ADDING WEATHER COVERAGE IN THE WESTERN PACIFIC

AMANDA REYNOLDS

GOAL

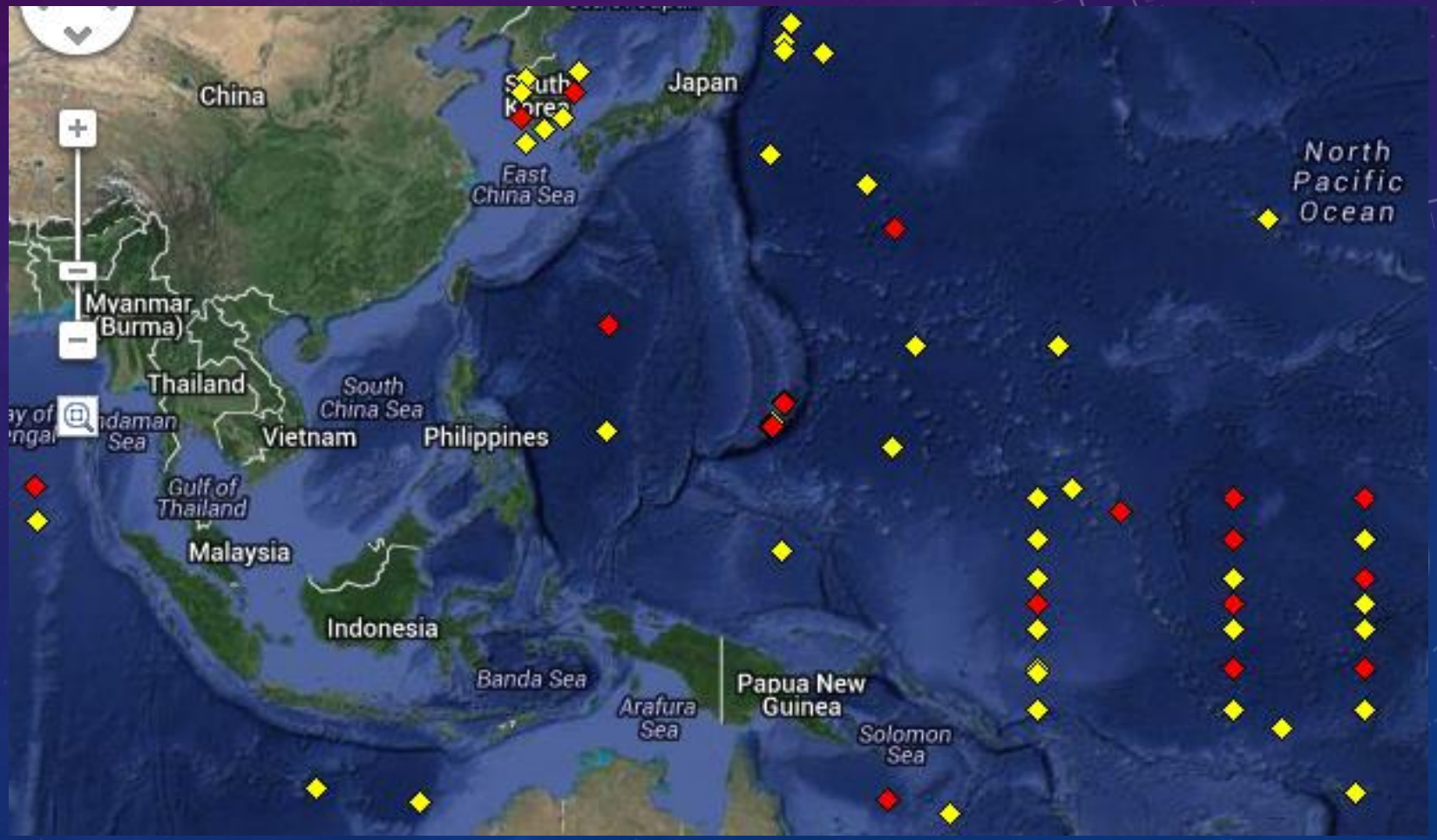
INCREASE THE NUMBER OF WEATHER OBSERVING STATIONS IN THE WESTERN PACIFIC OCEAN

OBJECTIVES

- Provide a base plan for Western Pacific Countries based on the US system
- Add additional land-based observing stations to all affected countries
- Add additional buoys in the Western Pacific Ocean
- Help form (and be part of) the “Coalition of Pacific Countries for Weather Observing”

CURRENT WESTERN PACIFIC WEATHER NETWORK

- Very Few Observing Stations
- Observations are mostly from satellites
- Those that are land based are very sparse

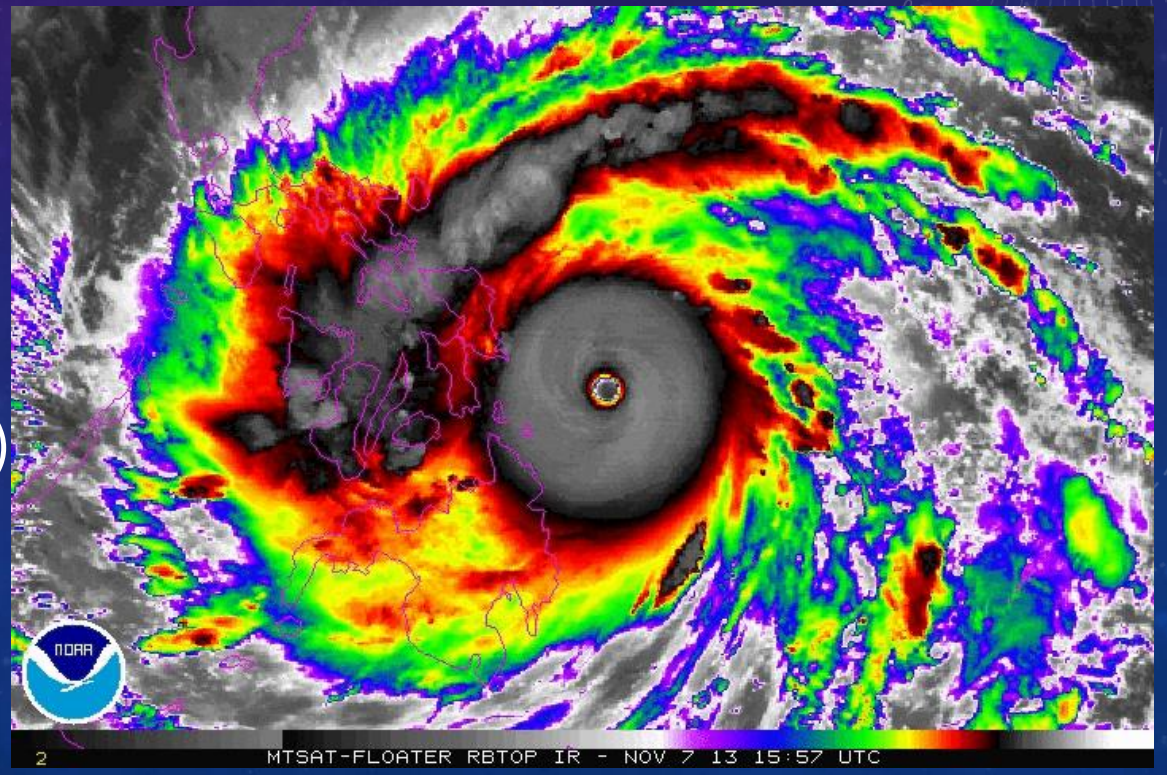


CURRENT UNITED STATES WEATHER NETWORK

- Observation sites include
  - Land-based (ASOS/AWOS) ~ 1500
  - Water-based ~ 1000
    - Buoys
    - Oil Platforms
- Nearly all are equipped to measure major weather phenomenon

ABOUT HAIYAN

- Although estimations of data are available, no exact measurements were taken
- No planes were flown in for data measurements
- Initial Satellite Estimates
  - Central Pressure less than Typhoon Tip (870 mb)
  - Fastest Winds Ever Recorded (above 253 mph)
  - Fastest Sustained Wind Recorded (above 190 mph)



ABOUT HAIYAN

- However, only one of these was actually correct
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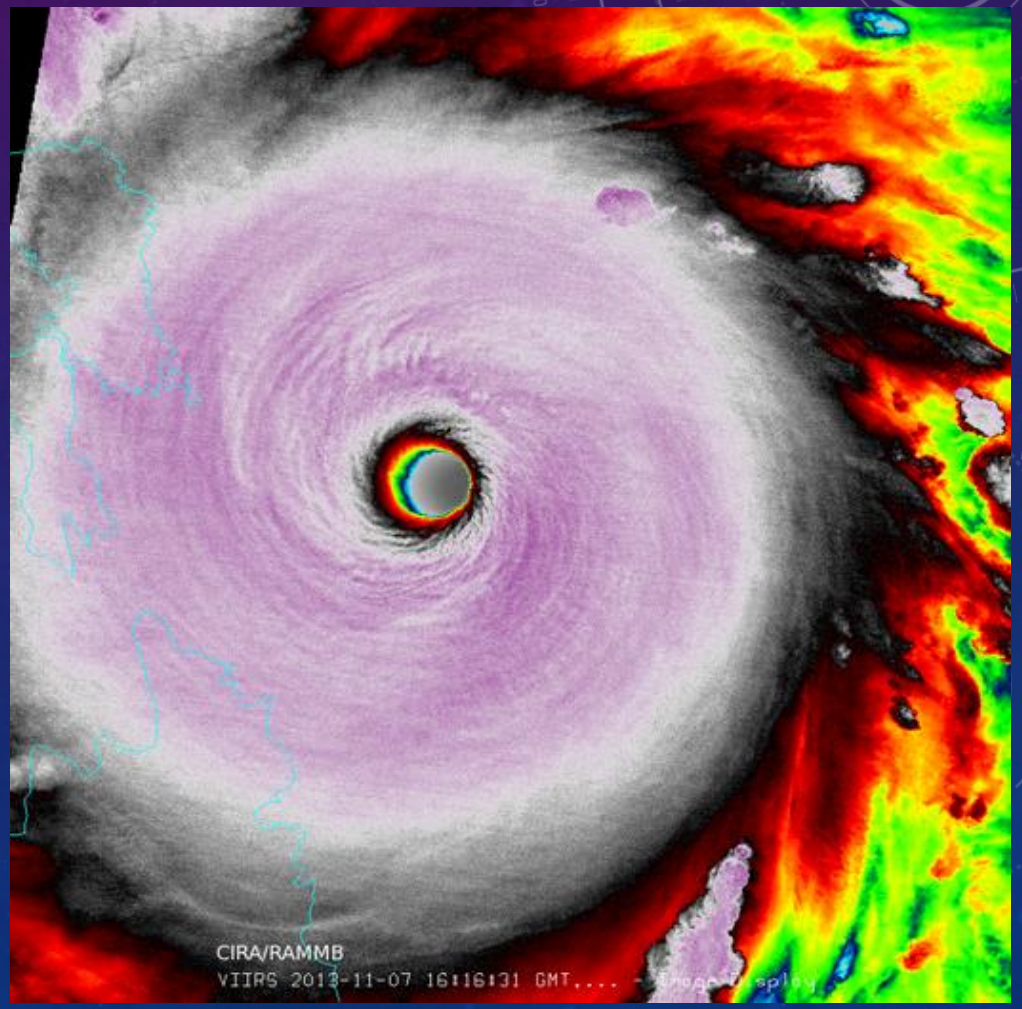


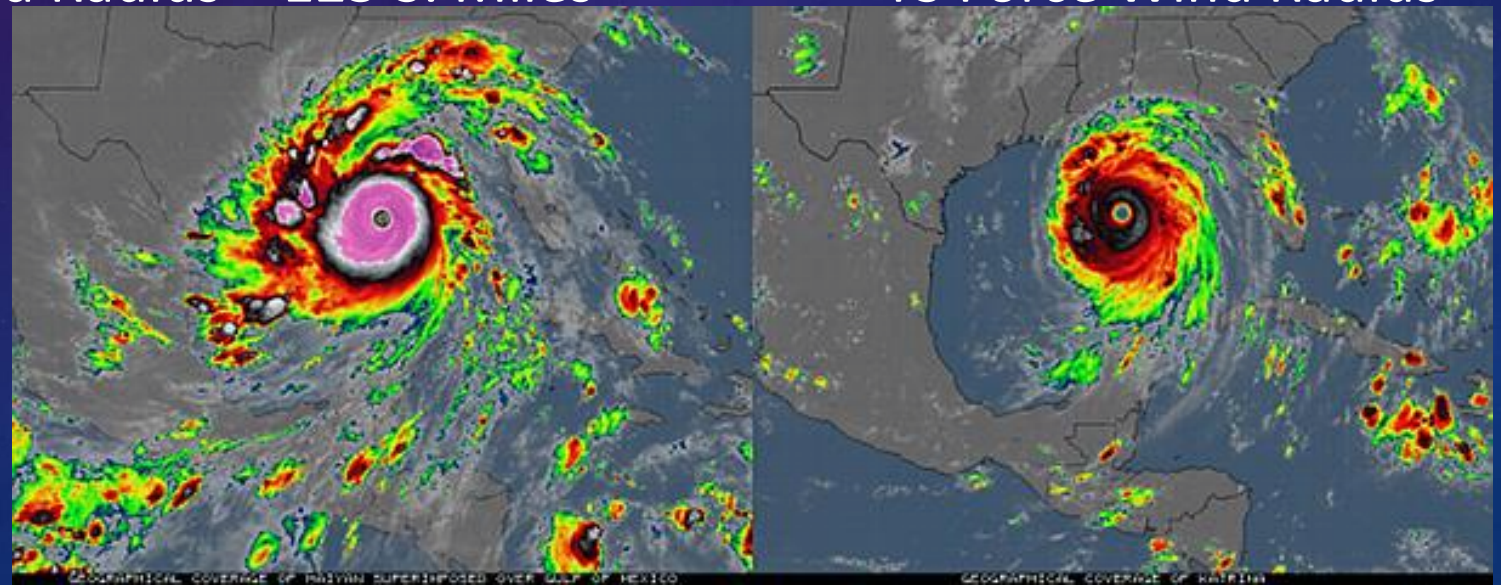
COMPARING KATRINA AND HAIYAN

HAIYAN

- Peak Sustained Winds ~ 190 mph
- Central Pressure ~ 895 mb
- Hurricane Force Wind Radius – 53 S. Miles
- TS Force Wind Radius – 125 S. Miles

KATRINA

- Peak Sustained Winds – 173 mph
- Central Pressure – 902 mb
- Hurricane Force Wind Radius – 92 S. Miles
- TS Force Wind Radius – 180 S. Miles



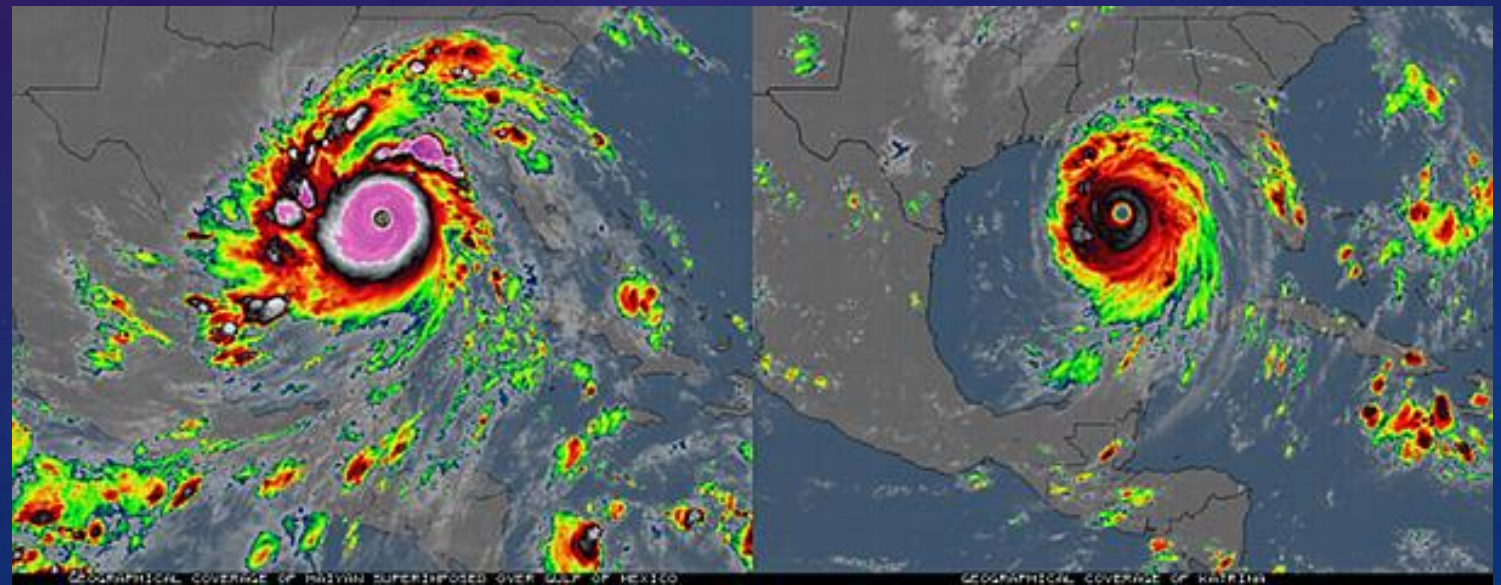
HOWEVER

HAIYAN

- No Planes Flew Into The Storm
- No Land-Based Observations
- Less than 20 Water-Based Observations

KATRINA

- Many Planes Flew Into The Storm
- Over 20 Land-Based Observations @ Landfall
- Over 100 Water-Based Observations



WHY THESE OBSERVATION STATIONS ARE NEEDED

- To verify weather findings, you need fine-tuned weather instruments
- There is no way to put Haiyan in history books officially because there is no official record of its central pressure or maximum wind speed
- With Water-Based Observation Sites, you can know the exact strength of the storm

HOW MANY LAND-BASED OBSERVING STATIONS AND WHERE

- Average Land-Based Observing Station Density in US -- 1 ASOS / 2500 sq. mi

- Philippines – 50 New Observing Stations
- Indonesia – 300 New Observing Stations
- Japan – 75 New Observing Stations
- Vietnam – 50 New Observing Stations
- Malaysia – 50 New Observing Stations

HOW MANY COASTLINE OBSERVING STATIONS AND WHERE

- Average Coastline Observing Station Density in US -- 1 ASOS / 150 km

- Philippines – 225 New Observing Stations
- Indonesia – 650 New Observing Stations
- Japan – 200 New Observing Stations
- Vietnam – 75 New Observing Stations
- Malaysia – 60 New Observing Stations

TIMELINE AND LOGISTICAL PLANNING

- Ultimately, the buoys and land-based stations would be installed ASAP
- However, installing these en mass may not be possible
- First, lay the base groundwork of required stations
  - Aproximately 100 Buoys in Pacific Ocean
  - 1 Buoy every 500 km at least
  - 1 Land-Based station for every 6,000 sq. mile
- Then As Able, add additional sensors.

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