



NAVAL RESEARCH LABORATORY

MARINE METEOROLOGY DIVISION
MONTEREY, CALIFORNIA



TCS08 Experiment Analysis: Ocean Products

Peter G. Black (1) and Jeffrey D. Hawkins (2)

(1) Naval Research Laboratory and SAIC, Inc., Monterey, CA
(2) Naval Research Laboratory, Monterey, CA

T-PARC/ TCS08 Data Management Workshop
Monterey, CA
2-3, May, 2009



SAIC
From Science to Solutions



TCS08 Experiment Analysis: RESULTS II

(Preliminary)

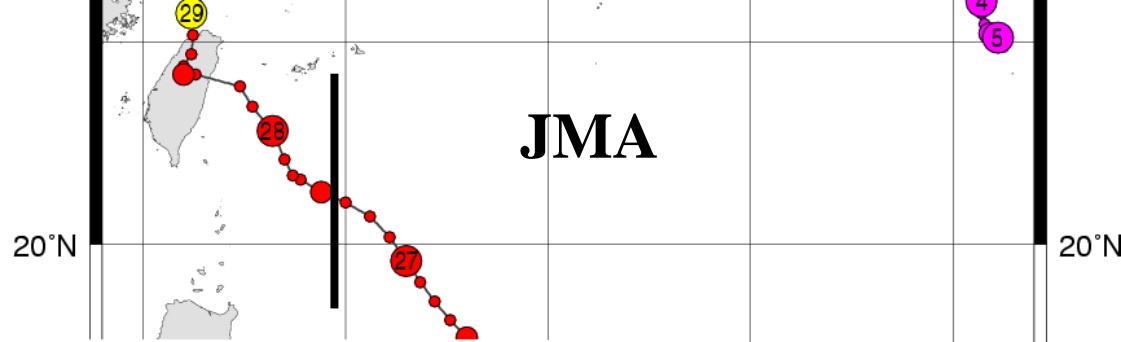
2) Hypothesis II: Rapid TC Intensification and Rapid TC Filling occurred over Warm and Cold eddies, respectively, in the WPAC Southern Eddy Zone*

➤ **Defined by Wu, et al. (18-25N)**

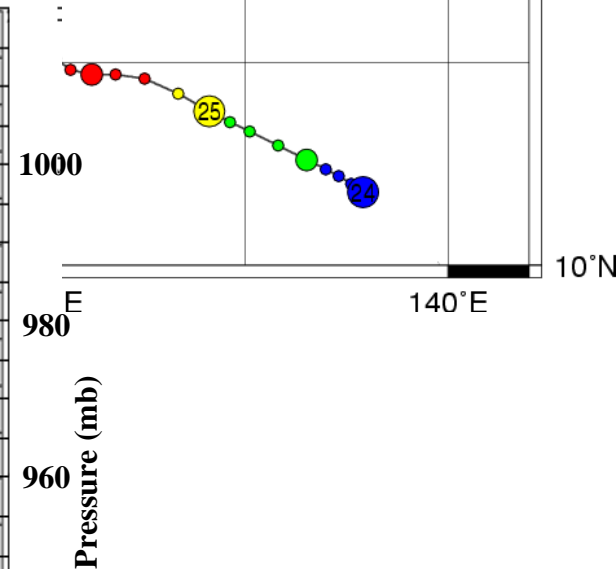
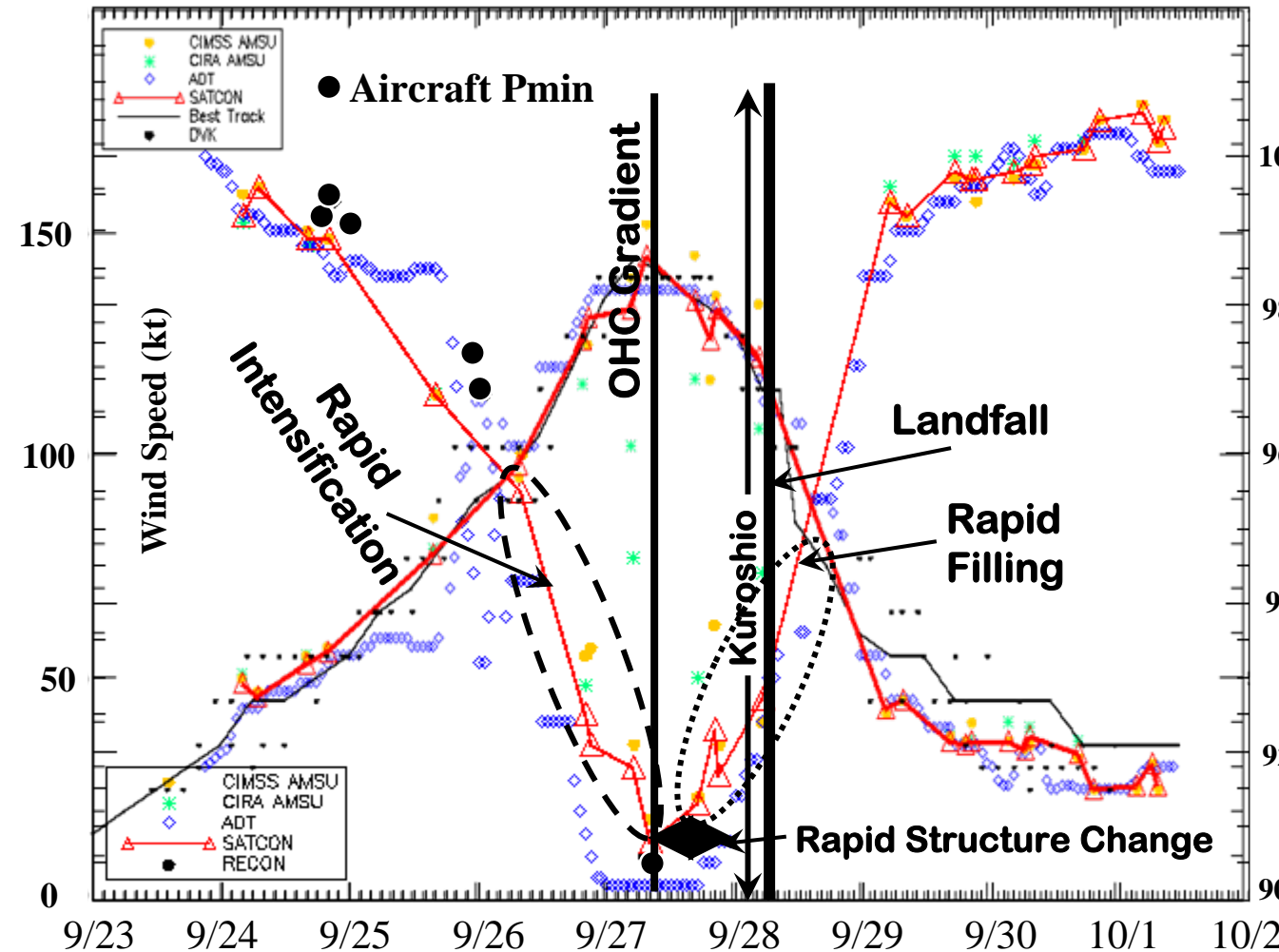
TCS08

Jangmi Sept, 2008

Track, Intensity Change



JMA



SATCON Intensity:
Velden, CIMSS
Hawkins, NRL

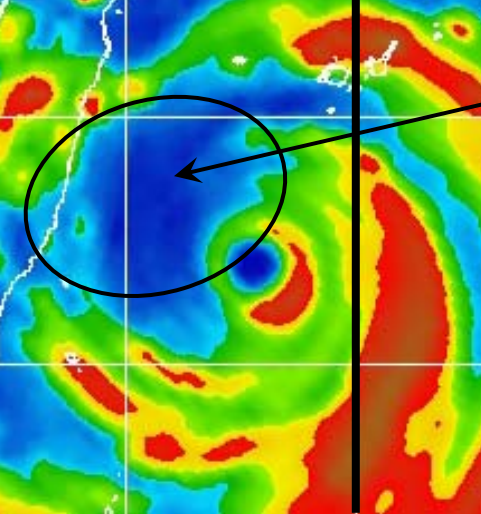


Rapid Structure Change

STY Jangmi

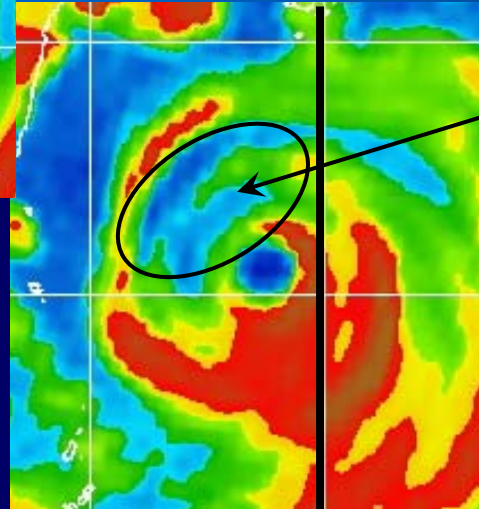
Eyewall open west,
NW quad rainbands
disappear

27 Sept, 2132



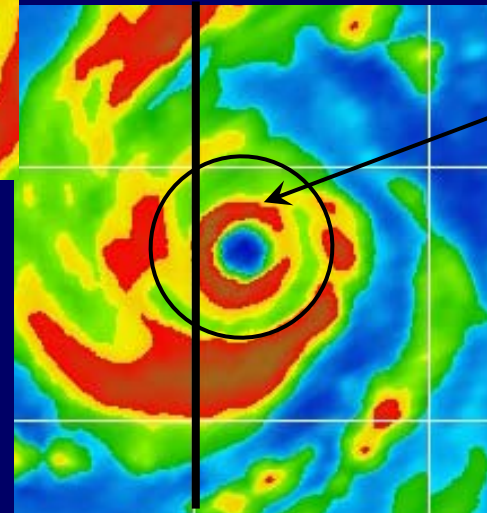
Eyewall, bands
decay

27 Sept, 1134

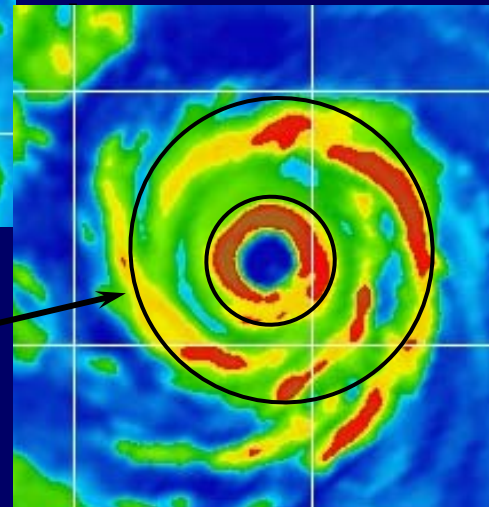


Eyewall shrinks,
asymmetric band
structure forms

27 Sept, 0445



Concentric Eyewalls:
Peak Intensity



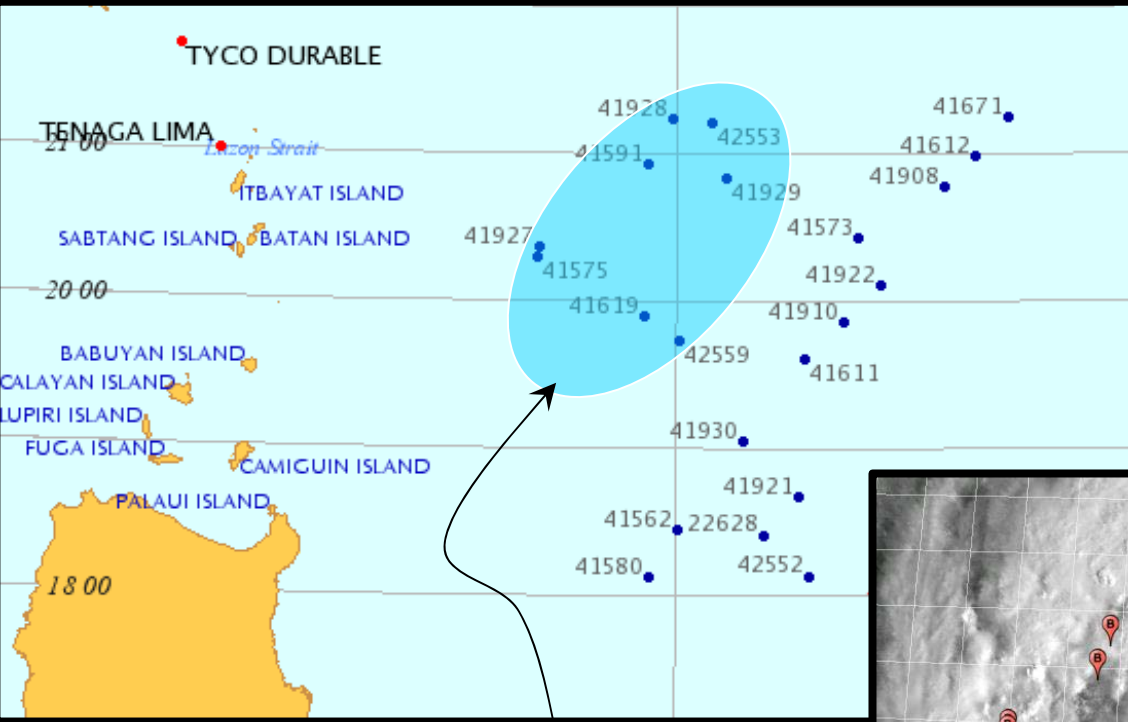
28 Sept, 0006

Time

Cold,
Shallow
OHC Gradient
Warm, Deep



Aircraft – Buoy Deployment



First occurrence of the deployment of drifting buoys ahead of a category 5 tropical cyclone (Jangmi). Chart at left and imagery below are from a few hours after the deployment of the buoys along the diagonal to the northwest of the TC

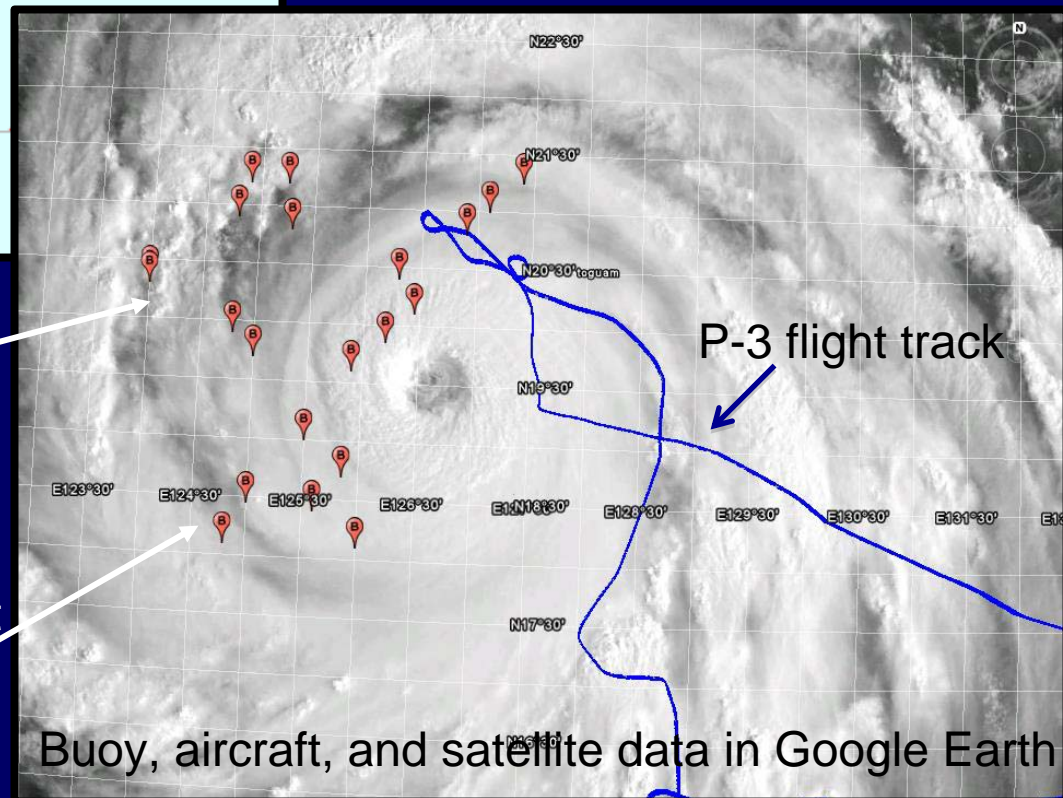
2313 UTC 26 September



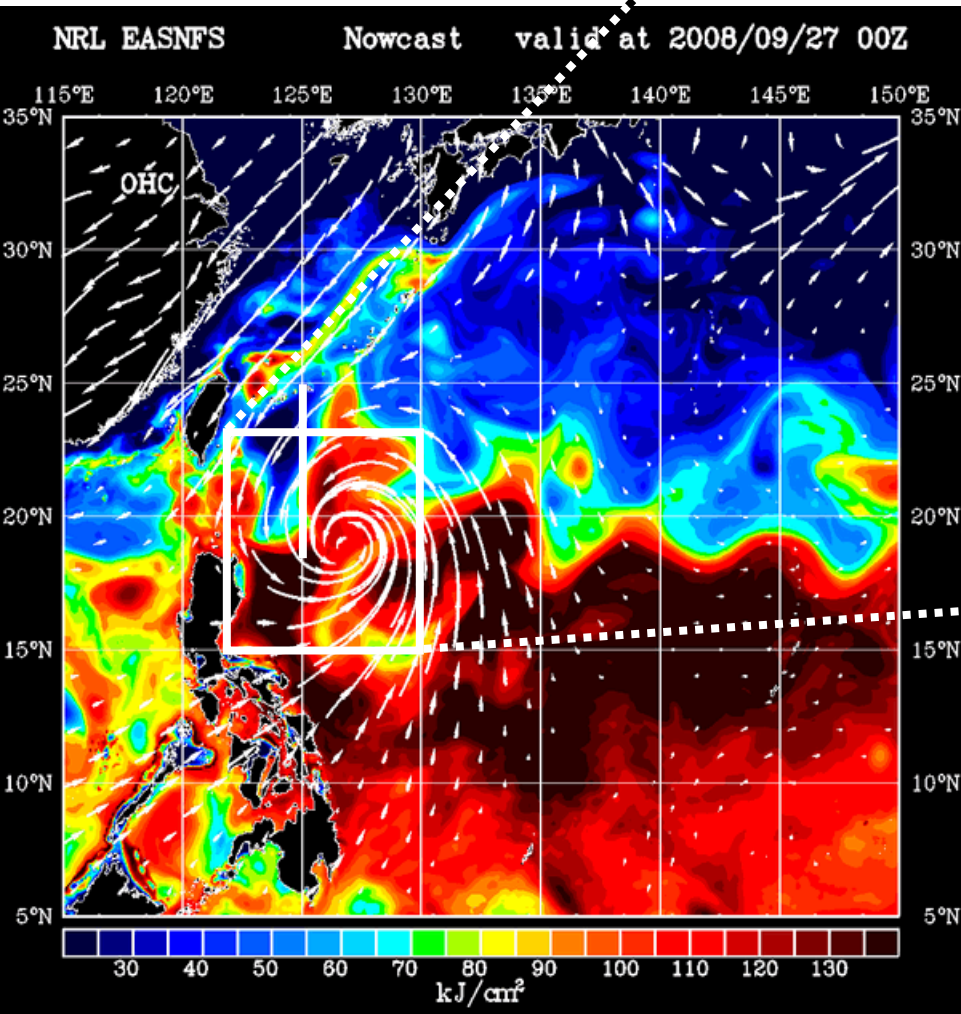
First buoy deployment in TY Hagupit several days earlier



Second deployment in STY Jangmi

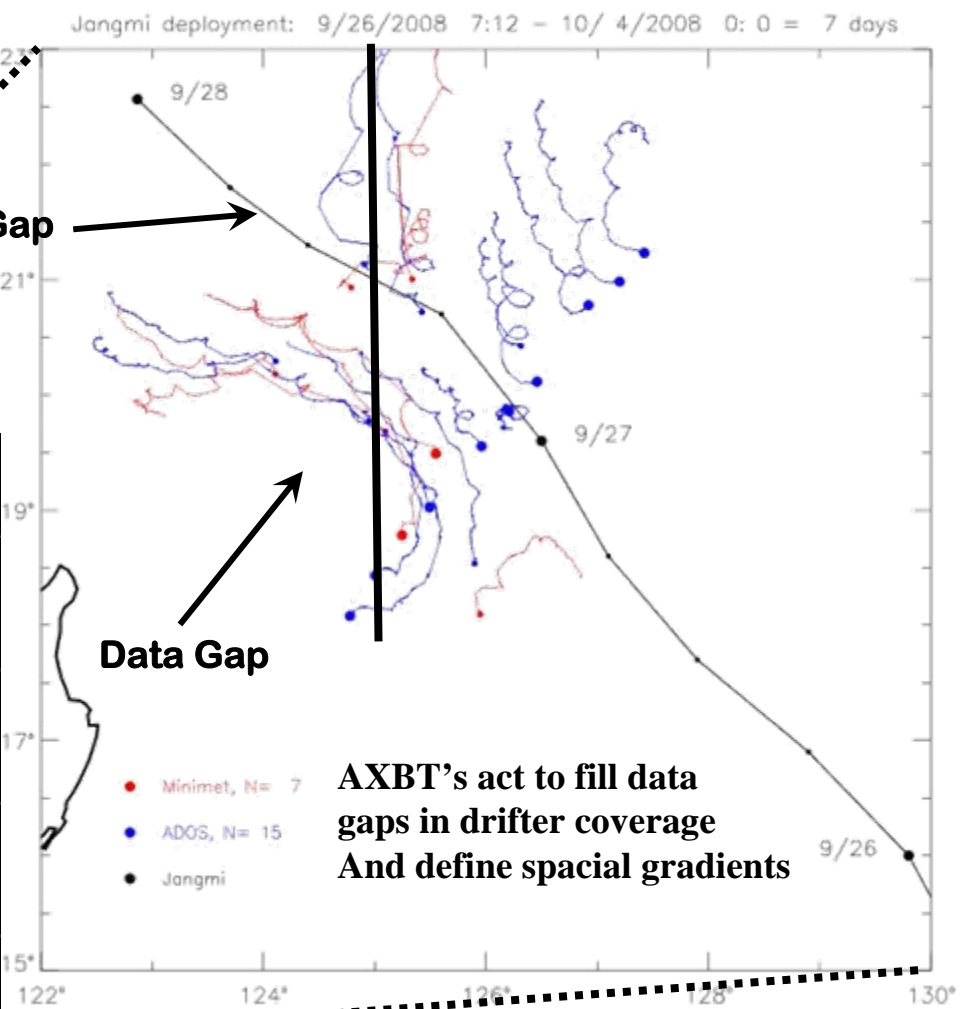


Buoy, aircraft, and satellite data in Google Earth

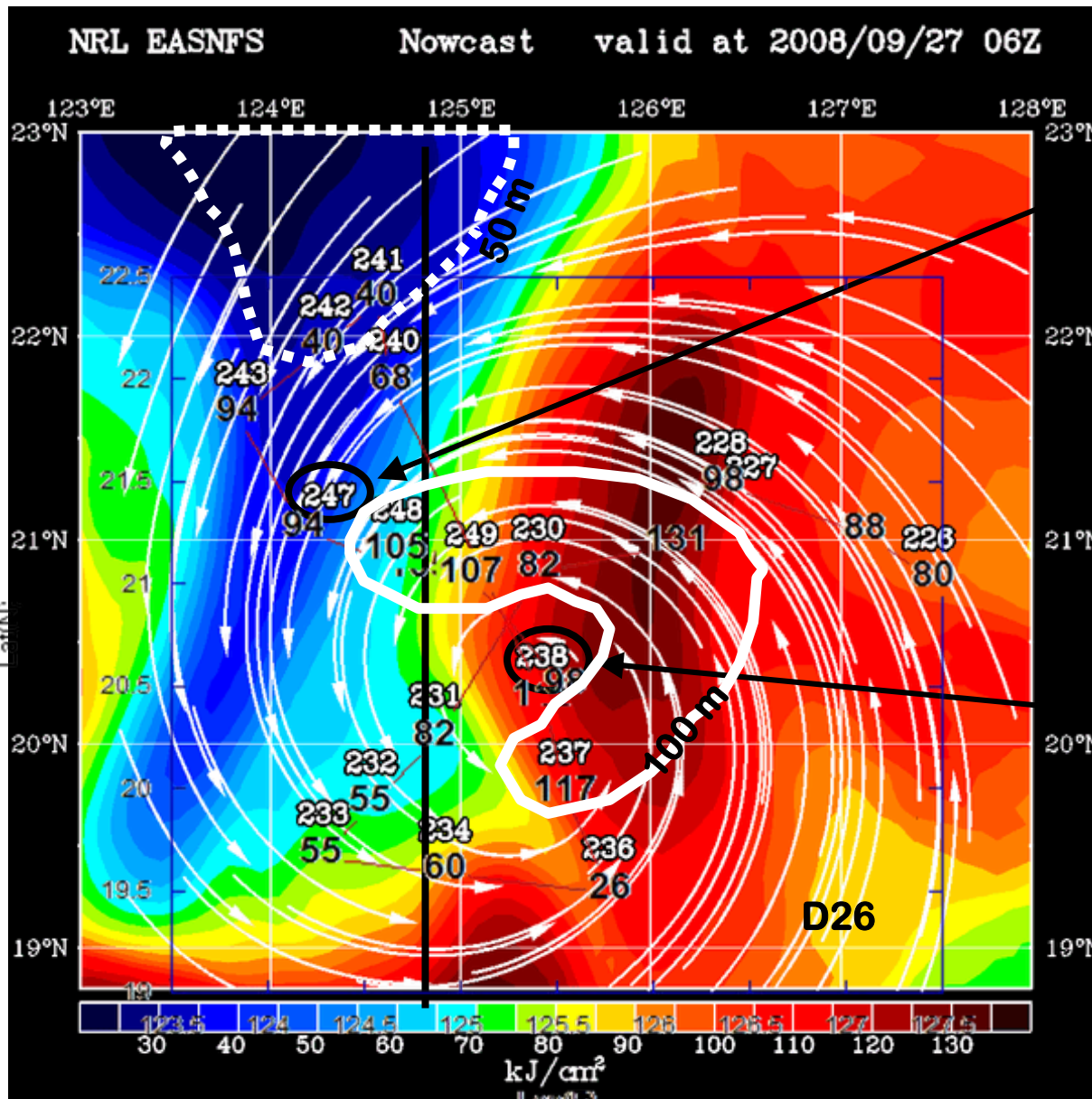


Data Gap

Data Gap

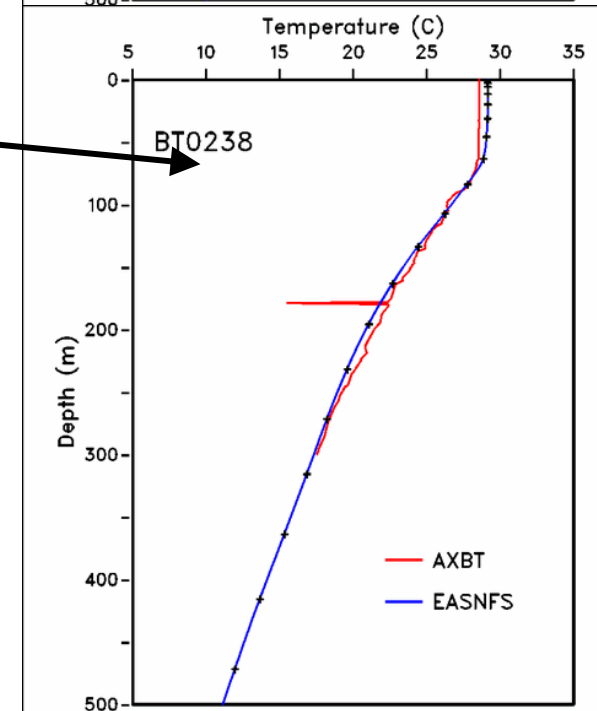
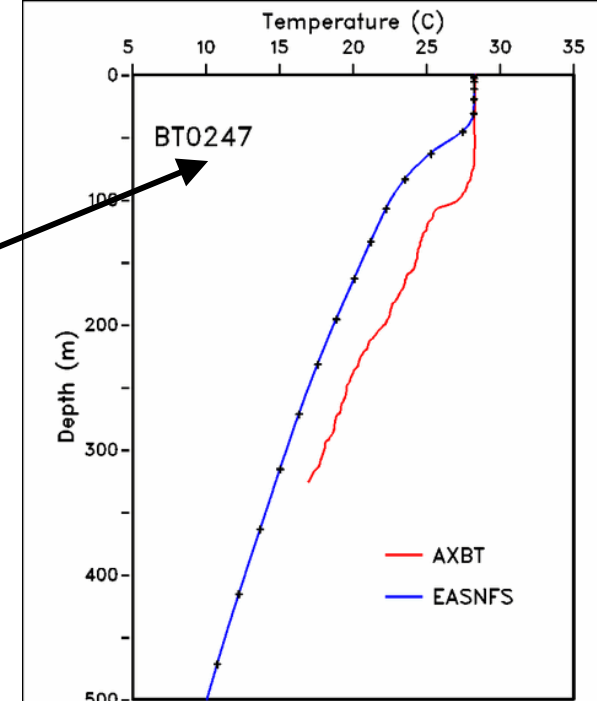


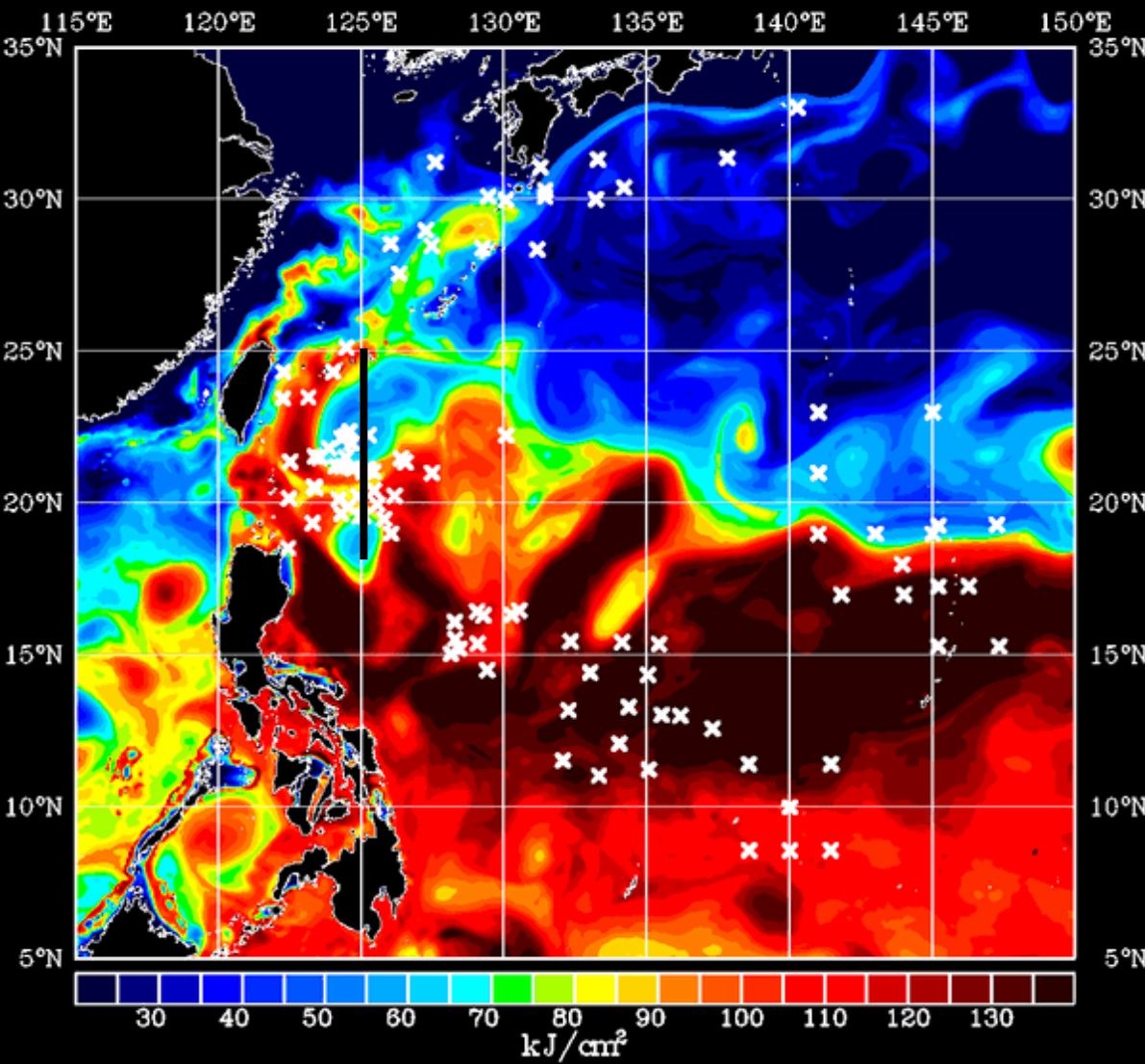
AXBT's act to fill data gaps in drifter coverage
And define spacial gradients



AXBT's help to adjust model-predicted eddy locations

Ko, NRL Stennis



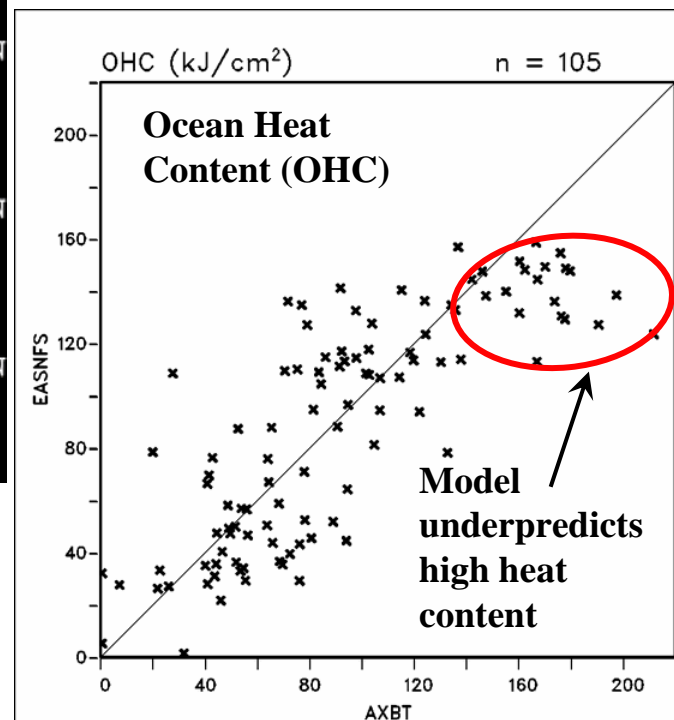


TCS08 AXBT Locations
Ko, NRL Stennis

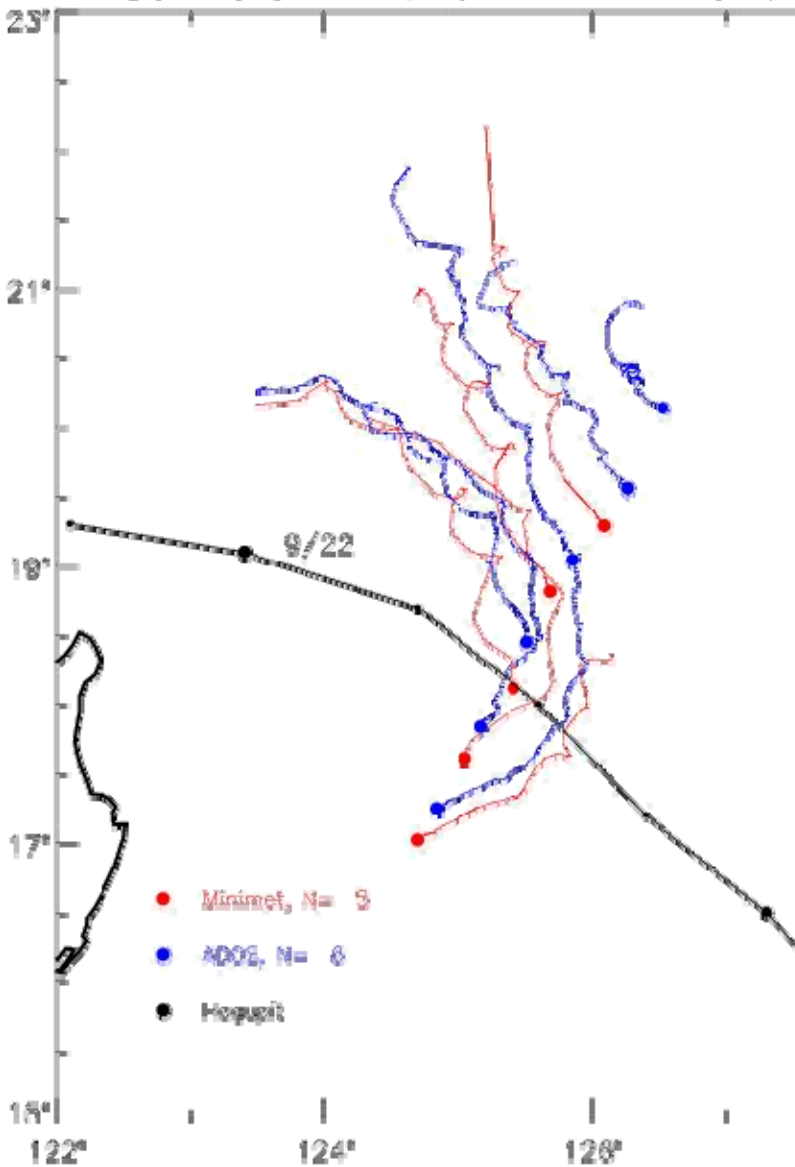
TCS08 Ocean Heat Content Obs:

- **Concurrent with GPS dropsondes**
- **Preview of ITOP2010**

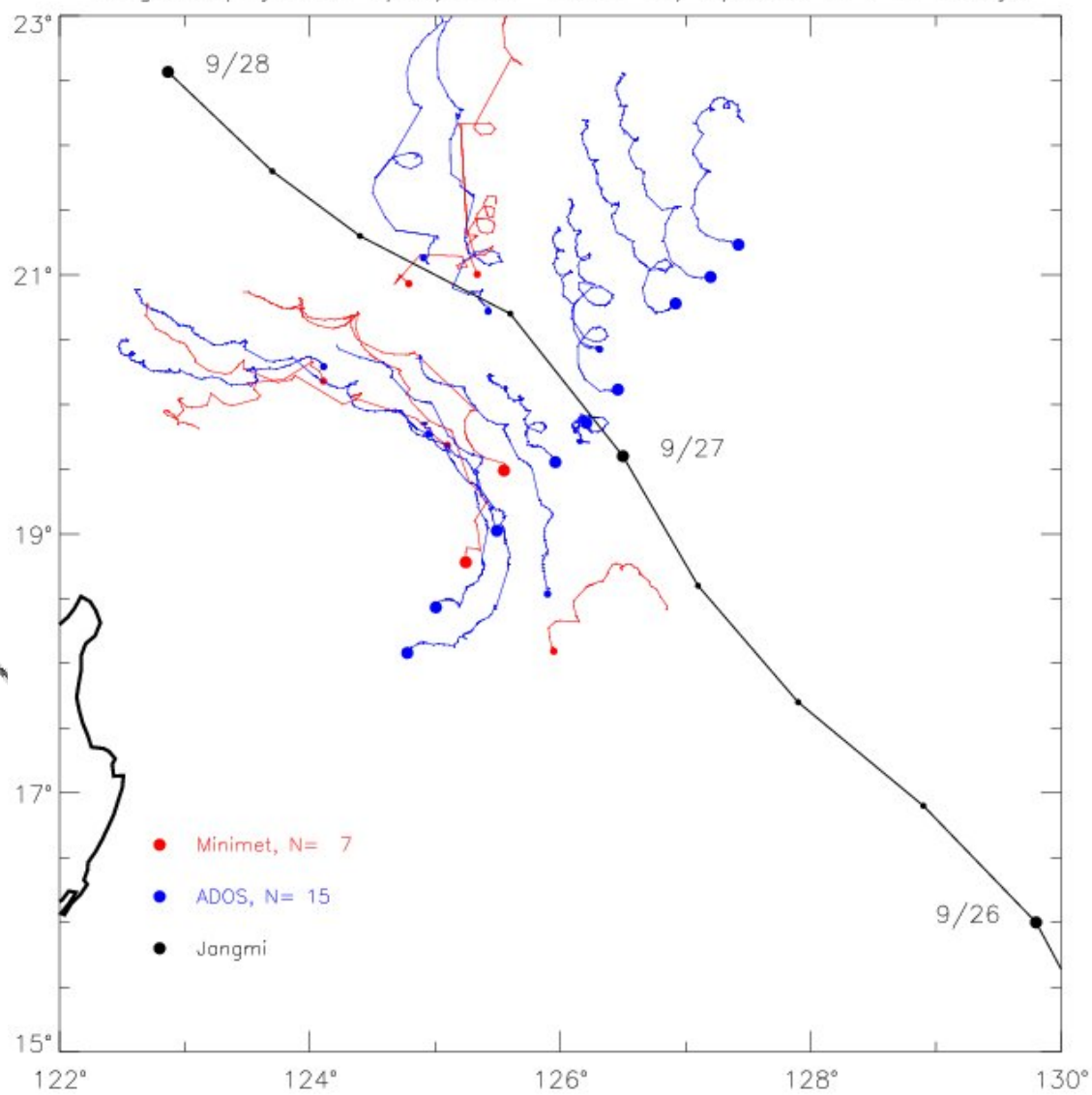
AXBT vs NRL Ocean Model Initial Conditions

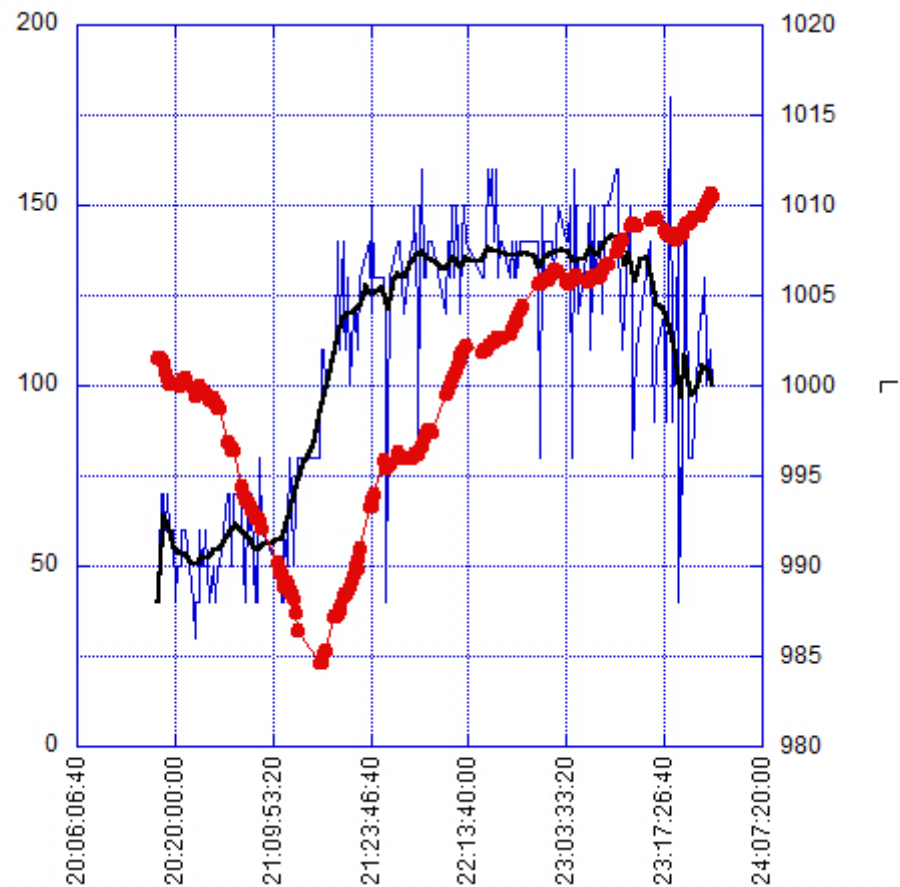
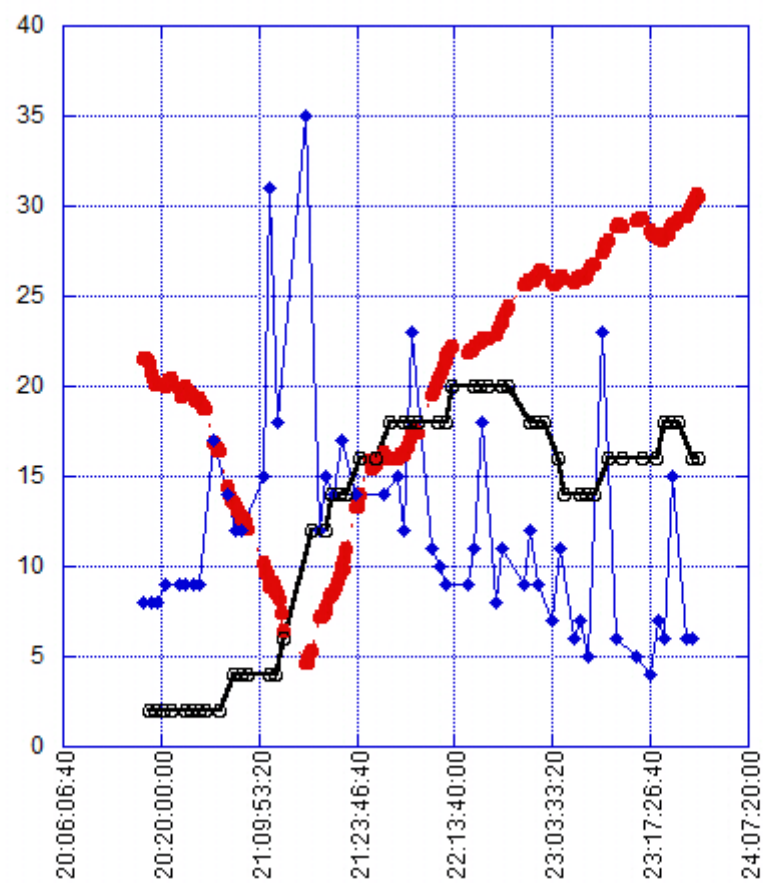


Hagupit deployment: 9/20/2008 12:31 - 9/25/2008 0: 0 = 7 days



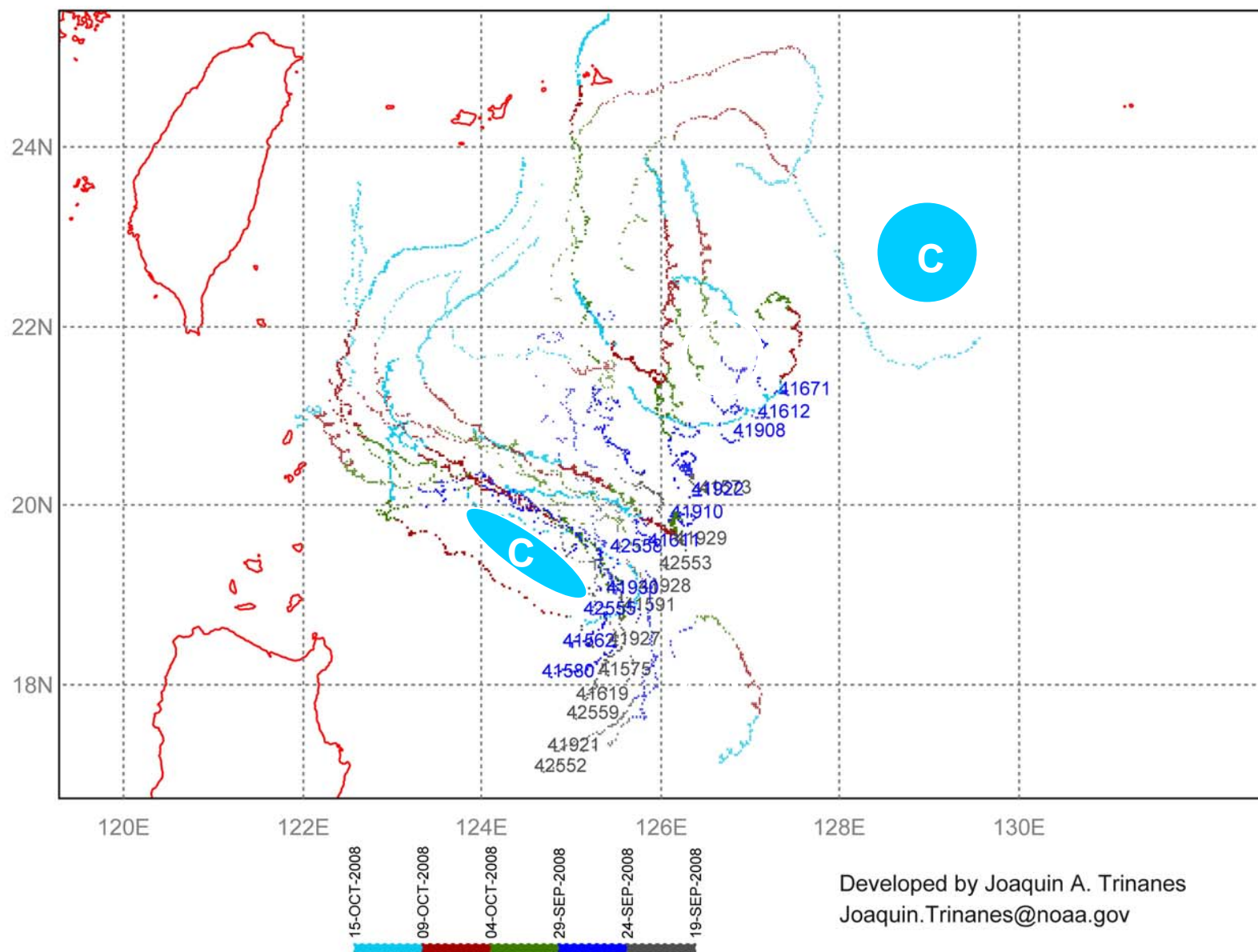
Jangmi deployment: 9/26/2008 7:12 - 10/ 4/2008 0: 0 = 7 days





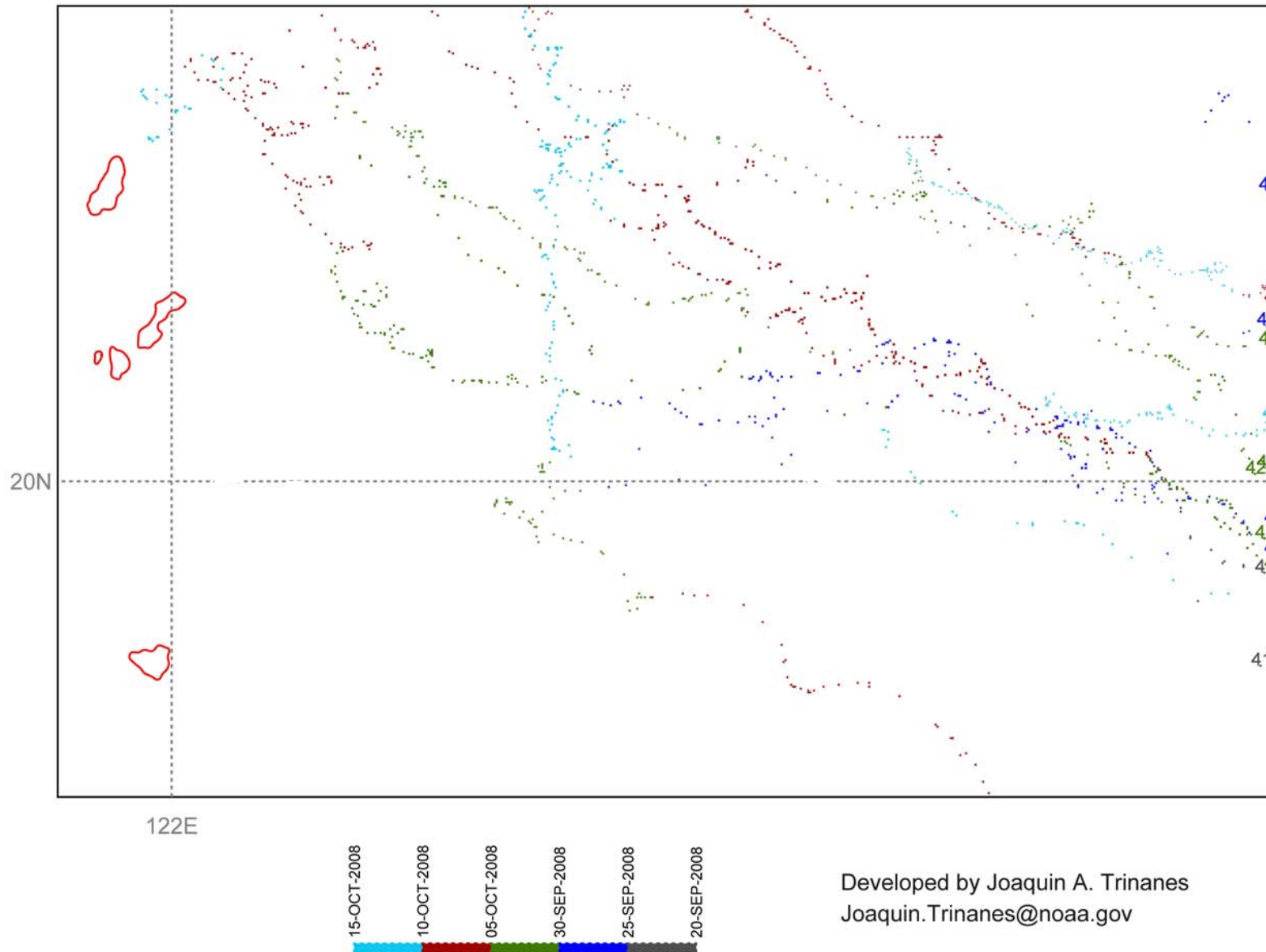


SEP-19-2008 to OCT-15-2008





SEP-20-2008 to OCT-15-2008



Developed by Joaquin A. Trinanes
Joaquin.Trinanes@noaa.gov

GOOS/CoastWatch NOAA/ACML

Hurricane Drifter Database

OCT-1-2008 to OCT-16-2008

Mabud Island

CoastWatch
Caribbean

Siayan Island

pier

Buoy 41921

20°52'12"



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Dionisio, the northeast
inhabitant of Philippines (at
the time)



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