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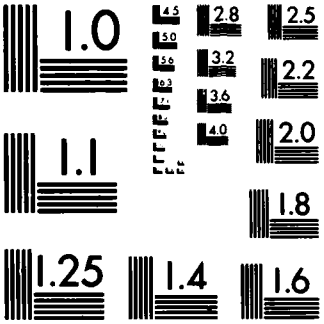

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NOCC/JTWC
Tech Note 82-1

Forecast Verification and Reconnaissance Data for Southern Hemisphere Tropical Cyclones (July 1980 through June 1982)

by

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June 82

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ERRATA SHEET for NOCC/JTWC Technical Note 87-1

Please make the following change to this publication:

Page 16, Table 9,

The labeling of two techniques, CY50 and CY85, is in reverse order along the X- and Y-axes. All values contained within the 24- and 48-hour forecast verification sections are correct, providing the order of techniques is changed to the following:

	JTWC	TYAN	CY50	CY85	BPAC	CLIM	XTRP	HPAC
JTWC								
TYAN								
CY50								
CY85								
BPAC								
CLIM								
XTRP								
HPAC								

This change applies to both the 24- and 48-hour sections

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ABSTRACT

The Joint Typhoon Warning Center (JTWC) area of responsibility includes the Southern Hemisphere, from 180° longitude westward to the east coast of Africa. This technical note documents forecast verification and reconnaissance data for those Southern Hemisphere tropical cyclones that occurred between 1 July 1980 and 30 June 1982.

FORECAST VERIFICATION
AND
RECONNAISSANCE DATA
SOUTHERN HEMISPHERE TROPICAL CYCLONES

I. INTRODUCTION

The Joint Typhoon Warning Center (JTWC) area of responsibility (AOR) was expanded on 1 October 1980 (on a one-year test basis) to include tropical cyclones in the Southern Hemisphere between 180° longitude westward to the east coast of Africa. The area was officially assigned to JTWC on a permanent basis by the Commander-in-Chief Pacific (CINCPAC) in September 1981.

JTWC's post-analysis programs were expanded to include verification of warnings and permanent storage of best track and reconnaissance data for Southern Hemisphere tropical cyclones. Forecast, best track, and reconnaissance data are transmitted from NAVOCEANCOMCEN Guam to the Fleet Numerical Oceanography Center, Monterey, California (FLENUMOCEANCEN) via the Naval Environmental Data Network (NEDN). These data are stored on mass storage devices at FLENUMOCEANCEN, and, through remote job entries from NAVOCEANCOMCEN Guam, are accessed and processed on computers at FLENUMOCEANCEN. Best track verification, and reconnaissance summaries for each tropical cyclone are then returned to NAVOCEANCOMCEN Guam via the NEDN. These summaries appear in Appendices A and B of this technical note.

The purpose of this technical note is to document best track data, verification statistics, and satellite reconnaissance data for Southern Hemisphere tropical cyclones which occurred between 1 July 1980 and 30 June 1982. Discussion of verification statistics has been kept to a minimum because comparison statistics do not exist for prior years when warnings were issued by NAVOCEANCOMCEN Guam's Operations Department. The reader is referred to the 1982 Annual Tropical Cyclone Report for a complete discussion of JTWC operating procedures.

II. SUMMARY OF TROPICAL CYCLONES FOR THE WESTERN SOUTH PACIFIC AND SOUTH INDIAN OCEANS

During the period of this report, a total of 49 tropical cyclones reached warning status in the JTWC Southern Hemisphere area of responsibility; 24 were recorded in the 1980-81 and 25 in the 1981-82 seasons (1 July to 30 June). These activity levels appear to be as expected with respect to the total number of tropical cyclones and their source regions. Four major oceanic source regions are identified for this portion of JTWC's area of responsibility (see Figure 1):

Western South Pacific Ocean	(SW PAC)
Northern Australian Region	(N AUST)
Central South Indian Ocean	(SC IO)
Western South Indian Ocean	(SW IO)

In general, tropical cyclones developing in a particular area will remain in that region. However, exceptions were noted:

(1) TC 24-80 developed in the SC IO and moved west into the SW IO, eventually making landfall on Africa's east coast.
(2) TC 02-82 traveled nearly 3056 nm (5660 km) as it crossed from the SC IO, south of Java, into the SW IO where it dissipated over water nearly 600 nm (1111 km) south of Mauritius.
(3) TC 19-82 took a southeasterly heading from N AUST and eventually moved into the SW PAC.

Intensity estimates for Southern Hemisphere tropical cyclones are derived from satellite imagery evaluation (Dvorak, 1973), estimates of intensity as reported by other regional warning centers, and, in rare occasions, from surface observational data. Over the period of this report, 24 tropical cyclones remained below a maximum intensity of 64 kt (32 m/sec), the criteria used to designate a cyclone of typhoon intensity in the western North Pacific. Of the remaining 25 tropical cyclones, 10 reached an intensity of at least 100 kt (51 m/sec). It is interesting to note, that of the 14 tropical cyclones which developed in the N AUST region, four of the six in 1980-81 attained at least 100 kt (51 m/sec) while in 1981-82 none of the eight tropical cyclones in this region attained 100 kt (51 m/sec). In fact, only two of the eight exceeded 50 kt (26 m/sec).

Summary data for the tropical cyclones occurring during the period of this report are presented in Table 1 (1980-81) and Table 2 (1981-82). Except for TC 06-81, which had a sufficient amount of synoptic data along its track to determine its intensity and minimum sea level pressure, the estimates of minimum sea level prressure were derived from the Atkinson and Holliday (1977) relationship between maximum sustained one-minute surface wind and minimum sea level pressure (Table 3). This relationship has been shown to be representative for tropical cyclones in the western North Pacific and it is utilized by the Australian region warning centers to provide intensity estimates in their respective areas of responsibility. However, since these pressure estimates were based upon intensities that have been primarily derived from interpretation of satellite imagery, considerable caution should be exercised when using these resultant pressure values in future tropical cyclone work. The distance traveled by each tropical cyclone was calculated from the official JTWC best track data (see Appendix A).

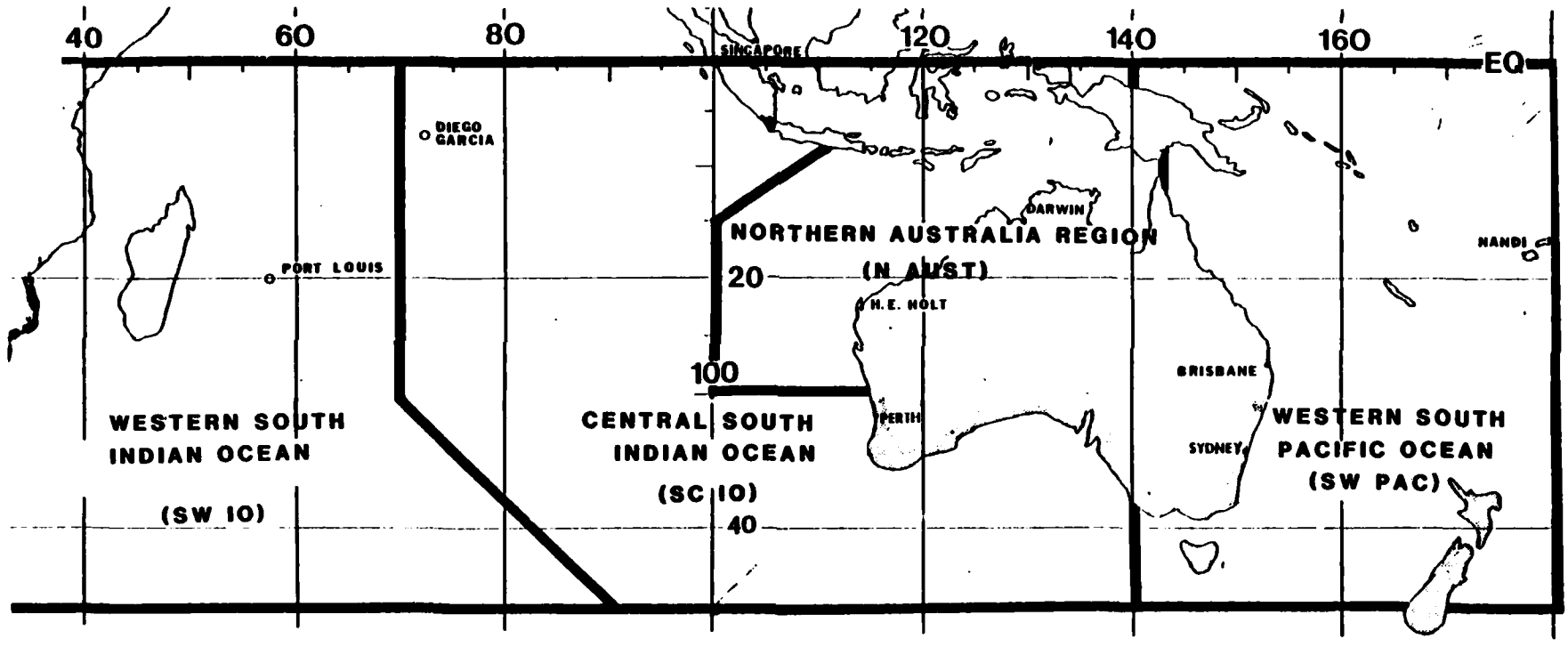

Figure 1. The four major oceanic source regions for the Southern Hemisphere area of responsibility. Although tropical cyclones which form in each of these regions tend to remain within the respective region, there are several examples of tropical cyclones crossing regional boundaries. Climatological data differs greatly between regions.

TABLE 1. 1980-81 SIGNIFICANT TROPICAL CYCLONES IN THE WESTERN SOUTH PACIFIC AND SOUTH INDIAN OCEANS

	CYCLONE NUMBER	NAME@	OCEANIC REGION	NUMBER OF WARNINGS	PERIOD OF WARNINGS	WARNING DAYS	MAXIMUM SURFACE WIND (kt)	MINIMUM SEA LEVEL PRESSURE (mb)	DISTANCE TRAVELED (nm)
1.	TC 21-80		SW IO	5	10 OCT - 12 OCT	3	40	993	928
2.	TC 22-80	ALICE	SC IO	14	05 NOV - 12 NOV	8	115	926	1656
3.	TC 24-80		SW IO	7	25 NOV - 28 NOV	4	55	983	2420
4.	TC 25-80	BERT	SC IO	13	27 NOV - 04 DEC	8	65	975	1564
5.	TC 26-80		N AUST	11	13 DEC - 18 DEC	6	80	962	1252
6.	TC 28-80	FELIX	N AUST	15	22 DEC - 29 DEC	8	100	942	1779
7.	TC 01-81	FLORINE	SW IO	8	06 JAN - 10 JAN	5	100	942	1570
8.	TC 02-81	ARTHUR	SW PAC	9	12 JAN - 16 JAN	5	75	966	1025
9.	TC 03-81	MABLE	N AUST	15	14 JAN - 20 JAN	7	100	942	1334
10.	TC 04-81		SC IO	4	16 JAN - 18 JAN	3	45	990	629
11.	TC 05-81		SW PAC	5	26 JAN - 27 JAN	2	25	996	963
12.	TC 06-81	HELYETTE	SW IO	7	30 JAN - 02 FEB	4	45	990	1944
13.	TC 08-81*	CLIFF	SW PAC	12*	09 FEB - 15 FEB	7	75	966	2179
14.	TC 09-81*		N AUST	2*	11 FEB - 11 FEB	1	40	993	1796
15.	TC 10-81	IADINE	SW IO	5	19 FEB - 21 FEB	3	55	983	1718
16.	TC 13-81	NEIL	N AUST	17	25 FEB - 05 MAR	9	100	943	1442
17.	TC 14-81	FREDA	SW PAC	19	26 FEB - 07 MAR	10	75	966	2122
18.	TC 15-81+		SW PAC	3	01 MAR - 02 MAR	2	50	987	1224+
19.	TC 16-81	JOHANNA	SW IO	9	05 MAR - 09 MAR	5	75	966	1701
20.	TC 17-81	MAX	N AUST	16	11 MAR - 18 MAR	8	100	942	1997
21.	TC 21-81	KLARA	SW IO	9	01 APR - 05 APR	5	40	993	1620
22.	TC 22-81	OLGA	SC IO	14	07 APR - 13 APR	7	115	926	2082
23.	TC 23-81	LISA	SW IO	14	17 APR - 23 APR	7	40	993	1298
24.	TC 24-81	PADDY	SC IO	5	26 MAY - 29 MAY	4	35	996	972

Notes:

* The first nine warnings for TC 08-81 and all warnings for TC 09-81 were issued by the Alternate Joint Typhoon Warning Center (Naval Western Oceanography Center, Pearl Harbor, Hawaii) during a period in which the staff of the Joint Typhoon Warning Center, Guam, was attending the Annual Tropical Cyclone Conference.

\+ Warning responsibility was passed to the Naval Western Oceanography Center, Pearl Harbor, Hawaii, when TC 15-81 crossed 180 degrees longitude. Data given are for the track west of 180 degrees.

@ Names of tropical cyclones given by regional warning centers (Nandi, Brisbane, Darwin, Perth, and Mauritius) are appended to JTWC warnings, when available.

TABLE 2. 1981-82 SIGNIFICANT TROPICAL CYCLONES IN THE WESTERN SOUTH PACIFIC AND SOUTH INDIAN OCEANS

	CYCLONE NUMBER	NAME@	OCEANIC REGION	NUMBER OF WARNINGS	PERIOD OF WARNINGS	WARNING DAYS	MAXIMUM SURFACE WIND (kt)	MINIMUM SEA LEVEL PRESSURE (mb)	DISTANCE TRAVELED (nm)
1.	TC 25-81		SC IO	3	27 JUL - 28 JUL	1	30	999	307
2.	TC 26-81	ALEX	SC IO	13	21 OCT - 27 OCT	6	65	975	1150
3.	TC 28-81	BESSI	SC IO	30	04 NOV - 18 NOV	14	90	952	2195
4.	TC 30-81	AMELIA	N AUST	3	06 DEC - 07 DEC	1	35	996	1245
5.	TC 32-81	GYAN	SW PAC	14	20 DEC - 26 DEC	6	105	937	1261
6.	TC 33-81	BENEDICTE	SW IO	8	21 DEC - 25 DEC	4	75	966	1781
7.	TC 01-82		SC IO	7	01 JAN - 04 JAN	3	45	990	478
8.	TC 02-82	CHRIS	SC IO	26	08 JAN - 21 JAN	13	120	920	3056
9.	TC 03-82	DAPHNE	SC IO	5	13 JAN - 15 JAN	2	35	996	475
10.	TC 04-82	ERROL	N AUST	10	13 JAN - 18 JAN	5	50	987	453
11.	TC 05-82	BRUNO	N AUST	3	16 JAN - 17 JAN	1	40	993	884
12.	TC 06-82		N AUST	4	19 JAN - 21 JAN	2	35	996	963
13.	TC 07-82	HETTIE	SW PAC	13	26 JAN - 31 JAN	5	70	971	1012
14.	TC 08-82	ABIGAIL	SW PAC	22	26 JAN - 05 FEB	10	65	975	1991
15.	TC 09-82	GRAHAM	N AUST	4	31 JAN - 02 FEB	2	35	996	535
16.	TC 10-82	ELECTRA	SW IO	10	01 FEB - 05 FEB	4	45	990	1798
17.	TC 11-82	HARRIET	N AUST	5	16 FEB - 18 FEB	2	35	996	383
18.	TC 12-82		SW IO	3	24 FEB - 25 FEB	1	45	990	970
19.	TC 13-82	IAN	N AUST	17	27 FEB - 07 MAR	8	65	975	1627
20.	TC 15-82	JUSTINE	SW IO	20	17 MAR - 26 MAR	9	75	966	2024
21.	TC 16-82		SC IO	5	17 MAR - 19 MAR	2	45	990	822
22.	TC 17-82	BERNIE	SW PAC	15	01 APR - 08 APR	7	95	947	2530
23.	TC 18-82	DOMINIC	N AUST	17	05 APR - 13 APR	8	70	971	1278
24.	TC 19-82	KARLA	SC IO	14	25 APR - 02 MAY	7	100	942	1463
25.	TC 21-82	CLAUDIA	SW PAC	5	15 MAY - 17 MAY	2	40	993	889

Notes:

@ Names of tropical cyclones given by regional warning centers (Nandi, Brisbane, Darwin, Perth, and Mauritius) are appended to JTWC warnings, when available.

TABLE 3. MAXIMUM SUSTAINED SURFACE WIND VERSUS MINIMUM SEA LEVEL PRESSURE (ATKINSON AND HOLLIDAY, 1977).

Maximum Sustained Surface Wind (kt)	Equivalent Minimum Sea Level Pressure (mb)
30	999
35	996
40	993
45	990
50	987
55	983
60	979
65	975
70	971
75	966
80	962
85	957
90	952
95	947
100	942
105	937
110	932
115	926
120	920
125	914
130	908
135	902
140	896
145	890
150	884
155	878
160	872
165	865
170	858

III. RECONNAISSANCE DATA

Satellite surveillance provided nearly 100 percent of center fixes for tropical cyclones in the western South Pacific and South Indian Oceans. A few synoptic fixes were possible for tropical cyclones north and east of Australia and in the vicinity of Madagascar.

A total of 1816 center fixes were provided to JTWC for Southern Hemisphere tropical cyclones. Appendix B includes individual center fix data for each tropical cyclone. Fix data are divided into two categories: satellite and synoptic. Fixes labelled with an asterisk (*) were determined in the best tracking process to be unrepresentative of the tropical cyclone's surface center and were not used to determine the final best track which appears in Appendix B. For satellite and synoptic fixes, the first three columns are as follows:

FIX NO. - Sequential fix number.

TIME(Z) - GMT time in day, hours, and minutes.

FIX POSITION - Latitude and longitude to the nearest tenth of a degree.

Depending upon the type of center fix, the remainder of the format varies as follows:

TABLE 4. POSITION CODE NUMBERS (PCN)

PCN	METHOD OF CENTER DETERMINATION/GRIDDING
1	EYE/GEOGRAPHY
2	EYE/EPHEMERIS
3	WELL-DEFINED CC/GEOGRAPHY
4	WELL-DEFINED CC/EPHEMERIS
5	POORLY-DEFINED CC/GEOGRAPHY
6	POORLY-DEFINED CC/EPHEMERIS

CC = Circulation Center

a. Satellite

(1) ACCRY - Satellite center fix positions are assigned position code numbers to indicate the accuracy of the center fix. The PCN depends upon the availability of geography for precise gridding and the degree of organization of the cyclone's circulation center. Table 4 lists PCN definitions; a "1" indicates relatively high accuracy and a "6" relatively low accuracy.

(2) DVORAK CODE - A Dvorak intensity estimate and trend evaluation is provided for many position fixes made from visual satellite imagery. An explanation of the code is provided below. The relationship between the Dvorak tropical cyclone current intensity estimate, maximum wind speed, and minimum sea level pressure (MSLP) is shown in Table 5.

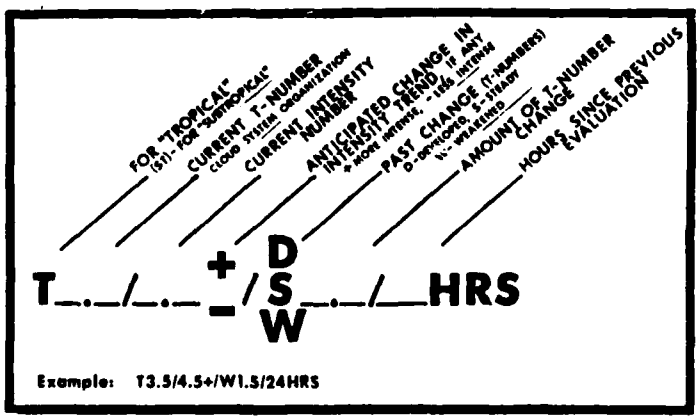

TABLE 5. MAXIMUM SUSTAINED WIND SPEED (KT) AS A FUNCTION OF DVORAK CURRENT INTENSITY NUMBER AND MINIMUM SEA LEVEL PRESSURE (MSLP)

TROPICAL CYCLONE CURRENT INTENSITY (CI)	WIND SPEED (KT)	MSLP (MB)
T 1.0	25	-
T 1.5	25	-
T 2.0	30	999
T 2.5	35	996
T 3.0	45	990
T 3.5	55	983
T 4.0	65	975
T 4.5	77	964
T 5.0	90	952
T 5.5	102	943
T 6.0	115	926
T 6.5	127	912
T 7.0	140	896
T 7.5	155	878
T 8.0	170	858

(3) COMMENTS - See Appendix C for an explanation of abbreviations.

(4) SITE - ICAO call sign of the specific satellite tracking station.

b. Synoptic

(1) INTENSITY ESTIMATE - An estimate of the tropical cyclone's maximum sustained surface wind speed in knots is based on the tropical cyclone forecaster's analysis of low-level synoptic data.

(2) NEAREST DATA - Accuracy of a synoptic fix is based on the distance in nautical miles from the estimated fix position to the nearest synoptic report or to the average distance of reports in data sparse areas.

IV. FORECAST VERIFICATION

Forecast positions at warning times and 24- and 48-hour valid times were verified against corresponding best tracks prepared by tropical cyclone forecasters for each tropical cyclone from 180° longitude west to the east coast of Africa. Mean absolute vector errors and right angle errors for individual tropical cyclones are displayed in Table 6 and Table 7. Annual mean errors for all tropical cyclones are summarized at the bottom of the tables. It is not possible to compare these annual mean errors with performance in past years because verification statistics were not derived prior to the 1980-81 Southern Hemisphere tropical cyclone season.

The verification results in Tables 6 and 7 show considerably larger errors than performance statistics for Northern Hemisphere tropical cyclones. During the last decade, the mean initial position error, the 24-hour forecast error, and the 48-hour forecast error for Northern Hemisphere tropical cyclones were approximately 25 nm (46 km), 124 nm (230 km), and 242 nm (448 km), respectively.

The length of time between the time of the satellite fix and warning time is directly proportional to initial position error. For cyclones west of 80E, this period was as long as eight hours due to the limited satellite coverage in this area. Only two satellite fixes per day, from the polar-orbiting NOAA 6 satellite, were available during the 1980-81 season. Inadequate satellite coverage remains a major contributor to large initial position errors in this area.

The relatively large errors at 24- and 48-hours are attributable to the large initial position error and the lack of upper-air observations west of Australia. In the South Indian Ocean, between Australia and Mauritius, rawinsonde observations are received only from Diego Garcia (WMO 61967) and Cocos Island (WMO 96996). During this two-year period, Southern Hemisphere tropical cyclone tracks were more erratic than typical Northern Hemisphere tracks. This erratic nature, combined with sparse rawinsonde data and large initial position errors, made these Southern Hemisphere tropical cyclones very difficult to forecast.

TABLE 6. FORECAST ERROR SUMMARY FOR 1980-81 SOUTHERN HEMISPHERE TROPICAL CYCLONES (ERRORS IN NAUTICAL MILES)

	WARNING			24 HOUR			48 HOUR		
TROPICAL CYCLONE	POSIT ERROR	RT ANGLE ERROR	NR OF WRNGS	POSIT ERROR	RT ANGLE ERROR	NR OF WRNGS	POSIT ERROR	RT ANGLE ERROR	NR OF WRNGS
TC 21-80	72	24	5	115	97	3	190	173	3
TC 22-80	101	65	14	138	89	12	241	154	10
TC 24-80	65	59	7	205	167	6	413	330	5
TC 25-80	34	21	13	159	128	10	454	262	6
TC 26-80	45	28	11	237	176	7	470	335	7
TC 28-80	19	13	15	83	65	14	206	146	12
TC 01-81	63	35	10	161	144	8	228	178	6
TC 02-81	24	16	9	124	86	8	224	122	6
TC 03-81	30	18	16	114	98	14	192	155	9
TC 04-81	31	19	4	91	62	3	106	106	1
TC 05-81	61	27	4	60	60	2			
TC 06-81	66	51	6	150	103	5	240	123	3
TC 08-81*	15	13	3*	331	331	1			
TC 09-81*			0*						
TC 10-81	52	41	5	182	153	4	327	299	3
TC 13-81	26	17	17	153	89	15	340	210	13
TC 14-81	39	24	19	149	116	18	343	211	11
TC 15-81	102	74	3	478	159	3	1178	380	1
TC 16-81	74	40	9	204	148	8	363	233	6
TC 17-81	30	15	16	176	108	14	295	208	12
TC 21-81	40	28	9	183	119	8	274	217	7
TC 22-81	53	35	14	160	142	13	323	237	10
TC 23-81	93	54	14	282	192	13	549	392	7
TC 24-81	33	15	5	92	77	4	147	144	2
ALL FORECASTS	48	30	228	165	119	192	315	216	140

* The first nine warnings issued for TC 08-81 and all warnings issued for TC 09-81 were provided by the Naval Western Oceanography Center, Pearl Harbor, HI. These warnings were not verified against the tropical cyclones' best tracks.

TABLE 7. FORECAST ERROR SUMMARY FOR 1981-82 SOUTHERN HEMISPHERE TROPICAL CYCLONES (ERRORS IN NAUTICAL MILES)

	WARNING			24 HOUR			48 HOUR		
TROPICAL CYCLONE	POSIT ERROR	RT ANGLE ERROR	NR OF WRNGS	POSIT ERROR	RT ANGLE ERROR	NR OF WRNGS	POSIT ERROR	RT ANGLE ERROR	NR OF WRNGS
TC 25-81	85	66	3	161	158	2			
TC 26-81	30	17	13	133	96	11	257	203	9
TC 28-81	47	26	30	115	73	29	228	151	26
TC 30-81	20	20	3	124	88	2			
TC 32-81	25	19	14	123	93	13	240	148	10
TC 33-81	28	17	8	81	42	7	98	62	5
TC 01-82	67	27	7	194	140	6	459	413	4
TC 02-82	28	18	26	85	52	24	161	103	22
TC 03-82	19	17	5	141	111	4	427	295	3
TC 04-82	49	23	10	123	92	8	264	199	6
TC 05-82	31	24	3	125	100	2			
TC 06-82	25	12	4	360	133	3	740	214	1
TC 07-82	25	13	13	140	82	12	293	124	10
TC 08-82	32	28	22	140	88	20	307	173	16
TC 09-82	32	20	4	93	40	2			
TC 10-82	49	26	9	180	122	7	431	307	4
TC 11-82	59	39	5	228	165	3	393	322	1
TC 12-82	47	42	3	196	170	1			
TC 13-82	28	15	17	185	103	15	341	117	6
TC 15-82	45	33	20	180	102	18	301	181	14
TC 16-82	79	66	5	215	202	3	190	190	1
TC 17-82	43	23	15	140	87	14	268	182	12
TC 18-82	26	18	17	146	71	15	324	213	13
TC 19-82	43	25	14	136	98	12	290	204	10
TC 21-82	62	43	5	269	183	5	473	320	3
ALL FORECASTS	38	24	275	144	91	238	274	174	176

Tables 8 and 9 present verification statistics for selected objective forecasting techniques for all Southern Hemisphere tropical cyclones in JTWC's area of responsibility for the 1980-81 seasons. In both tables, "X-AXIS" refers to techniques listed vertically. The example in Table 8 compares CY70 to CY50. In the 113 cases available for comparison, the average 24-hour vector error was 216 nm (400 km) for CY70, 299 nm (555 km) for CY50. The difference of 83 nm (154 km) is shown in the lower right corner. Differences are not always exact due to computational round off.

Objective techniques used by JTWC for Southern Hemisphere tropical cyclones are divided into three main categories: (1) climatological and analog techniques; (2) extrapolation; and (3) steering techniques. All objective techniques were run using operational data available at warning time. Specific objective techniques are described below:

a. EXTRAPOLATION - A track from the 12-hour old preliminary best track position through the current warning position which is linearly extrapolated to 24 and 48 hours.

b. CLIM - A climatological aid which provides 24- and 48-hour tropical cyclone forecast positions for initial latitude/longitude positions. The data are arranged by months and are based on approximately 70 years of historical data.

c. HPAC - The 24- and 48-hour HPAC forecast positions are derived from the mid-points of straight lines that connect the 24- and 48-hour positions on the EXTRAPOLATION and CLIM tracks.

d. CYCLOPS - In the Southern Hemisphere the program was run only in the unmodified mode with analysis fields until late in the 1981-82 season. The program advects a point vortex on a preselected analysis field in 6-hour time steps through 48 hours. In 1980-81, the 500 mb (CY50) and 700 mb (CY70) steering levels were verified. In 1981-82, the 500 mb (CY50) and 850 mb (CY85) steering levels were verified.

e. TYAN78 - An analog program which scans history tapes for cyclones within a specified acceptance envelope which are similar to the current cyclone. The program provides 12-hour to 72-hour forecasts.

f. BPAC - A program used with a Texas Instruments (TI-59) calculator system which generates 12 to 72 hour forecast positions. These forecasts are based on blending the past motion of the tropical cyclone with the CLIM forecast positions. The blending routine gives less weight to persistence at each succeeding forecast interval.

TABLE 8. ERROR STATISTICS FOR JTWC AND OBJECTIVE AIDS FOR THE 1980-81 SOUTHERN HEMISPHERE TROPICAL CYCLONE SEASON

STATISTICS FOR YEAR — 24 HOUR FORECASTS

	JTWC		TYAN		CY70		CY50		CLIM		XTRP		HPAC	
JTWC	192	165												
	165	0												
TYAN	143	152	149	143										
	140	-11	143	0										
CY70	110	171	84	160	114	216								
	209	38	209	49	216	0								
CY50	109	172	83	160	113	216	113	299						
	294	122	316	155	299	83	299	0						
CLIM	184	167	149	143	108	209	107	304	194	198				
	197	30	191	48	206	-2	207	-96	198	0				
XTRP	183	163	147	143	110	213	109	301	188	197	193	165		
	162	0	155	12	169	-43	168	-132	165	-31	165	0		
HPAC	179	164	147	143	106	208	105	304	188	197	188	165	188	158
	156	-6	154	10	161	-46	161	-142	158	-38	158	-6	158	0

NUMBER OF CASES | X-AXIS TECHNIQUE ERROR
Y-AXIS TECHNIQUE ERROR | ERROR DIFFERENCE Y - X

STATISTICS FOR YEAR — 48 HOUR FORECASTS

	JTWC		TYAN		CY70		CY50		CLIM		XTRP		HPAC	
JTWC	140	315												
	315	0												
TYAN	97	285	117	244										
	225	-50	244	0										
CY70	79	324	68	263	95	426								
	402	78	401	138	426	0								
CY50	78	325	67	265	94	428	94	577						
	546	220	579	314	577	148	577	0						
CLIM	138	318	117	244	91	408	90	586	165	344				
	340	22	332	88	337	-70	340	-245	344	0				
XTRP	133	307	115	244	90	414	89	580	158	339	160	300		
	294	-11	277	33	321	-92	320	-259	301	-37	300	0		
HPAC	132	308	115	244	88	405	87	585	158	339	158	301	158	272
	269	-38	262	17	275	-128	276	-307	272	-66	272	-28	272	0

JTWC -- Official JTWC forecast
TYAN -- TYAN78
CY70 -- CYCLOPS 700 mb, analysis mode
CY50 -- CYCLOPS 500 mb, analysis mode
CLIM -- Climatology
XTRP -- 12-hour extrapolation
HPAC -- Mean of XTRP and CLIM

TABLE 9. ERROR STATISTICS FOR JTWC AND OBJECTIVE AIDS FOR THE 1981-82 SOUTHERN HEMISPHERE TROPICAL CYCLONE SEASON

STATISTICS FOR YEAR — 24-HOUR FORECASTS

	JTWC		TYAN		CY85		CY50		BPAC		CLIM		XTRP		HPAC	
JTWC	238	144														
	144	0														
TYAN	166	131	166	118												
	118	-12	118	0												
CY85	207	133	161	115	207	234										
	234	100	226	110	234	0										
CY50	204	133	160	115	204	233	204	183								
	234	50	180	65	183	-48	183	0								
BPAC	203	140	154	119	190	236	187	182	203	136						
	136	-3	127	8	132	-103	132	-49	136	0						
CLIM	223	141	166	118	206	235	203	182	203	136	223	170				
	170	29	160	41	163	-70	163	-18	173	37	170	0				
XTRP	211	139	158	118	196	234	194	180	194	134	210	168	211	130		
	130	-8	119	2	127	-106	127	-52	130	-3	130	-37	130	0		
HPAC	210	139	158	118	196	234	194	180	194	134	210	168	210	130	210	125
	125	-13	117	0	120	-113	120	-59	125	-8	125	-42	125	-4	125	0

NUMBER OF CASES	X-AXIS TECHNIQUE ERROR
Y-AXIS TECHNIQUE ERROR	ERROR DIFFERENCE Y - X

STATISTICS FOR YEAR — 48-HOUR FORECASTS

	JTWC		TYAN		CY85		CY50		BPAC		CLIM		XTRP		HPAC	
JTWC	176	274														
	274	0														
TYAN	121	257	129	250												
	248	-8	250	0												
CY85	159	259	127	248	173	478										
	479	219	469	220	478	0										
CY50	157	259	125	248	171	478	171	361								
	369	109	348	101	361	-116	361	0								
BPAC	158	271	119	249	160	480	158	359	171	272						
	266	-4	263	14	257	-222	256	-103	272	0						
CLIM	170	273	129	250	172	479	170	359	171	272	184	299				
	295	21	278	28	291	-187	291	-67	301	29	299	0				
XTRP	166	270	124	349	166	480	165	357	164	255	177	295	179	253		
	246	-23	241	-7	251	-229	250	-10[illegible]	249	-6	253	-40	253	0		
HPAC	164	269	124	249	166	480	165	357	164	255	177	295	177	253	177	232
	227	-41	220	-28	227	-253	227	-130	229	-25	232	-62	232	-20	232	0

JTWC -- Official JTWC forecast
TYAN -- TYAN78
CY85 -- CYCLOPS 850 mb, analysis mode
CY50 -- CYCLOPS 500 mb, analysis mode
BPAC -- Blended Persistence and Climatology
CLIM -- Climatology
XTRP -- 12-hour extrapolation
HPAC -- Mean of XTRP and CLIM

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APPENDIX A

1. 1980-81 TROPICAL CYCLONE BEST TRACK DATA

TROPICAL CYCLONE 21-80
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
100800Z	6.9	65.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
100812Z	7.5	63.8	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
100900Z	6.9	62.9	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
100912Z	7.3	64.3	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
101000Z	7.9	65.0	30	7.4	62.3	30.	163.	0.	7.9	60.1	40.	186.	0.	8.3	58.3	50.	238.	10.
101012Z	8.9	64.7	35	8.7	63.0	30.	102.	-5.	9.0	59.8	50.	124.	10.	9.4	57.5	60.	243.	25.
101100Z	8.8	63.1	40	9.2	63.2	35.	25.	-5.	10.2	61.2	45.	35.	5.	11.6	58.7	55.	90.	20.
101112Z	9.6	61.8	40	9.7	62.2	35.	24.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
101200Z	10.7	61.5	40	10.0	61.2	25.	46.	-15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
101212Z	11.7	60.9	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
101300Z	12.2	60.1	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
101312Z	12.9	59.0	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
101400Z	13.5	57.6	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	72.	115.	190.	0.
AVG RIGHT ANGLE ERROR	24.	97.	173.	0.
AVG INTENSITY MAGNITUDE ERROR	6.	5.	18.	0.
AVG INTENSITY BIAS	-6.	5.	18.	0.
NUMBER OF FORECASTS	5	3	3	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 928. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 13. KNOTS

TROPICAL CYCLONE 22-80
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
110400Z	7.0	102.3	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
110412Z	6.9	101.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
110500Z	6.7	100.2	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
110512Z	6.8	98.9	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
110600Z	7.3	97.1	55	7.3	96.9	55.	12.	0.	8.8	93.3	75.	13.	-15.	10.8	90.8	85.	177.	-20.
110612Z	8.0	95.0	70	8.1	95.1	55.	8.	-15.	10.2	91.7	75.	61.	-20.	12.6	89.6	85.	252.	-25.
110700Z	8.7	93.1	90	9.0	92.6	70.	35.	-20.	12.0	88.3	95.	83.	-10.	14.8	86.1	110.	235.	-5.
110712Z	9.7	90.8	95	10.0	90.6	90.	22.	-5.	13.4	87.0	115.	161.	5.	17.0	85.0	115.	355.	15.
110800Z	10.7	87.8	105	11.0	88.2	95.	30.	-10.	14.2	83.6	110.	171.	-5.	19.0	79.5	115.	401.	25.
110812Z	11.1	85.6	110	11.1	85.0	100.	35.	-10.	12.4	79.3	115.	168.	15.	14.0	75.0	110.	278.	30.
110900Z	11.4	84.1	115	11.7	83.1	95.	61.	-20.	13.1	78.6	110.	124.	20.	16.9	74.8	95.	308.	30.
110912Z	11.8	82.1	100	11.9	82.2	100.	8.	0.	13.0	79.1	115.	32.	35.	15.0	75.6	100.	145.	45.
111000Z	12.4	80.6	90	12.5	81.0	100.	24.	10.	13.8	76.2	100.	148.	35.	15.0	74.2	90.	160.	60.
111012Z	12.8	79.6	80	13.2	80.0	100.	34.	20.	13.8	78.9	100.	70.	45.	15.4	74.2	90.	105.	70.
111100Z	13.4	78.7	65	14.3	79.3	90.	64.	25.	16.4	78.5	80.	183.	50.	0.0	0.0	0.	-0.	0.
111112Z	13.7	77.7	55	15.8	79.4	75.	160.	20.	18.4	81.9	55.	438.	35.	0.0	0.0	0.	-0.	0.
111200Z	13.9	76.7	30	14.8	82.4	50.	336.	20.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
111212Z	14.3	75.6	20	17.5	85.2	30.	586.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	101.	138.	241.	0.
AVG RIGHT ANGLE ERROR	65.	89.	154.	0.
AVG INTENSITY MAGNITUDE ERROR	13.	24.	33.	0.
AVG INTENSITY BIAS	2.	16.	23.	0.
NUMBER OF FORECASTS	14	12	10	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1656. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 16. KNOTS

TROPICAL CYCLONE 24-80
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
112212Z	8.1	79.5	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112300Z	9.0	77.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112312Z	10.0	76.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112400Z	10.5	74.6	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112412Z	10.9	72.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112500Z	11.2	71.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112512Z	11.5	68.8	30	11.1	69.0	30.	27.	0.	12.1	65.3	40.	166.	5.	13.8	61.7	50.	371.	10.
112600Z	11.8	66.0	35	11.0	65.0	30.	76.	-5.	12.0	60.0	40.	53.	5.	13.3	55.1	50.	192.	-5.
112612Z	11.7	62.5	35	11.5	62.4	35.	13.	0.	13.2	55.5	45.	66.	5.	17.0	52.0	55.	352.	15.
112700Z	12.0	59.1	35	11.9	58.8	40.	19.	5.	15.1	51.3	50.	248.	-5.	19.0	51.3	55.	539.	30.
112712Z	12.1	55.6	40	13.3	56.4	35.	86.	-5.	16.7	51.8	35.	333.	-5.	21.3	49.2	35.	610.	5.
112800Z	11.3	53.4	55	13.4	53.3	35.	114.	-20.	17.5	48.0	15.	365.	-10.	0.0	0.0	0.	-0.	0.
112912Z	11.2	51.1	40	13.2	50.8	40.	121.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112900Z	11.4	48.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112912Z	12.0	45.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
113000Z	12.3	43.8	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
113012Z	12.6	42.3	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120100Z	12.9	40.9	55	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120112Z	13.2	39.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	65.	265.	413.	0.
AVG RIGHT ANGLE ERROR	59.	167.	330.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	6.	13.	0.
AVG INTENSITY BIAS	-4.	-1.	11.	0.
NUMBER OF FORECASTS	7	6	5	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 2420. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 22. KNOTS

TROPICAL CYCLONE 25-80
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
112500Z	6.7	93.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112512Z	5.9	92.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112600Z	5.9	91.1	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112612Z	6.3	89.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112700Z	6.8	88.4	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112712Z	7.5	86.7	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
112800Z	8.0	85.7	40	8.6	85.5	40.	38.	0.	10.9	82.0	60.	219.	10.	13.5	77.0	70.	580.	5.
112912Z	8.8	85.4	45	8.8	84.3	50.	65.	5.	10.2	81.6	65.	270.	0.	11.7	78.8	75.	516.	15.
112900Z	9.9	85.6	50	9.7	85.2	50.	27.	0.	11.8	83.8	60.	177.	-5.	13.0	80.0	70.	383.	25.
112912Z	11.0	86.1	65	10.9	85.9	65.	13.	0.	13.3	88.1	70.	39.	10.	15.8	92.2	60.	434.	15.
113000Z	12.0	86.8	65	12.1	86.8	65.	6.	0.	14.7	88.9	60.	140.	15.	17.8	92.7	50.	581.	5.
113012Z	13.0	87.5	60	13.0	87.8	50.	18.	-10.	15.1	90.0	25.	301.	-20.	0.0	0.0	0.	-0.	0.
120100Z	13.9	86.5	45	14.0	88.0	40.	88.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120112Z	14.2	84.9	45	14.4	84.6	45.	21.	0.	16.1	81.0	30.	39.	-15.	0.0	0.0	0.	-0.	0.
120200Z	15.1	83.0	45	15.5	82.6	40.	33.	-5.	17.0	79.3	20.	83.	-20.	0.0	0.0	0.	-0.	0.
120212Z	15.9	81.6	45	15.7	81.7	45.	8.	0.	17.7	78.2	50.	99.	10.	20.0	75.4	35.	233.	15.
120300Z	16.4	80.6	40	16.7	81.0	55.	29.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120312Z	16.2	78.9	40	17.1	79.8	50.	75.	10.	19.2	70.3	35.	216.	15.	0.0	0.0	0.	-0.	0.
120400Z	16.0	77.3	30	16.0	77.0	30.	17.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120412Z	16.2	76.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	34.	159.	454.	0.
AVG RIGHT ANGLE ERROR	21.	128.	262.	0.
AVG INTENSITY MAGNITUDE ERROR	4.	12.	13.	0.
AVG INTENSITY BIAS	1.	0.	13.	0.
NUMBER OF FORECASTS	13	10	6	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1564. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 14. KNOTS

TROPICAL CYCLONE 26-80
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
121306Z	12.6	117.5	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121318Z	13.1	116.2	35	13.2	116.2	30.	6.	-5.	15.9	114.3	45.	151.	0.	18.8	113.8	55.	328.	-5.
121406Z	13.3	116.3	40	13.2	116.8	35.	30.	-5.	15.9	115.7	50.	212.	0.	19.1	115.3	60.	487.	-10.
121418Z	13.5	115.1	45	13.8	115.5	50.	29.	5.	16.2	114.5	70.	261.	10.	19.5	114.5	80.	525.	0.
121506Z	14.2	112.5	50	14.2	112.7	60.	12.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121518Z	14.4	110.4	60	14.5	110.6	70.	13.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121606Z	15.1	107.9	70	14.9	108.0	75.	13.	5.	15.5	103.7	80.	117.	10.	17.2	99.9	75.	184.	30.
121618Z	16.4	105.9	80	16.3	105.1	80.	46.	0.	18.5	102.0	85.	82.	30.	20.4	98.7	75.	205.	35.
121706Z	17.3	104.5	70	17.9	104.4	80.	36.	10.	22.2	104.5	85.	358.	40.	25.3	100.4	80.	639.	50.
121718Z	17.3	102.7	55	19.5	104.6	80.	171.	25.	22.4	108.8	55.	477.	15.	23.4	114.8	35.	[illegible]	10.
121800Z	15.4	105.0	40	16.6	103.2	30.	17.	-15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121812Z	17.2	102.4	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121906Z	17.5	101.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121918Z	17.8	101.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122006Z	17.9	100.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122018Z	18.5	99.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	45.	237.	470.	0.
AVG RIGHT ANGLE ERROR	28.	176.	335.	0.
AVG INTENSITY MAGNITUDE ERROR	9.	15.	20.	0.
AVG INTENSITY BIAS	3.	15.	16.	0.
NUMBER OF FORECASTS	11	7	7	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1252. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 14. KNOTS

TROPICAL CYCLONE 28-80
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS			24 HOUR FORECAST			ERRORS			48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND
122206Z	10.6	126.0	25	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
122218Z	10.7	124.5	25	10.6	124.4	30.	8.	5.		11.4	121.3	45.	42.	10.		12.7	118.3	55.	93.	0.
122306Z	10.9	122.6	30	10.9	122.8	25.	13.	-5.		11.5	119.6	30.	54.	-15.		13.5	116.8	40.	112.	-25.
122318Z	11.3	120.6	35	11.2	120.6	25.	6.	-10.		12.4	117.5	0.	43.	-55.		14.8	115.1	0.	124.	-65.
122406Z	11.7	118.7	45	11.7	118.4	45.	18.	0.		14.2	115.2	65.	62.	0.		17.1	113.3	90.	181.	20.
122418Z	12.2	116.8	55	12.2	116.3	55.	29.	0.		13.2	112.2	70.	75.	5.		14.5	108.7	70.	89.	-5.
122506Z	13.2	114.9	65	13.2	115.0	70.	6.	5.		15.8	112.5	95.	92.	25.		17.7	111.0	95.	207.	5.
122518Z	14.1	113.1	65	14.2	113.0	90.	8.	15.		15.8	110.1	90.	42.	15.		17.7	107.8	85.	109.	-15.
122606Z	14.7	111.4	70	15.0	111.3	75.	19.	5.		16.7	108.0	70.	54.	-20.		19.3	106.0	60.	80.	-40.
122618Z	15.1	110.1	75	15.1	110.0	75.	6.	0.		16.0	106.9	65.	71.	-35.		17.5	104.0	55.	200.	-40.
122706Z	15.8	108.0	90	15.6	108.2	75.	17.	-15.		16.6	104.6	65.	121.	-35.		17.7	101.4	55.	372.	-15.
122718Z	16.9	106.1	100	17.0	105.9	70.	13.	-30.		19.6	101.9	50.	163.	-45.		20.3	97.0	35.	572.	-10.
122806Z	18.6	104.8	100	18.9	104.5	100.	25.	0.		22.6	102.4	90.	161.	20.		26.2	101.9	80.	337.	50.
122818Z	20.8	104.5	95	20.7	104.4	95.	8.	0.		24.7	105.9	80.	71.	35.		0.0	0.0	0.	-0.	0.
122906Z	22.7	105.3	70	22.6	105.2	80.	8.	10.		25.5	109.0	40.	105.	10.		0.0	0.0	0.	-0.	0.
122918Z	23.7	106.6	45	24.4	108.4	60.	107.	15.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
123006Z	24.2	107.7	30	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	19.	83.	206.	0.
AVG RIGHT ANGLE ERROR	13.	65.	146.	0.
AVG INTENSITY MAGNITUDE ERROR	8.	23.	24.	0.
AVG INTENSITY BIAS	-0.	-6.	-12.	0.
NUMBER OF FORECASTS	15	14	12	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1779. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 19. KNOTS

TROPICAL CYCLONE 01-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS			24 HOUR FORECAST			ERRORS			48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND
010400Z	10.6	60.2	25	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
010412Z	11.0	60.2	25	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
010500Z	12.5	61.3	30	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
010512Z	14.5	61.2	40	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
010600Z	16.1	59.7	55	16.1	59.9	55.	12.	0.		19.0	56.2	85.	21.	-15.		21.5	5[illegible].0	80.	134.	0.
010612Z	17.5	58.1	80	17.7	57.8	70.	21.	-10.		21.2	54.8	90.	76.	-10.		24.3	53.3	95.	225.	20.
010700Z	19.2	56.5	100	19.1	56.2	80.	18.	-20.		22.0	54.0	90.	125.	10.		25.9	54.4	85.	189.	25.
010712Z	20.5	56.3	100	21.4	55.5	100.	56.	0.		25.7	55.2	90.	143.	15.		29.0	53.0	80.	150.	25.
010800Z	22.4	56.2	80	22.5	55.8	95.	23.	15.		26.5	57.8	75.	49.	15.		30.8	55.0	55.	346.	10.
010812Z	24.0	57.4	75	23.3	56.5	80.	65.	5.		26.8	59.3	60.	81.	5.		30.1	66.5	35.	321.	5.
010900Z	25.7	57.9	60	25.5	60.0	65.	114.	5.		28.2	63.5	55.	539.	10.		0.0	0.0	0.	-0.	0.
010912Z	27.3	57.9	55	28.0	59.0	55.	72.	0.		30.2	61.0	35.	254.	5.		0.0	0.0	0.	-0.	0.
011000Z	29.9	59.4	45	30.5	60.0	50.	90.	5.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011012Z	33.1	61.3	30	31.2	59.2	45.	156.	15.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	63.	161.	220.	0.
AVG RIGHT ANGLE ERROR	35.	144.	173.	0.
AVG INTENSITY MAGNITUDE ERROR	8.	11.	14.	0.
AVG INTENSITY BIAS	2.	4.	14.	0.
NUMBER OF FORECASTS	10	8	6	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1570. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 20. KNOTS

TROPICAL CYCLONE 02-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
						ERRORS					ERRORS					ERRORS		
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
011118Z	12.5	180.5	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011206Z	13.2	179.3	30	13.8	179.0	30.	40.	0.	17.9	175.7	50.	189.	5.	21.6	179.6	60.	281.	-5.
011218Z	13.9	178.0	35	14.0	178.2	30.	13.	-5.	16.2	177.0	45.	13.	-10.	19.8	178.2	55.	43.	-20.
011306Z	14.9	177.0	45	15.4	177.0	45.	30.	0.	18.9	177.2	65.	84.	0.	21.8	180.8	60.	117.	-5.
011318Z	16.0	176.9	55	15.8	176.8	55.	13.	0.	18.3	177.1	65.	70.	-10.	20.9	179.4	60.	90.	5.
011406Z	17.5	177.2	65	17.1	177.2	60.	24.	-5.	19.9	179.8	50.	70.	-15.	21.7	183.2	45.	341.	10.
011418Z	19.1	178.0	75	19.5	178.7	60.	46.	-15.	22.8	181.5	45.	113.	-10.	26.0	186.0	40.	470.	10.
011506Z	20.8	179.0	65	20.7	179.2	60.	13.	-5.	24.0	182.5	45.	237.	10.	0.0	0.0	0.	-0.	0.
011518Z	22.4	179.5	55	22.4	179.3	40.	11.	-15.	26.4	181.3	25.	216.	-5.	0.0	0.0	0.	-0.	0.
011606Z	25.3	178.4	35	25.4	178.9	30.	28.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011618Z	26.8	177.3	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	24.	124.	224.	0.
AVG RIGHT ANGLE ERROR	16.	86.	122.	0.
AVG INTENSITY MAGNITUDE ERROR	6.	8.	9.	0.
AVG INTENSITY BIAS	-6.	-4.	-1.	0.
NUMBER OF FORECASTS	9	8	6	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1025. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 17. KNOTS

TROPICAL CYCLONE 03-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
						ERRORS					ERRORS					ERRORS		
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
011206Z	12.3	110.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011218Z	12.8	112.3	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011306Z	13.3	114.2	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011318Z	14.0	115.8	30	14.0	116.1	30.	17.	0.	15.5	118.2	40.	65.	-10.	17.9	120.0	40.	162.	-10.
011406Z	14.5	116.6	45	14.6	116.5	45.	8.	0.	16.0	118.2	65.	53.	15.	17.8	119.9	70.	166.	20.
011418Z	15.3	117.1	50	14.8	117.4	45.	35.	-5.	16.5	119.0	65.	104.	15.	19.7	119.0	65.	170.	5.
011506Z	16.2	117.3	50	16.2	117.6	50.	17.	0.	18.7	117.8	50.	66.	0.	21.2	117.1	40.	200.	-30.
011518Z	17.1	117.3	50	17.2	117.6	45.	18.	-5.	19.5	117.0	40.	80.	-20.	0.0	0.0	0.	-0.	0.
011606Z	17.9	117.0	50	17.2	117.2	60.	44.	10.	20.6	116.4	75.	154.	5.	0.0	0.0	0.	-0.	0.
011618Z	18.3	116.4	60	18.9	117.0	60.	50.	0.	21.6	116.2	60.	192.	-25.	0.0	0.0	0.	-0.	0.
011706Z	19.1	115.9	70	17.8	116.1	70.	25.	0.	19.1	115.4	95.	82.	0.	21.3	114.7	100.	200.	10.
011718Z	18.6	115.0	85	19.3	114.3	95.	58.	10.	21.2	113.5	100.	40.	0.	23.8	114.8	25.	171.	-40.
011806Z	19.7	114.1	95	20.6	113.6	95.	61.	0.	23.0	113.0	90.	63.	0.	25.7	114.0	45.	174.	-10.
011818Z	21.3	112.8	100	21.2	112.8	100.	6.	0.	24.4	112.4	80.	35.	15.	26.5	114.8	30.	270.	-10.
011906Z	23.5	112.0	90	23.8	112.1	90.	19.	0.	30.1	114.9	60.	356.	5.	0.0	0.0	0.	-0.	0.
011918Z	24.6	111.0	65	25.2	112.8	65.	65.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012006Z	25.4	110.8	55	25.4	111.3	55.	27.	0.	26.5	111.7	30.	230.	0.	0.0	0.0	0.	-0.	0.
012018Z	25.6	110.9	40	25.8	110.2	40.	20.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012106Z	25.7	100.0	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	30.	114.	192.	0.
AVG RIGHT ANGLE ERROR	18.	98.	155.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	8.	16.	0.
AVG INTENSITY BIAS	0.	-0.	-8.	0.
NUMBER OF FORECASTS	16	14	9	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1330. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 12. KNOTS

TROPICAL CYCLONE 04-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
011412Z	9.2	77.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011500Z	10.7	79.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011512Z	11.9	79.4	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011600Z	13.1	79.7	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011612Z	14.3	79.8	45	14.3	79.6	35.	12.	-10.	17.1	78.8	50.	33.	15.	19.6	76.1	55.	106.	35.
011700Z	15.6	79.5	45	16.3	78.3	35.	81.	-10.	19.0	75.4	35.	193.	10.	0.0	0.0	0.	-0.	0.
011712Z	16.7	79.2	35	16.9	79.1	35.	13.	0.	18.6	76.9	30.	46.	10.	0.0	0.0	0.	-0.	0.
011800Z	17.7	78.5	25	17.9	78.3	30.	17.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011812Z	18.7	77.7	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	31.	91.	106.	0.
AVG RIGHT ANGLE ERROR	19.	62.	106.	0.
AVG INTENSITY MAGNITUDE ERROR	6.	12.	35.	0.
AVG INTENSITY BIAS	-4.	12.	35.	0.
NUMBER OF FORECASTS	4	3	1	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 629. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 13. KNOTS

TROPICAL CYCLONE 05-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
012118Z	12.8	154.7	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012206Z	13.1	155.3	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012218Z	13.5	156.1	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012306Z	13.9	156.8	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012318Z	14.3	157.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012406Z	14.0	158.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012418Z	15.3	159.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012506Z	15.7	160.9	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012518Z	16.2	162.6	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012606Z	16.9	164.1	25	17.2	164.7	35.	39.	10.	19.3	166.7	50.	6.	25.	0.0	0.0	0.	-0.	0.
012618Z	18.0	165.4	25	18.0	167.0	35.	91.	10.	20.2	170.5	45.	115.	25.	0.0	0.0	0.	-0.	0.
012706Z	19.3	166.8	25	19.3	167.4	30.	34.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012718Z	21.1	168.7	20	20.2	167.7	25.	78.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	61.	30.	0.	0.
AVG RIGHT ANGLE ERROR	27.	60.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	8.	25.	0.	0.
AVG INTENSITY BIAS	5.	25.	0.	0.
NUMBER OF FORECASTS	4	2	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 963. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 16. KNOTS

TROPICAL CYCLONE 06-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
012600Z	11.7	69.0	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012812Z	12.6	69.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012900Z	13.8	69.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012912Z	15.1	69.4	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013000Z	16.8	68.8	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013012Z	18.2	66.7	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013100Z	18.8	64.3	35	19.1	65.0	45.	44.	10.	21.0	61.4	55.	186.	25.	22.6	50.2	65.	322.	30.
013112Z	19.5	61.2	30	19.4	62.1	35.	51.	5.	20.9	57.8	40.	107.	10.	23.6	54.6	45.	220.	10.
020100Z	20.2	59.2	30	20.4	59.4	35.	69.	5.	21.9	53.1	30.	77.	-5.	26.1	50.4	25.	179.	-15.
020112Z	21.1	55.9	30	20.4	55.5	35.	46.	5.	23.9	51.1	0.	30.	-35.	0.0	0.0	0.	-0.	0.
020200Z	23.0	52.4	35	23.8	52.5	30.	48.	-5.	29.2	50.8	0.	351.	-40.	0.0	0.0	0.	-0.	0.
020212Z	23.7	50.6	35	25.8	51.5	30.	135.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020300Z	23.8	48.3	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020312Z	24.0	45.0	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020400Z	24.9	43.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020412Z	26.0	42.0	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	66.	150.	240.	0.
AVG RIGHT ANGLE ERROR	51.	103.	123.	0.
AVG INTENSITY MAGNITUDE ERROR	6.	23.	18.	0.
AVG INTENSITY BIAS	3.	-9.	8.	0.
NUMBER OF FORECASTS	6	5	3	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1944. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 22. KNOTS

TROPICAL CYCLONE 08-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
020806Z	9.5	176.9	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020918Z	9.9	174.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020906Z	11.5	171.5	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020918Z	13.4	169.6	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021006Z	13.9	168.4	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021018Z	14.3	168.7	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021106Z	16.2	168.7	55	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021118Z	17.7	168.0	65	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021206Z	20.0	166.8	75	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021218Z	22.4	165.0	70	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021306Z	24.6	162.2	60	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021318Z	25.7	157.7	50	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.	0.	-0.	0.
021406Z	26.0	157.2	40	25.0	155.2	40.	0.	0.	30.7	149.0	25.	331.	5.	0.0	0.0	0.	-0.	0.
021418Z	25.1	152.2	35	24.9	152.9	35.	37.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021506Z	25.3	147.7	20	25.2	147.8	25.	8.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	10.	331.	0.	0.
AVG RIGHT ANGLE ERROR	10.	331.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	2.	5.	0.	0.
AVG INTENSITY BIAS	2.	5.	0.	0.
NUMBER OF FORECASTS	3	1	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 2179. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 26. KNOTS

TROPICAL CYCLONE 09-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
020818Z	13.0	149.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020906Z	13.7	147.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020918Z	13.8	145.6	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021006Z	14.5	142.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021018Z	15.3	140.0	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021106Z	16.7	137.8	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021118Z	18.0	134.3	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021206Z	19.8	130.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021218Z	20.6	128.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021306Z	21.3	125.1	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021318Z	22.1	124.2	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021406Z	22.7	122.6	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021418Z	23.3	121.3	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021506Z	23.9	120.5	10	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	0.	0.	0.	0.
AVG RIGHT ANGLE ERROR	0.	0.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	0.	0.	0.	0.
AVG INTENSITY BIAS	0.	0.	0.	0.
NUMBER OF FORECASTS	0	0	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1796. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 23. KNOTS

TROPICAL CYCLONE 10-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
021612Z	12.4	54.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021700Z	12.4	52.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021712Z	12.5	50.9	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021900Z	12.9	48.1	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021912Z	13.4	46.5	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022000Z	14.2	45.0	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022012Z	15.0	44.2	45	15.2	43.2	45.	59.	0.	13.4	40.2	40.	231.	-10.	23.1	39.6	30.	309.	0.
022100Z	15.9	43.3	55	15.6	43.4	40.	33.	-15.	17.4	41.0	40.	168.	0.	21.3	40.8	35.	247.	15.
022112Z	17.1	44.1	50	17.8	47.0	45.	76.	-5.	21.0	43.0	35.	163.	5.	24.7	41.6	20.	245.	-5.
022200Z	17.8	44.7	40	18.3	44.0	35.	50.	-5.	20.4	44.2	30.	170.	10.	0.0	0.0	0.	-0.	0.
022212Z	19.6	45.6	30	19.0	45.2	15.	43.	-15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022300Z	21.5	47.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022312Z	23.1	49.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020300Z	25.0	51.5	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022312Z	27.7	55.9	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	52.	102.	727.	0.
AVG RIGHT ANGLE ERROR	41.	153.	299.	0.
AVG INTENSITY MAGNITUDE ERROR	0.	6.	7.	0.
AVG INTENSITY BIAS	-3.	1.	3.	0.
NUMBER OF FORECASTS	5	4	3	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1718. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 20. KNOTS

TROPICAL CYCLONE 13-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
022418Z	18.8	115.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022506Z	18.3	114.1	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022518Z	17.7	112.4	35	18.2	112.4	30.	30.	-5.	18.5	108.7	40.	154.	-5.	20.3	105.0	45.	350.	-15.
022606Z	17.0	110.9	40	17.6	111.1	35.	38.	-5.	18.1	107.9	45.	142.	-5.	20.5	104.8	45.	300.	-30.
022618Z	16.2	109.9	45	16.5	109.9	35.	18.	-10.	16.2	107.0	45.	96.	-15.	16.6	104.1	45.	115.	-45.
022706Z	16.3	109.5	50	16.2	110.1	55.	35.	5.	18.1	108.0	65.	127.	-10.	21.0	106.7	65.	257.	-35.
022718Z	15.5	108.5	60	15.1	107.8	65.	47.	5.	13.8	103.2	65.	242.	-25.	13.6	99.1	60.	384.	-40.
022806Z	16.1	107.3	75	16.2	107.3	70.	6.	-5.	17.2	103.9	90.	70.	-10.	18.0	100.6	90.	219.	-5.
022818Z	16.7	106.1	90	16.8	105.9	80.	13.	-10.	18.4	103.0	95.	116.	-5.	20.5	100.2	80.	289.	-10.
030106Z	17.0	105.1	100	17.0	105.0	95.	6.	-5.	18.0	102.8	90.	96.	-5.	20.3	100.1	75.	305.	-10.
030118Z	17.2	104.6	100	17.3	103.8	100.	46.	0.	18.1	101.2	85.	189.	-5.	20.0	98.8	70.	405.	-10.
030206Z	17.5	104.4	95	17.5	104.3	90.	6.	-5.	18.2	102.8	80.	125.	-5.	19.5	101.2	75.	311.	0.
030218Z	17.9	104.5	90	18.2	104.2	85.	25.	-5.	19.4	102.8	75.	177.	-5.	20.8	100.9	60.	449.	-5.
030306Z	18.2	105.0	85	18.2	104.6	75.	23.	-10.	18.8	104.4	65.	135.	-10.	21.2	103.4	55.	449.	0.
030318Z	18.6	105.8	80	18.8	105.4	70.	26.	-10.	20.3	105.8	60.	175.	-5.	21.8	104.8	55.	587.	15.
030406Z	19.4	106.7	75	19.5	106.4	70.	18.	-5.	20.7	108.1	60.	200.	5.	0.0	0.0	0.	-0.	0.
030418Z	20.5	108.9	65	20.2	107.8	65.	64.	0.	22.0	110.9	55.	257.	15.	0.0	0.0	0.	-0.	0.
030506Z	22.0	111.4	55	21.9	111.3	65.	8.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030518Z	23.0	115.3	40	22.8	114.9	45.	25.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	26.	153.	340.	0.
AVG RIGHT ANGLE ERROR	17.	89.	210.	0.
AVG INTENSITY MAGNITUDE ERROR	6.	9.	17.	0.
AVG INTENSITY BIAS	-3.	-6.	-15.	0.
NUMBER OF FORECASTS	17	15	13	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1448. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 13. KNOTS

TROPICAL CYCLONE 14-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
022518Z	15.8	145.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022606Z	15.6	145.0	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022618Z	16.8	140.2	40	16.8	140.1	35.	6.	-5.	19.5	152.3	55.	29.	0.	21.3	156.2	70.	78.	20.
022706Z	18.4	151.0	50	18.4	151.6	55.	34.	5.	20.9	156.7	65.	141.	5.	22.3	161.6	70.	316.	25.
022718Z	19.8	152.7	55	20.0	152.2	60.	31.	5.	23.2	154.4	80.	75.	30.	25.8	156.7	75.	271.	35.
022806Z	21.2	154.2	60	22.1	153.9	70.	57.	10.	25.2	157.3	95.	190.	50.	27.2	160.2	75.	424.	35.
022818Z	22.2	155.2	50	21.6	155.2	65.	36.	15.	23.2	159.8	90.	175.	10.	0.0	0.0	0.	-0.	0.
030106Z	22.3	155.9	45	22.7	156.5	55.	41.	10.	23.8	159.5	30.	231.	-10.	0.0	0.0	0.	-0.	0.
030118Z	21.3	156.4	40	21.8	157.2	45.	54.	5.	20.9	158.9	30.	96.	-15.	0.0	0.0	0.	-0.	0.
030206Z	20.8	156.9	40	21.1	157.2	45.	25.	5.	21.6	159.8	40.	160.	-5.	23.7	161.2	30.	360.	-25.
030218Z	20.3	157.5	45	20.0	158.2	40.	43.	-5.	19.9	160.5	30.	121.	-20.	0.0	0.0	0.	-0.	0.
030306Z	19.0	158.7	45	18.5	158.5	40.	54.	-5.	17.1	163.6	25.	140.	-30.	0.0	0.0	0.	-0.	0.
030318Z	17.9	159.0	50	17.5	160.0	45.	27.	-5.	15.7	162.7	40.	133.	-20.	17.0	165.7	45.	315.	-20.
030406Z	17.7	161.1	55	17.3	161.2	55.	27.	0.	17.1	163.6	65.	100.	0.	17.0	166.0	55.	214.	-20.
030418Z	17.8	161.7	65	17.8	161.9	65.	11.	0.	17.8	164.5	70.	111.	5.	17.8	167.0	65.	260.	0.
030506Z	19.1	162.2	55	17.9	162.7	65.	34.	0.	17.9	164.6	70.	128.	-5.	18.1	166.6	80.	441.	20.
030518Z	18.7	162.2	65	18.6	163.0	65.	13.	0.	19.6	164.8	75.	136.	10.	20.3	167.1	70.	510.	25.
030606Z	19.9	163.8	75	19.8	163.8	65.	6.	-10.	21.9	166.3	60.	213.	0.	22.2	170.5	50.	573.	20.
030618Z	21.7	164.7	65	21.8	164.8	65.	8.	0.	25.0	169.4	50.	270.	5.	0.0	0.0	0.	-0.	0.
030706Z	25.4	165.7	60	29.0	167.5	50.	226.	-10.	34.0	171.0	30.	232.	0.	0.0	0.0	0.	-0.	0.
030718Z	33.0	166.7	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030806Z	31.7	167.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	39.	149.	343.	0.
AVG RIGHT ANGLE ERROR	24.	118.	211.	0.
AVG INTENSITY MAGNITUDE ERROR	6.	12.	22.	0.
AVG INTENSITY BIAS	0.	1.	10.	0.
NUMBER OF FORECASTS	19	18	11	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 2122. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 17. KNOTS

TROPICAL CYCLONE 15-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
030106Z	6.2	176.1	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030118Z	9.5	178.2	35	12.0	177.5	35.	156.	0.	12.5	175.4	45.	652.	-5.	13.5	173.1	55.	1178.	10.
030206Z	11.0	182.4	40	11.2	180.2	40.	130.	0.	12.8	180.8	50.	553.	0.	0.0	0.0	0.	-0.	0.
030218Z	11.8	186.5	50	12.0	186.2	40.	21.	-10.	12.9	191.6	50.	230.	5.	0.0	0.0	0.	-0.	0.
030306Z	13.9	190.2	50	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030318Z	16.4	193.2	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	102.	478.	1178.	0.
AVG RIGHT ANGLE ERROR	74.	159.	380.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	3.	10.	0.
AVG INTENSITY BIAS	-3.	0.	10.	0.
NUMBER OF FORECASTS	3	3	1	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1224. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 41. KNOTS

TROPICAL CYCLONE 16-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
030112Z	22.0	47.1	10	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030200Z	21.3	47.5	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030212Z	20.5	47.9	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030300Z	19.8	48.5	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030312Z	18.9	49.5	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030400Z	18.0	50.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030412Z	17.4	52.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030500Z	17.9	53.5	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030512Z	19.3	54.2	35	18.5	54.6	25.	53.	-10.	19.5	57.0	35.	171.	-20.	20.8	59.2	45.	432.	-30.
030600Z	20.7	55.7	40	21.4	55.8	25.	42.	-15.	23.3	58.4	30.	158.	-35.	25.2	62.2	40.	312.	-35.
030612Z	22.2	58.0	55	21.9	58.1	40.	19.	-15.	23.1	62.9	50.	203.	-25.	23.9	67.2	50.	248.	-10.
030700Z	24.5	60.9	65	23.6	61.0	50.	60.	-15.	26.8	66.4	45.	66.	-30.	30.4	74.6	30.	298.	-15.
030712Z	26.2	64.4	75	25.7	62.3	75.	117.	0.	29.9	67.5	60.	141.	0.	34.1	73.4	50.	360.	20.
030800Z	27.3	67.5	75	27.2	65.5	70.	107.	-5.	30.7	71.5	50.	183.	5.	35.2	78.2	30.	526.	5.
030812Z	27.8	68.7	60	29.0	70.8	65.	132.	5.	32.5	77.9	45.	460.	15.	0.0	0.0	0.	-0.	0.
030900Z	28.2	69.5	45	28.0	71.2	60.	91.	15.	29.3	74.6	0.	248.	-25.	0.0	0.0	0.	-0.	0.
030912Z	28.8	70.1	30	28.7	71.0	45.	48.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031000Z	29.9	69.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	74.	204.	363.	0.
AVG RIGHT ANGLE ERROR	40.	148.	233.	0.
AVG INTENSITY MAGNITUDE ERROR	11.	19.	19.	0.
AVG INTENSITY BIAS	-3.	-14.	-11.	0.
NUMBER OF FORECASTS	9	8	6	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1701. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 17. KNOTS

TROPICAL CYCLONE 17-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
031018Z	11.5	133.0	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0	0.	0.0	0.0	0.	-0.	0.
031106Z	11.6	132.4	20	11.8	131.9	30.	32.	10.	12.8	129.5	45.	17.	0.	13.9	127.6	55.	127.	0.
031118Z	12.0	131.2	35	11.8	131.1	35.	13.	0.	13.0	128.4	55.	33.	0.	14.5	125.0	50.	129.	-15.
031206Z	12.6	129.7	45	12.7	129.6	40.	8.	-5.	14.0	1	.	91.	0.	15.6	123.3	40.	210.	-30.
031218Z	12.7	127.8	55	12.5	127.9	55.	12.	0.	13.8	1		86.	0.	16.3	123.0	70.	269.	-5.
031306Z	12.7	125.8	55	13.0	126.1	55.	25.	0.	15.0	1	.	166.	0.	18.0	123.1	50.	434.	-35.
031318Z	12.4	124.5	65	12.5	124.2	60.	19.	-5.	13.0	1		42.	-5.	14.4	118.1	80.	146.	-10.
031406Z	12.3	122.6	70	12.4	122.1	60.	30.	-10.	13.0	1		25.	0.	14.2	114.1	85.	6.	-15.
031418Z	12.3	120.9	75	12.2	120.9	70.	6.	-5.	12.7	1		170.	-10.	14.2	113.4	90.	83.	0.
031506Z	12.6	118.1	85	12.8	118.0	85.	13.	0.	14.4	115.0	90.	71.	-5.	18.6	108.6	85.	299.	5.
031513Z	12.7	116.3	90	12.8	116.2	90.	8.	0.	14.5	112.6	95.	145.	5.	19.2	108.4	85.	195.	25.
031606Z	14.2	114.2	100	14.3	114.3	100.	8.	0.	18.3	111.8	90.	189.	0.	23.6	114.0	45.	700.	0.
031618Z	15.2	114.4	90	15.0	114.4	90.	12.	0.	18.4	112.2	70.	195.	10.	24.7	115.2	45.	941.	20.
031706Z	15.2	112.4	80	15.0	113.7	80.	76.	0.	18.0	112.3	65.	470.	20.	0.0	0.0	0.	-0.	0.
031718Z	16.2	109.7	60	17.1	111.0	50.	92.	-10.	22.6	112.8	30.	765.	5.	0.0	0.0	0.	-0.	0.
031806Z	16.3	104.3	45	16.4	106.2	45.	110.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031818Z	16.5	100.9	25	16.6	100.8	30.	8.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	30.	176.	295.	0.
AVG RIGHT ANGLE ERROR	15.	108.	208.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	4.	13.	0.
AVG INTENSITY BIAS	-1.	1.	-5.	0.
NUMBER OF FORECASTS	16	14	12	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1997. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 21. KNOTS

TROPICAL CYCLONE 21-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
032800Z	6.6	56.9	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
032812Z	7.6	56.8	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
032900Z	8.8	56.8	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
032912Z	10.1	56.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
033000Z	11.2	55.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
033012Z	12.4	55.2	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
033100Z	13.4	55.0	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
033112Z	14.2	54.8	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040100Z	15.0	54.3	30	15.6	54.4	30.	36.	0.	18.4	54.6	40.	179.	5.	21.0	55.5	45.	371.	10.
040112Z	15.6	53.7	35	15.8	53.8	35.	13.	0.	18.2	53.5	45.	163.	5.	21.2	54.8	45.	341.	10.
040200Z	16.2	52.5	35	16.2	53.6	35.	63.	0.	17.2	53.3	45.	240.	10.	19.5	53.9	45.	376.	10.
040212Z	17.1	50.9	40	16.9	52.0	40.	66.	0.	19.0	51.0	45.	185.	10.	21.8	53.5	50.	249.	20.
040306Z	18.7	49.4	35	18.3	49.5	40.	25.	5.	22.4	49.3	40.	99.	5.	25.9	50.7	40.	115.	15.
040312Z	21.2	48.7	35	21.6	49.0	35.	29.	0.	26.3	48.8	40.	142.	10.	30.4	51.2	45.	259.	25.
040400Z	24.0	49.2	35	24.0	48.7	35.	27.	0.	28.5	49.8	45.	241.	20.	32.1	53.5	0.	243.	-20.
040412Z	25.0	51.0	30	26.2	49.8	35.	97.	5.	30.2	52.0	25.	212.	5.	0.0	0.0	0.	-0.	0.
040500Z	25.5	52.8	25	25.6	52.8	35.	6.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040512Z	26.8	53.9	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040600Z	28.1	54.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	40.	183.	274.	0.
AVG RIGHT ANGLE ERROR	28.	119.	217.	0.
AVG INTENSITY MAGNITUDE ERROR	2.	9.	16.	0.
AVG INTENSITY BIAS	2.	9.	10.	0.
NUMBER OF FORECASTS	9	8	7	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1620. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 15. KNOTS

TROPICAL CYCLONE 22-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
040400Z	5.9	94.0	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040412Z	5.3	92.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040500Z	6.6	92.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040512Z	7.7	92.9	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040600Z	8.6	93.2	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040612Z	9.4	92.4	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040700Z	8.7	92.1	33	9.4	93.1	30.	73.	-5.	11.1	96.7	40.	260.	-5.	12.8	100.4	50.	591.	-20.
040712Z	8.2	92.9	45	11.0	94.5	35.	193.	-10.	12.0	96.4	45.	340.	0.	14.0	100.3	50.	624.	-40.
040800Z	9.0	92.7	45	9.7	92.6	35.	42.	-10.	11.2	92.2	50.	101.	-20.	13.5	92.0	60.	199.	-30.
040812Z	9.8	91.5	45	9.7	92.6	45.	65.	0.	11.2	92.2	40.	130.	-50.	13.5	92.0	50.	239.	-65.
040900Z	10.6	90.6	70	11.1	90.6	45.	30.	-25.	12.5	88.7	60.	40.	-30.	14.7	87.7	60.	144.	-55.
040912Z	11.3	90.0	90	11.4	89.8	70.	13.	-20.	13.7	87.5	90.	117.	-25.	17.6	86.9	95.	130.	5.
041000Z	12.7	89.5	90	12.5	89.3	80.	17.	-10.	15.6	87.4	95.	92.	-20.	19.3	87.9	65.	173.	0.
041012Z	15.0	89.0	115	14.9	89.3	100.	18.	-15.	19.6	91.0	80.	203.	-10.	21.0	98.2	50.	540.	-15.
041100Z	17.1	87.7	115	17.3	88.0	110.	21.	-5.	22.6	88.4	80.	73.	15.	25.2	95.2	50.	226.	-15.
041112Z	19.9	86.8	90	20.1	86.7	100.	13.	10.	22.0	88.7	65.	90.	0.	24.9	91.6	40.	360.	-15.
041200Z	22.1	87.2	65	22.9	88.4	80.	82.	15.	25.3	95.3	[illegible]	226.	-15.	0.0	0.0	0.	-0.	0.
041212Z	24.3	88.8	65	24.4	90.0	70.	66.	5.	26.6	96.5	35.	150.	-20.	0.0	0.0	0.	-0.	0.
041300Z	27.4	91.8	65	26.5	91.6	55.	55.	-10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
041312Z	29.1	96.4	55	29.3	95.4	50.	54.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	33.	92.	147.	0.
AVG RIGHT ANGLE ERROR	15.	77.	144.	0.
AVG INTENSITY MAGNITUDE ERROR	1.	153.	218.	0.
AVG INTENSITY BIAS	-1.	153.	218.	0.
NUMBER OF FORECASTS	5	4	2	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 972. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 10. KNOTS

TROPICAL CYCLONE 23-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
040600Z	14.3	58.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040612Z	14.7	59.3	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040700Z	15.0	60.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040712Z	15.0	61.1	25	15.9	60.6	30.	441.	5.	14.9	74.7	30.	768.	0.	16.5	90.6	40.	1447.	5.
040800Z	15.0	62.0	30	16.3	61.2	30.	91.	0.	17.9	60.2	40.	100.	5.	20.3	60.1	50.	319.	15.
040812Z	16.3	61.5	30	16.4	61.1	30.	24.	0.	18.6	60.1	40.	283.	5.	21.2	60.4	40.	291.	5.
040900Z	16.3	59.8	35	17.8	60.5	30.	114.	-5.	20.1	60.0	45.	301.	10	23.2	60.8	40.	308.	5.
040912Z	17.1	55.4	35	19.0	56.1	35.	121.	0.	21.7	53.3	45.	202.	10.	[illegible]	51.7	35.	477.	-5.
041000Z	18.4	55.0	35	19.8	54.7	35.	86.	0.	21.2	52.6	45.	275.	10.	23.0	53.1	35.	[illegible]	-5.
041012Z	19.2	55.7	35	19.0	55.0	40.	41.	5.	20.8	53.0	40.	325.	0.	24.0	54.2	35.	592.	0.
041100Z	19.4	57.1	35	19.3	57.4	35.	18.	0.	20.1	61.0	35.	149.	-5.	0.0	0.0	0.	-0.	0.
041112Z	18.5	58.2	40	18.9	59.5	30.	78.	-10.	20.2	62.8	25.	214.	-10.	0.0	0.0	0.	-0.	0.
041200Z	18.3	59.2	40	18.3	60.2	30.	57.	-10.	18.6	64.1	25.	261.	-10.	0.0	0.0	0.	-0.	0.
041212Z	17.7	60.1	35	18.4	60.7	35.	54.	0.	19.0	62.6	35.	259.	0.	0.0	0.0	0.	-0.	0.
041300Z	16.9	59.9	35	18.6	60.7	30.	112.	-5.	19.6	63.0	20.	359.	-10.	0.0	0.0	0.	-0.	0.
041312Z	16.5	59.9	35	17.0	63.3	30.	38.	-5.	17.[illegible]	59.2	20.	170.	0.	0.0	0.0	0.	-0.	0.
041[illegible]Z	15.0	61.0	30	16.3	59.5	25.	25.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
041412Z	13.7	57.1	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	93.	200.	549.	0.
AVG RIGHT ANGLE ERROR	54.	192.	332.	0.
AVG INTENSITY MAGNITUDE ERROR	4.	6.	6.	0.
AVG INTENSITY BIAS	-2.	0.	3.	0.
NUMBER OF FORECASTS	14	13	7	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1290. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 13. KNOTS

TROPICAL CYCLONE 24-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
052200Z	6.0	90.7	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052212Z	7.5	90.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052300Z	7.0	90.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052312Z	6.3	99.9	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052400Z	7.2	89.1	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052412Z	8.4	90.1	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052500Z	9.7	90.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052512Z	10.8	91.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0
052600Z	11.5	91.8	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
052612Z	12.3	91.8	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
052700Z	13.1	91.6	35	13.6	91.8	30.	32.	-5.	15.9	91.5	184.	123.	149.	16.2	91.8	253.	162.	223.
052712Z	13.7	91.9	35	13.7	91.4	35.	29.	0.	15.8	91.4	180.	101.	150.	16.2	92.5	238.	131.	213.
052800Z	14.1	92.5	35	14.4	91.8	35.	45.	0.	16.3	92.2	185.	60.	155.	0.0	0.0	0.	-0.	0.
052812Z	14.8	92.8	30	15.0	92.8	30.	12.	0.	16.8	92.4	183.	84.	158.	0.0	0.0	0.	-0.	0.
052900Z	15.8	93.1	30	15.0	93.0	30.	48.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
052912Z	16.4	93.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
053000Z	17.1	94.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
053012Z	17.7	95.8	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	33.	92.	147.	0.
AVG RIGHT ANGLE ERROR	15.	77.	144.	0.
AVG INTENSITY MAGNITUDE ERROR	1.	153.	218.	0.
AVG INTENSITY BIAS	-1.	153.	218.	0.
NUMBER OF FORECASTS	5	4	2	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 972. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 10. KNOTS

2. 1981-82 TROPICAL CYCLONE BEST TRACK DATA

TROPICAL CYCLONE 25-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
072512Z	11.8	86.7	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
072600Z	11.3	86.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
072612Z	10.4	86.1	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
072700Z	10.0	85.3	30	10.5	83.5	25.	110.	-5.	11.6	81.3	25.	206.	0.	0.0	0.0	0.	-0.	0.
072712Z	10.7	84.9	25	10.8	84.4	25.	30.	0.	11.7	82.8	20.	116.	0.	0.0	0.0	0.	-0.	0.
072800Z	11.6	84.8	25	12.5	83.1	25.	113.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
072812Z	12.5	84.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	85.	161.	0.	0.
AVG RIGHT ANGLE ERROR	66.	158.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	2.	0.	0.	0.
AVG INTENSITY BIAS	-2.	0.	0.	0.
NUMBER OF FORECASTS	3	2	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 307. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 9. KNOTS

TROPICAL CYCLONE 26-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
102000Z	7.2	84.3	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
102012Z	8.4	85.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
102100Z	7.8	85.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
102112Z	7.8	84.4	30	8.5	84.9	40.	51.	10.	10.7	82.6	50.	167.	5.	12.2	79.8	50.	336.	-5.
102200Z	8.6	84.3	35	9.0	83.7	45.	43.	10.	10.0	81.1	60.	267.	10.	11.8	78.2	70.	427.	10.
102212Z	9.4	85.1	45	9.1	84.9	45.	22.	0.	10.6	84.1	50.	156.	-5.	12.1	82.8	50.	192	-15.
102300Z	11.4	85.4	50	10.2	84.8	50.	80.	0.	12.4	83.8	60.	139.	0.	14.2	81.8	65.	15[illegible]	0.
102312Z	12.8	85.5	55	12.7	85.1	60.	24.	5.	14.8	83.1	55.	65.	-10.	17.2	80.8	45.	166	-20.
102400Z	14.4	85.0	60	14.6	85.1	60.	13.	0.	18.7	85.2	55.	195.	-10.	21.8	87.8	45.	374.	[illegible]5.
102412Z	15.0	84.2	65	15.5	84.2	65.	30.	0.	17.4	81.4	65.	140.	0.	18.8	79.1	45.	189.	0.
102500Z	15.7	83.9	65	16.0	83.7	65.	21.	0.	18.2	81.8	65.	80.	5.	19.8	78.8	45.	147.	10.
102512Z	16.2	83.5	65	16.4	83.3	65.	17.	0.	18.2	83.7	60.	95.	15.	20.4	85.5	45.	332.	20.
102600Z	17.5	83.0	60	17.6	83.2	65.	13.	5.	20.2	84.0	55.	147.	20.	0.0	0.0	0.	-0.	0.
102612Z	19.2	82.4	45	18.8	82.3	60.	25.	15.	20.4	79.8	50.	13.	25.	0.0	0.0	0.	-0.	0.
102700Z	20.0	81.4	35	20.5	81.8	45.	38.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
102712Z	20.5	79.6	25	20.7	79.6	35.	12.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	30.	133.	257.	0.
AVG RIGHT ANGLE ERROR	17.	96.	203.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	10.	11.	0.
AVG INTENSITY BIAS	5.	5.	-2.	0.
NUMBER OF FORECASTS	13	11	9	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1150. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 13. KNOTS

TROPICAL CYCLONE 28-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
110300Z	7.3	94.0	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
110312Z	7.8	92.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
110400Z	8.7	91.8	30	8.5	92.5	35.	43.	5.	11.0	90.5	50.	46.	25.	13.7	87.9	65.	138.	35.
110412Z	9.6	90.8	30	10.1	90.9	40.	31.	10.	12.7	87.8	50.	113.	25.	15.0	84.3	60.	243.	25.
110500Z	10.5	89.9	25	11.4	90.0	40.	54.	15.	14.2	88.0	50.	168.	20.	15.6	84.2	55.	239.	15.
110512Z	11.1	88.8	25	11.5	88.5	40.	30.	15.	12.9	85.6	40.	97.	5.	14.1	81.7	35.	208.	-5.
110600Z	11.4	87.8	30	11.8	87.5	40.	30.	10.	13.0	84.8	50.	84.	10.	14.2	81.8	60.	245.	15.
110612Z	11.7	86.7	35	11.7	87.3	40.	35.	5.	12.7	84.4	50.	30.	10.	14.8	81.1	60.	299.	15.
110700Z	11.9	85.7	40	11.9	86.0	45.	18.	5.	13.7	83.8	55.	126.	10.	16.8	81.5	65.	355.	15.
110712Z	12.4	84.8	40	12.7	85.0	45.	21.	5.	14.2	82.4	55.	218.	10.	17.5	80.2	60.	405.	10.
110800Z	12.7	85.7	45	13.6	84.5	50.	88.	5.	15.8	82.8	60.	271.	10.	19.5	81.5	55.	476.	0.
110812Z	11.8	85.2	45	13.7	84.2	55.	128.	10.	14.9	82.6	65.	213.	15.	16.7	80.8	50.	307.	-5.
110900Z	11.5	84.2	50	12.4	84.0	60.	55.	10.	13.0	82.6	65.	87.	10.	14.8	80.8	70.	207.	10.
110912Z	11.4	83.2	50	12.0	83.2	55.	36.	5.	12.4	81.8	45.	60.	-10.	12.8	81.8	35.	180.	-30.
111000Z	11.6	82.2	55	11.9	83.8	50.	96.	-5.	12.1	82.5	40.	141.	-20.	12.4	80.5	35.	162.	-35.
111012Z	11.6	81.2	55	11.7	83.0	45.	106.	-10.	11.8	81.6	35.	146.	-30.	0.0	0.0	0.	-0.	0.
111100Z	11.4	80.2	60	11.8	79.6	45.	43.	-15.	12.6	76.4	50.	147.	-20.	13.8	72.4	55.	281.	-25.
111112Z	11.2	79.2	65	11.8	78.6	50.	50.	-15.	12.4	75.2	55.	144.	-20.	13.8	71.3	55.	287.	-30.
111200Z	10.9	78.2	70	11.2	77.8	55.	30.	-15.	11.6	74.8	65.	97.	-15.	12.6	70.9	65.	236.	-25.
111212Z	11.0	77.2	75	11.3	76.9	65.	25.	-10.	11.6	74.6	75.	65.	-10.	12.4	71.3	80.	164.	-5.
111300Z	11.2	76.4	80	11.4	75.8	75.	37.	-5.	12.1	73.0	90.	111.	0.	12.8	69.8	85.	223.	5.
111312Z	11.7	75.7	85	11.8	75.5	85.	13.	0.	12.6	73.6	95.	29.	10.	13.8	70.6	90.	135.	20.
111400Z	12.1	74.9	90	11.9	75.1	90.	17.	0.	12.8	73.8	95.	21.	15.	13.6	72.4	90.	47.	25.
111412Z	12.6	74.1	85	12.5	74.2	90.	8.	5.	13.1	72.2	90.	51.	20.	13.6	69.2	80.	61.	25.
111500Z	13.1	73.6	80	12.8	73.2	95.	30.	15.	13.6	71.0	85.	47.	20.	14.6	68.3	75.	57.	30.
111512Z	13.6	72.9	70	13.8	72.5	80.	26.	10.	15.4	70.5	60.	92.	5.	16.4	67.1	50.	175.	10.
111600Z	14.0	71.7	65	15.2	72.5	75.	86.	10.	17.2	70.0	65.	225.	20.	19.0	66.2	60.	320.	25.
111612Z	13.9	70.2	55	15.0	71.2	60.	88.	5.	16.1	69.0	45.	202.	5.	17.2	66.4	30.	263.	0.
111700Z	13.7	68.6	45	14.1	69.8	50.	74.	5.	14.6	67.5	40.	153.	5.	16.0	65.0	30.	226.	5.
111712Z	13.5	66.8	40	13.8	65.4	45.	84.	5.	14.4	61.9	30.	85.	0.	0.0	0.0	0.	-0.	0.
111800Z	13.8	65.0	35	14.0	64.7	40.	21.	5.	14.0	60.6	30.	64.	5.	0.0	0.0	0.	-0.	0.
111812Z	14.0	63.3	30	13.8	63.2	35.	13.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
111900Z	14.0	61.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	47.	115.	228.	0.
AVG RIGHT ANGLE ERROR	26.	73.	151.	0.
AVG INTENSITY MAGNITUDE ERROR	8.	13.	17.	0.
AVG INTENSITY BIAS	3.	4.	5.	0.
NUMBER OF FORECASTS	30	29	26	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 2195. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 11. KNOTS

TROPICAL CYCLONE 30-81
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
120212Z	11.6	132.3	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120306Z	11.2	131.2	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120318Z	11.0	130.0	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120406Z	11.4	128.6	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120418Z	11.9	126.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120506Z	12.2	124.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120518Z	12.5	122.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120606Z	14.4	120.5	35	14.5	120.5	35.	6.	0.	18.9	118.5	30.	51.	10.	0.0	0.0	0.	-0.	0.
120618Z	15.9	119.3	25	16.8	119.0	35.	17.	10.	21.2	118.8	25.	198.	10.	0.0	0.0	0.	-0.	0.
120706Z	19.0	117.6	20	19.5	117.8	35.	38.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
120718Z	20.8	115.3	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	20.	124.	0.	0.
AVG RIGHT ANGLE ERROR	20.	88.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	8.	10.	0.	0.
AVG INTENSITY BIAS	8.	10.	0.	0.
NUMBER OF FORECASTS	3	2	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1245. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 21. KNOTS

TROPICAL CYCLONE 32-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
121818Z	9.5	170.6	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121906Z	10.3	169.4	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121918Z	11.9	167.9	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122006Z	13.4	166.2	55	13.6	166.8	30.	37.	-25.	17.5	165.2	50.	150.	-25.	21.2	166.1	60.	305.	-45.
122018Z	14.8	164.5	65	15.0	164.9	40.	26.	-25.	18.5	163.6	60.	123.	-30.	22.5	164.2	60.	249.	-40.
122106Z	15.9	163.2	75	16.1	163.3	70.	13.	-5.	18.7	161.8	70.	57.	-35.	21.1	163.9	50.	93.	-40.
122118Z	16.8	162.4	90	16.8	162.3	80.	6.	-10.	20.0	161.9	75.	74.	-25.	22.0	165.0	50.	79.	-25.
122206Z	17.8	162.1	105	17.8	162.3	80.	11.	-25.	20.0	162.5	75.	43.	-15.	23.0	164.4	55.	106.	-5.
122218Z	18.8	162.2	100	19.0	161.8	75.	26.	-25.	21.4	162.5	65.	112.	-10.	24.1	165.2	50.	122.	0.
122306Z	19.7	163.2	90	19.8	163.1	85.	8.	-5.	21.8	165.1	70.	25.	10.	23.1	168.2	55.	169.	10.
122318Z	20.8	164.4	75	20.9	164.2	80.	13.	5.	22.8	167.0	65.	66.	15.	24.0	170.6	50.	291.	10.
122406Z	21.5	165.4	60	21.6	165.8	70.	23.	10.	22.8	169.0	55.	205.	10.	23.8	172.8	45.	441.	10.
122418Z	22.2	166.0	50	22.2	167.3	55.	72.	5.	24.0	170.2	35.	271.	-5.	25.9	173.6	25.	549.	-5.
122506Z	22.0	165.4	45	22.2	165.8	45.	25.	0.	23.1	168.0	30.	175.	-5.	0.0	0.0	0.	-0.	0.
122518Z	22.2	165.7	40	21.8	165.8	40.	25.	0.	23.0	167.3	30.	172.	0.	0.0	0.0	0.	-0.	0.
122606Z	22.2	165.0	35	22.0	165.6	35.	35.	0.	22.4	165.9	30.	128.	5.	0.0	0.0	0.	-0.	0.
122618Z	22.7	164.2	30	22.6	164.8	30.	34.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122706Z	23.3	163.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	25.	123.	240.	0.
AVG RIGHT ANGLE ERROR	19.	93.	148.	0.
AVG INTENSITY MAGNITUDE ERROR	10.	15.	19.	0.
AVG INTENSITY BIAS	-7.	-8.	-13.	0.
NUMBER OF FORECASTS	14	13	10	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1261. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 12. KNOTS

TROPICAL CYCLONE 33-81
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
121700Z	9.1	60.8	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121712Z	10.5	59.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121800Z	11.2	57.2	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121812Z	11.0	55.1	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121900Z	10.5	53.1	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
121912Z	11.2	50.7	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122000Z	11.4	48.2	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122012Z	13.5	47.2	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122100Z	13.9	45.2	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122112Z	14.2	44.3	40	14.5	44.3	35.	18.	-5.	16.6	42.0	50.	32.	-15.	17.0	37.9	40.	85.	-15.
122200Z	15.2	43.6	50	14.6	43.6	40.	36.	-10.	15.9	41.8	40.	104.	-35.	16.2	38.8	20.	122.	-30.
122212Z	16.1	42.2	65	15.8	42.8	45.	39.	-20.	17.0	40.6	40.	91.	-15.	17.0	38.0	30.	103.	-20.
122300Z	17.2	40.6	75	16.6	41.2	55.	50.	-20.	17.5	38.5	40.	50.	-10.	17.8	36.0	30.	52.	0.
122312Z	17.7	39.2	55	17.9	39.6	60.	26.	5.	18.8	37.0	40.	69.	-10.	18.8	34.5	25.	127.	0.
122400Z	18.0	37.8	50	17.8	37.9	60.	13.	10.	18.2	35.8	45.	59.	15.	0.0	0.0	0.	-0.	0.
122412Z	17.6	36.4	50	18.4	36.5	45.	36.	-5.	19.4	34.2	25.	162.	0.	0.0	0.0	0.	-0.	0.
122500Z	17.4	35.2	30	17.5	35.2	35.	6.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122512Z	16.7	34.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	28.	81.	98.	0.
AVG RIGHT ANGLE ERROR	17.	42.	62.	0.
AVG INTENSITY MAGNITUDE ERROR	10.	14.	13.	0.
AVG INTENSITY BIAS	-5.	-10.	-13.	0.
NUMBER OF FORECASTS	8	7	5	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1781. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 17. KNOTS

TROPICAL CYCLONE 01-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
122900Z	9.5	79.8	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
122912Z	9.8	79.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
123000Z	10.1	77.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
123012Z	9.7	77.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
123100Z	10.5	78.2	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
123112Z	11.7	77.8	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010100Z	12.4	77.7	40	13.1	76.9	35.	63.	-5.	14.2	73.3	55.	254.	15.	15.3	69.0	70.	497.	35.
010112Z	13.0	77.6	45	14.3	76.8	50.	91.	5.	15.7	73.4	70.	269.	30.	17.0	68.8	75.	508.	45.
010200Z	13.5	77.6	40	14.8	76.9	50.	88.	10.	16.4	75.2	60.	183.	25.	17.9	71.4	50.	369.	20.
010212Z	13.8	77.6	40	15.9	76.5	60.	141.	20.	18.0	73.8	55.	287.	25.	19.2	69.8	50.	461.	25.
010300Z	14.3	77.5	35	14.6	77.0	50.	34.	15.	15.3	76.9	35.	62.	5.	0.0	0.0	0.	-0.	0.
010312Z	14.5	77.2	30	14.7	77.2	40.	12.	10.	15.7	76.9	30.	107.	5.	0.0	0.0	0.	-0.	0.
010400Z	14.3	76.6	30	14.2	77.3	30.	41.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010412Z	14.2	75.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	67.	194.	459.	0.
AVG RIGHT ANGLE ERROR	27.	140.	413.	0.
AVG INTENSITY MAGNITUDE ERROR	9.	18.	31.	0.
AVG INTENSITY BIAS	8.	18.	31.	0.
NUMBER OF FORECASTS	7	6	4	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 478. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 6. KNOTS

TROPICAL CYCLONE 02-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
010600Z	12.7	102.9	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010612Z	12.8	101.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010700Z	13.0	100.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010712Z	13.4	97.9	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010800Z	13.8	95.5	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
010812Z	13.7	93.4	35	13.8	93.4	30.	6.	-5.	14.2	89.8	45.	103.	-10.	15.0	85.7	60.	182.	-15.
010900Z	13.6	91.0	40	14.0	91.2	40.	27.	0.	14.4	87.2	50.	126.	-15.	15.2	83.8	60.	191.	-25.
010912Z	13.3	88.3	55	13.5	88.7	50.	26.	-5.	13.8	83.6	60.	73.	-15.	14.2	80.9	65.	92.	-30.
011000Z	12.8	85.8	65	12.9	86.0	65.	13.	0.	12.9	81.1	85.	50.	0.	14.5	77.4	80.	101.	-25.
011012Z	12.6	83.8	75	12.6	83.3	85.	29.	10.	13.1	78.8	90.	108.	-5.	14.6	75.0	80.	64.	-35.
011100Z	12.6	81.9	85	12.4	81.8	90.	13.	5.	12.7	77.6	85.	61.	-20.	13.5	73.6	80.	99.	-40.
011112Z	12.7	80.6	95	12.4	80.6	90.	18.	-5.	12.7	77.3	80.	113.	-35.	13.2	73.4	75.	208.	-35.
011200Z	13.2	78.5	105	13.2	78.6	100.	6.	-5.	14.6	75.0	115.	65.	-5.	15.3	71.8	105.	171.	-10.
011212Z	14.0	76.9	115	13.2	76.2	110.	51.	-5.	14.0	72.5	110.	142.	0.	15.6	69.1	100.	152.	-15.
011300Z	15.1	74.0	120	15.2	73.8	115.	13.	-5.	17.4	69.2	110.	25.	-5.	19.0	65.0	85.	93.	-25.
011312Z	16.2	71.6	110	16.7	71.0	100.	46.	-10.	18.6	66.2	85.	111.	-30.	20.2	62.1	75.	196.	-25.
011400Z	[illegible]	69.5	115	17.2	70.0	100.	29.	-15.	19.0	66.4	90.	21.	-20.	20.8	63.2	80.	119.	-10.
011412Z	[illegible]	68.0	115	17.8	68.1	95.	8.	-20.	19.2	64.2	85.	68.	-15.	20.7	60.4	75.	179.	-5.
011500Z	[illegible]	66.6	110	18.9	66.2	90.	26.	-20.	20.8	62.7	80.	141.	-10.	22.0	58.8	70.	231.	5.
011512Z	[illegible]	65.4	100	19.2	65.3	110.	6.	10.	20.8	63.0	90.	70.	10.	22.6	61.0	75.	168.	15.
011600Z	[illegible]	64.7	90	19.6	64.7	100.	12.	10.	20.8	63.0	80.	83.	15.	22.5	61.3	70.	133.	15.
011612Z	[illegible]	63.4	80	19.4	64.0	80.	38.	0.	19.8	61.7	60.	8.	0.	20.5	59.0	50.	93.	5.
011700Z	19.7	62.1	65	19.8	62.1	65.	6.	0.	20.8	58.8	55.	62.	0.	22.7	55.0	45.	233.	5.
011712Z	19.9	61.8	60	19.9	60.8	60.	56.	0.	20.9	58.1	50.	98.	5.	22.7	55.0	40.	228.	5.
011800Z	20.7	59.9	55	21.0	59.5	55.	29.	0.	22.8	57.0	50.	122.	10.	25.2	54.2	45.	239.	15.
011812Z	22.0	59.4	45	21.3	58.6	55.	61.	10.	23.5	56.8	45.	118.	10.	25.2	55.2	30.	183.	5.
011900Z	23.0	59.2	40	23.4	59.3	50.	25.	10.	26.8	59.0	40.	116.	10.	30.7	60.2	30.	185.	5.
[illegible]12Z	[illegible]	58.8	35	24.2	59.2	45.	22.	10.	27.6	59.2	35.	94.	10.	0.0	0.0	0.	-3.	0.
[illegible]00Z	[illegible]	58.6	30	25.4	57.4	40.	66.	10.	28.9	58.6	30.	54.	5.	0.0	0.0	0.	-0.	0.
[illegible]12Z	[illegible]	58.4	25	26.8	58.8	35.	42.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012100Z	28.0	58.5	25	27.3	58.0	30.	50.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	28.	85.	161.	0.
AVG RIGHT ANGLE ERROR	18.	52.	103.	0.
AVG INTENSITY MAGNITUDE ERROR	7.	11.	17.	0.
AVG INTENSITY BIAS	-0.	-5.	-10.	0.
NUMBER OF FORECASTS	26	24	22	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 3056. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 17. KNOTS

TROPICAL CYCLONE 03-82
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS			24 HOUR FORECAST			ERRORS			48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND
011112Z	7.9	93.5	20	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011200Z	7.7	94.2	25	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011212Z	8.1	94.8	30	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011300Z	8.7	94.9	30	8.8	94.8	35.	8.	5.		9.9	93.3	55.	124.	20.		10.6	90.0	80.	390.	50.
011312Z	9.2	95.0	35	9.3	94.2	45.	48.	10.		10.3	91.8	65.	248.	30.		10.6	87.9	85.	593.	60.
011400Z	9.9	95.4	35	9.8	95.2	35.	13.	0.		11.1	95.2	40.	82.	10.		12.3	94.2	50.	299.	25.
011412Z	.5	95.0	35	10.8	95.9	35.	19.	0.		12.3	96.1	35.	110.	10.		0.0	0.0	0.	-0.	0.
011500Z	11.1	96.6	30	11.2	96.6	30.	6.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011512Z	11.8	97.9	25	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011600Z	12.2	99.3	25	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	19.	141.	427.	0.
AVG RIGHT ANGLE ERROR	17.	111.	295.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	18.	45.	0.
AVG INTENSITY BIAS	3.	18.	45.	0.
NUMBER OF FORECASTS	5	4	3	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 475. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 9. KNOTS

TROPICAL CYCLONE 04-82
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS			24 HOUR FORECAST			ERRORS			48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND		POSIT		WIND	DST	WIND
011306Z	13.0	114.1	30	0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011318Z	13.1	113.6	35	13.8	112.8	35.	63.	0.		15.0	110.0	50.	160.	5.		15.2	106.8	60.	337.	10.
011406Z	13.4	113.0	40	13.5	112.8	40.	13.	0.		14.2	111.6	50.	39.	0.		15.3	109.9	55.	197.	10.
011418Z	13.9	112.5	45	13.8	112.7	45.	13.	0.		14.2	111.2	70.	92.	20.		14.5	109.2	80.	257.	35.
011306Z	14.5	112.2	50	13.8	112.5	50.	45.	0.		14.2	111.5	60.	127.	15.		14.5	110.0	65.	237.	25.
011318Z	14.9	112.6	50	14.8	111.1	50.	87.	0.		16.2	109.3	55.	237.	10.		18.4	108.2	60.	384.	25.
011606Z	15.4	113.3	45	15.3	112.1	45.	70.	0.		16.7	112.9	50.	44.	10.		18.3	114.8	50.	170.	20.
011518Z	15.9	113.4	45	16.2	113.9	45.	34.	0.		17.8	115.0	35.	81.	0.		0.0	0.0	0.	-0.	0.
011706Z	16.4	113.6	40	17.0	113.8	40.	38.	0.		19.0	113.8	30.	207.	0.		0.0	0.0	0.	-0.	0.
011718Z	16.5	114.6	35	17.1	113.8	35.	58.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.
011806Z	16.5	116.3	30	16.6	115.2	30.	64.	0.		0.0	0.0	0.	-0.	0.		0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	49.	123.	264.	0.
AVG RIGHT ANGLE ERROR	23.	92.	199.	0.
AVG INTENSITY MAGNITUDE ERROR	0.	8.	21.	0.
AVG INTENSITY BIAS	0.	8.	21.	0.
NUMBER OF FORECASTS	10	8	6	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 453. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 8. KNOTS

TROPICAL CYCLONE 05-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
011418Z	11.7	132.3	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011506Z	12.9	132.1	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011518Z	14.1	130.4	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011606Z	15.1	128.2	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011618Z	15.9	125.8	40	15.6	125.7	30.	19.	-10.	16.5	121.9	45.	127.	10.	0.0	0.0	0.	-0.	0.
011706Z	17.1	123.8	40	16.8	123.6	35.	21.	-5.	18.2	120.0	45.	123.	15.	0.0	0.0	0.	-0.	0.
011718Z	19.6	122.1	35	18.5	123.0	30.	52.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011806Z	20.2	120.5	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	31.	125.	0.	0.
AVG RIGHT ANGLE ERROR	24.	100.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	7.	13.	0.	0.
AVG INTENSITY BIAS	-7.	13.	0.	0.
NUMBER OF FORECASTS	3	2	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 884. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 21. KNOTS

TROPICAL CYCLONE 06-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
011818Z	20.6	115.3	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011906Z	21.5	115.8	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
011918Z	21.7	114.3	35	21.3	114.4	35.	25.	0.	23.0	112.0	45.	224.	15.	24.2	109.2	55.	740.	40.
012006Z	24.1	113.2	30	23.8	113.1	45.	19.	15.	26.1	110.7	30.	324.	5.	0.0	0.0	0.	-0.	0.
012018Z	25.6	113.1	30	25.8	112.8	30.	51.	0.	28.3	109.8	25.	530.	10.	0.0	0.0	0.	-0.	0.
012106Z	30.2	114.7	25	30.2	114.8	20.	5.	-5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012118Z	34.2	117.5	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	25.	360.	740.	0.
AVG RIGHT ANGLE ERROR	12.	133.	214.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	10.	40.	0.
AVG INTENSITY BIAS	3.	10.	40.	0.
NUMBER OF FORECASTS	4	3	1	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 963. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 27. KNOTS

TROPICAL CYCLONE 07-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
						ERRORS					ERRORS					ERRORS		
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
012506Z	17.3	173.3	30	18.2	172.8	35.	61.	5.	20.8	171.2	45.	206.	-5.	23.5	169.6	55.	417.	-15.
012618Z	17.9	173.7	40	17.9	173.9	40.	6.	0.	19.1	174.8	50.	33.	-10.	20.8	175.8	60.	129.	-5.
012706Z	18.4	173.8	50	18.5	173.8	40.	6.	-10.	19.8	174.0	45.	87.	-25.	21.2	174.4	50.	162.	-15.
012718Z	18.7	174.4	60	18.7	174.8	50.	23.	-10.	20.2	176.2	55.	103.	-10.	22.9	177.4	65.	243.	0.
012806Z	18.7	175.0	70	18.7	175.2	70.	11.	0.	19.7	177.4	85.	110.	20.	22.4	179.0	95.	234.	40.
012818Z	18.7	175.3	65	18.7	175.6	75.	17.	10.	19.0	176.7	85.	46.	20.	20.2	177.8	95.	72.	45.
012906Z	18.8	175.7	65	18.7	175.8	65.	8.	0.	18.8	176.9	55.	66.	0.	19.3	177.8	50.	246.	5.
012918Z	19.1	175.9	65	19.7	175.8	60.	36.	-5.	18.8	176.6	50.	120.	0.	19.1	177.2	45.	404.	5.
013006Z	19.6	176.1	55	19.4	175.9	55.	16.	0.	20.5	175.5	45.	216.	0.	21.2	174.2	35.	505.	0.
013018Z	20.8	176.7	50	20.6	176.2	50.	31.	0.	22.0	175.2	40.	290.	0.	23.6	173.9	35.	519.	10.
013106Z	23.4	177.8	45	24.6	178.2	45.	75.	0.	30.0	173.2	35.	283.	0.	0.0	0.0	0.	-0.	0.
013118Z	25.7	178.6	40	25.7	178.8	40.	11.	0.	31.0	179.2	25.	122.	0.	0.0	0.0	0.	-0.	0.
020106Z	28.7	178.4	35	29.0	178.2	35.	21.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020118Z	31.8	177.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	25.	140.	293.	0.
AVG RIGHT ANGLE ERROR	13.	82.	124.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	8.	14.	0.
AVG INTENSITY BIAS	-1.	-1.	7.	0.
NUMBER OF FORECASTS	13	12	10	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1812. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 13. KNOTS

TROPICAL CYCLONE 08-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
						ERRORS					ERRORS					ERRORS		
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
012518Z	18.0	154.1	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012606Z	19.7	155.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
012618Z	20.1	157.8	35	20.2	157.7	35.	8.	0.	21.9	159.8	45.	43.	5.	23.6	161.2	50.	159.	10.
012706Z	20.7	159.1	40	21.0	159.2	35.	19.	-5.	22.9	161.7	40.	144.	0.	25.4	163.3	40.	398.	5.
012718Z	21.2	159.6	40	21.2	160.2	40.	34.	0.	22.8	162.7	50.	216.	10.	24.5	164.9	50.	526.	10.
012806Z	21.8	159.4	40	21.8	160.2	40.	45.	0.	23.8	160.0	50.	195.	15.	25.4	157.5	55.	344.	15.
012818Z	22.0	158.9	40	22.3	159.1	45.	21.	5.	23.0	157.5	45.	180.	5.	23.7	155.8	40.	310.	0.
012906Z	21.7	157.3	35	22.1	157.8	40.	37.	5.	22.7	155.2	50.	201.	10.	24.3	152.7	45.	477.	10.
012918Z	20.1	156.7	40	20.5	155.7	45.	61.	5.	20.6	152.0	50.	291.	10.	21.8	148.8	35.	604.	-10.
013006Z	19.7	156.8	40	19.1	157.6	40.	58.	0.	20.8	160.1	30.	261.	-5.	0.0	0.0	0.	-0.	0.
013018Z	18.6	156.7	40	18.6	156.3	35.	23.	-5.	16.7	157.5	30.	55.	-15.	0.0	0.0	0.	-0.	0.
013106Z	17.5	157.1	35	17.5	156.8	40.	17.	5.	16.1	158.7	45.	88.	-5.	15.8	161.4	35.	205.	-15.
013118Z	17.2	158.3	45	16.9	158.5	40.	21.	-5.	16.8	161.8	35.	80.	-20.	17.4	164.2	30.	218.	-30.
020106Z	17.2	159.7	50	17.8	159.4	45.	40.	-5.	18.7	162.2	55.	38.	5.	19.4	164.9	60.	227.	-5.
020118Z	18.0	161.2	55	17.7	161.4	55.	21.	0.	19.1	164.8	65.	169.	5.	21.5	166.2	75.	329.	15.
020206Z	19.2	161.8	50	19.2	162.2	55.	23.	5.	21.4	163.3	55.	78.	-10.	24.8	162.7	55.	70.	10.
020218Z	20.5	162.2	60	20.6	162.2	60.	6.	0.	22.8	161.8	60.	81.	0.	24.4	160.0	50.	310.	10.
020306Z	22.3	162.3	65	22.2	162.4	65.	8.	0.	26.5	163.9	60.	66.	15.	26.5	166.6	50.	178.	15.
020318Z	23.8	162.8	60	23.8	162.7	60.	5.	0.	26.2	164.5	50.	59.	10.	28.5	167.9	45.	244.	15.
020406Z	25.4	163.8	45	25.2	163.5	50.	20.	5.	28.0	166.8	40.	149.	5.	29.8	170.6	35.	318.	10.
020418Z	26.8	165.5	40	26.9	165.2	45.	68.	5.	30.2	167.9	35.	337.	5.	0.0	0.0	0.	-0.	0.
020506Z	25.6	167.5	35	25.6	167.2	40.	16.	5.	25.2	171.2	30.	62.	5.	0.0	0.0	0.	-0.	0.
020518Z	24.9	170.0	30	25.2	169.9	35.	19.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020606Z	24.7	172.2	25	23.2	173.8	25.	126.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	32.	140.	307.	0.
AVG RIGHT ANGLE ERROR	28.	88.	173.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	8.	12.	0.
AVG INTENSITY BIAS	1.	3.	4.	0.
NUMBER OF FORECASTS	22	20	16	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1991. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 14. KNOTS

TROPICAL CYCLONE 09-82
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
013018Z	18.8	122.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013106Z	19.4	121.9	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013118Z	20.1	119.8	30	20.3	118.5	30.	74.	0.	21.8	115.8	30.	67.	5.	0.0	0.0	0.	-0.	0.
020106Z	20.9	118.5	35	20.8	118.1	30.	23.	-5.	22.2	115.8	30.	120.	10.	0.0	0.0	0.	-0.	0.
020118Z	21.9	117.0	25	22.1	117.0	25.	12.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020206Z	23.8	114.5	20	23.7	114.2	20.	18.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	32.	93.	0..	0.
AVG RIGHT ANGLE ERROR	20.	40.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	1.	8.	0.	0.
AVG INTENSITY BIAS	-1.	8.	0.	0.
NUMBER OF FORECASTS	4	2	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 535. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 18. KNOTS

TROPICAL CYCLONE 10-82
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
013000Z	15.0	65.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013012Z	15.3	63.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013100Z	15.8	60.9	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
013112Z	16.2	58.5	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020100Z	16.8	56.2	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020112Z	17.5	54.8	35	17.3	54.3	35.	31.	0.	20.2	51.2	50.	61.	5.	23.2	48.8	60.	366.	40.
020200Z	18.6	53.1	40	18.0	53.4	40.	40.	0.	21.1	51.6	50.	175.	10.	23.3.	50.0	60.	476.	35.
020212Z	19.2	51.4	45	20.3	51.8	45.	70.	0.	23.8	50.3	55.	431.	35.	26.2	48.4	50.	585.	20.
020300Z	18.6	50.0	40	18.9	50.0	45.	18.	5.	18.3	47.2	25.	182.	0.	0.0	0.0	0.	-0.	0.
020312Z	17.4	46.8	20	18.2	48.8	35.	124.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020400Z	17.6	44.1	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020412Z	18.0	42.7	30	17.9	41.5	35.	69.	5.	19.3	37.3	45.	116.	15.	20.8	34.2	30.	296.	15.
020500Z	18.0	40.6	30	18.2	40.6	30.	12.	0.	19.2	36.6	40.	126.	15.	0.0	0.0	0.	-0.	0.
020512Z	17.8	38.6	30	17.8	38.4	30.	11.	0.	18.8	35.0	30.	168.	15.	0.0	0.0	0.	-0.	0.
020600Z	17.1	36.5	25	18.0	35.0	30.	67.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
020612Z	16.1	35.8	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	49.	180.	431.	0.
AVG RIGHT ANGLE ERROR	26.	122.	307.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	14.	28.	0.
AVG INTENSITY BIAS	3.	14.	28.	0.
NUMBER OF FORECASTS	9	7	4	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1798. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 20. KNOTS

TROPICAL CYCLONE 11-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
021406Z	11.6	108.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021418Z	12.1	109.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021506Z	12.5	110.5	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021518Z	13.1	111.3	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021606Z	13.9	111.5	35	14.0	112.0	35.	30.	0.	15.8	114.4	40.	244.	10.	17.9	115.3	45.	393.	25.
021618Z	14.4	111.0	35	14.2	112.6	35.	94.	0.	15.9	114.7	40.	296.	15.	0.0	0.0	0.	-0.	0.
021706Z	14.5	110.4	30	14.2	112.1	35.	100.	5.	14.8	112.2	45.	144.	25.	0.0	0.0	0.	-0.	0.
021718Z	14.2	109.9	25	14.4	109.0	30.	54.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
021806Z	13.9	109.9	20	14.2	109.8	35.	19.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	59.	228.	393.	0.
AVG RIGHT ANGLE ERROR	39.	165.	322.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	17.	25.	0.
AVG INTENSITY BIAS	5.	17.	25.	0.
NUMBER OF FORECASTS	5	3	1	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 383. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 8. KNOTS

TROPICAL CYCLONE 12-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
022212Z	22.6	36.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022300Z	24.1	37.4	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022312Z	24.7	40.0	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022400Z	26.5	42.2	45	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022412Z	29.3	44.4	40	28.1	44.8	40.	75.	0.	30.6	50.0	45.	196.	20.	0.0	0.0	0.	-0.	0.
022500Z	31.3	46.3	30	31.5	46.2	35.	13.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022512Z	33.7	48.8	25	34.2	49.7	30.	54.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	47.	196.	0.	0.
AVG RIGHT ANGLE ERROR	42.	170.	0.	0.
AVG INTENSITY MAGNITUDE ERROR	3.	20.	0.	0.
AVG INTENSITY BIAS	3.	20.	0.	0.
NUMBER OF FORECASTS	7	1	0	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 970. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 27. KNOTS

TROPICAL CYCLONE 13-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
						ERRORS					ERRORS					ERRORS		
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
022618Z	16.6	112.3	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
022706Z	17.0	111.2	30	16.5	111.5	30.	35.	0.	16.0	110.0	40.	151.	5.	15.8	108.0	45.	579.	5.
022718Z	16.4	111.6	35	16.7	110.8	30.	49.	-5.	17.2	109.2	40.	321.	0.	18.1	107.3	50.	712.	15.
022806Z	17.2	112.3	35	17.2	111.8	35.	29.	0.	18.1	112.7	30.	279.	-10.	19.0	113.9	30.	433.	0.
022818Z	19.0	114.5	40	18.8	113.9	35.	36.	-5.	21.8	116.4	25.	267.	-10.	0.0	0.0	0.	-0.	0.
030106Z	19.1	117.5	40	19.3	118.2	45.	41.	5.	21.0	124.5	20.	260.	-10.	0.0	0.0	0.	-0.	0.
030113Z	18.7	119.8	35	19.0	119.8	40.	18.	5.	19.8	123.6	25.	175.	-5.	0.0	0.0	0.	-0.	0.
030206Z	17.8	121.4	30	17.6	122.0	35.	36.	5.	17.3	126.7	25.	278.	-10.	0.0	0.0	0.	-0.	0.
030218Z	17.2	122.2	30	17.4	122.1	35.	13.	5.	16.6	124.0	25.	168.	-15.	0.0	0.0	0.	-0.	0.
030306Z	16.7	121.9	35	16.8	122.2	35.	18.	0.	16.3	124.3	25.	292.	-25.	0.0	0.0	0.	-0.	0.
030318Z	17.0	121.1	40	17.0	122.0	40.	52.	0.	17.1	122.4	30.	274.	-30.	0.0	0.0	0.	-0.	0.
030406Z	17.9	119.5	50	18.1	119.4	50.	13.	0.	20.1	116.8	60.	59.	-5.	23.0	115.2	25.	109.	-15.
030418Z	18.7	117.9	60	19.2	117.4	55.	41.	-5.	22.2	114.2	50.	102.	0.	24.8	112.8	35.	95.	0.
030506Z	19.6	115.9	65	19.9	116.2	65.	25.	0.	22.3	113.9	60.	25.	20.	24.8	112.5	45.	116.	20.
030518Z	20.5	114.3	50	20.5	114.2	65.	6.	15.	23.9	112.8	45.	60.	10.	0.0	0.0	0.	-0.	0.
030606Z	22.1	113.5	40	21.8	113.7	55.	21.	15.	25.5	113.6	35.	59.	10.	0.0	0.0	0.	-0.	0.
030618Z	23.5	113.8	35	23.9	113.4	50.	33.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
030706Z	25.1	114.6	25	25.2	114.5	25.	8.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	28.	185.	341.	0.
AVG RIGHT ANGLE ERROR	15.	103.	117.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	11.	9.	0.
AVG INTENSITY BIAS	3.	-5.	4.	0.
NUMBER OF FORECASTS	17	15	6	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1627. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 16. KNOTS

TROPICAL CYCLONE 15-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
						ERRORS					ERRORS					ERRORS		
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
031606Z	12.2	54.7	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031618Z	12.3	53.8	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031706Z	12.7	53.0	45	12.8	53.1	35.	8.	-10.	14.1	51.2	45.	45.	-25.	15.8	49.9	35.	136.	0.
031718Z	12.9	52.1	55	14.0	51.8	50.	68.	-5.	16.4	50.1	50.	142.	-10.	18.8	50.0	50.	337.	10.
031806Z	13.4	50.9	70	13.5	51.1	70.	13.	0.	15.0	49.0	35.	71.	0.	0.0	0.0	0.	-0.	0.
031818Z	14.1	49.5	60	14.3	50.0	65.	31.	5.	15.8	47.8	25.	142.	-15.	0.0	0.0	0.	-0.	0.
031906Z	14.8	47.8	35	14.1	48.4	25.	55.	-10.	14.6	45.8	40.	136.	-10.	15.9	42.8	50.	122.	-10.
031918Z	15.3	45.4	40	15.3	45.3	40.	6.	0.	16.8	41.8	50.	37.	-5.	18.6	39.2	45.	93.	-20.
032006Z	15.8	43.8	50	15.8	42.2	45.	92.	-5.	17.8	38.2	45.	166.	-15.	20.2	35.9	45.	252.	-25.
032018Z	16.4	42.3	55	17.5	41.8	55.	72.	0.	20.3	39.0	60.	193.	-5.	22.6	37.8	55.	293.	-15.
032106Z	16.8	40.9	60	17.6	41.0	55.	48.	-5.	20.1	38.8	65.	164.	-5.	22.7	37.7	55.	259.	-15.
032118Z	17.2	39.9	65	18.1	39.5	65.	59.	0.	20.7	37.4	70.	191.	0.	23.2	36.6	65.	278.	-5.
032206Z	17.4	39.2	70	18.2	38.0	70.	84.	0.	20.3	35.9	65.	196.	-5.	23.4	35.0	45.	334.	-25.
032218Z	17.8	38.8	70	18.1	38.0	70.	49.	0.	20.1	36.1	65.	178.	-5.	22.9	34.3	55.	365.	-20.
032306Z	18.5	38.9	70	18.2	37.9	70.	54.	0.	19.9	36.7	70.	181.	0.	22.2	35.2	60.	472.	-5.
032318Z	19.2	39.1	70	18.9	38.2	65.	54.	-5.	20.7	38.8	60.	157.	-15.	22.7	39.9	50.	384.	0.
032406Z	20.2	39.9	70	19.9	39.5	65.	29.	-5.	22.6	41.2	50.	155.	-15.	25.8	44.0	40.	270.	-5.
032418Z	21.9	41.3	75	22.1	41.2	60.	13.	-15.	24.5	45.2	35.	169.	-15.	24.2	48.8	20.	623.	-10.
032506Z	24.1	43.5	65	24.0	44.2	50.	39.	-15.	25.6	48.1	20.	359.	-25.	0.0	0.0	0.	-0.	0.
032518Z	27.3	44.8	50	26.3	45.6	50.	74.	0.	28.3	51.9	25.	561.	-5.	0.0	0.0	0.	-0.	0.
032606Z	30.3	43.9	45	30.6	44.7	45.	45.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
032618Z	32.7	42.0	30	32.5	41.9	30.	13.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	45.	180.	301.	0.
AVG RIGHT ANGLE ERROR	33.	102.	181.	0.
AVG INTENSITY MAGNITUDE ERROR	4.	10.	12.	0.
AVG INTENSITY BIAS	-4.	-10.	-10.	0.
NUMBER OF FORECASTS	20	18	14	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 2024. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 16. KNOTS

TROPICAL CYCLONE 16-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
031512Z	10.8	96.3	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031600Z	12.3	95.1	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031612Z	13.8	94.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031700Z	13.2	93.2	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031712Z	14.8	92.7	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
031800Z	16.2	91.2	40	15.9	91.0	35.	21.	-5.	18.0	88.6	45.	130.	15.	20.0	95.8	50.	190.	25.
031812Z	17.8	91.0	40	17.4	90.8	45.	27.	5.	20.2	90.7	45.	72.	20.	0.0	0.0	0.	-0.	0.
031900Z	19.2	90.5	30	21.4	91.6	40.	146.	10.	26.2	94.5	30.	444.	5.	0.0	0.0	0.	-0.	0.
031912Z	19.6	89.6	25	20.5	88.8	35.	70.	10.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
032000Z	20.7	89.1	25	22.8	88.6	30.	129.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	79.	215.	190.	0.
AVG RIGHT ANGLE ERROR	66.	202.	190.	0.
AVG INTENSITY MAGNITUDE ERROR	7.	13.	25.	0.
AVG INTENSITY BIAS	5.	13.	25.	0.
NUMBER OF FORECASTS	5	3	1	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 822. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 15. KNOTS

TROPICAL CYCLONE 17-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
033118Z	3.2	159.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040106Z	5.3	158.0	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040118Z	7.3	158.2	30	6.2	157.8	30.	70.	0.	8.2	156.1	40.	182.	0.	9.2	153.1	50.	313.	-10.
040206Z	9.1	158.6	35	9.8	159.3	30.	59.	-5.	13.3	159.7	40.	169.	-10.	16.3	157.2	50.	180.	-20.
040218Z	10.1	158.5	40	10.7	159.0	35.	47.	-5.	13.5	157.8	45.	102.	-15.	16.5	155.0	55.	117.	-25.
040306Z	10.9	158.2	50	11.5	157.2	45.	69.	-5.	13.0	154.3	65.	165.	-5.	15.0	150.5	70.	384.	-20.
040318Z	11.8	157.7	60	11.8	157.7	55.	0.	-5.	13.8	156.0	80.	97.	0.	15.7	153.5	85.	323.	-10.
040406Z	13.3	157.1	70	13.4	157.0	70.	8.	0.	17.0	156.8	90.	38.	0.	20.5	157.8	100.	81.	15.
040418Z	15.3	156.6	80	15.8	156.7	80.	31.	0.	20.8	157.2	100.	80.	5.	26.5	159.0	90.	254.	15.
040506Z	17.6	156.6	90	18.6	155.7	90.	79.	0.	23.2	156.3	100.	200.	15.	28.2	160.2	95.	279.	30.
040518Z	19.5	157.5	95	20.2	157.6	95.	42.	0.	24.8	160.3	90.	135.	15.	29.3	164.0	65.	212.	10.
040606Z	21.1	159.1	85	21.1	158.7	90.	22.	5.	24.8	161.1	70.	117.	5.	29.2	164.7	55.	274.	10.
040618Z	22.6	160.8	75	22.7	160.9	75.	8.	0.	26.6	165.1	55.	57.	0.	29.5	170.5	40.	217.	0.
040706Z	24.4	163.2	65	23.9	162.5	65.	49.	0.	27.1	166.2	45.	204.	0.	32.2	168.4	30.	586.	0.
040718Z	26.3	166.1	55	26.4	167.2	50.	59.	-5.	29.9	175.2	0.	81.	-40.	0.0	0.0	0.	-0.	0.
040806Z	28.3	169.8	45	28.0	168.4	45.	76.	0.	31.3	174.4	30.	339.	0.	0.0	0.0	0.	-0.	0.
040818Z	31.0	174.3	40	30.5	174.2	40.	30.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040906Z	34.8	179.7	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	43.	140.	268.	0.
AVG RIGHT ANGLE ERROR	23.	87.	182.	0.
AVG INTENSITY MAGNITUDE ERROR	2.	8.	14.	0.
AVG INTENSITY BIAS	-1.	-2.	-0.	0.
NUMBER OF FORECASTS	15	14	12	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 2530. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 25. KNOTS

TROPICAL CYCLONE 18-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
040412Z	11.3	138.3	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040500Z	11.0	138.8	35	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
040512Z	11.3	139.2	45	11.5	139.2	45.	12.	0.	10.9	138.4	60.	145.	0.	10.4	136.5	75.	390.	5.
040600Z	12.1	139.5	55	11.9	139.4	55.	13.	0.	11.9	138.7	65.	149.	0.	11.0	137.0	75.	445.	30.
040612Z	12.9	139.8	60	12.8	139.6	60.	13.	0.	14.8	140.2	70.	70.	0.	17.0	141.3	60.	237.	30.
040700Z	13.9	140.2	65	13.8	140.1	65.	8.	0.	15.6	142.5	50.	44.	5.	16.1	146.1	45.	76.	15.
040712Z	14.8	141.4	70	15.0	141.5	75.	13.	5.	16.2	144.5	40.	54.	10.	16.7	147.6	50.	136.	15.
040800Z	15.3	143.2	45	15.3	143.0	45.	12.	0.	15.9	145.4	30.	99.	0.	17.0	148.5	45.	184.	5.
040812Z	15.5	145.1	30	16.5	145.2	30.	60.	0.	19.1	148.2	40.	266.	5.	20.2	153.0	50.	371.	10.
040900Z	15.1	146.9	30	15.6	146.5	30.	38.	0.	16.9	150.5	40.	151.	0.	18.8	155.2	50.	322.	10.
040912Z	14.7	148.7	35	15.5	148.8	35.	48.	0.	16.1	153.2	45.	154.	5.	17.6	157.8	55.	342.	15.
041000Z	14.4	150.2	40	14.2	150.2	35.	12.	-5.	14.5	154.5	45.	129.	5.	15.0	159.4	55.	383.	15.
041012Z	14.2	151.4	40	14.6	152.1	40.	47.	0.	14.9	155.9	50.	177.	10.	15.5	160.5	60.	491.	25.
041100Z	14.2	152.3	40	14.6	152.8	40.	38.	0.	14.6	155.3	40.	146.	0.	14.8	158.2	45.	424.	15.
041112Z	14.4	152.9	40	14.5	153.0	40.	8.	0.	14.5	154.6	40.	164.	5.	14.5	156.2	40.	414.	15.
041200Z	14.9	152.8	40	14.5	153.3	40.	38.	0.	14.5	154.5	40.	233.	10.	0.0	0.0	0.	-0.	0.
041212Z	15.6	152.0	35	14.7	152.0	40.	54.	5.	14.8	151.3	40.	206.	15.	0.0	0.0	0.	-0.	0.
041300Z	16.6	151.1	30	16.6	150.9	35.	11.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
041312Z	18.0	150.0	25	17.9	149.8	30.	13.	5.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	26.	146.	324.	0.
AVG RIGHT ANGLE ERROR	18.	71.	213.	0.
AVG INTENSITY MAGNITUDE ERROR	1.	5.	16.	0.
AVG INTENSITY BIAS	1.	5.	16.	0.
NUMBER OF FORECASTS	17	15	13	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1278. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 12. KNOTS

TROPICAL CYCLONE 19-82
BEST TRACK DATA

	BEST TRACK			WARNING					24 HOUR FORECAST					48 HOUR FORECAST				
							ERRORS					ERRORS					ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
042306Z	6.2	85.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
042318Z	6.7	93.3	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
042406Z	7.3	81.1	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
042418Z	7.7	79.6	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
042506Z	7.8	78.1	40	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
042518Z	8.0	77.0	50	8.0	76.0	40.	59.	-10.	8.2	72.8	50.	174.	-20.	9.2	68.8	55.	393.	-30.
042606Z	8.2	76.2	60	8.2	75.9	60.	18.	0.	8.4	73.2	80.	131.	0.	8.8	69.6	95.	385.	5.
042618Z	8.6	75.7	70	8.3	74.9	70.	51.	0.	8.6	72.8	80.	173.	-5.	9.0	67.7	90.	561.	-5.
042706Z	9.1	75.3	80	9.5	75.8	80.	38.	0.	10.8	74.8	100.	69.	10.	11.5	72.6	95.	329.	-5
042718Z	9.9	75.4	85	9.8	75.3	90.	8.	5.	14.7	75.3	95.	249.	0.	11.8	75.0	90.	254.	-5.
042806Z	10.4	75.9	90	10.1	75.6	90.	25.	0.	11.2	75.1	65.	183.	-15.	12.2	74.0	65.	375.	0.
042818Z	10.9	77.0	95	10.8	76.5	90.	30.	-5.	13.2	77.2	90.	134.	-5.	15.4	77.8	80.	216.	5.
042906Z	11.4	78.2	100	12.0	77.8	90.	43.	-10.	14.2	79.8	85.	61.	0.	16.5	81.8	75.	51.	10.
042918Z	12.3	79.3	95	12.3	77.8	95.	88.	0.	14.2	80.2	75.	72.	0.	16.0	82.3	60.	112.	5.
043006Z	13.3	80.3	85	13.2	80.2	90.	8.	5.	14.5	82.8	75.	83.	10.	16.0	85.8	65.	229.	30.
043018Z	14.5	81.4	75	14.2	81.0	85.	29.	10.	15.8	82.7	75.	113.	20.	0.0	0.0	0.	-0.	0.
050106Z	15.8	82.3	65	15.0	81.8	75.	56.	10.	16.2	83.4	55.	187.	20.	0.0	0.0	0.	-0.	0.
050118Z	17.6	83.3	55	18.7	85.0	55.	117.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
050206Z	19.3	83.8	35	19.5	84.3	50.	31.	15.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	43.	136.	290.	0.
AVG RIGHT ANGLE ERROR	35.	98.	204.	0.
AVG INTENSITY MAGNITUDE ERROR	5.	9.	10.	0.
AVG INTENSITY BIAS	1.	1.	1.	0.
NUMBER OF FORECASTS	14	12	10	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 1463. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 14. KNOTS

TROPICAL CYCLONE 21-82
BEST TRACK DATA

	BEST TRACK			WARNING			ERRORS		24 HOUR FORECAST			ERRORS		48 HOUR FORECAST			ERRORS	
MO/DA/HR	POSIT		WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND	POSIT		WIND	DST	WIND
051106Z	9.0	157.1	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051118Z	8.4	157.0	15	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051206Z	8.8	156.4	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051218Z	9.6	156.3	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051306Z	10.6	156.4	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051318Z	11.4	156.6	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051406Z	12.3	156.8	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051418Z	13.2	157.0	30	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051506Z	14.1	157.8	35	14.8	158.2	40.	48.	5.	17.3	159.2	60.	218.	20.	19.8	161.2	65.	474.	35.
051518Z	14.4	159.0	40	15.0	158.6	45.	43.	5.	16.4	161.0	55.	196.	20.	17.7	164.0	60.	435.	35.
051606Z	13.8	160.2	40	15.5	159.6	40.	108.	0.	16.8	161.3	45.	294.	15.	18.2	163.9	50.	511.	30.
051618Z	13.2	161.7	35	14.0	161.2	40.	56.	5.	13.9	163.8	50.	254.	25.	0.0	0.0	0.	-0.	0.
051706Z	11.9	161.5	30	11.7	162.4	35.	54.	5.	10.2	165.6	30.	380.	10.	0.0	0.0	0.	-0.	0.
051718Z	11.4	160.3	25	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.
051806Z	11.0	159.2	20	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.	0.0	0.0	0.	-0.	0.

	ALL FORECASTS			
	WRNG	24-HR	48-HR	72-HR
AVG FORECAST POSIT ERROR	62.	269.	473.	0.
AVG RIGHT ANGLE ERROR	43.	183.	320.	0.
AVG INTENSITY MAGNITUDE ERROR	4.	18.	33.	0.
AVG INTENSITY BIAS	4.	18.	33.	0.
NUMBER OF FORECASTS	5	5	3	0

DISTANCE TRAVELED BY TROPICAL CYCLONE IS 889. NM

AVERAGE SPEED OF TROPICAL CYCLONE IS 11. KNOTS

APPENDIX B

1. 1980-81 TROPICAL CYCLONE FIX DATA

TC21-80
FIX POSITIONS FOR CYCLONE NO. 21

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	050212	7.6S	68.4E	PCN 6	T1.0/1.0	INIT OBS	KGWC
* 2	080156	7.0S	64.1E	PCN 5	T1.0/1.0	INIT OBS	FJDG
3	080246	6.8S	65.7E	PCN 5	T2.0/2.0 /S0.0/15HRS		KGWC
4	081112	7.3S	63.5E	PCN 5	T1.0/2.0 /D1.0/09HRS		FJDG
5	090224	7.7S	66.9E	PCN 4	T3.0/3.0 /D1.0/24HRS		KGWC
6	090315	7.6S	63.2E	PCN 5			FJDG
7	091101	7.2S	63.0E	PCN 5	T1.0/2.0		FJDG
8	091503	7.3S	64.0E	PCN 6			KGWC
9	091504	7.0S	62.0E	PCN 6			FJDG
10	092346	7.5S	64.8E	PCN 6			FJDG
11	100343	9.0S	65.7E	PCN 6	T3.0/3.0 /S0.0/24HRS		KGWC
12	101050	8.6S	62.1E	PCN 4	T2.0/2.0 /D0.5/24HRS		FJDG
13	101622	9.0S	63.8E	PCN 6			KGWC
14	102334	9.1S	66.2E	PCN 6			KGWC
15	102335	8.6S	62.3E	PCN 5			FJDG
16	110320	9.0S	61.5E	PCN 5	T2.5/2.0 /W0.5/18HRS		FJDG
17	110321	7.9S	64.5E	PCN 6	T1.0/1.5 /W2.0/24HRS		KGWC
18	111220	9.7S	62.6E	PCN 5	T2.0/1.5 /W0.5		FJDG
19	111600	9.6S	61.9E	PCN 4			KGWC
20	111600	9.8S	62.4E	PCN 6			FJDG
21	120258	10.8S	60.8E	PCN 5	T3.0/3.0 /D1.5/24HRS		KGWC
22	120258	12.0S	61.0E	PCN 3	T2.0/2.5 /D0.5/23HRS		FJDG
23	121208	13.8S	60.2E	PCN 3	T1.0/2.5 /D0.5		FJDG
24	121537	11.3S	60.0E	PCN 6			KGWC
25	121538	14.1S	59.2E	PCN 6			FJDG
26	122220	15.9S	60.2E	PCN 6			FJDG

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC22-80
FIX POSITIONS FOR CYCLONE NO. 22

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	080100	10.7S	87.5E	PCN 2	T5.5/6.0-/W0.5/24HRS		KGWC
* 2	100200	12.6S	80.3E	PCN 2	T6.0/6.0 /D0.5/25HRS		KGWC
3	040000	7.2S	101.8E	PCN 5	T1.0/1.0	INIT OBS	PGTW
4	040107	6.9S	102.1E	PCN 5	T1.0/1.0	INIT OBS	FJDG
5	040107	6.9S	101.9E	PCN 6	T1.5/1.5	INIT OBS	KGWC
6	040900	7.5S	100.5E	PCN 5			PGTW
7	041200	6.6S	99.5E	PCN 5			PGTW
8	041347	7.0S	99.3E	PCN 6	T1.0/1.5 /D0.5/12HRS		FJDG
9	041600	6.3S	99.3E	PCN 5			PGTW
10	050044	7.2S	101.0E	PCN 5			KGWC
11	050300	6.6S	99.8E	PCN 3	T2.5/2.5 /D1.5/27HRS		PGTW
12	051200	6.7S	98.9E	PCN 5			PGTW
13	051324	7.5S	99.3E	PCN 6		DVORAK N/A	FJDG
14	051600	7.1S	98.3E	PCN 5			PGTW
15	060000	7.5S	96.9E	PCN 5			PGTW
16	060203	7.8S	96.5E	PCN 3	T3.5/3.5 /D1.5/25HRS		KGWC
17	060300	7.3S	96.4E	PCN 5	T3.5/3.5 /D1.0/24HRS		PGTW
18	060900	7.8S	95.5E	PCN 5			PGTW
19	061200	8.2S	95.0E	PCN 5			PGTW
20	061600	8.2S	94.6E	PCN 5			PGTW
21	062100	8.7S	93.4E	PCN 5			PGTW
22	070000	8.9S	92.9E	PCN 1	T5.0/5.0 /D1.5/21HRS		PGTW
23	070141	8.5S	93.2E	PCN 2	T1.5/5.0 /D0.5/60HRS		FJDG
24	070141	8.7S	92.7E	PCN 1	T6.0/6.0 /D2.5/24HRS		KGWC
25	070300	9.0S	92.4E	PCN 1			PGTW
26	070900	9.6S	91.2E	PCN 1			PGTW
27	071200	9.8S	90.8E	PCN 1			PGTW
28	071420	9.8S	90.4E	PCN 2			KGWC
* 29	071421	11.6S	92.2E	PCN 2			FJDG
30	072100	10.6S	88.8E	PCN 1			PGTW
31	080000	10.7S	87.8E	PCN 1			PGTW
32	080119	11.5S	87.5E	PCN 2	T5.0/5.0 10HRS	071421Z POSIT IN ERROR	FJDG
33	080300	10.7S	87.4E	PCN 1			PGTW

34	080600	10.8S	86.4E	PCN 1				PGTW
35	080900	11.0S	85.9E	PCN 3			PSN BSD ON APRNT EYE	PGTW
36	081200	11.1S	85.4E	PCN 3			PSN BSD ON APRNT EYE	PGTW
37	081350	11.9S	85.0E	PCN 4				FJDG
38	082100	11.5S	83.7E	PCN 3			PSN BSD ON APRNT EYE	PGTW
39	090000	11.6S	83.6E	PCN 3			PSN BSD ON APRNT EYE	PGTW
40	090237	11.5S	84.7E	PCN 2	T5.5/6.0 /D0.5/13HRS			FJDG
41	090300	11.6S	83.2E	PCN 3	T6.0/6.0		INIT OBS	PGTW
42	090600	11.6S	82.9E	PCN 1			SUPPLEMENTAL BSD ON VIS DATA	PGTW
* 43	090600	11.4S	82.7E	PCN 3				PGTW
44	090900	11.9S	82.6E	PCN 1				PGTW
45	091200	12.2S	82.1E	PCN 1				PGTW
* 46	091335	12.1S	81.5E	PCN 2				KGWC
47	091335	12.1S	80.8E	PCN 2				FJDG
48	092100	12.6S	81.2E	PCN 3				PGTW
* 49	100000	12.7S	81.1E	PCN 3				PGTW
50	100215	12.5S	81.8E	PCN 1				FJDG
* 51	100300	12.9S	80.9E	PCN 3	T6.0/6.0 /S0.0/24HRS			PGTW
52	100900	13.3S	80.5E	PCN 3				PGTW
* 53	101454	13.3S	79.7E	PCN 4				KGWC
* 54	102100	13.9S	79.2E	PCN 5				PGTW
* 55	110000	14.3S	79.0E	PCN 5				PGTW
* 56	110152	13.5S	78.5E	PCN 4	T3.5/4.5 /W2.5/24HRS			KGWC
57	110153	13.0S	80.5E	PCN 5	T3.0			FJDG
* 58	110300	14.5S	79.1E	PCN 5	T5.0/6.0 /W1.0/24HRS			PGTW
* 59	110900	15.7S	79.5E	PCN 5				PGTW
* 60	111200	15.6S	79.9E	PCN 5				PGTW
* 61	111600	15.7S	80.7E	PCN 5				PGTW
* 62	112100	15.6S	82.1E	PCN 5				PGTW
63	120000	15.9S	82.5E	PCN 5				PGTW
* 64	120151	14.2S	76.5E	PCN 4	T1.0/2.0 /W2.5/24HRS			KGWC
* 65	120900	17.2S	84.5E	PCN 5				PGTW
* 66	121200	18.5S	85.5E	PCN 5				PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC24-80

FIX POSITIONS FOR CYCLONE NO. 24

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	221200	7.6S	79.3E	PCN 5			PGTW
2	221347	9.5S	78.5E	PCN 6		WELL FRMD CC	FJDG
* 3	222100	9.2S	76.3E	PCN 5			PGTW
* 4	230026	10.0S	76.9E	PCN 3	T2.0/3.0	INIT OBS PSN BSD ON ULAC	FJDG
5	230116	8.6S	77.6E	PCN 4	T1.5/1.5	INIT OBS PSN BSN ON EX IF LLCU	KGWC
6	231505	9.9S	76.0E	PCN 4		PSN BSD ON CONV. FEATURES	KGWC
7	240203	10.2S	75.0E	PCN 4	T1.5/1.5 /S0.0/25HRS	PSN BSD ON EX. OF LLCU LINES	KGWC
8	240204	10.8S	74.0E	PCN 3	T2.0/2.5 /D0.5/24HRS	CNTR BSD ON LLCC	FJDG
9	241443	10.7S	72.4E	PCN 6		PSN BSD ON CONV. FEATURES	KGWC
10	250332	11.0S	70.4E	PCN 6	T1.5/1.5 /S0.0/25HRS		KGWC
11	251601	10.7S	66.9E	PCN 6		PSN BSN ON CONV. FEATURES	KGWC
12	260259	11.8S	65.8E	PCN 6	T2.0/2.0 /D0.5/24HRS	PSN BSD ON EX. OF LLCU LINES	KGWC
13	260300	12.1S	65.4E	PCN 5	T3.0	COMPLETE DVORAK N/A	FJDG
14	261539	11.7S	60.3E	PCN 4			FJDG
15	261539	11.0S	61.1E	PCN 6	T2.0/2.0 /D0.5/24HRS	PSN BSD ON VLAC OUTFLOW	KGWC
16	270418	12.3S	58.0E	PCN 6	T1.5/2.0 /W0.5/25HRS		KGWC
17	271658	12.1S	54.8E	PCN 6			KGWC
18	280356	12.1S	51.9E		T3.0/2.5	PSN BSD ON PARTLY EXPOSD LLCL	FJDG
19	280356	10.9S	53.0E	PCN 5	T2.0/2.0 /D0.5/24HRS		KGWC
20	281635	10.7S	49.5E	PCN 3		DVORAK N/A	FJDG
21	290333	11.2S	46.8E	PCN 6	T1.5/1.5 /W0.5/24HRS	PSN BSD ON EX OF ULAC	KGWC
22	300452	12.8S	43.3E	PCN 3	T2.5/2.5-/D1.0/25HRS	PSN BSD ON EX OF LLCU LINES	KGWC
23	010429	12.7S	40.3E	PCN 1		PSN BSD ON BANDING EYE	KGWC

SYNOPTIC FIXES

FIX NO.	TIME (Z)	FIX POSITION		INTENSITY ESTIMATE	NEAREST DATA (NM)	COMMENTS
1	300900	12.5S	42.5E	15	60	

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC25-80

FIX POSITIONS FOR CYCLONE NO. 25

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	250141	6.2S	93.4E	PCN 6	T1.5/1.5	INIT OBS	KGWC
2	251420	5.8S	92.0E	PCN 6			KGWC
3	260118	5.0S	91.9E	PCN 6	T1.0/1.5 /W0.5/24HRS		KGWC
4	260300	4.9S	91.5E	PCN 5	T1.5/1.5	INIT OBS	PGTW
5	261200	6.2S	91.2E	PCN 5			PGTW
6	261358	7.0S	89.9E	PCN 4			KGWC
7	262100	6.4S	90.2E	PCN 5			PGTW
8	270056	6.9S	88.5E	PCN 6			KGWC
* 9	270215	9.5S	86.0E	PCN 5	T2.0/2.5		FJDG
10	270300	6.7S	88.2E	PCN 5	T2.0/2.0 /D0.5/24HRS		PGTW
11	271200	7.6S	86.4E	PCN 5			PGTW
12	271335	7.8S	86.8E	PCN 6			KGWC
13	272100	8.6S	86.4E	PCN 5			PGTW
14	280000	8.1S	85.8E	PCN 5			PGTW
15	280214	7.5S	85.5E	PCN 5	T2.5/2.5 /D1.5/49HRS		KGWC
16	280300	8.2S	85.4E	PCN 5	T3.0/3.0 /D1.0/24HRS		PGTW
17	280900	8.4S	85.4E	PCN 5			PGTW
18	282100	9.4S	85.5E	PCN 5			PGTW
19	290000	10.0S	85.9E	PCN 5			PGTW
20	290152	11.2S	86.9E	PCN 3			FJDG
21	290152	10.0S	86.4E	PCN 4	T3.0/3.0 /D0.5/24HRS		KGWC
22	290600	10.1S	85.7E	PCN 3	T4.0/4.0 /D1.0/27HRS		PGTW
23	290900	10.5S	85.8E	PCN 1			PGTW
24	291200	10.7S	85.8E	PCN 5			PGTW
25	291431	10.4S	86.4E	PCN 6			KGWC
* 26	291432	15.0S	89.1E	PCN 4			FJDG
27	292100	11.8S	86.6E	PCN 5			PGTW
28	300000	12.7S	86.6E	PCN 5			PGTW
29	300129	12.3S	87.2E	PCN 4	T2.0/2.0 /W1.0/24HRS		KGWC
* 30	300130	14.2S	86.5E	PCN 1	T3.0/3.0		FJDG
31	300600	12.0S	87.0E	PCN 3	T3.0/4.0 /W1.0/24HRS		PGTW
32	300900	12.5S	87.2E	PCN 5			PGTW
33	301200	13.0S	87.5E	PCN 5			PGTW
34	301409	14.6S	87.1E	PCN 6			FJDG
35	301600	13.3S	87.8E	PCN 5			PGTW
36	302100	13.7S	86.1E	PCN 5			PGTW
37	010107	13.3S	85.8E	PCN 4	T0.5/1.0-/W1.5/24HRS		KGWC
38	010600	13.9S	85.6E	PCN 3	T2.5/3.0 /W0.5/24HRS		PGTW
39	010900	14.1S	85.2E	PCN 5			PGTW
40	011200	14.2S	84.8E	PCN 5			PGTW
* 41	011600	14.6S	84.5E	PCN 5			PGTW
42	012100	15.1S	83.3E	PCN 5			PGTW
43	020226	15.0S	84.3E	PCN 6	T1.0/1.0 /S0.0/24HRS		KGWC
44	020300	15.2S	82.5E	PCN 5	T3.0/3.0 /S0.0/21HRS		PGTW
45	020600	15.3S	82.4E	PCN 5			PGTW
46	020900	15.4S	81.9E	PCN 5			PGTW
47	021200	15.7S	81.6E	PCN 5			PGTW
48	021600	16.3S	81.2E	PCN 5			PGTW
49	021640	17.1S	81.0E	PCN 4			FJDG
50	022100	16.6S	81.3E	PCN 5			PGTW
51	030203	15.9S	80.7E	PCN 6	T1.5/1.5 /D0.5/24HRS		KGWC
52	030300	16.5S	80.8E	PCN 5	T3.0/3.0 /S0.0/24HRS		PGTW
53	030600	16.7S	80.4E	PCN 5			PGTW
54	030900	17.0S	79.9E	PCN 5			PGTW
* 55	031200	17.4S	79.7E	PCN 5			PGTW
* 56	031443	20.0S	80.0E	PCN 6			FJDG
* 57	031600	18.1S	79.9E	PCN 5			PGTW
* 58	032100	19.2S	80.2E	PCN 5			PGTW
* 59	032309	16.2S	82.5E	PCN 3			FJDG
60	040140	16.0S	76.7E	PCN 4	T0.0/1.0 /W1.5/24HRS		KGWC
61	040300	16.3S	76.9E	PCN 3	T2.0/3.0 /W1.0/24HRS	EXP LLCC	PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC26-80

FIX POSITIONS FOR CYCLONE NO. 26

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	130000	12.1S 117.8E	PCN 5	T1.5/1.5	INIT OBS	PGTW
2	130300	12.6S 117.7E	PCN 5			PGTW
3	130600	12.7S 117.5E	PCN 5			PGTW
4	130900	12.9S 117.2E	PCN 5			PGTW
5	131200	13.3S 116.7E	PCN 5			PGTW
6	132100	12.9S 116.0E	PCN 5			PGTW
7	140000	13.1S 116.0E	PCN 5	T2.5/2.5 /D1.0/24HRS		PGTW
8	140300	13.0S 116.7E	PCN 5			PGTW
9	140900	13.4S 115.9E	PCN 5			PGTW
10	141600	13.5S 115.3E	PCN 5			PGTW
11	142100	13.7S 114.8E	PCN 5			PGTW
12	150000	13.2S 113.3E	PCN 5	T3.0/3.0 /D0.5/24HRS		PGTW
13	150300	14.0S 113.0E	PCN 5			PGTW
14	150900	14.3S 112.0E	PCN 5			PGTW
15	151600	14.4S 110.9E	PCN 5			PGTW
16	160000	14.5S 109.1E	PCN 3	T4.0/4.0 /D1.0/24HRS		PGTW
17	160032	14.5S 109.2E	PCN 1			KGWC
18	160300	14.9S 108.5E	PCN 3			PGTW
19	160900	15.4S 107.5E	PCN 1			PGTW
20	161600	16.1S 106.4E	PCN 1			PGTW
21	162100	16.7S 105.4E	PCN 1			PGTW
22	162324	16.6S 105.0E	PCN 1			KGWC
23	170000	17.0S 105.1E	PCN 1			PGTW
24	170900	17.7S 104.3E	PCN 3			PGTW
25	171200	18.5S 104.4E	PCN 5			PGTW
26	171600	19.1S 104.6E	PCN 5			PGTW
27	172100	20.2S 105.8E	PCN 5			PGTW
28	172347	17.0S 102.4E	PCN 6			KGWC
29	180600	16.1S 102.9E	PCN 3		EXPOSED BRD LLC	PGTW
30	180900	16.4S 103.0E	PCN 3			PGTW
31	181600	17.0S 102.5E	PCN 3			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC28-80

FIX POSITIONS FOR CYCLONE NO. 28

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	220000	11.0S 124.1E	PCN 5	T1.5/1.5	INIT OBS	PGTW
2	220300	10.7S 125.0E	PCN 5			PGTW
3	220600	10.6S 125.9E	PCN 5			PGTW
4	220900	10.7S 125.6E	PCN 5			PGTW
5	221200	10.6S 125.0E	PCN 5			PGTW
6	221600	10.6S 124.7E	PCN 5			PGTW
7	222100	10.9S 122.5E	PCN 5			PGTW
8	230000	10.8S 122.8E	PCN 5			PGTW
9	230300	10.8S 122.9E	PCN 5	T1.0/1.5+/W0.5/27HRS		PGTW
10	230600	11.2S 122.4E	PCN 5			PGTW
11	230900	11.1S 121.9E	PCN 5			PGTW
12	231200	11.3S 121.4E	PCN 5			PGTW
13	231600	11.2S 120.9E	PCN 5			PGTW
14	232100	11.6S 119.3E	PCN 5			PGTW
15	240300	11.5S 118.9E	PCN 5	T3.0/3.0 /D2.0/24HRS		PGTW
16	240600	11.7S 118.4E	PCN 3			PGTW
17	240900	11.9S 118.0E	PCN 5			PGTW
18	241200	11.9S 117.5E	PCN 1			PGTW
19	241600	12.1S 117.0E	PCN 5			PGTW
20	242100	12.4S 115.9E	PCN 5			PGTW
21	250000	12.5S 116.0E	PCN 5	T4.0/4.0 /D1.0/21HRS		PGTW
22	250300	13.1S 115.3E	PCN 1			PGTW
23	250900	13.6S 114.3E	PCN 1			PGTW
24	251600	14.1S 113.3E	PCN 1			PGTW
25	252100	14.5S 112.6E	PCN 1			PGTW
26	260000	14.6S 112.1E	PCN 1			PGTW
27	260300	14.7S 111.6E	PCN 1	T4.0/4.0 /S0.0/27HRS		PGTW
28	260900	14.8S 111.0E	PCN 5			PGTW

29	261600	15.0S	110.4E	PCN 5				PGTW
30	262100	15.3S	109.4E	PCN 5				PGTW
31	270000	15.4S	108.9E	PCN 5	T4.5/4.5 /D0.5/21HRS			PGTW
32	270900	16.0S	107.5E	PCN 1				PGTW
33	271200	16.2S	107.0E	PCN 1				PGTW
34	271226	16.2S	107.0E	PCN 2	T4.5/4.5		INIT OBS	KGWC
35	271600	16.7S	106.3E	PCN 1				PGTW
36	280000	17.7S	105.3E	PCN 3				PGTW
37	280105	18.7S	105.5E	PCN 2	T3.5/4.0 /W1.0/25HRS			KGWC
38	280300	18.0S	105.0E	PCN 1	T5.5/5.5 /D1.0/27HRS			PGTW
39	280900	19.2S	104.6E	PCN 5				PGTW
40	281345	20.2S	104.5E	PCN 2				KGWC
41	281600	20.0S	104.4E	PCN 1				PGTW
42	282100	21.3S	104.3E	PCN 1				PGTW
43	290000	22.1S	103.8E	PCN 5				PGTW
44	290042	22.0S	104.8E	PCN 4	T2.5/3.0 /W1.0/24HRS			KGWC
45	290300	22.1S	105.0E	PCN 1	T4.0/5.0 /W1.5/24HRS			PGTW
46	290900	23.1S	105.6E	PCN 5				PGTW
47	291322	23.8S	105.5E	PCN 4				KGWC
48	291600	24.0S	108.0E	PCN 5				PGTW
49	300000	25.4S	106.9E	PCN 5				PGTW
50	300300	24.0S	107.3E	PCN 5				PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC01-81
FIX POSITIONS FOR CYCLONE NO. 1

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	030353	10.9S	60.9E	PCN 5	T1.0/1.0	INIT OBS	KGWC
2	040241	10.1S	60.1E	PCN 3	T1.5		FJDG
3	040331	10.7S	59.7E	PCN 3	T1.5/1.5 /D0.5/24HRS		KGWC
4	041610	11.1S	60.6E	PCN 6			KGWC
5	050239	12.7S	61.8E	PCN 4	T2.0/2.0 /D0.5/23HRS		KGWC
6	050255	14.1S	62.6E	PCN 3	T1.5		FJDG
7	051547	13.9S	61.2E	PCN 6			KGWC
8	060245	16.2S	59.9E	PCN 3	T1.5/3.5 /D0.5		FJDG
9	060245	16.3S	59.1E	PCN 4	T3.5/3.5 /D1.5/24HRS		KGWC
10	061525	17.3S	57.3E	PCN 4	T3.5/5.5 /D0.5		FJDG
11	061525	17.9S	57.5E	PCN 2			KGWC
12	070404	19.9S	56.2E	PCN 1	T5.5/5.5-/D2.0/25HRS		KGWC
13	071643	21.1S	56.0E	PCN 3			KGWC
14	080341	22.2S	56.2E	PCN 5	T3.5/4.0 /W2.0/24HRS		KGWC
15	080342	25.5S	56.9E	PCN 3	T5.0/4.5		FJDG
16	081621	24.2S	58.5E	PCN 6			KGWC
17	090319	26.2S	57.2E	PCN 5	T3.0/3.0 /W0.5/24HRS		KGWC
18	091358	27.9S	57.2E	PCN 4			KGWC
19	091559	28.9S	58.9E	PCN 2			FJDG
* 20	100234	38.0S	70.0E	PCN 6			KGWC
21	100256	30.3S	58.3E	PCN 5	T2.0/3.0 /W1.0/24HRS		KGWC
* 22	101536	33.8S	62.7E	PCN 4			KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC02-81
FIX POSITIONS FOR CYCLONE NO. 2

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	120000	12.9S	179.7W	PCN 5	T2.0/2.0		PGTW
2	120300	13.3S	179.7E	PCN 5			PGTW
3	121200	13.3S	178.4E	PCN 5			PGTW
4	121600	13.4S	178.0E	PCN 5			PGTW
5	122100	14.1S	177.7E	PCN 5			PGTW
6	130300	14.6S	177.1E	PCN 3	T3.0/3.0 /D1.0/27HRS		PGTW
7	130900	15.2S	177.1E	PCN 1			PGTW
8	131200	15.3S	177.0E	PCN 1			PGTW
9	131600	15.6S	177.0E	PCN 1			PGTW
10	132022	16.2S	177.2E	PCN 6	T3.5/3.5 /S0.0/25HRS		KGWC
11	132100	16.1S	177.1E	PCN 5			PGTW
12	140300	17.3S	177.6E	PCN 5	T4.0/4.0 /D1.0/24HRS		PGTW

13	141200	18.7S	178.1E	PCN 5			PGTW
14	141600	19.1S	178.9E	PCN 5			PGTW
15	141959	19.5S	178.6E	PCN 6			KGWC
16	142100	20.1S	178.6E	PCN 5			PGTW
17	150300	20.0S	179.2E	PCN 3	T3.0/4.0 /W1.0/24HRS		PGTW
* 18	150900	20.8S	179.2W	PCN 5			PGTW
19	151200	20.8S	178.3W	PCN 5			PGTW
* 20	151600	21.6S	176.1W	PCN 5			PGTW
* 21	152100	22.7S	179.5E	PCN 5		ULCC 25.4 179.2	PGTW
22	160000	24.0S	178.9E	PCN 5			PGTW
23	160300	25.1S	178.6E	PCN 5	T2.0/3.0 /W1.0/24HRS		PGTW

SYNOPTIC FIXES

FIX NO.	TIME (Z)	FIX POSITION	INTENSITY ESTIMATE	NEAREST DATA (NM)	COMMENTS
1	140000	16.5S 176.5E	50	25	
2	141200	18.5S 177.5E	30	35	
3	150000	20.0S 178.5E	60	60	

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC03-81

FIX POSITIONS FOR CYCLONE NO. 3

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	120030	11.8S 110.2E	PCN 5	T1.5/1.5	INIT OBS	KGWC
2	120800	12.2S 110.6E	PCN 5	T2.5/2.5	INIT OBS	PGTW
3	121200	12.6S 110.4E	PCN 5			PGTW
4	121600	12.6S 110.4E	PCN 5			PGTW
5	130007	13.2S 112.8E	PCN 5	T1.5/1.5 /S0.0/24HRS		KGWC
6	130300	13.1S 113.7E	PCN 3	T2.0/0.5 /W0.5/24HRS		PGTW
7	131200	13.8S 115.5E	PCN 5			PGTW
8	132100	14.1S 116.0E	PCN 3			PGTW
9	140300	14.3S 116.3E	PCN 5	T3.5/3.5 /D1.5/24HRS		PGTW
10	141200	15.7S 115.6E	PCN 5			PGTW
11	141600	14.7S 117.3E	PCN 5			PGTW
12	142100	16.1S 115.8E	PCN 5			PGTW
13	150300	16.1S 117.1E	PCN 3	T2.5/3.5 /W1.0/24HRS		PGTW
14	151600	17.0S 117.9E	PCN 5			PGTW
15	152100	16.8S 117.2E	PCN 5			PGTW
16	152100	17.3S 117.7E	PCN 5			PGTW
17	160000	18.0S 117.5E	PCN 5			PGTW
18	160300	17.7S 117.0E	PCN 3	T3.5/3.5 /D1.0/24HRS		PGTW
19	161200	18.1S 117.0E	PCN 5			PGTW
20	161600	18.3S 116.5E	PCN 5			PGTW
21	162100	18.0S 116.5E	PCN 5			PGTW
22	170000	18.2S 116.2E	PCN 5			PGTW
23	170300	18.0S 115.9E	PCN 3	T4.5/4.5 /D1.0/24HRS		PGTW
24	170900	18.2S 115.7E	PCN 1			PGTW
25	171600	18.4S 115.2E	PCN 1			PGTW
26	172100	18.9S 114.9E	PCN 1			PGTW
27	180000	19.2S 114.7E	PCN 1			PGTW
28	180300	19.1S 114.4E	PCN 1	T5.5/5.5 /D1.0/24HRS		PGTW
29	180900	20.1S 113.9E	PCN 5			PGTW
30	181600	20.9S 113.0E	PCN 1			PGTW
31	182100	21.8S 112.5E	PCN 1			PGTW
32	190000	22.5S 112.3E	PCN 1			PGTW
33	190300	23.1S 112.1E	PCN 1	T4.5/5.5 /W1.0/24HRS		PGTW
34	190900	23.8S 112.1E	PCN 5			PGTW
35	191200	24.0S 112.2E	PCN 5			PGTW
36	191700	24.6S 113.1E	PCN 5			PGTW
37	200000	25.0S 111.5E	PCN 5			PGTW
38	200300	25.2S 111.0E	PCN 5	T3.0/3.5-/W1.5/24HRS		PGTW
39	201200	25.5S 110.6E	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC04-81
FIX POSITIONS FOR CYCLONE NO. 4

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	150244	11.2S	79.1E	PCN 5	T1.5/1.5	INIT OBS	KGWC
2	151523	11.4S	79.3E	PCN 6			KGWC
3	151524	12.0S	79.0E	PCN 3			FJDG
4	160222	13.3S	79.7E	PCN 4	T3.0/3.0 /D1.5/24HRS		KGWC
5	161501	15.0S	79.9E	PCN 6			FJDG
6	161501	15.3S	79.3E	PCN 6			KGWC
7	170159	15.6S	79.3E	PCN 4	T2.0/3.0 /W1.0/24HRS		KGWC
8	170257	15.5S	80.0E	PCN 5			FJDG
* 9	171430	18.1S	80.2E	PCN 6			FJDG
10	171439	17.2S	79.3E	PCN 6			KGWC
11	180317	15.0S	79.0E	PCN 6			FJDG

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC05-81
FIX POSITIONS FOR CYCLONE NO. 5

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	251200	16.0S	161.4E	PCN 5			PGTW
* 2	252100	17.1S	160.9E	PCN 5			PGTW
3	260000	16.5S	163.3E	PCN 5			PGTW
4	260300	17.0S	164.3E	PCN 5	T0.5/0.5	INIT OBS	PGTW
* 5	260900	17.5S	166.4E	PCN 5			PGTW
* 6	261600	17.6S	167.9E	PCN 5			PGTW
* 7	262100	19.7S	167.5E	PCN 5			PGTW
8	270000	19.5S	167.2E	PCN 5			PGTW
9	270300	19.1S	166.9E	PCN 5	T0.5/0.5 /S0.0/24HRS	ULCC AT 21.0 167.8	PGTW
* 10	270900	20.2S	170.7E	PCN 5		UL ONLY	PGTW
11	280000	21.8S	169.9E	PCN 5		SEC LLCC AT 23.0 163.4	PGTW
12	280300	22.8S	170.4E	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC06-81
FIX POSITIONS FOR CYCLONE NO. 6

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	290254	11.8S	68.9E	PCN 5	T1.0/1.0	INIT OBS	KGWC
2	291533	12.4S	70.7E	PCN 6			KGWC
3	290141	14.1S	69.8E	PCN 5	T1.0		FJDG
4	290231	13.9S	69.9E	PCN 4	T2.0/2.0 /D1.0/24HRS		KGWC
5	300119	17.4S	69.2E	PCN 3			FJDG
6	300203	16.8S	68.6E	PCN 4	T3.0/3.0 /D1.0/24HRS		KGWC
* 7	301449	22.8S	68.2E	PCN 6			FJDG
8	301448	18.6S	66.2E	PCN 6			KGWC
9	310327	18.7S	63.4E	PCN 4	T1.5/2.5 /W1.5/25HRS		KGWC
* 10	310329	20.0S	65.0E	PCN 5			FJDG
* 11	311607	20.6S	62.0E	PCN 6			FJDG
12	311607	20.3S	61.0E	PCN 6			KGWC
13	010305	21.9S	57.3E	PCN 3			FJDG
14	010305	20.0S	57.4E	PCN 6	T2.0/2.0 /D0.5/24HRS		KGWC
15	011544	22.4S	54.3E	PCN 6			KGWC
* 16	011545	24.1S	54.2E	PCN 4			FJDG
17	020423	24.0S	51.9E	PCN 5	T1.5/2.0 /W0.5/25HRS		KGWC

SYNOPTIC FIXES

FIX NO.	TIME (Z)	FIX POSITION		INTENSITY ESTIMATE	NEAREST DATA (NM)	COMMENTS
1	031200	24.0S	45.0E	40	120	
2	041200	26.0S	42.0E	20	200	

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC08-81
FIX POSITIONS FOR CYCLONE NO. 8

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	080000	8.4S	177.7E	PCN 5	T1.0/1.0	INIT OBS	PGTW
2	081200	9.0S	175.6E	PCN 5			PGTW
3	081600	9.5S	174.6E	PCN 5			PGTW
4	082041	10.5S	172.5E	PCN 5	T1.5/1.5	INIT OBS	KGWC
5	082100	10.6S	172.9E	PCN 5			PGTW
6	090000	11.6S	170.1E	PCN 5			PGTW
7	090000	11.4S	172.6E	PCN 5			PGTW
8	091200	12.7S	170.6E	PCN 5			PGTW
9	091600	13.4S	169.8E	PCN 5			PGTW
10	092018	13.5S	169.2E	PCN 5	T3.0/3.0 /D1.5/24HRS		KGWC
11	092100	13.4S	168.4E	PCN 5			PGTW
12	100000	13.5S	169.0E	PCN 5			PGTW
13	100900	13.7S	168.2E	PCN 5			PGTW
14	101200	13.7S	167.5E	PCN 5			PGTW
15	101600	13.9S	167.3E	PCN 5			PGTW
16	101959	15.2S	169.0E	PCN 5	T3.0/3.0 /S0.0/24HRS		KGWC
17	102100	14.5S	168.1E	PCN 5			PGTW
18	110000	15.4S	168.7E	PCN 5			PGTW
19	110300	16.1S	168.6E	PCN 3	T4.0/4.0	INIT OBS	PGTW
20	110900	16.6S	168.3E	PCN 5			PGTW
21	111200	16.8S	168.3E	PCN 5			PGTW
22	111600	17.3S	167.8E	PCN 1			PGTW
23	111933	18.1S	167.8E	PCN 2	T4.5/4.5 /D1.5/24HRS		KGWC
24	112100	18.3S	167.7E	PCN 1			PGTW
25	120000	19.0S	167.5E	PCN 1			PGTW
26	120900	20.6S	166.4E	PCN 1			PGTW
27	121200	21.0S	165.9E	PCN 1			PGTW
28	121600	21.9S	165.4E	PCN 3			PGTW
29	122052	23.2S	164.7E	PCN 3	T3.5/3.5 /W1.0/24HRS		KGWC
30	122100	23.2S	164.9E	PCN 5			PGTW
31	130000	24.4S	164.4E	PCN 5			PGTW
32	130600	25.6S	161.5E	PCN 5	T3.0/3.0	INIT OBS	PGTW
33	130900	25.7S	160.9E	PCN 5			PGTW
34	131200	25.1S	159.9E	PCN 3			PGTW
35	131600	25.6S	159.1E	PCN 3			PGTW
36	132100	25.6S	157.8E	PCN 5			PGTW
37	140000	26.2S	156.6E	PCN 5	T2.0/3.0 /W1.0/18HRS		PGTW
38	140300	26.6S	155.6E	PCN 5			PGTW
39	140900	25.5S	154.0E	PCN 5		LLCC	PGTW
40	141200	25.3S	153.7E	PCN 5			PGTW
41	141600	24.8S	153.1E	PCN 3			PGTW
42	150000	25.3S	150.2E	PCN 5	T1.0/2.0-/W1.0/24HRS		PGTW
43	150300	25.5S	146.8E	PCN 5			PGTW
44	150900	24.8S	145.4E	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC09-81
FIX POSITIONS FOR CYCLONE NO. 9

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	082100	13.2S 149.3E	PCN 5			PGTW
2	090000	13.6S 148.1E	PCN 5			PGTW
3	090600	13.5S 148.4E	PCN 5	T1.0/1.0	INIT OBS	PGTW
4	090900	13.9S 147.5E	PCN 5			PGTW
5	091200	14.1S 146.7E	PCN 5			PGTW
6	091600	14.0S 145.9E	PCN 5			PGTW
7	092100	13.6S 144.7E	PCN 5			PGTW
8	092200	14.0S 145.5E	PCN 6	T2.5/2.5	INIT OBS	KGWC
9	100000	13.5S 144.4E	PCN 5			PGTW
10	100600	14.4S 142.9E	PCN 5	T1.5/1.5 /S0.0/24HRS		PGTW
11	100900	14.9S 142.0E	PCN 5			PGTW
12	101200	15.2S 141.4E	PCN 5			PGTW
13	101600	15.9S 140.6E	PCN 5			PGTW
* 14	102100	15.4S 139.6E	PCN 5			PGTW
* 15	102137	15.4S 137.8E	PCN 5	T2.5/2.5 /S0.0/24HRS		KGWC
* 16	110000	15.2S 138.1E	PCN 5			PGTW
17	110300	16.4S 139.1E	PCN 3	T3.0/3.0-/D1.5/21HRS		PGTW
18	110900	17.0S 137.7E	PCN 3			PGTW
19	111200	16.9S 135.4E	PCN 3			PGTW
* 20	120000	19.6S 130.7E	PCN 5			PGTW
21	130000	20.5S 127.1E	PCN 5			PGTW
22	140000	21.2S 123.2E	PCN 5			PGTW

SYNOPTIC FIXES

FIX NO.	TIME (Z)	FIX POSITION	INTENSITY ESTIMATE	NEAREST DATA (NM)	COMMENTS
1	100000	14.0S 146.0E	25	100	
2	101200	15.0S 142.0E	20	60	
3	111200	17.0S 136.0E	25	70	
4	120000	19.0S 133.0E	25	75	
5	130000	21.0S 127.0E	15	160	
6	150000	23.5S 121.0E	15	40	

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC10-81
FIX POSITIONS FOR CYCLONE NO. 10

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	150251	13.1S 64.9E	PCN 6	T1.0/1.0	INIT OBS	KGWC
* 2	160410	12.8S 55.6E	PCN 5	T1.0/1.0 /S0.0/25HRS		KGWC
3	170347	12.4S 52.0E	PCN 3	T2.0/2.0 /D1.0/24HRS		KGWC
4	171627	12.6S 50.2E	PCN 5	T2.0/2.0 /D1.0/12HRS		KGWC
5	180506	13.1S 47.1E	PCN 6	T3.0/3.0 /D1.0/24HRS		KGWC
6	181604	13.0S 43.7E	PCN 6	T3.0/3.0 /D1.0/24HRS		KGWC
7	190443	15.0S 44.6E	PCN 5	T3.0/3.0 /S0.0/24HRS		KGWC
8	191722	14.4S 44.3E	PCN 6	T3.0/3.0 /S0.0/24HRS		KGWC
9	200420	16.8S 43.5E	PCN 3	T3.5/3.5 /D0.5/24HRS		KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

FIX POSITIONS FOR CYCLONE NO. 13

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	241200	18.9S 116.6E	PCN 5			PGTW
2	242100	18.6S 115.6E	PCN 5			PGTW
3	250000	18.9S 115.0E	PCN 5			PGTW
4	250300	18.4S 114.5E	PCN 5	T1.0/1.0	INIT OBS	PGTW
5	251200	17.8S 113.2E	PCN 5			PGTW
6	252100	18.0S 112.2E	PCN 5			PGTW
7	260000	17.3S 111.8E	PCN 5			PGTW
8	260023	17.6S 112.6E	PCN 5			KGWC
9	260300	17.3S 111.4E	PCN 5	T2.0/2.0 /D1.0/24HRS		PGTW
10	261200	16.4S 110.1E	PCN 5			PGTW
11	261800	16.3S 110.0E	PCN 5			PGTW
12	270000	15.6S 110.0E	PCN 5	T2.5/2.5 /D1.0/24HRS		KGWC
13	270300	15.8S 110.3E	PCN 3	T3.5/3.5 /D1.5/24HRS		PGTW
14	270900	16.0S 109.3E	PCN 1			PGTW
15	271200	15.8S 108.9E	PCN 1			PGTW
16	271800	15.1S 107.8E	PCN 3			PGTW
17	272100	15.6S 108.3E	PCN 5			PGTW
18	272338	15.8S 108.4E	PCN 5	T2.0/2.5 /W0.5/24HRS		KGWC
19	280000	15.6S 108.0E	PCN 5			PGTW
20	280600	16.2S 107.3E	PCN 1	T5.0/5.0 /D1.5/27HRS		PGTW
21	280900	16.3S 107.0E	PCN 1			PGTW
22	281200	15.5S 106.8E	PCN 1			PGTW
23	281600	16.6S 106.3E	PCN 1			PGTW
24	282100	16.9S 105.8E	PCN 1			PGTW
25	282335	16.9S 105.8E	PCN 1	T5.0/5.0 /D1.5/24HRS		KGWC
26	010000	16.9S 105.5E	PCN 1	T5.5/5.5 /D0.5/18HRS		PGTW
27	010300	16.9S 105.2E	PCN 1			PGTW
28	010900	17.1S 105.0E	PCN 1			PGTW
29	011200	17.2S 104.9E	PCN 1			PGTW
30	011600	17.1S 104.5E	PCN 1			PGTW
31	012100	17.4S 104.5E	PCN 3			PGTW
32	020000	17.5S 104.4E	PCN 3			PGTW
33	020300	17.4S 104.3E	PCN 1	T4.5/5.5 /W1.0/27HRS		PGTW
34	020900	17.7S 104.5E	PCN 1			PGTW
35	021200	17.7S 104.4E	PCN 1			PGTW
36	021600	17.6S 104.6E	PCN 1			PGTW
37	022100	17.9S 104.4E	PCN 1			PGTW
38	030000	18.1S 104.5E	PCN 1			PGTW
39	030011	18.0S 104.8E	PCN 1	T4.0/4.0 /S0.0/24HRS		KGWC
40	030300	18.1S 104.8E	PCN 3	T4.0/5.0 /W0.5/24HRS		PGTW
41	030900	18.2S 105.3E	PCN 3			PGTW
42	031200	18.4S 105.7E	PCN 3			PGTW
43	031600	18.3S 106.0E	PCN 3			PGTW
44	032100	19.2S 106.0E	PCN 3			PGTW
* 45	032328	18.2S 106.4E	PCN 3	T2.0/3.0 /W2.0/24HRS		KGWC
46	040000	19.1S 106.2E	PCN 5			PGTW
47	040300	19.2S 106.3E	PCN 5	T4.5/4.5-/D0.5/24HRS		PGTW
48	040900	19.2S 106.6E	PCN 5			PGTW
49	041200	19.7S 107.6E	PCN 5			PGTW
50	041600	20.3S 108.7E	PCN 5			PGTW
51	042100	20.7S 109.2E	PCN 5			PGTW
52	042326	20.9S 109.3E	PCN 3	T3.0/3.0 /D1.0/24HRS		KGWC
53	050000	21.1S 109.8E	PCN 5			PGTW
54	050300	21.6S 110.6E	PCN 3	T5.0/5.0-/D0.5/24HRS		PGTW
55	050900	22.5S 112.3E	PCN 5			PGTW
56	051200	22.9S 113.0E	PCN 5			PGTW
57	051600	22.4S 115.2E	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC14-81

FIX POSITIONS FOR CYCLONE NO. 14

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	251200	14.6S 143.5E	PCN 5			PGTW
2	260000	15.1S 144.8E	PCN 5			PGTW
3	260300	15.8S 145.3E	PCN 5	T1.0/1.0	INIT OBS	PGTW
4	261200	16.8S 146.9E	PCN 5			PGTW
5	262100	16.5S 148.9E	PCN 5			PGTW
6	270000	17.1S 149.8E	PCN 5			PGTW
7	270300	18.0S 150.3E	PCN 5	T3.0/3.0+/D2.0/24HRS		PGTW
8	270900	19.0S 151.6E	PCN 5			PGTW
9	271200	19.2S 153.0E	PCN 5			PGTW
10	272100	20.4S 152.1E	PCN 5			PGTW
11	280000	21.0S 153.2E	PCN 3	T4.0/4.0 /D1.0/21HRS		PGTW
12	280900	21.9S 155.4E	PCN 3			PGTW
* 13	281200	23.2S 156.9E	PCN 3			PGTW
14	281600	22.7S 157.3E	PCN 5			PGTW
15	010000	22.2S 156.1E	PCN 3	T2.5/3.5 /W1.5/24HRS		PGTW
16	010300	22.4S 156.2E	PCN 3			PGTW
* 17	010900	24.4S 157.2E	PCN 5		ULCC	PGTW
18	011200	22.1S 156.3E	PCN 5		LLCC	PGTW
19	011600	21.6S 156.7E	PCN 5			PGTW
20	020000	21.2S 157.0E	PCN 3	T3.0/3.0-/D0.5/24HRS		PGTW
21	020300	21.1S 157.1E	PCN 3			PGTW
22	020900	19.7S 157.0E	PCN 5			PGTW
23	021200	20.0S 157.7E	PCN 5			PGTW
24	021600	20.0S 157.9E	PCN 5			PGTW
25	022100	20.5S 158.8E	PCN 5			PGTW
26	030000	19.1S 158.8E	PCN 5	T2.5/3.0 /D0.5/24HRS		PGTW
27	030300	18.8S 159.3E	PCN 5			PGTW
28	030900	17.9S 159.5E	PCN 5			PGTW
29	031200	17.8S 159.4E	PCN 5			PGTW
30	031600	17.7S 159.7E	PCN 5			PGTW
31	032100	17.8S 160.0E	PCN 5			PGTW
32	040000	17.8S 160.6E	PCN 5	T3.5/3.5-/D1.0/24HRS		PGTW
33	040300	17.8S 160.9E	PCN 3			PGTW
34	040900	17.9S 161.4E	PCN 3			PGTW
35	041200	17.7S 161.5E	PCN 5			PGTW
36	041600	17.8S 161.7E	PCN 3			PGTW
37	042100	17.8S 161.8E	PCN 5			PGTW
38	050000	17.9S 162.2E	PCN 5	T4.0/4.0-/D0.5/24HRS		PGTW
39	050300	18.0S 162.4E	PCN 5			PGTW
40	050900	18.1S 162.1E	PCN 5			PGTW
41	051200	18.4S 162.2E	PCN 5			PGTW
42	051600	18.5S 162.9E	PCN 3			PGTW
43	060000	19.3S 163.2E	PCN 1	T4.0/4.0 /S0.0/24HRS		PGTW
44	060300	19.6S 163.5E	PCN 1			PGTW
45	060900	20.5S 164.1E	PCN 1			PGTW
46	061200	21.4S 165.0E	PCN 3			PGTW
47	061600	21.3S 164.5E	PCN 3			PGTW
48	062100	22.5S 164.7E	PCN 5			PGTW
49	070000	23.5S 165.3E	PCN 5	T3.0/4.0 /W1.0/24HRS		PGTW
50	070300	23.7S 165.4E	PCN 3			PGTW
51	071200	27.6S 167.1E	PCN 5			PGTW
* 52	071600	28.8S 166.3E	PCN 5			PGTW
53	080000	29.6S 166.3E	PCN 3	T3.0/3.0-/S0.0/24HRS		PGTW
54	080300	30.8S 166.6E	PCN 3			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC15-81

FIX POSITIONS FOR CYCLONE NO. 15

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	011500	7.8S 177.1E	PCN 5			PGTW
2	011300	9.2S 177.0E	PCN 5			PGTW
3	020000	10.6S 179.9W	PCN 5	T2.0/2.0	INIT OBS PSBL MULTIPLE CNTRS	PGTW
4	020300	10.5S 179.1W	PCN 5			PGTW
5	020900	11.5S 175.2W	PCN 5			PGTW
6	021200	11.5S 174.4W	PCN 5			PGTW
7	021600	11.6S 173.6W	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC16-81

FIX POSITIONS FOR CYCLONE NO. 16

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	040333	17.7S	51.4E	PCN 5	T1.5/1.5	INIT OBS	KGWC
2	050312	18.2S	53.8E	PCN 3	T2.0/2.0 /D0.5/24HRS		KGWC
3	051527	19.7S	54.2E	PCN 6			KGWC
4	060407	21.3S	57.1E	PCN 3	T3.0/3.0 /D1.0/25HRS		KGWC
5	061646	23.4S	58.6E	PCN 6			KGWC
6	070344	25.0S	61.7E	PCN 1	T4.5/4.5 /D1.5/24HRS		KGWC
7	071623	26.1S	65.2E	PCN 6			KGWC
8	080321	27.7S	67.9E	PCN 3	T3.5/4.5 /W1.0/24HRS		KGWC
9	081600	27.9S	69.8E	PCN 6			KGWC
10	090258	28.3S	69.8E	PCN 4	T1.0/2.0 /W2.5/24HRS		KGWC
11	100236	30.2S	69.7E	PCN 4	T0.0/1.0 /W1.0/24HRS		KGWC

SYNOPTIC FIXES

FIX NO.	TIME (Z)	FIX POSITION		INTENSITY ESTIMATE	NEAREST DATA (NM)	COMMENTS
1	011200	22.0S	47.0E	10	30	
2	021200	20.5S	47.5E	15	60	
3	031200	19.5S	50.0E	15	70	
4	041200	17.0S	53.0E	25	60	
5	060000	20.5S	56.0E	20	30	
6	061200	22.0S	58.0E	30	150	

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC17-81

FIX POSITIONS FOR CYCLONE NO. 17

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	060000	11.8S	132.5E	PCN 5	T1.5/1.5	INIT OBS	PGTW
2	070000	11.7S	133.9E	PCN 5	T2.0/2.0 /D0.5/24HRS		PGTW
3	072100	11.9S	132.6E	PCN 5			PGTW
4	080000	11.7S	132.7E	PCN 5	T1.0/2.0 /W1.0/24HRS	ULCC	PGTW
5	091200	11.6S	133.0E	PCN 5			PGTW
6	100600	11.5S	133.6E	PCN 5			PGTW
7	101200	11.7S	134.6E	PCN 5			PGTW
8	110000	11.6S	132.9E	PCN 5	T2.5/2.5	INIT OBS	PGTW
9	110300	11.4S	132.6E	PCN 5			PGTW
10	110900	11.9S	132.1E	PCN 5			PGTW
11	111200	11.6S	131.9E	PCN 5			PGTW
12	111600	11.7S	131.3E	PCN 5			PGTW
13	112100	12.8S	130.7E	PCN 5			PGTW
14	120000	12.5S	130.4E	PCN 5			PGTW
15	120600	12.8S	129.5E	PCN 5	T3.5/3.5 /D1.0/30HRS		PGTW
16	120900	12.8S	129.3E	PCN 5			PGTW
17	121200	12.7S	128.8E	PCN 5			PGTW
18	121600	12.0S	128.3E	PCN 5			PGTW
19	122100	12.8S	127.3E	PCN 5			PGTW
20	130000	12.9S	127.1E	PCN 5			PGTW
21	130600	12.6S	125.9E	PCN 5	T4.0/4.0 /D0.5/24HRS		PGTW
22	130900	12.6S	125.4E	PCN 5			PGTW
23	131200	12.6S	125.2E	PCN 5			PGTW
24	131600	12.3S	124.7E	PCN 5			PGTW
25	132100	12.4S	123.6E	PCN 5			PGTW
26	140300	12.4S	122.8E	PCN 5	T5.0/5.0 /D1.0/21HRS		PGTW
27	141600	12.2S	121.2E	PCN 5			PGTW
28	142100	12.7S	119.6E	PCN 5			PGTW
29	150300	12.6S	118.5E	PCN 1	T5.5/5.5 /D0.5/24HRS		PGTW
30	150900	12.7S	117.6E	PCN 5			PGTW
31	151600	12.7S	116.5E	PCN 5			PGTW
32	152100	12.9S	115.7E	PCN 5			PGTW
33	152100	12.7S	117.2E	PCN 5			PGTW
34	160300	13.8S	114.7E	PCN 5	T4.5/5.5 /W1.0/24HRS		PGTW
35	160900	14.7S	113.8E	PCN 5			PGTW
36	161200	15.3S	114.0E	PCN 5			PGTW
37	161600	15.2S	114.3E	PCN 5			PGTW

38	162100	15.2S	114.4E	PCN 3				PGTW
39	170000	14.7S	114.1E	PCN 5				PGTW
40	170600	15.2S	112.3E	PCN 5	T3.0/4.0 /W1.5/27HRS			PGTW
41	170900	15.5S	111.8E	PCN 5				PGTW
42	171200	15.9S	111.2E	PCN 5				PGTW
43	171600	16.2S	110.5E	PCN 5				PGTW
44	172100	16.1S	107.0E	PCN 5				PGTW
45	172334	15.9S	106.6E	PCN 5	T2.0		LLCC	KGWC
46	180000	16.2S	106.4E	PCN 5			LLCC	PGTW
47	180000	17.8S	108.2E	PCN 5			ULCC	PGTW
48	180600	16.5S	104.4E	PCN 5	T3.0/3.0-/S0.0/24HRS			PGTW
49	181200	16.0S	102.4E	PCN 5				PGTW
50	181600	16.6S	101.6E	PCN 5				PGTW
51	190052	17.1S	98.1E	PCN 3	T0.0/1.0 /W2.0/24HRS		LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC21-81
FIX POSITIONS FOR CYCLONE NO. 21

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	290413	7.0S	56.8E	PCN 6	T2.5/2.5+/D1.5/25HRS		KGWC
2	281511	8.2S	56.8E	PCN 6			KGWC
3	290350	8.9S	56.4E	PCN 5	T2.0/2.0 /S0.0/24HRS		KGWC
4	291629	10.6S	55.4E	PCN 6			KGWC
5	300327	11.9S	55.0E	PCN 5	T1.5/2.0 /W0.5/24HRS		KGWC
6	300336	10.5S	53.5E	PCN 5			FJDG
7	301606	12.8S	55.1E	PCN 6		EXPOSED LLCC	KGWC
8	310305	11.3S	55.7E	PCN 6	T2.0/2.0 /D0.5/24HRS		KGWC
9	311544	14.6S	54.7E	PCN 6		PSBL LLCC	KGWC
10	011702	15.9S	52.2E	PCN 6			KGWC
11	020309	16.0S	53.5E	PCN 6			FJDG
12	020400	16.4S	51.4E	PCN 5	T4.0/4.0 /D1.0/24HRS		KGWC
13	021639	17.1S	48.4E	PCN 6			KGWC
14	030337	19.0S	49.1E	PCN 5	T3.0/3.5 /W1.0/24HRS	APRNT LLCC	KGWC
15	031616	21.9S	48.6E	PCN 6			KGWC
16	031617	23.6S	44.3E	PCN 5			FJDG
17	040314	24.7S	49.6E	PCN 6	T2.0/3.0 /W1.0/24HRS		KGWC
18	041554	25.2S	51.5E	PCN 6			KGWC
19	050252	25.7S	53.2E	PCN 6	T1.0/2.0 /W1.0/24HRS	EXPOSED LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC22-81
FIX POSITIONS FOR CYCLONE NO. 22

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	040133	6.2S	94.0E	PCN 6	T1.0/1.0	INIT OBS	KGWC
* 2	041200	4.5S	92.9E	PCN 6			PGTW
3	041412	6.0S	91.6E	PCN 6			KGWC
4	050110	6.6S	92.7E	PCN 6	T2.0/2.0 /D1.0/24HRS		KGWC
5	050300	7.3S	92.1E	PCN 5	T1.0/1.0	INIT OBS	PGTW
* 6	051350	8.7S	93.6E	PCN 6			KGWC
7	052100	9.4S	93.4E	PCN 5			PGTW
* 8	060848	8.0S	91.1E	PCN 6	T2.0/2.0 /S0.0/24HRS		KGWC
9	060600	9.5S	92.6E	PCN 6	T1.0/1.0 /S0.0/27HRS		PGTW
10	062100	9.2S	92.3E	PCN 5			PGTW
11	070000	9.3S	93.0E	PCN 5			PGTW
* 12	070206	8.2S	95.0E	PCN 6	T3.0/3.0 /D1.0/24HRS		KGWC
* 13	070900	10.2S	92.6E	PCN 5			PGTW
* 14	071200	9.9S	92.9E	PCN 5			PGTW
15	071304	8.0S	93.2E	PCN 6			KGWC
16	072100	9.5S	92.5E	PCN 5			PGTW
17	080000	9.2S	92.5E	PCN 5			PGTW
* 18	080053	9.5S	94.3E	PCN 3	T2.5 D1.0		FJDG
19	080143	8.8S	92.6E	PCN 1	T5.0/5.0 /D2.0/24HRS		KGWC
20	080600	9.4S	92.4E	PCN 5	T3.0/3.0	INIT OBS	PGTW
21	081423	9.8S	90.0E	PCN 6		EXTRAP LLCC	KGWC
22	092100	10.7S	90.8E	PCN 5			PGTW
23	090000	10.7S	90.7E	PCN 5			PGTW

24	090030	11.0S	91.3E	PCN 3	T2.5			FJDG
25	090120	10.1S	89.8E	PCN 5	T6.0/6.0 /D1.0/24HRS			KGWC
26	090600	11.0S	90.2E	PCN 3	T4.0/4.0 /D1.0/24HRS			PGTW
27	090900	11.0S	90.2E	PCN 5				PGTW
28	091400	11.3S	90.7E	PCN 6			EXTRAP LLCC	KGWC X
29	091400	11.2S	89.8E	PCN 4				FJDG
30	092100	11.9S	89.5E	PCN 3				PGTW
31	100000	12.6S	89.4E	PCN 5				PGTW
32	100050	12.8S	89.0E	PCN 4	T6.0/6.0 /S0.0/24HRS			KGWC
33	100600	13.7S	89.4E	PCN 3	T5.5/5.5-/D1.5/24HRS			PGTW
34	100900	14.4S	89.2E	PCN 3				PGTW
35	101200	15.1S	89.0E	PCN 3				PGTW
36	101337	15.3S	88.7E	PCN 2				KGWC
37	102100	16.8S	87.7E	PCN 3				PGTW
38	110000	17.0S	87.4E	PCN 3				PGTW
* 39	110216	17.4S	88.6E	PCN 4	T5.5/6.0 /W0.5/25HRS			KGWC
40	110600	18.4S	87.0E	PCN 3	T5.0/5.5-/W0.5/24HRS			PGTW
41	110900	19.3S	86.5E	PCN 5				PGTW
42	111200	19.7S	86.6E	PCN 5				PGTW
43	111455	20.3S	87.5E	PCN 6				KGWC
44	120000	21.9S	87.7E	PCN 5				PGTW
45	120103	22.1S	87.1E	PCN 3				FJDG
46	120153	21.8S	87.8E	PCN 4	T3.5/4.5 /W2.0/24HRS		LLCC	KGWC
47	120300	22.4S	87.7E	PCN 5	T4.0/4.5-/W1.0/21HRS			PGTW
48	120900	23.3S	88.5E	PCN 5				PGTW
49	121200	23.6S	89.4E	PCN 5				PGTW
50	121432	25.0S	88.2E	PCN 4				KGWC
51	122100	26.9S	90.9E	PCN 5				PGTW
52	130130	27.7S	91.9E	PCN 6	T2.5/3.5 /W1.0/24HRS		LLCC	KGWC
53	130300	20.6S	92.1E	PCN 5				PGTW
54	130300	28.6S	92.1E	PCN 5				FJDG
55	130600	28.8S	94.0E	PCN 5	T3.0/3.5-/W1.0/27HRS			PGTW
56	130900	28.8S	95.7E	PCN 5				PGTW
57	131410	28.3S	96.6E	PCN 6	.			KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC23-81
FIX POSITIONS FOR CYCLONE NO. 23

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE		COMMENTS	SITE
1	060410	14.8S	59.3E	PCN 6	T1.5/1.5		INIT OBS	KGWC
2	061500	15.1S	62.5E	PCN 6				KGWC
3	070347	13.5S	65.9E	PCN 6	T2.5/2.5 /D1.0/24HRS			KGWC
4	071627	16.1S	61.8E	PCN 6				KGWC
5	080234	14.2S	63.1E	PCN 5	T1.5	D1.0		FJDG
6	080321	16.9S	60.3E	PCN 6	T4.0/4.0 /D1.5/24HRS		SNDY 14.8S 062.8E	KGWC
7	080324	15.5S	62.6E	PCN 6	T1.5/2.0 /W1.0/24HRS			KGWC
8	081604	17.5S	60.5E	PCN 6				KGWC
9	081604	19.4S	56.6E	PCN 4				FJDG
10	090212	17.8S	54.9E	PCN 3	T2.0			FJDG
11	090302	16.7S	56.7E	PCN 5	T2.5/2.5 /D1.0/24HRS			KGWC
12	091541	17.9S	54.5E	PCN 6				KGWC
13	091541	20.2S	54.1E	PCN 4				FJDG
14	100420	18.0S	55.6E	PCN 3	T2.5/2.5 /S0.0/25HRS			KGWC
15	101659	19.3S	56.4E	PCN 6				KGWC
16	110357	18.2S	58.7E	PCN 5	T2.0/2.5 /W0.5/24HRS			KGWC
17	111637	18.2S	59.1E	PCN 6				KGWC
18	120334	18.2S	59.7E	PCN 4	T2.5/2.5 /D0.5/24HRS			KGWC
19	121614	17.4S	60.2E	PCN 6				KGWC
20	130312	17.0S	58.8E	PCN 6	T2.5/2.5 /S0.0/24HRS			KGWC
21	131551	16.1S	58.2E	PCN 6				KGWC
22	140249	16.0S	59.7E	PCN 6	T1.5/2.5 /W1.0/24HRS			KGWC
23	141528	16.1S	59.5E	PCN 6				KGWC
* 24	150407	15.2S	56.2E	PCN 6	T1.0/1.5 /W0.5/26HRS		LLCC	KGWC
25	151646	15.5S	56.0E	PCN 6				KGWC
26	160344	15.6S	56.1E	PCN 3	T0.5/1.0 /W0.5/24HRS		LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC24-81
FIX POSITIONS FOR CYCLONE NO. 24

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	220148	8.2S	91.0E	PCN 6	T1.0/1.0	INIT OBS	KGWC
2	221427	8.1S	89.9E	PCN 6			KGWC
3	230125	7.0S	90.7E	PCN 6	T1.0/1.0 /S0.0/24HRS		KGWC
4	240102	6.7S	89.1E	PCN 6	T1.0/1.0 /S0.0/24HRS		KGWC
5	241341	8.0S	89.6E	PCN 6			KGWC
* 6	250039	10.8S	93.5E	PCN 6	T1.5/1.5 /D0.5/24HRS		KGWC
7	250300	10.7S	91.0E	PCN 5	T1.5/1.5	INIT OBS	PGTW
* 8	251200	11.7S	92.7E	PCN 5			PGTW
9	251318	11.6S	91.5E	PCN 6			KGWC
10	260000	11.6S	91.8E	PCN 5			PGTW
11	260157	12.4S	91.7E	PCN 4	T2.5/2.5 /D1.0/24HRS		KGWC
12	260300	11.7S	91.8E	PCN 5	T2.0/2.0 /D0.5/24HRS		PGTW
13	260600	12.2S	92.1E	PCN 5			PGTW
14	261255	12.7S	91.6E	PCN 6			KGWC
15	270134	13.3S	91.5E	PCN 4	T2.5/2.5 /S0.0/24HRS		KGWC
16	270300	12.9S	90.9E	PCN 5	T2.5/2.5-/D0.5/24HRS		PGTW
17	270600	13.2S	91.3E	PCN 5			PGTW
18	270900	13.4S	91.6E	PCN 5			PGTW
19	271200	13.6S	92.1E	PCN 5			PGTW
20	271414	13.9S	92.7E	PCN 6			KGWC
21	271600	13.6S	92.4E	PCN 5			PGTW
22	272100	14.0S	92.3E	PCN 5			PGTW
23	280111	13.9S	92.3E	PCN 4	T2.5/2.5-/S0.0/24HRS		KGWC
24	280300	14.1S	92.7E	PCN 5	T2.0/2.5 /W0.5/24HRS		PGTW
25	280600	14.5S	92.7E	PCN 5			PGTW
26	280900	14.7S	93.0E	PCN 5			PGTW
27	281351	15.8S	92.8E	PCN 6			KGWC
* 28	282100	13.8S	93.2E	PCN 5			PGTW
29	290049	15.7S	93.4E	PCN 4	T0.5/0.5-/W2.0/24HRS		KGWC
30	290300	15.6S	93.6E	PCN 3	T1.0/2.0 /W1.0/24HRS		PGTW
31	290600	15.5S	93.8E	PCN 3			PGTW
32	301200	17.8S	95.9E	PCN 3			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

2. 1981-82 TROPICAL CYCLONE FIX DATA

TC25-81
FIX POSITIONS FOR CYCLONE NO. 25

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	250300	9.8S	89.3E	PCN 5	T1.0/1.0	INIT OBS	PGTW
2	250916	12.1S	86.4E	PCN 6	T1.0/1.0	INIT OBS	KGWC
3	260905	10.6S	85.7E	PCN 3	T2.0/2.0 /D1.0/24HRS		KGWC
* 4	261200	10.9S	84.0E	PCN 5			PGTW
* 5	261451	10.8S	83.9E	PCN 6			KGWC
6	262008	10.5S	84.8E	PCN 6			KGWC
* 7	262100	11.0S	83.2E	PCN 5			PGTW
8	270149	10.2S	85.7E	PCN 4	T2.0/2.0 /S0.0/17HRS		KGWC
* 9	270300	11.4S	82.6E	PCN 5			PGTW
10	270600	10.6S	84.5E	PCN 3	T1.5/1.5	INIT OBS	PGTW
11	270853	10.7S	85.1E	PCN 4	T1.5/2.0 /W0.5/07HRS		KGWC
* 12	270900	11.8S	84.2E	PCN 5			PGTW
13	271425	11.2S	84.9E	PCN 6			KGWC
* 14	272100	12.3S	83.1E	PCN 5			PGTW
15	280126	11.3S	84.0E	PCN 6	T1.5/1.5 /S0.0/18HRS		KGWC
16	280300	11.6S	84.6E	PCN 3	T1.0/1.5 /W0.5/21HRS	EXP LLCC	PGTW
17	280842	12.3S	84.8E	PCN 4		EXP LLCC	KGWC
18	281405	12.2S	84.7E	PCN 6	T0.0/0.5 /W1.5/12HRS	EXP LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC26-81

FIX POSITIONS FOR CYCLONE NO. 26

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	190131	6.7S	82.6E	PCN 6	T1.5/1.5	INIT OBS	KGWC
2	191410	6.9S	84.8E	PCN 6			KGWC
3	200249	7.4S	84.6E	PCN 6	T2.0/2.0 /D0.5/25HRS		KGWC
4	201347	8.0S	84.8E	PCN 6			KGWC
5	202100	8.7S	85.9E	PCN 5			PGTW
6	210225	7.8S	85.3E	PCN 6	T2.5/2.5 /D0.5/24HRS		KGWC
7	210922	8.1S	85.0E	PCN 3			KGWC
8	211323	8.1S	84.3E	PCN 6			KGWC
9	211600	9.3S	84.1E	PCN 5			PGTW
10	212026	8.1S	84.2E	PCN 6			KGWC
11	212100	8.5S	83.7E	PCN 5			PGTW
12	220202	8.6S	83.4E	PCN 6			KGWC
13	220600	8.8S	85.2E	PCN 5	T2.5/2.5	INIT OBS	PGTW
14	220911	8.9S	85.2E	PCN 5	T4.0/4.0 /D0.5/24HRS		KGWC
15	221441	10.3S	85.7E	PCN 6			KGWC
16	221600	9.0S	84.4E	PCN 5			PGTW
17	222014	11.3S	85.4E	PCN 6			KGWC
18	222100	11.0S	85.3E	PCN 5			PGTW
19	230600	12.0S	85.4E	PCN 5	T3.0/3.0 /D0.5/24HRS		PGTW
20	230959	12.4S	85.9E	PCN 5	T3.5/3.5 /W0.5/24HRS		KGWC
* 21	230859	11.2S	84.4E	PCN 5	T3.5/3.5	INIT OBS	KGWC
22	230900	12.4S	84.6E	PCN 5			PGTW
23	231410	13.8S	85.3E	PCN 6			KGWC
24	231600	12.9S	85.1E	PCN 5			PGTW
25	231800	13.4S	85.3E	PCN 5			PGTW
26	232002	14.1S	86.0E	PCN 6			KGWC
27	232100	14.5S	85.3E	PCN 5			PGTW
28	240116	14.3S	84.8E	PCN 6			KGWC
29	240600	14.7S	84.2E	PCN 5	T4.0/4.0 /D1.0/24HRS		PGTW
30	240847	14.5S	84.0E	PCN 6	T3.5/3.5 /S0.0/24HRS		KGWC
31	240848	16.8S	84.6E	PCN 5	T4.5/4.5 /D1.0/24HRS		FJDG
32	240900	14.7S	83.4E	PCN 5			PGTW
33	241200	15.0S	84.3E	PCN 5			PGTW
34	241355	14.7S	84.1E	PCN 6			KGWC
35	241600	15.4S	84.0E	PCN 5			PGTW
* 36	241859	17.0S	84.5E	PCN 6			FJDG
37	242100	15.7S	84.1E	PCN 5			PGTW
38	242133	15.4S	84.0E	PCN 6			KGWC
39	250041	15.8S	84.1E	PCN 6			KGWC
40	250234	16.0S	84.1E	PCN 6			KGWC
41	250300	16.1S	83.7E	PCN 5	T4.0/4.0 /S0.0/21HRS		PGTW
42	250836	16.0S	83.4E	PCN 2	T4.0/4.0 /D0.5/24HRS		KGWC
43	250900	16.3S	83.7E	PCN 3			PGTW
44	251200	16.4S	83.4E	PCN 5			PGTW
45	251332	16.1S	83.3E	PCN 2			KGWC
46	251600	16.8S	83.1E	PCN 5			PGTW
47	252121	17.3S	83.0E	PCN 2			KGWC
48	252130	17.3S	84.0E	PCN 6			FJDG
49	260000	17.8S	83.1E	PCN 5			PGTW
50	260210	17.5S	82.9E	PCN 6			KGWC
51	260600	18.1S	82.6E	PCN 5			PGTW
52	261006	18.9S	82.8E	PCN 6	T2.5/3.5 /W1.5/26HRS		KGWC
53	261006	18.3S	82.1E	PCN 5			FJDG
* 54	261200	21.5S	82.1E	PCN 5			PGTW
55	261200	19.9S	82.0E	PCN 5			PGTW
56	261449	19.4S	82.4E	PCN 6			KGWC
* 57	261600	20.7S	82.1E	PCN 5			PGTW
* 58	261800	21.4S	82.0E	PCN 5			PGTW
* 59	262100	20.6S	81.3E	PCN 6			KGWC
60	270147	19.2S	81.1E	PCN 5		EXP LLCC	KGWC
61	270954	20.0S	80.3E	PCN 5	T1.5/2.5 /W1.0/24HRS	EXP LLCC	KGWC
62	271426	20.6S	78.4E	PCN 4		EXP LLCC	KGWC
* 63	280124	20.4S	80.7E	PCN 5			KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

FIX POSITIONS FOR CYCLONE NO. 28

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	030046	7.3S	95.4E	PCN 5	T1.5/1.5	INIT OBS	KGWC
2	030600	7.4S	92.7E	PCN 5	T1.5/1.5	INIT OBS	PGTW
* 3	031325	7.5S	94.1E	PCN 6		ULAC 7.5S 93.5E	KGWC
4	031600	8.5S	91.8E	PCN 5			PGTW
5	031936	9.1S	93.2E	PCN 6		ULAC 9.5S 92.5E	KGWC
6	032100	8.6S	91.4E	PCN 5			PGTW
7	040017	8.3S	91.8E	PCN 6			KGWC
8	040203	8.7S	91.9E	PCN 6	T3.0/3.0 /D1.5/26HRS		KGWC
9	040300	8.9S	92.1E	PCN 5	T2.5/2.5 /D1.0/21HRS		PGTW
10	040600	9.3S	91.5E	PCN 5			PGTW
11	040821	9.5S	90.0E	PCN 6			KGWC
12	040900	9.5S	91.0E	PCN 5			PGTW
* 13	041200	9.5S	89.4E	PCN 5			PGTW
14	041442	10.0S	89.0E	PCN 6			KGWC
15	041600	10.6S	91.0E	PCN 5			PGTW
16	042100	11.2S	90.8E	PCN 5			PGTW
* 17	042106	10.8S	80.0E	PCN 6		ULAC 11.3S 90.1E	KGWC
18	050140	10.5S	89.7E	PCN 5	T2.0/3.0 /W1.0/24HRS		KGWC
19	050600	10.6S	89.3E	PCN 5	T1.5/2.5 /W1.0/27HRS	PSBL MULTI CNTR	PGTW
20	050809	10.8S	80.9E	PCN 6			KGWC
21	050900	11.0S	80.8E	PCN 5			PGTW
22	051419	10.8S	80.3E	PCN 6			KGWC
23	052054	11.2S	87.5E	PCN 6			KGWC
24	052100	12.0S	88.2E	PCN 5			PGTW
25	060117	11.3S	88.2E	PCN 6	T1.5/2.0 /W0.5/24HRS		KGWC
26	060600	11.6S	87.5E	PCN 5	T1.5/2.0-/S0.0/24HRS		PGTW
27	060900	11.9S	87.3E	PCN 5			PGTW
28	060940	11.2S	87.0E	PCN 5			KGWC
29	061355	11.1S	86.8E	PCN 6			KGWC
30	061600	11.4S	86.4E	PCN 5		ULAC 11.0S 83.5E	PGTW
31	062043	12.0S	86.5E	PCN 6			KGWC
32	062100	11.9S	86.2E	PCN 5			PGTW
33	070000	11.9S	86.2E	PCN 6			KGWC
34	070235	12.5S	85.7E	PCN 6	T2.5/2.5 /D1.0/25HRS		KGWC
35	070600	12.7S	86.2E	PCN 5	T2.5/2.5 /D1.0/24HRS		PGTW
36	070900	12.6S	85.7E	PCN 5			PGTW
* 37	070920	13.5S	85.0E	PCN 6			KGWC
38	071333	13.1S	84.8E	PCN 6			KGWC
39	071600	12.9S	85.3E	PCN 5			PGTW
40	072031	13.2S	85.1E	PCN 6			KGWC
41	072100	13.3S	85.0E	PCN 5			PGTW
* 42	080212	13.3S	85.2E	PCN 5	T3.5/3.5+/D1.0/24HRS		KGWC
43	080212	13.1S	85.5E	PCN 5	T3.5/3.5 /D0.5/24HRS		FJDG
* 44	080300	13.3S	84.5E	PCN 5	T2.5/2.5 /S0.0/21HRS		PGTW
* 45	080900	13.4S	84.3E	PCN 5			PGTW
* 46	080910	13.3S	84.6E	PCN 6			KGWC
* 47	080917	14.0S	85.0E	PCN 5			FJDG
* 48	081451	13.5S	84.6E	PCN 6			KGWC
49	081600	13.3S	84.1E	PCN 5			PGTW
* 50	081920	14.7S	83.7E	PCN 6			FJDG
51	082019	11.3S	84.2E	PCN 6			KGWC
52	090140	11.5S	81.0E	PCN 5	T3.5/3.5 /S0.0/24HRS		KGWC
* 53	090600	11.3S	82.2E	PCN 5	T2.5/2.5 /D1.0/27HRS		PGTW
54	090905	11.0S	84.0E	PCN 5		SEVERAL SECNDRY LLCC	KGWC
55	091427	11.2S	83.8E	PCN 6			KGWC
* 56	091[illegible]	10.0S	81.4E	PCN 6		SECND SYS 12.0S 04.0E	FJDG
57	092150	11.6S	83.6E	PCN 6			KGWC
* 58	100125	11.5S	82.7E	PCN 5	T2.5/3.5 /W1.0/24HRS		KGWC
59	100600	11.6S	81.3E	PCN 5	T2.5/3.5 /W1.0/24HRS		PGTW
60	100853	11.6S	82.0E	PCN 5		SECNDRY LLCC 10.8S 82.1E	KGWC
61	101404	11.6S	80.1E	PCN 6			KGWC
* 62	102130	12.0S	79.3E	PCN 6			KGWC
63	110043	11.5S	80.1E	PCN 5	T3.5/3.5+/D1.0/24HRS		KGWC
* 64	110300	10.8S	79.1E	PCN 5	T3.5/3.5 /D1.0/21HRS		PGTW
65	110[illegible]	11.6S	79.8E	PCN 6			KGWC
66	112100	10.7S	79.2E	PCN 1			KGWC
67	120037	10.7S	77.3E	PCN 6			KGWC
68	120[illegible]	10.7S	77.6E	PCN 1	T4.5/4.5 /D1.0/24HRS		KGWC
69	121011	11.1S	77.7E	PCN 6			KGWC
* 70	121450	11.4S	75.4E	PCN 6			KGWC
71	122115	11.2S	76.3E	PCN 6			KGWC
72	130100	11.2S	75.4E	PCN 5	T4.5/4.5 /D0.5		FJDG
73	130[illegible]	11.2S	75.0E	PCN 2	T6.0/6.0 /D1.5/24HRS		KGWC
74	130156	11.2S	75.0E	PCN 2	T6.0/6.0 /D1.5/24HRS		FJDG
75	131000	11.7S	75.6E	PCN 2			KGWC
76	131600	11.2S	75.6E	PCN 5			FJDG
77	131435	11.9S	75.9E	PCN 2			KGWC
78	131456	11.8S	74.0E	PCN 6			FJDG
79	132017	12.1S	75.3E	PCN 6			FJDG

90	132103	11.7S	75.2E	PCN 2				KGWC
* 81	140314	12.5S	75.2E	PCN 1	T6.0/6.0 /S0.0/25HRS			KGWC
82	140940	12.6S	74.3E	PC 2				KGWC
83	140940	12.4S	74.4E	PC 5				FJDG
84	141412	12.7S	73.0E	PCN 2				KGWC
85	142000	13.2S	73.3E	PCN 6				FJDG
86	142051	12.7S	73.3E	PCN 2				KGWC
87	150251	13.1S	73.7E	PCN 2	T4.5/5.5 /W1.5/24HRS			KGWC
88	150251	13.0S	73.3E	PCN 5				FJDG
89	150936	13.7S	73.1E	PCN 4				KGWC
90	150937	13.3S	72.4E	PCN 6	T5.5/6.0-/W0.5/24HRS			FJDG
* 91	151530	14.7S	73.3E	PCN 4				KGWC
92	151530	14.2S	72.1E	PCN 6				FJDG
* 93	151940	14.8S	73.2E	PCN 6				FJDG
* 94	152039	15.3S	73.8E	PCN 4				KGWC
95	160137	14.3S	71.2E	PCN 6		EXP LLCC		FJDG
96	160228	14.0S	71.8E	PCN 4	T3.0/4.0 /W1.5/24HRS	EXP LLCC		KGWC
97	160924	14.8S	71.2E	PCN 6				KGWC
98	161506	13.8S	70.3E	PCN 4		EXP LLCC		KGWC
99	161507	14.9S	70.8E	PCN 6				FJDG
100	162210	13.5S	69.9E	PCN 4		EXP LLCC		KGWC
101	170204	13.8S	69.1E	PCN 6	T2.0/3.0 /W1.0/24HRS	EXP LLCC		KGWC
102	170206	13.8S	68.6E	PCN 4		EXP LLCC		KGWC
103	171055	13.7S	66.9E	PCN 4		EXP LLCC		KGWC
104	171443	13.8S	66.6E	PCN 4		EXP LLCC		KGWC
105	172150	13.6S	65.3E	PCN 4		EXP LLCC		KGWC
106	180322	13.7S	64.5E	PCN 4	T1.0/2.0 /W1.0/25HRS	EXP LLCC		KGWC
107	181043	13.9S	63.3E	PCN 4		EXP LLCC		KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC30-81
FIX POSITIONS FOR CYCLONE NO. 30

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	021800	13.5S 128.3E	PCN 5			PGTW
* 2	031600	11.8S 128.1E	PCN 5			PGTW
* 3	050541	12.8S 123.9E	PCN 5	T1.5/1.5	INIT OBS	KGWC
* 4	050600	13.3S 122.4E	PCN 5	T2.0/2.0	INIT OBS	PGTW
* 5	051105	13.6S 122.1E	PCN 6			KGWC
* 6	051600	13.4S 120.8E	PCN 5			PGTW
* 7	051826	14.3S 121.4E	PCN 6			KGWC
8	052100	13.5S 121.2E	PCN 5		ULCC FIX LLCC NOT EVIDENT	PGTW
* 9	052344	13.9S 120.0E	PCN 5	T2.5/2.5 /D1.0/18HRS	ULAC 12.8S 119.7E	KGWC
* 10	060000	14.1S 119.2E	PCN 5			PGTW
* 11	060600	16.6S 119.2E	PCN 5	T3.0/3.0 /D1.0/24HRS		PGTW
* 12	060711	15.6S 119.4E	PCN 5		ULAC 16.5S 120.1E	KGWC
* 13	061223	17.9S 119.2E	PCN 6			KGWC
* 14	061600	19.0S 118.3E	PCN 5		ULCC	PGTW
* 15	061814	19.4S 118.7E	PCN 6			KGWC
16	062321	18.2S 118.0E	PCN 3	T2.5/2.5-/S0.0/24HRS		KGWC
* 17	070000	19.6S 117.0E	PCN 5			PGTW
18	070600	19.6S 116.9E	PCN 5	T2.0/3.0 /W1.0/24HRS		PGTW
19	070700	18.9S 117.2E	PCN 3		EXP LLCC	KGWC

SYNOPTIC FIXES

FIX NO.	TIME (Z)	FIX POSITION	INTENSITY ESTIMATE	NEAREST DATA (NM)	COMMENTS
1	062100	17.5S 118.6E	25	20	

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPPESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC32-81

FIX POSITIONS FOR CYCLONE NO. 32

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	171000	8.1S 171.0E	PCN 5			PGTW
2	101800	9.8S 170.9E	PCN 5			PGTW
3	190300	9.4S 170.7E	PCN 5	T2.0/2.0	INIT OBS	PGTW
4	191600	11.2S 168.4E	PCN 5			PGTW
5	191958	12.5S 167.6E	PCN 6	T2.5/2.5	INIT OBS	KGWC
6	192100	13.0S 167.6E	PCN 5			PGTW
7	200000	12.6S 167.2E	PCN 5			PGTW
8	200300	13.1S 166.7E	PCN 5	T3.0/3.0 /D1.0/24HRS		PGTW
9	200600	13.7S 166.1E	PCN 5			PGTW
10	200837	13.5S 165.7E	PCN 6			KGWC
11	201200	14.1S 165.2E	PCN 5			PGTW
12	201529	14.3S 164.5E	PCN 6			KGWC
13	201600	14.5S 164.5E	PCN 5			PGTW
14	202100	14.8S 164.0E	PCN 5			PGTW
15	202116	15.1S 164.5E	PCN 1	T4.5/4.5 /D2.0/25HRS		KGWC
16	210000	15.4S 163.9E	PCN 5			PGTW
17	210414	15.8S 163.0E	PCN 1			KGWC
18	210600	16.0S 163.2E	PCN 1	T4.5/4.5 /D1.5/27HRS		PGTW
* 19	211200	16.0S 162.9E	PCN 1			PGTW
20	211517	16.7S 162.4E	PCN 2			KGWC
21	211600	16.8S 162.5E	PCN 1			PGTW
22	211800	16.6S 162.4E	PCN 2			PGTW
23	212052	16.9S 162.4E	PCN 1	T6.0/6.0 /D1.5/24HRS		KGWC
24	220000	17.2S 162.2E	PCN 1	T5.0/5.0 /D0.5/18HRS		PGTW
25	220300	17.5S 162.2E	PCN 1			PGTW
26	220600	17.8S 162.2E	PCN 1			PGTW
27	220931	18.2S 161.8E	PCN 2		ULAC 17.9S 162.2E	KGWC
28	221200	18.3S 162.2E	PCN 1			PGTW
29	221600	18.7S 162.1E	PCN 1			PGTW
30	221800	18.9S 162.2E	PCN 3			PGTW
31	222029	18.9S 162.2E	PCN 3	T4.5/5.5 /W1.5/24HRS	ULAC 18.6S 162.4E	KGWC
32	230000	19.1S 162.6E	PCN 1	T6.0/6.0 /D1.0/24HRS		PGTW
33	230300	19.5S 162.8E	PCN 1			PGTW
34	230600	19.7S 163.1E	PCN 1			PGTW
35	230900	19.9S 163.3E	PCN 1			PGTW
36	230908	19.5S 163.3E	PCN 2		EYE 10NM DIAMETER	KGWC
37	231200	20.3S 163.8E	PCN 1			PGTW
38	231600	20.8S 164.1E	PCN 3			PGTW
* 39	232005	20.3S 163.6E	PCN 6	T3.0/4.0 /W1.5/24HRS	ULAC 20.7S 164.7E	KGWC
40	240000	21.0S 165.3E	PCN 5	T5.0/6.0 /W1.0/24HRS		PGTW
* 41	240600	21.6S 166.6E	PCN 5			PGTW
* 42	240900	21.5S 167.3E	PCN 5			PGTW
* 43	241600	22.1S 167.0E	PCN 5			PGTW
44	250300	22.2S 165.2E	PCN 3	T3.5/4.5+/W1.5/27HRS	EXP LLCC	PGTW
45	250600	22.0S 165.4E	PCN 3			PGTW
46	250900	21.9S 165.6E	PCN 3			PGTW
47	251600	22.2S 166.2E	PCN 5			PGTW
48	260300	22.1S 165.2E	PCN 3	T2.0/3.0 /W1.5/24HRS	EXP LLCC	PGTW
49	260600	22.4S 165.4E	PCN 5			PGTW
50	261600	22.5S 164.4E	PCN 5		ULAC 22.0S 170.5E	PGTW
51	270300	23.1S 163.9E	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC33-81

FIX POSITIONS FOR CYCLONE NO. 33

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	170353	9.4S 60.4E	PCN 5	T1.5/1.5	INIT OBS ULAC 10.2S 61.3E	KGWC
2	180329	11.3S 56.5E	PCN 5	T2.0/2.0 /D0.5/24HRS	ULAC 11.5S 58.6E	KGWC
3	181608	10.9S 53.9E	PCN 6		ULAC 11.5S 55.1E	KGWC
4	190306	10.3S 53.4E	PCN 6	T3.0/3.0 /D1.0/24HRS	ULAC 11.2S 53.3E	KGWC
5	190324	10.0S 53.2E	PCN 6		ULAC 11.0S 53.3E	KGWC
6	191126	11.2S 51.1E	PCN 5		ULAC 12.0S 52.0E	KGWC
7	191545	11.2S 50.0E	PCN 6		ULAC 11.5S 51.0E	KGWC
8	192229	11.3S 48.7E	PCN 6		ULAC 12.0S 49.3E	KGWC
9	200424	11.6S 47.7E	PCN 5	T3.5/3.5+/D0.5/25HRS	ULAC 12.0S 49.0E	KGWC
10	201114	13.4S 47.2E	PCN 1			KGWC
11	201703	14.3S 46.6E	PCN 2		PARTIAL EYE WALL	KGWC

12	202359	13.4S	46.0E	PCN 5			KGWC
13	210400	13.9S	44.9E	PCN 5	T4.0/4.0 /D0.5/24HRS		KGWC
14	211102	14.3S	44.4E	PCN 5			KGWC
15	211639	14.0S	44.1E	PCN 6			KGWC
16	212347	15.3S	43.3E	PCN 6			KGWC
17	220518	15.6S	43.3E	PCN 5	T4.0/4.0 /S0.0/25HRS		KGWC
18	221232	16.2S	42.0E	PCN 1		EYE DIAMETER 18NM	KGWC
19	221616	16.3S	41.5E	PCN 2		EYE DIAMETER 12NM	KGWC
20	221757	16.4S	41.4E	PCN 2		EYE DIAMETER 9NM	KGWC
21	222335	17.1S	40.6E	PCN 2			KGWC
22	230333	17.3S	40.2E	PCN 1			KGWC
23	230455	17.5S	40.2E	PCN 1	T4.5/4.5 /D0.5/24HRS		KGWC
24	231221	17.5S	38.9E	PCN 1		EYE DIAMETER 16NM	KGWC
25	231743	17.5S	38.7E	PCN 2		EYE DIAMETER 18NM	KGWC
26	232304	18.3S	38.1E	PCN 6			KGWC
27	240431	18.2S	37.2E	PCN 1	T4.0/4.5 /W0.5/24HRS		KGWC
28	241209	17.9S	36.5E	PCN 5			KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC81-82
FIX POSITIONS FOR CYCLONE NO. 1

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	290100	9.4S	78.6E	PCN 6	T1.5/1.5	INIT OBS ULAC 9.3S 78.1E	KGWC
2	290200	9.8S	79.0E	PCN 5	T1.5/1.5	INIT OBS ULAC 9.3S 78.3E	KGWC
3	290900	9.5S	78.9E	PCN 6			KGWC
4	291500	9.9S	78.4E	PCN 6			KGWC
5	292000	9.8S	78.3E	PCN 6		ULAC 10.6S 78.6E	KGWC
6	300200	10.0S	77.6E	PCN 6	T1.5/1.5 /S0.0/24HRS	ULAC FIX LLCC 10.8S 78.7E	KGWC
7	301400	11.6S	77.9E	PCN 6		ULAC FIX LLCC 10.7S 77.9E	KGWC
8	310100	10.2S	78.1E	PCN 6	T2.5/2.5 /D1.0/24HRS	ULAC 11.2S 77.4E	KGWC
9	310900	11.5S	77.9E	PCN 5		ULAC 12.6S 77.3E	KGWC
10	311400	12.4S	77.7E	PCN 6			KGWC
11	312100	12.8S	77.7E	PCN 6		ULAC FIX	KGWC
12	010305	13.2S	77.7E	PCN 6	T3.5/3.5 /D1.0/25HRS	ULAC 13.3S 77.4E	KGWC
13	010310	15.0S	78.2E	PCN 6	T2.5/2.5	INIT OBS	FJDG
14	010052	14.3S	77.5E	PCN 5		ULAC 14.4S 77.0E	KGWC
15	011403	15.7S	76.5E	PCN 6			KGWC
16	012137	16.0S	75.6E	PCN 6			KGWC
17	020125	14.3S	77.1E	PCN 4	T4.5/4.5 /D1.0/22HRS	BREAKS CONTINUITY	KGWC
18	020242	14.5S	77.3E	PCN 5	T4.5/4.5 /D1.0/24HRS		KGWC
19	020242	15.5S	77.3E	PCN 6	T3.0/3.0 /D0.5/24HRS		FJDG
20	021022	15.5S	77.2E	PCN 6			KGWC
21	021023	16.4S	77.0E	PCN 6	T3.0/4.0 /W1.0/24HRS		FJDG
22	021521	17.7S	78.0E	PCN 6		ULAC FIX	KGWC
23	021521	17.2S	78.7E	PCN 6			FJDG
* 24	022125	16.6S	80.5E	PCN 6		ULAC FIX LLCC 15.6S 77.5E	KGWC
* 25	022125	16.2S	80.6E	PCN 6			FJDG
26	030102	14.4S	76.7E	PCN 4		EXP LLCC	KGWC
27	030218	14.0S	77.5E	PCN 4	T2.0/3.0 /W2.5/24HRS	EXP LLCC	KGWC
28	031011	14.5S	77.5E	PCN 4		EXP LLCC	KGWC
29	031011	14.5S	77.4E	PCN 6	T2.0/3.0 /W0.5/24HRS		FJDG
30	031457	14.2S	77.5E	PCN 4		EXP LLCC	KGWC
31	032114	14.2S	77.4E	PCN 4		EXP LLCC	KGWC
32	040155	14.0S	76.5E	PCN 4	T2.0/2.0 /S0.0/24HRS	EXP LLCC	KGWC
33	041434	14.1S	75.9E	PCN 6			KGWC
34	042210	16.7S	75.3E	PCN 5			FJDG
35	050157	15.4S	74.1E	PCN 6		EXP LLCC	KGWC
36	050313	15.3S	74.3E	PCN 6	T2.0/2.0 /S0.0/25HRS	EXP LLCC	KGWC
37	060249	15.7S	69.5E	PCN 6	T3.0/3.0 /D1.0/24HRS		FJDG
38	061528	16.2S	69.3E	PCN 6		ULAC FIX	KGWC
39	070226	16.5S	65.9E	PCN 4	T0.5/1.5 /W2.5/24HRS	EXP LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC02-82

FIX POSITIONS FOR CYCLONE NO. 2

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	030037	13.1S 107.3E	PCN 5	T1.0/1.0	INIT OBS	KGWC
* 2	031316	13.2S 106.0E	PCN 6		ULAC 14.5S 108.7E	KGWC
3	060108	12.5S 102.0E	PCN 6	T1.5/1.5	INIT ODS ULAC FIX	KGWC
4	061347	12.9S 101.8E	PCN 6		ULAC FIX	KGWC
5	070045	13.1S 100.4E	PCN 3	T2.5/2.5 /D1.0/24HRS	ULAC 13.2S 99.2E	KGWC
6	070300	13.5S 95.5E	PCN 5	T1.5/1.5	INIT ODS	PGTW
7	070741	13.3S 98.6E	PCN 5		ULAC 13.7S 98.1E	KGWC
8	071324	13.7S 97.6E	PCN 6		ULAC FIX	KGWC
9	071600	13.6S 96.7E	PCN 5			PGTW
10	071800	13.7S 96.3E	PCN 5			PGTW
11	072026	13.9S 96.4E	PCN 6		ULAC 14.3S 95.8E	KGWC
12	080021	13.5S 95.1E	PCN 5	T3.0/3.0-/D0.5/24HRS		KGWC
13	080300	14.1S 94.8E	PCN 5	T2.5/2.5 /D1.0/24HRS		PGTW
14	080900	13.8S 94.0E	PCN 5			PGTW
15	080911	13.7S 93.9E	PCN 5			KGWC
16	081300	13.4S 93.4E	PCN 6		ULAC FIX	KGWC
17	081600	13.9S 92.4E	PCN 5		ULCC FIX	PGTW
18	081800	14.1S 92.1E	PCN 5		ULCC FIX	PGTW
19	082014	12.9S 91.5E	PCN 6			KGWC
20	090139	13.4S 90.6E	PCN 5	T4.0/4.0+/D1.0/25HRS		KGWC
21	090300	13.7S 90.7E	PCN 5	T3.5/3.5 /D1.0/24HRS		PGTW
22	090600	13.7S 90.1E	PCN 5			PGTW
23	090859	13.6S 88.8E	PCN 1		EYE DIA 6NM	KGWC
24	090859	12.7S 89.8E	PCN 5			FJDG
25	090900	13.6S 89.4E	PCN 5			PGTW
26	091418	13.3S 88.0E	PCN 6			KGWC
* 27	091418	12.9S 88.9E	PCN 5			FJDG
28	091600	13.2S 87.4E	PCN 5		ULCC FIX	PGTW
29	091800	13.1S 86.8E	PCN 1		EYE HAS DVLPD	PGTW
30	092002	12.9S 86.7E	PCN 2			KGWC
31	100000	12.7S 85.7E	PCN 1			PGTW
32	100115	12.5S 85.6E	PCN 1	T6.0/6.0 /D2.0/24HRS	EYE DIA 12NM	KGWC
33	100300	12.6S 85.2E	PCN 1	T4.5/4.5 /D1.0/24HRS		PGTW
34	100600	12.6S 84.7E	PCN 1			PGTW
35	100848	12.6S 84.7E	PCN 1			KGWC
36	100900	12.6S 84.1E	PCN 1			PGTW
37	101200	12.5S 83.8E	PCN 1			PGTW
38	101354	12.6S 83.7E	PCN 2			KGWC
39	101800	12.5S 82.7E	PCN 1		WELL ORGNZD WITH EYE	PGTW
40	102133	12.3S 82.2E	PCN 2		EYE DIA 12NM	KGWC
41	110000	12.3S 81.9E	PCN 1			PGTW
42	110233	12.3S 82.0E	PCN 1	T6.0/6.0 /S0.0/25HRS		KGWC
* 43	110234	12.2S 83.3E	PCN 5	T5.5/5.5 /D0.5/20HRS		FJDG
44	110300	12.3S 81.4E	PCN 1	T5.0/5.0 /D0.5/24HRS		PGTW
45	110836	12.5S 81.4E	PCN 2			KGWC
46	111512	12.3S 80.3E	PCN 2			KGWC
47	112121	13.3S 78.9E	PCN 2		EYE DIA 18NM	KGWC
48	112121	12.5S 80.1E	PCN 6			FJDG
49	120058	13.2S 79.2E	PCN 2		EYE DIA 20NM	KGWC
50	120210	13.1S 78.1E	PCN 1	T6.5/6.5 /D0.5/24HRS	EYE DIA 18NM	KGWC
51	120210	13.1S 78.4E	PCN 2	T6.0/6.0 /D0.5/24HRS		FJDG
52	121006	13.8S 76.4E	PCN 2			KGWC
53	121006	14.4S 76.1E	PCN 5			FJDG
54	121449	14.2S 75.8E	PCN 2		EYE DIA 12NM	KGWC
55	121440	14.1S 75.6E	PCN 6			FJDG
56	122100	15.0S 74.9E	PCN 6			FJDG
57	122109	15.1S 74.5E	PCN 2		EYE DIA 12NM	KGWC
58	130056	15.3S 74.2E	PCN 6			FJDG
59	130146	15.2S 73.3E	PCN 2	T5.5/6.5 /W1.0/24HRS		KGWC
60	130954	15.8S 72.1E	PCN 2			KGWC
* 61	130955	16.0S 71.0E	PCN 6	T4.5/5.5 /W1.5/24HRS		FJDG
62	131425	16.3S 71.2E	PCN 2		EYE DIA 18NM	KGWC
63	132057	17.0S 70.4E	PCN 2		EYE DIA 24NM	KGWC
64	132227	17.5S 70.2E	PCN 6			FJDG
65	140153	16.8S 69.3E	PCN 2		EYE DIA 20NM	KGWC
66	140304	17.2S 69.4E	PCN 2	T6.5/6.5 /D1.0/25HRS	EYE DIA 30NM	KGWC
67	140305	16.7S 69.9E	PCN 6	T5.0/5.0 /W0.5/24HRS	EYE DIA 15NM	FJDG
68	140942	17.7S 68.4E	PCN 2		EYE DIA 33NM	KGWC
69	140943	17.2S 68.2E	PCN 6		EYE FILLING	FJDG
70	141545	18.3S 67.7E	PCN 2		EYE DIA 30NM	KGWC
71	142227	18.7S 66.5E	PCN 2		EYE DIA 27NM	KGWC
72	142227	17.5S 70.2E	PCN 6			FJDG
73	150130	18.4S 66.0E	PCN 2			KGWC
74	150240	18.7S 66.3E	PCN 2	T6.5/6.5 /S0.0/24HRS		KGWC
75	150240	18.2S 66.0E	PCN 6		EYE DIA 30NM	FJDG
76	151112	19.0S 65.5E	PCN 1		EYE DIA 24NM	KGWC
77	151112	19.1S 66.1E	PCN 6			FJDG
78	151519	19.0S 65.3E	PCN 2		EYE DIA 24NM	KGWC

4	19.2S	65.8E	PCN 6			FJDG
5	19.3S	65.0E	PCN 2			KGWC
7	19.4S	64.8E	PCN 6	T4.0/5.0 /W2.5/24HRS		KGWC
1	19.5S	63.9E	PCN 2			KGWC
5	19.7S	62.8E	PCN 6			KGWC
3	19.8S	62.4E	PCN 6			KGWC
5	19.0S	61.6E	PCN 6			KGWC
5	18.8S	61.7E	PCN 5	T3.5/4.0 /W0.5/25HPS		KGWC
9	20.2S	60.8E	PCN 3			KGWC
4	19.9S	60.6E	PCN 4			KGWC
2	21.0S	60.0E	PCN 4			KGWC
2	20.3S	59.2E	PCN 6			KGWC
1	21.8S	58.5E	PCN 5			FJDG
1	20.5S	59.2E	PCN 6	T3.0/3.5 /W0.5/24HRS		KGWC
7	21.8S	59.2E	PCN 4			KGWC
7	21.2S	59.5E	PCN 5			FJDG
0	22.2S	59.4E	PCN 2			KGWC
0	22.9S	59.8E	PCN 4			KGWC
8	23.3S	59.6E	PCN 3	T2.0/2.5 /W1.0/24HRS		KGWC
5	23.9S	59.2E	PCN 5			KGWC
7	24.6S	58.2E	PCN 6			KGWC
8	25.2S	58.6E	PCN 6			KGWC
6	25.6S	58.7E	PCN 5	T2.0/2.0 /S0.0/25HRS	ULAC 25.7S 58.4E	KGWC
5	26.6S	57.9E	PCN 6			KGWC
8	27.8S	57.8E	PCN 6			KGWC
4	28.6S	58.4E	PCN 3	T1.0/1.5 /W1.0/23HRS	EXP LLCC	KGWC

TICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC03-82
FIX POSITIONS FOR CYCLONE NO. 3

SATELLITE FIXES

	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
36	7.9S	93.6E	PCN 6	T1.5/1.5	INIT OBS	KGWC
00	7.7S	93.7E	PCN 5			PGTW
39	7.7S	94.2E	PCN 6		ULAC FIX	KGWC
00	7.7S	94.1E	PCN 5	T2.0/2.0	INIT OBS	PGTW
24	8.6S	94.0E	PCN 5	T2.5/2.5 /D1.0/24HRS		KGWC
00	7.8S	94.5E	PCN 5			PGTW
27	8.5S	94.8E	PCN 6		ULAC FIX	KGWC
00	7.9S	94.5E	PCN 5		BASED ON CONTINUITY	PGTW
46	8.2S	95.2E	PCN 6	T3.5/3.5+/D1.0/17HRS		KGWC
00	8.4S	94.2E	PCN 5	T3.0/3.0 /D1.0/24HRS		PGTW
12	9.1S	94.4E	PCN 5			KGWC
00	9.4S	94.0E	PCN 5		ULCC FIX	PGTW
44	9.9S	94.1E	PCN 6		ULAC 9.5S 94.6E	KGWC
00	9.6S	93.4E	PCN 5		ULCC FIX	PGTW
00	9.7S	93.1E	PCN 5		ULCC FIX	PGTW
57	10.3S	94.1E	PCN 6		ULAC 10.0S 94.7E	KGWC
00	10.0S	94.2E	PCN 5		ULCC FIX BREAKS CONTINUITY	PGTW
23	9.9S	95.5E	PCN 3	T2.5/3.5 /W1.0/24HRS		KGWC
00	10.0S	95.4E	PCN 3	T1.5/2.0 /W1.5/24HRS		PGTW
00	10.2S	96.1E	PCN 3			PGTW
00	10.4S	96.2E	PCN 3		ULAC 8.7S 92.7E	KGWC
00	10.4S	96.4E	PCN 5			PGTW
02	10.5S	94.7E	PCN 6		ULAC FIX	KGWC
59	11.2S	95.9E	PCN 4	T0.5/1.5 /W2.0/24HRS	EXP LLCC	KGWC

OTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC04-82
FIX POSITIONS FOR CYCLONE NO. 4

SATELLITE FIXES

E	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
000	12.5S	113.7E	PCN 5			PGTW
003	13.2S	114.0E	PCN 5	T1.5/1.5	INIT OBS ULAC 12.6S 113.5E	KGWC
300	12.8S	114.3E	PCN 3	T1.5/1.5	INIT OBS	PGTW
200	13.3S	113.5E	PCN 5		BASED ON CONTINUITY	PGTW
344	13.6S	113.2E	PCN 6		ULAC FIX	KGWC

6	131600	13.4S 112.9E	PCN 5				PGTW
* 7	131800	13.5S 112.3E	PCN 5				PGTW
* 8	132100	13.7S 111.9E	PCN 5				PGTW
9	132342	12.9S 113.4E	PCN 5	T2.5/2.5 /D1.0/24HRS		ULAC 12.2S 112.5E	KGWC
* 10	140000	13.5S 111.9E	PCN 5				PGTW
11	140300	13.2S 113.3E	PCN 3	T2.5/2.5 /D1.0/24HRS			PGTW
12	140800	13.7S 112.9E	PCN 5			ULAC 13.1S 112.0E	KGWC
13	140900	13.3S 113.0E	PCN 5				PGTW
14	141221	14.0S 112.4E	PCN 6			ULAC 13.6S 111.6E	KGWC
15	141600	13.6S 112.3E	PCN 5				PGTW
16	141903	14.3S 111.7E	PCN 6			ULAC 14.0S 111.3E	KGWC
* 17	142318	14.6S 111.2E	PCN 5	T3.5/3.5 /D1.0/24HRS		BASED ON EXTRAP	KGWC
18	150000	13.9S 111.8E	PCN 5				PGTW
19	150300	13.0S 112.6E	PCN 5	T3.0/3.0 /D0.5/24HRS			PGTW
20	150600	14.6S 111.9E	PCN 5				PGTW
21	150748	14.1S 111.5E	PCN 5			BASED ON EXTRAP	KGWC
* 22	151157	14.8S 109.1E	PCN 6			ULAC FIX	KGWC
23	151000	14.8S 111.7E	PCN 5				PGTW
24	151851	14.5S 112.1E	PCN 6			ULAC FIX LLCC 14.9S 112.6E	KGWC
* 25	160036	14.2S 112.1E	PCN 6	T3.5/3.5 /S0.0/25HRS		BASED ON EXTRAP	KGWC
26	160300	15.3S 113.3E	PCN 5	T3.0/3.0 /S0.0/24HRS			PGTW
27	160600	15.7S 113.3E	PCN 5				PGTW
28	160737	15.2S 112.8E	PCN 5			BASED ON EXTRAP	KGWC
* 29	161134	14.7S 112.8E	PCN 6			BASED ON CONTINUITY	KGWC
30	161200	15.9S 113.4E	PCN 5				PGTW
31	161600	16.0S 113.8E	PCN 5				PGTW
* 32	161839	15.8S 109.0E	PCN 6			ULAC FIX	KGWC
33	170012	16.1S 113.6E	PCN 5	T2.5/3.5 /W1.0/24HRS		ULAC 14.8S 111.0E	KGWC
34	170300	16.6S 112.8E	PCN 5	T2.0/3.0 /W1.0/24HRS		EXP LLCC	PGTW
35	170600	16.3S 113.5E	PCN 5			EXP LLCC	PGTW
36	170725	16.6S 113.6E	PCN 5			BASED ON EXTRAP	KGWC
37	171251	15.8S 114.4E	PCN 6			EXP LLCC	KGWC
38	171600	16.5S 114.0E	PCN 5				PGTW
* 39	171828	15.4S 113.5E	PCN 6			ULAC FIX	KGWC
* 40	172100	16.9S 114.0E	PCN 5				PGTW
* 41	172349	15.4S 114.3E	PCN 5	T3.0/3.0 /D0.5/24HRS		ULAC 15.7S 113.5E	KGWC
42	180300	16.0S 115.4E	PCN 5	T1.5/2.5 /W0.5/24HRS		EXP LLCC	PGTW
43	180713	17.0S 116.7E	PCN 3			EXP LLCC	KGWC
44	181317	17.2S 116.2E	PCN 6				KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC05-82
FIX POSITIONS FOR CYCLONE NO. 5

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	141600	11.7S 133.5E	PCN 5			PGTW
2	151800	14.1S 130.5E	PCN 5			PGTW
3	160300	15.1S 128.6E	PCN 5	T1.0/1.0-	INIT OBS	PGTW
4	160600	15.2S 128.2E	PCN 5			PGTW
5	161200	15.2S 127.0E	PCN 5			PGTW
6	161600	15.7S 125.2E	PCN 5			PGTW
7	170300	17.2S 124.4E	PCN 5	T1.0/1.0+/S0.0/24HRS		PGTW
8	170600	17.7S 124.1E	PCN 5			PGTW
9	171600	19.5S 122.0E	PCN 5			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC06-82
FIX POSITIONS FOR CYCLONE NO. 6

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	190300	21.2S 115.3E	PCN 5			PGTW
2	190600	21.1S 116.0E	PCN 5	T1.0/1.0	INIT OBS	PGTW
3	191700	22.0S 116.0E	PCN 5			PGTW
4	191900	21.2S 114.4E	PCN 5		BREAKS CONTINUITY	PGTW
5	192100	22.3S 114.1E	PCN 5		ULCC FIX	PGTW
6	200300	23.3S 113.6E	PCN 5	T2.0 2.0-/D1.0/21HRS		PGTW
7	201600	25.0S 112.0E	PCN 5		ULCC FIX	PGTW
8	210300	29.5S 114.0E	PCN 5	T1.0/2.0 /W1.0/24HRS		PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC07-82

FIX POSITIONS FOR CYCLONE NO. 7

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	251600	17.6S 173.3E	PCN 5			PGTW
2	260300	17.3S 173.2E	PCN 5	T2.0/2.0	INIT OBS	PGTW
3	260600	17.9S 173.2E	PCN 5			PGTW
4	260900	17.9S 172.9E	PCN 5			PGTW
5	261200	17.5S 173.5E	PCN 5			PGTW
6	261600	17.7S 173.7E	PCN 5			PGTW
7	261800	17.9S 173.8E	PCN 5			PGTW
8	270300	18.4S 173.7E	PCN 5		ULCC FIX	PGTW
9	270600	18.5S 173.5E	PCN 5	T3.0/3.0 /D1.0/27HRS		PGTW
10	270900	18.5S 174.0E	PCN 5			PGTW
11	271600	18.4S 174.5E	PCN 5			PGTW
12	271800	18.6S 174.8E	PCN 5			PGTW
13	271954	18.6S 174.8E	PCN 1	T4.0/4.0 /D1.5/24HRS		KGWC
14	280000	18.7S 174.9E	PCN 1		EYE HAS DVLPD	PGTW
15	280332	19.0S 175.2E	PCN 2			KGWC
16	280600	18.7S 175.2E	PCN 1	T4.0/4.0 /D1.0/24HRS		PGTW
17	280900	18.6S 175.3E	PCN 1			PGTW
18	281200	18.6S 175.5E	PCN 1			PGTW
19	281600	18.6S 175.5E	PCN 1			PGTW
20	281800	18.7S 175.2E	PCN 3			PGTW
21	281931	18.6S 175.5E	PCN 3	T3.5/4.0 /W0.5/24HRS		KGWC
22	282100	18.8S 175.6E	PCN 3			PGTW
23	290000	18.7S 175.6E	PCN 3			PGTW
24	290600	18.3S 175.5E	PCN 3	T3.5/4.0 /W0.5/24HRS		PGTW
25	291200	18.6S 175.6E	PCN 5			PGTW
26	291600	19.1S 175.7E	PCN 5			PGTW
27	300000	19.0S 176.3E	PCN 5			PGTW
28	300300	19.4S 175.8E	PCN 3	T3.0/3.5 /W0.5/21HRS		PGTW
29	300600	19.7S 175.8E	PCN 5			PGTW
30	301600	20.3S 176.4E	PCN 5			PGTW
31	301900	20.9S 176.4E	PCN 5			PGTW
32	310000	22.8S 177.3E	PCN 5		BASED ON EXTRAP	PGTW
33	310300	23.4S 177.5E	PCN 5	T3.0/3.0 /S0.0/24HRS		PGTW
34	310600	23.8S 177.7E	PCN 5			PGTW
35	311200	24.1S 178.3E	PCN 5			PGTW
36	311600	24.9S 178.4E	PCN 5			PGTW
37	010000	27.1S 178.5E	PCN 5			PGTW
38	010300	27.9S 178.5E	PCN 5	T2.0/2.5 /W1.0/24HRS		PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC08-82

FIX POSITIONS FOR CYCLONE NO. 8

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
1	251600	17.4S 154.9E	PCN 5			PGTW
2	260300	19.6S 155.4E	PCN 3	T1.5/1.5	INIT OBS	PGTW
3	260600	19.9S 155.4E	PCN 3			PGTW
4	261600	19.6S 157.6E	PCN 5		ULCC FIX	PGTW
5	261800	19.9S 158.0E	PCN 5			PGTW
6	270300	20.3S 158.9E	PCN 5		ULCC FIX LLCC 20S 157E	PGTW
7	270600	20.7S 159.0E	PCN 5	T2.5/2.5 /D1.0/27HRS		PGTW
8	270900	20.9S 159.5E	PCN 5			PGTW
9	271600	21.0S 159.9E	PCN 5			PGTW
10	271800	20.9S 160.1E	PCN 5			PGTW
11	280000	21.5S 159.9E	PCN 5			PGTW
12	280600	22.1S 159.5E	PCN 5	T2.5/2.5+/S0.0/24HRS		PGTW
13	280900	22.0S 159.2E	PCN 5			PGTW
14	281600	22.0S 159.2E	PCN 5			PGTW
15	281000	22.0S 159.0E	PCN 5			PGTW
16	282100	21.9S 158.6E	PCN 5			PGTW
17	282112	21.8S 159.7E	PCN 5	T2.5/2.5 /S0.0/24HRS		PGTW
18	290000	22.2S 158.6E	PCN 5			PGTW
19	290600	21.5S 157.4E	PCN 5	T2.5/2.5 /S0.0/24HRS		PGTW
20	291200	20.3S 157.1E	PCN 5			PGTW
21	291600	20.1S 156.3E	PCN 5			PGTW
22	291800	19.8S 156.0E	PCN 5			PGTW

23	300000	19.1S	157.2E	PCN 5				PGTW
24	300300	19.5S	157.1E	PCN 5	T2.0/2.5 /W0.5/21HRS			PGTW
25	300600	19.8S	156.6E	PCN 5				PGTW
26	301600	18.5S	156.3E	PCN 5				PGTW
27	301800	18.6S	156.0E	PCN 5				PGTW
28	310000	18.1S	156.5E	PCN 5		EXP LLCC		PGTW
29	310300	17.8S	156.6E	PCN 3	T2.0/2.0 /S0.0/24HRS	EXP LLCC		PGTW
30	310600	17.6S	157.0E	PCN 5		EXP LLCC		PGTW
31	311200	17.3S	157.7E	PCN 5				PGTW
32	311600	17.1S	158.2E	PCN 5				PGTW
33	010000	17.4S	158.6E	PCN 5				PGTW
34	010300	17.7S	159.0E	PCN 5	T3.0/3.0 /D1.0/24HRS			PGTW
35	010600	17.5S	159.6E	PCN 3				PGTW
36	010900	17.2S	160.1E	PCN 5		ULCC FIX		PGTW
37	011600	17.7S	161.3E	PCN 5				PGTW
38	020000	18.4S	161.5E	PCN 5				PGTW
39	020300	18.8S	161.8E	PCN 6	T2.5/3.0 /W0.5/24HRS			PGTW
40	020600	19.2S	161.9E	PCN 3				PGTW
41	020900	19.5S	162.0E	PCN 5				PGTW
42	021200	19.7S	162.0E	PCN 3				PGTW
43	021600	20.3S	162.2E	PCN 3				PGTW
44	021800	20.6S	162.1E	PCN 3				PGTW
45	030000	21.3S	162.1E	PCN 1		BANDING TYPE EYE		PGTW
46	030300	21.7S	162.2E	PCN 1	T3.5/3.5 /D1.0/24HRS	RAGGED EYE		PGTW
47	030600	22.3S	162.3E	PCN 1				PGTW
48	030900	22.7S	162.2E	PCN 1				PGTW
49	031200	22.9S	162.4E	PCN 1		EYE DIA 10NM		PGTW
50	031600	23.5S	162.6E	PCN 3				PGTW
51	031800	23.8S	162.6E	PCN 3				PGTW
52	040000	24.2S	163.1E	PCN 5				PGTW
53	040300	25.0S	163.2E	PCN 5	T2.5/3.5 /W1.0/24HRS			PGTW
54	040600	25.5S	163.7E	PCN 5				PGTW
55	041200	26.2S	164.9E	PCN 5				PGTW
* 56	041800	27.2S	165.4E	PCN 5				PGTW
* 57	050300	26.8S	166.7E	PCN 5				PGTW
58	050600	26.0S	167.2E	PCN 5	T1.5/2.5 /W1.0/27HRS			PGTW
59	051200	25.7S	168.3E	PCN 5				PGTW
60	051600	25.2S	169.4E	PCN 5				PGTW
61	060000	23.6S	171.7E	PCN 3				PGTW
62	060300	23.5S	172.9E	PCN 3	T0.5/1.5 /W1.0/21HRS			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC09-82
FIX POSITIONS FOR CYCLONE NO. 9

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION	ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	011000	22.6S 115.8E	PCN 5			PGTW
2	280600	17.1S 122.8E	PCN 5	T1.5/1.5	INIT OBS	PGTW
3	280900	17.2S 122.6E	PCN 5			PGTW
4	281600	17.4S 121.7E	PCN 5			PGTW
5	282253	17.7S 122.9E	PCN 5	T1.5/1.5	INIT OBS ULAC 17.5S 122.7E	KGWC
6	290000	17.8S 124.2E	PCN 5	T1.5/1.5 /S0.0/24HRS		PGTW
7	300300	19.1S 124.1E	PCN 3	T1.0/1.0 /W0.5/21HRS	EXP LLCC	PGTW
8	310300	19.5S 121.0E	PCN 5	T1.5/1.5 /D0.5/24HRS		PGTW
9	310600	19.2S 120.7E	PCN 5			PGTW
10	311600	19.6S 119.0E	PCN 5			PGTW
11	010000	20.4S 118.5E	PCN 5			PGTW
12	010300	20.7S 118.4E	PCN 5	T1.0/1.5 /W0.5/24HRS		PGTW
13	010600	20.9S 118.2E	PCN 5			PGTW
14	020300	23.3S 114.5E	PCN 6	T1.0/1.0 /S0.0/24HRS		PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC10-82

FIX POSITIONS FOR CYCLONE NO. 10

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	300333	14.9S	64.8E	PCN 6	T1.0/1.0		KGWC
2	301612	15.6S	62.9E	PCN 6			KGWC
3	310310	15.6S	60.4E	PCN 5	T2.0/2.0 /D1.0/24HRS	BASED ON EXTRAP	KGWC
4	311549	16.5S	57.8E	PCN 6		ULCC FIX	KGWC
5	010246	16.8S	55.8E	PCN 5	T2.5/2.5 /D0.5/24HRS	BASED ON EXTRAP	KGWC
6	011115	17.3S	54.9E	PCN 5		BASED ON EXTRAP	KGWC
7	011707	17.8S	54.6E	PCN 6			KGWC
8	012218	18.3S	53.9E	PCN 6		BASED ON EXTRAP	KGWC
9	020404	19.1S	53.1E	PCN 5	T3.0/3.0 /D0.5/25HRS	ULAC 10.7S 53.0E	KGWC
10	021103	19.3S	51.5E	PCN 6		BASED ON EXTRAP	KGWC
11	021643	19.2S	50.9E	PCN 6		BASED ON EXTRAP	KGWC
12	022348	18.7S	50.1E	PCN 6		BASED ON EXTRAP	KGWC
13	030341	18.3S	49.5E	PCN 5	T3.5/3.5 /D0.5/24HRS	BASED ON EXTRAP	KGWC
14	031210	17.1S	46.2E	PCN 6			KGWC
15	031620	17.5S	44.7E	PCN 6		BASED ON EXTRAP	KGWC
16	040450	17.5S	43.5E	PCN 5	T3.0/3.5 /W0.5/25HRS		KGWC
17	041221	18.1S	42.6E	PCN 5		BASED ON EXTRAP	KGWC
18	041737	17.9S	42.2E	PCN 6		ULAC 17.2S 41.6E	KGWC
19	042324	17.9S	40.9E	PCN 5		ULAC 17.2S 40.5E	KGWC
20	050435	17.7S	39.3E	PCN 5	T2.5/3.0 /W0.5/24HRS	ULAC 16.9S 39.5E	KGWC
21	051714	17.8S	37.1E	PCN 6			KGWC
22	052312	16.6S	36.7E	PCN 6		ULAC FIX	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC11-82

FIX POSITIONS FOR CYCLONE NO. 11

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	140300	11.5S	107.9E	PCN 3	T1.5/1.5	INIT OBS	PGTW
2	140600	11.5S	107.9E	PCN 5			PGTW
* 3	141800	12.3S	107.5E	PCN 5			PGTW
4	150300	12.4S	110.3E	PCN 3	T1.5/1.5 /S0.0/24HRS		PGTW
5	150645	12.5S	110.6E	PCN 5		ULAC 12.5S 109.6E	KGWC
6	151319	13.0S	110.7E	PCN 6			KGWC
7	151931	13.1S	110.8E	PCN 6		BASED ON EXTRAP	KGWC
8	160016	13.9S	111.7E	PCN 5	T2.0/2.0 /D0.5/24HRS	ULAC 13.2S 111.0E	KGWC
9	160300	13.6S	111.4E	PCN 3	T1.5/1.5 /S0.0/24HRS	EXP LLCC	PGTW
10	160634	13.7S	111.7E	PCN 4		EXP LLCC	KGWC
* 11	161255	13.8S	112.3E	PCN 6			KGWC
* 12	161600	13.0S	113.5E	PCN 5			PGTW
* 13	161919	13.7S	111.9E	PCN 6		ULAC 14.0S 110.9E	KGWC
14	162253	13.4S	111.6E	PCN 5	T3.0/3.0 /D1.0/24HRS	ULAC 12.8S 109.9E	KGWC
15	170000	14.4S	110.3E	PCN 5	T2.5/2.5 /D1.0/27HRS	BASED ON EXTRAP	PGTW
16	170304	14.1S	110.5E	PCN 5		BASED ON EXTRAP	KGWC
17	171232	14.5S	109.8E	PCN 6		ULAC 14.3S 108.5E	KGWC
18	171600	14.3S	109.2E	PCN 5			PGTW
19	171907	13.9S	109.3E	PCN 6		ULAC 14.7S 109.1E	KGWC
* 20	172329	13.4S	109.9E	PCN 3	T2.0/2.5 /W1.0/24HRS	EXP LLCC	KGWC
21	180000	13.0S	110.0E	PCN 3		EXP LLCC	PGTW
22	180700	13.9S	110.3E	PCN 3	T1.5/2.5 /W1.0/21HRS	EXP LLCC	PGTW
23	180702	13.9S	110.0E	PCN 3		EXP LLCC	KGWC
24	181200	14.2S	110.4E	PCN 6		EXP LLCC	KGWC
* 25	181600	14.5S	110.7E	PCN 5			PGTW
* 26	181955	14.5S	110.0E	PCN 4		EXP LLCC	KGWC
27	190047	14.0S	110.5E	PCN 3	T1.0/2.0 /W1.0/25HRS	EXP LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC12-82
FIX POSITIONS FOR CYCLONE NO. 12

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	221211	22.6S	36.1E	PCN 5	T1.5/1.5	INIT OBS	KGWC
2	221719	23.7S	35.9E	PCN 6		ULAC 22.7S 36.3E	KGWC
3	230417	24.0S	38.5E	PCN 5		ULAC 23.7S 38.4E	KGWC
4	231655	26.0S	42.0E	PCN 6			KGWC
5	240353	27.0S	42.9E	PCN 5	T3.0/3.0-/D2.5/40HRS		KGWC
6	241147	29.0S	44.0E	PCN 5		BASED ON EXTRAP	KGWC
7	242250	30.9S	46.2E	PCN 4	T1.0/2.0 /W2.0/19HRS	EXP LLCC	KGWC
8	251135	33.5S	48.8E	PCN 4	T0.5/1.0 /W0.5/12HRS	EXP LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC13-82
FIX POSITIONS FOR CYCLONE NO. 13

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	252344	17.3S	112.9E	PCN 5	T1.5/1.5	INIT OBS	KGWC
2	261223	16.8S	110.2E	PCN 6			KGWC
3	262320	16.5S	111.4E	PCN 5	T2.0/2.0 /D0.5/24HRS	ULAC 17.1S 109.7E	KGWC
4	270000	16.6S	111.8E	PCN 5			PGTW
5	270300	16.9S	111.6E	PCN 3	T1.5/1.5	INIT OBS	PGTW
6	271159	16.5S	111.6E	PCN 6		BASED ON EXTRAP	KGWC
7	271850	16.3S	111.7E	PCN 6			KGWC
8	280000	17.2S	111.6E	PCN 5			PGTW
9	280038	17.1S	111.9E	PCN 5	T3.0/3.0 /D1.0/25HRS		KGWC
10	290300	17.1S	112.0E	PCN 5	T2.5/2.5 /D1.0/24HRS		PGTW
11	280600	17.5S	112.1E	PCN 5			PGTW
12	280735	17.9S	112.8E	PCN 5		BASED ON EXTRAP	KGWC
13	281135	18.5S	113.4E	PCN 6		BASED ON EXTRAP	KGWC
14	281800	18.8S	114.2E	PCN 5			PGTW
15	281838	19.0S	115.0E	PCN 6		BASED ON EXTRAP	KGWC
* 16	010014	18.2S	117.2E	PCN 5	T3.5/3.5 /D0.5/24HRS	BASED ON EXTRAP	KGWC
17	010300	19.1S	117.6E	PCN 5	T3.0/3.0 /D0.5/24HRS		PGTW
18	010600	19.0S	117.9E	PCN 5			PGTW
* 19	010723	18.4S	118.9E	PCN 5			KGWC
20	011112	19.0S	118.0E	PCN 6		BASED ON EXTRAP	KGWC
21	011600	18.8S	119.3E	PCN 5			PGTW
22	011800	18.9S	119.0E	PCN 5			PGTW
23	011800	18.8S	119.9E	PCN 6		BASED ON EXTRAP	KGWC
24	012351	18.3S	121.4E	PCN 5	T2.0/3.0-/W1.5/24HRS		KGWC
25	020300	17.8S	120.9E	PCN 5	T1.5/2.0 /W1.5/24HRS		PGTW
26	020600	17.5S	121.2E	PCN 5			PGTW
27	020711	17.4S	121.7E	PCN 5			KGWC
28	021230	17.3S	121.0E	PCN 5			KGWC
29	021600	17.6S	121.9E	PCN 5			PGTW
30	021814	17.0S	121.3E	PCN 5		ULAC FIX	KGWC
31	022327	17.1S	122.1E	PCN 5	T2.5/2.5 /D0.5/24HRS	ULAC 16.5S 121.9E	KGWC
32	030000	16.9S	121.8E	PCN 5			PGTW
33	030300	16.8S	122.0E	PCN 5	T2.5/2.5-/D1.0/24HRS		PGTW
34	030000	16.7S	122.1E	PCN 5			PGTW
35	030659	17.0S	122.3E	PCN 5			KGWC
36	031206	17.0S	122.0E	PCN 6		ULAC FIX	KGWC
37	031600	17.0S	122.0E	PCN 5			PGTW
* 38	031302	17.4S	122.2E	PCN 5		ULAC FIX	KGWC
39	032204	17.6S	120.6E	PCN 5	T3.0/3.0 /D0.5/24HRS	ULAC 17.2S 120.3E	KGWC
40	040000	17.7S	120.2E	PCN 5			PGTW
41	040300	17.8S	119.0E	PCN 5	T3.0/3.0 /D0.5/24HRS		PGTW
42	040600	18.1S	119.7E	PCN 5			PGTW
43	040647	17.9S	119.3E	PCN 5			KGWC
* 44	041143	18.0S	117.2E	PCN 6		ULAC FIX	KGWC
45	041200	18.6S	118.0E	PCN 5			PGTW
46	041600	18.9S	118.0E	PCN 5			PGTW
* 47	041750	18.2S	117.4E	PCN 6		ULAC 18.4S 117.1E	KGWC
* 48	042100	19.0S	118.4E	PCN 5		BASED ON CONTINUITY	PGTW
49	050000	19.4S	117.2E	PCN 5			PGTW
50	050021	18.3S	116.9E	PCN 6	T3.5/3.5 /D0.5/25HRS	ULAC 18.8S 117.3E	KGWC
51	050400	19.6S	116.4E	PCN 5	T4.0/4.0 /D1.0/25HRS		PGTW
52	050600	19.6S	116.0E	PCN 5			PGTW
53	050635	19.6S	115.2E	PCN 5		ULAC 19.9S 115.1E	KGWC

54	050900	20.0S	115.3E	PCN 5				PGTW
55	051300	19.5S	114.5E	PCN 6			BASED ON EXTRAP	KGWC
56	051600	20.4S	114.3E	PCN 5				PGTW
57	051800	20.6S	114.1E	PCN 5				PGTW
58	051920	20.7S	114.9E	PCN 6			ULAC FIX	KGWC
59	052100	20.7S	113.8E	PCN 5				PGTW
60	052358	20.5S	114.2E	PCN 6	T2.5/3.5	/W1.0/24HRS		KGWC
61	060400	21.8S	114.1E	PCN 5	T2.5/3.5	/W1.5/24HRS		PGTW
62	060600	22.3S	113.9E	PCN 5			BASED ON EXTRAP	PGTW
63	060806	21.9S	113.5E	PCN 5			BASED ON EXTRAP	KGWC
64	061237	23.2S	113.4E	PCN 6			BASED ON EXTRAP	KGWC
65	061600	23.1S	113.6E	PCN 5				PGTW
66	061909	24.5S	113.9E	PCN 6			BASED ON EXTRAP	KGWC
67	062334	23.7S	114.3E	PCN 3	T2.0/2.5	/W0.5/24HRS	EXP LLCC	KGWC
68	070000	24.0S	114.1E	PCN 5				PGTW
69	070400	25.0S	114.3E	PCN 5	T1.5/2.5	/W1.0/24HRS		PGTW
70	070600	25.6S	114.6E	PCN 5				PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC15-82
FIX POSITIONS FOR CYCLONE NO. 15

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE		COMMENTS	SITE
1	161112	12.4S	54.2E	PCN 5	T1.5/1.5		INIT OBS	KGWC
2	162215	12.7S	53.3E	PCN 6			BASED ON EXTRAP	KGWC
3	171100	13.3S	52.7E	PCN 2	T2.5/2.5	/D1.0/24HRS	BANDING EYE	KGWC
4	172345	13.1S	51.8E	PCN 2			EYE DIA 10NM	KGWC
5	180341	13.4S	51.3E	PCN 1			EYE DIA 13NM	KGWC
6	181048	14.1S	50.9E	PCN 2	T4.5/4.5	/D2.0/24HRS		KGWC
7	181620	13.9S	50.1E	PCN 2			EYE DIA 8NM	KGWC
8	182333	13.7S	49.2E	PCN 4			EXP MLCC	KGWC
9	190459	14.8S	48.5E	PCN 5			BASED ON EXTRAP	KGWC
10	191218	15.0S	46.5E	PCN 5	T3.0/4.0+	/W1.5/25HRS		KGWC
11	191737	15.4S	44.7E	PCN 5			BASED ON EXTRAP	KGWC
* 12	192321	14.7S	43.5E	PCN 5			ULAC FIX	KGWC
13	200435	16.1S	43.6E	PCN 5			EYE DEVELOPING	KGWC
14	201206	16.8S	42.5E	PCN 5	T3.5/3.5	/D0.5/24HRS	BASED ON EXTRAP	KGWC
15	202309	16.8S	42.0E	PCN 6				KGWC
16	211154	17.5S	40.0E	PCN 1	T4.0/4.0	/D0.5/24HRS		KGWC
17	212257	17.4S	39.2E	PCN 1				KGWC
18	221142	17.4S	38.8E	PCN 1	T4.5/4.5	/D0.5/24HRS		KGWC
19	230027	18.0S	38.2E	PCN 2			EYE DIA 18NM	KGWC
20	231130	18.1S	38.5E	PCN 1	T4.0/4.5	/W0.5/23HRS		KGWC
21	231312	18.3S	38.8E	PCN 5			BASED ON EXTRAP	KGWC
22	240015	19.3S	39.4E	PCN 2				KGWC
23	241300	21.3S	40.9E	PCN 5	T3.5/4.0	/W0.5/26HRS	BASED ON EXTRAP	KGWC
24	250003	23.2S	43.2E	PCN 6			BASED ON EXTRAP	KGWC
25	251240	26.1S	44.7E	PCN 5	T2.5/3.5	/W1.0/24HRS	BASED ON EXTRAP	KGWC
26	252351	28.9S	44.4E	PCN 3			EXP LLCC	KGWC
27	261236	31.4S	42.4E	PCN 5	T1.0/2.0	/W1.5/21HRS	BASED ON EXTRAP	KGWC
* 28	262339	31.7S	41.3E	PCN 5			BASED ON EXTRAP	KGWC
29	271224	33.3S	40.8E	PCN 3	T0.5/1.5	/W0.5/23HRS	EXP LLCC	KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC16-82
FIX POSITIONS FOR CYCLONE NO. 16

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE		COMMENTS	SITE
1	150000	10.5S	96.3E	PCN 5	T1.5/1.5		INIT OBS ULAC FIX	KGWC
2	151800	11.2S	95.9E	PCN 5				PGTW
3	152045	11.9S	95.8E	PCN 6			ULAC FIX	KGWC
4	160000	11.9S	95.4E	PCN 5			ULCC FIX	PGTW
* 5	160300	11.6S	93.7E	PCN 5	T1.0/1.0		INIT OBS BASED ON EXTRAP	PGTW
* 6	160740	14.6S	94.3E	PCN 6	T1.5/1.5	/S0.0/24HRS	BASED ON EXTRAP	KGWC
7	162033	13.6S	92.7E	PCN 6			BASED ON EXTRAP	KGWC
* 8	170300	12.5S	94.8E	PCN 5	T1.0/1.0	/S0.0/24HRS		PGTW
9	170918	14.5S	92.7E	PCN 6	T1.0/1.5	/W0.5/25HRS	BASED ON EXTRAP	KGWC

10	171600	15.5S	91.7E	PCN 5				PGTW
11	172021	15.9S	91.2E	PCN 6		ULAC FIX		KGWC
12	172100	15.4S	90.7E	PCN 5				PGTW
13	180000	15.9S	91.0E	PCN 5				PGTW
14	180200	16.4S	91.6E	PCN 6		ULAC 17.0S 091.2E		KGWC
15	180600	16.8S	91.1E	PCN 5	T3.0/3.0-/D2.0/27HRS			PGTW
16	180900	17.1S	91.2E	PCN 5				PGTW
17	180906	17.8S	91.1E	PCN 6	T2.5/2.5 /D1.5/24HRS	BASED ON EXTRAP		KGWC
18	181257	18.7S	91.6E	PCN 6		BASED ON EXTRAP		KGWC
19	181800	19.1S	91.3E	PCN 5				PGTW
20	182009	20.2S	92.1E	PCN 6				KGWC
* 21	182100	21.3S	92.2E	PCN 5				PGTW
22	190136	20.0S	90.9E	PCN 6		ULAC 21.0S 093.1E		KGWC
* 23	190600	19.7S	89.0E	PCN 5	T1.0/2.0 /W2.0/24HRS	BRKS CONTINUITY EXP LLCC		PGTW
24	190854	20.2S	90.6E	PCN 6	T1.5/2.5 /W1.0/24HRS	EXP LLCC		KGWC
* 25	191415	21.0S	89.6E	PCN 6		EXP LLCC		KGWC
26	200113	19.8S	90.1E	PCN 4				KGWC
27	200600	20.2S	89.8E	PCN 3	T0.5/1.0 /W0.5/24HRS			PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC17-82

FIX POSITIONS FOR CYCLONE NO. 17

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
* 1	311800	3.6S	161.4E	PCN 5			PGTW
2	312030	4.6S	158.1E	PCN 6	T1.5/1.5	INIT OBS	KGWC
3	010600	5.5S	158.2E	PCN 5	T1.5/1.5	INIT OBS	PGTW
4	010727	5.0S	158.3E	PCN 6			KGWC
5	010900	5.5S	157.5E	PCN 5			PGTW
6	011200	5.7S	157.4E	PCN 5			PGTW
7	011539	6.2S	158.5E	PCN 6			KGWC
* 8	011800	6.2S	158.2E	PCN 5			PGTW
* 9	012147	8.6S	156.8E	PCN 6	T2.5/2.5 /D1.0/25HRS	ULAC FIX	KGWC
* 10	020000	6.7S	157.7E	PCN 5		ULCC FIX	PGTW
11	020300	9.2S	159.1E	PCN 5	T2.0/2.0 /D0.5/21HRS	BRKS CONTINUITY	PGTW
* 12	020424	8.7S	155.7E	PCN 6		ULAC FIX	KGWC
13	020600	9.8S	158.0E	PCN 5			PGTW
14	020845	8.7S	158.3E	PCN 6		ULAC FIX	KGWC
15	020900	8.7S	158.4E	PCN 5			PGTW
* 16	021200	8.7S	157.0E	PCN 5			PGTW
17	021527	9.8S	158.8E	PCN 6		ULAC FIX	KGWC
18	021600	10.1S	158.2E	PCN 5			PGTW
19	021900	10.1S	158.0E	PCN 5			PGTW
20	022100	10.4S	158.8E	PCN 5			PGTW
21	022124	10.6S	159.2E	PCN 6	T3.0/3.0 /D0.5/24HRS	BASED ON EXTRAP	KGWC
22	030000	11.2S	158.0E	PCN 5			PGTW
23	030300	11.2S	157.6E	PCN 5	T2.5/2.5 /D0.5/24HRS		PGTW
* 24	030412	10.7S	157.2E	PCN 5			KGWC
* 25	030600	11.3N	157.1E	PCN 5			PGTW
* 26	030900	11.4S	156.8E	PCN 5			PGTW
27	031002	10.3S	157.8E	PCN 6		BASED ON EXTRAP	KGWC
28	031200	11.0S	158.4E	PCN 5			PGTW
* 29	031515	10.4S	157.6E	PCN 6		BASED ON EXTRAP	KGWC
30	031600	11.9S	158.6E	PCN 5			PGTW
31	031800	12.2S	158.0E	PCN 5			PGTW
32	032100	12.0S	157.3E	PCN 5			PGTW
33	032100	12.1S	157.6E	PCN 3	T3.5/3.5 /D0.5/24HRS		KGWC
34	040000	12.2S	157.4E	PCN 5		ULCC FIX	PGTW
35	040300	12.9S	157.4E	PCN 5	T3.5/3.5 /D1.0/24HRS		PGTW
36	040600	13.3S	156.9E	PCN 3			PGTW
37	040939	13.6S	157.2E	PCN 2		ELLIPTICAL EYE	KGWC
38	041200	14.6S	156.5E	PCN 3			PGTW
39	041600	15.6S	156.7E	PCN 3			PGTW
40	041645	15.0S	156.9E	PCN 2			KGWC
41	042036	15.7S	156.2E	PCN 1	T4.5/4.5 /D1.0/24HRS		KGWC
42	050000	16.3S	156.1E	PCN 1			PGTW
43	050300	17.1S	156.2E	PCN 1	T4.5/4.5 /D1.0/24HRS		PGTW
44	050340	17.1S	156.5E	PCN 1			KGWC
45	050600	17.7S	156.5E	PCN 1			PGTW
46	050915	18.2S	156.4E	PCN 2			KGWC
47	051200	18.8S	156.9E	PCN 1		EYE DIA 55NM	PGTW
48	051600	19.7S	157.4E	PCN 1			PGTW
49	051633	19.2S	157.5E	PCN 2			KGWC
50	051900	19.0S	157.5E	PCN 1			PGTW
51	052013	19.0S	157.0E	PCN 2	T5.0/5.0 /D0.5/23HRS		KGWC
52	052100	20.0S	157.0E	PCN 1		EYE DIA 50NM	PGTW

53	060000	20.2S	158.0E	PCN 1				PGTW
54	060300	20.7S	158.3E	PCN 1	T3.5/4.0 /W1.0/24HRS			PGTW
* 55	060336	20.6S	159.1E	PCN 1				KGWC
56	060600	21.0S	159.0E	PCN 1				PGTW
57	061200	22.0S	159.8E	PCN 1				PGTW
58	061600	22.3S	160.6E	PCN 3				PGTW
* 59	061621	21.9S	160.3E	PCN 2		EYE DIA 15NM		KGWC
60	061800	22.6S	160.8E	PCN 1				PGTW
* 61	061949	22.2S	160.5E	PCN 1	T4.5/5.0 /W0.5/24HRS			KGWC
62	070000	23.2S	161.6E	PCN 1				PGTW
63	070300	23.7S	162.3E	PCN 3	T4.0/4.0 /D0.5/24HRS			PGTW
64	070324	23.3S	162.4E	PCN 5		BASED ON EXTRAP		KGWC
65	070600	24.2S	162.8E	PCN 3				PGTW
66	070828	24.3S	163.1E	PCN 6				KGWC
67	071200	25.7S	165.1E	PCN 5				PGTW
* 68	071600	26.1S	166.8E	PCN 5				PGTW
* 69	071800	26.5S	168.2E	PCN 5		ULCC FIX		PGTW
70	071926	26.0S	167.0E	PCN 5	T3.0/4.0 /W1.5/23HRS			KGWC
71	080000	27.0S	166.5E	PCN 5				PGTW
72	080300	27.2S	167.7E	PCN 5	T2.5/3.5 /W1.5/24HRS			PGTW
73	080312	26.9S	167.9E	PCN 5		EXP LLCC		KGWC
74	080600	28.0S	169.0E	PCN 5				PGTW
75	080900	28.9S	169.9E	PCN 5				PGTW
76	081200	29.3S	171.0E	PCN 5				PGTW
77	081600	30.1S	173.0E	PCN 5				PGTW
* 78	090000	33.8S	177.4E	PCN 5				PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC18-82

FIX POSITIONS FOR CYCLONE NO. 18

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	041600	11.3S	138.5E	PCN 5			PGTW
2	041643	11.6S	138.9E	PCN 6			KGWC
* 3	042218	11.7S	139.5E	PCN 5	T2.0/2.0 /D0.5/17HRS		KGWC
4	050300	11.1S	138.8E	PCN 5	T1.5/1.5	INIT OBS	PGTW
5	050530	10.9S	138.5E	PCN 5		ULAC FIX	KGWC
6	051056	11.2S	139.8E	PCN 6		ULAC FIX	KGWC
7	051200	11.8S	139.3E	PCN 5			PGTW
8	051600	11.9S	139.2E	PCN 5			PGTW
9	051633	11.3S	139.1E	PCN 4			KGWC
10	051800	11.8S	139.4E	PCN 5			PGTW
11	052100	11.7S	139.4E	PCN 5			PGTW
12	052154	11.4S	139.2E	PCN 5	T3.5/3.5 /D1.5/24HRS	ULAC 11.7S 139.7E	KGWC
13	060300	12.2S	139.1E	PCN 5	T3.0/3.0 /D1.5/24HRS		PGTW
14	060518	12.3S	139.8E	PCN 5		BASED ON EXTRAP	KGWC
15	060900	12.9S	138.8E	PCN 5			PGTW
16	061200	13.3S	139.8E	PCN 3		POSSIBLE BANDING EYE	PGTW
17	061621	13.1S	139.6E	PCN 6		BASED ON EXTRAP	KGWC
18	061600	13.5S	139.9E	PCN 3			PGTW
19	062100	14.0S	140.2E	PCN 3		POSSIBLE BANDING EYE	PGTW
20	062130	13.1S	139.9E	PCN 5	T4.5/4.5 /D1.0/23HRS		KGWC
21	070000	13.9S	140.0E	PCN 1			PGTW
22	070300	13.9S	140.5E	PCN 1	T4.5/4.5-/D1.5/24HRS		PGTW
23	070506	14.1S	140.8E	PCN 1			KGWC
24	070600	14.3S	140.7E	PCN 1			PGTW
25	070900	14.7S	141.1E	PCN 1			PGTW
26	071009	14.6S	141.1E	PCN 2			KGWC
27	071200	14.9S	141.5E	PCN 3			PGTW
28	071600	15.0S	141.9E	PCN 3			PGTW
29	071800	15.1S	142.3E	PCN 5			PGTW
30	072100	15.3S	142.6E	PCN 5			PGTW
31	072107	15.1S	142.1E	PCN 5	T3.0/4.0 /W1.5/24HRS		KGWC
32	080000	15.6S	143.2E	PCN 5			PGTW
33	080300	15.6S	143.4E	PCN 5	T2.5/3.5-/W2.0/24HRS		PGTW
34	080454	15.8S	143.9E	PCN 5		BASED ON EXTRAP	KGWC
35	080600	14.9S	143.2E	PCN 5			PGTW
36	080900	16.3S	144.5E	PCN 5			PGTW
37	081557	15.2S	145.2E	PCN 5		ULAC FIX	KGWC
38	081600	15.7S	145.4E	PCN 5			PGTW
39	081800	15.6S	146.2E	PCN 5			PGTW
40	082100	15.2S	146.3E	PCN 5			PGTW
41	082224	14.4S	147.0E	PCN 5	T1.5/2.5 /W1.5/25HRS	BASED ON EXTRAP	KGWC
42	090000	14.6S	146.0E	PCN 5			PGTW
43	090300	14.9S	147.5E	PCN 5	T2.5/2.5 /S0.0/24HRS		PGTW
* 44	090442	15.2S	146.4E	PCN 3		EXP LLCC	KGWC
45	090600	15.3S	147.7E	PCN 5			PGTW
46	090900	15.4S	140.3E	PCN 5			PGTW
47	090922	15.9S	147.0E	PCN 5			KGWC
48	091200	15.5S	140.9E	PCN 5		BASED ON EXTRAP	PGTW

* 49	091545	15.9S	150.2E	PCN 5		ULAC FIX	KGWC
50	091800	15.1S	149.6E	PCN 5			PGTW
51	092100	15.1S	150.1E	PCN 5			PGTW
52	092201	14.4S	151.3E	PCN 5	T2.5/2.5 /D1.0/24HRS	BASED ON EXTRAP	KGWC
53	100000	14.2S	150.2E	PCN 3			PGTW
54	100300	14.2S	150.6E	PCN 3	T3.0/3.0 /D0.5/24HRS		PGTW
55	100430	15.0S	151.1E	PCN 3		EXP LLCC	KGWC
56	100600	14.8S	151.5E	PCN 5			PGTW
* 57	100858	14.2S	152.2E	PCN 6			KGWC
58	100900	14.8S	151.5E	PCN 5			PGTW
59	101200	14.5S	151.0E	PCN 5			PGTW
60	101533	14.5S	151.7E	PCN 6		BASED ON EXTRAP	KGWC
61	101600	14.6S	151.8E	PCN 5			PGTW
62	101800	14.5S	152.2E	PCN 5			PGTW
63	102100	14.3S	152.3E	PCN 5			PGTW
64	102137	14.1S	151.9E	PCN 3	T2.5/2.5 /S0.0/24HRS		KGWC
65	110000	14.3S	152.4E	PCN 5			PGTW
66	110300	14.5S	152.7E	PCN 5	T2.5/3.0 /W0.5/24HRS	BASED ON EXTRAP	PGTW
67	110418	13.9S	152.7E	PCN 5		BASED ON EXTRAP	KGWC
68	110600	14.4S	152.9E	PCN 5			PGTW
69	110900	14.3S	152.9E	PCN 5			PGTW
70	111016	14.3S	152.7E	PCN 6			KGWC
71	111200	14.1S	153.1E	PCN 5			PGTW
72	111600	14.5S	153.0E	PCN 5			PGTW
73	111703	14.1S	152.9E	PCN 6			KGWC
74	112100	14.6S	152.3E	PCN 5			PGTW
* 75	112113	14.4S	151.7E	PCN 5	T3.0/3.0 /D0.5/24HRS	BASED ON EXTRAP	KGWC
76	120000	14.6S	152.2E	PCN 5		BASED ON EXTRAP	PGTW
77	120300	14.7S	151.9E	PCN 3	T2.0/2.5 /W0.5/24HRS		PGTW
78	120406	14.6S	152.2E	PCN 5		BASED ON EXTRAP	KGWC
79	120600	14.8S	152.0E	PCN 3			PGTW
80	120900	14.6S	152.0E	PCN 5			PGTW
81	121200	15.0S	152.7E	PCN 5			PGTW
* 82	121600	15.1S	152.4E	PCN 5			PGTW
83	121651	16.2S	152.5E	PCN 5		ULAC FIX	KGWC
84	121000	15.5S	152.1E	PCN 5			PGTW
* 85	122100	16.1S	152.4E	PCN 5			PGTW
86	130000	16.9S	150.8E	PCN 3			PGTW
87	130300	17.4S	150.6E	PCN 5	T1.0/1.5 /W1.0/24HRS	BASED ON EXTRAP	PGTW
88	130536	17.6S	149.7E	PCN 5	T1.0/1.0 /W2.0/32HRS	BASED ON EXTRAP	KGWC
89	130600	18.1S	149.7E	PCN 5			PGTW
90	130900	18.4S	149.6E	PCN 5			PGTW
* 91	131639	16.2S	146.8E	PCN 5			KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES

TC19-82

FIX POSITIONS FOR CYCLONE NO. 19

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	230600	6.4S	85.5E	PCN 5	T1.0/1.0	INIT ODS	PGTW
2	230042	5.5S	84.2E	PCN 6	T1.0/1.0	INIT ODS ULAC FIX	KGWC
3	231800	7.2S	82.6E	PCN 5		ULCC FIX	PGTW
4	232127	7.8S	83.8E	PCN 5		ULAC FIX	KGWC
5	240237	7.8S	81.5E	PCN 5	T1.0/1.0 /S0.0/18HRS	ULAC FIX	KGWC
* 6	242115	9.1S	80.7E	PCN 6		ULAC FIX	KGWC
7	251000	8.0S	77.4E	PCN 5	T3.0/3.0 /D1.5/24HRS	ULAC 7.9S 76.7E	KGWC
8	252103	8.1S	76.7E	PCN 6		BASED ON EXTRAP	KGWC
9	260159	8.2S	76.3E	PCN 5		BASED ON EXTRAP	KGWC
10	260940	8.4S	75.8E	PCN 1	T3.5/3.5 /D0.5/24HRS	PARTIAL EYE WALL	KGWC
11	260948	8.1S	75.4E	PCN 6	T4.0/4.0 /D1.0/24HRS		PGTW
12	261429	8.2S	75.2E	PCN 6		ULAC 8.0S 75.0E	KGWC
13	261429	8.2S	74.9E	PCN 6			PGTW
* 14	262000	8.2S	74.1E	PCN 5			PGTW
15	262051	8.9S	75.6E	PCN 6		BASED ON EXTRAP	KGWC
16	270307	9.4S	75.3E	PCN 3		EYE DIA 9NM	KGWC
17	270930	9.8S	75.5E	PCN 6	T4.0/4.0 /D0.5/24HRS		PGTW
* 18	270936	10.4S	75.2E	PCN 2	T4.5/4.5 /D1.0/24HRS		KGWC
* 19	271405	10.2S	74.0E	PCN 4			KGWC
* 20	271405	11.5S	75.2E	PCN 6			PGTW
21	272039	10.4S	75.5E	PCN 2			KGWC
22	272221	10.0S	75.4E	PCN 2		BANDING EYE	KGWC
23	280224	9.9S	76.7E	PCN 3		EYE DIA 9NM	KGWC
24	280245	10.0S	76.4E	PCN 6	T4.5/4.5 /D1.0/17HRS		PGTW
25	280924	10.6S	76.3E	PCN 2	T4.5/4.5 /S0.0/23HRS		KGWC
26	281522	11.0S	77.1E	PCN 2		BANDING EYE	KGWC
27	281522	11.0S	77.0E	PCN 6			PGTW
28	282118	12.0S	77.0E	PCN 6			PGTW

29	282209	11.4S	77.3E	PCN 2				KGWC
30	290220	11.4S	78.1E	PCN 4				KGWC
31	290912	11.7S	78.2E	PCN 2	T5.5/5.5-/D1.0/24HRS	EYE DIA 27NM		KGWC
32	290912	11.2S	78.2E	PCN 6	T4.5/4.5 /S0.0/30HRS			FJDG
33	291459	12.2S	78.8E	PCN 4				KGWC
34	291459	11.3S	78.0E	PCN 6				FJDG
35	292156	12.8S	79.4E	PCN 2				KGWC
36	300156	12.9S	79.9E	PCN 4				KGWC
37	300900	13.7S	80.9E	PCN 2	T5.5/5.5-/S0.0/24HRS	EYE DIA 15NM		KGWC
38	300900	13.2S	80.5E	PCN 6	T4.5/4.5-/D1.0/24HRS			FJDG
39	301435	13.0S	81.5E	PCN 4		EYE DIA 12NM		KGWC
40	301435	13.7S	80.9E	PCN 6				FJDG
41	302144	14.9S	82.2E	PCN 6		ULAC FIX		KGWC
* 42	302145	16.0S	82.5E	PCN 6				FJDG
43	010133	14.8S	82.1E	PCN 6		BASED ON EXTRAP		KGWC
44	010848	15.9S	82.4E	PCN 6	T3.0/4.0 /W2.5/24HRS	BASED ON EXTRAP		KGWC
45	011412	17.6S	83.5E	PCN 6		ULAC FIX		KGWC
* 46	011950	18.6S	85.1E	PCN 6		ULAC FIX		KGWC
47	012132	16.3S	83.4E	PCN 6		EXP LLCC		KGWC
48	020109	18.5S	83.5E	PCN 4		EXP LLCC		KGWC
* 49	020300	18.9S	83.6E	PCN 5		EXP LLCC		PGTW
50	020836	19.2S	84.4E	PCN 4	T1.5/2.5 /W1.5/24HRS	EXP LLCC		KGWC
51	030227	22.8S	82.2E	PCN 6	T0.0/1.0 /W1.5/18HRS	EXP LLCC		KGWC

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

TC21-82
FIX POSITIONS FOR CYCLONE NO. 21

SATELLITE FIXES

FIX NO.	TIME (Z)	FIX POSITION		ACCRY	DVORAK CODE	COMMENTS	SITE
1	141800	13.2S	157.3E	PCN 5			PGTW
* 2	142100	13.3S	150.3E	PCN 5		ULAC FIX	PGTW
3	150000	14.2S	158.2E	PCN 5	T3.0/3.0	INIT OBS	PGTW
4	150300	14.6S	157.9E	PCN 5			PGTW
5	150600	14.0S	157.7E	PCN 5			PGTW
6	150900	14.1S	157.9E	PCN 5			PGTW
7	151200	14.6S	150.2E	PCN 5		ULCC FIX	PGTW
8	151500	14.7S	150.6E	PCN 5		ULCC FIX	PGTW
9	151800	14.8S	150.8E	PCN 5		ULCC FIX	PGTW
10	152100	14.9S	159.0E	PCN 5		ULCC FIX	PGTW
11	160000	15.0S	150.3E	PCN 5			PGTW
* 12	160300	15.2S	159.5E	PCN 5	T1.5/2.5 /W1.5/27HRS		PGTW
* 13	160600	15.5S	160.0E	PCN 5			PGTW
* 14	160900	15.3S	160.3E	PCN 5			PGTW
15	161600	15.4S	161.4E	PCN 5		ULCC FIX	PGTW

NOTICE - THE ASTERISKS (*) INDICATE FIXES UNREPRESENTATIVE AND NOT USED FOR BEST TRACK PURPOSES.

APPENDIX C

CONTRACTIONS

ACCRY	Accuracy
APT	Automatic Picture Transmission
AVG	Average
BRG	Bearing
CDO	Central Dense Overcast
CI	Current Intensity
CLD	Cloud
CLSD	Closed
CNTR	Center
DEG	Degree(s)
DIAM	Diameter
DIR	Direction
DMSP	Defense Meteorological Satellite Program
HGT	Height
HPAC	Mean of XTRP and Climatology
HR	Hour(s)
HVY	Heavy
ICAO	International Civil Aviation Organization
IR	Infrared
KM	Kilometer(s)
KT	Knot(s)
LLCC	Low-Level Circulation Center
LVL	Level
M	Meter(s)
M/SEC	Meters per Second
MAX	Maximum
MB	Millibar(s)
MET	Meteorological
MIN	Minimum
NEDN	Naval Environmental Data Network
NEDS	Naval Environmental Display Station
NESS	National Environmental Satellite Service
NM	Nautical Mile(s)
N/O	Not Observed
NOAA	National Oceanic and Atmospheric Administration
OBS	Observation(s)
PCN	Position Code Number
PSBL	Possible
PTLY	Partly
QUAD	Quadrant
RECON	Reconnaissance
RNG	Range
SAT	Satellite
SFC	Surface
SLP(MSLP)	Sea Level Pressure (Minimum Sea Level Pressure)
STNRY	Stationary
SST	Sea Surface Temperature
TC	Tropical Cyclone
TCFA	Tropical Cyclone Formation Alert
TD	Tropical Depression
TIROS	Television Infrared Observation Satellite
TS	Tropical Storm
TY	Typhoon
VEL	Velocity
VIS	Visual
VSBL	Visible
WMO	World Meteorological Organization
WND	Wind
XTRP	Extrapolation
Z	Zulu Time (Greenwich mean time)

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The Joint Typhoon Warning Center (JTWC) area of responsibility includes the Southern Hemisphere, from 180° longitude westward to the east coast of Africa. This technical note documents forecast verification and reconnaissance data for those Southern Hemisphere tropical cyclones that occurred between 1 July 1980 and 30 June 1982.

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