

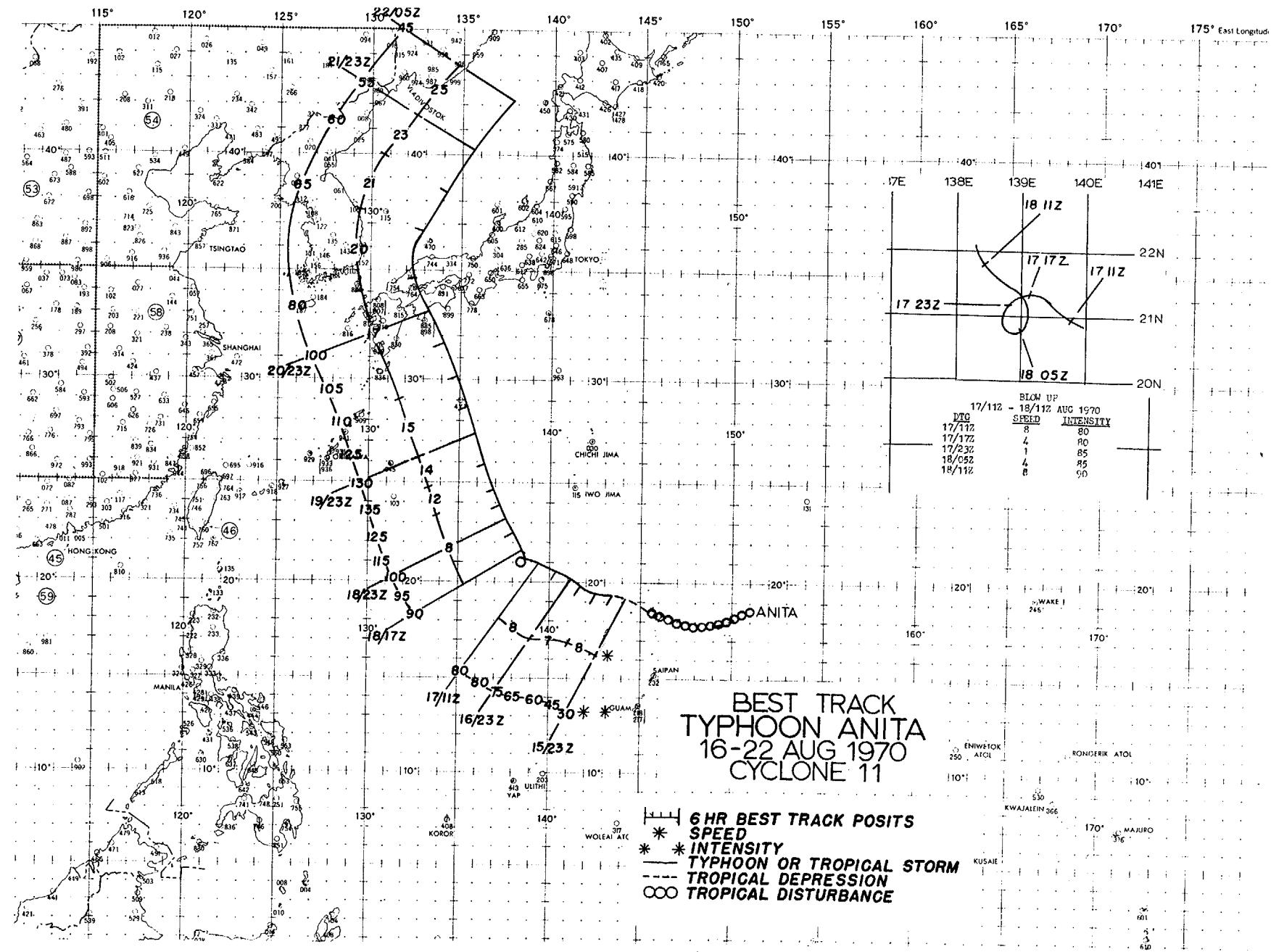
D. TYPHOON ANITA 15 AUG 2300Z-22 AUG 0500Z

1. STATISTICS

- a. Number of Warnings Issued - 26
- b. Number of Warnings with Typhoon Intensity - 19
- c. Distance Traveled During Warning Period - 2,001 MI

2. CHARACTERISTICS AS A TYPHOON

- a. Minimum Observed SLP - 912 MBS at 19/2055Z
- b. Minimum Observed 700 MB Height - 2325 M at 19/2055Z
- c. Maximum Surface Wind - 135 KTS (From Best Track)
- d. Maximum Radius of Surface Circulation - 480 MI



3. TYPHOON ANITA NARRATIVE

As early as the 11th upper air reports from Marcus and Wake Islands plus satellite pictures indicated an upper level circulation in existence between the two islands. Two days later an ESSA-8 view disclosed the system to have drifted south of Marcus and enhanced in convective activity. Ship data indicated the low aloft had reflected downward into the surface pressure pattern as an induced wave.

This wave disturbance passed through the Northern Marianas chain during the night of the 15th to 16th with evidence of a developing circulation. A reconnaissance aircraft investigated the system the following afternoon and located a closed center with 995 mb central pressure 140 miles northwest of Pagan Island and Tropical Storm Anita was named.

Anita proceeded west northwest and intensified to typhoon strength within 18 hours while shifting to a more northerly course on the 17th. The ridge line north of the typhoon began to weaken considerably between Okinawa and Iwo Jima as a reflection of a slow moving trough in the westerlies east of Korea. Meanwhile heights began to build east of Japan with the establishment of a strong center of action for the subtropical ridge to the northeast of Anita. This set up steering conditions which resulted in a northwest path towards the Japanese coastline for the next three days.

While southwest of Iwo Jima on the 18th, Anita began to approach a 200 mb trough over the Sea of Japan extending through the Northern Ryukyu's. As this trough provided an efficient evacuation mechanism for the transfer of mass to the westerlies, the central pressure began to respond. In the following 36 hours dropsonde measurements showed a progressive fall of 55 mb. Reconnaissance aircraft radar presentations and infra-red satellite view of the storm during the night of the 19-20th indicated Anita had become highly organized in character (Figure 5-8). The storm reached its peak intensity while attaining super typhoon strength during the morning hours of the 20th as aerial reconnaissance registered a 912 mb surface pressure in the eye some 270 mi northwest of Iwo Jima (Figure 5-9).

At this point Anita started to increase her forward speed to 15 knots and later to 17 knots due to the increased southerly flow created between a strong mid-tropospheric high to the northeast and a cut off low in the East China Sea. The eye of the typhoon crossed the coastline of Western Shikoku about 40 N.M. southwest of Kochi City during the late morning hours of the 21st with an accompanying storm surge of 7.7 feet flooding parts of the city. At this time Anita had filled and wind strength was near 105 knots. Maximum sustained wind



FIGURE 5-8 NIMBUS IV NIGHTTIME INFRA-RED VIEW OF TYPHOON ANITA (ORBIT 1783) 19 AUGUST.
A TROPICAL DISTURBANCE IS DEPICTED NORTHEAST OF THE TYPHOON EAST OF THE
JAPANESE ISLANDS.

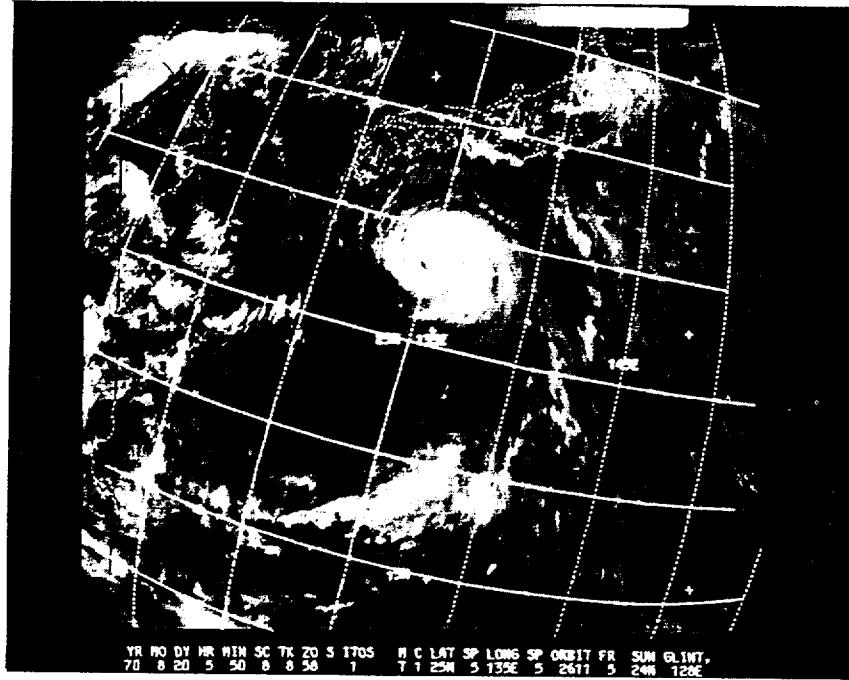


FIGURE 5-9 ANITA SOUTH OF SHIKOKU ISLAND WITH SUPER TYPHOON WINDS AS DISPLAYED TO
ITOS-1 ON THE AFTERNOON OF 20 AUGUST.

report occurred at Murotomisaki Weather Station registering 100 knots and gusts to 124 knots about 60 miles east of the center. Lowest pressure measured in the area was at Cape Ashizuri 15 miles west of the center with 962.3 mb.

At least 31 vessels were reported sunk including the 2,739 ton Japanese ship Koyo Maru along the coast of Japan while heavy rains (up to 15 inches) caused floods and landslides inland. Statistics reveal at least 23 storm-related deaths, 556 injured and over 5,000 houses partially or totally destroyed.

In response to a major trough moving off the China coast, the typhoon recurved sharply after passage over Hiroshima and entrance into the Sea of Japan. On her north-east course, at a rate greater than 20 knots, Anita quickly lost typhoon intensity late on the 21st. She transformed to an extratropical system as she passed west of Hokkaido by the 22nd.

TYPHOON ANITA

FIX NO.	TIME	POSIT	EYE FIXES CYCLONE			11	OBS	OBS	MIN	FLT	LVL	TT/TO	EYE	ORIEN-	EYE	CHARACTER	
			UN-T-	MET-OU	FLT		LVL	SFC	MTN	700MB	WIND	SIP	HGT	LVL	TT/TO	FORM	TATION
1	160222Z	19.3N 143.4E	54--25--			040	045	995	---	26/24	---						NEG WALL
2	160512Z	19.5N 143.0E	SLTLS	STG 8	DIA --	CAT -											-----
3	160600Z	18.8N 142.3E	ACFT RUR		--	--											-----
4	160903Z	19.2N 142.4E	VW--10--	0160M	050	--	--	--	--	--/-	CIRC	--	10	OPEN TO NW			-----
5	161211Z	19.3N 141.9E	VW--105--		--	--				--/-	CIRC	--	15	CLSD WALL 4NM THK			-----
6	161405Z	19.3N 141.7E	VW--10--		--	--				--/-	CIRC	--	17	OPEN TO N			-----
7	162100Z	19.7N 141.4E	54--05--	700MB	055	075	978	2914	16/12	CIRC	--	22	5NM THK, OPEN W QUAD			-----	
8	170300Z	20.3N 140.6E	54--05--	700MB	072	080	976	2920	19/13	CIRC	--	40	NEG W/C			-----	
9	170456Z	19.5N 139.5E	SLTLS	STG X	DIA 0,	CAT 3											-----
10	170900Z	20.8N 139.8E	VW--05--	0200M	--	055	977	--	28/23	CIRC	--	18	NEG W/C			-----	
11	171235Z	21.0N 139.5E	VW--02--	0200M	--	055	977	--	28/24	ELIP	N-S	36X24	8NM THK N SEMICIR			-----	
12	171400Z	21.0N 139.1E	VW--10--		--	--			--/-	ELIP	N-S	35X25	-----			-----	
13	172100Z	21.1N 139.0E	54--05--	700MB	070	080	960	2810	23/15	---			OPEN NE-NW			-----	
14	180430Z	20.9N 138.9E	54--10--	700MB	060	075	962	2829	16/11	---			CLSD			-----	
15	180533Z	21.5N 138.0E	SLTLS	STG X	DIA 0,	CAT 3											-----
16	180900Z	21.4N 138.5E	VW--05--		057	--	--	--	--/-	ELIP	NE-SW	20X14	CLSD			-----	
17	181340Z	21.9N 138.3E	VW--03--		065	100	965	--	27/23	CIRC	--	20	CLSD			-----	
18	182020Z	22.8N 137.8E	54--07--	700MB	067	070	947	2643	16/12	CIRC	--	20	OPEN SSW-W			-----	
19	190300Z	23.6N 137.4E	54--08--	700MB	110	095	924	2435	20/12	CIRC	--	18	CLSD, 5NM THK			-----	
20	190454Z	23.5N 137.0E	SLTLS	STG X	DIA 0,	CAT 4											-----
21	190925Z	24.5N 137.1E	VW--10--		--	--	--	--	--/-				CLSD, 5NM THK			-----	
22	191005Z	24.5N 137.2E	VW--05--	700MB	--	--	921	2417	--/-	CIRC	--	14	CLSD, 5NM THK			-----	
23	191435Z	25.2N 136.7E	VW--10--		--	--	--	--	--/-				CLSD, 5NM THK			-----	
24	192055Z	26.3N 136.6E	54--05--	700MB	110	130	912	2325	22/15	CIRC	--	18	CLSD			-----	
25	200300Z	28.0N 135.6E	54--30--	700MB	100	110	924	2430	20/14	CIRC	--	20	CLSD			-----	
26	200425Z	27.5N 135.5E	ACFT RUR		--	--	--	--	--/-								-----
27	200520Z	28.5N 135.0E	SLTLS	STG X	DIA 0	CAT 4											-----
28	200800Z	29.4N 134.9E	LND RUR		--	--	--	--	--/-								-----
29	200857Z	29.5N 135.2E	VW--05--		075	--	--	--	--/-	CIRC	--	11	CLSD, APRD BKN S SEMICIR			-----	
30	200900Z	29.5N 134.9E	LND RUR		--	--	--	--	--/-								-----
31	201425Z	30.7N 134.3E	VW--03--	700MB	075	--	950	2658	16/12	CIRC	--	20	CLSD, 11NM THK			-----	
32	201430Z	30.4N 134.2E	ACFT RUR		--	--	--	--	--/-								-----
33	201600Z	31.2N 133.9E	ACFT RUR		--	--	--	--	--/-								-----
34	201658Z	31.4N 133.7E	ACFT RUR		--	--	--	--	--/-								-----
35	201700Z	31.4N 133.8E	ACFT RUR		--	--	--	--	--/-								-----
36	201800Z	31.5N 133.7E	ACFT RUR		--	--	--	--	--/-								-----
37	201800Z	31.6N 133.6E	ACFT RUR		--	--	--	--	--/-								-----
38	201900Z	31.8N 133.7E	LND RUR		--	--	--	--	--/-								-----
39	202000Z	32.1N 133.5E	LND RUR		--	--	--	928	--/-								-----
40	202100Z	32.0N 134.0E	54--1-05--	700MB	070	080	950	2725	17/13	CINC		50-20	OUTER-OPEN W-NW, INNER-OPEN SW-W			-----	
41	202100Z	32.4N 133.3E	LND RUR		--	--	--	--	--/-								-----
42	202200Z	32.5N 133.3E	LND RUR		--	--	--	--	--/-								-----
43	202230Z	32.7N 133.3E	LND RUR		--	--	--	--	--/-								-----
44	202300Z	33.0N 133.2E	LND RUR		--	--	--	--	--/-								-----
45	210000Z	33.3N 132.9E	LND RUR		--	--	--	--	--/-								-----
46	210200Z	34.2N 132.5E	LND RUR		--	--	--	--	--/-								-----
47	210300Z	34.2N 132.6E	54--0-06--	500MB	075	--	--	--	--/-	03/00							-----
48	210500Z	34.9N 132.2E	LND RUR		--	--	--	--	--/-				NEG W/C				-----

TYPHOON ANITA EYE FIXES CYCLONE																
FIX NO.	TIME	POSII	UNIT- METHOD			FLT ACCY	LVL	WIND	SFC IND	OBS SLP	MIN 700MB	FLT LVL	EYE FORM	ORIEN- TATION	EYE DIA	CHARACTER WALL CLOUD
			METHOU	FLT	LVL											
49	Z10700Z	35.7N 132.4E	LND	RDR	---	---	---	---	---	---	---	---	---	---	---	
50	Z10800Z	35.8N 132.5E	LND	RUR	---	---	---	---	---	---	---	---	---	---	---	
51	Z11000Z	36.1N 132.7E	LND	RUR	---	---	---	---	---	---	---	---	---	---	---	
52	Z11024Z	36.1N 132.3E	VW--03--	700MB	057	---	993	3024	15/09	---	---	---	---	---	---	
53	Z11200Z	36.7N 132.9E	LND	RDR	---	---	---	---	---	---	---	---	---	---	---	
54	Z11215Z	36.8N 132.8E	VW--04--	700MB	060	---	---	---	---	---	---	---	---	---	NEG W/C	
55	Z11300Z	36.9N 133.1E	LND	RUR	---	---	---	---	---	---	---	---	---	---	---	
56	Z11400Z	37.5N 133.0E	LND	RUR	---	---	---	---	---	---	---	---	---	---	---	
57	Z11407Z	37.2N 133.4E	VW--01--	700MB	060	---	991	3051	13/11	---	---	---	---	---	NEG W/C	
58	Z12100Z	39.4N 135.1E	54--10--	---	065	---	---	---	---	---	---	CTRC	---	10	---	

TYPHOON ANITA

TROPICAL CYCLONE 11 -- 8/15/2300Z TO 8/22/0500Z
POSITION AND FORECAST VERIFICATION DATA

WARN NO.	DTG	WARNING LAT	POSIT LONG	BEST TRACK LAT	TRACK LONG	24 HR FCST LAT	FCST LONG	24 HR ERROR DEG DIST	48 HR FCST LAT	FCST LONG	48 HR ERROR DEG DIST	72 HR FCST LAT	FCST LONG	72 HR ERROR DEG DIST
01	15/2300Z	19.4N	143.6E	19.1N	144.4E	21.7N	141.7E	-018-0096-	-----	-----	-----	-----	-----	-----
02	16/0500Z	20.1N	143.2E	19.3N	143.5E	22.2N	141.2E	027-0102	-----	-----	-----	-----	-----	-----
03	16/1100Z	19.2N	142.2E	19.3N	142.5E	19.4N	138.8E	202-0096	20.2N	135.5E	242-0186	21.3N	132.8E	229-0306
04	16/1700Z	19.3N	141.2E	19.6N	141.7E	19.7N	137.5E	227-0120	20.6N	134.2E	244-0240	-----	-----	-----
05	16/2300Z	19.8N	141.1E	20.1N	141.1E	21.2N	138.5E	288-0018	22.7N	135.5E	259-0120	24.3N	132.9E	226-0252
06	17/0500Z	20.5N	140.4E	20.6N	140.3E	22.6N	137.7E	324-0120	24.6N	135.1E	288-0132	-----	-----	-----
07	17/1100Z	21.0N	139.6E	20.9N	139.5E	23.1N	136.8E	313-0120	25.3N	134.3E	283-0150	27.7N	132.7E	217-0180
08	17/1700Z	21.4N	138.9E	21.1N	139.1E	23.4N	136.2E	300-0114	25.7N	133.9E	266-0156	-----	-----	-----
09	17/2300Z	21.2N	138.9E	21.1N	138.9E	21.9N	137.8E	175-0072	23.4N	135.7E	188-0234	25.0N	133.9E	175-0480
10	18/0500Z	20.9N	138.9E	20.9N	139.0E	21.3N	138.7E	155-0168	22.3N	137.2E	167-0390	-----	-----	-----
11	18/1100Z	21.6N	138.4E	21.7N	138.5E	23.2N	136.8E	188-0090	25.8N	134.7E	180-0258	28.3N	133.4E	177-0492
12	18/1700Z	22.1N	138.0E	22.4N	138.1E	24.0N	136.8E	180-0114	26.6N	135.5E	164-0300	-----	-----	-----
13	18/2300Z	23.1N	137.7E	23.1N	137.7E	26.3N	135.9E	197-0060	30.5N	134.5E	156-0162	36.5N	136.2E	197-0228
14	19/0500Z	23.9N	137.2E	23.9N	137.4E	27.6N	135.5E	180-0066	32.6N	134.1E	146-0150	-----	-----	-----
15	19/1100Z	24.7N	136.9E	24.7N	137.1E	28.4N	135.2E	169-0102	33.9N	134.0E	160-0162	41.5N	136.5E	-----
16	19/1700Z	25.4N	136.5E	25.9N	136.8E	29.0N	134.7E	166-0150	33.6N	132.1E	200-0294	-----	-----	-----
17	19/2300Z	26.6N	136.5E	27.3N	136.3E	31.2N	135.2E	134-0144	37.8N	134.8E	197-0150	47.0N	139.5E	-----
18	20/0500Z	28.3N	135.7E	28.7N	135.6E	36.5N	134.1E	036-0132	45.0N	137.5E	003-0162	-----	-----	-----
19	20/1100Z	30.1N	134.9E	30.1N	134.8E	39.2N	134.9E	030-0180	-----	-----	-----	-----	-----	-----
20	20/1700Z	31.5N	134.3E	31.5N	133.9E	38.5N	134.5E	046-0012	-----	-----	-----	-----	-----	-----
21	20/2300Z	32.9N	133.2E	33.0N	133.1E	40.3N	134.6E	277-0048	-----	-----	-----	-----	-----	-----
22	21/0500Z	34.8N	132.7E	34.7N	132.4E	43.7N	136.2E	330-0096	-----	-----	-----	-----	-----	-----
23	21/1100Z	36.3N	132.7E	36.5N	132.9E	41.0N	136.1E	-----	-----	-----	-----	-----	-----	-----
24	21/1700Z	38.0N	133.9E	38.3N	134.2E	43.8N	139.5E	-----	-----	-----	-----	-----	-----	-----
25	21/2300Z	40.1N	135.7E	40.2N	135.7E	-----	-----	-----	-----	-----	-----	-----	-----	-----
26	22/0500Z	42.2N	137.4E	42.3N	137.4E	-----	-----	-----	-----	-----	-----	-----	-----	-----

AVERAGE 24 HOUR ERROR - 0100 MI. } O/.
AVERAGE 48 HOUR ERROR - 0202 MI.
AVERAGE 72 HOUR ERROR - 0323 MI.