

# Joint Typhoon Warning Center 2005 Year In Review



Lt Col Amanda Preble  
Director



## Overview

- **Mission**
- **2005 Tropical Cyclone Summary**
  - **Tracks**
  - **Statistics**
- **2005 Research**
- **Customer Support 2006**



09/30/05 1200Z 19W LONGWANG  
09/30/2005 1351Z terra IR

## JTWC Mission

**Provide tropical cyclone forecast and warning support for Department of Defense, Department of State and US Government assets in the Pacific and Indian Oceans as established by Commander, United States Pacific Command.**



# 2005 Tropical Cyclones vs Climatology

## Arabian Sea & Bay of Bengal

2001: 4  
2002: 5  
2003: 3  
2004: 5  
2005: 7

25 Yr Avg: 5

## NW Pacific

2001: 27  
2002: 31  
2003: 27  
2004: 32  
2005: 25

25 Yr Avg: 31

## Cent Pac

2001: 4  
2002: 5  
2003: 2  
2004: 2  
2005: 1

25 Yr Avg: 2

## NE Pacific

2001: 17  
2002: 16  
2003: 16  
2004: 16  
2005: 16

25 Yr Avg: 18

CPHC

NHC

## S Indian Ocean & W Australia Region

2001: 18  
2002: 21  
2003: 20  
2004: 25  
2005: 18

25 Yr Avg: 18

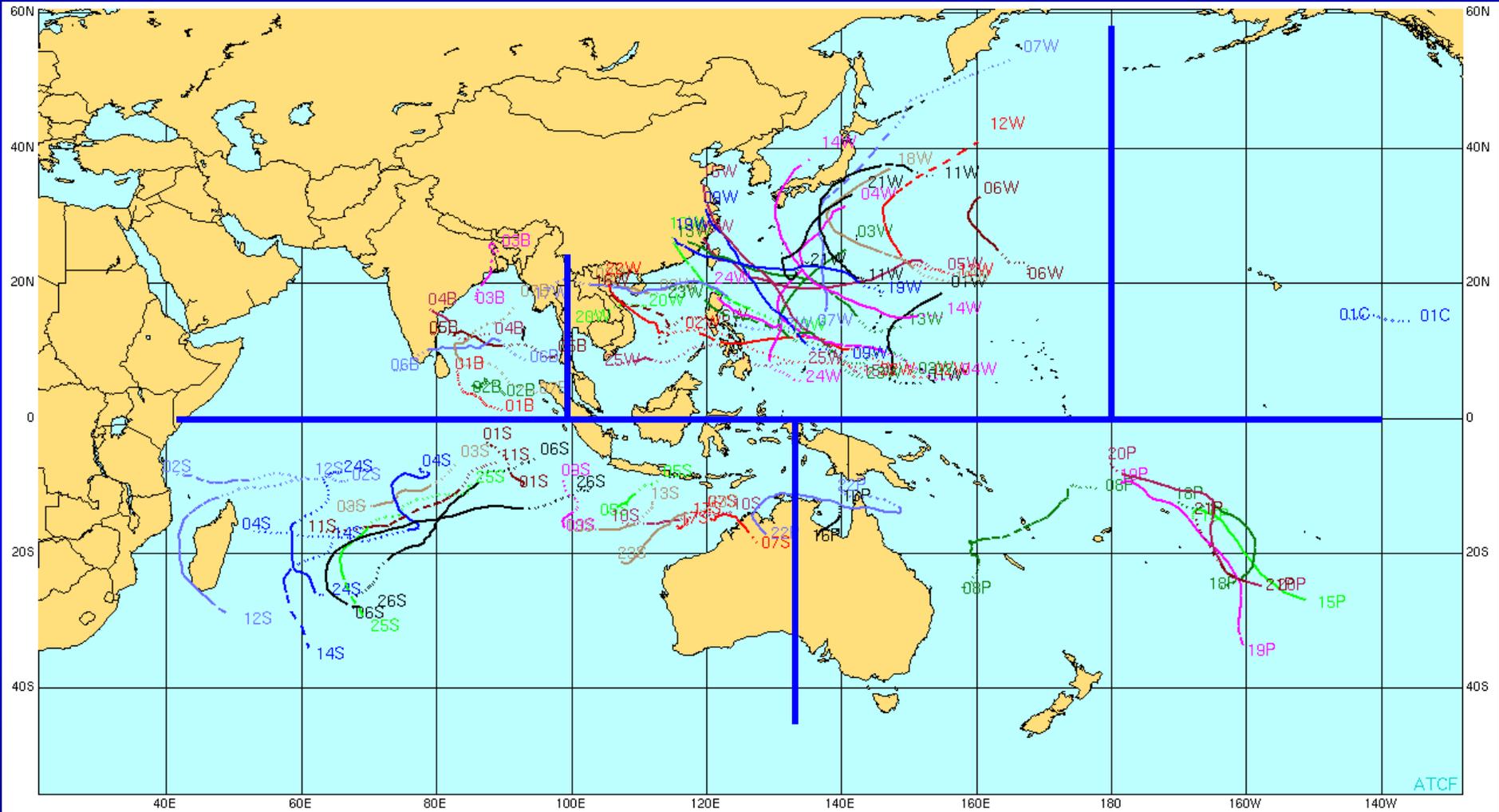
## South Pacific & E Australia Region

2001: 3  
2002: 4  
2003: 9  
2004: 2  
2005: 8

25 Yr Avg: 10

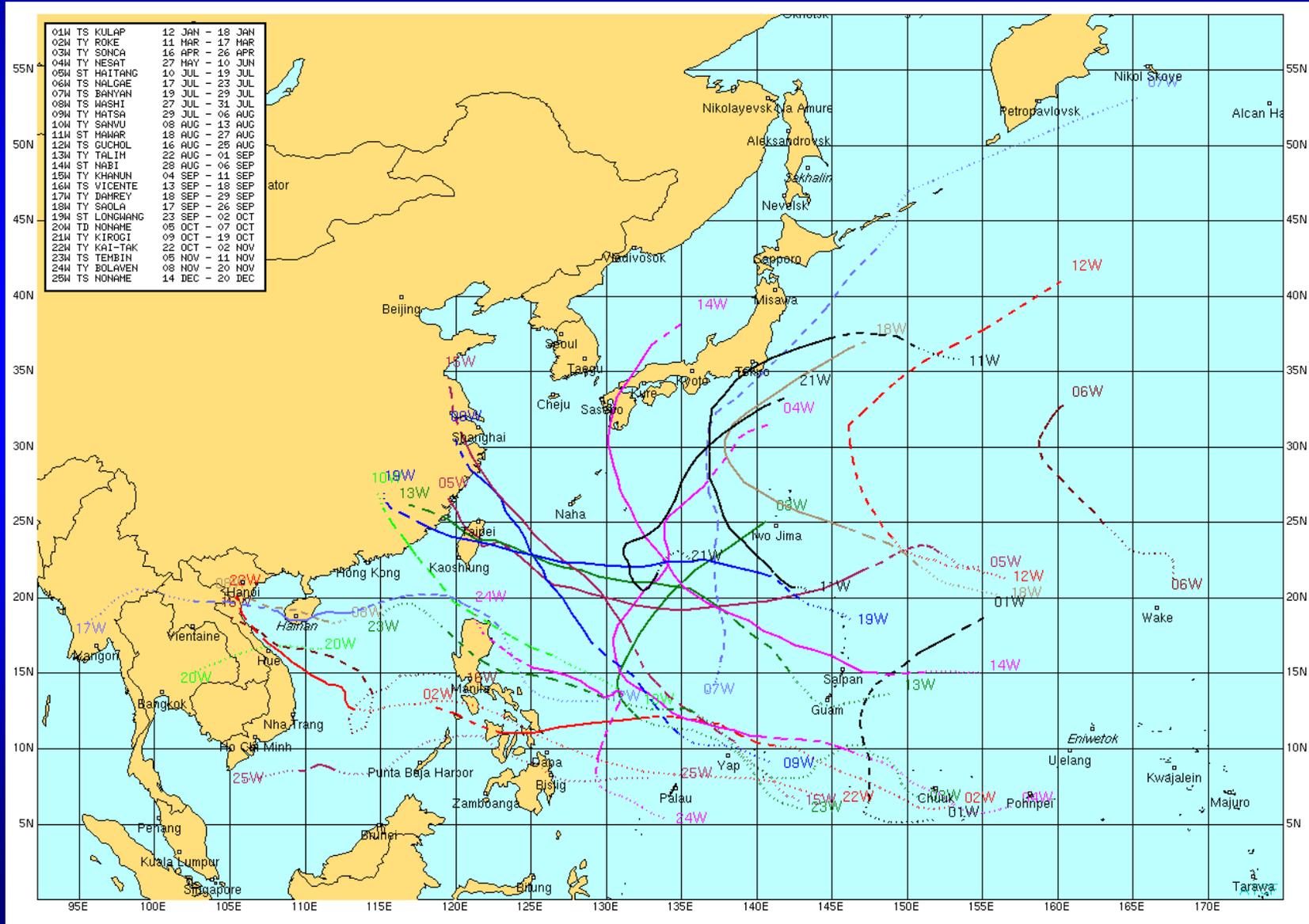


# 2005 Storms



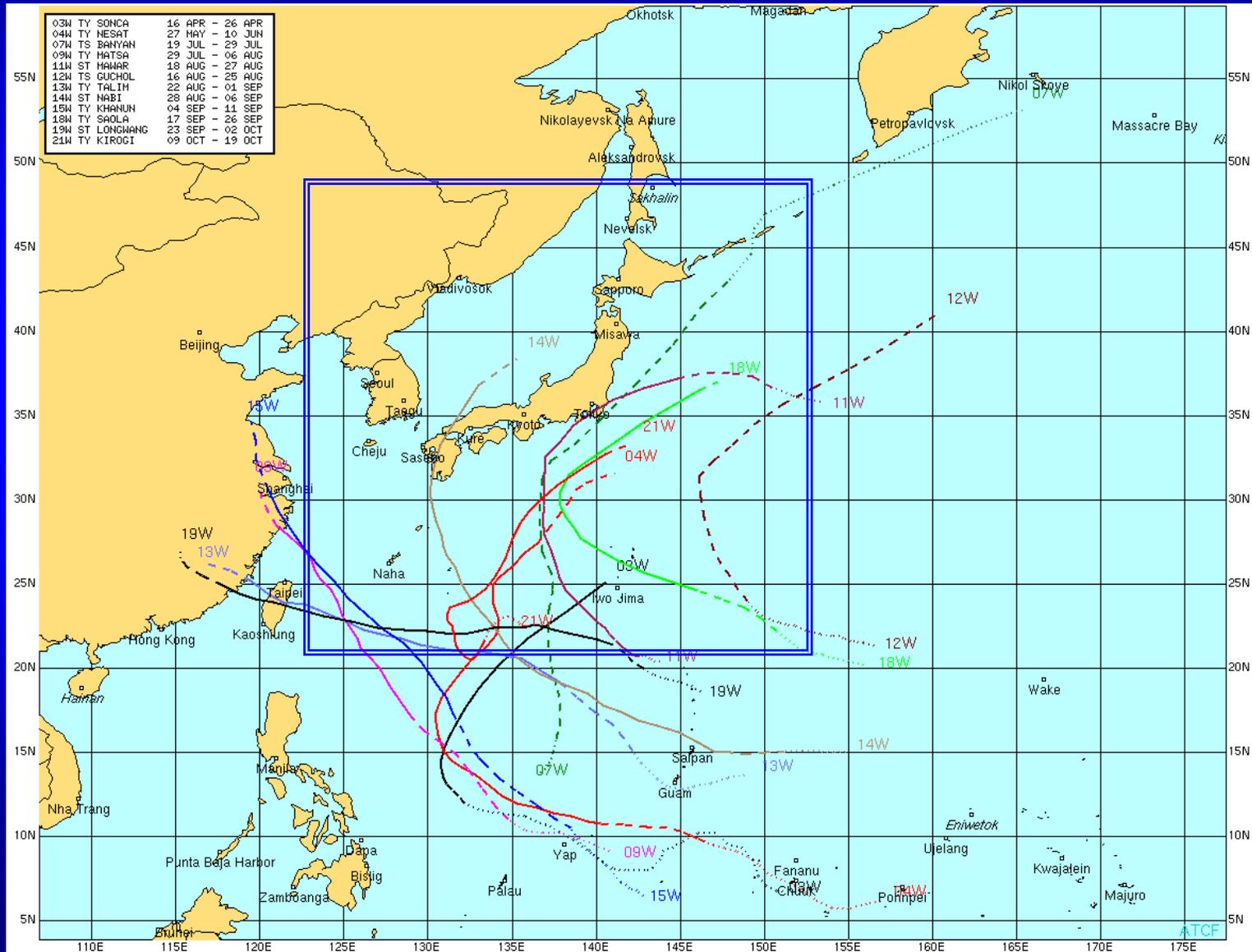


# 2005 WESTPAC Storms



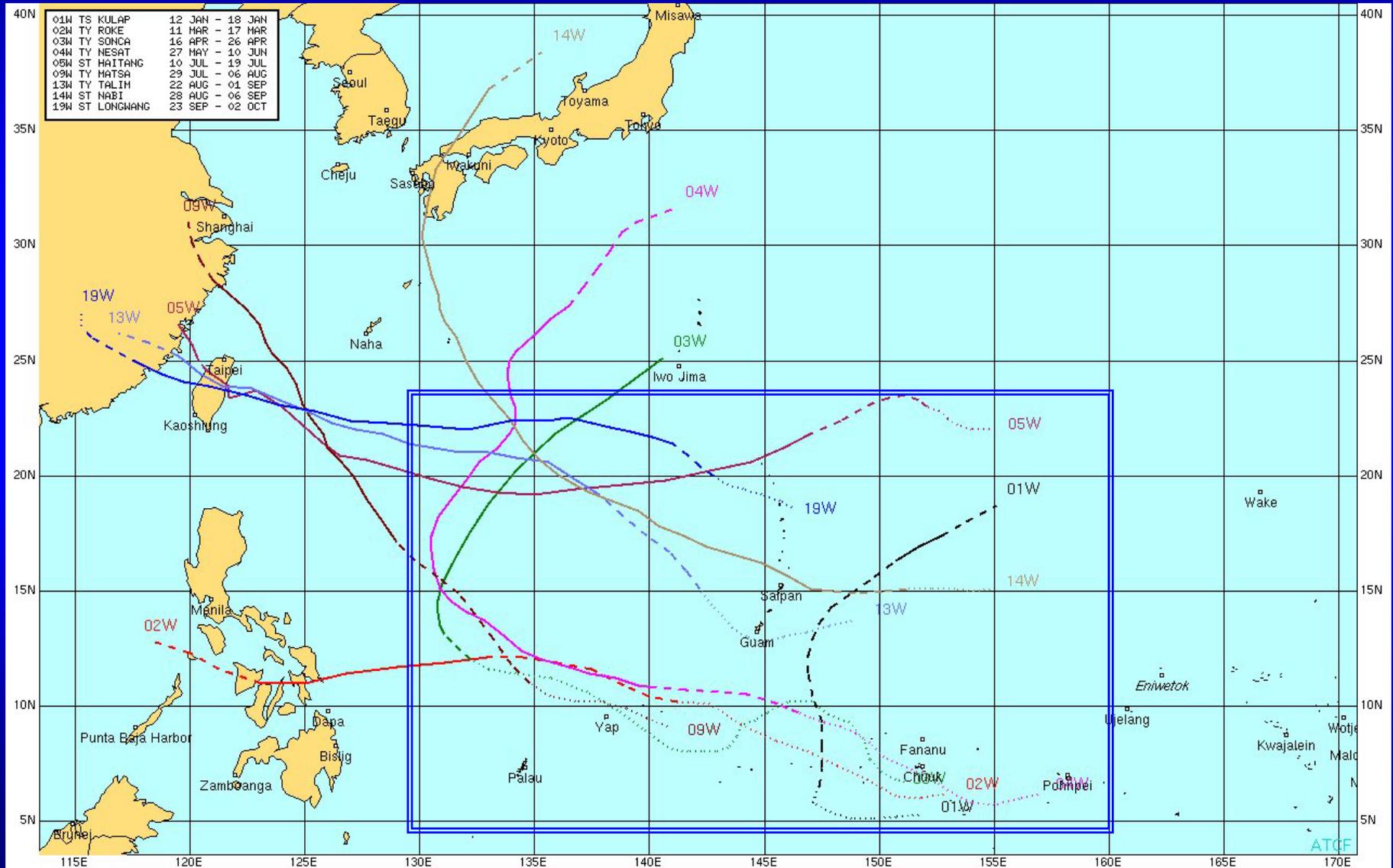


# 2005 Japan Storms



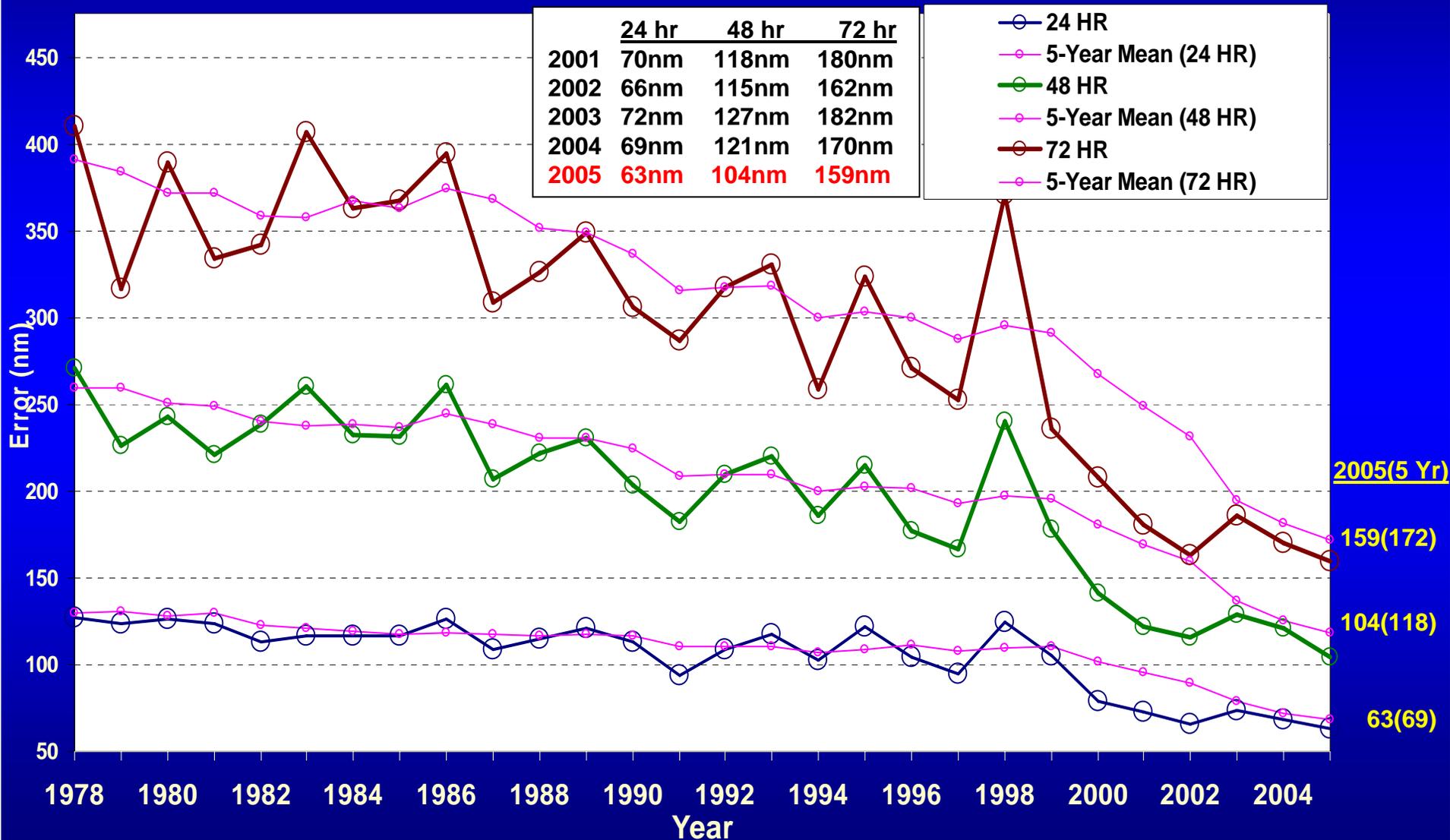


# 2005 Guam Storms



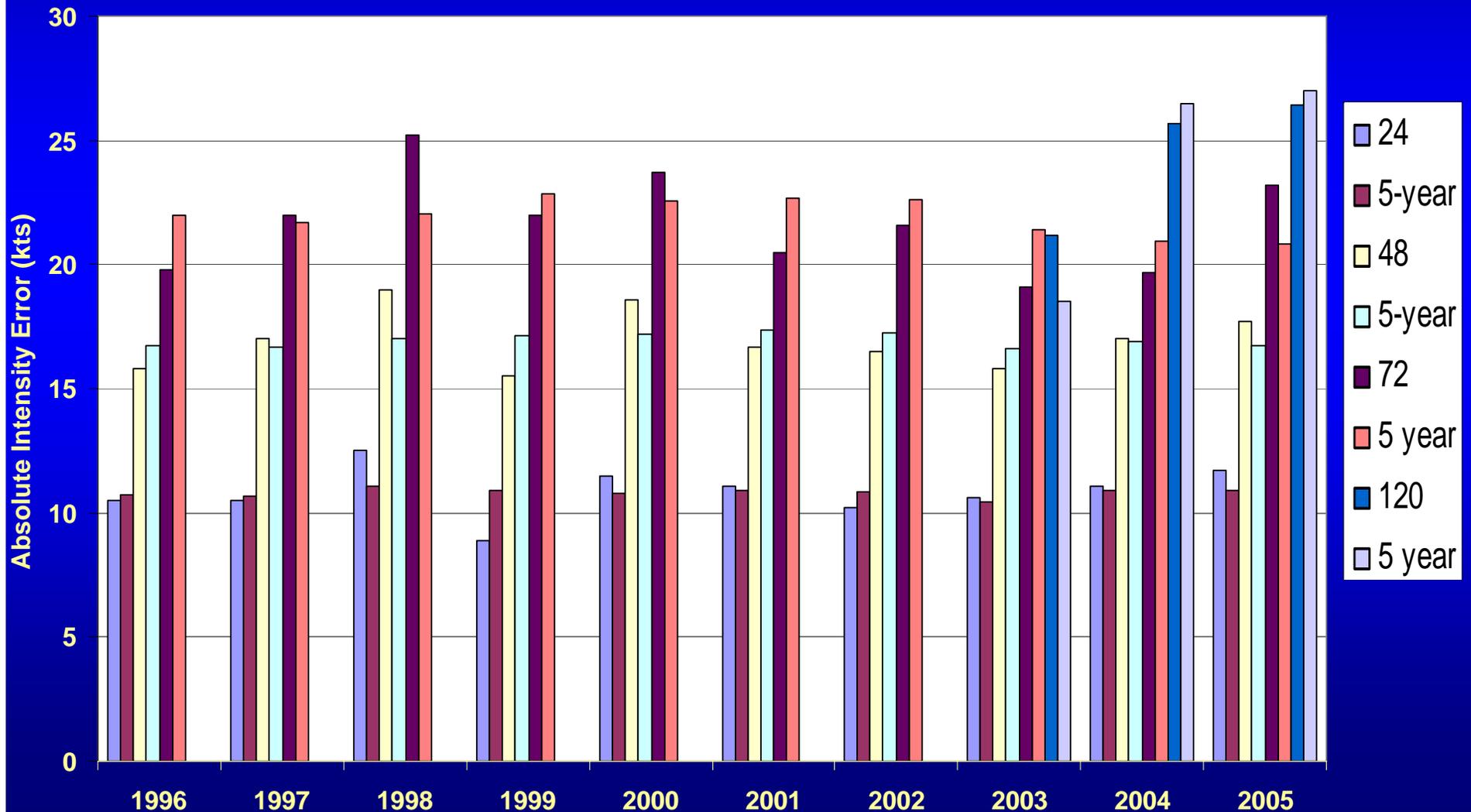


# JTWC Position Error





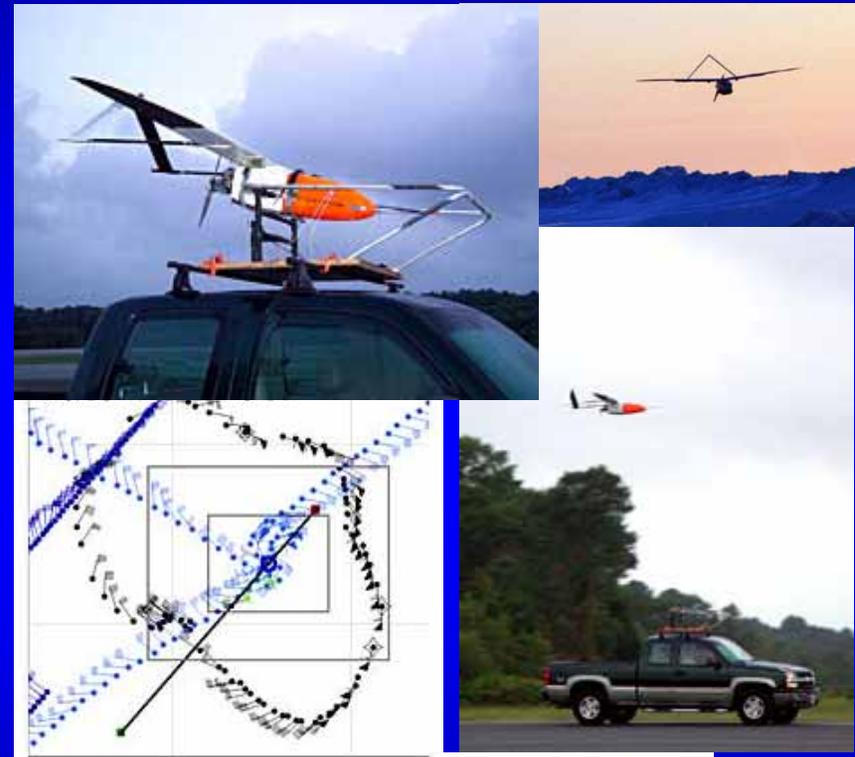
# JTWC Forecast Intensity Error 24, 48, 72 & 120 hour





# Pacific Air Forces WSUAV Test

- **Provided operational support to the Weather Scout UAV tests on Guam**
  - Identified 7 potential target areas during 4-week test
  - Updated target location every 6 hours while airborne
  - Data not used to support real-time TC forecasts
  - Fills Quikscat/surface obs data gap
- **Full spectrum of capabilities not tested**
  - Limited tropical cyclone activity within vehicle's range during test period
  - Additional testing required



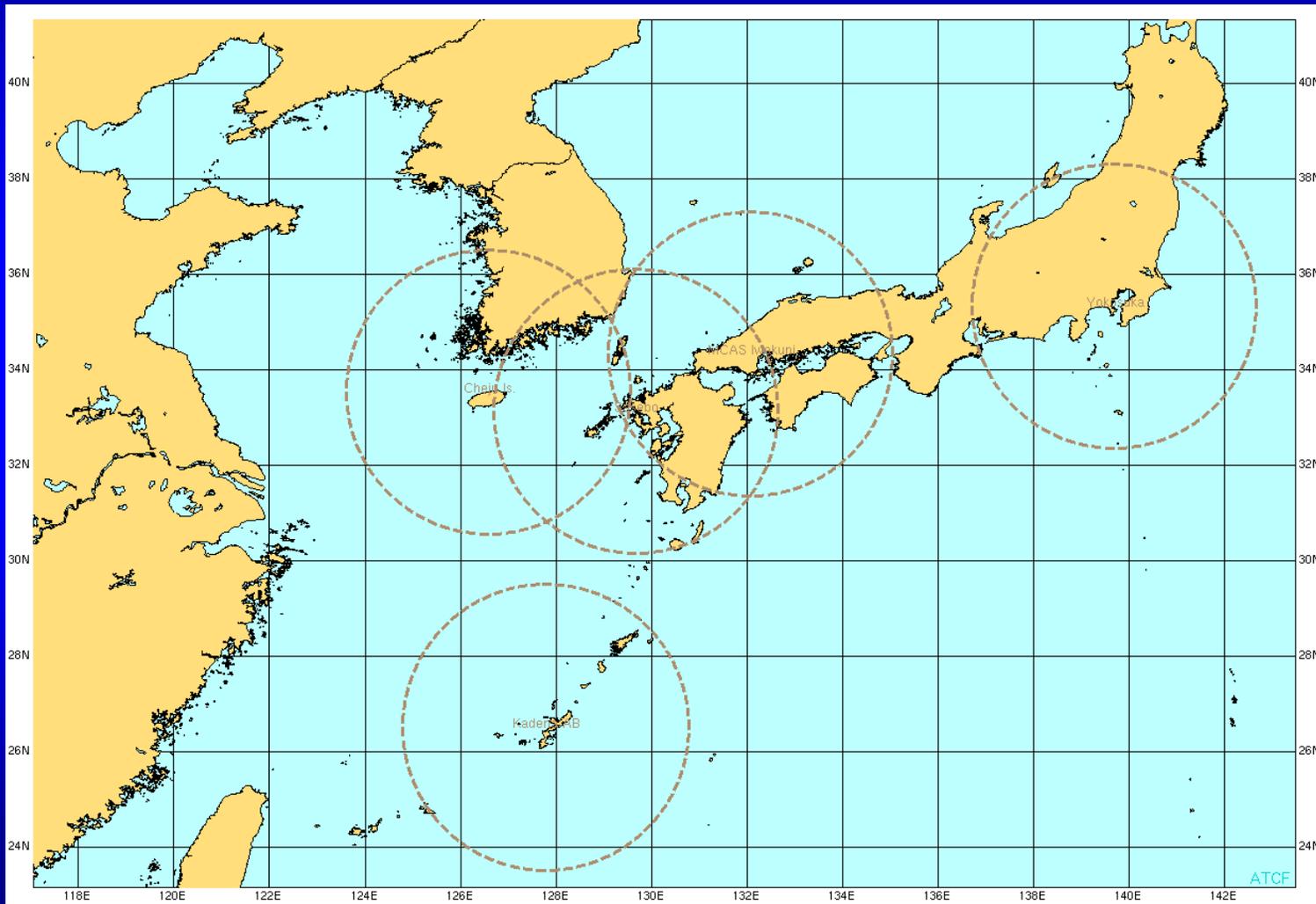


## 3 Hourly TC Position T&E

- **JTWC tested and evaluated North WESTPAC dissemination of 3 hourly TC location data when TC is within 180nm of fixed US DoD sites**
  - Cheju Island, ROK
  - Kadena AB, Japan
  - Naval Station Sasebo
  - Andersen AB, Guam
  - MCAS Iwakuni
  - Yokosuka, Japan
- **Operational Implementation 2006**

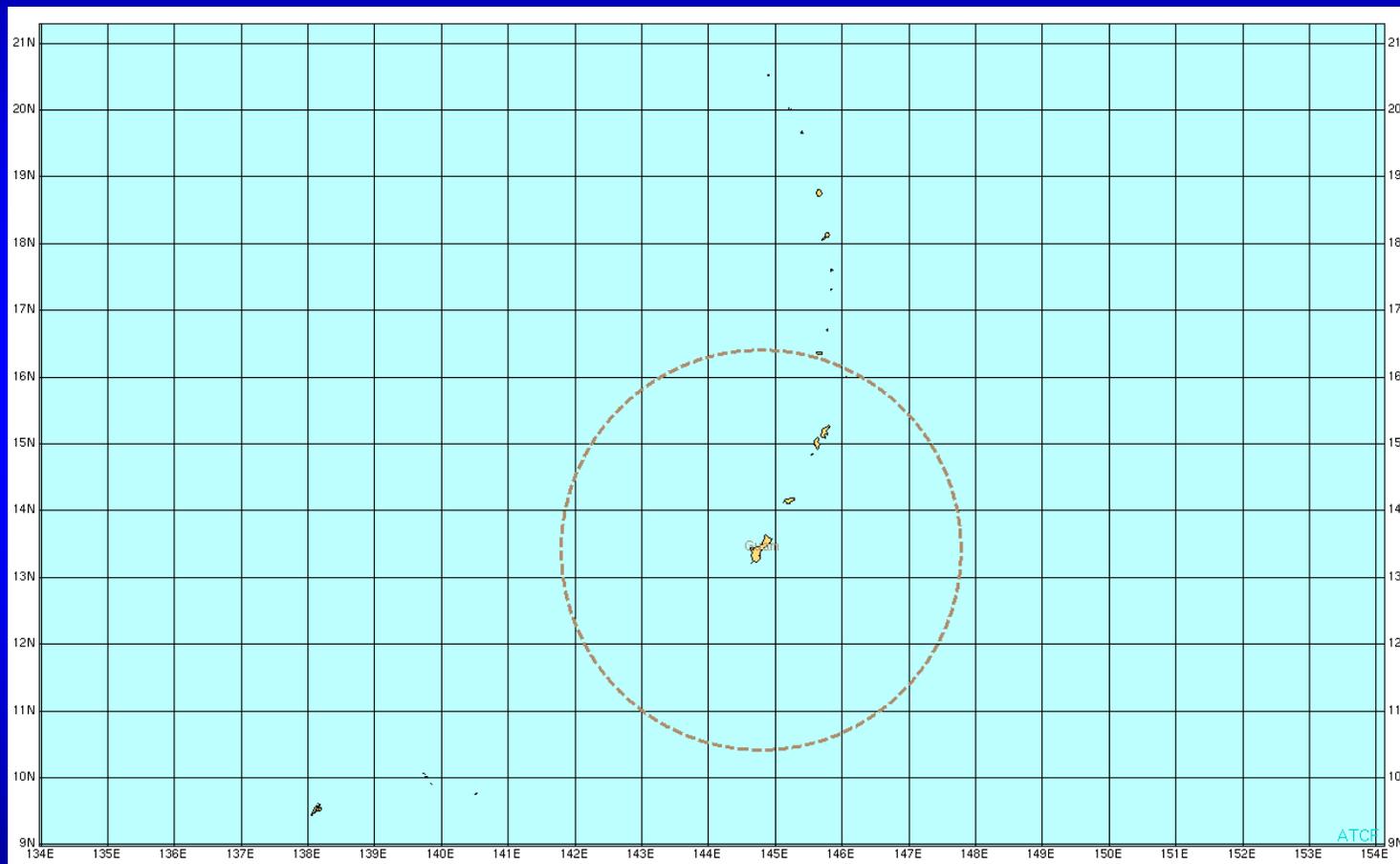


# Japan & Korea 3 Hourly Areas





# Guam 3-Hourly Area





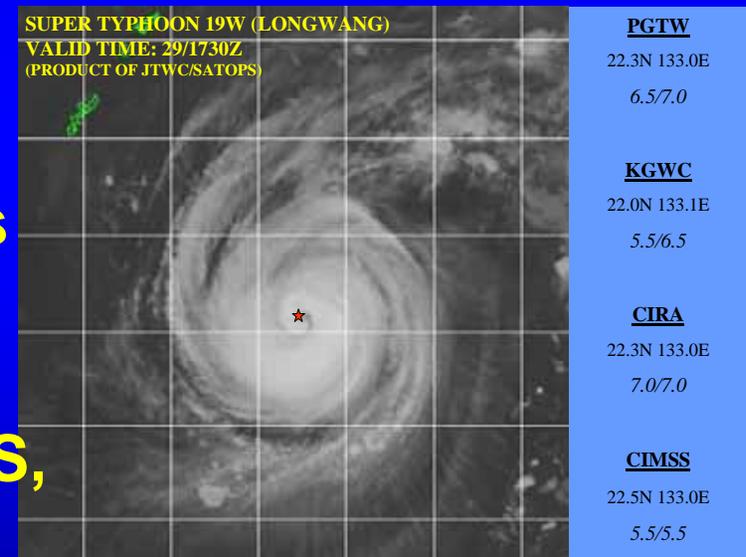
## 2006 Collaboration

- **CIRA/NOAA partnership**
  - **Wind probability forecasts**
    - Run in parallel to error swath
    - Utilize field evaluation – offline website
    - Improve TCCOR recommendations
  - **TC genesis aids**
    - Incorporates MTSAT/GOES, vertical wind shear
    - Yields 24 hr outlook (similar to ABXX bulletins)
  - **TC forecast improvement**
    - Ocean heat content displays via web
    - JT evaluations during forecast process – feedback to CIRA
- **Invited to participate in ocean surface winds workshop (NOAA/NESDIS) June 2006**



# Automated Intensity Review

- Field review of Automated Objective Dvorak Technique (AODT), Automated Dvorak Technique (ADT), and JTWC subjective intensity estimates
  - Continuous improvement in automated intensity processes
  - ADT considered for operational inclusion in 2006
- Results to be presented at AMS, Monterey





# JTWC 2006 Tasks

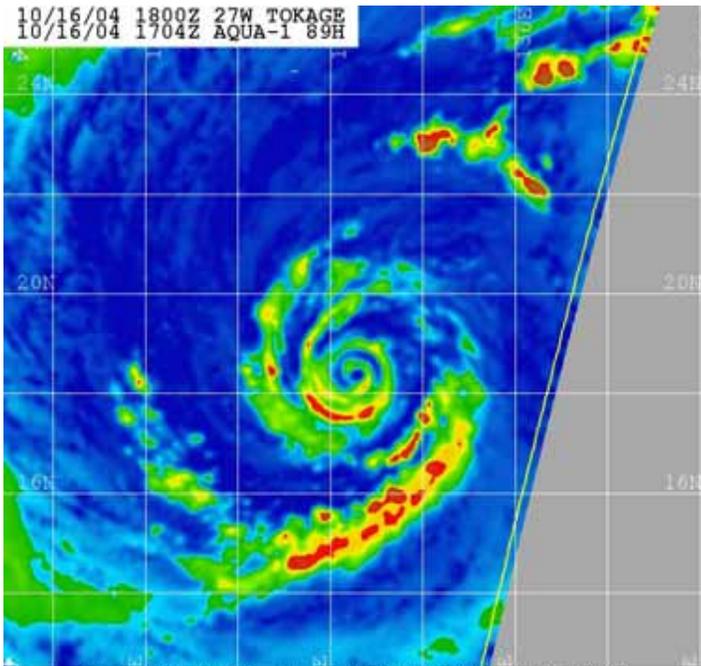
- **Evaluate Probability Forecast**
  - Wind probability forecasts
  - “Confidence”
- **Continue Satellite Studies**
  - Automated intensity estimate field review
- **Assimilate Military METOC Mergers and Reorganizations**
- **Plan and Execute Road Show**



# Questions?

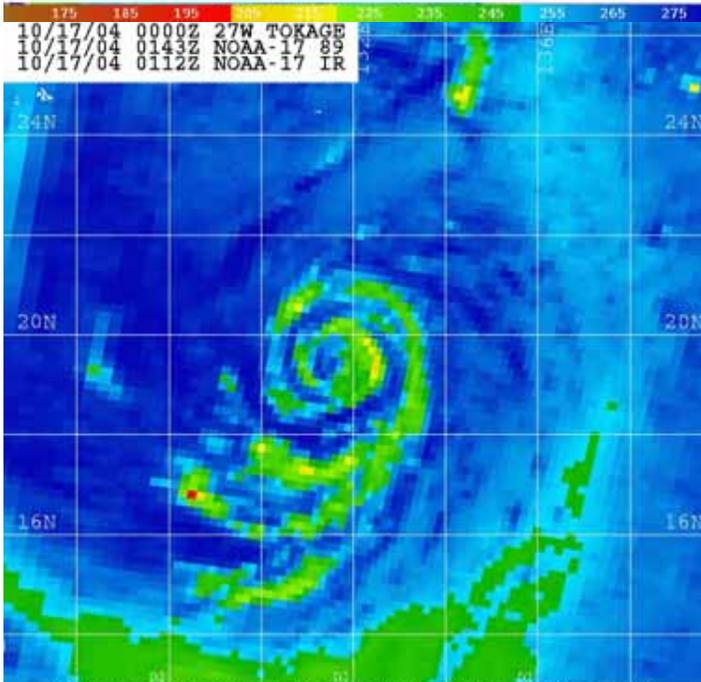


10/16/04 1800Z 27W TOKAGE  
10/16/04 1704Z AQUA-1 89H



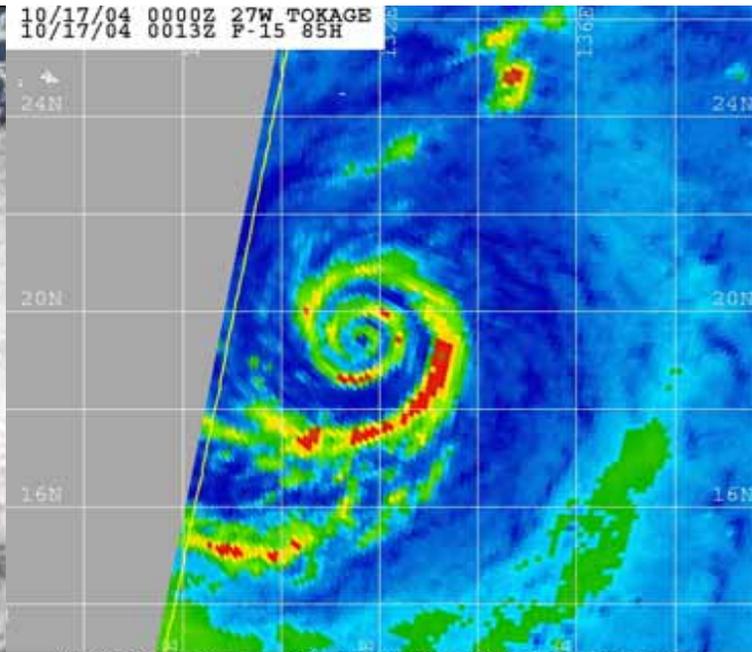
Naval Research Lab [www.nrimry.navy.mil/sat\\_products.html](http://www.nrimry.navy.mil/sat_products.html)  
89H Brightness Temp (Kelvin)

10/17/04 0000Z 27W TOKAGE  
10/17/04 0143Z NOAA-17 89  
10/17/04 0112Z NOAA-17 IR



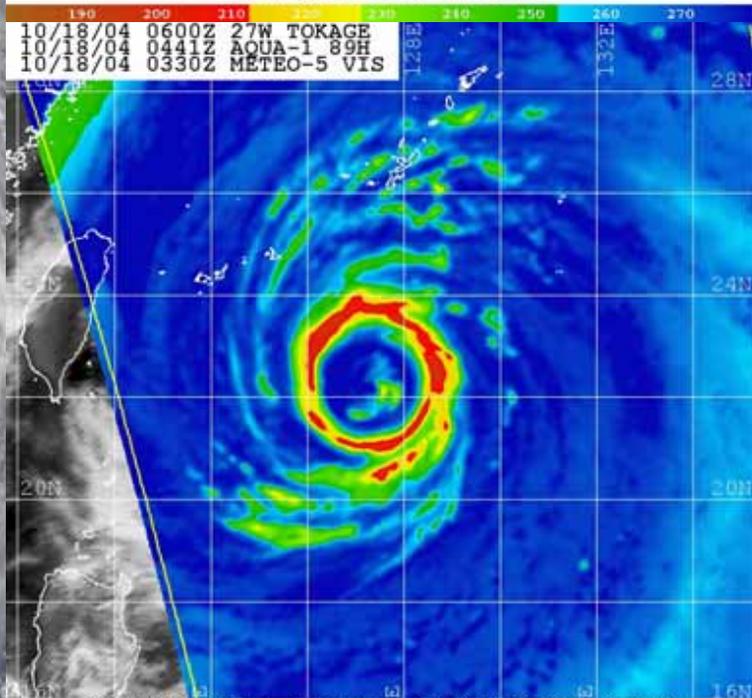
Naval Research Lab [www.nrimry.navy.mil/sat\\_products.html](http://www.nrimry.navy.mil/sat_products.html)  
89 Brightness Temp (Kelvin)

10/17/04 0000Z 27W TOKAGE  
10/17/04 0013Z F-15 85H



Naval Research Lab [www.nrimry.navy.mil/sat\\_products.html](http://www.nrimry.navy.mil/sat_products.html)  
85H Brightness Temp (Kelvin)

10/18/04 0600Z 27W TOKAGE  
10/18/04 0441Z AQUA-1 89H  
10/18/04 0330Z METEO-5 VIS

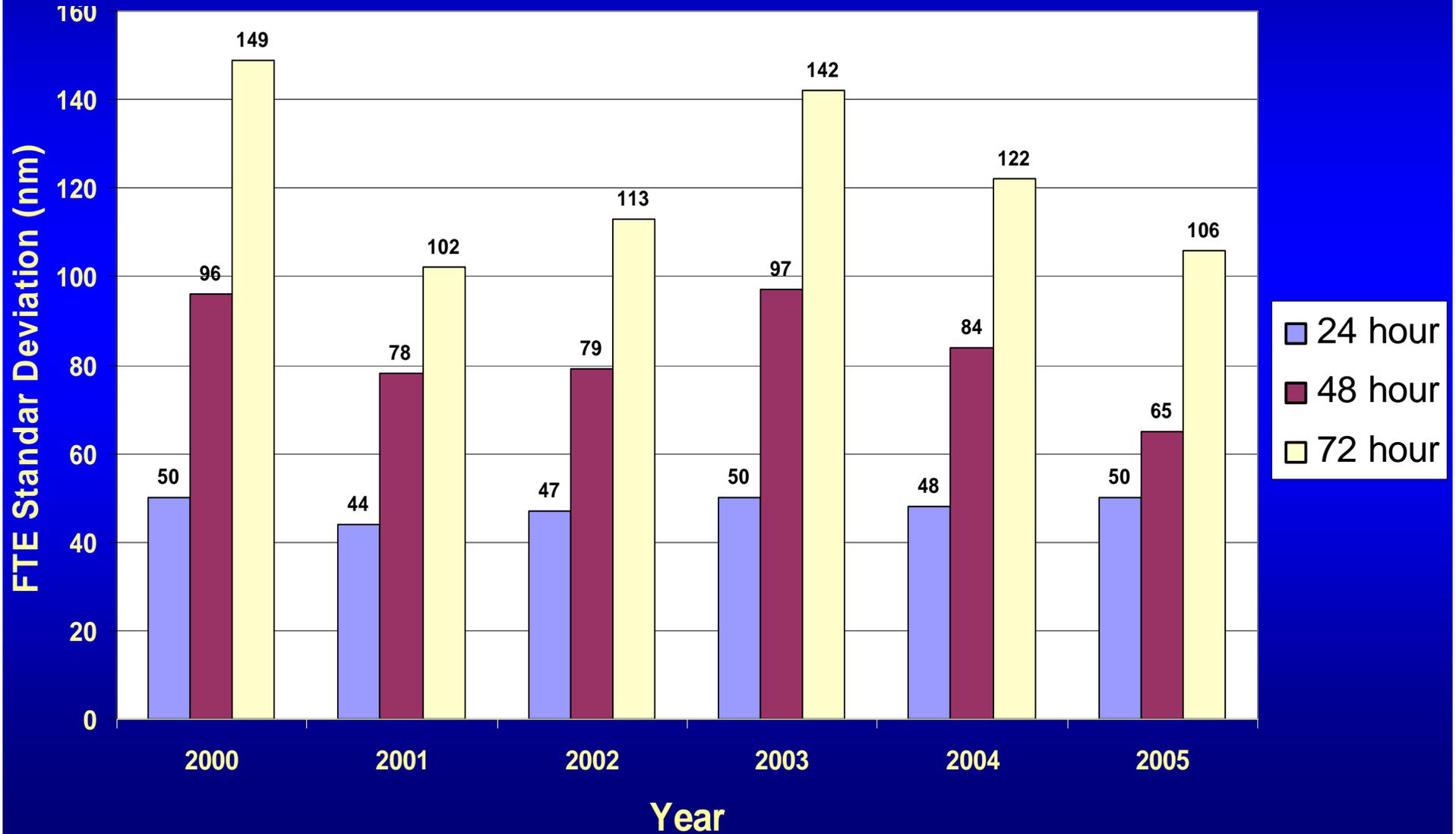


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89H Brightness Temp (Kelvin)



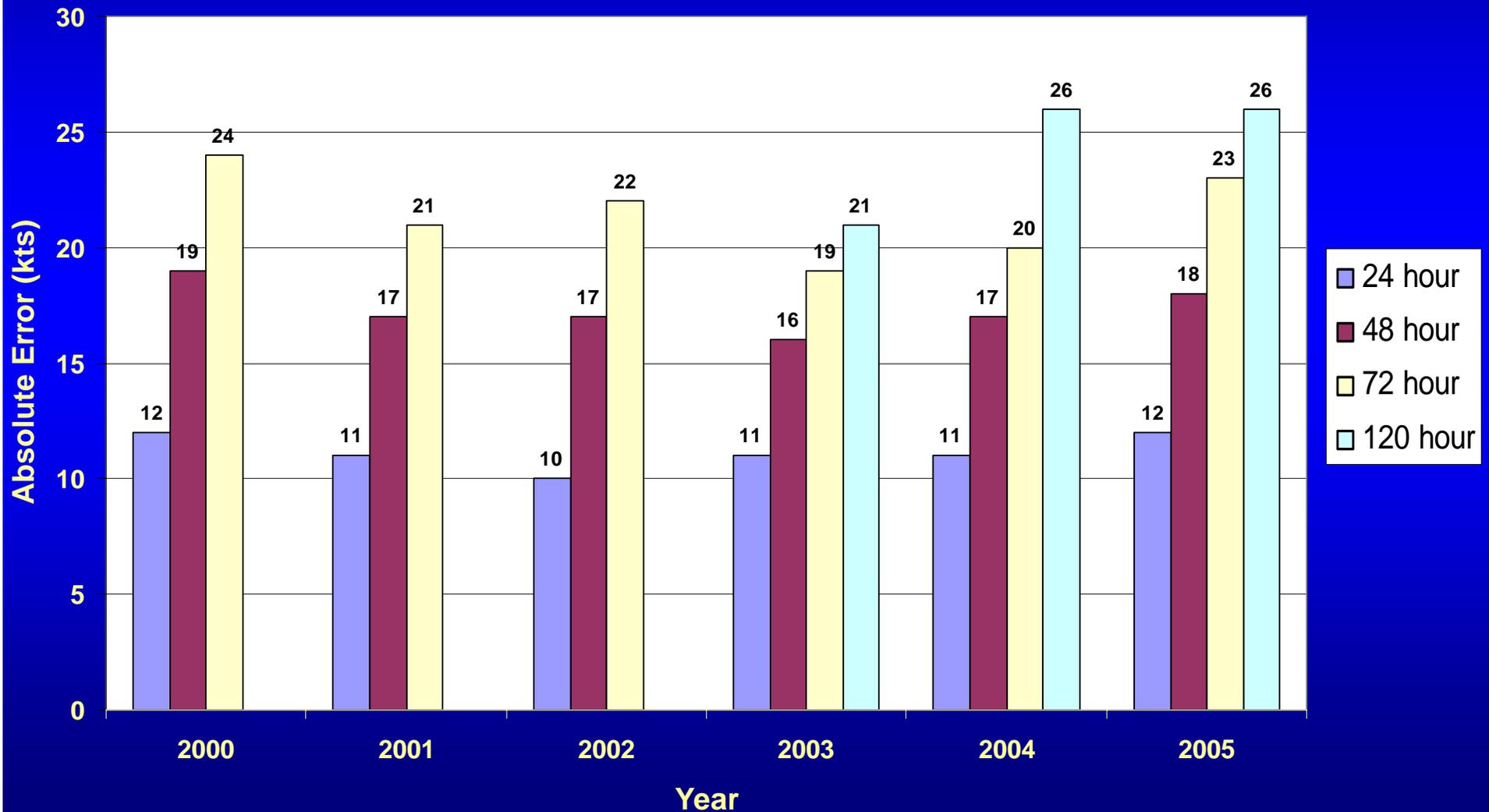


# Mean Forecast Track Standard Deviation



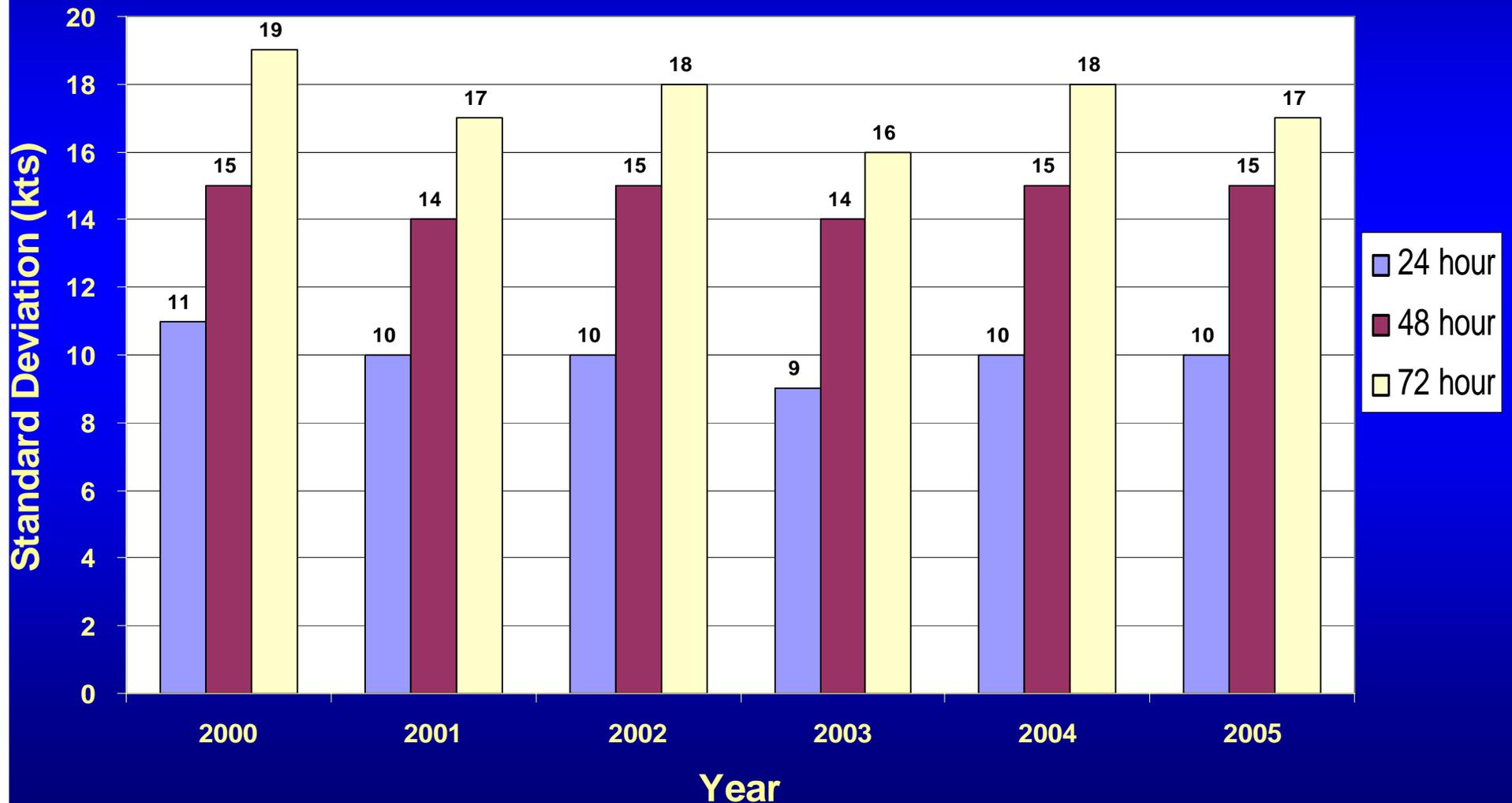


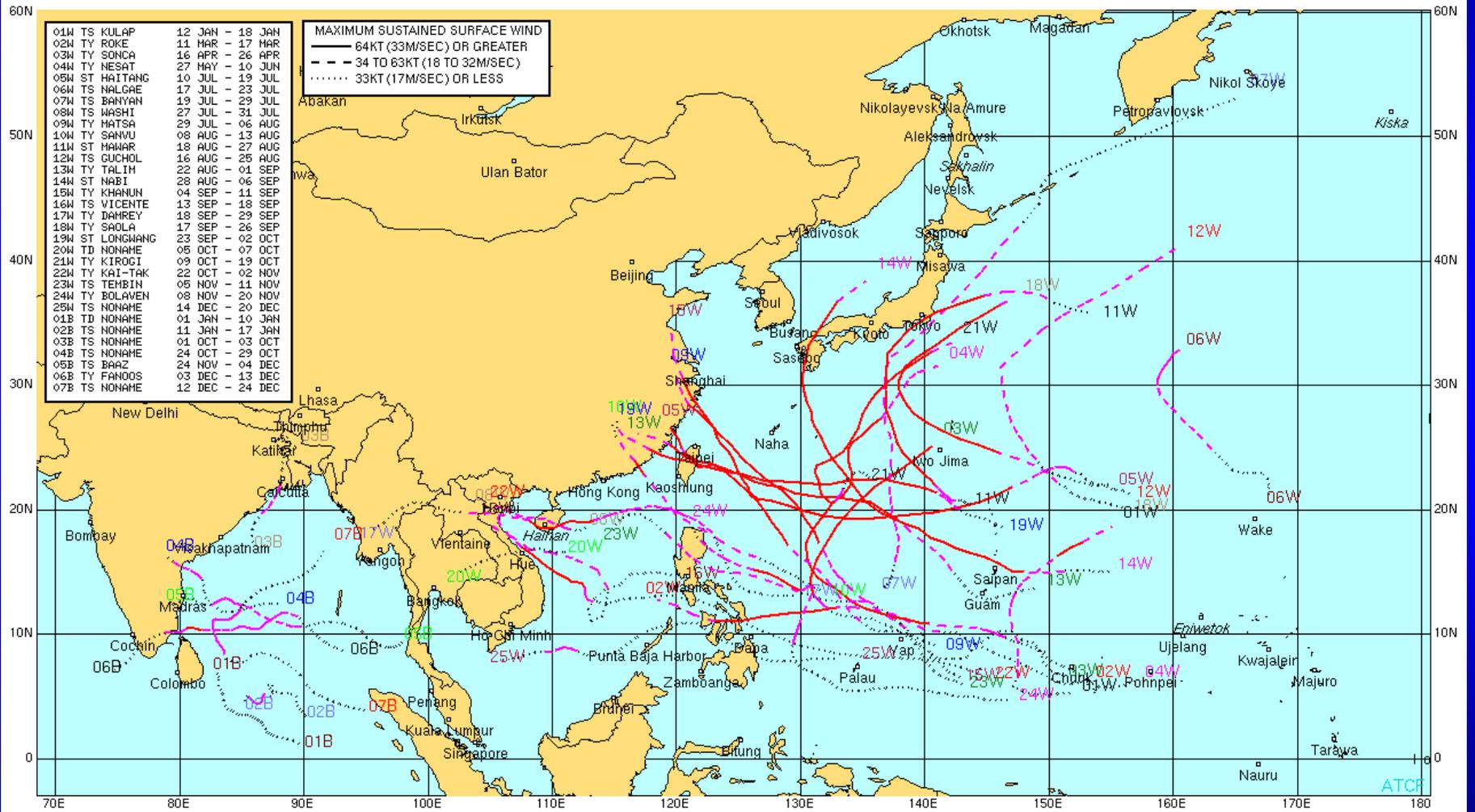
# Forecast Intensity Mean Absolute Errors

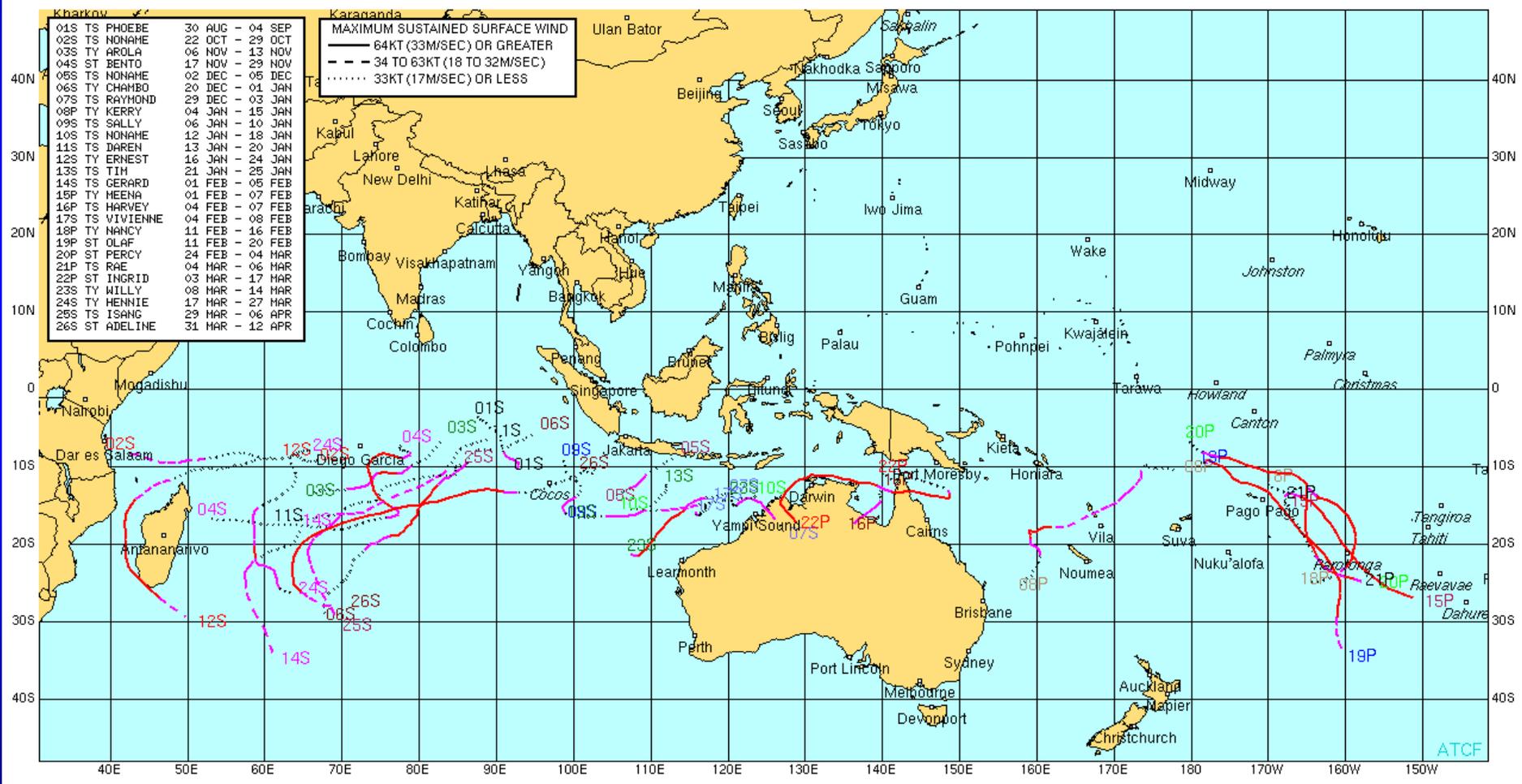




# Forecast Intensity Standard Deviation

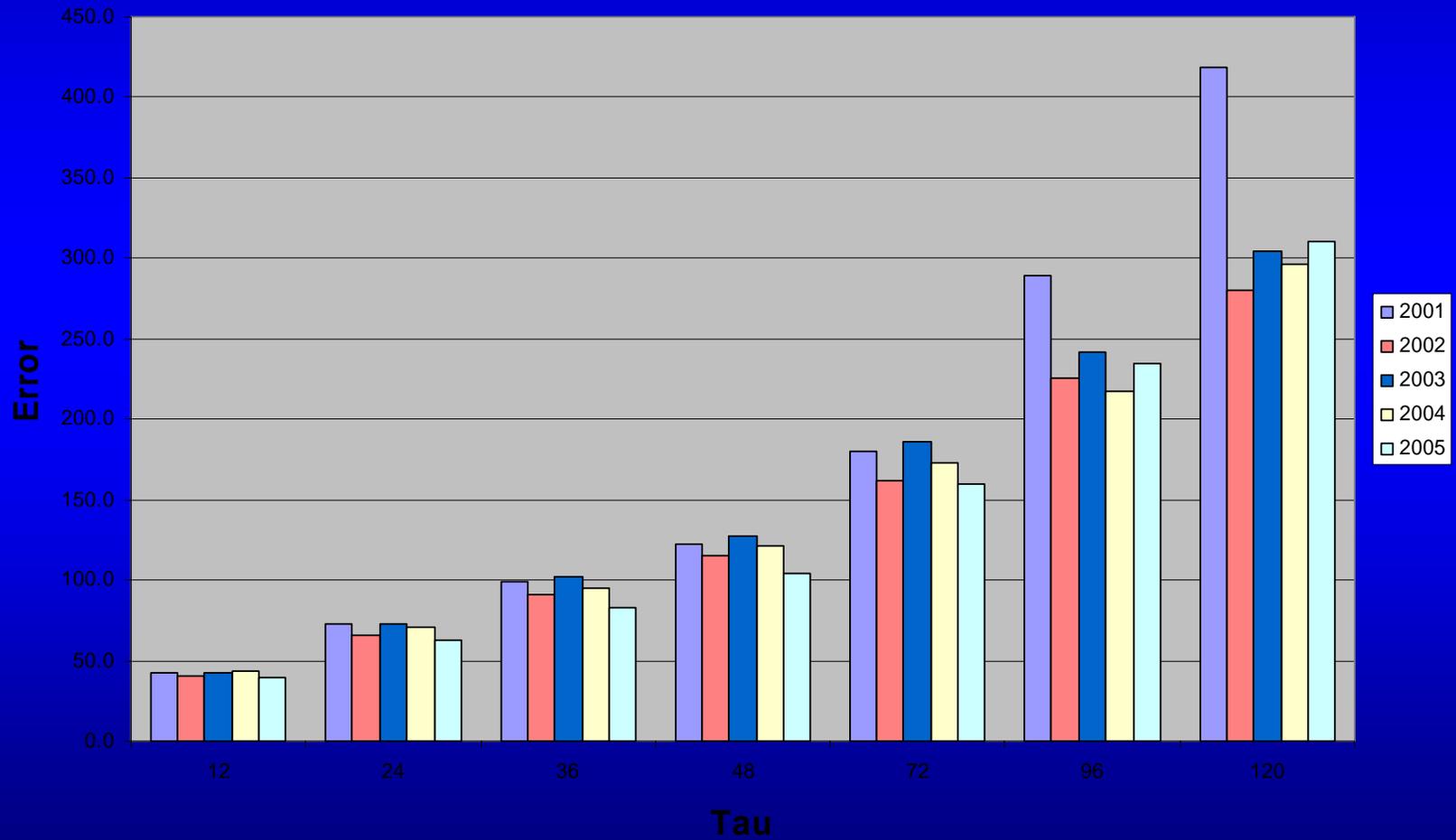






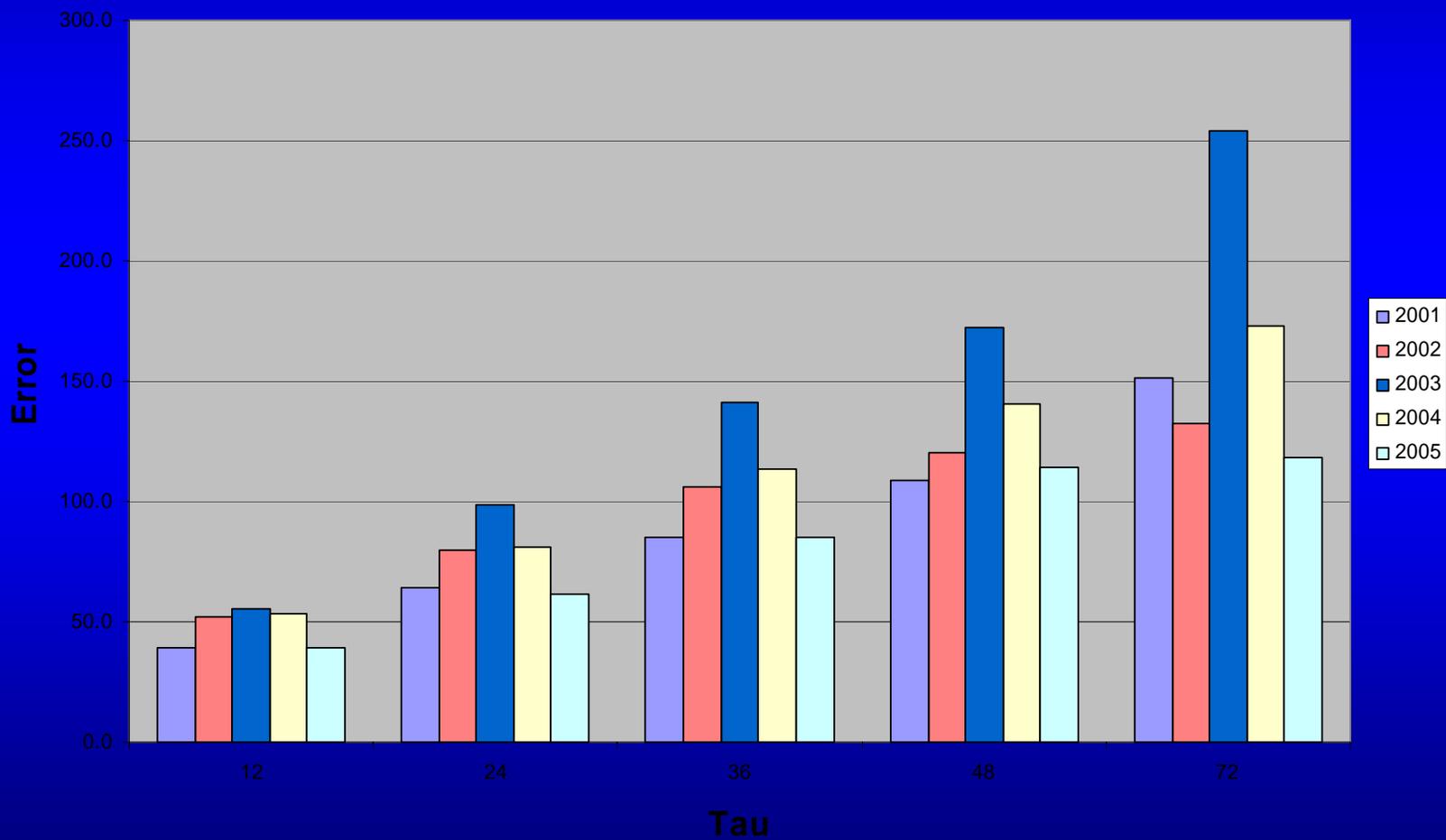


## WP Forecast Track Error



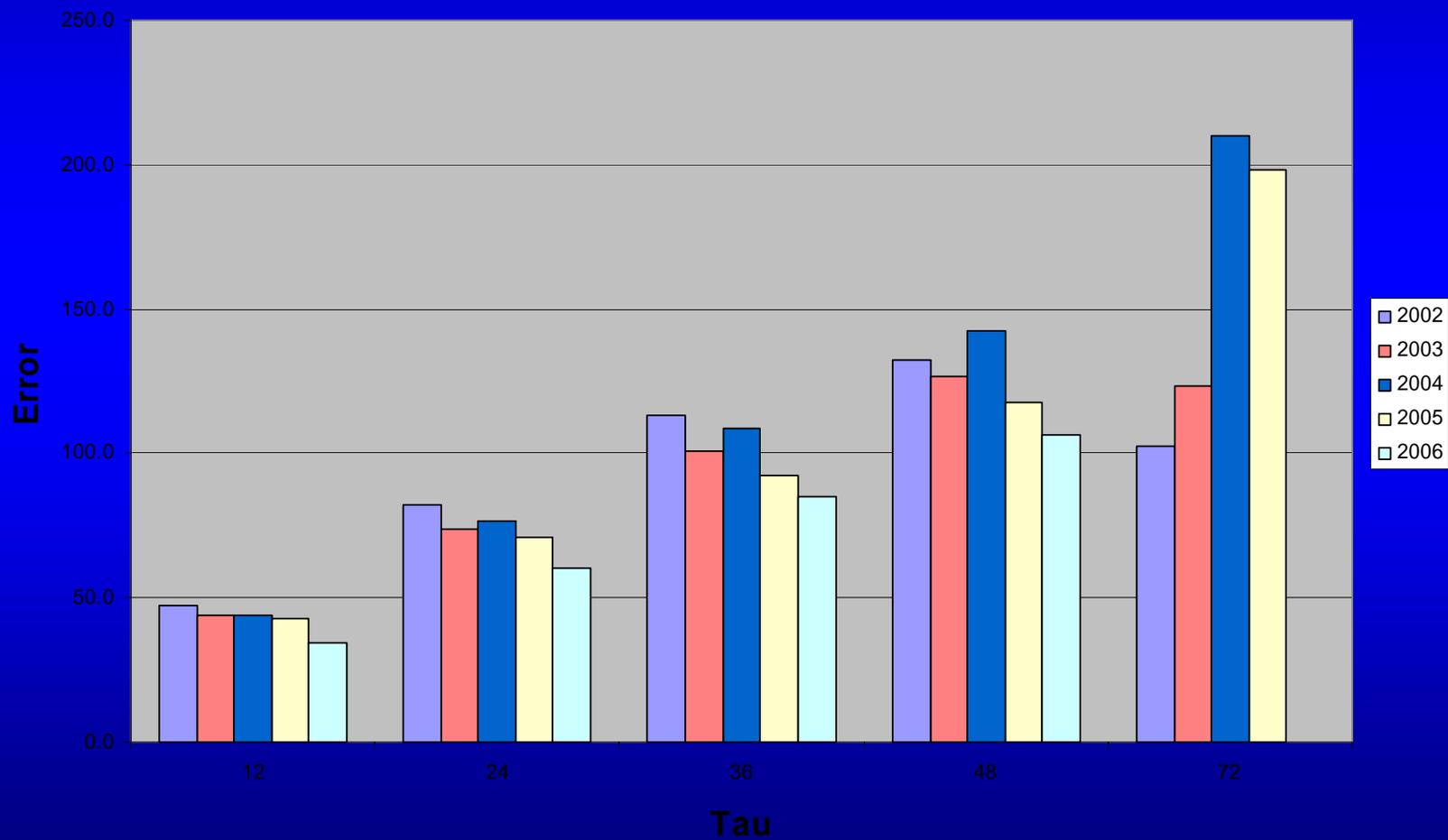


## IO Forecast Track Error



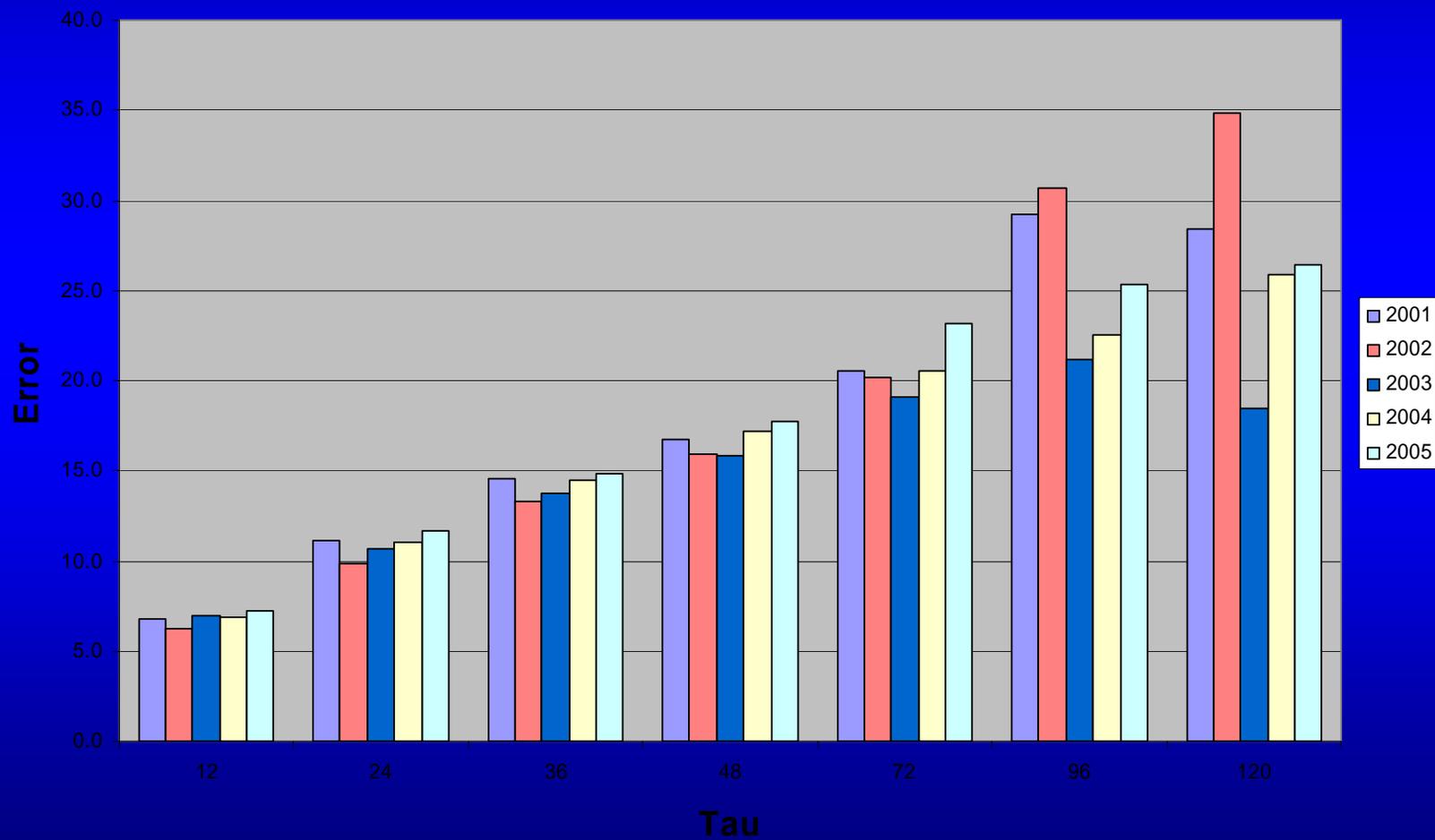


## SH Forecast Track Error





## WP Intensity Error





## IO Forecast Track Error

