Convective Initiation
 - Cloud Top Cooling
 - Overshooting Tops
- MODIS bands, including TPW
- CIRA Orographic Rain Index
- NASA Sport Multi-sensor SST Composite
- NESDIS QPE

Training

- Forecasters are more likely to try something they are familiar with
- Showing examples of the usefulness of some products in certain types of recent events can also help



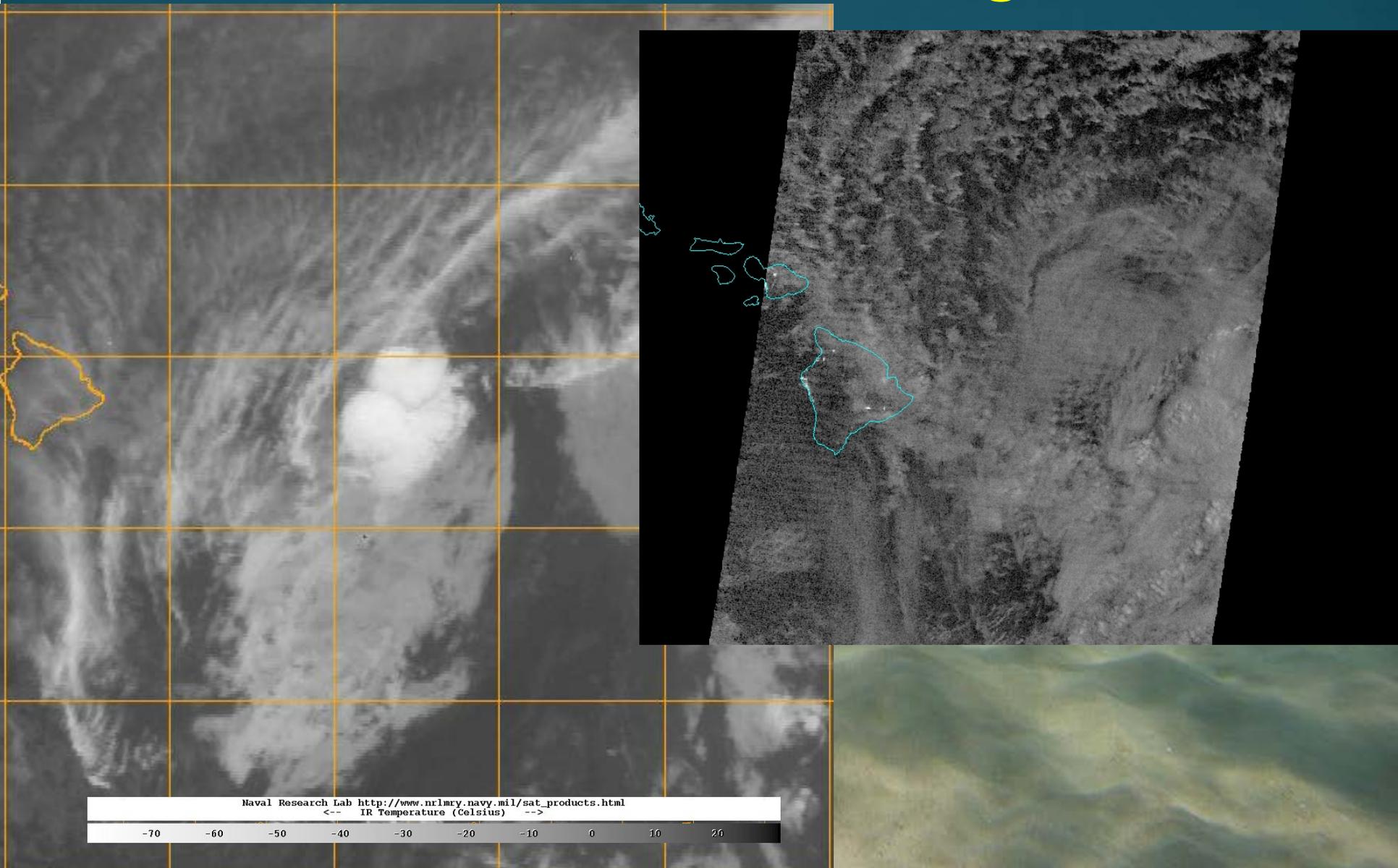
Training Challenges

- Forecasters almost always prefer face-to-face training or seminar-type sessions which is not always practical with 20 forecasters
- Long term staffing shortages with few training shifts
- Forecaster skepticism; more likely to be curious about something new when an immediate benefit can be determined, otherwise will rely on proven tools
- One issue can be long time between product-specific events (e.g. CTC & Convective Initiation)

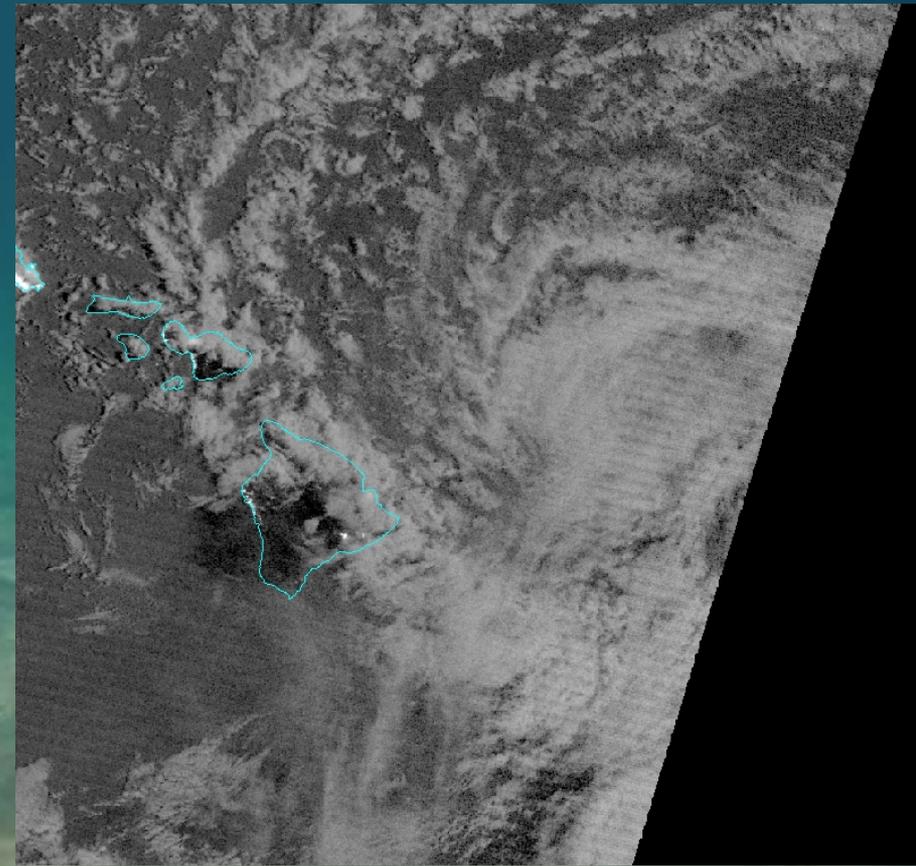
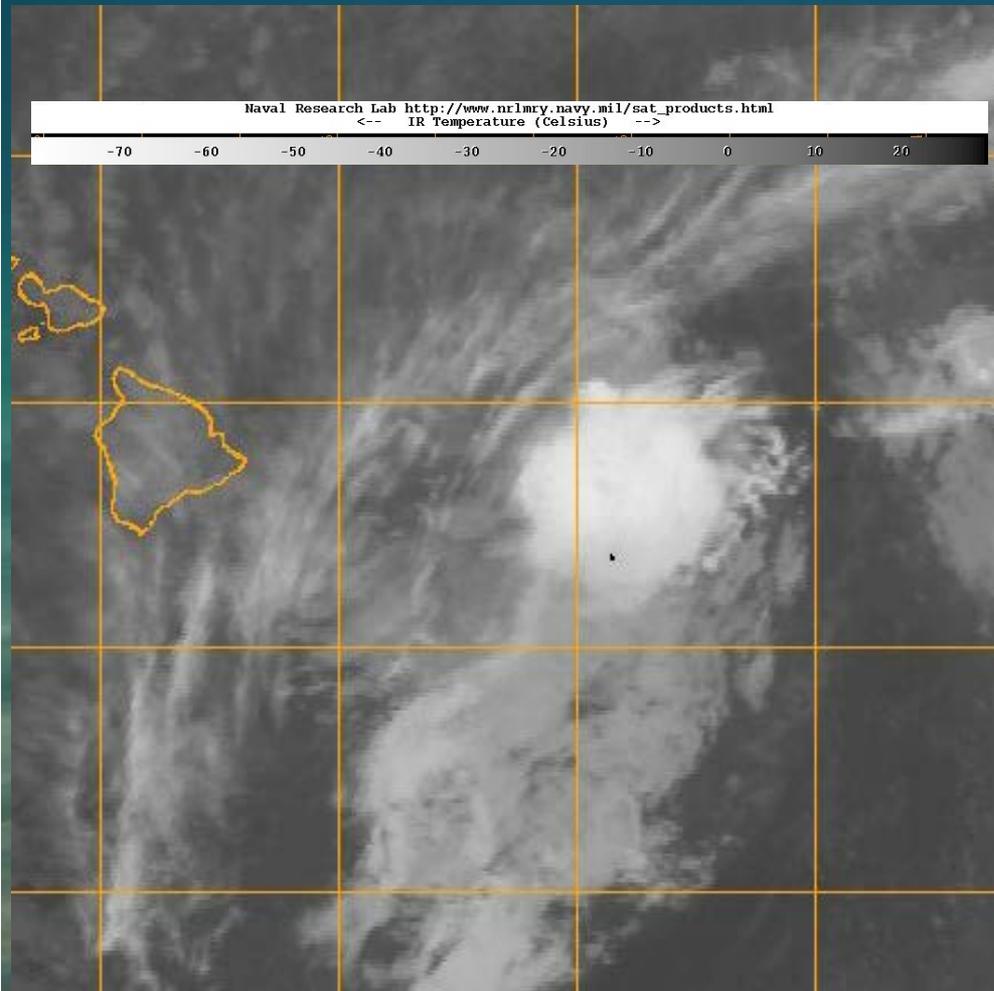
VIIRS Day Night Band

- Available in HFO/CPHC AWIPS since 7/25/2012
- Used by CPHC satellite desk & hurricane specialists to help find TC centers at night
- In sheared situations, can be nearly impossible to find center from GOES IR imagery
- Two fortuitous DNB images provided CPHC forecasters the info needed for a critical nighttime center relocation as Flossie approached the state of Hawaii

GOES-15 IR & VIIRS DNB image ~1100Z



GOES-15 IR & VIIRS DNB around 1245Z



“The center of Flossie was hidden by high clouds most of the night before VIIRS nighttime visual satellite imagery revealed an exposed low level circulation center farther north than expected. We re-bested the 06 UTC position based on the visible data.” – CPHC 5 am 7/29/13

MIMIC

- Added to HFO/CPHC AWIPS 3/13/2012
- Biggest day-to-day winner! Used every shift
- Rainfall occurrence & amounts in Hawaii very sensitive to available moisture
 - Orographically enhanced precipitation
 - Sea breeze/upvalley forced convection
- Models often struggle with details of these moisture fields even in the first 6 hours
- Conventional satellite imagery does not capture the entire story
- Forecasters can use real-time imagery/simulations to make forecast adjustments & monitor model performance

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Mag: 1.25

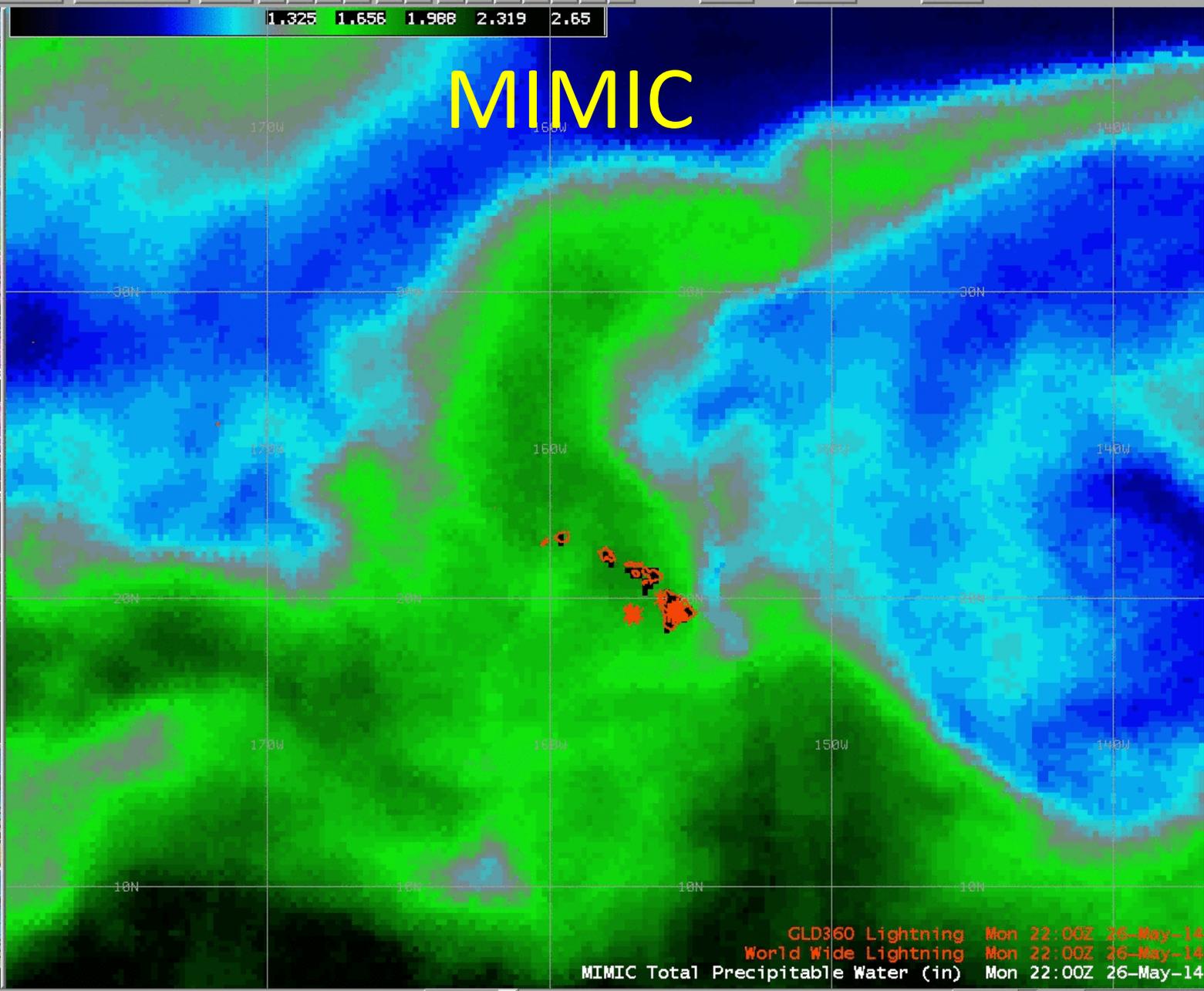
Density: Max

1.325 1.656 1.986 2.319 2.65

MIMIC

A vertical sidebar on the left side of the interface. It contains several panels:

- Top: A grid of small map thumbnails showing different views of the main map.
- Middle: A panel with a dark background and some light-colored patterns, possibly a satellite or radar image.
- Bottom: Two panels displaying numerical data in a grid format, likely representing atmospheric or oceanographic parameters.



GLD360 Lightning Mon 22:00Z 26-May-14
 World Wide Lightning Mon 22:00Z 26-May-14
 MIMIC Total Precipitable Water (in) Mon 22:00Z 26-May-14

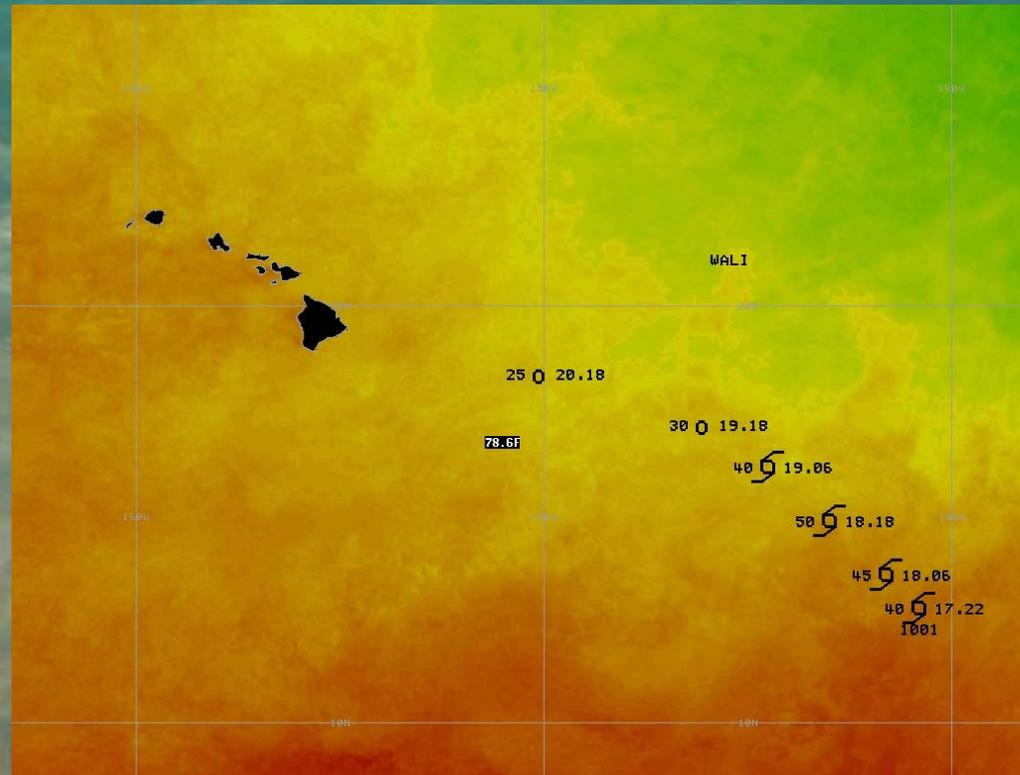
Status: ▾

Radar: ▾

Frames: 47 Time: 02:43 Z 29-May-14

NASA/SPoRT SST

- Available for past several months
- Used by CPHC hurricane specialists
- Valuable for TC intensity forecasting
- Cited in TS Wali TCD



Summary

- Both MIMIC and VIIRS DNB appear to be fully ready to be implemented into operations
- Other products we have tested appear to be more suited to certain regions and not as helpful in their current state for the tropics (e.g. CTC/CI/ORI/NESDIS QPE)
- Very much appreciate the efforts of GOES-R/JPSS PG
- Continued R2O interactions will undoubtedly yield more benefits in the future

An underwater photograph showing a sandy seabed with ripples and shadows, and clear blue water above. The word "Questions?" is written in yellow in the center.

Questions?