



GATE AREA WIND SETS FROM SMS IMAGES

# A REPORT

from the space science and engineering center  
the university of wisconsin-madison  
madison, wisconsin

GATE AREA WIND SETS FROM SMS IMAGES

David W. Martin  
Gary C. Chatters  
David Suchman

Space Science and Engineering Center

October 1975

A Report on NASA Contract NAS5-23296

## I. Introduction

One of the important contributions of satellites to GATE is winds inferred from the motions of clouds. In this report we present eleven GATE area wind sets generated from images of the first Synchronous Meteorological Satellite (SMS-1). These wind sets serve two purposes: first, to demonstrate the kind and quality of winds that may be expected from SMS images; and second, to provide a partial data base of satellite cloud tracer winds for GATE.

Requirements for satellite cloud winds have been indicated in various plans for GATE, including the Experiment Design Proposal (1972) and reports for the Central Programme, Convection Sub-Programme, and Synoptic-Scale Sub-Programme (1974). The plan for the Central Programme calls for cloud winds at two scales of space and time:  $5^{\circ}$  resolution, 6 hr interval; and  $1^{\circ}$  resolution, 3 hr interval. The plan for the Convective Sub-Programme specifies the same time resolution but spatial resolutions of  $2.5^{\circ}$  and "as available." In the Synoptic-Scale Sub-Programme two levels are anticipated--upper and lower troposphere.

A part of these requirements on the larger time and space scale has been met through operational cloud wind production at NOAA's National Environmental Satellite Service. NESS generated two wind sets per day, from images of the third Applications Technology Satellite (ATS-3) through 28 July, and from SMS-1 thereafter. Resolution was  $2.5$  to  $5^{\circ}$ , with most clouds taken from the lower troposphere. These vectors are available on magnetic tape (Report on the Field Phase of GATE: Summary of Data Collected, 1975).

The wind sets presented here are an additional, independent contribution,

not included in the original plans for GATE. They are geared not so much to stated requirements of the various plans but to a demonstration of the potential of the data. There are two types of wind sets: low density, large scale, and high density, small scale. Both types include low and high level winds, corresponding to trade cumulus clouds and cirrus clouds. A middle level wind set is given in only one case. (Middle level clouds were present over portions of most frames displayed for tracking; however, the experience of doing one middle level wind set led to the conclusion that the effort required to isolate and track such clouds could better be spent tracking cumulus and cirrus clouds.)

These SMS winds are considered to be part of the Convection Sub-Program Data Set. They will be available on GATE format magnetic tape as part of the GATE Archive at both World Data Centers A, in Asheville, and B, in Moscow.

The University of Wisconsin archive of SMS data, and the method used for tracking clouds are described in Sections 2 and 3. These are followed by a presentation of mapped wind sets, with satellite photographs and commentary. All winds are listed by set in an appendix at the end of this report.

## II. Data

### SSEC SMS Archive

Beginning on the 27th of June 1974 SSEC recorded images generated by the SMS-1 satellite. With a few exceptions, all images generated between the 27th of June and the 28th of September 1974 were recorded for the SSEC GATE data archive.

The Visible and Infrared Spin Scan Radiometer (VISSR) aboard the SMS generates a burst of data for the 18° of each rotation that it sees the earth. This burst of data is sent to the ground station at Wallops

Island, Virginia where it is processed, stretched in time, and sent back to the satellite for retransmission to various users. The stretched signal is received at SSEC and recorded in digital form on a specially modified video slant track recorder. The slant track records both the visible and the infrared images at their full resolution. Scan number, phase angle (beta), and most other line documentation are preserved. Up to 32 full scan digital SMS images at full resolution can be stored on one 1" x 7500' magnetic tape.

Several problems surfaced in this first extensive use of the SSEC slant track recording system. A couple of days of data were lost due to wear on the mechanical components and failures of electrical equipment. A persisting problem in an intermediate data storage device caused some pictures to have widely spaced vertical bars. Since these vertical bars did not cause any geometric distortion of the picture, they were more of a nuisance than a real barrier to data processing.

The satellite also had an occasional problem. On some days the sun referenced line start would drift rather badly causing jitter or random drift in the east-west alignment. Sometimes the extent of this effect was not immediately apparent. For these cases (day 253 is one example) picture alignment and evaluation of the alignment took far longer than normal.

#### Selection

The selection of days for wind set analysis was based on an evaluation of these factors:

- (1) Archive quality. Data known to be compromised were ignored.
- (2) SMS scan mode. For high density wind sets especially, days with 15 minute data gave much better results than days of 30 minute data. There were 5 days of operation in the 15 minute mode, all from Phase 3.

- (3) Priority days. Certain days were singled out by the U.S. GATE Project Office and the International Scientific and Management Group (ISMG) for early attention because of their special interest and exceptional coverage. Opinions were also solicited from individual scientists within and without the Madison GATE community.
- (4) Convection. Apart from the designated priority days, convection within and around the B-array was evaluated. Although days of strong convection were emphasized, we tried to represent a wide range of convective intensity. Some of this evaluation was done in Dakar during the field experiment.
- (5) Duplication. Except for a 10 September wind set prepared for comparison, we tried to avoid overlap with wind sets planned by other groups, such as the University of Chicago.

The days selected for wind set analysis are 11 August (223),

5 September (248), 10 September (253), and 18 September (261).

### III. Method

#### McIDAS

Once selected, the SMS images were processed on the University of Wisconsin Man-Computer Interactive Data Access System (McIDAS). McIDAS is a system of data processing hardware and software designed to provide efficient processing of the enormous quantities of data generated by satellite imaging without significant loss of quality in spatial resolution, brightness resolution, or picture geometry. Details on system configuration are given in Appendix A.

The data to be processed are stored both on a digital disk and on an analog disk. The analog disk refreshes a standard 525 line TV monitor used for visual display. Because digital storage preserves the original brightness resolution and spatial geometry of the data, brightness measurements are made from this digital data. Each scan line contains documentation words giving the absolute satellite frame reference. This information is stored when data subsets are read from magnetic tape storage.

## Navigation

Preservation of spatial geometry and absolute frame reference is necessary for the proper functioning of the navigation system. By "navigation" we refer to the procedure which establishes a relationship between the satellite's line and element reference frame and the earth's latitude and longitude coordinates. The physical parameters needed to establish this relationship are the satellite's orbit, attitude, camera geometry, and phase angle (beta) of the rotation about its axis. The orbit is taken from weekly NASA range-range rate measurements. The attitude (orientation of the satellite's spin axis in space) is determined by measurement of the line and element position of an earth reference point (landmark). The camera geometry (relationship of the camera to the spin axis) is a function of satellite construction. The absolute position of the camera "turn on" (element 1) in its rotation about the spin axis is controlled electronically with respect to the sun and may be determined from either measurements or documentation recorded with the data. The result is a set of parameters which a computer subroutine uses to generate transformations from image coordinates (line and element) to earth coordinates (latitude and longitude), or earth to image coordinates.

The predictability of the orbit and the stability of the satellite's spin axis have been sufficient to provide a relative accuracy which, over a day, is better than the spatial resolution of the satellite (1 km near the subpoint). By relative accuracy we mean that if line and element  $(\ell_1, e_1)$  of an image at time  $t_1$  are assigned the same latitude and longitude as  $(\ell_2, e_2)$  on an image at time  $t_2$  then these points will actually have the same value of latitude and longitude to within 1 km, although the correct value may be off by more than this amount. Lacking a perfect absolute

navigation, this method is well suited to cloud tracking. While small displacements must be measured accurately, the absolute positioning of the wind vector is not quite as critical.

#### Tracking

There are two primary methods for tracking clouds: cursor location of the cloud to the nearest TV line and element (pixel tracking), and image match location of the cloud to better than TV line-element resolution (correlation tracking). The correlation method requires only rough tracking of the cloud: the operator simply positions a rectangular cursor to enclose a cloud on each frame in a sequence. The computer then performs a correlation analysis to align the brightness fields and fine tune the operator's tracking. Correlation tracking is the most accurate tracking method, but requires well-defined clouds moving in a single-layer flow pattern.

Because of the small size of the tracer clouds and the general complexity of cloud patterns in the GATE area, most clouds have been tracked by the single pixel (picture element) method: the location of the cloud is determined by the position of the cursor, which is moved around the screen by a position joystick.

Both correlation and pixel tracking have been facilitated by the addition of a function called the velocity cursor. This function automatically displaces the cursor from one picture to the next according to the position of a second joystick. The displacement is linear within the TV line-element coordinate system, and is constant from one picture to the next. Thus, in the first picture of a sequence, using the position joystick, the operator can position the cursor over the cloud he wishes to track. Stepping to the next picture, he adjusts the displacement of the cursor with

the velocity joystick until the cursor moves exactly as the cloud moves. If he has a good tracer, cloud and cursor should be very nearly coincident in the third and succeeding pictures. The operator, therefore, is able to use all pictures in a sequence to follow and evaluate a particular cloud. He can also match the motion of the cursor to the motion of a pattern if individual clouds cannot be followed.

#### Cloud Height

An examination of infrared and visible loops was usually sufficient to identify the trade cumulus and cirrus clouds used as tracers for the wind. Because clouds at these two levels tended to move as distinct sheets, wind sets ordinarily were generated by level, with cloud height specified by the operator as 900 or 200 mb.

In the relatively few cases of ambiguity, the height of cloud tops was calculated from visible and infrared brightnesses using the method of Mosher (Suomi, 1975). This cloud height program calculates cloud emissivity from visible data, then applies this emissivity as a correction to the infrared black body temperature to obtain the cloud top temperature. Standard atmosphere soundings, corrected for latitude, yield a conversion of cloud top temperature to height. If visible data are absent, cloud height is computed using the uncorrected black body temperature. This function is available on McIDAS as part of the cloud tracking program.

Direct calculations, field reports, and earlier studies such as that of Shenk, Hasler, and Fujita (1975) in the Caribbean indicate that the low level cloud tracers are best matched to winds at 950 mb. High cloud tracers cover a deeper layer, centered at or slightly below the 200 mb level. Calculations of cloud top height place the middle cloud tracers between 500 and 700 mb.

### Accuracy

The quality of a wind set depends on data, tools, and people. Time and spatial resolutions of the data impose one fundamental limit on tracking accuracy. For SMS, with a subpoint resolution of 1 km, the uncertainty of the displacement of an ideal pixel sized cloud in 15 min data is about  $1 \text{ m}\cdot\text{s}^{-1}$ . Displacements of larger clouds can be specified to greater accuracy using correlation; with larger clouds, however, changes in shape and unrepresentative motion become more and more important.

For data of a certain resolution, the limiting factor on tracking accuracy becomes the person doing the tracking. This human factor has been assessed in a comparison of objectively analyzed grid point winds produced independently from the same set of images by four scientists all with comparable cloud tracking experience. Reproducibility (RMS) was  $2 \text{ m}\cdot\text{s}^{-1}$  for the cirrus level, and  $1.3 \text{ m}\cdot\text{s}^{-1}$  for the cumulus level (Suchman and Martin, 1975).

Measurement noise was reduced by averaging the two displacement vectors that resulted from tracking clouds on a three-frame sequence; this was especially significant in the case of pixel tracking.

In order to improve the visibility of clouds, scenes of low contrast usually were enhanced by a linear interval technique operating on the video signal. A second option called autoenhancement, which alters the digital image, was used to redistribute contrast in infrared images. A frequency distribution of brightness for an infrared scene typically shows a major peak at the dark (high temperature) end of the scale, with another, smaller peak at the bright (low temperature) end. Autoenhancement systematically flattens the peaks and fills the valleys, so that every

brightness level occurs with the same frequency. This yields a marked improvement in the visibility of low clouds, enabling clouds to be tracked in autoenhanced images where they could not be seen previously.

Editing was the last step in generating wind sets. A group of meteorologists viewed the cloud winds, which were displayed on the TV as vectors superimposed on the tracking pictures. Questionable vectors were challenged and deleted if the operator who generated the wind set could not justify these winds through reference to specific clouds at the appropriate levels. A final editing removed a few doubtful vectors from computer maps.

#### IV. Vector Maps

Each of the eleven wind sets is briefly described in this section, and related to notable features of the satellite cloud field.\* Areas covered by wind set picture sequences are mapped in Fig. 1.

##### A. 11 August

Convection on 11 August (Day 223) was scattered along a broad and rather diffuse Inter-Tropical Convergence Band (ITCB) (Figs. 2 and 3). The large, spiral-banded cluster over and west of the B-array at 00 Z (Fig. 2) shrank as it moved westward; at 12 Z (Fig. 3) only a small cluster remained with a broad tail of broken middle and high cloud extending east and south-east. This tail was linked through scattered low clouds to a second cluster east of the B-array; thence, through low and middle clouds to an extensive area of high cloudiness over the southern half of West Africa. Clouds along the ITCB were distributed in three waves, with deep convection occurring in each of the wavecrests.

---

\* Portions of this section are taken from Suchman and Martin (op. cit.).

Patterns north of the ITCB were complex, but generally consistent with the picture of westward tilted waves along the ITCB. Patches of middle level cloud were found over the central Atlantic. Low clouds tended to be organized in bands. An oval cloud mass with weak spiral banding lay west of Cape Verde with a plume of dust arcing southward from the African coast around its eastern periphery, then west and north across the Cape Verde Islands.

Low level wind fields based on infrared data at 00 Z are merely suggestive. A difluent northeast trade flow off the West African coast weakens and splits near the B-array (Fig. 4a). Winds south of the equator are from the east-southeast.

A much more complete picture was obtained for 12 Z using visible as well as infrared images (Fig. 4b). The ITCB is seen to lie along the confluence between a well developed northeast trade flow and southeast trades extending across the equator. Northeast and southeast trade flows split along a difluent axis that intersects the confluent axis just west of the B-array. Northeast trades on the African side of the difluent axis turn eastward, merge with the cross equatorial flow, and enter West Africa as southwesterlies. The cyclonic portion of this circulation apparently is closed, for a small gyre is indicated 100 to 200 km west of Cape Verde in association with the oval cloud mentioned earlier. Although few low clouds could be tracked over West Africa, the southwesterly flow appears to become light and variable toward its interior. In broad terms this low level flow agrees well with the August mean flow described by Sadler (1975).

Easterlies prevailed at the cirrus level (200 to 300 mb). Tracers, which were confined to the ITCB in the 00 Z sequence (Fig. 5a) show centers of difluence with the two clusters along the ITCB. The difluent centers

are replaced by a wavelike perturbation in the 12 Z fields (Fig. 5b). East of the wave axis at about 28°W flow is southeasterly; a ridge is indicated over Africa close to the Greenwich meridian. Speeds are quite uniform--most falling between 10 and 20  $\text{m}\cdot\text{s}^{-1}$ . Again, at the larger scales flow is consistent with Sadler's August mean.

#### B. 5 September

Five September (day 248) was one of the most convectively active days during the entire GATE period over the B-array. A large, well-organized cluster (see Fig. 6) dominated this area for much of the day. There were two distinct centers of activity associated with this cluster: one to the east that reached maturity early in the day and the one to the west that developed in the morning and began decaying by early afternoon.

Although the flow characteristics were rather complicated, well defined convergence/divergence patterns were present in association with the two clusters. At low levels, the strong flow into the clusters in early morning (mainly from the north and southwest) gradually diminished from the east as the day progressed with the winds to the north of the cluster becoming more zonal (Fig. 7a, b, c). By late afternoon, the strongest inflow was associated with the western cluster. The high level flow, initially from southeast to northwest over the northern region and northeast to southwest over the southern region, became dominated by the strong outflow from the two convective centers as the day progressed, with the northeast to southwest flow reappearing in eastern regions by late afternoon (Fig. 8a, b, c).

The correspondence between low level satellite and available ship wind (Figs. 7b and 8b) is very close; most, if not all of the differences can be accounted for by observational inaccuracies and the half hour lag in measurement times. The tendency for ship winds to exceed satellite winds in

the southwestern part of the area at upper levels (Fig. 8b) may be the result of lower layered cirrus associated with a small developing convective cell near 6°N, 27°N.

When the 12 GMT sonde observations (given to the nearest five knots) were compared with the closest objectively analyzed grid point wind derived from the 1230 GMT wind set, the average absolute difference in speed was  $1.9 \text{ m}\cdot\text{s}^{-1}$  for the cumulus level, and  $2.9 \text{ m}\cdot\text{s}^{-1}$  for the cirrus level. Absolute differences in direction for both cases averaged about 20°. Differences were randomly distributed for the low level; at the cirrus level tracer winds were consistently slower, probably because of cirrus evaporation along the downstream edge.

#### C. 10 September

Ten September (day 253) was at the suppressed end of the weather spectrum. There was little convection in the B-array, and few clouds (Fig. 9). Cumulus level tracers show an elongated anticyclonic gyre at 5° and 6°N (Fig. 10a, b). Winds in the clear area across the B-array north of the gyre axis were light westerly, with a weak maximum in west northwest flow at the top of the B-array. These features appear also in the surface ship winds (Fig. 10a). The largest discrepancies occur in the weak wind area close to the center of the gyre.

Flow at the cirrus level was generally westward (Fig. 11a, b). A northeast-southwest oriented cyclonic shear zone is indicated north of the B-array, with strong diffluence in the southeast over and around a mature cloud cluster between 5° and 7°N. Ship winds at 200 mb very closely match satellite winds in speed; however, through the center section between the shear zone and cluster, ship wind directions are more northerly, by as much as 30 degrees close to the cluster at 7°N.

Middle level flow was also from the west, and therefore, over and north of the B-array, opposed to the near surface flow. 1230 and 1500 Z maps show a ridge extending northward from the center of the B-array. Speeds were consistent, averaging 7 to 8  $\text{m}\cdot\text{s}^{-1}$ .

D. 18 September

Eighteen September (day 261) was neither as suppressed as 10 September nor as active as 5 September (Fig. 13a, b). Clouds at the trade cumulus level were abundant. In the central and northwestern parts of the analysis area these cumuli swelled to congesti and cumulonimbi, forming two small, rather disorganized clusters. The maps of low cloud tracers show that these clusters developed in an anticyclonic south to southwesterly current (Fig. 14a, b). Within this current there was a slight direction convergence, and a fairly marked speed convergence, both in the vicinity of the central cluster (at  $9^{\circ}21'N$ ,  $21^{\circ}00'W$ ).

Ship winds and satellite winds agree to within 10 degrees, except at the Vanguard ( $10^{\circ}N$ ,  $23^{\circ}20'W$ ), where the direction difference is about  $50^{\circ}$  (Fig. 13a). Speeds also are very close.

Cirrus clouds were not as uniformly distributed; nevertheless, the large scale pattern is well defined (Fig. 15a, b). Flow at the cirrus level turned anticyclonically from east to southeast. There was a slight downstream decrease in speed, with a difluent pattern west and southwest of center, and over the central cluster at 15 GMT.

Although no ship winds lie close to the satellite winds, the patterns formed by each set are mutually consistent (Fig. 15a). Principal features of the satellite field--including anticyclonic flow, difluence, and downstream deceleration--appear in the ship winds as well.

Comparisons of the 12 GMT soundings with the nearest objectively

analyzed grid point wind for 1330 GMT show close agreement: differences in speed were  $1.0 \text{ m}\cdot\text{s}^{-1}$  for low and  $2.7 \text{ m}\cdot\text{s}^{-1}$  for high level winds, while the directional differences were  $25^\circ$  and  $16^\circ$ , respectively. None of the deviations were systematic. These correspondences were somewhat better than those of 5 September partly due to the higher resolution of the data, and partly due to the relative simplicity of the flow patterns.

#### V. Conclusions

Examination of the wind sets affirms that data in the Wisconsin archive are able to meet the requirements of GATE, with two possible exceptions. Infrared-only (night time) wind sets may fall short in vector density, especially at the cumulus level. In addition, a few days of the archive contain data with noise that will compromise tracking quality.

Limited comparisons with ship winds suggest, for cloud winds made from good quality visible and infrared pictures, an accuracy equal to the accuracy of the ship winds.

In one important respect the data went far beyond any stated requirements. This is illustrated by winds at the trade cumulus level for 1330 Z on 18 September: 287 cloud tracers were found and tracked over an area 25 square degrees in size. Such a density of winds offers fascinating possibilities for detailed studies of convective processes, even down to the scale of individual cumulonimbi.

## APPENDIX A

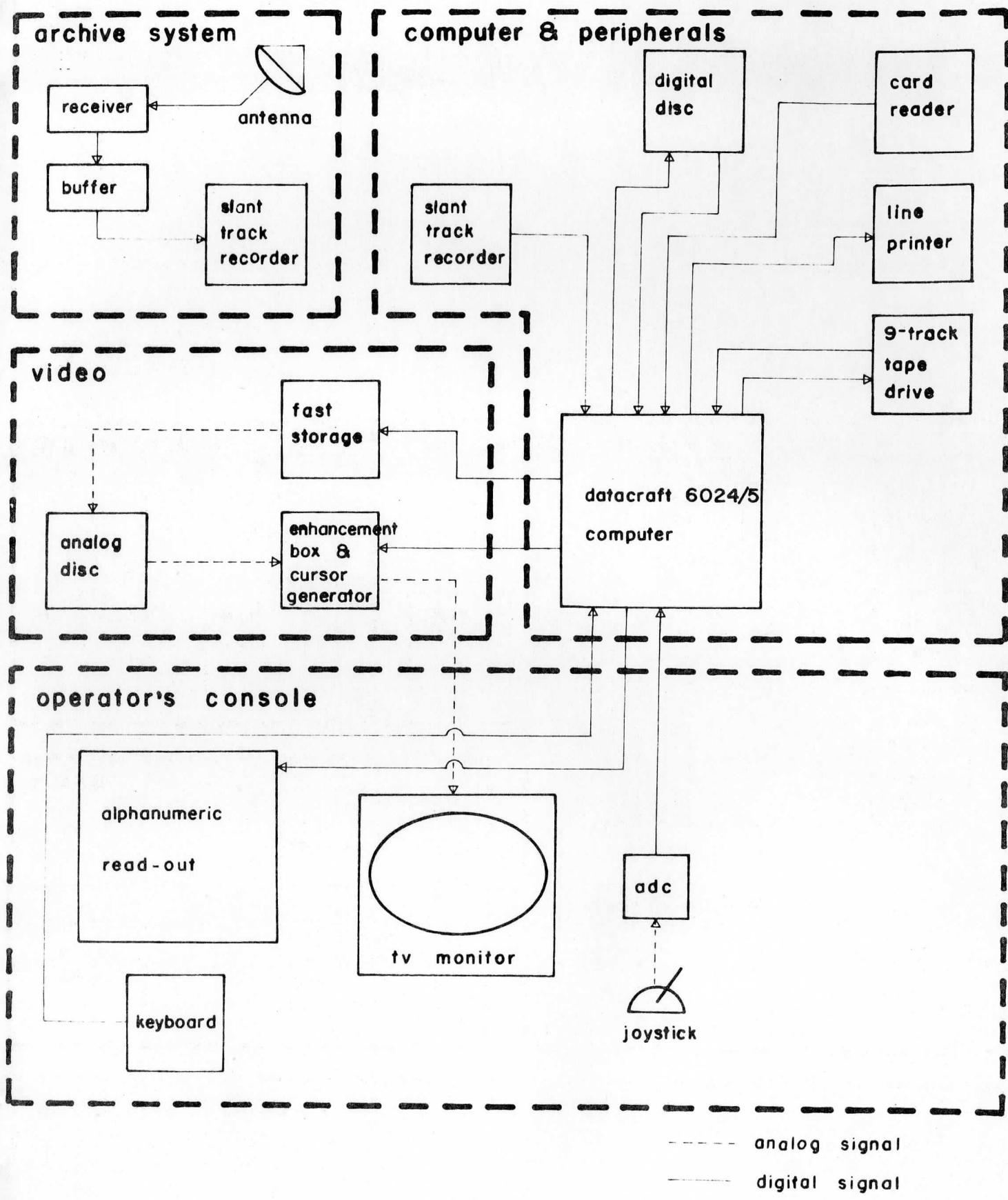
## McIDAS SATELLITE DATA RECORDING AND DISPLAY CAPABILITIES

The SMS satellites generate an earth image consisting of approximately 15,000 lines of 15,000 elements, each with 6 bits of brightness resolution. On McIDAS all of this data--over  $10^9$  bits every half hour--can be stored on a slant track tape. For processing of the data, appropriate subsets are later read from the slant track tapes for processing.

In respect to computing power McIDAS is a moderate size minicomputer based system with assembler and FORTRAN IV programming capabilities. The unique feature that makes the system useful for working with satellite images is the TV type display. The normal 525 line TV display also has a timing circuit which subdivides each line into 672 elements. Thus the image display system is equivalent to the image generation system in the satellite and the original image geometry is preserved in the display as well as in the digitally stored data.

The display system also generates a cursor which is overlaid on the satellite image. The line and element position of the cursor may be controlled by the operator using a joystick to specify the position of a cloud or region of the image to be used for further processing.

More complete descriptions of McIDAS can be found in Suomi (1975), Chatters and Suomi (1975), and Smith (1975). A block diagram is shown on the following page.



## APPENDIX B

## WIND SET LISTING

LOW LEVEL WINDS DAY 223 0000Z SECTOR 2 = North Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-30.30	23.42	54.67 8.84
16.20	-30.97	23.80	75.81 6.85
16.20	-31.01	23.07	42.94 9.62
16.20	-31.31	23.51	61.65 7.87
16.20	-29.90	24.27	56.68 9.57
16.20	-29.54	24.06	45.29 7.58
16.20	-28.77	24.91	36.97 5.55
16.20	-30.36	24.79	30.03 4.63
16.20	-26.24	21.20	46.30 10.27
16.20	-21.77	23.58	31.28 14.95
16.20	-20.25	23.32	25.28 14.51
16.20	-25.19	23.79	67.30 5.78
16.20	-25.18	18.23	67.69 8.80
16.20	-27.69	18.66	70.68 6.35
16.20	-20.28	9.41	312.29 2.24
16.20	-23.10	10.56	66.58 2.00
16.20	-21.47	9.09	332.60 1.38
16.20	-17.46	12.90	323.44 2.63
16.20	-32.04	16.72	51.99 7.41
16.20	-31.31	17.24	50.61 7.49
16.20	-31.48	14.94	72.10 5.40
16.20	-32.39	15.32	70.40 7.24
16.20	-34.99	18.52	72.99 6.22
16.20	-33.70	20.61	43.27 7.26
16.20	-27.42	20.03	53.07 7.98
16.20	-23.16	20.20	40.56 7.76
16.20	-19.95	10.27	274.96 6.95
16.20	-21.00	10.02	274.14 4.85
16.20	-20.13	9.72	299.46 3.14
16.20	-17.00	12.61	247.94 2.08
16.20	-16.39	13.35	203.27 4.01
16.20	-21.20	23.92	43.16 13.52
16.20	-23.89	10.88	344.18 .62

LOW LEVEL WINDS DAY 223 0000Z SECTOR 5 = South Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-23.36	110.47	8.82
16.20	-23.78	111.00	8.87
16.20	-25.64	95.59	6.67
16.20	-24.63	109.59	7.05
16.20	-24.71	101.86	6.84
16.20	-24.54	107.51	7.86
16.20	-25.72	95.32	7.39
16.20	-27.01	100.50	5.29
16.20	-27.91	98.07	8.94
16.20	-29.61	86.13	4.96
16.20	-29.90	86.89	4.98
16.20	-22.54	220.50	3.83
16.20	-22.05	273.44	1.67
16.20	-20.75	279.50	2.64
16.20	-20.77	285.57	1.58
16.20	-20.02	283.74	2.57

HIGH LEVEL WINDS DAY 223 0000Z SECTOR 2 = North Central

	LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-27.28	11.05	95.86	12.39
16.20	-32.02	10.29	91.50	18.28
16.20	-17.39	10.18	117.21	23.60
16.20	-28.57	12.58	100.84	10.16
16.20	-24.21	9.75	91.96	11.69
16.20	-33.08	9.68	85.49	16.27
<hr/>				
16.20	-30.57	12.64	109.77	14.90
16.20	-28.36	12.11	88.19	13.92
16.20	-29.27	12.63	89.12	12.75
16.20	-26.55	9.33	77.58	8.72
16.20	-29.93	12.54	93.75	14.44
16.20	-30.31	12.80	111.97	15.96
16.20	-29.31	12.57	102.42	12.83
16.20	-33.38	9.24	77.76	14.53
16.20	-33.46	12.67	76.77	9.29
16.20	-32.80	11.63	80.56	13.87
16.20	-30.93	11.56	94.94	13.70
16.20	-18.93	10.88	120.00	22.30
16.20	-17.39	10.75	121.00	22.90
16.20	-17.31	10.08	127.82	22.38
16.20	-25.37	24.68	214.80	10.86
16.20	-30.77	10.92	85.76	11.36
16.20	-33.14	9.63	79.39	17.05

HIGH LEVEL WINDS DAY 223 0000Z SECTOR 5 = South Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-33.38	9.24	16.48
16.20	-34.75	8.90	11.38
16.20	-33.04	8.08	15.95
16.20	-33.05	7.80	15.76
16.20	-33.70	7.64	13.44
16.20	-32.71	6.21	15.61
16.20	-33.63	6.22	14.09
16.20	-34.08	6.65	10.56
16.20	-32.54	7.14	12.97
16.20	-31.99	7.45	11.33
16.20	-32.58	8.01	16.87
16.20	-32.36	8.70	18.65
16.20	-31.99	7.95	14.49
16.20	-33.59	5.04	21.05
16.20	-32.42	5.34	16.88
16.20	-32.06	5.02	18.49
16.20	-31.05	4.77	19.92
16.20	-30.72	5.17	18.79
16.20	-30.03	5.28	15.51
16.20	-29.27	6.00	11.81
16.20	-28.31	5.52	15.23
16.20	-26.80	5.22	18.82
16.20	-26.94	4.70	17.24
16.20	-26.47	6.00	18.84
16.20	-26.50	8.35	11.65
16.20	-26.98	9.08	10.43
16.20	-28.02	8.82	11.85
16.20	-28.26	7.92	14.74
16.20	-30.69	8.16	18.37
16.20	-26.75	5.61	18.00
16.20	-22.27	5.15	11.05
16.20	-21.79	4.73	11.51
16.20	-21.28	4.51	12.02
16.20	-21.81	4.39	9.77
16.20	-22.10	4.17	10.19
16.20	-20.95	6.02	5.88
16.20	-20.94	6.43	6.82
16.20	-21.57	5.88	10.87
16.20	-16.08	7.31	11.86
16.20	-17.95	1.64	24.51
16.20	-17.27	.36	24.03
16.20	-16.86	2.56	19.54
16.20	-18.51	-0.03	20.01

LOW LEVEL WINDS DAY 223 1200Z SECTOR 1 = Northwest

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-36.67	19.16	55.61
15.00	-36.57	19.89	56.65
15.00	-36.12	19.90	79.09
15.00	-35.98	19.70	69.66
15.00	-35.43	20.45	59.02
15.00	-35.34	20.87	82.00
15.00	-35.73	21.25	65.59
15.00	-36.03	21.71	65.30
15.00	-35.63	22.47	66.26
15.00	-36.56	23.10	73.99
15.00	-37.07	23.05	59.96
15.00	-37.10	21.19	81.40
15.00	-36.37	21.81	49.43
15.00	-36.06	20.85	64.76
15.00	-36.71	20.46	88.42
15.00	-37.02	20.67	87.86
15.00	-35.47	19.43	62.21
15.00	-35.92	19.35	61.14
15.00	-35.63	18.45	64.27
15.00	-35.89	19.00	64.04
15.00	-37.31	19.68	71.54
15.00	-35.69	17.87	56.42
15.00	-35.54	17.53	56.43
15.00	-36.43	18.30	62.73
15.00	-36.66	18.40	62.35
15.00	-37.35	17.95	65.67
15.00	-38.32	18.82	85.93
15.00	-38.01	17.97	64.20
15.00	-37.67	17.80	86.52
15.00	-38.50	18.12	76.64
15.00	-38.66	18.36	76.43
15.00	-39.06	18.46	75.70
15.00	-36.79	16.79	64.08
15.00	-37.04	16.55	63.45
15.00	-37.52	17.29	80.30
15.00	-37.56	16.54	80.13
15.00	-35.75	16.82	64.25
15.00	-35.74	16.54	59.41
15.00	-35.75	15.26	58.04
15.00	-43.32	14.37	75.92
15.00	-41.88	15.14	71.12
15.00	-42.46	15.64	69.56
15.00	-42.00	14.76	63.76
15.00	-43.22	16.06	72.76
15.00	-43.00	15.70	73.08
15.00	-42.40	16.31	78.15
15.00	-42.00	16.52	93.92
15.00	-42.84	14.36	61.37
			9.14
			9.85

15.00	-43.91	14.96	77.74	8.95
15.00	-44.07	15.26	73.04	6.58
15.00	-41.24	14.65	81.59	8.82
15.00	-41.69	14.55	57.93	10.32
15.00	-41.86	14.08	59.74	10.96
15.00	-43.60	13.70	75.46	11.33
15.00	-39.83	12.26	73.29	10.35
15.00	-39.86	12.10	73.27	10.30
15.00	-37.27	15.94	72.09	7.89
15.00	-42.51	10.48	64.24	5.76
15.00	-42.18	9.77	82.74	3.36
15.00	-41.63	9.78	84.95	3.35
15.00	-41.20	9.68	62.40	4.72
15.00	-41.00	9.37	187.99	.90
15.00	-41.67	9.52	83.21	2.45
15.00	-40.70	9.70	57.81	1.96
15.00	-45.59	10.08	66.31	5.53
15.00	-45.28	9.70	66.66	5.41
15.00	-45.09	9.35	66.74	5.32
15.00	-44.38	9.70	68.67	5.35
15.00	-44.57	9.03	67.65	5.21
15.00	-45.41	12.02	88.49	7.20
15.00	-45.18	11.95	70.31	9.39
15.00	-45.64	12.19	88.39	8.92
15.00	-44.21	11.86	80.49	5.57
15.00	-45.79	11.43	65.10	7.77
15.00	-44.17	10.82	78.52	4.50
15.00	-42.97	11.96	69.83	7.69
15.00	-42.55	11.98	74.47	5.75
15.00	-43.22	11.86	61.86	10.06
15.00	-43.44	11.61	76.11	7.33
15.00	-43.62	10.99	73.75	6.38
15.00	-44.50	12.80	52.40	8.26
15.00	-44.17	12.81	58.85	7.67
15.00	-42.81	15.27	79.36	8.99
15.00	-44.27	15.33	77.32	9.05
15.00	-45.03	14.06	89.33	6.85
15.00	-45.31	13.86	88.65	6.80
15.00	-45.84	13.72	79.07	6.88
15.00	-44.94	14.52	77.29	9.70
15.00	-45.17	14.86	72.76	7.36
15.00	-45.40	14.99	88.50	7.07
15.00	-45.37	15.32	88.60	7.14
15.00	-45.65	15.58	83.11	10.63
15.00	-44.44	15.69	90.16	10.59
15.00	-44.95	16.06	89.57	10.67
15.00	-44.61	16.06	90.16	7.32
15.00	-44.58	16.57	90.27	7.43
15.00	-44.69	16.80	90.11	7.49
15.00	-44.10	16.94	91.18	7.52
15.00	-43.84	16.95	91.64	7.52
15.00	-44.44	17.55	90.56	7.67
15.00	-44.03	18.10	80.10	11.34
15.00	-43.75	18.00	91.51	9.46
15.00	-43.43	18.11	91.87	9.49
15.00	-42.83	18.08	93.45	7.80

15.00	-42.26	17.94	71.69	8.23
15.00	-41.58	18.60	87.98	8.79
15.00	-41.50	19.22	88.11	8.93
15.00	-40.81	19.23	75.64	9.30
15.00	-40.78	20.17	73.26	7.86
15.00	-41.56	20.34	71.94	7.94
15.00	-41.79	20.44	71.68	7.97
15.00	-42.14	20.82	71.25	8.07
15.00	-41.83	21.22	71.91	8.15
15.00	-41.29	20.66	72.53	7.99
15.00	-40.33	21.24	74.43	8.09
15.00	-40.62	21.45	60.55	9.07
15.00	-41.05	22.08	71.66	7.50
15.00	-40.67	21.78	64.63	7.85
15.00	-42.62	20.58	79.06	8.56
15.00	-42.66	19.74	69.02	10.64
15.00	-42.13	20.24	66.34	9.14
15.00	-43.22	21.00	92.61	9.32
15.00	-43.38	21.18	79.10	9.55
15.00	-42.97	19.77	79.33	9.21
15.00	-43.75	20.01	78.20	9.29
15.00	-44.03	18.65	80.18	11.47
15.00	-44.54	18.93	78.78	10.72
15.00	-44.65	19.38	77.93	10.00
15.00	-44.90	19.48	89.93	13.17
15.00	-44.80	17.89	89.89	10.27
15.00	-45.12	17.76	89.61	10.23
15.00	-45.34	16.77	89.28	10.00
15.00	-45.75	18.04	94.01	12.02
15.00	-46.38	18.72	93.37	12.18
15.00	-46.10	18.23	88.16	9.50
15.00	-46.41	18.09	87.82	9.48
15.00	-45.59	19.31	95.32	9.81
15.00	-45.85	19.56	95.12	9.86
15.00	-46.57	19.96	88.27	12.44
15.00	-46.39	16.23	94.17	9.07
15.00	-46.34	16.81	94.30	9.20
15.00	-47.08	16.98	93.35	9.24
15.00	-46.75	17.62	93.87	9.40
15.00	-47.21	17.59	93.12	9.38
15.00	-47.14	18.03	93.58	8.65
15.00	-47.02	18.20	93.46	9.53
15.00	-47.03	18.76	93.47	9.66
15.00	-47.67	17.72	92.53	9.41
15.00	-47.60	18.76	92.64	9.66
15.00	-46.67	15.70	93.56	7.97
15.00	-47.30	16.16	92.66	8.08
15.00	-47.30	15.83	92.96	7.16
15.00	-47.32	15.32	85.50	8.73
15.00	-47.66	15.29	84.97	8.72
15.00	-47.09	14.85	85.77	8.61
15.00	-46.59	14.49	86.57	8.52
15.00	-47.06	14.46	86.75	11.03
15.00	-48.55	14.60	90.40	8.55
15.00	-48.74	15.72	97.66	8.06
15.00	-48.61	15.96	96.05	10.63

15.00	-47.67	13.74	91.65	8.34
15.00	-48.21	14.18	90.88	8.45
15.00	-48.19	13.57	97.07	9.22
15.00	-48.66	13.80	82.44	7.57
15.00	-49.04	13.99	99.27	5.99
15.00	-49.60	13.70	96.96	6.73
15.00	-50.08	13.73	94.52	9.25
15.00	-50.24	14.40	95.27	7.73
15.00	-50.51	14.23	78.36	6.91
15.00	-49.65	13.44	79.50	6.69
15.00	-48.58	13.11	81.38	6.57
15.00	-49.08	13.07	80.43	6.59
15.00	-49.30	12.86	81.02	7.37
15.00	-46.26	10.38	70.69	4.43
15.00	-46.34	10.60	70.66	4.48
15.00	-45.79	12.98	86.49	5.64
15.00	-51.29	13.05	77.96	7.50
15.00	-50.52	13.71	86.99	7.53
15.00	-51.44	11.46	84.94	7.03
15.00	-51.29	10.88	82.06	4.38
15.00	-51.14	10.62	85.29	6.82
15.00	-50.60	12.37	86.66	7.21
15.00	-52.98	11.34	64.02	6.76
15.00	-52.91	10.95	72.04	6.32
15.00	-53.28	11.76	77.17	8.98
15.00	-52.64	11.72	91.32	4.56
15.00	-51.79	10.68	93.65	4.32
15.00	-52.77	9.14	62.35	6.28
15.00	-52.51	8.82	62.48	6.19
15.00	-48.98	8.72	76.77	4.76
15.00	-52.11	13.84	80.28	10.22
15.00	-51.86	14.21	77.42	7.80
15.00	-52.49	14.47	76.61	7.90
15.00	-52.91	13.72	78.31	9.40
15.00	-53.27	13.29	77.65	9.33
15.00	-52.93	14.91	76.22	8.02
15.00	-52.29	15.74	77.49	8.17
15.00	-52.20	16.17	91.71	12.41
15.00	-52.60	16.85	91.58	10.88
15.00	-49.76	16.06	82.87	9.79
15.00	-46.35	24.99	74.52	9.57
15.00	-46.59	25.10	68.68	7.19
15.00	-48.45	24.51	64.98	7.20
15.00	-50.02	23.71	73.56	11.91
15.00	-50.97	24.05	82.54	9.97
15.00	-51.01	23.03	82.22	9.75
15.00	-51.18	23.30	95.21	9.86
15.00	-51.43	23.47	81.83	9.85
15.00	-51.97	24.08	78.84	13.51
15.00	-49.74	24.69	78.70	11.05
15.00	-50.44	24.81	75.77	9.44
15.00	-51.06	24.90	97.25	7.69
15.00	-52.53	24.62	93.58	11.04
15.00	-52.40	24.84	93.77	11.09
15.00	-52.62	24.14	82.61	12.59
15.00	-53.97	23.17	80.51	11.59

15.00	-53.16	23.16	81.28	11.55
15.00	-53.27	24.37	79.84	10.12
15.00	-51.67	22.22	70.02	10.87
15.00	-53.02	22.29	81.80	12.19
15.00	-48.63	17.04	90.99	5.76
15.00	-50.75	17.38	74.45	12.99
15.00	-50.53	16.78	88.21	9.94
15.00	-51.13	16.03	81.38	9.85
15.00	-51.18	17.28	83.26	12.65
15.00	-48.99	20.17	83.03	8.20
15.00	-48.78	19.85	83.32	8.12
15.00	-47.10	20.58	86.08	8.26
15.00	-48.23	20.43	85.68	10.77
15.00	-48.89	16.33	84.14	9.84
15.00	-39.01	8.59	324.79	1.93
15.00	-39.25	8.55	350.20	1.67
15.00	-38.44	11.36	97.20	3.75
15.00	-37.67	12.00	84.81	3.92
15.00	-39.28	10.13	211.51	1.53
15.00	-40.09	9.54	74.66	3.42
15.00	-42.10	9.46	67.01	3.55
15.00	-42.53	9.55	101.47	2.49
15.00	-39.03	12.69	77.98	8.50
15.00	-39.71	13.27	75.84	7.83
16.20	-34.92	11.06	46.27	6.86
16.20	-34.79	11.27	41.41	4.57
16.20	-34.77	11.47	49.98	7.74
16.20	-34.99	11.40	51.61	8.94
16.20	-35.22	10.93	61.82	8.70
16.20	-35.12	10.80	67.82	6.11
16.20	-35.14	11.45	62.40	8.31
16.20	-35.07	11.65	62.64	8.37
16.20	-35.31	11.38	59.88	9.28
16.20	-35.41	11.50	53.47	9.53
16.20	-35.54	11.61	58.97	7.63
16.20	-36.76	10.57	350.57	2.63
16.20	-37.31	11.15	25.59	2.22
16.20	-36.83	10.72	14.42	2.71
16.20	-36.72	10.50	345.73	2.66
16.20	-36.65	10.42	348.19	4.13
16.20	-36.59	10.16	331.39	2.88
16.20	-36.49	10.48	331.48	3.14
16.20	-36.58	10.53	11.97	3.13
16.20	-36.16	10.26	353.39	3.95
16.20	-36.31	10.32	347.58	4.04
16.20	-36.35	10.14	345.17	4.36
16.20	-35.75	8.90	17.53	4.51
16.20	-35.81	9.16	18.95	5.10
16.20	-36.04	8.60	13.64	3.48
16.20	-36.37	8.84	29.58	4.85
16.20	-36.26	8.81	26.33	4.40
16.20	-36.13	9.03	15.71	4.32
16.20	-36.23	8.64	18.03	3.36
16.20	-36.20	8.72	18.43	3.35
16.20	-36.92	11.31	24.90	4.61
16.20	-37.04	11.36	44.86	4.21

16.20	-37.42	9.34	309.52	1.56
16.20	-37.32	9.39	294.86	2.25
16.20	-35.99	11.30	42.29	7.10
16.20	-36.57	11.81	69.46	6.93
16.20	-36.52	12.07	71.44	8.50
16.20	-36.04	12.23	62.18	8.75
16.20	-35.84	9.68	17.16	5.34
16.20	-35.93	9.83	25.67	5.71
16.20	-36.11	9.86	16.38	4.10
16.20	-35.85	8.60	358.22	2.10
16.20	-38.27	8.92	284.74	1.79
16.20	-38.18	8.92	301.18	2.25
16.20	-39.02	9.09	290.92	2.48
16.20	-38.89	8.96	279.53	2.17
16.20	-38.75	8.57	292.90	1.50
16.20	-39.01	8.61	320.54	.84

## LOW LEVEL WINDS DAY 223 1200Z SECTOR 2 = North Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-34.36	24.96	68.94
15.00	-33.88	24.99	70.14
15.00	-33.45	25.00	69.12
15.00	-32.75	25.05	65.81
15.00	-32.39	24.65	62.37
15.00	-33.43	24.21	63.87
15.00	-34.50	20.26	51.87
15.00	-30.55	21.62	38.23
15.00	-31.30	19.50	33.85
15.00	-31.83	19.49	34.47
15.00	-30.61	19.11	22.97
15.00	-30.55	18.56	26.86
15.00	-30.90	17.71	29.48
15.00	-31.08	17.48	31.32
15.00	-29.58	17.69	28.51
15.00	-29.03	17.60	17.78
15.00	-29.32	17.17	18.78
15.00	-28.93	17.16	17.47
15.00	-28.68	16.58	11.82
15.00	-28.33	16.36	9.14
15.00	-29.78	15.52	17.02
15.00	-30.43	15.90	23.87
15.00	-31.19	15.99	30.11
15.00	-31.13	16.77	27.98
15.00	-31.51	16.05	31.80
15.00	-31.87	16.42	39.82
15.00	-33.81	16.63	48.61
15.00	-33.20	17.80	42.47
15.00	-35.48	18.34	59.93
15.00	-34.74	16.22	45.98
15.00	-30.16	17.19	27.50
15.00	-30.58	17.29	31.98
15.00	-29.58	16.47	18.26
15.00	-29.49	15.64	11.93
15.00	-29.14	16.40	15.39
15.00	-32.24	17.23	36.36
15.00	-34.20	19.15	51.02
15.00	-32.22	23.53	59.93
15.00	-31.90	23.12	56.52
15.00	-31.54	22.70	51.88
15.00	-33.40	23.76	51.19
15.00	-32.68	23.74	54.71
15.00	-34.22	18.04	44.18
15.00	-33.38	19.52	43.05
15.00	-31.80	16.84	26.81
15.00	-32.27	24.77	66.87
15.00	-32.27	24.77	66.91

15.00	-31.92	24.70	56.82	7.11
15.00	-32.97	22.40	53.11	6.66
15.00	-31.08	20.49	31.12	6.50
15.00	-27.48	14.77	356.92	8.37
15.00	-29.60	14.31	15.33	7.09
15.00	-31.08	14.27	33.55	6.23
15.00	-31.13	14.46	33.82	6.27
15.00	-33.98	15.16	41.60	8.00
15.00	-35.65	14.86	62.75	9.54
15.00	-35.84	13.66	56.25	7.74
15.00	-35.75	11.92	47.97	9.34
15.00	-35.06	11.94	62.19	8.77
15.00	-34.75	12.10	65.04	9.57

15.00	-33.30	11.74	59.27	11.20
15.00	-32.10	12.15	69.10	6.59
15.00	-31.43	11.81	51.86	6.78
15.00	-27.85	13.68	348.56	5.37
15.00	-26.86	13.32	337.07	5.39
15.00	-26.16	13.25	333.12	6.49
15.00	-24.81	13.32	329.61	7.48
15.00	-24.05	14.22	303.52	5.78
15.00	-25.01	12.59	332.43	8.44
15.00	-24.43	12.52	331.28	4.93
15.00	-23.83	12.56	328.14	6.08
15.00	-23.29	12.64	312.85	5.84
15.00	-23.87	13.35	322.40	7.80
15.00	-26.05	10.88	350.59	1.71
15.00	-26.74	10.86	338.36	3.05
15.00	-25.07	10.52	317.42	1.93
15.00	-23.78	9.77	324.93	2.54
15.00	-23.41	9.73	285.09	3.57
15.00	-21.02	10.09	256.07	2.72
15.00	-20.66	12.02	291.38	6.13
15.00	-19.94	11.48	269.95	6.15
15.00	-19.54	11.59	278.67	6.10
15.00	-18.88	11.66	247.28	5.90
15.00	-18.42	12.17	246.03	5.88
15.00	-18.20	11.48	242.15	5.17
15.00	-17.95	10.87	246.32	6.31
15.00	-18.95	12.38	242.58	4.80
15.00	-19.47	12.43	243.68	4.69
15.00	-17.67	11.97	240.50	5.16
15.00	-17.28	12.39	231.23	5.89
15.00	-17.97	13.30	213.42	4.07
15.00	-18.84	12.95	224.67	3.03
15.00	-18.02	13.33	213.20	4.05
15.00	-17.12	14.54	205.19	5.13
15.00	-17.70	13.87	206.99	5.07
15.00	-33.76	20.91	54.42	7.78
15.00	-34.28	21.36	58.63	7.59
15.00	-29.39	20.56	19.35	8.81
15.00	-29.10	20.17	21.03	10.39

15.00	-29.76	20.86	23.89	9.68
15.00	-30.46	21.59	39.41	7.73
15.00	-30.08	21.20	29.13	8.34
15.00	-28.74	19.80	19.64	10.09
15.00	-25.41	15.99	19.13	7.96
15.00	-18.26	15.30	228.44	3.47
15.00	-18.12	15.48	214.26	2.77
15.00	-32.28	15.71	48.73	8.54
15.00	-31.87	15.57	30.60	7.56
15.00	-33.06	11.55	70.49	11.00
15.00	-33.30	11.74	59.27	11.20
15.00	-23.26	10.67	290.97	2.93
15.00	-23.24	10.69	289.79	2.67
15.00	-23.13	10.61	305.07	1.72
15.00	-22.69	10.66	283.57	3.43
15.00	-21.62	10.69	275.11	5.33
15.00	-23.76	9.84	292.95	2.77
15.00	-21.32	10.15	277.20	3.59
15.00	-31.98	12.81	53.58	5.69
15.00	-35.29	13.22	50.44	8.21
15.00	-18.40	13.16	210.12	4.94
15.00	-19.19	13.79	242.45	2.09
15.00	-19.74	14.14	314.81	3.21
15.00	-19.16	14.26	249.66	2.91
15.00	-18.22	15.33	194.20	3.32
15.00	-17.84	15.55	193.69	3.42
15.00	-17.92	16.25	146.96	5.36
15.00	-17.94	16.29	141.83	5.29
15.00	-18.57	16.09	111.60	4.96
15.00	-17.05	25.36	25.25	13.32
15.00	-19.37	25.52	48.84	12.44
15.00	-26.72	24.00	42.75	9.37
15.00	-24.73	24.00	38.55	11.58
15.00	-27.19	16.62	6.52	8.58
15.00	-27.92	17.73	18.00	10.45
15.00	-27.24	18.20	19.19	10.42
15.00	-15.76	25.07	30.98	16.60
15.00	-15.19	25.67	27.36	13.21
15.00	-16.45	23.57	37.47	17.90
15.00	-27.10	11.67	336.47	4.31

## LOW LEVEL WINDS DAY 223 1200Z SECTOR 3 = Northeast

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-16.58	11.41	236.14    7.47
16.20	-18.65	10.83	254.76    6.07
16.20	-17.96	10.83	238.32    7.24
16.20	-17.00	8.86	202.70    4.18
16.20	-17.42	8.72	193.24    1.75
16.20	-17.56	12.16	243.57    6.46
16.20	-17.93	13.32	235.69    6.77
16.20	-15.61	12.32	223.00    5.89
16.20	-15.68	13.31	199.41    5.55
16.20	-17.64	12.36	248.59    4.90
16.20	-14.74	12.15	222.60    6.15
16.20	-14.02	10.68	214.58    4.28
16.20	-14.00	11.04	197.13    4.70
16.20	-12.98	10.25	206.78    3.03
16.20	-13.59	10.34	224.53    5.16
16.20	-12.16	10.50	212.87    2.22
16.20	-13.60	12.35	215.14    5.74
16.20	-18.34	14.29	195.61    6.84
16.20	-18.21	15.38	206.91    5.15
16.20	-17.93	16.31	145.94    5.31
16.20	-17.00	14.61	196.70    6.16
16.20	-16.97	14.38	205.44    6.59
16.20	-9.15	12.57	203.51    1.59
16.20	-9.97	12.70	143.36    2.72
16.20	-16.64	8.51	212.05    4.94
16.20	-15.92	8.67	232.75    4.33
16.20	-15.59	9.44	235.66    3.94
16.20	-17.21	8.83	206.08    3.14
16.20	-15.98	8.57	235.23    4.42
16.20	-15.36	9.60	206.12    2.90
16.20	-14.11	11.08	209.65    5.03

## LOW LEVEL WINDS DAY 223 1200Z SECTOR 5 = South Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-16.68	217.78	5.04
15.00	-16.43	221.50	7.06
15.00	-20.72	278.37	2.41
15.00	-21.94	269.63	3.11
15.00	-19.60	292.69	1.85
15.00	-24.55	149.27	4.56
15.00	-16.94	220.66	7.24
15.00	-17.53	226.27	4.78
15.00	-17.75	211.93	4.97
15.00	-19.63	274.36	3.09
15.00	-19.93	275.65	3.10
15.00	-19.62	309.37	3.57
15.00	-19.30	285.64	.91
15.00	-19.94	299.12	.85
15.00	-21.21	292.65	4.16
15.00	-22.02	307.60	4.61
15.00	-24.25	222.75	2.17
15.00	-24.44	232.90	4.29
15.00	-25.16	262.58	3.33
15.00	-26.47	267.97	2.40
15.00	-26.56	268.45	2.60
15.00	-25.36	236.95	4.34
15.00	-27.79	280.58	1.47
15.00	-28.52	146.71	.59
15.00	-30.09	345.71	1.90
15.00	-30.56	10.50	2.00
15.00	-31.59	50.52	2.02
15.00	-32.15	349.70	1.40
15.00	-32.80	42.86	.76
15.00	-34.42	359.56	3.93
15.00	-34.55	35.86	2.45
15.00	-33.49	39.08	2.23
15.00	-34.03	65.57	2.10
15.00	-32.12	34.84	1.66
15.00	-31.13	57.88	4.00
15.00	-31.07	281.02	.39
15.00	-32.00	75.55	1.34
15.00	-32.95	97.25	3.01
15.00	-33.59	93.26	3.87
15.00	-34.62	89.54	5.57
15.00	-35.27	122.75	3.28
15.00	-34.64	124.61	3.37
15.00	-33.99	94.92	1.87
15.00	-32.93	96.47	3.55
15.00	-32.71	105.29	5.33
15.00	-33.43	93.57	6.43
15.00	-34.69	107.76	6.69
15.00	-33.82	92.85	6.44

15.00	-33.10	.58	100.08	3.03
15.00	-32.90	.20	95.04	6.26
15.00	-32.98	.70	95.03	6.15
15.00	-32.84	-1.13	107.61	4.71
15.00	-32.43	.63	98.98	4.48
15.00	-32.64	-1.26	96.52	4.49
15.00	-32.27	.56	98.44	4.77
15.00	-32.82	1.43	93.35	6.84
15.00	-31.50	.97	112.92	7.17
15.00	-28.62	-1.96	85.76	6.22
15.00	-30.54	-.05	110.14	8.71
15.00	-30.49	.56	97.35	8.37
15.00	-32.45	-2.93	70.43	4.17
15.00	-31.78	-2.63	108.30	5.19
15.00	-32.22	-3.64	73.83	4.81
15.00	-33.77	-3.23	81.73	4.83
15.00	-32.82	-2.75	84.46	4.97
15.00	-33.26	-3.11	72.32	5.05
15.00	-31.05	-2.20	89.24	3.40
15.00	-30.12	-3.23	80.93	4.98
15.00	-30.36	-2.82	80.37	5.08
15.00	-29.49	-3.14	79.98	9.52
15.00	-29.45	-3.45	77.89	7.70
15.00	-29.00	-3.26	77.34	6.87
15.00	-28.43	-3.00	78.64	6.96
15.00	-28.76	-3.63	77.82	6.80
15.00	-28.13	-3.37	79.18	6.87
15.00	-27.96	-2.11	86.93	5.32
15.00	-27.80	-4.68	88.10	6.48
15.00	-27.33	-4.61	89.19	9.22
15.00	-26.91	-4.57	89.88	7.46
15.00	-28.61	-4.43	86.74	7.38
15.00	-27.19	-4.95	89.41	8.26
15.00	-27.43	-5.56	78.64	5.43
15.00	-27.67	-5.47	78.09	5.45
15.00	-27.67	-5.08	88.63	8.18
15.00	-26.48	-4.63	90.55	8.40
15.00	-28.11	-4.94	66.28	3.02
15.00	-28.46	-4.82	70.43	3.90
15.00	-28.47	-5.29	76.04	5.49
15.00	-25.91	-4.66	91.46	8.46
15.00	-23.30	-5.23	97.40	6.76
15.00	-23.52	-5.00	112.98	9.52
15.00	-23.94	-5.07	112.64	9.40
15.00	-23.95	-4.79	111.42	12.44
15.00	-24.29	-4.60	109.92	10.30
15.00	-23.51	-4.49	115.10	8.76
15.00	-23.42	-4.30	115.00	8.83
15.00	-23.89	-4.10	106.51	9.27
15.00	-24.25	-4.35	106.19	9.15
15.00	-24.53	-4.17	109.78	7.39
15.00	-24.51	-3.92	105.65	9.20
15.00	-25.08	-3.84	114.93	5.66
15.00	-24.89	-2.91	103.23	10.23
15.00	-25.04	-2.76	117.56	9.24
15.00	-26.65	-2.77	96.93	8.03

15.00	-26.94	-2.71	96.49	8.01
15.00	-26.77	-2.58	96.73	8.06
15.00	-26.39	-2.52	97.29	8.12
15.00	-25.96	-2.89	116.70	11.12
15.00	-25.33	-3.30	117.65	9.08
15.00	-25.56	-2.63	97.67	9.11
15.00	-24.79	-2.59	110.01	9.76
15.00	-24.03	-2.71	105.53	9.54
15.00	-23.99	-2.93	112.29	6.87
15.00	-23.56	-3.02	108.04	8.67
15.00	-23.12	-2.38	108.20	8.88
15.00	-22.42	-4.74	110.73	8.51
15.00	-22.67	-4.65	110.33	8.50
15.00	-21.98	-5.43	98.63	7.83
15.00	-22.12	-2.90	127.33	8.26
15.00	-22.58	-3.16	117.92	8.35
15.00	-22.75	-3.38	103.12	8.41
15.00	-20.87	-3.33	109.35	10.01
15.00	-20.35	-3.79	120.65	8.75
15.00	-20.15	-4.07	109.12	7.83
15.00	-20.17	-4.80	105.57	9.50
15.00	-17.94	-4.94	122.84	4.01
15.00	-17.95	-4.62	115.71	4.97
15.00	-18.00	-4.40	115.46	4.97
15.00	-17.62	-4.16	124.58	5.65
15.00	-18.19	-4.07	118.50	6.41
15.00	-21.08	-2.50	148.01	7.38
15.00	-20.83	-2.50	148.19	7.44
15.00	-21.89	-2.80	122.15	11.27
15.00	-21.23	-2.73	128.71	9.87
15.00	-19.99	-3.76	128.22	5.84
15.00	-18.77	-3.87	123.67	10.48
15.00	-18.46	-3.70	144.89	8.46
15.00	-18.76	-3.29	127.22	11.20
15.00	-19.28	-2.67	133.71	11.03
15.00	-19.15	-2.47	136.85	11.81
15.00	-19.53	-1.69	132.42	8.31
15.00	-18.33	-1.83	133.49	8.57
15.00	-17.94	-2.01	133.92	8.66
15.00	-18.01	-1.34	142.37	8.79
15.00	-18.85	-1.20	137.45	7.85
15.00	-17.78	.88	151.62	6.92
15.00	-17.39	-1.10	133.40	7.49
15.00	-17.16	-1.45	147.54	6.22
15.00	-17.93	.64	146.23	9.59
15.00	-26.74	2.32	135.40	4.05
15.00	-24.25	1.83	141.39	4.48
15.00	-24.67	1.82	140.64	4.39
15.00	-25.07	2.95	137.08	4.47
15.00	-24.43	2.93	161.00	3.67
15.00	-25.40	2.84	130.69	6.36
15.00	-27.79	1.97	135.55	7.70
15.00	-27.73	2.38	122.88	6.57
15.00	-27.21	1.92	124.17	6.59
15.00	-27.56	2.36	115.50	6.12
15.00	-27.23	2.37	97.80	5.64

15.00	-27.00	2.52	134.89	5.34
15.00	-27.07	2.21	129.12	5.94
15.00	-27.33	2.65	98.90	4.81
15.00	-26.63	3.74	155.10	3.23
15.00	-26.42	3.65	155.59	3.27
15.00	-26.86	3.83	170.97	2.93
15.00	-26.65	3.93	170.46	2.99
15.00	-24.73	4.25	170.43	3.46
15.00	-25.28	4.31	147.48	6.14
15.00	-25.12	4.43	123.50	4.10
15.00	-20.50	2.70	179.57	5.38
15.00	-19.89	1.60	145.59	6.60
15.00	-19.12	2.32	159.34	8.13
15.00	-21.14	2.59	169.27	5.29
15.00	-21.89	2.32	141.33	7.56
15.00	-22.12	1.65	131.29	7.37
15.00	-19.91	2.49	169.79	5.58
15.00	-16.99	1.23	148.09	7.25
15.00	-16.29	.83	157.02	9.02
15.00	-16.33	1.31	139.74	10.74
15.00	-16.92	1.81	162.66	9.56
15.00	-16.68	1.84	160.60	8.70
15.00	-19.20	1.75	147.79	8.91
15.00	-20.55	.76	122.64	6.21
15.00	-20.72	.13	115.11	7.75
15.00	-18.75	2.68	163.29	7.03
15.00	-17.67	2.74	165.82	8.23
15.00	-17.78	2.54	166.06	8.20
15.00	-16.90	3.18	163.34	7.50
15.00	-16.86	3.40	163.10	7.51
15.00	-16.22	4.06	185.81	7.46
15.00	-19.44	3.27	154.52	5.09
15.00	-16.31	5.02	206.10	8.35
15.00	-17.12	4.87	192.43	7.41
15.00	-17.09	5.16	184.01	8.22
15.00	-17.44	4.67	168.60	7.21
15.00	-19.02	3.95	177.65	6.72
15.00	-18.61	3.93	161.44	7.13
15.00	-25.30	1.47	133.81	7.32
15.00	-27.29	1.27	114.37	8.65

## HIGH LEVEL WINDS DAY 223 1200Z SECTOR 1 = Northwest

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-35.98	9.94	77.93 9.68
15.00	-35.88	10.38	95.36 10.38
15.00	-38.73	8.77	77.47 17.08
15.00	-38.45	8.65	77.64 17.06
15.00	-38.14	8.87	91.05 18.35
15.00	-37.74	8.78	91.70 15.82
15.00	-37.52	8.57	88.41 17.50
15.00	-38.44	9.55	87.80 18.53
15.00	-38.00	9.68	88.03 17.75
15.00	-37.89	10.38	84.22 15.48
15.00	-37.99	10.96	84.36 16.47
15.00	-37.97	10.62	94.37 17.98
15.00	-41.41	10.38	66.04 13.04
15.00	-41.05	10.34	76.60 13.96
15.00	-41.45	11.73	88.52 14.71
15.00	-43.75	10.13	85.58 10.96
15.00	-43.61	10.00	85.37 10.09
15.00	-38.35	13.90	91.93 11.11
15.00	-38.56	13.43	91.69 10.99
15.00	-38.93	13.46	91.66 9.30
15.00	-38.92	13.66	91.63 9.34
15.00	-39.20	13.75	91.22 9.36
15.00	-38.83	13.86	92.35 7.70
15.00	-46.07	8.68	78.16 6.53
15.00	-46.51	8.79	93.64 8.12
15.00	-46.67	8.63	93.47 8.08
15.00	-46.98	8.54	92.25 10.56
15.00	-47.20	9.20	99.37 8.32
15.00	-47.54	9.61	96.82 10.90
15.00	-47.59	9.29	95.82 12.48
15.00	-48.19	9.06	90.70 12.36
15.00	-47.76	8.62	84.72 8.09
15.00	-48.57	9.71	114.41 7.37
15.00	-48.31	10.00	111.62 7.06
15.00	-48.61	10.42	113.91 7.53
15.00	-48.02	10.78	103.10 9.71
15.00	-49.38	11.27	101.26 9.78
15.00	-49.57	10.97	101.01 9.71
15.00	-49.95	10.81	100.64 9.67
15.00	-49.34	10.81	101.41 9.68
15.00	-50.40	8.66	82.85 10.68
15.00	-49.91	8.78	94.08 10.69
15.00	-50.48	8.57	98.68 10.77
15.00	-51.34	8.70	89.78 10.47
15.00	-51.03	8.69	92.76 10.69
15.00	-52.30	8.67	88.16 7.95

## HIGH LEVEL WINDS DAY 223 1200Z SECTOR 2 = North Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-17.37	10.35	110.06 17.10
15.00	-17.64	12.97	110.14 11.46
15.00	-17.52	14.43	123.66 12.78
15.00	-17.98	15.26	137.78 13.76
15.00	-18.52	15.13	134.39 14.32
15.00	-19.22	17.11	150.68 12.85
15.00	-18.44	18.51	157.55 13.68
15.00	-17.52	17.12	144.61 11.58
15.00	-30.29	12.39	76.87 13.81
15.00	-30.41	11.93	76.72 13.67
15.00	-30.48	11.76	78.05 15.36
15.00	-33.57	11.62	83.08 15.55
15.00	-33.02	11.27	78.17 13.12
15.00	-32.49	10.99	77.17 11.35
15.00	-32.19	10.70	68.23 11.96
15.00	-32.01	10.46	71.61 10.68
15.00	-31.34	10.05	74.68 12.27
15.00	-31.17	9.12	75.70 12.88
15.00	-35.44	10.46	85.73 17.58
15.00	-35.19	20.32	146.58 12.88
15.00	-33.09	21.69	137.77 12.36
15.00	-32.62	21.09	140.03 6.50
15.00	-34.90	23.12	148.47 14.39
15.00	-32.03	21.57	140.14 6.67
15.00	-31.71	21.36	123.54 7.31

## HIGH LEVEL WINDS DAY 223 1200Z SECTOR 3 = Northeast

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-17.48	12.92	136.63 7.59
16.20	-17.40	14.37	131.92 11.17
16.20	-15.89	10.67	126.07 9.80
16.20	-15.48	10.85	118.29 8.15
16.20	-16.66	9.75	112.40 12.12
16.20	-15.06	9.59	112.25 8.41
16.20	-17.84	14.53	129.30 11.49
16.20	-10.55	15.12	122.81 10.78
16.20	-9.17	13.71	123.05 10.11
16.20	-10.61	15.12	115.21 9.96
16.20	6.34	14.18	99.18 7.08
16.20	4.65	10.92	68.02 8.90
16.20	4.04	11.23	74.48 11.40
16.20	-2.29	10.83	118.08 7.53
16.20	-10.56	9.13	113.47 15.04
16.20	-10.25	9.63	112.63 15.89
16.20	-9.30	10.20	115.72 15.36
16.20	-8.60	13.77	124.31 8.63
16.20	-9.21	13.51	130.77 8.91
16.20	-10.40	13.37	122.92 11.81
16.20	-10.80	13.45	132.57 15.43
16.20	-3.17	13.02	146.68 13.55
16.20	7.51	11.76	106.87 9.46
16.20	-1.79	10.54	133.58 6.44
16.20	-3.42	18.07	119.58 11.57
16.20	-5.06	19.04	119.48 8.97
16.20	-9.19	18.55	110.14 12.62
16.20	-11.49	14.51	120.34 14.04
16.20	-10.53	15.20	133.74 9.48
16.20	-9.98	13.73	118.72 9.36
16.20	-11.30	10.65	110.84 10.38
16.20	-10.19	9.80	110.76 14.94
16.20	-11.25	10.92	118.23 19.05
16.20	-10.20	10.19	119.51 16.91
16.20	-2.25	10.93	116.65 7.13
16.20	6.65	13.12	87.97 12.54
16.20	6.34	12.40	89.23 8.59
16.20	7.87	12.71	99.49 12.07
16.20	4.35	10.45	76.63 14.55
16.20	5.98	10.23	76.52 15.75
16.20	8.19	15.33	73.98 7.93
16.20	-5.57	12.03	112.94 14.56
16.20	-5.62	9.48	134.01 5.93
16.20	-8.14	12.63	130.35 13.00

16.20	-5.45	14.31	134.25	11.56
16.20	-6.28	12.82	127.45	8.77
16.20	-4.15	9.30	140.29	7.74

## HIGH LEVEL WINDS DAY 223 1200Z SECTOR 5 = South Central

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-20.82	7.54	133.59
15.00	-21.16	7.21	119.11
15.00	-20.68	6.75	111.93
15.00	-20.29	6.33	111.72
15.00	-21.05	6.41	111.37
15.00	-21.16	6.60	123.50
15.00	-21.98	6.86	117.96
15.00	-21.83	6.29	118.11
15.00	-22.41	6.43	105.55
15.00	-22.92	6.75	114.65
15.00	-22.68	5.98	114.95
15.00	-23.45	6.22	113.94
15.00	-23.34	5.81	125.90
15.00	-23.93	5.47	111.47
15.00	-24.69	5.32	127.20
15.00	-25.04	4.93	111.04
15.00	-24.51	4.37	100.70
15.00	-24.80	3.96	95.80
15.00	-25.02	3.61	95.66
15.00	-25.57	2.68	95.33
15.00	-19.94	7.28	128.84
15.00	-19.25	7.02	127.85
15.00	-19.24	7.53	120.06
15.00	-18.47	6.94	120.73
15.00	-17.85	6.96	121.11
15.00	-18.38	6.40	121.17
15.00	-20.30	5.67	129.37
15.00	-22.63	5.16	118.98
15.00	-23.09	5.05	118.65
15.00	-27.61	5.12	65.36
15.00	-28.10	5.46	64.76
15.00	-27.85	6.03	59.35
15.00	-29.82	6.79	56.86
15.00	-29.66	7.36	50.88
15.00	-33.76	8.15	90.03
15.00	-34.17	8.60	94.12
15.00	-33.22	8.29	116.26
15.00	-34.69	6.08	95.37
15.00	-35.22	5.79	81.76
15.00	-30.47	1.45	63.58
15.00	-29.23	3.77	46.75
15.00	-29.56	3.79	45.02
15.00	-30.27	3.91	68.94
15.00	-29.01	5.25	63.10
15.00	-29.87	5.21	59.42
15.00	-30.46	4.97	58.77
15.00	-30.68	3.68	62.95
15.00	-31.26	2.82	62.10
			15.21

15.00	-29.78	6.32	46.81	12.89
15.00	-31.78	5.20	61.03	13.08
15.00	-32.21	4.85	57.69	17.57
15.00	-32.17	3.65	57.27	17.22
15.00	-34.57	5.13	83.87	10.30
15.00	-32.61	5.94	75.01	10.09
15.00	-30.67	5.25	49.98	9.33
15.00	-31.36	6.14	87.29	6.34
15.00	-32.96	6.42	98.79	8.12

## LOW LEVEL WINDS DAY 248 0000Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-20.78	12.28	26.86 4.75
16.20	-20.91	12.24	41.94 4.44
16.20	-21.00	12.37	46.46 4.86
16.20	-20.54	12.20	47.34 3.98
16.20	-21.16	12.36	38.36 4.99
16.20	-21.44	12.44	55.95 5.36
16.20	-21.87	11.82	38.56 4.57
16.20	-21.81	11.95	39.15 4.58
16.20	-22.03	11.79	16.79 5.35
16.20	-22.19	11.89	28.51 6.52
16.20	-22.26	11.89	25.16 4.65
16.20	-22.16	12.12	31.04 4.90
16.20	-22.22	12.28	31.46 4.92
16.20	-21.98	11.33	13.98 6.31
16.20	-22.08	11.20	15.91 4.81
16.20	-22.00	11.24	18.91 5.94
16.20	-22.41	10.14	339.96 4.39
16.20	-22.48	10.91	15.94 3.84
16.20	-22.54	10.78	8.25 4.77
16.20	-22.72	11.22	4.93 7.85
16.20	-22.75	11.35	8.78 7.44
16.20	-22.55	10.80	12.50 5.89
16.20	-22.80	11.65	26.28 5.41
16.20	-22.80	11.94	29.44 6.21
16.20	-22.85	11.76	30.60 6.87
16.20	-23.42	10.63	359.39 7.51
16.20	-23.34	10.43	358.89 7.48
16.20	-23.52	10.17	358.13 7.52
16.20	-23.61	10.09	358.39 8.03
16.20	-23.84	10.46	356.15 8.12
16.20	-23.62	10.45	359.29 8.05
16.20	-23.69	10.53	359.43 8.07
16.20	-23.39	10.61	355.84 7.50
16.20	-23.64	10.73	359.23 7.06
16.20	-23.68	11.15	8.84 5.14
16.20	-23.82	12.14	25.95 5.81
16.20	-23.97	11.05	352.70 7.20
16.20	-24.03	11.11	352.93 7.23
16.20	-24.21	10.58	2.99 8.25
16.20	-24.02	11.31	4.65 7.21
16.20	-23.96	11.66	9.41 6.79
16.20	-24.31	11.77	5.83 7.87
16.20	-24.52	12.16	6.71 7.96
16.20	-25.30	12.08	19.99 8.12
16.20	-25.44	12.01	12.79 7.86
16.20	-25.63	12.11	6.12 7.74
16.20	-25.66	12.02	8.99 8.35
16.20	-25.91	11.95	2.49 8.29

16.20	-27.35	11.68	4.66	7.20
16.20	-27.21	11.55	357.48	7.63
16.20	-27.32	11.50	357.04	7.16
16.20	-27.53	11.43	357.74	8.23
16.20	-27.85	11.34	353.72	7.86
16.20	-27.11	10.38	317.68	6.74
16.20	-27.79	10.50	292.28	7.00
16.20	-18.73	11.59	77.00	2.62
16.20	-18.57	11.89	89.16	3.08
16.20	-18.11	10.96	76.29	4.05
16.20	-27.47	4.85	230.98	6.72
16.20	-27.92	9.86	299.33	5.56
16.20	-24.16	5.68	242.95	6.31
16.20	-23.54	6.28	258.56	5.49
16.20	-23.49	6.44	258.40	5.45
16.20	-23.53	6.65	261.07	7.25
16.20	-19.45	5.36	232.78	9.64
16.20	-18.92	5.17	233.95	10.19
16.20	-19.19	5.59	234.02	7.51
16.20	-19.58	5.52	241.20	6.82
16.20	-27.44	9.53	301.05	7.89
16.20	-27.33	9.57	294.08	7.48
16.20	-27.17	9.36	289.60	7.38
16.20	-28.31	7.53	249.25	7.28
16.20	-28.13	7.56	257.87	7.83
16.20	-26.81	4.99	232.65	7.30
16.20	-25.30	6.12	248.01	7.96
16.20	-24.92	6.06	257.72	5.15
16.20	-24.04	6.81	271.20	5.24
16.20	-24.86	6.34	251.57	6.74
16.20	-19.83	5.41	233.86	7.05
16.20	-18.82	5.60	241.25	9.38
16.20	-18.82	25.52	239.45	9.78
16.20	-21.42	7.54	267.25	3.75
16.20	-21.51	7.01	255.36	4.57
16.20	-22.08	6.70	227.41	3.61
16.20	-23.35	6.92	253.94	7.97
16.20	-23.35	7.00	261.95	8.60
16.20	-23.35	7.19	257.27	5.26
16.20	-21.58	28.65	245.66	6.44
16.20	-21.11	5.83	258.24	6.79
16.20	-18.70	11.55	77.44	2.60
16.20	-18.52	11.85	81.51	3.69
16.20	-18.32	12.13	62.60	3.24
16.20	-27.74	7.58	233.79	6.31
16.20	-26.16	8.34	282.46	8.74
16.20	-26.18	8.21	278.85	4.81
16.20	-26.09	8.26	319.64	2.93
16.20	-25.91	8.41	286.92	9.57
16.20	-26.10	8.52	287.61	7.88
16.20	-24.10	6.68	268.67	9.07
16.20	-23.48	6.50	270.90	7.29
16.20	-23.46	6.66	253.62	7.46
16.20	-22.35	10.11	348.24	4.71
16.20	-22.49	10.61	350.32	4.73
16.20	-22.04	10.91	12.72	6.27

16.20	-22.10	10.82	14.15	4.74
16.20	-22.06	10.93	14.09	5.22
16.20	-23.71	9.94	345.43	5.70
16.20	-24.17	10.54	359.22	7.72
16.20	-26.15	12.07	359.55	8.35
16.20	-26.25	12.21	2.97	8.39
16.20	-26.70	9.29	284.76	7.16
16.20	-26.91	9.29	288.76	5.88
16.20	-25.72	6.82	274.17	7.36
16.20	-23.41	7.08	265.77	4.82
16.20	-22.65	7.85	259.08	7.44
16.20	-22.38	8.20	270.48	4.73
16.20	-22.55	8.08	284.49	6.27
16.20	-23.33	7.21	273.73	5.23
16.20	-22.79	8.66	295.17	2.86
16.20	-22.92	8.60	296.48	4.41
16.20	-22.71	8.73	294.30	4.59
16.20	-22.63	8.78	268.41	5.04
16.20	-22.67	8.65	302.05	5.43
16.20	-22.74	8.42	286.21	6.66
16.20	-22.35	8.29	284.62	5.03
16.20	-26.47	10.00	329.87	4.71
16.20	-26.08	9.80	308.89	2.76
16.20	-25.42	9.37	313.18	2.23
16.20	-26.28	10.26	5.79	6.59

## HIGH LEVEL WINDS DAY 248 0900Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-25.56	11.09	147.40 4.02
16.20	-25.64	11.16	146.81 4.01
16.20	-25.68	11.07	137.23 4.54
16.20	-25.77	10.64	122.61 4.20
16.20	-25.19	10.67	135.85 6.18
16.20	-25.02	10.86	147.84 4.77
16.20	-25.15	11.56	143.20 2.53
16.20	-25.40	10.36	127.62 8.72
16.20	-25.77	10.33	121.04 8.15
16.20	-25.26	9.66	98.96 14.10
16.20	-24.93	9.16	93.90 12.12
16.20	-24.47	9.01	77.04 13.71
16.20	-26.97	9.73	104.12 11.30
16.20	-27.05	9.38	107.75 13.69
16.20	-27.13	9.06	112.36 11.04
16.20	-27.42	9.19	111.00 12.85
16.20	-27.81	9.24	103.25 12.87
16.20	-27.55	8.72	98.82 13.11
16.20	-27.67	8.44	89.98 14.33
16.20	-27.86	8.50	93.73 14.29
16.20	-26.59	7.32	85.76 8.32
16.20	-26.85	7.02	82.07 8.29
16.20	-26.34	7.28	100.41 5.56
16.20	-26.48	6.94	94.46 5.85
16.20	-26.64	6.98	98.22 6.33
16.20	-28.17	6.98	82.13 7.67
16.20	-27.41	6.10	106.29 7.56
16.20	-27.30	6.02	102.81 7.47
16.20	-27.46	5.99	102.61 7.44
16.20	-28.36	5.22	109.75 6.94
16.20	-24.16	10.20	132.53 4.02
16.20	-23.64	9.53	103.47 9.68
16.20	-26.55	9.67	99.25 11.67
16.20	-26.13	9.43	93.43 8.85
16.20	-26.19	9.05	101.26 10.19
16.20	-26.74	9.05	112.26 10.12
16.20	-26.89	9.06	114.65 10.26
16.20	-25.64	8.57	78.41 9.01
16.20	-25.79	8.57	78.14 9.00
16.20	-25.52	8.27	76.06 9.50
16.20	-26.08	7.89	105.29 9.54
16.20	-26.44	8.19	108.73 12.07
16.20	-26.74	8.44	102.72 10.47
16.20	-26.83	8.50	97.01 10.82
16.20	-27.08	8.36	102.71 12.25
16.20	-27.34	8.11	98.43 11.15
16.20	-26.37	7.78	89.71 9.77
16.20	-26.19	7.04	91.01 4.56

16.20	-20.86	10.87	143.51	5.90
16.20	-21.82	9.81	101.67	15.67
16.20	-21.80	10.05	108.76	14.61
16.20	-21.22	10.46	127.88	9.10
16.20	-22.32	9.54	115.29	10.86
16.20	-22.41	9.24	78.41	9.59
16.20	-22.28	9.02	53.80	9.01
16.20	-22.36	8.14	55.25	10.27
16.20	-22.06	8.20	63.03	9.38
16.20	-21.12	7.37	20.05	9.41
16.20	-20.58	7.91	3.18	6.66
16.20	-20.07	8.59	32.89	8.44
16.20	-19.10	7.38	20.38	6.10
16.20	-19.77	10.18	124.33	8.79
16.20	-20.97	9.05	80.34	12.10
16.20	-20.06	8.55	28.66	9.80
16.20	-19.75	10.48	94.05	7.01
16.20	-19.71	9.61	101.68	9.75
16.20	-18.55	8.98	66.21	10.50
16.20	-26.11	6.76	72.89	9.74
16.20	-22.95	10.80	124.79	7.26
16.20	-24.20	7.85	19.89	5.77
16.20	-24.69	7.77	29.05	5.26
16.20	-25.18	7.92	57.74	6.20
16.20	-25.01	7.84	58.17	6.16
16.20	-24.25	8.19	42.78	7.49
16.20	-23.64	9.39	116.11	11.93
16.20	-23.38	9.55	114.87	12.65
16.20	-24.52	8.94	65.01	9.33
16.20	-24.27	8.84	58.91	10.85
16.20	-24.68	9.04	67.79	9.89

## LOW LEVEL WINDS DAY 248 1230Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-21.84	241.44	7.14
16.20	-19.38	225.89	5.26
16.20	-19.00	225.04	5.24
16.20	-18.86	224.73	5.20
16.20	-18.66	239.68	7.65
16.20	-18.58	227.26	9.41
16.20	-18.89	247.03	10.19
16.20	-19.97	220.06	6.65
16.20	-19.73	244.63	7.51
16.20	-19.84	237.45	5.81
16.20	-20.49	256.32	9.43
16.20	-21.17	251.02	6.12
16.20	-22.55	234.30	7.39
16.20	-23.75	238.37	6.97
16.20	-26.43	22.44	8.11
16.20	-26.09	11.12	6.48
16.20	-26.04	22.50	8.04
16.20	-27.19	20.34	7.57
16.20	-26.46	22.74	6.43
16.20	-24.89	40.56	9.10
16.20	-24.65	45.21	7.55
16.20	-24.42	45.61	6.02
16.20	-24.29	20.05	5.95
16.20	-22.52	64.71	5.94
16.20	-21.90	63.74	5.50
16.20	-20.48	71.37	3.69
16.20	-24.04	31.53	6.59
16.20	-24.18	19.94	5.91
16.20	-24.10	64.34	6.36
16.20	-19.04	93.86	2.53
16.20	-19.27	134.04	3.16
16.20	-22.58	52.51	4.79
16.20	-22.38	55.79	5.19
16.20	-22.59	47.48	5.80
16.20	-22.91	36.55	5.48
16.20	-22.87	36.06	5.39
16.20	-22.86	29.58	4.38
16.20	-23.03	34.08	5.95
16.20	-23.36	39.79	5.18
16.20	-23.53	52.31	5.81
16.20	-23.52	22.43	5.83
16.20	-23.44	26.22	5.99
16.20	-23.77	28.68	7.32
16.20	-27.58	357.24	9.35
16.20	-27.50	358.17	10.36
16.20	-27.26	357.76	9.32
16.20	-28.19	291.34	6.86
16.20	-27.93	293.30	6.13

16.20	-27.71	6.70	292.87	6.15
16.20	-25.50	5.68	239.30	5.58
16.20	-25.40	5.75	248.51	8.12
16.20	-23.60	5.65	243.71	5.99
16.20	-22.94	6.44	231.58	6.79
16.20	-22.91	6.72	248.34	6.10
16.20	-23.43	6.35	261.98	4.77
16.20	-19.15	6.94	241.26	6.79
16.20	-19.38	6.57	234.87	5.53
16.20	-19.75	6.05	228.32	6.23
16.20	-21.36	4.96	230.20	6.16
16.20	-24.12	10.53	28.47	4.50
16.20	-24.34	10.78	39.45	7.32
16.20	-24.70	11.11	36.71	7.14
16.20	-25.37	11.48	36.48	7.26
16.20	-25.29	11.21	52.86	6.34
16.20	-22.91	12.31	47.76	6.90
16.20	-22.31	11.90	54.80	6.06
16.20	-26.96	11.95	8.44	9.09
16.20	-25.03	12.20	49.35	8.39
16.20	-24.55	5.90	254.44	7.87
16.20	-23.48	4.76	233.14	5.22
16.20	-22.07	4.87	221.71	7.14
16.20	-19.55	5.29	217.92	4.56
16.20	-27.81	9.57	307.80	7.42
16.20	-27.72	9.69	301.14	6.88
16.20	-28.18	10.04	307.02	6.11
16.20	-28.11	9.50	297.50	6.69
16.20	-26.76	8.04	257.16	10.42
16.20	-27.50	7.59	265.40	8.36
16.20	-23.39	5.06	252.60	5.75
16.20	-24.88	6.36	261.81	7.51
16.20	-27.00	8.46	284.86	8.87
16.20	-20.58	36.32	255.91	6.51
16.20	-20.01	7.09	255.42	6.54
16.20	-28.15	9.48	277.56	7.87
16.20	-27.87	9.59	309.83	6.44
16.20	-27.42	9.53	291.88	7.88
16.20	-27.93	9.52	297.37	6.68
16.20	-27.79	7.18	290.28	6.94
16.20	-25.44	5.77	244.29	7.91
16.20	-24.77	6.51	256.09	6.24
16.20	-26.04	11.74	22.50	8.04
16.20	-27.19	12.17	20.34	7.57
16.20	-26.46	11.68	22.74	6.43
16.20	-24.89	11.78	40.56	9.10
16.20	-24.65	11.82	45.21	7.55
16.20	-24.42	11.59	45.61	6.02
16.20	-24.29	11.42	20.05	5.95
16.20	-22.52	12.10	64.71	5.94
16.20	-21.90	12.13	63.74	5.50
16.20	-20.48	12.21	71.37	3.69
16.20	-24.04	11.45	31.53	6.59
16.20	-24.18	11.36	19.94	5.91
16.20	-24.10	12.02	64.34	6.36
16.20	-23.33	9.81	25.97	5.16

16.20	-22.76	10.12	31.26	4.51
16.20	-22.79	10.22	26.00	4.28
16.20	-23.31	9.63	12.70	6.25
16.20	-23.59	9.51	12.19	6.25
16.20	-23.82	9.48	352.26	6.09
16.20	-24.54	9.84	34.96	5.94
16.20	-22.87	6.46	237.14	5.73
16.20	-23.08	6.43	233.89	6.54
16.20	-24.84	6.94	250.65	3.08
16.20	-26.24	8.06	277.45	9.25
16.20	-26.69	7.83	259.39	7.58
16.20	-26.59	8.28	275.39	8.46
16.20	-26.37	8.27	273.33	8.69
16.20	-24.20	7.03	241.51	3.33
16.20	-25.04	6.80	244.20	4.04
16.20	-25.03	6.69	224.66	5.98
16.20	-24.86	6.43	258.65	9.02
16.20	-24.27	6.60	251.93	6.37
16.20	-25.82	6.94	247.25	6.41
16.20	-22.36	6.53	232.72	6.08
16.20	-22.67	9.36	23.27	2.14
16.20	-23.08	9.07	327.28	2.54
16.20	-25.91	8.17	290.70	7.07
16.20	-22.89	8.15	262.76	4.84
16.20	-22.83	8.04	262.56	4.87

## HIGH LEVEL WINDS DAY 248 1230Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-25.58	10.21	4.49
16.20	-26.11	10.35	5.58
16.20	-26.71	10.60	7.17
16.20	-25.79	10.83	5.29
16.20	-25.29	10.22	7.65
16.20	-20.46	11.05	6.16
16.20	-20.85	11.16	8.25
16.20	-21.49	10.98	10.36
16.20	-22.16	10.73	11.45
16.20	-22.62	10.89	11.75
16.20	-22.59	10.04	8.55
16.20	-23.15	9.81	7.62
16.20	-25.90	11.38	5.87
16.20	-27.78	10.30	9.99
16.20	-27.99	9.25	11.78
16.20	-27.73	9.27	8.45
16.20	-28.22	9.30	10.59
16.20	-27.97	8.97	12.49
16.20	-26.98	9.50	13.25
16.20	-27.13	10.12	11.62
16.20	-23.45	10.72	10.83
16.20	-19.41	11.67	6.23
16.20	-22.79	9.87	9.37
16.20	-25.89	8.98	11.99
16.20	-25.48	7.78	11.24
16.20	-27.44	10.76	11.51
16.20	-23.43	9.53	9.09
16.20	-26.32	9.15	13.51
16.20	-26.12	8.68	13.68
16.20	-26.88	7.38	6.46
16.20	-27.84	5.80	7.34
16.20	-27.87	5.28	8.37
16.20	-27.41	5.87	5.72
16.20	-26.92	5.66	7.36
16.20	-26.41	5.29	6.32
16.20	-26.90	6.75	6.36
16.20	-26.60	6.92	5.94
16.20	-27.17	6.45	8.51
16.20	-21.41	7.38	4.56
16.20	-21.14	7.55	7.96
16.20	-21.06	9.47	4.07
16.20	-19.35	10.40	4.79
16.20	-23.28	8.87	7.86
16.20	-22.20	7.87	8.68
16.20	-20.97	10.44	8.05
16.20	-19.71	11.31	6.26
16.20	-19.97	11.08	7.35
16.20	-25.79	7.76	7.66

16.20	-21.70	7.94	59.64	5.06
16.20	-22.99	8.25	45.40	9.73
16.20	-26.35	9.85	123.23	8.34
16.20	-19.31	6.17	54.28	16.25
16.20	-19.07	6.40	56.82	16.51
16.20	-20.13	7.01	25.21	11.91
16.20	-19.69	7.54	17.96	10.73
16.20	-19.84	7.31	16.16	11.64
16.20	-19.59	8.44	20.58	6.67
16.20	-19.59	8.44	20.58	6.67
16.20	-19.96	7.99	23.00	11.22
16.20	-20.22	7.74	14.62	6.44
16.20	-20.58	7.55	10.82	8.90
16.20	-18.98	9.67	50.51	8.65
16.20	-19.20	10.02	78.17	4.51
16.20	-20.30	8.53	17.48	6.09
16.20	-26.28	10.90	115.32	5.03
16.20	-22.38	10.20	122.83	11.91
16.20	-21.91	7.49	50.59	8.06
16.20	-22.56	8.05	54.03	7.18
16.20	-21.11	9.14	169.52	4.70
16.20	-24.93	7.40	61.07	10.80
16.20	-25.32	7.44	60.80	10.79
16.20	-25.86	7.86	67.37	8.69
16.20	-24.05	9.11	145.40	7.54
16.20	-23.65	9.33	145.14	7.61
16.20	-23.75	8.32	255.85	2.45
16.20	-23.87	8.49	215.98	2.50
16.20	-25.93	8.43	82.57	9.09
16.20	-25.94	8.22	81.04	9.09
16.20	-24.64	9.34	149.32	6.32
16.20	-24.30	9.30	144.26	6.72

## LOW LEVEL WINDS DAY 248 1500Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-26.69	12.03	23.44 5.87
16.20	-24.01	10.63	53.76 5.02
16.20	-24.20	11.05	29.12 6.81
16.20	-24.46	11.29	52.00 3.97
16.20	-24.19	10.70	52.21 3.92
16.20	-24.00	10.68	47.00 4.26
16.20	-24.67	11.11	36.10 5.46
16.20	-24.74	11.21	35.87 5.48
16.20	-24.80	11.28	36.07 5.47
16.20	-25.25	11.18	35.20 7.29
16.20	-27.60	11.97	14.71 7.56
16.20	-27.46	11.86	7.56 7.83
16.20	-26.82	11.73	20.67 5.16
16.20	-26.89	11.27	11.80 6.87
16.20	-25.16	11.40	27.66 4.93
16.20	-25.25	11.20	29.80 8.59
16.20	-26.45	11.79	27.19 7.22
16.20	-24.25	11.05	33.30 5.91
16.20	-25.35	10.87	23.09 5.75
16.20	-25.52	11.11	42.74 6.73
16.20	-25.42	11.04	36.66 6.12
16.20	-22.91	10.91	63.32 4.58
16.20	-23.10	11.34	67.05 5.49
16.20	-27.93	7.61	283.82 9.76
16.20	-27.34	7.54	279.99 10.61
16.20	-24.13	5.18	245.88 6.92
16.20	-26.79	7.64	269.64 9.62
16.20	-26.84	7.57	266.57 8.27
16.20	-27.09	7.68	266.43 9.16
16.20	-26.21	7.34	266.31 5.59
16.20	-26.11	7.38	251.81 5.91
16.20	-23.09	10.50	69.14 5.83
16.20	-23.08	10.23	45.69 6.44
16.20	-23.17	5.46	234.44 7.28
16.20	-22.20	5.20	267.51 5.98
16.20	-25.49	5.50	243.13 11.10
16.20	-25.40	5.25	230.11 9.93
16.20	-22.22	12.27	81.07 5.19
16.20	-22.46	12.23	86.92 3.63
16.20	-18.95	11.96	130.12 3.37
16.20	-18.48	11.99	123.97 3.75
16.20	-18.74	11.94	141.91 4.03
16.20	-18.64	11.50	125.05 3.74
16.20	-18.82	11.05	125.94 3.75
16.20	-18.45	10.37	106.12 4.23
16.20	-18.18	10.20	119.18 3.48
16.20	-19.11	7.68	258.92 7.70
16.20	-18.72	7.77	252.79 6.42

16.20	-18.78	7.50	245.41	5.66
16.20	-19.65	7.89	242.28	7.44
16.20	-19.93	7.39	249.01	8.63
16.20	-19.58	7.40	246.39	6.12
16.20	-20.02	7.13	252.69	6.86
16.20	-18.55	6.79	239.88	7.83
16.20	-18.54	6.63	229.91	7.59
16.20	-18.68	5.55	224.70	6.83
16.20	-19.23	5.54	231.50	7.99
16.20	-19.67	5.22	231.25	8.02
16.20	-27.90	5.07	238.15	5.56
16.20	-27.09	6.62	260.18	9.35
16.20	-27.02	6.46	265.95	8.79
16.20	-23.29	7.22	250.05	8.19
16.20	-22.46	7.28	257.20	7.94
16.20	-22.08	7.60	246.00	6.45
16.20	-22.42	6.96	249.47	7.81
16.20	-23.37	7.12	258.59	6.37
16.20	-24.68	11.88	46.14	5.13
16.20	-24.72	11.55	49.42	5.46
16.20	-24.40	11.61	46.86	4.37
16.20	-24.50	12.18	46.17	5.21
16.20	-23.35	11.83	50.22	4.85
16.20	-22.23	12.28	81.57	5.66
16.20	-22.58	12.11	73.54	6.33
16.20	-22.78	12.25	71.34	7.48
16.20	-23.24	12.14	70.60	6.95
16.20	-22.95	12.09	60.02	6.56
16.20	-22.82	11.89	66.86	7.18
16.20	-22.77	11.76	72.62	5.84
16.20	-23.00	11.45	65.82	6.65
16.20	-23.03	11.37	56.06	5.62
16.20	-23.33	10.90	63.38	4.53
16.20	-22.93	10.29	75.71	4.11
16.20	-22.91	9.76	42.39	4.58
16.20	-19.23	12.01	117.80	3.53
16.20	-19.06	12.19	117.04	4.56
16.20	-27.38	8.31	274.84	6.81
16.20	-27.34	8.22	270.30	7.72
16.20	-27.26	8.28	270.37	7.72
16.20	-26.89	7.85	263.29	8.30
16.20	-26.93	7.99	274.82	6.84
16.20	-26.97	8.07	263.08	7.84
16.20	-24.22	6.73	262.74	8.70
16.20	-24.02	6.70	267.49	10.29
16.20	-24.11	6.56	277.08	8.68
16.20	-22.45	7.21	263.38	8.84
16.20	-22.60	7.29	259.63	6.25
16.20	-22.82	7.14	266.56	8.99
16.20	-22.24	7.31	268.46	8.76
16.20	-24.45	6.63	270.30	9.54
16.20	-24.65	10.10	12.19	4.10
16.20	-24.56	10.09	12.25	4.08
16.20	-24.78	10.07	348.95	3.96
16.20	-24.36	9.89	348.66	3.99
16.20	-22.91	9.63	348.63	4.06

16.20	-23.52	10.01	10.34	1.56
16.20	-23.60	9.90	9.18	1.82
16.20	-23.59	6.81	272.86	8.21
16.20	-26.21	7.01	274.30	5.47
16.20	-26.22	6.85	274.02	5.70
16.20	-25.04	6.69	257.02	6.90
16.20	-25.18	6.80	255.20	5.99
16.20	-25.29	6.85	254.75	5.74
16.20	-24.99	6.49	257.34	5.95
16.20	-22.56	6.72	270.20	7.34

## HIGH LEVEL WINDS DAY 248 1500Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-21.85	6.43	50.66 14.91
16.20	-22.56	8.11	22.55 6.71
16.20	-20.03	7.65	19.16 9.89
16.20	-23.29	10.41	144.17 9.19
16.20	-26.46	10.56	138.82 8.13
16.20	-19.94	7.65	19.27 9.91
16.20	-22.25	10.61	132.09 8.71
16.20	-21.74	10.79	129.99 6.76
16.20	-21.94	10.70	136.34 7.39
16.20	-22.15	11.53	153.13 11.58
16.20	-25.91	10.55	138.52 8.12
16.20	-25.54	10.66	149.15 11.08
16.20	-26.89	10.39	106.66 7.17
16.20	-26.87	10.68	123.11 9.14
16.20	-27.31	10.64	118.59 11.26
16.20	-24.37	10.49	175.84 8.76
16.20	-20.02	5.69	45.96 14.32
16.20	-18.56	5.62	29.88 13.18
16.20	-20.40	7.52	20.00 9.35
16.20	-20.57	6.93	27.37 11.01
16.20	-21.12	6.66	27.07 9.80
16.20	-21.20	7.43	26.14 8.10
16.20	-20.76	7.42	18.96 9.79
16.20	-21.41	11.84	151.90 9.42
16.20	-21.22	11.86	150.88 10.04
16.20	-21.03	11.84	158.84 9.49
16.20	-20.78	11.72	165.25 6.64
16.20	-20.50	11.59	182.29 6.00
16.20	-20.97	11.60	172.25 8.04
16.20	-20.81	11.54	182.60 8.04
16.20	-20.51	10.83	116.57 8.11
16.20	-20.02	10.98	111.20 4.78
16.20	-20.09	10.88	111.20 4.78
16.20	-19.63	10.44	133.07 2.73
16.20	-18.99	9.32	13.57 6.22
16.20	-20.04	8.56	351.57 4.84
16.20	-20.88	9.51	174.40 3.64
16.20	-22.84	9.62	134.09 5.13
16.20	-22.72	9.16	81.30 1.98
16.20	-23.34	9.52	143.93 6.88
16.20	-27.30	8.94	111.23 13.47
16.20	-26.95	8.43	103.23 9.27
16.20	-27.21	7.86	126.68 7.18
16.20	-27.30	5.69	92.69 8.40
16.20	-28.26	5.28	89.83 8.31
16.20	-27.44	5.21	89.67 8.81
16.20	-27.77	8.81	126.03 8.78
16.20	-25.06	7.97	333.80 8.00

16.20	-25.63	7.95	50.79	11.47
16.20	-24.37	8.56	306.75	3.94
16.20	-20.74	9.50	209.55	3.09
16.20	-1.48	9.81	156.24	3.38
16.20	-20.59	9.12	320.61	3.55
16.20	-20.88	8.61	308.45	4.18
16.20	-23.66	8.94	230.69	3.10
16.20	-23.40	8.63	288.56	4.40
16.20	-24.38	9.01	235.28	6.36
16.20	-24.38	8.53	287.87	4.37
16.20	-23.05	8.71	313.14	4.36
16.20	-22.74	8.58	339.10	4.85
16.20	-22.59	7.90	356.91	6.04
16.20	-28.05	9.80	94.51	11.78
16.20	-26.45	7.95	61.45	9.94
16.20	-21.99	10.23	127.10	6.33
16.20	-22.40	10.27	121.30	7.27
16.20	-24.67	9.84	198.27	6.14
16.20	-24.35	9.69	215.95	5.13
16.20	-23.53	8.75	223.79	3.68
16.20	-23.72	8.00	284.09	5.42
16.20	-23.73	8.97	218.01	4.97
16.20	-24.53	9.29	227.98	3.67
16.20	-22.97	9.44	132.35	7.27
16.20	-23.83	9.61	149.53	5.06
16.20	-25.02	9.87	162.87	7.47

## LOW LEVEL WINDS DAY 253 1230Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-21.55	12.35	317.45 2.40
16.20	-21.30	12.58	290.82 3.31
16.20	-21.48	12.44	318.29 2.40
16.20	-20.68	12.77	344.08 1.88
16.20	-20.75	12.37	334.00 2.48
16.20	-20.66	12.52	328.53 3.76
16.20	-21.39	12.07	297.28 3.59
16.20	-21.24	12.08	307.39 2.78
16.20	-21.41	11.95	306.69 4.45
16.20	-21.24	11.86	322.17 2.80
16.20	-21.26	11.80	322.89 2.16
16.20	-21.50	11.67	300.29 3.23
16.20	-21.29	11.60	285.53 2.46
16.20	-21.29	11.45	319.51 3.50
16.20	-21.45	11.59	309.48 4.15
16.20	-21.52	11.51	295.84 3.71
16.20	-21.26	11.30	298.47 3.30
16.20	-21.11	11.13	332.12 3.02
16.20	-21.41	11.02	293.75 2.73
16.20	-21.58	11.10	312.91 3.88
16.20	-21.74	11.35	319.30 3.53
16.20	-21.91	11.09	311.19 2.60
16.20	-22.13	11.09	305.08 2.98
16.20	-22.43	11.26	288.94 3.59
16.20	-22.63	11.24	301.21 3.34
16.20	-22.61	11.45	307.28 2.95
16.20	-22.48	11.35	306.99 2.94
16.20	-22.43	11.26	280.89 3.49
16.20	-22.35	11.03	300.08 3.39
16.20	-22.27	10.86	270.69 5.01
16.20	-22.26	10.75	275.53 5.50
16.20	-22.54	10.54	311.32 3.36
16.20	-22.47	10.46	289.25 4.78
16.20	-22.46	10.43	287.31 3.78
16.20	-22.69	10.38	287.71 5.24
16.20	-23.08	10.26	288.12 3.78
16.20	-23.17	10.29	291.28 3.35
16.20	-23.44	10.48	284.92 4.66
16.20	-23.61	10.75	285.49 3.11
16.20	-23.76	11.03	301.58 4.45
16.20	-23.61	11.30	284.40 3.44
16.20	-25.25	11.57	264.69 6.59
16.20	-22.66	12.07	287.23 4.27
16.20	-22.57	11.85	283.04 3.35
16.20	-23.00	12.21	297.13 2.96
16.20	-22.26	11.79	304.90 3.87
16.20	-22.28	11.71	298.10 3.67
16.20	-25.39	3.45	130.39 4.14

16.20	-25.08	3.29	130.97	3.47
16.20	-24.99	2.98	128.11	4.45
16.20	-24.77	2.89	127.12	3.82
16.20	-24.59	2.98	132.05	3.50
16.20	-24.36	3.25	108.85	2.82
16.20	-25.27	3.79	145.97	3.31
16.20	-25.33	4.43	146.01	2.68
16.20	-24.60	4.42	132.61	2.71
16.20	-24.52	4.58	146.73	2.82
16.20	-24.74	5.11	146.09	2.20
16.20	-24.26	4.66	164.88	2.49
16.20	-23.89	3.20	126.38	3.28
16.20	-22.14	3.41	138.48	4.19
16.20	-24.27	4.77	176.03	2.46
16.20	-23.44	3.81	131.16	3.75
16.20	-23.25	3.71	114.71	3.59
16.20	-24.98	3.43	140.14	4.22
16.20	-25.04	3.91	134.07	3.26
16.20	-25.04	4.01	118.66	2.69
16.20	-25.69	5.70	320.84	2.15
16.20	-25.32	5.81	255.33	1.42
16.20	-24.76	6.13	8.39	.62
16.20	-22.07	3.58	109.55	3.50
16.20	-22.51	10.21	294.19	2.92
16.20	-22.43	10.38	316.93	3.04
16.20	-22.65	10.31	310.03	6.33
16.20	-22.49	10.29	289.25	4.78
16.20	-22.64	10.00	283.10	4.74
16.20	-22.75	9.79	309.27	6.45
16.20	-22.74	9.79	315.84	5.76
16.20	-22.82	9.65	299.20	4.28
16.20	-22.88	9.62	303.18	3.88
16.20	-23.06	9.50	314.96	5.16
16.20	-23.54	9.92	305.19	5.50
16.20	-23.41	10.09	286.45	5.72
16.20	-24.05	10.02	301.64	2.60
16.20	-24.82	9.63	331.52	4.49
16.20	-24.52	9.92	287.91	5.74
16.20	-23.40	8.52	12.97	.85
16.20	-23.02	7.57	232.09	1.32
16.20	-24.22	9.57	256.38	3.04
16.20	-24.18	9.64	230.77	2.60
16.20	-24.22	9.16	226.27	1.59
16.20	-23.10	10.22	298.79	4.56
16.20	-23.19	10.29	298.84	3.54
16.20	-23.25	10.09	302.70	5.84
16.20	-24.29	10.31	331.37	5.03
16.20	-24.93	9.46	305.04	3.35
16.20	-24.56	8.97	179.22	3.68
16.20	-23.67	8.34	70.92	1.12
16.20	-24.73	7.30	224.50	1.63
16.20	-23.19	8.82	288.60	2.18
16.20	-23.09	9.05	307.94	1.98
16.20	-23.07	8.96	287.44	5.10
16.20	-23.26	7.82	240.70	.56
16.20	-22.54	7.31	341.35	1.70

16.20	-23.64	7.07	243.57	1.85
16.20	-22.01	10.36	307.48	2.70
16.20	-21.40	3.26	167.71	3.90
16.20	-21.19	2.76	156.32	4.17
16.20	-24.31	4.16	167.13	2.49
16.20	-23.90	8.15	233.00	.46
16.20	-25.26	7.44	243.11	2.72
16.20	-25.22	7.33	249.76	2.11
16.20	-24.74	7.32	248.42	2.16
16.20	-22.54	7.83	276.17	3.77
16.20	-22.72	7.63	284.35	1.98
16.20	-21.11	7.73	294.29	3.10
16.20	-25.44	13.30	272.68	2.78
16.20	-25.08	13.16	277.10	4.21
16.20	-24.95	13.14	269.47	3.79
16.20	-24.98	13.06	270.50	2.85
16.20	-24.88	12.89	285.13	3.87
16.20	-24.36	12.96	298.74	3.12
16.20	-24.33	12.87	289.22	2.99
16.20	-24.21	13.09	314.39	4.97
16.20	-24.22	12.75	306.72	4.07
16.20	-23.99	12.74	316.78	2.73
16.20	-24.63	13.41	345.84	2.78
16.20	-23.23	13.85	217.76	.65
16.20	-22.65	13.53	258.04	.43
16.20	-22.60	13.58	261.70	.93
16.20	-22.47	13.26	260.30	1.01
16.20	-22.63	12.96	250.90	2.17
16.20	-22.37	12.73	262.87	2.06
16.20	-22.42	12.80	264.93	4.02
16.20	-21.58	13.12	306.71	2.87
16.20	-21.43	13.16	311.62	1.86
16.20	-21.21	13.26	296.57	1.55
16.20	-21.09	13.27	311.29	1.80
16.20	-20.98	13.29	311.28	1.80
16.20	-20.97	13.40	296.32	1.56
16.20	-20.77	13.45	296.90	1.51
16.20	-20.77	13.59	297.08	1.48
16.20	-20.71	13.58	298.64	1.48
16.20	-20.90	13.09	257.25	1.56
16.20	-20.74	12.84	.47	1.23

MID LEVEL WINDS DAY 253 1230Z

	LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-24.62	12.11	139.89	8.17
16.20	-24.46	11.97	137.62	9.11
16.20	-24.70	11.86	135.77	11.32
16.20	-24.41	11.70	137.95	10.39
16.20	-24.64	11.62	133.41	9.03
16.20	-24.30	11.40	129.15	9.08
16.20	-23.90	11.28	129.90	9.74
16.20	-24.44	11.09	119.16	7.61
16.20	-24.72	11.21	133.62	8.98
16.20	-24.90	11.12	131.32	5.73
16.20	-25.73	11.66	119.79	6.17
16.20	-25.59	11.49	137.46	7.00
16.20	-24.87	10.86	133.08	6.98
16.20	-25.16	10.58	131.05	4.98
16.20	-25.41	10.28	123.98	6.62
16.20	-25.40	10.40	122.85	7.64
16.20	-24.81	10.23	125.58	7.30
16.20	-24.09	10.67	122.38	8.83
16.20	-23.94	10.39	129.17	7.69
16.20	-24.01	10.60	130.20	9.67
16.20	-21.81	11.64	97.87	9.60
16.20	-22.04	11.49	96.10	10.44
16.20	-21.92	11.57	94.81	9.54
16.20	-22.80	10.41	95.54	8.70
16.20	-23.61	13.41	143.33	9.15
16.20	-21.17	7.88	81.88	9.84
16.20	-21.60	7.67	84.60	10.20
16.20	-24.98	8.84	99.98	6.78
16.20	-25.21	8.66	100.75	6.28
16.20	-25.43	8.50	110.61	7.43
16.20	-25.69	8.11	111.80	5.92
16.20	-25.03	9.09	110.54	6.16
16.20	-25.54	9.10	131.27	6.30
16.20	-25.07	10.13	128.04	7.47
16.20	-25.49	9.28	130.93	6.33
16.20	-25.54	8.83	100.36	6.28
16.20	-25.69	8.77	109.24	5.05
16.20	-25.69	8.71	109.21	5.05
16.20	-25.74	8.57	115.26	6.16
16.20	-25.79	8.53	124.33	5.61
16.20	-25.45	8.58	109.11	7.88
16.20	-25.40	8.62	99.65	6.68
16.20	-25.37	8.68	102.89	7.24
16.20	-25.60	8.34	103.06	7.12
16.20	-25.79	8.53	121.69	5.99
16.20	-25.81	8.84	101.99	5.39
16.20	-24.70	9.25	103.90	6.97
16.20	-23.76	10.10	115.25	9.68

16.20	-22.50	8.72	86.17	11.22
16.20	-22.21	8.88	88.70	11.26
16.20	-21.97	8.26	98.75	9.24
16.20	-21.34	8.65	73.84	6.82
16.20	-21.59	7.41	113.58	5.54
16.20	-24.66	7.54	98.99	7.87
16.20	-24.36	8.16	77.15	10.68
16.20	-24.38	7.05	91.63	8.62

## HIGH LEVEL WINDS DAY 253 1230Z

LONG•	LAT•	DIRECTION	SPEED (M/SEC)
16.20	-24.83	6.30	86.93 11.75
16.20	-24.75	6.25	74.80 11.75
16.20	-24.58	6.20	84.27 10.42
16.20	-24.15	6.36	81.62 10.08
16.20	-24.45	6.28	78.10 12.56
16.20	-25.12	6.32	81.15 10.43
16.20	-24.69	5.35	82.87 18.64
16.20	-24.82	5.20	76.68 18.51
16.20	-24.73	5.48	82.07 21.05
16.20	-23.12	5.21	75.46 17.98
16.20	-23.03	5.20	70.60 17.99
16.20	-22.84	5.10	62.59 17.07
16.20	-22.35	4.93	54.06 16.43
16.20	-23.34	6.07	57.66 9.73
16.20	-21.68	4.34	63.68 18.45
16.20	-21.54	4.29	66.50 20.69
16.20	-22.22	4.31	71.88 18.75
16.20	-25.10	11.14	65.79 15.54
16.20	-24.93	11.00	79.07 22.33
16.20	-24.31	11.58	67.80 17.18
16.20	-23.94	11.65	73.12 19.01
16.20	-23.45	11.72	67.83 16.81
16.20	-22.93	11.70	57.55 17.15
16.20	-23.09	11.71	58.15 17.56
16.20	-22.98	12.00	55.94 16.45
16.20	-22.92	11.96	53.18 15.21
16.20	-22.86	12.28	48.11 16.05
16.20	-22.56	12.17	48.41 15.25
16.20	-22.59	12.53	53.03 16.23
16.20	-21.90	12.80	47.49 18.20
16.20	-22.00	13.26	52.10 14.95
16.20	-22.24	13.38	47.11 14.21
16.20	-21.93	13.40	52.61 14.29
16.20	-21.70	13.36	65.39 12.13
16.20	-21.69	-14.15	54.44 14.27
16.20	-21.95	12.42	63.62 9.71
16.20	-21.73	12.56	64.48 11.35
16.20	-21.18	10.73	91.96 16.65
16.20	-20.94	10.67	88.71 15.33
16.20	-21.41	10.70	91.58 17.61
16.20	-25.66	6.28	76.47 13.38
16.20	-23.44	3.73	66.99 19.95
16.20	-22.69	4.04	69.51 22.42
16.20	-22.67	3.87	66.09 22.94
16.20	-21.31	5.45	65.72 13.26
16.20	-22.60	5.42	60.22 14.33
16.20	-22.60	5.55	61.16 12.54
16.20	-23.48	7.02	100.18 15.02

16.20	-21.83	6.66	79.93	10.98
16.20	-24.42	6.64	85.80	10.93
16.20	-24.95	6.52	92.79	11.70
16.20	-21.40	7.60	87.21	10.05
16.20	-21.60	10.27	96.37	17.39
16.20	-21.04	9.36	74.04	15.77
16.20	-23.47	8.58	91.95	20.42
16.20	-23.47	7.18	113.36	12.95
16.20	-25.12	6.51	102.34	11.88
16.20	-21.44	7.08	96.75	18.11
16.20	-21.16	7.05	98.27	15.79
16.20	-24.74	6.89	90.97	9.99
16.20	-24.77	6.57	90.86	10.34
16.20	-24.26	6.52	82.97	10.06
16.20	-23.15	7.34	107.20	13.98

## LOW LEVEL WINDS DAY 253 1500Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC.)
16.20	-28.26	11.21	244.15 5.00
16.20	-28.17	11.20	247.36 5.85
16.20	-28.06	11.09	247.70 5.84
16.20	-27.82	10.99	243.74 5.03
16.20	-27.98	10.77	250.16 6.70
16.20	-27.74	10.56	254.55 4.71
16.20	-28.25	10.29	246.79 5.89
16.20	-27.49	11.54	244.56 5.02
16.20	-26.88	11.51	240.38 4.20
16.20	-26.57	11.31	285.82 3.63
16.20	-26.56	11.21	268.79 3.56
16.20	-28.03	11.37	243.84 5.02
16.20	-26.29	10.43	280.58 4.55
16.20	-26.33	10.50	267.58 5.45
16.20	-25.80	11.84	271.29 3.57
16.20	-24.58	10.55	293.61 4.89
16.20	-24.44	10.58	299.57 4.09
16.20	-24.32	10.53	299.03 4.10
16.20	-23.77	11.29	323.93 2.80
16.20	-23.53	12.11	235.43 1.00
16.20	-23.40	12.01	289.87 3.78
16.20	-23.38	11.77	276.60 2.70
16.20	-23.29	11.52	271.49 4.63
16.20	-23.38	11.33	273.55 3.64
16.20	-23.42	11.10	294.53 2.90
16.20	-23.35	10.84	272.64 3.69
16.20	-23.24	10.77	261.23 6.63
16.20	-23.20	10.70	284.04 4.70
16.20	-23.57	10.46	322.22 2.78
16.20	-23.13	10.17	293.71 2.96
16.20	-23.12	9.98	308.52 3.41
16.20	-23.09	9.87	319.27 5.41
16.20	-23.35	9.72	319.24 4.11
16.20	-22.37	-10.08	294.95 5.08
16.20	-22.14	9.95	287.14 6.87
16.20	-21.89	10.53	310.48 3.54
16.20	-21.91	10.71	295.66 5.08
16.20	-21.99	10.95	272.45 4.68
16.20	-22.27	11.13	273.79 3.71
16.20	-21.78	11.59	326.82 2.97
16.20	-21.95	11.80	345.70 2.59
16.20	-22.06	12.00	311.06 2.21
16.20	-21.94	12.35	311.39 2.25
16.20	-20.52	12.25	8.73 2.83
16.20	-20.15	12.21	8.26 2.85
16.20	-19.31	12.30	18.03 .90
16.20	-19.37	11.33	315.33 3.72
16.20	-18.99	11.38	351.68 3.87

16.20	-18.96	11.19	354.00	4.83
16.20	-18.91	10.80	336.33	6.16
16.20	-18.98	10.70	320.78	7.13
16.20	-18.60	10.95	346.00	5.93
16.20	-19.28	10.72	341.68	4.91
16.20	-19.21	10.49	312.71	3.72
16.20	-19.25	10.20	312.87	3.70
16.20	-20.18	10.60	340.64	4.81
16.20	-20.06	10.85	314.39	4.98
16.20	-19.55	10.10	308.00	7.07
16.20	-19.41	9.90	329.97	5.22
16.20	-18.87	9.74	313.41	5.09
16.20	-18.70	9.29	329.27	5.26
16.20	-19.09	8.78	305.10	5.84
16.20	-18.93	8.72	320.11	4.44
16.20	-18.84	8.59	312.00	6.42
16.20	-18.76	8.51	295.71	5.42
16.20	-18.33	8.71	319.61	5.85
16.20	-19.88	8.09	303.35	5.79
16.20	-22.85	8.91	285.56	3.91
16.20	-23.28	7.73	268.30	3.87
16.20	-23.12	7.73	268.52	3.87
16.20	-22.41	7.64	305.13	3.53
16.20	-22.32	7.56	289.46	3.09
16.20	-22.55	7.65	289.86	3.06
16.20	-21.41	12.35	314.94	3.57
16.20	-21.34	12.23	322.29	6.91
16.20	-21.08	11.46	321.31	6.91
16.20	-21.60	11.11	321.90	5.56
16.20	-21.49	11.08	336.11	5.95
16.20	-21.33	10.82	330.30	5.08
16.20	-21.07	10.65	307.85	6.93
16.20	-22.42	7.64	299.44	2.23
16.20	-19.72	10.33	298.10	3.16
16.20	-23.22	7.50	269.61	2.91
16.20	-23.99	7.56	296.75	4.20
16.20	-24.19	7.83	267.49	2.86
16.20	-24.36	7.80	267.38	2.84
16.20	-23.94	8.67	254.03	3.96
16.20	-23.91	9.58	300.94	2.08
16.20	-24.32	8.85	254.50	3.93
16.20	-24.50	9.27	305.94	3.32
16.20	-24.86	8.57	290.44	3.90
16.20	-24.99	8.64	267.03	0.97
16.20	-25.30	8.51	304.03	3.31
16.20	-25.29	7.77	285.45	2.91
16.20	-25.11	7.88	265.24	1.93
16.20	-25.12	7.42	266.05	1.96
16.20	-24.77	7.05	265.63	2.89
16.20	-24.76	6.66	247.04	3.17
16.20	-26.17	7.14	284.11	2.91
16.20	-26.81	7.61	238.28	4.40
16.20	-25.09	9.04	296.50	2.06
16.20	-24.83	8.94	241.26	2.18
16.20	-25.22	9.03	267.41	1.88
16.20	-25.10	9.44	289.59	2.89

16.20	-24.64	9.39	291.81	4.94
16.20	-24.46	9.60	309.25	4.62
16.20	-24.80	9.30	268.85	3.73
16.20	-26.87	10.26	239.30	4.28
16.20	-27.55	9.81	256.62	5.60
16.20	-28.22	9.70	255.85	5.56
16.20	-28.18	9.16	263.09	1.83
16.20	-28.26	8.83	230.70	3.59
16.20	-28.36	8.42	227.73	4.98
16.20	-28.18	8.19	209.93	3.77
16.20	-28.33	6.73	210.10	3.85
16.20	-28.08	5.59	171.79	5.28
16.20	-27.79	5.49	148.75	4.88
16.20	-27.96	4.87	148.97	4.91
16.20	-25.96	4.64	113.47	2.81
16.20	-25.46	4.76	113.65	2.82
16.20	-25.15	4.89	61.54	3.99
16.20	-23.95	5.34	244.89	.18
16.20	-24.12	5.35	104.13	3.69
16.20	-25.96	4.64	113.47	2.81
16.20	-24.20	5.25	101.75	4.57
16.20	-23.23	5.93	266.53	2.06
16.20	-24.54	6.73	247.63	3.18
16.20	-22.49	4.85	19.91	2.08
16.20	-22.64	4.91	21.73	2.12
16.20	-25.35	4.78	101.47	.70
16.20	-25.11	5.80	264.81	1.10
16.20	-25.10	6.18	292.31	2.11

## MID LEVEL WINDS DAY 253 1500Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
16.20	-24.66	6.02	49.42 10.92
16.20	-24.67	6.26	65.27 10.13
16.20	-24.46	6.13	53.44 10.38
16.20	-26.17	11.65	95.18 5.60
16.20	-26.31	11.61	111.42 6.86
16.20	-26.17	11.86	115.13 8.05
16.20	-24.71	11.51	105.65 11.57
16.20	-24.59	11.72	126.46 9.02
16.20	-24.86	11.90	135.99 10.27
16.20	-24.97	12.15	114.32 10.11
16.20	-25.04	11.37	122.27 6.50
16.20	-25.27	10.92	140.48 9.74
16.20	-25.65	10.79	136.23 7.72
16.20	-25.25	10.34	112.60 8.91
16.20	-25.57	9.98	129.30 5.80
16.20	-25.77	9.67	136.69 6.47
16.20	-25.96	9.90	122.61 8.54
16.20	-28.08	9.88	132.33 7.14
16.20	-26.94	10.06	124.96 6.51
16.20	-24.62	10.36	117.91 9.30
16.20	-20.17	10.21	60.93 8.23
16.20	-19.59	9.64	55.49 8.77
16.20	-19.77	9.63	55.55 8.73
16.20	-19.26	9.27	61.28 12.86
16.20	-18.91	9.14	65.18 12.41
16.20	-18.86	9.08	65.21 12.38
16.20	-18.56	9.16	55.38 12.67
16.20	-18.38	9.14	46.33 13.26
16.20	-20.74	10.78	62.83 13.75
16.20	-19.11	10.45	68.71 8.88

## HIGH LEVEL WINDS DAY 253 1500Z

LONG•	LAT•	DIRECTION	SPEED (M/SEC)
16.20	-27.47	11.65	63.46 17.71
16.20	-27.67	11.64	55.14 17.16
16.20	-27.66	10.40	63.35 19.62
16.20	-27.59	10.19	64.31 20.45
16.20	-27.33	10.29	64.41 20.49
16.20	-27.43	10.50	66.17 22.22
16.20	-26.95	10.44	64.39 20.62
16.20	-25.05	9.66	86.73 16.74
16.20	-24.14	11.40	65.86 14.82
16.20	-24.48	10.98	61.30 12.13
16.20	-24.19	10.99	66.37 17.90
16.20	-23.62	11.88	55.36 18.11
16.20	-21.61	10.46	91.91 17.39
16.20	-22.45	9.45	98.19 19.13
16.20	-22.39	9.18	98.21 19.14
16.20	-22.11	10.60	85.40 14.53
16.20	-18.60	11.59	83.46 15.40
16.20	-18.40	11.82	77.40 11.74
16.20	-18.45	9.62	96.39 20.07
16.20	-19.68	8.69	98.61 19.80
16.20	-19.98	8.88	102.25 20.88
16.20	-23.93	7.20	103.22 14.27
16.20	-23.95	7.44	103.97 17.17
16.20	-24.23	7.21	98.77 14.95
16.20	-25.64	5.41	88.37 16.37
16.20	-26.49	5.14	88.48 16.24
16.20	-26.66	5.01	79.52 18.31
16.20	-25.32	5.15	74.95 16.98
16.20	-24.81	4.97	90.71 20.21
16.20	-24.77	4.68	90.77 20.20
16.20	-23.76	5.06	72.46 18.55
16.20	-23.56	5.05	70.84 16.77
16.20	-24.32	4.66	75.56 18.08
16.20	-23.07	5.09	75.84 14.47
16.20	-23.21	4.95	87.58 15.84
16.20	-22.62	5.01	65.89 13.33
16.20	-21.92	4.90	46.33 10.38
16.20	-20.82	5.22	56.79 13.82
16.20	-19.95	5.99	27.93 8.35
16.20	-19.67	5.34	38.97 10.91
16.20	-25.11	6.60	88.58 7.27
16.20	-25.48	6.54	88.31 8.15
16.20	-25.33	6.49	97.85 6.37
16.20	-24.87	6.41	73.39 7.63
16.20	-25.27	6.34	100.67 9.23
16.20	-25.58	6.36	99.72 10.13
16.20	-24.58	6.53	108.66 5.72
16.20	-24.69	6.45	95.64 7.32

16.20	-24.47	6.54	100.94	4.61
16.20	-23.27	6.51	86.66	10.22

LOW LEVEL WINDS DAY 261 1330Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-22.15	203.35	5.15
15.00	-22.04	209.99	6.10
15.00	-22.16	187.08	6.25
15.00	-22.07	186.56	6.21
15.00	-22.13	193.40	7.42
15.00	-21.86	197.18	7.60
15.00	-21.75	208.20	6.58
15.00	-21.78	200.29	9.37
15.00	-21.78	192.33	8.40
15.00	-21.64	182.70	7.22
15.00	-21.62	189.17	8.35
15.00	-21.82	177.05	4.67
15.00	-21.94	182.55	6.18
15.00	-22.06	182.60	7.72
15.00	-22.01	182.61	7.68
15.00	-21.99	182.87	7.18
15.00	-22.37	174.99	7.16
15.00	-22.63	173.00	8.70
15.00	-22.47	162.97	8.43
15.00	-22.35	175.71	7.69
15.00	-22.43	170.70	6.71
15.00	-22.23	174.48	6.19
15.00	-22.70	159.61	8.54
15.00	-21.93	155.17	5.10
15.00	-21.96	168.91	5.74
15.00	-21.62	182.95	6.70
15.00	-21.33	167.75	5.30
15.00	-21.40	173.90	6.21
15.00	-21.33	177.50	5.16
15.00	-21.35	182.64	4.67
15.00	-21.52	192.83	5.36
15.00	-21.25	176.01	7.69
15.00	-21.11	173.69	5.68
15.00	-21.11	183.01	4.66
15.00	-20.96	195.97	6.51
15.00	-20.89	189.22	4.78
15.00	-20.85	183.52	5.71
15.00	-20.84	183.46	6.21
15.00	-22.56	164.16	5.88
15.00	-22.54	164.55	7.84
15.00	-22.47	170.02	6.70
15.00	-22.48	182.52	6.72
15.00	-22.63	182.31	6.69
15.00	-22.72	182.14	6.70
15.00	-22.85	182.32	6.67
15.00	-22.94	158.13	7.05
15.00	-23.04	158.67	7.05
15.00	-23.23	172.87	2.70

15.00	-23.22	8.25	171.95	7.68
15.00	-23.29	7.99	166.29	6.77
15.00	-23.69	7.97	163.80	4.30
15.00	-23.64	8.10	170.24	6.70
15.00	-23.60	7.98	161.59	3.83
15.00	-23.57	7.89	161.12	3.83
15.00	-23.64	7.82	161.12	3.83
15.00	-23.72	7.54	172.83	8.21
15.00	-23.80	7.57	169.93	6.24
15.00	-23.88	7.57	163.84	8.88
15.00	-23.88	7.70	156.94	8.73
15.00	-23.84	7.79	153.87	8.84
15.00	-24.00	7.88	165.64	4.78
15.00	-23.98	8.09	165.56	4.77
15.00	-23.83	8.31	182.50	4.70
15.00	-23.69	8.20	182.66	3.66
15.00	-23.38	8.15	169.19	6.21
15.00	-23.54	8.30	172.54	8.66
15.00	-23.43	8.33	190.63	6.34
15.00	-23.45	7.71	165.69	6.35
15.00	-21.29	8.49	203.24	6.89
15.00	-21.25	8.60	203.14	9.59
15.00	-21.35	8.62	203.00	9.61
15.00	-21.34	8.85	207.05	8.25
15.00	-21.55	8.82	203.70	8.01
15.00	-21.52	8.94	202.39	8.47
15.00	-21.69	9.14	187.03	5.19
15.00	-21.51	9.10	204.33	6.37
15.00	-21.52	9.23	206.41	5.88
15.00	-21.61	9.17	201.61	7.28
15.00	-21.39	9.24	205.01	7.49
15.00	-21.52	9.43	206.18	5.92
15.00	-21.66	9.57	208.10	4.16
15.00	-21.58	9.57	226.01	5.44
15.00	-21.50	9.57	232.26	3.64
15.00	-21.26	9.23	213.17	7.59
15.00	-21.22	9.07	212.99	7.56
15.00	-21.35	8.98	203.70	7.97
15.00	-21.96	9.23	204.44	6.33
15.00	-21.96	9.42	204.04	6.35
15.00	-22.29	8.98	181.85	4.64
15.00	-22.37	8.92	182.09	4.65
15.00	-22.44	8.81	173.27	6.14
15.00	-22.45	8.69	173.46	6.14
15.00	-22.54	8.91	173.22	6.14
15.00	-22.50	9.02	196.56	7.58
15.00	-21.83	9.53	209.49	7.23
15.00	-21.93	9.68	216.05	5.93
15.00	-21.99	9.64	212.05	5.62
15.00	-21.87	9.63	218.20	8.13
15.00	-22.07	9.71	215.28	7.83
15.00	-22.21	9.68	210.55	7.95
15.00	-22.46	9.48	198.27	4.94
15.00	-22.39	9.49	198.18	4.94
15.00	-22.26	9.50	218.81	5.51
15.00	-22.64	9.40	205.48	4.71

15.00	-22.67	9.46	195.76	5.93
15.00	-22.71	9.26	187.98	4.22
15.00	-22.79	9.16	187.88	4.19
15.00	-22.94	8.52	174.04	6.64
15.00	-23.28	8.75	190.84	6.33
15.00	-23.22	8.67	177.87	6.18
15.00	-23.68	8.67	182.36	5.22
15.00	-23.64	8.63	182.34	9.19
15.00	-23.49	8.58	182.14	7.64
15.00	-23.89	8.81	181.90	6.64
15.00	-23.99	8.86	181.86	6.15
15.00	-23.99	8.96	181.94	6.19
15.00	-23.91	9.26	193.38	6.91
15.00	-23.92	9.34	206.90	7.59
15.00	-23.91	9.51	199.38	6.06
15.00	-23.82	9.43	199.50	6.07
15.00	-23.38	8.86	191.53	5.83
15.00	-23.40	8.96	191.18	5.80
15.00	-23.50	8.91	187.61	4.72
15.00	-23.53	8.85	177.57	6.13
15.00	-23.67	9.05	187.38	4.71
15.00	-23.55	9.09	205.18	4.70
15.00	-23.31	9.13	197.41	7.05
15.00	-23.45	9.33	186.80	5.24
15.00	-23.52	9.32	187.27	4.74
15.00	-23.56	9.40	195.11	3.82
15.00	-23.07	8.96	176.99	5.62
15.00	-22.75	8.79	191.68	5.83
15.00	-23.23	8.89	194.52	4.35
15.00	-23.03	9.45	207.69	4.22
15.00	-23.08	9.38	207.72	4.22
15.00	-23.46	9.71	187.12	4.68
15.00	-23.47	9.62	188.03	3.69
15.00	-23.43	9.79	207.45	4.18
15.00	-23.42	9.89	200.94	5.57
15.00	-22.45	9.77	213.28	4.47
15.00	-23.67	9.82	199.20	6.04
15.00	-23.73	9.79	201.09	5.56
15.00	-23.86	9.83	200.75	5.56
15.00	-23.79	9.88	196.13	5.38
15.00	-23.72	9.88	207.22	5.31
15.00	-23.61	9.93	199.14	6.05
15.00	-23.42	10.01	189.73	6.24
15.00	-23.45	10.04	205.36	6.90
15.00	-23.60	10.06	179.35	3.10
15.00	-23.83	10.03	180.49	4.09
15.00	-23.79	10.11	204.91	5.74
15.00	-23.56	10.17	200.40	5.52
15.00	-23.71	10.14	200.61	5.54
15.00	-23.85	10.30	206.69	4.13
15.00	-23.47	10.24	206.85	4.11
15.00	-23.37	10.25	206.94	4.12
15.00	-20.62	8.15	168.61	3.72
15.00	-20.61	7.91	168.96	3.73
15.00	-20.53	8.97	196.98	3.85
15.00	-20.45	8.84	175.17	3.68

15.00	-20.06	8.60	198.24	5.50
15.00	-19.95	8.90	191.14	3.24
15.00	-19.90	8.77	190.89	3.23
15.00	-19.89	8.86	188.14	5.26
15.00	-19.83	8.94	188.21	5.22
15.00	-19.84	9.02	193.21	5.32
15.00	-20.19	8.51	193.30	5.39
15.00	-20.30	8.91	171.39	2.64
15.00	-20.21	8.71	182.35	4.14
15.00	-20.27	8.65	182.29	4.13
15.00	-20.29	9.09	182.22	4.13
15.00	-20.20	9.01	182.44	4.10
15.00	-19.94	8.53	182.63	4.69
15.00	-19.84	8.68	199.80	3.40
15.00	-19.55	8.53	178.42	5.80
15.00	-19.55	8.87	200.03	5.07
15.00	-19.49	8.74	182.66	4.63
15.00	-19.52	8.92	197.55	3.88
15.00	-19.32	8.96	182.71	6.13
15.00	-19.23	9.03	182.61	4.62
15.00	-19.13	8.95	182.22	4.13
15.00	-18.97	8.99	204.03	4.04
15.00	-19.14	8.65	217.77	3.45
15.00	-19.21	8.54	211.03	3.19
15.00	-19.20	8.45	211.38	3.20
15.00	-19.24	8.27	187.65	6.28
15.00	-19.33	8.27	187.65	6.28
15.00	-19.25	7.72	183.71	5.18
15.00	-19.35	7.65	178.28	5.15
15.00	-19.32	7.91	178.40	5.20
15.00	-19.78	8.14	177.66	5.14
15.00	-19.91	8.10	177.04	4.65
15.00	-19.81	7.82	178.93	6.16
15.00	-19.80	8.31	171.19	4.67
15.00	-20.05	8.23	174.50	6.68
15.00	-20.13	9.25	172.17	5.62
15.00	-20.15	9.17	172.55	5.67
15.00	-20.24	9.29	192.86	5.30
15.00	-20.10	9.42	182.46	5.12
15.00	-19.91	9.67	179.91	3.03
15.00	-19.83	9.70	181.62	4.59
15.00	-20.22	9.35	181.80	4.61
15.00	-20.13	9.49	186.55	6.22
15.00	-20.84	8.62	182.45	5.14
15.00	-21.98	9.99	221.63	4.33
15.00	-21.82	10.00	207.77	6.50
15.00	-21.75	10.00	207.81	6.50
15.00	-22.11	9.96	207.59	6.49
15.00	-22.50	10.54	227.86	6.44
15.00	-22.51	10.42	198.24	6.52
15.00	-22.28	10.40	207.46	5.30
15.00	-22.22	10.17	209.53	6.02
15.00	-22.76	11.20	196.61	4.81
15.00	-22.61	11.20	196.77	4.80
15.00	-22.67	11.21	198.20	4.32
15.00	-22.55	11.17	198.29	4.27

15.00	-22.47	11.10	198.62	4.35
15.00	-22.41	11.01	206.52	5.24
15.00	-22.64	10.89	220.56	4.20
15.00	-22.35	10.69	220.82	4.27
15.00	-22.22	10.91	220.70	4.19
15.00	-22.15	11.06	203.98	4.51
15.00	-22.04	11.06	204.14	4.54
15.00	-21.99	11.07	204.09	4.50
15.00	-21.86	11.12	230.08	4.23
15.00	-21.71	11.14	231.40	6.09
15.00	-21.60	11.11	239.45	5.44
15.00	-21.49	11.09	225.79	3.83
15.00	-21.42	11.04	225.23	5.36
15.00	-21.37	10.91	226.06	4.58
15.00	-23.78	10.49	209.92	3.67
15.00	-23.62	10.33	187.24	3.65
15.00	-19.94	10.32	245.81	4.21
15.00	-20.00	10.31	245.80	4.17
15.00	-19.97	10.38	245.27	4.18
15.00	-20.03	10.48	229.72	5.07
15.00	-19.29	10.43	230.23	5.08
15.00	-20.04	10.56	211.27	3.68
15.00	-19.89	10.84	226.16	5.40
15.00	-20.09	10.68	233.26	5.47
15.00	-20.18	10.70	222.24	4.33
15.00	-20.34	10.73	216.80	3.92
15.00	-19.76	9.88	193.44	4.78
15.00	-20.30	10.41	230.11	5.08
15.00	-20.25	10.38	229.36	5.86
15.00	-20.62	11.33	187.27	2.02
15.00	-20.26	11.27	255.50	4.79
15.00	-19.81	11.14	249.37	6.66
15.00	-19.89	11.15	242.35	4.84
15.00	-21.34	10.80	233.42	2.75
15.00	-21.38	10.70	241.90	3.60
15.00	-21.27	10.78	241.92	3.63
15.00	-19.35	10.81	234.80	4.74
15.00	-19.43	10.75	256.45	2.84
15.00	-19.40	10.69	246.12	4.20
15.00	-19.20	10.81	232.71	3.56
15.00	-19.96	11.30	252.85	3.81
15.00	-19.77	11.21	244.11	6.44
15.00	-19.63	11.18	247.33	2.93
15.00	-19.64	11.31	248.25	2.90
15.00	-19.51	11.17	260.90	4.17
15.00	-19.79	11.28	257.38	2.75
15.00	-20.45	11.33	247.32	6.14
15.00	-20.31	11.22	247.86	6.20
15.00	-20.32	11.28	254.16	4.32
15.00	-19.90	9.32	172.83	6.09
15.00	-19.16	10.89	221.78	3.52
15.00	-21.20	10.60	232.31	3.56
15.00	-20.90	10.17	213.22	4.40
15.00	-20.90	9.99	200.01	4.43
15.00	-20.71	9.82	200.58	4.48
15.00	-20.68	9.68	222.94	5.89

15.00	-20.60	9.79	215.42	5.29
15.00	-20.45	9.83	215.35	5.27
15.00	-20.57	10.32	201.52	5.55
15.00	-20.21	10.00	206.52	5.83
15.00	-20.26	9.86	206.48	5.83
15.00	-20.40	9.69	201.89	7.27
15.00	-20.50	9.53	208.09	7.67
15.00	-20.44	9.46	211.13	8.01
15.00	-20.80	9.44	208.31	6.61
15.00	-20.75	9.52	208.36	6.56
15.00	-20.63	9.38	215.83	5.30
15.00	-20.78	9.06	201.17	4.51
15.00	-20.84	9.82	197.72	3.32
15.00	-20.92	10.71	214.44	3.18
15.00	-20.70	10.76	202.66	5.06
15.00	-20.86	10.71	215.12	5.15
15.00	-21.05	10.62	214.84	5.13
15.00	-21.44	9.88	209.77	6.03
15.00	-19.99	10.08	208.43	6.51

## HIGH LEVEL WINDS DAY 261 1330Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-21.83	10.48	135.35 8.74
15.00	-21.84	10.26	138.57 7.10
15.00	-21.80	10.68	128.90 12.07
15.00	-21.64	10.68	135.49 9.42
15.00	-21.50	10.68	139.60 10.13
15.00	-21.44	10.70	128.52 12.12
15.00	-21.44	10.57	137.42 12.40
15.00	-21.55	10.57	137.42 12.40
15.00	-21.71	10.49	137.58 12.35
15.00	-21.63	10.38	135.82 12.05
15.00	-20.33	10.03	109.27 18.47
15.00	-20.28	10.10	107.88 18.35
15.00	-20.23	9.83	101.73 12.03
15.00	-20.39	9.70	92.61 15.82
15.00	-20.59	9.57	92.75 15.73
15.00	-20.99	9.99	95.32 10.85
15.00	-21.30	9.78	102.80 9.48
15.00	-21.94	10.69	139.66 10.78
15.00	-21.59	10.83	143.08 10.85
15.00	-21.82	10.83	143.23 10.85
15.00	-21.37	10.03	99.04 9.89
15.00	-21.13	10.03	90.20 9.91
15.00	-21.56	10.06	133.55 9.09
15.00	-21.10	9.52	92.57 11.28
15.00	-21.51	10.16	132.38 7.11
15.00	-22.79	10.79	141.76 6.16
15.00	-22.99	10.85	135.20 6.10
15.00	-22.71	10.84	138.47 5.79
15.00	-22.82	10.56	138.86 5.78
15.00	-23.25	10.55	151.55 6.72
15.00	-19.36	11.26	99.43 11.26
15.00	-19.43	11.05	99.44 11.28
15.00	-18.90	11.39	85.82 6.44
15.00	-22.09	7.56	96.63 10.48
15.00	-22.25	7.48	96.84 10.41
15.00	-21.98	7.57	93.95 10.44
15.00	-21.68	7.45	94.01 10.45
15.00	-21.38	7.56	95.10 9.06
15.00	-21.25	7.58	96.05 8.06
15.00	-20.93	7.53	94.52 9.58
15.00	-19.43	9.40	105.63 17.34
15.00	-19.26	9.32	102.35 17.16
15.00	-19.27	9.41	105.17 20.90
15.00	-19.08	9.70	96.92 20.08
15.00	-19.01	9.51	106.10 13.87
15.00	-19.11	9.60	105.91 13.92
15.00	-19.34	8.82	94.67 19.36
15.00	-19.19	8.67	98.22 21.00

15.00	-19.13	8.50	92.49	16.93
15.00	<del>-19.14</del>	<del>8.84</del>	<del>92.42</del>	<del>16.92</del>
15.00	-20.98	9.16	110.17	16.74
15.00	-21.31	9.83	108.22	11.20

## LOW LEVEL WINDS DAY 261 1500Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-21.98	8.46	181.87 6.42
15.00	-22.58	8.43	183.92 6.43
15.00	-22.41	8.57	188.17 6.36
15.00	-22.49	8.57	180.81 6.40
15.00	-22.04	9.13	199.05 5.90
15.00	-22.15	9.25	202.09 5.39
15.00	-22.53	9.68	170.55 4.08
15.00	-19.75	9.31	165.66 3.94
15.00	-22.31	8.31	180.90 5.73
15.00	-22.82	7.98	168.00 6.13
15.00	-22.06	8.49	181.80 6.20
15.00	-21.94	8.03	180.67 5.59
15.00	-21.73	9.52	205.60 5.32
15.00	-21.94	9.13	199.05 5.27
15.00	-22.58	8.40	185.10 6.08
15.00	-21.80	8.61	181.89 3.94
15.00	-22.45	8.98	184.00 5.01
15.00	-22.13	8.92	183.67 5.94
15.00	-21.59	8.97	192.36 6.59
15.00	-21.73	9.22	209.47 4.59
15.00	-21.75	9.14	200.15 3.64
15.00	-21.76	9.66	197.03 4.64
15.00	-22.09	8.67	184.15 4.49
15.00	-21.89	8.61	183.68 5.45
15.00	-21.89	8.51	187.75 6.53
15.00	-21.92	8.25	178.96 6.91
15.00	-21.98	8.18	178.37 5.45
15.00	-22.38	8.18	182.99 6.51
15.00	-22.47	8.13	175.10 7.03
15.00	-22.27	7.96	187.93 5.58
15.00	-22.71	7.55	174.13 6.55
15.00	-22.70	8.14	178.94 7.02
15.00	-22.69	8.24	175.24 6.99
15.00	-22.80	8.73	195.49 6.87
15.00	-22.38	8.72	173.45 5.48
15.00	-22.44	8.72	183.64 5.52
15.00	-23.83	8.77	174.94 4.14
15.00	-23.45	8.88	175.20 5.97
15.00	-23.85	9.46	174.02 3.74
15.00	-23.51	9.41	182.75 4.48
15.00	-23.34	8.72	182.02 5.54
15.00	-22.31	9.76	171.93 3.60
15.00	-21.33	7.76	175.83 5.02
15.00	-21.69	7.76	179.03 5.89
15.00	-21.60	8.71	189.19 5.45
15.00	-21.76	8.91	202.24 4.81
15.00	-23.78	8.78	183.77 4.64
15.00	-23.76	8.86	184.20 4.17

15.00	-23.39	8.96	173.89	5.54
15.00	-23.86	9.18	173.99	5.59
15.00	-23.88	9.23	178.19	5.07
15.00	-23.77	9.57	178.18	4.56
15.00	-23.47	9.47	184.67	5.09
15.00	-23.26	9.30	193.11	5.71
15.00	-23.07	9.51	190.73	4.62
15.00	-23.44	9.52	184.20	5.05
15.00	-23.36	9.70	184.32	5.04
15.00	-23.47	8.97	174.78	6.05
15.00	-23.62	8.43	174.54	6.09
15.00	-23.54	8.63	183.62	6.10
15.00	-23.80	7.76	164.32	7.29
15.00	-23.83	7.99	161.74	7.88
15.00	-23.46	9.85	183.99	5.53
15.00	-23.18	10.19	184.68	3.98
15.00	-22.79	9.69	183.89	5.45
15.00	-22.69	9.78	184.35	4.95
15.00	-22.35	9.21	189.59	5.01
15.00	-21.70	9.30	209.89	4.54
15.00	-22.23	9.85	178.82	4.37
15.00	-22.17	10.09	212.85	4.15
15.00	-21.27	10.72	224.03	3.14
15.00	-21.27	10.82	208.48	2.54
15.00	-21.00	11.18	210.85	1.29
15.00	-20.80	10.90	209.74	2.50
15.00	-20.51	10.98	210.08	3.65
15.00	-19.68	10.36	198.73	4.28
15.00	-19.75	11.44	260.03	3.18
15.00	-20.10	7.97	191.31	4.31
15.00	-19.16	9.13	197.09	4.77
15.00	-19.73	9.39	171.53	4.07
15.00	-22.32	10.71	226.64	4.33
15.00	-21.24	8.42	183.98	4.83
15.00	-21.55	9.19	203.47	5.91
15.00	-21.54	8.79	178.75	4.83
15.00	-21.64	7.85	179.02	5.87
15.00	-21.69	8.60	183.73	6.37
15.00	-20.15	10.68	229.39	4.95
15.00	-20.02	9.52	184.82	4.11
15.00	-19.58	10.29	186.17	2.98
15.00	-19.96	11.27	250.69	1.77
15.00	-20.91	10.31	176.72	3.15
15.00	-21.39	10.45	204.14	3.07
15.00	-21.28	10.88	223.92	2.44
15.00	-21.47	11.35	239.97	2.48
15.00	-20.59	11.03	202.80	3.41
15.00	-19.94	10.63	201.28	3.86
15.00	-19.68	10.94	222.04	3.42
15.00	-20.05	10.22	177.73	3.54
15.00	-20.24	10.11	191.99	4.21
15.00	-21.15	10.29	185.69	3.73
15.00	-20.10	8.46	172.10	4.65
15.00	-19.95	9.19	184.29	6.62
15.00	-19.85	9.44	168.05	5.12
15.00	-20.11	9.31	171.67	6.62

15.00	-21.30	8.98	220.56	6.58
15.00	-19.52	10.23	170.96	3.98
15.00	-22.08	11.05	216.61	2.88
15.00	-22.69	9.87	173.76	4.92
15.00	-22.04	9.98	199.04	5.73
15.00	-21.05	10.96	231.90	2.74
15.00	-21.06	10.73	196.37	2.80
15.00	-20.72	10.49	209.10	4.85
15.00	-21.06	10.24	187.52	1.72
15.00	-20.24	8.51	166.20	4.74
15.00	-20.14	8.81	164.51	5.76
15.00	-20.77	8.50	173.88	5.72
15.00	-19.46	9.14	185.70	4.08
15.00	-21.72	9.85	213.24	4.10
15.00	-19.00	9.23	185.23	4.49
15.00	-18.87	9.17	173.62	4.95
15.00	-19.07	9.05	186.43	3.53
15.00	-19.12	8.70	201.03	3.85
15.00	-23.81	10.46	177.13	3.50
15.00	-23.69	10.47	191.23	4.11
15.00	-21.31	10.09	187.25	2.26
15.00	-21.09	9.43	204.17	3.10
15.00	-20.88	8.33	177.97	3.80
15.00	-20.69	7.70	194.38	5.48
15.00	-21.32	8.84	198.93	5.69
15.00	-19.84	10.26	196.43	2.67
15.00	-19.39	9.32	185.13	2.63
15.00	-19.52	9.45	168.80	3.63
15.00	-19.40	9.46	184.54	4.61
15.00	-18.98	10.38	149.72	1.66
15.00	-20.54	11.14	224.23	1.58
15.00	-21.65	11.29	221.62	2.46
15.00	-23.16	9.91	198.46	3.81
15.00	-23.23	9.98	196.60	4.29
15.00	-23.15	10.03	191.64	3.62
15.00	-23.82	10.95	184.25	3.04
15.00	-19.33	8.17	171.59	4.65
15.00	-20.13	7.75	187.88	5.33
15.00	-19.15	8.44	194.86	5.34
15.00	-19.59	8.29	170.10	4.19
15.00	-18.98	11.45	272.93	1.08
15.00	-21.55	9.61	217.43	4.40

## HIGH LEVEL WINDS DAY 261 1500Z

LONG.	LAT.	DIRECTION	SPEED (M/SEC)
15.00	-21.96	10.80	138.08 9.94
15.00	-22.20	11.08	132.28 10.23
15.00	-23.54	10.84	131.67 10.66
15.00	-20.90	10.08	115.36 17.15
15.00	-20.76	9.69	113.12 11.77
15.00	-21.58	9.46	100.95 15.90
15.00	-20.25	10.98	108.19 18.03
15.00	-19.46	8.88	95.00 18.66
15.00	-19.31	8.48	93.91 17.22
15.00	-19.82	8.60	85.92 17.23
15.00	-19.26	9.46	102.31 16.99
15.00	-22.37	7.56	93.34 10.31
15.00	-21.73	9.72	101.18 11.52
15.00	-21.22	10.49	143.79 12.73
15.00	-21.37	9.95	106.42 9.78
15.00	-23.10	11.13	148.61 7.26
15.00	-21.76	10.58	117.43 9.36
15.00	-19.28	10.36	106.10 18.12
15.00	-21.16	8.96	103.08 15.58
15.00	-21.54	10.05	108.57 8.87
15.00	-21.84	9.91	105.46 13.63
15.00	-20.50	9.91	107.93 12.98
15.00	-21.37	9.41	104.07 14.62
15.00	-19.34	11.29	120.29 19.73
15.00	-19.60	11.28	123.18 13.38
15.00	-19.33	9.64	98.72 14.77
15.00	-21.74	9.72	108.50 11.80
15.00	-19.22	8.18	87.41 13.85
15.00	-22.37	7.47	90.92 8.42
15.00	-23.57	10.57	130.66 9.35
15.00	-23.11	10.36	132.84 4.79
15.00	-23.62	10.59	129.45 10.46
15.00	-23.60	10.79	137.35 11.72
15.00	-23.06	11.11	165.73 6.05
15.00	-22.94	10.74	137.09 5.82
15.00	-21.83	10.87	133.79 9.35
15.00	-21.56	10.77	124.45 9.50
15.00	-21.67	10.52	132.42 6.75
15.00	-22.00	10.16	112.99 15.72
15.00	-21.80	9.72	106.41 14.74
15.00	-21.45	9.72	102.85 14.11
15.00	-21.44	9.46	108.05 16.42
15.00	-21.37	9.28	99.45 13.49
15.00	-21.14	9.33	91.14 11.55
15.00	-21.48	9.21	102.46 14.62
15.00	-21.27	8.99	100.68 16.51
15.00	-20.61	10.00	114.55 12.44
15.00	-20.32	10.99	117.93 14.88

15.00	-19.59	11.06	114.07	19.86
15.00	<del>-19.29</del>	10.36	108.99	17.38
15.00	-19.14	9.98	101.47	14.00
15.00	-19.16	9.58	97.87	13.36
15.00	<del>-19.81</del>	9.94	106.08	15.60
15.00	-19.29	7.89	88.03	14.82

#### ACKNOWLEDGEMENTS

These wind sets represent the efforts of many people. Those most directly contributing include Terry Schwalenberg, Eric Suomi, and J. T. Young whose work made the SMS GATE archive possible. Tom Haig developed the GATE wind set program. Brian Auvine and Walter Knaack mapped, tabulated, and recorded the wind sets. Figures for this report were drafted by Dana Wooldridge and Steve Christy; the manuscript was typed by Barbara Mueller.

This work was supported under NASA Contract NAS5-23296.

## REFERENCES

- Chatters, G. C. and V. E. Suomi, 1975: The Applications of McIDAS. IEEE Transactions on Geoscience Electronics, GE-13, 137-146.
- Houghton, D. D., 1974: The Central Program for the GARP Atlantic Tropical Experiment. GATE Report No. 3, Geneva, ICSU/WMO. 35 pp.
- Houghton, D. D. and D. E. Parker, 1974: The Synoptic-Scale Subprogram of GATE. GATE Report No. 6, Geneva, ICSU/WMO. 112 pp.
- Kuettner, J.P., N. E. Rider, and I. G. Sitnikov, 1972: Experiment Design Proposal for the GARP Atlantic Tropical Experiment. GATE Report No. 1, Geneva, ICSU/WMO. 195 pp.
- Kuettner, J. P. and R. F. Long (ed.), 1975: Report on the Field Phase of the GARP Atlantic Tropical Experiment Scientific Program. GATE Report No. 116, Geneva, ICSU/WMO.
- Rodenhuis, D. and A. Betts, 1974: The Convection Sub-Program for the GARP Atlantic Tropical Experiment. GATE Report No. 7, Geneva, ICSU/WMO. 83 pp.
- Sadler, J. C., 1975: The Monsoon Circulation and Cloudiness Over the GATE Area. Mon. Wea. Rev., 103, 369-387.
- Shenk, W. E., A. F. Hasler, and T. T. Fujita, 1974: Investigations of the Relationship Between Cloud and Atmospheric Motion. Paper presented at the 54th Annual Meeting of the Amer. Meteor. Soc., Jan. 8-11, 1974, Honolulu, Hawaii.
- Smith, E. A., 1975: The McIDAS System. IEEE Transactions on Geoscience Electronics, GE-13, 123-136.
- Suchman, D. and D. W. Martin, 1975: Wind Sets From SMS Images: An Assessment of Quality for GATE. Submitted to Jour. Appl. Meteor.
- Suomi, V. E. (Principal Investigator), 1975: Man-Computer Interactive Data Access System (McIDAS). Final Report Contract NAS5-23296, Univ. of Wisconsin, Madison.

## CAPTIONS TO FIGURES

- Figure 1 Outlines of areas covered by images used to track clouds.
- Large area, low density (11 August)
  - Small area, high density (5, 10, and 18 September)
- Figure 2 SMS-1 infrared image mosaic for 00 GMT, 11 August 1974, photographed from McIDAS display. Images were displayed at 2X resolution. Cursor is located at 17°00'N, 26°30'W (top); 2°00'N, 26°30'W (bottom). For area covered, see Fig. 1a.
- Figure 3 SMS-1 image mosaics for 12 GMT, 11 August 1974.
- Visible channel, 1/4-X resolution
  - Infrared channel, 2X resolution. Cursor is located at 16°30'N, 45°00'W (left), 17°00'N, 26°30'W (center), 17°00'N, 6°30'W (right), and 2°00'N, 26°30'W (bottom).
- Figure 4 Cumulus level cloud tracer motions. Each vector represents the motion of a single cloud or cloud element tracked through the middle three frames of a five frame sequence.
- 00 GMT, 11 August 1974
  - 12 GMT, 11 August 1974
- Figure 5 Cirrus level cloud tracer motions
- 00 GMT, 11 August 1974
  - 12 GMT, 11 August 1974
- Figure 6 SMS-1 images for 12 GMT, 5 September 1974. Cursor is centered on the B-array, at 8°30'N, 23°30'W.
- Visible channel, 1/2-X resolution
  - Infrared channel, 4X resolution
- Figure 7 Cumulus level cloud tracer motions
- 09 GMT, 5 September 1974
  - 1230 GMT, 5 September 1974. Surface ship winds for 12 GMT are plotted as heavy arrows with circles.
  - 15 GMT, 5 September 1974.
- Figure 8 Cirrus level cloud tracer motions
- 09 GMT, 5 September 1974
  - 1230 GMT, 5 September 1974. 200 mb ship winds for 12 GMT are plotted as heavy arrows with circles.
  - 15 GMT, 5 September 1974
- Figure 9 SMS-1 image mosaic for 1230 GMT, 10 September 1974. Cursor positions are 12°14'N, 23°14'W (top), 08°30'N, 23°30'W (center), and 04°50'N, 23°30'W (bottom).
- Visible channel, 1X resolution
  - Infrared channel, 8X resolution

Figure 10 Cumulus level cloud tracer motions

- a. 1230 GMT, 10 September 1974; surface ship winds, 12 GMT
- b. 1500 GMT, 10 September 1974; Oceanographer tethered balloon (BLIS) measurement of wind at 15 GMT, 600 m, shown as double arrow.

Figure 11 Cirrus level cloud tracer motions

- a. 1230 GMT, 10 September 1974; 200 mb ship winds, 12 GMT
- b. 1500 GMT, 10 September 1974

Figure 12 Middle level cloud tracer motions

- a. 1230 GMT, 10 September 1974
- b. 1500 GMT, 10 September 1974

Figure 13 SMS-1 images for 1330 GMT, 18 September 1974

- a. Visible channel, 1X resolution
- b. Infrared channel, 8X resolution

Figure 14 Cumulus level cloud tracer motions

- a. 1330 GMT, 18 September 1974; surface ship winds, 12 GMT
- b. 1500 GMT, 18 September 1974

Figure 15 Cirrus level cloud tracer motions

- a. 1330 GMT, 18 September 1974; 200 mb ship winds, 12 GMT
- b. 1500 GMT, 18 September 1974

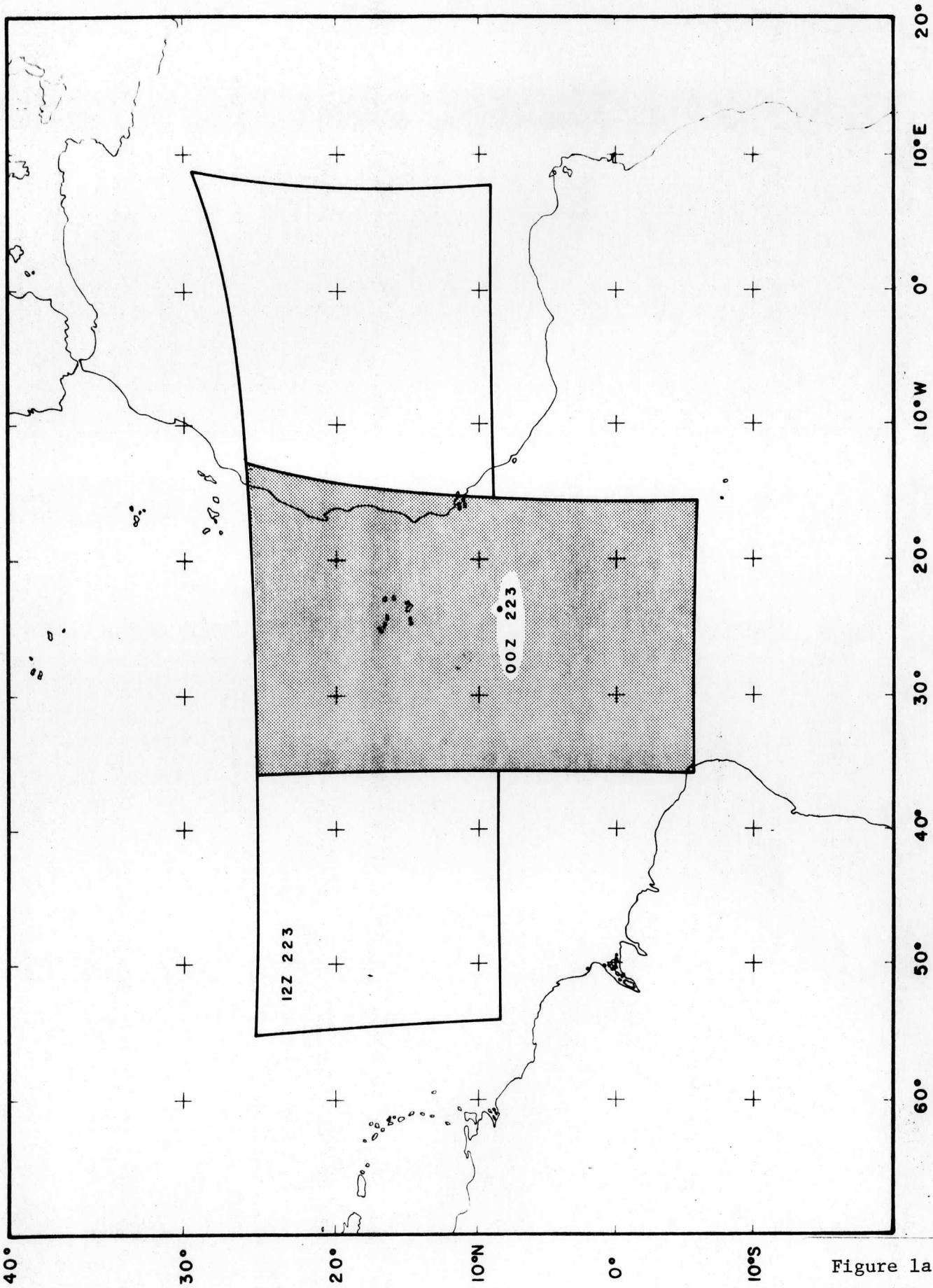


Figure 1a

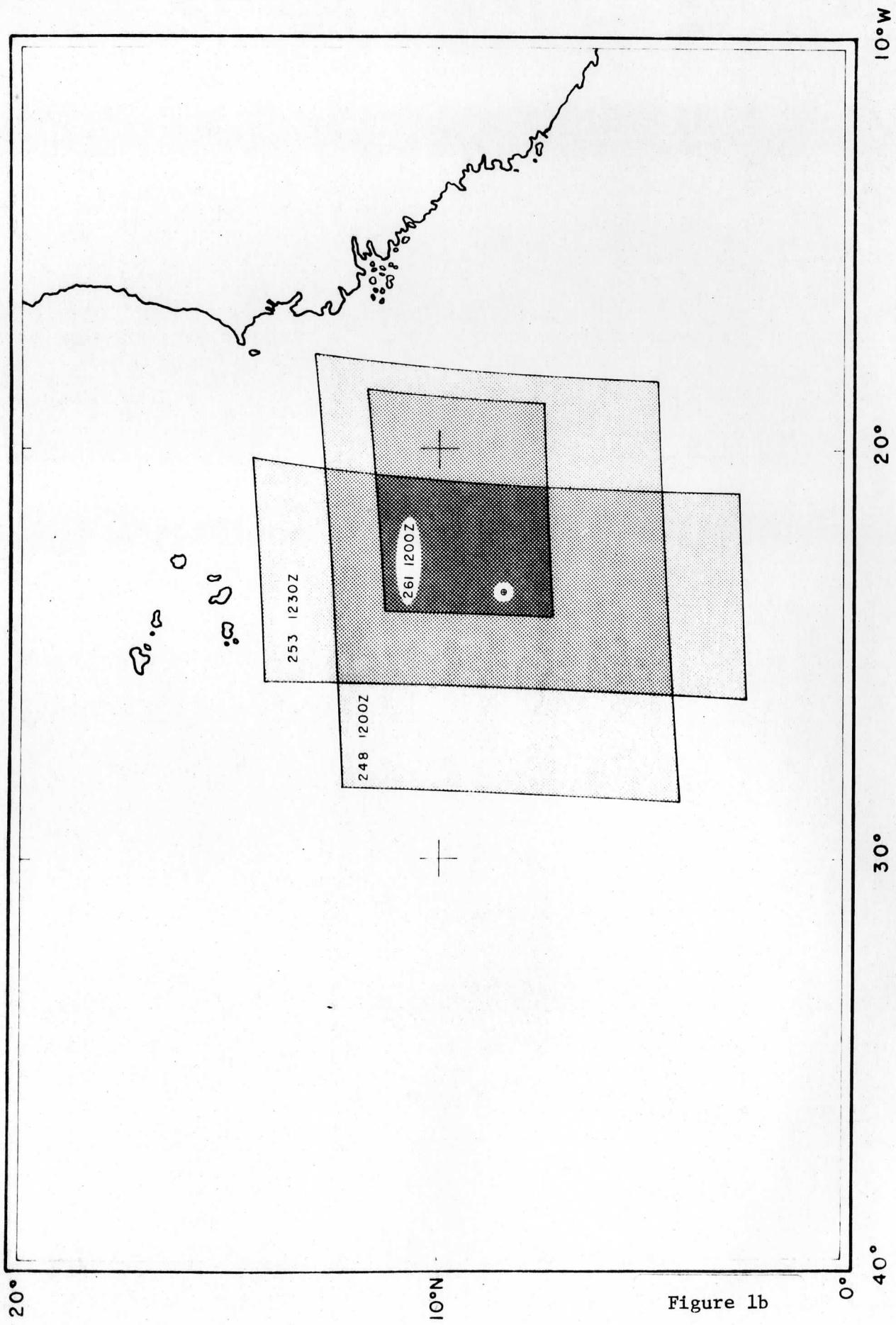


Figure 1b

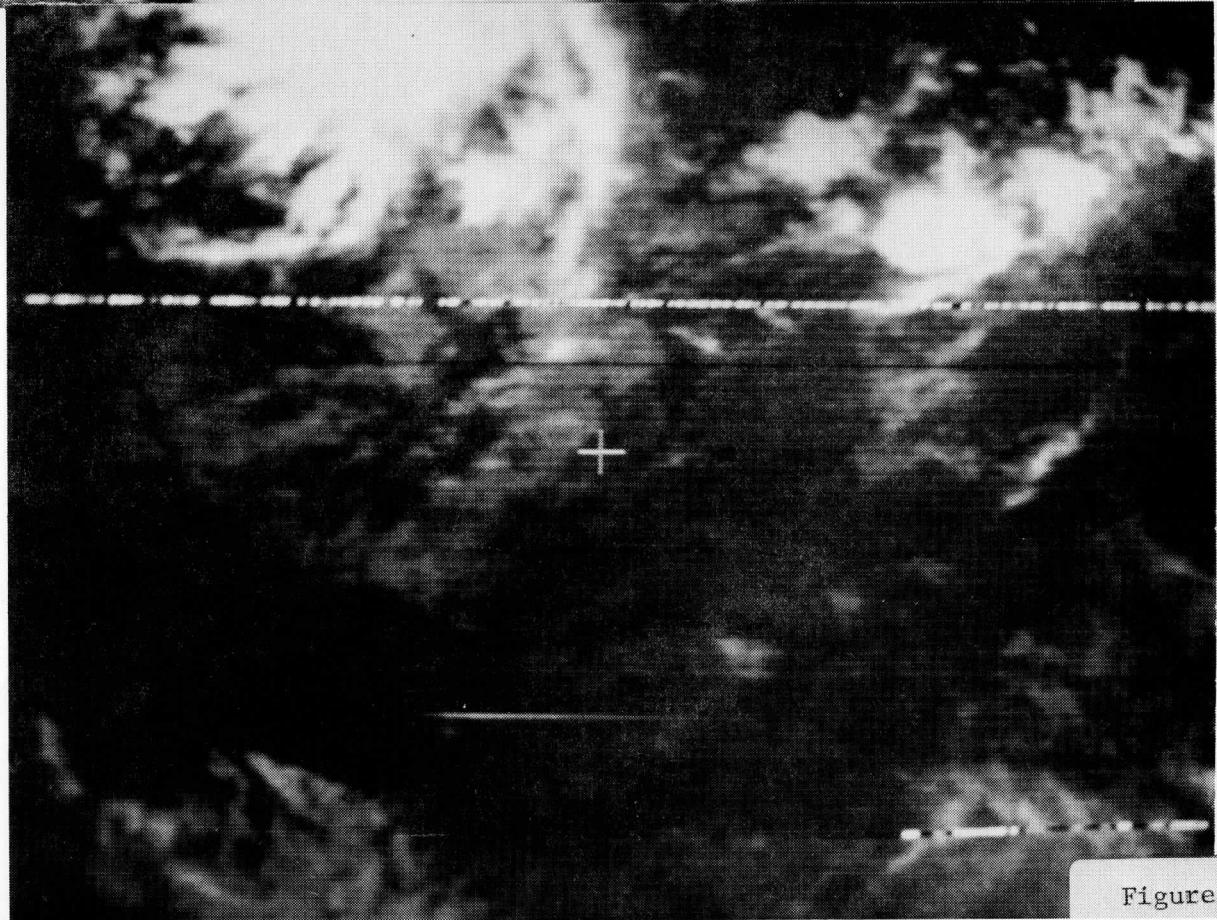
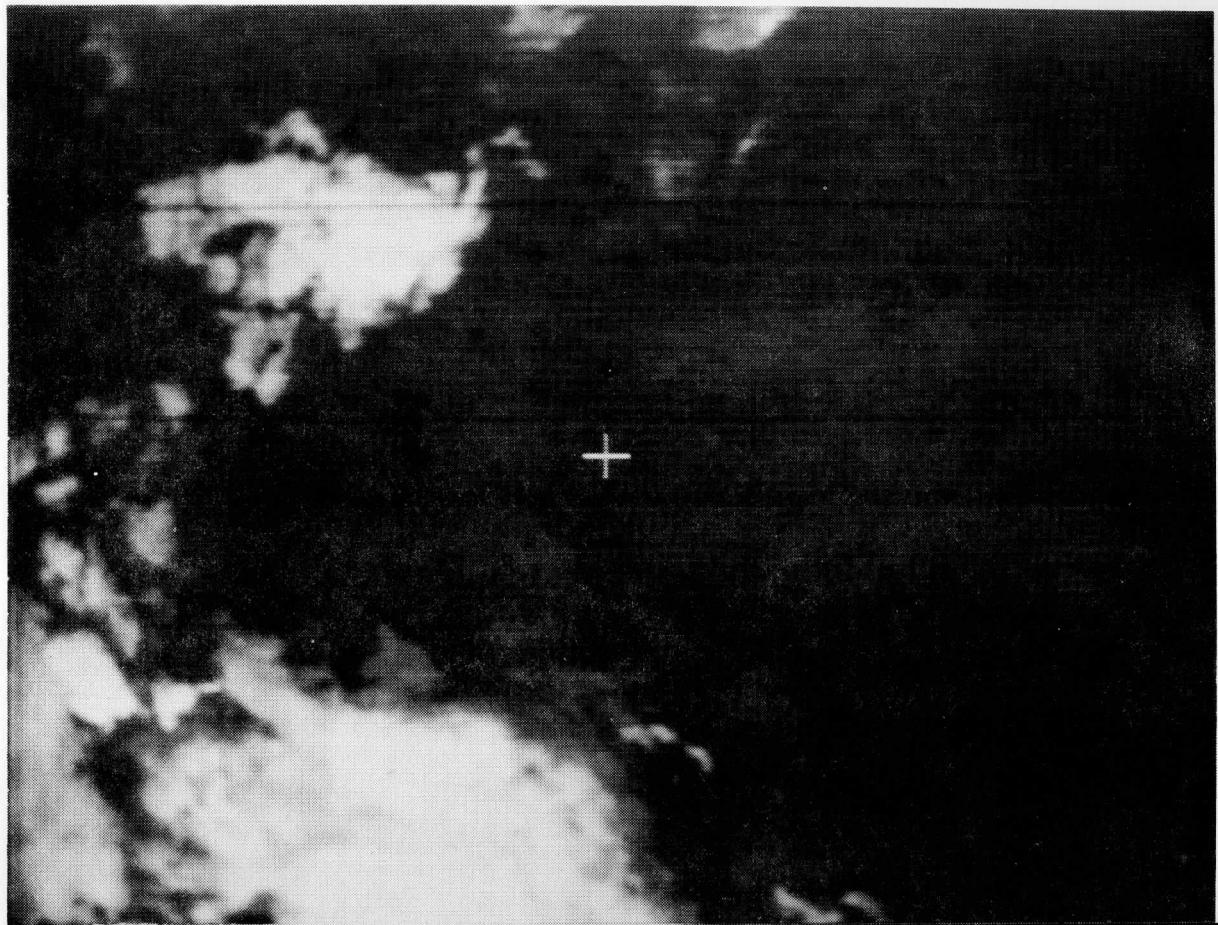


Figure 2

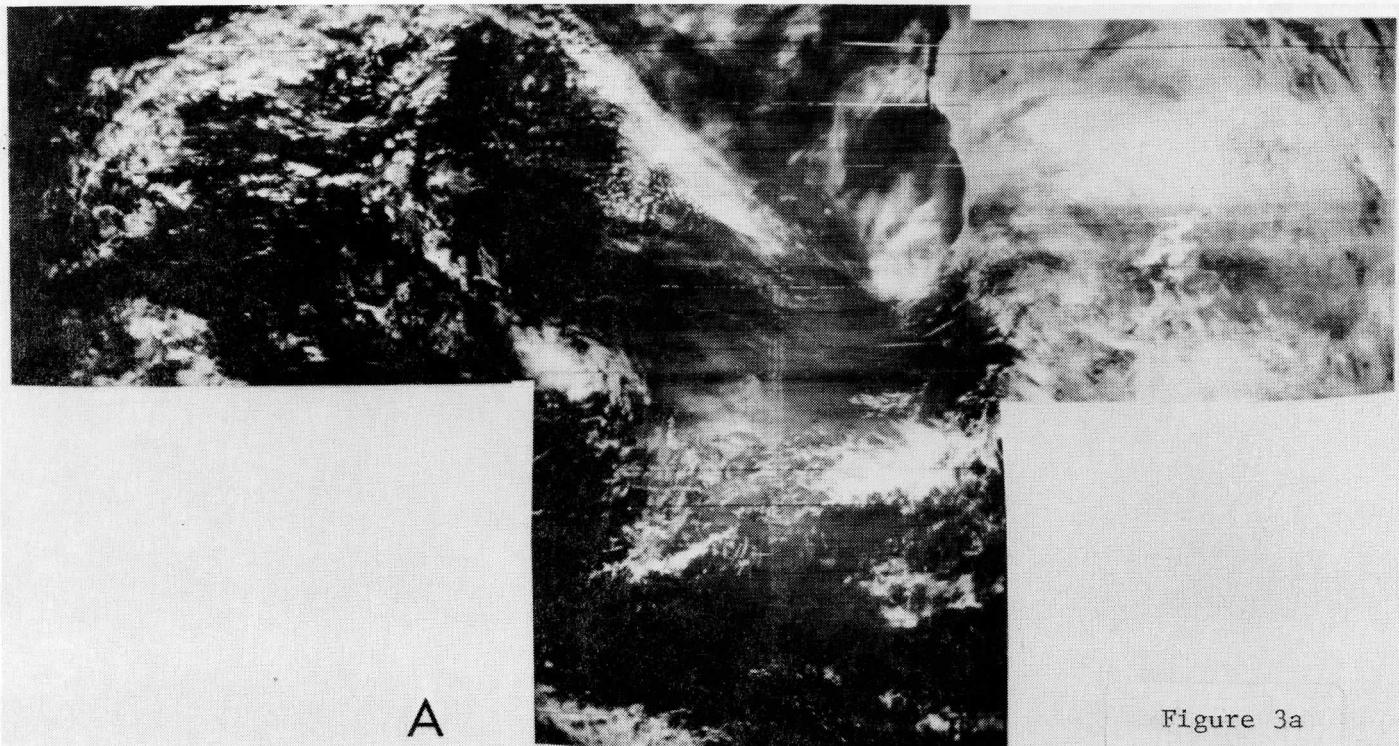


Figure 3a

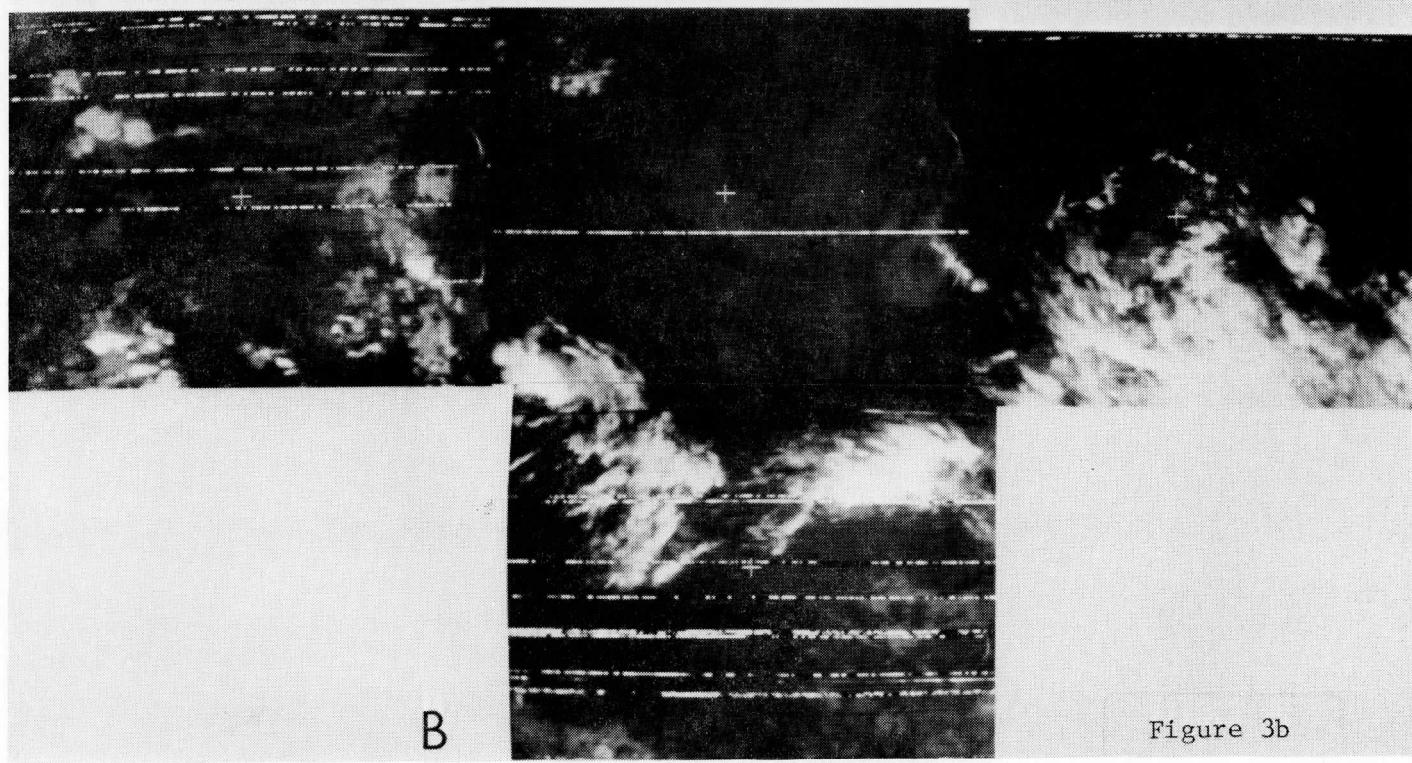


Figure 3b

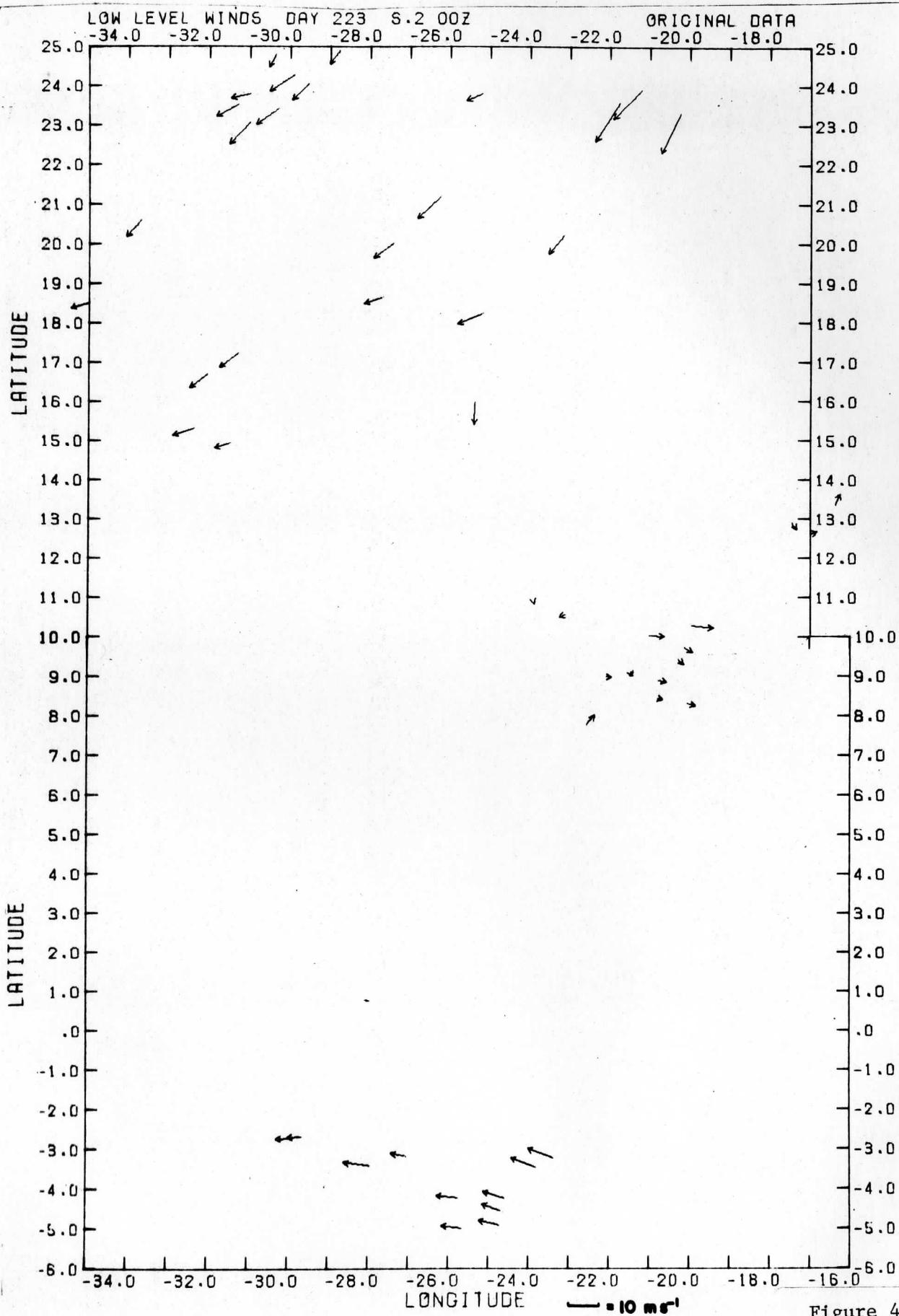


Figure 4a

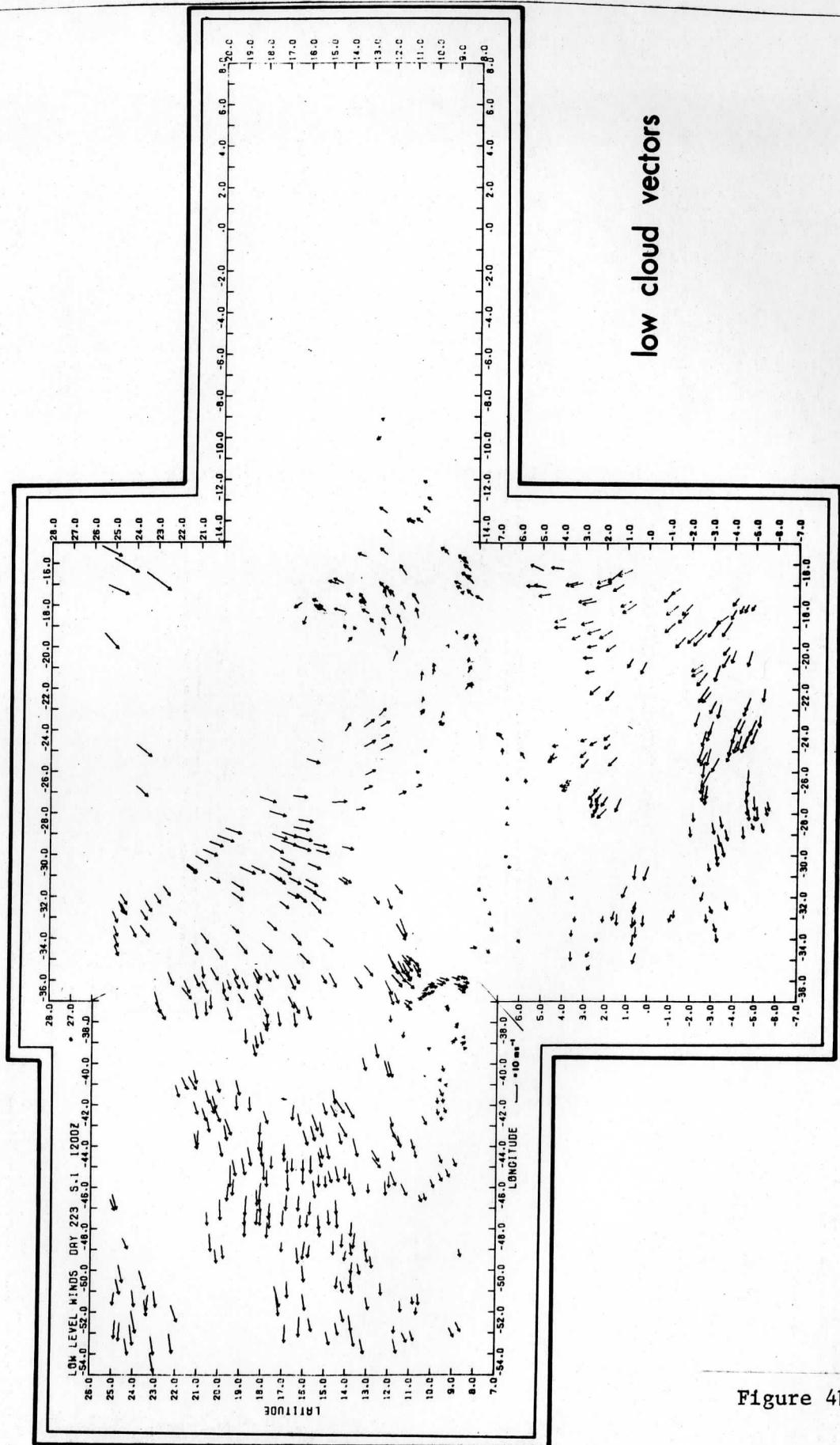
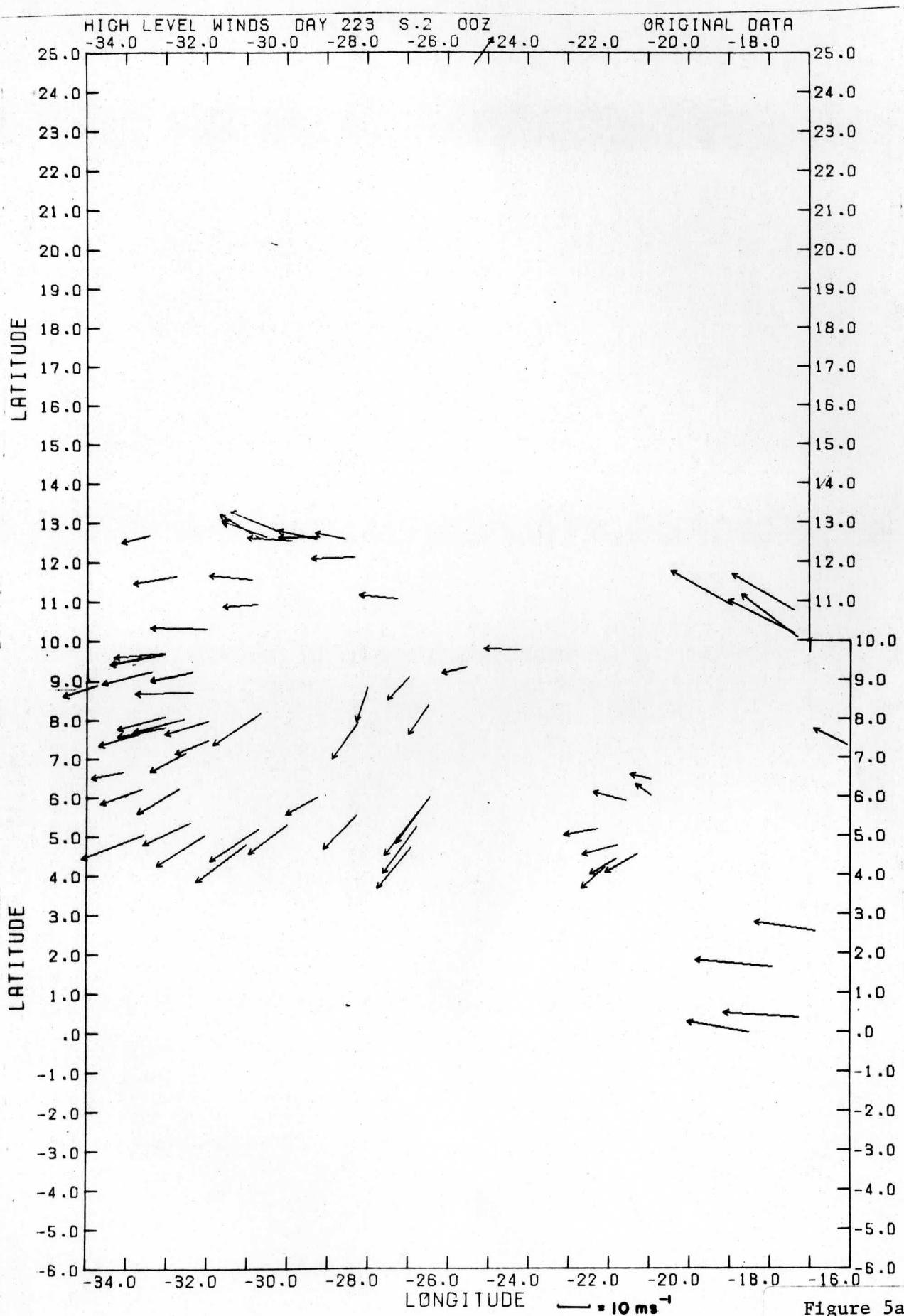


Figure 4b



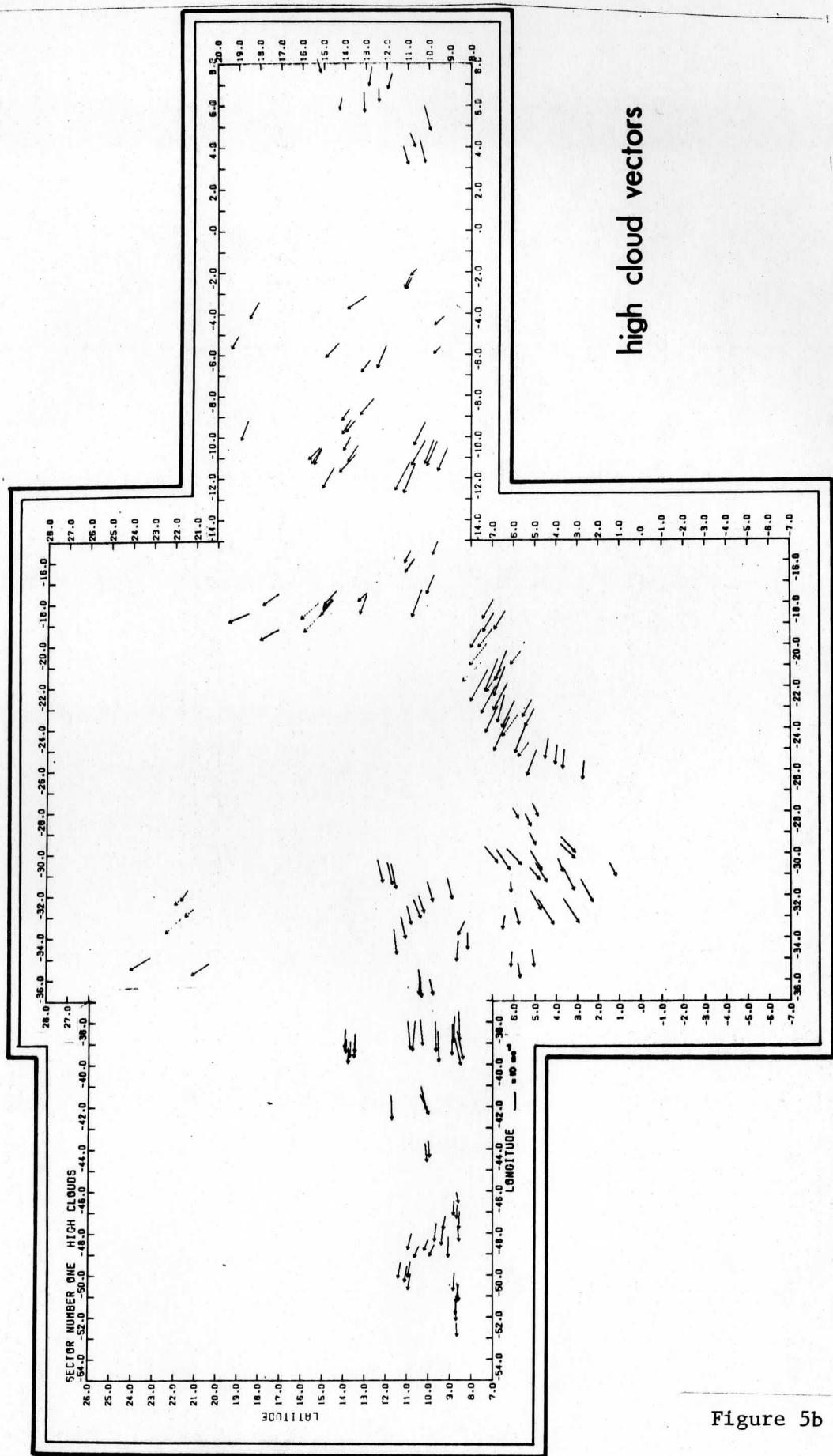
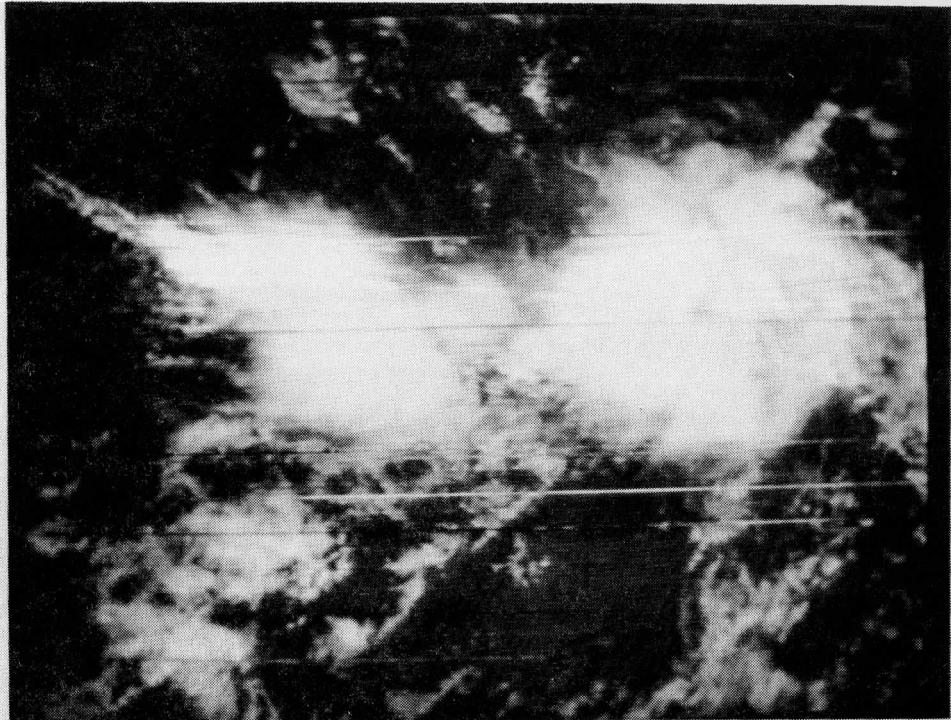
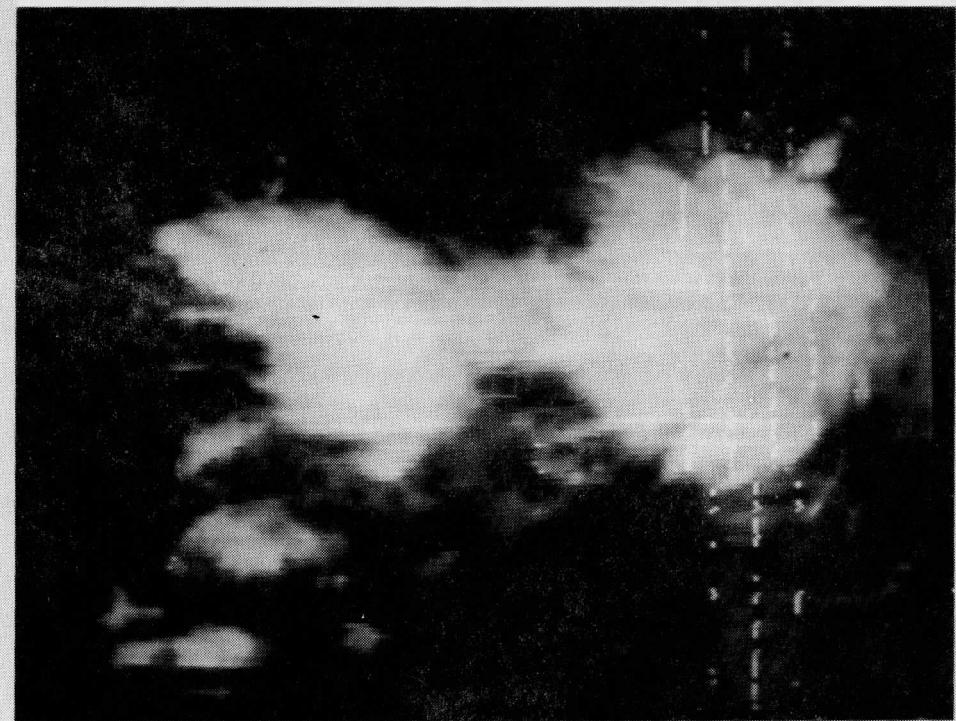


Figure 5b



A

Figure 6a



B

Figure 6b

ORIGINAL DATA

LOW LEVEL WINDS DAY 248 900Z

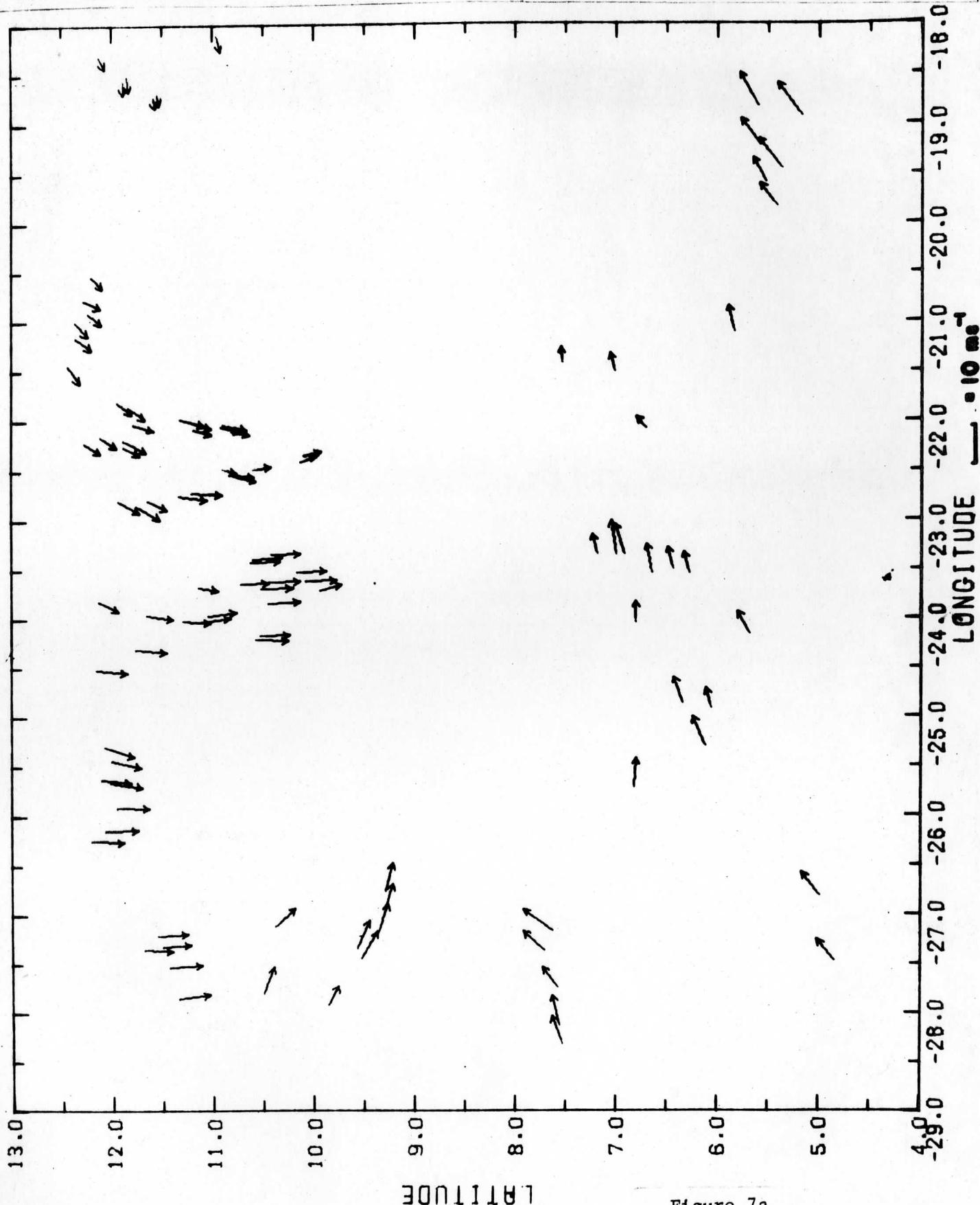


Figure 7a

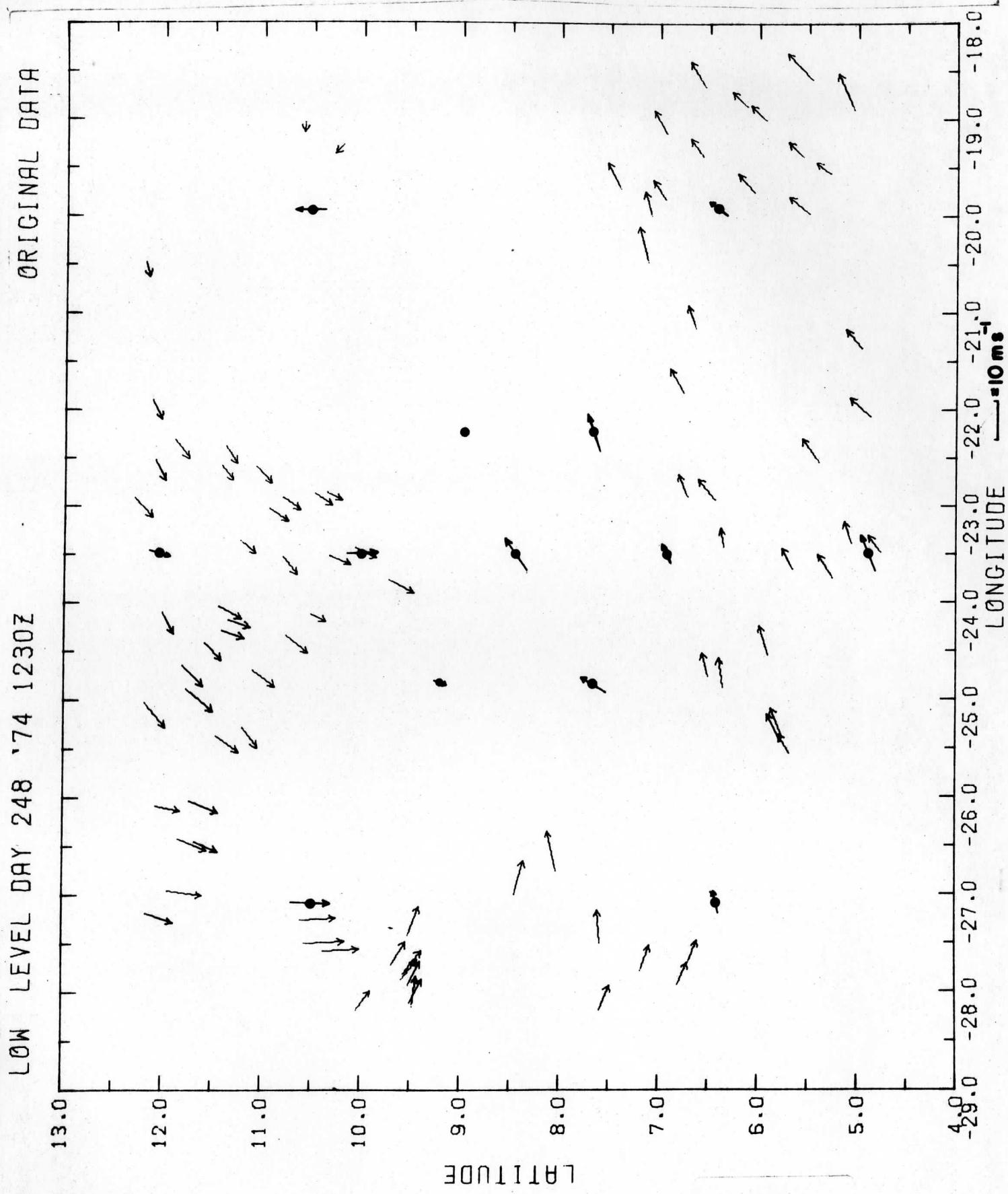
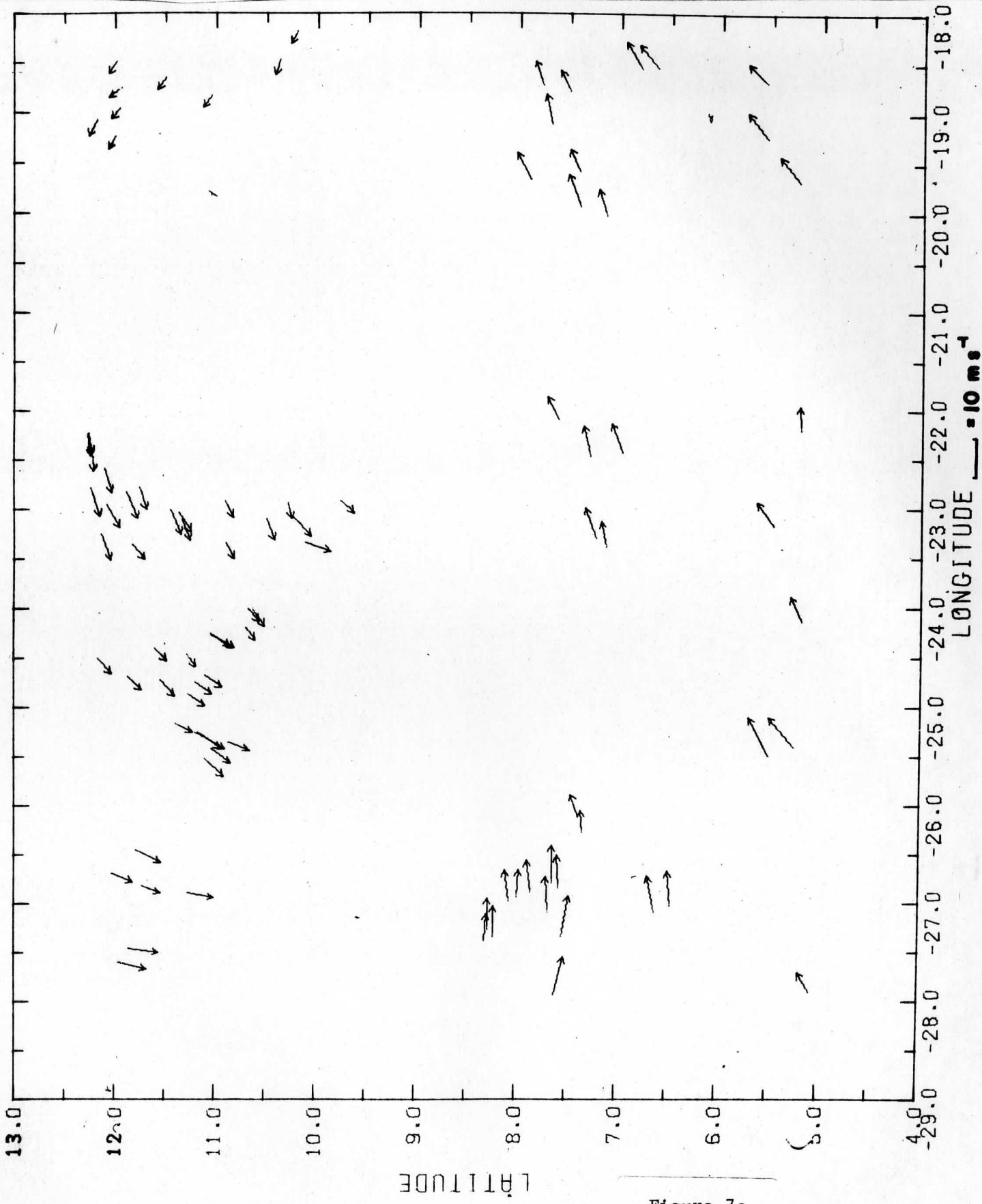


Figure 7b

## ORIGINAL DATA

LOW LEVEL WINDS DAY 248 '74 1500Z



LATITUDE

Figure 7c

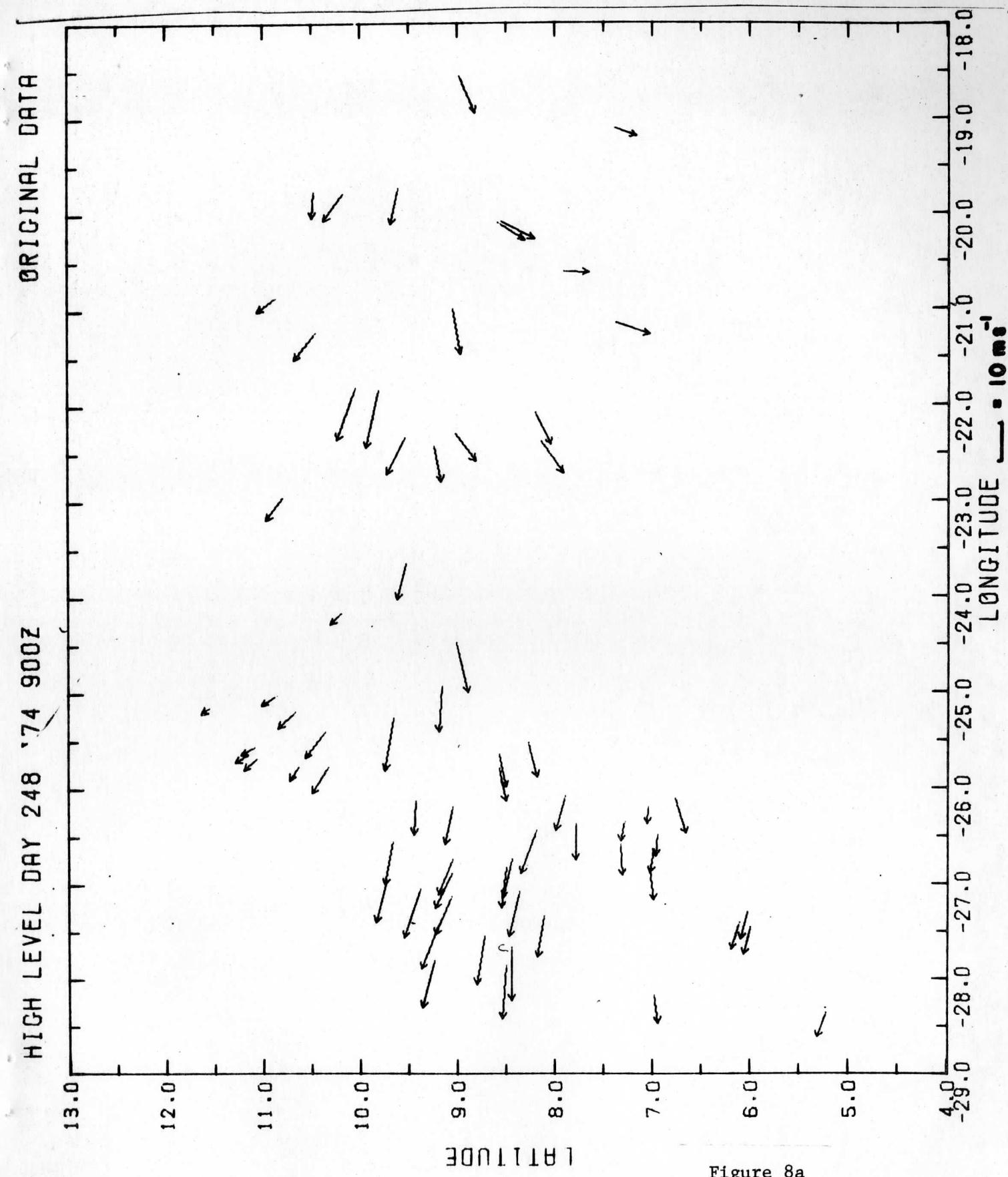


Figure 8a

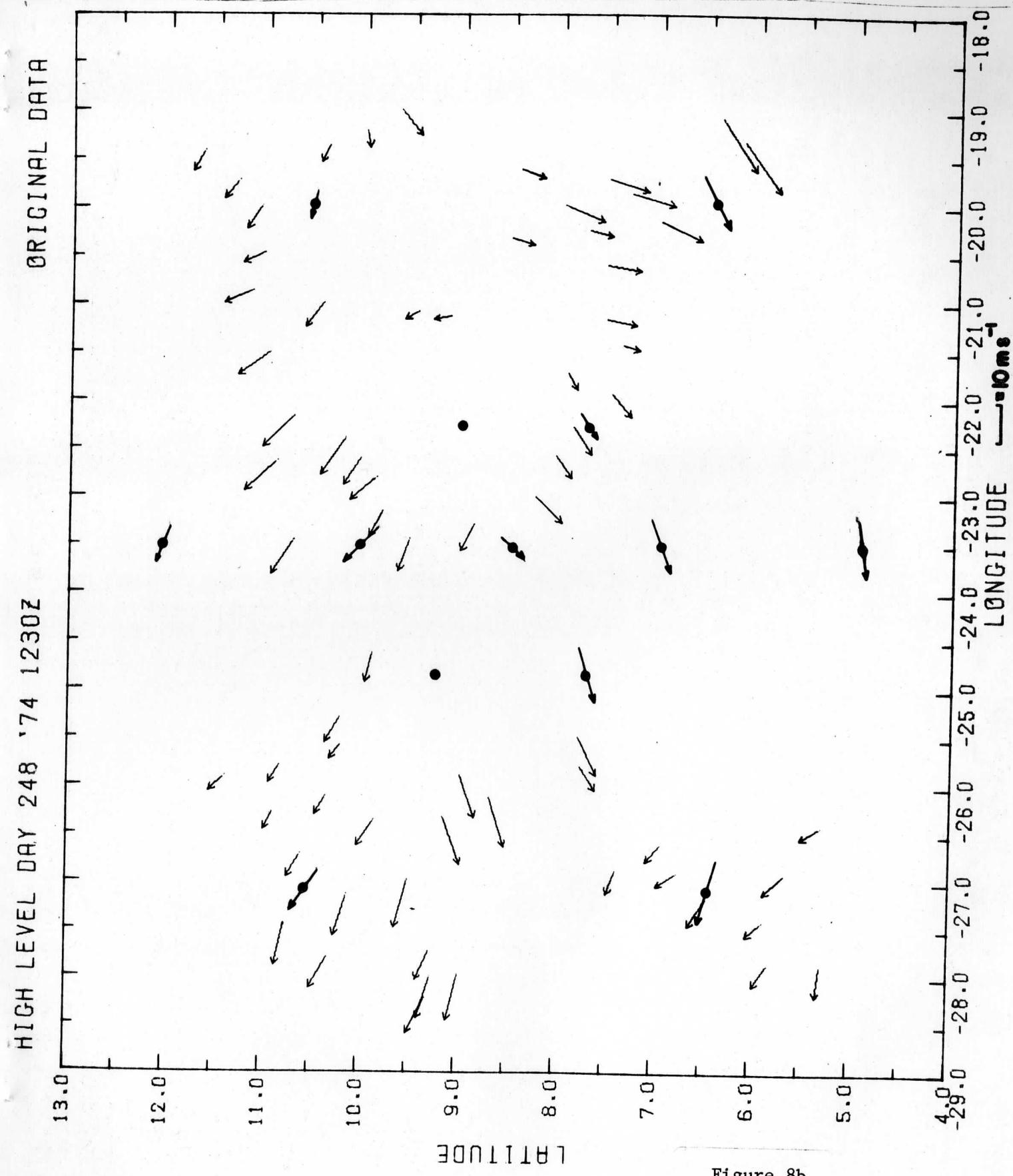
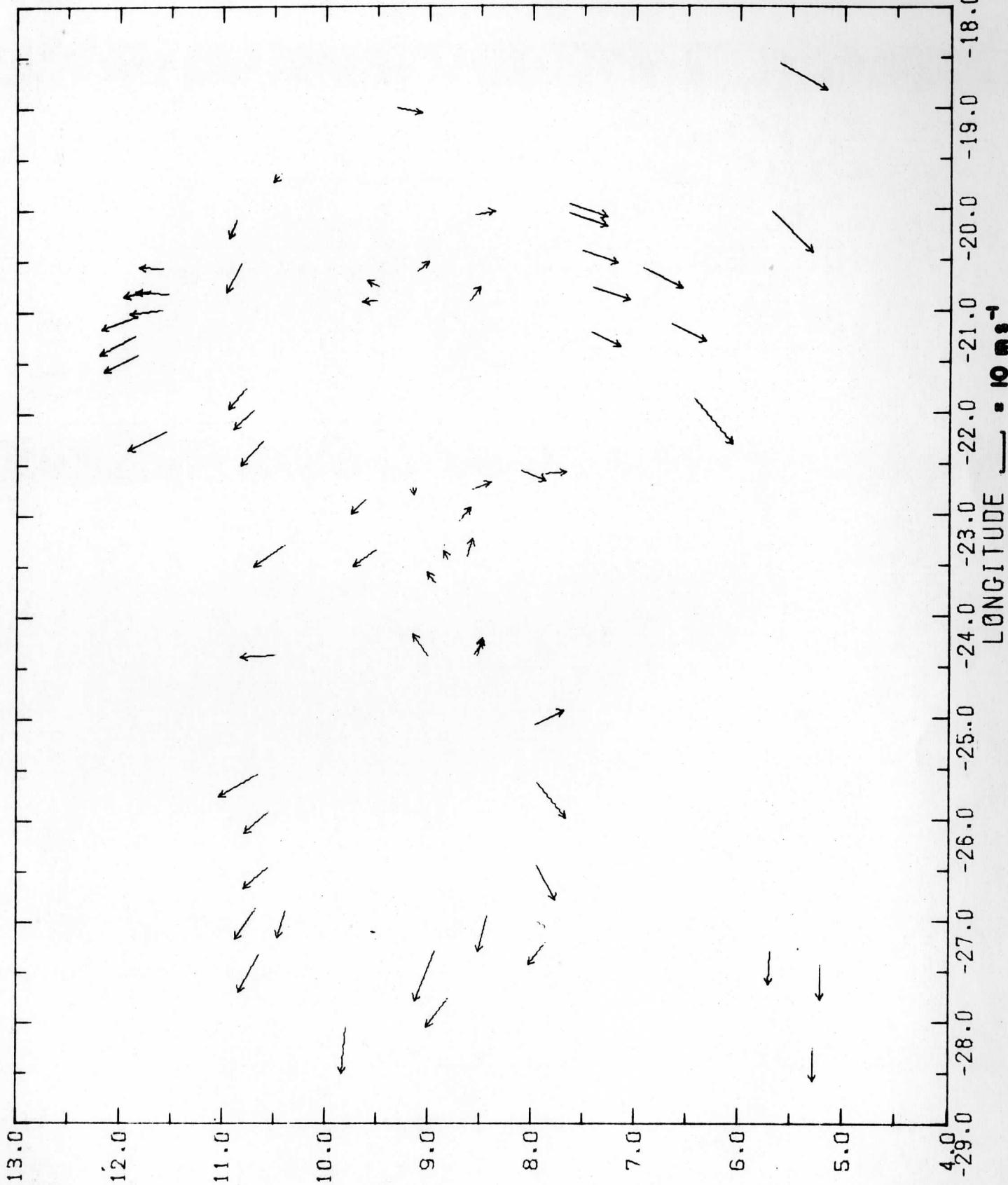


Figure 8b

ORIGINAL DATA

HIGH LEVEL WINDS DAY 248 '74 1500Z



LATITUDE

Figure 8c

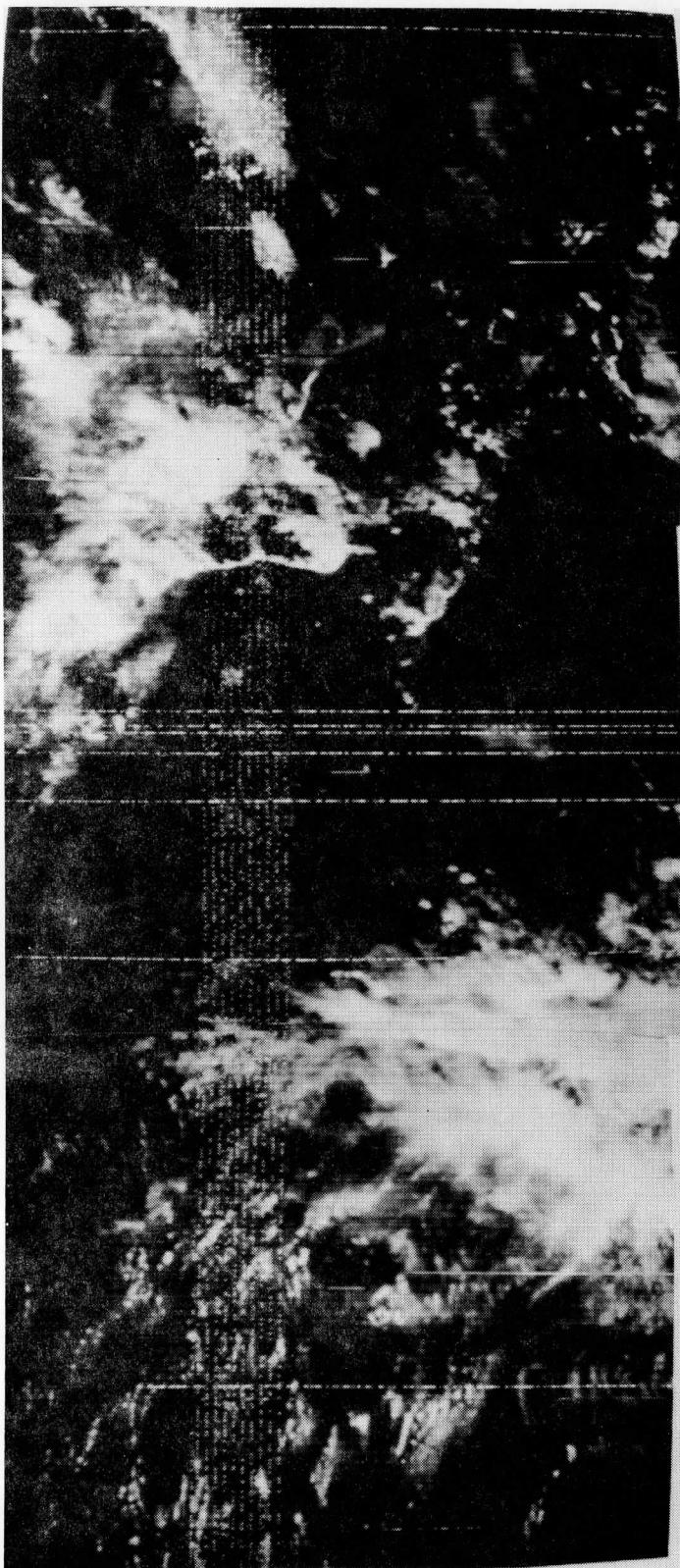
**A**

Figure 9a

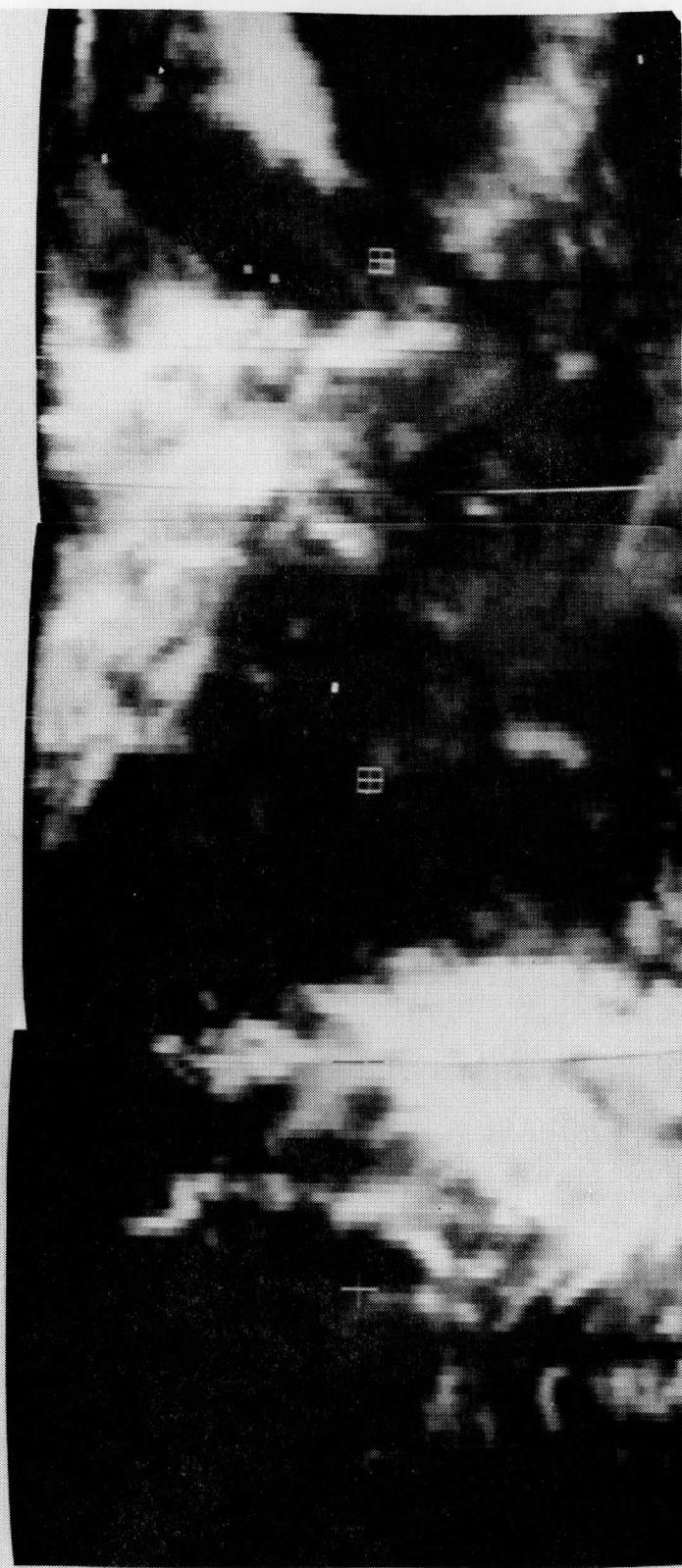
**B**

Figure 9b

LOW LEVEL WINDS DAY 253 '74 1230Z AVE.

ORIGINAL DATA

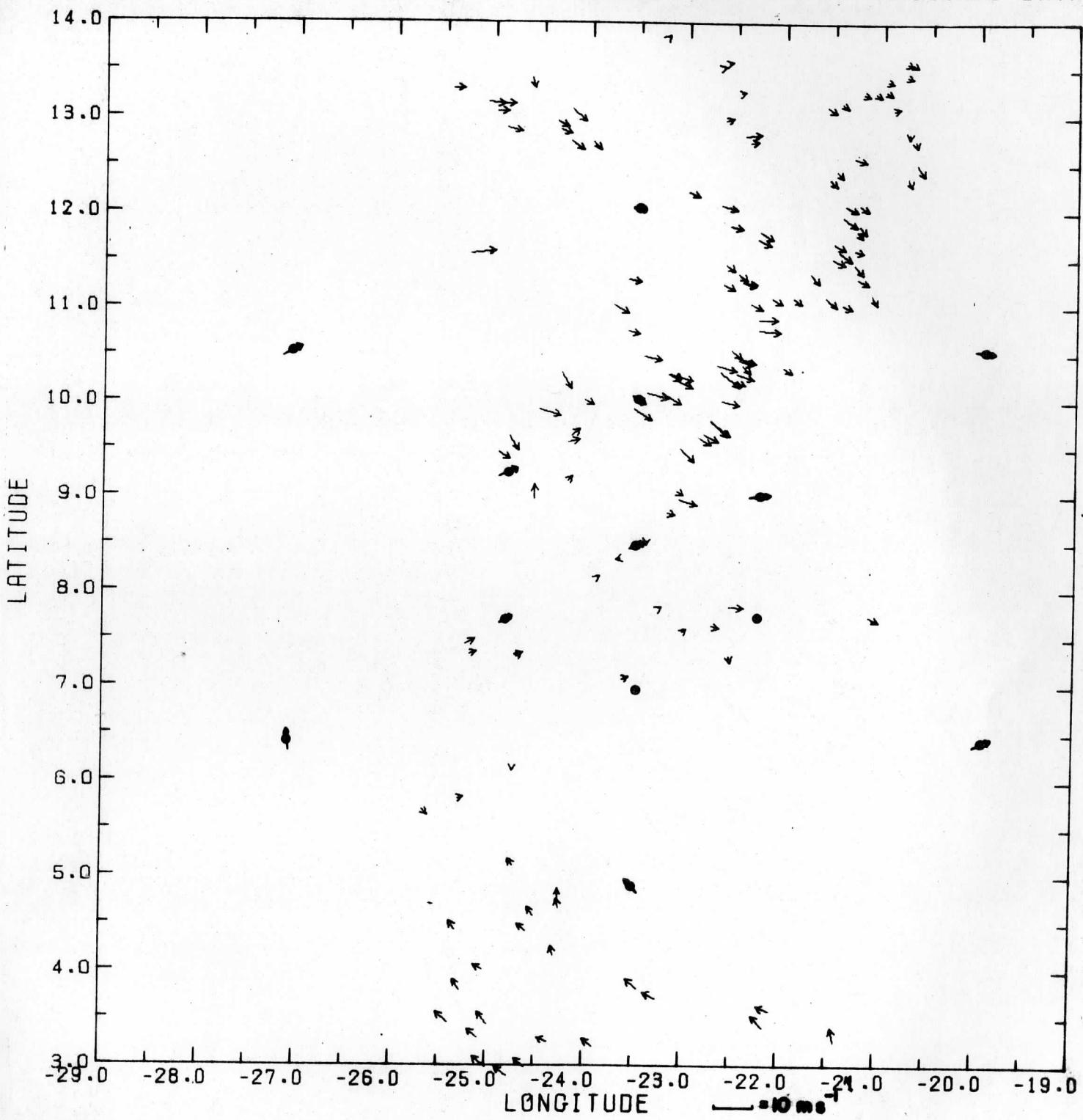


Figure 10a

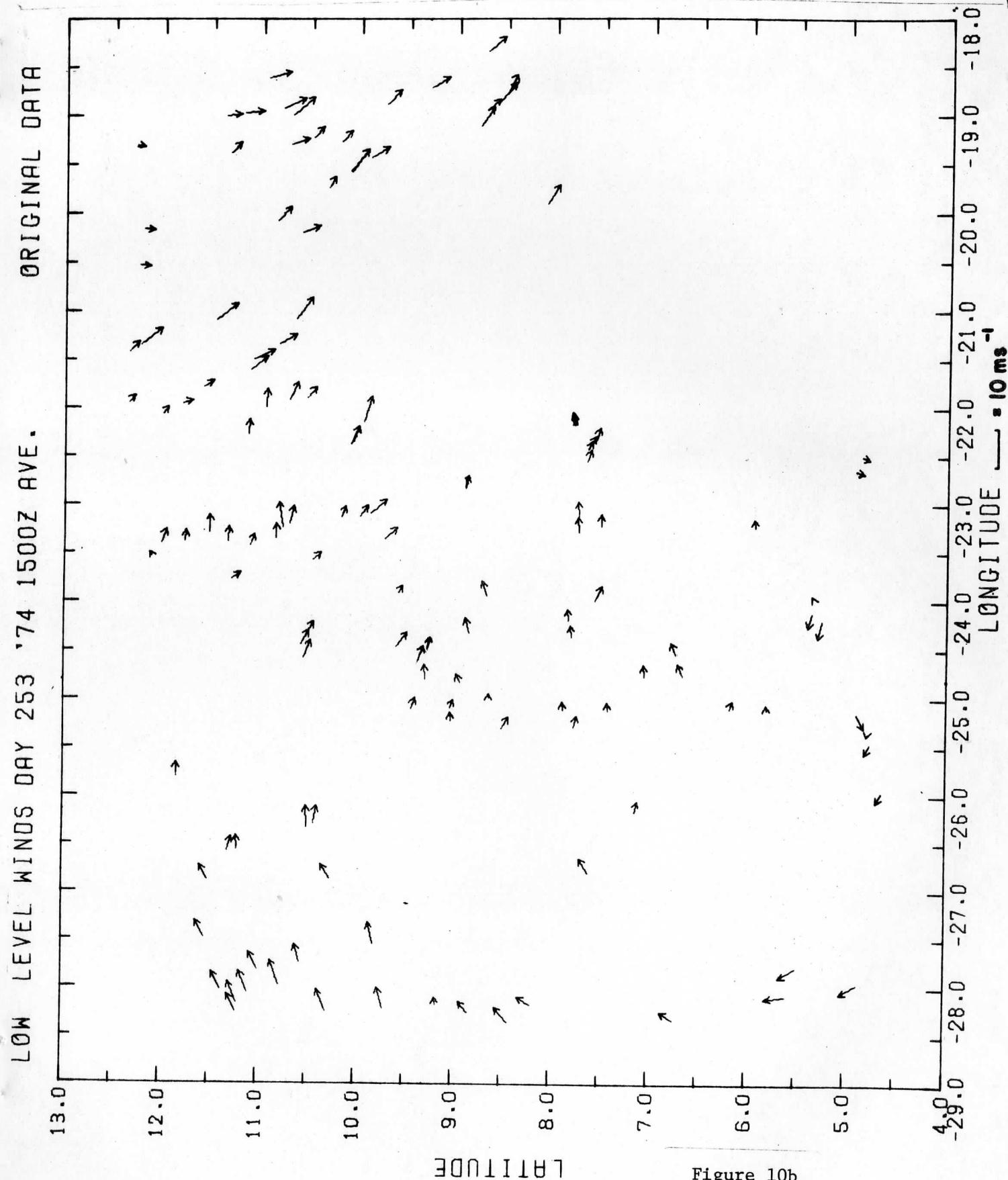


Figure 10b

HIGH LEVEL WINDS DAY 253 '74 1230Z AVE.

ORIGINAL DATA

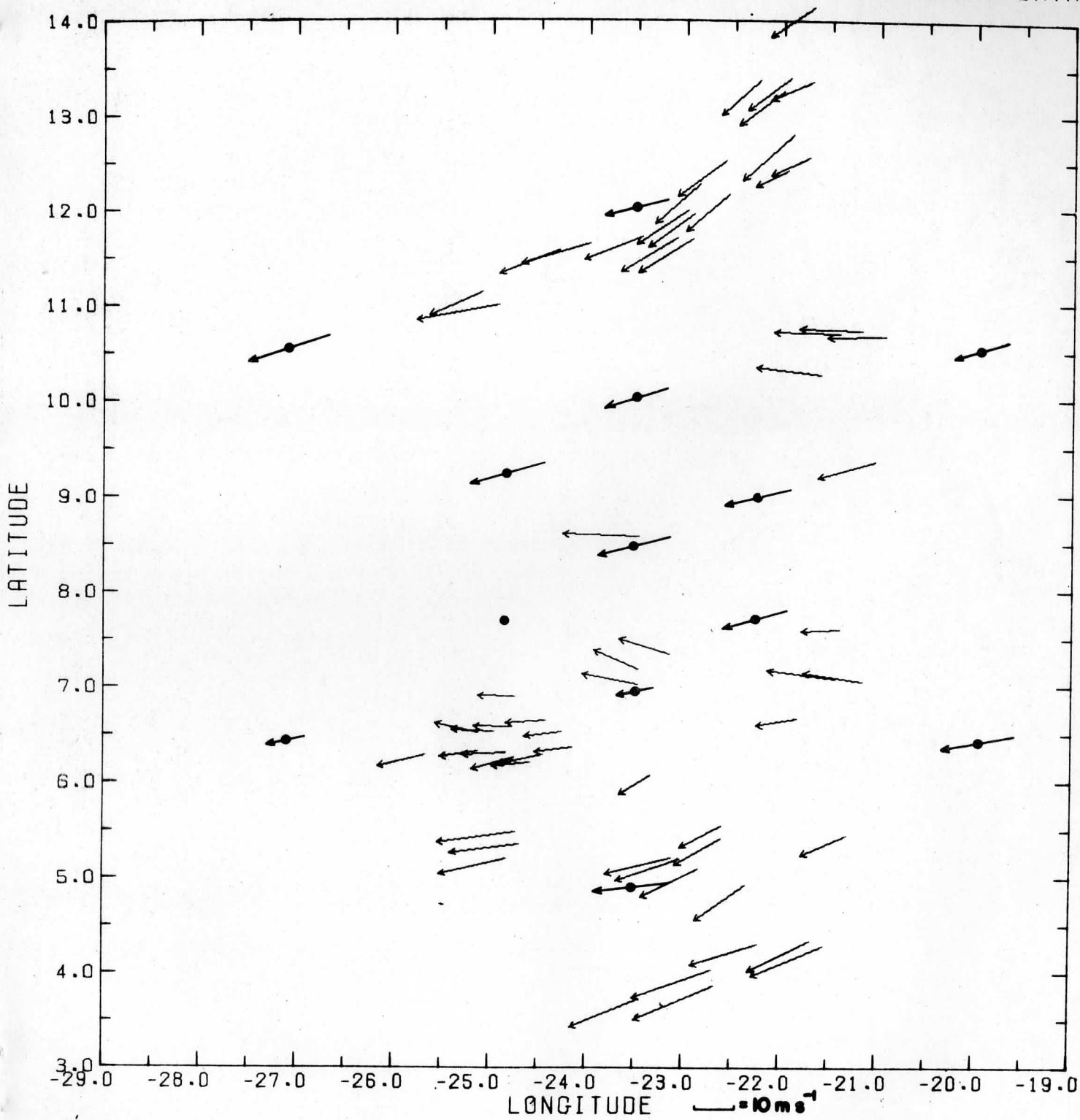


Figure 11a

ORIGINAL DATA

HIGH LEVEL WINDS DAY 253 '74 1500Z AVE.

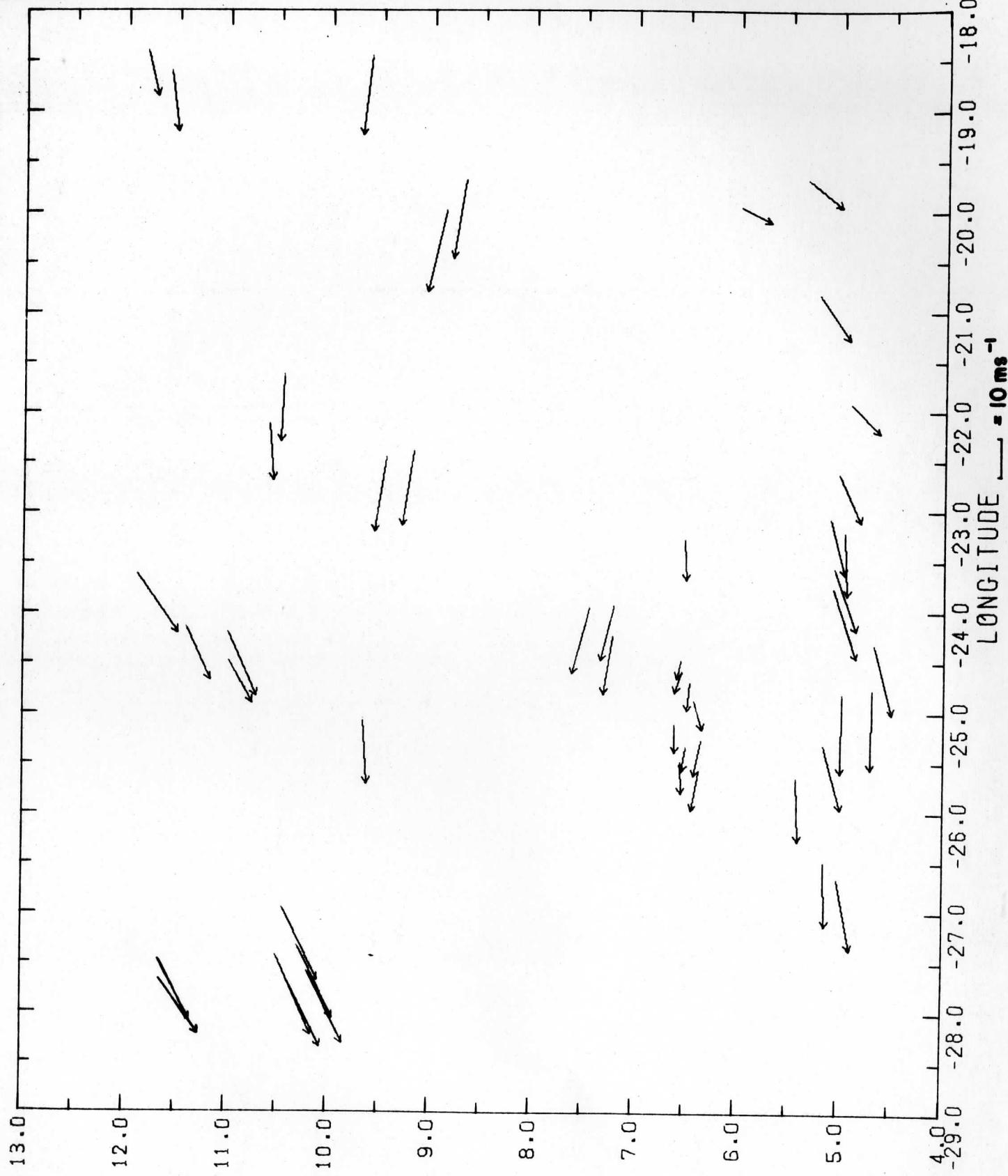


Figure 11b

MID LEVEL WINDS DAY 253 '74 1230Z AVE.

ORIGINAL DATA

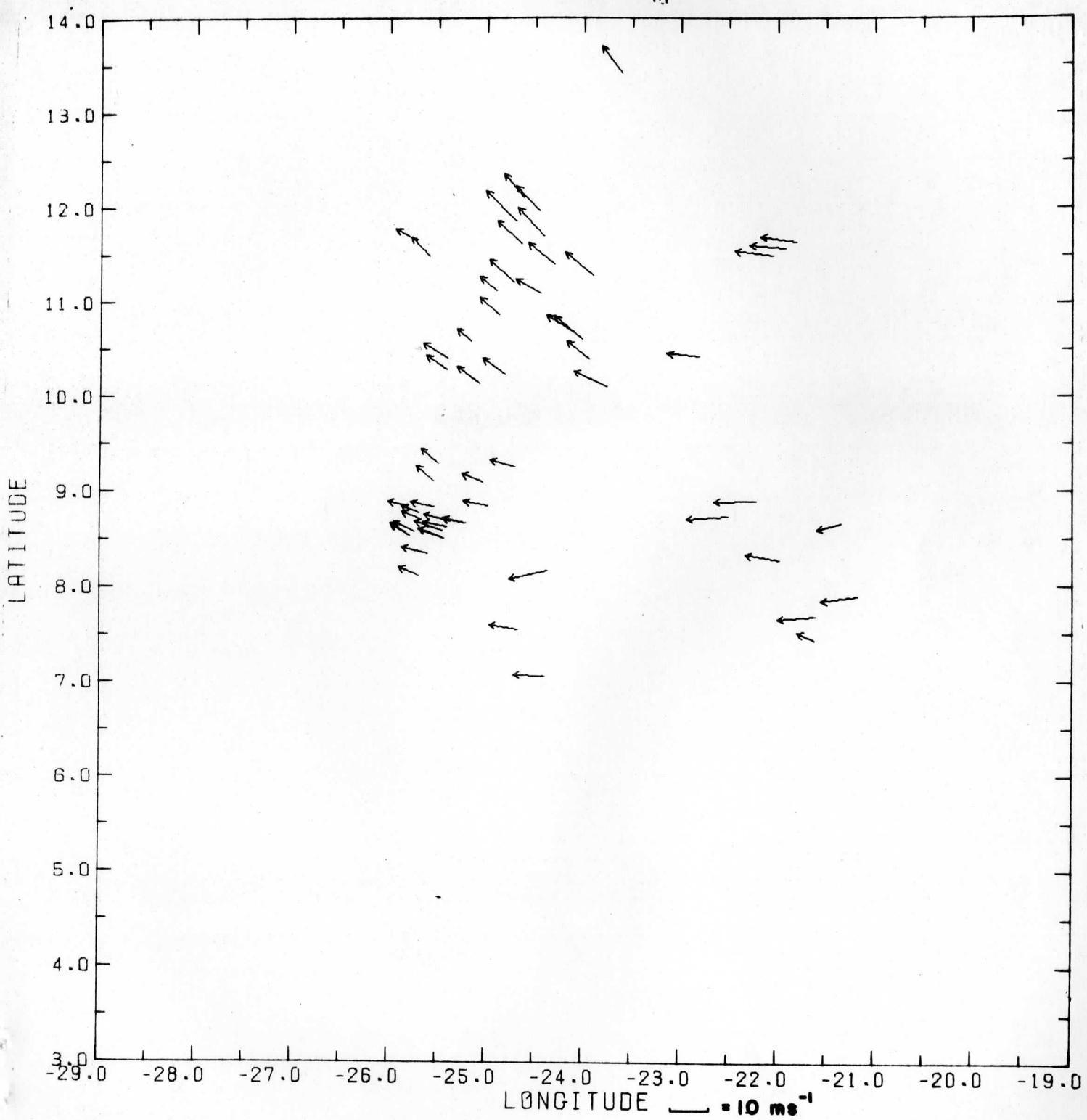


Figure 12a

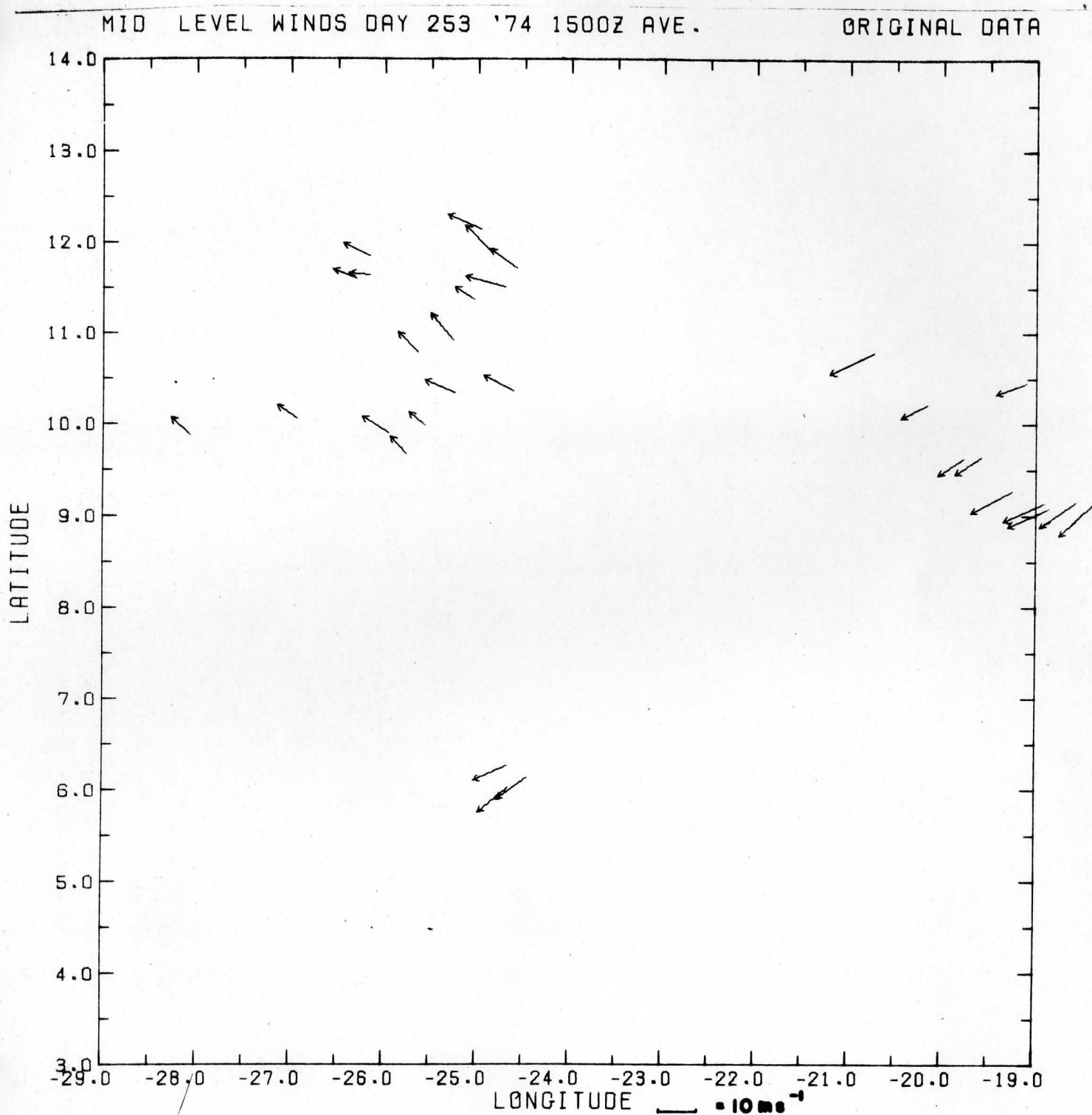
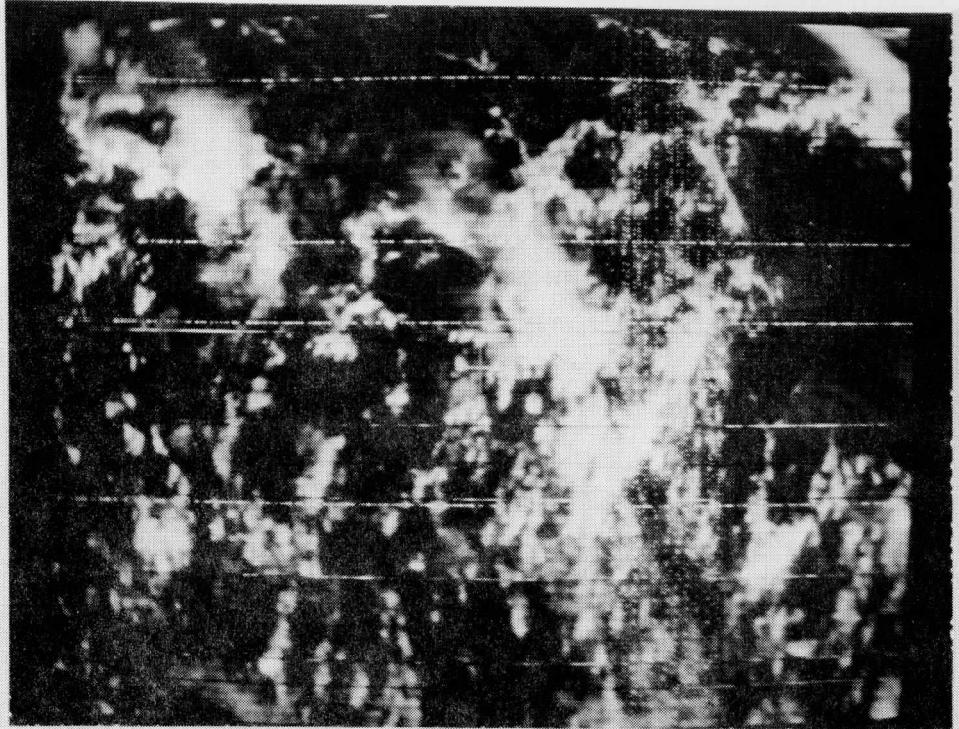
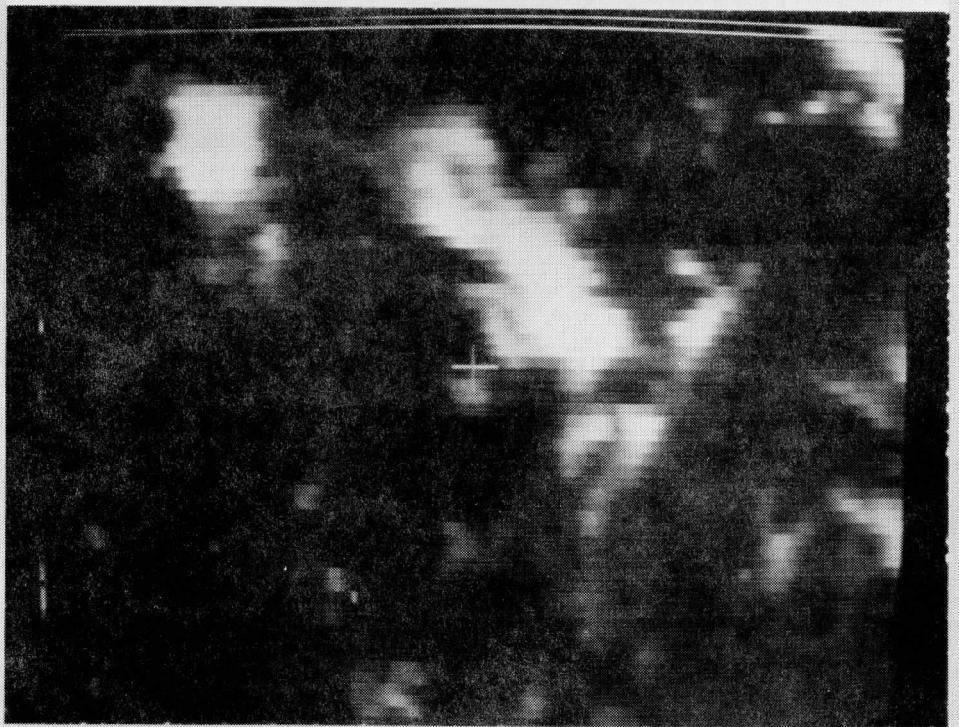


Figure 12b



A

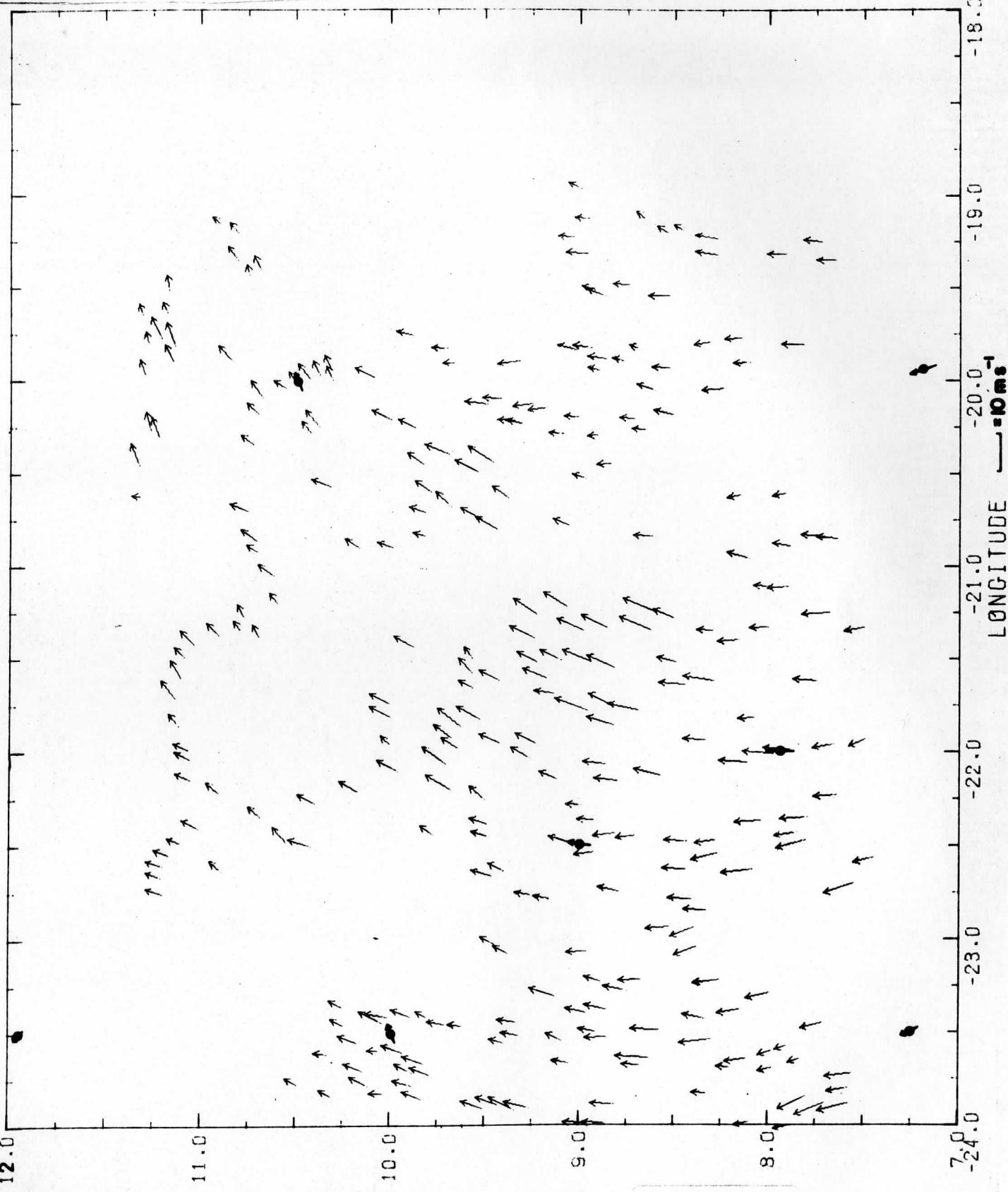
Figure 13a



B

Figure 13b

LOW LEVEL WINDS DAY 261 '74 1330Z

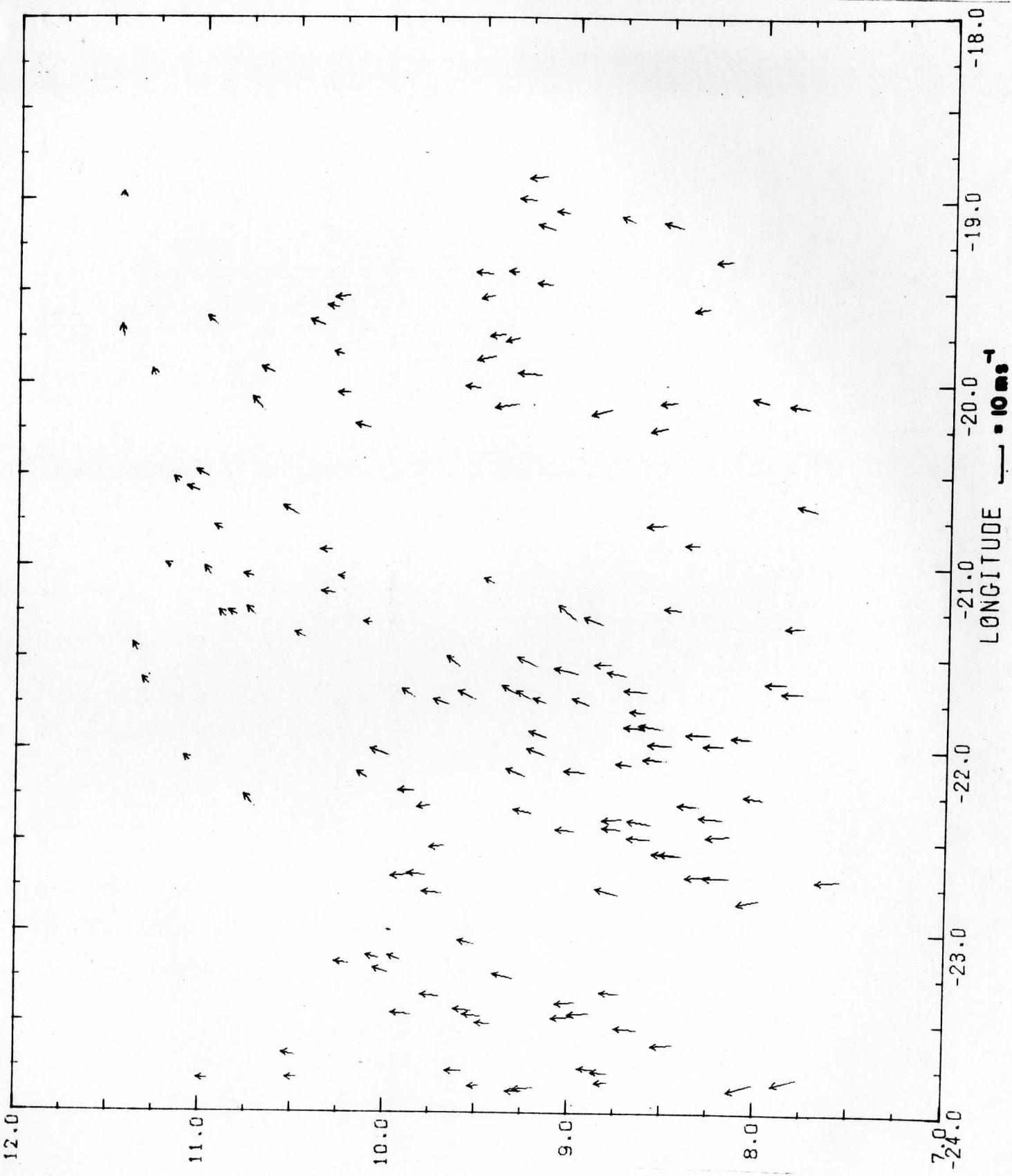


LATITUDE

Figure 14a

ORIGINAL DATA

LOW LEVEL WINDS DAY 261 '74 1500Z



LATITUDE

Figure 14b

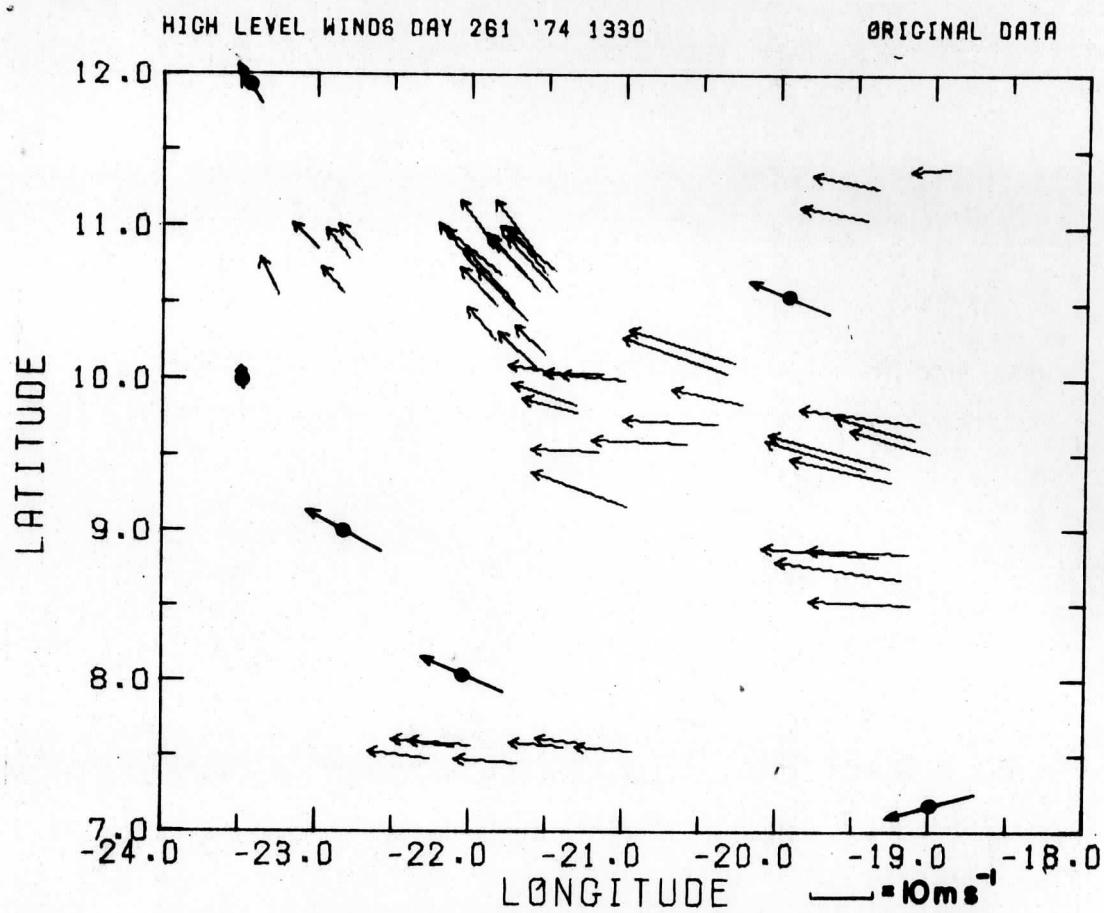


Figure 15a

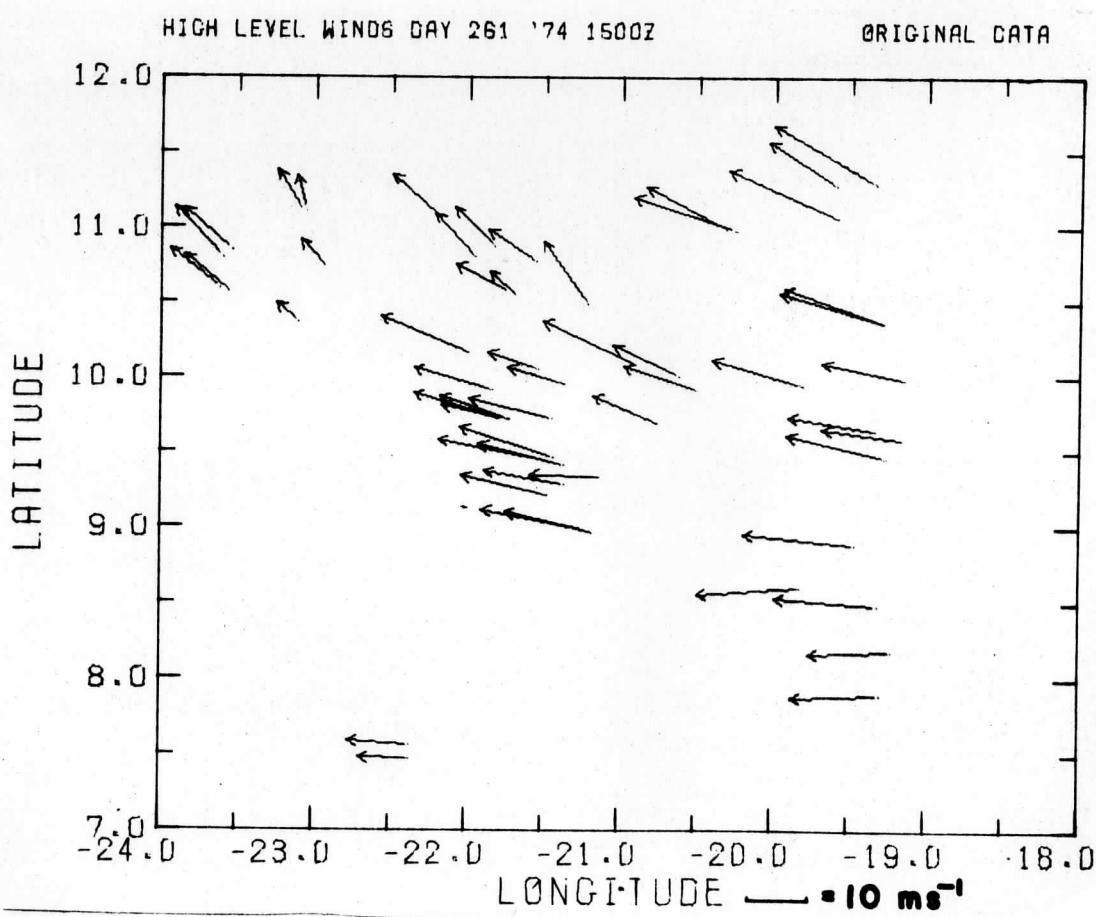


Figure 15b