



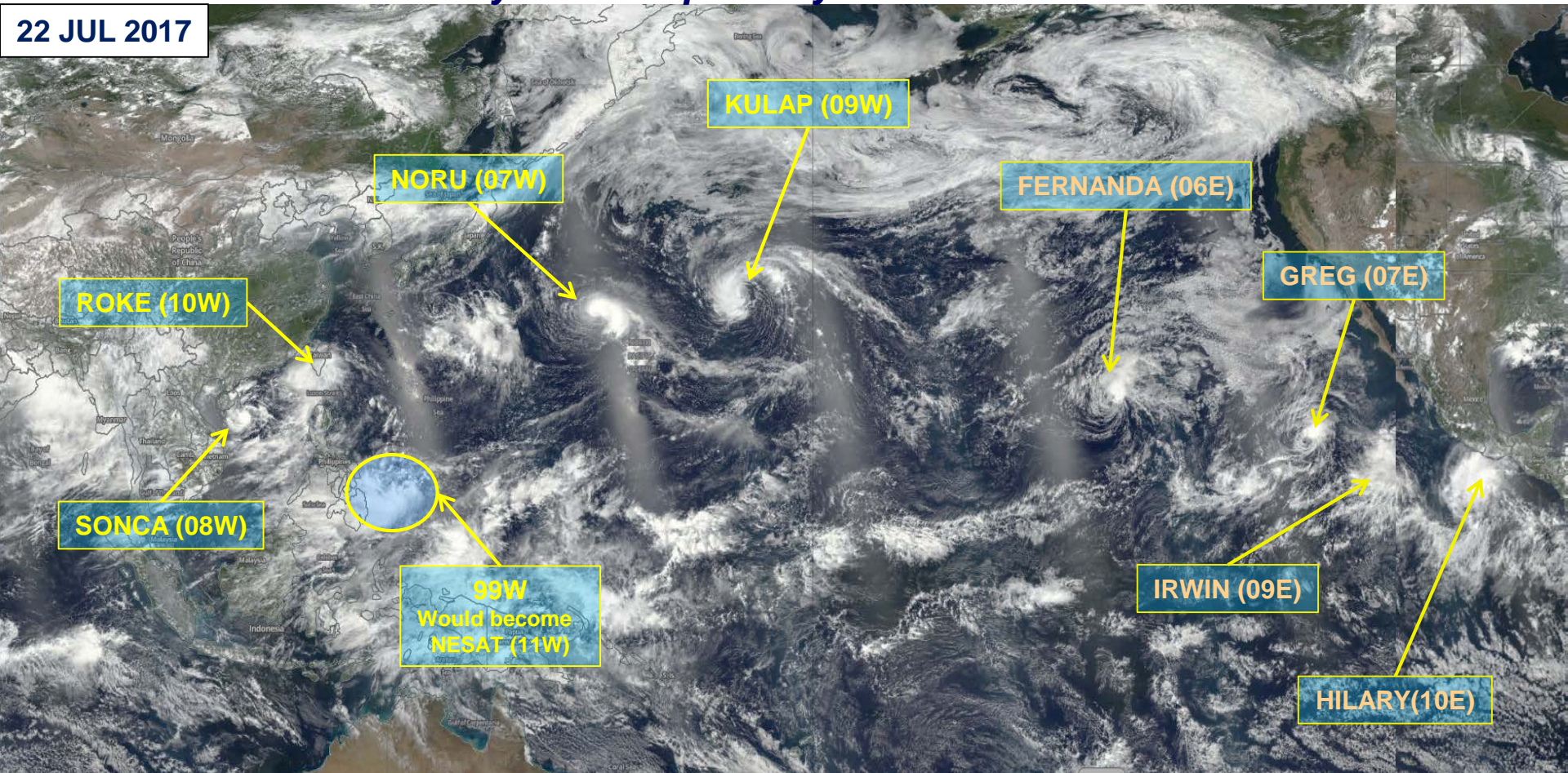
Joint Typhoon Warning Center

Challenges in 2017; New Products and Services Planned for 2018 and 2019



July 2017 Tropical Cyclone Out-Break

22 JUL 2017



2018 TCORF / 72nd IHC

13-15 March 2018

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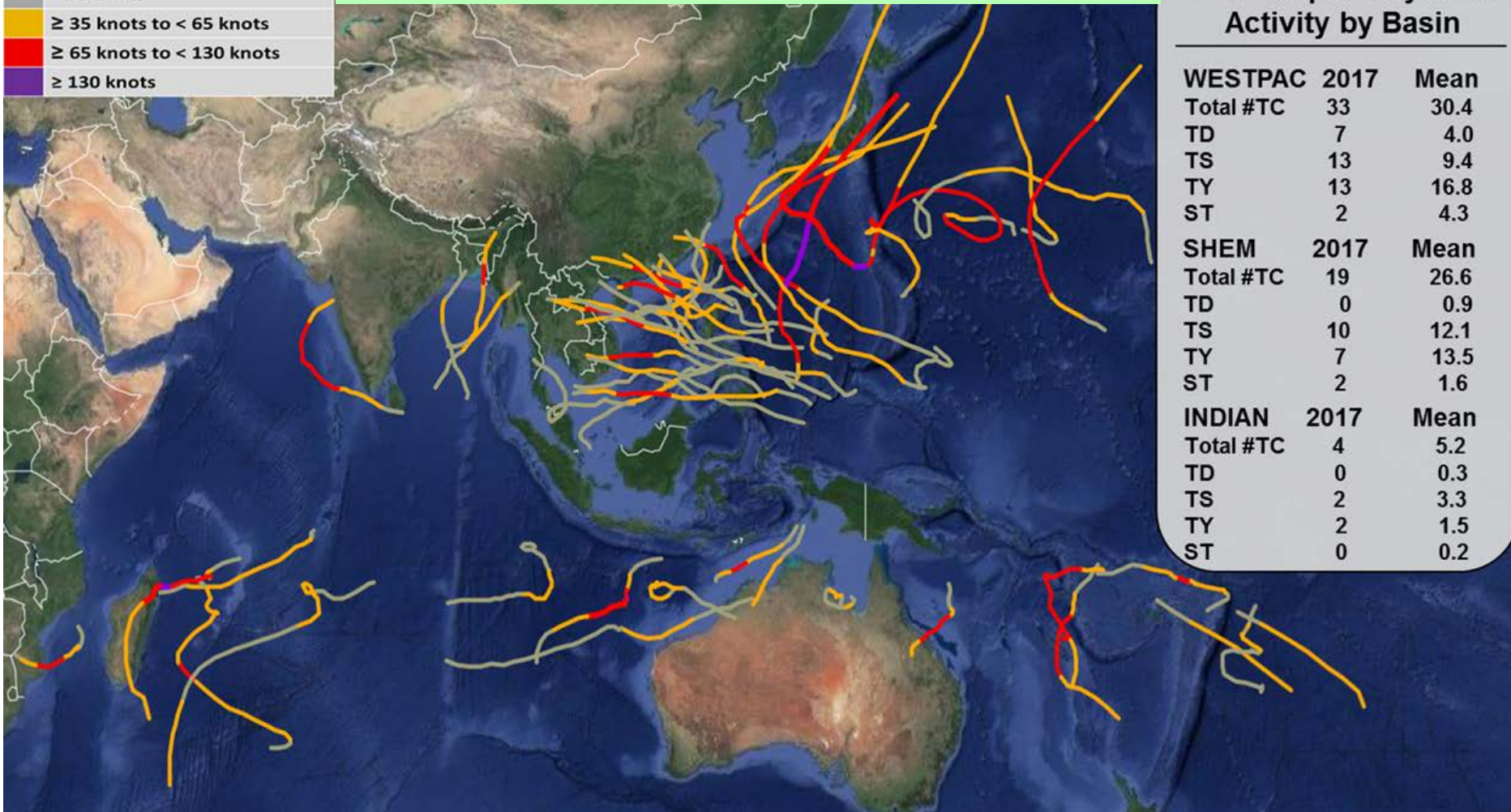
2017 Activity



Peak Tropical Cyclone Intensity

< 35 knots
≥ 35 knots to < 65 knots
≥ 65 knots to < 130 knots
≥ 130 knots

6,908 Fixes and 762 Forecasts on 56 Tropical Cyclones



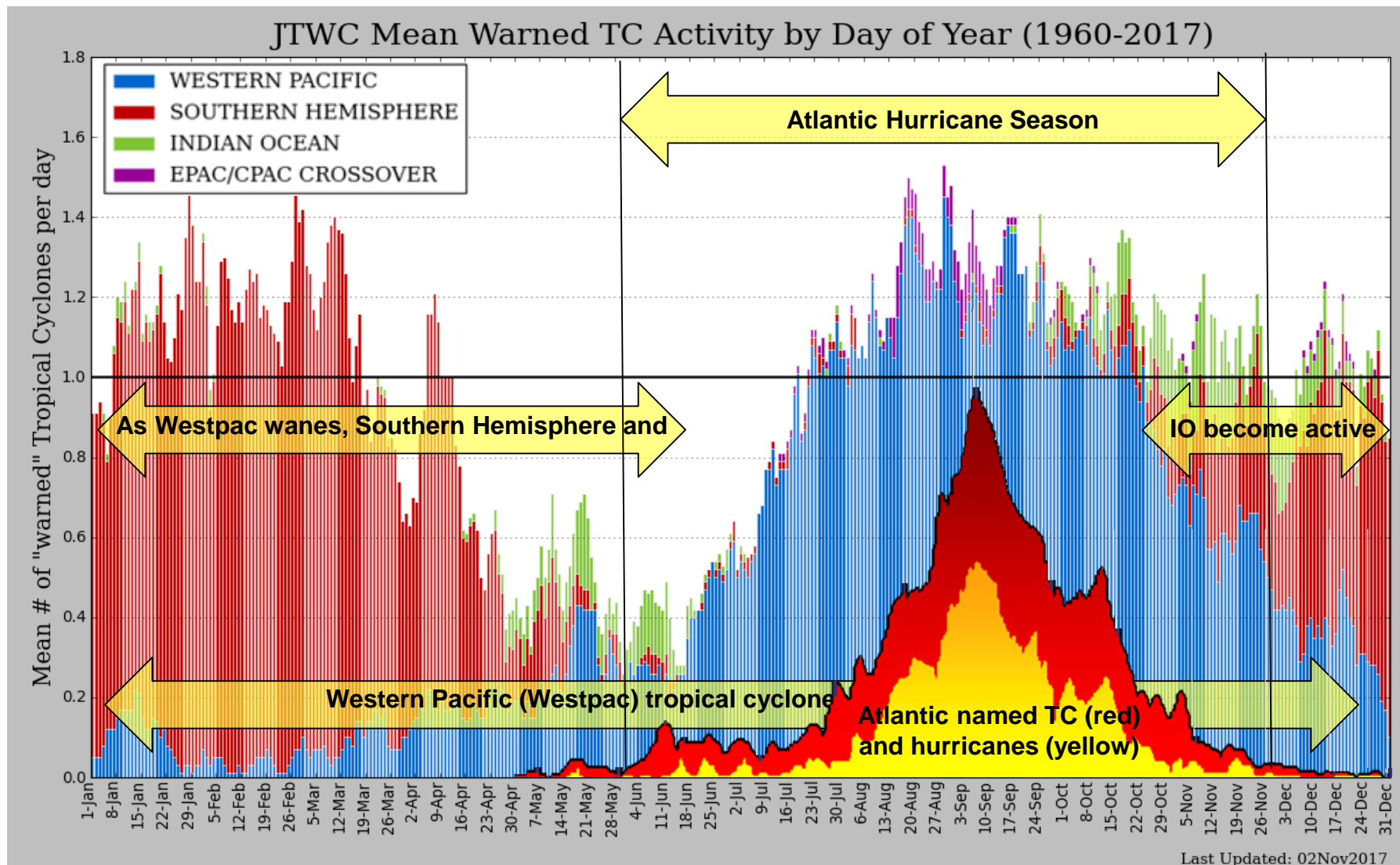
2017 Tropical Cyclone Activity by Basin

WESTPAC	2017	Mean
Total #TC	33	30.4
TD	7	4.0
TS	13	9.4
TY	13	16.8
ST	2	4.3
SHEM	2017	Mean
Total #TC	19	26.6
TD	0	0.9
TS	10	12.1
TY	7	13.5
ST	2	1.6
INDIAN	2017	Mean
Total #TC	4	5.2
TD	0	0.3
TS	2	3.3
TY	2	1.5
ST	0	0.2

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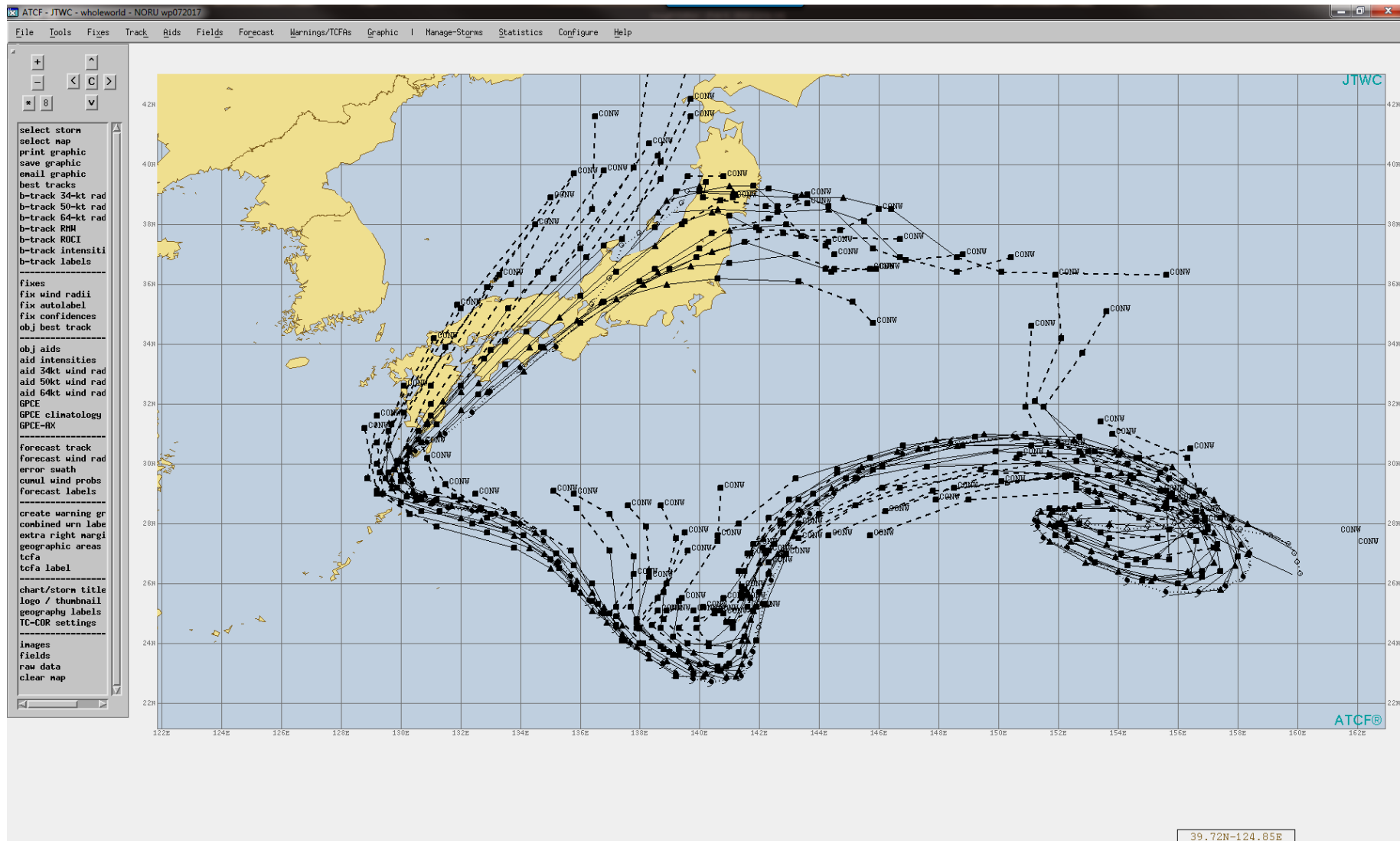
Challenges: Always Busy



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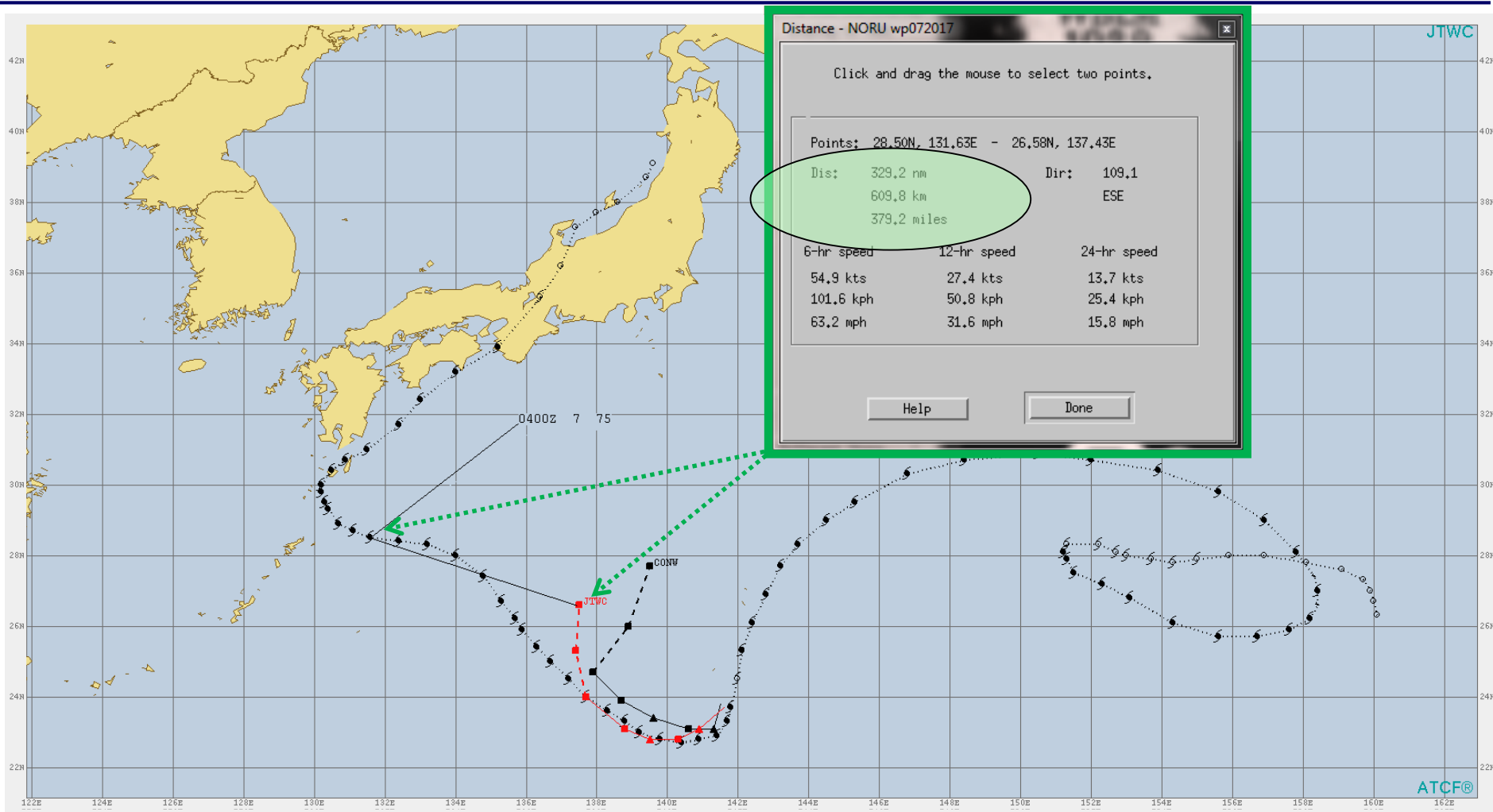
Challenges: Large Track Busts



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Challenges: Large Track Busts



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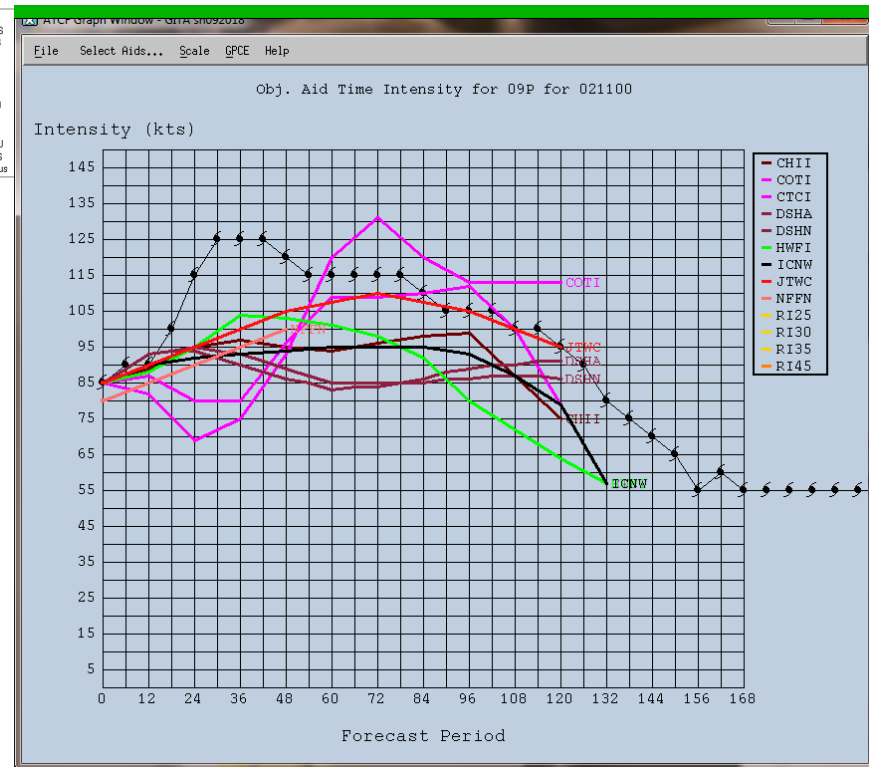
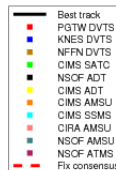
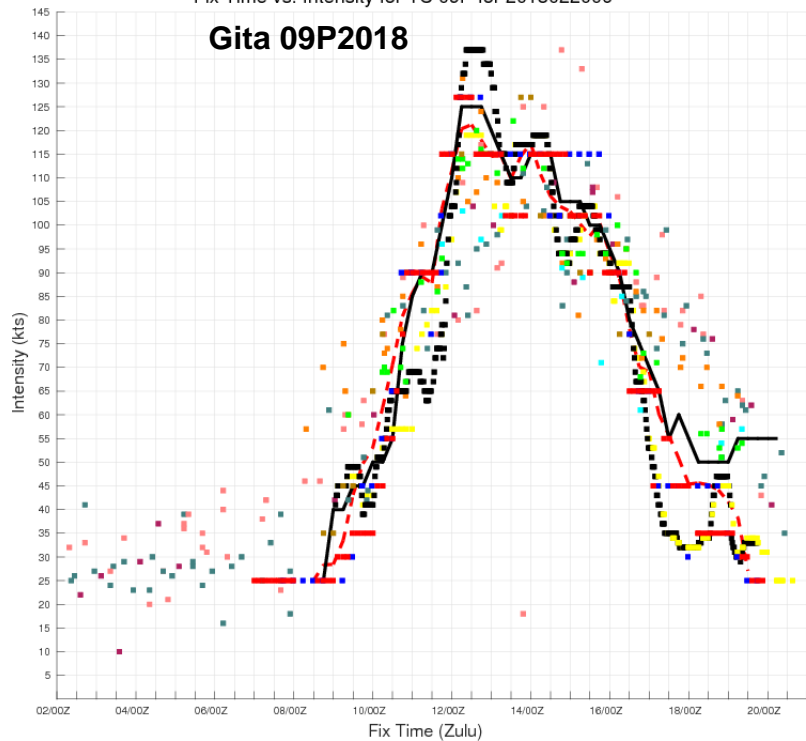


Challenges: Rapid Intensity Change



Fix Time vs. Intensity for TC 09P for 2018022006

Gita 09P2018



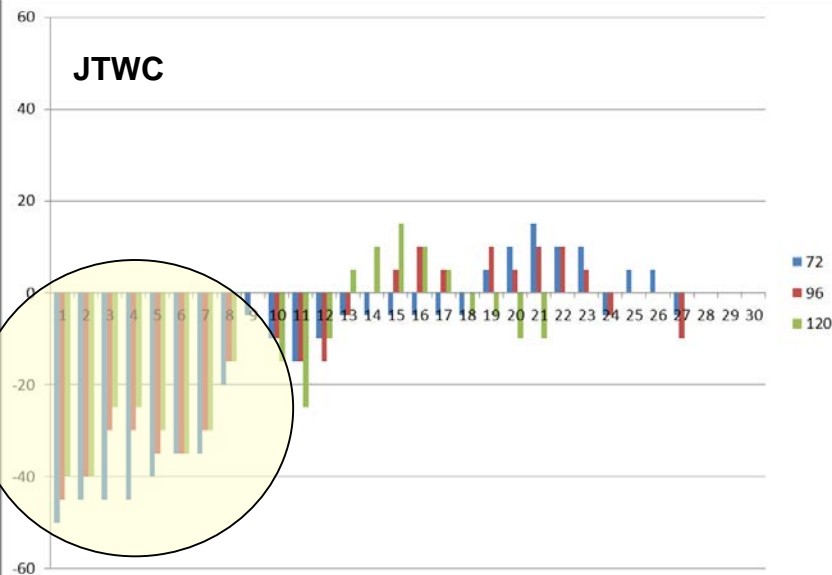
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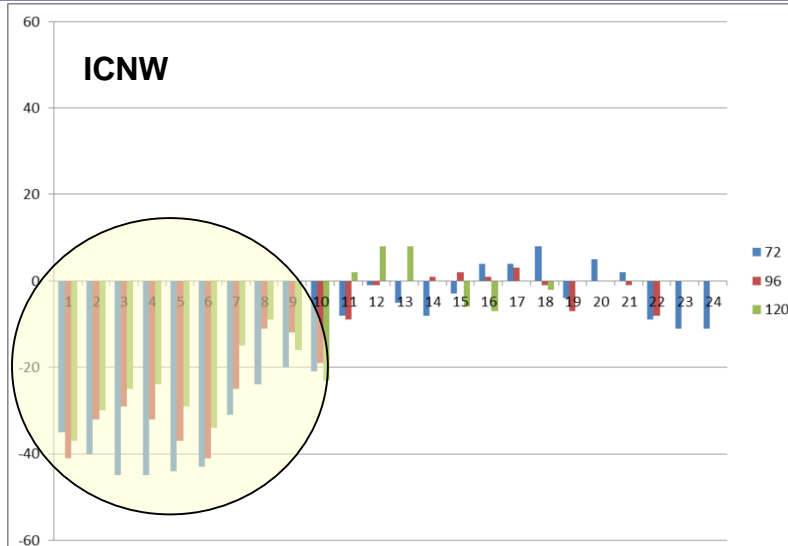
Challenges: Poor TD/TS Intensity Guidance



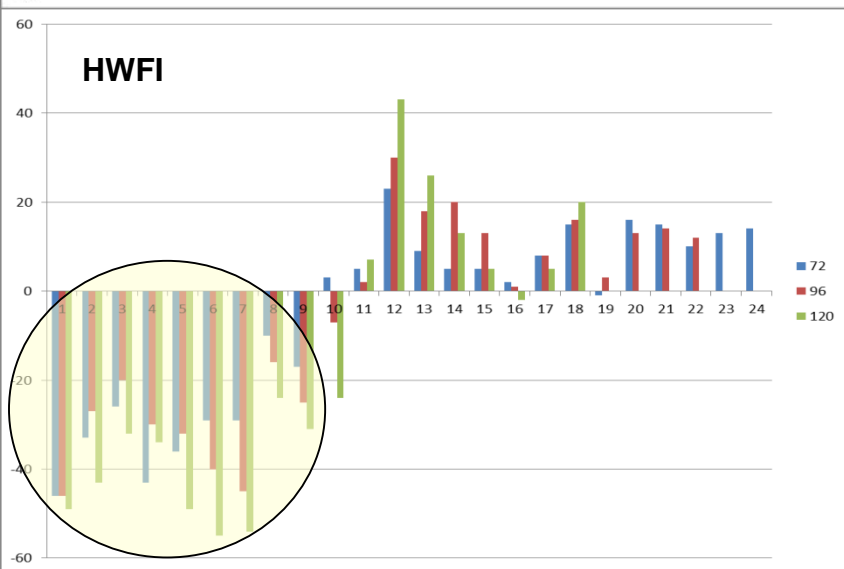
JTWC



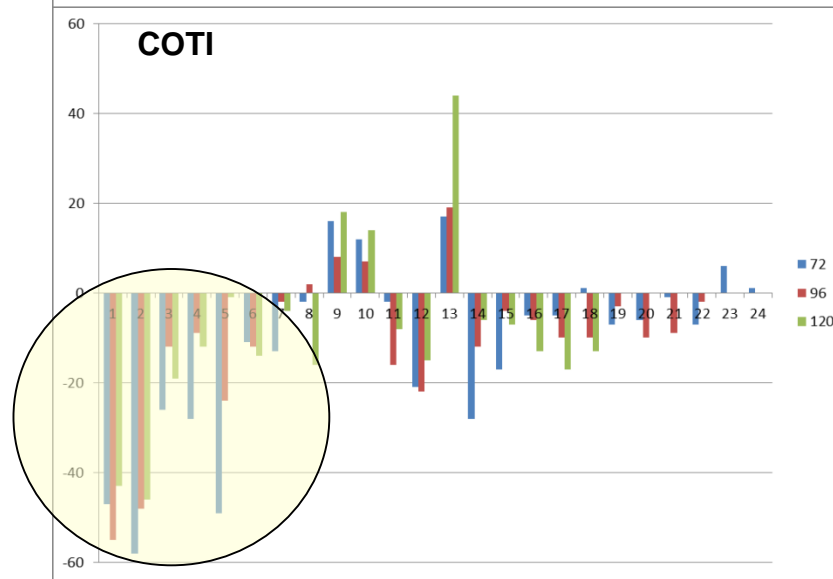
ICNW



HWFI



COTI



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New Products/Services: New Website

Tropical Warnings

Products and Services Notice

Warning Graphic Legend

Annual Tropical Cyclone Reports

Best Track Archive

Frequently Asked Questions (FAQ)

Global Tropical Hazards Outlook "new"

Current Messages

Messages Archive

Frequently Asked Questions

Naval Oceanography Portal

Tropical Cyclone Support

Tsunami Support

Alert: There are active seismic events!

JOINT TYPHOON WARNING CENTER

ABIO ABPW CPHC

NO SUSPECT AREAS

TC 07S (CEBILE)

VALID TIME: 05/1700Z
(PRODUCT OF JTWC/SATOPS)

LOW MEDIUM HIGH

TC formation unlikely within 24 hours

TC development likely, but expected to occur beyond 24 hours

TC development likely within 24 hours (Reference TCFA)

Tropical Cyclone (Reference Warning)

JTWC Tropical Warnings

Current Northwest Pacific/North Indian Ocean* Tropical Systems

- No Current Tropical Cyclone Warnings.

* Includes Bay of Bengal and Arabian Sea

Current Central/Eastern Pacific Tropical Systems

- No Current Tropical Cyclone Warnings.

Current Southern Hemisphere Tropical Systems

Tropical Cyclone 11S (Dumazile) Warning #14
Issued at 05/2100Z

- TC Warning Text
- TC Warning Graphic
- JMW 3.0 Data
- Google Earth Overlay KML
- IR Satellite Imagery
- Satellite Fix Bulletin

Tropical Cyclone Formation Alert WTPS21
Issued at 05/1400Z

- TCFA Text
- TCFA Graphic
- JMW 3.0 Data
- Google Earth Overlay KML
- IR Satellite Imagery
- Satellite Fix Bulletin

Current Significant Tropical Weather Advisories

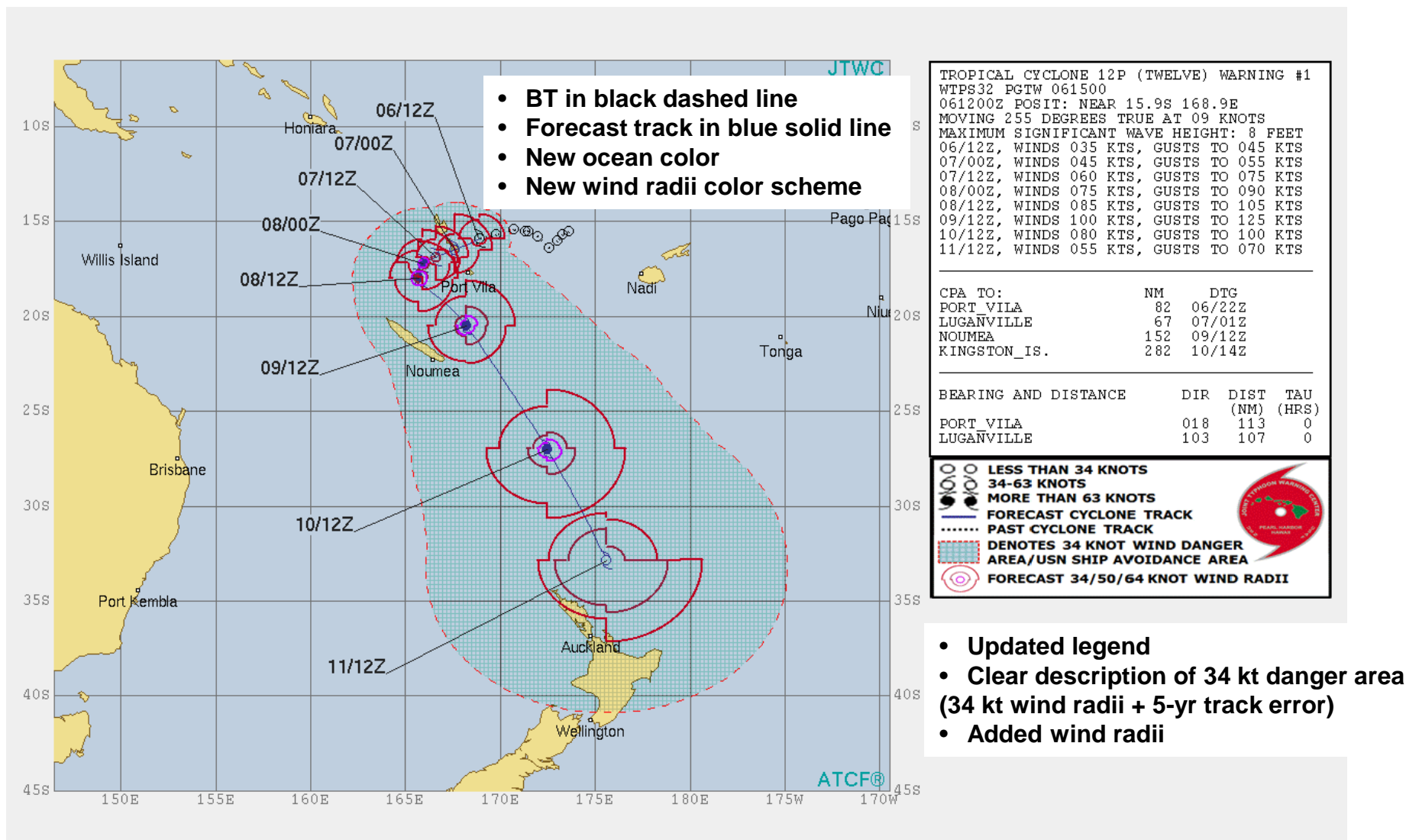
- ABPW10 (Western/South Pacific Ocean)
- ABIO10 (Indian Ocean)
- Satellite Image

<http://www.metoc.navy.mil/jtwc/jtwc.html>

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New Products/Services: Updated Graphic

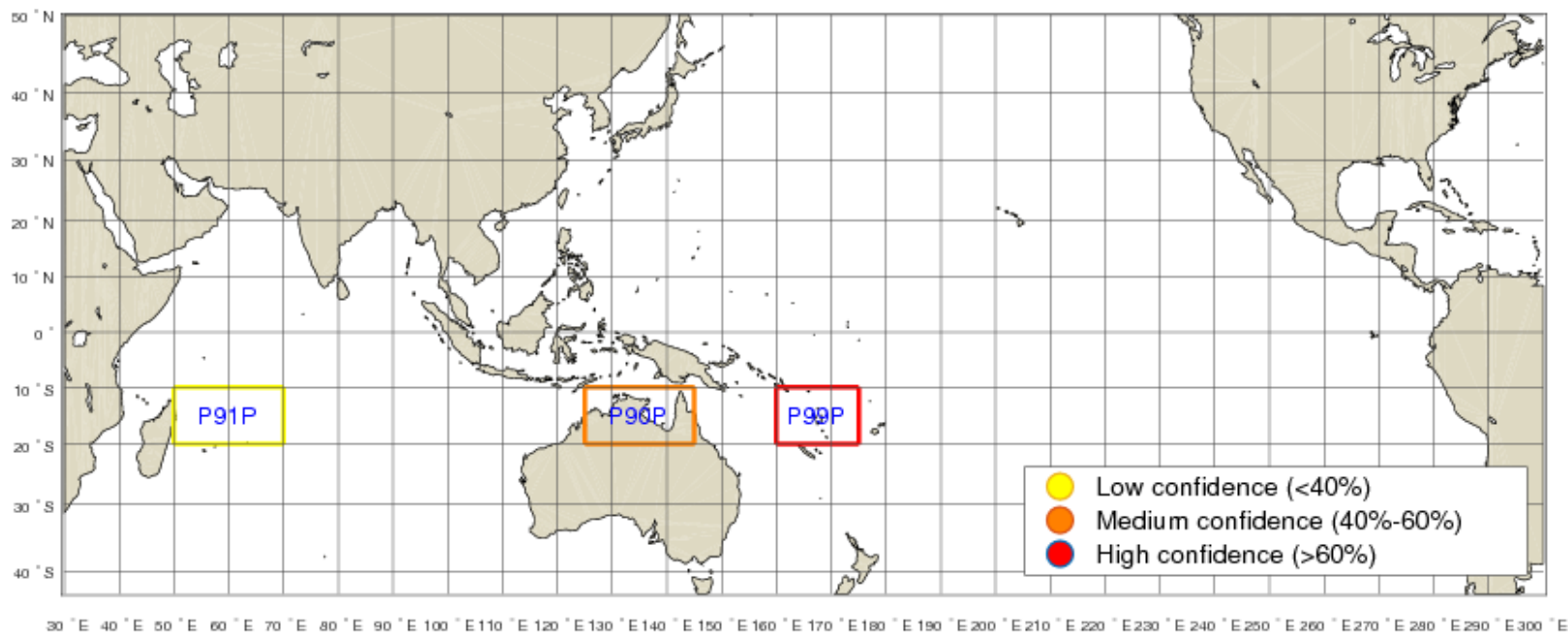


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New Products/Services: “Pre-Invests”

JTWC Two-Week TC Formation Outlook for 030600Z



Preinvest P99P: TC formation may occur between 03060600Z and 03070600Z. Subjective confidence: 90% Invest: 97P
Preinvest P90P: TC formation may occur between 03091200Z and 03121200Z. Subjective confidence: 40% Invest: 98P
Preinvest P91P: TC formation may occur between 03100000Z and 03120000Z. Subjective confidence: 30% Invest: XXX

Experimental product – to be made available to DoD METOC customers
Updated every 12 hours by Navy Enlisted forecasters
Next step: add “general expected” movement

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New Products/Services: AWIPS-2



- Installation scheduled for late April
- USN accreditation ~ early 2019
- Data fusion and visualization tool

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2018-2019 JTWC R&D Needs



Priority	Need
1 TC Intensity Change	Basin-specific (WESTPAC, SHEM, NIO, SIO, and SWPAC) probabilistic and deterministic forecast guidance for TC intensity change, particularly the onset, duration, and magnitude of rapid intensity change events (including ERC, over-water weakening, etc.) at 2-3 day lead times.
2 TC Structure Specification	Basin-specific (WESTPAC, SHEM, NIO, SIO, and SWPAC) probabilistic and deterministic guidance for the specification (analysis and forecast) of key TC structure variables, including the production of 34-, 50- and 64- knot wind radii and a dynamic (situational) confidence-based swath of potential 34-kt wind impacts
3 Data Exploitation	Techniques or products that improve the utility and exploitation of microwave satellite, ocean surface wind vectors, and radar data for fixing (center, intensity, radii) TCs, or for diagnosing RI, ETT, ERC, etc. (e.g., develop a “Dvorak-like” technique using microwave imagery).
4 TC Track Improvement	Model enhancements or guidance to improve TC track forecast skill and the conveyance of probabilistic track uncertainty . Includes development of guidance-on-guidance to identify and reduce forecast error outliers resulting from large speed (e.g., accelerating recurvers) and directional (e.g., loops) errors, or from specific forecast problems such as upper-level trough interaction, near/over-land, elevated terrain, and extratropical transition.
5 TC Genesis Timing and Forecast	Guidance to improve the forecasting of TC genesis timing and the subsequent track, intensity and structure of pre-genesis tropical disturbances at both the short-range (0-48 hours) and the medium-range (48-120 hours), that exhibits a high probability of detection and a low false alarm rate. Techniques to diagnose and predict the formation of TCs via transition of non-classical disturbances (e.g. monsoon depressions, sub-tropical, hybrids, etc).

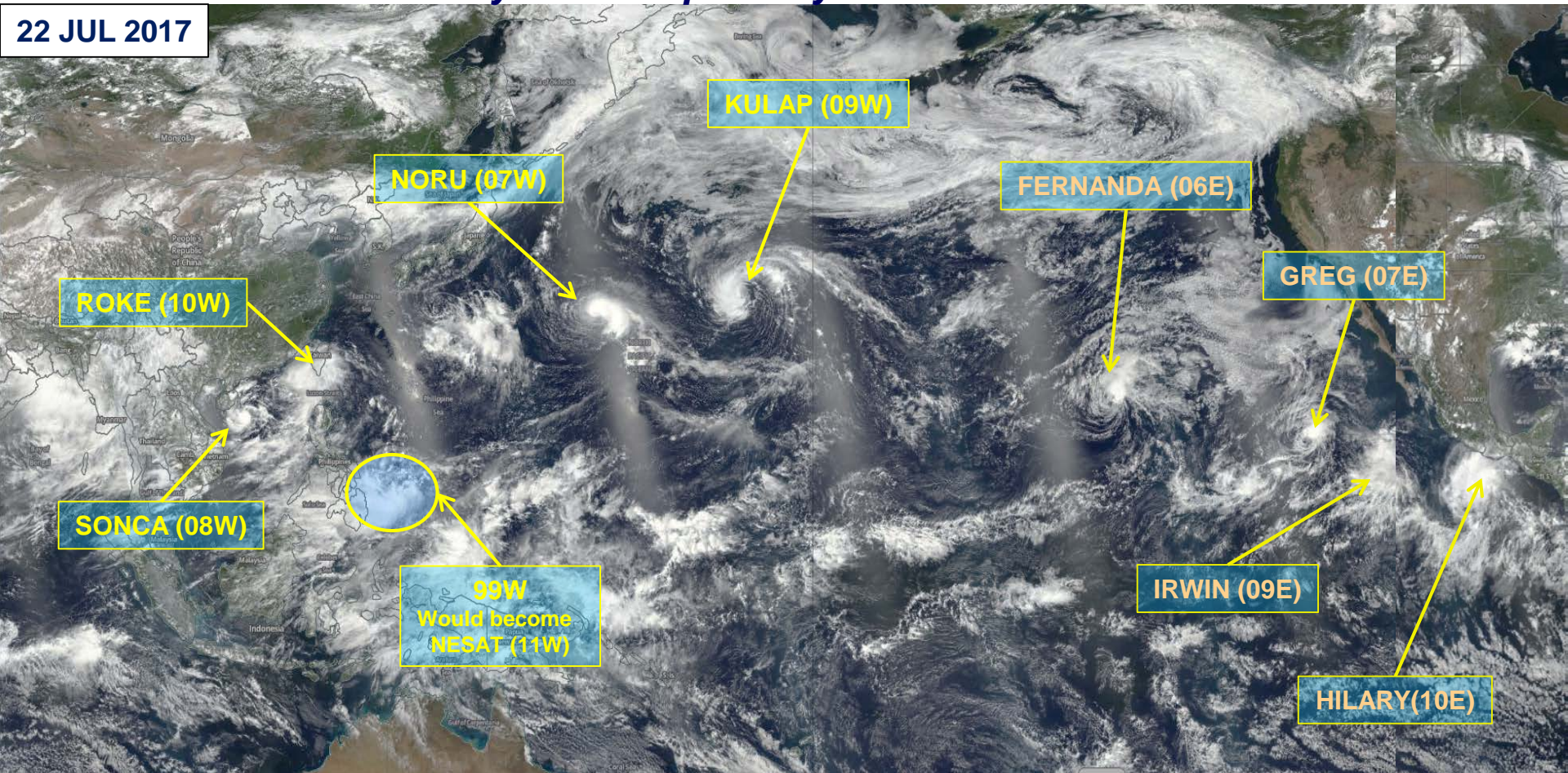
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Questions?

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