JOINT TYPHOON WARNING CENTER
2011 YEAR IN REVIEW

Super Typhoon Songda
Destroys Kadena AB WSR-88D

=>

66th INTERDEPARTMENTAL HURRICANE CONFERENCE

5-8 MAR 2012

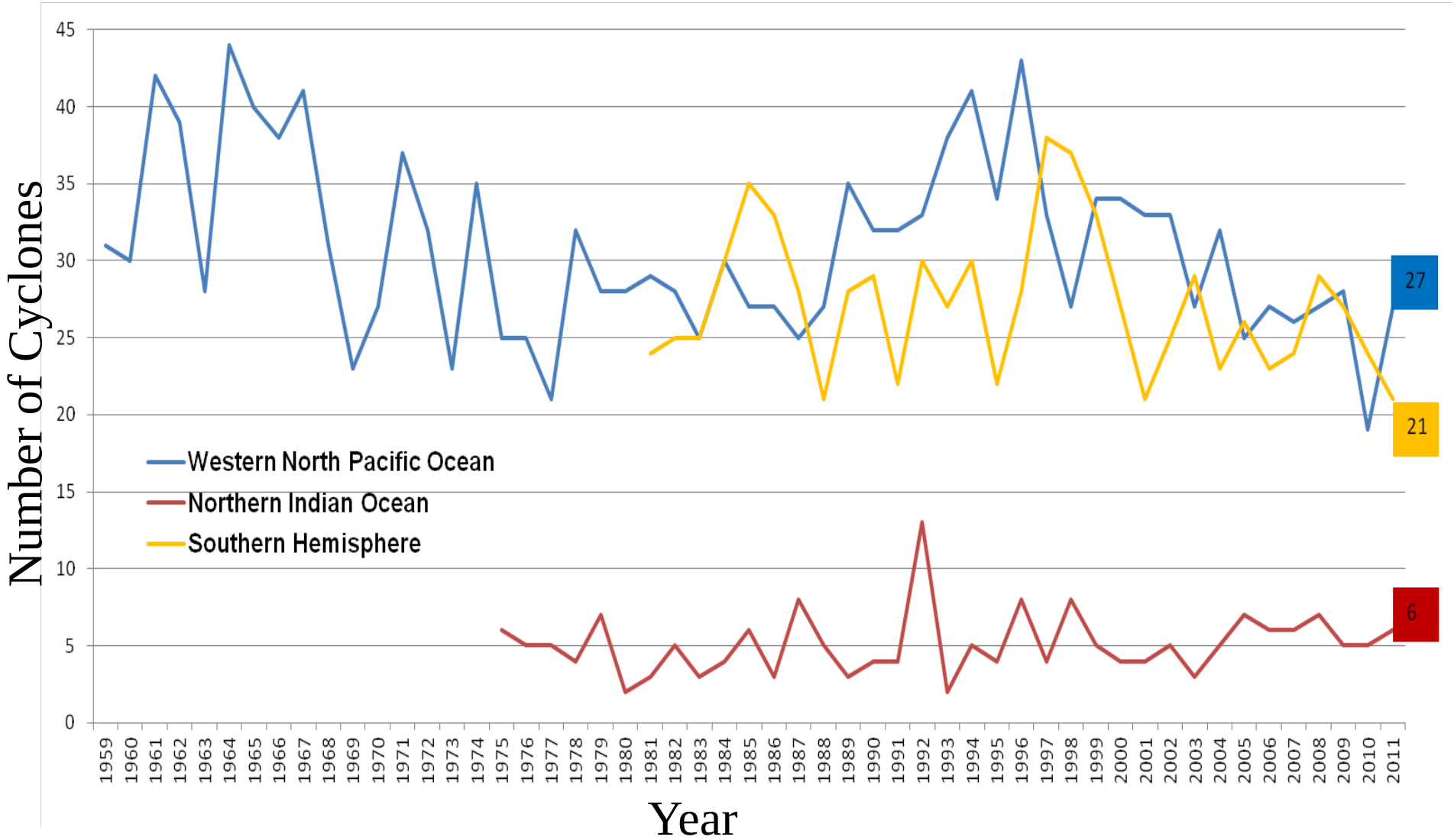
CHARLESTON, SC

Mr. Robert (Bob) Falvey
Director, Joint Typhoon Warning Center

MISSION

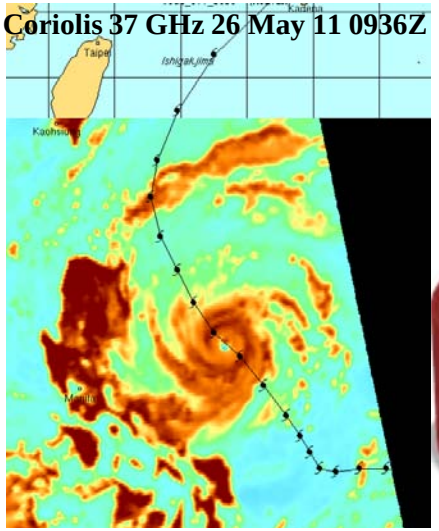
Provide tropical cyclone reconnaissance, analysis, forecast and warning support for Department of Defense, and other US Government assets in the Pacific and Indian Oceans as established by Commander, United States Pacific Command.

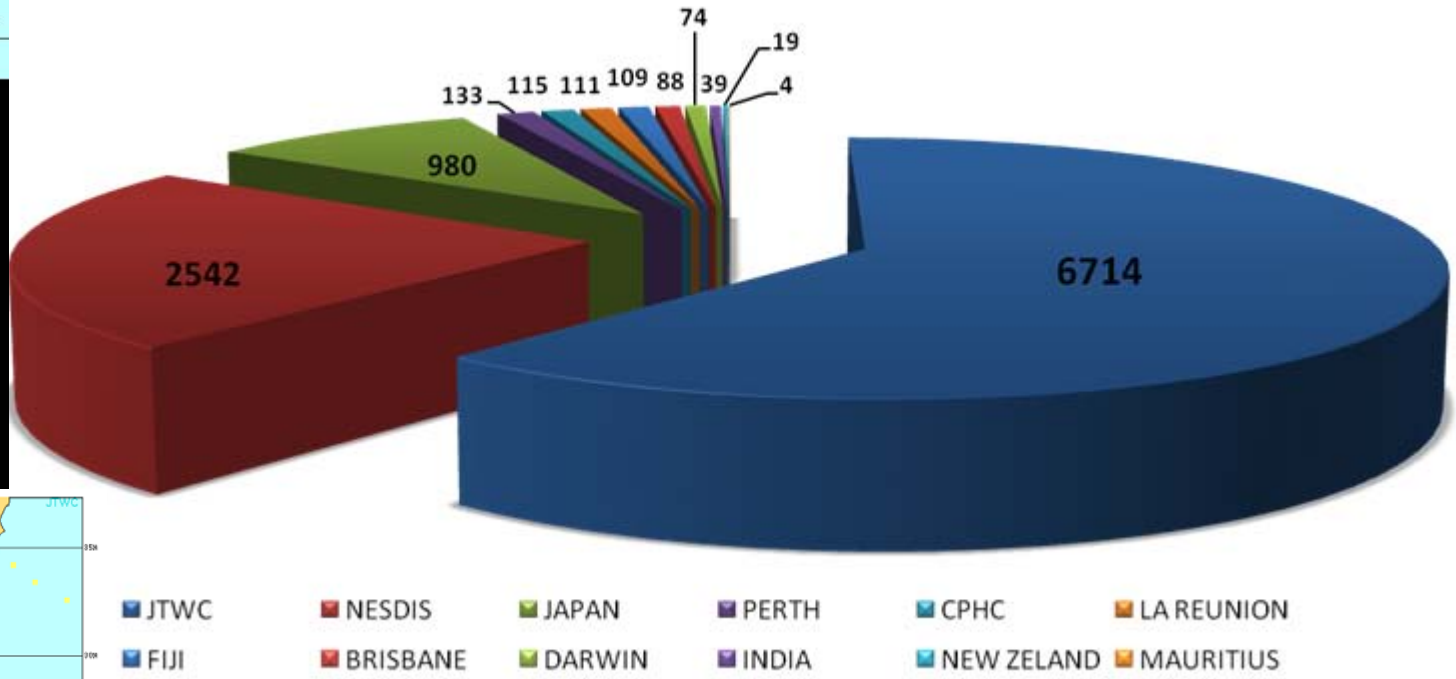
ANNUAL TC ACTIVITY
(All Intensities)

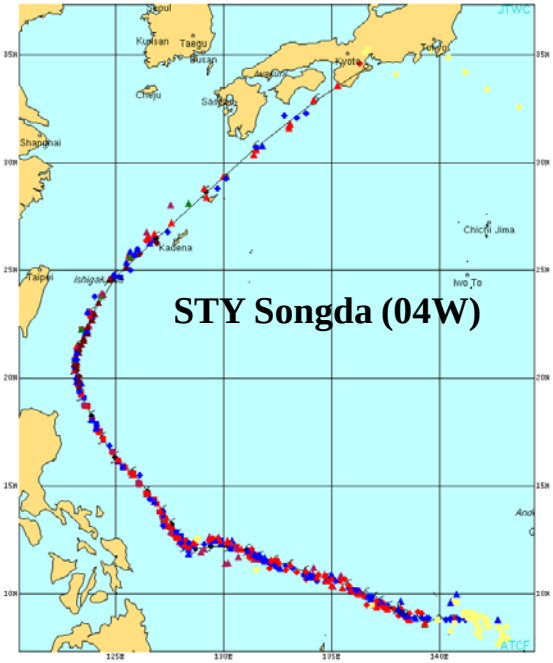


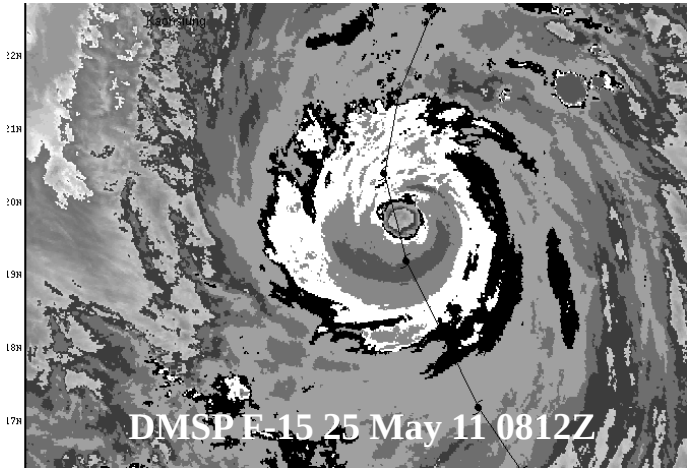
2011 SATELLITE RECON

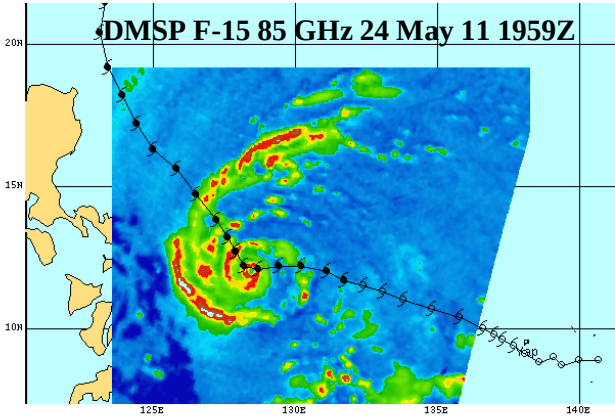
Fixes by Agency – 10,928







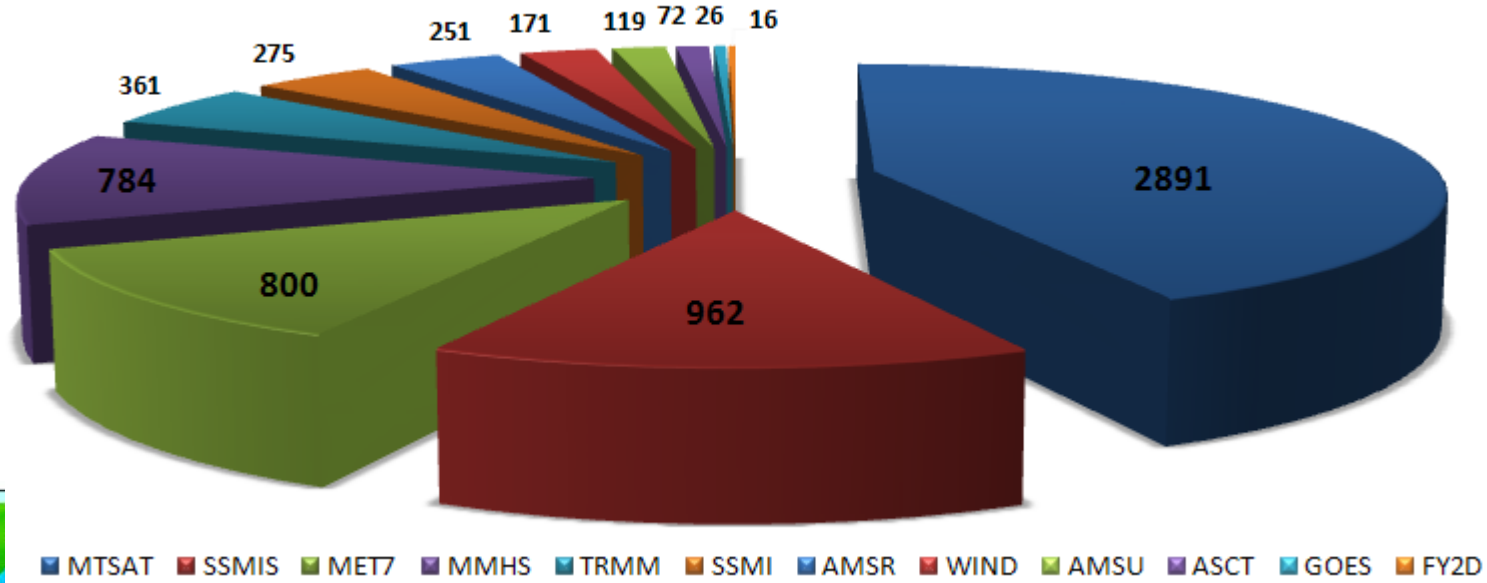




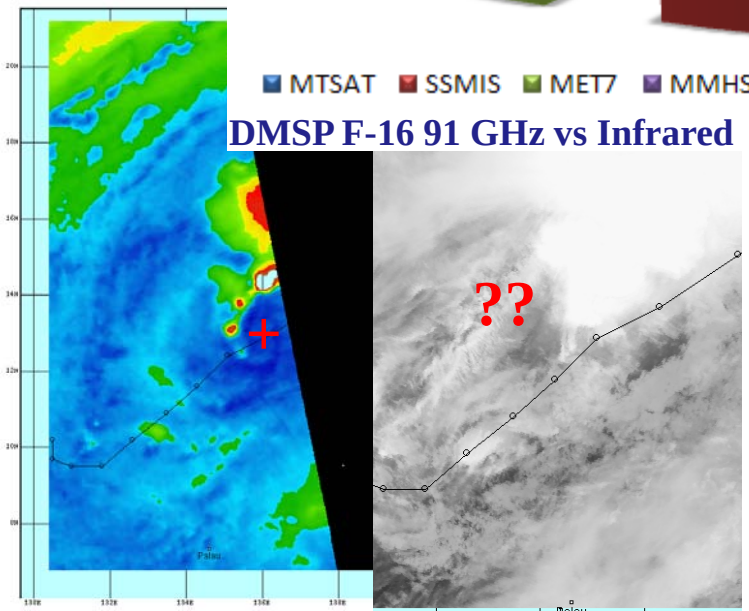
2011 SATELLITE RECON

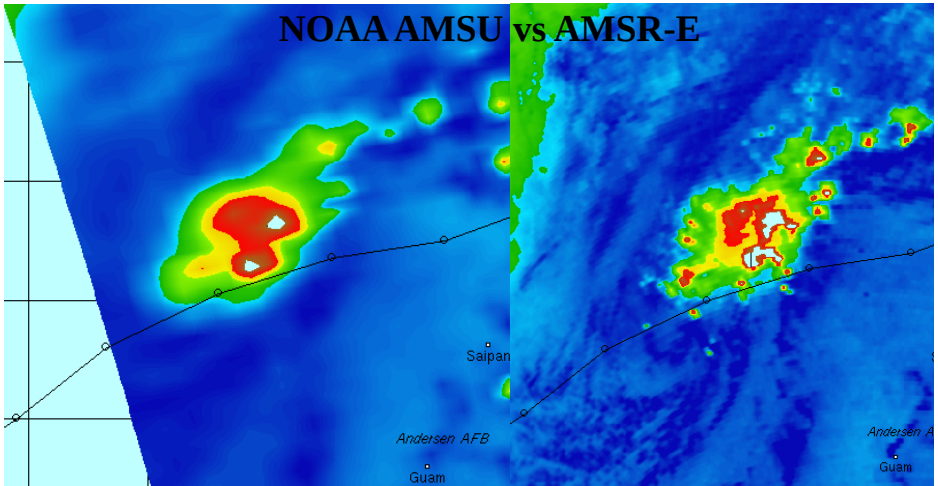
JTWC (PGTW) Fixes – 6,714

Total Microwave Fixes: 2,923 (43.5% of total)

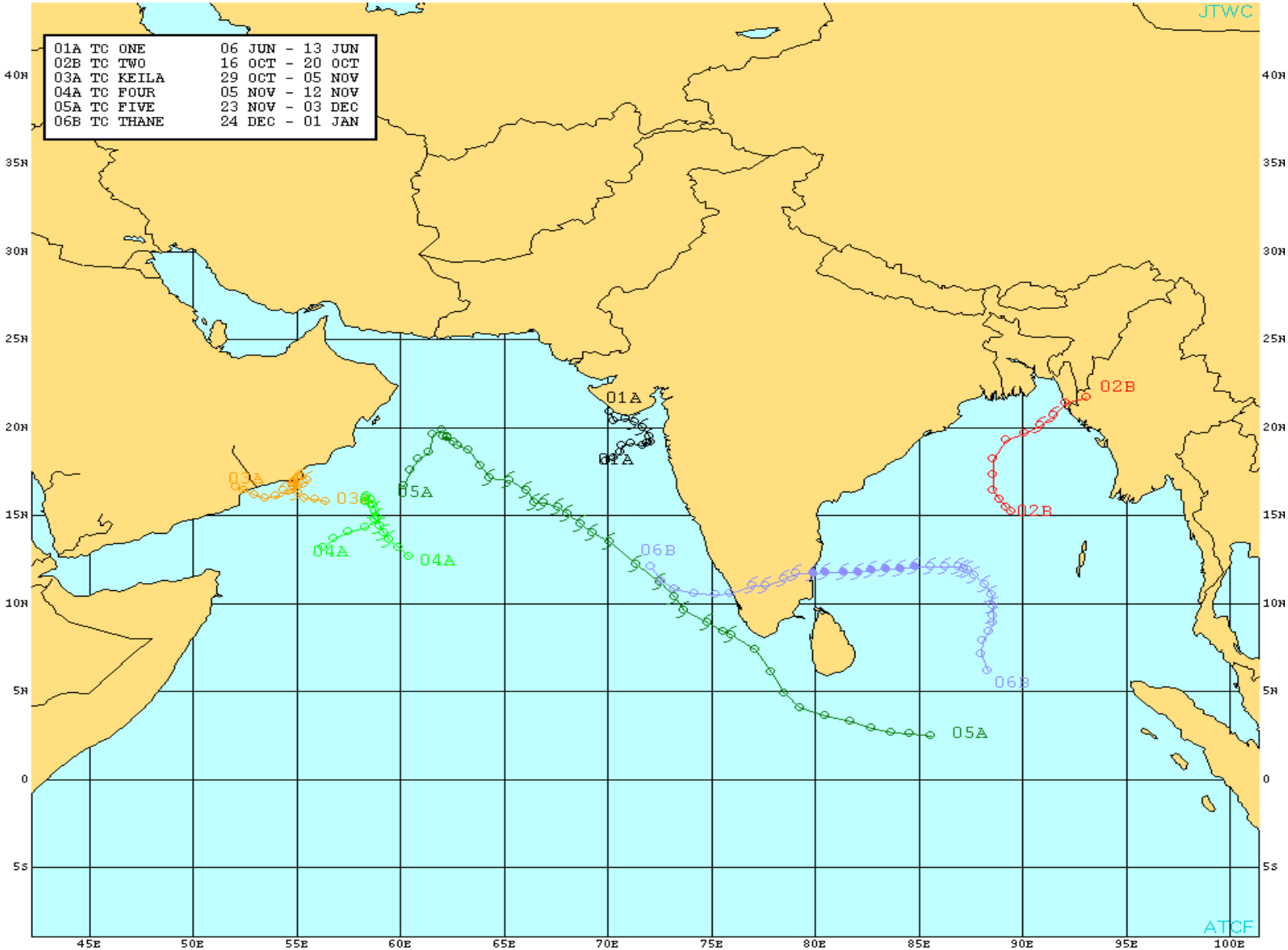


DMSP F-16 91 GHz vs Infrared

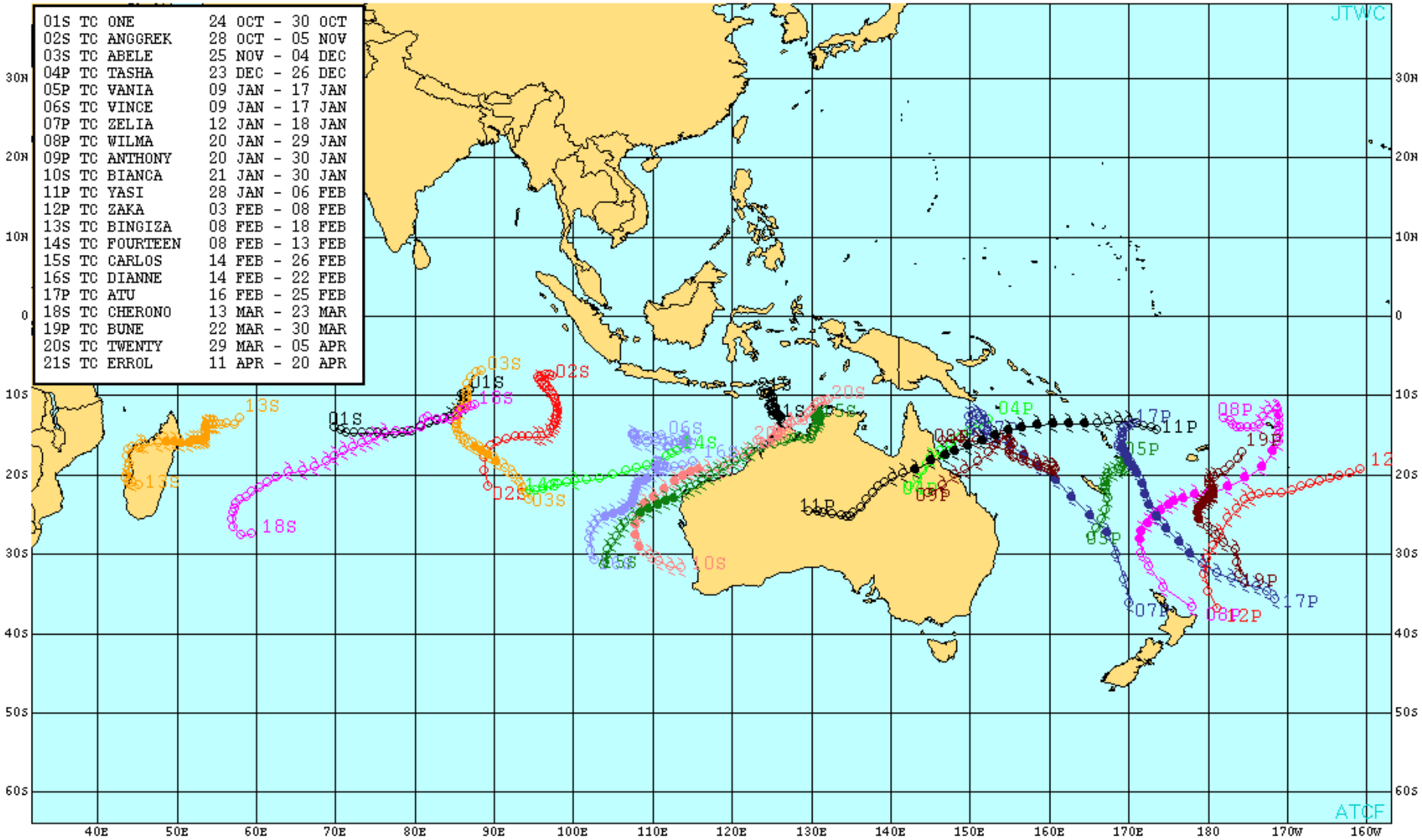




2011 NORTH INDIAN OCEAN

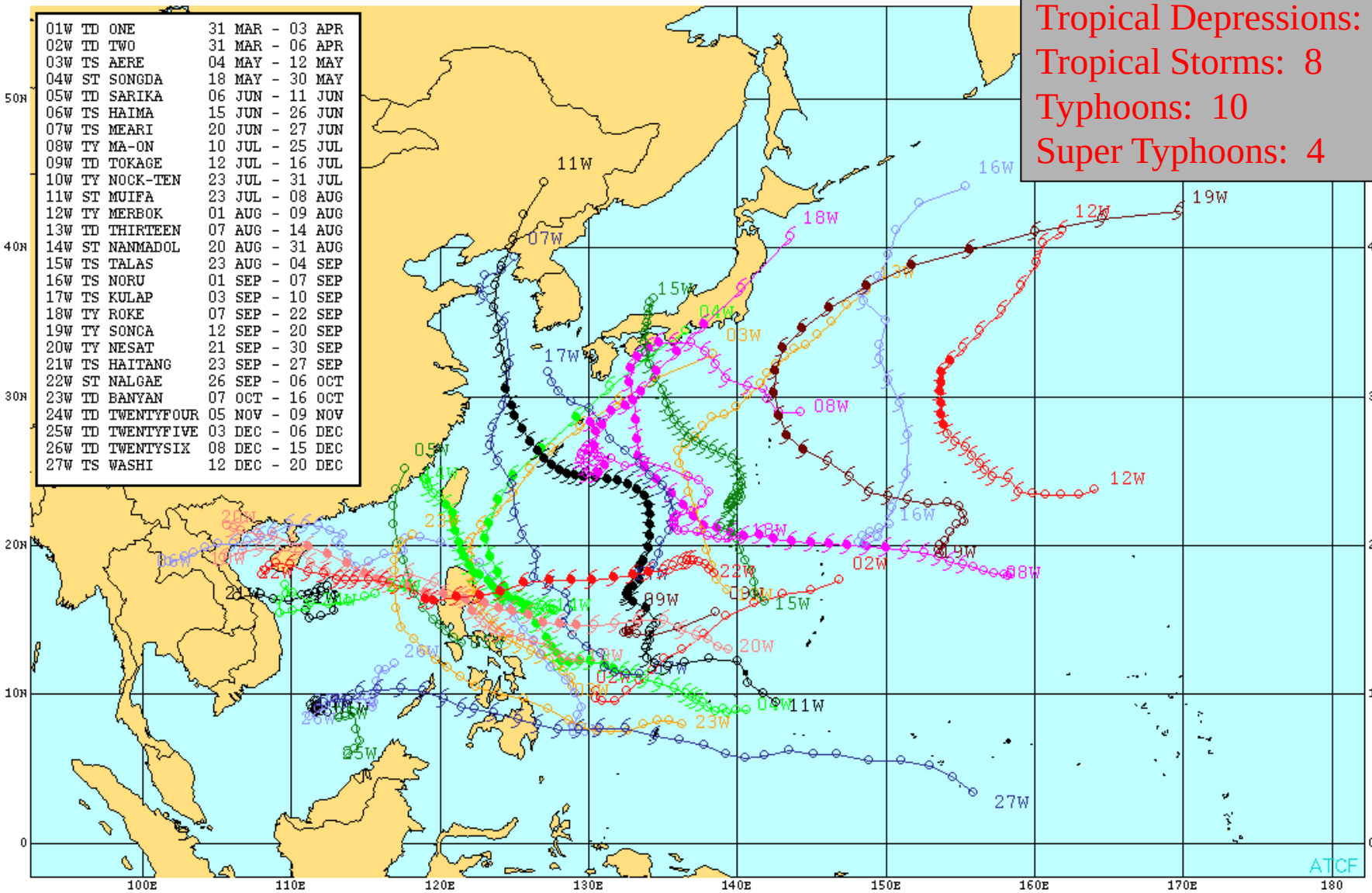


2011 SOUTHERN HEMISPHERE



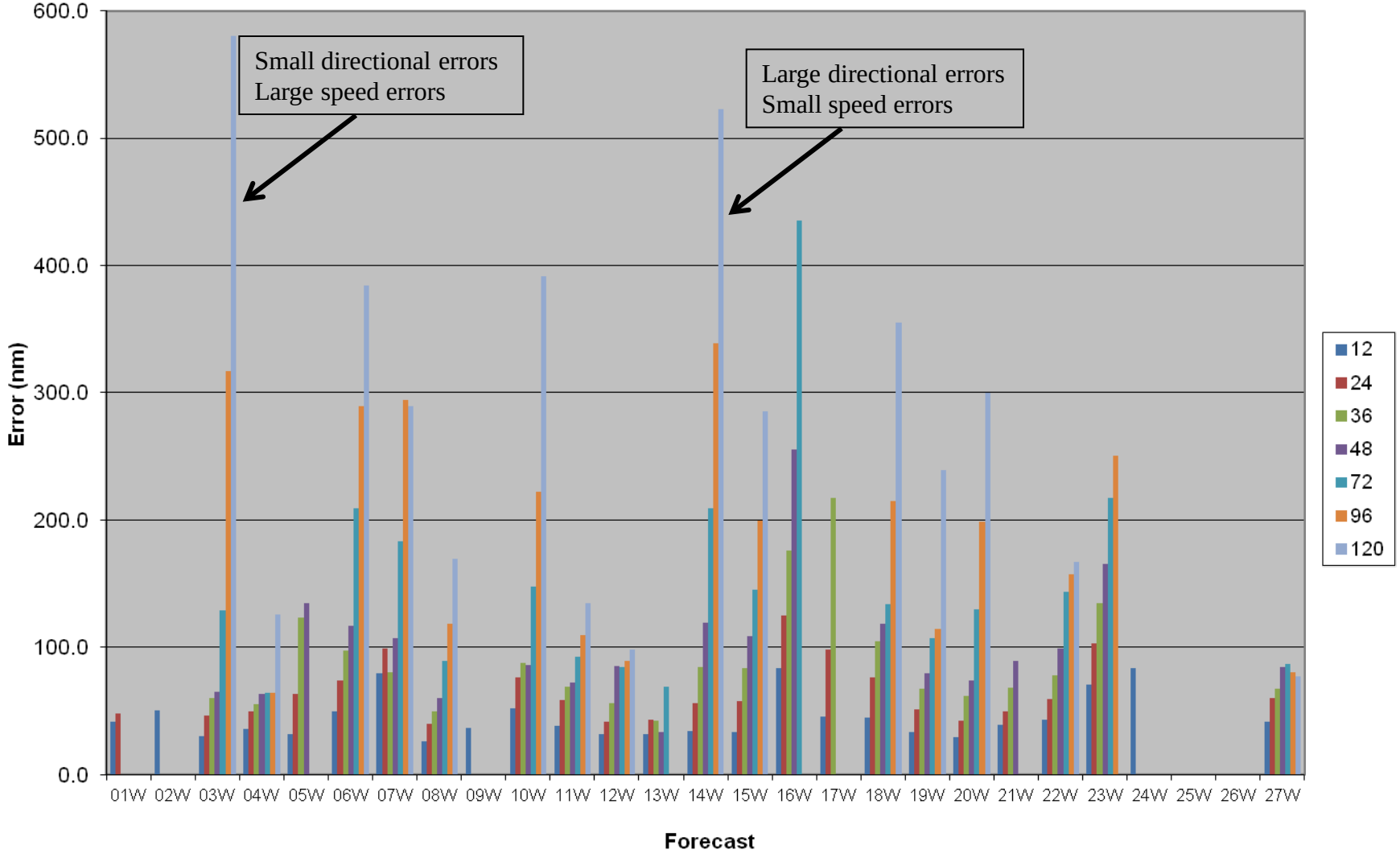
2011 WESTERN NORTH PACIFIC

Tropical Depressions: 9
Tropical Storms: 8
Typhoons: 10
Super Typhoons: 4



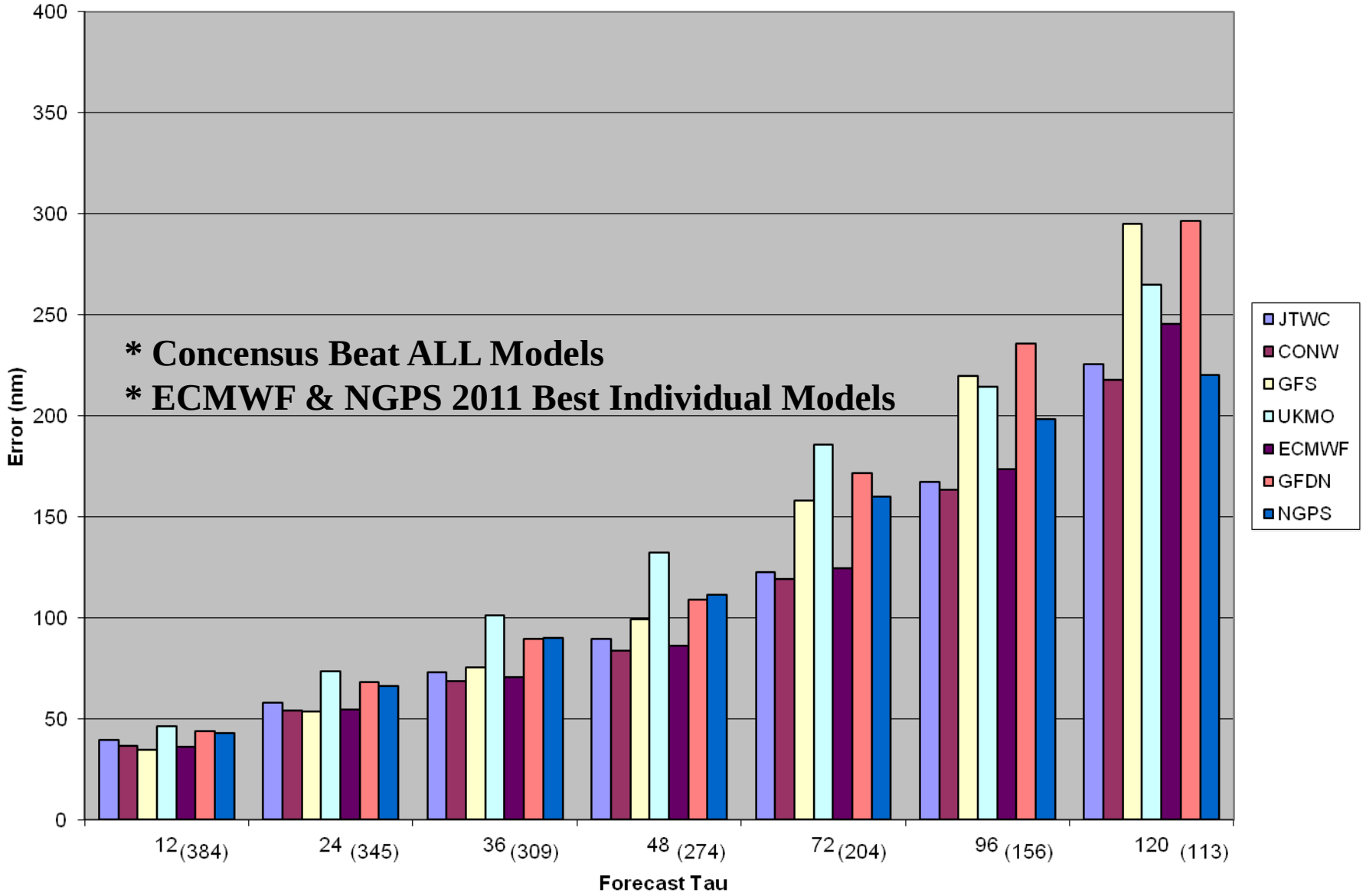
2011 WESTERN NORTH PACIFIC TRACK ERRORS

Storm by Storm



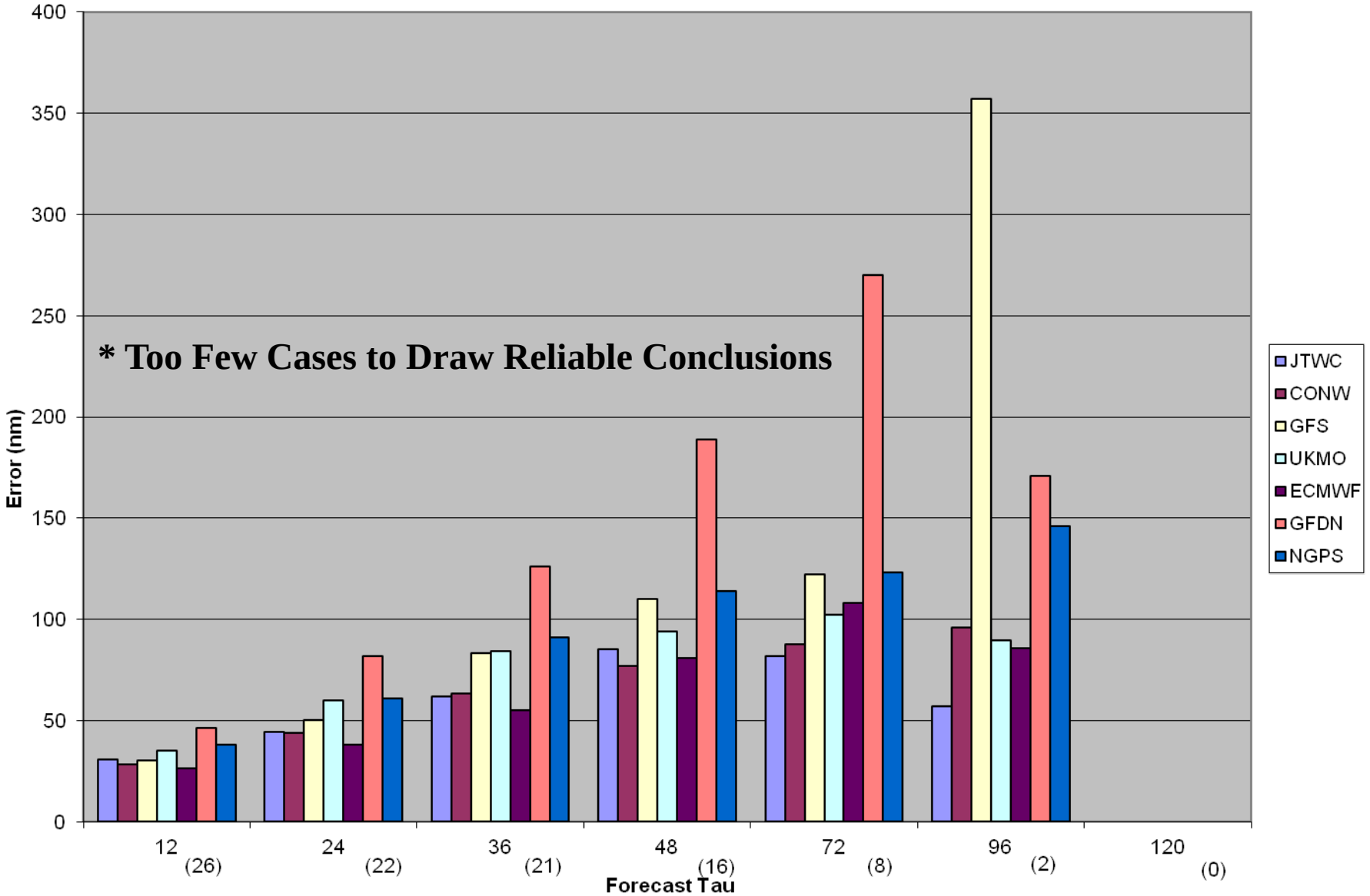
2011 MODEL TRACK ERRORS

(Western North Pacific – Homogeneous)



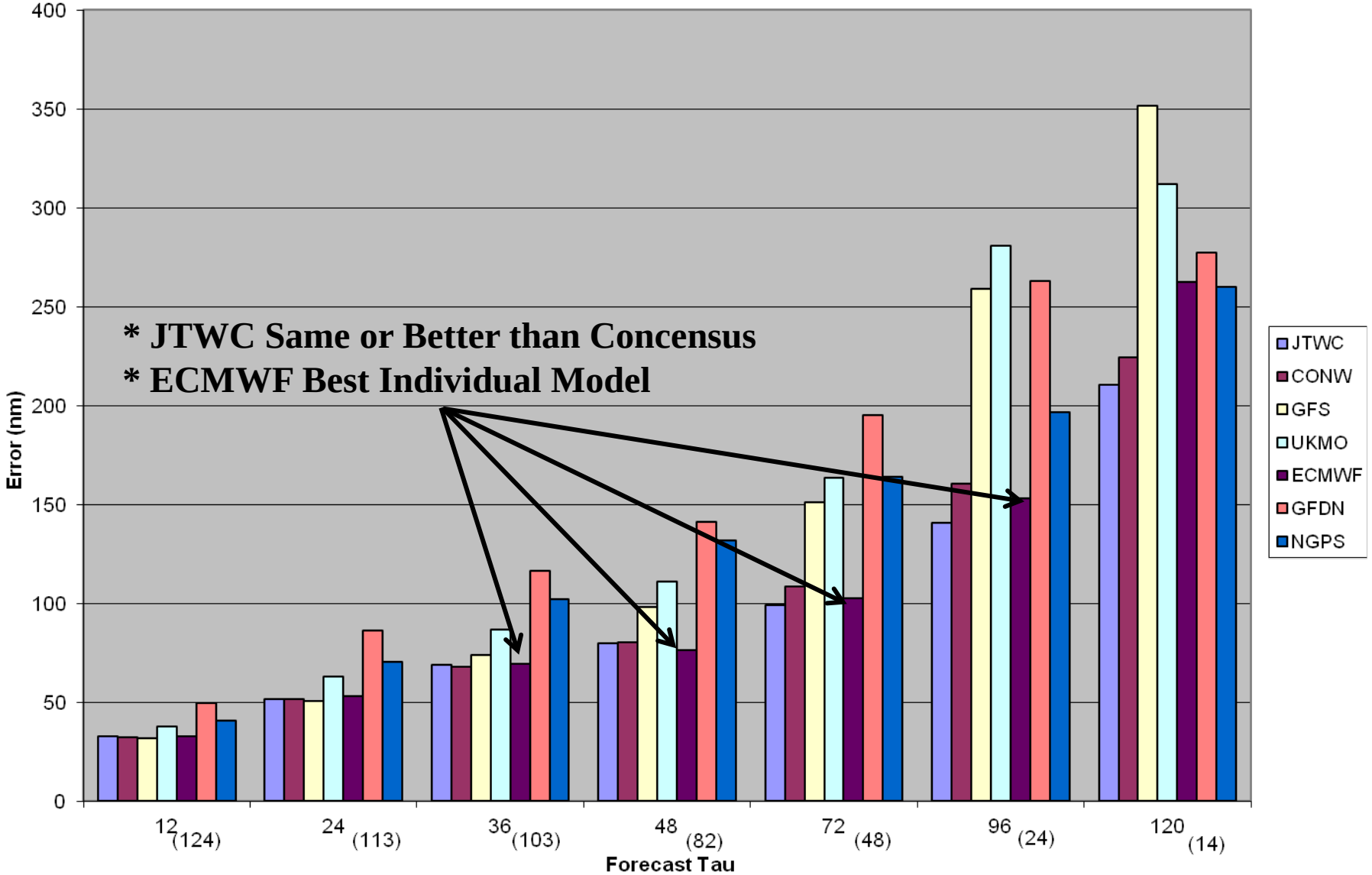
2011 MODEL TRACK ERRORS

(Northern Indian Ocean – Homogeneous)



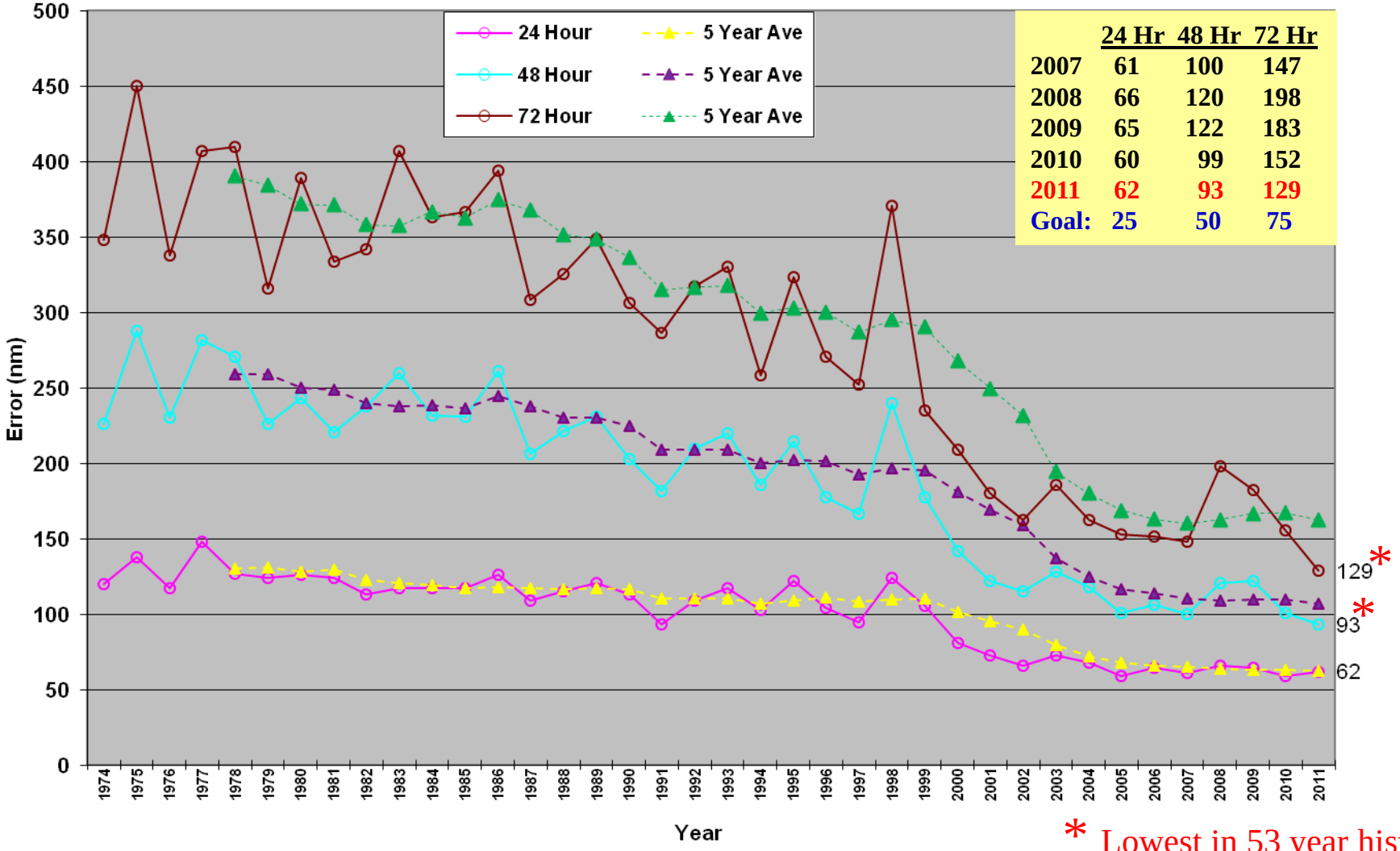
2011 MODEL TRACK ERRORS

(Southern Hemisphere – Homogeneous)



JTWC TRACK ERRORS

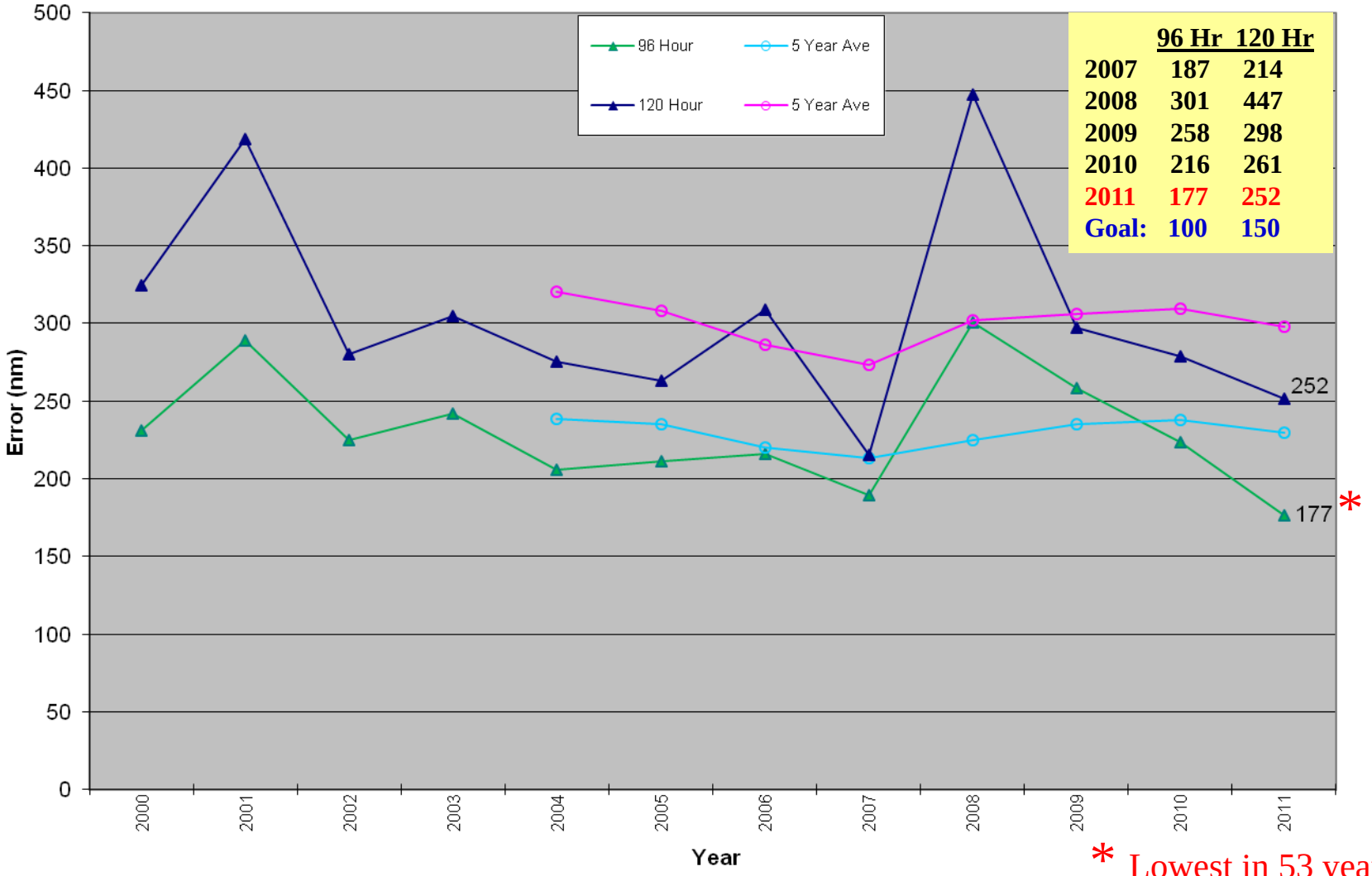
(Western North Pacific - 24-72 Hours)



	24 Hr	48 Hr	72 Hr
2007	61	100	147
2008	66	120	198
2009	65	122	183
2010	60	99	152
2011	62	93	129
Goal:	25	50	75

* Lowest in 53 year history

JTWC TRACK ERRORS
(WESTERN NORTH PACIFIC – 96-120 Hours)



	96 Hr	120 Hr
2007	187	214
2008	301	447
2009	258	298
2010	216	261
2011	177	252
Goal:	100	150

* Lowest in 53 year history

2011 WESTERN NORTH PACIFIC INTENSITY ERRORS

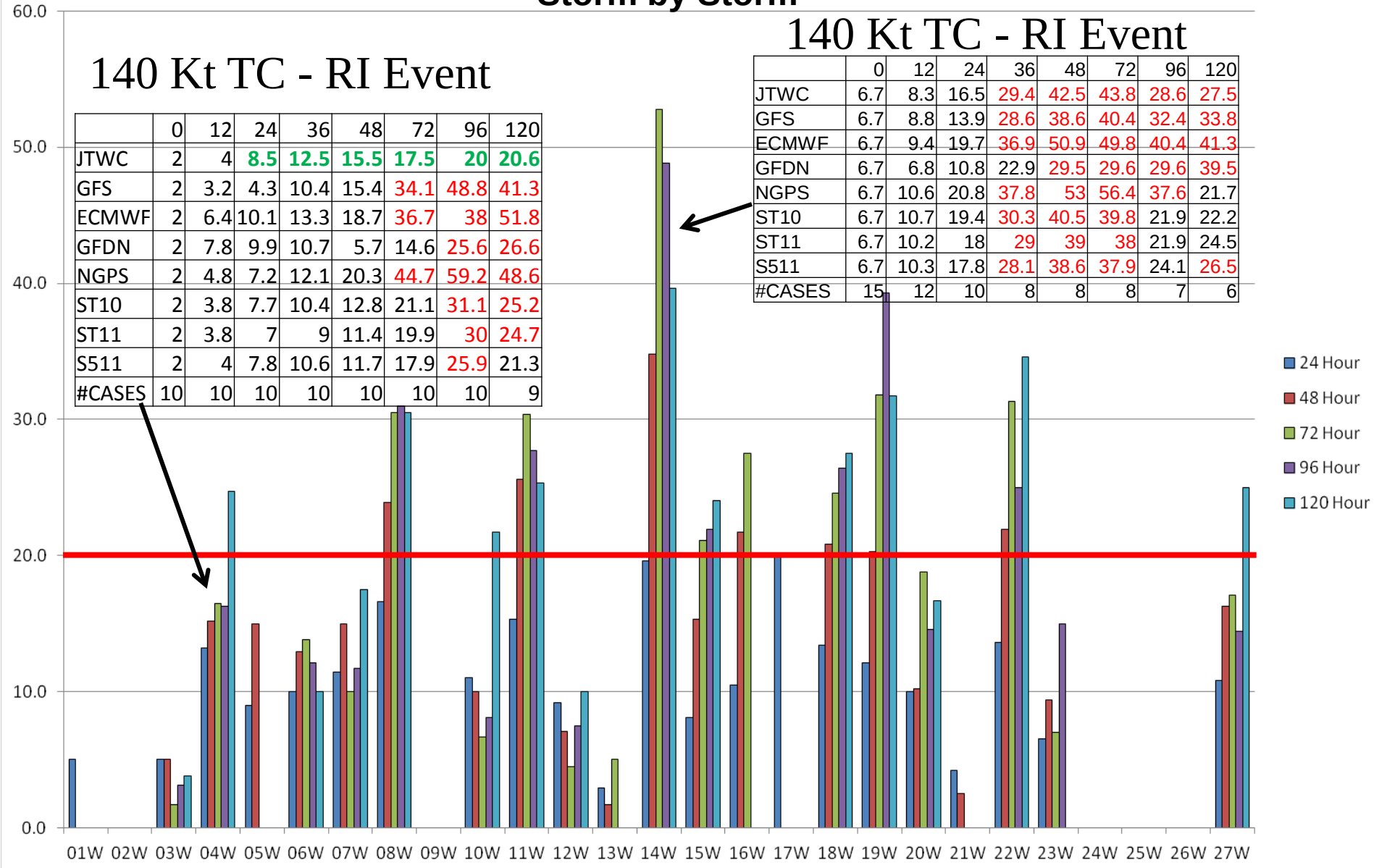
Storm by Storm

140 Kt TC - RI Event

	0	12	24	36	48	72	96	120
JTWC	2	4	8.5	12.5	15.5	17.5	20	20.6
GFS	2	3.2	4.3	10.4	15.4	34.1	48.8	41.3
ECMWF	2	6.4	10.1	13.3	18.7	36.7	38	51.8
GFDN	2	7.8	9.9	10.7	5.7	14.6	25.6	26.6
NGPS	2	4.8	7.2	12.1	20.3	44.7	59.2	48.6
ST10	2	3.8	7.7	10.4	12.8	21.1	31.1	25.2
ST11	2	3.8	7	9	11.4	19.9	30	24.7
S511	2	4	7.8	10.6	11.7	17.9	25.9	21.3
#CASES	10	10	10	10	10	10	10	9

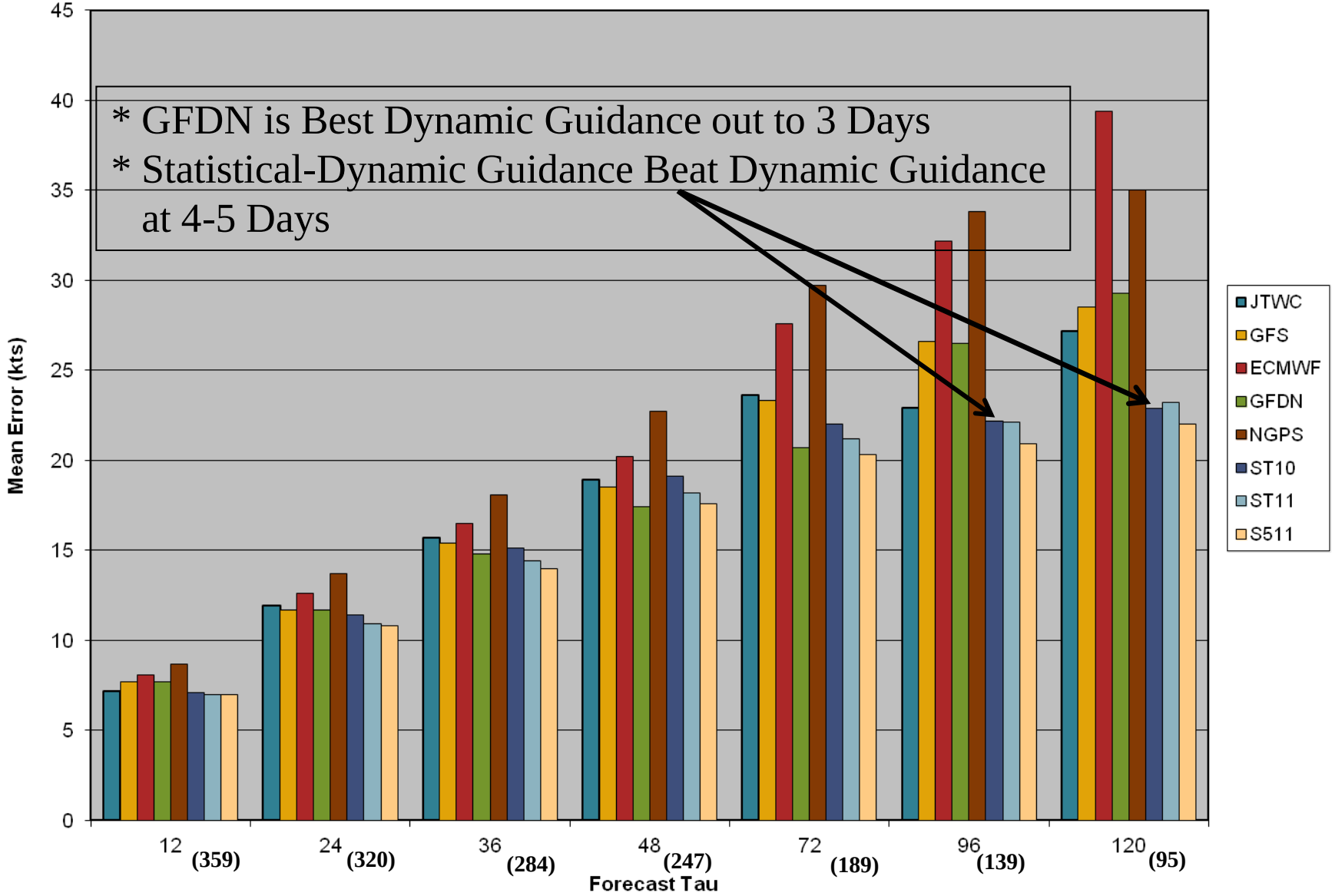
140 Kt TC - RI Event

	0	12	24	36	48	72	96	120
JTWC	6.7	8.3	16.5	29.4	42.5	43.8	28.6	27.5
GFS	6.7	8.8	13.9	28.6	38.6	40.4	32.4	33.8
ECMWF	6.7	9.4	19.7	36.9	50.9	49.8	40.4	41.3
GFDN	6.7	6.8	10.8	22.9	29.5	29.6	29.6	39.5
NGPS	6.7	10.6	20.8	37.8	53	56.4	37.6	21.7
ST10	6.7	10.7	19.4	30.3	40.5	39.8	21.9	22.2
ST11	6.7	10.2	18	29	39	38	21.9	24.5
S511	6.7	10.3	17.8	28.1	38.6	37.9	24.1	26.5
#CASES	15	12	10	8	8	8	7	6



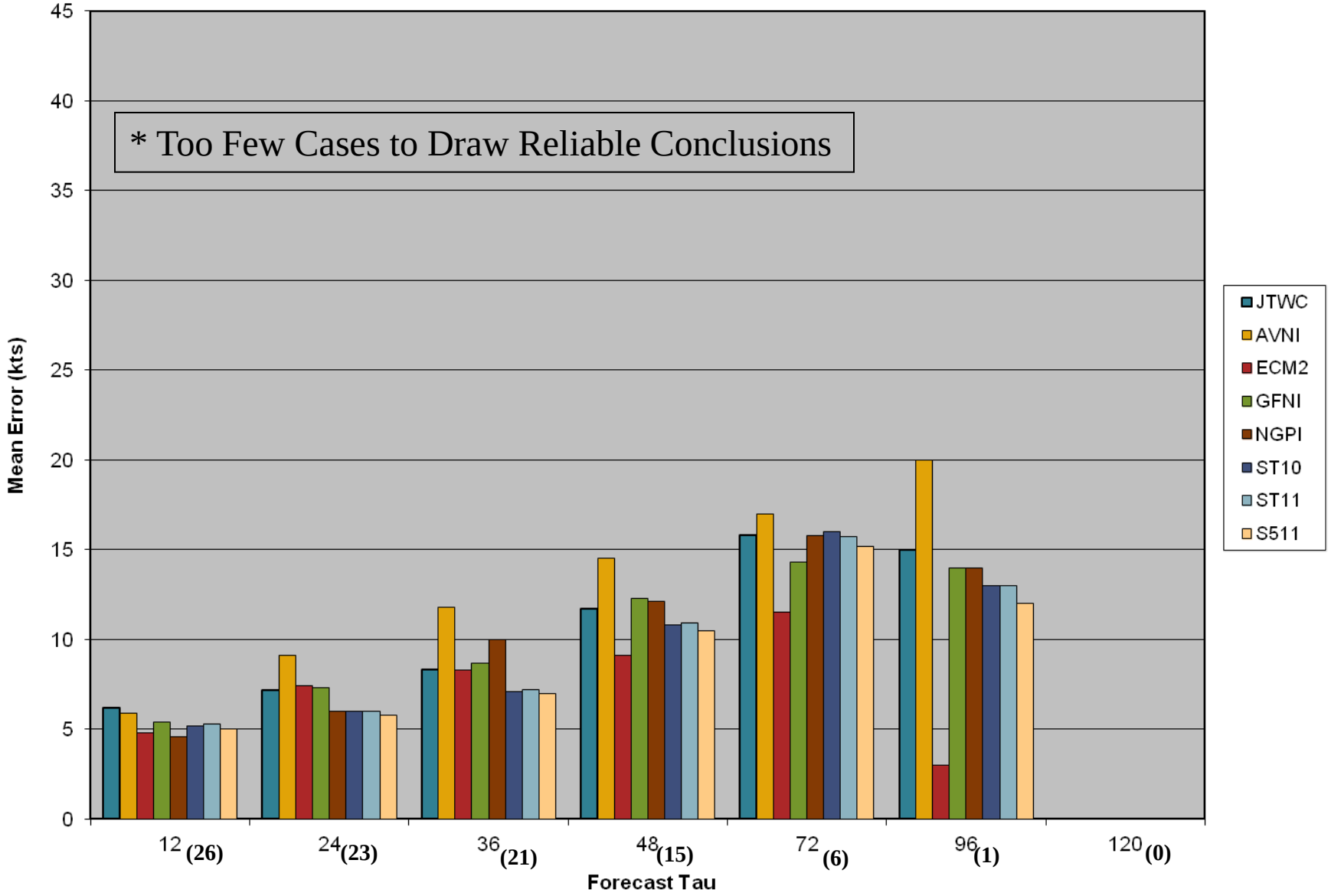
2011 MODEL INTENSITY ERRORS

(Western North Pacific – Homogeneous)



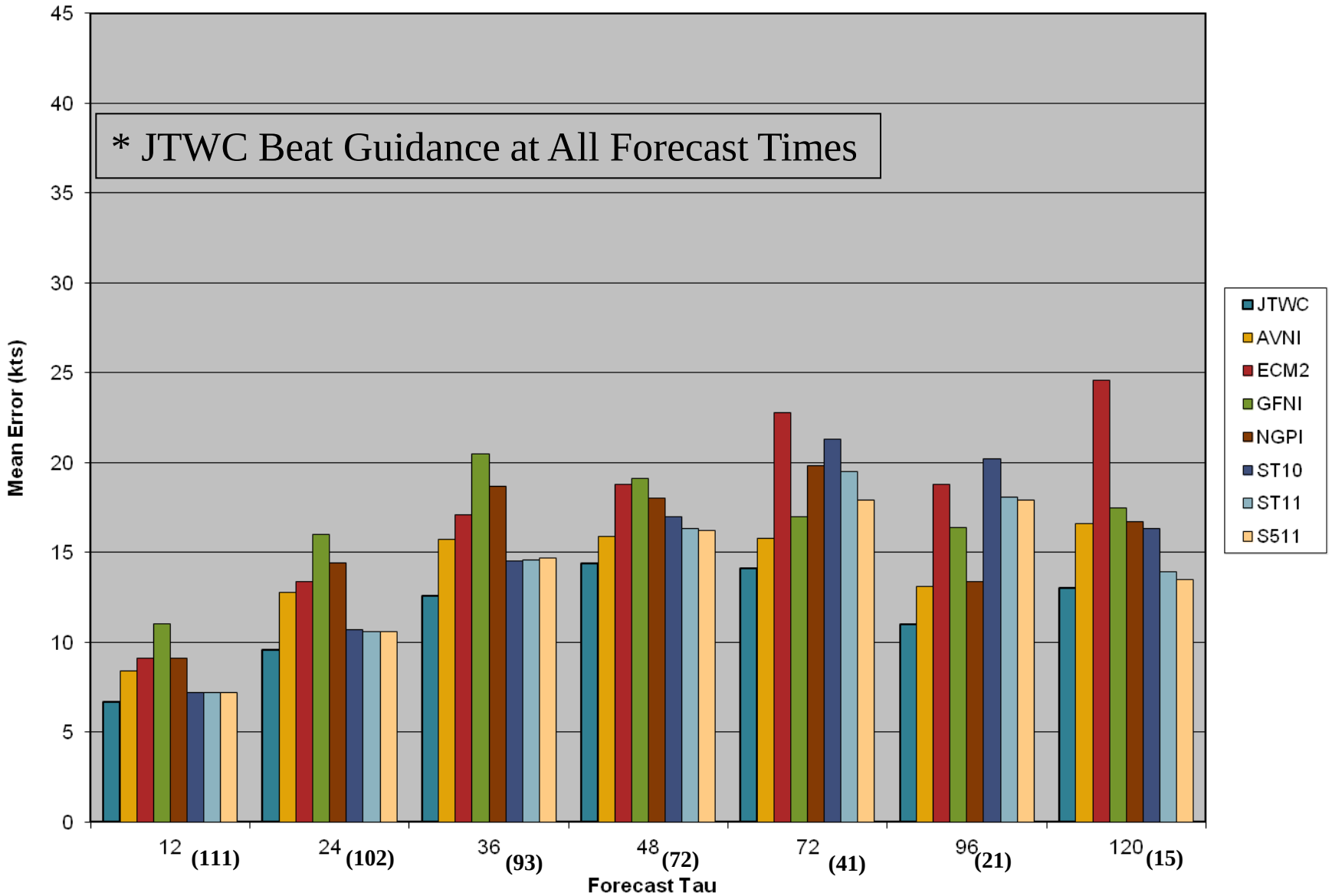
2011 MODEL INTENSITY ERRORS

(Northern Indian Ocean – Homogeneous)



2011 MODEL INTENSITY ERRORS

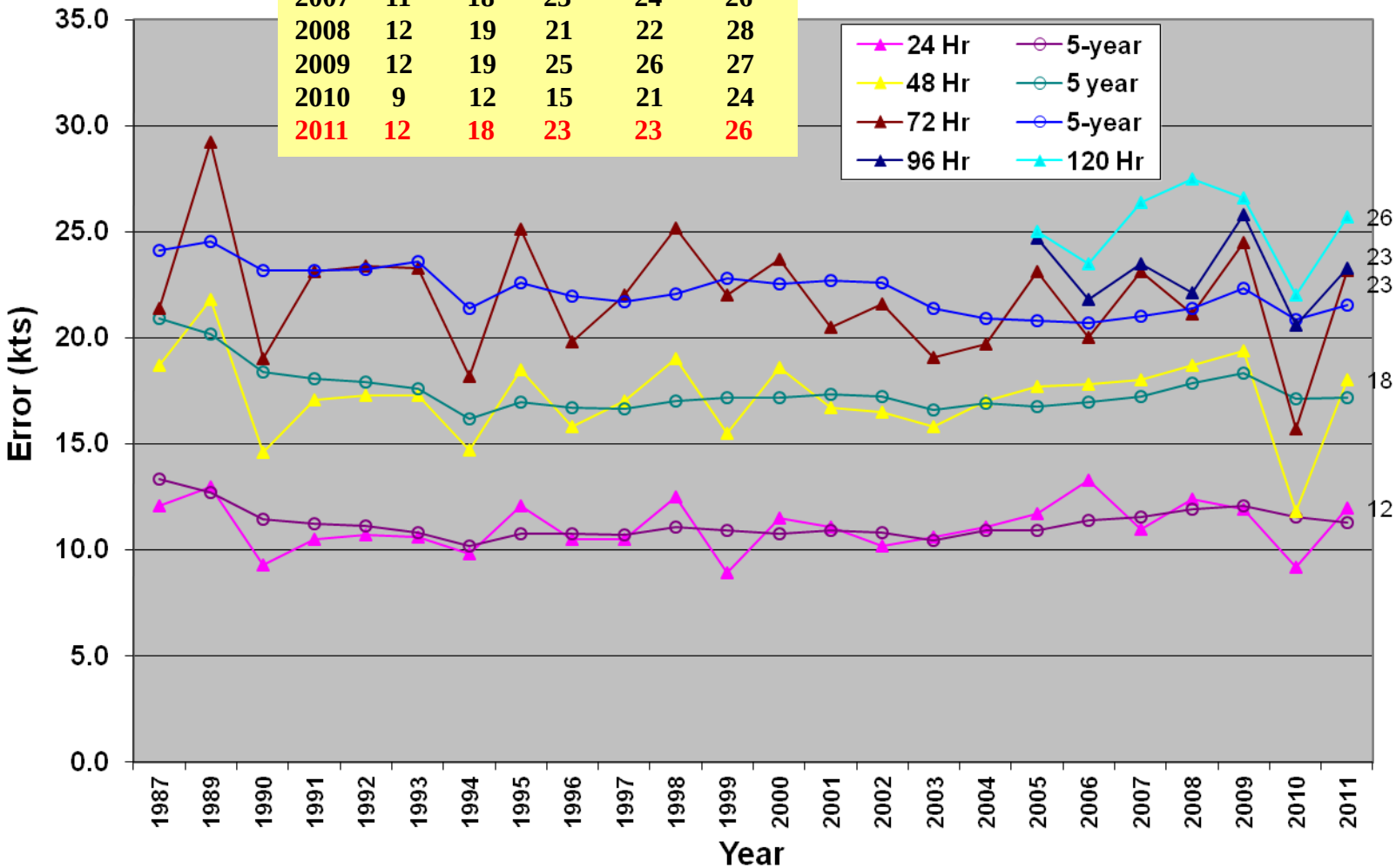
(Southern Hemisphere – Homogeneous)



JTWC INTENSITY ERRORS

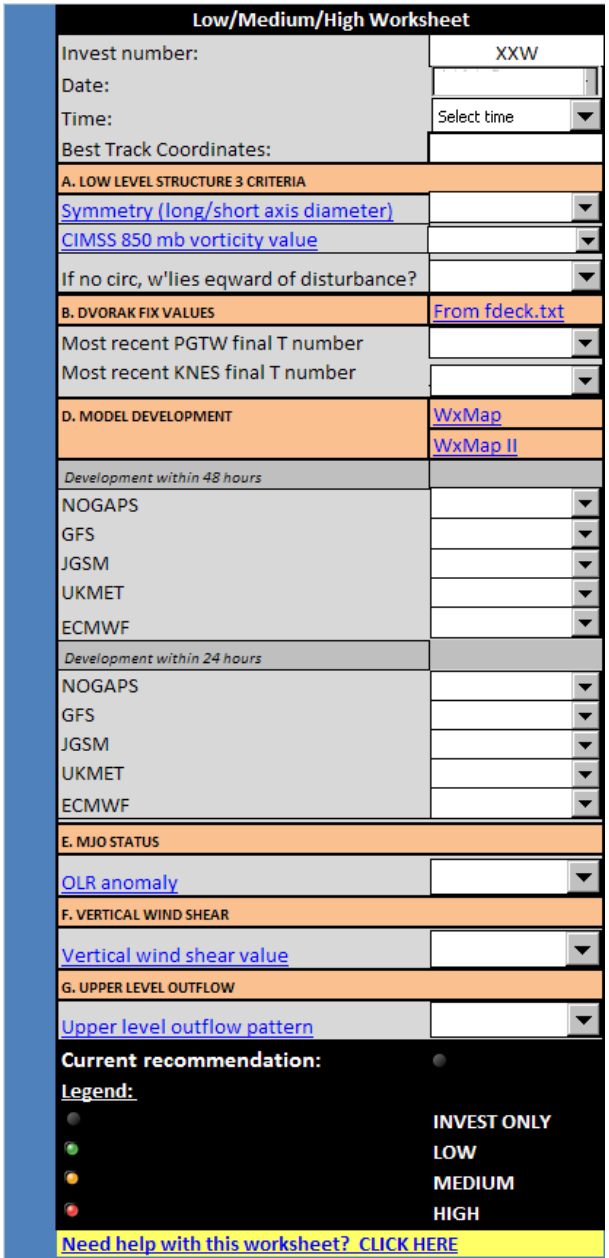
(Western North Pacific 24 - 120 Hours)

	24 Hr	48 Hr	72 Hr	96Hr	120Hr
2007	11	18	23	24	26
2008	12	19	21	22	28
2009	12	19	25	26	27
2010	9	12	15	21	24
2011	12	18	23	23	26



2012 PROJECTS/EVENTS

- **Genesis or Development potential**
  - Use of radiance data (Ritchie – U AZ)
  - NOGAPS GPI (Fu – UH)
- **Ensemble TC forecasting**
  - AFWA MEPS – 4km WRF
- **Rapid intensification climatology, diagnoses, and prediction**
- **TC / TUTT cell interaction (Patla – UH)**
- **Improvements to data processing, display, analysis and storage**
  - Google Earth tool (GEMINI)
  - PZAL (Collab) archive
  - JTWC Automation Management System (JAMS)
- **AWIPS-2 Evaluation**
- **COAMPS-TC evaluation**
- **GFDN upgrades / coupling**
- **Mark IVB X-Band Upgrade**
- **UH Intern**
- **Low/Med/High Assessment Worksheet – AMS Meeting Talk**
- **Global Hawk**
- **Typhoon Conference**
  - Tokyo, 3-5 April 2012



Low/Medium/High Worksheet	
Invest number:	XXW
Date:	
Time:	Select time
Best Track Coordinates:	
A. LOW LEVEL STRUCTURE 3 CRITERIA	
Symmetry (long/short axis diameter)	
CIMSS 850 mb vorticity value	
If no circ, w'lies eqward of disturbance?	
B. DVORAK FIX VALUES	From fdeck.txt
Most recent PGTW final T number	
Most recent KNES final T number	
D. MODEL DEVELOPMENT	WxMap
	WxMap II
Development within 48 hours	
NOGAPS	
GFS	
JGSM	
UKMET	
ECMWF	
Development within 24 hours	
NOGAPS	
GFS	
JGSM	
UKMET	
ECMWF	
E. MJO STATUS	
OLR anomaly	
F. VERTICAL WIND SHEAR	
Vertical wind shear value	
G. UPPER LEVEL OUTFLOW	
Upper level outflow pattern	
Current recommendation:	
Legend:	
	INVEST ONLY
	LOW
	MEDIUM
	HIGH
Need help with this worksheet? CLICK HERE	

Contact Info

- Commanding Officer
  CAPT Mike Angove
  michael.angove@navy.mil
  (808) 471-0363

- Director
  Mr. Robert Falvey
  robert.falvey@navy.mil
  (808) 474-5301

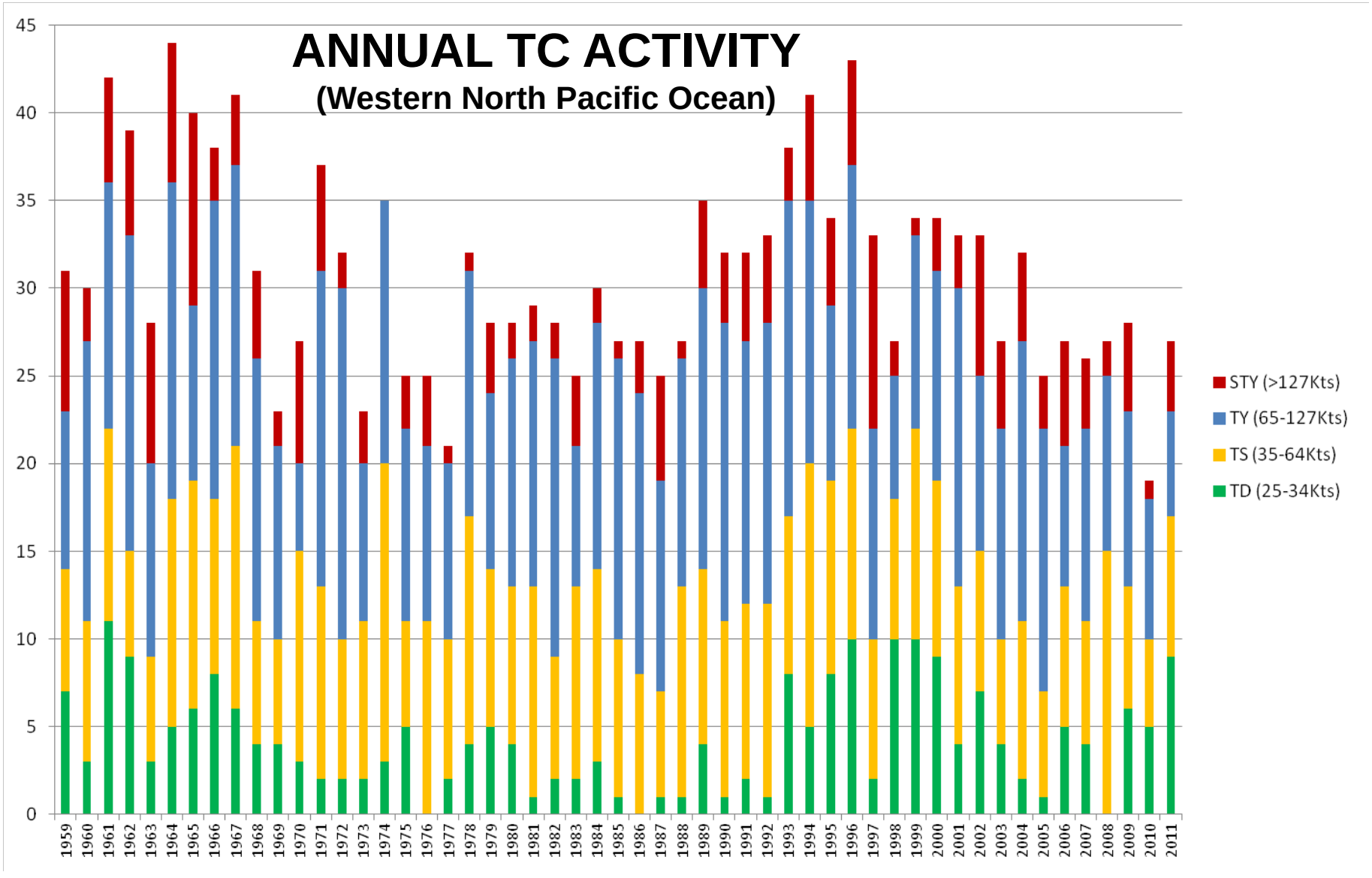
- Technical Advisor
  Mr. Ed Fukada
  edward.fukada@navy.mil
  (808) 474-5305

- Operations Officer (JTOPS)
  LCDR Sarah Follett
  sarah.follett@navy.mil
  (808) 471-4597

- Techniques Development
  Mr. Matt Kucas
  matthew.kucas@navy.mil
  (808) 471-4597

- Satellite Operations Flight
  Capt Jay Neese (deployed)
  jay.neese@navy.mil
  (808) 474-3946

QUESTIONS


ANNUAL TC ACTIVITY
(Western North Pacific Ocean)
STY (>127Kts)
TY (65-127Kts)
TS (35-64Kts)
TD (25-34Kts)
0
5
10
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1959
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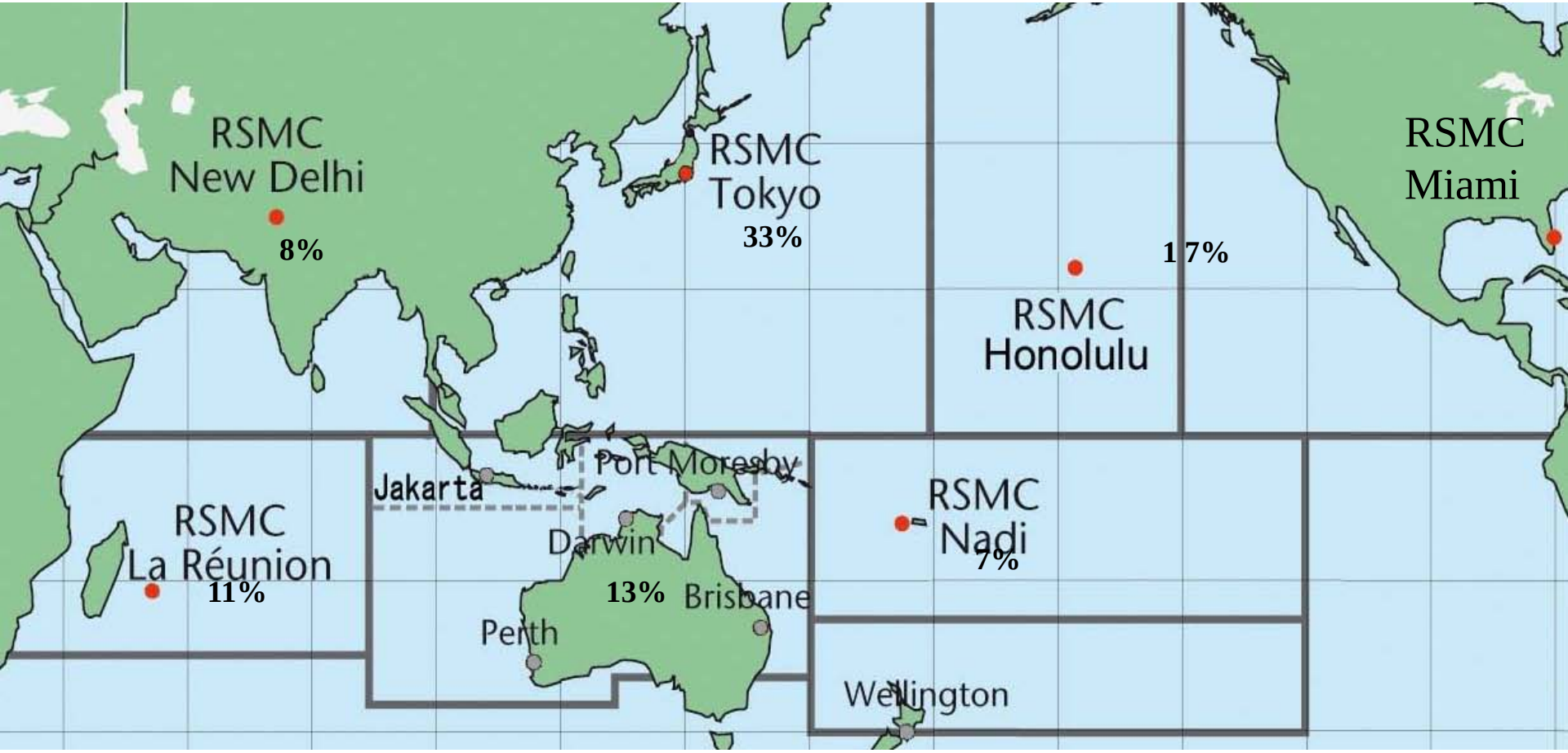
JTWC AOR


RSMC
New Delhi
8%
RSMC
Tokyo
33%
RSMC
Miami
17%
RSMC
Honolulu
Jakarta
Port Moresby
RSMC
La Réunion
11%
Darwin
13%
Brisbane
Perth
RSMC
Nadi
7%
Wellington