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Regional Meteorology of the Bering Sea During MIZEX West
February and March, 1983



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REGIONAL METEOROLOGY OF THE BERING SEA
DURING MIZEX-WEST, FEBRUARY AND MARCH 1983

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REGIONAL METEOROLOGY OF THE BERING SEA DURING
MIZEX-WEST, FEBRUARY AND MARCH, 1983¹

J. G. Wilson², A. L. Comiskey³, R. W. Lindsay⁴, and V. L. Long²

ABSTRACT. The Marginal Ice Zone Experiment (MIZEX) West was conducted in the eastern Bering Sea during February and March 1983. During the experiment surface and upper-air meteorological observations were taken from two ships, the NOAA Ship DISCOVERER and Coast Guard Cutter WESTWIND. The meteorology of the region for this period is illustrated with fields of sea level pressure, surface air temperature (computed from the 1000-850 mb thickness), and surface winds. These fields are derived from a mesoscale hand drawn analysis that was digitized on a 6×5 polar stereographic grid and processed through the computer routines in METLIB.

The weather during this period was predominantly characterized by storms crossing the North Pacific Ocean along the Aleutian Island chain resulting in northeasterly winds of 10 to 20 kts and temperatures of -10°C to -15°C in the eastern Bering Sea. Under these meteorological conditions, the ice edge advected to the south and west. The upper-air soundings generally showed a well-defined, well-mixed, marine boundary layer ranging between 100 and 900 m depth. The atmospheric boundary layer seaward of the ice edge under conditions of off-ice winds deepened by a factor of 1.6, 170 km downwind of the ice edge.

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1. INTRODUCTION

The Marginal Ice Zone Experiment-West (MIZEX-West) was conducted over the eastern Bering Sea Shelf during the months of February and March 1983. The objectives of the experiment included gathering observations of the regional meteorology, oceanography, and sea ice dynamics and thermodynamics along the marginal ice zone (MIZ) (Cavalieri *et al.*, 1983). The regional meteorological objectives were to study the modification of the planetary boundary layer across the MIZ and to study the change in characteristics of the MIZ under a variety of atmospheric conditions, in addition to generally describing the regional weather during the experiment.

MIZEX-West used a variety of platforms for making weather observations. The NOAA Ship DISCOVERER, located along the outer MIZ, operated in coordination with the U.S. Coast Guard Cutter WESTWIND, located in the inner MIZ (Fig. 1). Weather observations were made hourly from the bridge and twice daily upper-air observations were made by launching airsonde weather balloons from the afterdecks of each ship. In addition, two remote meteorological stations on ice floes that drifted through the MIZ were deployed from the WESTWIND. These stations transmitted data to shore through GOES-West (Geosynchronous Orbiting Environmental Satellite). Weather observations were also made during six flights of the NOAA WP-3D aircraft. Additional airsondes were launched from the ships on flight days.

This report describes the meteorological conditions over the eastern Bering Sea during MIZEX-West. The report lists the surface and upper-air observations from the ships, gives a narrative of the synoptic weather conditions during the experiment, and provides analyzed mesoscale maps of surface air temperature, pressure, and wind velocity over the region throughout the period.

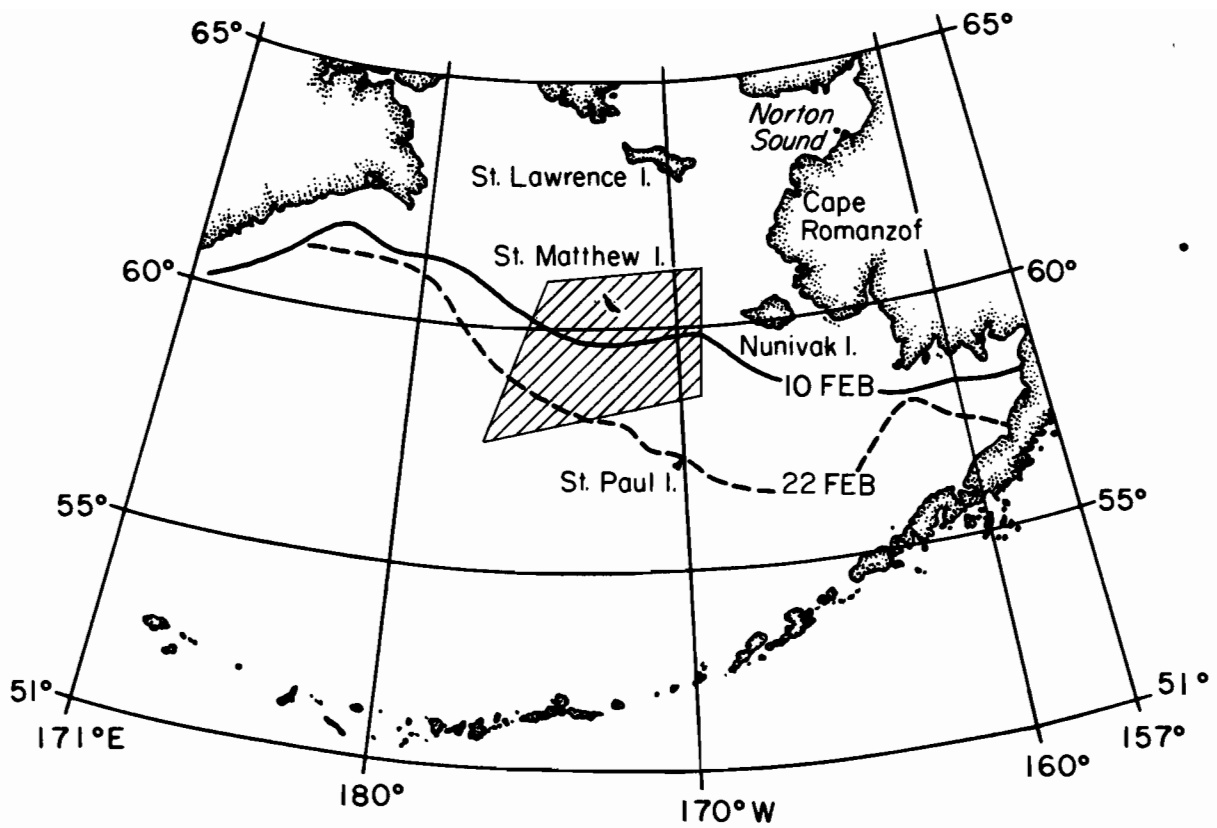


Figure 1. The eastern Bering Sea, region of ship operations near St. Matthew Island, and ice edge position on 10 and 22 February as determined from infrared satellite imagery.

2. METHODS

2.1 Surface Meteorological Observations

Shipboard surface meteorological observations were recorded hourly on the two ships with the WESTWIND in the inner MIZ, upwind of the DISCOVERER in the outer MIZ. Appendix A contains the weather logs of the WESTWIND and DISCOVERER.

The surface wind speed and direction were estimated by a 2-minute visual average then were converted to true values by graphically removing the ship motion. Wind speeds were recorded to the nearest knot and directions to the nearest whole degree.

Since the WESTWIND anemometer was frozen for much of the experiment, the winds are not included in the weather log. The DISCOVERER was constantly changing ship speed and orientation with respect to the actual wind, introducing a large variability in the correction for ship motion. The DISCOVERER also provided data tapes of winds sampled every second then vector averaged over 10 seconds.

While the DISCOVERER was in the ice, the pit log, which measures ship speed over ground, was retracted to prevent damage. The 10-second averaged winds for these periods could be reconstructed by estimating ship motion using Loran C fixes recorded by the ship's computer every 20 seconds throughout the experiment, but this has not been done. The ship computer was out of operation for at least 18 hours on 7 February.

Air temperatures were read to 0.1 degrees Fahrenheit with mercury thermometers then were converted to degrees Celsius. The WESTWIND thermometer was mounted in an exposed position on the ship's flying bridge. When checked in an ice water bath this thermometer measured 0.2°C. The DISCOVERER measured wet and dry bulb temperatures with a sling psychrometer calibrated

by the Seattle Port Meteorologist in January 1983. Both ships had difficulty obtaining wet bulb temperatures in freezing conditions. For accurate humidity measurements a digital humidity analyzer was mounted on the WESTWIND bridge wing. The sensor, model 911 manufactured by EG & G Environmental Equipment, used a frosted mirror. The instrument measured a dew point temperature in the range of -40°C to $+60^{\circ}\text{C}$ with a manufacturer's specified accuracy of $\pm 0.4^{\circ}\text{C}$.

Surface meteorological observations were also recorded at two remote ice stations deployed by the WESTWIND (Appendix B). The data collection package, a Model 3400A made by Synergetics International Inc., transmitted all geophysical data to GOES. The surface pressure (at one station), temperature, wind, and under-ice current were averaged for 10 minutes each hour with instantaneous measurements of the compass and vanes as a system check. Since the rotation of the ice floes in the earth's magnetic field is slow compared to the sampling rate, the relative alignment of the compass and vanes was accomplished by the alignment of the meteorological mast with true north at deployment and the subsequent subtraction of the first compass reading from all wind and current measurements.

The two remote meteorological stations were deployed with an array of six position-only ARGOS stations shown in Figure 2. Each ice station was located on a separate ice floe and drifted freely through the MIZ.

2.2 Surface Meteorological Maps

The National Weather Service Forecast Office in Anchorage, AK produces regional surface synoptic weather maps. These maps were reanalyzed after the experiment to include mesoscale atmospheric features (Lindsay and Comiskey, 1982) and late data that had not been included in the original

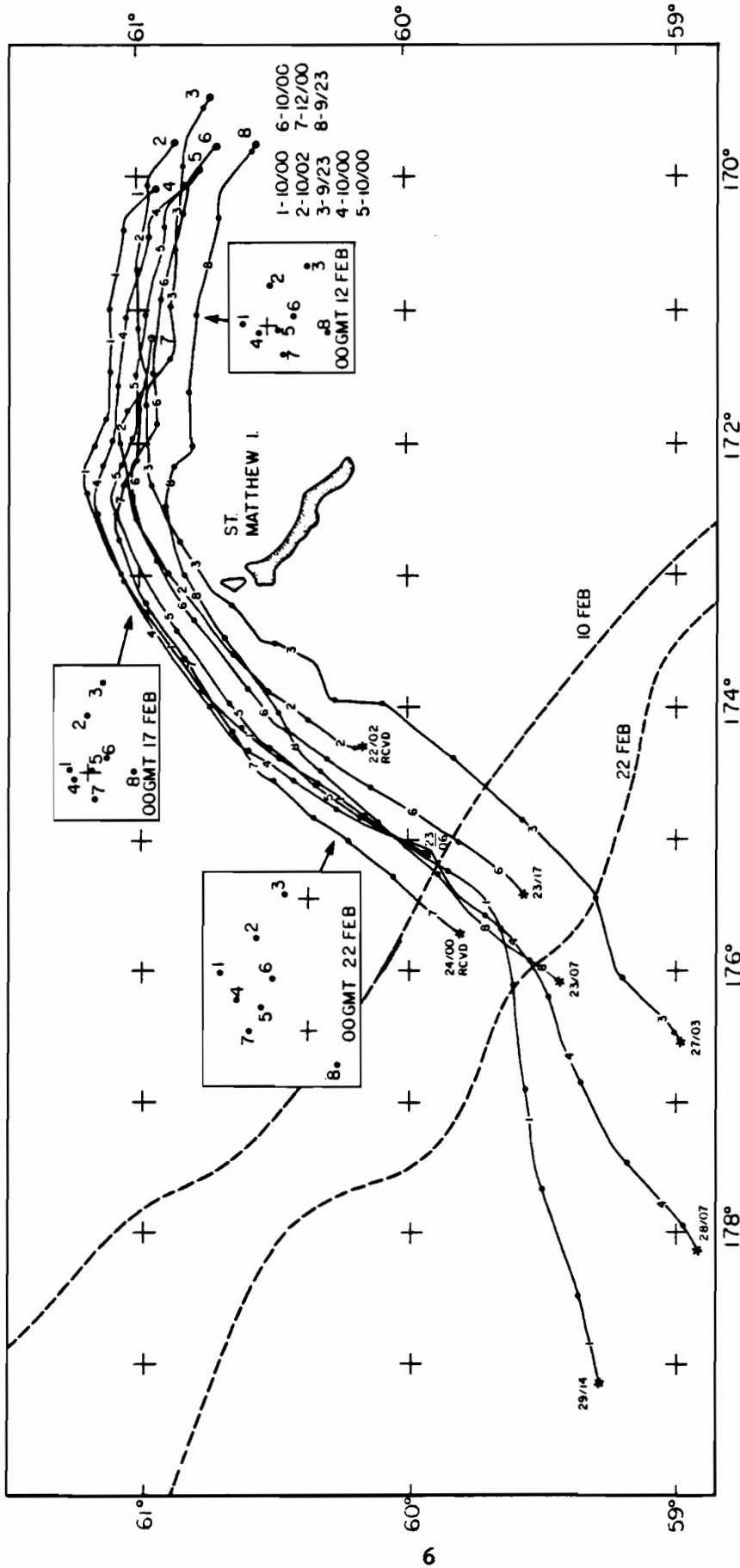


Figure 2. A Lagrangian array of eight ice stations, including two meteorological stations, drifted approximately 25° to the right of the wind direction with very little change of the pattern in which the stations were deployed. The deployment dates are listed on the right and the days of recovery or melt out of the instrumented floes is indicated at the end of each trajectory. The floes accelerated as they neared the ice edge.

analyses. Appendix C consists of twelve of these reanalyzed surface maps for the period of the experiment during which the WP-3D had flights in the eastern Bering Sea. The temperatures on the maps were derived from 1000-850 mb thicknesses to reduce the effects of surface temperature aberrations caused by topography, mechanical mixing, stability, and erroneous observations.

In addition to the hand-drawn maps in Appendix C there are twice daily mesoscale analyses of pressure and temperature at 00 and 12 GMT that have been manually digitized onto a 6×5 polar stereographic grid. The gridded fields were interpolated to a $\frac{1}{2}$ -mesh grid using METLIB (Overland *et al.*, 1980; Macklin *et al.*, 1984). The interpolated fields of sea level pressure and surface air temperature are shown in Appendix D.

Surface winds were calculated at each grid point using the METLIB program WINDS Model 4 (Macklin *et al.*, 1984) with a speed reduction factor of .8 of the gradient wind and an inflow angle of 30° to the left of the gradient wind to correct to the surface. The sea level pressure and surface-corrected gradient wind fields for the experiment are shown in Appendix E.

2.3 Upper Air Observations

Throughout MIZEX there were twice daily weather balloon launches from the DISCOVERER and the WESTWIND at 00 and 12 GMT. The systems used to profile the thermal structure of the lower atmosphere were the same for both ships. Each balloon was instrumented with an expendable airsonde Model AS-1C-PTRH, which measures the ambient pressure, air temperature, and humidity. These data were telemetered to the ships' Automatic Data Acquisition System (ADAS) ground receivers, Model TS3-A, manufactured by AIRCO, Inc., and are shown in Appendix F. With a 100-g pilot balloon, the

ascent rate was approximately 200 m per minute. The sonde cycled through the sensors in about 5 seconds, hence 24 samples were taken in a 400-m deep boundary layer. The surface meteorological conditions at the time of each launch are shown in Tables 1 and 2.

On the days of the WP-3D aircraft overflights there were two or three balloon launches in addition to the synoptic launches. These additional launches generally bracketed the time when the plane was over the ships.

On the night of 13 February the ships conducted a series of special airsonde launches to examine the modification of the marine boundary layer as air streamed off the ice over relatively warmer water. The DISCOVERER was positioned at the ice edge directly downwind of the WESTWIND, then steamed downwind at approximately 12 knots launching 7 balloons at 45-minute intervals (Figure 3). The WESTWIND launched one balloon at the beginning of the period to set the upwind conditions for the series.

3. SUMMARY OF THE METEOROLOGY DURING MIZEX WEST

During much of February and March 1983, the interaction between the Siberian high pressure system and low pressure in the southern Bering Sea resulted in cold, continental or Arctic air streaming westward off the Alaskan coast or southward through the Bering Strait region toward the ice edge. These easterly and northerly winds are commonly observed over the Bering during winter months when the dominant path for cyclones crossing the North Pacific is approximately west to east along the axis of the Aleutian Island chain and into either the southeastern Bering or the northern Gulf of Alaska (Klein, 1957; Overland and Pease, 1982).

In early February low pressure in the southern Bering brought winds ranging from easterly to northerly at 5-20 knots and air temperatures of

Table 1. CGC WESTWIND airsonde launches surface meteorological data.

Sonde No.	Day/Time (GMT)	Lat °N	Long °W	Surface Sonde (°C)	Temp Ship (°C)	Dew Point Sonde (°C)	Dew Point Ship (°C)	Max ht. (mb)
1	6/19	58 53.4	172 17.3	-5.8				370
2	7/0	59 00.7	172 05.0	-3.2	-2.2			325
3	7/12	59 00.9	171 58.0	-3.6	-3.0		-6.3	466
4	8/0	59 13.0	172 3.0	-2.6	-2.8			448
5	8/11	59 16.0	171 35.8	-2.0	-2.8			472
6	8/23	60 12.9	169 58.2	-1.9	-2.0		-3.6	571
7	9/12	60 38.0	169 23.3	-3.8	-3.7		-5.9	555
8	10/00	60 44.0	169 26.6	-3.9	-4.1		-7.9	453
9	10/11	60 34.0	170 02.6	-6.3	-6.2		-9.8	382
10	11/00	60 51.3	170 30.6	-8.8	-7.8		-11.6	397
11	11/23	60 57.0	171 11.2	-9.8	-9.0		-13.0	450
12	12/12	60 56.7	171 35.6	-13.5	-13.4			909
13	12/23	61 00.1	171 39.8	-15.6	-15.0		-17.6	848
14	13/09	60 59.8	171 54.8	-17.3	-16.8			420
15	13/11	60 58.0	171 58.0	-17.1	-17.5		-18.0	654
16	13/19	60 58.7	172 08.5	-14.3	-13.5		-16.4	534
17	14/01	60 58.0	172 06.4	-11.9	-14.9			450
18	14/02	60 57.0	172 09.0	-10.5	-12.5			595
19	14/12	60 57.6	172 17.3	-5.4	-7.5	-10.3	-8.2	576
20	14/23	61 01.7	172 18.2	-6.0	-4.8	-6.5	-6.2	584
21	15/11	61 03.0	172 24.0	-7.7	-7.2	-11.0	-8.9	494
22	16/0	61 03.5	172 37.8	-12.1	-12.4	-15.6	-13.0	560
23	16/11	61 00.4	172 55.4	-11.2	-10.5	-13.6	-12.3	687
24	16/20	61 00.4	172 55.4	-12.8	-10.5	-17.8	-13.5	592
25	17/0	60 58.2	173 7.3	-12.4	-13.0	-17.5	-14.3	692
26	17/1	60 57.6	173 9.7	-12.5	-12.8	-14.8	-14.2	750
27	17/11	60 54.6	173 21.6	-12.9	-12.8	-17.2	-13.9	654
28	17/23	60 51.3	173 32.9	-14.8	-14.3	-18.7	-16.1	135
29	18/11	60 45.5	173 50.4	-17.6	-17.6	-20.9	-18.6	266
30	18/23	60 39.2	174 9.1	-19.1	-18.5	-23.7	-21.1	480
31	19/02	60 37.3	174 13.1	-17.4	-17.9	-22.5	-20.3	516
32	19/03	60 36.6	174 15.3	-17.5	-17.8	-22.5	-19.8	660
33	19/04	60 36.1	174 17.2	-17.5	-17.7		-19.2	780
34	19/6	60 35.4	174 21.1	-17.2	-17.6	-20.8	-19.1	553
35	19/9	60 35.1	174 24.7	-17.2	-17.5	-21.6	-19.2	602
36	19/11	60 35.0	174 26.9	-17.2	-17.4	-21.6	-21.4	810
37	19/14	60 33.8	174 27.2	-16.7	-12.2	-20.3	-18.3	460
38	19/15	60 32.7	174 28.6	-16.5	-16.5	-18.6	-17.6	460
39	20/00	60 29.9	174 33.0	-15.1	-15.1	-18.1	-18.2	494
40	20/11	60 25.9	174 40.6	-17.3	-17.0	-19.4	-18.2	627
41	20/23	60 22.0	174 42.1	-15.1	-15.3	-20.7	-16.8	450
42	21/11	60 19.5	174 56.4	-17.2	-16.5	-19.2	-17.1	599
43	21/22	60 13.6	174 58.3	-14.8	-15.2	-19.7		700
44	22/11	60 08.6	175 08.4	-14.8	-13.6	-15.8	-15.2	490

Table 1. WESTWIND airsonde log (continued).

Sonde No.	Day/Time (GMT)	Lat °N	Long °W	Surface Sonde (°C)	Temp Ship (°C)	Dew Point Sonde (°C)	Dew Point Ship (°C)	Max ht. (mb)
45	22/23	60 01.5	175 16.2	-13.5	-12.9	-15.5	13.9	789
46	23/11	59 54.5	175 32.7	-12.8	-12.5	-15.0		270
47	23/18	59 50.6	175 37.1	-11.2	-10.5	-12.6	-10.8	644
48	23/19	59 50.9	175 40.0	-11.6	-11.4	-14.7	-11.4	730
49	23/20	59 50.7	175 41.0	-10.8	-11.0	-12.2	-12.2	630
50	24/00	59 47.0	175 44.0	-10.4		-11.8	-11.4	394
51	24/01	59 45.8	175 45.5	-10.3		-12.9	-11.3	420
52	24/02	59 44.8	175 47.1	-9.3		-10.0	-9.7	496
53	24/03	59 44.4	175 47.5	-9.4	-8.3	-12.0	-9.6	270
54	24/04	59 42.5	175 52.0	-9.6	-9.4	-10.6	-9.4	458

Table 2. NOAA ship DISCOVERER airsonde launches surface meteorological data.

Sonde No.	Day/Time (GMT)	Lat °N	Long °W	Wind Spd (m/s)	Wind Dir (DegT)	Surface Sonde (°C)	Temp Ship (°C)	Dew Point Sonde (°C)	Max ht. (mb)
1	6/19	58 53.4	172 17.3	3.1	45	-4.2	-8.0		387
2	7/12	59 8.5	172 27.3	8.2	85	-1.1	-3.2		498
3	8/0	59 9.4	172 19.7	10.3	65	-0.7	-3.0		489
4	8/12	59 11.2	172 26.9	8.2	75	-2.2	-1.8		703
5	9/0	59 14.3	172 30.8	7.2	75	-1.5	-1.2	-2.1	485
6	9/12	59 17.5	172 43.8	6.2	60	-1.1	-2.8	-3.7	493
7	10/0	59 21.0	172 47.9	8.2	105	0.5	0.0	-2.2	493
8	10/12	59 28.9	173 4.0	16.5	80	-2.0	-3.5	-3.9	499
9	11/0	59 34.4	173 21.7	18.0	075	-4.3	-3.5	-6.0	483
10	11/12	59 36.4	173 54.3	19.6	090	-4.4	-4.5	-5.3	502
11	12/0	59 46.3	174 16.0	15.4	095	-4.8	-5.0	-6.7	517
12	12/12	59 17.1	173 32.1	14.4	080	-6.8	-7.0	-8.3	521
13	13/0	58 57.3	172 4.2	16.5	065	-6.7	-7.5	-9.3	490
14	13/9	58 58.4	172 8.5	15.4	080	-5.2	-8.3		517
15	13/10	58 56.8	172 25.0	14.4	080	-5.3			505
16	13/10	58 55.7	172 36.4			-8.0			498
17	13/11	58 54.0	172 53.2	11.3	70	-7.0	-5.7		490
18	13/12	58 50.7	173 7.7	11.3	70	-4.8	-5.5	-5.9	491
19	13/13	58 46.6	173 23.3	11.3	70	-5.6	-5.5	-5.7	489
20	13/13	58 42.7	173 39.2	11.3	70	-5.1	-5.5		432
21	13/20	58 47.2	173 5.4	13.4	75	-5.1	-5.8		522
22	14/01	58 48.3	172 23.0	10.3	95	0.7	-3.0		378
23	14/07	58 54.4	171 1.6	11.3	180	0.2	-0.2		553
24	14/12	58 41.6	171 20.3	9.3	180	1.2	0.0	-1.0	782
25	15/0	59 5.1	171 27.3	11.3	115	-.6	-1.5	-1.5	318
26	15/11	58 50.4	172 49.3	11.3	75	-3.1	-3.3		482
27	16/0	59 19.7	172 36.0	10.3	50	-7.2	-7.7	-9.9	504
28	16/11	59 14.1	172 54.3	11.8	60	-4.2	-6.0	-6.4	486
29	16/19	59 8.1	173 3.8	11.3	55	-5.0	-3.5	-9.0	584
30	17/0	59 23.2	172 49.9	13.9	20	-7.9	-8.3	-12.4	582
31	17/6	59 21.7	173 1.3	15.4	40	-6.9	-9.2	-9.9	751
32	17/11	59 20.7	173 13.9	14.4	40	-7.6	-7.2	-9.5	630
33	18/0	59 17.7	173 39.9	19.6	35	-8.8	-9.8	-10.0	526
34	19/0	59 56.8	175 16.6	18.5	45	-15.6	-13.4	-19.4	469
35	19/4	60 0.3	175 21.3	18.0	40	-13.0	-14.0	-16.8	742
36	19/6	59 53.2	175 33.9	18.0	40	-13.8	-14.0	-16.8	735
37	19/8	59 44.5	175 48.1	16.5	40	-13.1	-14.0	-14.0	718
38	19/10	59 38.0	175 58.2	17.5	50	-10.4	-12.0	-12.0	708
39	19/14	59 37.2	175 57.9	11.0	40	-8.8	-10.4		816
41	19/21	59 54.3	175 30.8	10.3	25	-10.4	-10.0	-16.0	747
42	20/2	59 47.1	175 32.2	12.4	20		-9.3		480
43	20/11	60 11.4	175 38.8	9.3	15	-15.4	-13.5	-18.5	535
44	21/0	60 12.4	175 50.1	9.3	30	-15.3	-14.0	-19.8	434
46	22/0	60 4.7	176 21.0	10.3	25	-11.2	-8.7	-15.0	486

Table 2. DISCOVERER airsonde log (continued).

Sonde No.	Day/Time (GMT)	Lat °N	Long °W	Wind Spd (m/s)	Wind Dir (DegT)	Surface Sonde Temp (°C)	Ship Temp (°C)	Dew Point Sonde (°C)	Max ht. (mb)
47	22/11 60	1.7	176 38.0	13.4	25	-8.0	-10.0	-10.0	353
48	23/0 59	53.0	176 51.8	18.5	15	-8.7	-10.0	-12.5	209
49	23/12 59	54.1	176 37.8	15.4	30	-9.4	-10.0	-15.3	875
51	23/18 59	46.7	176 44.9	14.4	10	-9.1	-9.5	-15.0	285
52	23/19 59	45.8	176 46.6	14.4	10	-7.2	-9.4	-13.2	402
53	23/20 59	44.6	176 46.1	14.4	10	-9.6	-9.4	-15.4	270
54	24/0 59	42.4	176 34.6	15.4	15	-9.0	-9.8	-9.0	484

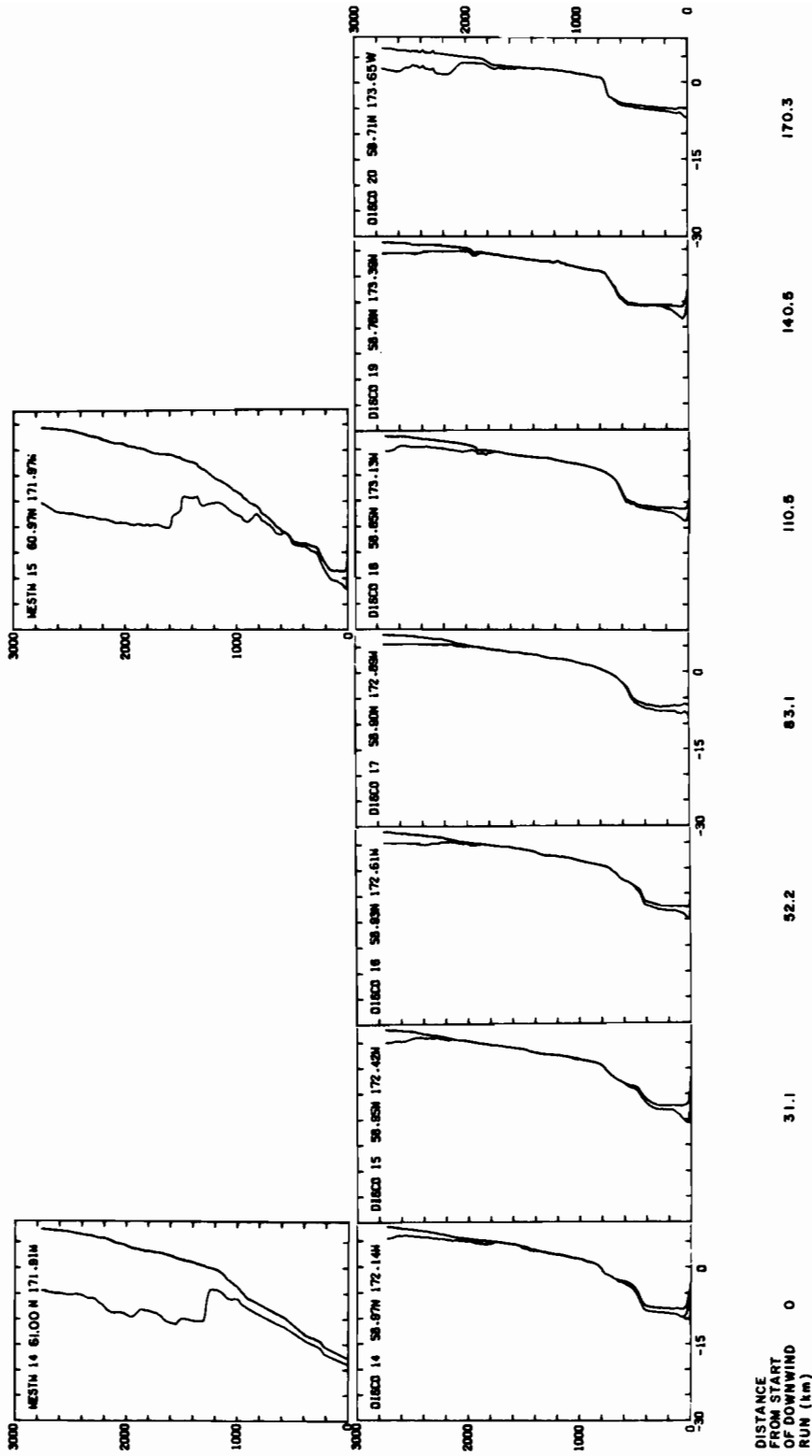


Figure 3. The atmospheric boundary layer deepens seaward of the ice edge under conditions of off-ice winds as seen in airsondes taken as the NOAA ship DISCOVERER steamed downwind at 12 kts.

about -4°C at the ice edge and slightly lower in the ice interior. From 10 to 13 February the easterly winds increased to over 30 knots at the WESTWIND in inner MIZ and over 35 knots in the outer MIZ (DISCOVERER). The high winds and associated cold air advection resulted in an air temperature decrease to about -18°C at the WESTWIND. However, the DISCOVERER observed no significant change. The upper air soundings (Appendix F) indicate a well-mixed marine boundary layer at both ships during this period.

There was a brief period on 14 February when the winds shifted to southerly due to a low pressure center in the southwestern Bering. The winds were about 20 knots and temperatures during this period of warm air advection rose to 0°C at the DISCOVERER and -5°C at the WESTWIND. The airsondes launched during this period show the surface warming but very little change aloft and the marine boundary layer is not clearly defined.

Between 15 and 19 February the North Pacific storm track shifted south of the Aleutian Islands and the northeast winds increased over this period to more than 35 kts. Associated with the high winds and cold air advection were air temperatures of about -14°C at the ice edge and -24°C in the ice interior. The marine boundary layer was defined by a sharp inversion with dry air aloft and deepened from 300 to 600 m throughout this period at the WESTWIND. The boundary layer was a similar depth at the DISCOVERER in the outer MIZ but deepened to 900 m at 00 GMT on 18 February.

The period of 20 to 22 February was characterized by winds from the north-northeast at 20-25 knots and air temperatures averaging -12°C at the ice edge and -16°C at the WESTWIND. The winds increased to 30-35 knots through 24 February and temperatures continued to rise to -9.5°C at the DISCOVERER and -10.5°C at the WESTWIND. The soundings, again, show a defined, well-mixed boundary layer of 100-400 m depth.

The ships left the vicinity of the ice on 24 February and the remainder of the analysis is taken from the METLIB meteorological fields (Appendices D and E). By 12 GMT on 23 February the storm track shifted north over the Aleutian Islands and a low pressure center retrograded westward along the island chain into the southwestern Bering Sea through 3 March. The winds over the MIZ were southeasterly to easterly. From 3 to 8 March a low pressure center passed over the Aleutians bringing northeasterly winds, then the pressure gradient over the Bering relaxed, the northeasterlies lightened, and the air temperatures over Alaska rose considerably.

The passage of a storm from 8 to 13 March to the south of the Aleutian chain tightened the pressure gradient over the Bering Sea and brought high northerly winds and cold air advection that moved the 0°C isotherm from the Nunivak Island vicinity to well south of the Aleutians.

A high pressure ridge moved over the Bering in the period following the storm passage and was characterized by light northwesterly winds and a gradual warming of the region through 16 March. By 18 March the 0°C isotherm intersected St. Lawrence Island in the northern Bering Sea.

The region was again dominated by northeasterly winds and cold air advection that moved the 0°C isotherm south to the vicinity of the Aleutians through the end of March, with another series of storms passing to the south of the Aleutians. The gradient relaxed and winds lightened after the 28th.

4. RESULTS

The dominant weather scenario in the Bering Sea during February and March 1983 was northeasterly winds 10-20 knots and temperatures of about -10°C to -15°C (colder in MIZ interior). This pattern was broken periodically

by a shift in the North Pacific storm track from south of the Aleutian Island chain to the southern Bering. There was one ridge of high pressure that moved through the region from 13 to 16 March.

The free drifting array of eight ice stations deployed on separate ice floes in the MIZ drifted in the mean 25 degrees to the right of the wind direction. Despite changes in wind direction of 180 degrees, the pattern of the array at deployment was nearly maintained for more than 10 days and approximately 440 km (Figure 2). The floes accelerated as they neared the ice edge.

With the winds predominantly from the northeast and hence, off-ice, the ice edge advected toward the south and west (Figure 1). These conditions are also characterized by most of the soundings with a well-defined, well-mixed, marine boundary layer ranging between 100 and 900 m depth.

The growth of the atmospheric boundary layer seaward of the ice edge under conditions of 12 m/s off-ice winds is illustrated in Figure 3. The boundary layer deepened by a factor of 1.6 within 170 km of the ice edge on 13 February.

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References

- Cavaliere, D.J., and 15 others, 1983: MIZEX-West: Bering Sea Marginal Ice Zone Experiment. *EOS Transactions AGU*, 64, 578-580.
- Klein, W.H., 1957: Principal tracks and mean frequencies of cyclones and anticyclones in the northern hemisphere. Res. Paper No. 40, U.S. Weather Bureau, 60 pp. [National Weather Service, Techniques Development Laboratory, Washington, D.C., 20233].
- Lindsay, R.W. and A.L. Comiskey, 1982: *Surface and Upper-air Observations in the Eastern Bering Sea, February and March 1981*. NOAA Tech. Memo. ERL PMEL-35, 90 pp.
- Macklin, S.A., R.L. Brown, J. Gray, and R.W. Lindsay, 1984: *METLIB-II -A Program Library for Calculating and Plotting Atmospheric and Oceanic Fields*. NOAA Tech. Memo. ERL PMEL-54, 53 pp.
- Overland, J.E., R.A. Brown, and C.D. Mobley, 1980: *METLIB - A Program Library for Calculating and Plotting Marine Boundary Layer Wind Fields*. NOAA Tech. Memo. ERL PMEL-20, 82 pp.
- Overland, J.E. and C.H. Pease, 1982: Cyclone climatology of the Bering Sea and its relation to sea ice extent. *Mon. Wea. Rev.*, 110, 5-13.

APPENDIX A

HOURLY SURFACE WEATHER OBSERVATION LOGS FROM THE USCGC
WESTWIND AND NOAA SHIP DISCOVERER

BRIDGE DATA FROM THE WESTWIND FOR MIZEX 1983.

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 2 7 0	58	59.8	172	8.7	-4.9	-5.50	984.6	10	7	0.0	-99
83 2 7 1	58	58.8	172	9.6	-4.7	-6.50	984.0	10	4	6.5	228
83 2 7 2	58	57.3	172	13.0	-4.8	-6.90	984.0	10	5	6.5	55
83 2 7 3	59	4.3	171	57.0	-5.3	-6.80	984.6	10	5	13.0	55
83 2 7 4	59	8.8	171	48.0	-6.4	-6.50	985.0	10	10	0.0	-99
83 2 7 5	-99	-99.0	-99	-99.0	-4.3	-6.30	985.0	10	10	0.0	-99
83 2 7 6	59	7.6	171	51.2	-5.0	-6.10	985.7	10	10	0.0	-99
83 2 7 7	59	7.5	171	51.2	-4.4	-5.20	985.7	10	10	0.0	-99
83 2 7 8	59	7.6	171	55.7	-4.0	-5.90	986.0	10	10	0.0	-99
83 2 7 9	59	7.6	171	55.8	-4.0	-5.40	986.7	10	10	0.0	-99
83 2 7 10	59	8.6	171	57.8	-4.0	-5.90	986.3	10	8	0.0	12
83 2 7 11	59	9.0	171	58.4	-4.0	-5.70	986.7	10	8	0.0	11
83 2 7 12	59	9.8	171	59.8	-3.9	-6.90	987.4	10	8	0.0	6
83 2 7 13	59	10.4	171	59.1	-4.3	-6.90	987.4	10	7	0.0	353
83 2 7 14	59	10.7	171	59.2	-4.3	-6.90	987.7	10	8	0.0	354
83 2 7 15	59	10.5	171	59.5	-4.2	-6.50	987.4	10	8	0.0	342
83 2 7 16	59	10.8	171	59.7	-3.9	-6.70	987.4	10	8	0.0	337
83 2 7 17	-99	-99.0	172	.4	-3.7	-6.50	987.7	10	8	0.0	333
83 2 7 18	59	10.7	172	1.0	-5.8	-5.80	988.0	10	10	0.0	340
83 2 7 19	59	10.7	172	2.0	-3.9	-5.60	987.7	10	10	0.0	340
83 2 7 20	59	9.8	172	3.9	-5.0	-5.80	987.7	10	10	0.0	340
83 2 7 21	59	10.0	172	5.0	-3.9	-4.80	988.0	10	10	0.0	340
83 2 7 22	59	11.8	172	4.1	-3.8	-5.10	988.4	10	10	0.0	50
83 2 7 23	59	11.7	172	4.3	-2.8	-99.00	988.4	10	10	13.7	58
83 2 8 0	59	9.7	172	3.2	-2.7	-99.00	989.1	10	10	13.7	188
83 2 8 1	59	8.5	172	5.4	-2.2	-99.00	989.1	10	7	13.0	233
83 2 8 2	59	9.4	172	14.4	-2.8	-3.10	989.7	10	9	10.0	330
83 2 8 3	59	12.2	172	14.4	-2.2	-2.80	989.7	10	7	7.7	150
83 2 8 4	59	9.1	172	13.0	-2.8	-3.00	990.1	10	9	10.0	13
83 2 8 5	59	12.6	172	13.2	-2.8	-2.80	991.8	10	9	0.0	357
83 2 8 6	59	14.2	172	10.1	-2.2	-3.00	991.1	10	9	0.0	0
83 2 8 7	59	13.2	172	4.5	-1.1	-7.00	991.1	10	9	10.0	110
83 2 8 8	59	7.2	171	56.6	-1.1	-6.30	991.4	10	10	10.0	147
83 2 8 9	59	5.6	171	55.6	-1.3	-5.60	992.8	10	10	-99.0	-99
83 2 8 10	59	9.9	171	48.6	-3.1	-3.70	993.1	10	10	9.0	53
83 2 8 11	59	15.0	171	36.0	-3.1	-99.00	994.1	4	5	5.0	45
83 2 8 12	59	20.6	171	28.0	-2.8	-99.00	994.1	5	1	9.0	45
83 2 8 13	59	28.3	171	17.1	-5.1	-99.00	995.5	6	5	0.0	310
83 2 8 14	59	30.8	171	12.6	-4.6	-99.00	995.8	6	10	10.0	48
83 2 8 15	59	36.1	171	.5	-4.2	-99.00	995.8	6	10	10.0	48
83 2 8 16	59	41.5	170	51.9	-3.7	-4.70	996.2	8	10	10.0	34
83 2 8 17	59	46.9	170	44.0	-2.8	-6.90	996.2	10	10	10.0	38
83 2 8 18	59	51.5	170	37.8	-2.7	-6.00	997.2	10	10	8.0	45
83 2 8 19	59	56.6	170	28.6	-2.6	-3.50	998.2	10	10	8.5	45
83 2 8 20	60	.6	170	20.7	-2.1	-3.60	998.5	10	10	6.0	45
83 2 8 21	60	4.1	170	16.0	-2.2	-3.70	998.9	10	10	8.0	45
83 2 8 22	60	9.4	170	6.9	-1.7	-3.70	999.6	10	10	8.0	45
83 2 8 23	60	12.9	169	58.6	-1.4	-5.70	1000.2	10	10	0.0	0
83 2 9 0	60	12.9	169	58.6	-1.6	-3.60	1000.6	10	10	7.2	37
83 2 9 1	60	21.9	169	47.6	.0	-3.60	1000.6	10	10	7.2	37
83 2 9 2	60	27.6	169	27.5	-2.1	-5.60	1000.6	10	10	6.2	40
83 2 9 3	60	30.7	169	50.9	.0	-7.80	1000.6	10	10	6.2	40

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 2 9 4	60	34.0	169	22.4	-3.9	-99.00	1001.6	10	10	3.2	50
83 2 9 5	60	36.6	169	16.6	-3.8	-99.00	1001.6	10	10	0.0	50
83 2 9 6	60	36.7	169	17.8	-3.3	-99.00	1001.9	10	10	0.0	34
83 2 9 7	60	36.8	169	17.5	-3.3	-99.00	1001.9	10	10	0.0	16
83 2 9 8	60	37.3	169	18.6	-3.6	-99.00	1002.3	10	10	0.0	21
83 2 9 9	60	37.4	169	19.9	-4.1	-99.00	1002.3	10	10	0.0	355
83 2 9 10	60	37.9	169	21.5	-3.8	-4.90	1002.6	10	8	0.0	354
83 2 9 11	60	38.6	169	22.1	-3.8	-4.30	1002.6	10	8	0.0	354
83 2 9 12	60	39.5	169	24.4	-4.3	-5.90	1002.6	10	8	0.0	4
83 2 9 13	60	40.2	169	24.9	-4.6	-5.40	1002.3	10	7	0.0	5
83 2 9 14	60	41.7	169	25.0	-3.9	-5.40	1002.3	10	9	0.0	6
83 2 9 15	60	42.0	169	24.6	-3.6	-5.40	1001.9	10	9	0.0	7
83 2 9 16	60	42.6	169	24.2	-3.9	-5.40	1001.6	10	9	0.0	8
83 2 9 17	60	43.0	169	23.5	-3.9	-5.40	1001.2	10	10	0.0	8
83 2 9 18	60	43.0	169	23.5	-4.2	-5.30	1001.6	10	10	0.0	9
83 2 9 19	60	43.0	169	24.1	-3.7	-4.30	1001.9	10	10	0.0	10
83 2 9 20	60	43.3	169	22.8	-2.2	-3.90	1002.3	10	10	0.0	10
83 2 9 21	60	43.6	169	23.2	-2.6	-4.30	1002.3	10	10	0.0	10
83 2 9 22	60	44.7	169	23.8	-3.3	-4.60	1002.3	10	8	0.0	6
83 2 9 23	60	44.2	169	26.7	-4.2	-6.80	1002.6	10	8	0.0	6
83 2 10 0	60	44.3	169	27.0	-4.4	-7.90	1002.6	10	8	0.0	6
83 2 10 1	60	44.3	169	28.1	-4.6	-7.60	1002.6	10	8	0.0	7
83 2 10 2	60	45.8	169	28.9	-4.6	-5.20	1002.3	10	8	0.0	7
83 2 10 3	60	44.9	169	28.8	-4.6	-6.60	1002.3	10	8	0.0	163
83 2 10 4	60	45.0	169	29.0	-3.9	-6.40	1002.3	10	9	0.0	123
83 2 10 5	-99	-99.0	-99	-99.0	-3.9	-7.50	1002.6	10	9	6.9	195
83 2 10 6	60	41.3	169	29.2	-4.2	-7.70	1002.3	10	10	2.0	140
83 2 10 7	60	37.0	169	27.9	-4.2	-7.80	1002.3	10	10	4.0	165
83 2 10 8	60	32.4	169	28.6	-4.2	-7.80	1002.3	10	10	4.0	180
83 2 10 9	60	27.7	169	35.4	-4.4	-7.90	1002.3	10	8	5.0	270
83 2 10 10	-99	-99.0	169	51.9	-99.0	-8.30	1001.6	10	8	7.0	270
83 2 10 11	-99	-99.0	169	58.5	-99.0	-9.20	1001.6	10	8	5.5	328
83 2 10 12	-99	-99.0	170	6.7	-99.0	-9.90	1001.6	10	8	5.0	328
83 2 10 13	-99	-99.0	170	16.0	-99.0	-10.70	1002.3	10	6	6.0	355
83 2 10 14	60	49.3	170	18.6	-8.2	-10.50	1002.3	10	7	0.0	56
83 2 10 15	60	49.8	170	19.6	-8.4	-11.00	1002.6	10	7	0.0	25
83 2 10 16	60	50.4	170	20.5	-8.9	-11.20	1002.6	10	7	0.0	350
83 2 10 17	60	50.8	170	21.3	-8.9	-11.30	1002.3	10	7	0.0	6
83 2 10 18	60	51.0	170	22.0	-8.9	-11.40	1001.9	10	7	0.0	7
83 2 10 19	60	51.1	-99	-99.0	-8.9	-11.40	1001.6	10	7	0.0	14
83 2 10 20	60	51.1	170	24.2	-9.4	-12.10	1000.9	10	7	0.0	12
83 2 10 21	60	51.0	170	26.1	-9.2	-12.10	1000.9	10	7	0.0	4
83 2 10 22	60	50.7	170	28.1	-7.1	-12.10	1000.9	10	8	0.0	4
83 2 10 23	60	51.6	170	30.5	-6.8	-11.90	1000.9	10	7	.8	70
83 2 11 0	60	51.6	170	32.8	-8.6	-11.50	1000.9	10	9	0.0	42
83 2 11 1	60	51.6	170	31.5	-8.9	-12.40	1000.6	10	9	0.0	41
83 2 11 2	60	51.9	170	36.5	-8.9	-12.50	1000.6	10	10	0.0	30
83 2 11 3	60	52.1	170	38.6	-9.4	-11.90	1000.2	10	9	0.0	38
83 2 11 4	60	52.3	170	40.2	-9.6	-10.90	1000.6	10	9	0.0	46
83 2 11 5	60	52.3	170	41.7	-10.2	-13.00	1000.9	10	9	0.0	47
83 2 11 6	60	52.7	170	43.2	-9.7	-12.50	1000.6	10	9	0.0	54
83 2 11 7	60	52.8	170	44.7	-8.6	-13.20	1000.2	10	9	0.0	55
83 2 11 8	60	52.9	170	46.6	-10.3	-12.70	1000.6	10	9	0.0	58
83 2 11 9	60	53.0	170	48.5	-10.0	-13.20	1000.9	10	9	0.0	61
83 2 11 10	60	53.1	170	50.6	-10.5	-13.50	1000.6	5	9	0.0	62
83 2 11 11	60	53.3	170	53.1	-10.2	-13.50	1000.6	7	9	0.0	62

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 21112	60	53.7	170	55.4	-10.3	-11.40	999.9	7	9	0.0	63
83 21113	60	54.2	170	57.9	-9.9	-11.50	1000.2	7	9	0.0	64
83 21114	60	54.8	171	.6	-11.1	-12.00	1000.2	7	10	0.0	65
83 21115	60	55.5	171	2.0	-10.8	-12.30	1000.6	7	10	0.0	4
83 21116	60	56.1	171	3.8	-10.8	-12.30	1000.9	10	10	0.0	64
83 21117	60	56.5	171	4.1	-11.2	-12.40	1000.6	10	10	0.0	64
83 21118	60	57.0	171	4.9	-11.5	-12.90	1000.6	10	10	0.0	65
83 21119	60	57.2	171	5.7	-11.1	-13.90	1000.9	10	10	0.0	65
83 21120	60	57.3	171	6.6	-11.7	-15.10	1001.2	10	10	0.0	65
83 21121	60	57.2	171	7.6	-11.7	-13.00	1001.2	10	9	0.0	65
83 21122	60	57.1	171	9.0	-11.3	-12.70	1000.9	10	9	0.0	63
83 21123	60	57.0	171	10.5	-11.1	-13.10	1000.6	10	9	0.0	64
83 212 0	60	56.7	171	12.5	-10.6	-13.00	1000.2	10	9	2.0	241
83 212 1	60	57.1	171	15.2	-12.1	-13.10	1000.2	10	9	0.0	316
83 212 2	60	57.4	171	17.2	-12.1	-14.30	1000.2	10	9	0.0	41
83 212 3	60	57.5	171	18.5	-11.3	-14.40	1000.2	10	9	0.0	129
83 212 4	-99	-99.0	-99	-99.0	-11.5	-14.40	1000.2	10	8	0.0	80
83 212 5	-99	-99.0	-99	-99.0	-12.7	-99.00	1000.2	10	8	0.0	330
83 212 6	60	57.0	171	23.5	-13.2	-99.00	1000.2	10	8	0.0	351
83 212 7	60	55.0	171	28.5	-13.2	-99.00	1000.6	10	8	0.0	311
83 212 8	60	56.6	171	29.6	-13.2	-99.00	1000.6	10	9	0.0	70
83 212 9	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 21210	60	56.6	171	31.6	-13.2	-13.60	1000.6	10	7	0.0	321
83 21211	60	56.6	171	32.6	-14.4	-99.00	1000.6	10	7	0.0	323
83 21212	60	56.7	171	35.8	-15.0	-99.00	1000.6	10	7	0.0	324
83 21213	60	57.0	171	38.1	-16.2	-16.40	1000.9	10	7	0.0	304
83 21214	60	57.5	171	40.5	-16.2	-16.30	1000.6	8	7	0.0	304
83 21215	60	58.7	171	40.9	-16.3	-99.00	1000.6	-99	7	0.0	155
83 21216	60	59.2	171	42.1	-18.3	-99.00	1000.9	3	7	0.0	65
83 21217	60	59.8	171	43.6	-17.6	-19.30	1000.6	3	7	0.0	285
83 21218	-99	-99.0	171	44.0	-18.2	-99.00	1000.6	9	6	2.0	170
83 21219	61	.2	171	42.9	-17.0	-17.40	1000.6	9	7	7.7	65
83 21220	61	.2	171	42.9	-17.3	-99.00	1000.6	2	9	0.0	15
83 21221	61	.2	171	42.9	-14.3	-17.20	1000.6	10	9	0.0	75
83 21222	-99	-99.0	-99	-99.0	-15.3	-17.00	1000.6	10	10	2.3	60
83 21223	61	.5	171	40.0	-16.0	-17.60	1000.6	10	10	0.0	321
83 213 0	61	.5	171	40.0	-15.4	-17.20	1000.6	10	10	0.0	320
83 213 1	61	.1	171	42.7	-15.4	-17.10	1000.6	10	10	0.0	322
83 213 2	61	0.0	171	44.3	-16.1	-16.60	1000.6	10	10	0.0	320
83 213 3	61	0.0	171	45.6	-17.6	-17.90	1000.6	10	10	0.0	321
83 213 4	61	0.0	171	46.7	-17.9	-99.00	1000.2	10	10	0.0	322
83 213 5	60	59.0	171	46.6	-18.1	-18.90	1000.6	10	10	0.0	250
83 213 6	60	59.8	171	51.4	-18.1	-21.00	1000.6	3	10	0.0	291
83 213 7	60	59.0	171	52.5	-18.3	-18.40	1000.9	3	9	0.0	289
83 213 8	60	58.8	171	54.7	-18.0	-99.00	1001.2	3	9	-99.0	114
83 213 9	60	58.9	171	55.2	-18.0	-99.00	1000.6	3	8	-99.0	112
83 21310	60	58.7	171	56.6	-17.4	-17.80	1000.6	3	9	5.0	35
83 21311	60	58.8	171	58.2	-17.6	-18.20	1000.6	2	9	0.0	24
83 21312	60	58.8	171	59.3	-17.4	-18.00	1000.6	10	9	0.0	24
83 21313	60	58.9	172	.9	-15.3	-17.20	1000.6	10	9	0.0	24
83 21314	60	58.5	172	2.0	-16.0	-16.70	1000.6	10	9	.3	210
83 21315	60	58.4	172	3.1	-16.2	-16.60	1000.6	10	9	.5	310
83 21316	-99	-99.0	-99	-99.0	-16.2	-16.60	1000.6	10	10	.5	280
83 21317	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 21318	60	59.1	172	6.0	-13.3	-16.90	1000.6	10	9	0.0	259
83 21319	60	59.9	172	7.1	-13.3	-16.40	1000.6	10	9	0.0	50

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 21320	60	59.5	172	7.3	-13.9	-16.30	1000.6	10	9	0.0	50
83 21321	60	59.7	172	7.5	-13.6	-15.60	1001.2	10	9	0.0	50
83 21322	60	59.6	172	7.6	-15.9	-99.00	1001.2	10	9	0.0	-99
83 21323	60	59.4	172	7.4	-16.0	-99.00	1001.2	10	9	0.0	92
83 214 0	60	58.6	172	5.2	-13.9	-15.40	1000.9	10	9	0.0	23
83 214 1	60	58.3	172	5.3	-13.9	-15.40	1000.9	10	9	0.0	23
83 214 2	60	58.3	172	5.5	-15.0	-15.20	1000.9	10	9	0.0	31
83 214 3	60	58.1	172	5.9	-15.0	-99.00	1000.9	7	9	0.0	29
83 214 4	60	57.9	172	6.0	-15.1	-99.00	1000.6	7	9	0.0	28
83 214 5	60	57.2	172	7.2	-15.6	-99.00	1000.9	6	9	0.0	30
83 214 6	60	57.4	172	8.8	-14.9	-99.00	1000.6	6	9	0.0	30
83 214 7	60	57.3	172	10.0	-14.4	-99.00	1000.6	10	9	0.0	30
83 214 8	60	57.3	172	10.0	-12.2	-99.00	1000.3	10	9	0.0	29
83 214 9	60	57.4	172	11.1	-11.6	-99.00	1000.3	10	9	0.0	29
83 214 5	60	57.4	172	12.3	-11.4	-99.00	999.9	10	9	0.0	31
83 214 6	60	57.2	172	12.7	-11.0	-11.90	1000.2	10	10	0.0	31
83 214 7	60	57.7	172	13.6	-10.9	-11.90	1000.2	10	10	0.0	20
83 214 8	60	57.7	172	14.5	-10.1	-11.90	1000.2	10	10	0.0	20
83 214 9	60	57.7	172	14.9	-10.2	-11.20	1000.2	10	10	0.0	20
83 21410	60	57.6	172	16.0	-8.1	-10.80	1000.6	10	8	0.0	20
83 21411	60	57.6	172	17.1	-7.9	-8.80	1000.6	10	8	0.0	78
83 21412	60	57.6	172	18.6	-7.2	-8.20	1000.6	10	8	0.0	91
83 21413	60	57.8	172	19.6	-7.8	-99.00	1000.6	10	8	0.0	65
83 21414	60	58.2	172	20.7	-4.4	-5.40	1001.6	10	8	0.0	60
83 21415	60	58.7	172	21.5	-4.8	-5.90	1001.9	10	7	0.0	60
83 21416	60	59.2	172	21.8	-4.8	-5.90	1001.9	10	7	0.0	60
83 21417	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 21418	61	.6	172	21.6	-6.8	-99.00	1003.6	3	7	0.0	54
83 21419	61	1.1	172	20.9	-6.7	-8.10	1003.6	4	7	0.0	54
83 21420	61	1.5	172	19.9	-5.7	-7.30	1004.6	4	7	0.0	50
83 21421	61	1.6	172	19.2	-6.1	-7.10	1005.3	6	7	0.0	45
83 21422	61	1.7	172	18.6	-3.8	-6.70	1005.6	8	7	0.0	46
83 21423	61	1.3	172	18.2	-5.7	-6.20	1005.6	10	7	0.0	55
83 215 0	61	1.7	172	17.7	-5.9	-6.20	1005.6	10	7	0.0	55
83 215 1	61	1.7	172	18.7	-5.9	-6.10	1005.6	10	7	0.0	30
83 215 2	61	1.9	172	19.4	-4.1	-6.20	1006.3	10	7	0.0	20
83 215 3	61	2.7	172	26.4	-4.6	-4.90	1006.7	10	7	0.0	25
83 215 4	61	2.6	172	21.0	-4.6	-4.90	1007.3	10	7	0.0	310
83 215 5	61	3.0	172	21.3	-4.6	-5.00	1007.3	10	7	0.0	27
83 215 6	61	3.3	172	22.2	-4.4	-5.00	1007.3	10	7	0.0	347
83 215 7	61	3.6	172	22.0	-4.7	-6.20	1007.7	10	7	0.0	328
83 215 8	61	3.8	172	22.2	-5.4	-6.50	1007.7	10	7	0.0	326
83 215 9	61	3.9	172	22.5	-5.7	-7.80	1007.3	10	7	0.0	324
83 21510	61	3.9	172	22.9	-6.7	-8.90	1007.7	10	8	0.0	324
83 21511	61	3.8	172	22.2	-7.3	-8.90	1007.7	10	8	0.0	324
83 21512	61	3.8	172	25.1	-8.8	-99.00	1007.7	10	8	0.0	323
83 21513	61	3.7	172	27.2	-9.5	-99.00	1008.0	10	8	0.0	322
83 21514	61	3.6	172	28.9	-10.1	-99.00	1008.0	10	8	0.0	323
83 21515	61	3.7	172	30.8	-10.6	-12.40	1008.0	10	8	0.0	323
83 21516	61	3.9	172	32.5	-10.6	-12.40	1008.0	10	8	0.0	323
83 21517	61	4.0	172	33.7	-12.2	-14.60	1008.0	10	8	0.0	323
83 21518	61	4.3	172	34.8	-11.7	-12.60	1007.7	10	7	0.0	318
83 21519	61	4.4	172	35.4	-11.7	-14.00	1007.3	10	7	0.0	314
83 21520	61	4.4	172	35.9	-12.2	-13.20	1007.3	6	7	0.0	315
83 21521	61	4.2	172	36.3	-12.3	-13.20	1007.3	5	7	0.0	315
83 21522	61	3.9	172	36.9	-12.2	-14.80	1007.0	4	7	0.0	315

TIME GMT	LAT DEG MIN	LONG DEG MIN	TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
								SPD M/S	DIR DEGT
83 21523	61 3.5	172 37.7	-12.2	-13.40	1007.0	5	8	0.0	315
83 216 0	61 2.8	172 39.5	-12.2	-13.00	1007.0	8	8	0.0	315
83 216 1	61 2.5	172 40.3	-12.2	-12.80	1006.3	8	8	0.0	314
83 216 2	61 2.0	172 42.2	-12.1	-12.80	1006.3	7	8	0.0	316
83 216 3	61 1.6	172 43.7	-11.2	-12.30	1005.6	6	8	0.0	316
83 216 4	61 1.4	172 45.1	-12.1	-12.50	1005.3	5	8	0.0	316
83 216 5	61 1.2	172 47.4	-11.4	-11.80	1005.3	9	8	0.0	317
83 216 6	61 1.1	172 49.1	-11.1	-12.30	1005.3	10	8	0.0	314
83 216 7	61 1.1	172 50.4	-11.1	-12.30	1005.3	10	8	0.0	314
83 216 8	61 1.1	172 51.6	-11.1	-12.10	1005.3	10	8	0.0	314
83 216 9	61 .1	172 53.8	-11.1	-12.10	1005.3	10	8	0.0	314
83 21610	61 .8	172 53.5	-11.7	-99.00	1005.6	2	9	0.0	313
83 21611	61 .5	172 54.6	-10.9	-12.30	1005.3	3	9	0.0	312
83 21612	61 .2	172 56.0	-10.7	-12.00	1005.3	3	9	0.0	312
83 21613	60 59.8	172 57.6	-11.0	-12.20	1005.3	6	9	0.0	313
83 21614	60 59.5	172 59.8	-11.0	-11.90	1005.6	6	8	0.0	315
83 21615	60 59.4	173 1.5	-11.0	-12.00	1005.0	6	8	0.0	314
83 21616	60 59.3	173 2.9	-11.3	-12.60	1005.0	6	8	0.0	315
83 21617	60 59.3	173 4.4	-11.6	-12.80	1005.0	10	8	0.0	313
83 21618	60 59.3	173 5.3	-12.2	-12.90	1004.3	10	9	0.0	313
83 21619	60 59.3	173 5.9	-12.8	-13.70	1003.9	8	9	0.0	309
83 21620	60 59.2	173 5.9	-13.0	-13.50	1003.6	7	9	0.0	304
83 21621	60 59.0	173 6.4	-13.6	-14.30	1003.6	7	9	0.0	303
83 21622	60 58.7	173 6.7	-13.1	-15.10	1003.9	10	9	0.0	301
83 21623	60 58.2	173 7.4	-13.1	-14.50	1003.9	10	9	0.0	300
83 217 0	60 57.2	173 8.2	-13.1	-14.30	1003.9	10	9	0.0	298
83 217 1	60 57.1	173 9.7	-12.9	-14.20	1003.9	10	9	0.0	295
83 217 2	60 56.7	173 11.1	-11.9	-13.60	1002.3	3	9	0.0	295
83 217 3	60 56.2	173 12.9	-11.9	-13.50	1002.3	3	9	0.0	295
83 217 4	60 55.8	173 14.6	-12.7	-13.40	1001.6	4	9	0.0	296
83 217 5	60 55.6	173 16.1	-13.1	-13.30	1002.6	4	9	0.0	293
83 217 6	60 55.4	173 17.3	-13.0	-14.30	1001.6	3	9	0.0	292
83 217 7	60 55.5	173 18.9	-13.1	-14.50	1001.2	1	8	0.0	342
83 217 8	60 55.4	173 19.4	-13.8	-14.50	1001.2	1	8	0.0	336
83 217 9	-99-99.0	-99-99.0	-13.2	-14.20	1002.3	1	8	0.0	335
83 21710	60 55.1	173 20.3	-13.2	-14.30	1002.6	2	8	0.0	330
83 21711	60 54.5	173 21.5	-12.8	-13.90	1002.6	2	8	0.0	320
83 21712	60 54.9	173 21.9	-12.8	-13.80	1002.6	2	8	0.0	330
83 21713	-99-99.0	-99-99.0	-12.8	-14.20	1003.3	0	8	0.0	330
83 21714	60 53.5	173 24.6	-13.3	-14.60	1003.3	2	8	0.0	332
83 21715	60 53.2	173 26.2	-13.9	-15.00	1003.9	2	9	0.0	330
83 21716	60 52.8	173 27.5	-13.6	-15.00	1004.6	1	9	0.0	331
83 21717	60 52.6	173 28.8	-14.3	-15.20	1005.0	1	9	0.0	332
83 21718	60 52.2	173 30.9	-14.3	-15.20	1004.3	3	8	0.0	329
83 21719	60 52.5	173 30.8	-14.9	-15.90	1004.3	1	8	0.0	326
83 21720	60 52.3	173 31.1	-14.9	-16.10	1006.3	2	8	0.0	325
83 21721	60 52.0	173 31.6	-14.8	-16.10	1006.3	0	8	0.0	324
83 21722	60 51.6	173 31.9	-14.8	-16.10	1007.0	0	8	0.0	324
83 21723	60 51.1	173 32.5	-14.9	-16.10	1006.3	0	8	0.0	324
83 218 0	60 50.4	173 33.5	-14.8	-15.70	1007.0	0	8	0.0	322
83 218 1	60 49.7	173 34.8	-14.4	-15.80	1007.0	1	8	0.0	322
83 218 2	60 48.9	173 36.0	-13.6	-16.30	1007.3	0	8	0.0	321
83 218 3	60 48.9	173 39.0	-13.7	-16.30	1007.3	0	8	0.0	321
83 218 4	60 47.5	173 41.7	-14.2	-16.50	1009.0	2	9	0.0	323
83 218 5	60 47.2	173 43.2	-14.3	-16.50	1009.7	2	9	0.0	323
83 218 6	60 47.0	173 44.5	-14.8	-16.60	1010.0	0	9	0.0	322

TIME GMT	LAT DEG MIN	LONG DEG MIN	TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
								SPD M/S	DIR DEGT
83 218 7	60 46.7	173 45.9	-15.6	-16.90	1011.1	0	9	0.0	322
83 218 8	60 46.5	173 48.4	-16.1	-17.10	1012.1	0	9	0.0	322
83 218 9	60 46.2	173 48.3	-16.4	-18.10	1012.4	0	9	0.0	322
83 21810	60 46.0	173 49.2	-16.6	-99.00	1013.8	0	9	0.0	322
83 21811	60 45.4	173 50.4	-17.9	-18.60	1014.4	0	9	0.0	322
83 21812	60 44.8	173 51.5	-18.0	-19.00	1014.4	0	9	0.0	322
83 21813	60 44.3	173 52.8	-18.0	-19.30	1015.1	0	9	0.0	322
83 21814	60 43.6	173 54.3	-18.7	-19.70	1014.8	0	9	0.0	323
83 21815	60 42.9	173 56.3	-18.9	-19.90	1015.5	0	9	0.0	322
83 21816	60 42.2	173 58.4	-19.3	-20.10	1016.1	0	9	0.0	322
83 21817	60 41.7	174 0.0	-19.9	-20.70	1016.1	0	9	0.0	321
83 21818	60 41.3	174 1.9	-20.7	-21.30	1016.5	0	9	0.0	321
83 21819	60 40.9	174 3.6	-20.8	-22.10	1018.5	1	9	0.0	321
83 21820	60 40.5	174 5.4	-20.2	-22.50	1018.9	1	9	0.0	321
83 21821	60 40.2	174 6.2	-20.0	-22.30	1019.2	1	9	0.0	321
83 21822	60 39.9	174 7.3	-19.6	-21.40	1019.2	0	9	0.0	322
83 21823	60 39.4	174 8.5	-18.9	-21.10	1019.2	0	8	0.0	323
83 219 0	60 38.7	174 9.8	-18.6	-20.80	1020.2	1	8	0.0	323
83 219 1	60 38.1	174 11.4	-18.3	-20.40	1019.5	1	8	0.0	324
83 219 2	60 37.3	174 13.1	-17.9	-20.30	1019.5	1	8	0.0	324
83 219 3	60 36.6	174 15.3	-17.8	-19.80	1019.5	2	8	0.0	324
83 219 4	60 36.1	174 17.2	-17.7	-19.20	1020.2	2	8	0.0	325
83 219 5	60 35.7	174 19.2	-18.3	-19.70	1020.5	2	8	0.0	325
83 219 6	60 35.4	174 21.1	-17.6	-19.10	1020.2	0	8	0.0	325
83 219 7	60 35.3	174 23.6	-17.7	-19.10	1020.5	0	8	0.0	326
83 219 8	60 35.2	174 23.8	-17.8	-19.20	1020.2	0	8	0.0	327
83 219 9	60 35.2	174 24.6	-17.7	-99.00	1020.2	0	8	0.0	327
83 21910	60 35.0	174 25.9	-17.8	-21.40	1020.9	0	8	0.0	330
83 21911	60 34.8	174 26.0	-17.8	-21.40	1020.9	0	8	0.0	327
83 21912	60 34.5	174 26.9	-17.8	-21.30	1020.9	0	8	0.0	328
83 21913	60 34.1	174 27.0	-17.2	-19.10	1022.6	0	8	0.0	328
83 21914	60 33.6	174 27.5	-17.4	-18.30	1019.5	2	8	0.0	329
83 21915	60 33.0	174 28.3	-17.2	-99.00	1019.2	2	8	0.0	330
83 21916	60 32.4	174 29.1	-17.2	-17.90	1019.2	2	8	0.0	330
83 21917	60 32.0	174 30.0	-17.7	-18.10	1017.8	1	8	0.0	331
83 21918	60 31.6	174 30.9	-17.4	-17.80	1017.8	1	8	0.0	330
83 21919	60 31.3	174 31.5	-17.2	-17.40	1017.8	2	8	0.0	332
83 21920	60 30.9	174 31.9	-17.6	-99.00	1017.5	3	7	0.0	327
83 21921	60 30.8	174 32.1	-16.0	-17.40	1017.2	2	7	0.0	327
83 21922	60 30.4	174 32.2	-15.9	-18.40	1016.1	2	6	0.0	327
83 21923	60 30.0	174 32.4	-15.4	-17.90	1015.8	0	6	0.0	328
83 220 0	60 29.5	174 32.7	-15.0	-18.20	1015.8	0	6	0.0	327
83 220 1	60 28.8	174 33.2	-14.8	-17.50	1015.1	0	6	0.0	328
83 220 2	60 28.1	174 33.9	-14.7	-19.50	1015.5	0	6	0.0	328
83 220 3	60 27.4	174 34.9	-14.8	-19.30	1014.8	0	6	0.0	328
83 220 4	60 26.1	174 36.6	-15.7	-18.60	1015.1	0	6	0.0	328
83 220 5	60 26.1	174 37.4	-16.4	-17.80	1015.5	0	7	0.0	328
83 220 6	60 26.0	174 38.3	-16.6	-17.80	1015.1	0	7	0.0	326
83 220 7	60 25.8	174 39.2	-16.7	-18.00	1014.4	0	7	0.0	320
83 220 8	60 25.8	174 39.9	-16.9	-18.00	1014.4	0	7	0.0	320
83 220 9	60 25.8	174 40.3	-16.9	-17.90	1014.4	0	7	0.0	320
83 22010	60 25.9	174 40.5	-17.2	-18.00	1014.4	-99	6	0.0	322
83 22011	60 25.9	174 40.6	-17.6	-18.20	1014.4	-99	6	0.0	320
83 22012	60 25.6	174 40.7	-18.0	-18.40	1014.4	-99	6	0.0	320
83 22013	60 25.4	174 40.8	-17.8	-18.80	1014.4	-99	6	0.0	280
83 22014	60 25.1	174 40.1	-18.3	-18.80	1014.4	0	6	0.0	286

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 22015	60	24.6	174	41.3	-17.8	-18.60	1014.4	0	6	0.0	287
83 22016	60	24.1	174	42.0	-17.9	-18.70	1014.1	0	6	0.0	289
83 22017	60	23.6	174	42.8	-17.9	-18.80	1014.4	0	6	0.0	290
83 22018	60	23.2	174	43.8	-18.2	-19.10	1014.4	0	6	0.0	290
83 22019	60	22.9	174	44.6	-18.2	-18.70	1014.4	0	6	0.0	290
83 22020	60	22.4	174	45.5	-18.1	-19.20	1015.1	0	6	0.0	291
83 22021	60	27.5	174	46.6	-17.5	-19.30	1015.5	0	6	0.0	291
83 22022	60	22.3	174	46.6	-16.4	-17.50	1015.5	0	5	0.0	290
83 22023	60	22.1	174	47.0	-16.1	-16.80	1015.1	0	5	0.0	290
83 221 0	60	21.7	174	47.5	-15.6	-16.60	1014.8	0	5	0.0	292
83 221 1	60	21.3	174	48.3	-15.2	-16.20	1014.4	0	5	0.0	292
83 221 2	60	20.8	174	49.1	-14.7	-16.40	1013.8	2	5	0.0	293
83 221 3	60	20.3	174	49.9	-15.0	-16.40	1014.1	3	5	0.0	293
83 221 4	60	19.9	174	51.0	-16.0	-16.40	1013.8	4	5	0.0	293
83 221 5	60	19.5	174	52.4	-16.3	-16.40	1014.1	3	5	0.0	293
83 221 6	60	19.3	174	53.4	-16.7	-99.00	1013.4	1	5	0.0	294
83 221 7	60	19.3	174	54.5	-16.4	-16.40	1013.4	3	5	0.0	288
83 221 8	60	19.3	174	55.3	-16.3	-16.30	1013.0	4	5	0.0	275
83 221 9	60	19.4	174	56.2	-15.7	-15.90	1013.0	4	5	0.0	265
83 22110	60	19.5	174	56.4	-16.4	-17.20	1013.1	2	6	0.0	266
83 22111	60	19.5	174	56.4	-16.4	-17.10	1013.1	2	6	0.0	266
83 22112	60	19.5	174	56.2	-16.5	-17.30	1013.1	3	0	0.0	259
83 22113	60	18.9	174	56.0	-16.5	-16.90	1013.1	3	0	0.0	262
83 22114	60	18.5	174	55.9	-16.5	-16.60	1012.1	1	4	0.0	257
83 22115	60	17.7	174	56.2	-16.2	-99.00	1011.7	1	3	0.0	288
83 22116	60	17.3	174	55.3	-15.9	-16.00	1011.4	1	4	0.0	47
83 22117	60	16.5	174	55.4	-15.9	-16.40	1011.1	1	5	0.0	284
83 22118	60	15.8	174	55.9	-16.0	-16.20	1011.1	2	5	0.0	286
83 22119	60	15.1	174	56.6	-15.9	-16.00	1011.1	0	5	0.0	297
83 22120	60	14.5	174	57.4	-15.4	-15.40	1010.7	2	5	0.0	286
83 22121	60	14.0	174	58.1	-15.4	-99.00	1010.7	0	5	0.0	286
83 22122	60	13.6	174	58.3	-15.2	-99.00	1010.4	0	5	0.0	276
83 22123	60	13.6	174	59.3	-13.9	-99.00	1010.4	0	5	0.0	277
83 222 0	60	13.2	175	0.0	-12.8	-99.00	1009.7	0	5	0.0	15
83 222 1	60	13.0	175	.3	-12.2	-15.00	1009.4	0	5	0.0	36
83 222 2	60	12.3	175	.8	-12.6	-15.00	1009.0	0	8	0.0	36
83 222 3	60	11.5	175	1.5	-12.7	-14.30	1008.7	0	8	0.0	26
83 222 4	60	10.6	175	1.6	-13.9	-14.70	1008.4	0	9	0.0	100
83 222 5	-99	-99.0	175	1.5	-13.9	-14.70	1008.4	0	10	0.0	255
83 222 6	60	8.9	175	3.2	-13.9	-14.70	1008.0	1	9	0.0	263
83 222 7	60	8.9	175	4.4	-14.4	-15.00	1008.0	1	9	0.0	280
83 222 8	60	9.1	175	5.3	-14.9	-15.20	1007.7	0	9	0.0	263
83 222 9	60	8.8	175	6.5	-14.8	-15.40	1007.3	0	9	0.0	273
83 22210	60	8.7	175	7.4	-14.4	-15.40	1007.0	0	5	0.0	36
83 22211	60	8.6	175	8.2	-14.4	-15.20	1006.7	0	5	0.0	262
83 22212	60	8.4	175	8.8	-14.0	-14.60	1005.6	0	5	0.0	255
83 22213	60	8.3	175	9.0	-14.6	-99.00	1005.6	0	5	0.0	254
83 22214	60	7.9	175	9.1	-14.3	-15.10	1005.3	0	5	0.0	254
83 22215	60	7.5	175	9.3	-14.0	-15.40	1004.3	3	5	0.0	265
83 22216	60	6.8	175	9.5	-14.8	-15.90	1004.0	3	5	0.0	270
83 22217	60	6.1	175	9.9	-14.8	-15.60	1004.0	3	5	0.0	268
83 22218	60	5.2	175	10.6	-14.7	-17.40	1004.0	3	5	0.0	268
83 22219	60	4.5	175	11.6	-14.8	-16.30	1003.3	5	6	0.0	337
83 22220	60	3.6	175	12.7	-15.0	-16.20	1003.3	5	6	0.0	286
83 22221	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 22222	60	2.5	175	14.7	-14.4	-15.00	1002.3	2	6	0.0	295

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 22223	60	1.9	175	15.9	-13.9	-14.30	1001.2	2	6	0.0	293
83 223 0	60	1.3	175	16.9	-12.8	-13.90	1000.6	4	6	0.0	292
83 223 1	60	.7	175	18.0	-12.8	-13.40	999.5	4	6	0.0	281
83 223 2	60	.2	175	19.0	-12.2	-13.80	998.9	4	6	0.0	8
83 223 3	59	56.0	175	21.2	-12.2	-13.40	998.2	4	3	8.0	211
83 223 4	59	50.0	175	30.0	-11.0	-12.40	996.8	8	4	0.0	270
83 223 5	-99	-99.0	-99	-99.0	-11.1	-99.00	996.5	8	4	13.0	5
83 223 6	59	56.1	175	22.0	-99.0	-16.70	996.1	4	7	.6	0
83 223 7	59	56.6	175	23.8	-99.0	-16.70	996.5	4	8	0.0	303
83 223 8	59	56.2	175	25.6	-99.0	-16.70	996.1	4	8	0.0	303
83 223 9	-99	-99.0	-99	-99.0	-99.0	-16.50	995.5	9	8	0.0	303
83 22310	59	55.4	175	29.2	-99.0	-99.00	994.8	8	6	0.0	276
83 22311	59	55.1	175	30.5	-12.2	-99.00	994.5	8	6	0.0	272
83 22312	59	54.7	175	31.8	-12.3	-99.00	994.1	8	7	0.0	305
83 22313	59	54.4	175	31.7	-11.9	-99.00	992.8	6	7	-99.0	285
83 22314	59	53.9	175	32.4	-11.9	-99.00	992.4	8	7	0.0	277
83 22315	59	53.2	175	33.2	-11.4	-99.00	992.1	8	7	0.0	279
83 22316	59	52.3	175	34.0	-11.4	-99.00	991.4	10	7	0.0	266
83 22317	59	51.2	175	35.3	-10.6	-99.00	991.1	10	7	0.0	291
83 22318	59	51.3	175	36.4	-10.0	-11.40	990.4	10	7	0.0	275
83 22319	59	50.9	175	39.6	-10.0	-11.40	990.1	10	7	0.0	300
83 22320	59	51.0	175	40.4	-11.0	-12.20	990.1	10	7	0.0	0
83 22321	59	50.4	175	41.3	-11.1	-11.70	989.4	10	7	0.0	318
83 22322	59	49.7	175	42.6	-99.0	-13.20	988.7	10	5	0.0	313
83 22323	59	49.1	175	43.4	-99.0	-13.50	988.0	10	5	0.0	338
83 224 0	59	47.0	175	44.0	-99.0	-11.40	987.7	10	5	0.0	272
83 224 1	59	45.8	175	45.5	-99.0	-11.30	987.0	10	5	0.0	293
83 224 2	59	44.8	175	47.1	-99.0	-9.70	987.0	10	6	0.0	278
83 224 3	59	43.5	175	49.9	-99.0	-9.60	986.0	10	6	0.0	293
83 224 4	59	44.0	175	49.3	-9.4	-9.90	986.0	10	7	0.0	317
83 224 5	59	43.2	175	51.1	-9.0	-10.20	985.7	10	7	0.0	280
83 224 6	59	42.2	175	52.4	-9.1	-9.80	985.3	10	7	0.0	280
83 224 7	59	41.3	175	57.3	.0	-9.70	985.3	10	7	0.0	280
83 224 8	59	40.9	175	58.8	-9.1	-10.40	985.0	10	7	0.0	274
83 224 9	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 22410	59	40.3	176	.7	-99.0	-9.60	984.7	10	5	0.0	302
83 22411	59	40.0	176	2.3	-9.4	-10.00	984.3	10	5	0.0	290
83 22412	59	39.7	176	3.8	-99.0	-10.70	984.3	10	5	0.0	299
83 22413	59	39.3	176	5.2	-99.0	-10.30	984.3	10	5	0.0	295
83 22414	59	38.6	176	6.2	-9.1	-10.30	984.3	10	2	0.0	296
83 22415	59	38.5	176	5.8	-9.1	-9.90	984.3	10	9	0.0	310
83 22416	59	37.8	176	6.7	-99.0	-9.80	983.3	10	9	0.0	317
83 22417	59	37.2	176	8.4	-99.0	-9.70	983.3	10	9	0.0	315
83 22418	59	36.8	176	9.2	-8.7	-9.80	984.0	10	9	0.0	282
83 22419	59	36.9	176	12.1	-99.0	-9.80	984.7	10	5	0.0	45
83 22420	59	35.9	176	10.4	-9.2	-9.70	984.7	10	4	0.0	357
83 22421	59	35.0	176	14.5	-9.2	-9.80	985.3	10	5	0.0	255
83 22422	59	50.7	176	15.5	-99.0	-8.80	985.0	10	3	0.0	113
83 22423	59	30.6	176	14.1	-7.4	-8.60	985.0	10	3	4.0	75
83 225 0	59	31.5	176	1.3	-7.4	-8.90	985.0	10	3	6.0	80
83 225 1	59	29.3	175	39.9	-99.0	-9.10	985.0	8	6	7.7	72
83 225 2	59	28.8	175	28.3	-99.0	-9.30	985.0	10	9	7.7	85
83 225 3	59	24.2	175	21.0	-99.0	-8.70	985.7	10	3	7.7	160
83 225 4	-99	-99.0	-99	-99.0	-99.0	-99.00	985.7	10	2	13.1	200
83 225 5	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 225 6	59	12.1	175	27.3	-4.7	-6.30	985.7	10	-99	12.0	110

TIME GMT	LAT		LONG		TAIR C	TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN						SPD M/S	DIR DEGT
83 225 7	59	7.3	175	7.8	-99.0	-4.70	985.0	10	-99	12.0	110
83 225 8	59	2.5	174	47.1	-99.0	-99.00	985.0	10	1	10.0	100
83 225 9	59	.5	174	30.5	-1.9	-4.30	986.0	10	1	10.0	110
83 22510	58	58.1	174	14.9	-3.3	-5.70	986.7	10	3	1.0	110
83 22511	58	55.5	173	57.7	-3.3	-5.70	987.4	10	5	1.0	110
83 22512	58	53.0	173	43.3	-99.0	-5.80	987.4	10	4	1.0	110
83 22513	58	50.4	173	28.6	-99.0	-5.90	987.7	6	3	.9	110
83 22514	58	47.2	173	13.7	-99.0	-5.80	987.0	6	7	.8	130
83 22515	58	42.2	173	2.6	-4.2	-5.70	987.0	7	4	.8	130
83 22516	58	37.3	172	5.2	-99.0	-5.40	987.4	5	7	.8	130
83 22517	58	34.3	172	42.6	-99.0	-99.00	987.7	4	7	.8	40
83 22518	58	38.4	172	35.6	-99.0	-6.40	987.7	8	7	6.1	40
83 22519	58	42.7	172	29.0	-99.0	-6.20	988.0	8	7	6.0	40
83 22520	58	44.1	172	27.3	-99.0	-6.10	989.0	8	7	6.0	40
83 22521	58	47.6	172	21.9	-99.0	-6.10	989.4	9	-99	0.0	40
83 22522	58	48.0	172	22.4	-99.0	-6.10	989.4	9	-99	0.0	106
83 22523	58	47.8	172	23.9	-2.2	-6.10	988.7	9	10	0.0	102
83 226 0	58	47.6	172	25.4	-99.0	-6.10	988.7	9	10	0.0	102
83 226 1	-99	-99.0	-99	-99.0	0.0	0.00	0.0	0	0	0.0	0
83 226 2	58	44.4	172	23.7	-99.0	-6.30	988.7	10	10	0.0	102
83 226 3	58	50.0	172	22.0	-4.5	-6.40	988.4	10	10	.5	40

BRIDGE DATA FROM THE DISCOVERER FOR MIZEX 1983.

TIME GMT	LAT		LONG		WIND			TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN	SPD M/S	DIR DEGT	TAIR C					SPD M/S	DIR DEGT
83 2 8 7	59	4.0	172	16.0	9.27	60	-2.5	-3.29	990.5	0	5	0.0	190
83 2 8 8	59	4.0	172	16.0	8.24	65	-2.5	-3.29	991.0	0	3	0.0	309
83 2 8 9	59	10.0	172	22.0	8.24	60	-2.0	-3.31	991.5	0	5	0.0	302
83 2 8 10	-99	-99.0	-99	-99.0	7.72	70	-2.0	-3.31	991.5	0	9	0.0	340
83 2 8 11	59	10.9	172	25.9	8.24	75	-1.8	-2.83	991.9	0	9	0.0	344
83 2 8 12	59	11.7	172	28.0	7.21	75	-2.2	-2.71	992.1	0	9	0.0	346
83 2 8 13	59	12.3	172	26.4	9.27	90	-2.5	-3.29	993.1	0	9	0.0	76
83 2 8 14	59	13.2	172	26.9	5.15	80	-1.8	-2.83	993.1	0	9	0.0	357
83 2 8 15	59	13.0	172	27.0	6.18	90	-2.0	-2.77	993.5	0	9	0.0	315
83 2 8 16	59	13.0	172	28.0	5.15	100	-2.0	-2.51	993.7	0	9	0.0	330
83 2 8 17	59	14.0	172	29.0	5.15	100	-1.8	-2.31	993.8	0	9	0.0	349
83 2 8 18	59	14.0	172	29.0	5.15	110	-1.5	-2.78	994.0	0	9	0.0	150
83 2 8 19	59	14.0	172	29.0	5.15	110	-1.0	-1.00	994.5	0	7	0.0	210
83 2 8 20	59	14.2	172	29.0	6.18	115	-1.0	-1.00	995.0	0	8	0.0	215
83 2 8 21	59	14.4	172	29.0	5.15	110	-1.5	-2.26	995.2	0	9	0.0	330
83 2 8 22	59	14.4	172	29.6	5.15	110	-1.5	-2.26	995.5	0	9	0.0	340
83 2 8 23	59	14.4	172	30.3	7.21	75	-1.2	-1.95	996.5	0	5	0.0	244
83 2 9 0	59	14.2	172	30.7	5.15	95	-1.2	-1.95	996.5	0	6	0.0	306
83 2 9 1	59	14.8	172	31.4	7.21	105	-1.0	-1.49	996.7	0	6	0.0	289
83 2 9 2	59	15.2	172	32.4	7.72	100	-.5	-1.72	996.7	0	6	0.0	70
83 2 9 3	59	15.0	172	32.0	5.15	105	-.9	-1.64	996.8	0	6	0.0	350
83 2 9 4	59	16.0	172	34.0	7.21	100	-1.0	-2.25	997.2	0	6	0.0	41
83 2 9 5	59	16.0	172	34.0	8.24	95	-1.2	-2.73	997.6	0	7	0.0	5
83 2 9 6	59	16.0	172	34.0	8.24	5	-1.0	-2.52	997.8	0	8	0.0	350
83 2 9 7	59	16.0	172	38.0	5.15	85	-1.0	-2.25	997.8	0	10	0.0	330
83 2 9 8	59	17.0	172	38.0	5.15	90	-1.5	-2.78	997.8	0	10	0.0	330
83 2 9 9	59	17.0	172	38.0	5.15	80	-1.8	-2.83	997.5	0	9	0.0	163
83 2 9 10	59	17.0	172	38.0	5.15	85	-1.8	-2.83	997.5	0	8	0.0	165
83 2 9 11	59	17.3	172	43.7	6.18	60	-2.8	-3.33	997.3	0	3	0.0	155
83 2 9 12	59	17.6	172	44.2	6.18	80	-2.5	-3.02	997.0	0	4	0.0	75
83 2 9 13	59	18.2	172	43.3	7.21	65	-1.8	-2.31	996.8	0	3	0.0	162
83 2 9 14	59	18.6	172	43.3	8.24	85	-1.0	-1.49	996.2	0	3	0.0	328
83 2 9 15	59	20.0	172	43.0	9.27	90	-.2	-1.66	996.2	0	6	0.0	340
83 2 9 16	59	20.0	172	43.0	8.24	105	-.2	-.91	995.8	0	6	0.0	7
83 2 9 17	59	20.0	172	44.0	8.75	90	-.5	-1.22	995.8	0	6	0.0	350
83 2 9 18	59	20.0	172	44.0	8.24	90	0.0	-1.55	995.8	0	7	0.0	64
83 2 9 19	59	20.0	172	44.0	8.24	90	0.0	-1.28	995.5	0	9	0.0	60
83 2 9 20	59	20.0	172	45.0	10.29	100	-.5	-.50	995.5	0	3	.2	90
83 2 9 21	59	20.0	172	45.0	7.21	90	0.0	-1.28	995.6	0	4	0.0	173
83 2 9 22	59	20.0	172	45.0	8.24	90	0.0	-1.28	995.5	0	5	0.0	336
83 2 9 23	59	20.8	172	47.3	8.24	105	-.5	-.98	995.2	0	4	0.0	350
83 2 10 0	59	21.1	172	48.1	10.29	100	-.5	-.98	995.0	0	4	0.0	64
83 2 10 1	59	21.2	172	47.3	11.32	105	-.5	-1.47	994.8	0	4	0.0	43
83 2 10 2	59	21.8	172	49.1	8.24	100	-1.5	-2.00	994.7	0	4	0.0	187
83 2 10 3	59	22.0	172	49.0	7.21	105	-1.2	-2.73	994.9	0	4	0.0	180
83 2 10 4	59	23.0	172	49.0	9.78	100	-2.0	-99.00	995.0	0	6	.2	35
83 2 10 5	59	25.0	172	48.0	9.27	105	-1.7	-2.46	995.2	0	8	0.0	200
83 2 10 6	59	25.0	172	50.0	12.35	110	-2.0	-3.31	995.2	0	9	0.0	216
83 2 10 7	59	25.0	172	50.0	12.35	110	-2.0	-3.31	995.5	0	10	0.0	343
83 2 10 8	59	26.5	172	55.0	13.38	95	-2.0	-3.31	995.5	0	10	0.0	90
83 2 10 9	59	26.0	172	55.0	15.44	95	-2.5	-2.50	995.5	0	10	0.0	127
83 2 10 10	59	26.0	172	55.0	14.41	90	-2.5	-2.50	995.5	0	10	0.0	350

TIME GMT	LAT DEG MIN	LONG DEG MIN	WIND			TDP C	PRESS MB	NCCVR	ICVR	SHIP	
			SPD M/S	DIR DEGT	TAIR C					SPD M/S	DIR DEGT
83 21011	59 28.3	173 4.6	16.47	80	-3.5	-4.05	995.5	0	8	0.0	91
83 21012	59 29.7	173 4.6	13.38	85	-3.4	-4.23	996.1	0	8	0.0	342
83 21013	59 30.6	173 7.9	13.38	80	-3.5	-4.05	996.2	0	8	0.0	343
83 21014	59 31.8	173 8.7	15.44	75	-3.5	-4.91	996.2	0	9	0.0	346
83 21015	59 32.0	173 9.0	13.38	85	-3.5	-4.91	995.8	0	8	0.0	333
83 21016	59 33.0	173 14.0	15.44	80	-4.2	-5.06	995.2	0	7	0.0	184
83 21017	59 33.0	173 12.0	15.44	70	-4.2	-5.36	995.4	0	6	0.0	81
83 21018	59 34.0	173 10.0	15.44	70	-4.5	-5.99	995.4	0	6	0.0	72
83 21019	59 34.0	173 10.0	15.44	75	-2.5	-6.96	995.2	0	6	0.0	184
83 21020	59 34.3	173 14.2	15.44	74	-2.5	-6.96	994.9	0	5	0.0	181
83 21021	59 33.5	173 16.9	13.38	75	-4.0	-7.06	994.5	0	5	0.0	188
83 21022	59 33.5	173 20.0	14.41	70	-3.5	-6.47	994.5	0	5	0.0	334
83 21023	59 33.6	173 20.9	17.50	75	-5.0	-6.53	993.7	0	6	0.0	332
83 211 0	59 33.4	173 30.6	16.47	80	-3.5	-4.91	993.7	0	4	0.0	246
83 211 1	59 33.4	173 37.2	19.56	85	-3.5	-4.05	993.2	0	4	0.0	27
83 211 2	59 33.5	173 40.5	19.04	85	-4.5	-5.08	992.2	0	4	0.0	190
83 211 3	59 33.0	173 40.0	18.53	75	-4.5	-5.37	991.2	0	2	0.0	91
83 211 4	59 33.0	173 36.0	15.96	80	-4.6	-4.89	991.8	0	3	0.0	155
83 211 5	59 34.0	173 31.0	15.44	80	-4.5	-5.37	992.1	0	3	0.0	212
83 211 6	59 34.0	173 34.0	20.59	80	-4.5	-5.37	992.2	0	3	0.0	55
83 211 7	59 34.0	173 34.0	19.56	75	-4.5	-5.37	991.2	0	3	0.0	189
83 211 8	59 34.3	173 45.9	20.59	85	-4.5	-5.37	991.0	0	-99	0.0	180
83 211 9	59 35.0	173 46.0	20.07	80	-4.5	-5.37	991.3	0	-99	0.0	80
83 21110	59 36.0	173 48.0	19.04	85	-4.5	-5.37	991.2	0	-99	0.0	85
83 21111	59 36.5	173 50.6	18.53	90	-4.5	-5.37	991.9	0	2	0.0	88
83 21112	59 36.5	173 53.8	19.56	90	-4.5	-5.37	991.7	0	1	0.0	76
83 21113	59 37.3	173 57.7	17.50	80	-4.5	-5.37	991.7	0	1	0.0	349
83 21114	59 38.3	173 58.8	20.59	85	-4.5	-5.37	992.0	0	1	0.0	76
83 21115	59 39.0	173 59.0	15.44	80	-4.5	-5.37	992.0	0	1	0.0	90
83 21116	59 40.0	174 3.0	20.59	80	-4.5	-5.37	992.0	0	1	0.0	350
83 21117	59 42.0	174 3.0	15.44	80	-3.8	-4.93	992.8	0	1	0.0	90
83 21118	59 42.0	174 4.0	15.44	80	-3.5	-4.91	992.8	0	1	0.0	330
83 21119	59 43.0	174 5.0	15.44	80	-3.0	-4.38	993.4	0	1	.4	337
83 21120	59 45.5	174 11.7	15.44	80	-3.5	-4.91	993.5	0	1	.4	162
83 21121	59 48.3	174 11.7	15.44	85	-3.5	-4.91	993.9	0	2	0.0	196
83 21122	59 45.0	174 12.0	18.53	100	-3.0	-5.89	993.9	0	1	.4	163
83 21123	59 49.0	174 18.8	15.44	95	-5.2	-6.11	994.5	0	0	.4	300
83 212 0	59 47.6	174 18.9	14.41	85	-3.5	-5.21	994.5	0	0	.4	281
83 212 1	59 47.6	174 20.6	13.38	85	-6.0	-6.62	993.9	0	1	.4	120
83 212 2	59 51.1	174 23.3	15.44	80	-5.3	-6.21	994.5	0	0	.4	298
83 212 3	59 51.0	174 23.0	14.41	85	-6.4	-7.04	994.4	0	0	.5	300
83 212 4	59 51.0	174 22.0	15.44	80	-6.5	-6.50	995.0	0	3	.3	10
83 212 5	59 49.0	174 4.0	14.41	85	-6.4	-6.72	994.8	0	2	.8	144
83 212 6	59 45.0	174 12.0	15.44	90	-6.5	-7.47	994.8	0	2	.6	144
83 212 7	59 38.7	174 3.0	13.38	85	-6.5	-7.14	995.0	0	0	.8	144
83 212 8	59 34.0	173 54.0	13.38	80	-6.8	-7.45	995.0	0	0	.8	144
83 212 9	59 28.7	173 49.4	14.41	80	-6.8	-7.45	995.0	0	1	.8	144
83 21210	59 25.5	173 47.0	13.38	80	-6.8	-7.12	995.0	0	1	.8	144
83 21211	59 19.7	173 37.1	14.41	80	-7.0	-8.00	994.9	0	0	.6	135
83 21212	59 15.0	173 29.2	12.35	80	-7.0	-7.66	994.9	0	0	.6	144
83 21213	59 9.2	173 21.2	14.41	65	-7.0	-7.66	994.2	0	0	.6	144
83 21214	59 3.4	173 12.5	14.41	70	-7.0	-7.66	993.7	0	0	.6	144
83 21215	59 1.0	173 7.0	14.41	70	-7.0	-7.66	994.2	0	0	0.0	70
83 21216	58 58.0	173 1.0	12.35	65	-7.0	-7.66	993.6	0	0	.8	133
83 21217	58 52.0	172 48.0	14.41	70	-5.8	-7.06	993.6	0	0	0.0	70
83 21218	58 51.0	172 54.0	13.38	70	-5.8	-6.42	993.5	0	0	.8	130

TIME GMT	LAT DEG MIN	LONG DEG MIN	WIND			TDP C	PRESS MB	NCCVR	ICVR	SHIP	
			SPD M/S	DIR DEGT	TAIR C					SPD M/S	DIR DEGT
83 21219	58 46.0	172 33.4	13.38	70	-5.0	-8.23	992.8	0	0	.8	130
83 21220	58 46.0	172 33.0	14.41	65	-4.8	-8.73	992.9	0	0	.8	132
83 21221	58 45.5	172 23.0	14.41	65	-4.5	-7.64	992.6	0	0	.8	75
83 21222	58 48.1	172 19.1	14.41	65	-4.5	-7.64	992.6	0	0	.8	47
83 21223	58 52.5	172 7.0	15.96	65	-7.5	-9.26	992.9	0	0	.9	42
83 213 0	58 57.8	172 4.0	16.47	65	-7.5	-9.26	992.9	0	0	.9	46
83 213 1	59 2.7	171 56.4	16.47	60	-8.8	-9.91	993.1	0	0	.5	39
83 213 2	59 4.7	171 53.3	16.47	70	-8.9	-10.02	993.5	0	3	2.5	71
83 213 3	59 5.0	171 52.0	13.90	60	-8.8	-9.91	993.2	0	3	.4	56
83 213 4	59 7.0	171 49.0	15.44	80	-9.0	-9.00	993.2	0	3	.4	39
83 213 5	59 10.0	171 45.0	15.44	70	-9.0	-9.74	993.6	0	2	.4	38
83 213 6	59 11.0	171 43.0	15.44	70	-9.0	-9.74	994.2	0	2	.4	220
83 213 7	59 6.5	171 50.0	15.44	80	-9.0	-9.74	994.2	0	1	.4	220
83 213 8	59 1.5	-99-99.0	15.44	80	-8.3	-9.01	994.2	0	1	.4	220
83 213 9	58 58.2	172 11.9	14.41	80	-8.5	-8.50	993.9	0	0	1.2	260
83 21310	58 56.8	172 28.2	13.38	80	-8.5	-9.22	993.9	0	0	1.2	260
83 21311	58 54.6	172 57.1	11.32	70	-5.7	-6.63	994.2	0	0	1.2	260
83 21312	58 49.3	173 11.2	11.32	60	-5.5	-6.11	994.3	0	0	1.2	260
83 21313	58 44.3	173 33.2	11.32	70	-5.5	-6.74	994.5	0	0	1.2	260
83 21314	58 42.7	173 38.8	13.38	70	-5.6	-7.18	994.2	0	0	0.0	86
83 21315	58 44.0	173 35.0	14.41	65	-5.6	-7.18	994.0	0	0	0.0	88
83 21316	58 44.0	173 35.0	14.41	65	-5.6	-7.18	994.2	0	0	0.0	65
83 21317	58 44.0	173 36.0	13.38	70	-5.5	-7.07	994.2	0	0	1.0	88
83 21318	58 47.0	173 26.0	13.38	75	-5.8	-6.42	994.2	0	0	1.0	88
83 21319	58 47.6	173 .6	14.41	75	-5.0	-5.00	994.2	0	0	1.0	8
83 21320	58 48.0	172 41.1	14.41	85	-5.0	-5.00	994.3	0	0	1.1	88
83 21321	58 48.0	172 22.7	13.38	70	-3.0	-4.38	994.8	0	0	0.0	185
83 21322	58 48.7	172 21.4	13.38	75	-4.0	-4.00	994.9	0	0	0.0	70
83 21323	58 48.7	172 20.7	10.29	60	-3.0	-3.00	994.5	0	0	0.0	20
83 214 0	58 48.9	172 21.8	13.38	70	-3.0	-3.54	994.2	0	0	0.0	60
83 214 1	58 48.4	172 21.0	10.29	95	-3.0	-3.00	993.7	0	0	0.0	60
83 214 2	58 48.7	172 14.2	6.18	205	.5	-.76	993.8	0	0	1.2	87
83 214 3	58 49.0	171 57.0	7.21	175	1.1	-1.17	994.1	0	0	0.0	100
83 214 4	58 49.0	171 42.0	8.24	190	1.0	-1.01	995.2	0	0	1.2	88
83 214 5	58 49.0	171 32.0	8.24	190	1.0	-1.01	996.2	0	0	1.2	88
83 214 6	58 50.0	171 10.0	11.32	180	.5	-1.29	997.2	0	0	1.2	89
83 214 7	58 55.0	171 4.0	10.29	185	-.2	-2.18	998.2	0	0	1.1	328
83 214 8	58 53.9	171 3.9	11.32	180	-.2	-2.18	998.9	0	0	0.0	180
83 214 9	58 51.7	171 6.4	9.27	180	0.0	-1.29	999.5	0	0	0.0	180
83 21410	58 46.5	171 13.2	9.27	180	0.0	-1.29	1000.0	0	0	0.0	180
83 21411	58 42.4	171 19.0	7.21	165	0.0	-.50	1000.5	0	0	.9	216
83 21412	58 40.2	171 22.7	9.27	185	0.0	0.00	1001.0	0	0	.9	219
83 21413	58 37.0	171 28.6	8.24	165	.2	.20	1001.0	0	0	0.0	165
83 21414	58 42.7	171 42.4	6.18	155	0.0	0.00	1001.2	0	0	.9	314
83 21415	58 46.0	171 49.0	8.24	140	0.0	0.00	1001.1	0	0	0.0	126
83 21416	58 50.0	171 43.0	8.24	145	-.2	-.20	1001.1	0	0	1.0	38
83 21417	58 55.0	171 35.0	8.24	145	-.4	-.88	1001.2	0	0	0.0	140
83 21418	59 0.0	171 28.0	8.24	140	.2	-.81	1001.3	0	0	0.0	145
83 21419	59 4.4	171 21.2	8.24	90	0.0	-1.02	1002.1	0	0	1.0	34
83 21420	59 6.2	171 16.6	8.24	120	-.1	-.57	1002.5	0	0	1.0	39
83 21421	59 9.3	171 14.1	9.27	105	-1.0	-1.00	1003.0	0	0	1.0	29
83 21422	59 9.3	171 11.6	7.21	125	-1.0	-1.00	1003.5	0	1	0.0	219
83 21423	59 3.3	171 20.1	11.32	115	-1.5	-1.50	1003.3	0	0	1.2	220
83 215 0	59 2.9	171 42.1	11.32	115	-1.0	-2.26	1003.3	0	0	1.2	282
83 215 1	59 11.0	172 5.6	9.78	90	-1.5	-2.79	1003.0	0	0	1.2	260
83 215 2	59 7.8	172 24.2	13.90	95	0.0	-2.11	1002.5	0	0	1.2	37

TIME GMT	LAT DEG MIN	LONG DEG MIN	WIND				TDP C	PRESS MB	NCCVR	ICVR	SHIP	
			SPD M/S	DIR DEGT	TAIR C	DIR					SPD M/S	DIR DEGT
83 215 3	59 16. 0	172 16. 0	11. 32	80	-1. 2	-3. 85	1002. 6	0	2	. 8	40	
83 215 4	59 16. 0	172 16. 0	6. 18	80	-1. 3	-3. 11	1002. 9	0	1	0. 0	350	
83 215 5	59 12. 0	172 16. 0	11. 32	75	-1. 3	-3. 11	1002. 9	0	0	0. 0	75	
83 215 6	59 10. 0	172 20. 0	10. 29	75	-2. 6	-3. 13	1002. 8	0	0	0. 0	75	
83 215 7	59 4. 9	172 27. 1	13. 38	75	-2. 7	-2. 96	1002. 2	0	0	0. 0	75	
83 215 8	59 . 6	172 34. 2	10. 29	70	2. 2	-14. 51	1001. 9	0	0	0. 0	75	
83 215 9	58 57. 5	172 37. 8	10. 29	75	-3. 2	-3. 20	1001. 7	0	0	0. 0	75	
83 21510	58 54. 8	172 41. 3	11. 32	75	-3. 3	-3. 57	1001. 5	0	0	0. 0	220	
83 21511	58 50. 4	172 49. 3	11. 32	80	-3. 0	-3. 00	1001. 2	0	0	0. 0	90	
83 21512	58 51. 5	172 51. 0	10. 29	90	-3. 0	-3. 54	1001. 2	0	0	0. 0	133	
83 21513	58 50. 5	172 52. 7	10. 29	85	-3. 0	-4. 38	1001. 5	0	0	0. 0	126	
83 21514	58 51. 7	172 53. 1	10. 29	80	-3. 5	-4. 33	1001. 3	0	0	0. 0	71	
83 21515	58 53. 0	172 52. 0	8. 24	60	-3. 5	-4. 33	1001. 0	0	0	0. 0	20	
83 21516	58 55. 0	172 51. 0	9. 27	55	-4. 2	-5. 98	1000. 8	0	0	0. 0	20	
83 21517	59 2. 0	172 40. 0	7. 21	60	-4. 2	-5. 98	1000. 8	0	0	1. 0	20	
83 21518	59 11. 0	172 40. 0	11. 32	70	-4. 8	-6. 00	1001. 0	0	0	1. 0	25	
83 21519	59 20. 7	172 34. 5	11. 32	70	-6. 3	-6. 62	1001. 8	0	0	0. 0	31	
83 21520	59 22. 0	172 32. 1	11. 32	70	-6. 8	-7. 12	1002. 0	0	0	0. 0	72	
83 21521	59 22. 8	172 33. 6	11. 32	70	-8. 0	-8. 35	1002. 0	0	0	0. 0	50	
83 21522	59 21. 0	172 32. 5	11. 32	70	-7. 5	-7. 50	1001. 4	0	1	0. 0	135	
83 21523	59 20. 3	172 36. 7	10. 29	50	-7. 7	-8. 75	1001. 3	0	2	0. 0	156	
83 216 0	59 19. 5	172 35. 4	12. 87	55	-7. 2	-8. 22	1000. 9	0	2	0. 0	156	
83 216 1	59 18. 3	172 41. 7	12. 35	35	-8. 0	-8. 70	1000. 8	0	2	0. 0	212	
83 216 2	59 18. 2	172 41. 3	12. 35	40	-7. 9	-8. 24	1000. 2	0	2	-99. 0	304	
83 216 3	59 19. 0	172 42. 0	13. 38	30	-9. 0	-9. 74	998. 8	0	2	0. 0	50	
83 216 4	59 19. 0	172 42. 0	15. 44	65	-9. 2	-9. 95	1000. 3	0	2	0. 0	50	
83 216 5	59 19. 0	172 42. 0	16. 47	35	-9. 2	-10. 75	1000. 2	0	4	0. 0	50	
83 216 6	59 20. 0	172 43. 0	12. 35	50	-9. 0	-10. 94	1000. 1	0	4	0. 0	50	
83 216 7	59 19. 7	172 46. 9	12. 87	50	-8. 1	-9. 55	999. 9	0	4	0. 0	303	
83 216 8	59 19. 4	172 50. 0	11. 32	50	-7. 3	-8. 32	999. 8	0	3	0. 0	314	
83 216 9	59 19. 2	172 52. 3	10. 29	50	-7. 2	-8. 22	1000. 0	0	4	0. 0	298	
83 21610	59 6. 3	172 49. 9	10. 29	50	-6. 9	-7. 56	1000. 0	0	1	0. 0	50	
83 21611	59 15. 2	172 52. 9	11. 84	60	-6. 0	-6. 00	1000. 0	0	1	. 7	220	
83 21612	59 14. 0	172 54. 3	11. 84	60	-6. 0	-6. 00	1000. 0	0	0	0. 0	114	
83 21613	59 10. 6	172 59. 9	11. 32	65	-4. 5	-5. 99	999. 9	0	0	. 7	230	
83 21614	59 8. 8	173 7. 8	11. 32	65	-4. 2	-6. 63	999. 7	0	0	. 7	229	
83 21615	59 4. 0	173 9. 0	12. 35	75	-3. 8	-4. 94	998. 9	0	0	1. 0	218	
83 21616	58 59. 0	173 16. 0	12. 35	65	-3. 8	-4. 94	999. 0	0	0	0. 0	70	
83 21617	58 55. 0	173 23. 0	11. 32	60	-3. 0	-5. 27	998. 9	0	0	0. 0	215	
83 21618	59 0. 0	173 20. 0	11. 32	55	-3. 5	-5. 52	998. 4	0	0	1. 0	37	
83 21619	59 9. 2	173 1. 8	14. 41	55	-7. 0	-8. 72	998. 8	0	0	1. 1	50	
83 21620	59 17. 1	172 50. 3	15. 44	50	-7. 9	-9. 71	999. 9	0	1	0. 0	50	
83 21621	59 16. 7	172 47. 3	15. 44	50	-8. 2	-9. 27	998. 2	0	1	0. 0	52	
83 21622	59 16. 1	172 50. 0	16. 47	40	-8. 1	-9. 54	998. 2	0	1	1. 0	0	
83 21623	59 21. 5	172 19. 9	13. 90	20	-8. 3	-9. 76	998. 2	0	4	. 5	0	
83 217 0	59 25. 2	172 47. 4	10. 81	35	-9. 5	-11. 50	997. 9	0	9	0. 0	113	
83 217 1	59 25. 4	172 47. 3	10. 29	40	-9. 5	-11. 50	997. 1	0	9	. 1	125	
83 217 2	59 25. 5	172 48. 3	12. 35	35	-9. 7	-11. 29	997. 2	0	9	0. 0	154	
83 217 3	59 25. 0	172 50. 0	10. 29	35	-9. 0	-10. 93	996. 9	0	9	0. 0	140	
83 217 4	59 24. 0	172 53. 0	12. 87	35	-9. 1	-10. 23	996. 1	0	9	0. 0	140	
83 217 5	59 21. 0	173 1. 0	11. 32	45	-9. 2	-9. 95	996. 9	0	7	. 4	230	
83 217 6	59 21. 0	173 1. 0	15. 44	40	-9. 2	-10. 74	996. 9	0	6	0. 0	40	
83 217 7	59 21. 0	173 2. 0	12. 35	40	-9. 2	-10. 74	996. 0	0	4	0. 0	40	
83 217 8	59 21. 0	173 2. 0	13. 38	45	-9. 2	-10. 34	996. 3	0	5	. 6	5	
83 217 9	59 21. 5	173 7. 2	14. 41	40	-9. 3	-10. 05	996. 7	0	2	0. 0	303	
83 21710	59 20. 8	173 10. 1	15. 44	50	-9. 3	-9. 67	996. 6	0	2	0. 0	306	

TIME GMT	LAT		LONG		WIND				PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN	SPD M/S	DIR DEGT	TAIR C	TDP C				SPD M/S	DIR DEGT
83 21711	59	20.6	173	12.5	14.41	40	-7.2	-8.21	996.7	0	8	0.0	41
83 21712	59	21.3	173	15.9	16.47	50	-7.2	-8.21	997.2	0	7	0.0	8
83 21713	59	20.1	173	19.1	13.38	55	-7.2	-9.31	997.2	0	7	0.0	312
83 21714	59	20.6	173	22.6	13.38	55	-8.0	-8.00	997.2	0	7	0.0	304
83 21715	59	19.0	173	25.0	14.41	55	-8.0	-8.00	997.2	0	5	0.0	150
83 21716	59	19.0	173	25.0	13.38	45	-9.0	-9.74	997.2	0	3	0.0	150
83 21717	59	19.0	173	30.0	15.44	45	-9.0	-9.74	997.3	0	2	0.0	155
83 21718	59	19.0	173	31.0	20.59	40	-9.2	-10.74	998.0	0	2	0.0	50
83 21719	59	19.8	173	31.7	18.53	45	-8.8	-9.91	998.9	0	2	0.0	45
83 21720	59	19.8	173	34.5	16.47	40	-9.0	-9.74	999.8	0	2	0.0	159
83 21721	59	20.1	173	35.9	17.50	40	-9.0	-9.74	1000.2	0	2	.8	30
83 21722	59	21.0	173	35.5	16.47	40	-8.9	-9.26	1000.8	0	1	.6	270
83 21723	59	18.8	173	40.1	19.04	55	-10.1	-11.31	1000.7	0	1	0.0	146
83 218 0	59	17.9	173	39.9	19.56	35	-9.8	-10.58	1000.5	0	1	0.0	156
83 218 1	59	20.0	173	39.5	20.59	45	-10.5	-11.74	1002.0	0	1	0.0	350
83 218 2	59	22.9	173	42.1	17.50	40	-8.0	-8.70	1002.2	0	1	.4	321
83 218 3	59	25.0	173	53.0	15.44	60	-8.2	-11.29	1002.8	0	2	.4	320
83 218 4	59	27.0	173	57.0	14.41	50	-8.0	-11.49	1003.2	0	1	.6	318
83 218 5	59	34.0	174	6.0	21.62	45	-9.2	-99.00	1004.2	0	2	0.0	45
83 218 6	59	35.0	174	16.0	17.50	45	-9.2	-11.61	1006.2	0	2	.6	280
83 218 7	59	35.3	174	24.3	19.56	45	-9.3	-11.29	1007.1	0	1	0.0	45
83 218 8	59	36.2	174	35.0	18.53	45	-9.2	-11.18	1007.8	0	1	0.0	245
83 218 9	59	36.3	174	41.4	21.62	45	-9.3	-10.46	1008.5	0	0	0.0	245
83 21810	59	43.1	174	47.9	21.62	45	-9.3	-10.46	1009.4	0	0	.8	343
83 21811	59	44.9	-99	-99.0	20.59	35	-12.1	-18.93	1011.1	0	4	0.0	35
83 21812	59	49.8	174	58.3	20.59	45	-12.1	-15.05	1011.9	0	9	.4	9
83 21813	59	52.3	175	2.8	21.62	40	-12.5	-12.50	1012.5	0	8	0.0	307
83 21814	59	51.1	175	2.0	21.62	35	-12.5	-13.93	1013.3	0	7	0.0	47
83 21815	59	50.0	175	6.0	20.59	50	-12.0	-12.90	1013.2	0	5	0.0	300
83 21816	59	49.0	175	11.0	18.02	40	-12.0	-12.90	1014.2	0	-99	0.0	300
83 21817	59	47.0	175	13.0	18.02	45	-12.4	-13.33	1014.5	0	-99	0.0	300
83 21818	59	46.0	175	16.0	20.59	50	-13.5	-16.17	1015.1	0	2	.5	50
83 21819	59	48.2	175	11.1	20.59	45	-13.5	-18.84	1016.2	0	1	.4	35
83 21820	59	50.5	175	8.3	19.56	40	-16.0	-16.58	1017.0	0	10	0.0	35
83 21821	59	51.4	175	15.1	19.56	40	-14.5	-17.39	1017.0	0	1	.7	245
83 21822	59	56.3	175	15.1	19.56	40	-15.9	-16.48	1018.0	0	5	0.0	40
83 21823	59	52.9	175	15.0	18.53	45	-13.4	-14.40	1018.2	0	5	0.0	297
83 219 0	59	56.5	175	16.9	16.47	45	-16.2	-18.08	1018.5	0	7	0.0	138
83 219 1	59	55.4	175	19.2	18.53	45	-14.0	-16.78	1018.2	0	5	0.0	147
83 219 2	59	54.9	175	21.5	17.50	35	-14.0	-16.79	1018.7	0	7	0.0	40
83 219 3	59	59.0	175	23.0	18.53	35	-13.6	-14.61	1019.2	0	5	.4	40
83 219 4	60	0.0	175	21.0	18.02	40	-14.0	-14.00	1019.5	0	9	0.0	155
83 219 5	59	55.0	175	30.0	18.02	45	-14.0	-14.00	1019.8	0	9	.4	220
83 219 6	59	56.0	175	31.0	18.02	40	-14.0	-15.04	1019.9	0	8	.4	220
83 219 7	59	48.3	175	42.7	18.02	45	-14.2	-14.72	1020.0	0	0	.6	217
83 219 8	59	44.5	175	48.1	16.47	40	-14.0	-14.51	1019.9	0	0	.6	220
83 219 9	59	41.2	175	54.4	17.50	55	-13.0	-13.48	1020.0	0	0	.6	220
83 21910	59	38.0	175	58.2	17.50	50	-12.0	-12.00	1019.5	0	0	.6	220
83 21911	59	34.1	176	4.1	16.47	40	-10.2	-11.44	1020.1	0	0	.6	220
83 21912	59	29.3	176	9.8	17.50	40	-10.5	-13.65	1019.5	0	0	.6	37
83 21913	59	32.3	176	6.5	15.96	40	-10.2	-12.33	1019.7	0	0	.7	40
83 21914	59	37.6	175	58.8	16.99	40	-10.4	-12.09	1019.1	0	0	.7	40
83 21915	59	41.0	175	53.0	15.44	40	-10.4	-12.10	1019.2	0	0	.7	40
83 21916	59	52.0	175	43.0	15.44	40	-11.0	-13.24	1019.2	0	1	.7	40
83 21917	59	51.0	175	37.0	15.44	30	-12.0	-14.41	1019.0	0	4	.7	40
83 21918	59	54.0	175	32.0	13.38	20	-11.5	-14.89	1018.8	0	5	.7	40

TIME GMT	LAT		LONG		WIND				PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN	SPD M/S	DIR DEGT	TAIR C	TDP C				SPD M/S	DIR DEGT
83 21919	59	56.1	175	28.9	12.35	20	-12.1	-14.00	1018.2	0	10	0.0	45
83 21920	59	55.6	175	29.5	10.29	20	-11.8	-99.00	1018.0	0	9	0.0	111
83 21921	59	54.3	175	30.8	10.29	25	-10.0	-14.06	1017.1	0	9	0.0	116
83 21922	59	53.7	175	32.0	10.29	25	-9.3	-11.30	1016.9	0	9	0.0	117
83 21923	59	50.9	175	30.3	11.84	20	-10.1	-10.90	1016.2	0	9	.1	72
83 220 0	59	49.5	175	29.4	11.84	20	-10.1	-11.32	1015.9	0	9	0.0	140
83 220 1	59	48.1	-99	-99.0	14.41	10	-9.1	-10.25	1015.0	0	9	0.0	97
83 220 2	59	47.0	175	32.3	12.35	20	-9.3	-10.06	1014.8	0	9	0.0	272
83 220 3	59	46.0	175	33.0	13.38	20	-8.6	-99.00	1015.0	0	9	0.0	260
83 220 4	59	46.0	175	34.0	11.84	20	-8.5	-99.00	1015.0	0	9	0.0	260
83 220 5	59	46.0	175	46.0	12.87	25	-7.5	-99.00	1015.0	0	8	.5	140
83 220 6	59	44.0	175	43.0	12.87	25	-5.2	-8.53	1015.0	0	8	.6	140
83 220 7	59	51.2	175	40.8	12.87	15	-11.0	-11.42	1014.9	0	0	.7	10
83 220 8	59	51.2	175	38.5	11.32	12	-12.8	-12.80	1014.7	0	0	.7	12
83 220 9	60	6.3	175	37.4	10.29	15	-13.9	-13.90	1014.9	0	1	.7	345
83 22010	60	11.3	175	38.1	10.29	15	-14.5	-14.50	1015.1	0	3	.4	0
83 22011	60	11.8	175	38.7	9.27	15	-13.5	-13.50	1015.1	0	5	0.0	272
83 22012	60	11.0	175	38.9	9.27	15	-13.5	-13.50	1015.1	0	5	0.0	274
83 22013	60	10.8	175	41.0	13.38	15	-13.2	-14.70	1015.0	0	5	0.0	59
83 22014	60	10.2	175	40.6	10.29	20	-15.0	-16.11	1015.0	0	5	0.0	139
83 22015	60	10.0	175	42.0	9.27	25	-15.0	-16.11	1015.0	0	5	0.0	290
83 22016	60	9.0	175	44.0	8.75	20	-14.5	-15.57	1015.0	0	5	0.0	290
83 22017	60	9.0	175	45.0	9.27	25	-14.0	-15.04	1015.0	0	5	0.0	290
83 22018	60	8.0	175	47.0	9.27	40	-13.5	-16.17	1015.2	0	5	0.0	290
83 22019	60	7.4	175	49.4	9.27	40	-13.9	-14.93	1015.4	0	4	.2	355
83 22020	60	12.2	175	57.0	9.27	40	-14.0	-20.39	1015.5	0	7	.4	40
83 22021	60	12.9	175	48.1	10.29	35	-14.7	-15.79	1015.9	0	8	0.0	195
83 22022	60	12.9	175	49.2	8.24	40	-15.0	-99.00	1015.9	0	6	0.0	130
83 22023	60	12.5	175	49.8	9.27	30	-14.0	-14.00	1015.5	0	6	0.0	106
83 221 0	60	11.8	175	51.5	7.21	20	-14.0	-14.00	1015.5	0	6	0.0	144
83 221 1	60	11.5	175	51.8	6.18	20	-13.5	-14.50	1015.1	0	6	0.0	50
83 221 2	60	11.4	175	50.2	11.32	20	-13.5	-14.50	1015.1	0	6	0.0	35
83 221 3	60	12.0	175	49.0	10.29	10	-13.6	-99.00	1014.8	0	6	0.0	42
83 221 4	60	8.0	175	53.0	10.29	20	-13.5	-13.99	1014.8	0	6	.4	200
83 221 5	60	9.0	175	58.0	9.27	10	-13.5	-13.99	1014.8	0	6	.4	320
83 221 6	60	9.0	175	58.0	8.24	20	-14.2	-14.20	1015.0	0	7	0.0	130
83 221 7	60	8.3	175	58.5	10.29	15	-13.1	-13.10	1014.9	0	4	0.0	130
83 221 8	60	8.6	175	59.5	9.27	20	-13.1	-13.10	1014.7	0	3	0.0	135
83 221 9	60	8.9	175	.1	8.24	25	-13.3	-13.30	1014.4	0	2	0.0	130
83 22110	60	9.5	175	59.8	10.29	30	-13.2	-13.20	1014.0	0	4	0.0	128
83 22111	60	9.0	176	.7	9.27	15	-14.0	-14.00	1014.0	0	7	0.0	86
83 22112	60	9.7	176	2.7	9.27	15	-14.0	-14.00	1014.0	0	7	0.0	336
83 22113	60	9.6	176	3.0	11.32	20	-14.2	-15.81	1013.7	0	7	0.0	35
83 22114	60	9.1	176	3.6	13.38	20	-13.1	-14.07	1013.2	0	7	0.0	163
83 22115	60	9.0	176	8.0	12.35	20	-13.0	-13.97	1012.8	0	7	0.0	140
83 22116	60	7.0	176	9.0	12.87	20	-13.0	-13.97	1012.2	0	7	0.0	140
83 22117	60	6.0	176	11.0	10.29	20	-13.0	-13.97	1012.2	0	7	0.0	130
83 22118	60	6.0	176	12.0	10.29	15	-11.8	-12.69	1012.2	0	7	0.0	126
83 22119	60	16.0	176	14.0	9.27	20	-11.3	-12.16	1012.3	0	2	0.0	305
83 22120	60	5.5	176	17.2	10.29	25	-10.4	-12.54	1012.2	0	4	0.0	195
83 22121	60	5.4	176	18.9	10.29	25	-10.4	-11.22	1011.9	0	3	0.0	115
83 22122	60	5.1	176	20.2	10.29	20	-11.2	-99.00	1011.9	0	3	0.0	120
83 22123	60	5.0	176	20.7	10.29	25	-8.7	-10.21	1011.7	0	4	0.0	313
83 222 0	60	4.5	176	21.6	11.32	25	-10.5	-13.63	1011.2	0	5	0.0	119
83 222 1	60	3.9	176	22.6	11.32	10	-11.0	-11.85	1011.0	0	4	0.0	146
83 222 2	60	2.1	176	22.9	10.29	25	-10.0	-10.79	1010.2	0	4	0.0	134

TIME GMT	LAT		LONG		WIND			TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN	SPD M/S	DIR DEGT	TAIR C					SPD M/S	DIR DEGT
83 222 3	59	59.0	176	24.0	11.32	20	-10.5	-12.65	1010.0	0	4	0.0	140
83 222 4	59	57.0	176	25.0	10.29	20	-10.0	-10.79	1009.1	0	4	.4	270
83 222 5	60	2.0	176	28.0	11.32	15	-10.0	-10.79	1009.2	0	4	.8	20
83 222 6	60	1.0	176	28.0	9.27	20	-11.0	-13.23	1009.4	0	4	0.0	130
83 222 7	60	1.9	176	32.7	11.32	20	-9.5	-11.52	1009.0	0	3	.4	325
83 222 8	60	2.3	176	36.7	10.29	25	-10.0	-12.08	1008.8	0	1	.4	316
83 222 9	60	2.4	176	35.7	12.35	20	-10.0	-12.08	1008.4	0	1	0.0	127
83 22210	60	2.4	176	36.0	12.35	20	-9.0	-10.95	1008.0	0	1	.4	275
83 22211	60	1.8	176	37.2	13.38	25	-10.0	-10.00	1007.5	0	1	0.0	275
83 22212	60	1.7	176	38.0	13.38	25	-10.0	-10.00	1007.2	0	1	0.0	124
83 22213	60	1.5	176	37.7	14.41	25	-10.5	-13.13	1007.2	0	1	0.0	132
83 22214	60	.5	176	38.8	13.38	25	-10.5	-11.75	1006.5	0	1	0.0	129
83 22215	60	0.0	176	40.0	13.38	20	-10.5	-11.75	1006.2	0	1	0.0	130
83 22216	59	57.0	176	42.0	12.87	30	-10.2	-11.42	1005.2	0	1	0.0	278
83 22217	59	57.0	176	42.0	13.38	30	-10.2	-11.42	1005.0	0	1	.4	199
83 22218	59	56.0	176	43.0	12.87	30	-10.2	-10.20	1004.8	0	1	.4	199
83 22219	59	54.5	176	45.7	14.41	30	-9.8	-10.58	1004.3	0	1	.4	201
83 22220	59	52.5	176	47.7	14.41	25	-10.1	-10.49	1003.9	0	2	0.0	200
83 22221	59	51.7	176	48.5	13.38	20	-10.4	-10.80	1003.2	0	4	0.0	150
83 22222	59	47.7	176	50.7	13.38	20	-9.9	-10.29	1002.7	0	1	.4	83
83 22223	59	51.9	176	51.8	18.53	15	-10.0	-10.00	1001.9	0	2	.4	35
83 223 0	59	52.5	176	49.5	17.50	15	-10.0	-10.79	1001.2	0	1	0.0	136
83 223 1	59	52.2	176	50.4	15.44	10	-8.9	-10.02	1000.5	0	1	0.0	350
83 223 2	59	52.9	176	49.8	14.41	15	-10.1	-10.89	1000.0	0	2	.4	40
83 223 3	59	56.0	176	44.0	15.44	20	-10.0	-11.63	1000.0	0	2	.7	50
83 223 4	59	58.0	176	37.0	14.41	15	-10.0	-10.79	998.8	0	4	.7	50
83 223 5	60	2.0	176	35.0	13.38	25	-10.0	-10.79	998.8	0	6	.4	90
83 223 6	60	1.0	176	33.0	12.87	15	-11.6	-13.41	998.5	0	8	.4	115
83 223 7	59	58.6	176	33.0	15.44	10	-10.0	-10.79	997.1	0	6	0.0	15
83 223 8	59	58.1	176	33.6	17.50	10	-10.0	-10.79	996.9	0	2	0.0	270
83 223 9	59	57.1	176	34.8	15.44	20	-9.2	-10.74	996.4	0	1	0.0	270
83 22310	59	55.7	176	36.2	15.44	20	-9.0	-10.52	995.7	0	1	0.0	275
83 22311	59	54.5	176	37.5	15.44	30	-10.0	-11.20	995.5	0	1	0.0	279
83 22312	59	32.2	176	38.6	16.47	30	-10.0	-10.79	995.5	0	1	0.0	330
83 22313	59	54.6	176	40.8	17.50	20	-10.0	-10.00	994.1	0	1	0.0	324
83 22314	59	55.4	176	41.7	16.47	25	-9.5	-10.26	993.5	0	1	0.0	275
83 22315	59	51.0	176	43.0	16.47	25	-10.0	-10.00	992.8	0	2	0.0	270
83 22316	59	51.0	176	43.0	15.44	20	-9.0	-9.74	992.3	0	2	0.0	272
83 22317	59	49.0	176	43.0	14.41	20	-9.0	-9.74	991.8	0	2	0.0	271
83 22318	59	47.0	176	43.0	14.41	10	-9.5	-10.66	991.2	0	2	0.0	270
83 22319	59	45.6	176	46.7	14.41	10	-9.4	-9.77	990.7	0	2	0.0	270
83 22320	59	44.2	176	46.3	15.44	20	-9.8	-9.80	990.3	0	10	0.0	90
83 22321	59	43.0	176	40.4	15.44	20	-9.4	-9.77	989.3	0	0	0.0	90
83 22322	59	40.8	176	36.5	16.47	5	-9.6	-9.00	988.9	0	5	0.0	110
83 22323	59	42.7	176	36.1	17.50	355	-9.2	-9.20	988.5	0	4	.4	15
83 224 0	59	42.9	176	34.8	15.44	15	-9.8	-11.39	987.9	0	4	0.0	111
83 224 1	59	41.9	176	33.5	16.47	15	-9.8	-10.57	986.9	0	4	.4	61
83 224 2	59	41.6	176	33.5	17.50	10	-9.8	-11.39	986.3	0	4	0.0	85
83 224 3	59	41.0	176	34.0	18.53	20	-9.8	-11.39	985.8	0	5	.2	115
83 224 4	59	30.0	176	32.0	17.50	10	-8.0	-8.69	985.2	0	4	.3	275
83 224 5	59	37.0	176	37.0	16.47	10	-8.0	-8.69	985.2	0	4	.3	275
83 224 6	59	36.0	176	38.0	19.56	20	-8.2	-9.26	985.5	0	2	0.0	20
83 224 7	59	34.0	176	40.9	16.47	10	-8.3	-9.00	984.9	0	0	0.0	300
83 224 8	59	33.5	176	42.2	15.44	15	-7.2	-8.56	984.7	0	0	0.0	125
83 224 9	59	32.5	176	44.8	15.44	10	-7.5	-8.52	984.1	0	1	.4	325
83 22410	59	33.0	176	47.2	16.47	20	-8.9	-9.26	984.0	0	2	0.0	135

TIME GMT	LAT		LONG		WIND			TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN	SPD M/S	DIR DEGT	TAIR C					SPD M/S	DIR DEGT
83 22411	59	38.8	176	49.9	13.38	40	-7.2	-7.20	984.2	0	4	0.0	280
83 22412	59	30.7	176	51.1	15.44	25	-10.0	-10.00	983.9	0	4	0.0	280
83 22413	59	31.4	176	52.2	14.41	25	-8.2	-9.26	983.9	0	4	0.0	284
83 22414	59	30.0	176	53.8	14.41	25	-7.8	-7.80	983.5	0	4	0.0	289
83 22415	59	29.0	176	54.0	14.41	30	-7.8	-7.80	983.2	0	4	0.0	288
83 22416	59	27.0	176	58.0	13.38	30	-8.0	-8.69	983.2	0	4	0.0	290
83 22417	59	27.0	176	58.0	12.87	30	-7.2	-7.20	983.2	0	4	0.0	290
83 22418	59	27.0	176	58.0	12.87	35	-7.0	-7.65	983.2	0	4	0.0	290
83 22419	59	25.4	176	58.2	14.41	35	-8.0	-8.00	983.5	0	1	0.0	103
83 22420	59	24.5	176	58.9	11.32	30	-8.0	-8.69	984.0	0	3	0.0	121
83 22421	59	23.2	177	.7	12.35	30	-7.1	-7.76	984.9	0	1	.4	30
83 22422	59	26.4	176	58.4	18.53	30	-8.0	-9.42	984.5	0	0	.4	30
83 22423	59	32.1	176	52.9	17.50	30	-8.7	-9.42	984.9	0	0	.8	30
83 225 0	59	37.1	176	44.3	16.47	30	-8.0	-8.00	984.9	0	3	0.0	119
83 225 1	59	37.5	176	42.7	15.44	45	-8.7	-8.70	984.9	0	8	.4	41
83 225 2	59	38.1	176	41.4	15.44	40	-8.7	-8.70	985.2	0	8	.2	43
83 225 3	59	39.0	176	41.0	15.44	40	-8.7	-8.70	985.2	0	8	.5	45
83 225 4	59	39.0	176	43.0	13.38	40	-8.0	-8.69	986.1	0	4	.6	230
83 225 5	59	40.0	176	45.0	13.38	40	-8.0	-8.69	986.1	0	7	0.0	40
83 225 6	59	38.0	176	43.0	13.38	35	-8.4	-9.11	986.4	0	3	0.0	155
83 225 7	59	38.9	176	44.9	10.29	45	-7.0	-7.66	987.2	0	0	0.0	300
83 225 8	59	37.8	176	47.1	10.81	50	-6.5	-7.47	987.6	0	0	0.0	302
83 225 9	59	36.7	176	48.7	10.81	50	-7.4	-8.07	987.8	0	0	0.0	298
83 22510	59	37.2	176	50.1	12.35	40	-6.7	-6.70	988.2	0	1	0.0	157
83 22511	59	37.0	176	51.4	12.35	40	-6.5	-6.50	988.7	0	1	0.0	152
83 22512	59	36.7	176	53.2	12.35	45	-6.5	-6.50	989.2	0	1	0.0	55
83 22513	59	36.9	176	55.0	10.29	55	-6.5	-6.50	989.2	0	1	0.0	300
83 22514	59	36.7	176	55.7	9.27	55	-5.5	-5.50	989.2	0	1	0.0	300
83 22515	59	36.0	176	58.0	9.27	50	-5.0	-5.00	989.2	0	1	0.0	305
83 22516	59	36.0	176	59.0	10.29	55	-5.2	-5.20	989.8	0	1	0.0	305
83 22517	59	34.0	177	0.0	8.24	45	-5.2	-5.20	990.1	0	1	0.0	305
83 22518	59	34.0	177	0.0	9.27	55	-4.8	-5.38	990.1	0	1	0.0	305
83 22519	59	33.8	177	4.8	6.18	20	-4.9	-5.19	990.7	0	1	0.0	303
83 22520	59	36.6	177	7.8	8.24	45	-4.7	-7.18	991.3	0	1	0.0	75
83 22521	59	35.7	177	39.4	10.29	45	-5.2	-6.10	991.5	0	1	0.0	200
83 22522	59	35.1	177	10.7	6.69	50	-5.3	-6.21	991.9	0	2	0.0	162
83 22523	59	33.0	177	9.1	9.27	50	-5.3	-6.21	991.9	0	2	0.0	87
83 226 0	59	33.8	177	14.5	8.24	30	-4.0	-4.00	992.1	0	2	0.0	311
83 226 1	59	33.3	177	15.0	9.27	50	-4.0	-4.00	992.1	0	2	0.0	87
83 226 2	59	38.8	177	17.9	10.29	50	-4.8	-5.38	992.7	0	2	0.0	152
83 226 3	59	33.0	177	18.0	10.81	50	-5.0	-5.00	992.1	0	1	0.0	145
83 226 4	59	28.0	177	13.0	10.29	50	-5.0	-99.00	992.5	0	0	.8	150
83 226 5	59	23.0	177	6.0	8.24	40	-5.0	-99.00	992.4	0	1	.8	150
83 226 6	59	15.0	176	55.0	8.24	30	-5.6	-6.21	992.2	0	0	.8	144
83 226 7	59	4.7	176	39.1	8.24	25	-4.3	-4.87	991.4	0	0	1.1	145
83 226 8	58	54.9	176	25.9	7.21	25	-3.0	-3.00	990.7	0	0	1.1	145
83 226 9	58	45.3	176	13.6	9.27	30	-2.5	-3.02	990.0	0	0	1.1	145
83 22610	58	34.8	176	3.1	11.32	30	-1.8	-2.30	989.1	0	0	1.1	145
83 22611	58	27.5	175	54.2	12.87	45	-2.0	-2.00	988.2	0	0	1.0	145
83 22612	58	19.2	175	43.5	12.87	45	-1.4	-1.90	987.9	0	0	1.0	145
83 22613	58	11.7	175	33.2	12.87	45	-.5	-1.72	986.7	0	0	1.0	145
83 22614	58	3.1	175	21.0	11.84	45	-.3	-.77	985.9	0	0	1.0	145
83 22615	57	57.0	175	13.0	12.35	43	-.3	-.77	985.5	0	0	1.0	145
83 22616	57	49.0	175	3.0	11.32	45	.2	-.30	984.8	0	0	1.0	145
83 22617	57	40.0	174	52.0	12.87	45	.2	-.30	984.2	0	0	1.0	145
83 22618	57	33.0	174	43.0	12.35	50	.2	-.30	984.0	0	0	1.0	145

TIME GMT	LAT		LONG		WIND			TDP C	PRESS MB	NCCVR	ICVR	SHIP	
	DEG	MIN	DEG	MIN	SPD M/S	DIR DEGT	TAIR C					SPD M/S	DIR DEGT
83 22619	57	23.9	174	29.9	14.41	50	.2	-99.00	984.0	0	0	1.0	145
83 22620	57	22.8	174	26.9	11.32	50	.2	-99.00	984.7	0	0	.4	215
83 22621	57	22.7	174	27.9	15.44	45	.3	-99.00	984.8	0	0	0.0	50
83 22622	57	24.1	174	27.1	15.44	50	-.5	-1.71	985.0	0	0	0.0	50
83 22623	57	27.1	174	22.8	13.38	35	-1.5	-2.77	985.5	0	0	.8	65
83 227 0	57	33.0	174	12.2	14.41	45	-1.2	-1.20	985.7	0	0	0.0	60
83 227 1	57	32.6	174	11.5	15.44	55	-1.2	-1.20	985.7	0	0	0.0	67
83 227 2	57	34.0	174	9.7	12.35	50	-1.8	-2.30	985.9	0	0	.8	35
83 227 3	57	42.0	174	0.0	12.35	50	-1.8	-2.30	986.6	0	0	1.1	45
83 227 4	57	46.0	173	53.0	12.35	60	-3.4	-3.40	987.2	0	0	0.0	40
83 227 5	57	50.0	173	48.0	12.35	60	-3.5	-3.50	987.2	0	0	1.0	45
83 227 6	57	57.0	173	37.0	12.35	50	-4.2	-4.20	987.8	0	0	0.0	45
83 227 7	58	0.0	173	32.0	12.35	60	-4.9	-5.19	988.2	0	0	0.0	40
83 227 8	58	10.7	173	16.2	11.32	50	-5.1	-5.69	989.0	0	0	0.0	50
83 227 9	58	11.9	173	14.9	12.35	55	-5.3	-6.52	989.0	0	0	0.0	51
83 22710	58	12.6	173	14.5	11.84	45	-6.3	-6.93	989.1	0	0	0.0	50
83 22711	58	9.2	173	17.8	11.32	45	-6.3	-6.93	989.1	0	0	0.0	53
83 22712	58	14.5	173	10.6	12.35	50	-7.0	-8.00	989.5	0	0	1.0	48
83 22713	58	21.3	173	2.7	12.35	50	-8.2	-9.27	990.0	0	1	0.0	40
83 22714	58	22.5	173	3.9	10.29	45	-8.0	-8.00	990.0	0	1	0.0	305
83 22715	58	23.0	173	6.0	9.27	40	-8.0	-8.00	989.8	0	1	0.0	306
83 22716	58	23.0	173	7.0	8.24	45	-8.6	-9.32	989.8	0	1	0.0	308
83 22717	58	23.0	173	8.0	7.72	55	-8.6	-9.32	989.8	0	1	0.0	310
83 22718	58	23.0	173	8.0	8.24	55	-9.2	-10.33	989.8	0	1	0.0	317
83 22719	58	21.3	173	2.3	7.72	60	-8.4	-8.75	989.6	0	1	0.0	145
83 22720	58	20.9	173	3.6	8.24	50	-8.4	-9.48	989.7	0	0	0.0	175
83 22721	58	20.3	173	4.6	8.24	50	-8.4	-9.86	989.9	0	0	0.0	165

APPENDIX B

SURFACE WEATHER OBSERVATIONS AT TWO REMOTE METEOROLOGICAL
ICE STATIONS AS THEY DRIFTED THROUGH THE MARGINAL ICE ZONE

REMOTE METEOROLOGICAL STATION NUMBER 2

TIME QMT YYMMDDHHMM	POSITION		WIND			TAIR C	SST C	CURRENT	
	LAT N	LONG W	SPD M/S	DIR DEGT	GUST M/S			SPD M/S	DIR DEGT
83 210 2 5	60.81	190.45	0.0	180	.3	-4.93	-2.59	18.6	89
83 210 435	60.88	190.25	10.6	85	12.9	-4.98	-1.60	20.2	89
83 210 7 5	60.89	190.19	10.7	77	12.6	-5.55	-1.61	16.1	82
83 210 935	60.90	190.12	10.0	70	12.3	-6.63	-1.61	16.8	70
83 21012 5	60.92	190.07	11.1	69	13.2	-8.24	-1.60	19.6	84
83 2101435	60.94	190.04	11.2	68	13.2	-8.26	-1.60	22.3	71
83 21017 5	60.96	190.01	11.3	62	13.5	-9.31	-1.60	16.8	69
83 2101935	60.96	189.97	12.4	69	14.7	-9.44	-1.59	15.8	76
83 21022 5	60.96	189.91	12.1	63	15.0	-9.34	-1.59	15.5	81
83 211 035	60.95	189.84	12.4	71	15.3	-9.21	-1.58	18.3	75
83 211 3 5	60.95	189.76	10.7	62	13.2	-10.12	-1.58	18.0	74
83 211 535	60.96	189.71	10.9	66	12.9	-10.49	-1.58	18.4	73
83 211 8 5	60.96	189.66	10.3	70	12.9	-10.85	-1.58	19.6	71
83 2111035	60.97	189.59	10.0	69	12.3	-11.24	-1.58	16.4	73
83 21113 5	60.99	189.51	11.2	64	13.5	-11.51	-1.58	18.6	62
83 2111535	61.00	189.44	11.1	65	14.4	-11.72	-1.57	14.6	60
83 21118 5	61.00	189.38	10.7	66	12.6	-11.59	-1.57	17.7	64
83 2112035	61.00	189.34	10.3	64	12.3	-12.34	-1.58	16.0	70
83 21123 5	61.00	189.30	10.3	64	12.3	-11.95	-1.58	17.9	66
83 212 135	60.99	189.23	10.9	64	12.6	-11.51	-1.58	14.8	59
83 212 4 5	60.98	189.16	10.2	61	12.3	-11.53	-1.57	10.6	57
83 212 635	60.98	189.09	9.6	48	11.4	-13.05	-1.57	10.2	54
83 212 9 5	60.98	189.03	9.9	48	11.7	-13.32	-1.57	9.3	50
83 2121135	60.98	188.97	10.4	49	12.6	-14.06	-1.56	11.7	50
83 21214 5	60.99	188.93	9.4	38	11.1	-17.21	-1.55	14.9	44
83 2121635	60.99	188.90	8.2	44	10.0	-17.92	-1.55	16.0	39
83 21219 5	61.00	188.88	8.9	41	10.3	-16.98	-1.56	13.1	43
83 2122135	61.00	188.88	8.6	36	10.0	-14.82	-1.58	13.2	43
83 213 0 5	60.98	188.82	9.9	36	11.4	-14.39	-1.60	10.3	49
83 213 235	60.97	188.77	9.2	31	10.6	-16.31	-1.59	13.2	43
83 213 5 5	60.96	188.73	9.4	39	11.1	-17.80	-1.60	15.1	44
83 213 735	60.97	188.69	9.2	34	10.6	-17.85	-1.60	11.4	45
83 21310 5	60.96	188.64	8.4	36	9.7	-17.64	-1.62	12.1	43
83 2131235	60.96	188.58	8.4	28	10.0	-16.46	-1.63	12.1	42
83 21315 5	60.96	188.53	8.8	44	10.3	-16.05	-1.63	11.8	45
83 2131735	60.97	188.49	8.7	45	10.0	-16.22	-1.63	14.5	51
83 21320 5	60.97	188.47	8.1	46	9.4	-15.75	-1.62	12.3	53
83 2132235	60.97	188.46	8.0	41	9.1	-14.70	-1.62	9.3	58
83 214 1 5	60.96	188.41	6.5	64	7.9	-11.63	-1.63	8.5	68
83 214 335	60.95	188.37	7.2	71	8.5	-10.51	-1.63	8.4	67
83 214 6 5	60.95	188.33	9.0	70	10.3	-9.93	-1.64	11.2	80
83 214 835	60.96	188.30	8.9	68	10.3	-9.31	-1.64	13.6	73
83 21411 5	60.97	188.29	5.5	79	6.4	-6.67	-1.64	7.4	65
83 2141335	60.99	188.27	4.2	124	5.0	-6.51	-1.64	3.0	77
83 21416 5	61.01	188.26	4.9	127	6.4	-7.19	-1.64	7.8	107
83 2141835	61.03	188.25	4.1	120	5.3	-7.12	-1.64	5.7	132
83 21421 5	61.04	188.24	5.0	113	6.2	-5.37	-1.63	4.1	153
83 2142335	61.04	188.23	4.4	110	5.3	-4.44	-1.64	7.3	121
83 215 2 5	61.04	188.23	7.2	106	8.8	-4.28	-1.64	11.2	109
83 215 435	61.05	188.20	6.1	84	7.3	-4.53	-1.65	8.4	100
83 215 7 5	61.07	188.21	7.5	72	9.1	-5.99	-1.65	8.6	89
83 215 935	61.07	188.17	9.7	64	12.3	-7.18	-1.66	17.8	71

TIME GMT YYMMDDHHMM	POSITION		WIND			TAIR C	BST C	CURRENT	
	LAT N	LONG W	SPD M/S	DIR DEGT	GUST M/S			SPD M/S	DIR DEGT
83 21512 5	61.07	188.11	10.8	48	13.2	-9.09	-1.66	13.5	59
83 2151435	61.07	188.07	10.5	50	13.2	-10.49	-1.66	15.4	60
83 21517 5	61.07	188.03	10.4	43	12.3	-11.55	-1.66	11.7	56
83 2151935	61.07	188.00	10.2	41	12.6	-12.54	-1.67	10.5	48
83 21522 5	61.07	187.96	10.0	40	12.9	-11.81	-1.67	8.9	51
83 216 035	61.07	187.91	11.0	37	13.5	-11.40	-1.67	13.6	44
83 216 3 5	61.07	187.86	11.5	38	13.5	-12.15	-1.68	11.0	43
83 216 535	61.05	187.79	11.0	43	12.9	-11.51	-1.68	11.7	51
83 216 8 5	61.04	187.73	10.3	51	12.0	-10.70	-1.68	7.4	50
83 2161035	61.03	187.66	9.3	48	11.7	-10.38	-1.68	16.1	70
83 21613 5	61.03	187.60	9.8	42	12.0	-11.13	-1.68	10.8	56
83 2161535	61.03	187.54	10.0	45	11.7	-11.71	-1.68	13.2	53
83 21618 5	61.02	187.49	9.1	42	11.7	-12.56	-1.69	10.5	48
83 2162035	61.02	187.49	10.5	39	12.6	-13.09	-1.69	11.1	53
83 21623 5	61.02	187.48	11.0	38	13.2	-11.86	-1.69	9.6	55
83 217 135	61.00	187.45	12.0	37	14.1	-11.67	-1.69	11.4	43
83 217 4 5	60.99	187.41	11.1	38	13.5	-12.35	-1.69	17.6	37
83 217 635	60.97	187.36	11.5	33	14.7	-13.00	-1.69	14.1	44
83 217 9 5	60.96	187.30	11.9	42	14.1	-13.10	-1.69	10.0	59
83 2171435	60.93	187.17	11.2	39	14.1	-13.76	-1.69	14.8	39
83 21717 5	60.91	187.11	10.2	43	12.9	-13.96	-1.69	11.7	54
83 2171935	60.91	187.07	12.3	40	15.3	-14.43	-1.69	15.2	49
83 21722 5	60.90	187.05	12.1	30	15.0	-13.78	-1.69	17.4	53
83 218 035	60.88	187.02	14.5	24	18.2	-14.09	-1.70	19.7	34
83 218 3 5	60.84	186.93	14.1	35	17.3	-14.19	-1.70	13.0	22
83 218 535	60.82	186.87	13.9	30	16.4	-15.52	-1.71	14.4	36
83 218 8 5	60.81	186.80	14.2	35	17.9	-16.34	-1.71	16.7	42
83 2181035	60.78	186.76	13.8	31	16.4	-17.75	-1.71	13.4	43
83 21813 5	60.76	186.72	13.5	32	17.0	-18.24	-1.71	15.8	52
83 2181535	60.74	186.62	13.8	25	17.3	-19.28	-1.71	20.7	45
83 21818 5	60.71	186.55	13.9	25	17.6	-20.77	-1.71	23.9	44
83 2182035	60.69	186.51	13.1	29	15.8	-20.12	-1.71	19.2	49
83 21823 5	60.67	186.47	12.6	31	15.5	-18.74	-1.71	18.8	58
83 219 135	60.64	186.42	12.1	27	15.0	-18.04	-1.71	17.4	59
83 219 4 5	60.61	186.33	11.4	27	14.4	-17.88	-1.71	8.7	53
83 219 635	60.60	186.25	10.1	32	13.2	-17.66	-1.71	10.4	65
83 219 9 5	60.60	186.22	10.7	28	13.2	-17.86	-1.71	7.3	43
83 2191135	60.59	186.20	8.6	12	10.8	-17.57	-1.71	0.0	180
83 21914 5	60.57	186.18	5.8	355	7.3	-17.76	-1.71	0.0	180
83 2191635	60.55	186.15	6.3	355	7.9	-17.82	-1.70	0.0	180
83 21919 5	60.53	186.13	6.3	350	8.2	-18.37	-1.70	0.0	180
83 2192135	60.53	186.12	5.8	360	7.6	-16.58	-1.71	0.0	180
83 220 0 5	60.52	186.13	7.0	357	9.4	-13.95	-1.71	0.0	180
83 220 235	60.48	186.11	7.0	351	9.4	-14.19	-1.70	0.0	180
83 220 5 5	60.45	186.05	5.6	1	7.0	-15.96	-1.70	0.0	180
83 220 735	60.45	186.02	5.3	352	6.4	-17.67	-1.71	0.0	180
83 22010 5	60.45	186.01	6.1	3	7.3	-17.71	-1.68	0.0	180
83 2201235	60.45	186.01	4.7	7	6.7	-18.53	-1.70	10.2	24
83 22015 5	60.43	186.01	8.2	20	10.6	-17.90	-1.67	7.4	42
83 2192035	60.40	185.94	6.5	344	7.9	-17.57	-1.70	0.0	180
83 21923 5	60.39	185.91	7.3	0	9.1	-14.79	-1.71	0.0	180
83 220 135	60.36	185.89	7.3	359	9.1	-13.81	-1.70	0.0	180
83 220 4 5	60.34	185.85	5.7	351	7.0	-15.96	-1.70	0.0	180
83 220 635	60.33	185.80	5.6	355	7.0	-17.20	-1.71	0.0	180
83 220 9 5	60.33	185.78	5.1	1	6.7	-17.82	-1.67	0.0	180
83 2201135	60.33	185.78	5.2	356	6.4	-18.61	-1.70	16.4	21

TIME GMT YYMMDDHHMM	POSITION		WIND			TAIR _s C	BST C	CURRENT	
	LAT N	LONG W	SPD M/S	DIR DEGT	GUST M/S			SPD M/S	DIR DEGT
83 22014 5	60.32	185.78	7.5	20	9.4	-17.94	-1.69	7.1	40
83 2201635	60.30	185.76	6.8	23	8.8	-17.86	-1.65	6.0	33
83 22019 5	60.27	185.75	6.9	19	9.4	-17.80	-1.64	12.4	12
83 2202135	60.25	185.71	8.5	17	10.6	-15.92	-1.66	13.4	14
83 221 0 5			8.2	14	10.0	-15.14	-1.65	14.8	23
83 221 235			6.9	8	9.4	-15.44	-1.64	11.5	21
83 221 5 5			5.7	360	7.6	-16.95	-1.62	14.2	21
83 221 735			4.3	351	5.3	-18.12	-1.64	8.5	350
83 22110 5			4.6	351	6.2	-18.56	-1.63	11.8	7
83 2211235			6.6	357	7.9	-17.87	-1.64	10.7	13
83 22115 5			7.9	3	9.7	-16.75	-1.64	12.5	14
83 2211735			8.2	8	10.6	-15.95	-1.65	17.2	16
83 22120 5			8.6	7	11.1	-15.42	-1.65	16.2	13
83 2212235			8.5	13	10.8	-14.07	-1.66	23.3	16

REMOTE METEOROLOGICAL STATION NUMBER 7

TIME GMT YYMMDDHHMM	POSITION		WIND			GUST M/S	TAIR C	PRESS MB	SST C	CURRENT	
	LAT N	LONG W	SPD M/S	DIR DEGT	DIR DEGT					SPD M/S	
83 21123 7	60.94	188.83	8.8	70	11.4	-11.74	1000.0	-1.73	10.1	78	
83 212 137	60.95	188.75	7.7	69	10.9	-11.18	1000.1	-1.76	8.0	91	
83 212 4 7	60.96	188.66	7.5	54	10.0	-12.83	1000.4	-1.77	5.8	81	
83 212 637	60.97	188.61	7.1	55	9.4	-13.42	1000.8	-1.78	5.5	76	
83 212 9 7	60.97	188.56	8.1	52	11.4	-14.06	1001.0	-1.78	3.9	55	
83 2121137	60.97	188.48	7.6	54	10.3	-15.12	1001.3	-1.78	5.2	83	
83 21214 7	60.99	188.39	7.4	50	9.7	-17.10	1001.1	-1.78	.5	29	
83 2121637	61.00	188.35	7.0	46	9.1	-18.54	1001.1	-1.79	4.0	47	
83 21219 7	61.02	188.32	6.4	45	8.5	-18.02	1000.9	-1.80	3.8	37	
83 2122137	61.01	188.31	6.2	44	7.9	-16.06	1000.7	-1.80	3.5	48	
83 213 0 7	61.00	188.27	6.7	45	9.1	-14.86	1004.8	-1.81	3.1	38	
83 213 237	61.00	188.21	6.5	41	9.1	-16.22	1000.3	-1.81	4.9	31	
83 213 5 7	61.00	188.16	5.8	45	7.6	-17.79	1000.3	-1.81	5.5	41	
83 213 737	61.00	188.12	5.8	50	7.9	-18.12	1000.5	-1.81	2.9	41	
83 21310 7	61.00	188.08	6.0	44	8.2	-18.18	1000.2	-1.81	2.3	46	
83 2131237	61.00	188.02	5.5	32	7.9	-17.41	1000.7	-1.81	6.5	37	
83 21315 7	61.00	187.97	5.7	47	8.2	-16.52	1000.5	-1.81	4.2	26	
83 2131737	61.00	187.93	5.8	39	7.9	-16.53	1000.3	-1.81	5.3	32	
83 21320 7	61.01	187.91	6.3	43	8.2	-15.82	1000.5	-1.82	1.6	32	
83 2132237	61.00	187.90	5.9	41	7.6	-14.92	1000.9	-1.82	1.3	35	
83 214 1 7	60.98	187.86	5.4	47	7.6	-13.75	1000.4	-1.81	2.0	34	
83 214 337	60.97	187.80	4.7	54	6.2	-11.44	1000.4	-1.81	0.0	350	
83 214 6 7	60.98	187.77	6.4	64	8.2	-10.42	1000.6	-1.82	4.0	87	
83 214 837	60.98	187.73	6.5	62	7.9	-10.09	1000.5	-1.82	2.2	91	
83 21411 7	60.98	187.69	5.4	72	7.3	-8.37	1000.7	-1.82	1.2	49	
83 2141337	60.99	187.65	2.8	116	4.1	-5.03	1001.3	-1.82	0.0	62	
83 21416 7	61.01	187.61	4.9	146	6.5	-4.86	1002.3	-1.82	2.9	130	
83 2141837	61.04	187.62	2.6	150	3.5	-7.49	1003.9	-1.82	3.6	133	
83 21421 7	61.05	187.66	1.6	115	2.9	-6.11	1005.4	-1.82	.6	142	
83 2142337	61.05	187.68	5.2	113	6.7	-6.02	1006.2	-1.82	4.1	129	
83 215 2 7	61.05	187.66	4.1	100	5.3	-4.36	1006.9	-1.82	4.4	117	
83 215 437	61.06	187.63	3.3	85	4.4	-4.70	1007.6	-1.82	3.5	117	
83 215 7 7	61.08	187.62	5.0	73	6.7	-5.16	1008.1	-1.82	3.1	89	
83 215 937	61.09	187.61	6.6	65	9.1	-7.36	1008.2	-1.82	4.7	92	
83 21512 7	61.08	187.56	8.3	59	10.9	-8.69	1008.3	-1.82	3.6	84	
83 2151437	61.08	187.50	9.4	57	11.1	-10.89	1008.0	-1.82	3.1	74	
83 21517 7	61.09	187.43	7.4	53	10.3	-11.96	1008.0	-1.82	.5	88	
83 2151937	61.09	187.39	8.0	52	10.9	-12.78	1008.1	-1.81	1.7	79	
83 21522 7	61.09	187.38	7.8	48	10.6	-11.97	1008.1	-1.82	2.7	52	
83 216 037	61.07	187.33	7.5	48	9.7	-11.60	1007.1	-1.83	4.0	39	
83 216 3 7	61.05	187.26	7.8	49	10.9	-11.83	1006.2	-1.83	7.0	32	
83 216 537	61.04	187.19	8.0	51	10.9	-12.00	1006.3	-1.83	11.8	35	
83 216 8 7	61.04	187.14	8.0	53	11.1	-11.39	1006.0	-1.83	7.0	44	
83 2161037	61.03	187.09	7.8	55	10.6	-11.33	1006.1	-1.83	5.3	45	
83 21613 7	61.02	187.03	7.6	51	10.0	-11.41	1005.6	-1.84	6.2	42	
83 2161537	61.01	186.96	6.9	52	9.4	-11.56	1005.7	-1.84	9.8	39	
83 21618 7	61.01	186.91	6.9	48	10.0	-12.43	1005.3	-1.84	5.0	41	
83 2162037	61.01	186.89	6.3	40	8.5	-13.55	1004.7	-1.84	8.9	32	
83 21623 7	60.99	186.87	7.5	35	10.6	-12.73	1004.0	-1.84	7.9	32	
83 217 137	60.97	186.83	7.7	33	10.3	-12.38	1002.7	-1.84	6.4	30	
83 217 4 7	60.95	186.75	7.0	38	9.7	-12.90	1002.4	-1.84	6.8	19	
83 217 637	60.95	186.69	7.1	34	10.3	-14.09	1002.3	-1.85	7.4	25	

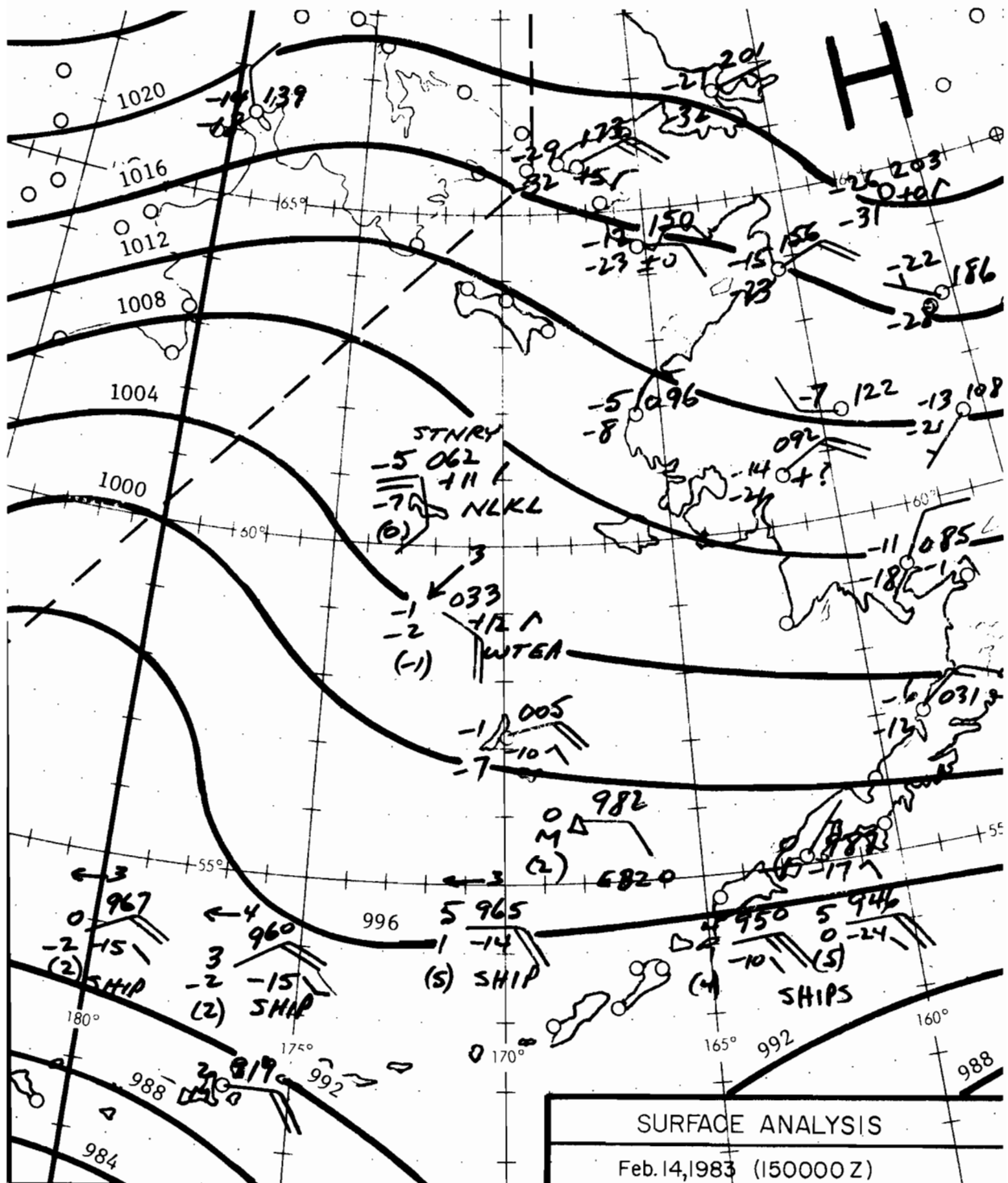
TIME GMT YYMMDDHHMM	POSITION		WIND			GUST M/S	TAIR C	PRESS MB	SST C	CURRENT	
	LAT N	LONG W	SPD M/S	DIR DEGT	SPD M/S					DIR DEGT	
83 217 9 7	60.93	186.66	6.5	40	9.1	-13.68	1003.0	-1.85	6.8	29	
83 2171437	60.91	186.58	5.8	33	9.1	-14.31	1004.0	-1.85	11.2	31	
83 21717 7	60.89	186.52	5.1	38	7.0	-14.77	1005.3	-1.85	7.8	28	
83 2171937	60.89	186.48	9.5	42	13.2	-15.46	1005.9	-1.86	9.0	35	
83 21722 7	60.88	186.47	10.0	37	15.0	-14.90	1007.6	-1.85	14.8	22	
83 218 037	60.85	186.42	11.1	39	15.0	-14.30	1008.1	-1.85	11.8	29	
83 218 3 7	60.82	186.35	10.7	36	14.7	-14.32	1009.5	-1.85	8.1	41	
83 218 537	60.80	186.26	10.4	36	14.1	-15.19	1011.4	-1.86	11.5	32	
83 218 8 7	60.79	186.20	10.1	37	14.4	-16.45	1013.2	-1.85	10.3	35	
83 2181037	60.78	186.16	8.9	33	12.6	-17.80	1015.0	-1.79	10.7	34	
83 21813 7	60.76	186.11	9.4	35	13.5	-18.71	1016.3	-1.79	11.4	44	
83 2181537	60.72	186.04	10.4	33	15.5	-19.30	1017.6	-1.80	17.0	30	
83 21818 7	60.70	185.96	9.7	31	14.1	-20.67	1019.0	-1.77	10.6	33	
83 2182037	60.69	185.91	9.2	31	13.2	-20.27	1020.4	-1.72	16.9	24	
83 21823 7	60.67	185.85	9.0	35	12.9	-18.80	1021.2	-1.70	16.4	28	
83 219 137	60.65	185.79	9.1	32	12.9	-17.86	1021.2	-1.71	13.4	27	
83 219 4 7	60.62	185.71	8.2	29	12.0	-17.75	1021.6	-1.73	11.4	23	
83 219 637	60.61	185.64	7.2	27	9.7	-17.84	1021.7	-1.74	11.8	21	
83 219 9 7	60.60	185.59	6.6	34	10.0	-17.82	1022.0	-1.72	12.9	29	
83 2191137	60.59	185.56	6.7	13	9.1	-17.51	1021.6	-1.72	10.1	16	
83 21914 7	60.58	185.54	6.7	5	8.5	-17.41	1020.2	-1.74	8.2	354	
83 2191637	60.55	185.50	5.4	3	7.3	-17.63	1019.4	-1.74	8.0	354	
83 21919 7	60.54	185.47	5.6	360	7.3	-17.26	1018.8	-1.74	5.2	339	
83 2192137	60.52	185.46	5.6	0	7.0	-15.87	1017.8	-1.74	6.2	344	
83 220 0 7	60.51	185.45	5.8	7	8.2	-14.10	1021.6	-1.76	14.0	350	
83 220 237	60.48	185.43	6.1	3	7.6	-14.66	1015.6	-1.76	8.8	357	
83 220 5 7	60.45	185.38	6.1	7	7.3	-16.35	1015.5	-1.77	7.7	350	
83 220 737	60.44	185.34	5.4	359	7.0	-17.08	1015.4	-1.79	8.8	337	
83 22010 7	60.44	185.32	4.3	9	5.6	-17.76	1015.4	-1.78	4.0	10	
83 2201237	60.44	185.32	4.2	19	5.9	-18.17	1015.5	-1.78	5.1	19	
83 22015 7	60.43	185.31	4.3	20	5.6	-18.34	1015.4	-1.78	5.4	20	
83 2192037	60.39	185.22	6.8	357	8.8	-16.61	1018.2	-1.74	6.7	351	
83 21923 7	60.38	185.22	5.8	6	7.3	-14.85	1017.2	-1.75	8.3	357	
83 220 137	60.37	185.19	5.6	5	7.9	-14.26	1015.9	-1.75	6.9	4	
83 220 4 7	60.34	185.15	6.2	4	8.8	-15.56	1015.3	-1.77	9.9	2	
83 220 637	60.35	185.09	5.6	359	7.0	-16.88	1015.5	-1.78	7.3	346	
83 220 9 7	60.33	185.08	5.1	4	6.5	-17.48	1015.4	-1.76	6.6	5	
83 2201137	60.33	185.07	3.7	17	5.3	-18.12	1015.5	-1.78	5.9	8	
83 22014 7	60.33	185.07	4.1	16	5.9	-18.46	1015.3	-1.78	5.7	18	
83 2201637	60.30	185.07	4.0	19	5.6	-18.38	1015.5	-1.77	5.0	25	
83 22019 7	60.27	185.05	3.5	22	5.0	-18.59	1015.9	-1.78	3.9	15	
83 2202137	60.25	185.03	5.1	19	6.7	-16.27	1016.2	-1.78	5.6	13	
83 221 0 7	60.24	185.01	5.7	21	7.9	-14.87	1020.5	-1.80	5.1	15	
83 221 237	60.22	184.99	5.2	13	7.0	-15.09	1014.9	-1.79	5.8	11	
83 221 5 7	60.19	184.94	5.0	12	6.7	-16.33	1014.9	-1.79	4.6	11	
83 221 737	60.17	184.89	4.7	1	6.5	-16.60	1014.4	-1.80	6.2	4	
83 22110 7	60.16	184.86	5.1	7	6.5	-16.67	1014.0	-1.80	5.5	16	
83 2211237	60.16	184.84	5.2	6	7.0	-16.93	1013.3	-1.79	5.9	11	
83 22115 7	60.14	184.83	6.1	7	7.6	-16.39	1012.6	-1.79	11.0	14	
83 2211737	60.11	184.81	5.9	15	7.8	-16.20	1012.1	-1.80	7.6	19	
83 22120 7	60.08	184.77	6.6	358	9.1	-15.80	1011.8	-1.80	8.0	5	
83 2212237	60.05	184.73	7.0	7	9.1	-14.04	1011.3	-1.79	8.0	27	
83 222 1 7	60.03	184.69	7.0	8	8.8	-13.07	1010.2	-1.80	6.4	24	
83 222 337	60.00	184.64	7.3	1	9.7	-13.86	1009.2	-1.79	3.2	354	
83 222 6 7	59.98	184.58	6.4	359	9.4	-14.62	1008.9	-1.79	3.5	1	
83 222 837	59.96	184.51	6.3	5	9.4	-15.13	1008.0	-1.79	5.2	16	

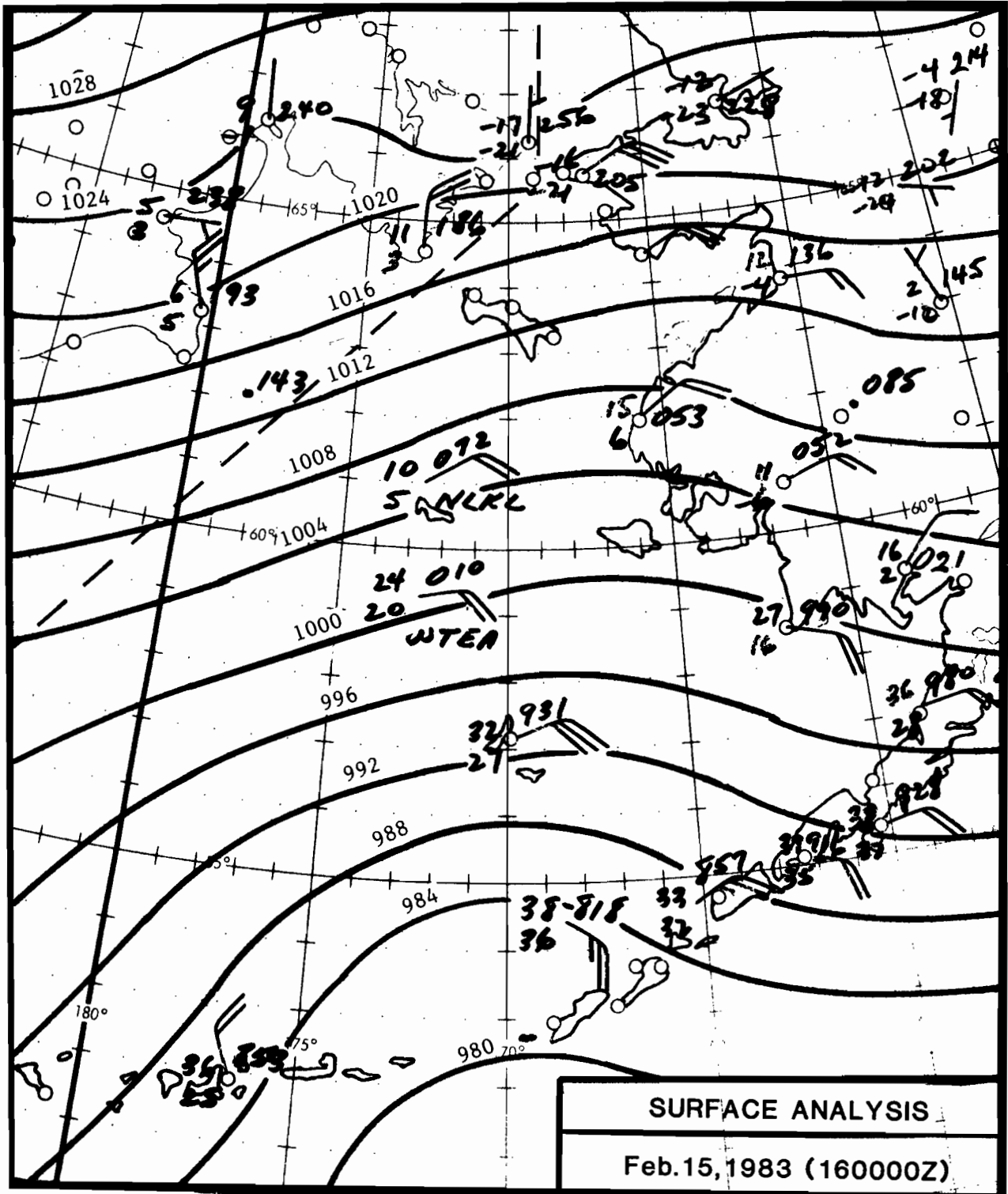
TIME GMT YYMMDDHHMM	POSITION		WIND		GUST M/S	TAIR C	PRESS MB	SST C	CURRENT	
	LAT N	LONG W	SPD M/S	DIR DEGT					SPD M/S	DIR DEGT
83 22211 7	59.95	184.44	6.5	13	8.8	-14.66	1007.1	-1.80	7.7	31
83 2221337	59.93	184.41	6.6	13	8.2	-14.83	1006.1	-1.81	4.9	29
83 22216 7	59.91	184.38	6.9	14	9.7	-15.06	1004.7	-1.81	7.5	357
83 2221837	59.88	184.35	7.2	13	9.7	-14.95	1004.0	-1.82	4.9	20

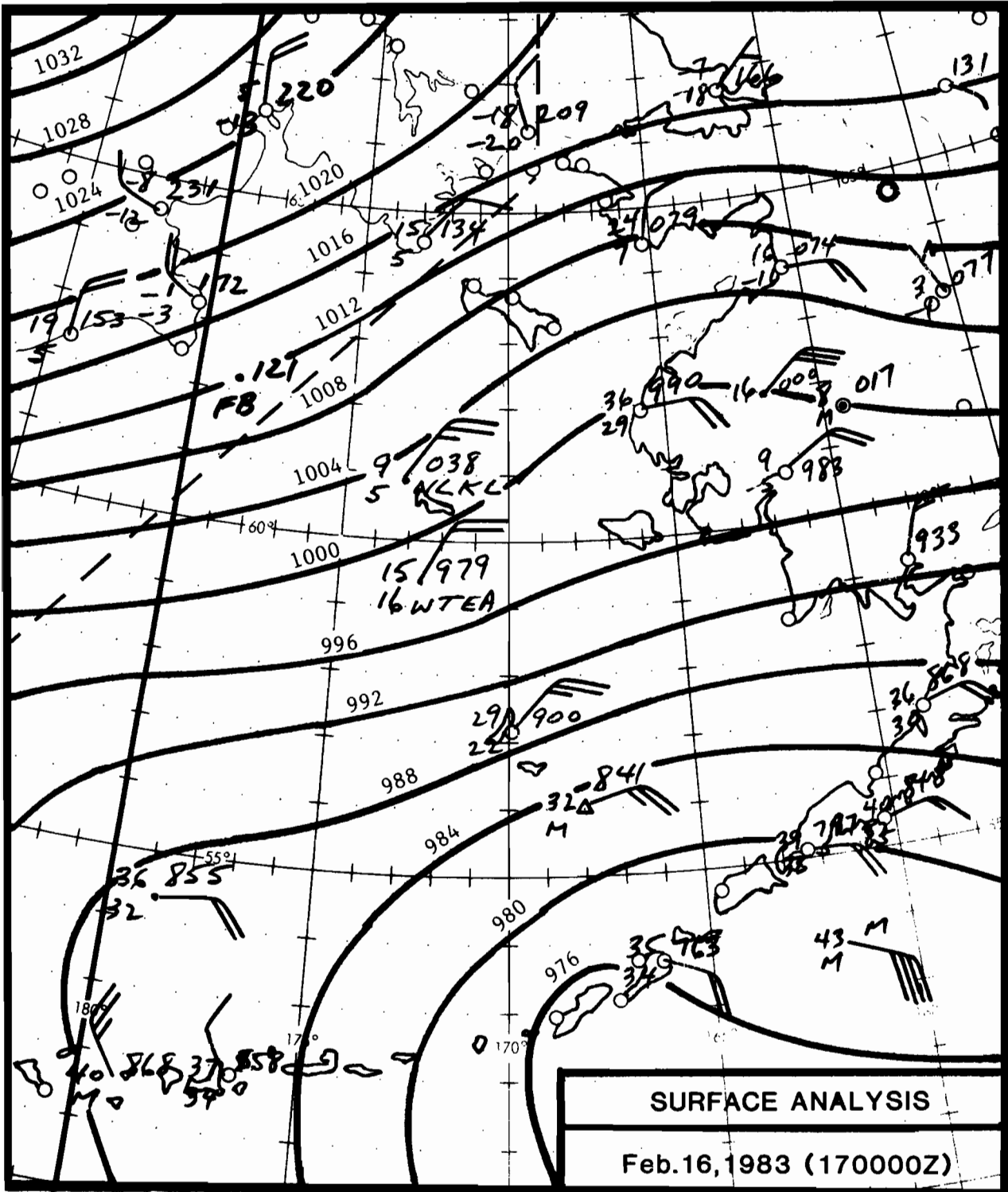
APPENDIX C

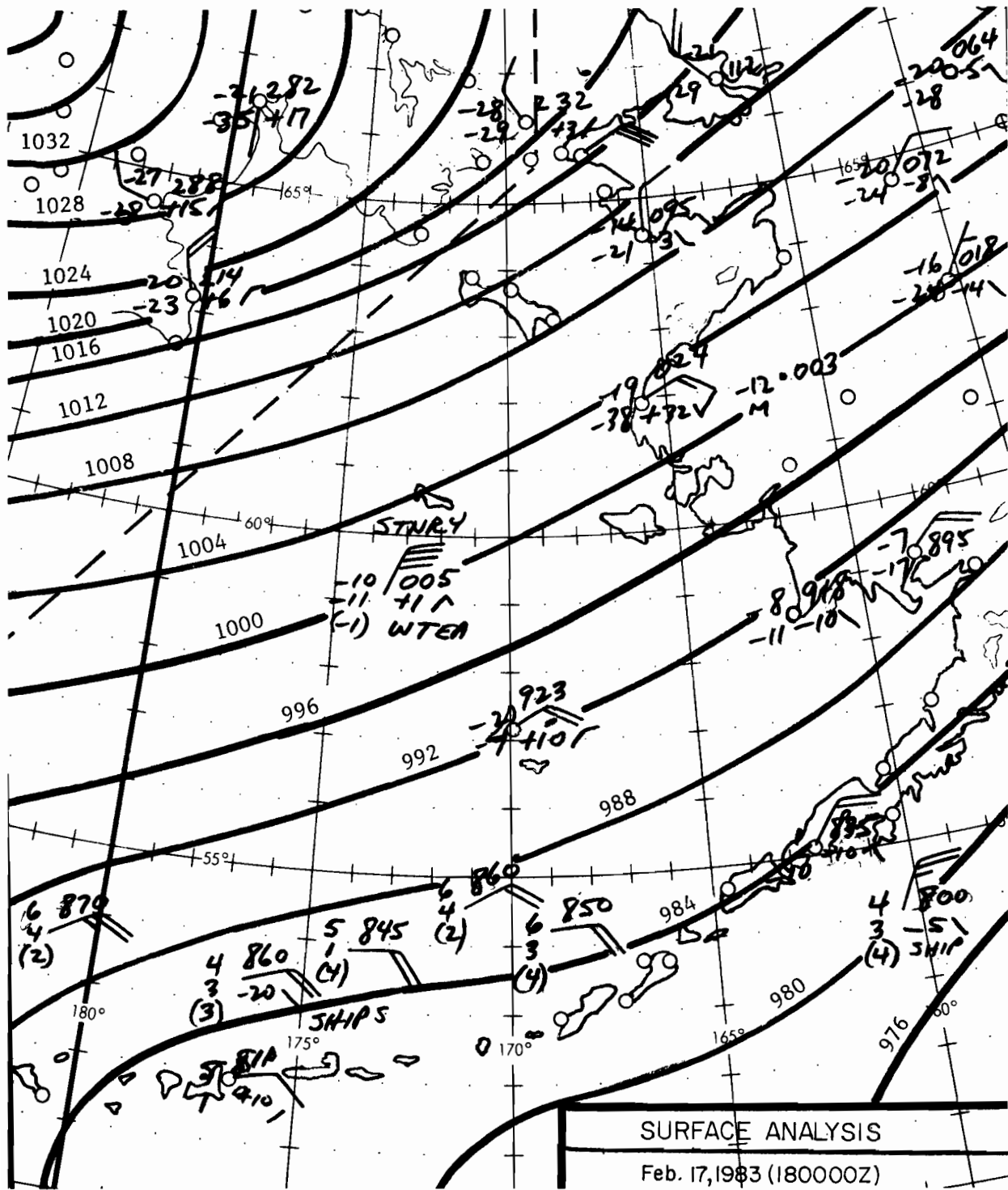
HAND DRAWN 00 GMT SEA LEVEL PRESSURE ANALYSES FOR TWELVE DAYS

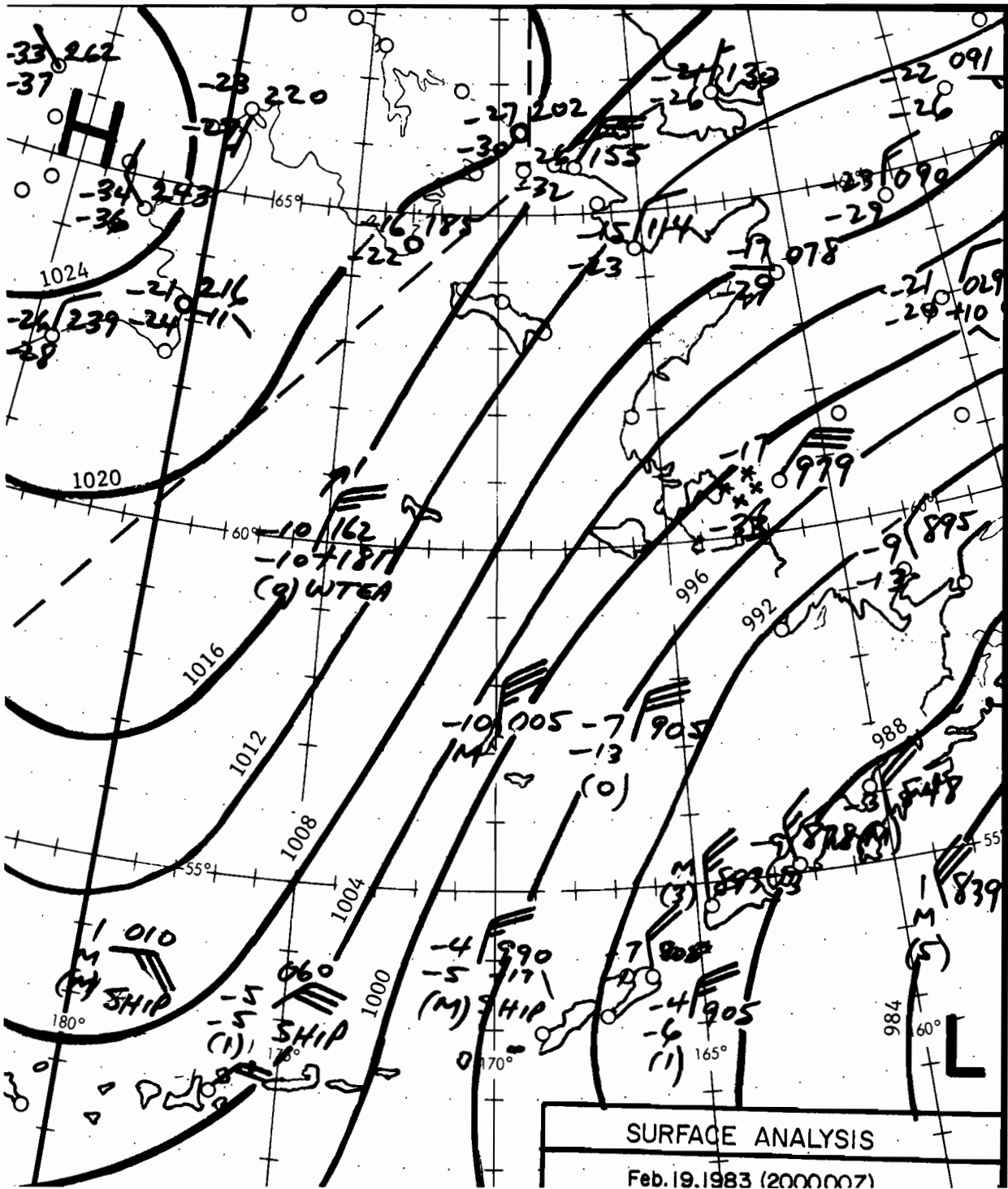
13 FEBRUARY 83 - 24 FEBRUARY 83 DURING MIZEX-WEST

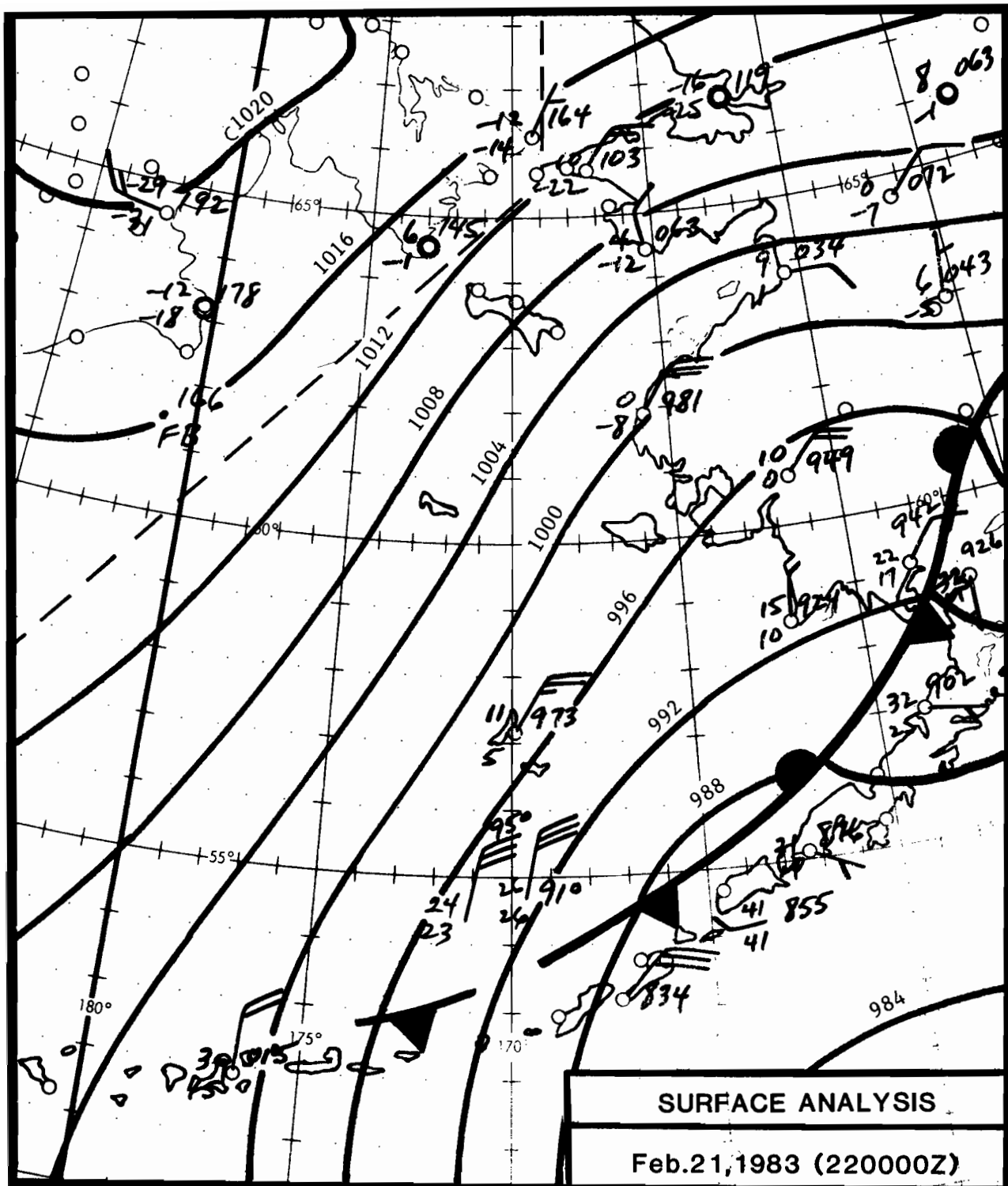


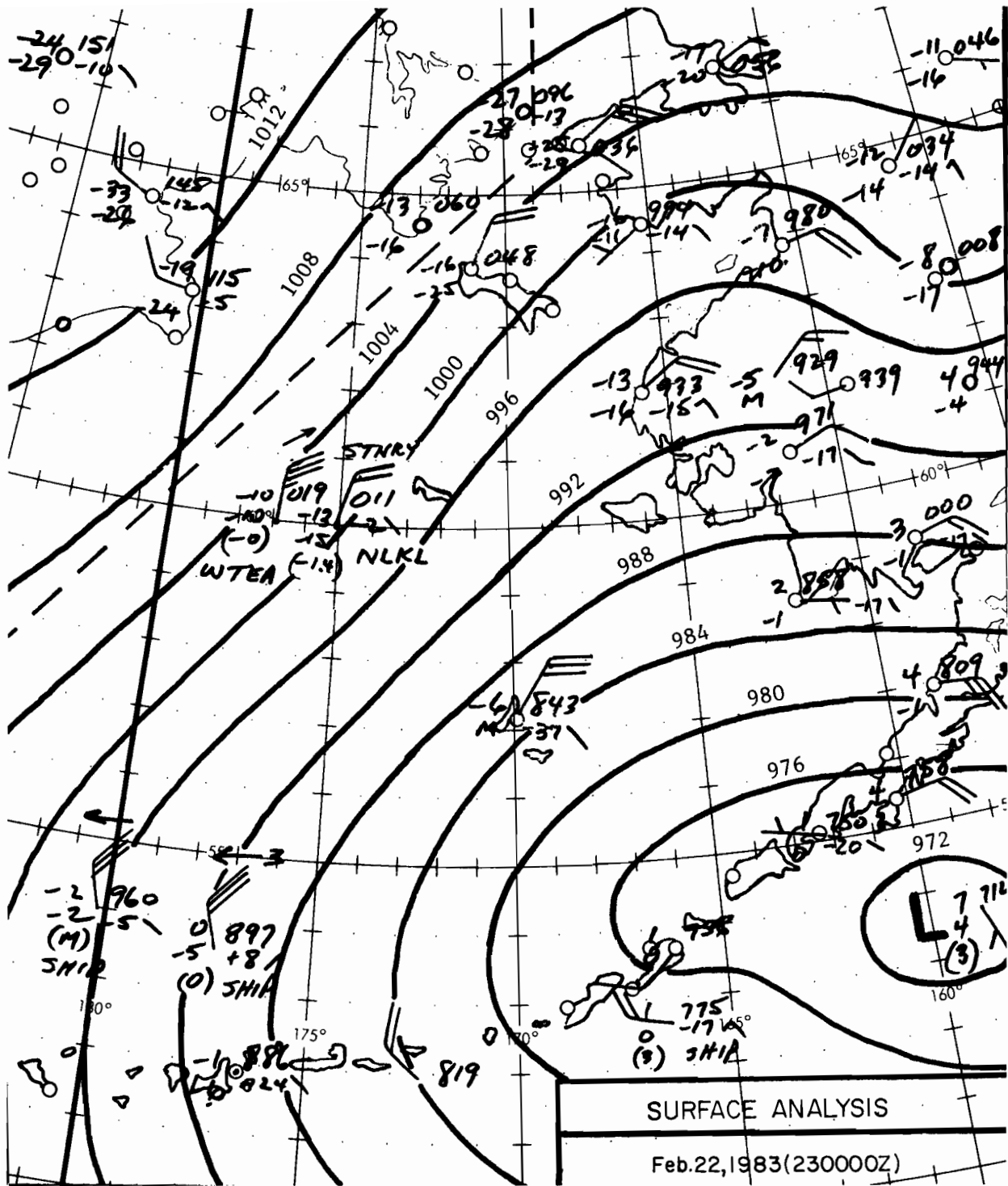


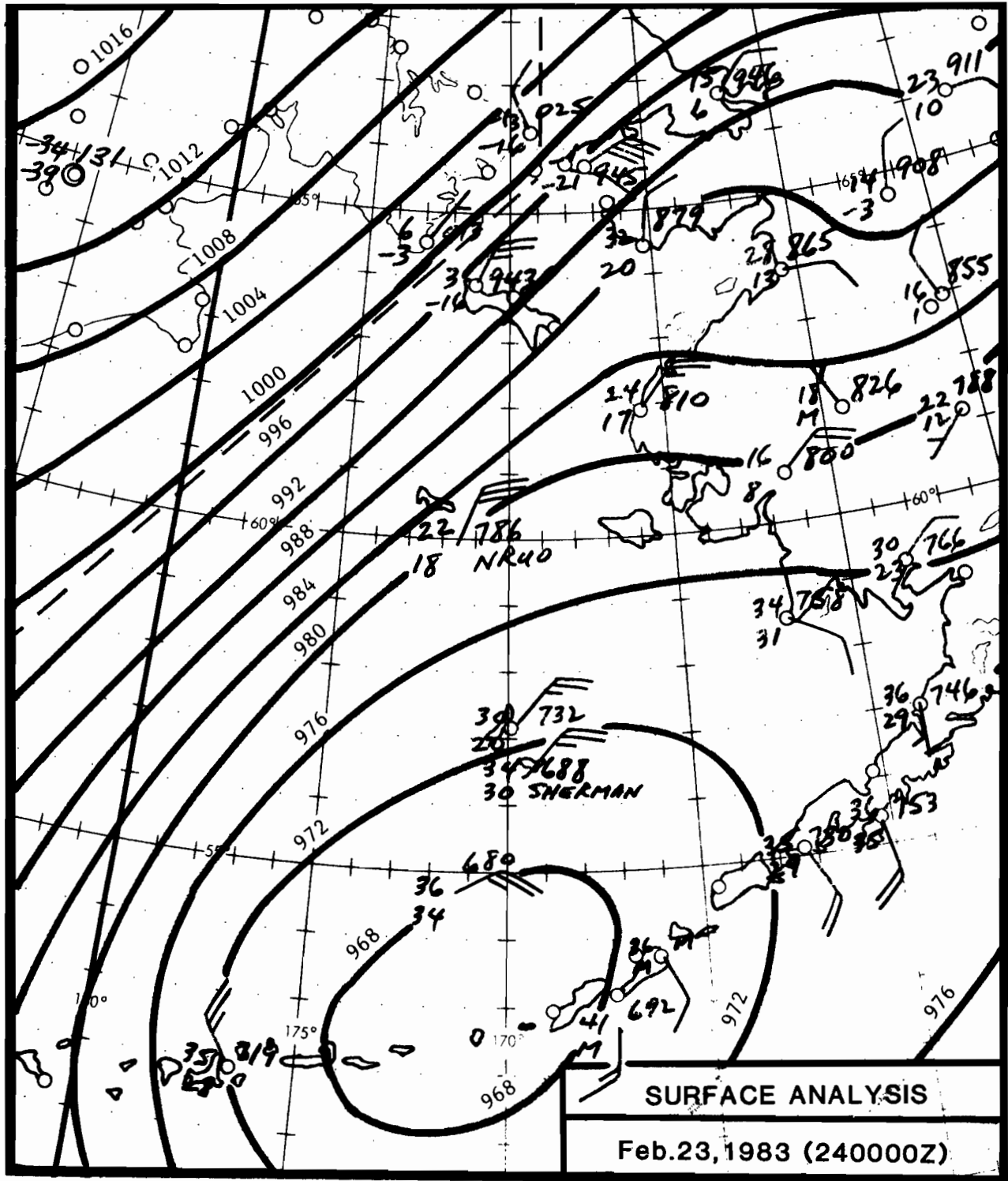










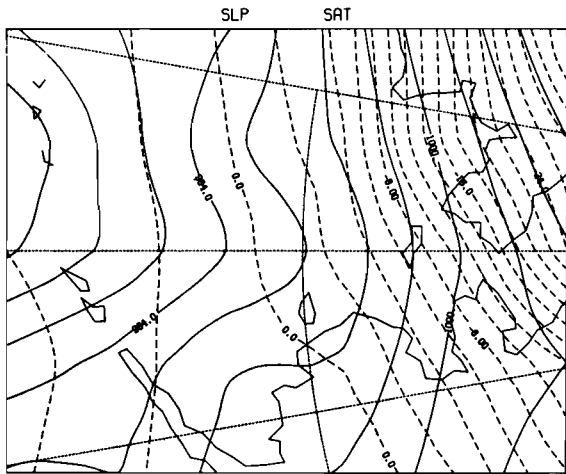


APPENDIX D

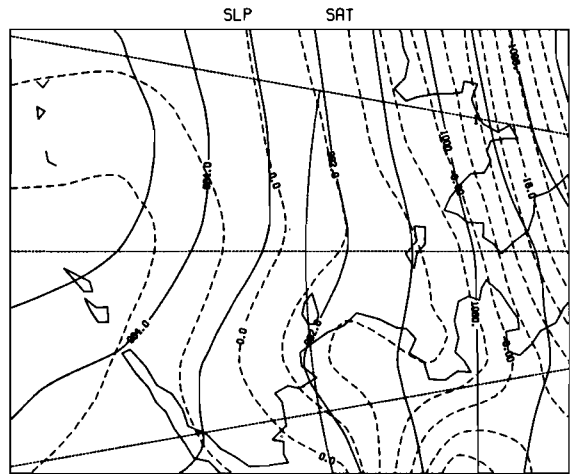
SEA LEVEL PRESSURE AND SURFACE AIR TEMPERATURE FIELDS

AT 00 AND 12 GMT PRODUCED WITH METLIB

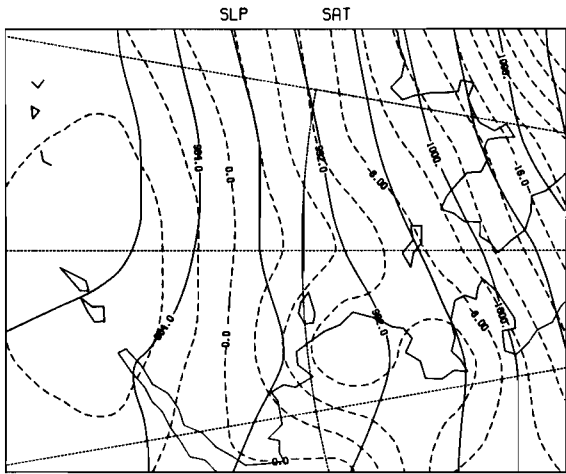
4 FEBRUARY 83 - 31 MARCH 83



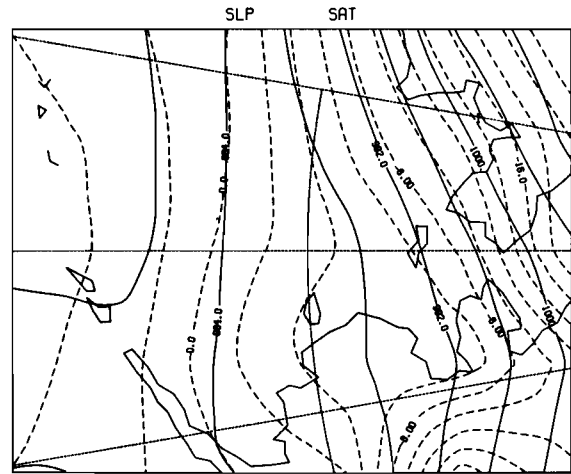
00Z 4 FEB 1983
1983 BERING SEA



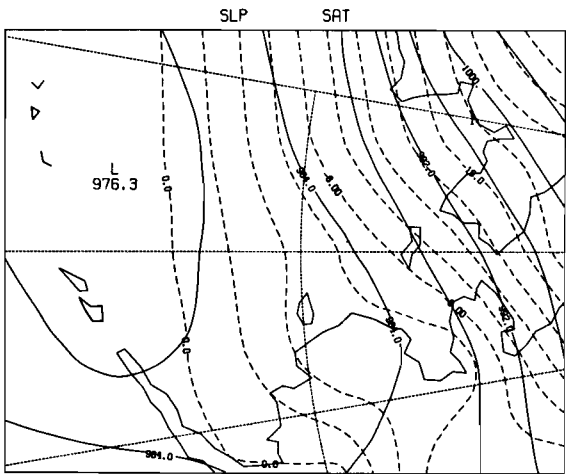
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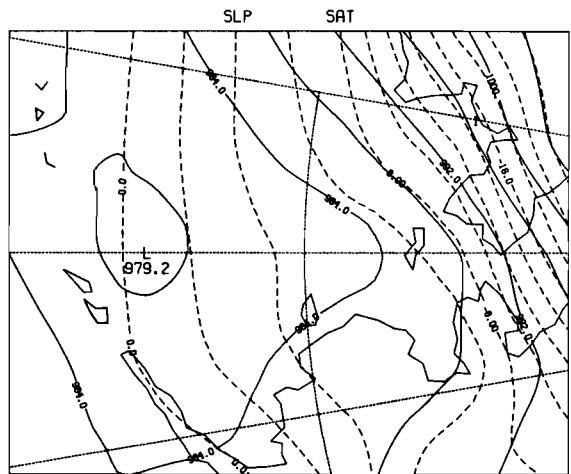
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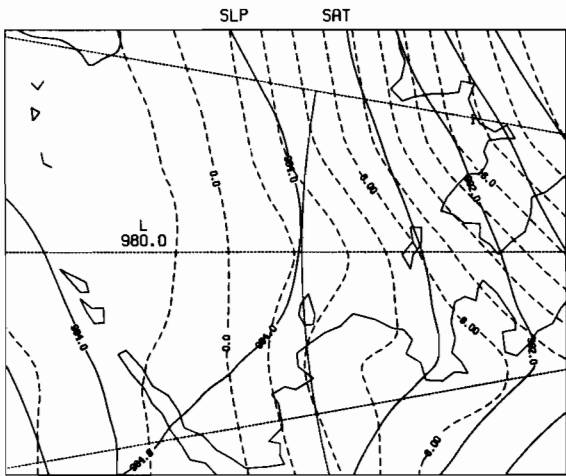
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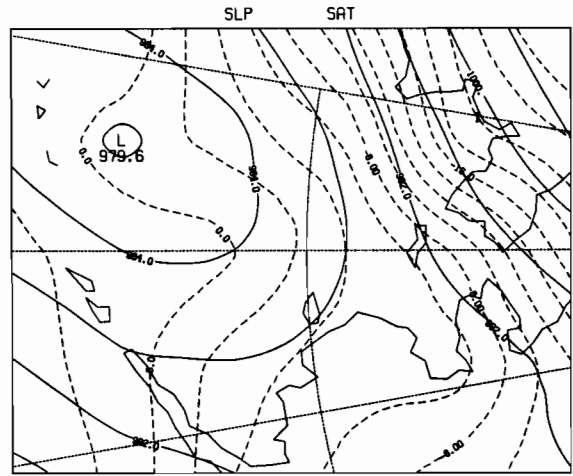
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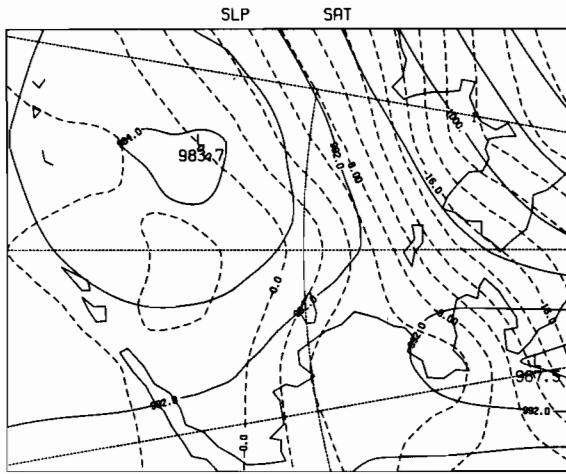
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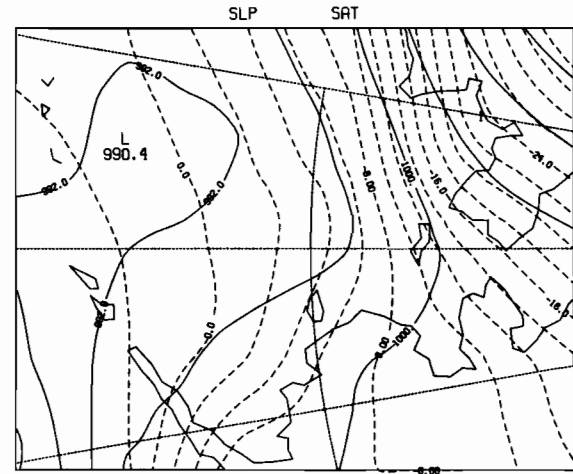
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1983 BERING SEA



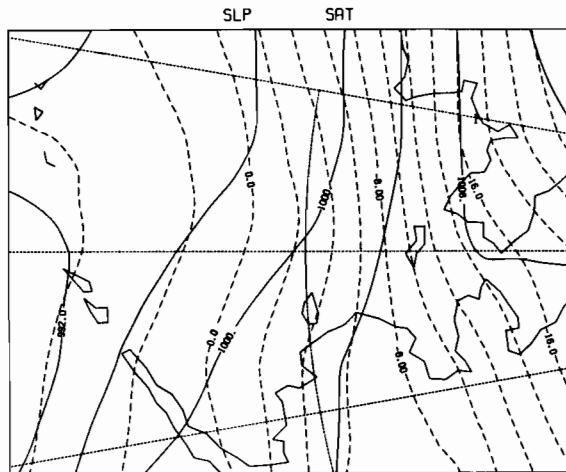
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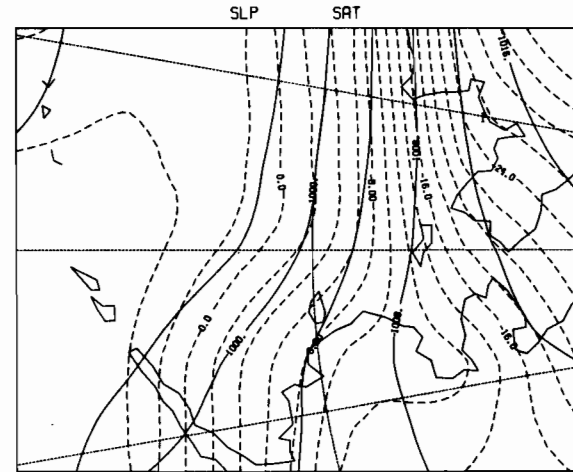
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1983 BERING SEA



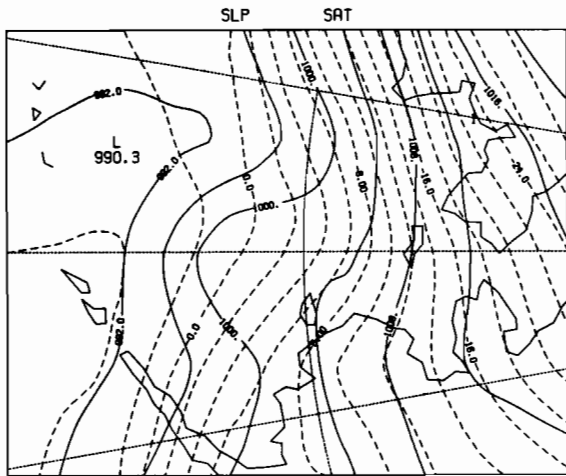
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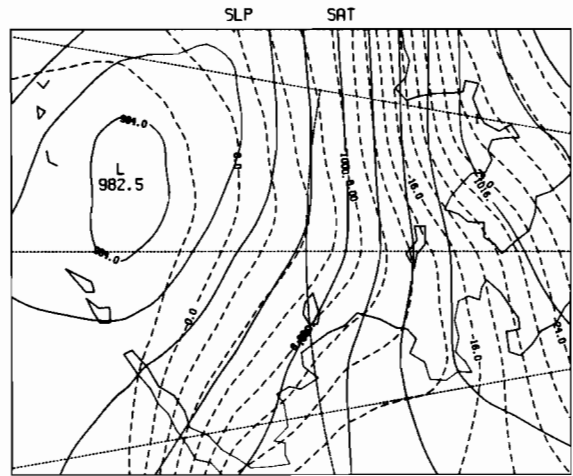
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1983 BERING SEA



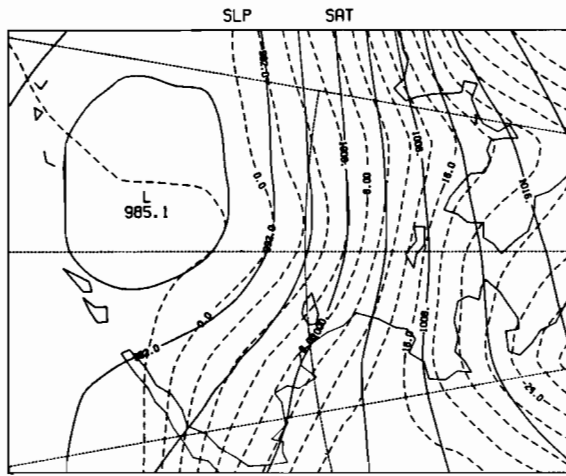
12Z 9 FEB 1983
1983 BERING SEA



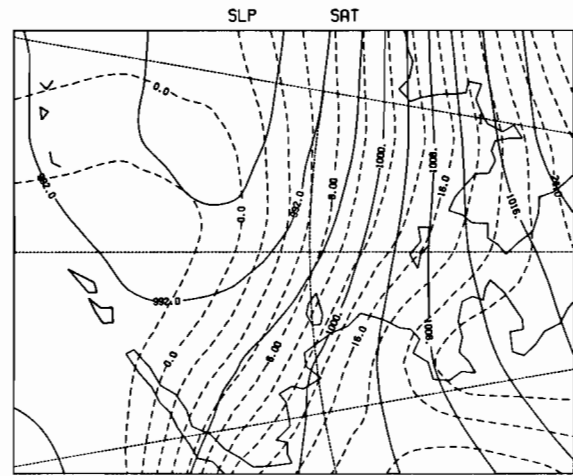
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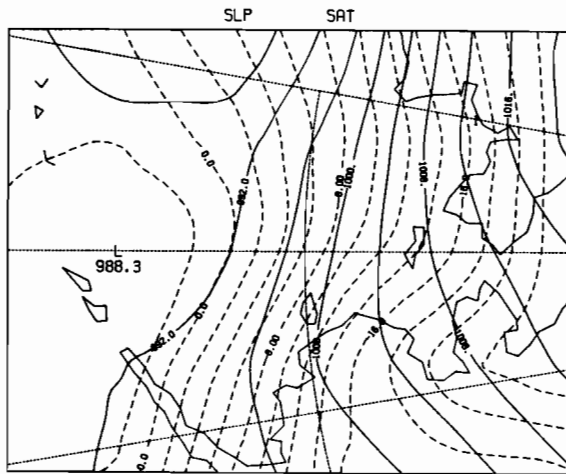
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1983 BERING SEA



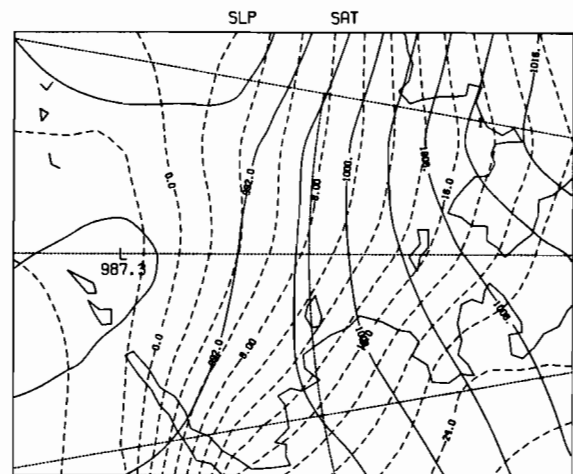
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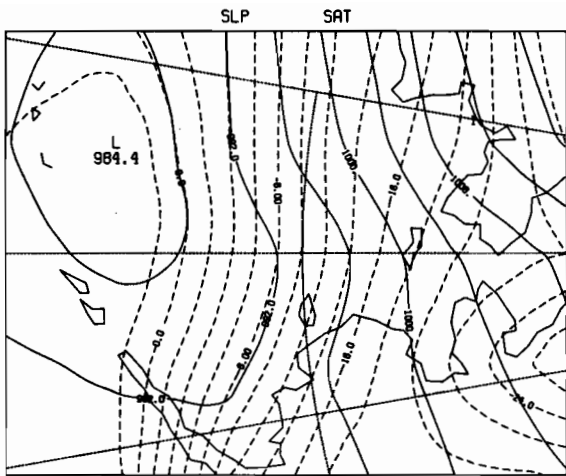
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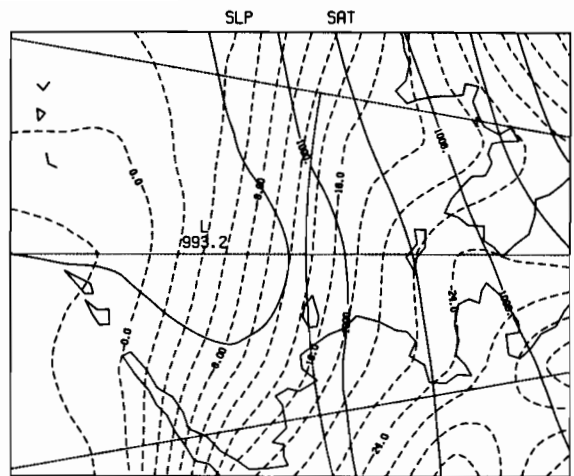
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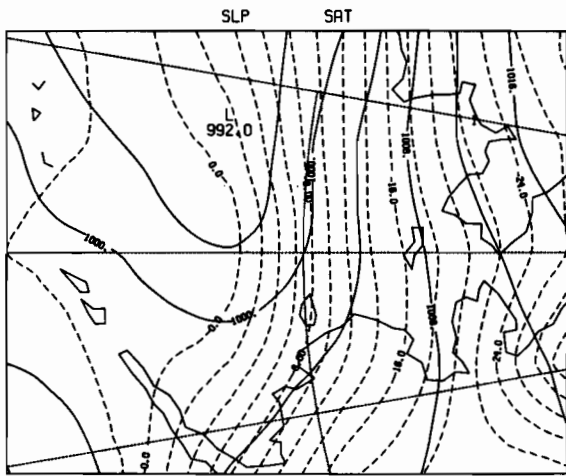
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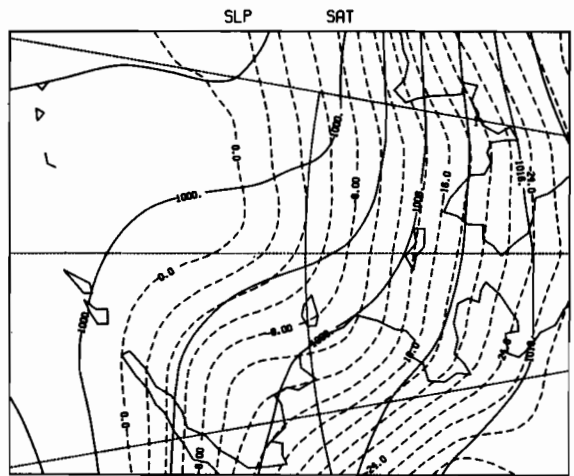
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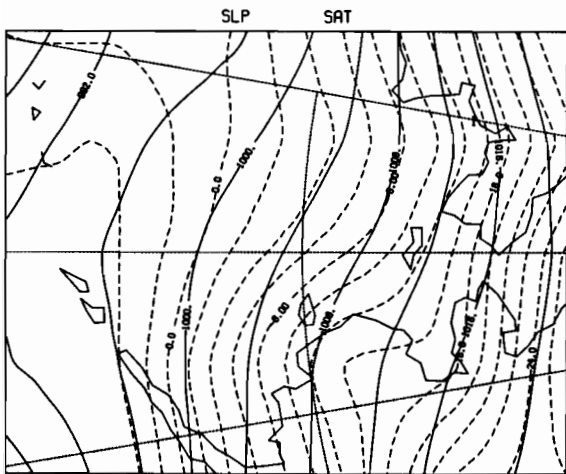
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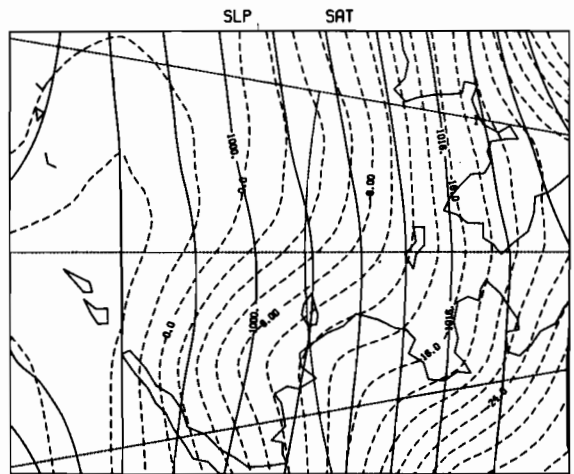
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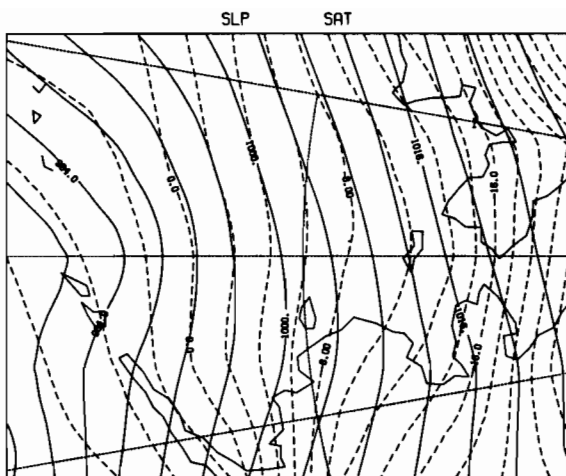
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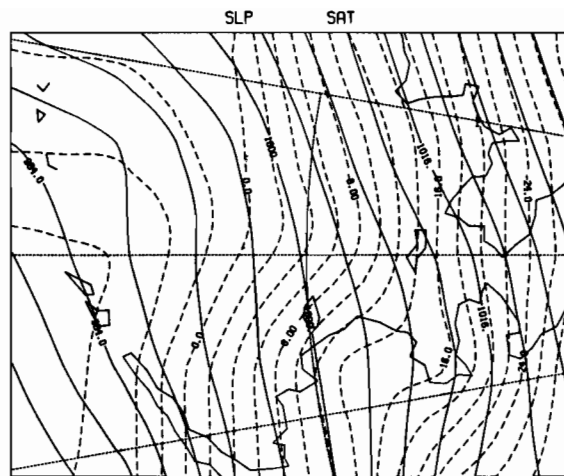
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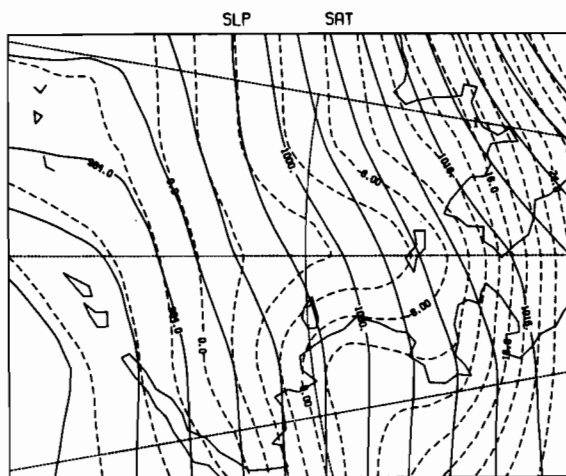
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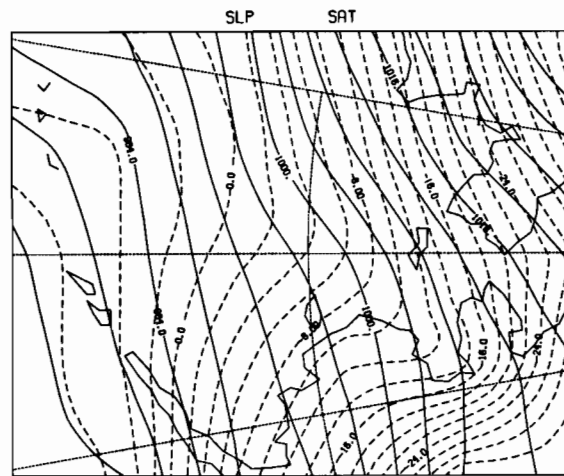
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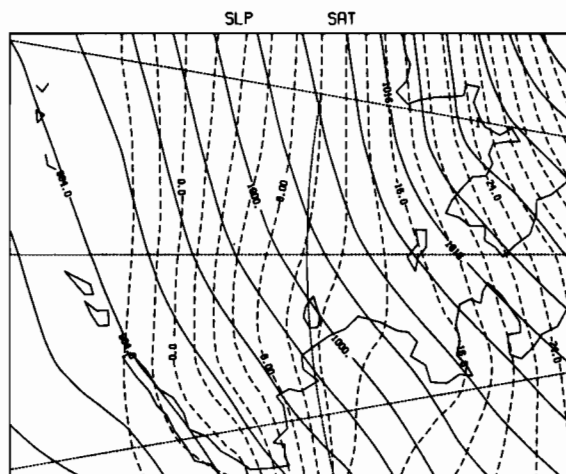
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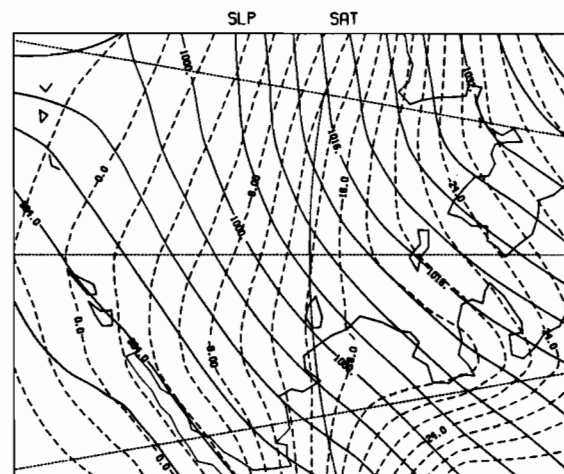
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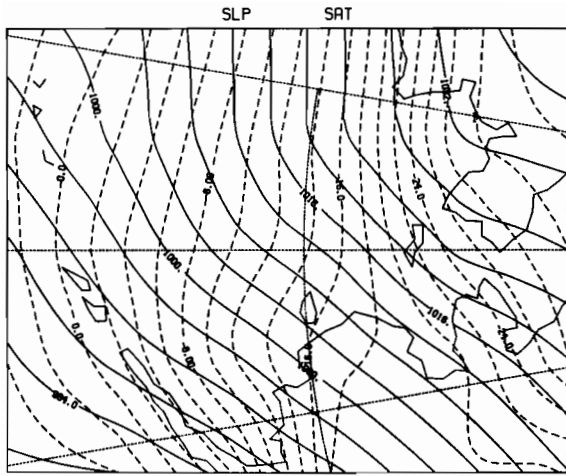
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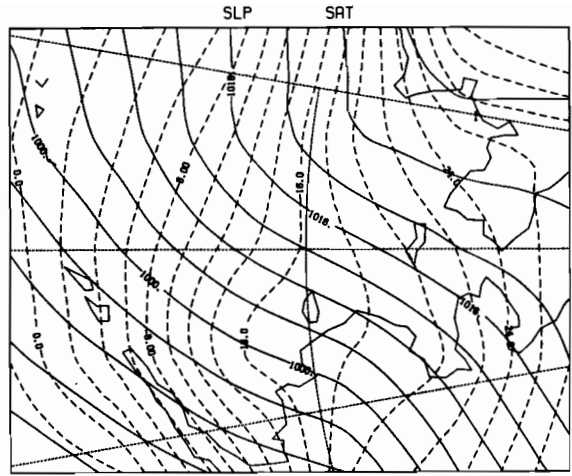
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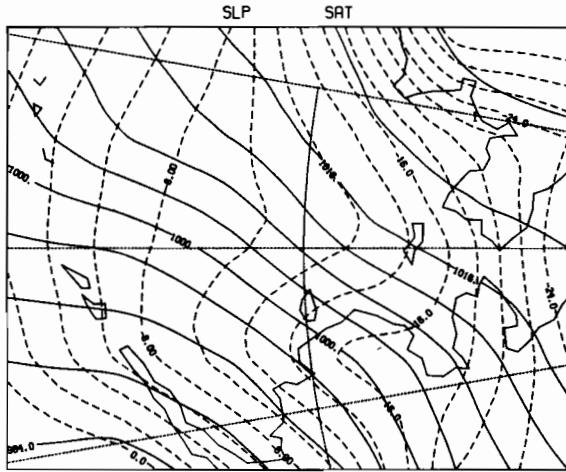
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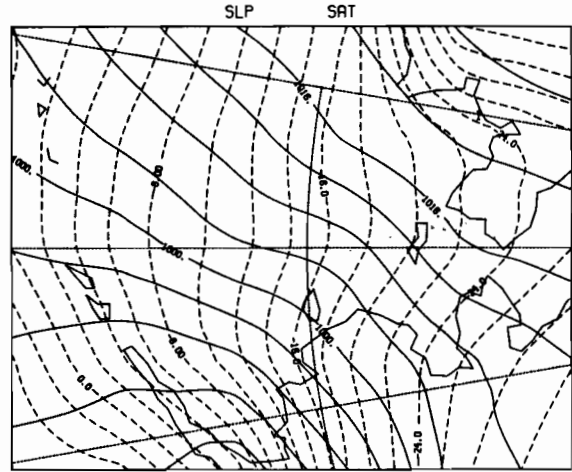
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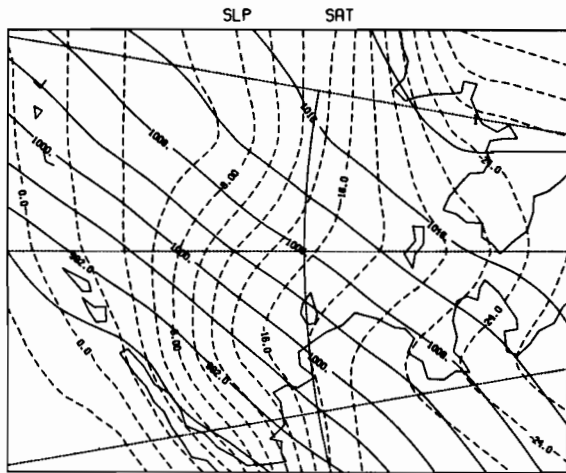
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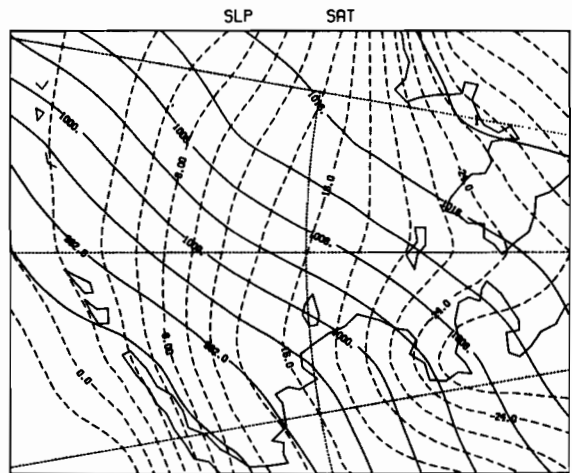
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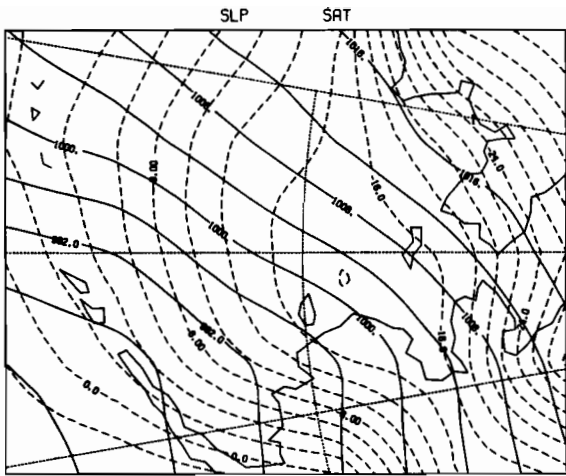
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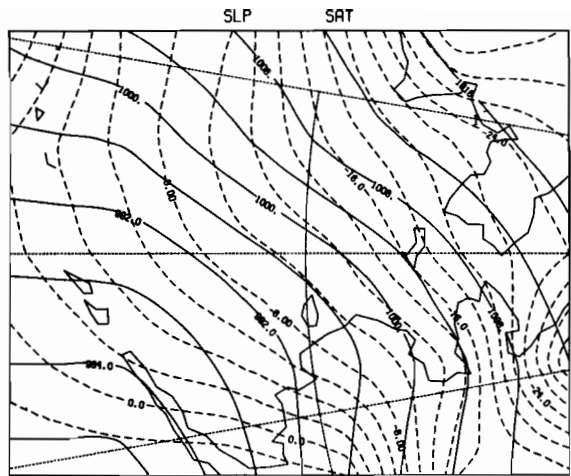
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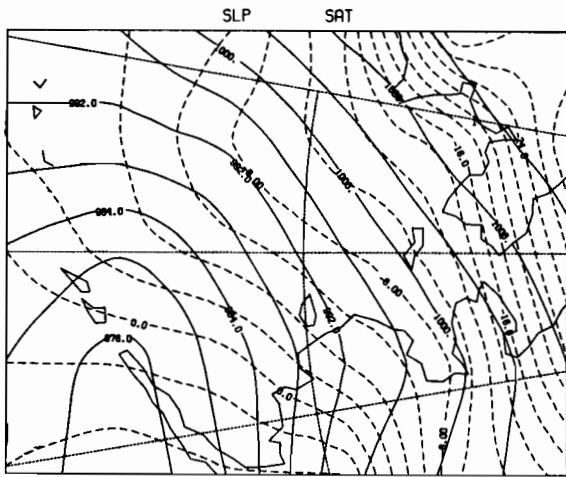
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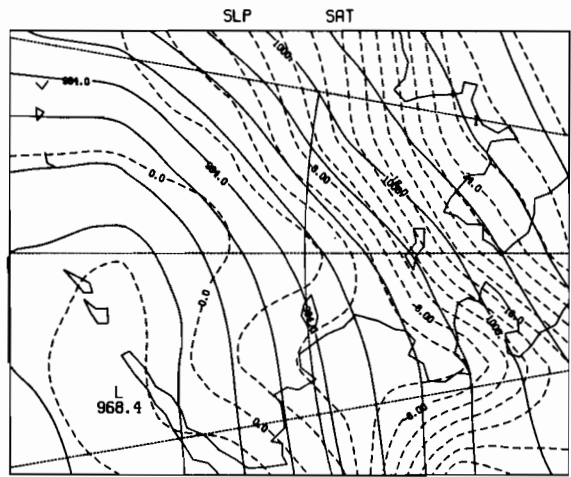
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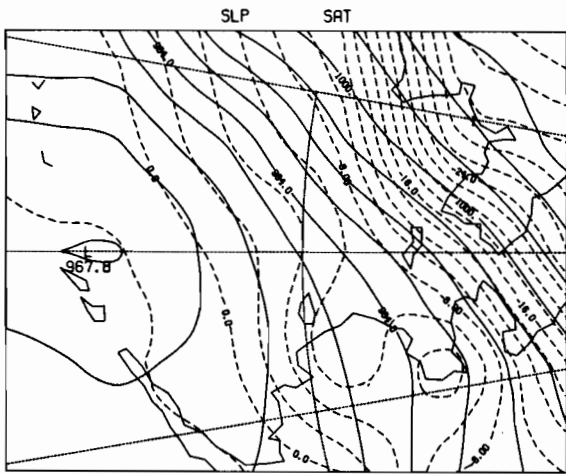
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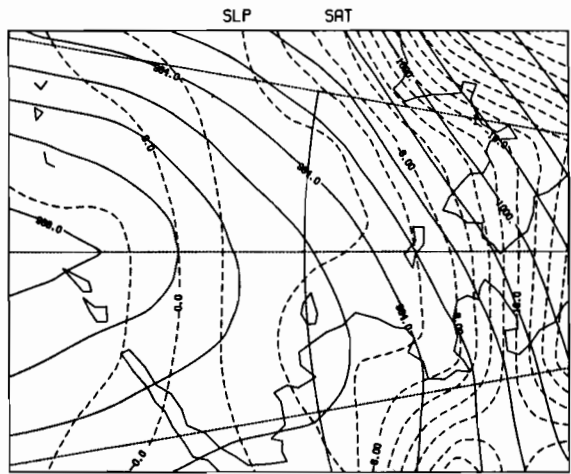
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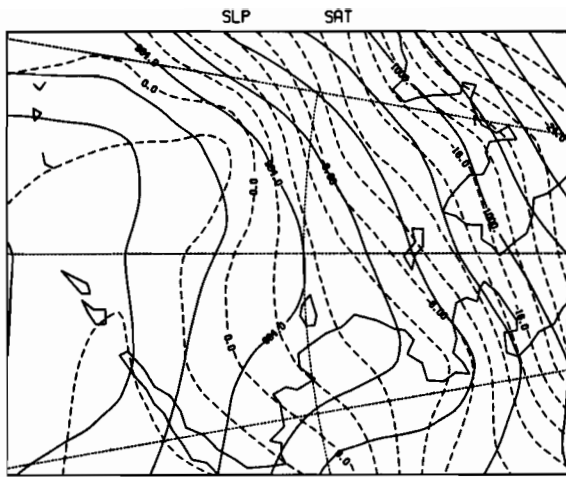
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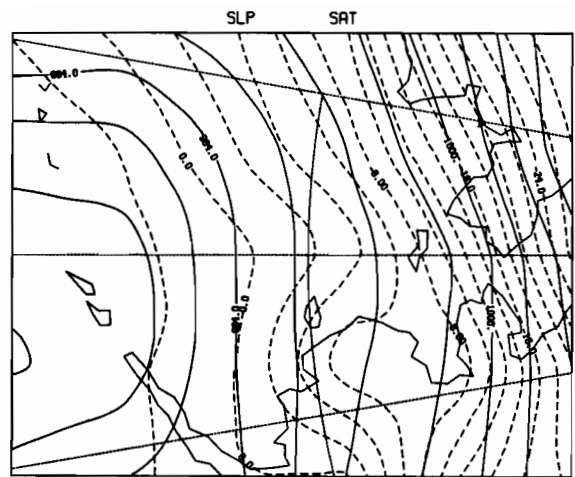
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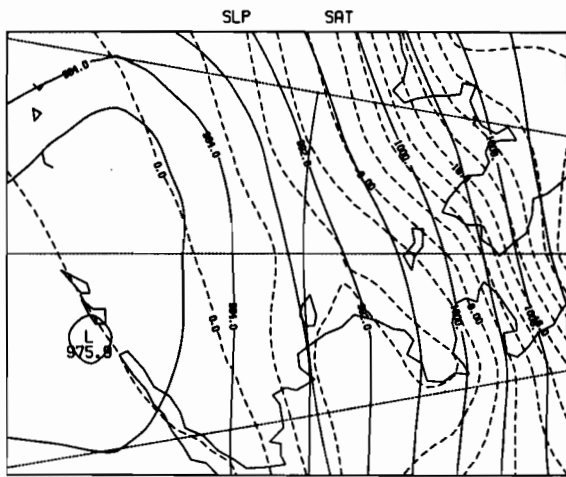
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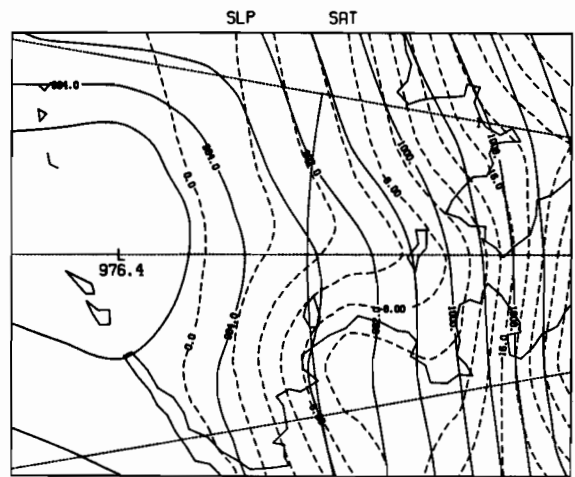
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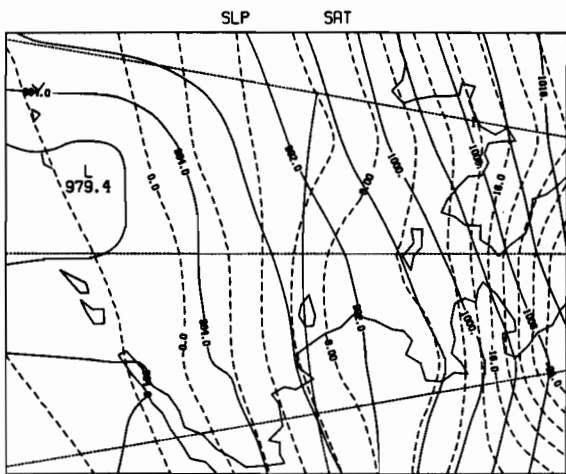
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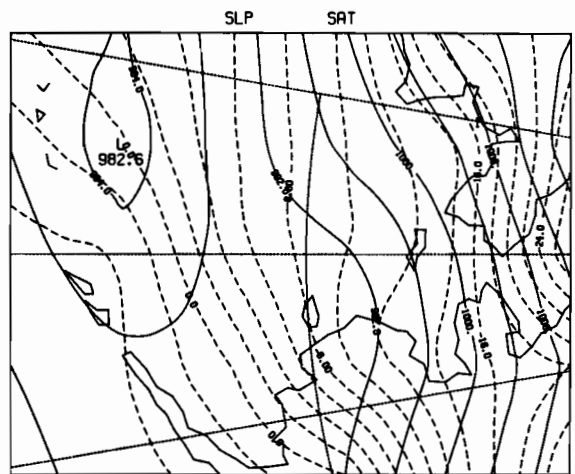
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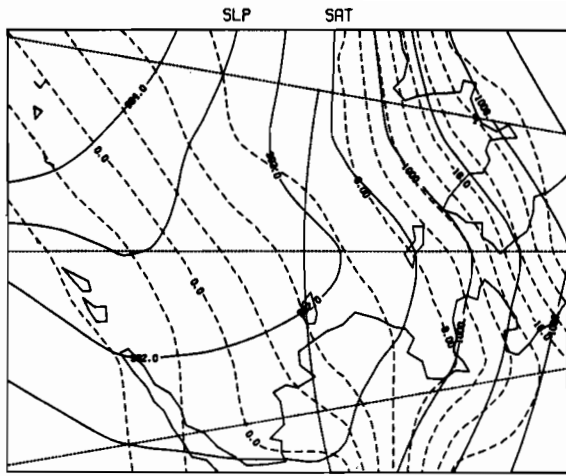
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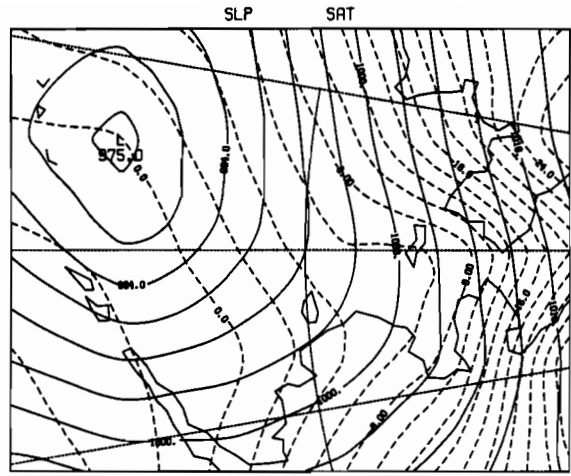
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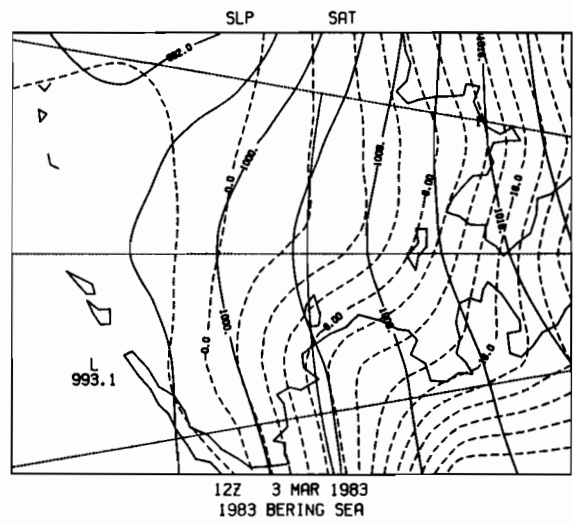
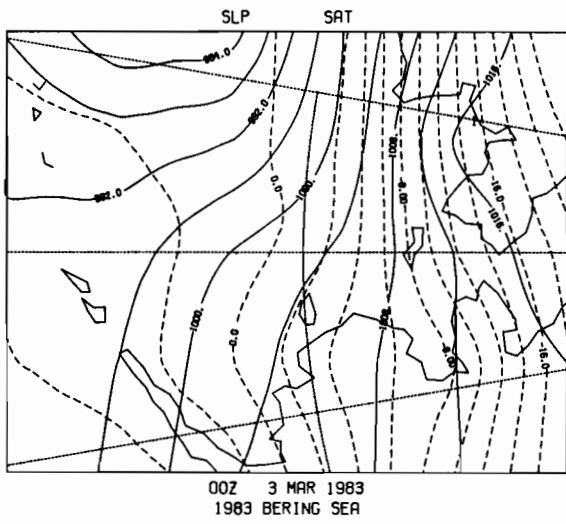
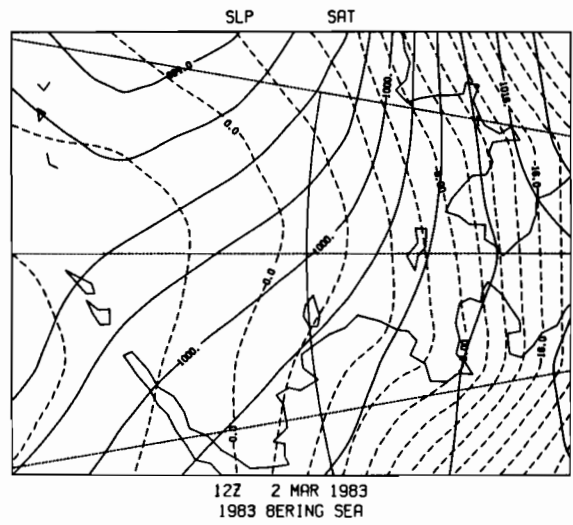
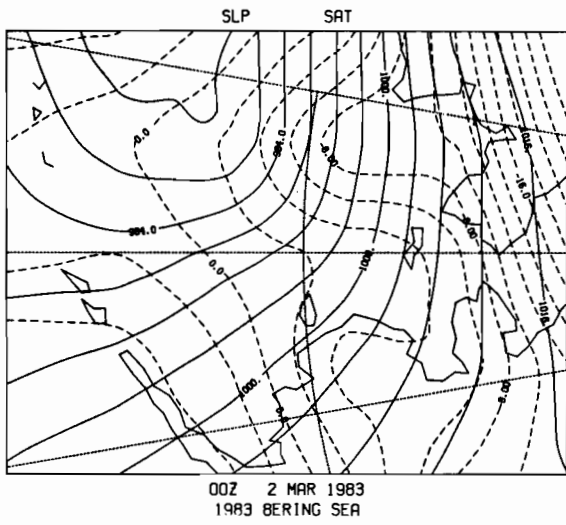
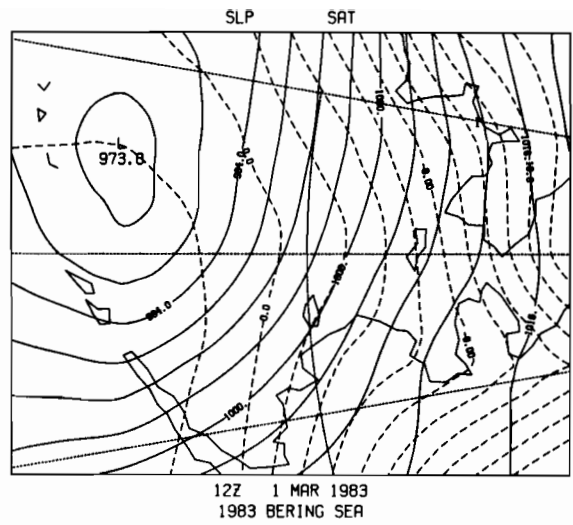
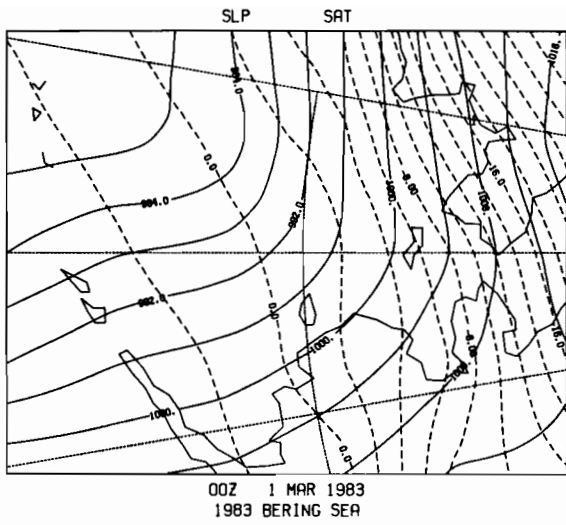
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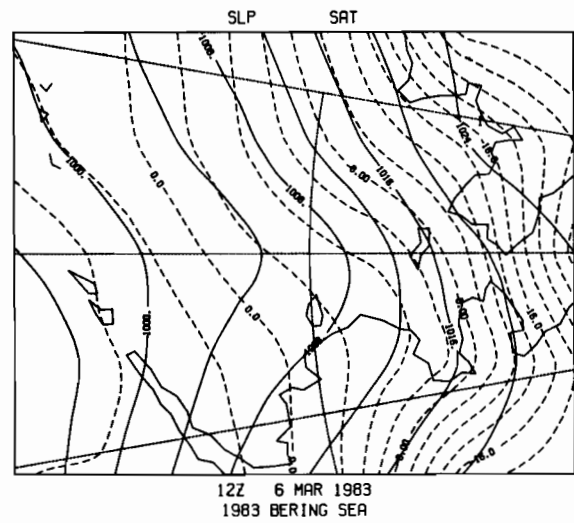
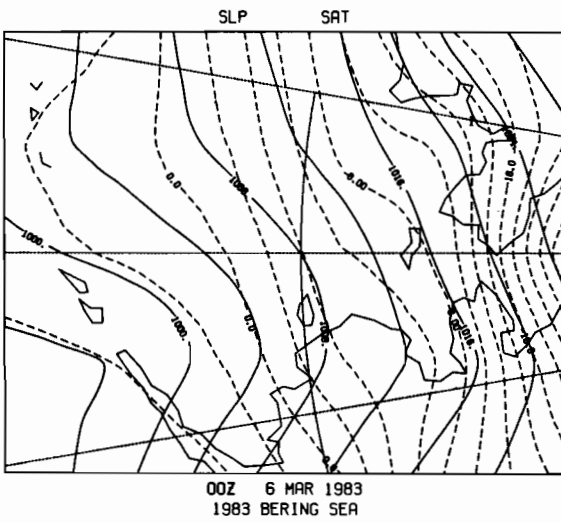
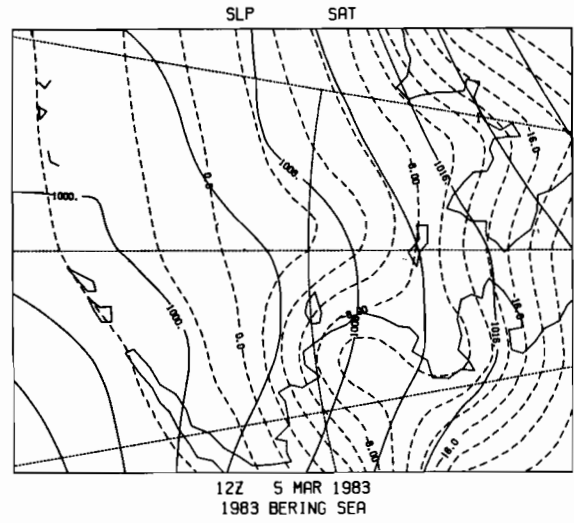
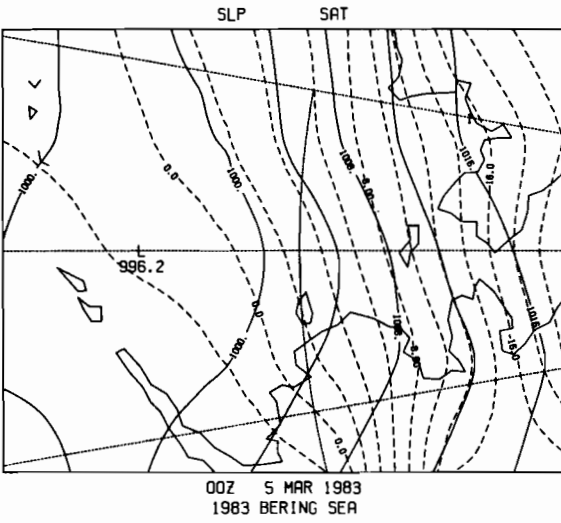
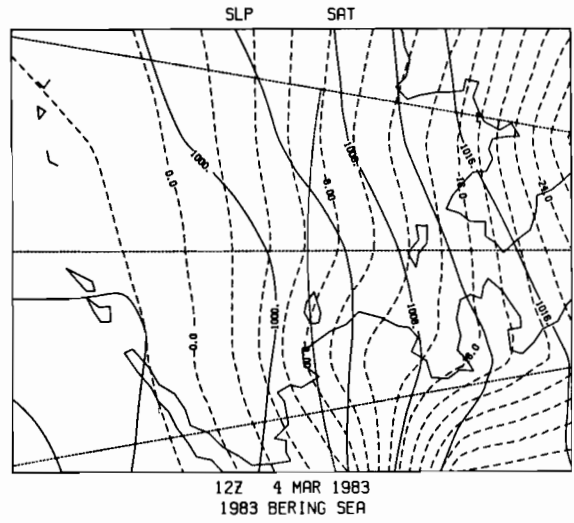
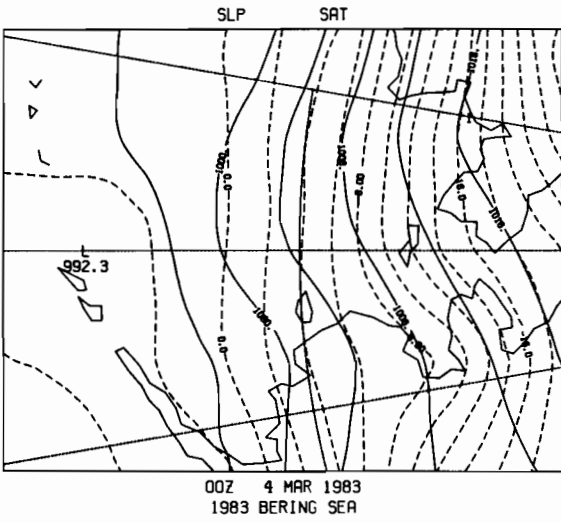


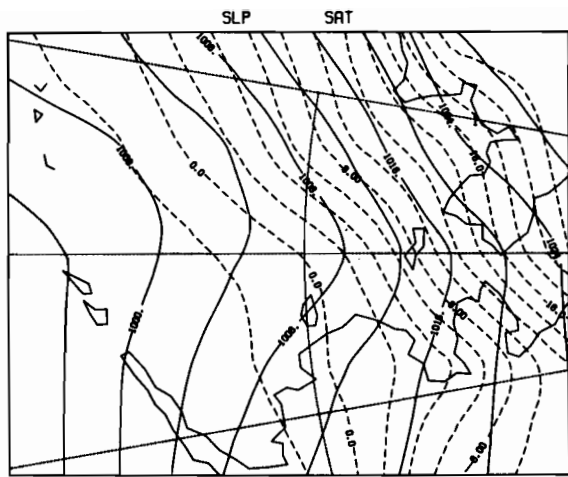
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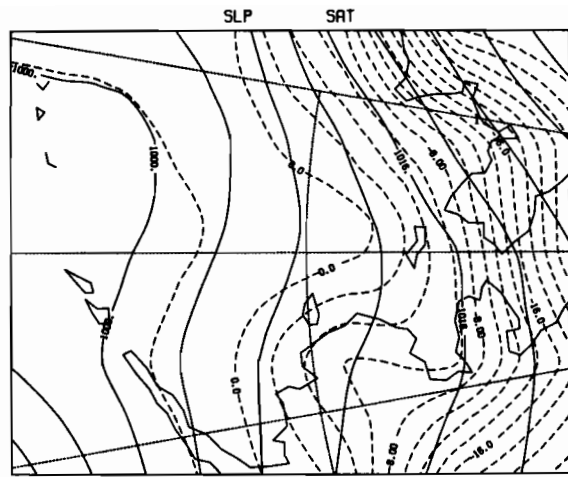
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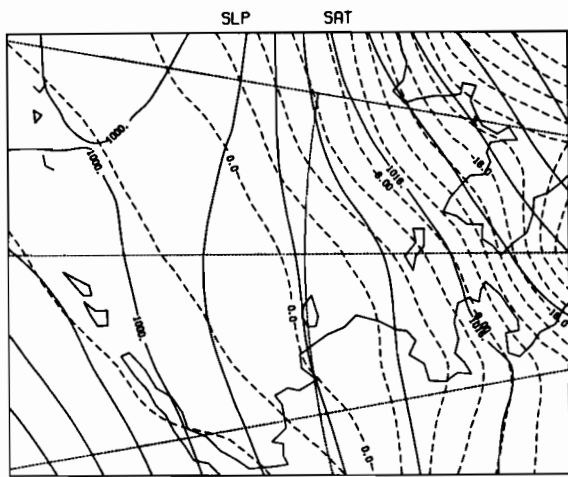




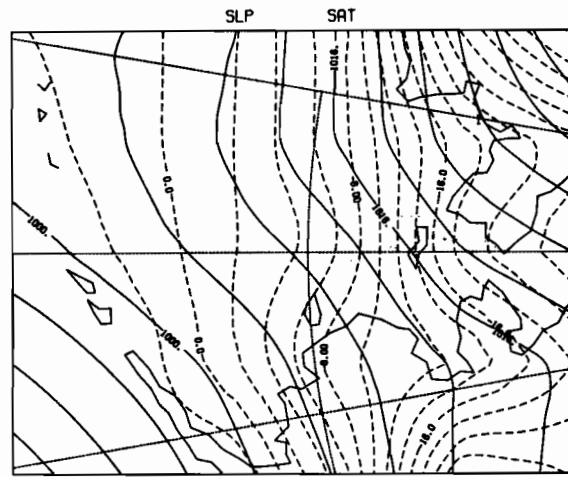
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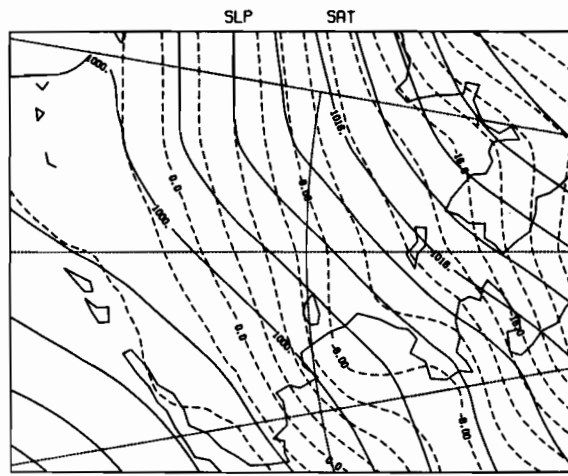
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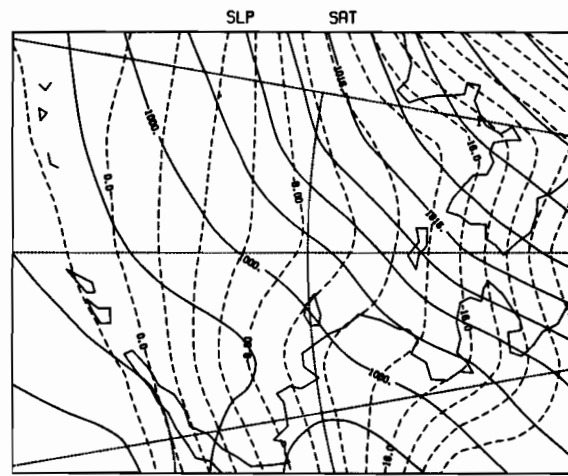
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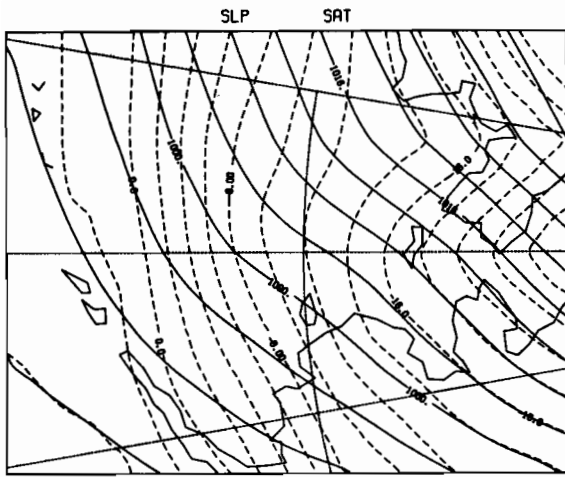
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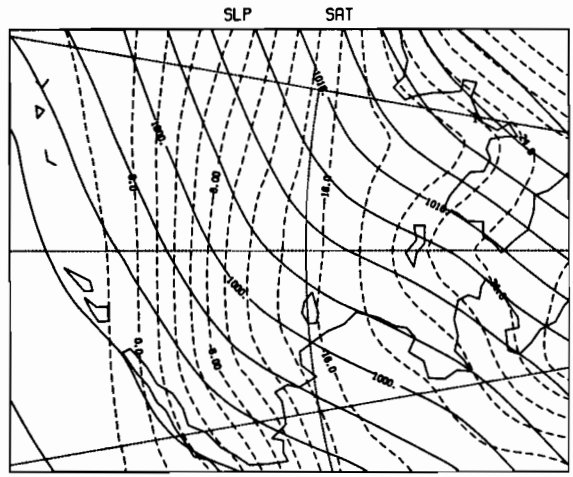
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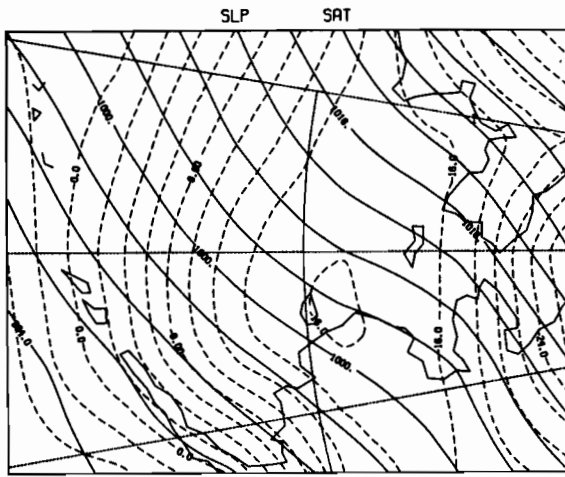
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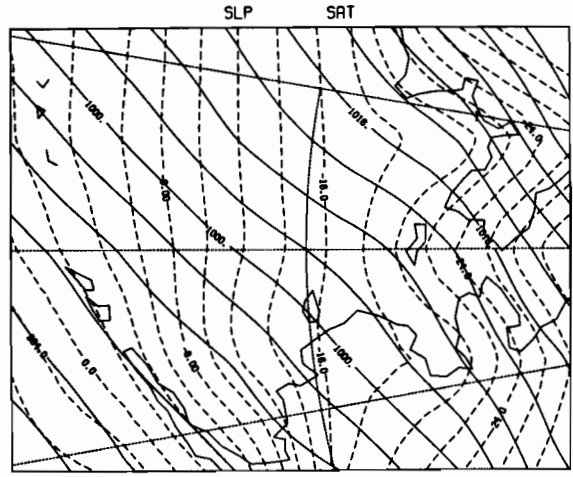
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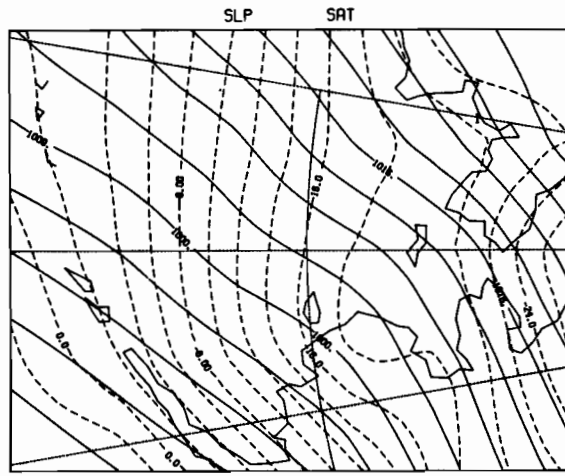
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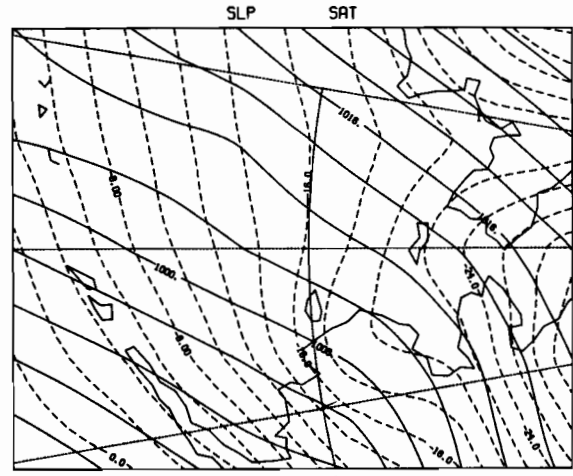
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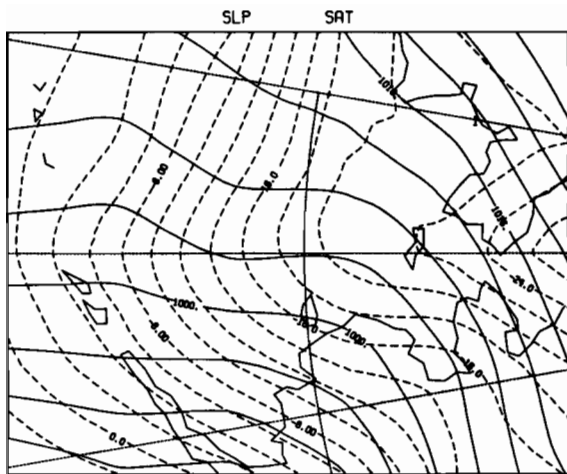
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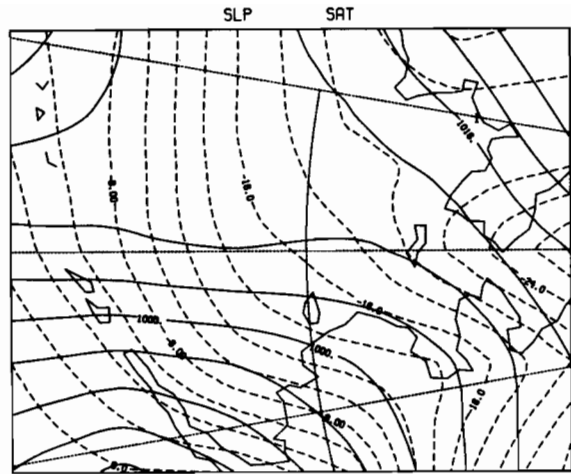
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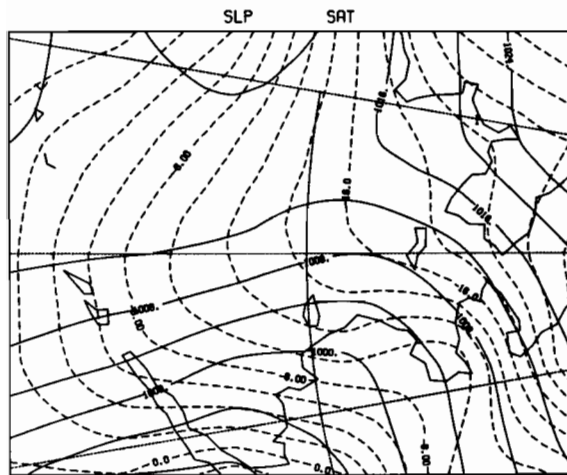
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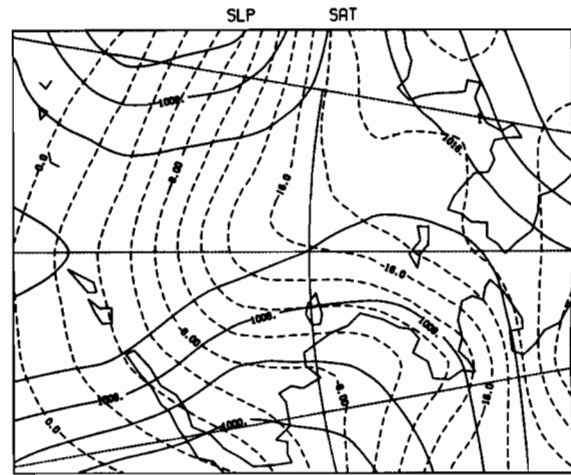
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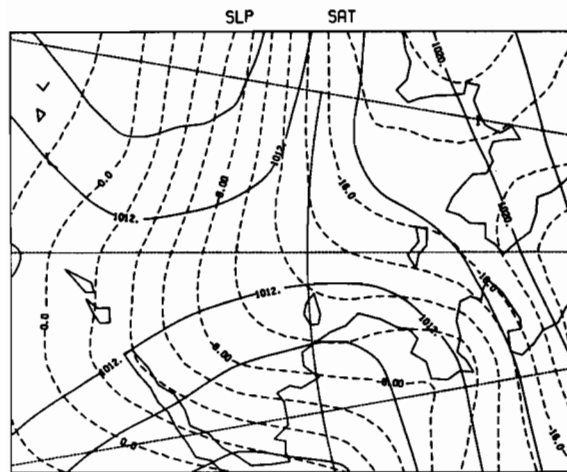
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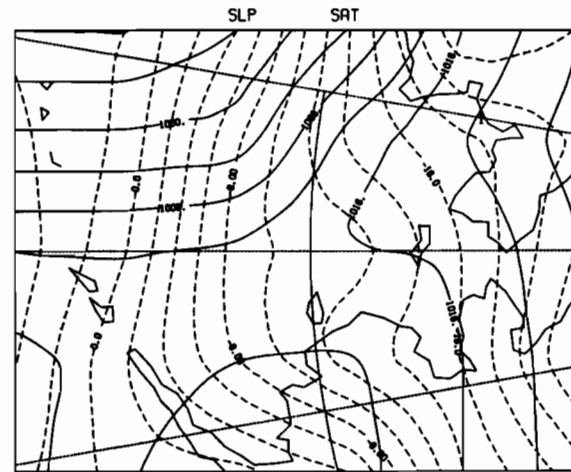
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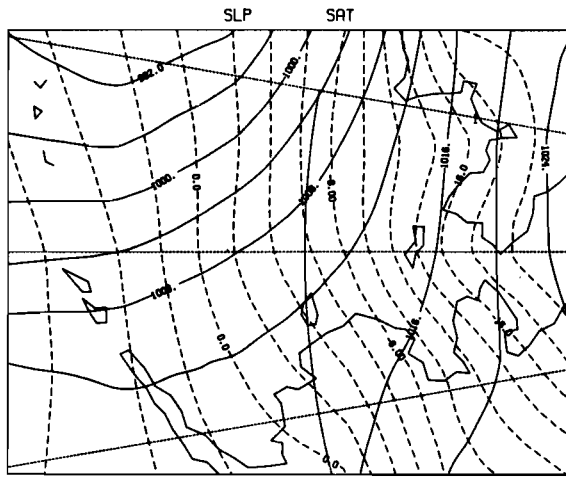
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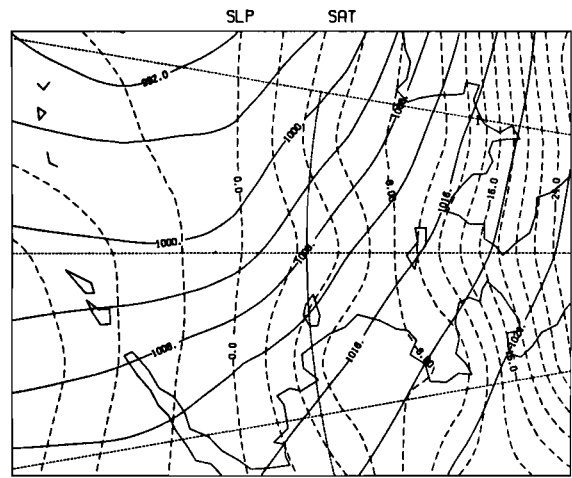
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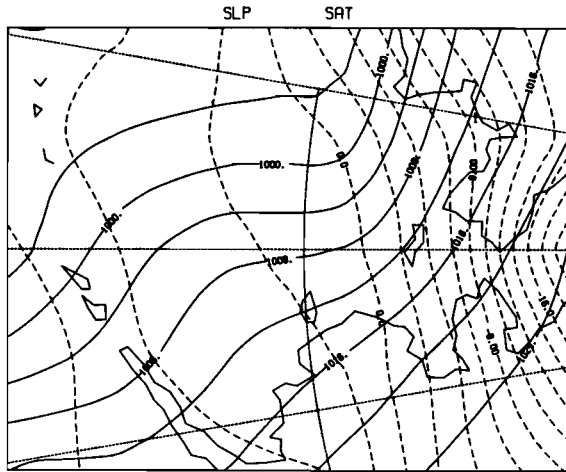
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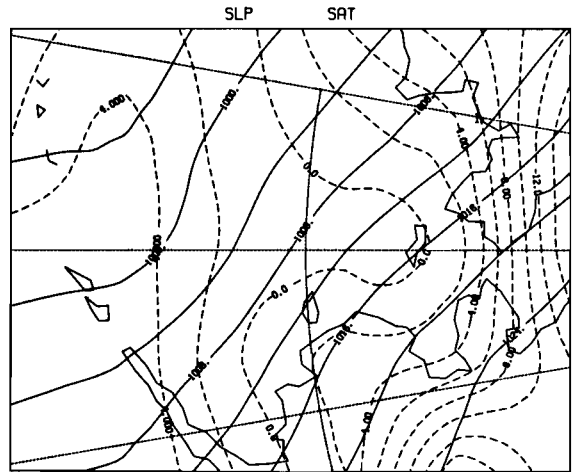
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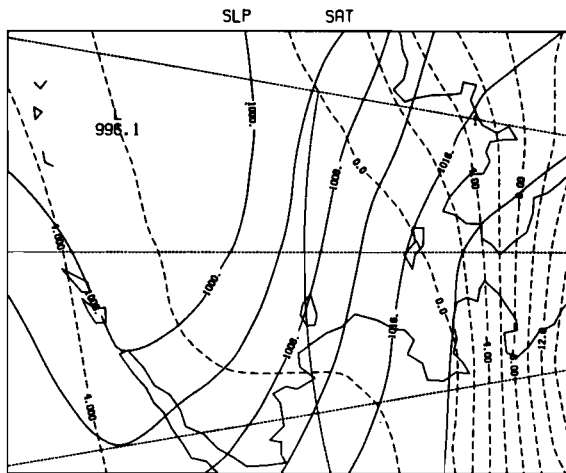
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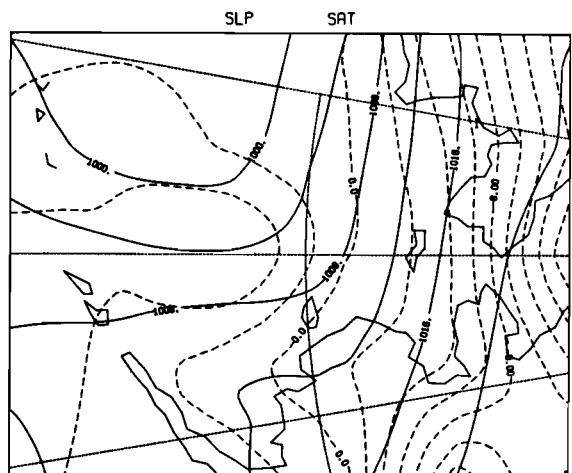
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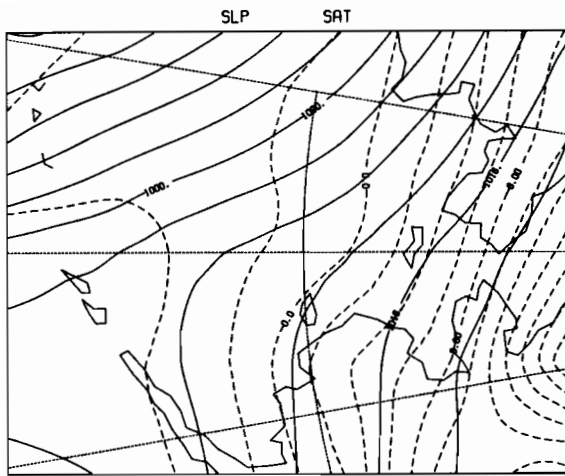
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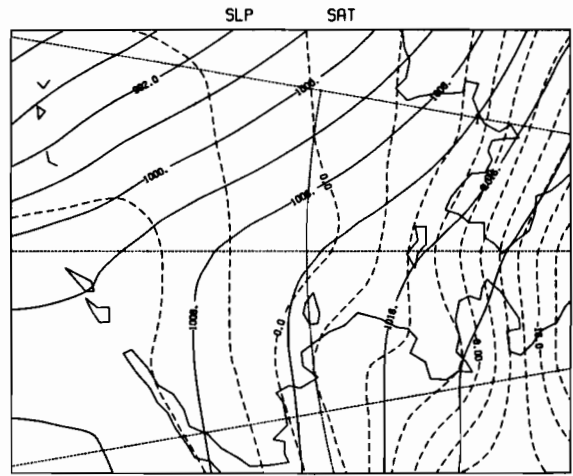
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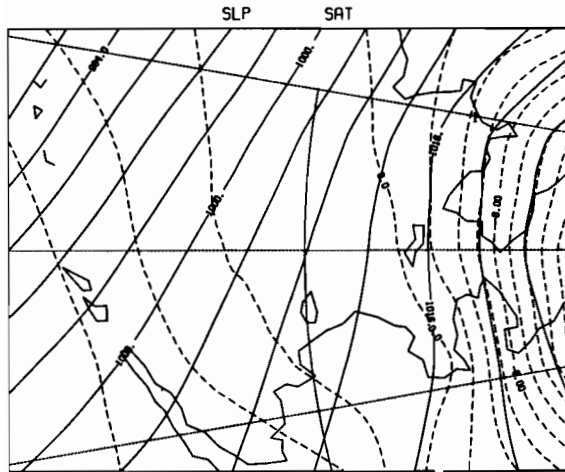
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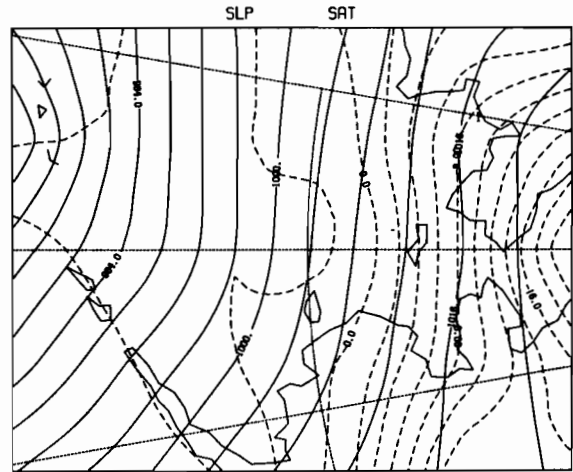
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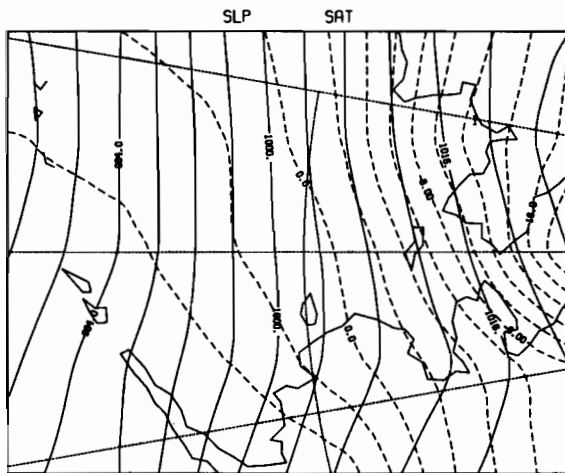
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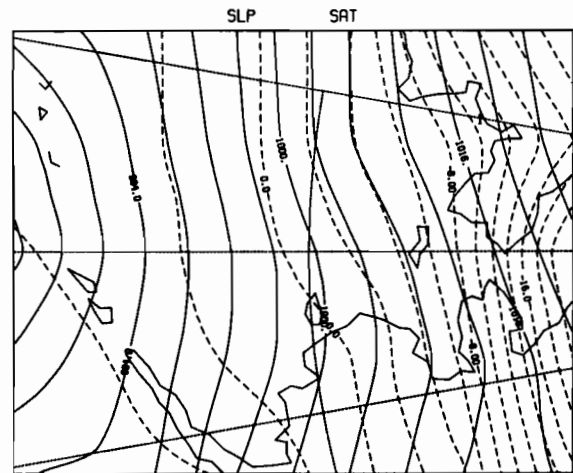
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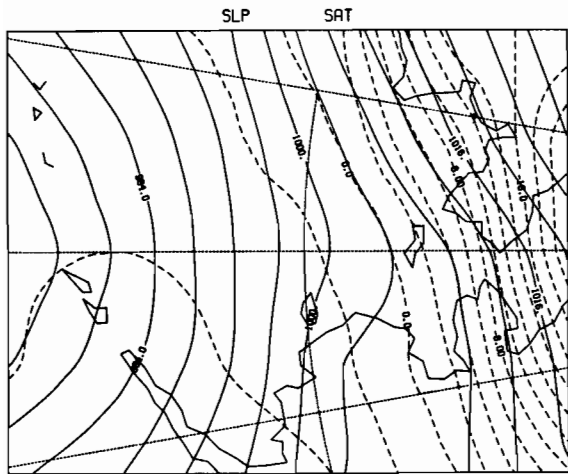
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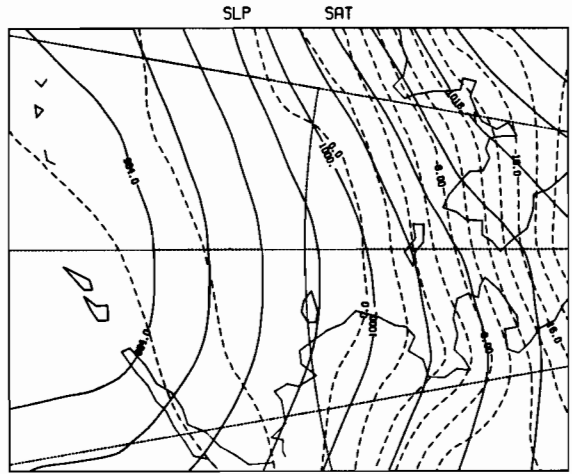
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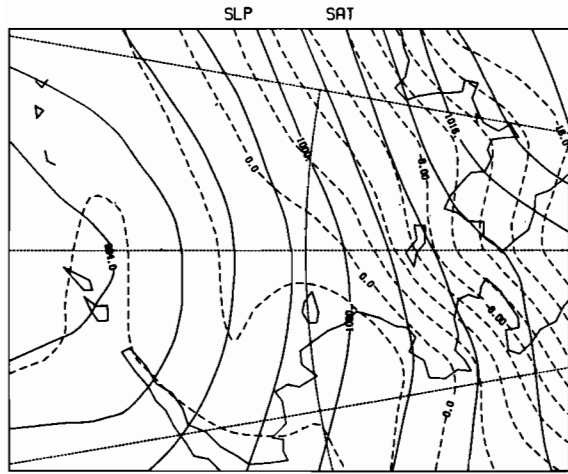
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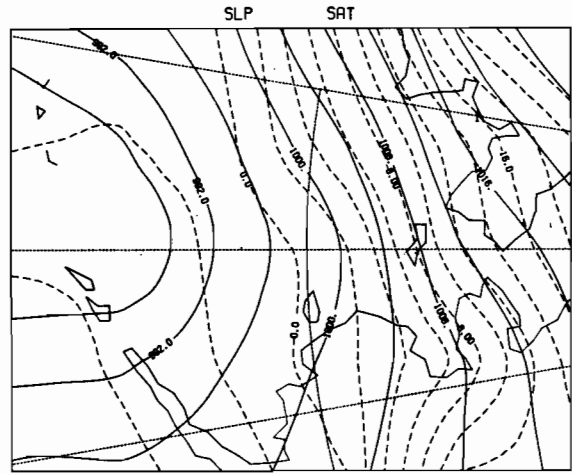
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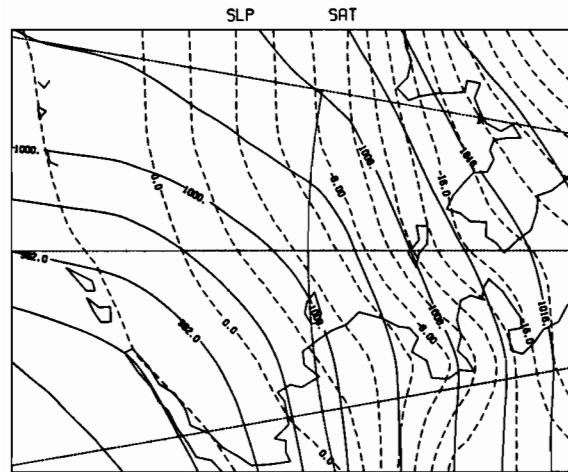
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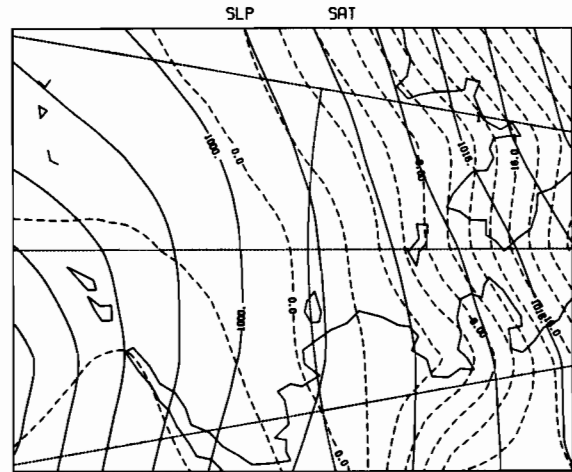
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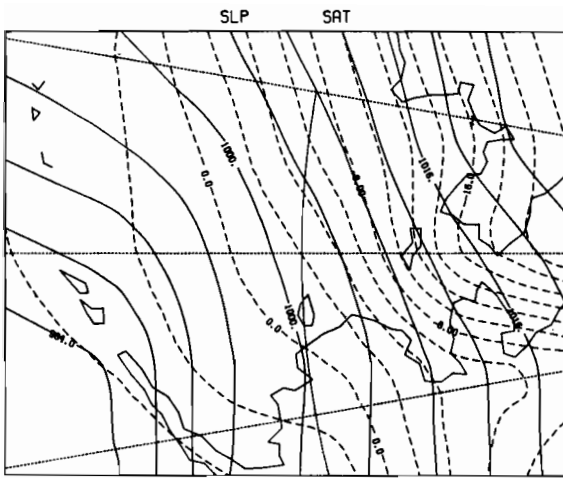
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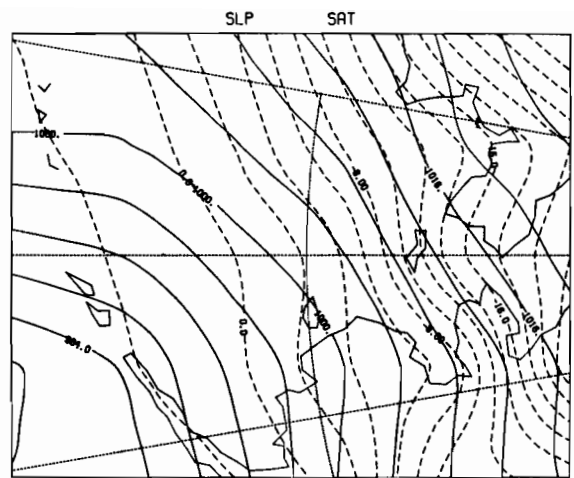
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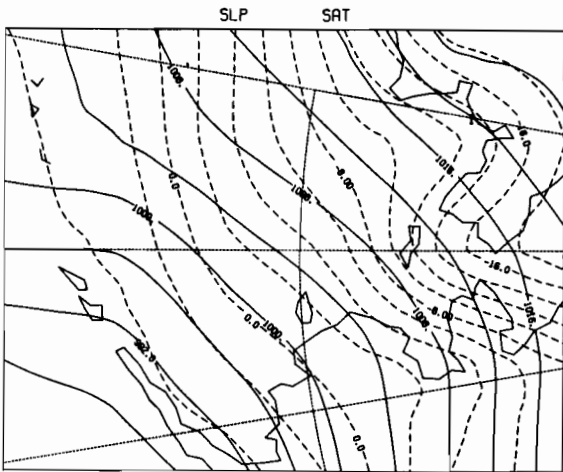
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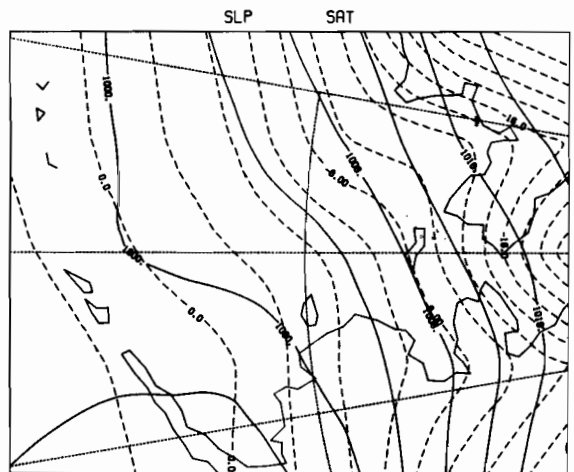
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1983 BERING SEA



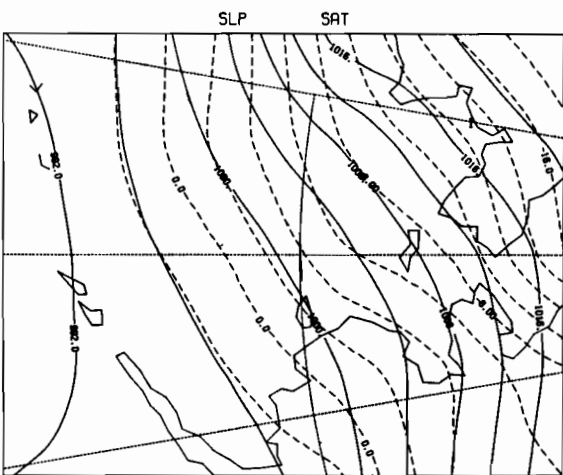
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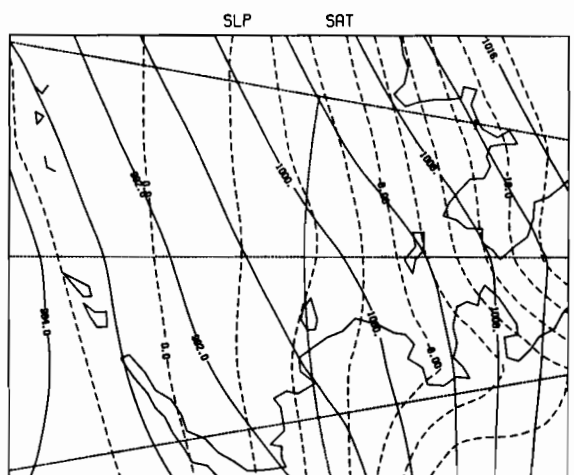
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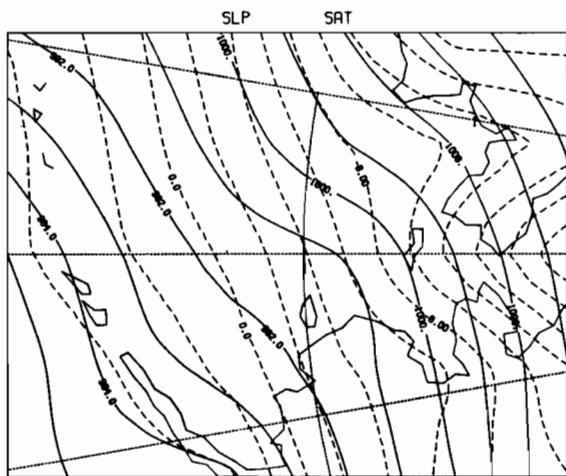
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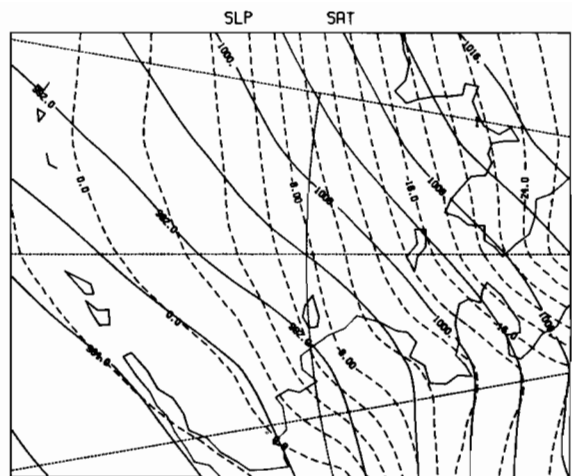
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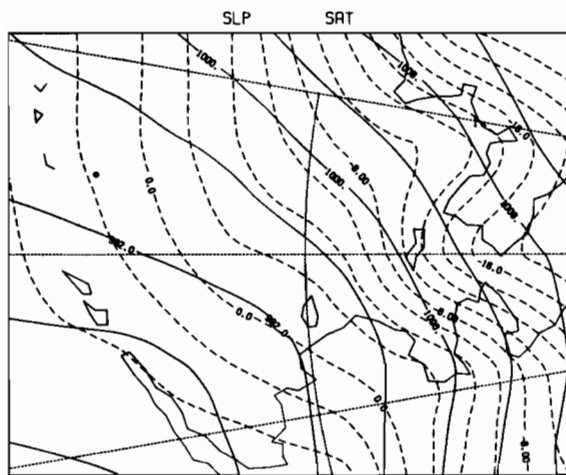
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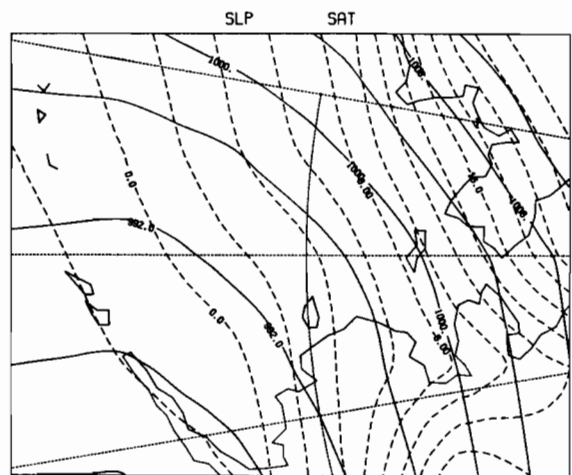
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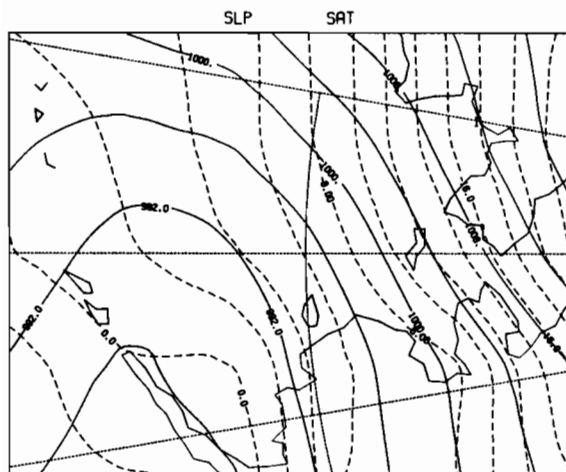
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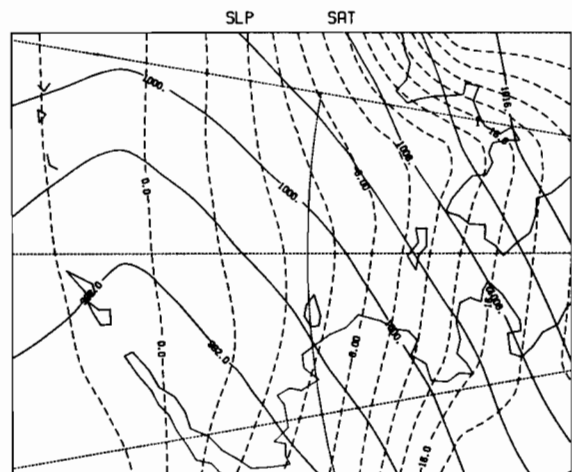
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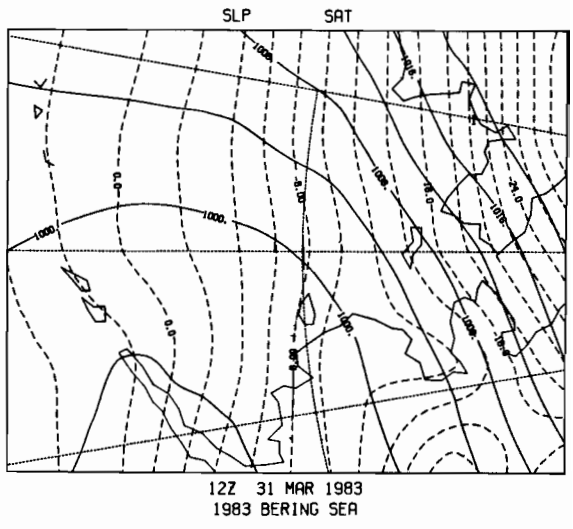
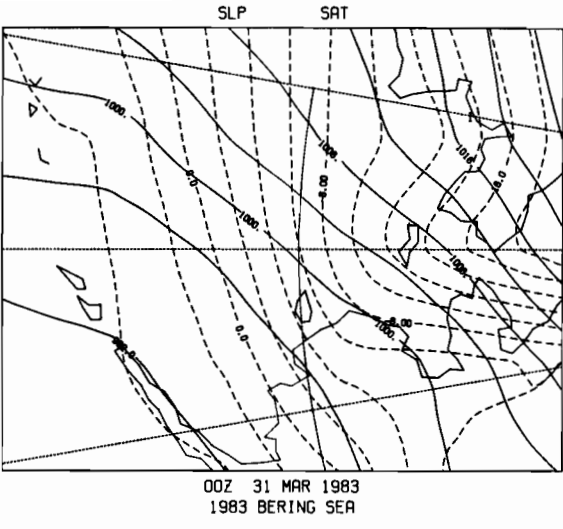
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1983 BERING SEA



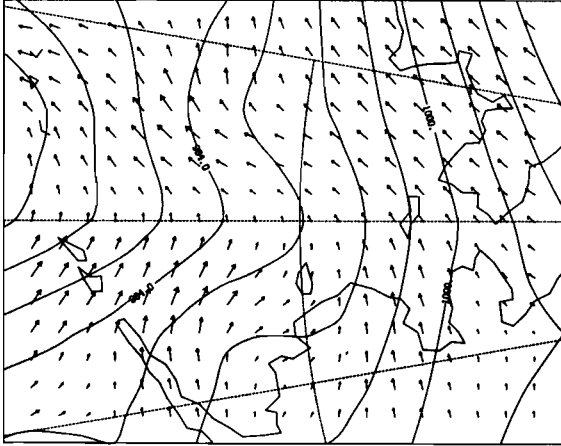
APPENDIX E

SEA LEVEL PRESSURE AND SURFACE GRADIENT WIND FIELDS

AT 00 AND 12 GMT PRODUCED WITH METLIB

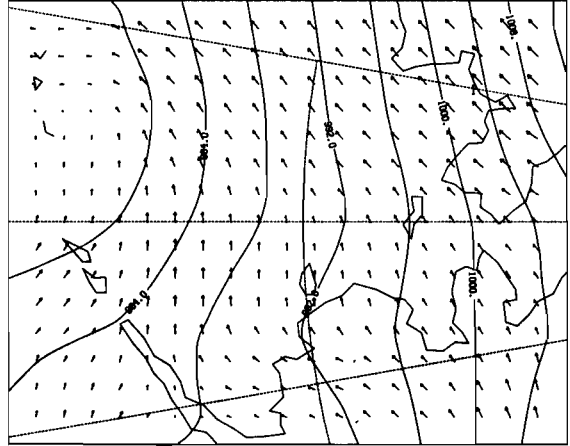
4 FEBRUARY 83 - 31 MARCH 83

SLP
EMPR WINDS



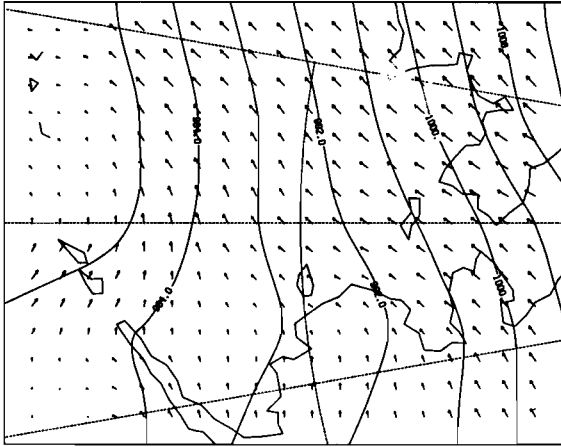
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SLP
EMPR WINDS



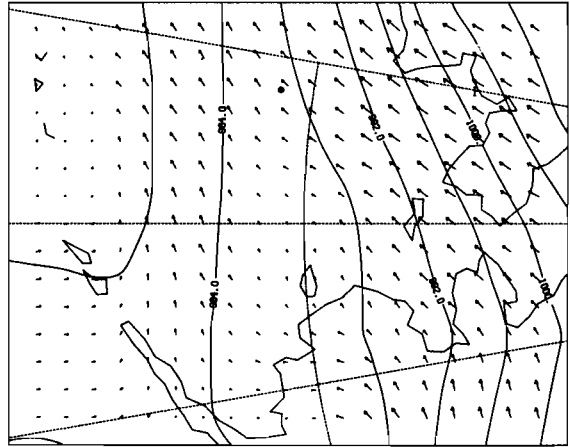
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EMPR WINDS



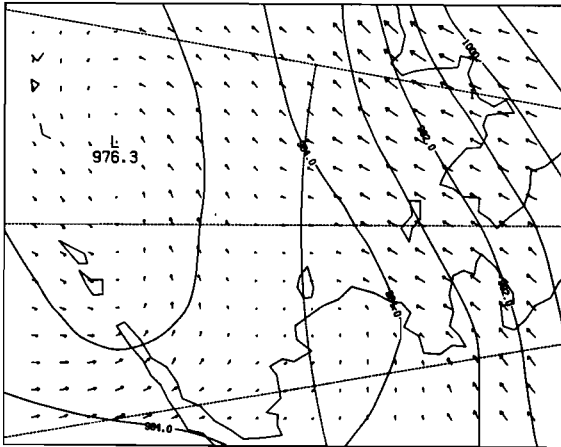
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EMPR WINDS



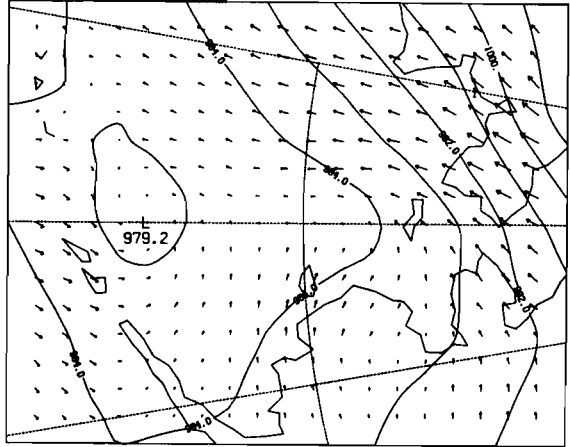
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EMPR WINDS

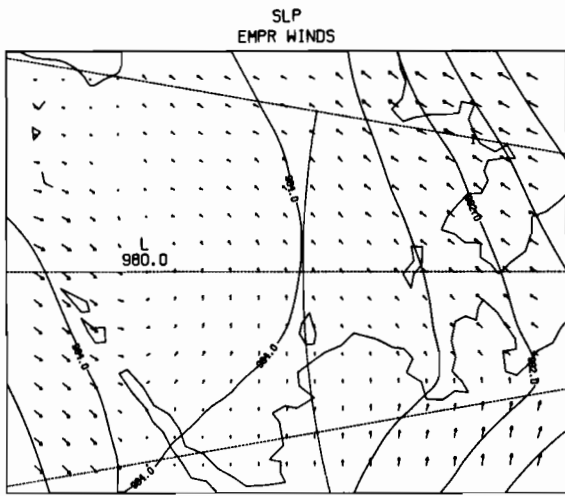


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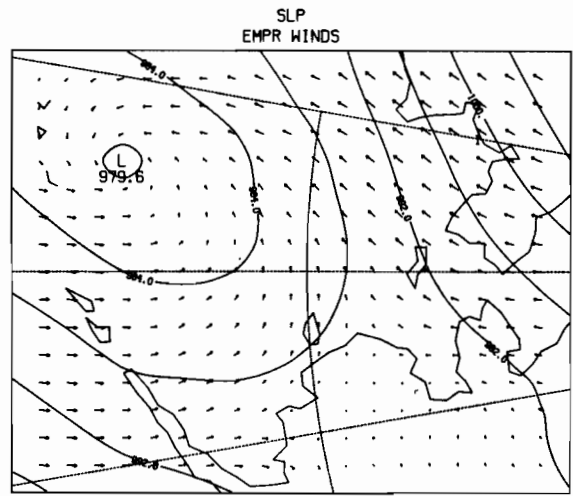
SLP
EMPR WINDS



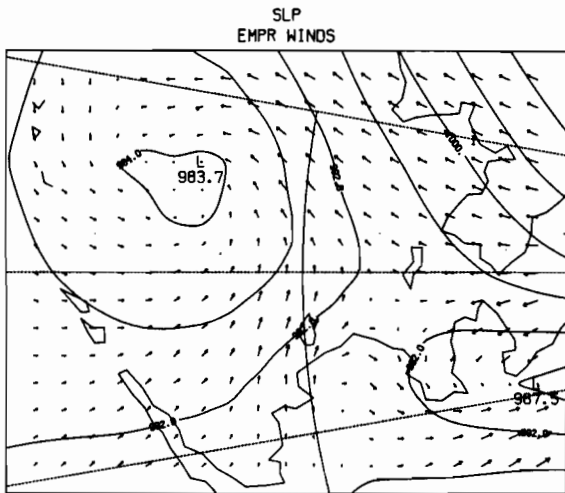
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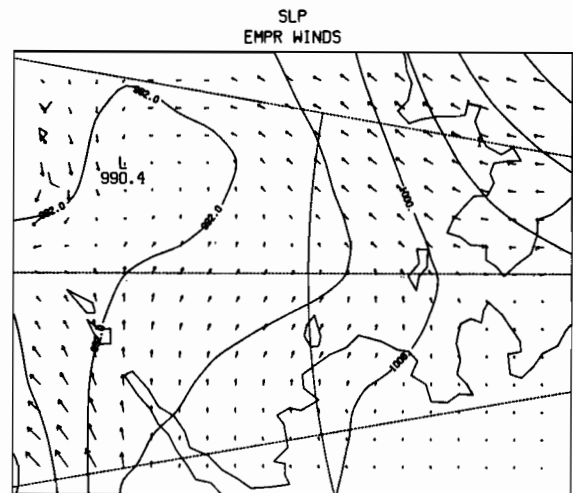
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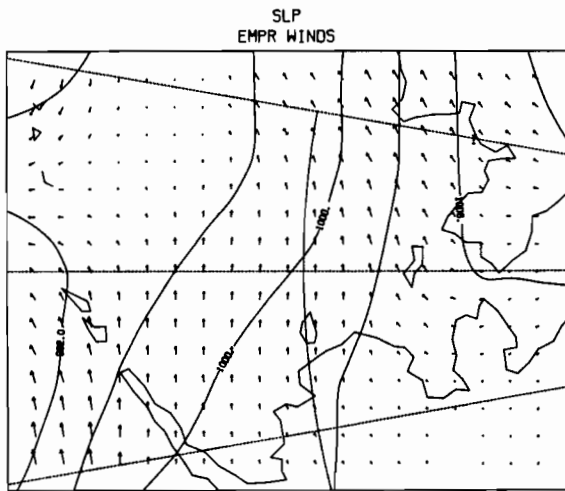
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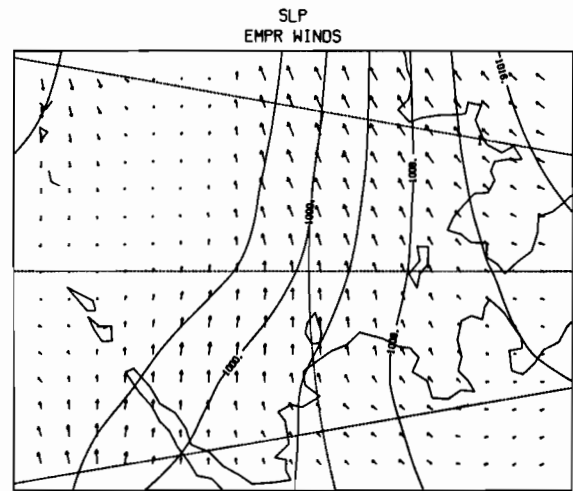
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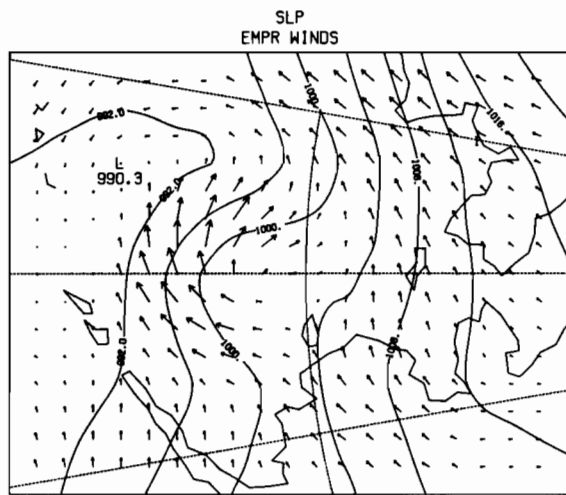
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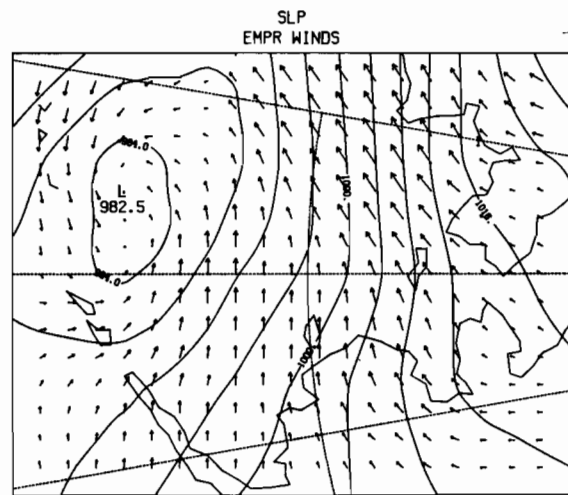
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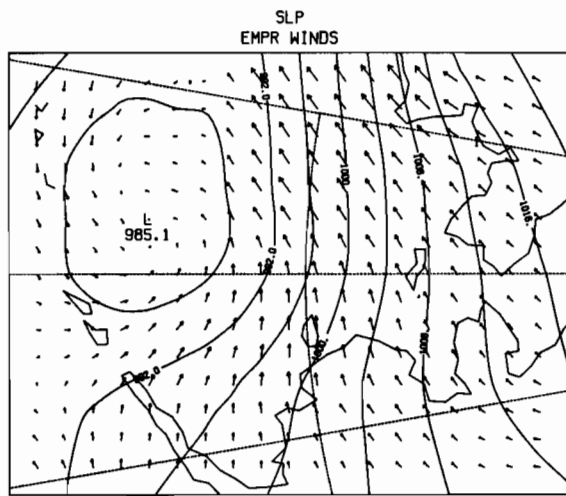
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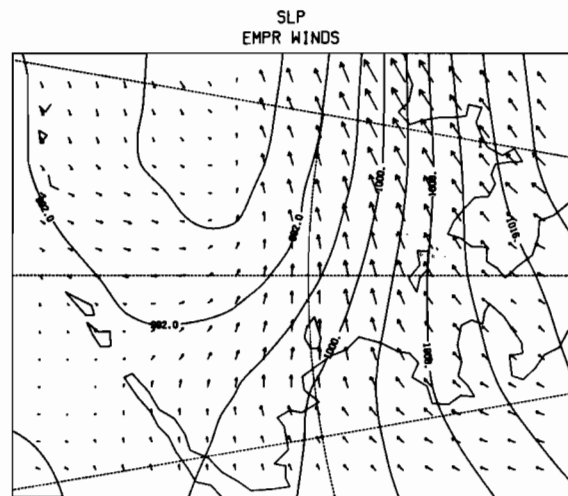
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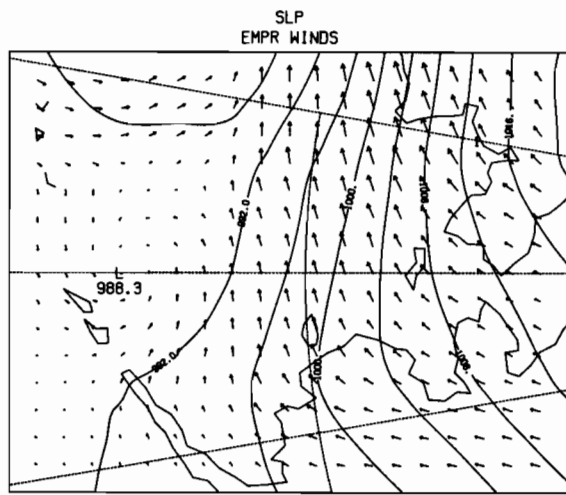
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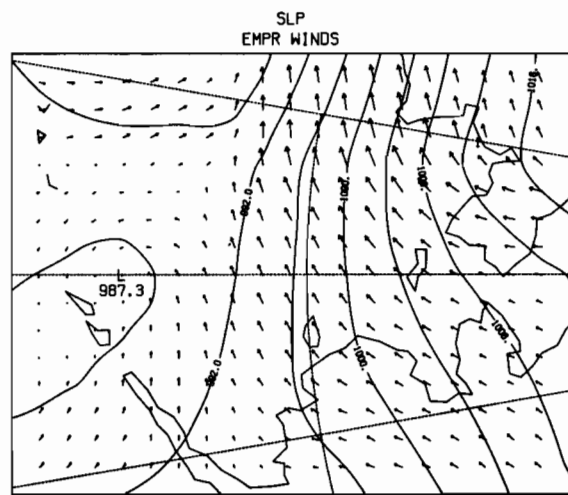
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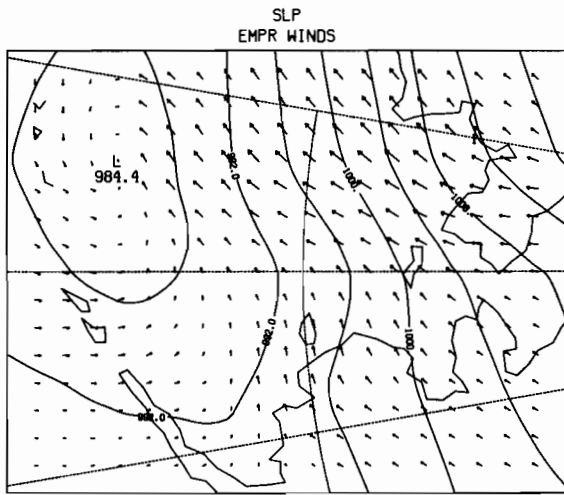
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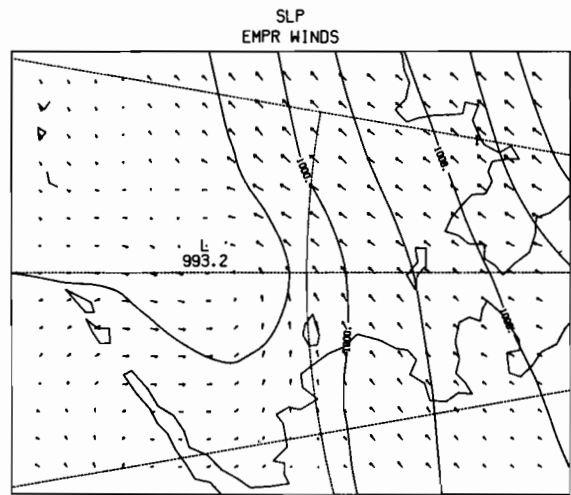
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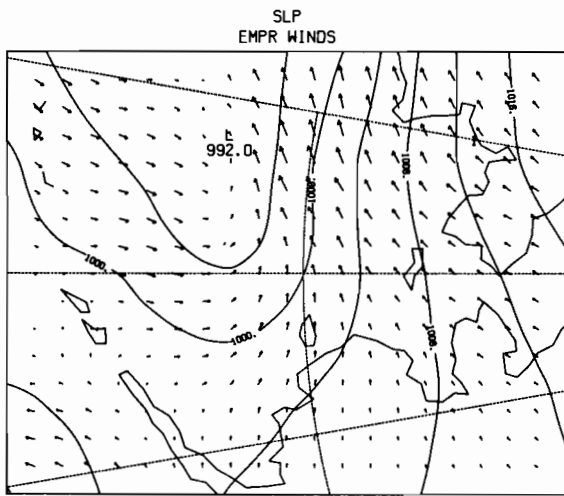
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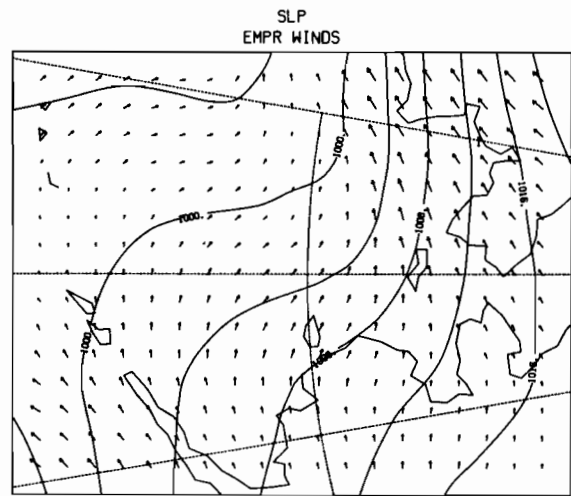
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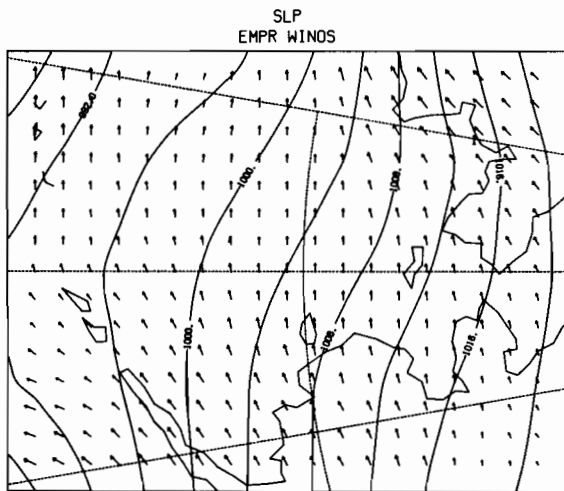
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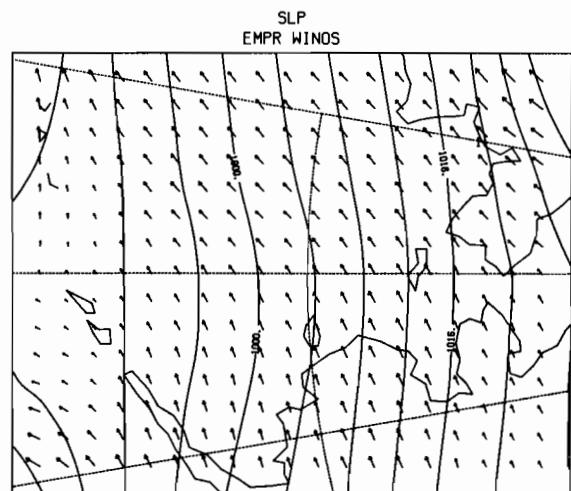
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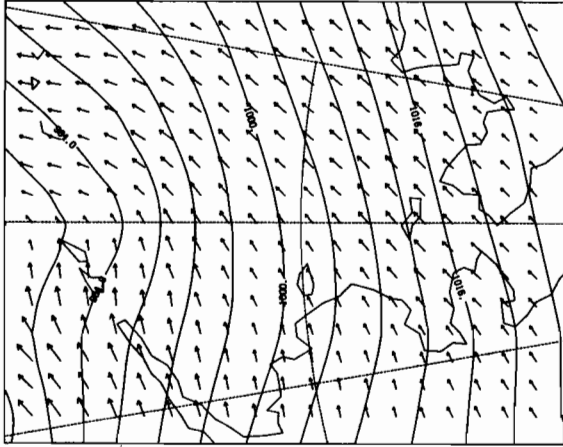


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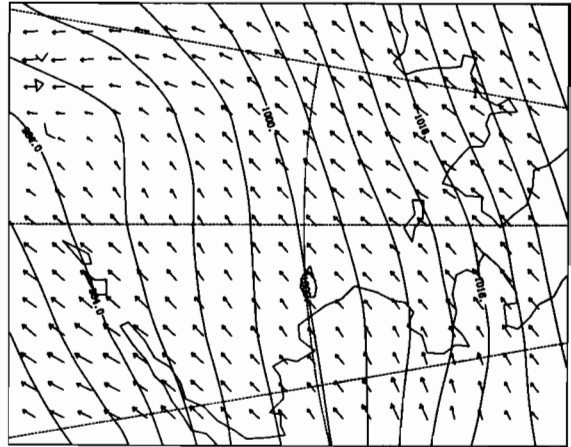
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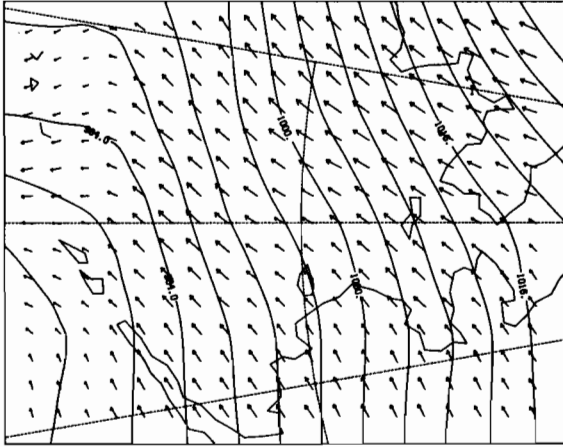
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EMPR WINDS



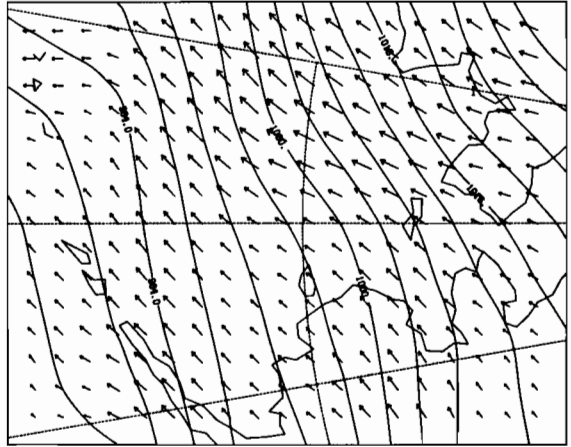
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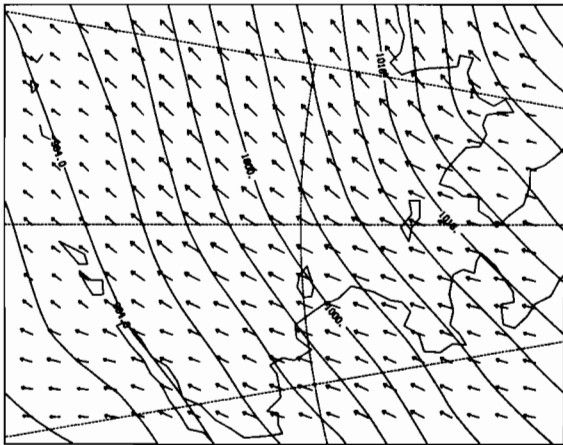
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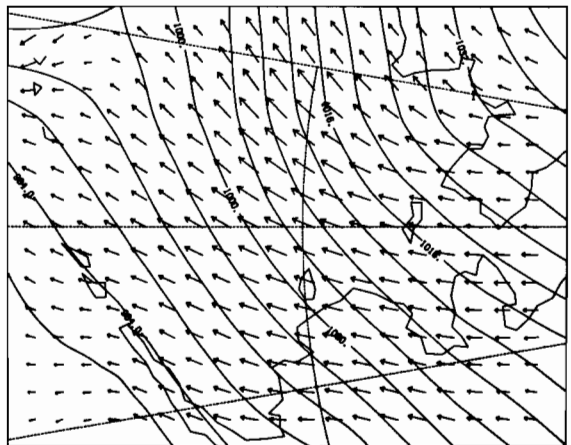
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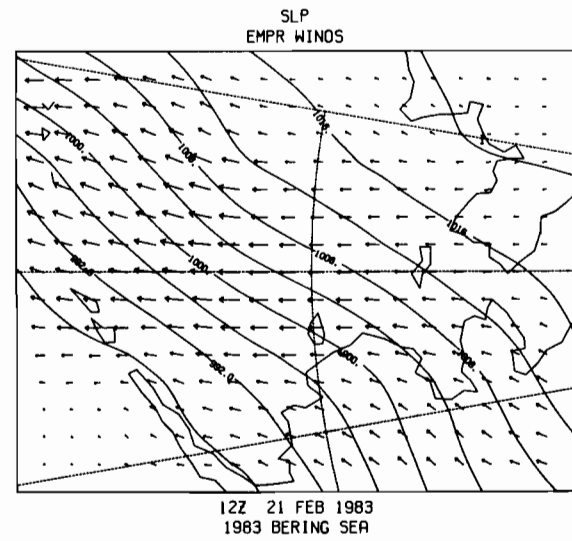
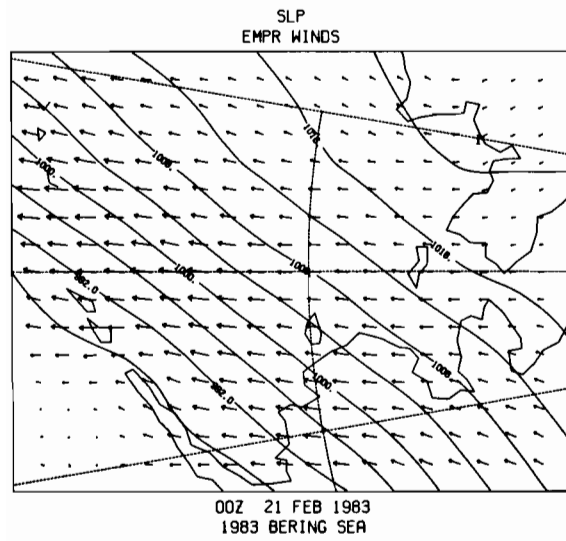
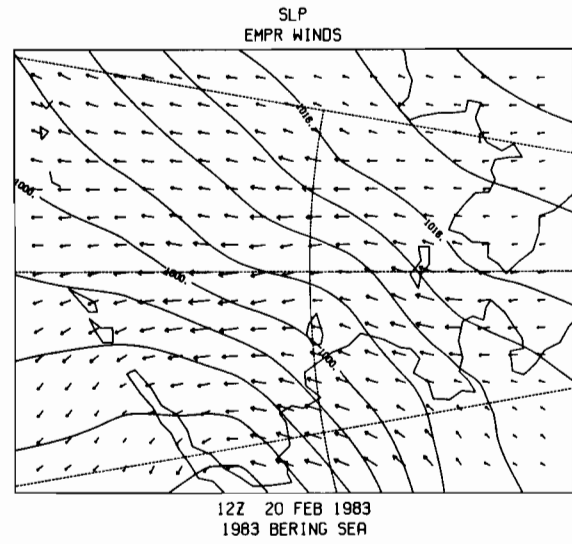
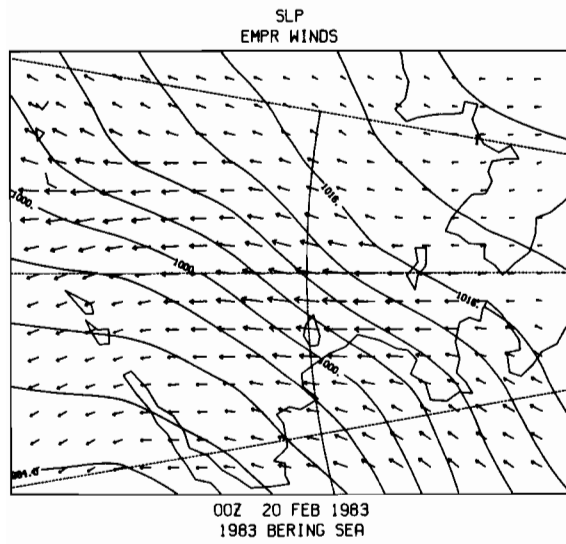
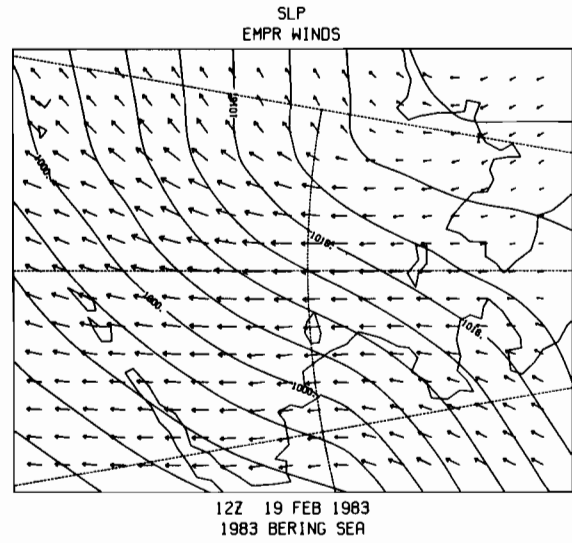
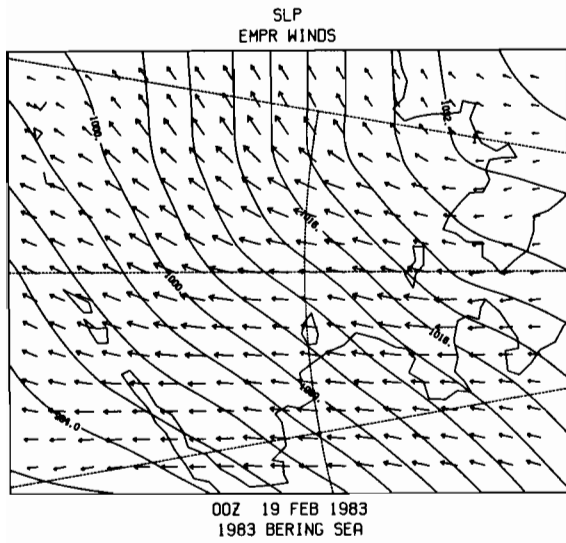


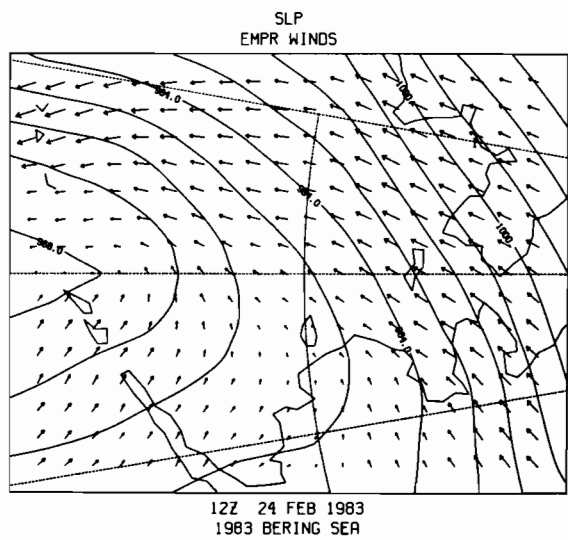
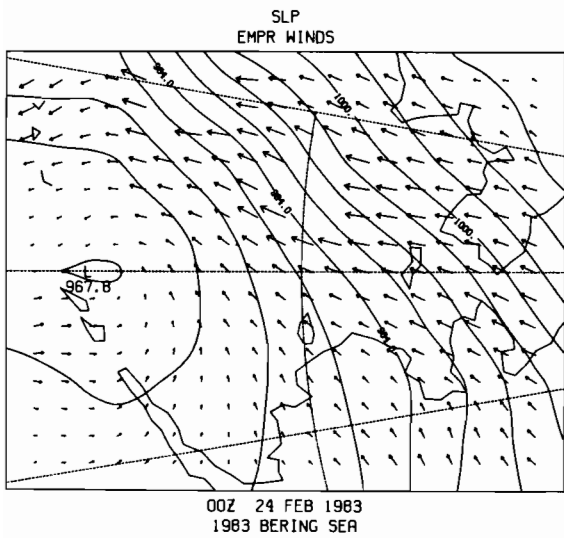
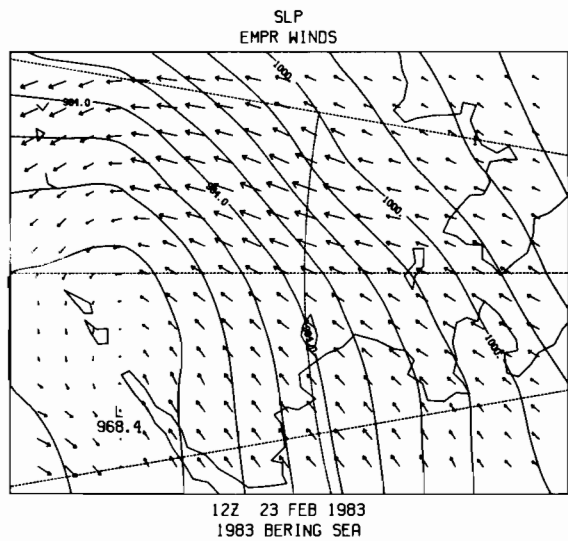
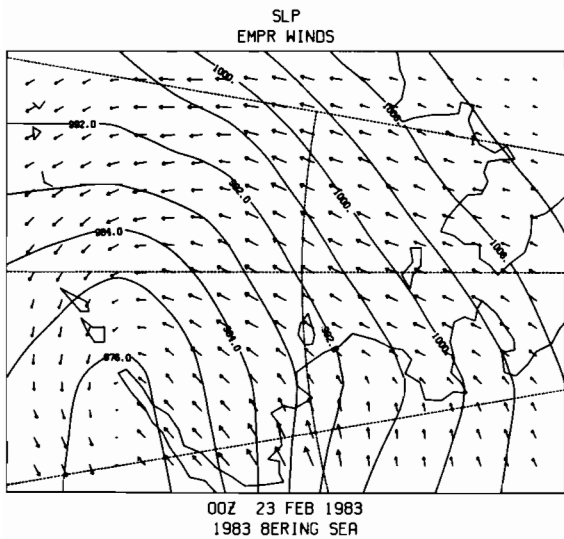
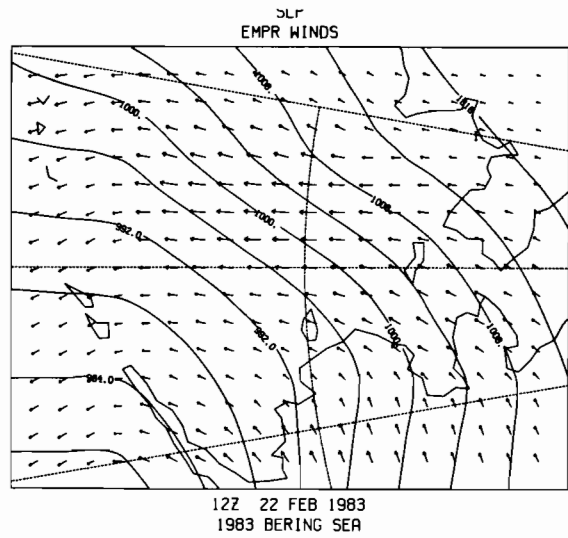
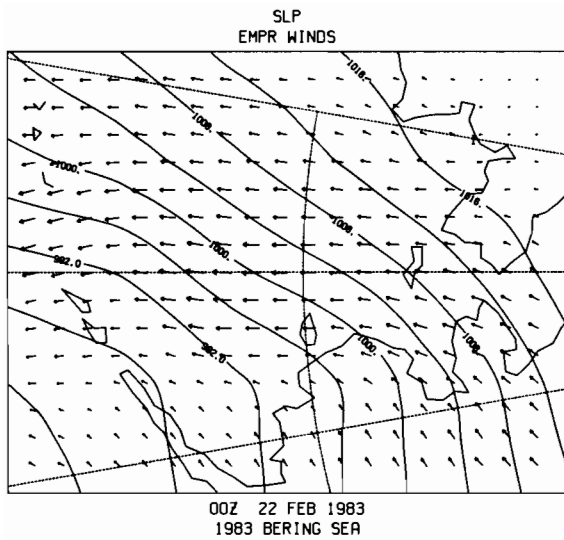
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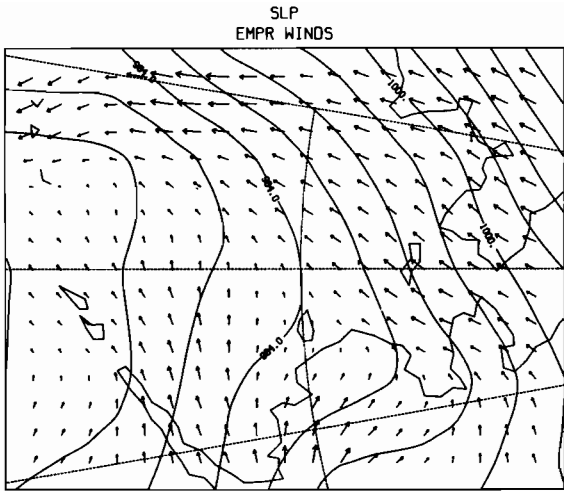
SLP
EMPR WINDS



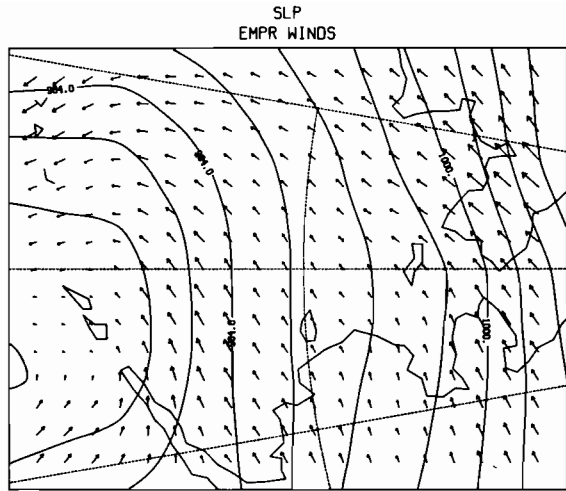
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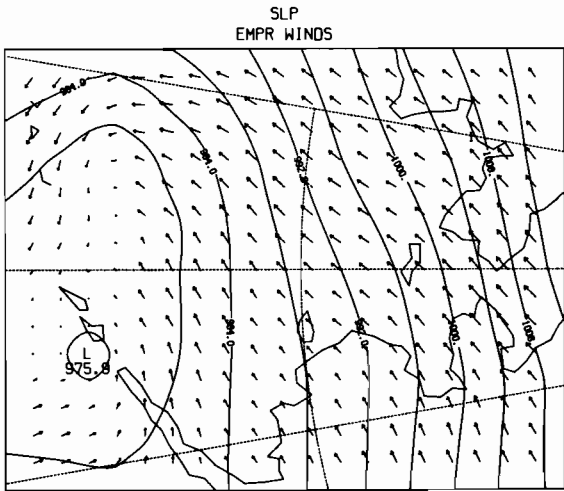




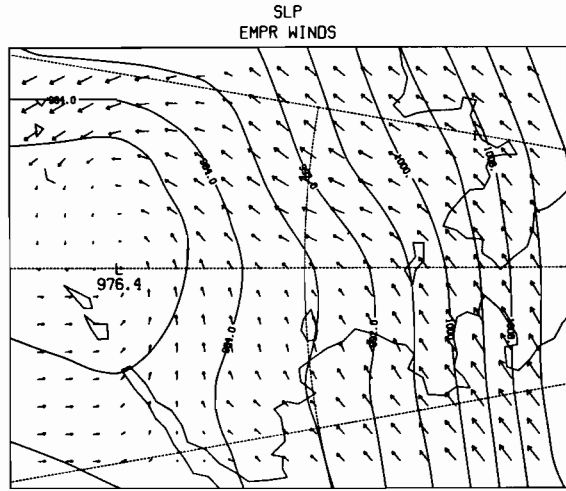
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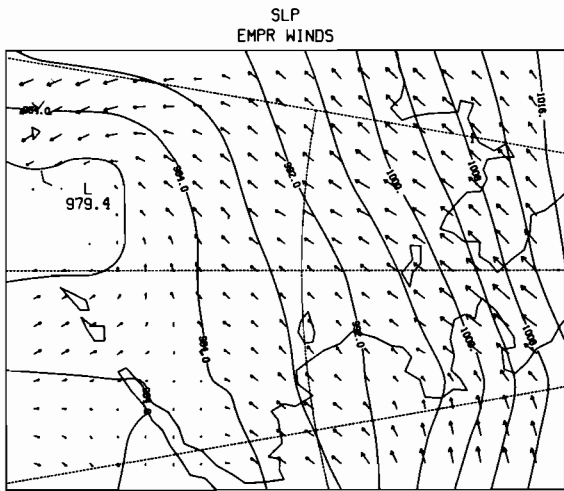
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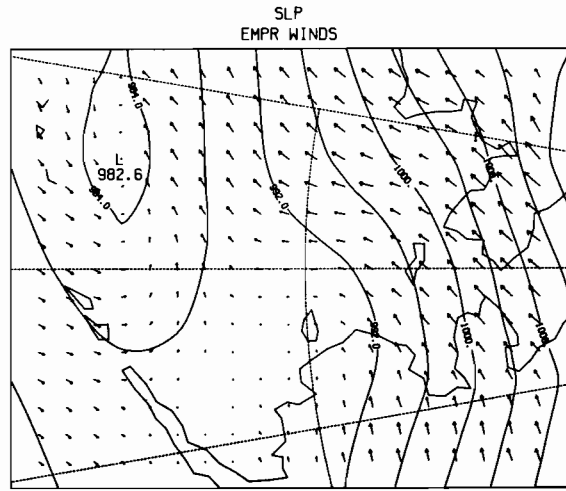
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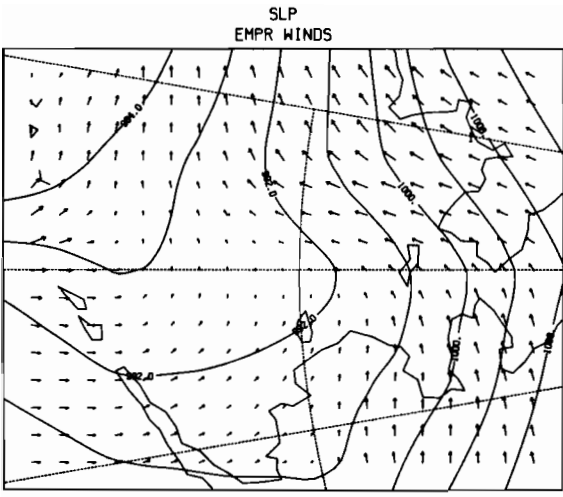
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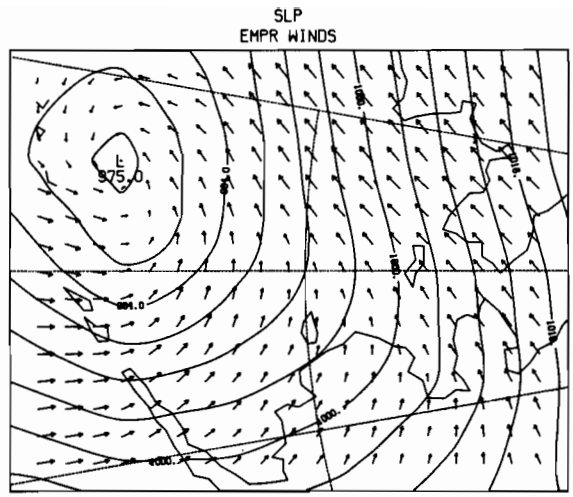
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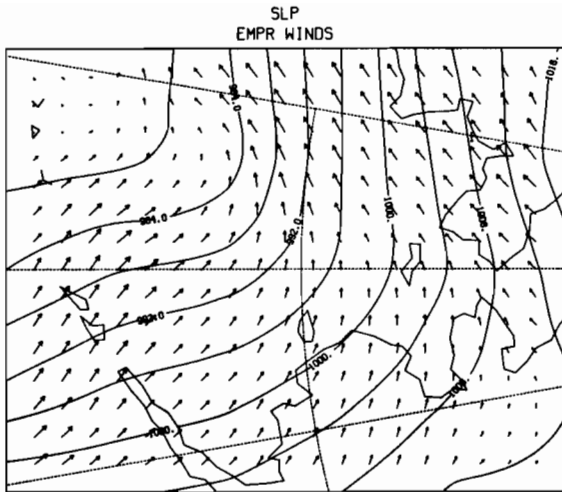
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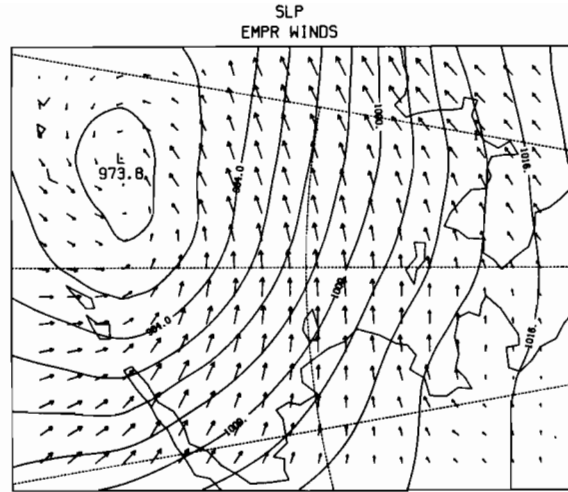
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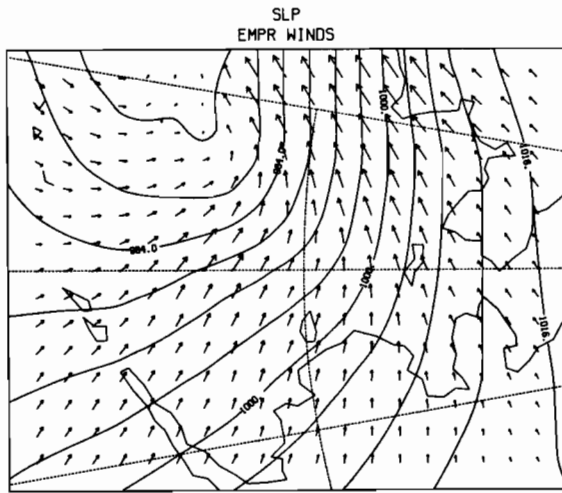
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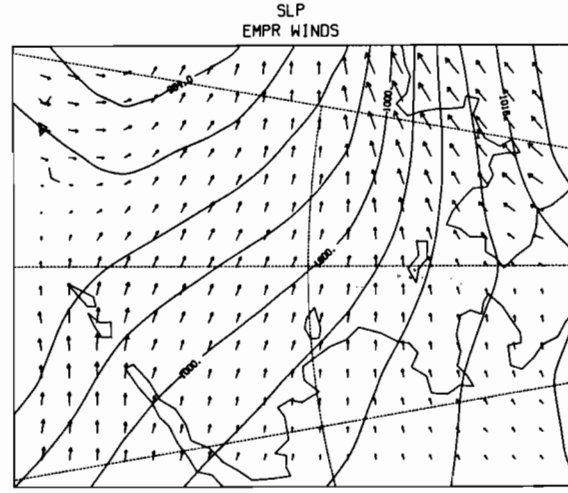
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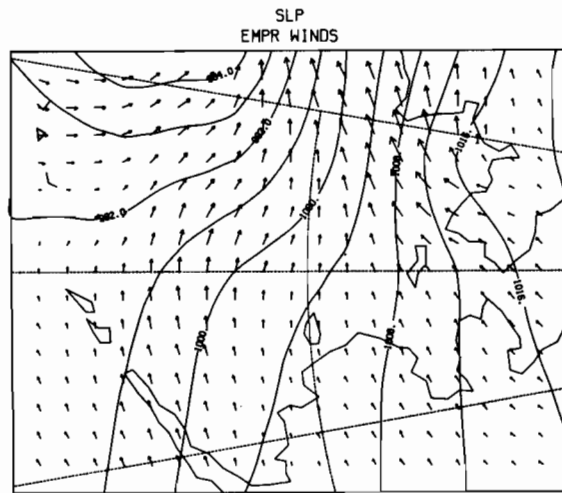
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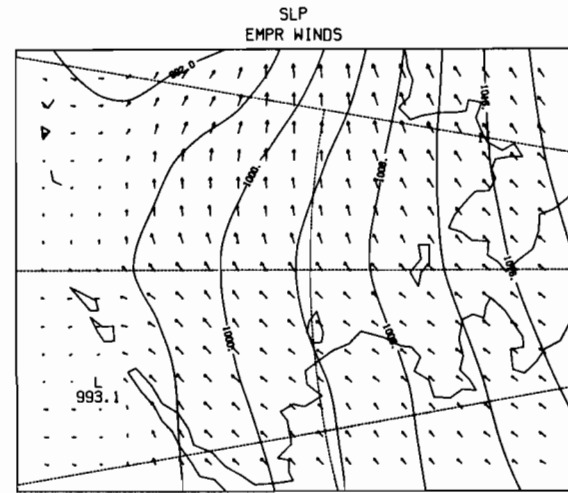
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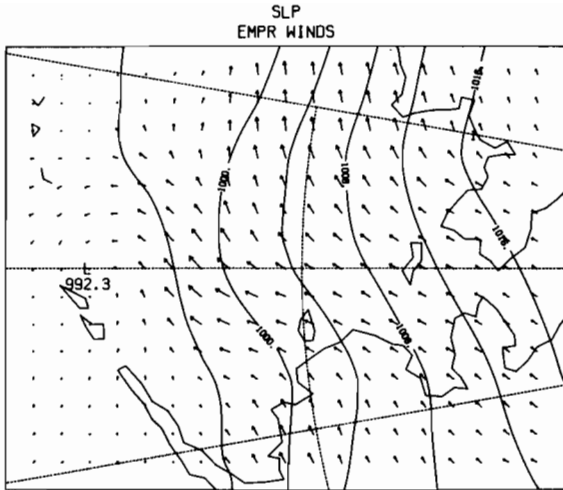
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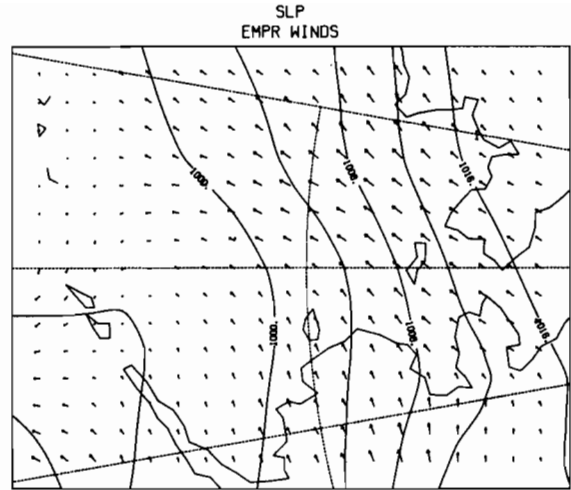
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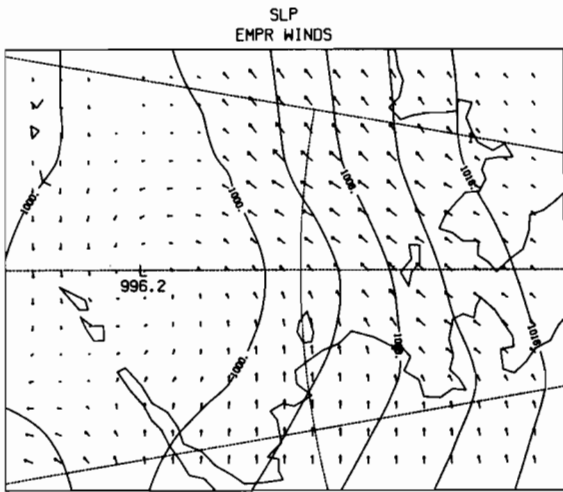
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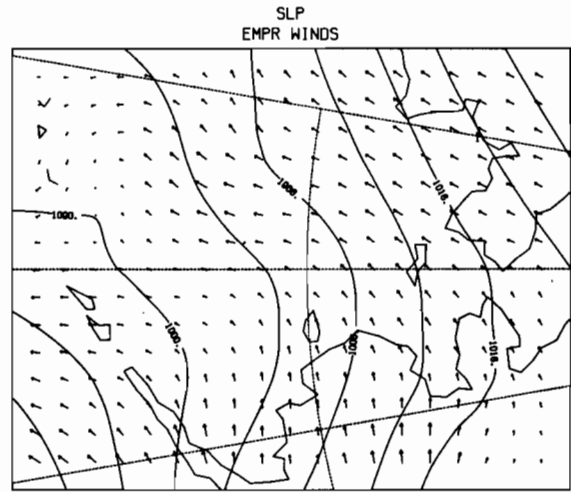
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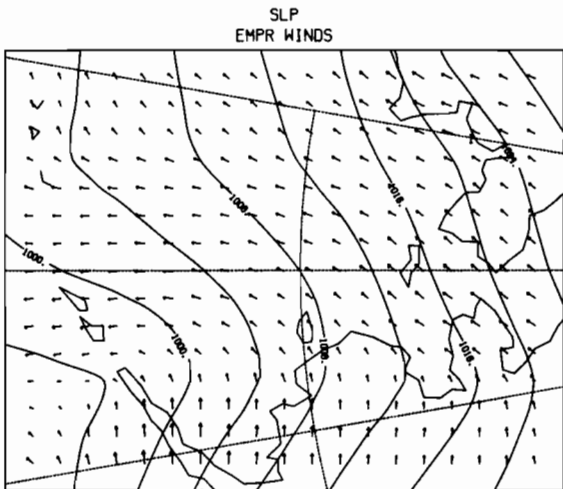
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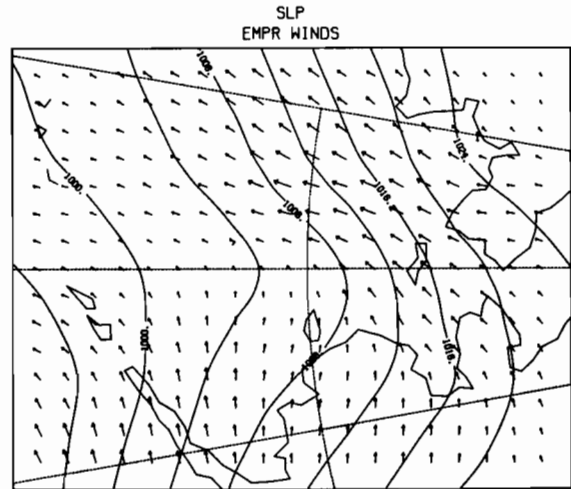
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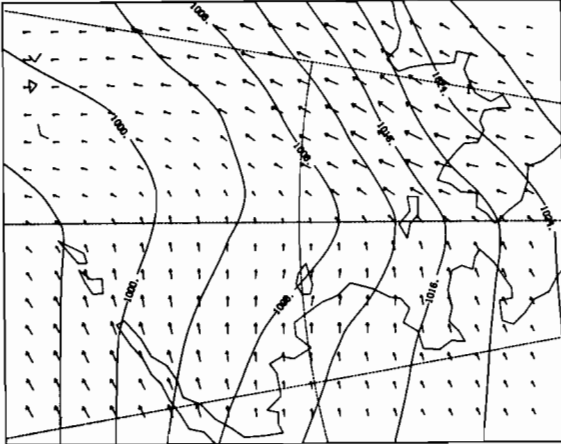


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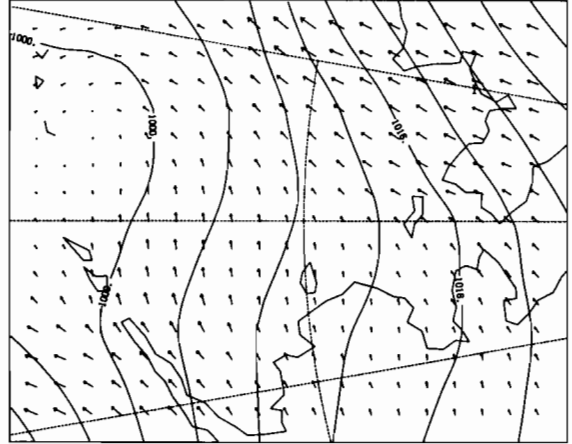
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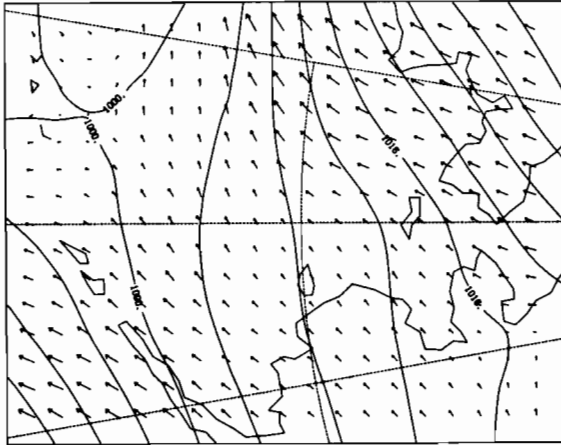
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EMPR WINDS



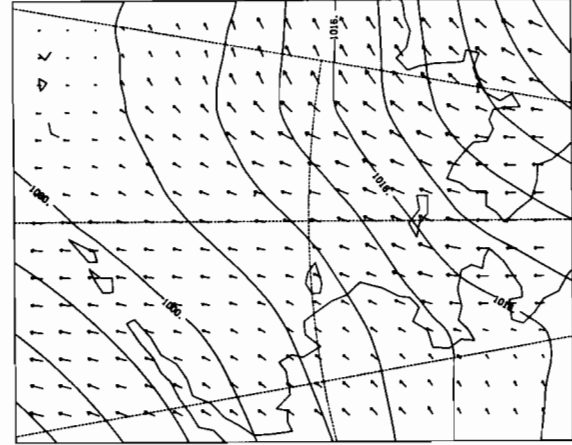
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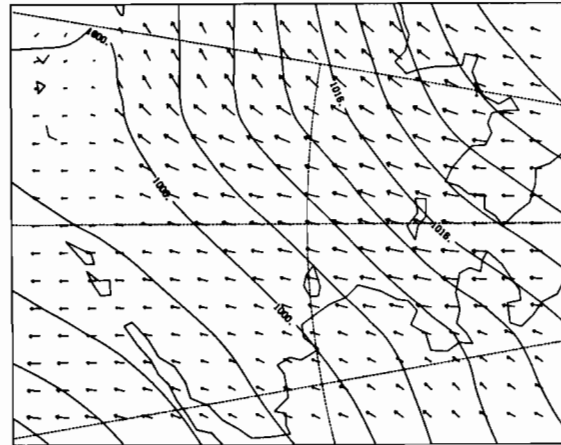
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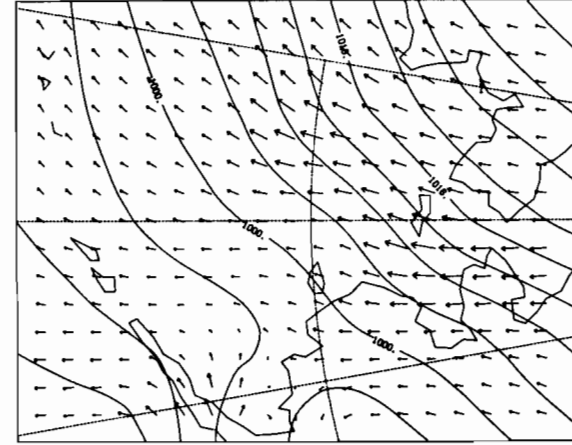
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EMPR WINDS

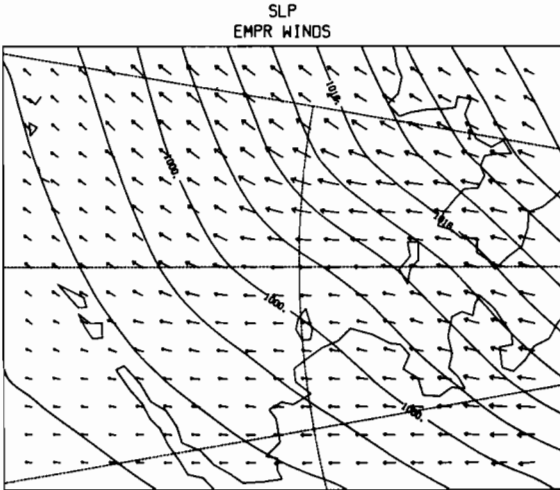


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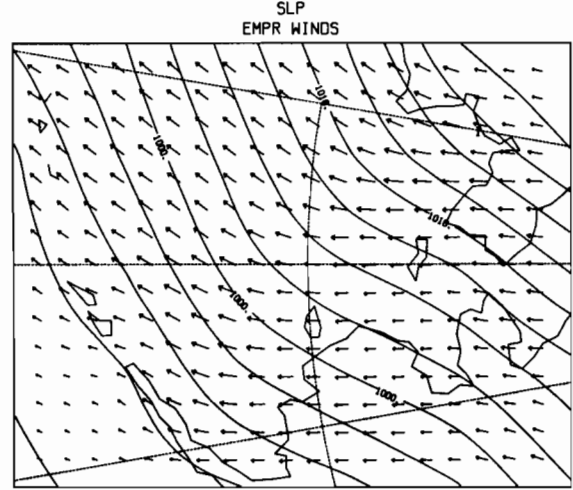
SLP
EMPR WINDS



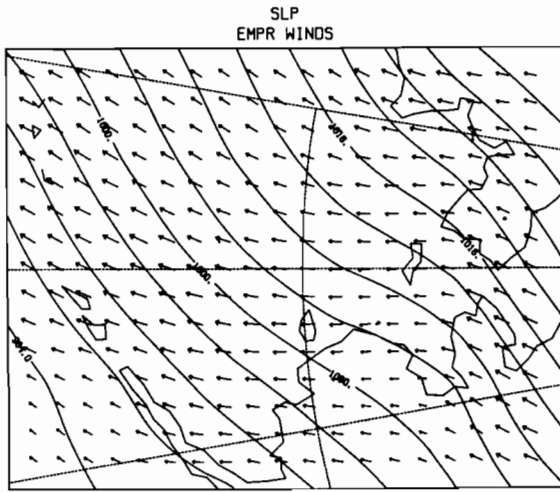
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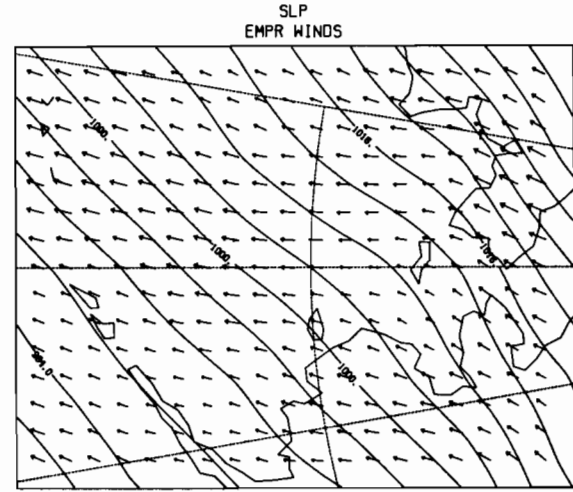
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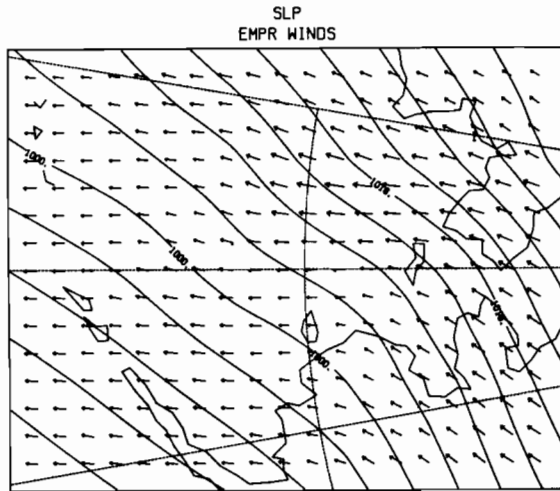
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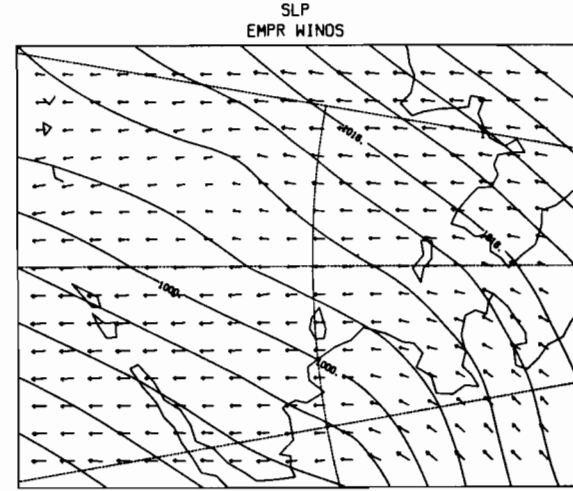
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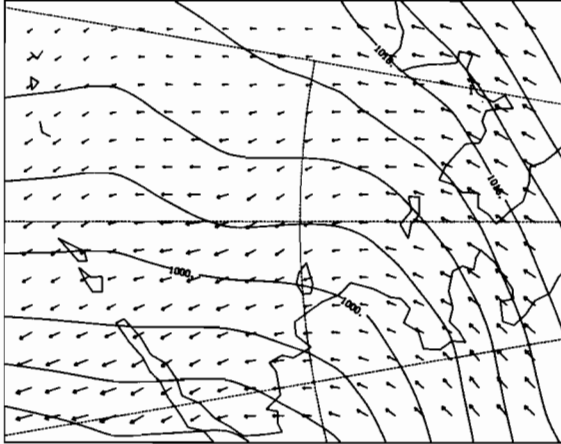


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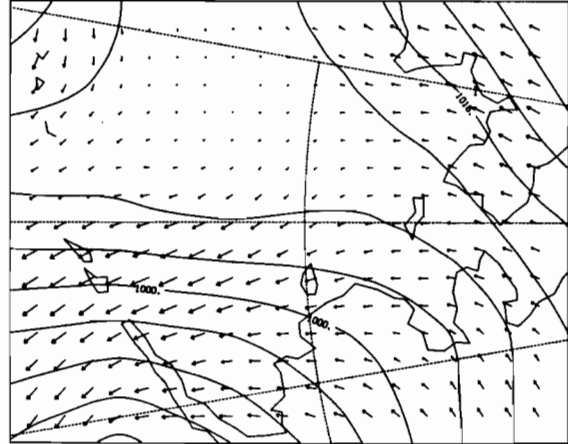
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EMPR WINDS



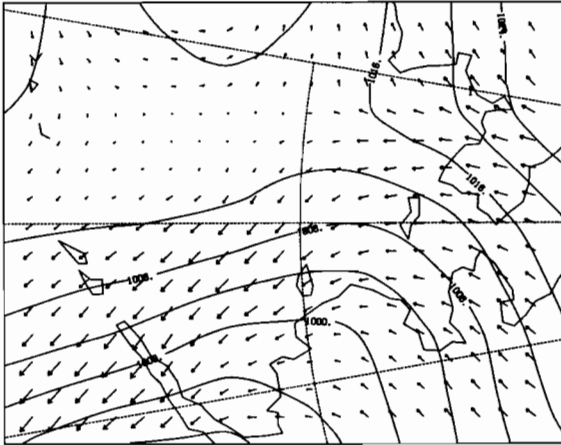
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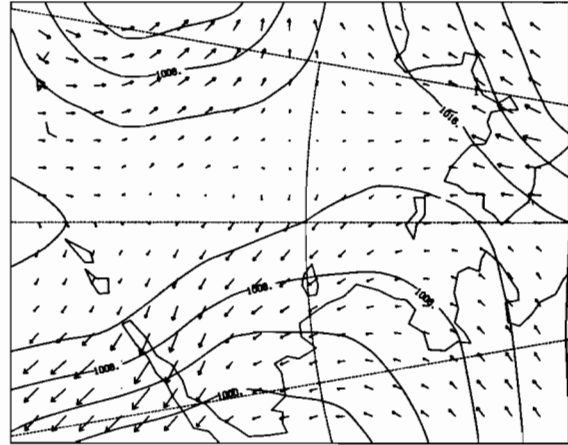
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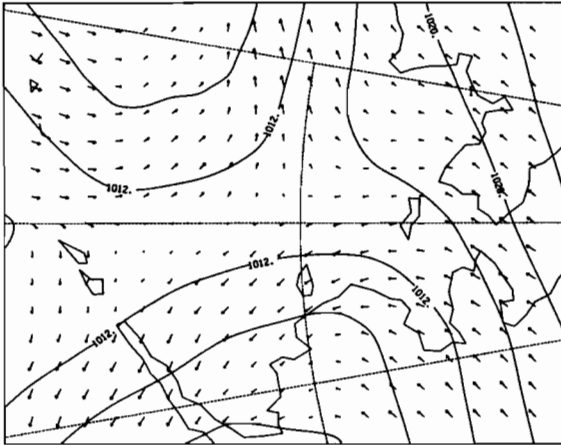
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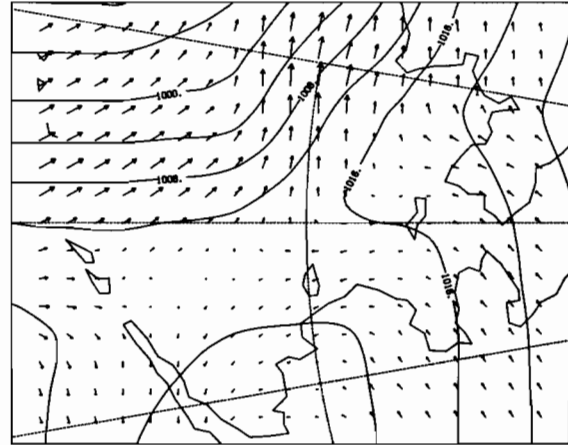
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EMPR WINDS

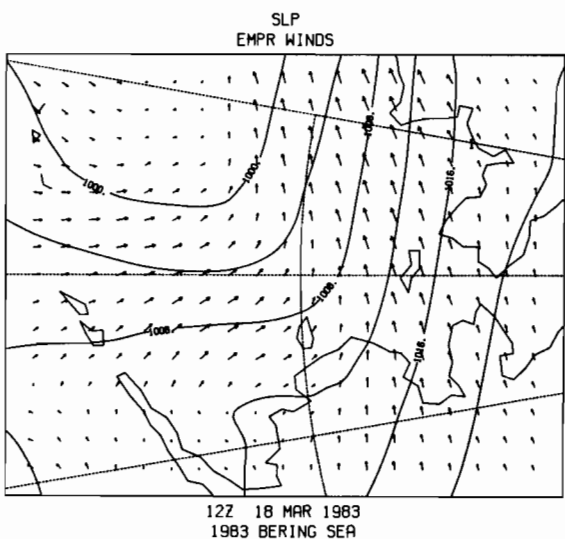
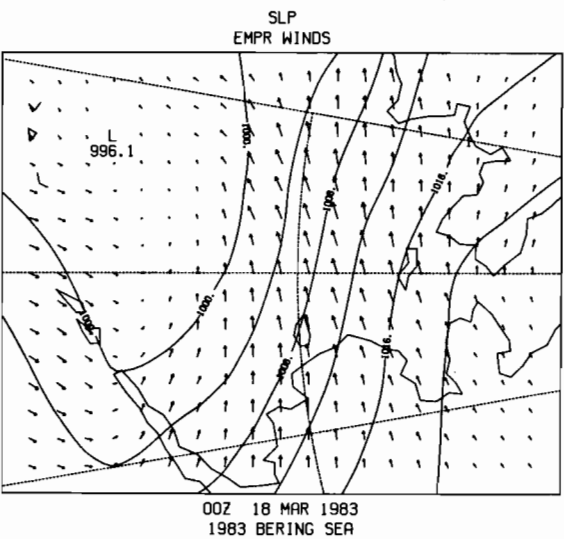
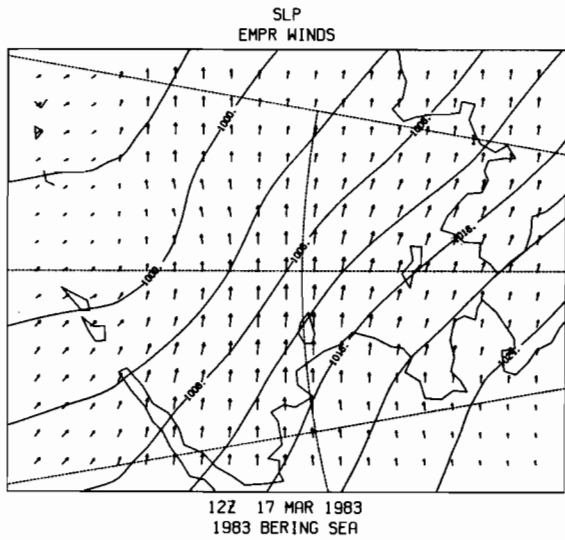
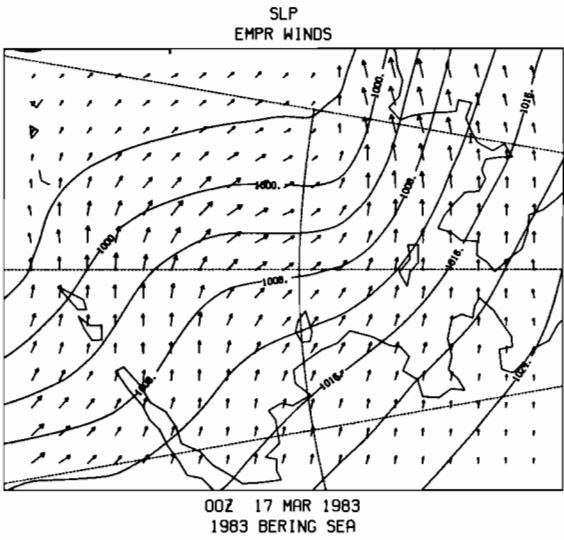
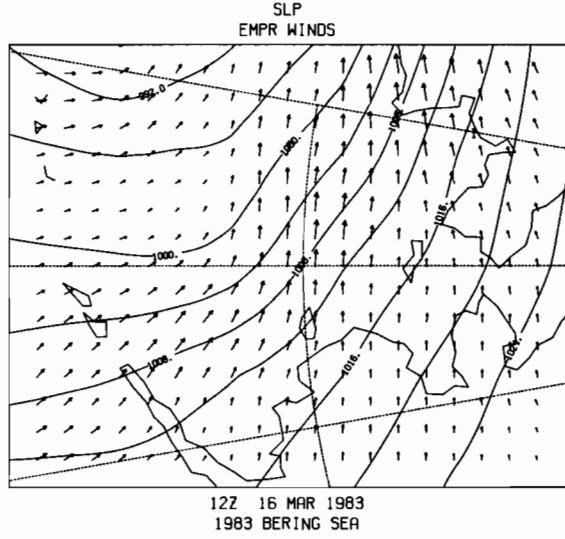
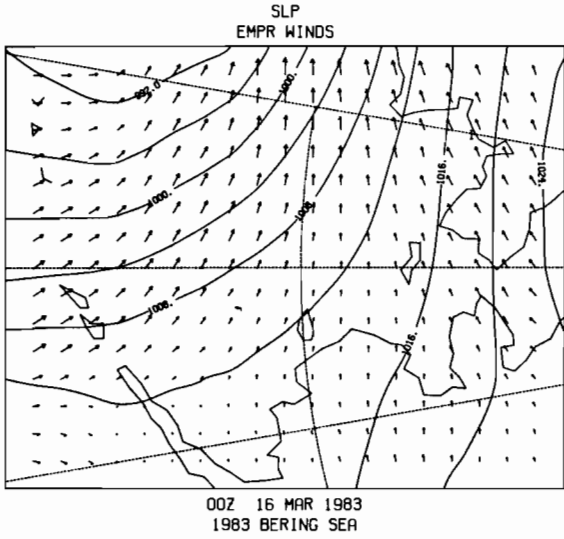


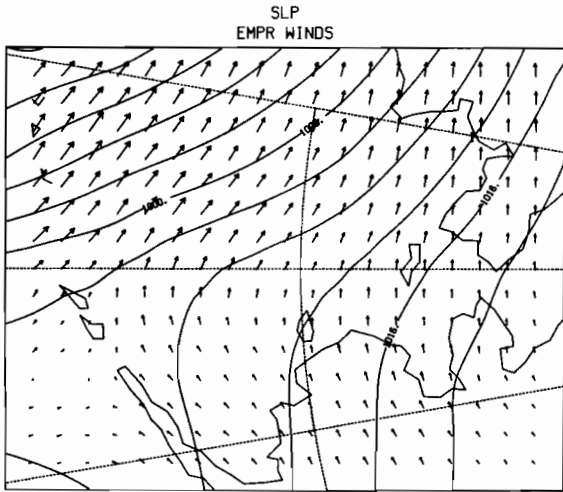
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EMPR WINDS

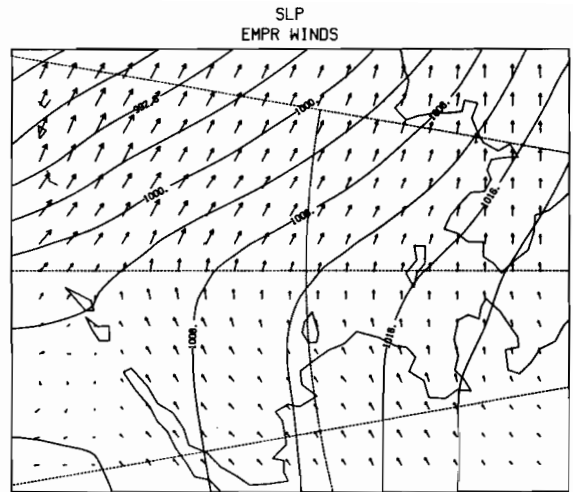


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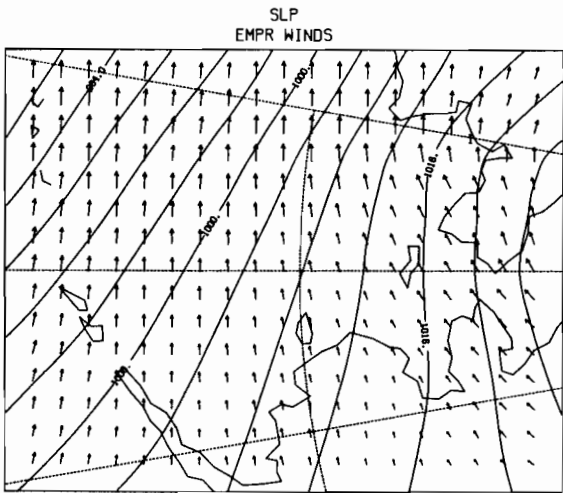




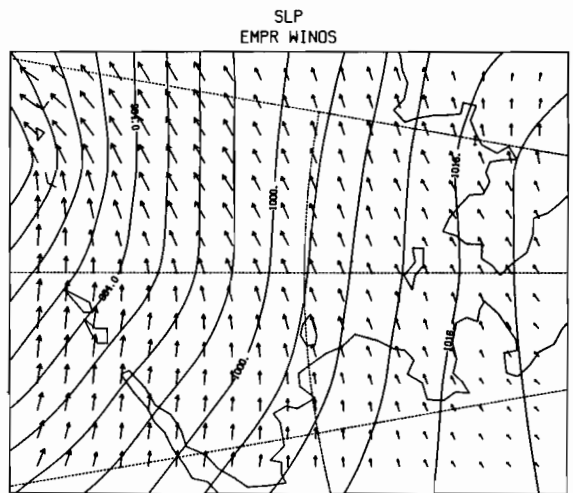
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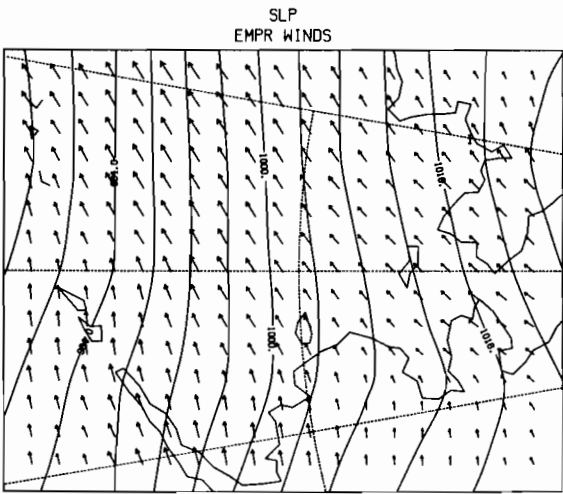
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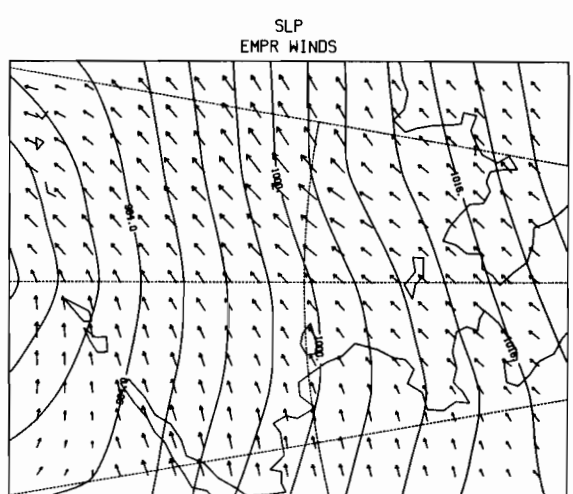
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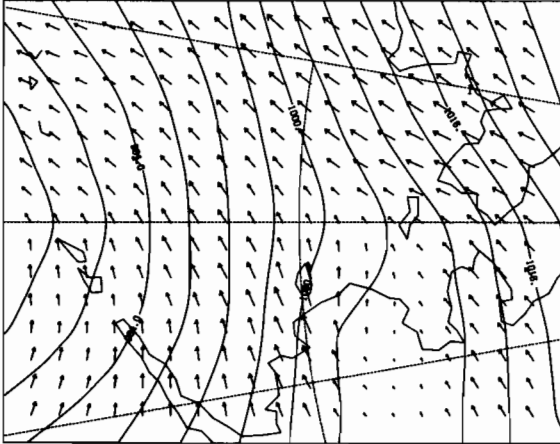


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1983 BERING SEA



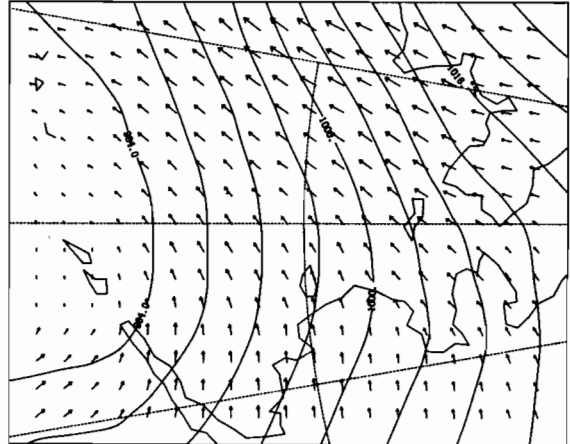
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SLP
EMPR WINDS



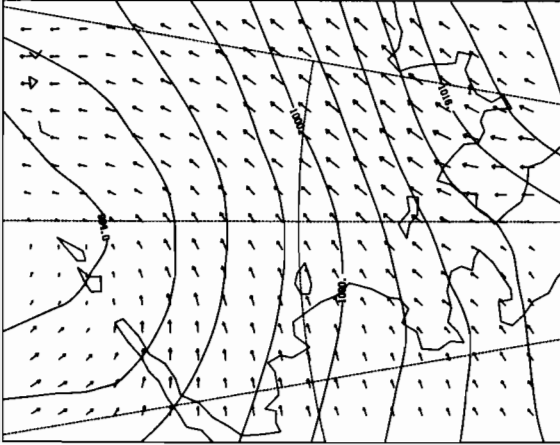
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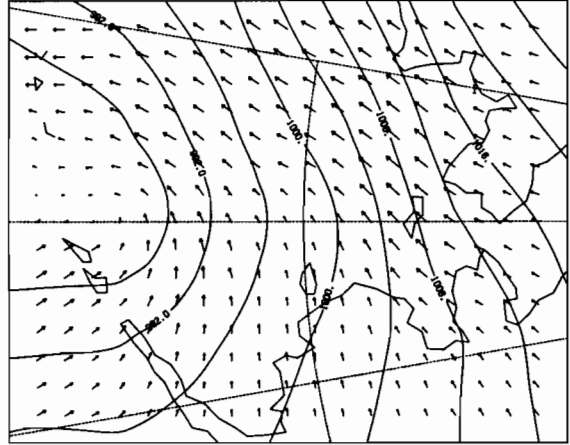
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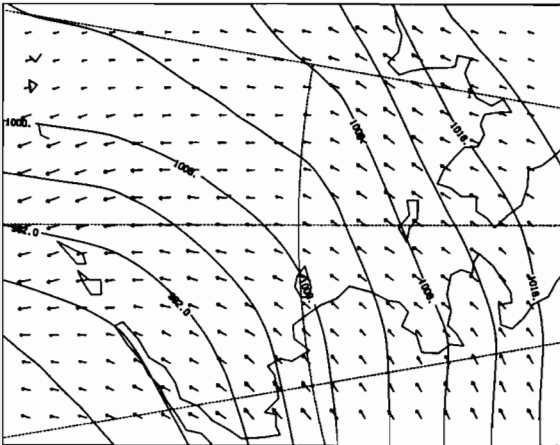
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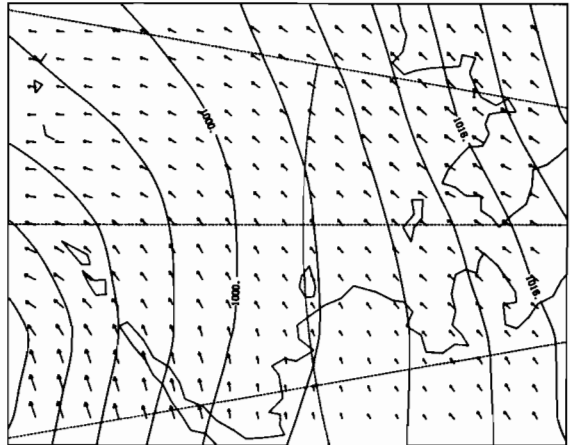
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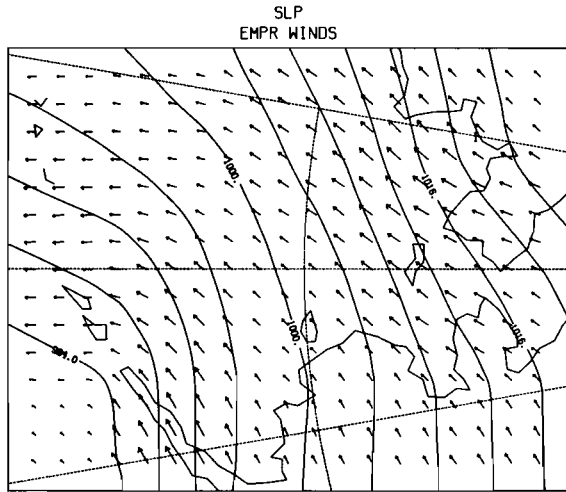


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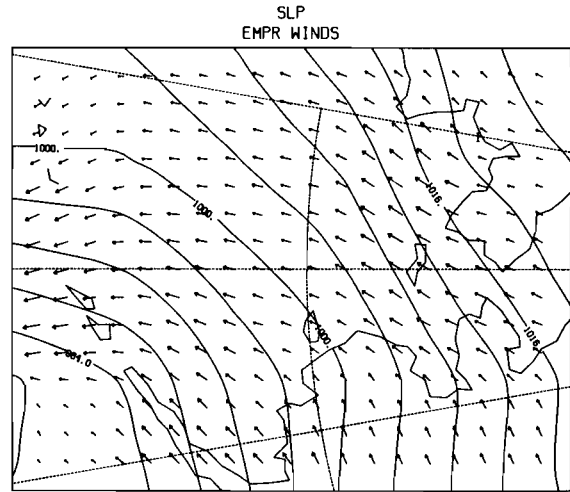
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EMPR WINDS



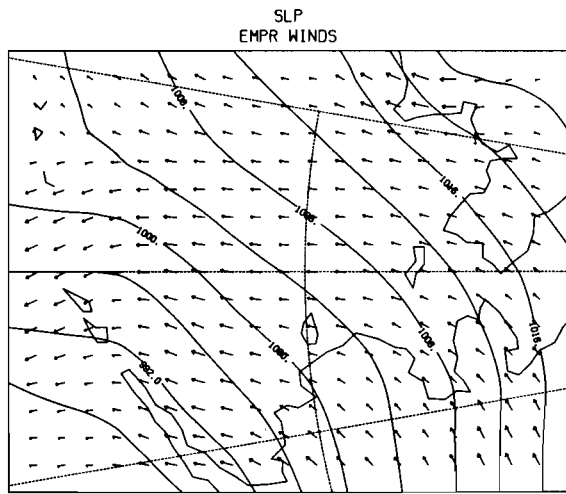
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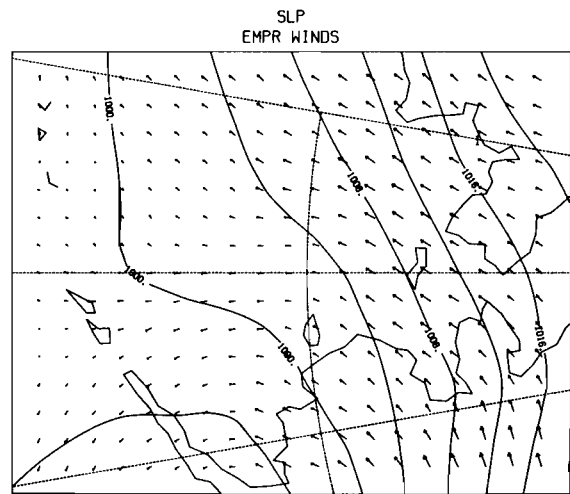
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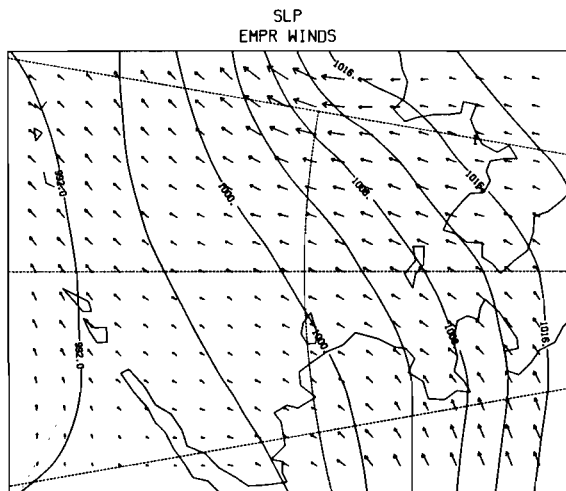
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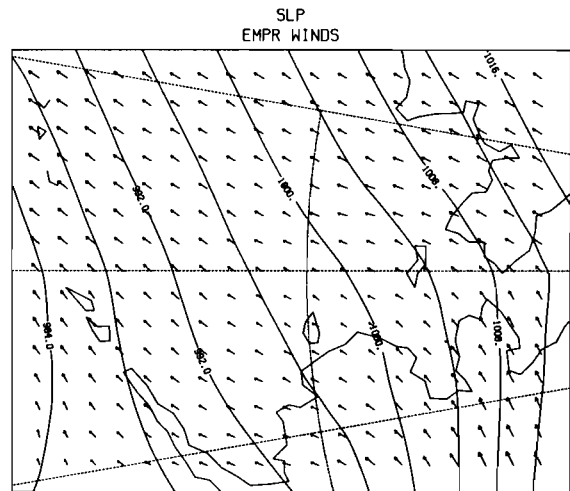
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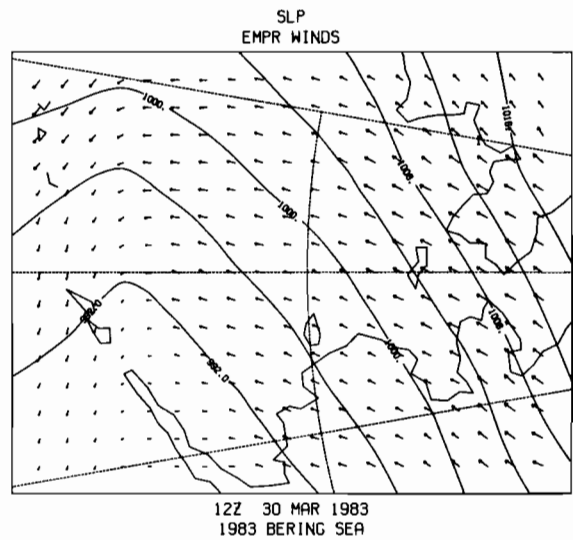
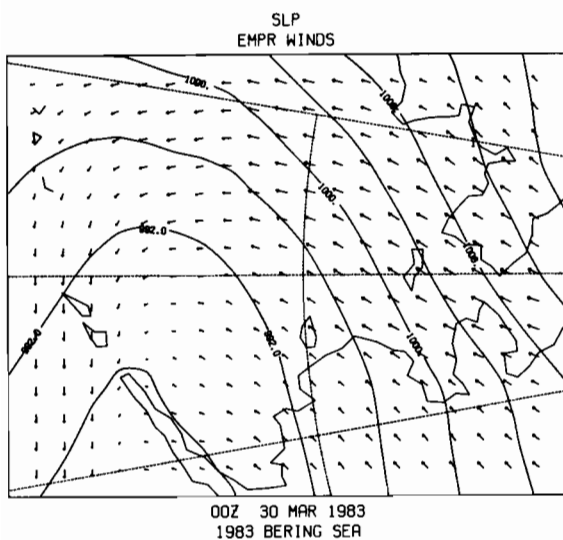
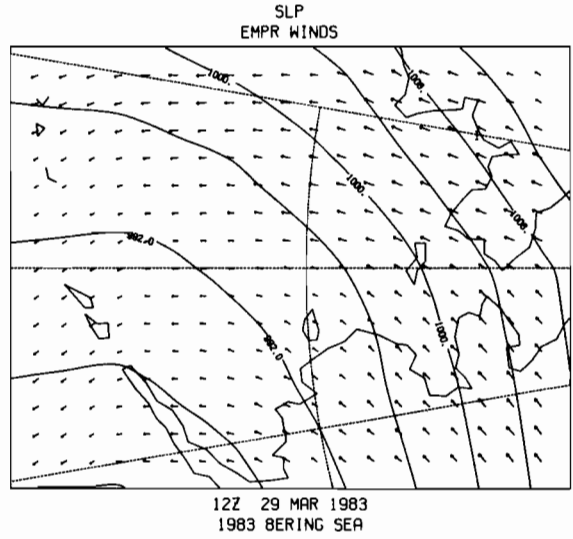
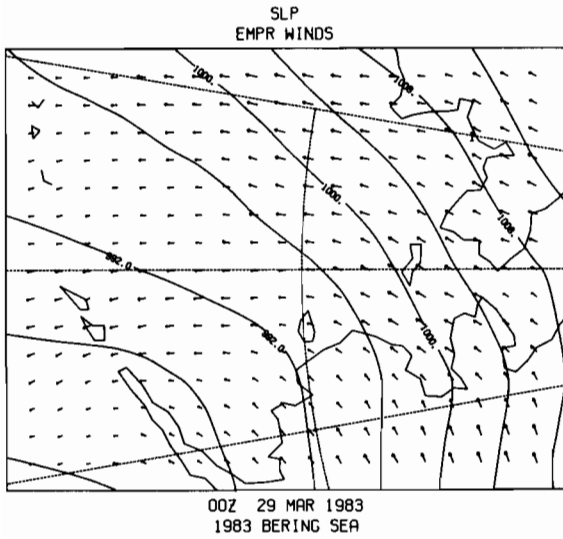
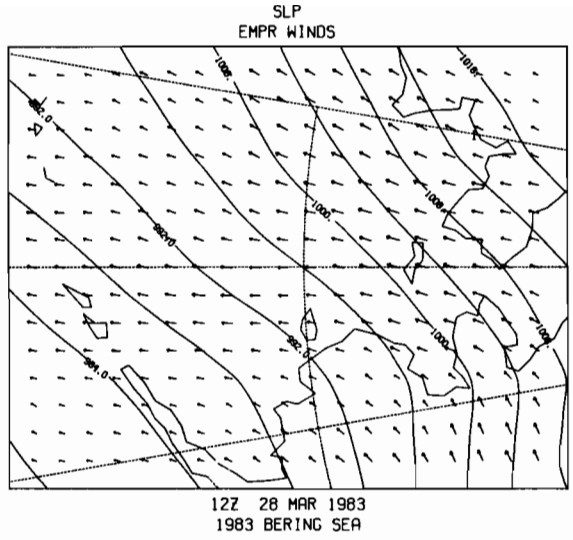
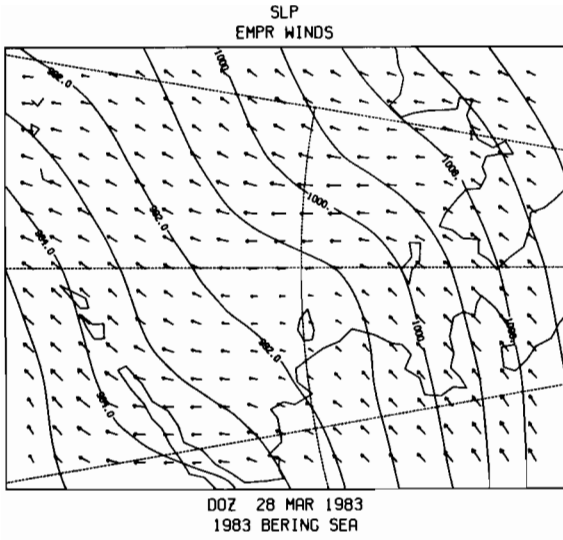
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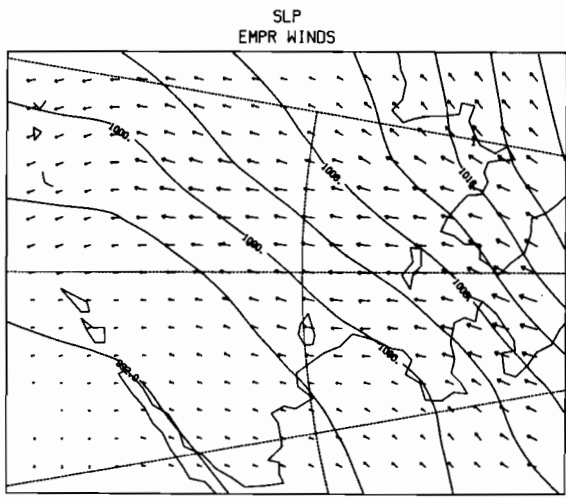


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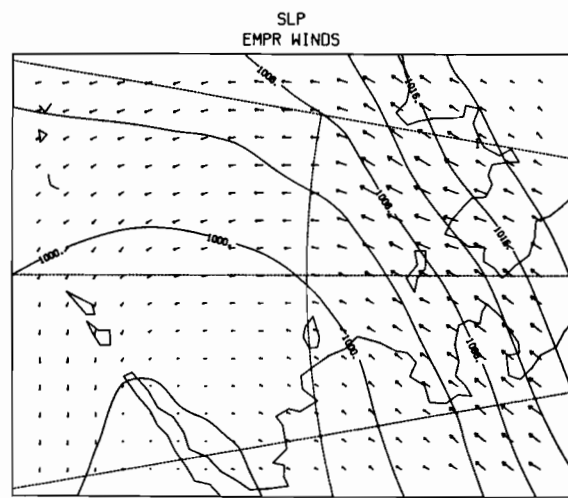


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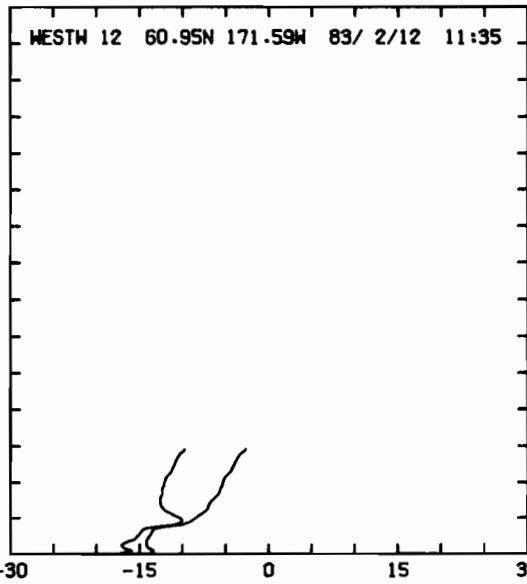
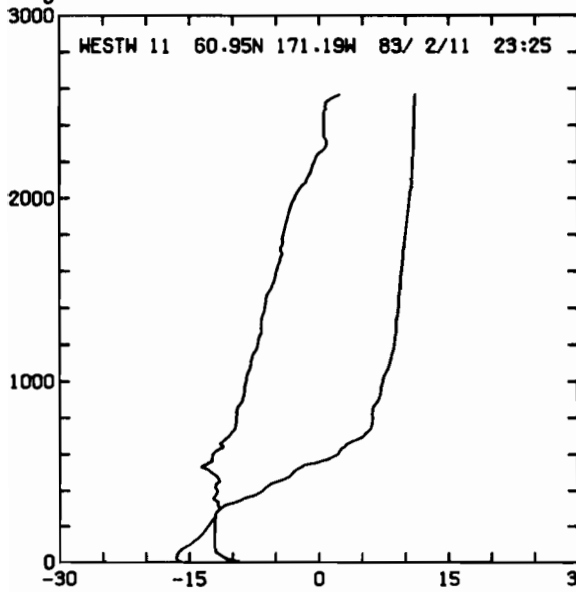
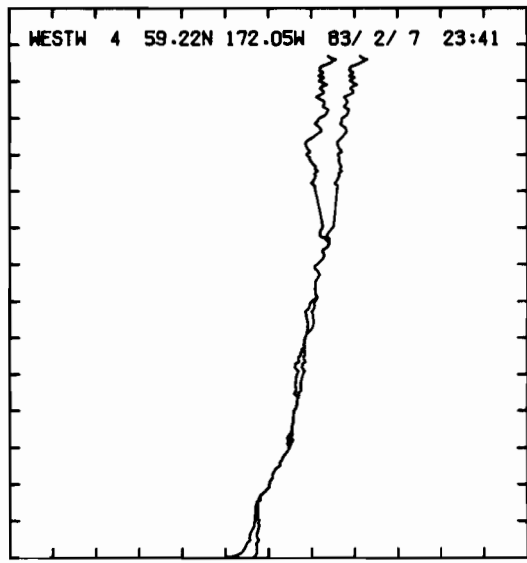
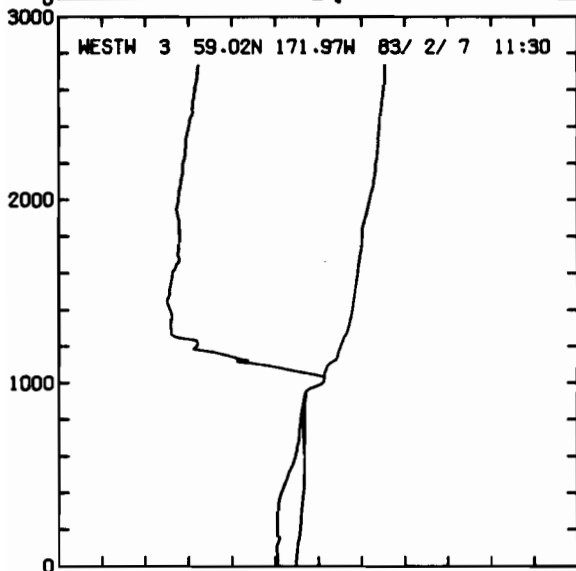
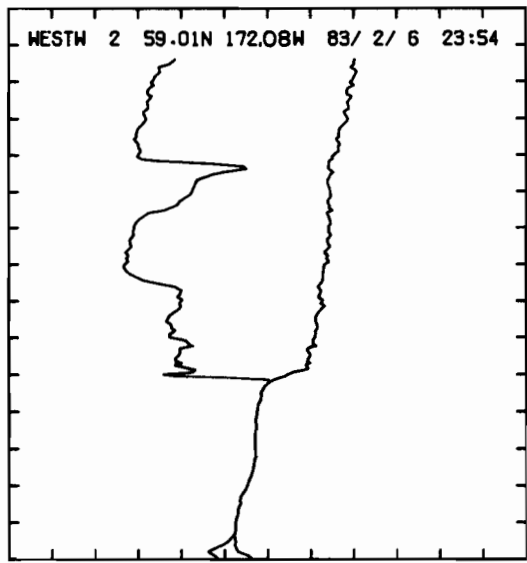
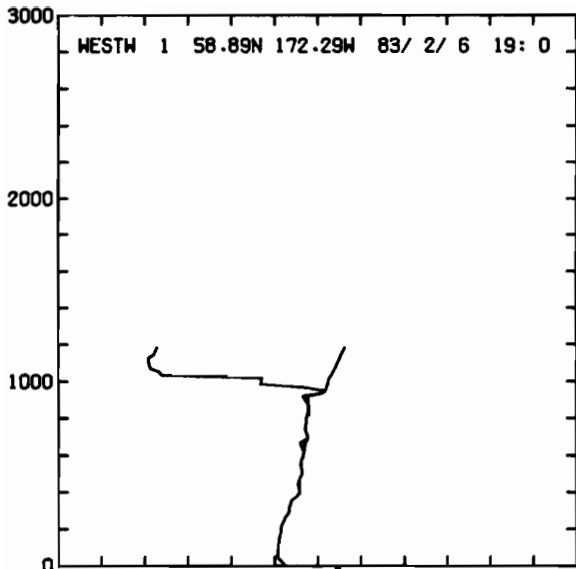
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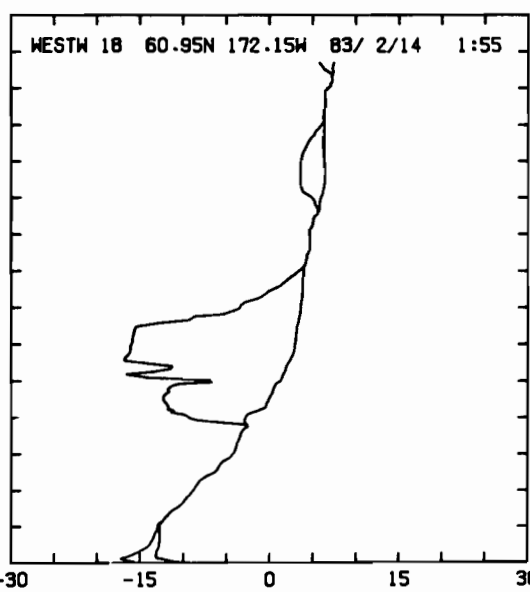
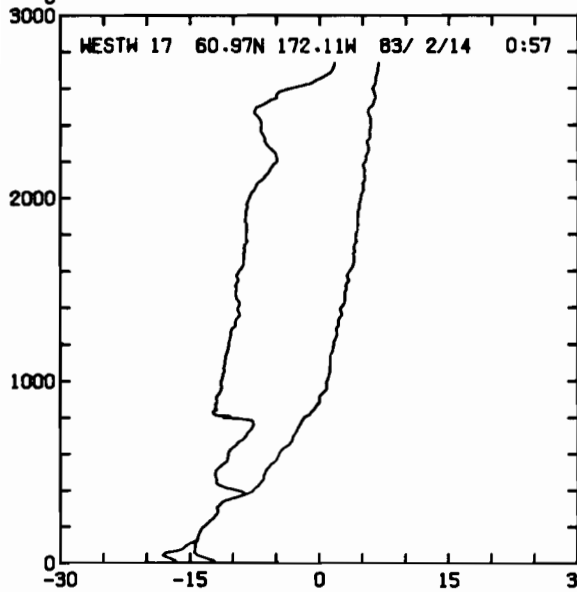
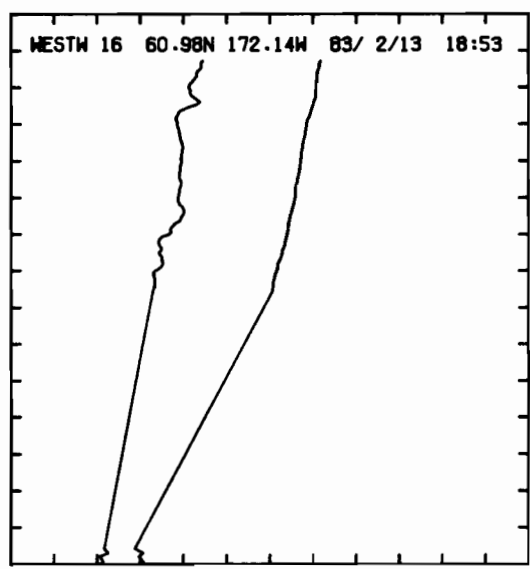
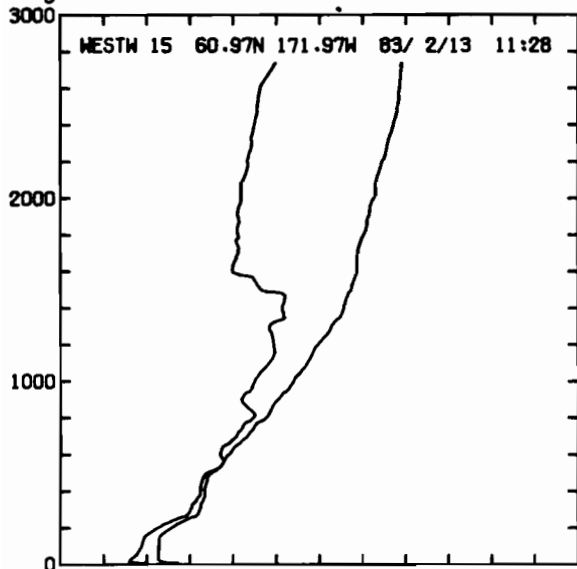
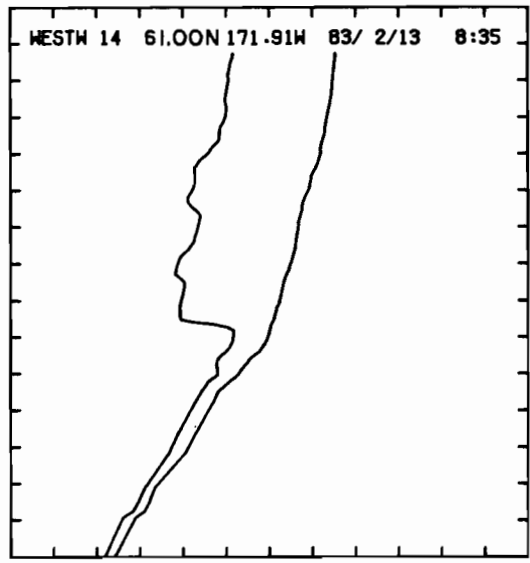
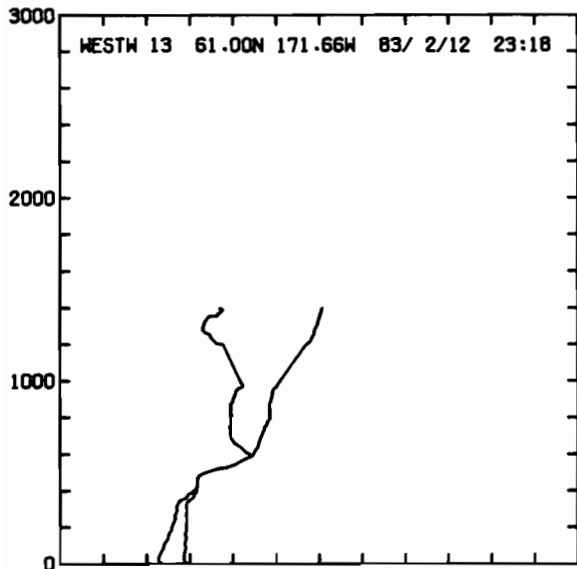


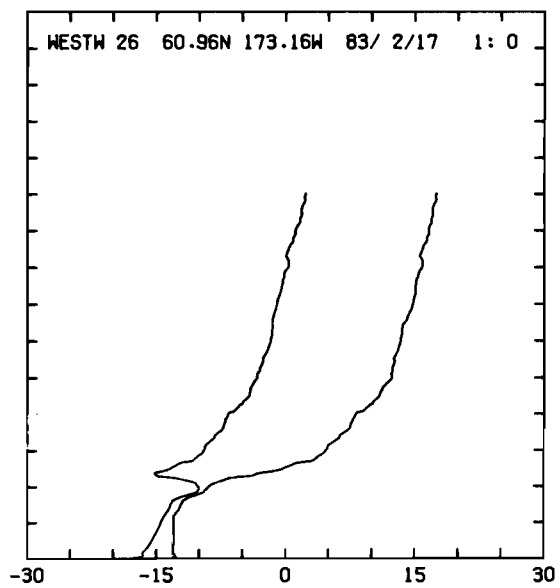
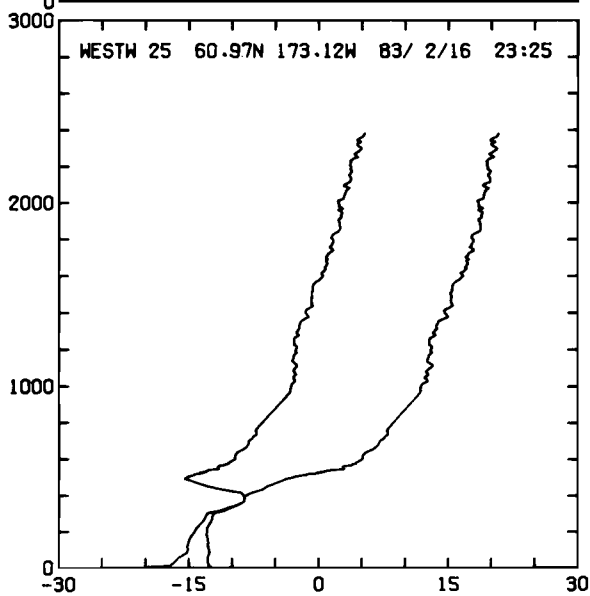
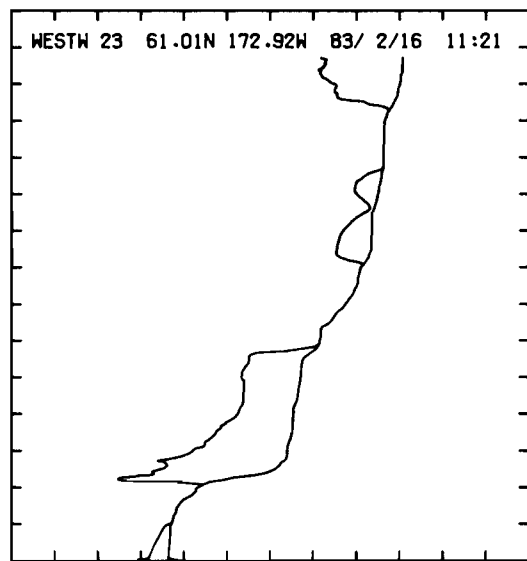
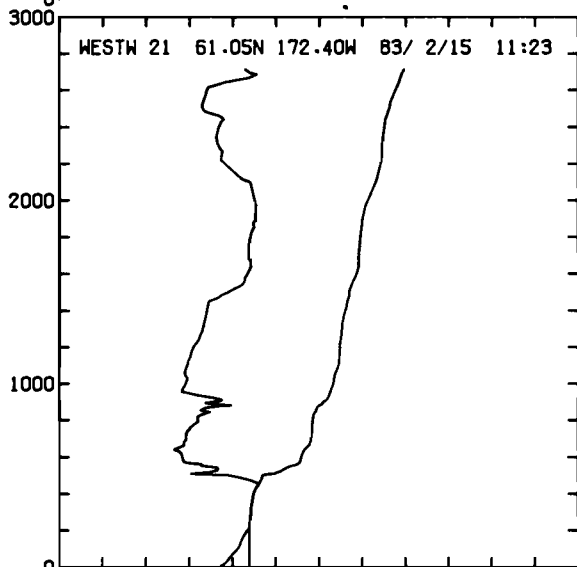
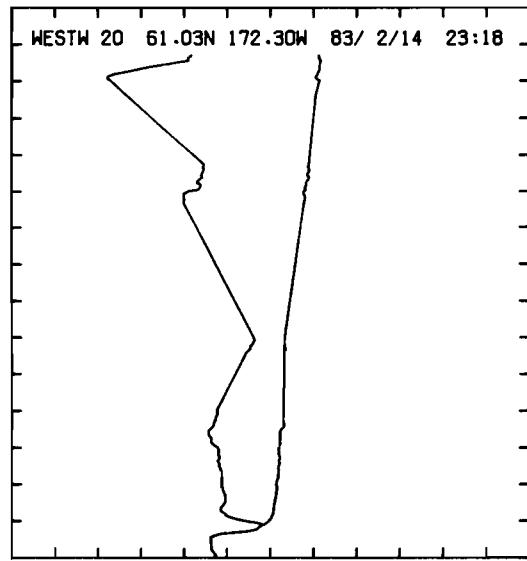
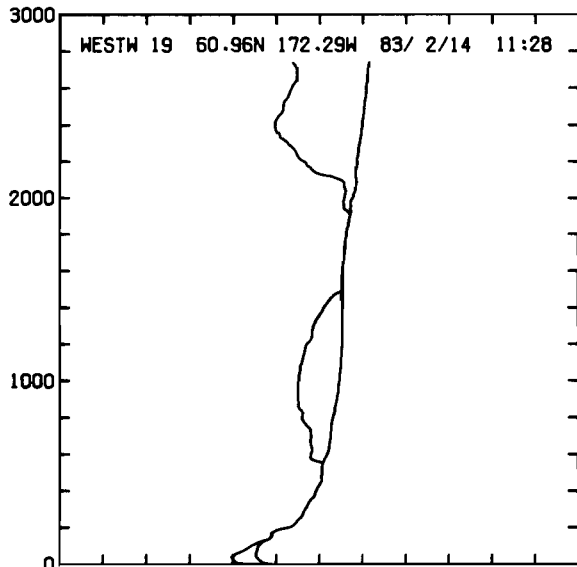
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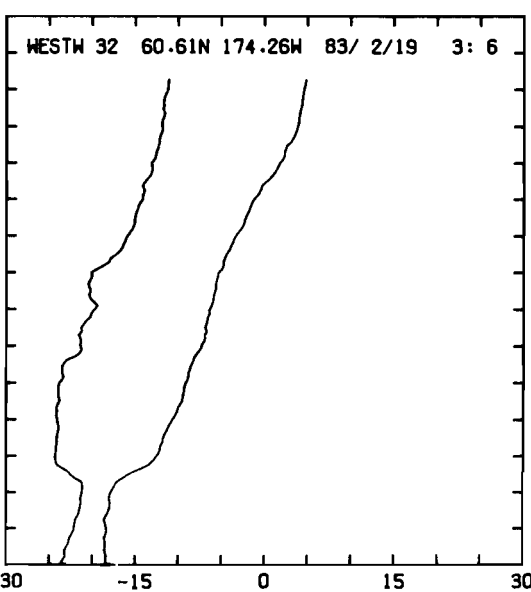
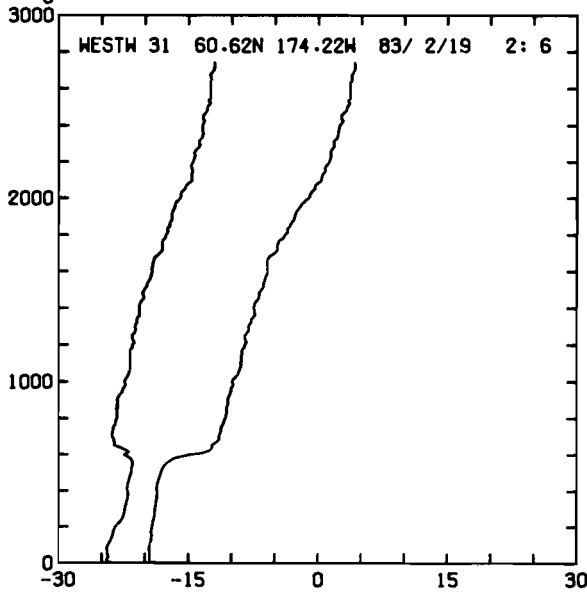
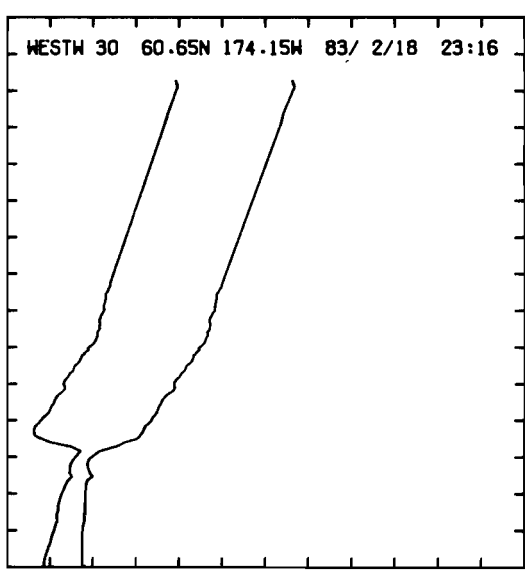
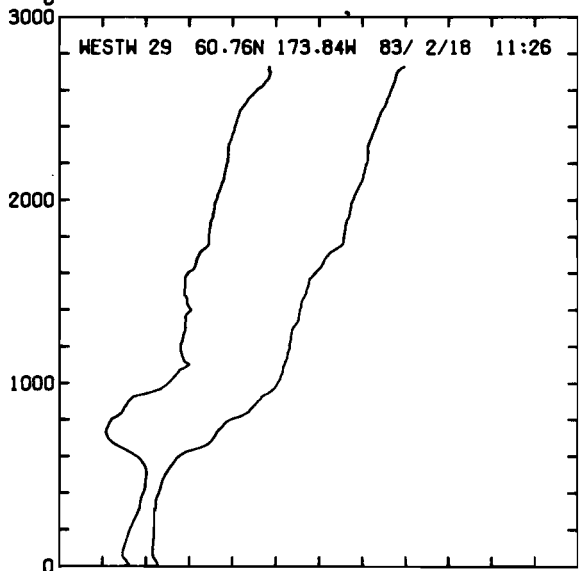
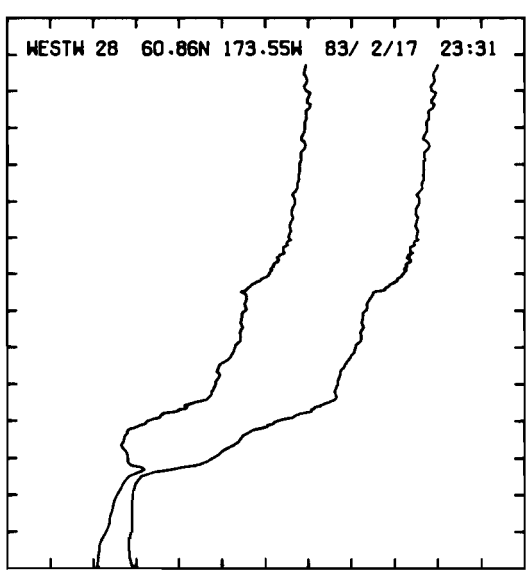
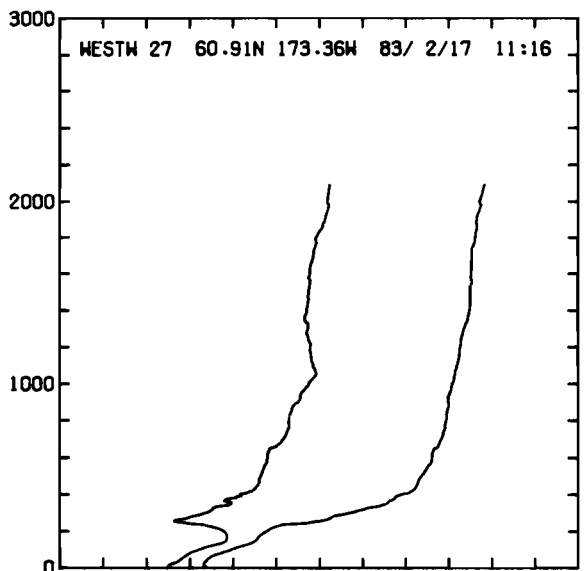
APPENDIX F

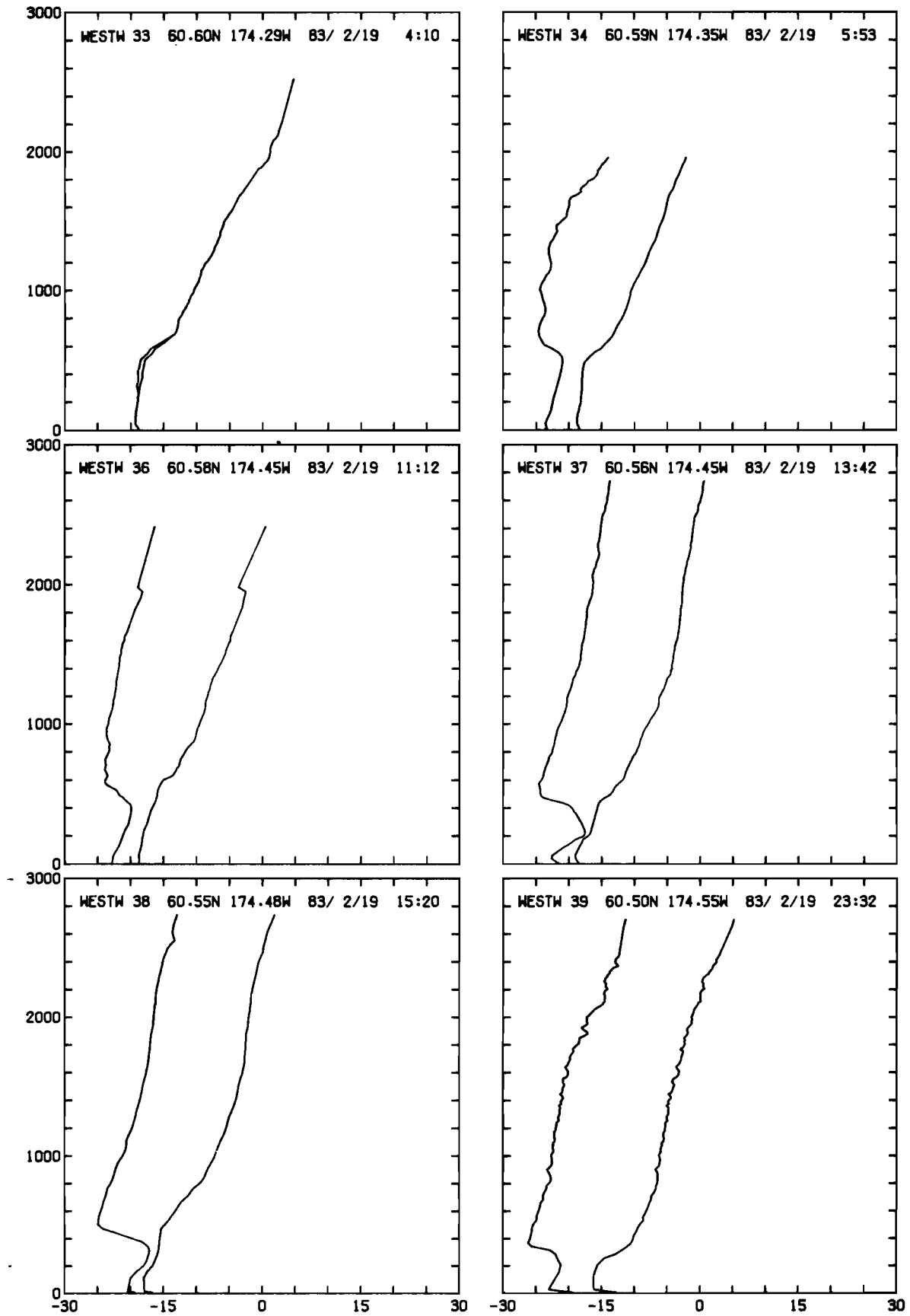
UPPER-AIR OBSERVATIONS OF POTENTIAL TEMPERATURE
AND DEW POINT POTENTIAL TEMPERATURE
FROM THE USCGC WESTWIND AND NOAA SHIP DISCOVERER

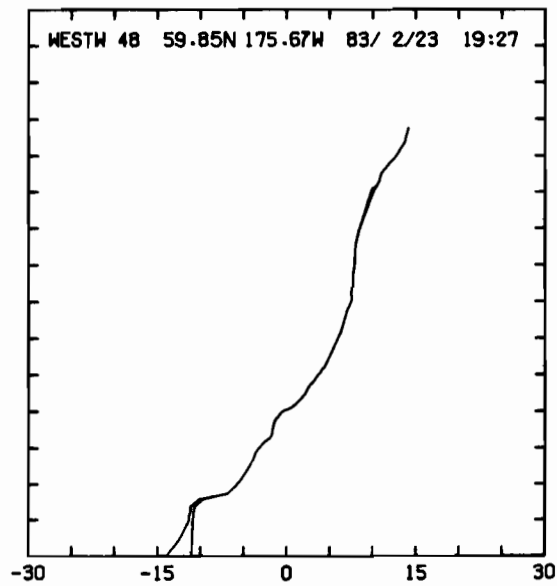
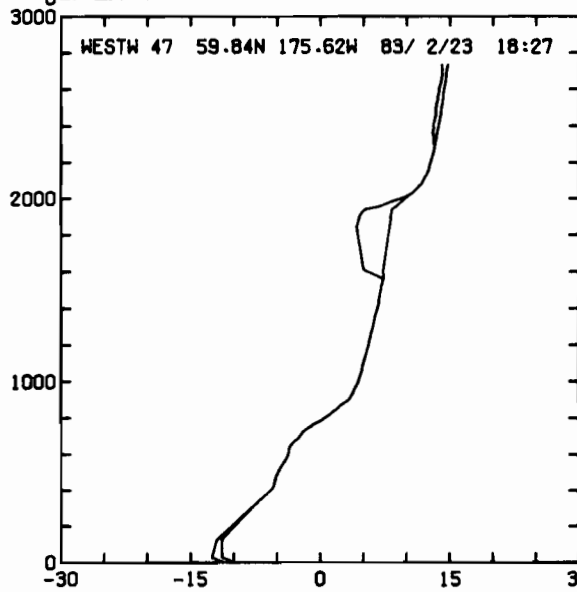
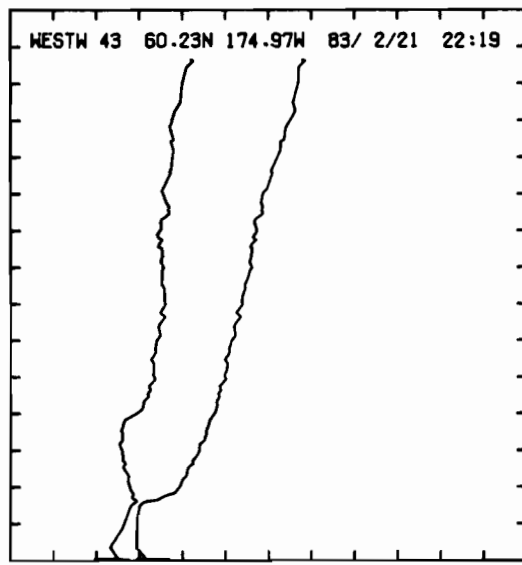
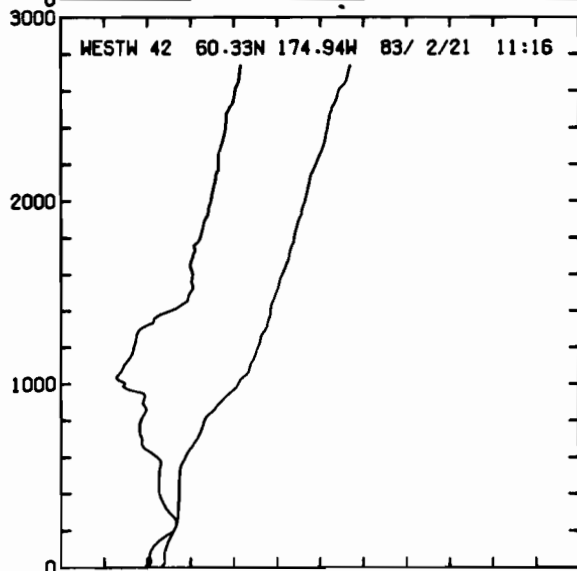
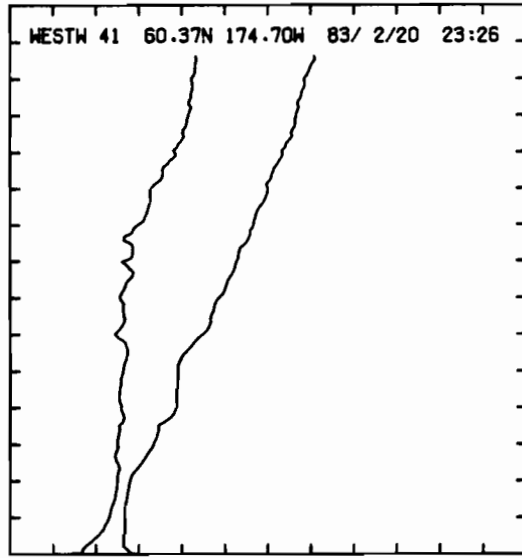
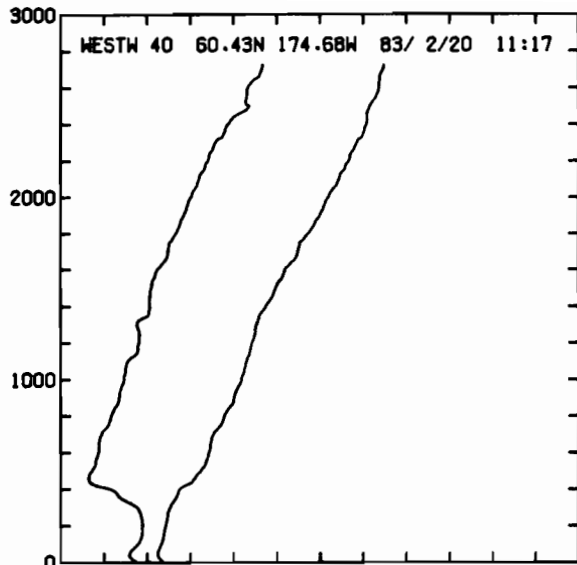


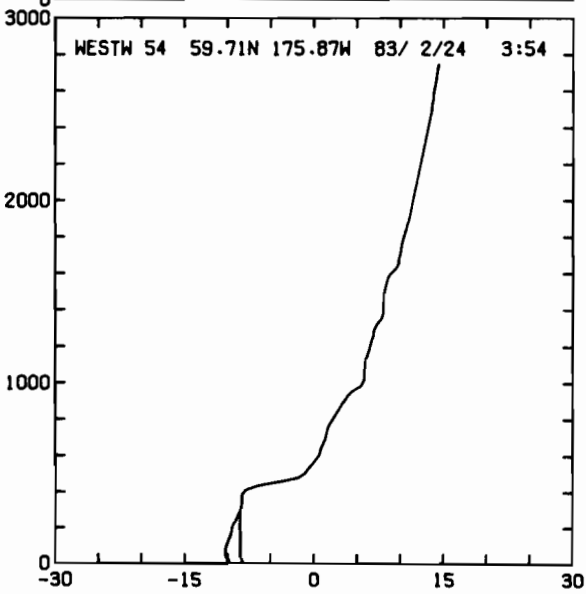
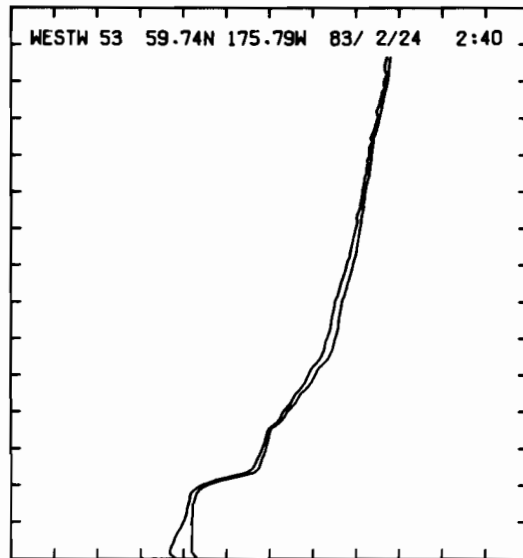
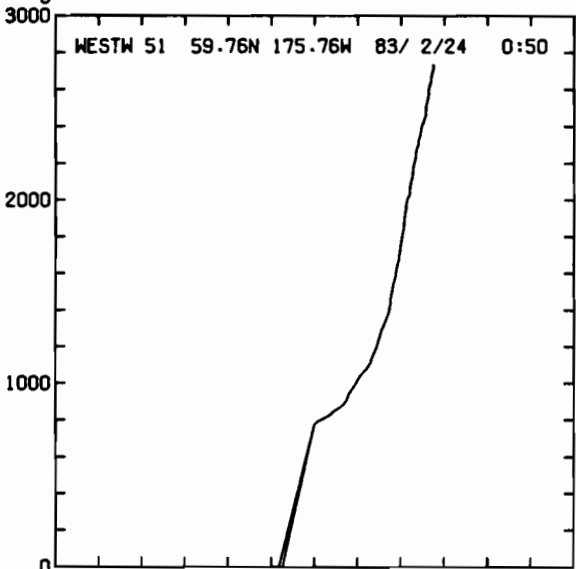
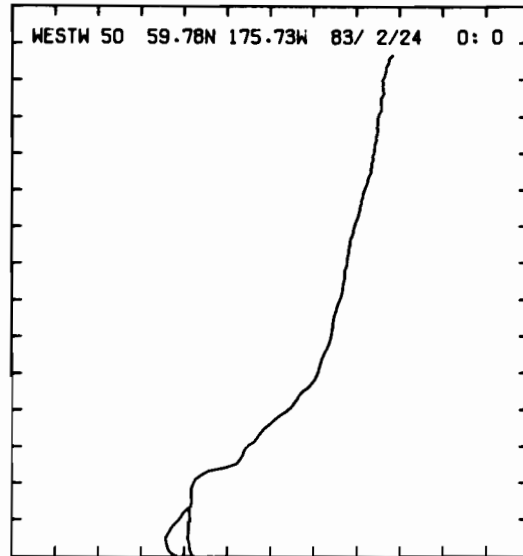
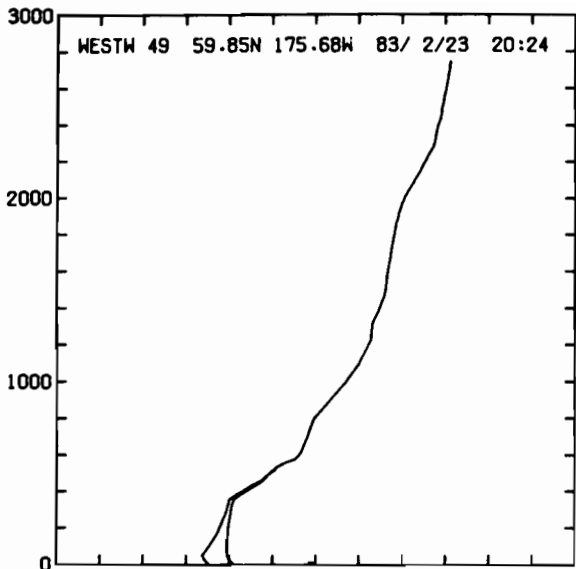


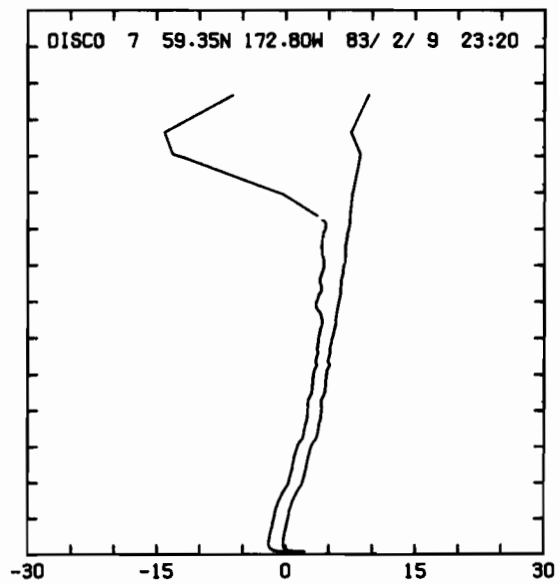
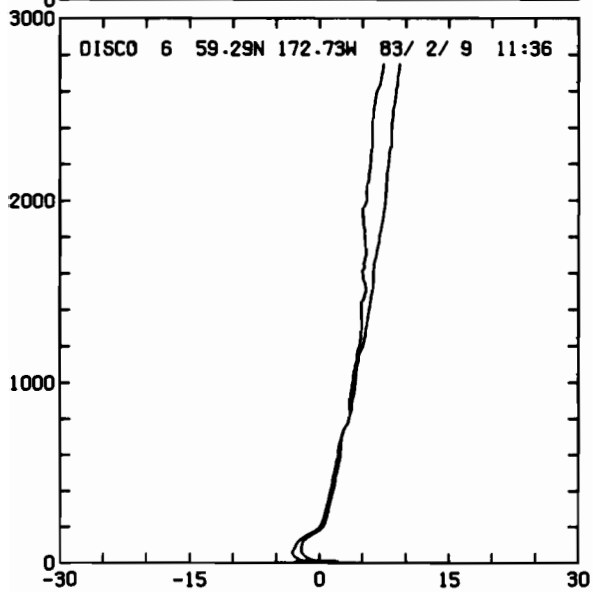
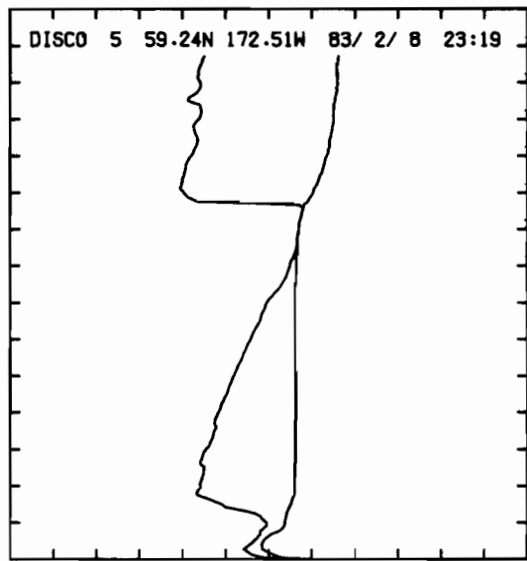
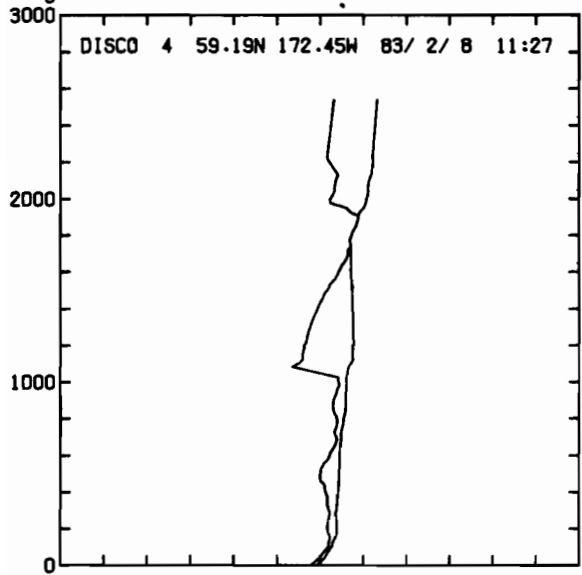
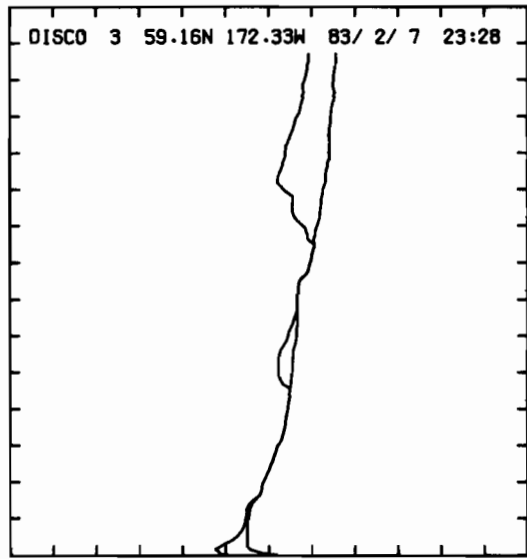
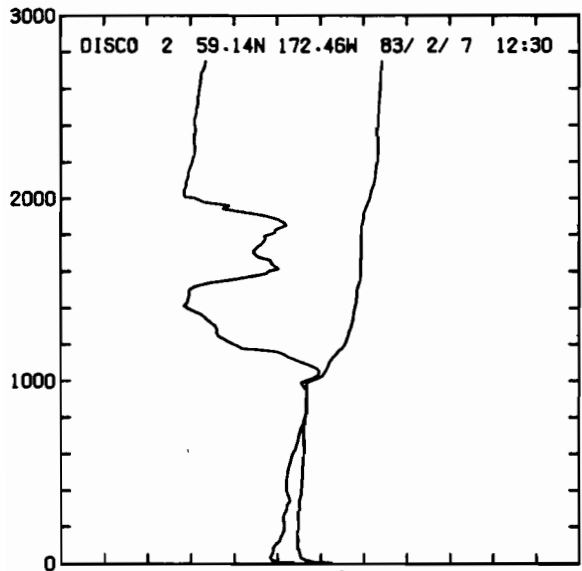


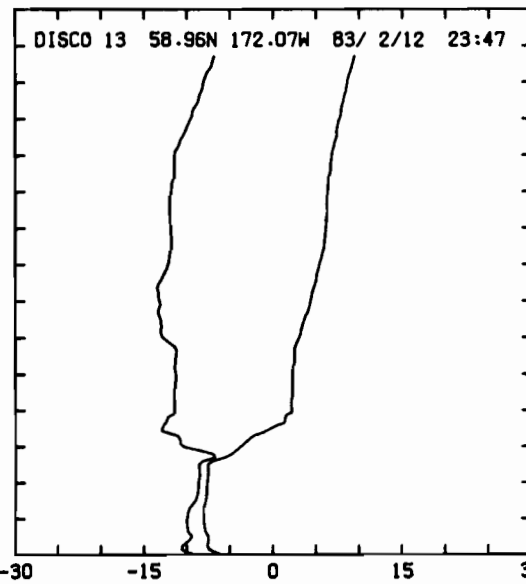
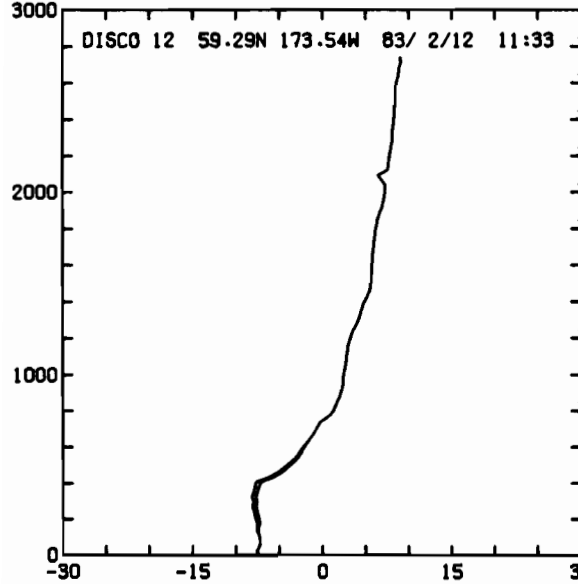
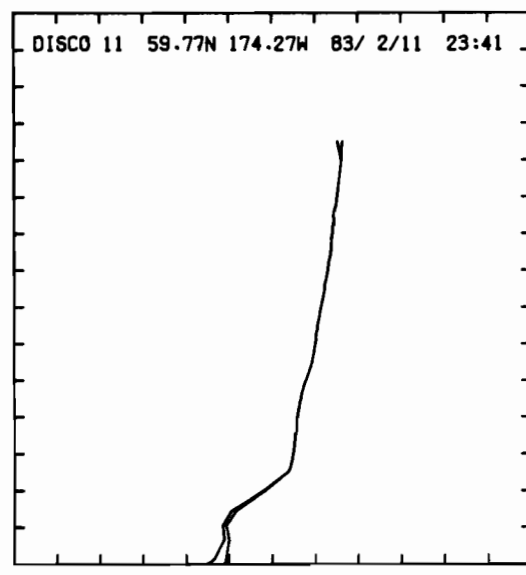
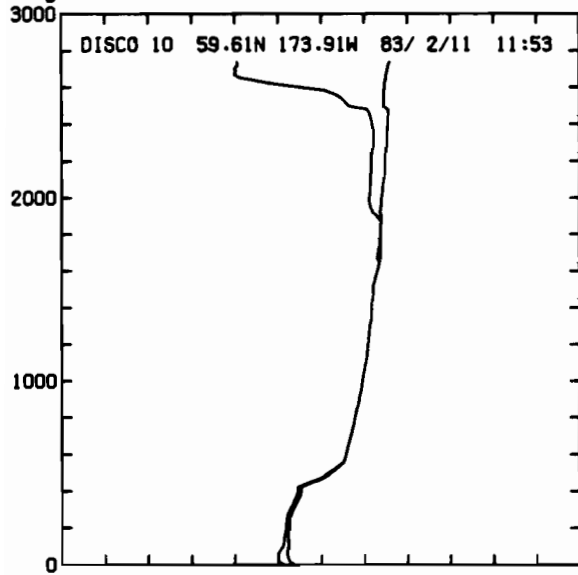
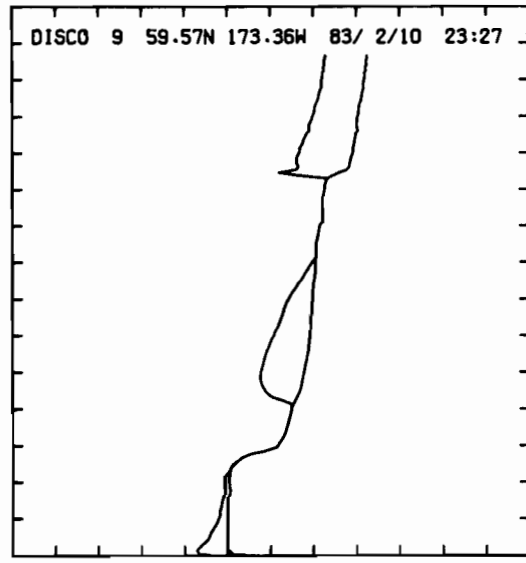
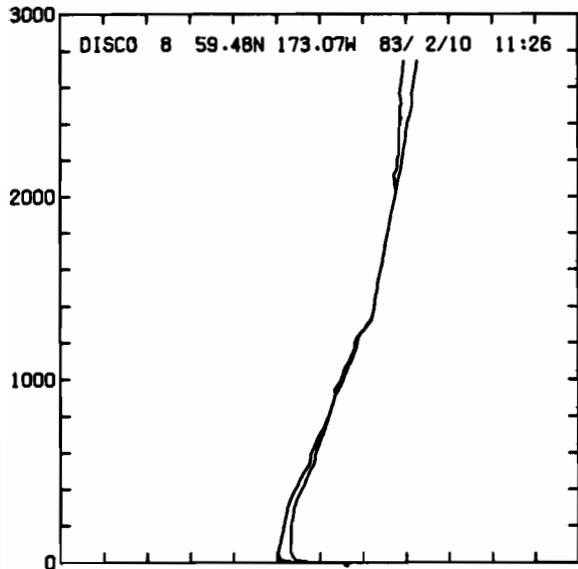


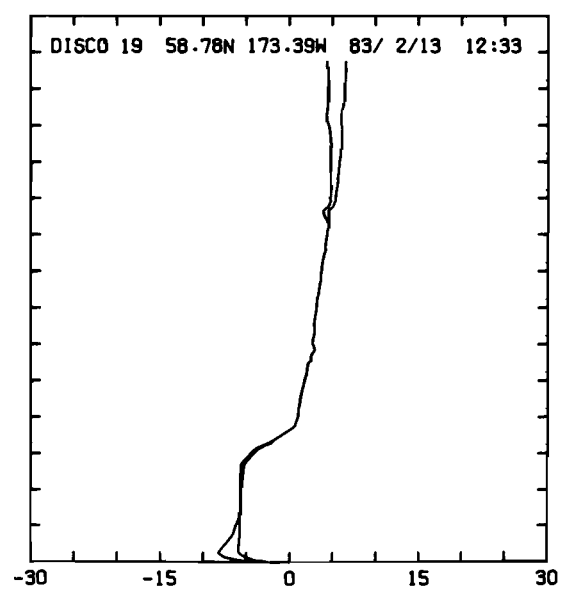
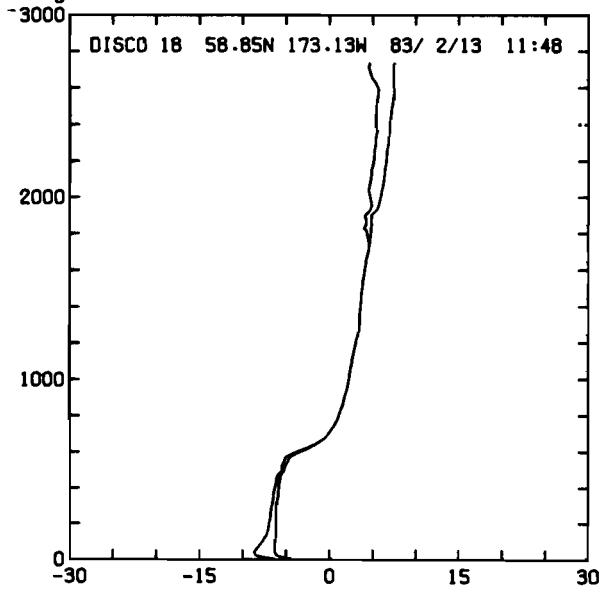
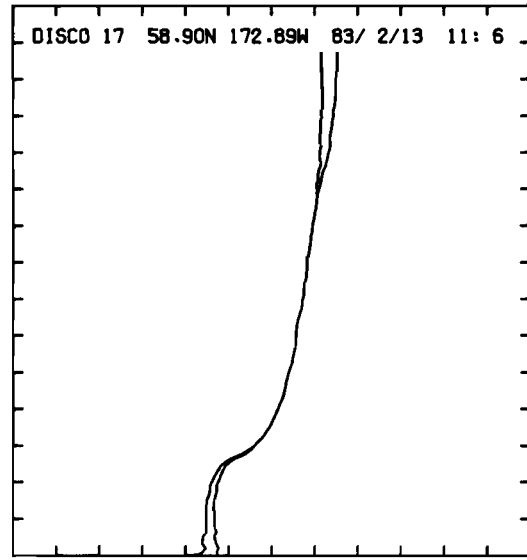
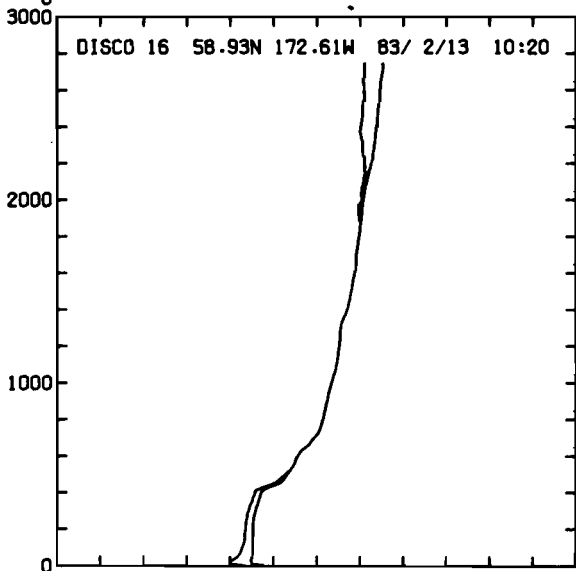
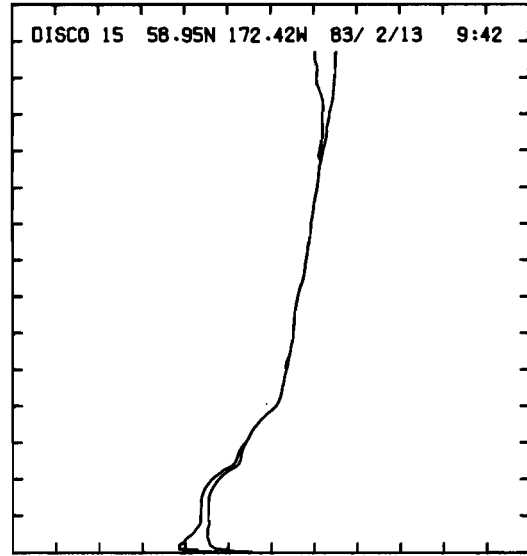
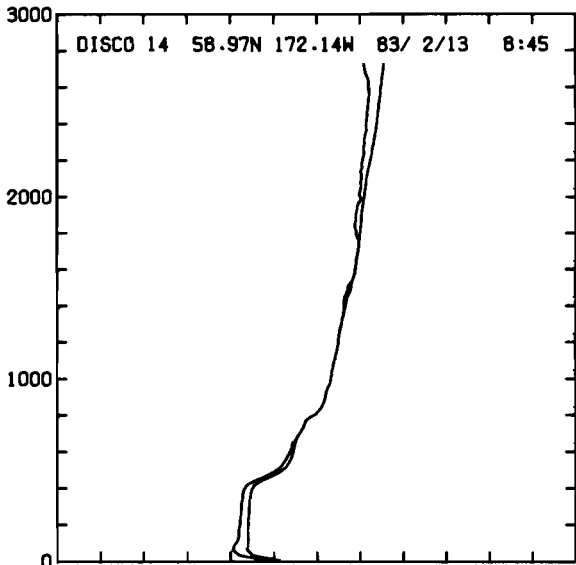


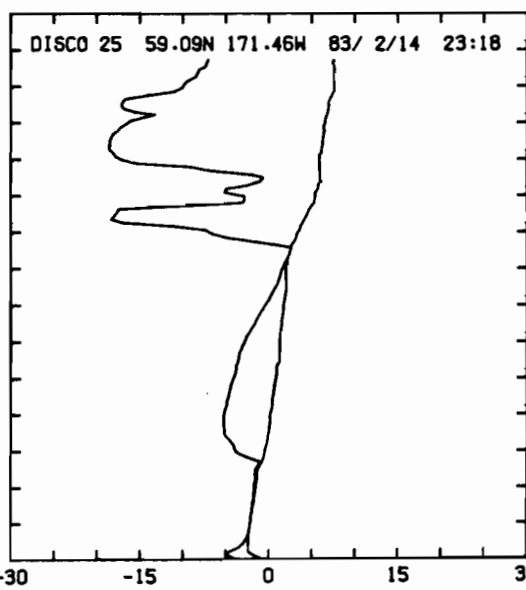
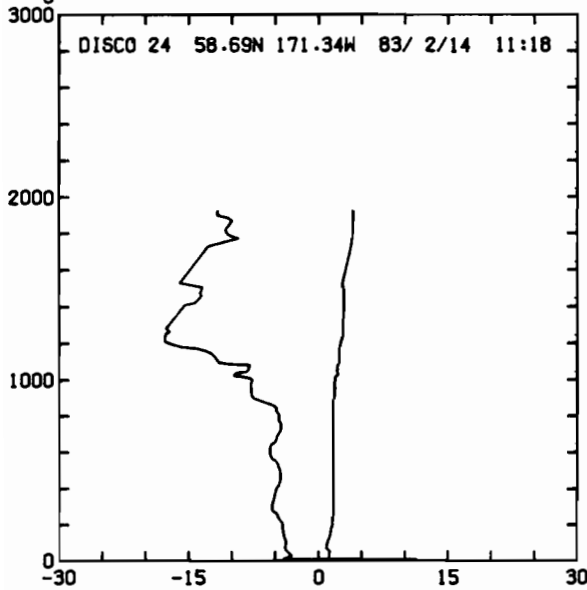
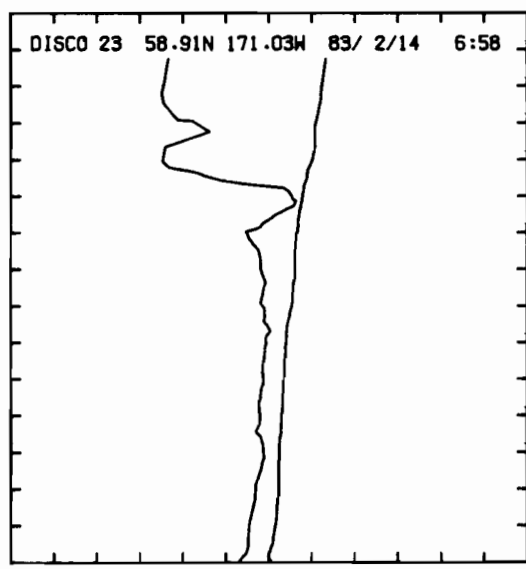
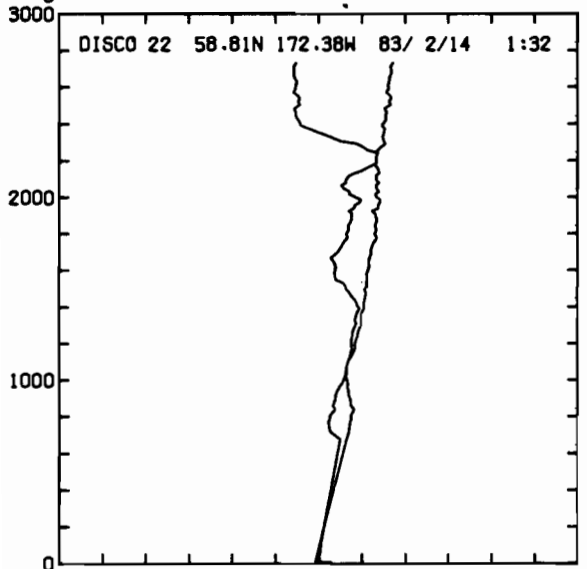
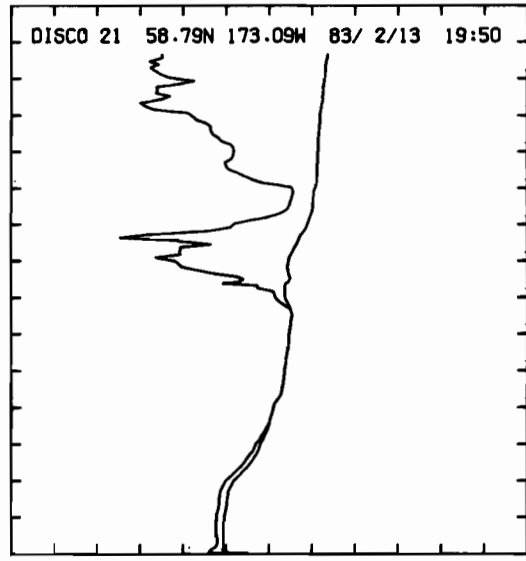
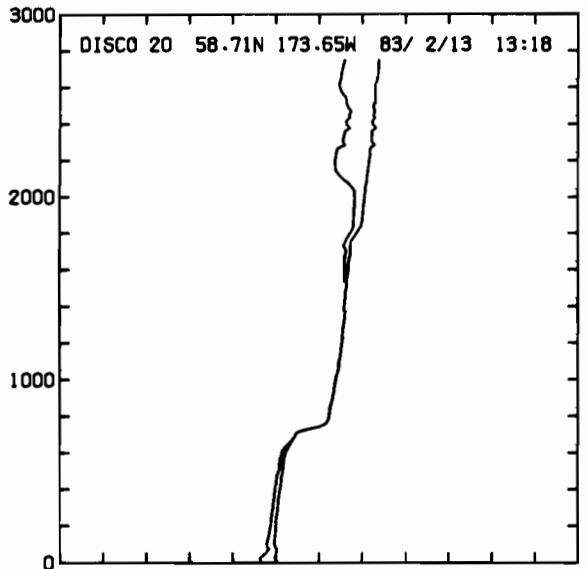


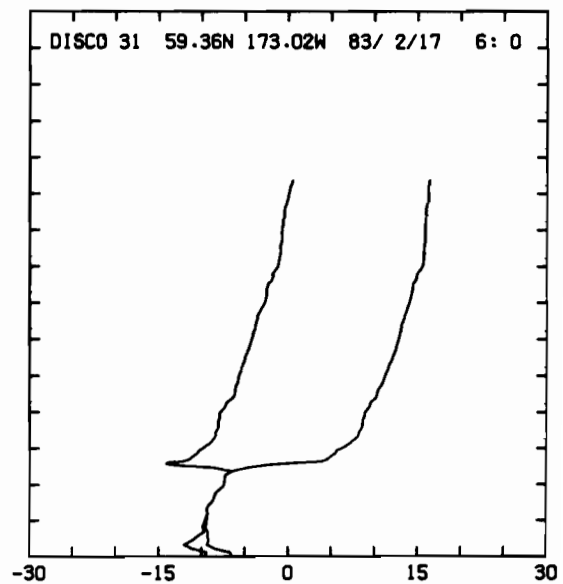
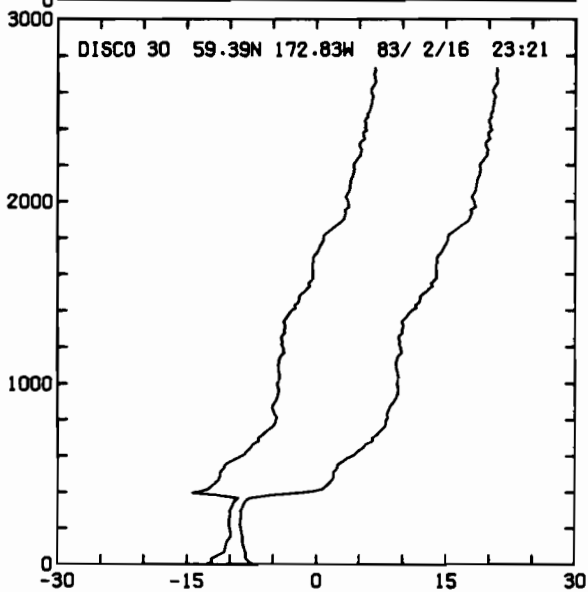
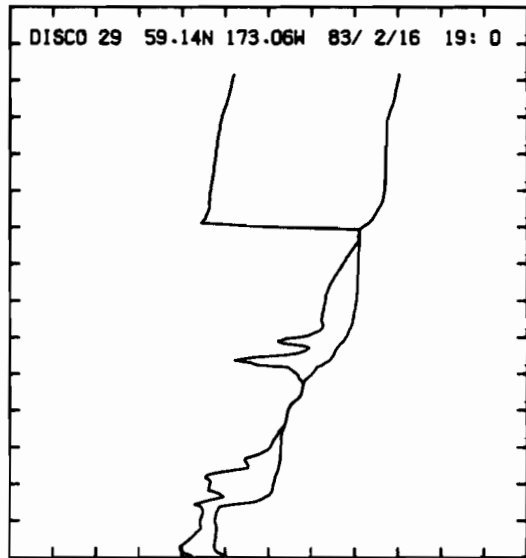
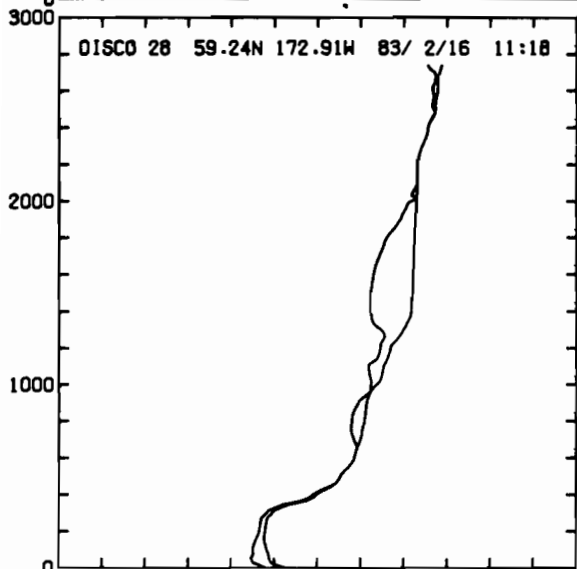
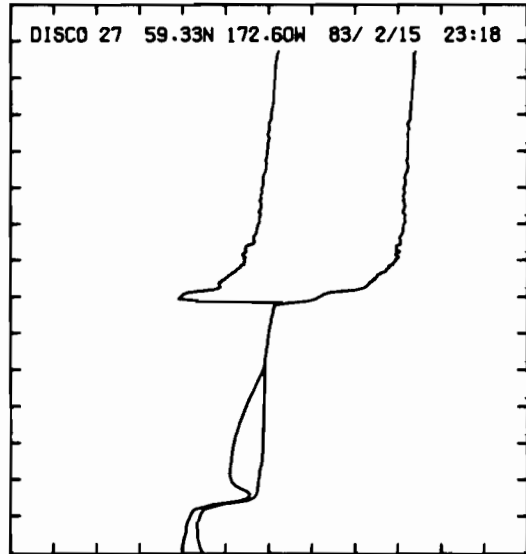
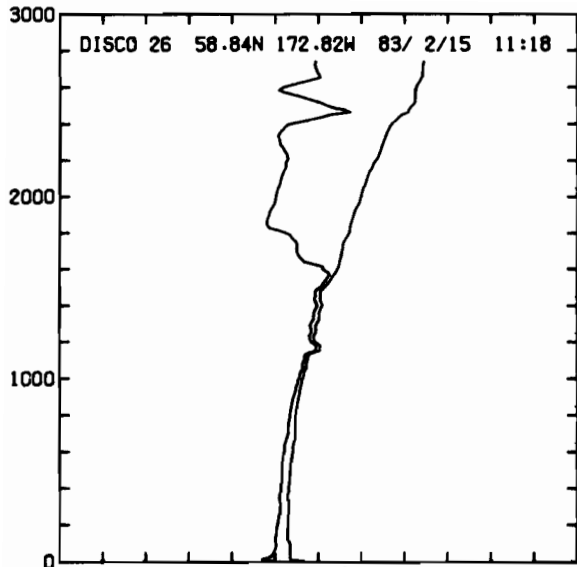


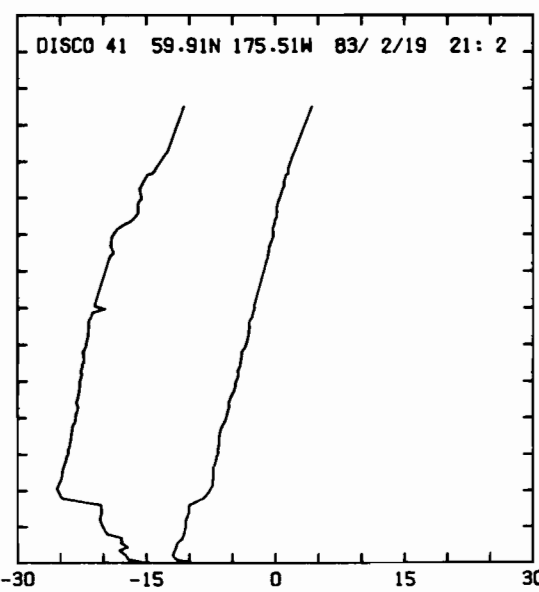
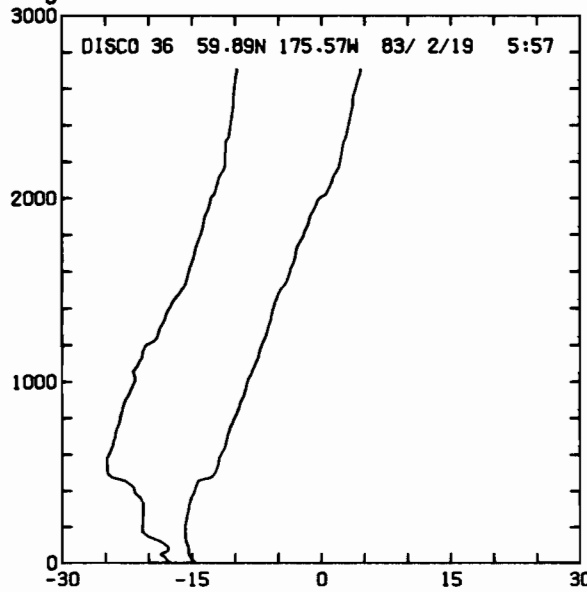
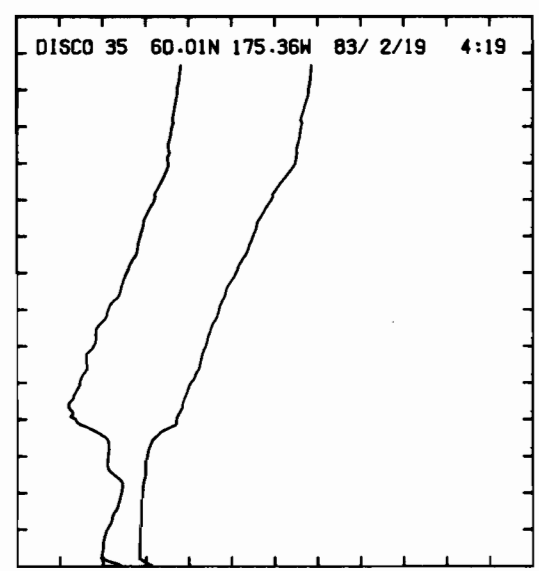
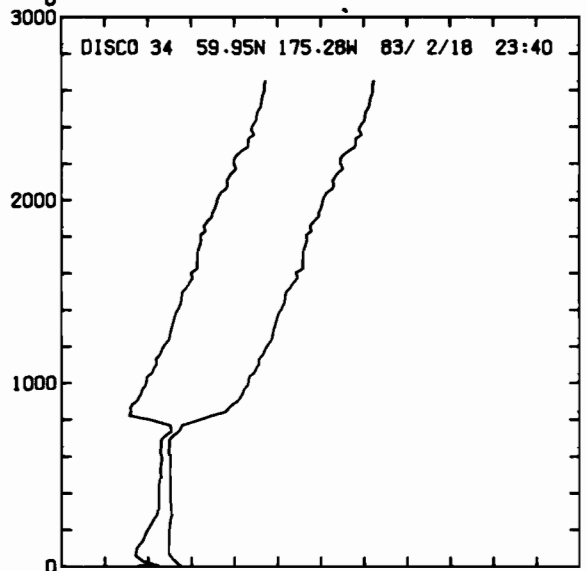
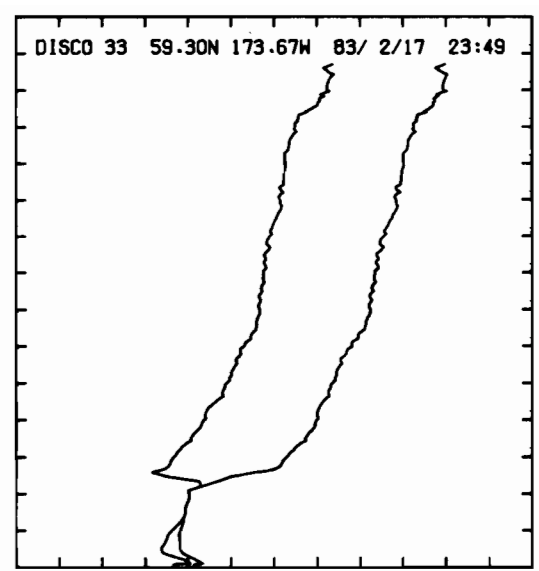
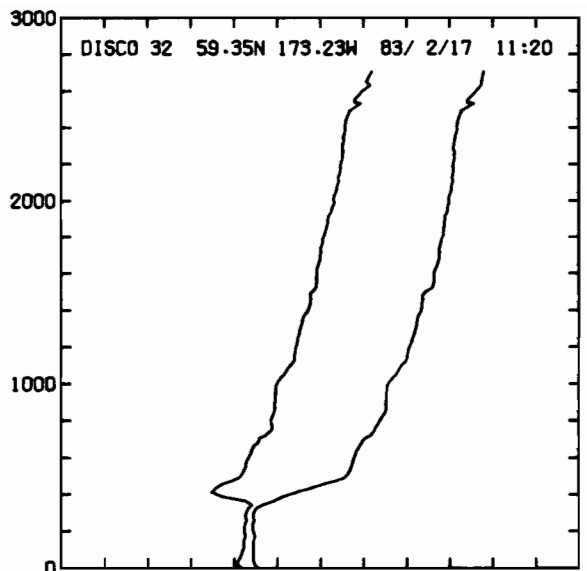


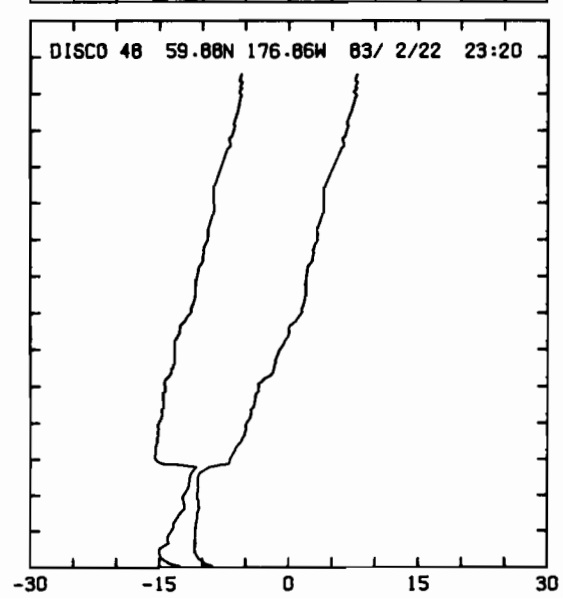
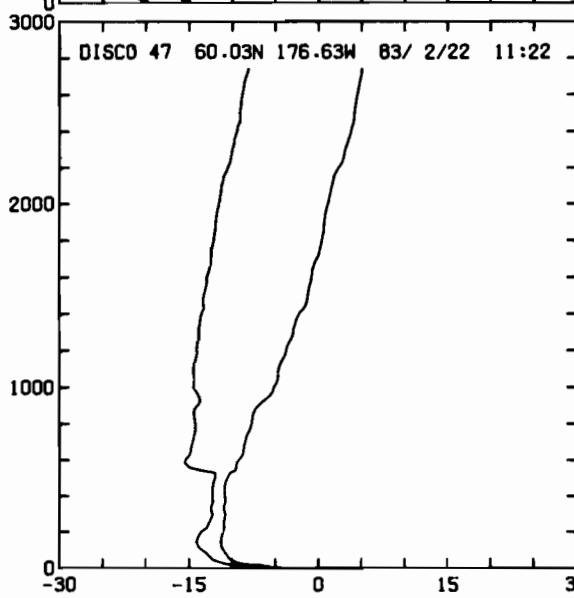
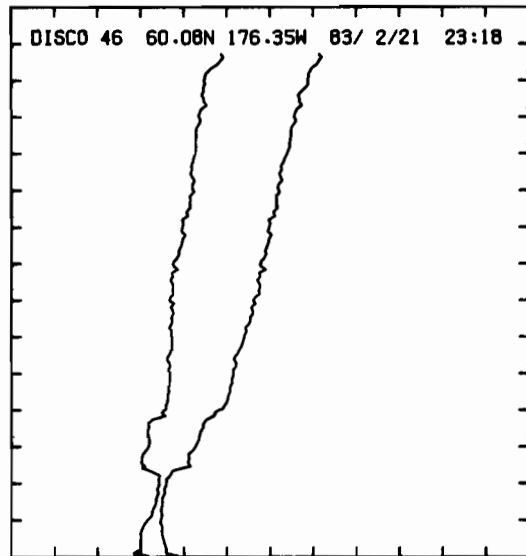
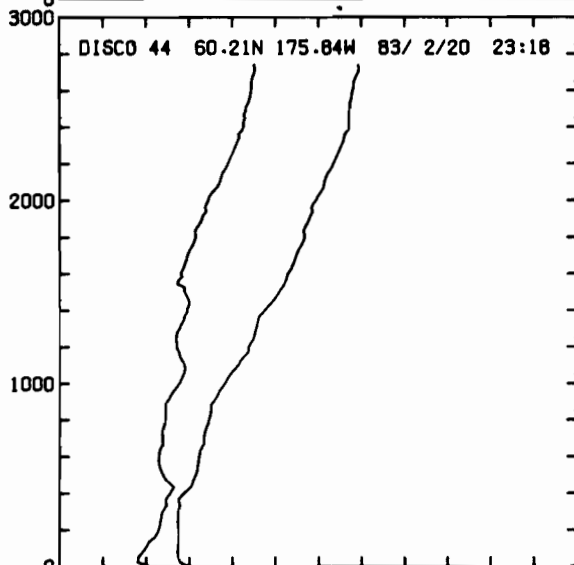
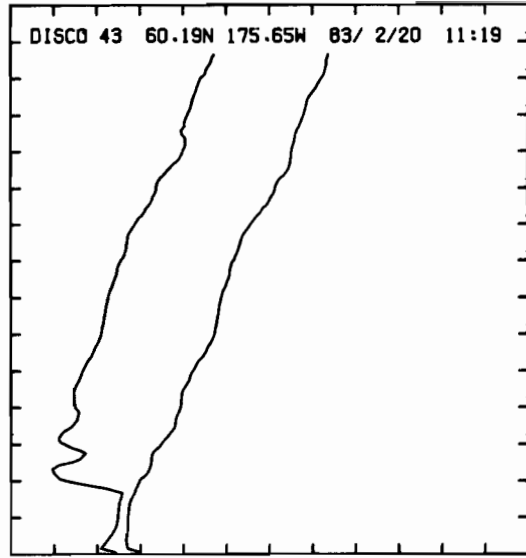
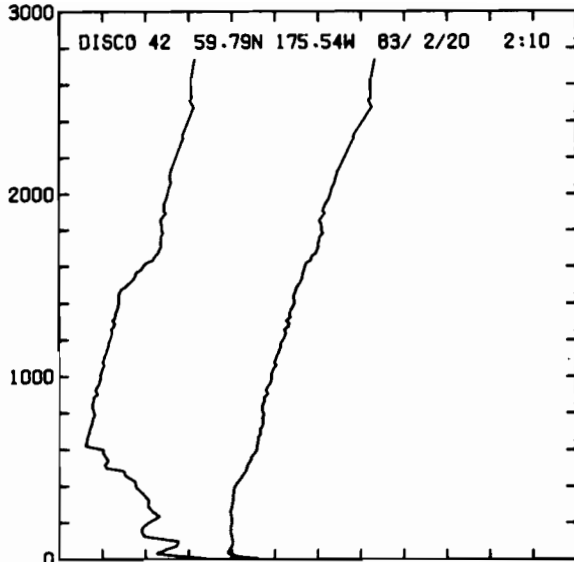


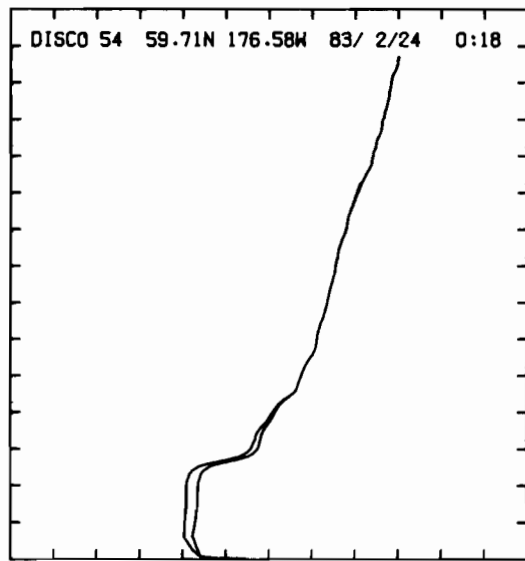
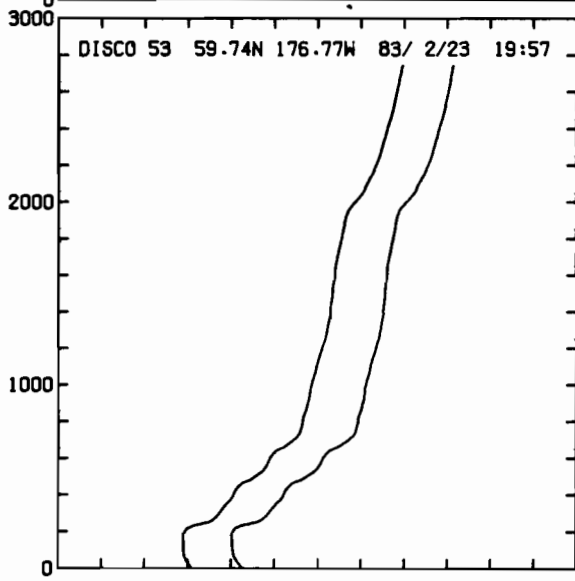
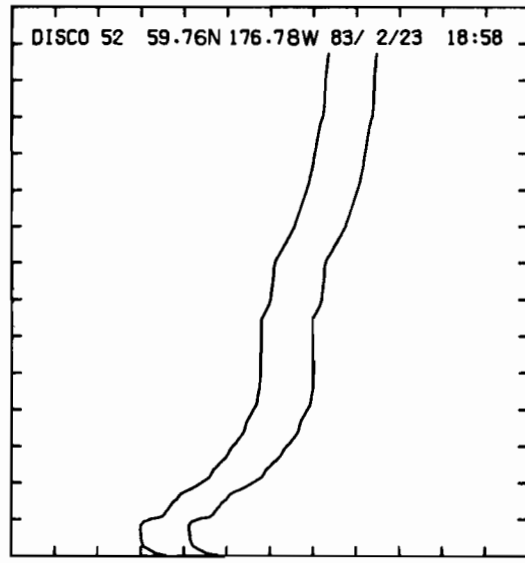
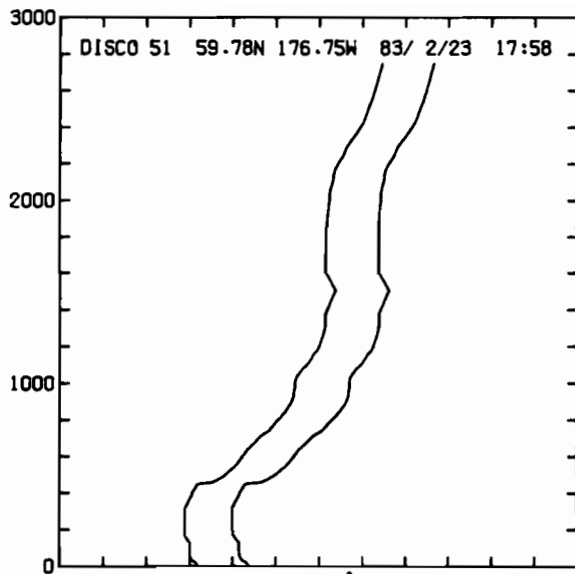












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