



ARASF

Atmospheric Research Airborne Support Facility

Flight Data Catalogue

Flight A575

14 September 1997

ACSOE

Investigation of Tropical Air
originating over the US



POST FLIGHT REQUIREMENTS FORM

Flight No: 4575

Date: 14/9/97

A/S Name: H. RICHEN

Aircraft Scientist's Post Flight Requirements:

1. Are any copies of the flight folder required?
YES ☒ NO ☐ for *SEVERAL FOR ME*
2. Flight data and folders will normally be discarded after 10 years, is this OK?
YES ☐ NO ☒ If not OK, state period *10 YRS*
3. Is the flight part of an international project or major campaign?
YES ☒ NO ☐ Name of Project *ALLIANCE ACSE*
4. Do you want the video tape kept?
YES ☒ NO ☐ How long? *10 YRS*
5. Has the Handheld camera or the Camcorder been used:
YES ☐ NO ☒
If yes, do you want the handheld camera film processed:
immediately ☐ or when the film is finished? ☐
6. Do you want the cloud physics data kept? *NOT USED*
YES ☒ NO ☒
If yes, which disc / file do you want it stored in?
7. Do you want to do the interactive processing?
YES ☒ NO ☒

NOTE:

- Members of MRF Radiation and Cloud Physics groups are expected to meet their own requirements for data storage and non-standard processing.
- For non MRF users, Data Management Section will keep the processed data TEMPORARILY until the requirements are made known.
- Any other requirements for post-flight processing and data storage should be discussed with the Data Management Section.
- If copies of the Flight Folder are required, it is the responsibility of the Aircraft Scientist / User to produce them.



AS75 ACSOE SCIENCE

September 14, 1997

SORTIE OBJECTIVE:

To observe the atmospheric chemical composition in atlantic air Southwest of the Azores. The data will be added to a systematically collected airmass data base and will be used to determine the oxidising capacity and the budget of tropospheric oxidants in marine air at mid latitudes in the northern hemisphere. It is hoped that we will be able to intercept air which has stratospheric characteristics during the transit.

LOCATION:

Northeast Atlantic Ocean, Southwest of the Azores.

WEATHER:

Cloud Free

FLIGHT PATTERN:

- [1] Depart airfield and transit to oceanic airspace.
 - [1.1] Hold climb at 3000 ft for wet chemistry check. *← NOxy CAL 15min FL200*
- [2] Stepped profile from 50ft (or minimum safe altitude) to FL200 — 500ft/min to top of boundary layer then 1000ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200
- [2.1] Run for NOxy Calibration.
- [3] Sawtooth to top of next profile location.
- [4] Stepped profile from FL200 to 50ft (or minimum safe altitude) — 1000ft/min to top of boundary layer then 500ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200
- [5] Stepped profile from 50ft (or minimum safe altitude) to FL200 — 500ft/min to top of boundary layer then 1000ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200
- [6] Sawtooth to top of next profile location. ✓
- [7] Stepped profile from FL200 to 50ft (or minimum safe altitude) — 1000ft/min to top of boundary layer then 500ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200



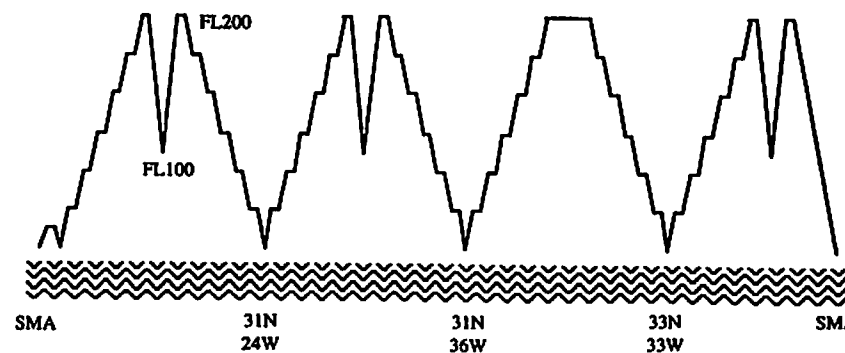
- [8] Stepped profile from 50ft (or minimum safe altitude) to FL200 — 500ft/min to top of boundary layer then 1000ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200
- [9] Run to top of next profile location.
- [10] Stepped profile from FL200 to 50ft (or minimum safe altitude) — 1000ft/min to top of boundary layer then 500ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200
- [11] Stepped profile from 50ft (or minimum safe altitude) to FL200 — 500ft/min to top of boundary layer then 1000ft/min.
Fill bottles at 100ft, 500ft, 1000ft, 3000ft, FL070, FL150, FL200
- [12] Sawtooth to top of next profile location.
- [13] Profile into Santa Maria from FL200.

OTHER REQUIREMENTS:

Cabin pressure and temperature to be kept constant on level runs. The NOxy should ideally be zeroed every 15 minutes. During profiles this should be done at the start of grab sample runs. Other instrument operators should perform zeros at this time if required.

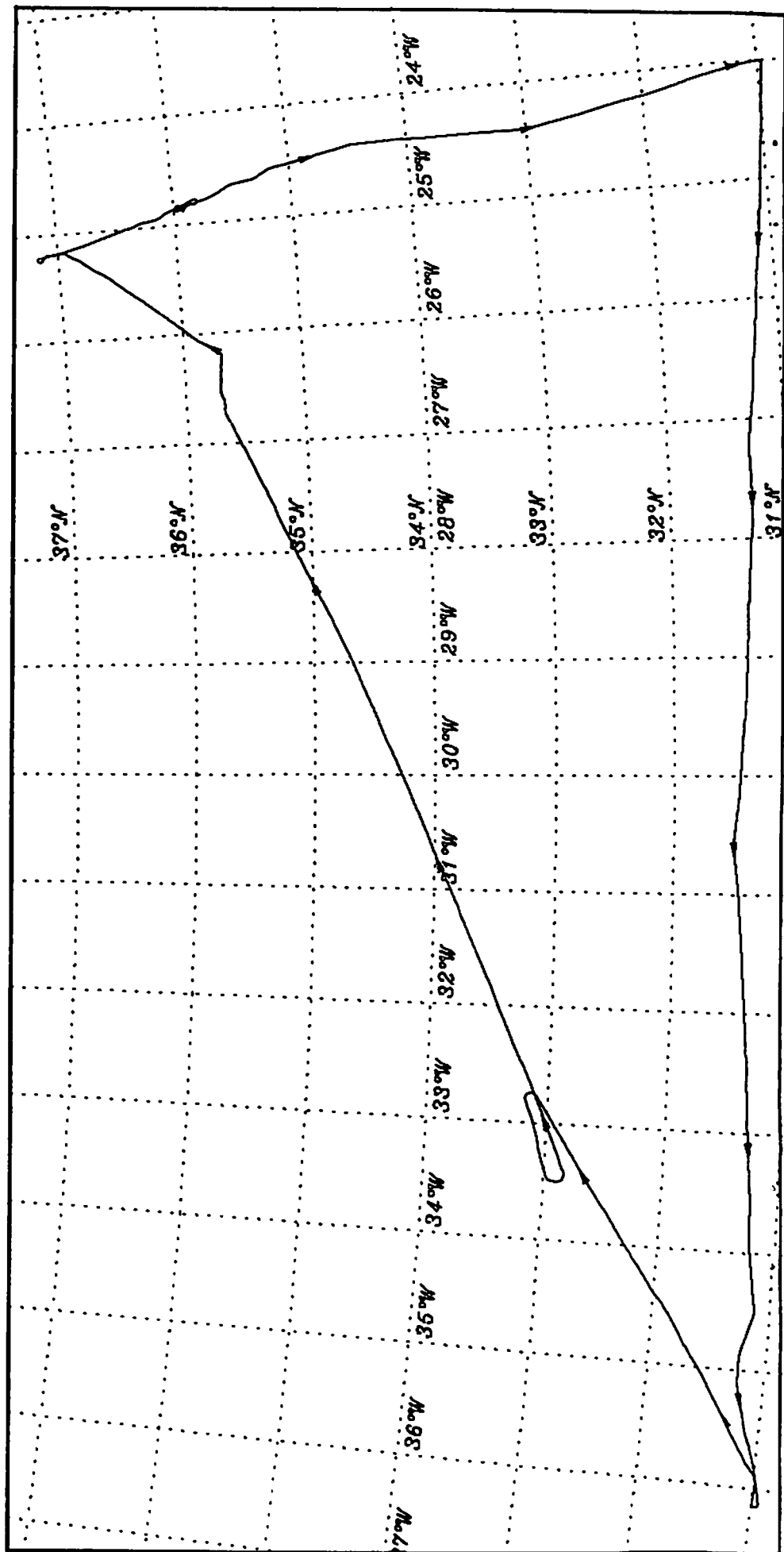
TIME:

hours.



A575

GPS data
09:07:03 - 20:34:34



SAMPLE BOTTLE RECORD

Flight No. AS75

Date 14/9/97

Sheet no. 4/25

[illegible]

SAMPLE BOTTLE RECORD

Flight No. A575

Date 14/3/97

Sheet no. 3/4

Sample no.	Bottle no.	Time	E/M	Height	PRESSURE			True pressure (mb)	Remarks (Run No. etc.)
					PURGE TIME	FILL TIME	END TIME		
25	R 19			5000'	170100	170712	170748	847	3 min purge on run 7 bar 3
26	R 25			500'	171000	171728	171755	994	1 min purge on run 7 bar.
27	S 11			100'	171800	172010	172032	1013	no purge on run. P7. 100
28	R 37			5000'	172200	173052	173124	846	1 min purge 50 7 100 130
29	R 4			FL 100	173400	174004	174052	700	1 min purge 7
30	R 36			FL 130	174200	174700	174830	622	1 min purge. 7 bar
31	S 16			FL 150	175000	175245	175411	572	1 min purge 6.5 bar
32	R 32			FL 180	175600	175901	180112	506	1 min purge 5.8 bar.
33	A 8			FL 220 100	180245	181013	181306	420	4.9 bar
34	R 13			P8 500'	182000	182960	183041		1 min purge 500 7 bar 5000 100
35	R 16			5000'	183300	184100	18418	847	1 min purge 130 - 7 bar 150
36	R 9			FL 100	184300	184849	184952	700	7 bar 180 200

SAMPLE BOTTLE RECORD

G.C. Form 3

Flight No. 4575

Date 14/3/97

Sheet no. 2/4

Sample no.	Bottle no.	Time	E/M	Height	Pressure Purge Time	Pressure Fill Time	End Time	True Pressure (mb)	Remarks (Run No. etc.)
13	5/4			100'	14403	144100	144126		P3 7 bar
14	5/12			500'	144250	144324	144355		1 min purge only total 7 bar
15	4/9			1000'	144450	144610	144642		1 min purge only fill from run start.
16	4/7			3000'	144755	144833	144860	920	3 min purge on run
17	5/109 1*			FL 070	145645	150134	150210	784	1 min purge on run * ex Harwell
18	4/11			FL 150	150500	151250	151432		1 min purge on run. 6.5 bar.
19	5/3			FL 200	151600	152605	152907	466	5.4 bar.
20	5/8			FL 200	161500	163010	163310		before P6 on run 5. 40 9 bar only
21	2/2			FL 180	163500	163855	164148	504	after 1 min purge on run 180
22	5/7			FL 150	164342	164630	164838	573	1 min purge on run 150 130 200 500 6.9 bar
23	5/9			FL 130	164944	165220	165342	528	1 min on purge on run 500 7. bar 50
24	5/10			FL 100	165513	165822	165911	700	1 min purgen run 7 bar

SAMPLE BOTTLE RECORD

Flight No. A575 Date 14 9 97 Sheet no. 1/4

Sample Bottle no.	Time	e/m	Height	Purge Time	Pressure	Fill Time	End Time	True Pressure (mb)	Remarks (Run No. etc.)
1	4/12		100'	13/10	13/145	13/122	13/1230	10/8	Purged from 300.1 ON DESCENT
2	4/5		500'	13/14	13/172	13/1340	13/1800	1004	
3	4/10		1000'	13/1920	13/2020	13/2130	081		
4	093		3000'	132330	132502	132536	0915		
5	012		7000'	132700	133233	133310	285		START FILL AT BEGINNING of Run
6	088		FL 150	133800	134245	134445	573	485	
7	4/6		FL 200	134730	135342	135625	467		AT START 5.0 BAR 5.04 BAR
8	4/11		FL 150	140250	140720	141010	/		1 run into run 5.6 BAR
9	4/3		FL 070	141215	141925	142007	—		ON DESCENT FROM FL130 FILL 1 run into run
10	4/2		3000'	142200	142737	142834	045		1 run purge on
11	5/1		1000'	143000	143535	143550	091		3 run purge on run
12	4/4		500'	143730	143820	143906			1 run purge on run

Interactive Processing Log

Flight No. A575 Date: 14/9/97 User: H. RICHEN
Interactive by: I. Rux
Date: 29/9/97

Renav

KALMAN FILTERING USED

TWC

Profile plotted: YES P11
Line chosen: Profile / Whole flight / Other

a = - 0.1496E+1
b = + 0.5419E-2
c = + 0.3117E-6

LWC

Very STORMY

Heimann / Barnes

NOT USED

A575, 14th September, 1997
 ACSOE
 North Atlantic near the Azores

Start time	End time	Event	Height(s)	Hdg	Comments
123633					Take off St Maria
124855	130551	R1	FL060 FL080	180°	
131128	135336	P1	50' FL200	170°	Bottle fills at 100', 500',1000',3000',FL70 FL150,FL200
135336	140106	R2	FL200	185°	
140106	144016	P2	FL200 50'	185°	Bottle fills at 100', 500',1000',3000',FL70 FL150,FL200
144016	152159	P3	50' FL200	290°	Bottle fills at 100', 500',1000',3000',FL70 FL150,FL200
152159	152949	R3	FL200	280°	
152949	155514	P4	FL200 FL100	290°	
160110	162751	P5	FL100 FL220	275°	
162751	163301	R5	FL220	280°	
163301	171924	P6	FL220 50'	270°	Bottle fills at FL180 FL150,FL130,FL100,FL50 500'
171924	180736	P7	50' FL220	065°	Bottle fills at 100', FL50,FL100,FL130,FL150 FL180
180736	181325	R6	FL220	065°	
182814	191223	P8	50' FL220	080°	Bottle fills at 500', FL50,FL100,FL130,FL150 FL180,FL220
191623	192019	P9	FL220 FL180	080°	
192019	193553	R7	FL180	075°	
193553	194004	P10	FL180 FL220	080°	
194004	195948	P11	FL220 50'	040°	
200226	200701	R8	5000'	050°	
202810					Land St Maria

FLIGHT FOLDER

Flight No. A 575

DATE: 14/9/97

Take off: 1235

Landing: 2030



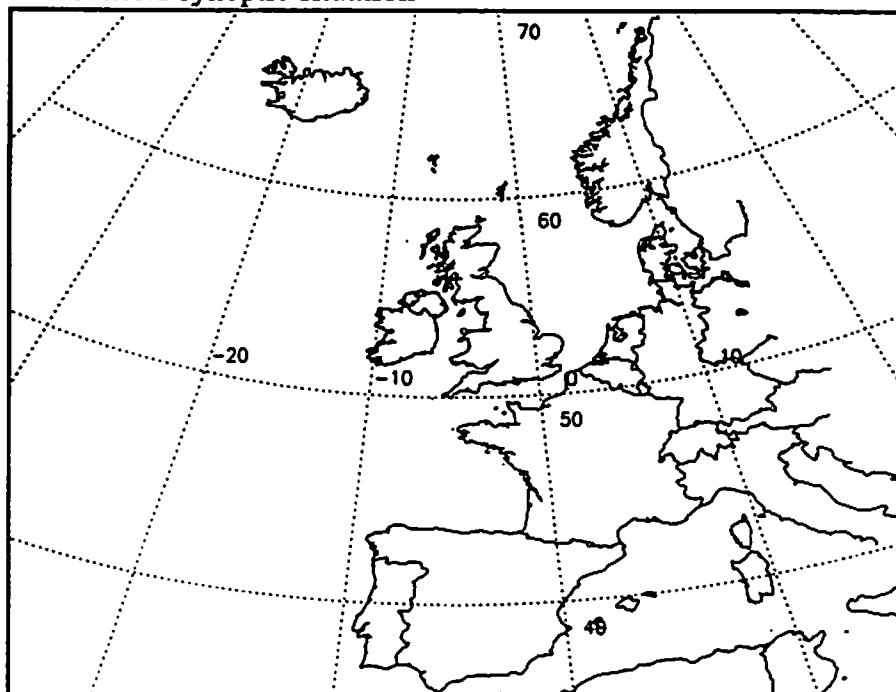
Aircraft Scientist : H. RICHER
 Flight Leader : I. RICE
 Others CO : S. SCHMITZ
 ECKE : J. KENT
 PSAP CNE : K. DEWEY
 BOTTLES : D. ARTHUR
 PENEA : T. GILLEN
 FOMMERSBY : G. MILLS
 PINEIDE : B. GANDY
 NOXY : S. BARWITTE

Captain : M. PULSK
 Co-pilot : D. BENDALL
 Navigator : J. AYERS
 Engineer : M. LEMMONS
 Loadmaster : K. QUICK

+ PAUL LONKS
 CLAUDE KEEVES
 GUYAN PENNETT
 KATHY LAW } MISSION SCIENTISTS

Trials Instructions : MRF1 : AC&OE
 Operating area : N. ATLANTIC

General synoptic situation



TIME:

Debrief

A successful science sortie was flown on the first day of the detachment from Santa Maria. The main aims of the experiment were met *i.e.* both tropical air and air with its origin over N. America were seemingly identified by their chemical signatures. All instruments were working although the PAN GC had excessive electrical noise for the first half of the flight and the NO_x background was found to vary. The CO sensitivity was also found to increase during the flight.

On leaving Santa Maria O_3 and CO values were low *e.g.* 55 ppb CO, 33 ppb O_3 at FL 100. However, these values were found to increase to *ca.* 70 ppb CO at FL160 and 65 ppb O_3 .

Throughout the flight observations of cumulus and stratocumulus clouds were made. However, the most notable feature was the poor visibility due to a thick haze layer as we flew south. This very humid air was rich in peroxide with readings of *ca.* 1.25 ppb. This haze became less notable as we ascended to the west. At the same time O_3 , CO and NO_y were found to increase. Maximum values of CO (*ca.* 120 ppb), O_3 (*ca.* 100 ppb) and NO_y (*ca.* 2 ppb) were found at altitude on the western leg of the sortie.



AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: HANNAH R RICHER

Project: ACSOE
Flight No: AS75

Date: 14/9/97
Page 1 of 8

10.10
656

Time GMT	Run Profile	Height	Heading INS	Latitude Longitude	Other Information (eg: clouds, weather, visibility, winds, sea state etc.)
1240		Pres Rad FL			TAKE OFF SANTA MARIA +
1243		3000 Pres Rad FL	168	36.56 -25.04	CLIMB TO 3000 feet RAIN 3000ft for wet chem O3 18 ppb CO 68
1246		Pres Rad FL			REQUEST ASCENT TO FLOBO IN CLOUD
1248.5	RUN 1	060 Pres Rad FL	172 167	36.31 -24.96	NOXY CAR IN BETWEEN CLOUD
1250.5	4	Pres Rad FL			CLOUD SO HAVE TO CLIMB TO FLOBO
1251.51	u	080 Pres Rad FL	17e		STILL MUCH MIXED LOW CLOUD HAVE TO DEViate FROM COURSE TO AVOID CLOUD
	v	Pres Rad FL			SMALL CU DEW AND STRATUS + many STRATOCU CIRrus 1/8 above
1254.4		080 Pres Rad FL			STRATOCU now 8/8
13:01.28		080 Pres Rad FL	357	35.82 -24.82	TURN TO COMPLETE NOXY RUN IN CLEAR AIR
13:05.51		Pres Rad FL	160		DESCENT TO 50 feet 550mb inversion / cloud THERM - MEET AIR
1309.39		Pres Rad FL	160		PRIZZLE

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: HANNAH RICHOR

Project: AC50E
Flight No: A575

Date: 14/9/97
Page 2 of 8

Time GMT	Run Profile	Height	Heading INS	Latitude Longitude	Other Information (eg: clouds, weather, visibility, winds, sea state etc.)
131241	P1	600ft Pres Rad FL		35.55 -24.6	bottle filled
131329	"	500ft Pres Rad FL	160	35.50 -24.66	bottle run
131813	"	500ft Pres Rad FL		35.27 -24.62	RESTART PROFILE
131905	"	010 Pres Rad FL	156	35.25 -24.61	bottle run
132138		Pres Rad FL	170	35.15 -24.58	restart profile THROUGH SMALL Cn
132454	"	500ft Pres Rad FL	174	35.08 -24.53	IN CLOUD BOTTLE RUN.
132539	"	Pres Rad FL		34.95 -24.52	RESTART PROFILE ABOVE CLOUD AT 5000 ft
133113	"	500ft Pres Rad FL	176	34.66 -24.46	1 MIN FOR NOXY ZERO
133316		Pres Rad FL	174	34.58 -24.45	RESTART PROFILE - JUST SMALL AMOUNT of CIRRUS ABOVE (1/4) 8/8 STRATUS BELOW.
		Pres Rad FL		34.41 -24.44	RATE OF CLIMB REDUCED TO
		FL100 Pres Rad FL			VERY LOW CO ~ 55 ppb C3 33 ppb INCREASE IN O3 65 ppb 10-12,000 ft

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: HANNAH RICHER

Project: ACSOE

Flight No: A575

Date: 14/9/97

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Time GMT	Run Profile	Height	Heading INS	Latitude Longitude	Other Information (eg: clouds, weather, visibility, winds, sea state etc.)
	P1	Pres Rad FL			AND ALSO 14,000 feet
1342.42	P1	150 Pres Rad FL	183	33.94 -24.40	BOTTLE RUN (ACCOMPLISHED ABOVE CO MAX) ~ 60 → 65 ppb
1346		160 Pres Rad FL		33.94 -24.40	Ozone the mean density profile 66 ppb
1352	R2	200 Pres Rad FL		33.37 -24.40	CO up to 70 ppb End profile / Start run
		Profile 150 Pres Rad FL		32	1 minute zero for NO ₂ at beginning of every run
1405.55		150 Pres Rad FL		32.50 -24.31	Bottle filling run. (NO ₂ zero)
1410.7	P2	Pres Rad FL	174	32.21 -24.25	Restart P2 STATIONS show 8/8 H ₂ O up to 1.25 ppb
1418.12		070 Pres Rad FL		31.76 -24.16	BOTTLE RUN
1420.18		Pres Rad FL		31.62 -24.12	Restart profile
1428.23		200 Pres Rad FL		31.55 -24.10	Bottle run
		1000 Pres Rad FL			Bottle / cal run

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: HANNAH RICHES

Project: FCSOE

Flight No: AS75

Date: 14/9/97

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Time GMT	Run Profile	Height	Heading INS	Latitude Longitude	Other Information (eg: clouds, weather, visibility, winds, sea state etc.)
		500 Pres Rad FL			Bottle
	23	100 Pres Rad FL			Same
		1000 Pres Rad FL			Same
		3000 Pres Rad FL			Same
15224		4200 Pres Rad FL	276	31.15 -25.81	Restart profile Ca. FL 100 Bottle fell
		7000 Pres Rad FL			Bottle fell
151120		150 Pres Rad FL			Bottle fell
1		2000 Pres Rad FL			
152159					Should now have 66 minutes to do a shallower sawtooth.
1					Cumulus(?) cloud streaks below have some cirrus and the odd large cum visible
153154		200 Pres Rad FL	272	31.20 -27.8	(corrective descent to starboard side) haze becoming more clear to starboard

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: R. CHER

Project: ACSOE - ON COA Date: 4/1/77

Flight No: A575

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Time GMT	Run Profile	Height	Heading INS	Latitude Longitude	Other Information (eg: clouds, weather, visibility, winds, sea state etc.)
		Pres Rad FL			Bah isolated
		Pres Rad FL			as line of convective cloud visible - stratus behind
		Pres Rad FL			On descent (slow smooth) go back into
		Pres Rad FL			large large
		Pres Rad FL			Shallow descent 400 feet/min
		Pres Rad FL			More decreasing(?)
155514	P	20	274	31.45 -30.3	CALIBRATION / 2020 RUN
160110	P5		258	31.45 -30.14	Resume profile at 400 feet/min back to FL 220
160824		013	263	31.41 -31.39	Have less notable but more cloud! layers of broken stratus below
161313		015	263	31.38 -31.82	CO, O ₃ , NO _y increasing on ascent from FL 100
1633		220		31.23 -33.51	O ₃ max ~ 90 ppb at FL 220
1633	P6			31.21 -33.85	Profile descent @ 1000 ft/min.
163731		180		31.20 -33.89	avoiding Cu clouds
					Below filling level
16455	P6			31.17 -34.17	Restart P6

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist:

Project: AC 554 Date: 11/09/97
Flight No: A575 Page 6 of 8

GMT	Event Mark	Run No.	Height	Pres/Rel	INS Heading	Omega Pos'n		Other Info. (eg. clouds, weather, visibility, winds, sea state etc.)	Photo No.
						Latitude	Longitude		
164509			FL150		258	31.14		sharp dec. in O_3 to (60) NO $_2$ (0.35) CO (9.3) CO $_2$ change in readiness to avoid Cu clouds rest of profile O_3 & NO $_2$ remaining lower. bottle fluids run	
1647			FL150		282	31.16			
164843		PL	-			31.16			
165057			FL130		245	31.20			
			FL100			31.20		restart profile	
165920		PL			250	31.16			
170515			FL050			31.07			
170253		PL	FL050		249	31.04			
1711604			SOGL		274	30.94		bottle fill	
171810					99	30.94			
171914		P7			92	30.94			
171944			100ft			30.94			
						30.94		recommenced profile to 50 ft	
						30.94			
						30.94			
						30.94			
						30.94		start P7.	
						30.94			
						30.94			
						30.94			

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: RICHARD

Project: AC30E Date: 4-19-1977
Flight No: A575 Page 1 of 8

GMT	Event Mark	Run No.	Height	Pres/Rel	INS Heading	Omega Pos'n		Other Info. (eg. clouds, weather, visibility, winds, sea state etc.)	Photo No.
						Latitude	Longitude		
172037		P7			73	31.50 -35.84		Test start profile O ₃ & NO ₂ 0.3	
172935			FL050		50	31.33 -35.38		NOx zero & battle R22	
173145		P7	FL100		49	31.40 -35.27		recurrence profile. O ₃ increases to 7 ppb NO ₂ inc (0.03 ppb)	
174150		P7	FL100		52	31.81 -34.63		NO ₂ 1. CO pers. data zero' + battle, full recurrence profile	
174526			FL130			32.01 -34.36		battle R22	
174847		P7	FL150			32.18 -34.13		recurrence profile	
175051			FL150			32.26 -34.00		battle O ₃ clearest starting steps up	
175419			FL180			32.63		adjust profile very large NO ₂ & O ₃ inc. O ₃ 7.5 → 150 ppb also NO ₂ double O ₃ & NO ₂ back to normal. (comax = 120)	
1758			FL180			-33.48		O ₃ & NO ₂ increasing on level run, recurrence profile	
180114		P7							
1802			FL220		248	33.16 -32.84		start run	

1822.34 6300 ft STRETCHED DECK (100 feet only).

AIRCRAFT SCIENTIST'S LOG

Aircraft Scientist: RICHARD

Project: ACSOE
Flight No: AS75

Date: 4/9/97
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Time GMT	Run Profile	Height	Heading INS	Latitude Longitude	Other Information (eg: clouds, weather, visibility, winds, sea state etc.)
183255	Restart P8	Pres Rad FL			
1839	F	50 Pres Rad FL			BATh fl
1841		100 Pres Rad FL			CO & peroxide cal, BATh fl
184953	restart P8	Pres Rad FL			O ₃ inc, CO inc (100ppb), NO ₂ (0.45)
185412		130 Pres Rad FL			BATh fl
185710	restart P8	Pres Rad FL			
		220 Pres Rad FL			BATh fl + cal
19419	R7	180 Pres Rad FL			NO ₂ cal
19553	P10	Pres Rad FL			
19404	P4	220 Pres Rad FL			descent
195948	end P11	Pres Rad FL			
200226	RP	Pres Rad FL			JO'D RUN

Flight Leader's In-Flight Log

Flight No A 575.....

Date14/1/97.....

Page1..... of2.....

Video Tape	
No.	A575 #1
Ends	1541
(FFC) / DFC / RFC	

	GPS	INU
Lat	36° 58.38N	36 58.36N
Long	25° 09.46W	25 09.48W
Time	1019	1020
Status	53	GL ALGN

DRS recording to HORACE	(y)/n
HORACE recording to disc	(y)/n
SATCOM sending pos. reports	(y)/n

GMT	EVM	Height	QNH	Hdg	IAS	TAT	DP	DI Htr		Wind/ Sea st.
09034				DATA ON						
121200				SET INU TO NAV						
123633				T/O ST MARIA						
124128	8			START VIDEO A575 #1					CANT = 0000	
124555	9	FL080		START PI RUN 1						
				180 185 12			10	OFF		
130551	11	FL080		END RUN 1						
				180						
131128	12	50'	1020	START PI ↑				OFF		SS=5
131140	13	100'		INTERUPT PI - BOTTLE FILL						
131241	15	100'		RESUME PI						
131329	16	500		INTERUPT PI - BOTTLE FILL						
131811	17	500'		RESUME PI						
131905	18	1000'		INTERUPT PI - BOTTLE FILL						
132138	19	1000'		RESUME PI						
132454	20	3000'		ENDUPT PI BOTTLE FILL						
132539	21	3000'		RESUME PI						
133113	23	FL070		INTERUPT PI - BOTTLE FILL / NOXY ZERO						
133316	24	FL070		RESUME PI						
134202	26	FL150		INTERUPT PI BOTTLE FILL						
134448	27	FL150		RESUME PI						
135336	29	FL200		END RESUME PI BOTTLE FILL / START RUN 2				OFF		
				190 160						

Video Tape	
No.	A575#1
Ends	1541/1840
(FFC) / DFC / RFC	

	GPS	INU
Lat	33 09.33N	32 45.26
Long	24 24.65 W	24 24.40 W
Time	1358	1402
Status	S's	NAV

DRS recording to HORACE	(y) n
HORACE recording to disc	(y) n
SATCOM sending pos reports	(y) n

GMT	EVM	Height	QNH	Hdg	IAS	TAT	DP	DI Htr	Wind/ Sea st.
			END RUN 2			START P2	↓		
140106	30	FL200		185	1205	-11	-30	OFF	
140555	31	FL150	INTERUPT P2				BOTTLE FILL		
141017	32	FL150	RESTART P2						
141812	33	FL070	INTERUPT P2				BOTTLE FILL		
142018	34	FL070	RESTART P2						500/LIN (2) 500
142623	36	3200'	(100) INTERUPT P2				BOTTLE FILL		
142840	37	3200'	RESTART P2						
143239	38	1020'	INTERUPT P2				BOTTLE FILL		
143600	40	1000'	RESTART P2						
143656	42	500'	INTERUPT P2				BOTTLE FILL		
143912	43	500	RESTART P2						
144016	44	500'	END P2 / START P3				BOTTLE FILL		SS=2
144024	45	100'	(103) INTERUPT P3				BOTTLE FILL		
144134	46	100'	RESTART P3						
144217	47	500'	INTERUPT P3				BOTTLE FILL		
144402	48	500'	1023	290	RESTART P3				
144436	49	1000'	1023	285	INTERUPT P3		BOTTLE FILL		
144648	51	1000'	1023	285	RESTART P3				
145031	52	3200'		285	INTERUPT P3				
145400	53	3200'		285	RESTART P3				1000/LIN (2) 8000'
150011	55	FL070	1013		INTERUPT P3		BOTTLE FILL		
150224	56	FL070		290	RESTART P3				
151120	57	FL150		290	INTERUPT P3		BOTTLE FILL		
151431	58	FL150		290	RESTART P3				
152159	59	FL200		(240) END	INTERUPT P3		START RUN 3		
152449	60	FL200		250	END RUN 3		START P4		400/LIN
154001	61				STOP UNDER A575#1 COUNT = 6045				
154046	62				START VIDEO A575#2 COUNT = 0000				
155514	63	FL100	1013	290	END P4		START RUN 4		
160110	64	FL100		275	END RUN 4		START P5		400/LIN
162751	65	FL220			END P5		START RUN 5		

et Research Flight

ETA 2000

Flight Leader's In-Flight Log

Flight No A 575.....

Date 14/9/97.....

Page 2 of 2.....

Video Tape	
No.	A575#2
Ends	1740
(FFC) / DFC / RFC	

	GPS	INU
Lat		
Long		
Time		
Status		

DRS recording to HORACE	(y) n
HORACE recording to disc	(y) n
SATCOM sending pos. reports	(y) n

GMT	EVM	Height	QNH	Hdg	IAS	TAT	DP	DI Htr	Wind/ Sea st.
			END RUN 5 / START P6						
163301	66	FL220		280				OFF	FL180
163731	67	FL180		270	INTERUPT P6			BOTTLE FILL	
164155	68	FL180		270	RESUME P6			OFF	
164504	69	FL150		270	INTERUPT P6			BOTTLE FILL	
164843	70	FL150		280	RESUME P6				
165057	71	FL130		280	INTERUPT P6			BOTTLE FILL	
165353	72	FL130		280	RESUME P6				
165655	73	FL100		265	INTERUPT P6			BOTTLE FILL	
165910	74	FL100		265	RESUME P6				
170231	75	6200'		265	INTERUPT P6			BOTTLE FILL	
170759	76	5000'			RESUME P6				
171104	77	500'			INTERUPT P6			BOTTLE FILL	
171810	78	500'		110	RESUME P6				
172224	79	50'	1015	115	END P6 / START P7				SS=6
171944	80	100'			INTERUPT P7			BOTTLE FILL	
172037	81	100'		065	RESUME P7				
172935	82	5000'		060	INTERUPT P7			BOTTLE FILL	
173135	83	5000'		065	RESUME P7				
173635	84	FL100		065	INTERUPT P7			BOTTLE FILL	
174150	85	FL100		065	RESUME P7				
174526	86	FL130		060	INTERUPT P7			BOTTLE FILL	
174847	87	FL130		065	RESUME P7				
175051	88	FL150		065	INTERUPT P7			BOTTLE FILL	
175419	89	FL150		065	RESUME P7				
175742	90	FL170		065	INTERUPT P7			BOTTLE FILL	
180114	91	FL180		065	RESUME P7				
180736	92	FL220		END	INTERUPT P7 // START RUN 6				
181328	93	FL220		END RUN 6					

Video Tape	
No.	A575
Ends	1840 / 2138
<input checked="" type="checkbox"/> FFC / <input type="checkbox"/> DFC / <input type="checkbox"/> RFC	

	GPS	INU
Lat		
Long		
Time		
Status		

DRS recording to HORACE	<input checked="" type="checkbox"/> y / <input type="checkbox"/> n
HORACE recording to disc	<input checked="" type="checkbox"/> y / <input type="checkbox"/> n
SATCOM sending pos reports	<input type="checkbox"/> y / <input type="checkbox"/> n

GMT	EVM	Height	QNH	Hdg	IAS	TAT	DP	DI Htr		Wind/ Sea st.
18284	94	50'	1013	080	START PT					SS=7
18289	95	500'		085	INTERUPT PT				BOTTLE FILL	
18325	96	500'			RESUMPT PT					
18391	99	5000'			INTERUPT PT				BOTTLE FILL	
18372	97		STOP	VIDEO	A575 #2	COUNT = 0053				
18385	98		START	VIDEO	A575 #3	COUNT = 0000				
18417	100	5000'		080	RESUMPT PT					
18419	101	FL000		080	INTERUPT PT				BOTTLE FILL	
18453	102	FL000		080	RESUMPT PT					
18534	103	FL305			INTERUPT PT				BOTTLE FILL	
18570	104	FL300		080	RESUMPT PT					
18914	105	FL150		080	INTERUPT PT				BOTTLE FILL	
19023	106	FL150		080	RESUMPT PT					
19051	107	FL180		080	INTERUPT PT				BOTTLE FILL	
19083	108	FL180		080	RESUMPT PT					
19123	109	FL220		080	END PT				BOTTLE FILL	
19162	110	FL220		080	START P9					
19201	111	FL180		080	END P9 / START CAL	P10			P7	
19353	112	FL180		075	END R7 / START	P10				
19400	113	FL220		080	END P10 / START	P11				
19414	114	50'	1017	040	END P11					SS=3/4
20026	115	5000'	1010	050	START RUN 8					
20070	116	5000'		050	END RUN 8					
20174	117			VIDEO	A575 #3	START COUNT = 4053				
202810				LAND	ST INHALLA					
				DATA	OFF				GPS POS	
									36 58.36 N	
									25 01.46 W	

Flight Leader's Pre/In-Flight Check List

Flight No: A575

Date: 14/9/17

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CHEK for auto selection

GMT	PARA	NO	D.R.S.	DECODE	INSTRUMENT	EXPECTED VALUES	
						INFLIGHT	PREFLIGHT
	REF +	5	0567	✓		Approx 0568	
	REF -	7	2853	✓		Approx 2858	
	AOSS	19	4045	✓ ^{F/S} O/S	TORQUE 4.0	2047 st. and level	
	AOA	18	4045	✓ ^{F/S} O/S	TORQUE 3.5	2047 st. and level	
	RD HT	37	0000	✓		As Indicated 0000	
	PR HT	8	3886	200	✓	As Altimeter	
	CABP	14	3317	1005	✓		
	A/S	9	0588	✓		As ASI 0000 - 0100	
	UP1S	81	0871		TOID		
	UP2S	82	0682		NED		
	UIRS	83	0336		JNO2		
	UP1Z	84	0878		TOID	Approx 0147	
	UP2Z	85	0146	✓	NED	Approx 0149	
	UIRZ	86	0336		JNO2	Approx 2061	
	UP1T	87	0987		TOID	As IAT	
	UP2T	88	2344	26 ✓	NED	As IAT	
	UIRT	89	0020		JNO2	As IAT	
	LP1S	91	0114		TOID		
	LP2S	92	0146		NED		
	LIRS	93	0011		JNO2		
	LP1Z	94	0110		TOID	Approx 0150	
	LP2Z	95	0157	✓	NED	Approx 0146	
	LIRZ	96	0011		JNO2	Approx 2050	
	LP1T	97	0000		TOID	As IAT	
	LP2T	98	2334	26	NED	As IAT	
	LIRT	99	0020		JNO2	As IAT	
	J/W	42	0140	0 ✓		As Indicated 0000	
	HYGR	58	3085	20			
	HYCC	59	0712			696-901	
	FDEW	138	2499	10 ?		DP = (DRSU/20)-100 C	
	FSTA	139	0208				
	DTP	10	1450	23			
	DTC	11	6				
	NDTF	23	1687	23		same as De-Iced	
	NDTC	24	6				
	INCT	48	2725	✓			
	HEIM	141	2635				
	PRTC	142	2382	✓		approx 2380	
	TWCD	70	4022	✓		0000-4094	
	TSAM	72	0213	✓		0640-1860 < min	
	O3	100	0089	✓			
	O3P	106	2048			$P \approx (DRSU \times 0.4) + 145mB$	
	O3RG	113	2027				

Flight Leaders' Pre/In-Flight Check List

BCDS for auto selection

GMT	PARA.	NO.	H/D	D.R.S.	DECODE	INSTR	EXPECTED VALUE
	FL NO	1	Hex	525			Flight No.
	GMTH	2	Hex	0111	✓		Clock: First 4 No.s
	GMTM	3	Hex	0338	✓		Clock: Last 4 No.s
	E/M	4	Hex	7			Event Mark Counter
	INCH	49	Dec				Multipxd Hkeeping
3775	1492	3777	0478	3772	3682	3772	0137
	3856						
	LATC	160	Dec	0220			Latitude
	LONC	161	Dec	0700			Longitude

Total Water Content Meter Check List

TOTW for auto selection

Height: 0'

GMT	PARA	NO	D.R.S.	DECODE	INSTRUMENT	EXPECTED VALUES	
						INFLIGHT	PREFLIGHT
	TWCD	70	4007	✓		0001-4095	
	TNOS	71	1255	✓		2000-3460	< min
	TSAM	72	0213	✓		0640-1860	< min
	TAMB	73	2577	✓		2400-3200	
	TSRC	74	1256	✓		2160-2470	
	HTR1	75	2088	✓		0000-4095	< 4095
	HTR2	76	2120	✓		0000-4095	< 4095
	ISRC	77	1014	✓		0001-1230	< min
	STAT	78	4682	✓		4095	
	EV1V	170	2023				
	EV2V	171	2023				
	NPWR	172	3339				
	EVIC	173	3468				
	EV2C	174	3468				

BROAD BAND RADIOMETER FIT

(pre-Flight only)

	PARA NO	POSITION	DOMES	COVERS	OBSCURERS
UPPER	81,84,87	Port	Clear J210	Off On	Large Small
	82,85,88	Stbd	Red		
	83,86,89	Centre	Silicon J210		
LOWER	91,94,97	Port	Clear J210	Off On	
	92,95,98	Stbd	Red		
	93,96,99	Centre	Silicon J210		

Flight Leader's Pre/In-Flight Check List

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Flight No: 1575 Date: 14/9/97

CHECK for auto selection

GMT	PARA	NO	D.R.S.	DECODE	INSTRUMENT	EXPECTED VALUES
	REF +	5	0567	✓		Approx 0568
	REF -	7	2855	✓		Approx 2858
	AOSS	19	1871	F/S	TORQUE	2047 st. and level
	AOA	18	1021	F/S	TORQUE	2047 st. and level
	RD HT	37	1605	✓	8000	As Indicated 0000
	PR HT	8	2407	✓	As Altimeter	
	CABP	14	2483	180		As ASI 0000 - 0100
	A/S	9	1244	180		
	UPIS	81	4048	✓	✓	
	UP2S	82	1971	✓	✓	
	UIRS	83	1039	✓	✓	
	UP1Z	84	4045	✓	✓	Approx 0147
	UP2Z	85	0000	✓	✓	Approx 0149
	UHRZ	86	1000	✓	✓	Approx 2061
	UP1T	87	4045	✓	✓	As IAT
	UP2T	88	2408	✓	✓	As IAT
	UIRT	89	0001	✓	✓	As IAT
	LP1S	91	2344	✓	✓	
	LP2S	92	0261	✓	✓	
	LIRS	93	2000	✓	✓	
	LP1Z	94	1074	✓	✓	Approx 0150
	LP2Z	95	0951	✓	✓	Approx 0146
	LIRZ	96	2177	✓	✓	Approx 2050
	LP1T	97	1526	✓	✓	As IAT
	LP2T	98	0807	✓	✓	As IAT
	LIRT	99	1455	✓	✓	As IAT
	1/W	42	1243	0.1	✓	As Indicated 0000
	HYGR	58	3408	✓	✓	
	HYCC	59	0716	✓	✓	696-901
	FDEW	138	0114	✓	✓	DP = (DRSU/20)-100 C
	FSTA	139	0012	✓	✓	
	DTF	10	1308	21	✓	
	DTC	11	0	✓	✓	
	NDTF	23	1073	✓	✓	same as De-Iced
	NDTC	24	0	✓	✓	
	INCT	48	2457	✓	✓	
	HEIM	141	2835	✓	✓	
	PRIC	142	2835	✓	✓	approx 2380
	TWCD	70	1989	✓	✓	0000-4094
	TSAM	72	1185	✓	✓	0640-1860 < min
	O3	100	0057	✓	✓	
	O3P	106	1583	✓	✓	P ≈ (DRSU × 0.4) + 145mB
	O3RG	113	2247	✓	✓	

Flight Leaders' Pre/In-Flight Check List

BCDS for auto selection

GMT	PARA.	NO.	H/D	D.R.S.	DECODE	INSTR	EXPECTED VALUE
	FL NO	1	Hex	575			Flight No.
	GMTH	2	Hex	0741			Clock: First 4 No.s
	GMTM	3	Hex	0500			Clock: Last 4 No.s
	E/M	4	Hex	32			Event Mark Counter
	INCH	49	Dec				Multipxd Hkeeping
3084	3850	0875	3111	3776	3111		QAS
	LATC	160	Dec	0742	31		Latitude
	LONG	161	Dec	2820	-24		Longitude

Total Water Content Meter Check List

TOTW for auto selection
 Height: \searrow H020
 FL150

GMT	PARA	NO	D.R.S.	DECODE	INSTRUMENT	EXPECTED VALUES
	TWCD	70	✓	1548	✓	0001-4095
	TNOS	71	✓	2574	✓	2000-3460 < min
	TSAM	72	✓	1128	✓	0640-1860 < min
	TAMB	73	✓	277	✓	2400-3200
	TSRC	74	✓	2234	✓	2160-2470
	HTRI	75	✓	2313	✓	0000-4095 < 4095
	HTR2	76	✓	2624	✓	0000-4095 < 4095
	ISRC	77	✓	1025	✓	0001-1230 < min
	STAT	78	✓	4025	✓	4095
	EVIV	170		8487		
	EV2V	171		3124		
	NPWR	172		0657		
	EVIC	173		3928		
	EV2C	174		3427		

BROAD BAND RADIOMETER FIT

(pre-Flight only)

	PARA NO	POSITION	DOME	COVERS	OBSCURERS
UPPER	81,84,87 82,85,88 83,86,89	Port Sb'd Centre	Clear Red Silicon	OFF / On	Large/Small
LOWER	91,94,97 92,95,98 93,96,99	Port Sb'd Centre	Clear Red Silicon	OFF / On	

VIDEO TAPE LOG

Flight No **A**575.....

Project ACSOE

Date 14/9/97

Tape No AS75#1 User H. RUCKER

Retention Period INDEF

[illegible]

VIDEO TAPE LOG

Flight No **A 575**.....

Project AE SOE.....

Date 14/9/17

Tape No. A575#2 User H. RICHEN

Retention Period *INDEF*

[illegible]

VIDEO TAPE LOG

Flight No **A 575**.....

Project ARSOE.....

Date 14/9/27

Tape No. AS75#3 User H. RICHER

Retention PeriodINDEX.....

[illegible]

IGC SAMPLE RECORD

Clouds

MAIN

IS/FLUSH

up/down

GC run in

Flight no. A575

Sh

39.

37.5

12

Date 14/9/97

1

IC	Time	Height	Ch.1				Ch.2				Ch.3				Notes
			ST	SP	DT	DP	BT	P.C	ST	SP	DT	DP	BT	P.C	
1	Ground														
1	13336	FL200	453	1184					488	1601					
2	14036	FL150	453	1291					489	1726					
3	14414	500'	451	1723					488	2252					
4	14527	300'	451	1606					488	2092					
5	15024	700'	452	1428					488	1844					
6	151140	FL150	454	1261					489	1605					
7	15221	FL200	457	1154					491	1516					
	16140		Reoperation					1=14		2=9			3=11		
8	174601	FL180	447	1402					483	1787					
9	17553	FL170	449	1300					484	1643					
0	180440	FL210	451	1195					485	1448					
1	182891	500'	450	1742					486	2106					
2	183746	FL200	449	1502					485	1456					

Adjusted
Humidity

Sim PAN

PAN

DATE 14 SEP 97	FTI No 01	FLT No A575	NAV AMELI
DEPARTURE AIRFIELD SANTA MARIA		ATIS R/W 18 150/17 CAVOK 23/20 H 1020	
ATC CLEARANCE FPR			TAKE OFF TIME 1236

TIME	FIN 1012			IAS	TAS	W/V	ALT FL	QNH	GPS	RUN IDENT
	HDG	DR	G/S						LAT/LONG	
1248 ⁵⁵	168	4P	193	180	202	230/23	F060	1020	3623.7 02459.8	R1
1305 ⁵¹							F080	1020	3555.0 02451.2	RR1
1311 ²⁸							50'↑			P1.4
1312 ⁴¹							100'↑			RP1.4
1313 ¹⁹							500'		3531.7 02441.0	IP1
1318 ¹¹							1000'		3519.1 02438.5	R01
1324 ⁵⁹							3000'		3501.3 02432.0	IP1
1331 ¹³							F070		3442.0 02427.9	IP1
1342 ⁴²							F150		3402.6 02424.2	IP1
1353 ³⁴							F200		3322.7 02424.4	EP1/R2
1401 ⁰⁶							F200		3249.9 02422.5	EP2/P2
1405 ⁵⁹							F150		3230.6 02418.8	IP2
1418 ¹²							F070		3145.8 02409.3	IP2
1426 ²³							3000'	1020	3118.8 02403.4	IP2
1432 ³⁹	275	3S	185	178	184	223/03	1000'		3059.6 02400.1	IP2
1436 ⁵⁶							500'		3059.3 02414.1	IP2
1440 ¹⁶							50'↑ EP1/S		3100.3 02426.3	EP2/S
1440 ²⁹										IP3
1442 ¹⁷							500'		3100.6 02433.2	IP3
1444 ³⁶							1000'		3101.5 02441.4	IP3
1450 ³¹							3000'		3103.6 02501.9	IP3
1500 ¹¹							F070		3107.5 02535.4	IP3
1511 ²⁰							F150		3112.7 02618.6	IP3
1521 ⁵⁹							F200		3117.3 02705.9	EP3/R3
1529 ⁴⁹							F200		3117.6 02743.0	EP3/P4

ARRIVAL AIRFIELD	LANDING TIME
ATC CLEARANCES	TAKE OFF
ATIS	FLIGHT TIME

DATE	FTI No	FLT No	NAV
DEPARTURE AIRFIELD		ATIS	
ATC CLEARANCE			TAKE OFF TIME 1236

TIME	FIN 1012			IAS	TAS	W/V	ALT FL	QNH	GPS		RUN IDENT
	HDG	DR	G/S						LAT/LONG		
1555 ¹⁴	273	3S	296	266	319	245/25	F100	1020	3127.1	03015.1	EP4/R4
1601 ¹⁰									3127.9	03047.4	EP4/P5
1627 ⁵¹							F220		3117.3	03301.7	EP5/R5
1633 ⁰¹									3114.5	03328.1	EP5/P6
1637 ³¹							F180		3113.3	03352.2	IP6
1645 ⁰⁹							F150		3108.7	03423.8	IP6
1650 ⁵⁷						248/30	F130		3112.1	03446.4	IP6
1656 ⁵⁵							F100		3112.9	03508.9	IP6
1704 ³¹							F050		3106.4	03532.6	IP6
1716 ⁰⁴							500'		3056.6	03607.1	IP6
1719 ²⁴							50'		3059.3	03600.3	EP6/P7
1719 ⁴⁴	049	1S	215	176	186	235/30	100'		3059.3	03559.0	IP7
1729 ³⁵							F050		3119.3	03524.0	IP7
1736 ³⁵							F100		3136.8	03456.9	IP7
1745 ²⁶							F130		3200.7	03422.7	IP7
1748 ⁵¹							F150		3215.7	03400.9	IP7
1757 ⁴²							F180		3235.6	03332.5	IP7
1807 ³⁶							F220		3304.2	03248.2	EP7/R6
1813 ²⁵							F210		3306.0	03302.8	EP6
1828 ¹⁴							50'		3259.6	03301.7	IP8
1828 ⁵⁹	068	4S	209	176	184	211/33	500'		3300.8	03259.0	IP8
1839 ¹⁵							F050		3318.9	03218.3	IP8
1846 ²⁹							F100		3332.3	03146.0	IP8
1853 ⁴¹							F135				IP8
?							F130		3347.6	03109.7	IP8

ARRIVAL AIRFIELD	LANDING TIME
ATC CLEARANCES	TAKE OFF
ATIS	FLIGHT TIME

FLIGHT LEADER'S INSTRUMENT STATUS REPORT

FLIGHT NO: *A575*

DATE: *14 ' 9 ' 97*

MRF / *AES*

INSTRUMENT	FITTED	OPERATED	COMMENTS
NAVIGATION:			
GPS	✓	✓	
OMEGA	✓	✓	
INU	✓	✓	
RADALT	✓	✓	
THERMOMETERS:			
DI TEMP	✓	✓	
NDI TEMP	✓	✓	
ICTP	✓	✓	
HEIMANN	✓	✓	
HYGROMETERS:			
GEN. EASTERN	✓	✓	
TWC	✓	✓	
FWVS	✓	✓	
J/W	✓	✓	
EXP. PITOT HEAD:			
STATIC PRESS.	✓	✓	
PITOT PRESS.	✓	✓	
GUST VANES	✓	✓	
RADIOMETERS:			
UPPER CLEAR	<i>TOLD</i> ✓	✓	
UPPER RED	✓	✓	
UPPER SILICON	<i>INDO</i> ✓	✓	
LOWER CLEAR	<i>TOLD</i> ✓	✓	
LOWER RED	✓	✓	
LOWER SILICON	<i>INDO</i> ✓	✓	
MARSS	X		
SAFIRE	X		
DEIMOS	X		
ARIES	X		
CHEMISTRY:			
OZONE	✓	✓	
ECGC	✓	✓	
NOX	✓	✓	
OTHERS:			
CCN	X	X	
CLOUD PHYSICS	X		
CABIN PRESS	X	✓	
NEPHELOMETER	X		
PSAP	✓	✓	

A575 14-SEP-97 Data starts 09:03:31 Data ends 20:31:47

Header file EAGLE\$DUA0:[RAWDATA]A575_RAW_HDDR.DAT;
Data file EAGLE\$DUA0:[RAWDATA]A575_RAW_DATA.DAT; 78.8 Mbytes (161320 blocks)

Transcription on 26-SEP-97 11:51:32
Extraction on 26-SEP-97 11:51:32

Data set type 2

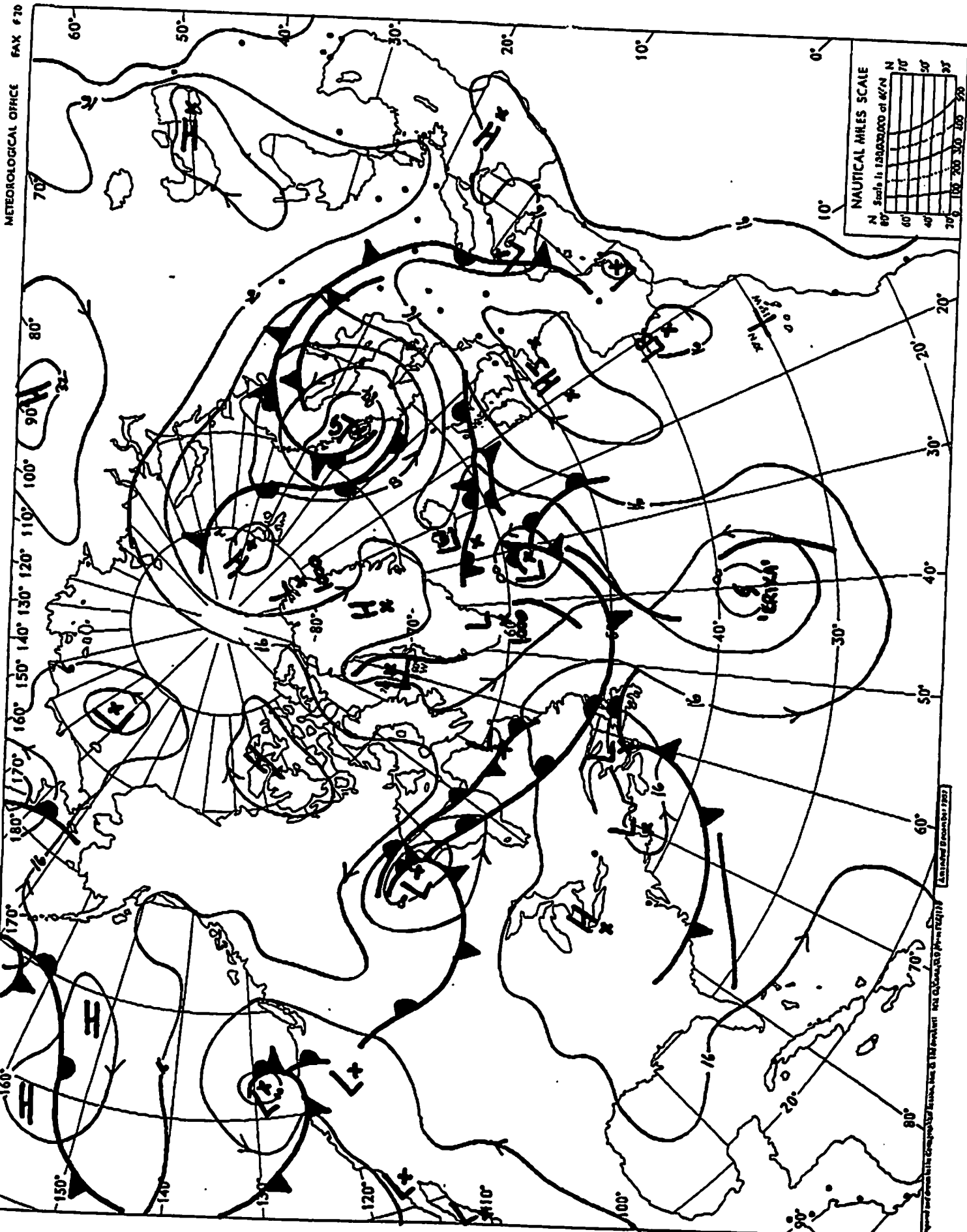
ISS 31 DBF 31 IC 02 121 parameters recorded 889 samples per second

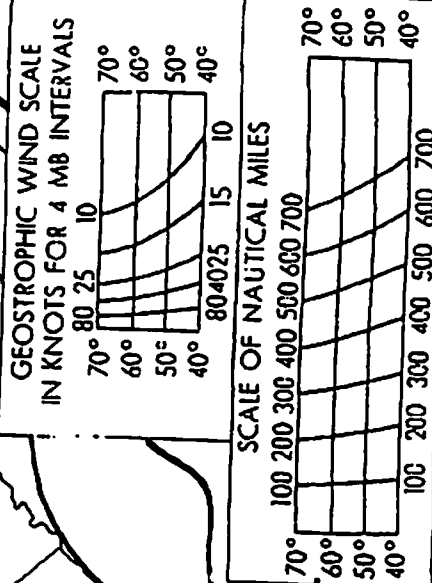
14 sections of data

Section	GMT	SEC	Starts EVM	BLK	REC	GMT	SEC	Ends EVM	BLK	REC
1	09:03:31	032611	000	00010	00001	09:48:30	035310	006	02709	02700
2	09:58:53	035933	006	03332	02701	11:31:52	041512	007	08911	08280
3	11:37:00	041820	007	09219	08281	13:08:40	047320	011	14719	13781
4	13:08:44	047324	011	14723	13782	17:42:51	063771	085	31170	30229
5	17:42:55	063775	085	31174	30230	17:45:01	063901	085	31300	30356
6	17:45:05	063905	085	31304	30357	17:45:07	063907	085	31306	30359
7	17:45:11	063911	085	31310	30360	17:57:08	064628	089	32027	31077
8	17:57:12	064632	089	32031	31078	18:15:34	065734	093	33133	32180
9	18:15:38	065738	093	33137	32181	18:39:27	067167	099	34566	33610
10	18:39:31	067171	099	34570	33611	18:39:57	067197	099	34596	33637
11	18:40:01	067201	099	34600	33638	20:07:56	072476	116	39875	38913
12	20:07:58	072478	116	39877	38914	20:07:58	072478	116	39877	38914
13	20:08:00	072480	116	39879	38915	20:27:59	073679	117	41078	40114
14	20:28:12	073692	117	41091	40115	20:31:47	073907	117	41306	40330

LIST OF FORMS USED ON FLIGHT

No. of forms	Form Title
✓	Aircraft Scientist de-briefing sheet Aircraft Scientist log Aircraft Scientist post flight requirements sheet Interactive log
✓ ✓ ✓ ✓	Flight Leader pre-flight check form Flight Leader in-flight check form Flight Leader in-flight log Flight Leader Video tape log (photocopy original)
	SAFIRE log CCN log MARSS log DERMOS log Chemistry log <i>bottles, ECG</i>
✓	Particulate / Filter boom Operator's log 2DC / FSSP / Holography Operator's log Sonde Ejector's log Navigator's log Photographic log (photocopy original)
✓ ✓ ✓	Instrument status forms RTD prints Raw data plots Weather charts Satellite pictures GPS track





ASXX EGRR MSLP ANALYSIS DT 0000 UTC 14 SEP 1997

Polar Stereographic Projection. Standard Parallel 60°N. Original scale 1:20,000,000.

MET OFFICE TOTAL Page.001 **

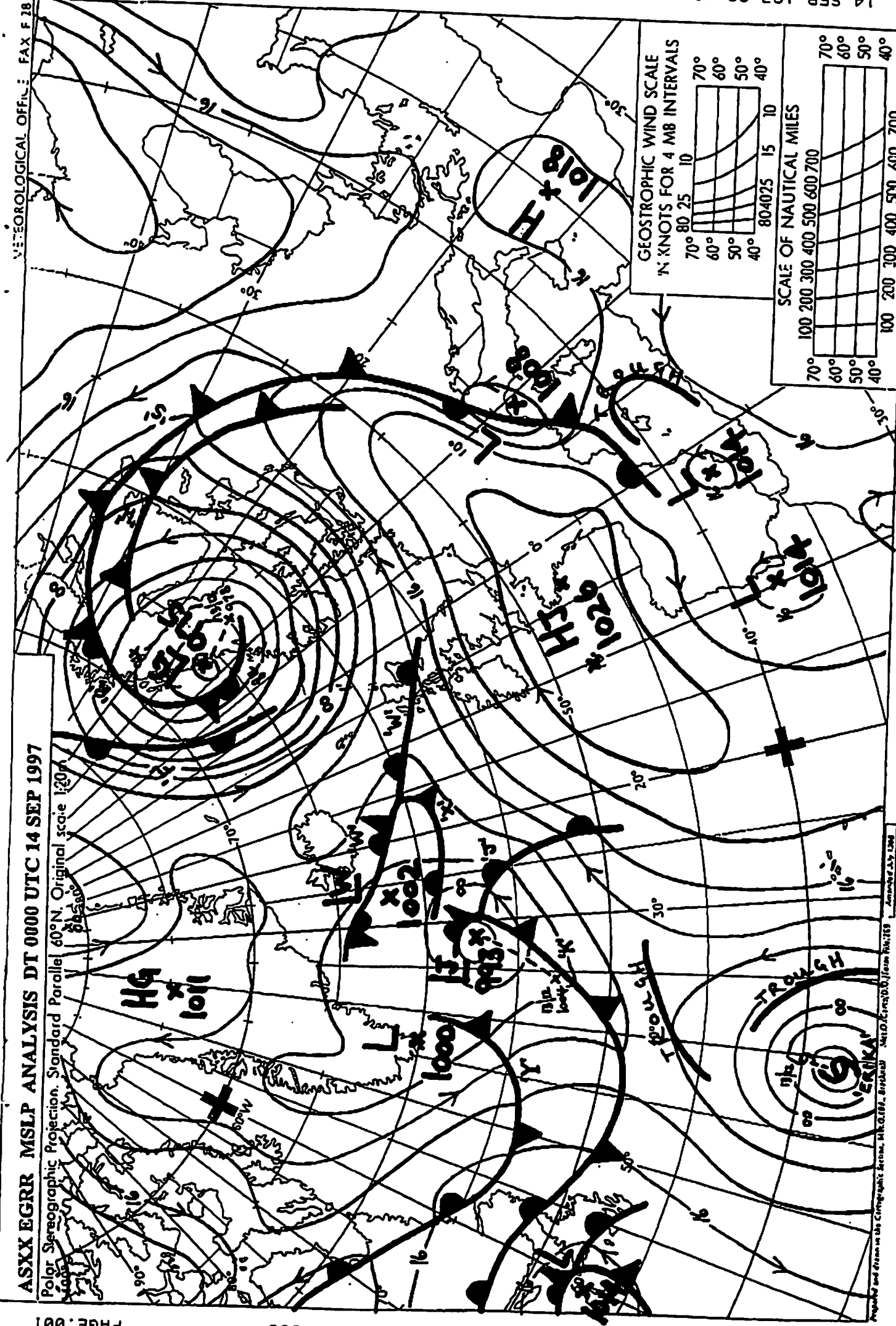
PAGE.001

TO 4806

BRACKNELL

14 SEP '97 03:45

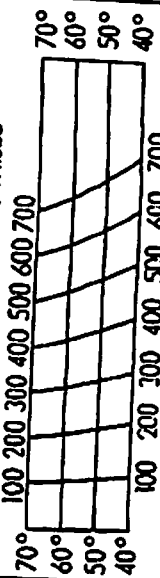
14 SEP '97 03:45



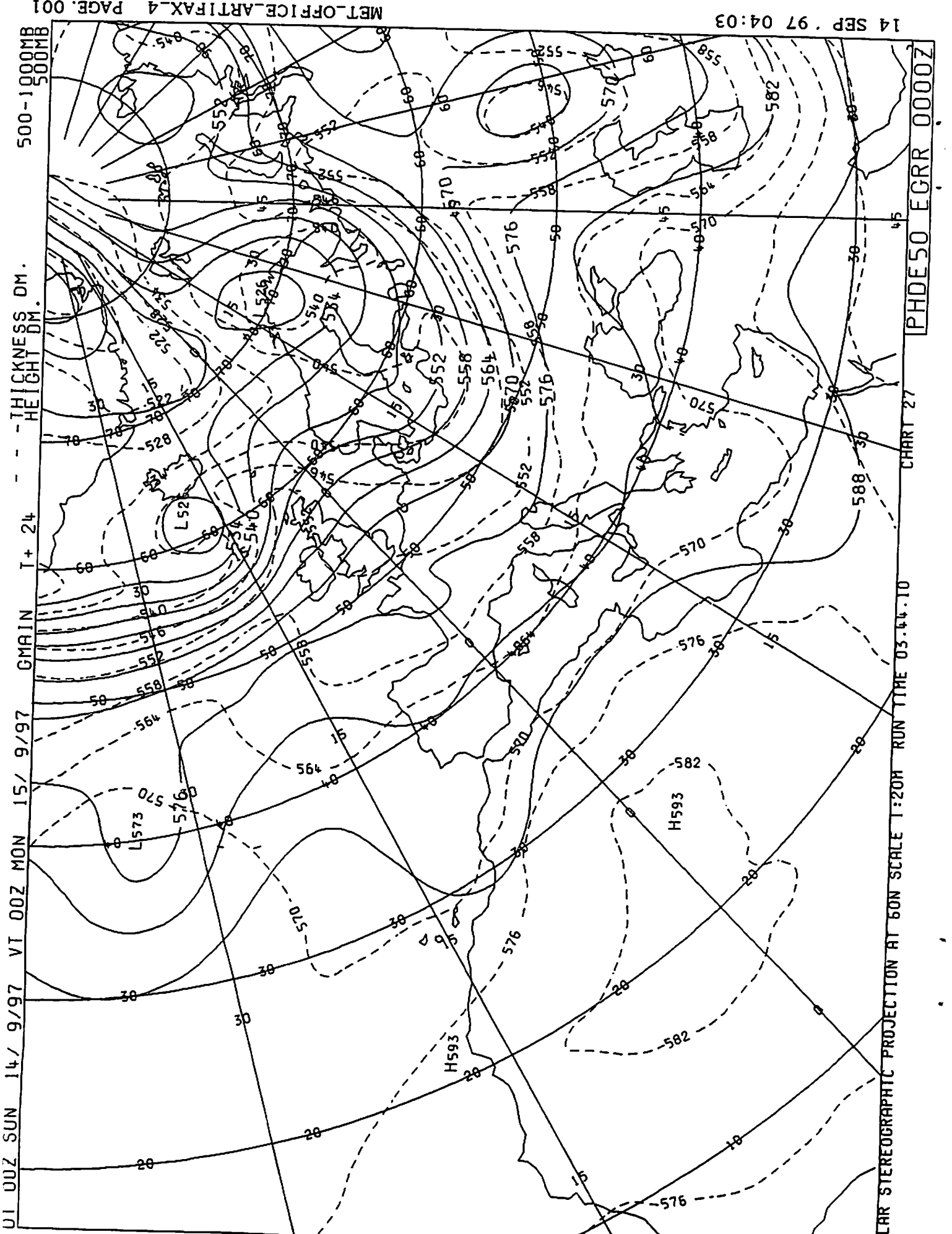
GEOSTROPHIC WIND SCALE
IN KNOTS FOR 4 MB INTERVALS



SCALE OF NAUTICAL MILES



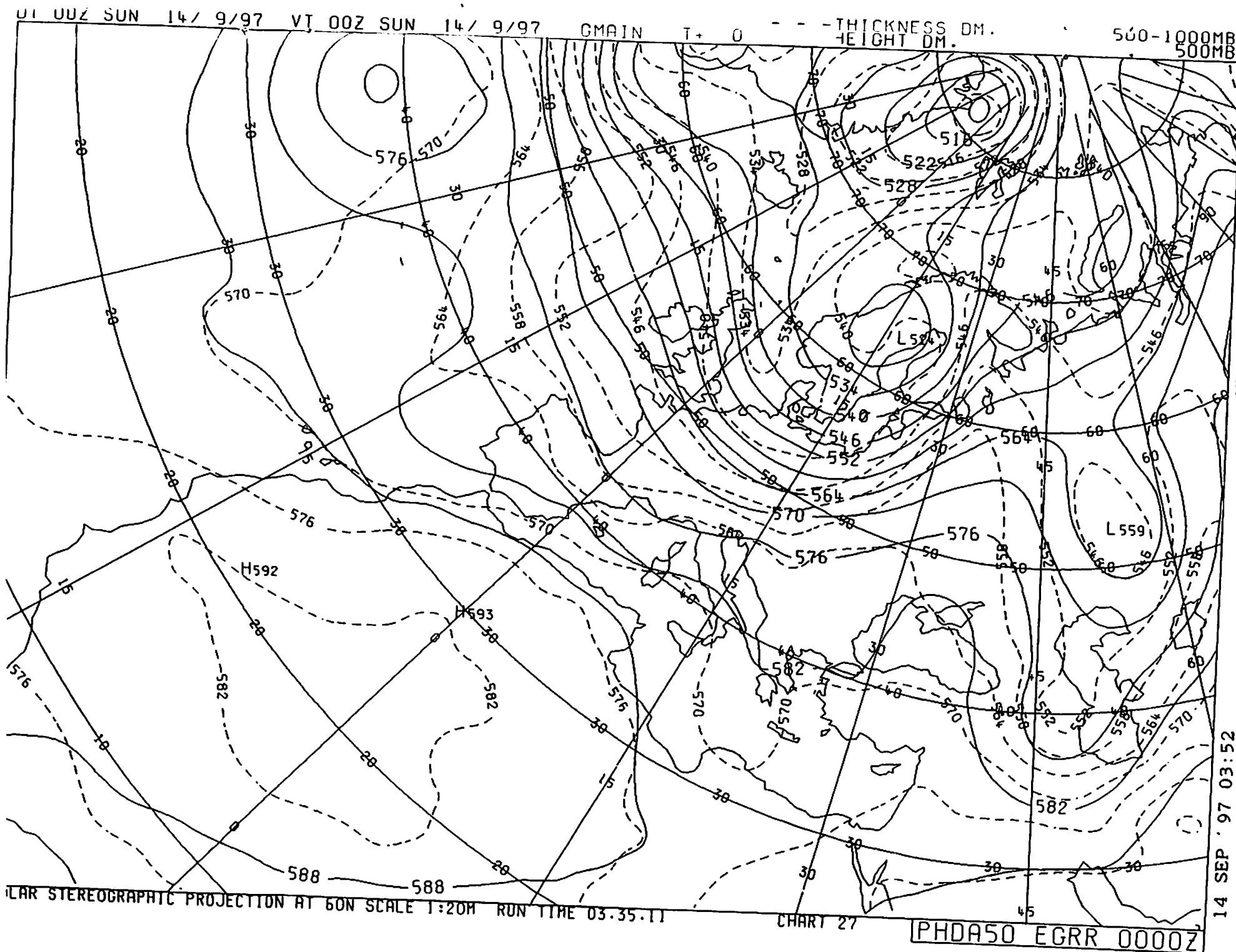
Prepared and drawn in the Cartographic Service, M.O. (C) 1997. (From RAC159) Approved July 1998

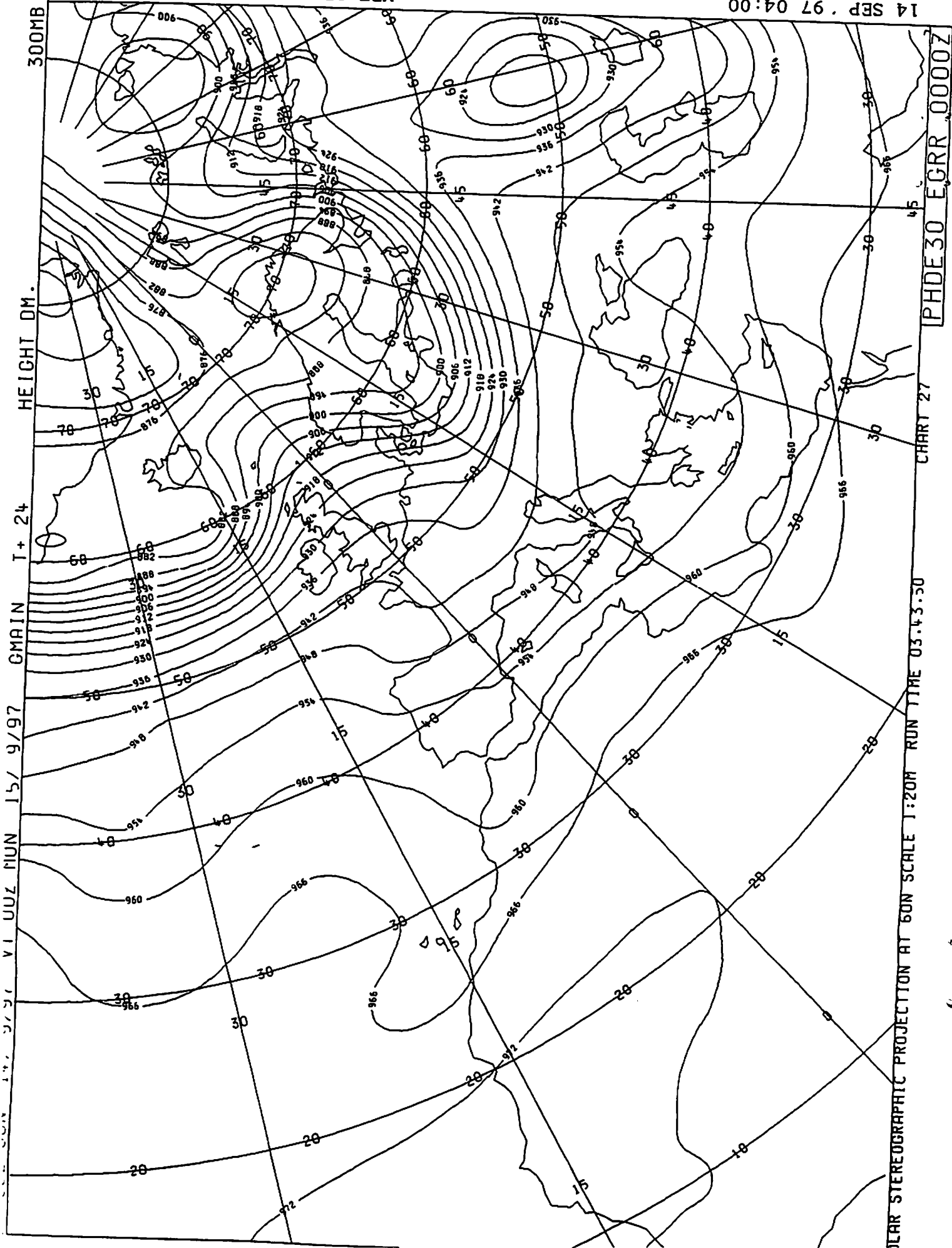


01 00Z SUN 14/ 9/97 VT 00Z MON 15/ 9/97 GMAIN T+ 24 - - THICKNESS DM. 500-1000MB 500MB

14 SEP 97 04:03 MET-OFFICE-ARTIFAX-4 PAGE.001

YEAR STEREOGRAPHIC PROJECTION AT 60N SCALE 1:20H RUN TIME 03.44.10
CHART 27
PHDE50 ECRR 0000Z





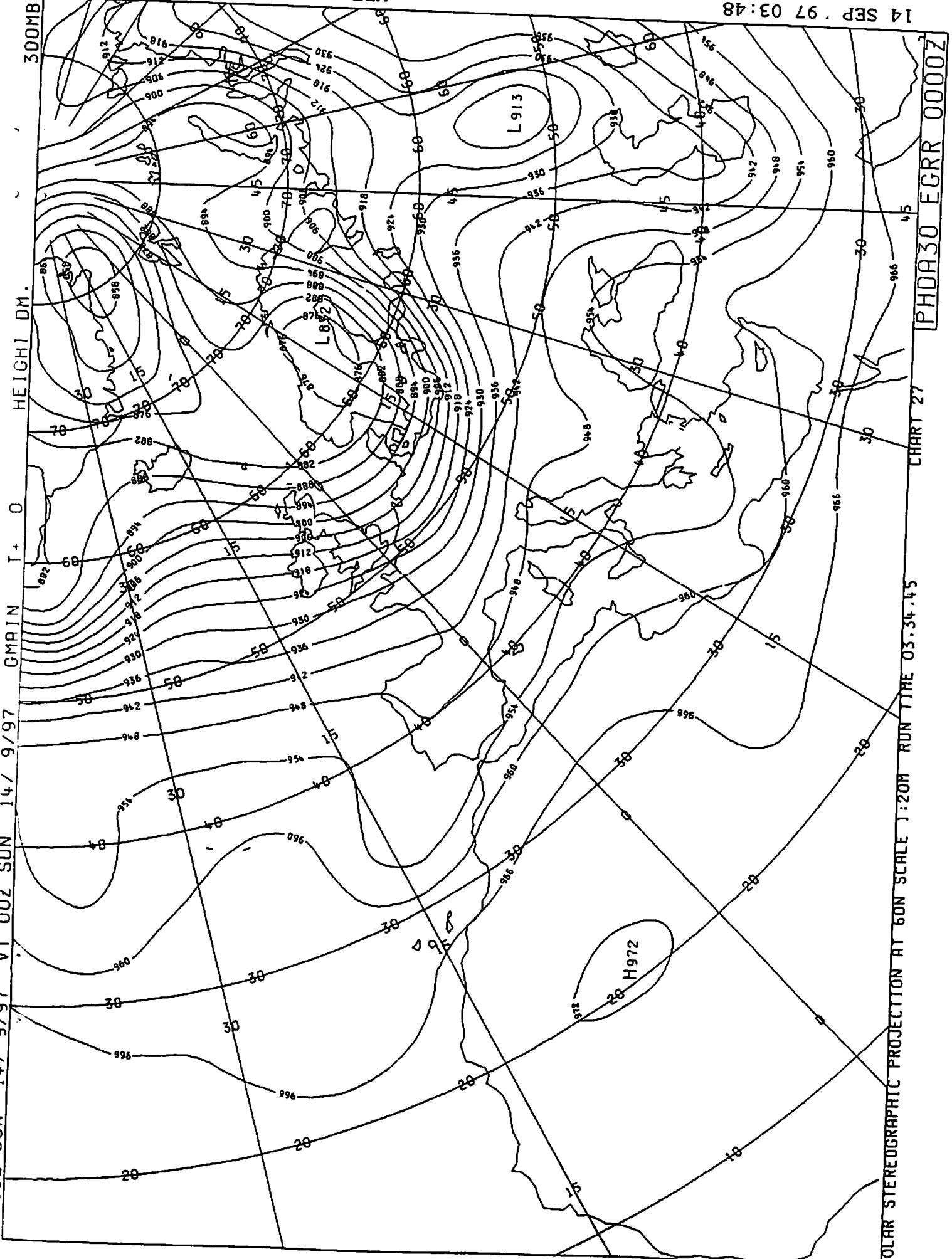
01 00Z SUN 14/ 9/97 VI 00Z SUN 14/ 9/97 GMATN T + 0

HEIGHT DM.

300MB

MET-OFFICE-ARTIFAX-6 PAGE.001

14 SEP . 97 03:48



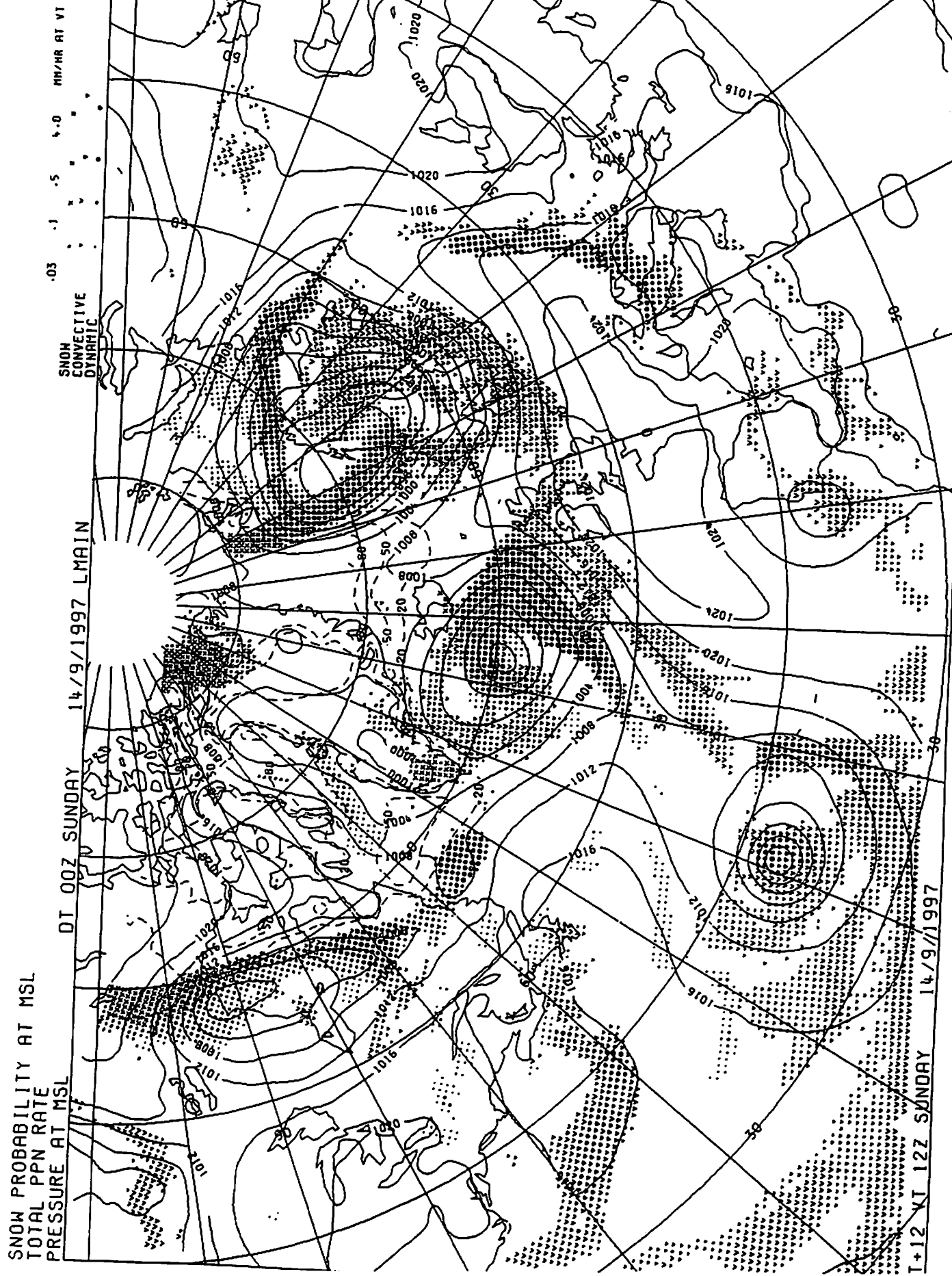
Polar STEREOGRAPHIC PROJECTION AT 60N SCALE 1:20M RUN TIME 03:34.45

CHART 27

PH0A30 ECR 00007

PAGE. 001

14 SEP 97 03:24



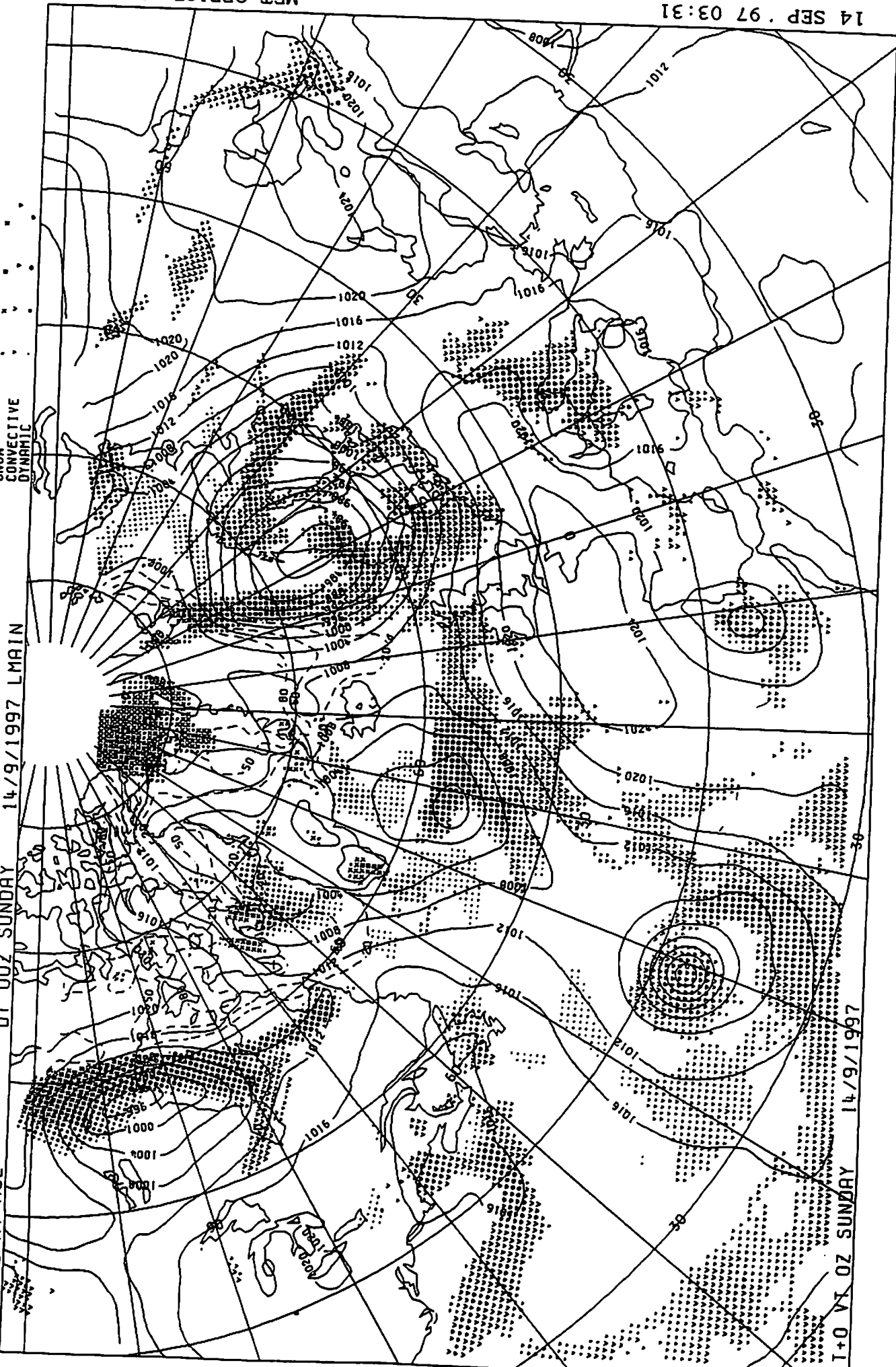
14 SEP '97 03:31

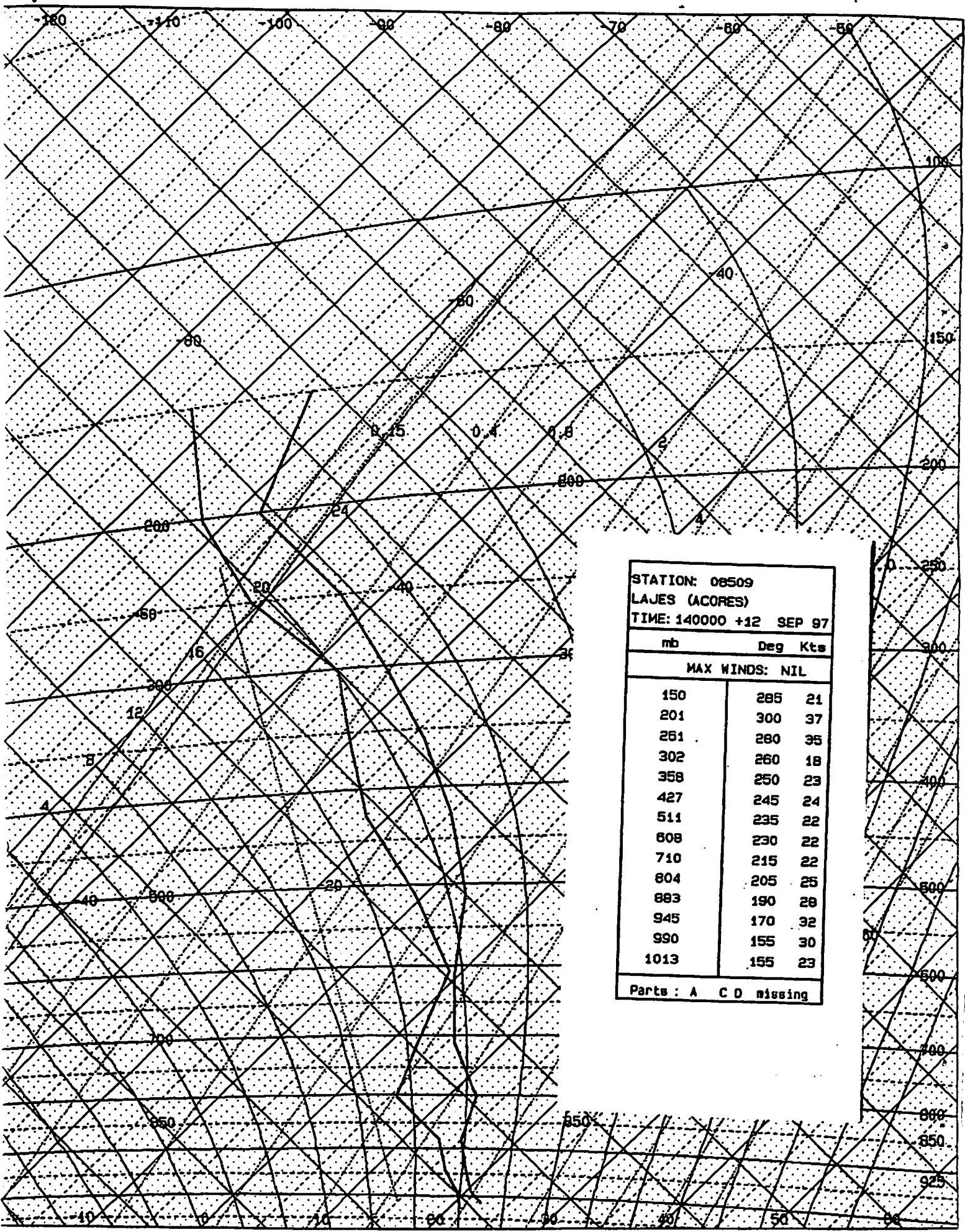
SNOW PROBABILITY AT MSL
TOTAL PPN RATE
PRESSURE AT MSL

DT 00Z SUNDAY 14/9/1997 LMAIN

SNOW
CONVECTIVE
DYNAMIC

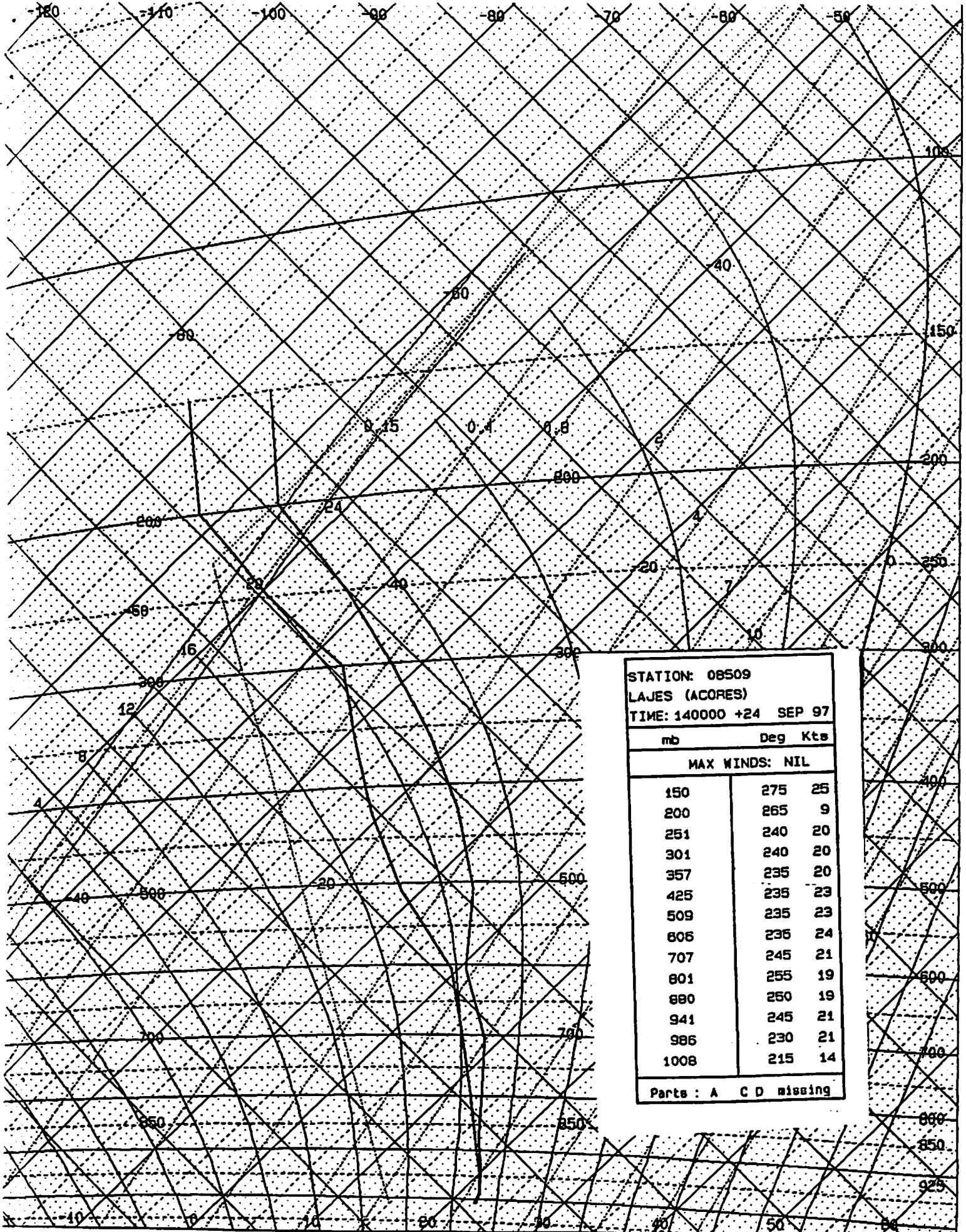
.03 .1 .5 1.0 MM/HR AT VT





STATION: 08509
LAJES (ACORES)
TIME: 140000 +12 SEP 97

mb	Deg	Kts
MAX WINDS: NIL		
150	285	21
201	300	37
251	280	35
302	260	18
358	250	23
427	245	24
511	235	22
608	230	22
710	215	22
804	205	25
883	190	28
945	170	32
990	155	30
1013	155	23
Parts : A C D missing		

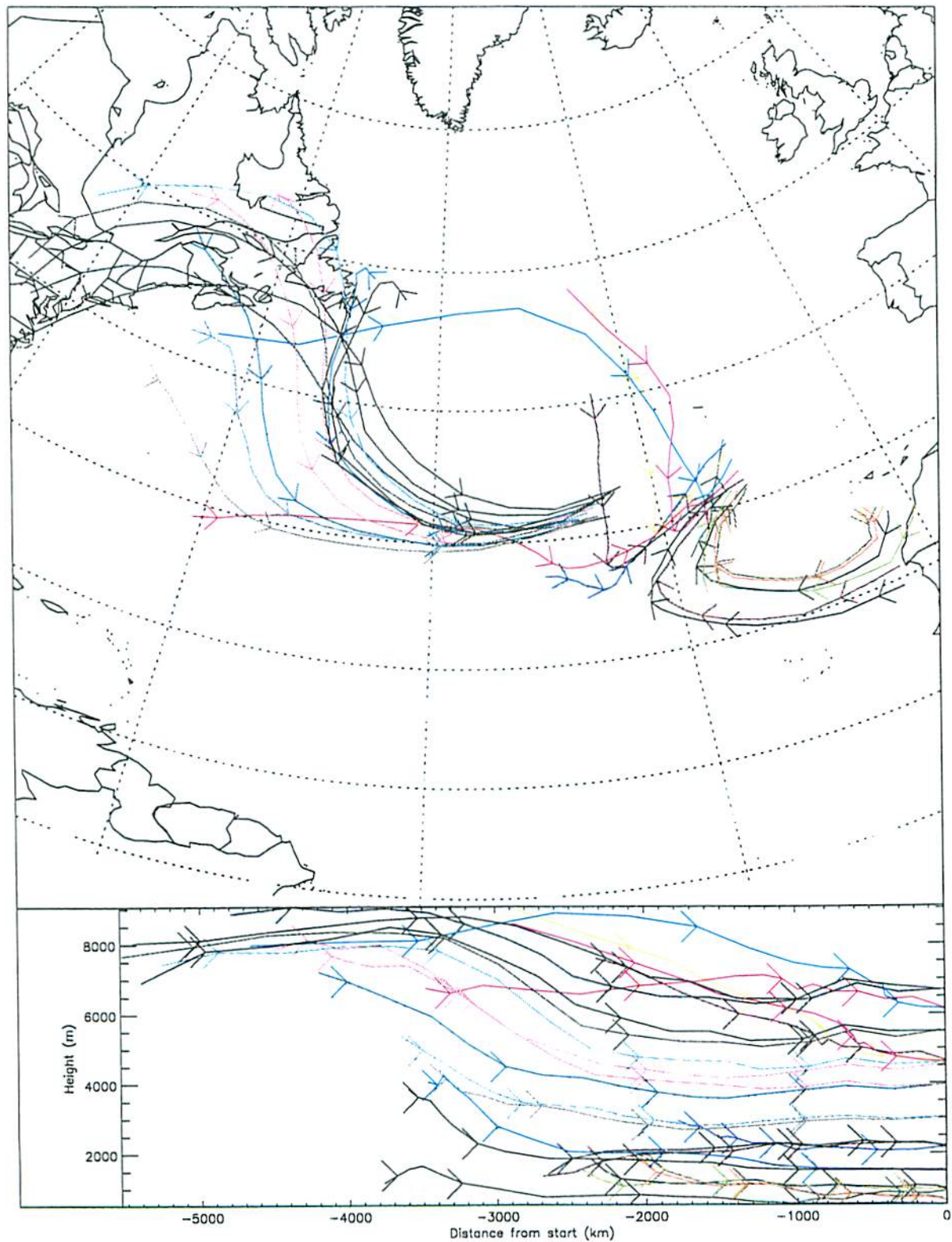


STATION: 08509		
LAJES (ACORES)		
TIME: 140000 +24 SEP 97		
mb	Deg	Kts
MAX WINDS: NIL		
150	275	25
200	265	9
251	240	20
301	240	20
357	235	20
425	235	23
509	235	23
606	235	24
707	245	21
801	255	19
880	250	19
941	245	21
986	230	21
1008	215	14
Parts : A C D missing		

Figure 1(a) Back Trajectories

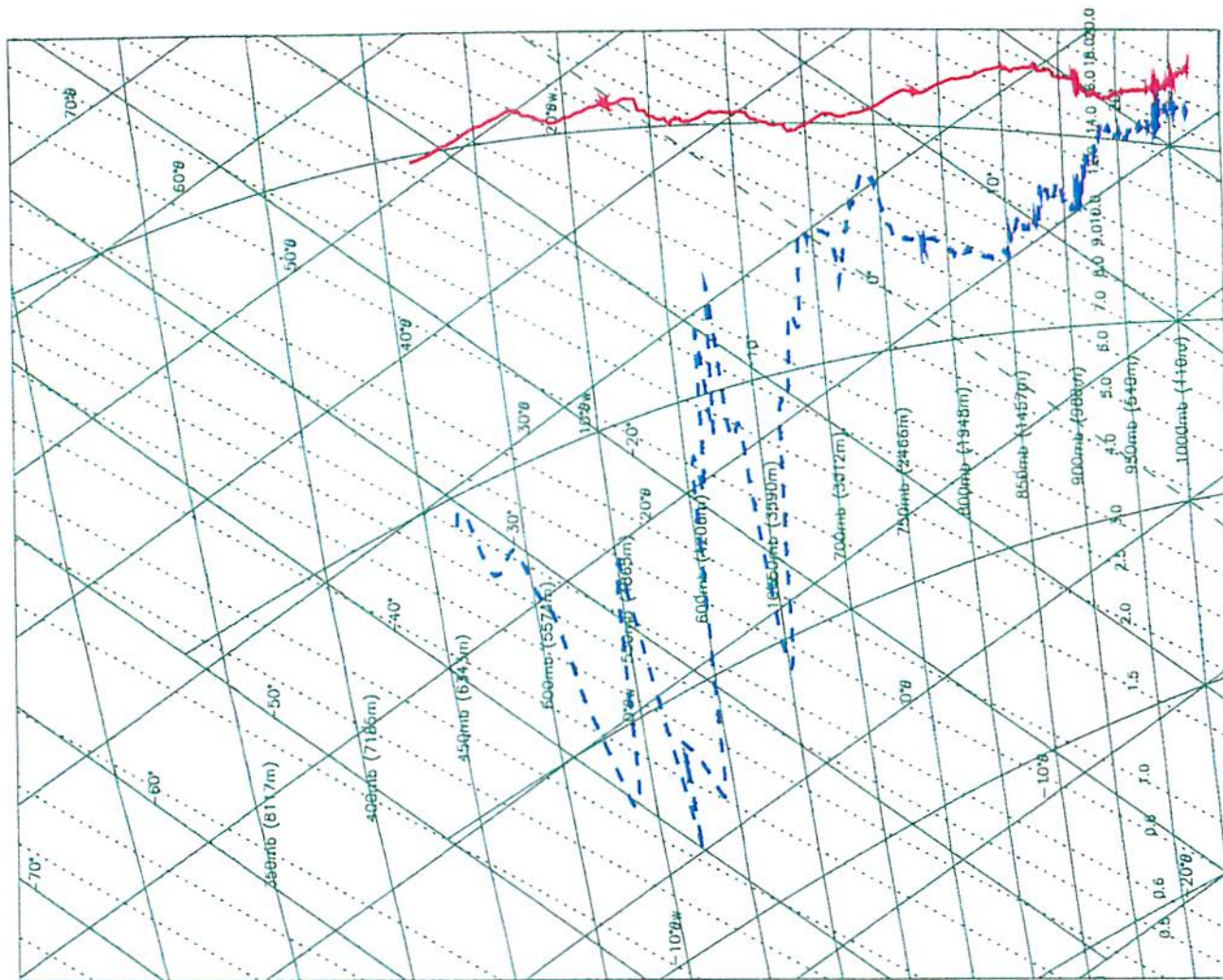
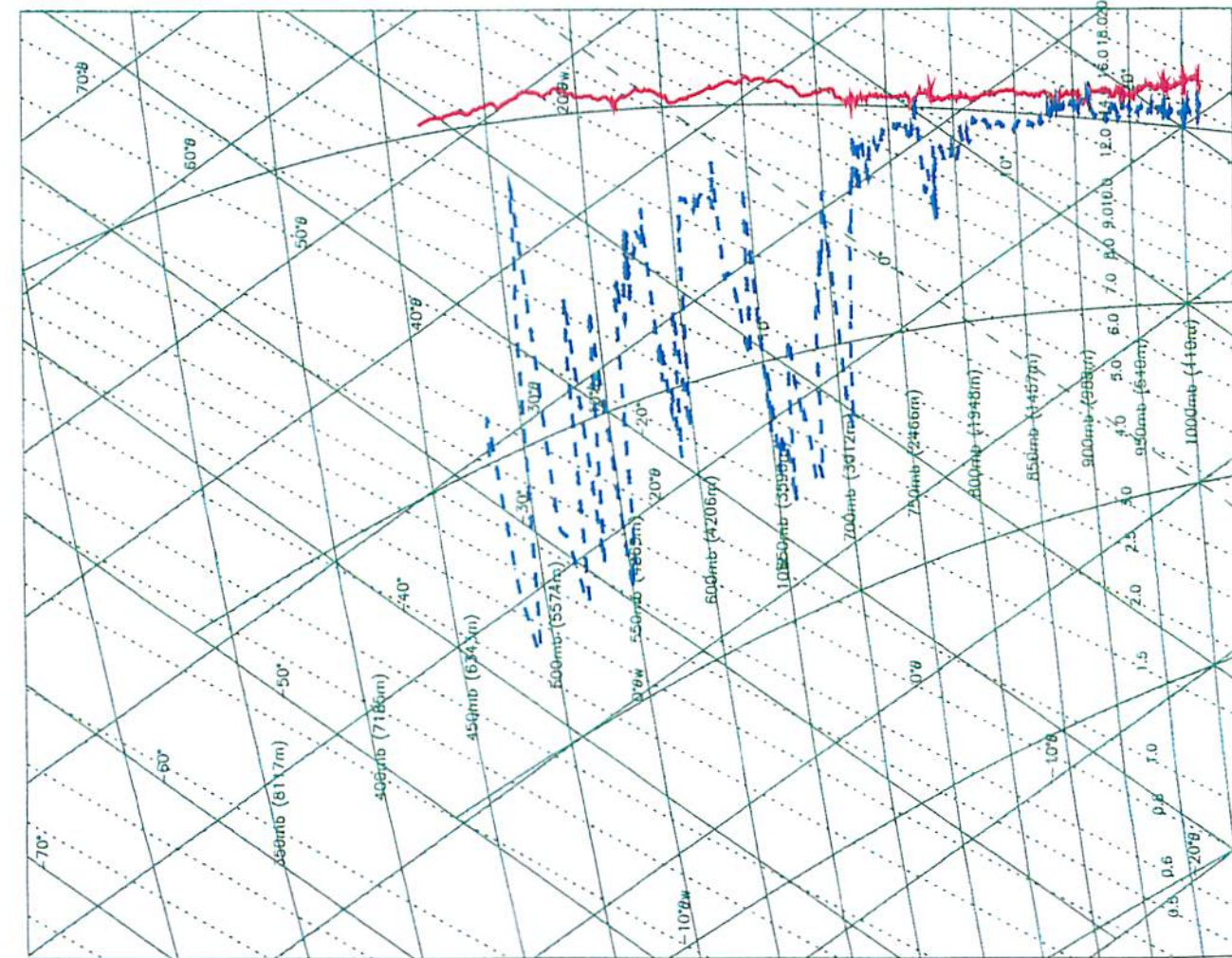
From 12Z 10/ 9/1997 to 18Z 14/ 9/1997

Arrows every 24 hrs



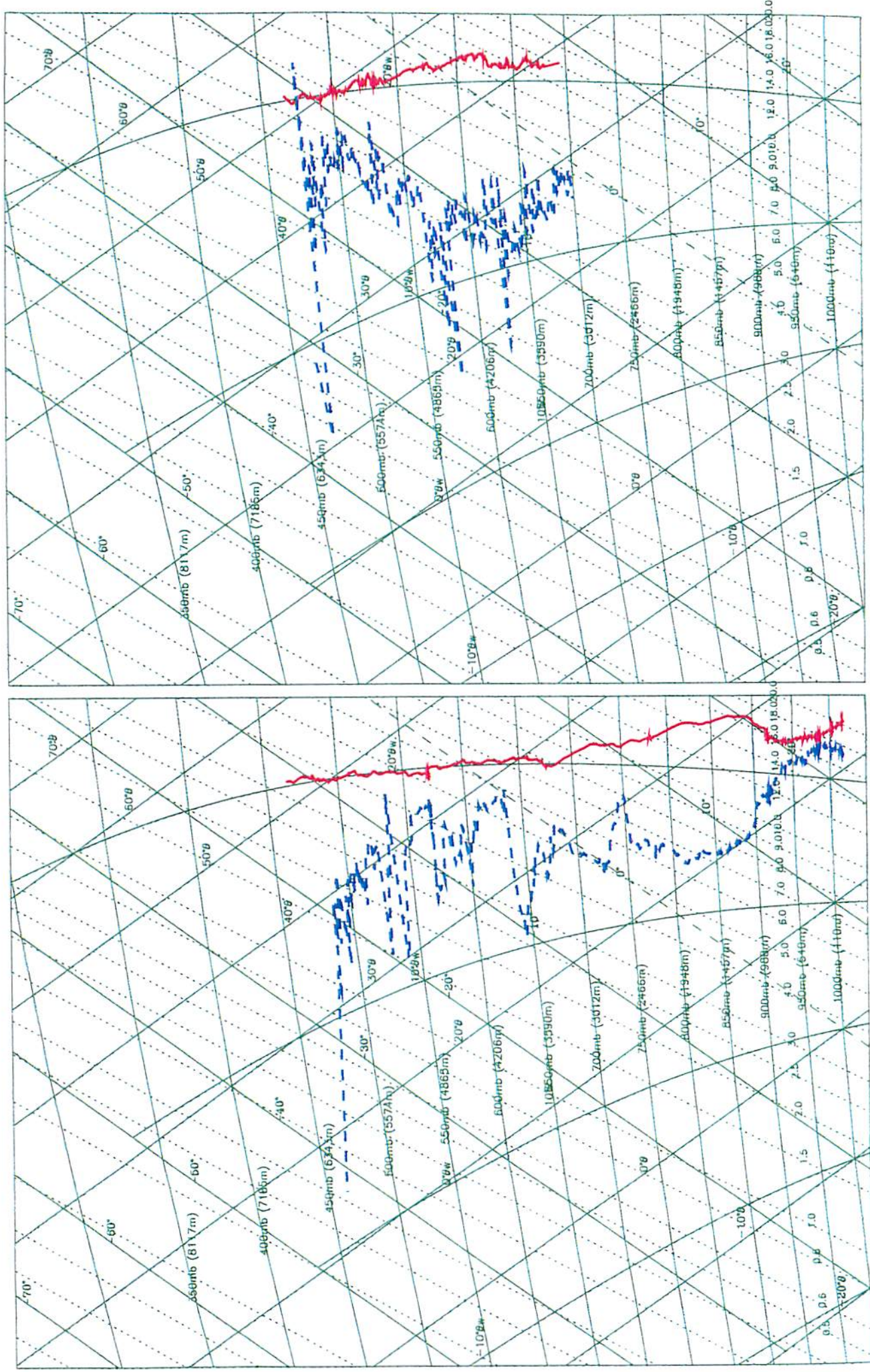
A575 14-SEP-97

P1 50'-FL200 (+bottles)(131128-135336) + P2 FL200-50' (+bottles)(140106-144016)



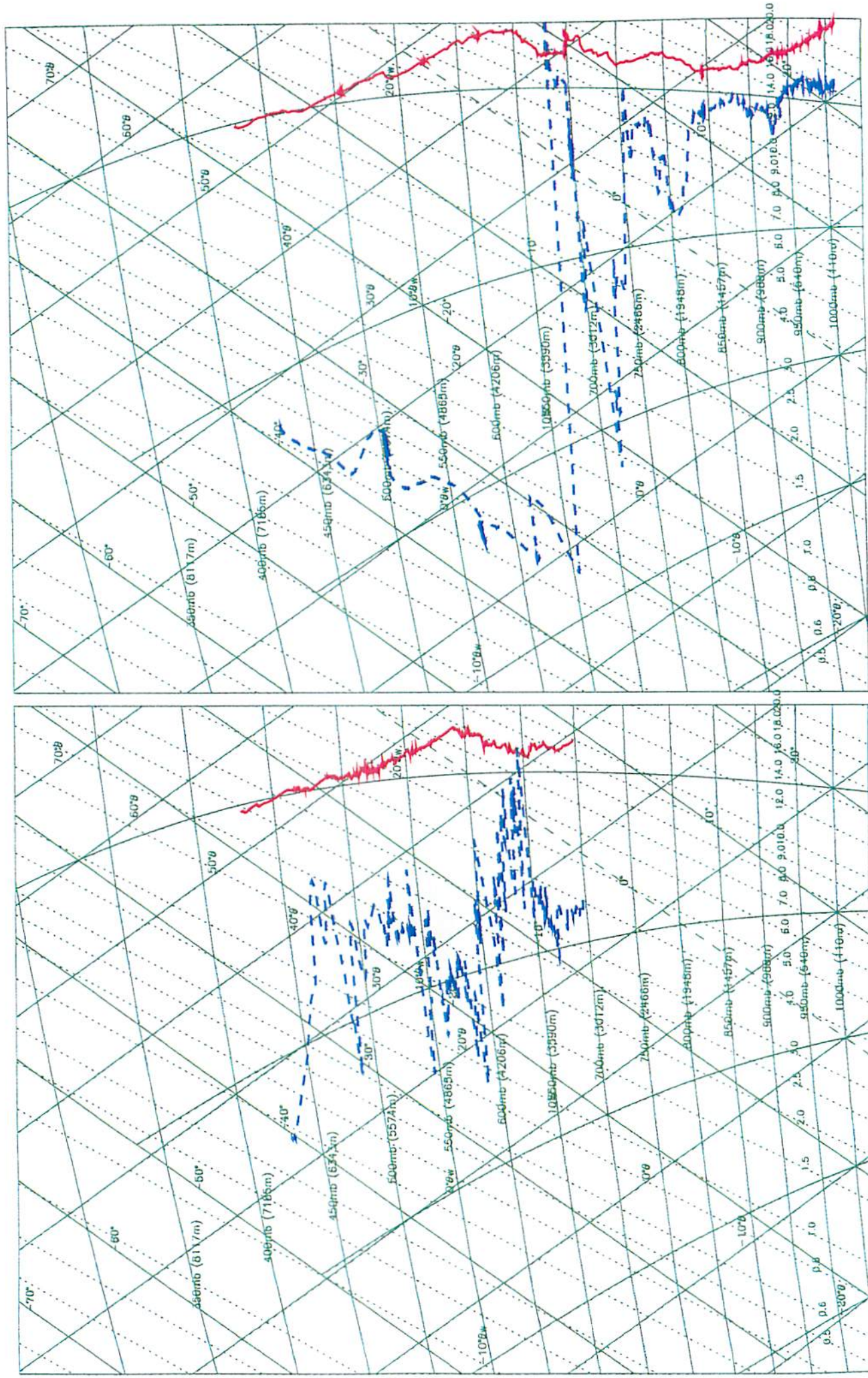
A575 14-SEP-97

P3 50'-FL200 (+bottles)(144016-152159) + P4 FL200-FL100(152949-155514)



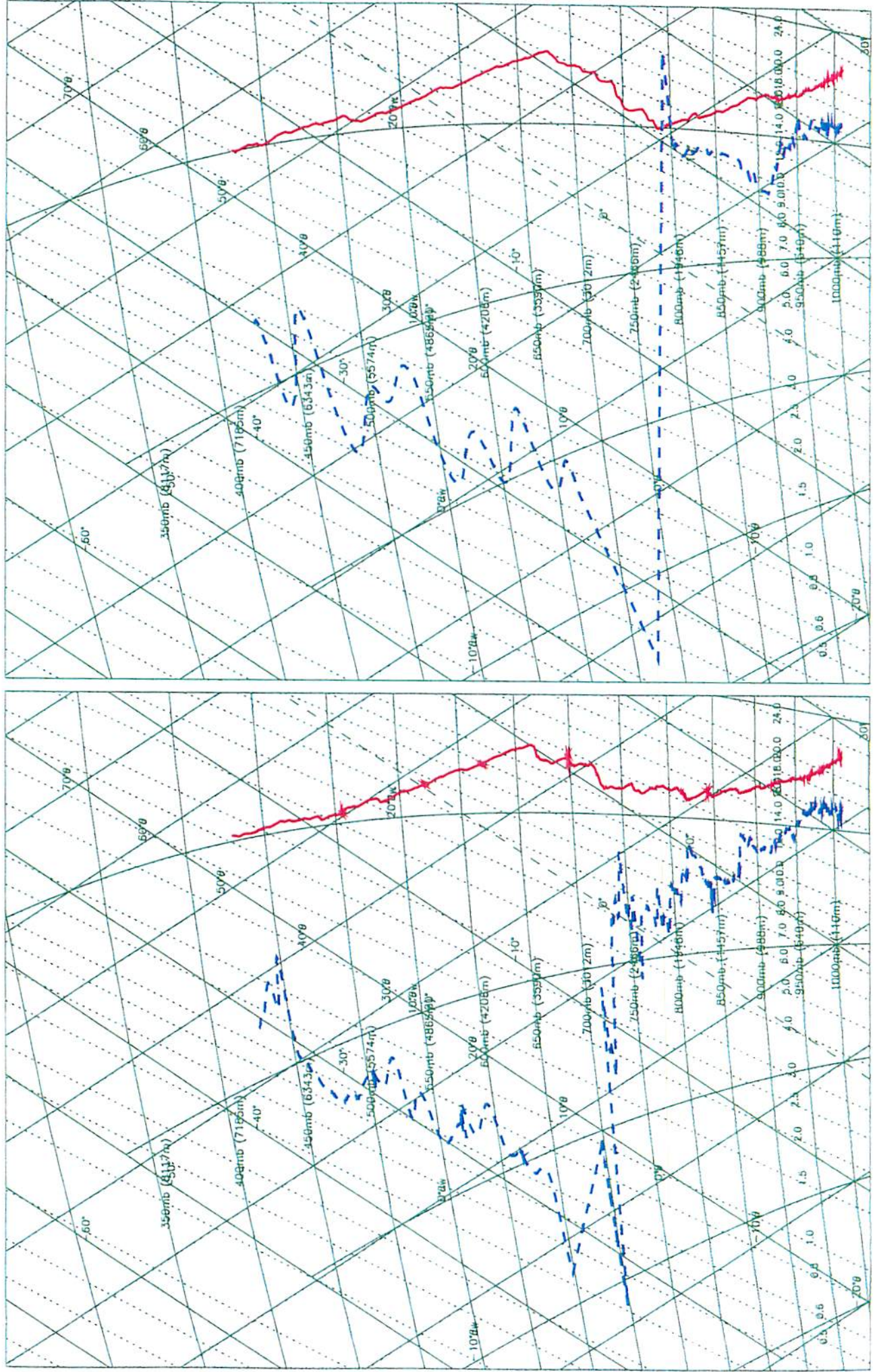
A575 14-SEP-97

P5 FL100-FL220(160110-162751) + P6 FL220-50'(163301-171924)



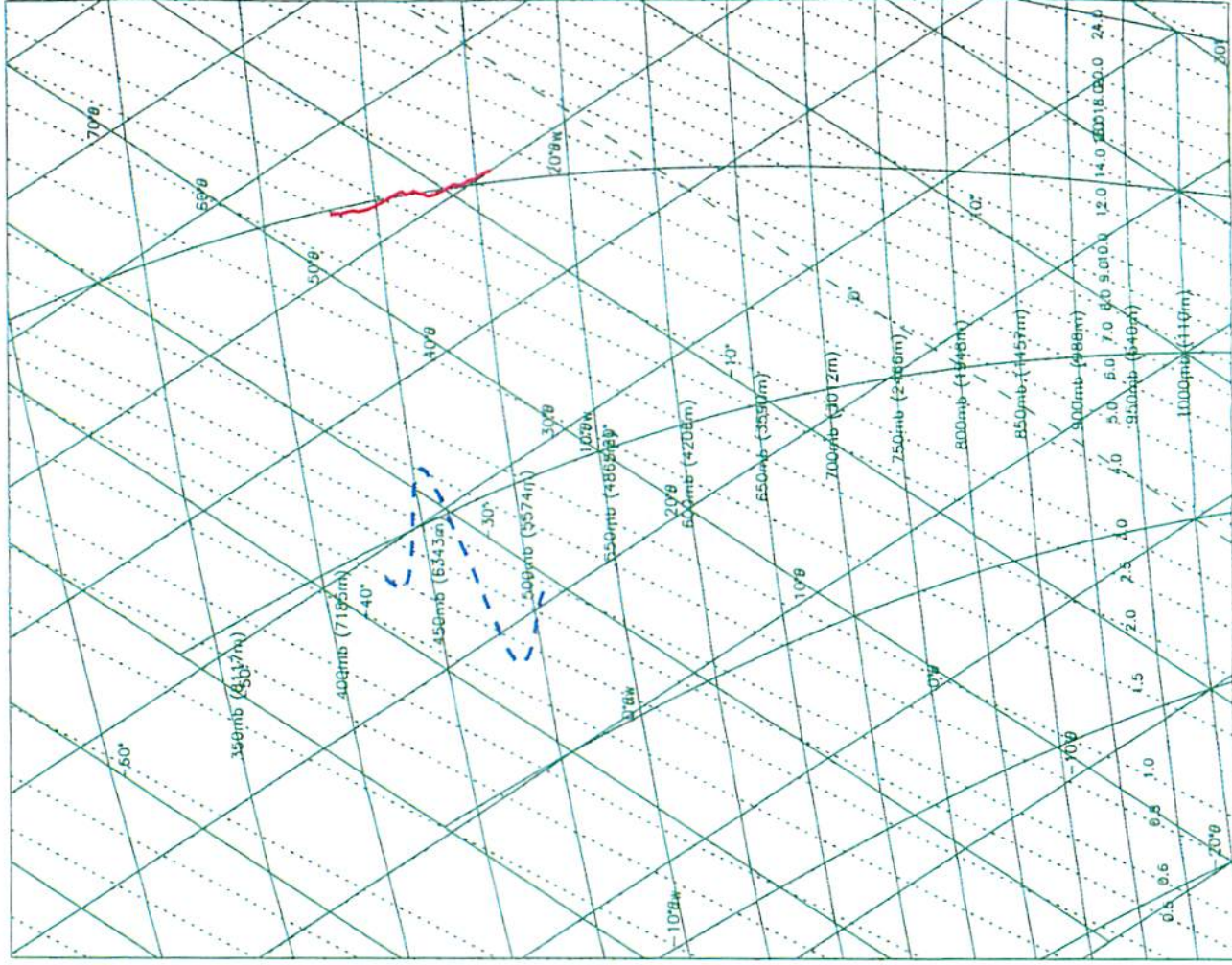
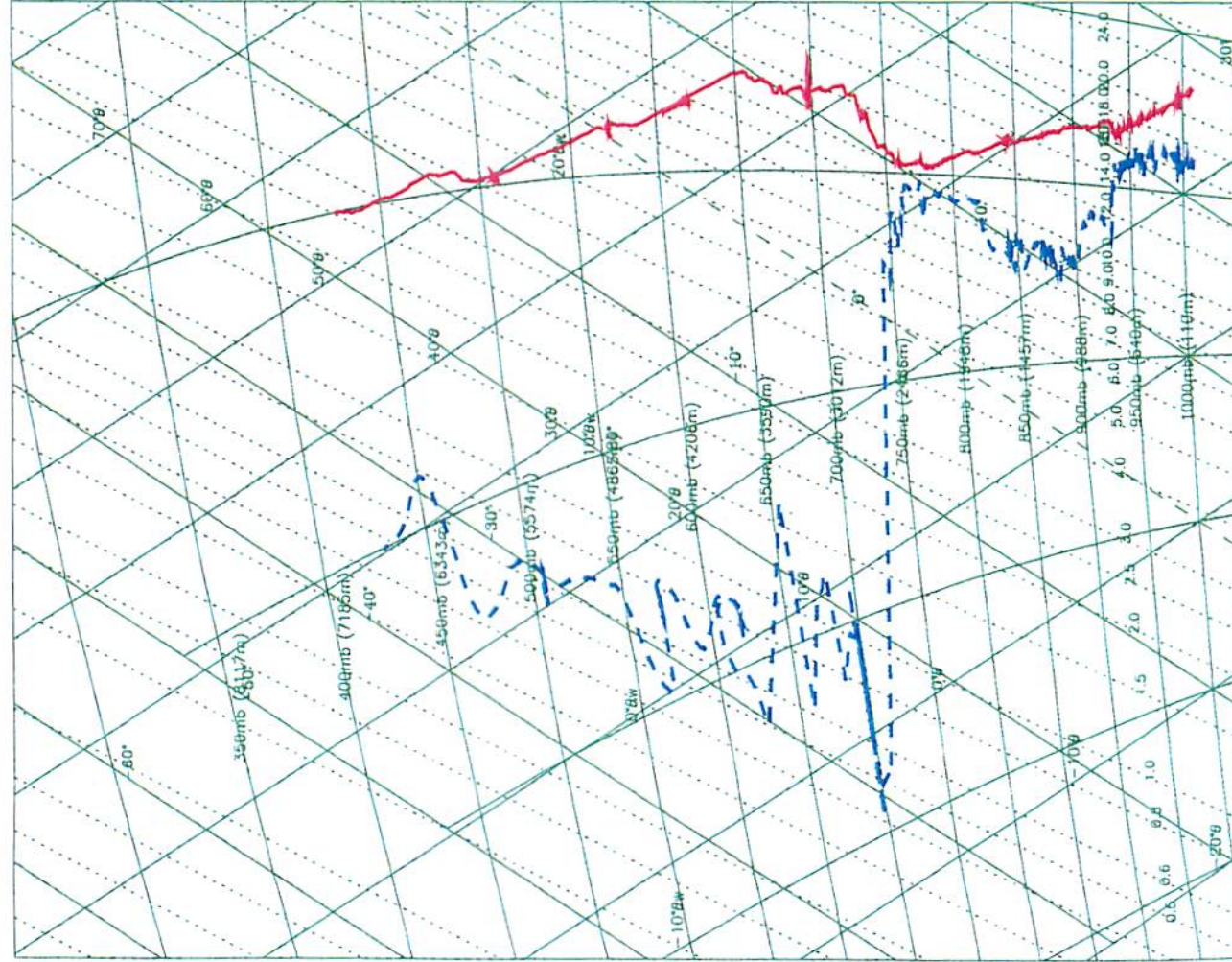
A575 14-SEP-97

P7 50'-FL220(171924-180736) + Descent(181325-182814)



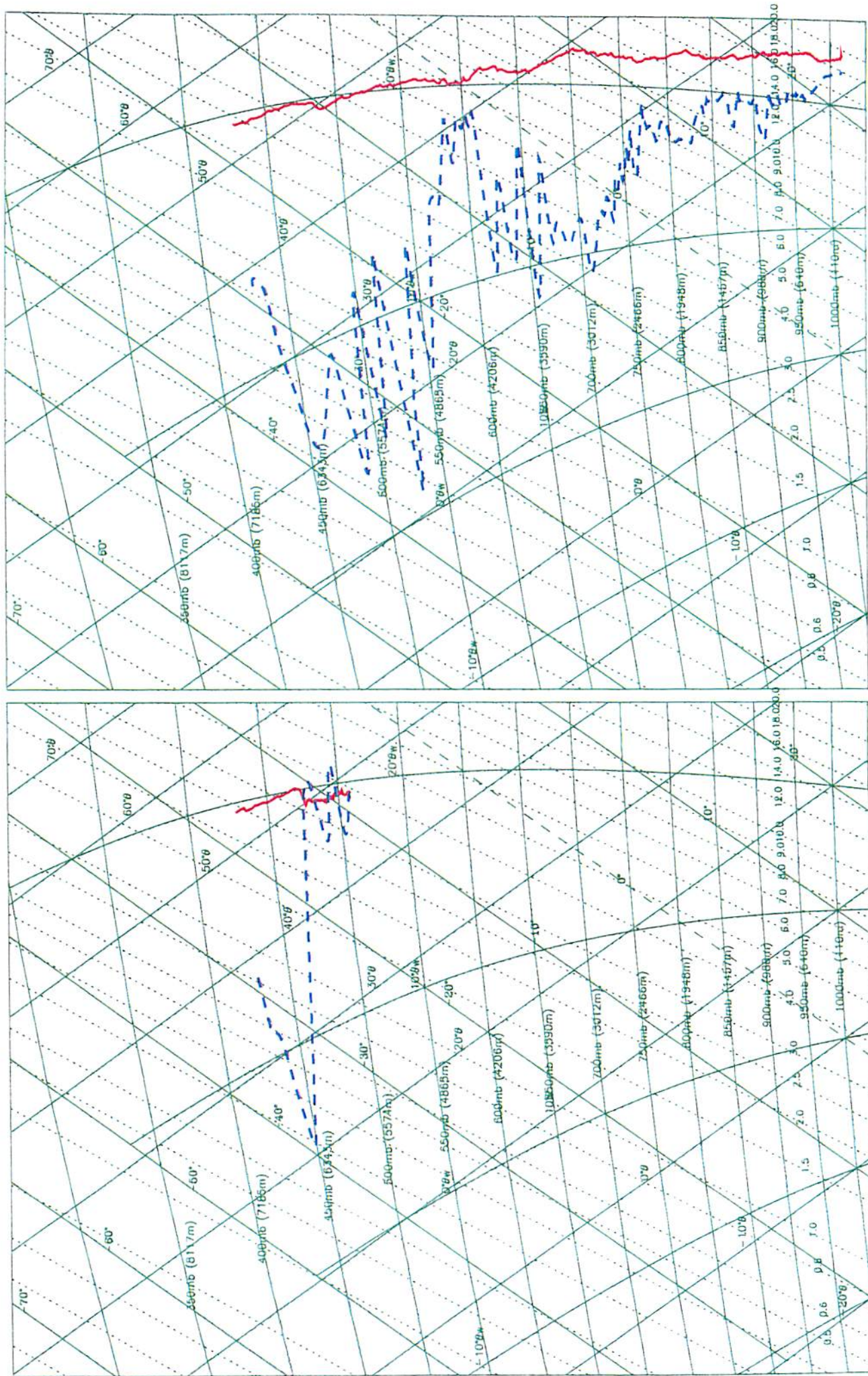
A575 14-SEP-97

P8 50'-FL220(182814-191223) + P9 FL220-FL180(191623-192019)



A575 14-SEP-97

P10 FL180-FL220(193553-194004) + P11 FL220-50'(194004-195948)



A575 14-SEP-97

R1 FL060-FL080

From 124855-130551 *Plotted 6-May-1998 16:02*

STATIC PRESSURE (MB)

No of obs 1017
Mean 765.704
Standard dev 24.0289
Max value 814.782
Min value 751.255

DEICED TRUE TEMP (DEG K)

No of obs 1017
Mean 283.617
Standard dev 0.933757
Max value 285.853
Min value 282.587

DEW POINT (DEG K)

No of obs 1017
Mean 281.007
Standard dev 1.82045
Max value 285.116
Min value 277.010

OZONE MIXING RATIO (PPB)

No of obs 1017
Mean 26.1333
Standard dev 2.57327
Max value 35.4262
Min value 18.3746

PSAP LIN ABS COEFF ()

No of obs 1017
Mean 7.234207e-08
Standard dev 4.219167e-07
Max value 3.784467e-06
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 1017
Mean 37.3718
Standard dev 4.60501
Max value 57.2378
Min value 13.5881

PRESSURE HEIGHT (METRES)

No of obs 1017
Mean 2303.91
Standard dev 246.764
Max value 2452.87
Min value 1801.06

CORRECTED LATITUDE (DEGREES)

No of obs 1017
Mean 36.0368
Standard dev 0.170954
Max value 36.3937
Min value 35.7957

CORRECTED LONGITUDE (DEGREES)

No of obs 1017
Mean -24.8778
Standard dev 6.138094e-02
Max value -24.7766
Min value -24.9970

NORTHWARD WIND COMPT (M S-1)

No of obs 1017
Mean 7.42022
Standard dev 1.81213
Max value 10.7293
Min value 2.18573

EASTWARD WIND COMPT (M S-1)

No of obs 1017
Mean 7.34786
Standard dev 1.93513
Max value 11.7024
Min value 2.78451

VERTICAL WIND COMPT (M S-1)

No of obs 1017
Mean -0.170764
Standard dev 0.547663
Max value 1.67651
Min value -1.53003

WIND SPEED (MS-1)

No of obs 1017
Mean 10.5489
Standard dev 2.19053
Max value 14.4410
Min value 4.26526

WIND DIRECTION (DEG)

Mean 224.719

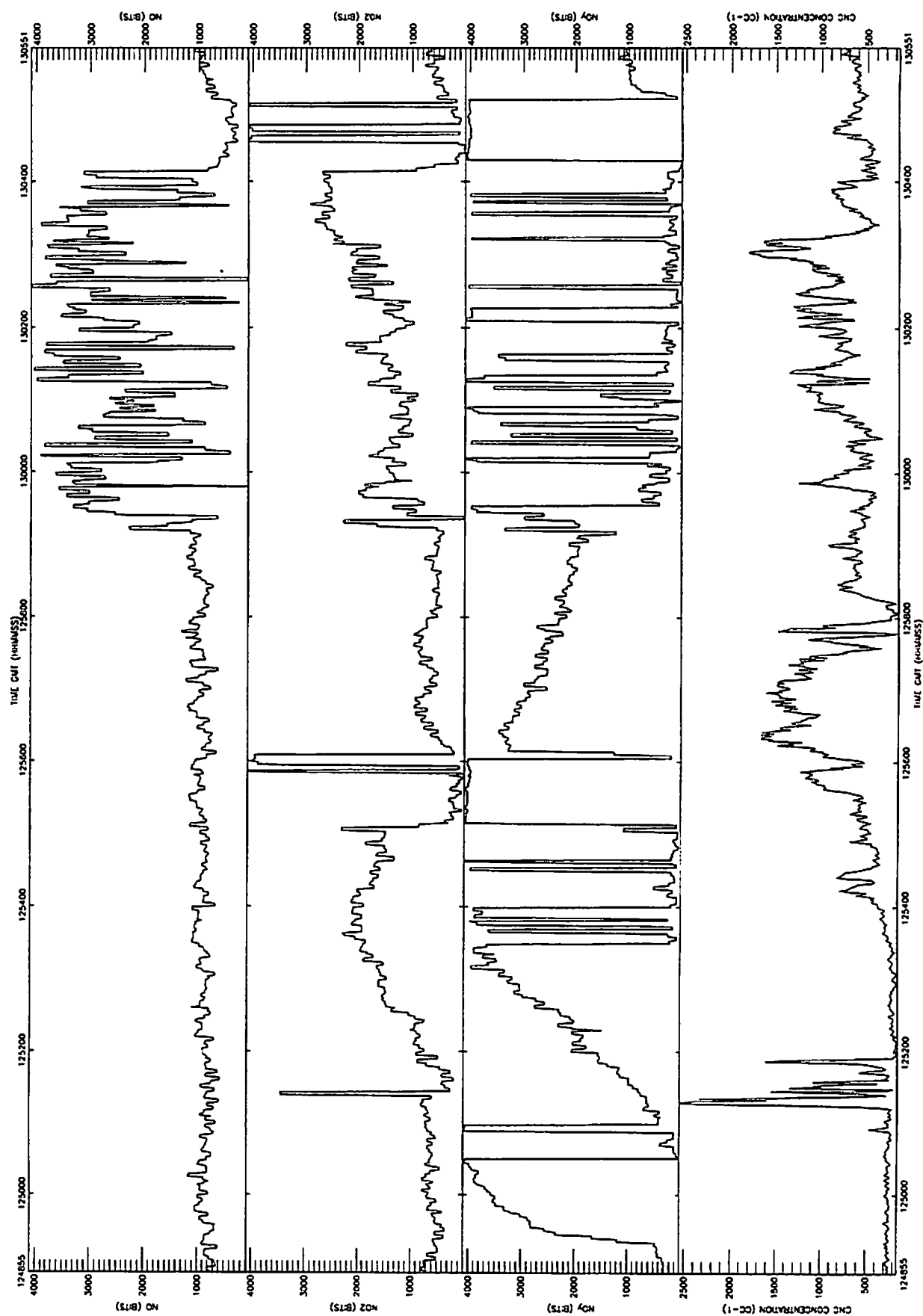
TRUE AIR SPEED (M S-1)

No of obs 1017
Mean 105.505
Standard dev 2.54753
Max value 110.330
Min value 100.757

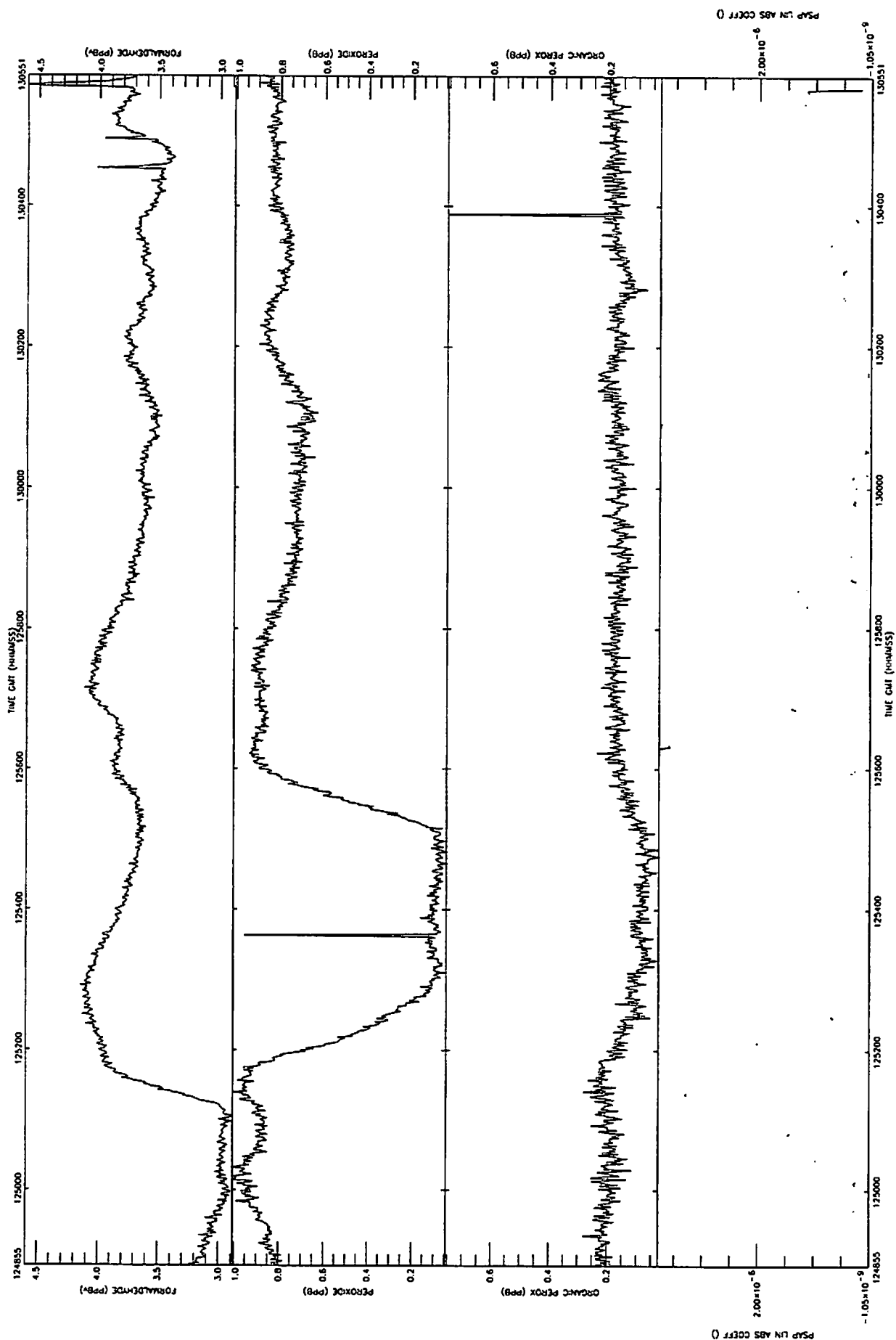
HEADING (DEG)

Mean 166.298

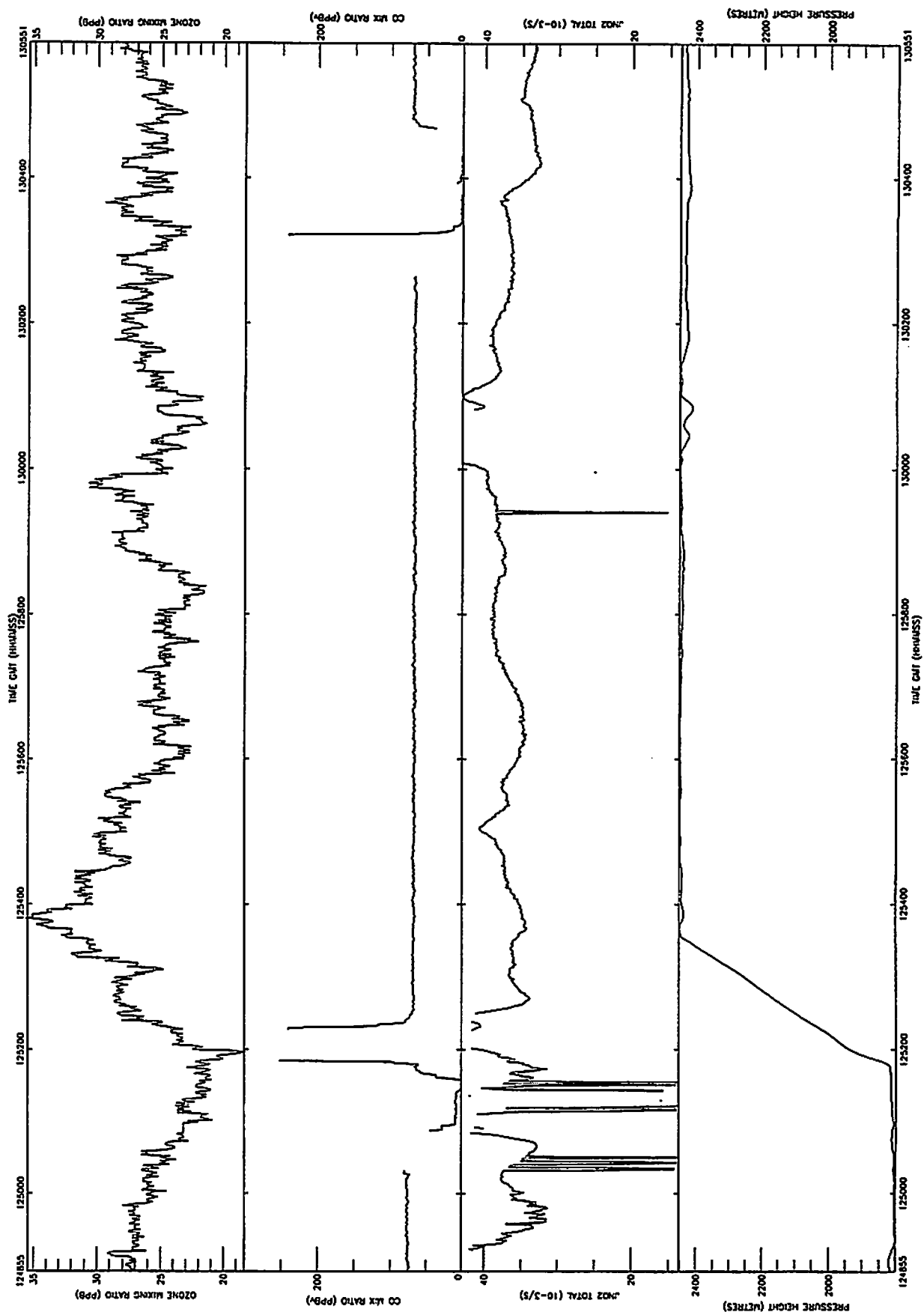
A575 14-SEP-97 R1 FL060-FL080 From 124855-130551 Plotted 6-May-1998 16:02



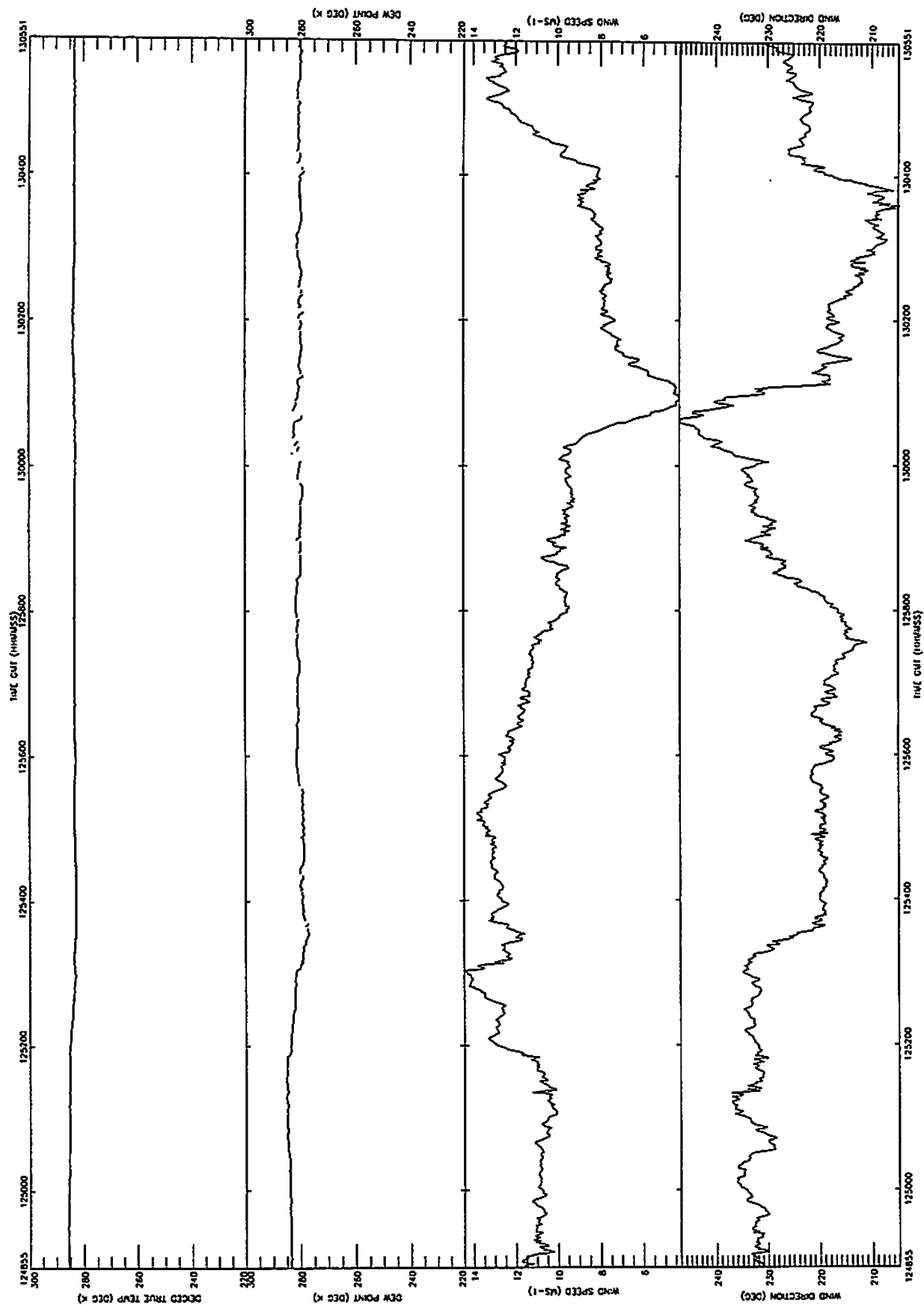
A575 14-SEP-97 R1 FL060-FL080 From 124855-130551 Plotted 6-May-1998 16:02



A575 14-SEP-97 R1 FL060-FL080 From 124855-130551 Plotted 6-May-1998 16:02



A575 14-SEP-97 R1 FL060-FL080 From 124855-130551 Plotted 6-May-1998 16:02



A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:17

STATIC PRESSURE (MB)
No of obs 2529
Mean 766.019
Standard dev 189.931
Max value 1017.78
Min value 465.826

DEICED TRUE TEMP (DEG K)
No of obs 2529
Mean 282.671
Standard dev 11.1741
Max value 296.787
Min value 261.834

DEW POINT (DEG K)
No of obs 2529
Mean 274.488
Standard dev 19.1384
Max value 295.302
Min value 230.435

OZONE MIXING RATIO (PPB)
No of obs 2529
Mean 33.8931
Standard dev 15.1782
Max value 66.7130
Min value 16.7281

PSAP LIN ABS COEFF ()
No of obs 2529
Mean 1.502323e-06
Standard dev 2.553305e-06
Max value 1.283306e-05
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)
No of obs 2529
Mean 30.7301
Standard dev 15.2020
Max value 54.1442
Min value 2.77443

PRESSURE HEIGHT (METRES)
No of obs 2529
Mean 2507.96
Standard dev 2056.56
Max value 6092.88
Min value -37.6557

CORRECTED LATITUDE (DEGREES)
No of obs 2529
Mean 34.5805
Standard dev 0.653325
Max value 35.6151
Min value 33.3763

CORRECTED LONGITUDE (DEGREES)
No of obs 2529
Mean -24.4953
Standard dev 0.100939
Max value -24.4036
Min value -24.7367

NORTHWARD WIND COMPT (M S-1)
No of obs 2529
Mean 5.69537
Standard dev 4.64089
Max value 14.1576
Min value -1.84420

EASTWARD WIND COMPT (M S-1)
No of obs 2529
Mean 5.91872
Standard dev 4.88311
Max value 13.9252
Min value -4.50828

VERTICAL WIND COMPT (M S-1)
No of obs 2529
Mean -0.794979
Standard dev 0.592465
Max value 1.70741
Min value -2.31192

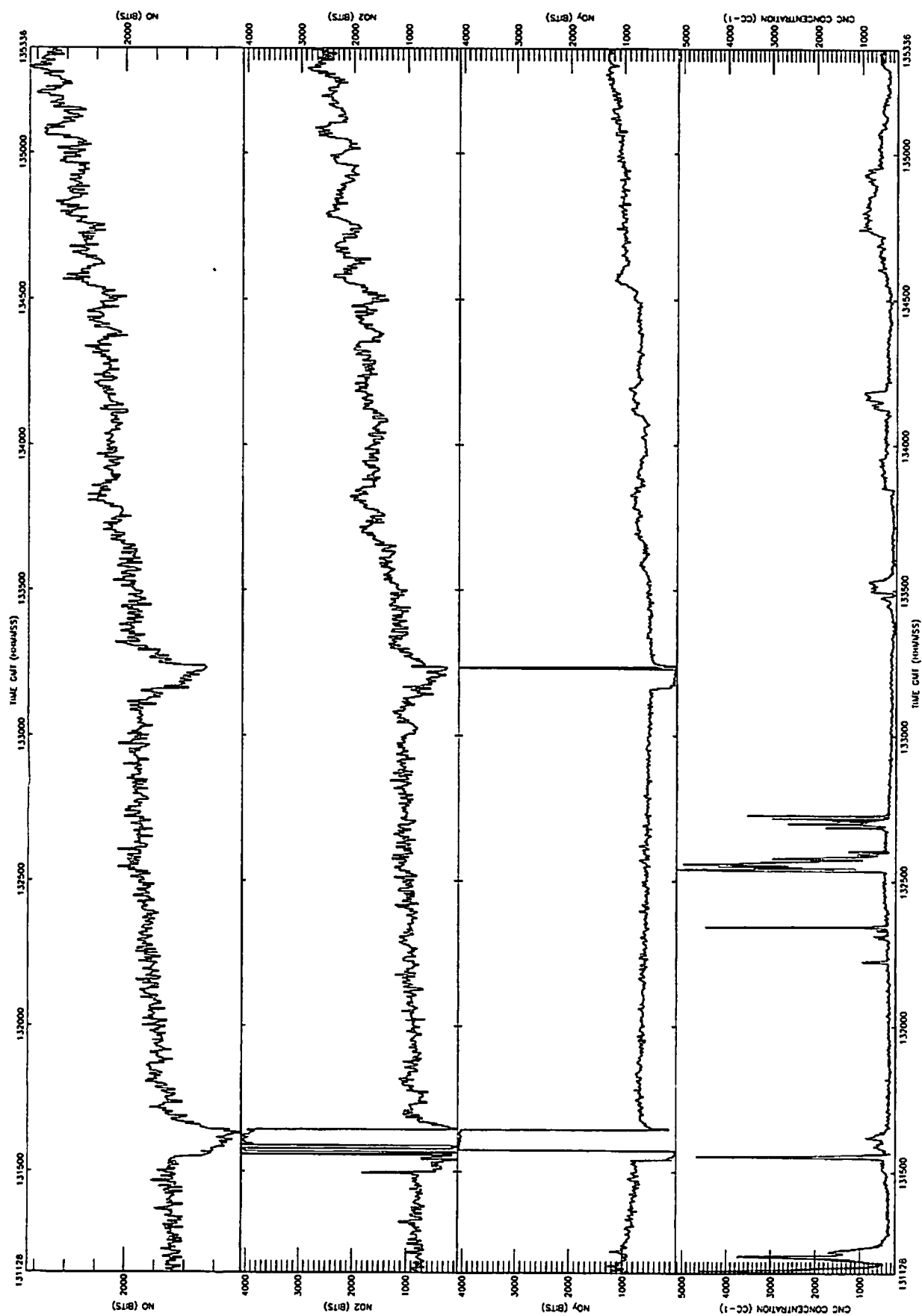
WIND SPEED (MS-1)
No of obs 2529
Mean 10.3567
Standard dev 2.36074
Max value 15.4391
Min value 5.70726

WIND DIRECTION (DEG)
Mean 226.102

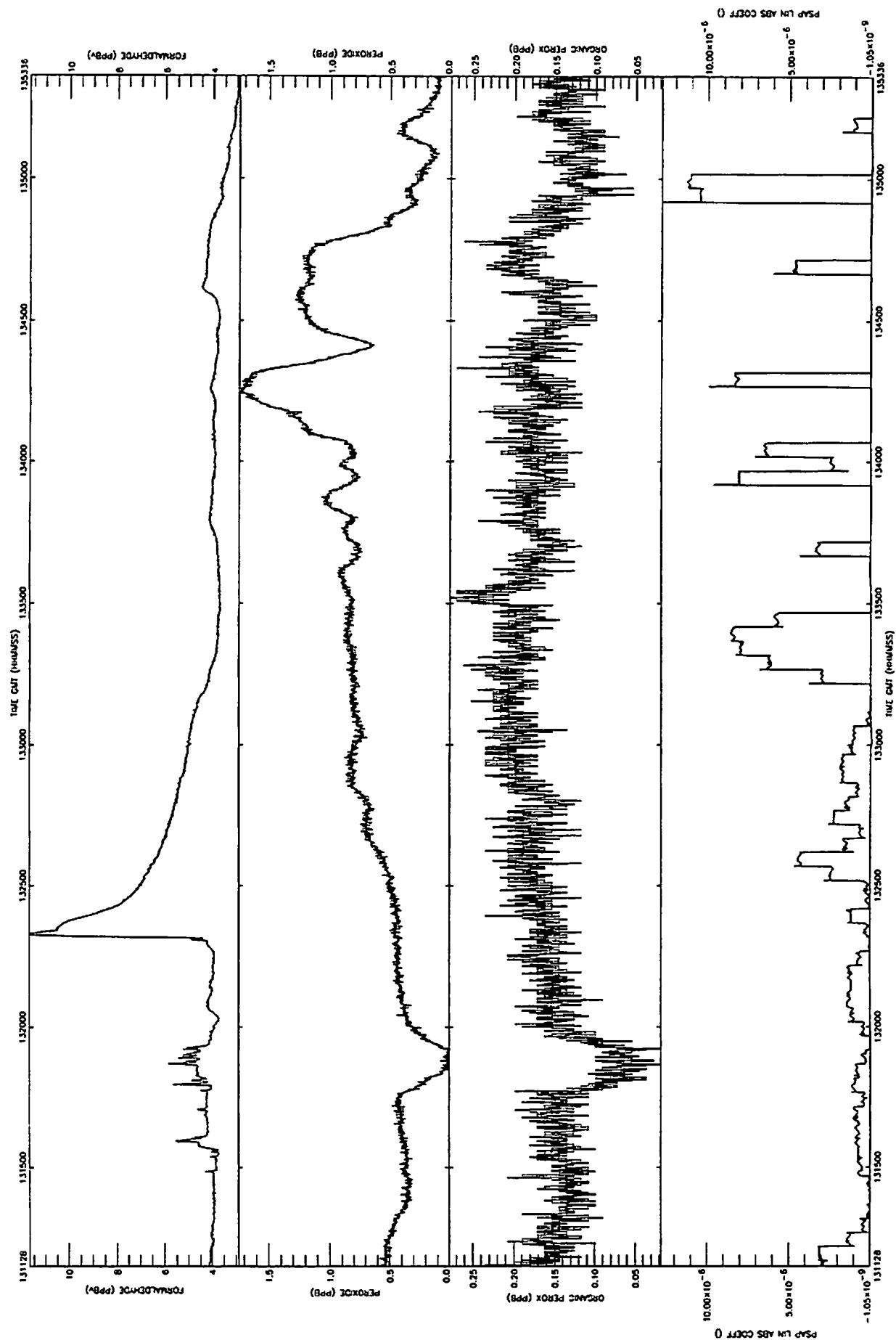
TRUE AIR SPEED (M S-1)
No of obs 2529
Mean 105.009
Standard dev 8.32023
Max value 121.820
Min value 93.0027

HEADING (DEG)
Mean 173.107

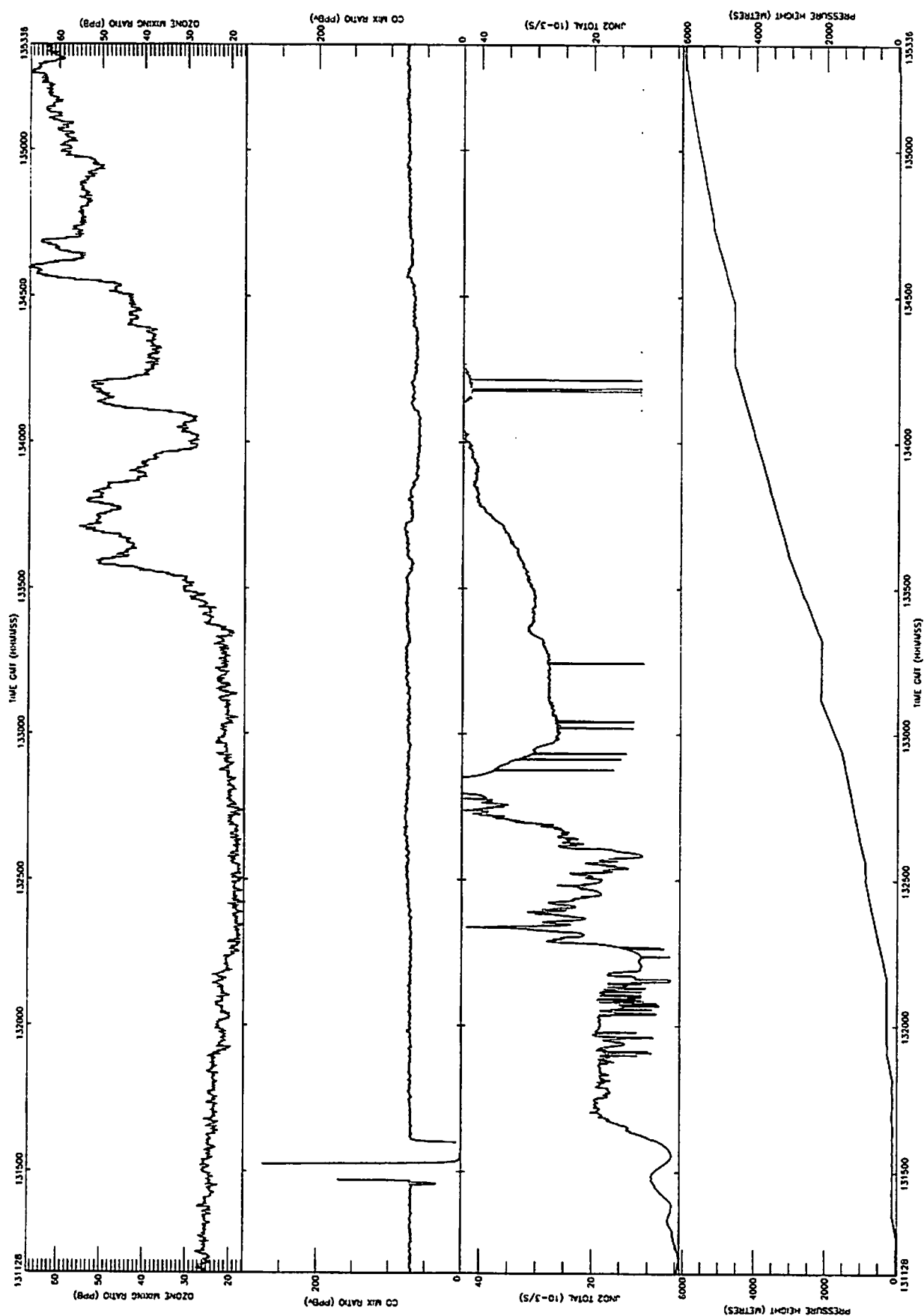
A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:17



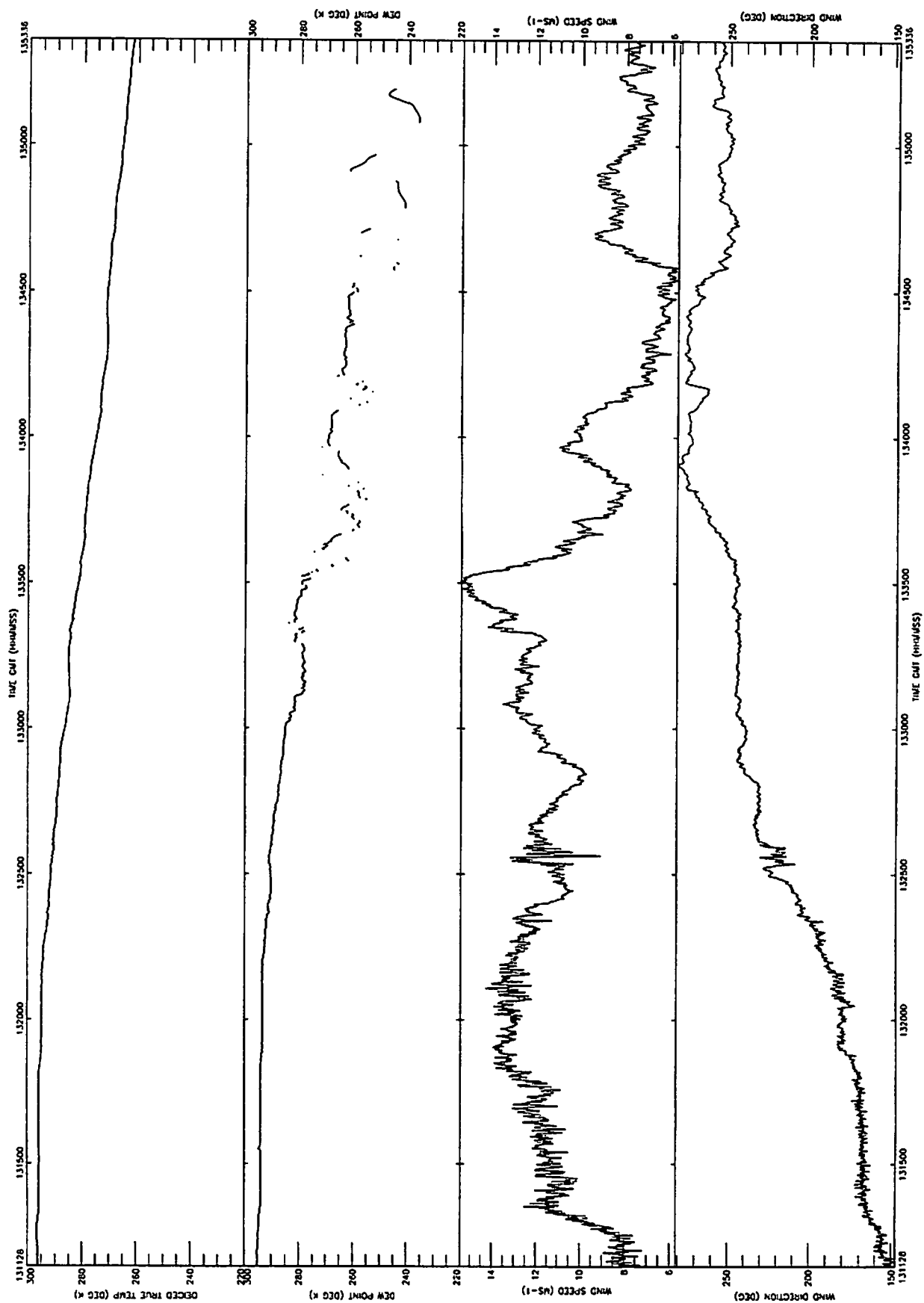
A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:17



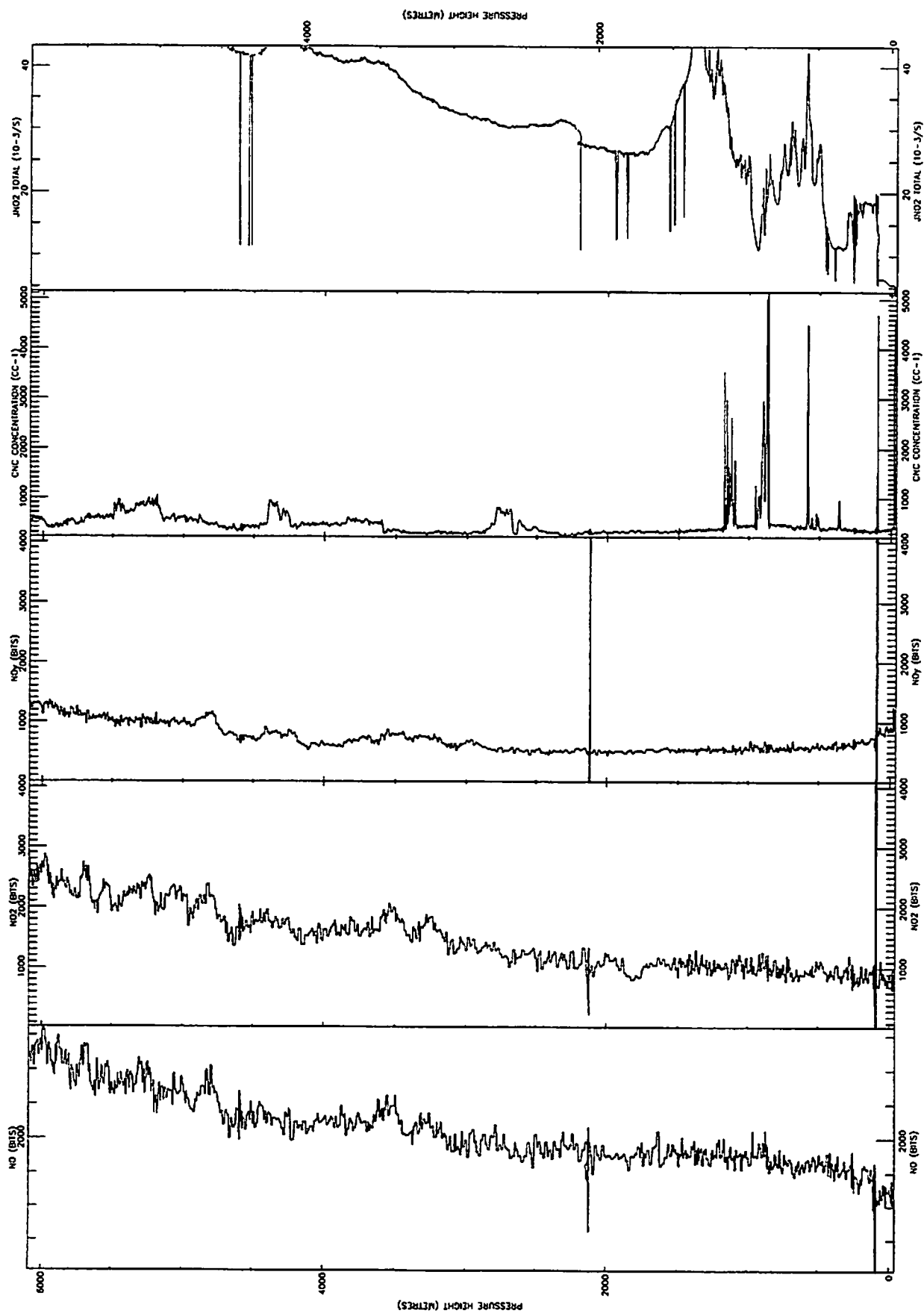
A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:17



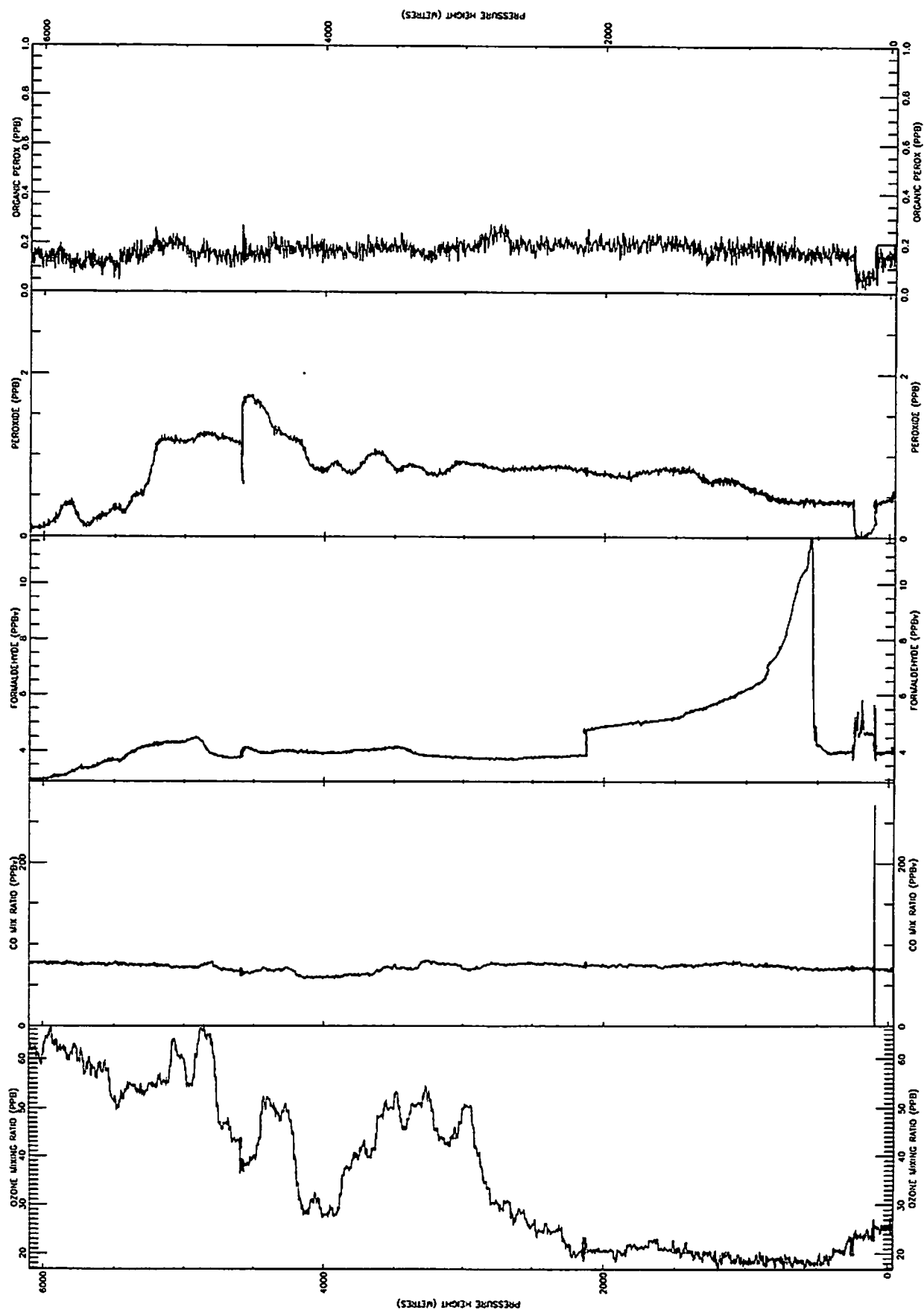
A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:17



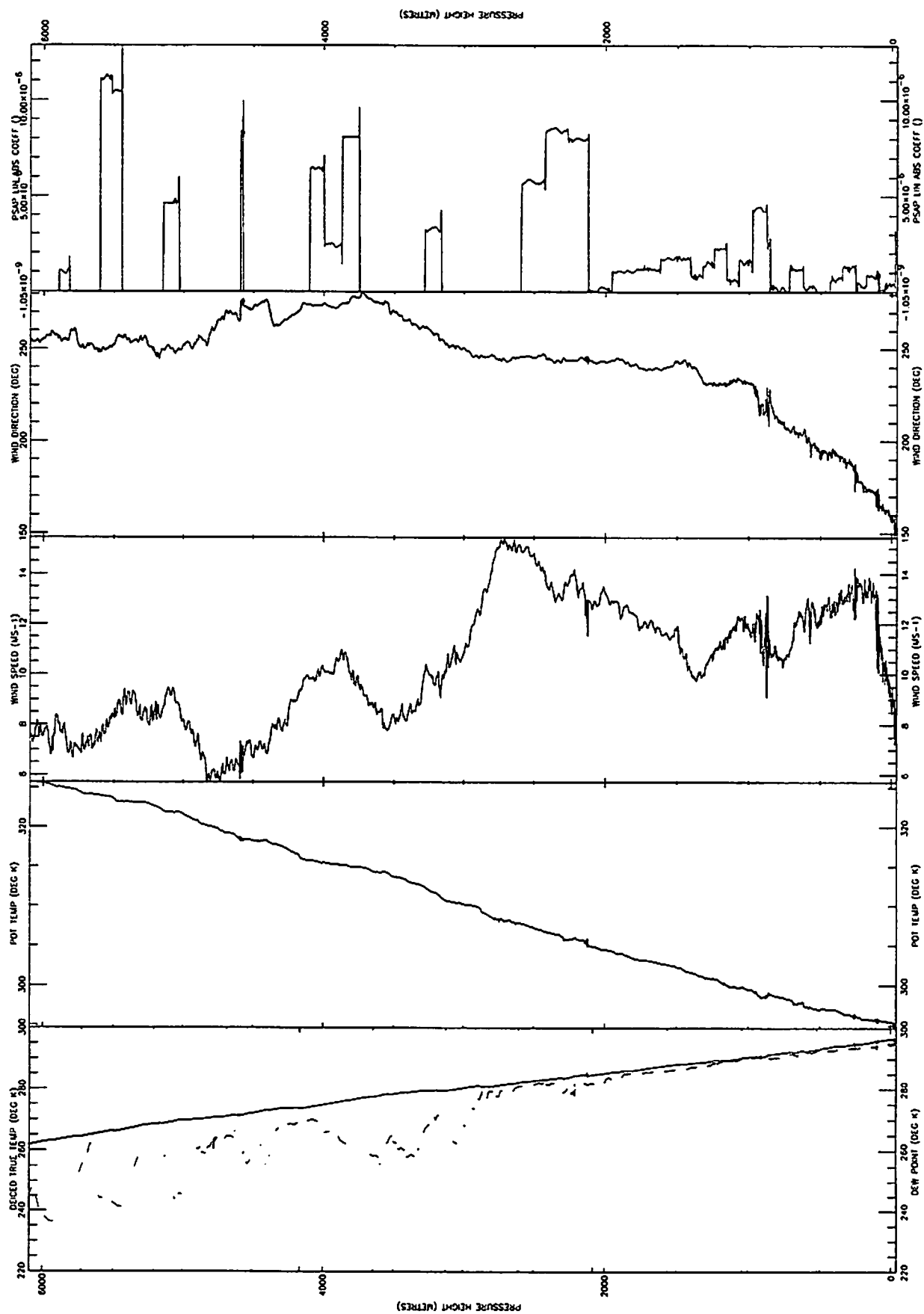
A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:17



A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:16



A575 14-SEP-97 P1 50'-FL200 (+bottles) From 131128-135336 Plotted 6-May-1998 16:16



A575 14-SEP-97 R2 FL200 From 135336-140106 Plotted 6-May-1998 16:21

STATIC PRESSURE (MB)

No of obs 451
Mean 465.423
Standard dev 0.317595
Max value 466.094
Min value 464.845

DEICED TRUE TEMP (DEG K)

No of obs 451
Mean 261.459
Standard dev 0.189686
Max value 261.834
Min value 261.008

DEW POINT (DEG K)

No of obs 451
Mean 231.797
Standard dev 2.14404
Max value 241.786
Min value 230.082

OZONE MIXING RATIO (PPB)

No of obs 451
Mean 58.4854
Standard dev 3.20486
Max value 66.4328
Min value 52.8678

PSAP LIN ABS COEFF ()

No of obs 451
Mean 1.163554e-07
Standard dev 3.439951e-07
Max value 1.732963e-06
Min value -1.046657e-09

JN02 TOTAL (10-3/S)

No of obs 451
Mean 39.5361
Standard dev 6.97258
Max value 47.1502
Min value 10.7509

PRESSURE HEIGHT (METRES)

No of obs 451
Mean 8099.17
Standard dev 4.96348
Max value 6108.22
Min value 6088.70

CORRECTED LATITUDE (DEGREES)

No of obs 451
Mean 33.1114
Standard dev 0.161510
Max value 33.3763
Min value 32.8312

CORRECTED LONGITUDE (DEGREES)

No of obs 451
Mean -24.4044
Standard dev 9.610767e-03
Max value -24.3753
Min value -24.4117

NORTHWARD WIND COMPT (M S-1)

No of obs 451
Mean 1.45660
Standard dev 0.280078
Max value 2.05841
Min value 0.913498

EASTWARD WIND COMPT (M S-1)

No of obs 451
Mean 7.10208
Standard dev 0.435941
Max value 8.09218
Min value 6.07495

VERTICAL WIND COMPT (M S-1)

No of obs 451
Mean -0.454211
Standard dev 0.263122
Max value 5.134583e-02
Min value -0.948013

WIND SPEED (MS-1)

No of obs 451
Mean 7.25638
Standard dev 0.417618
Max value 8.26646
Min value 6.31185

WIND DIRECTION (DEG)

Mean 258.410

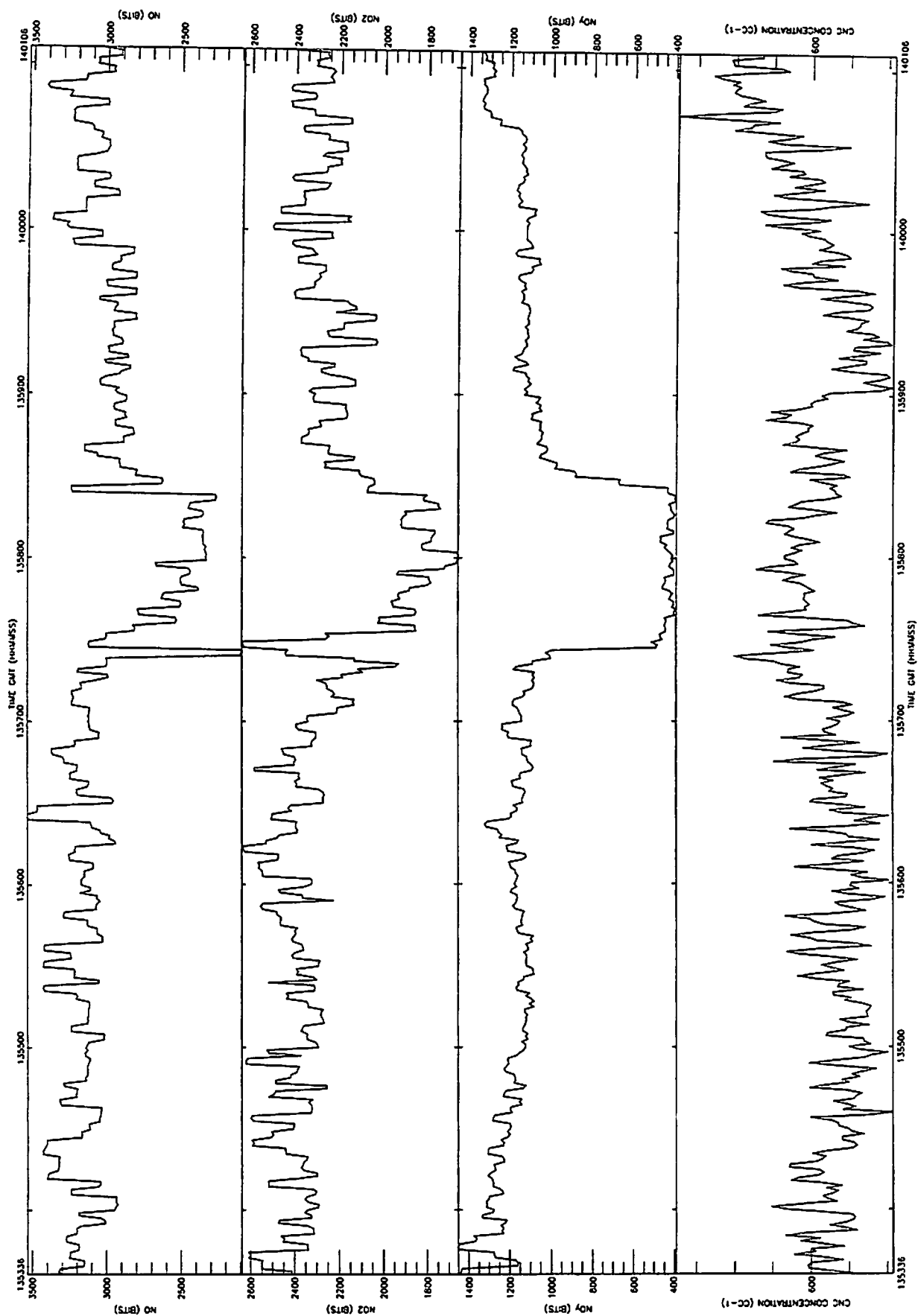
TRUE AIR SPEED (M S-1)

No of obs 451
Mean 136.068
Standard dev 9.74306
Max value 148.141
Min value 112.263

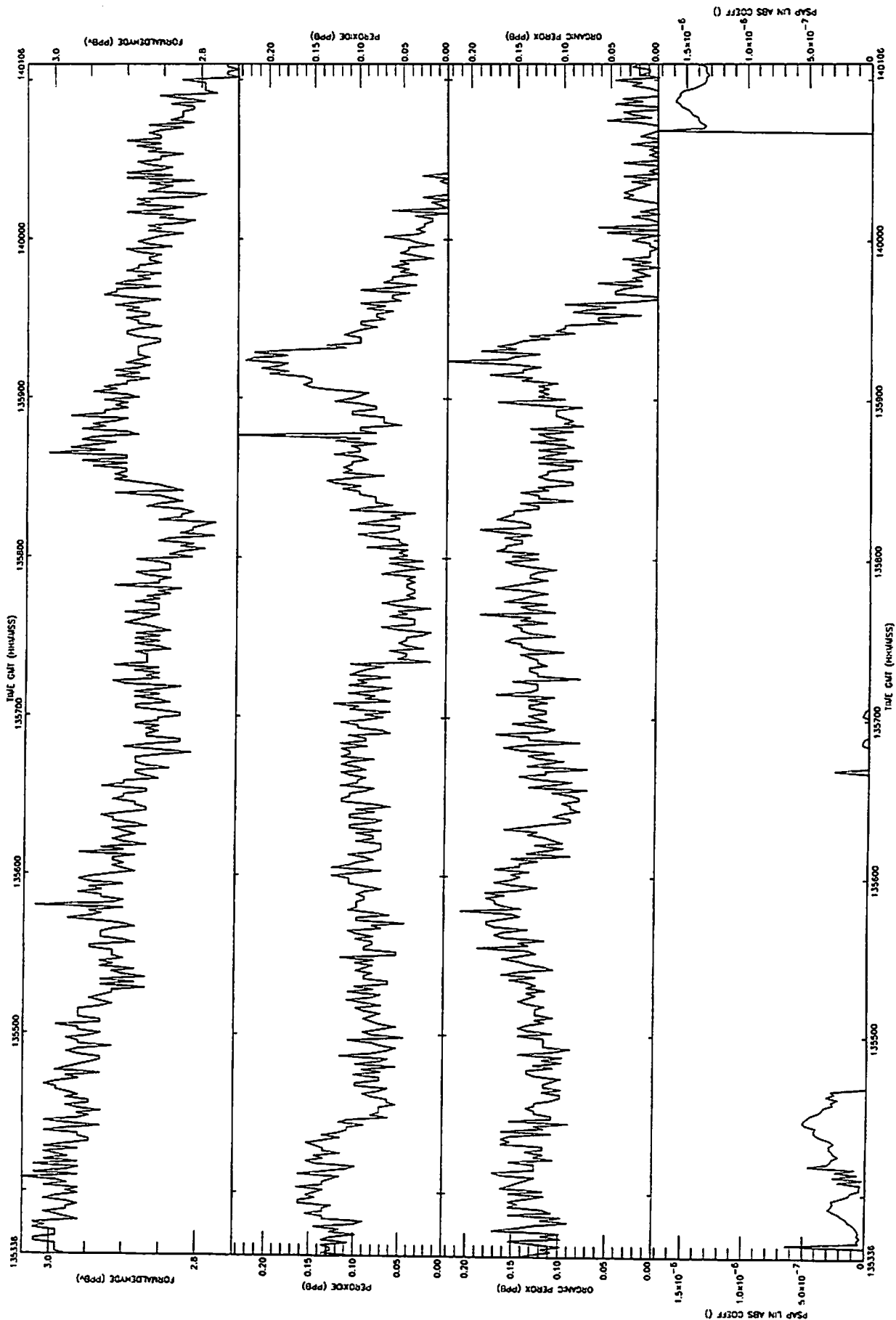
HEADING (DEG)

Mean 177.126

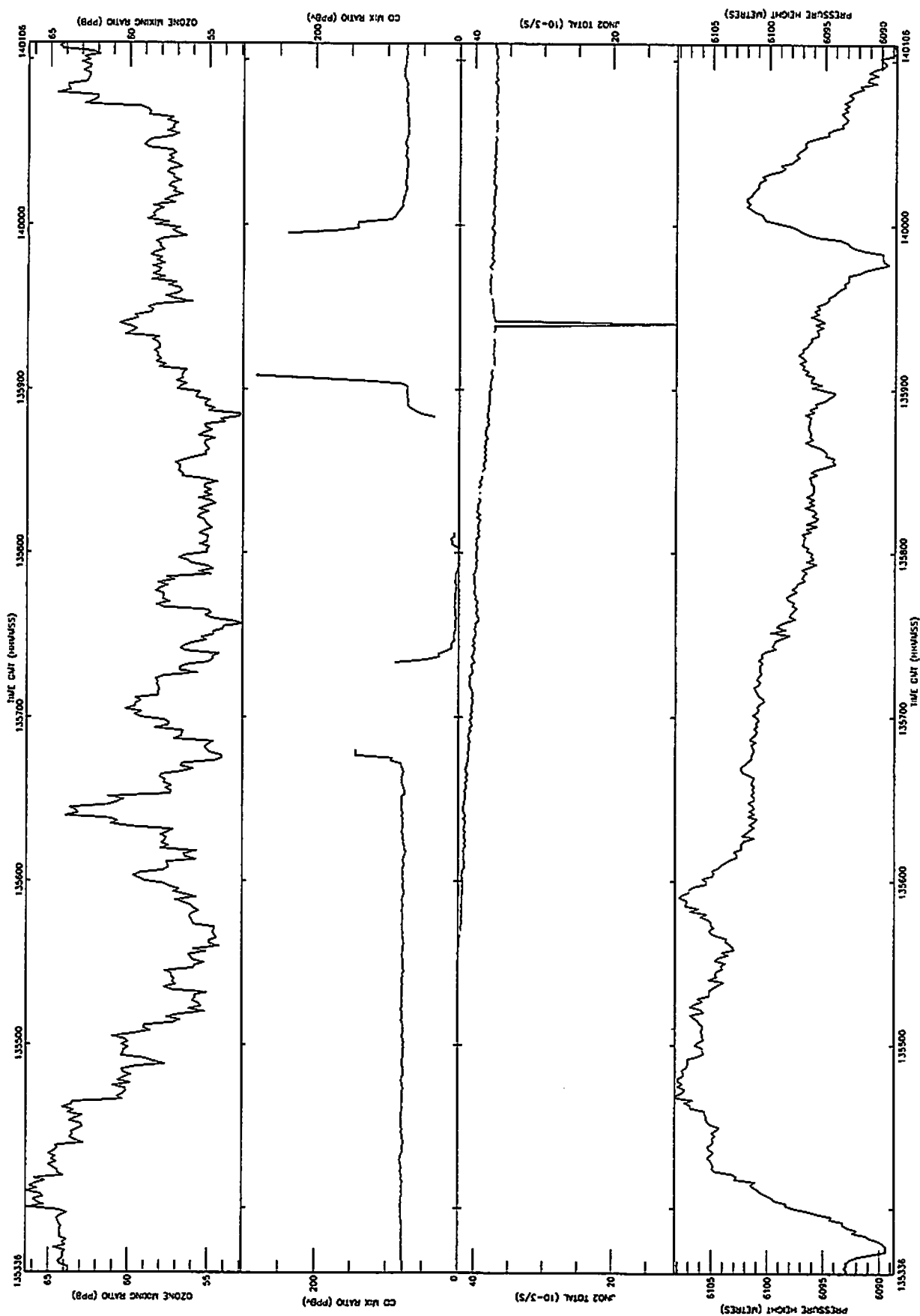
A575 14-SEP-97 R2 FL200 From 135336-140106 Plotted 6-May-1998 16:21



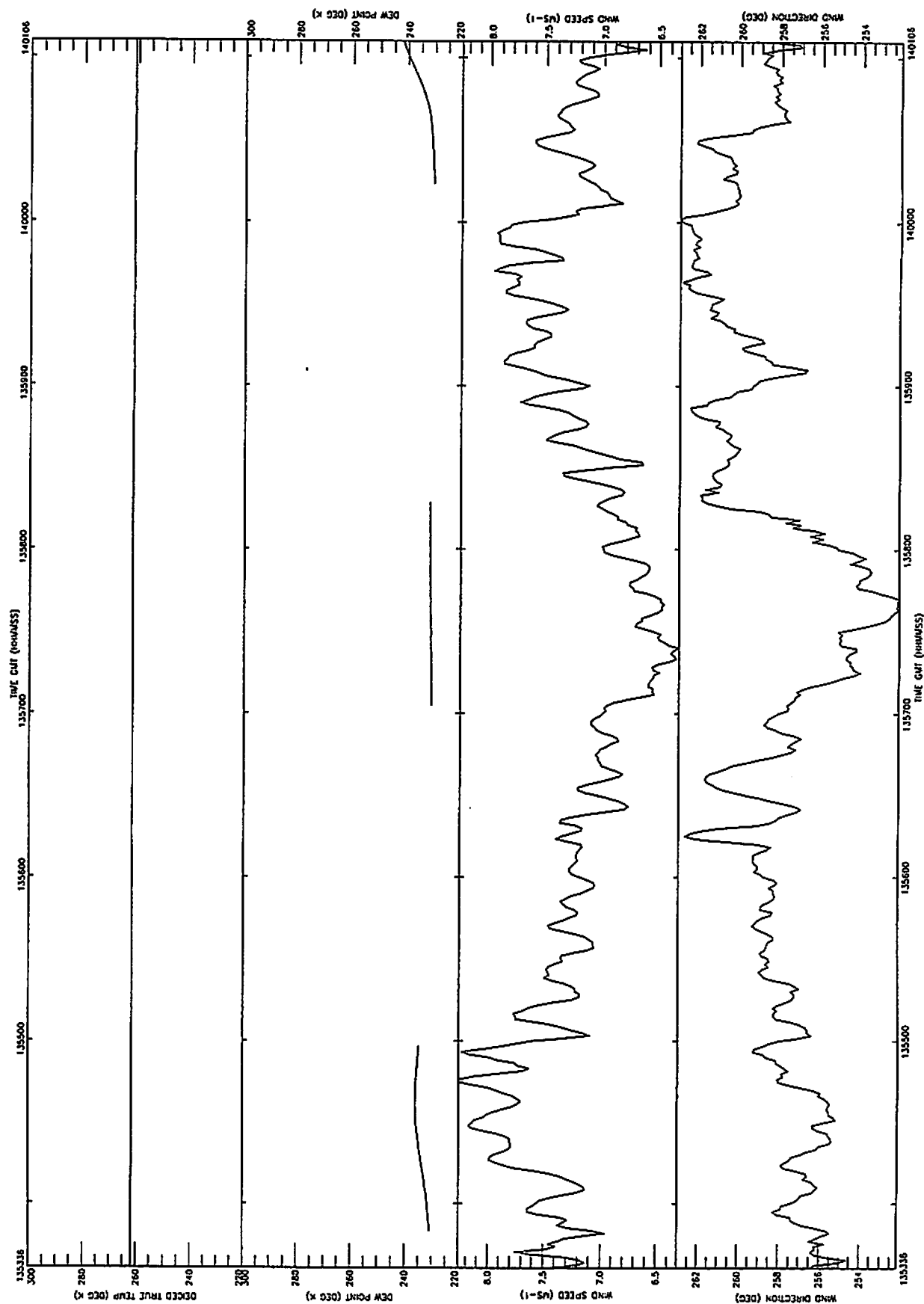
A575 14-SEP-97 R2 FL200 From 135336-140106 Plotted 6-May-1998 16:21



A575 14-SEP-97 R2 FL200 From 135336-140106 Plotted 6-May-1998 16:21



A575 14-SEP-97 R2 FL200 From 135336-140106 Plotted 6-May-1998 16:21



A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:36

STATIC PRESSURE (MB)

No of obs 2351
Mean 781.881
Standard dev 175.195
Max value 1018.98
Min value 466.078

DEICED TRUE TEMP (DEG K)

No of obs 2351
Mean 284.699
Standard dev 10.7467
Max value 298.675
Min value 261.025

DEW POINT (DEG K)

No of obs 2351
Mean 271.262
Standard dev 22.2967
Max value 296.105
Min value 232.837

OZONE MIXING RATIO (PPB)

No of obs 2351
Mean 34.5698
Standard dev 15.4873
Max value 71.6350
Min value 13.0509

PSAP LIN ABS COEFF ()

No of obs 2351
Mean 4.303929e-06
Standard dev 3.879622e-06
Max value 1.913411e-05
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 2351
Mean 26.5548
Standard dev 7.57209
Max value 37.2179
Min value 8.94103

PRESSURE HEIGHT (METRES)

No of obs 2351
Mean 2307.68
Standard dev 1879.87
Max value 6088.95
Min value -47.6172

CORRECTED LATITUDE (DEGREES)

No of obs 2351
Mean 31.6936
Standard dev 0.588806
Max value 32.8312
Min value 30.9702

CORRECTED LONGITUDE (DEGREES)

No of obs 2351
Mean -24.1827
Standard dev 0.116516
Max value -24.0024
Min value -24.4387

NORTHWARD WIND COMPT (M S-1)

No of obs 2351
Mean 2.73475
Standard dev 1.24560
Max value 5.27303
Min value -1.73598

EASTWARD WIND COMPT (M S-1)

No of obs 2351
Mean 7.01787
Standard dev 4.55094
Max value 16.3216
Min value -0.676323

VERTICAL WIND COMPT (M S-1)

No of obs 2351
Mean 0.155462
Standard dev 0.566068
Max value 1.71658
Min value -1.27860

WIND SPEED (MS-1)

No of obs 2351
Mean 7.98853
Standard dev 3.89515
Max value 16.4240
Min value 2.20931

WIND DIRECTION (DEG)

Mean 248.710

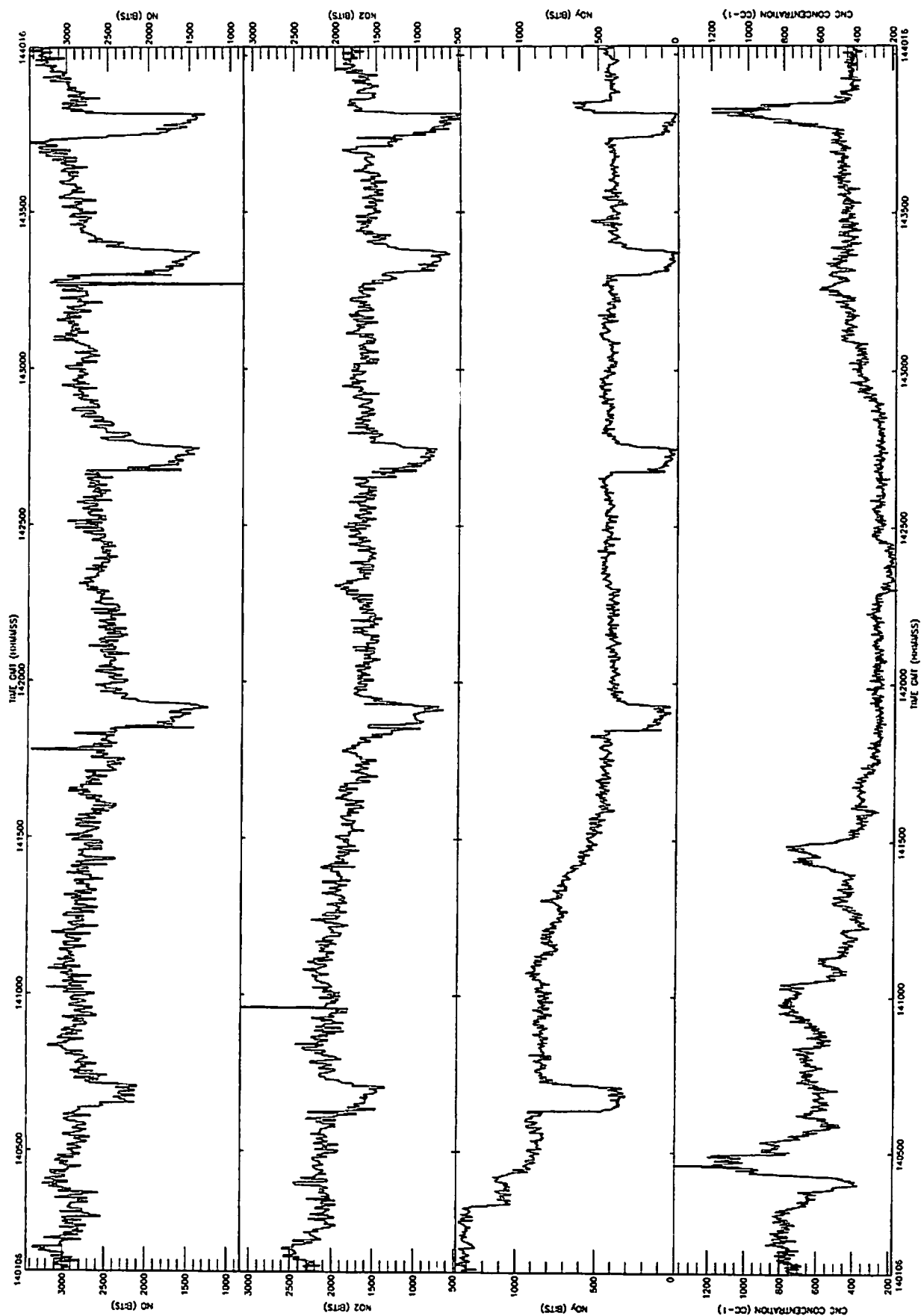
TRUE AIR SPEED (M S-1)

No of obs 2351
Mean 107.617
Standard dev 10.8973
Max value 131.924
Min value 91.2417

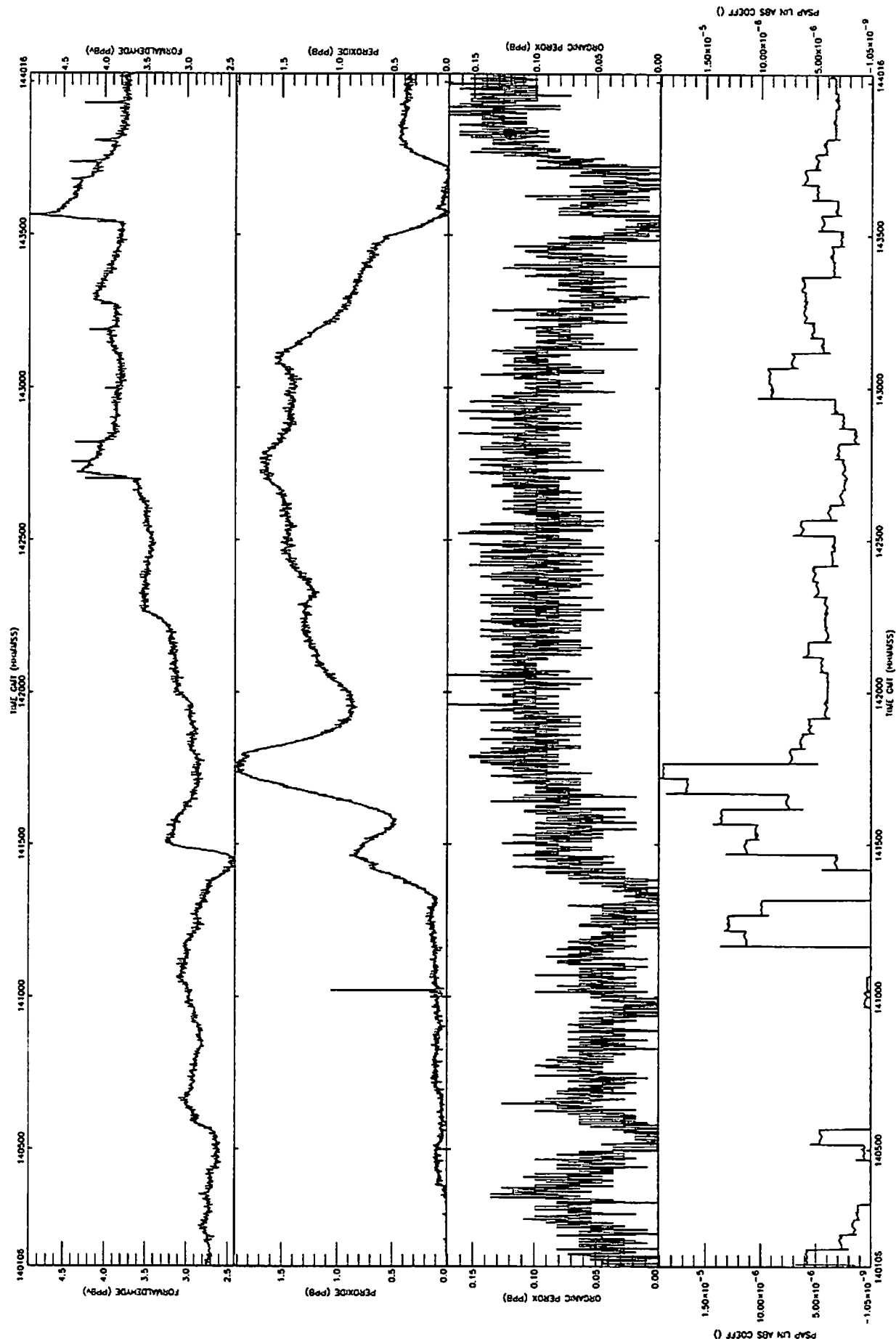
HEADING (DEG)

Mean 181.826

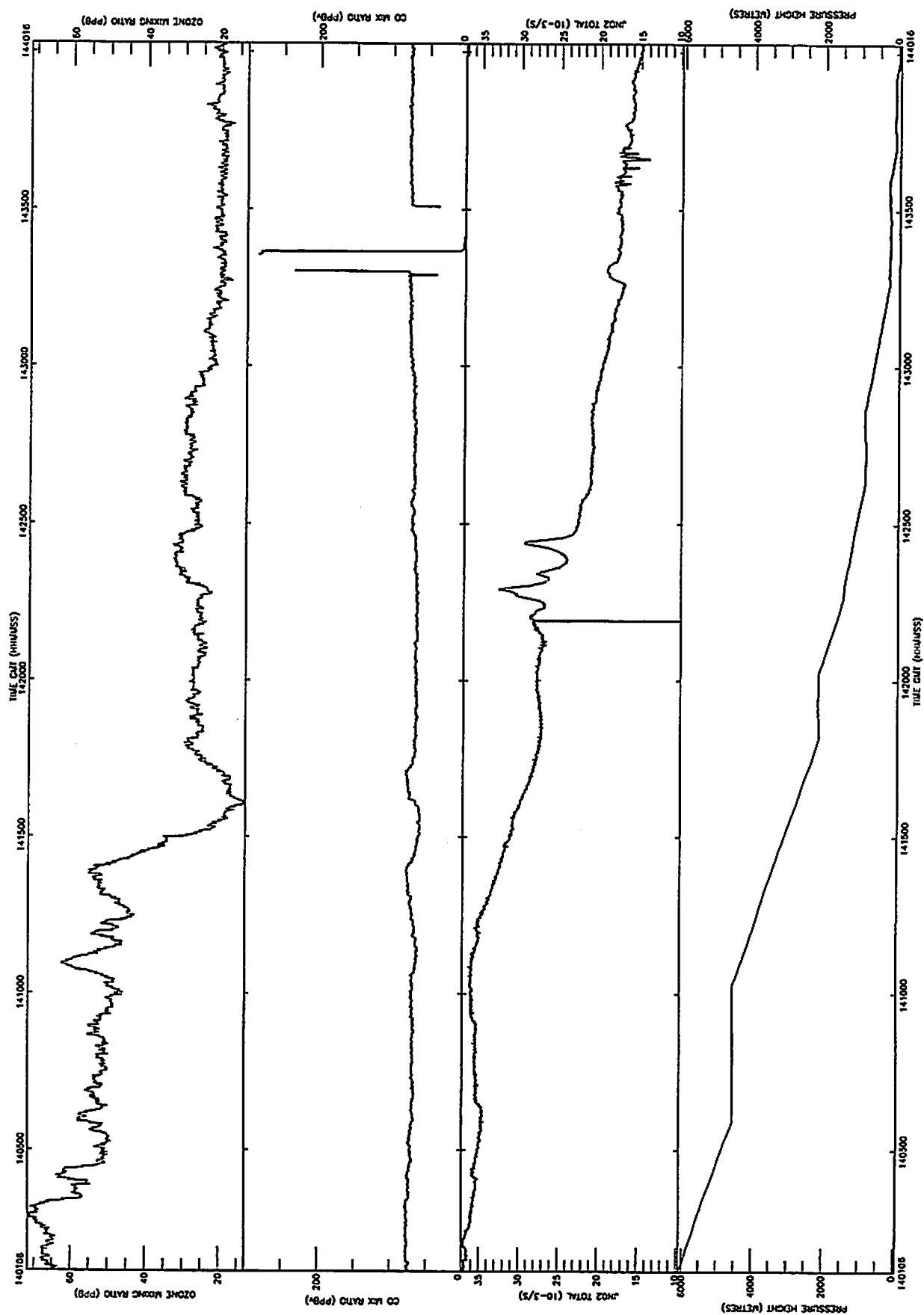
A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:36



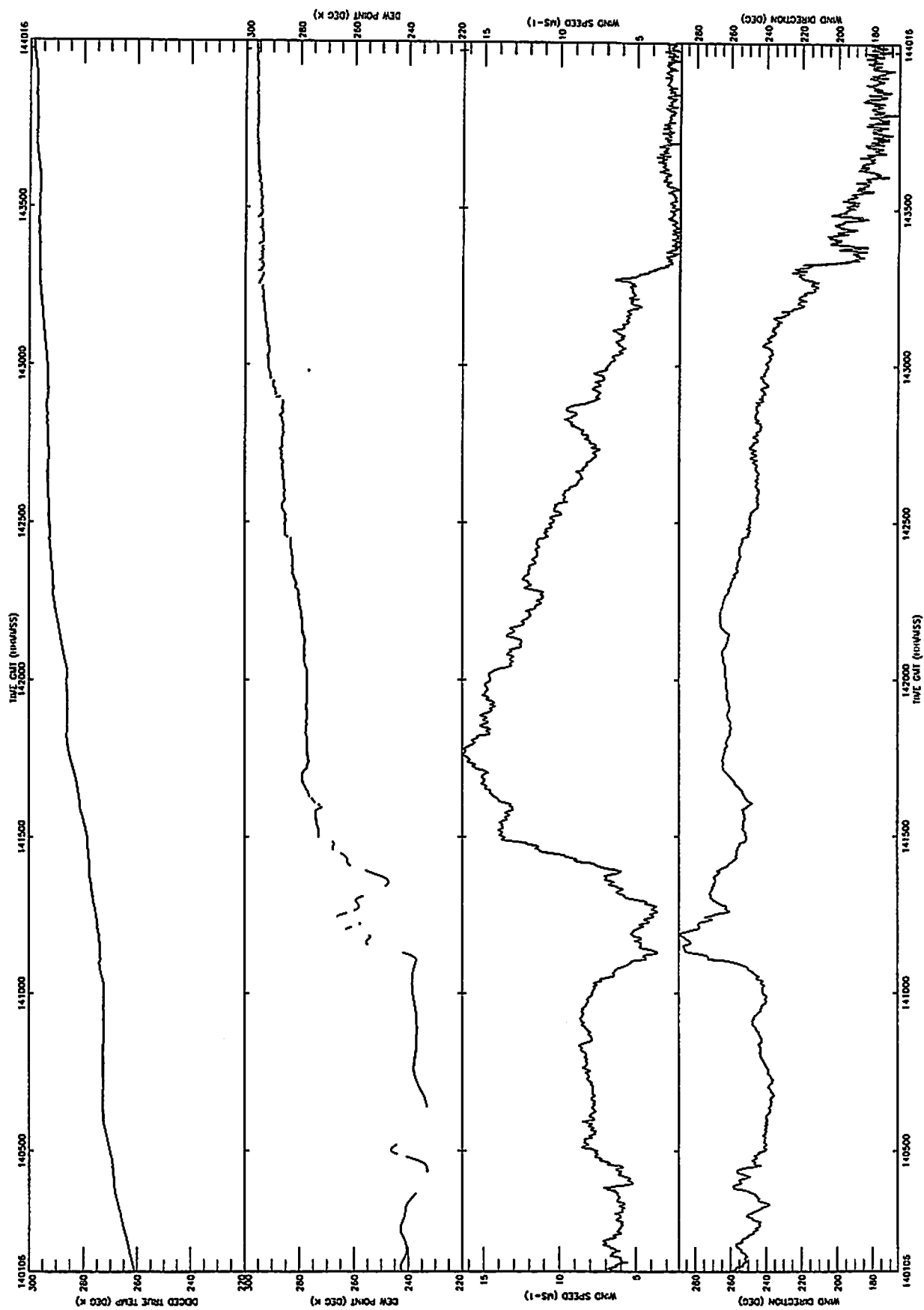
A575 14-SEP-97 P2 FL200-50' (4 bottles) From 140106-144016 Plotted 6-May-1998 16:35



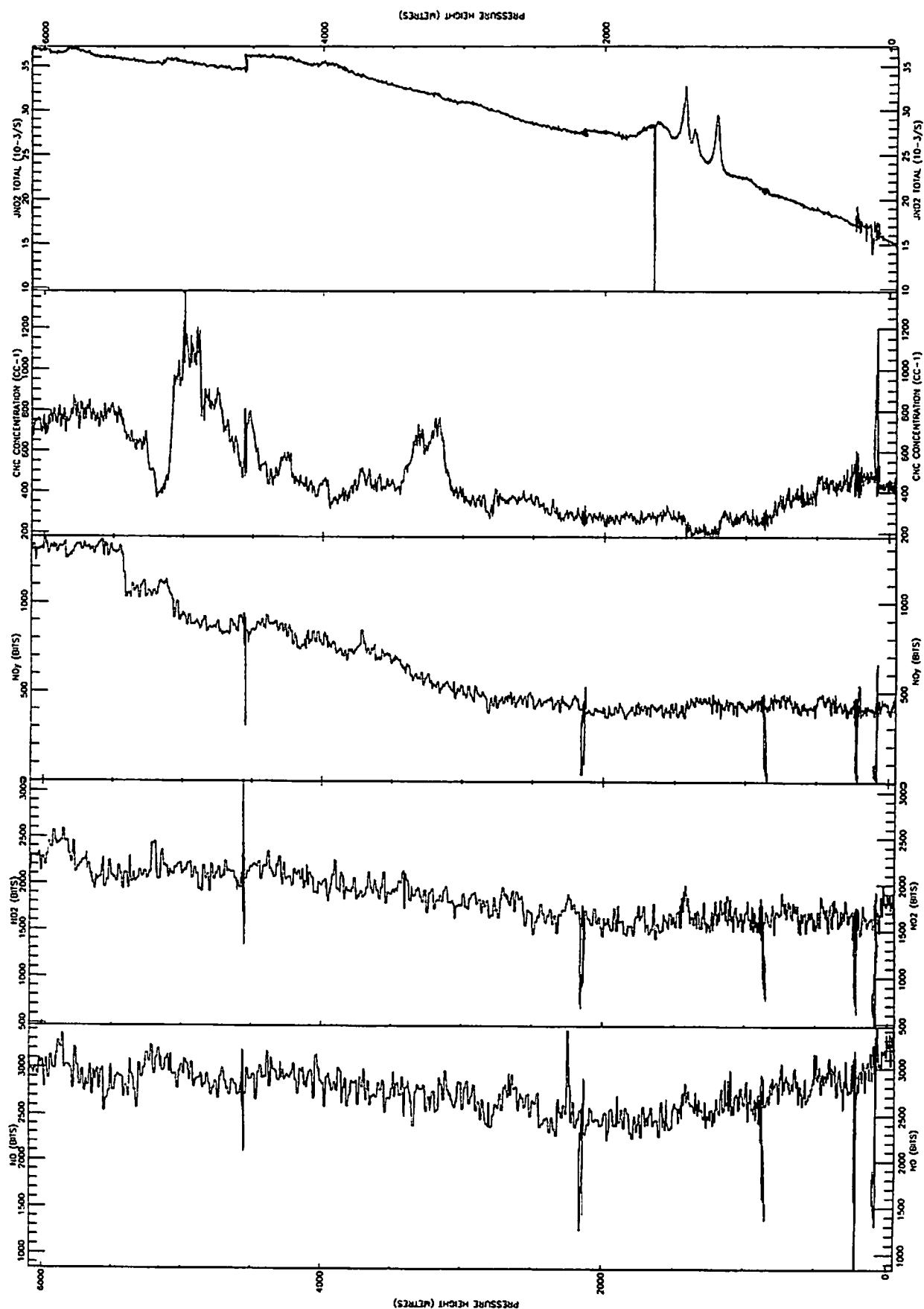
A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:35



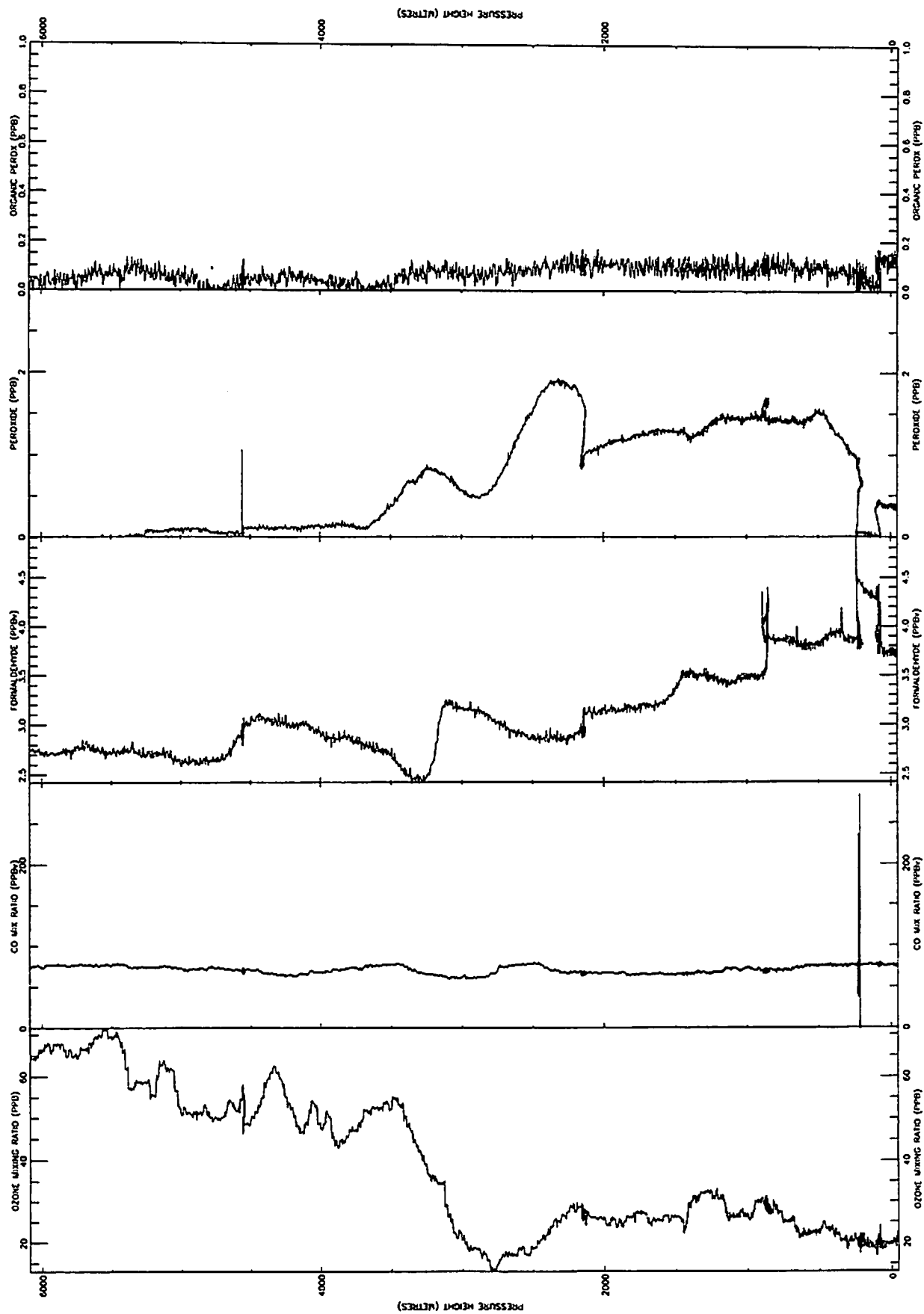
A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:35



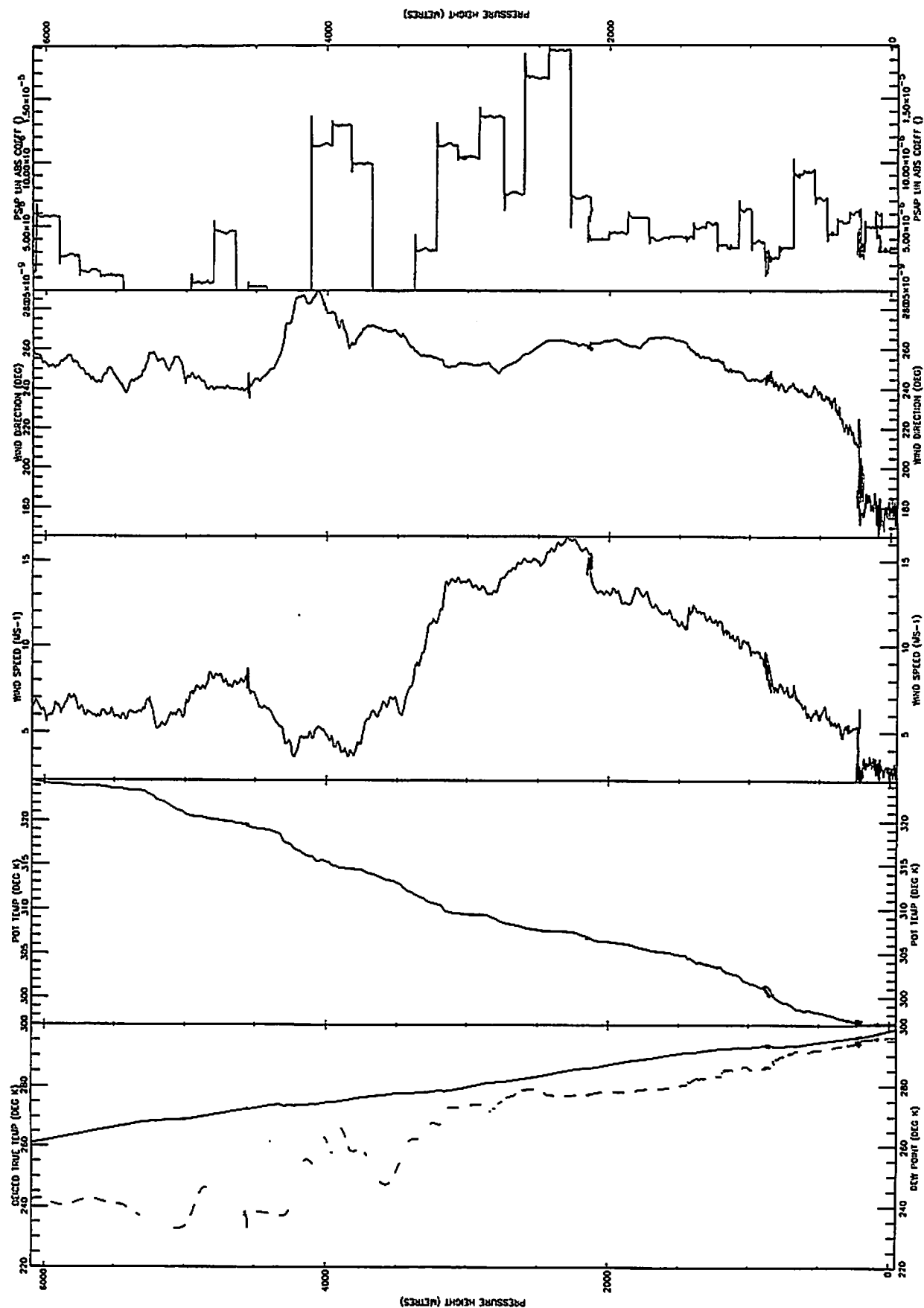
A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:35



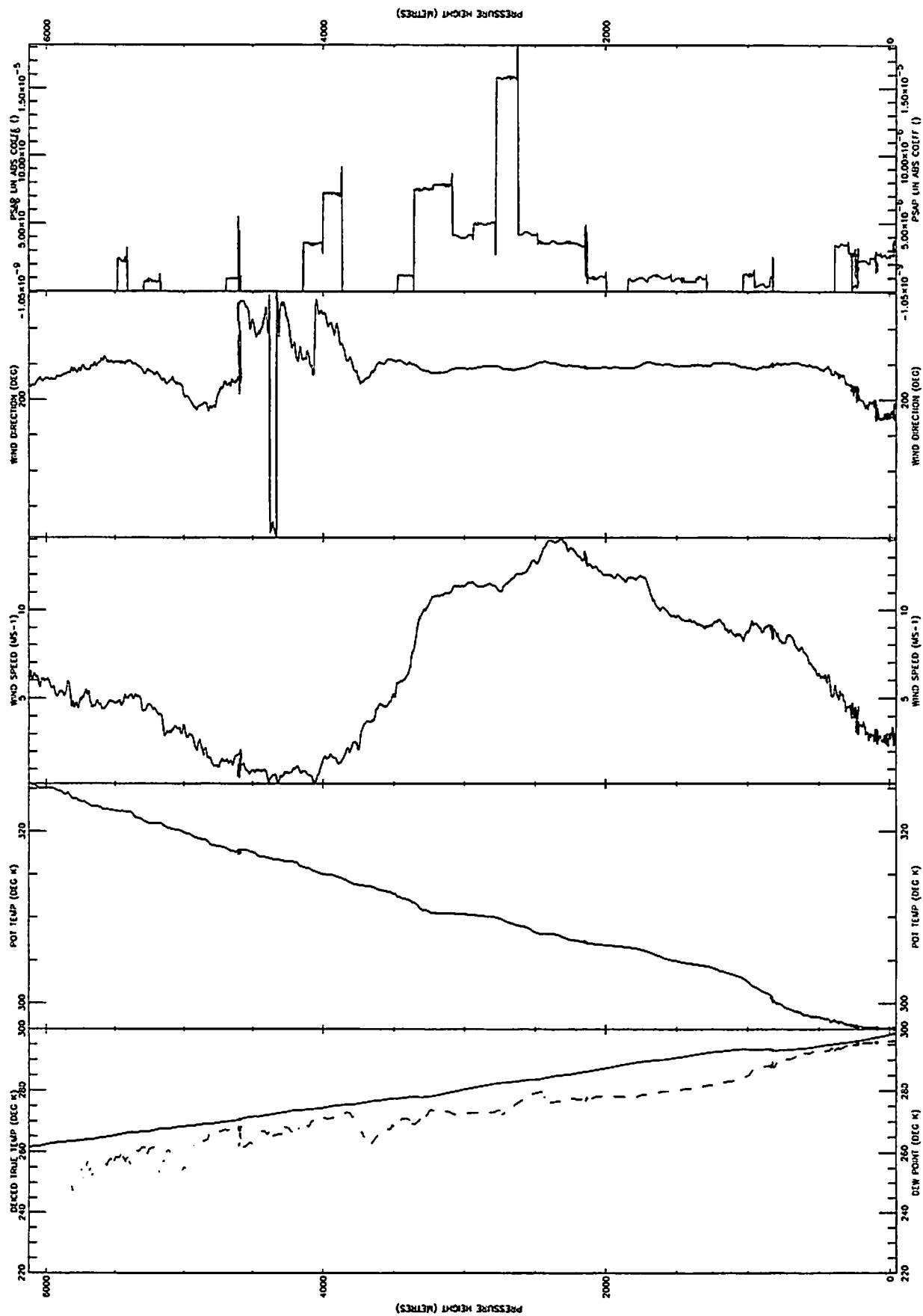
A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:35



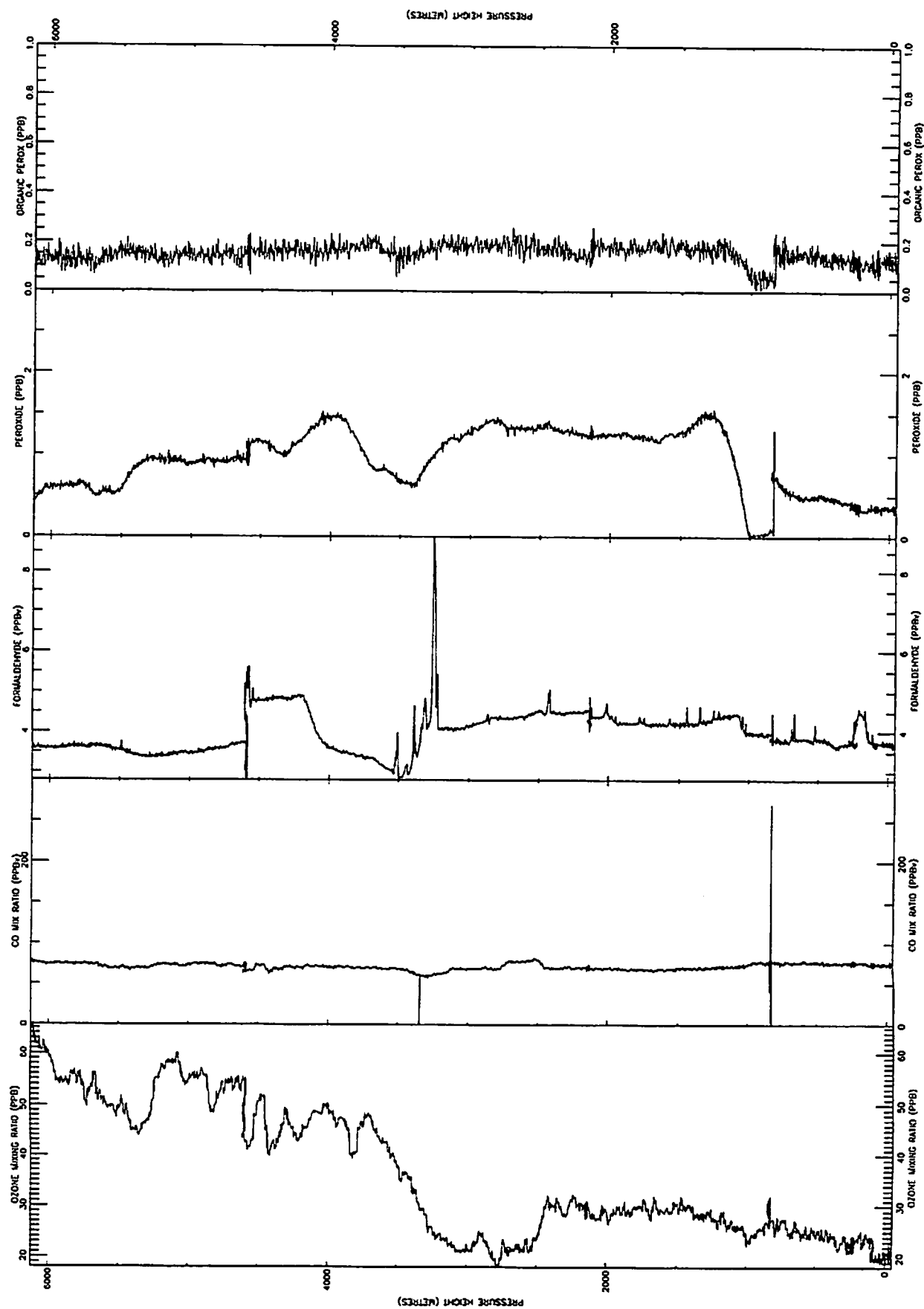
A575 14-SEP-97 P2 FL200-50' (+bottles) From 140106-144016 Plotted 6-May-1998 16:35



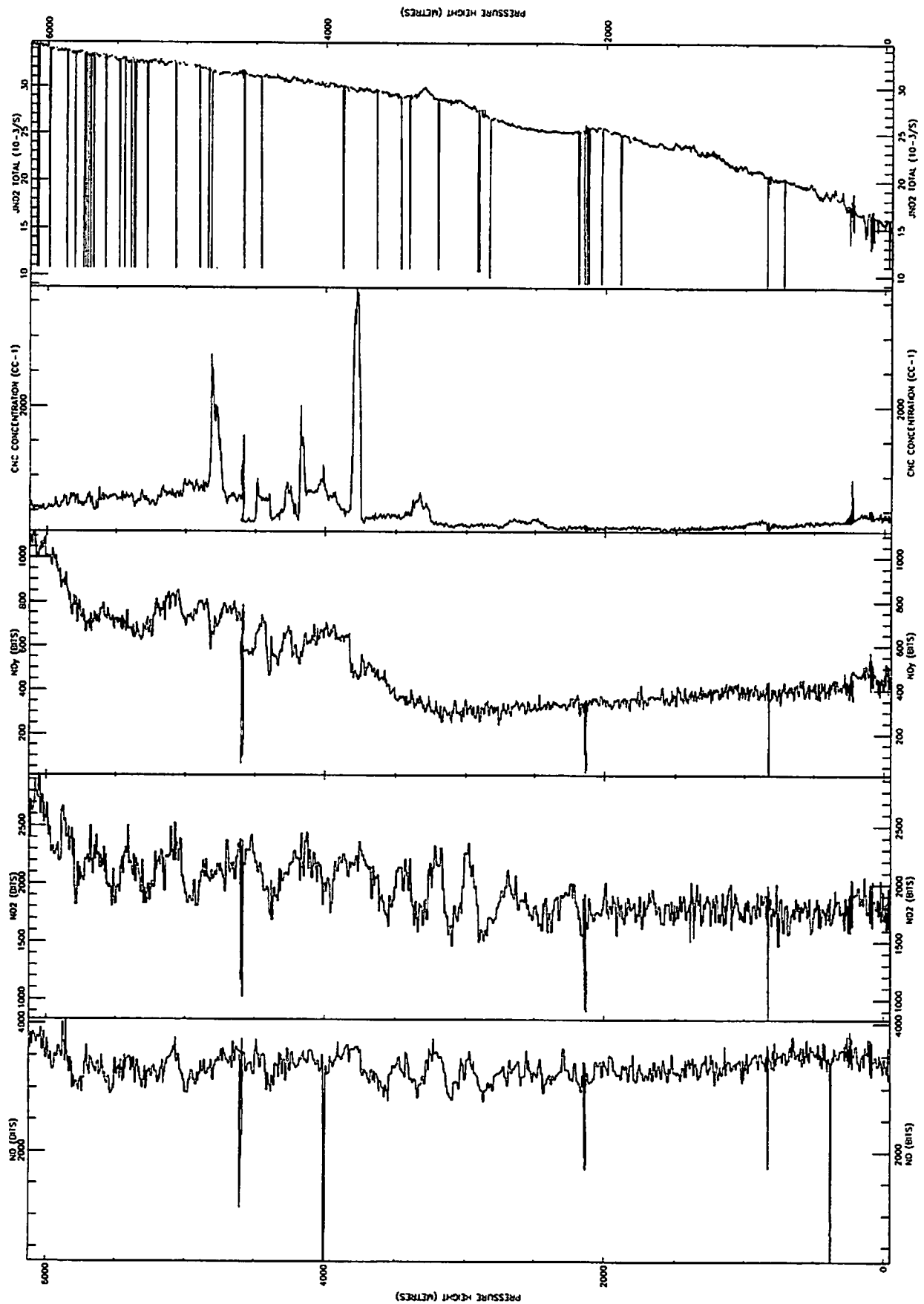
A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:58



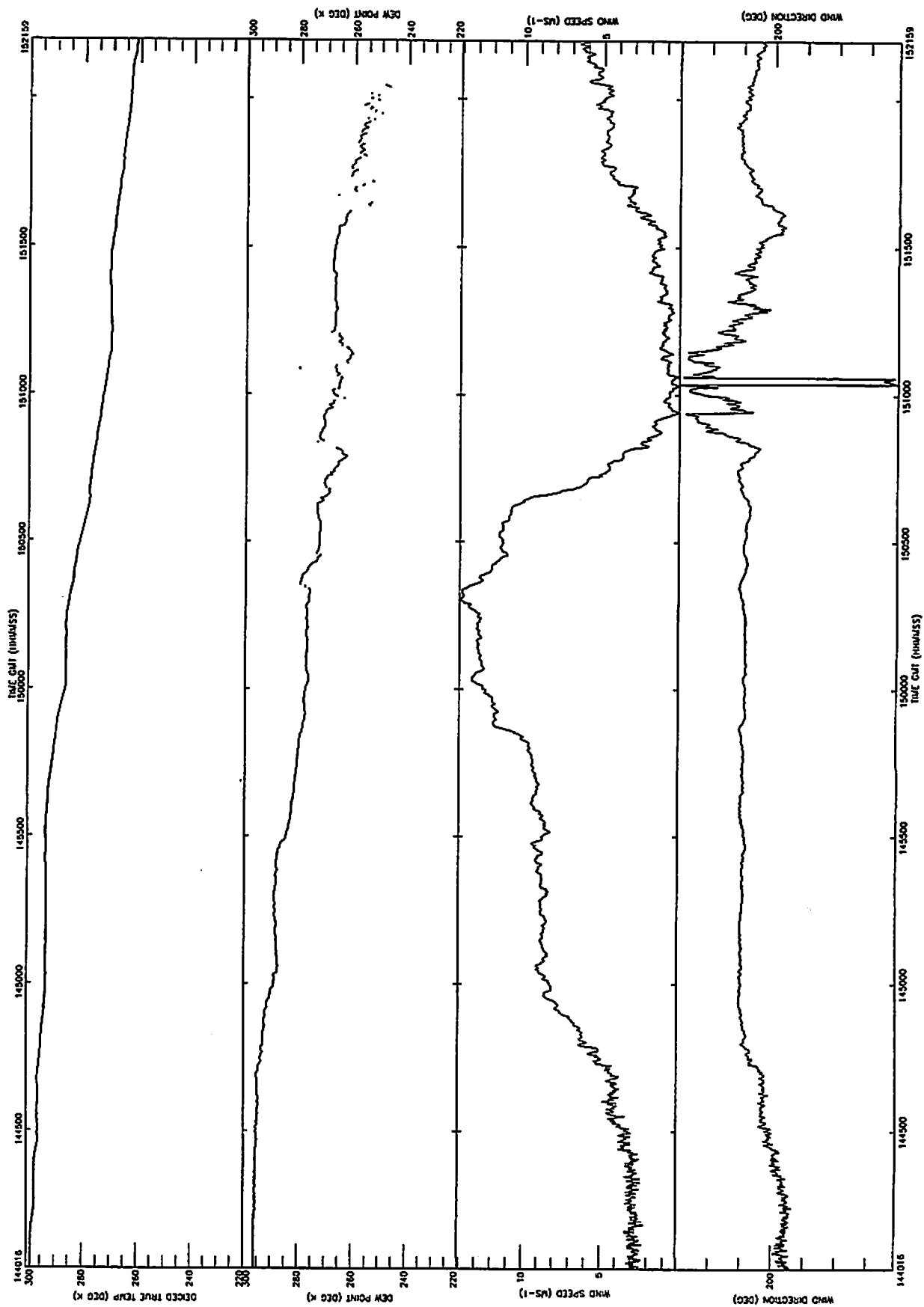
A575 14-SEP-97 P3 50'--FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:58



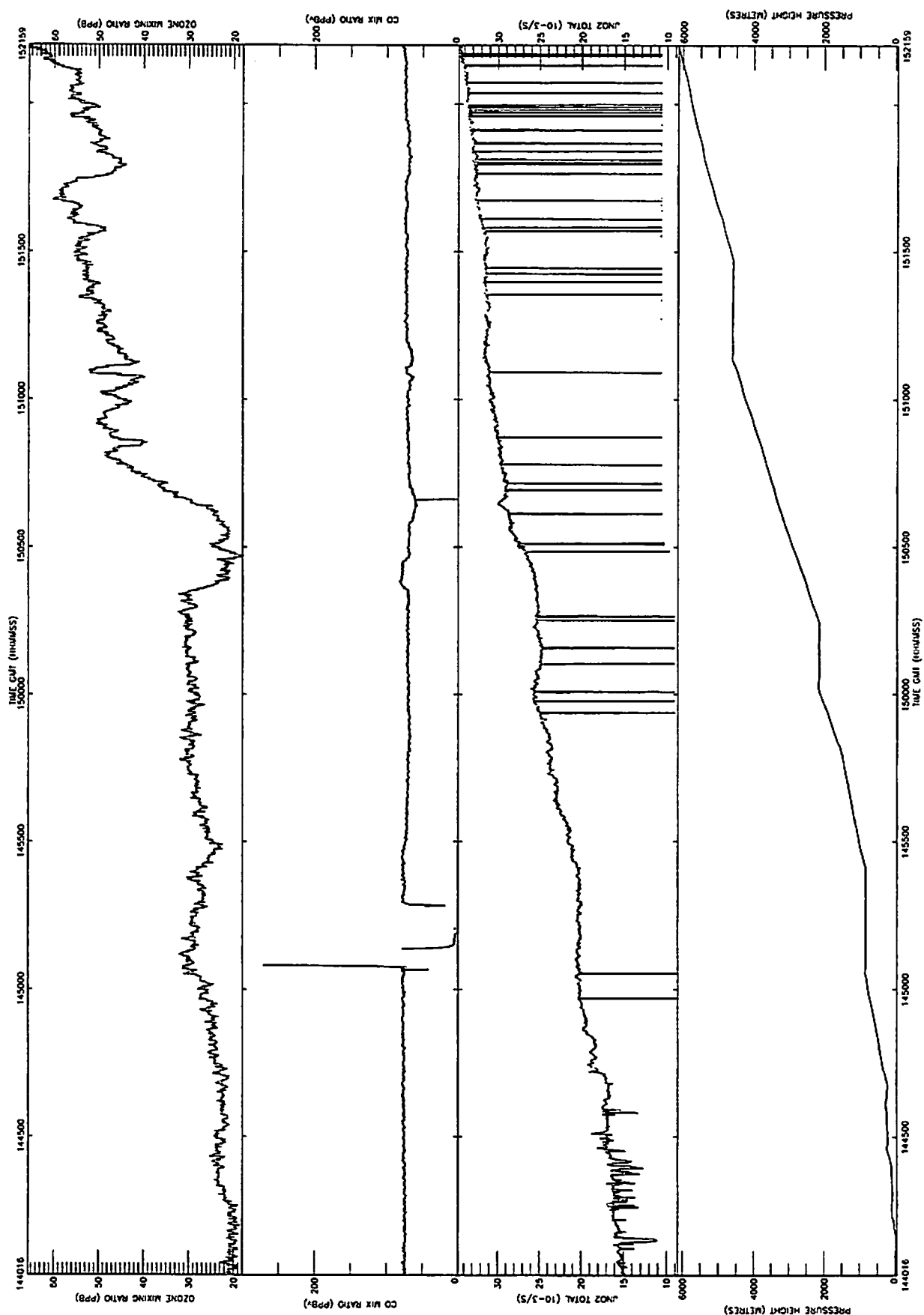
A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:58



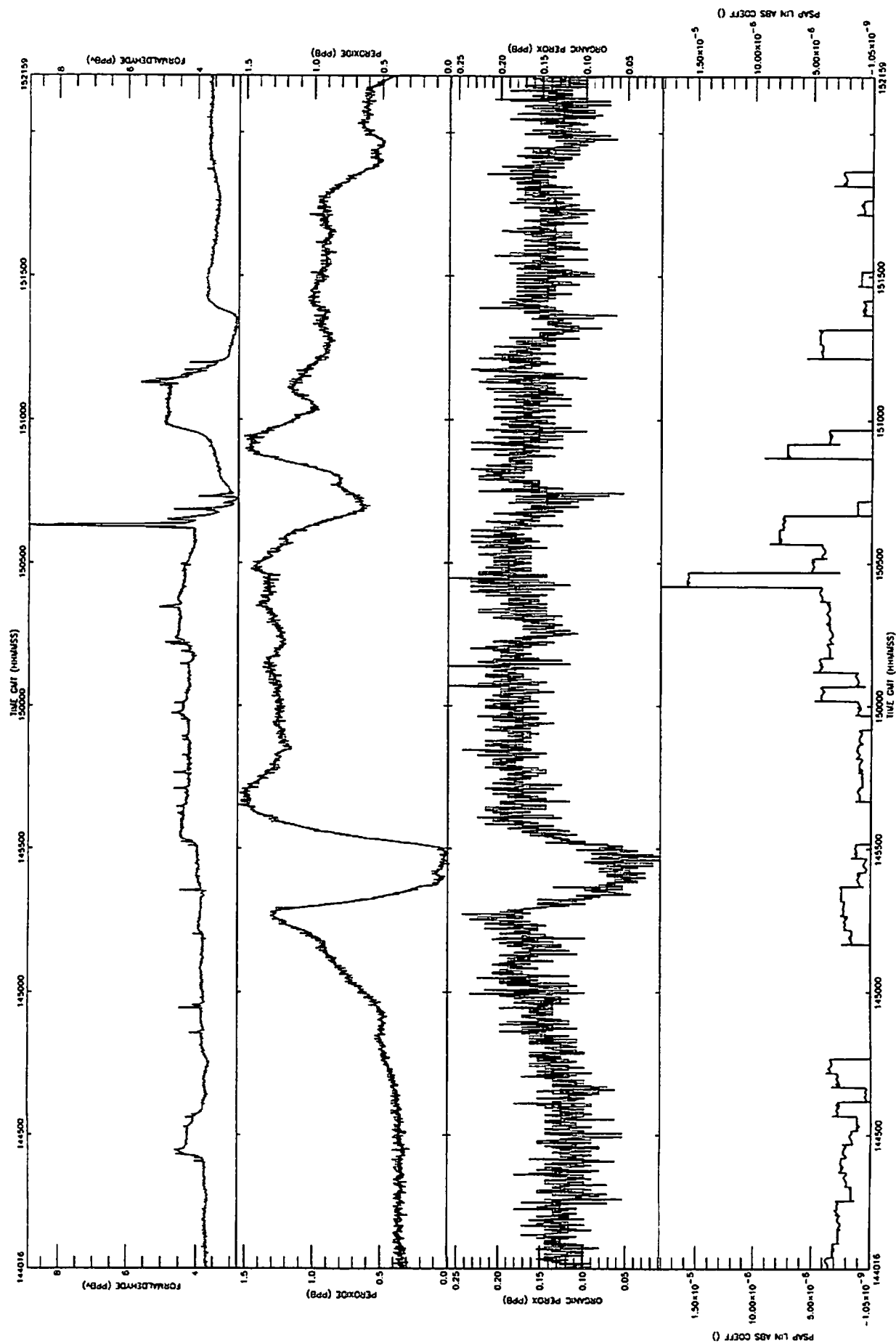
A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:58



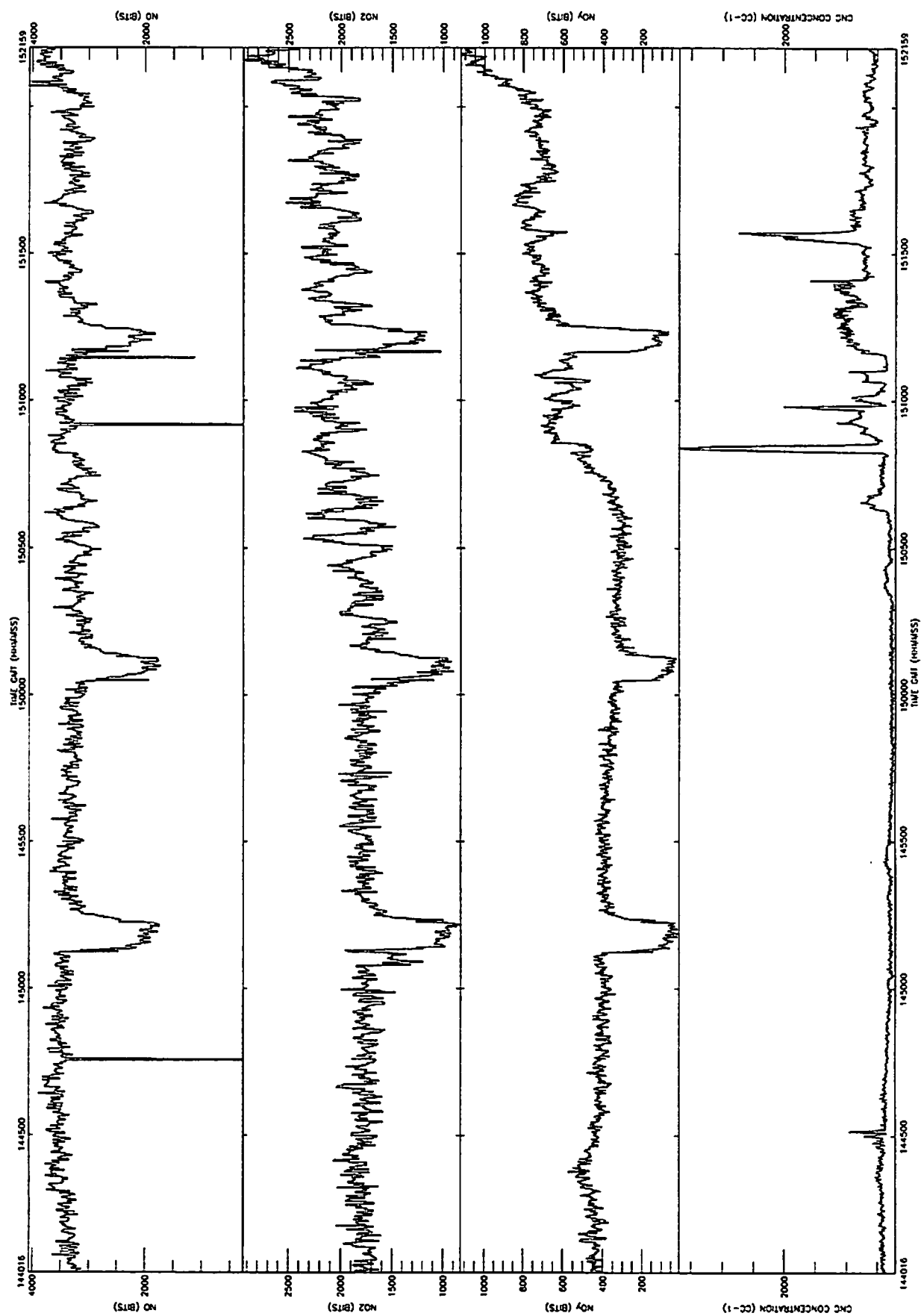
A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:59



A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:59



A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:59



A575 14-SEP-97 P3 50'-FL200 (+bottles) From 144016-152159 Plotted 6-May-1998 16:59

STATIC PRESSURE (MB)

No of obs 2504
Mean 765.479
Standard dev 179.407
Max value 1018.98
Min value 463.758

DEICED TRUE TEMP (DEG K)

No of obs 2504
Mean 283.414
Standard dev 11.6811
Max value 298.666
Min value 261.409

DEW POINT (DEG K)

No of obs 2504
Mean 276.801
Standard dev 14.9029
Max value 296.217
Min value 230.773

OZONE MIXING RATIO (PPB)

No of obs 2504
Mean 34.6571
Standard dev 12.5087
Max value 65.6294
Min value 18.0427

PSAP LIN ABS COEFF ()

No of obs 2504
Mean 1.735284e-06
Standard dev 2.431141e-06
Max value 1.818163e-05
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 2504
Mean 21.8861
Standard dev 7.39660
Max value 34.6801
Min value 7.01193

PRESSURE HEIGHT (METRES)

No of obs 2504
Mean 2491.94
Standard dev 1949.55
Max value 6125.24
Min value -47.6172

CORRECTED LATITUDE (DEGREES)

No of obs 2504
Mean 31.1377
Standard dev 8.482475e-02
Max value 31.2892
Min value 31.0064

CORRECTED LONGITUDE (DEGREES)

No of obs 2504
Mean -25.6964
Standard dev 0.759600
Max value -24.4387
Min value -27.1040

NORTHWARD WIND COMPT (M S-1)

No of obs 2504
Mean 2.75806
Standard dev 1.60733
Max value 5.78466
Min value -1.35207

EASTWARD WIND COMPT (M S-1)

No of obs 2504
Mean 5.34083
Standard dev 4.04902
Max value 13.3180
Min value -0.476448

VERTICAL WIND COMPT (M S-1)

No of obs 2504
Mean -0.712872
Standard dev 0.471409
Max value 0.441719
Min value -1.76247

WIND SPEED (MS-1)

No of obs 2504
Mean 6.29357
Standard dev 3.93688
Max value 14.1136
Min value 0.177377

WIND DIRECTION (DEG)

Mean 242.688

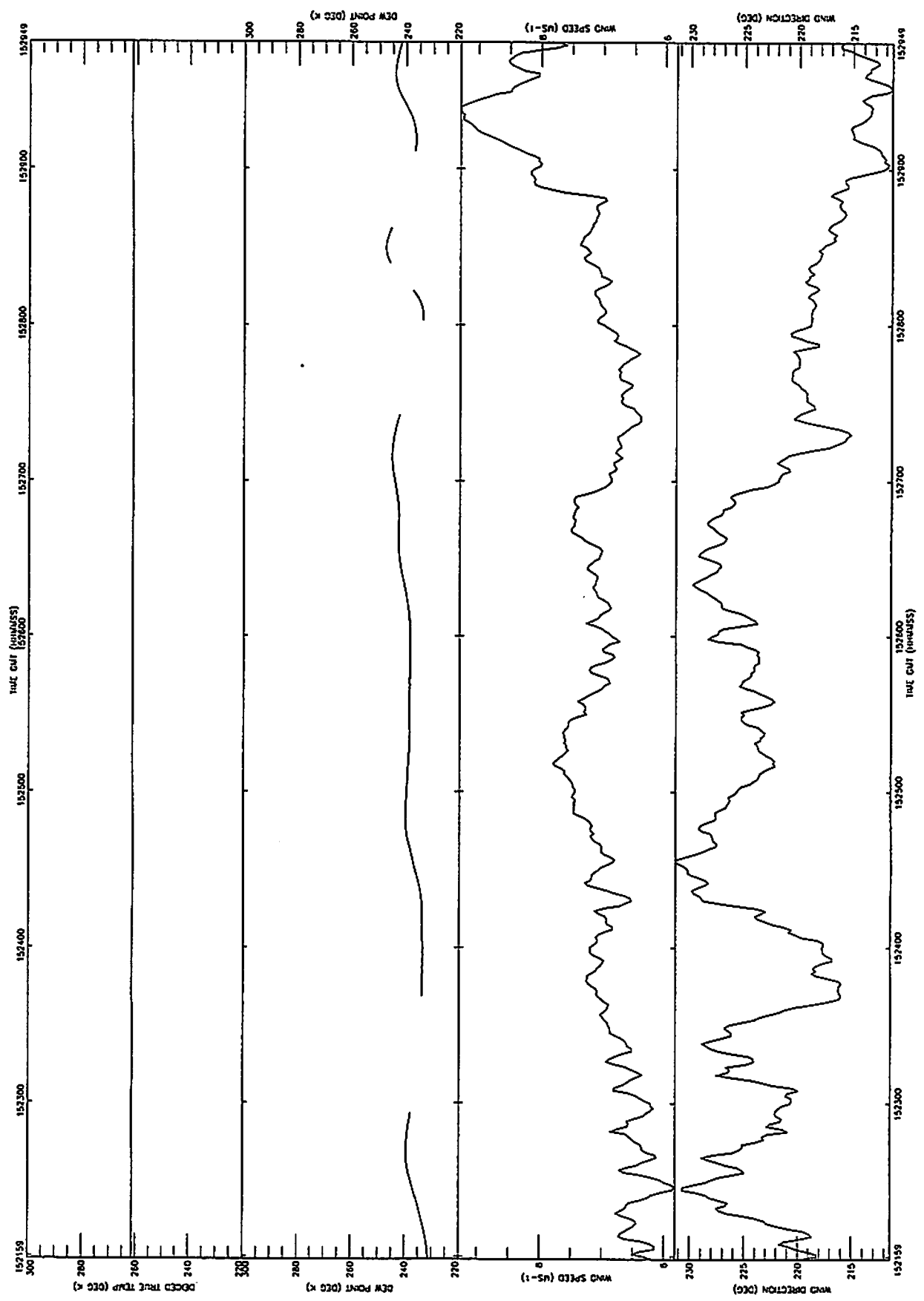
TRUE AIR SPEED (M S-1)

No of obs 2504
Mean 107.147
Standard dev 10.0200
Max value 124.557
Min value 90.0028

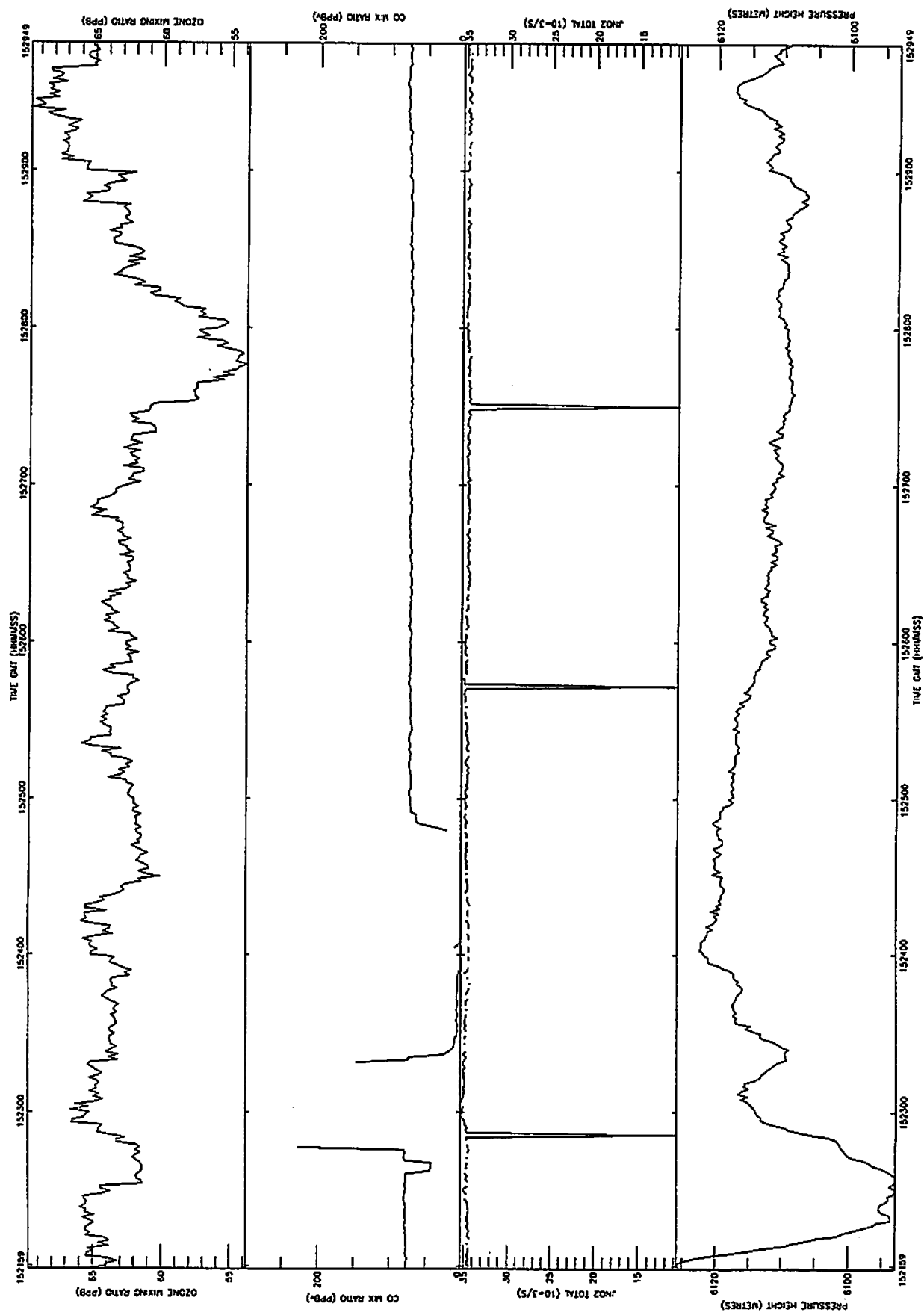
HEADING (DEG)

Mean 277.029

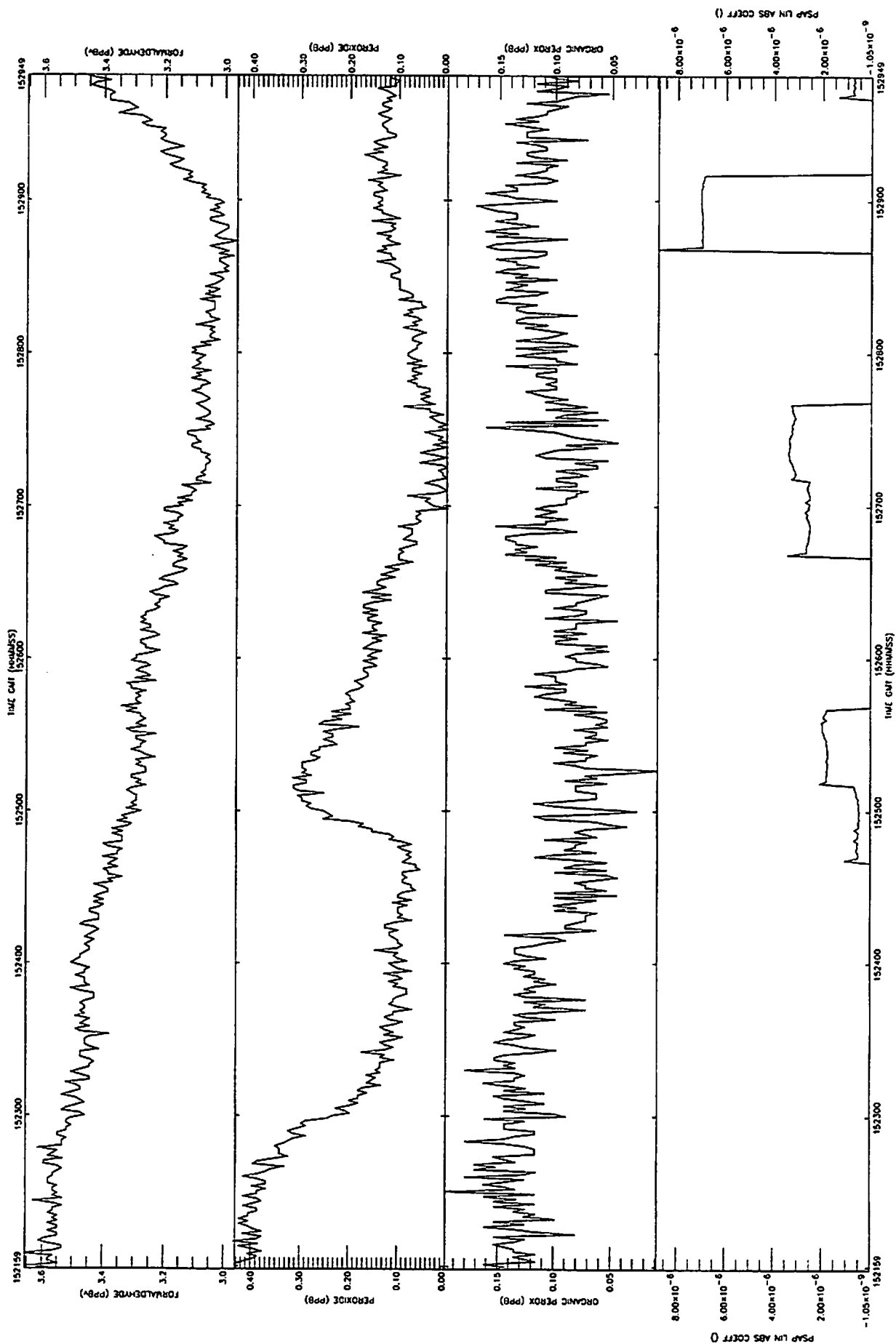
A575 14-SEP-97 R3 FL200 From 152159-152949 Plotted 6-May-1998 17:01



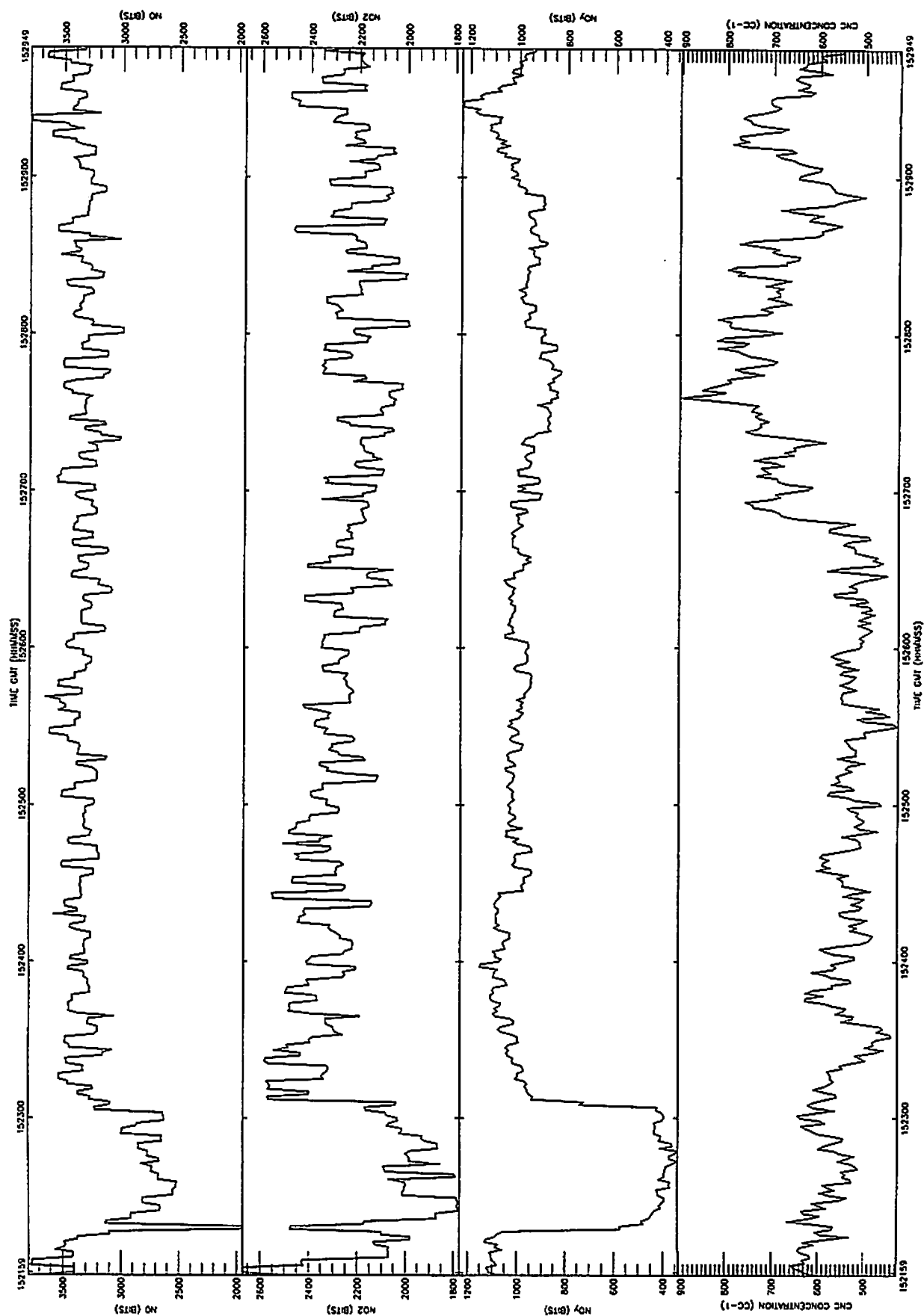
A575 14-SEP-97 R3 FL200 From 152159-152949 Plotted 6-May-1998 17:01



A575 14-SEP-97 R3 FL200 From 152159-152949 Plotted 6-May-1998 17:01



A575 14-SEP-97 R3 FL200 From 152159-152949 Plotted 6-May-1998 17:01



A575 14-SEP-97 R3 FL200 From 152159-152949 Plotted 6-May-1998 17:01

STATIC PRESSURE (MB)

No of obs 471
Mean 464.587
Standard dev 0.396605
Max value 465.818
Min value 463.717

DEICED TRUE TEMP (DEG K)

No of obs 471
Mean 261.385
Standard dev 0.150721
Max value 261.833
Min value 261.122

DEW POINT (DEG K)

No of obs 471
Mean 238.533
Standard dev 3.69193
Max value 247.409
Min value 231.134

OZONE MIXING RATIO (PPB)

No of obs 471
Mean 63.0830
Standard dev 2.68972
Max value 69.6913
Min value 53.8298

PSAP LIN ABS COEFF ()

No of obs 471
Mean 9.927899e-07
Standard dev 1.889613e-06
Max value 8.791114e-06
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 471
Mean 31.3110
Standard dev 8.44799
Max value 35.3995
Min value 10.5342

PRESSURE HEIGHT (METRES)

No of obs 471
Mean 6112.26
Standard dev 6.20574
Max value 6125.88
Min value 6093.00

CORRECTED LATITUDE (DEGREES)

No of obs 471
Mean 31.2985
Standard dev 2.559636e-03
Max value 31.3017
Min value 31.2892

CORRECTED LONGITUDE (DEGREES)

No of obs 471
Mean -27.4115
Standard dev 0.179322
Max value -27.1040
Min value -27.7218

NORTHWARD WIND COMPT (M S-1)

No of obs 471
Mean 5.29777
Standard dev 0.782840
Max value 7.76388
Min value 3.69560

EASTWARD WIND COMPT (M S-1)

No of obs 471
Mean 4.72695
Standard dev 0.437996
Max value 5.56995
Min value 3.85091

VERTICAL WIND COMPT (M S-1)

No of obs 471
Mean -0.663827
Standard dev 0.320663
Max value -7.775116e-02
Min value -1.54126

WIND SPEED (MS-1)

No of obs 471
Mean 7.12809
Standard dev 0.636054
Max value 9.28889
Min value 5.82663

WIND DIRECTION (DEG)

Mean 221.741

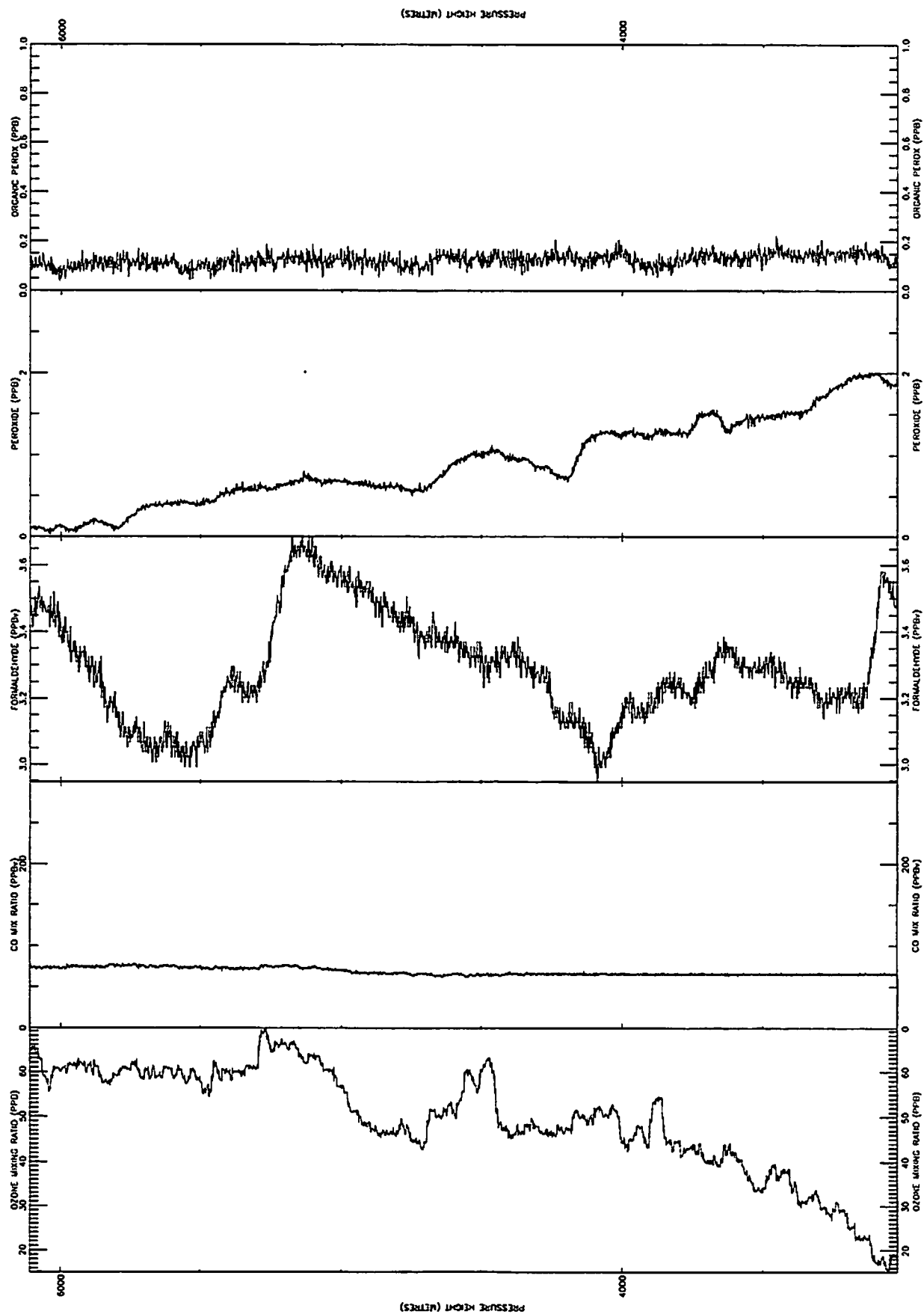
TRUE AIR SPEED (M S-1)

No of obs 471
Mean 129.982
Standard dev 2.80016
Max value 136.347
Min value 118.594

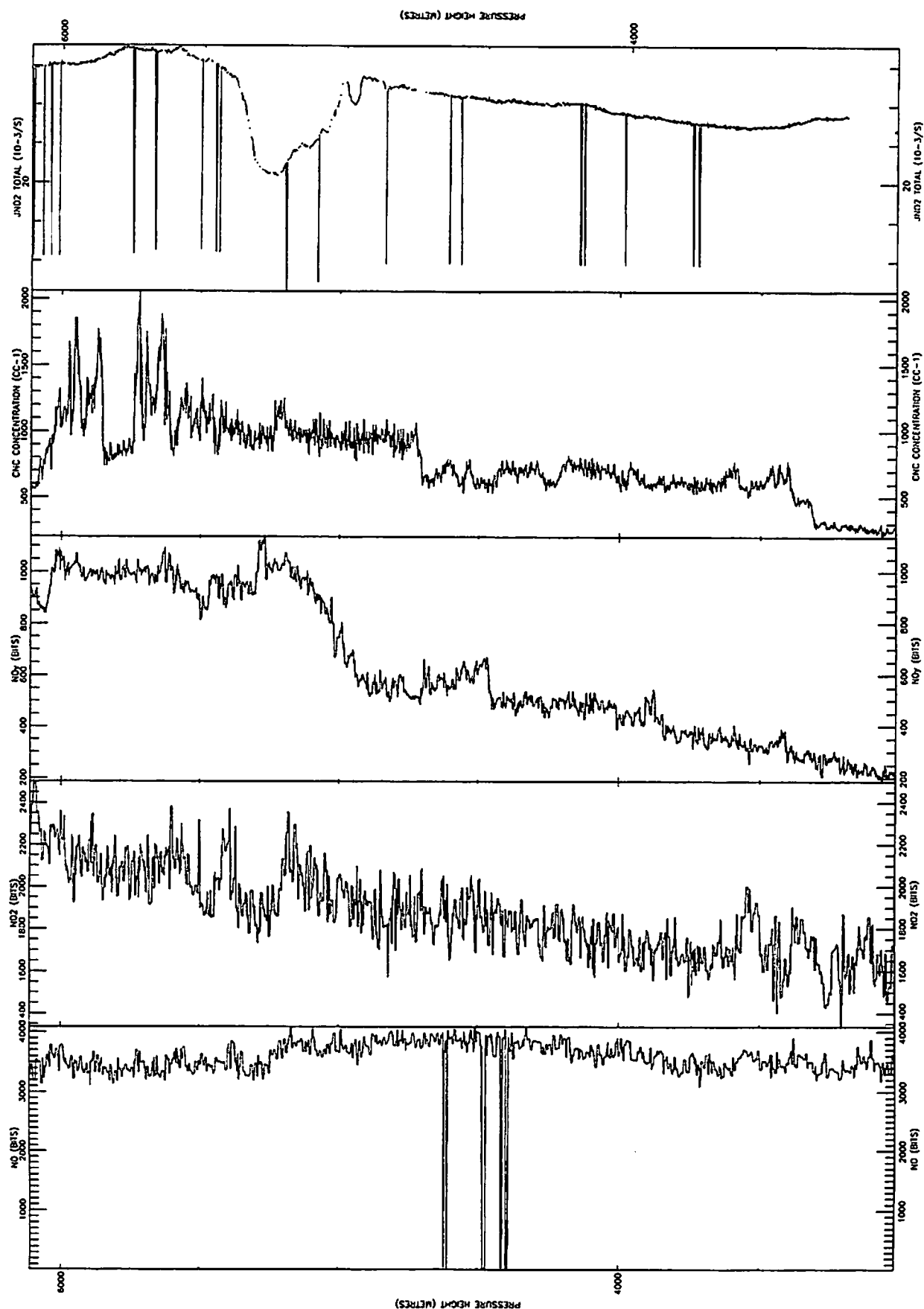
HEADING (DEG)

Mean 270.620

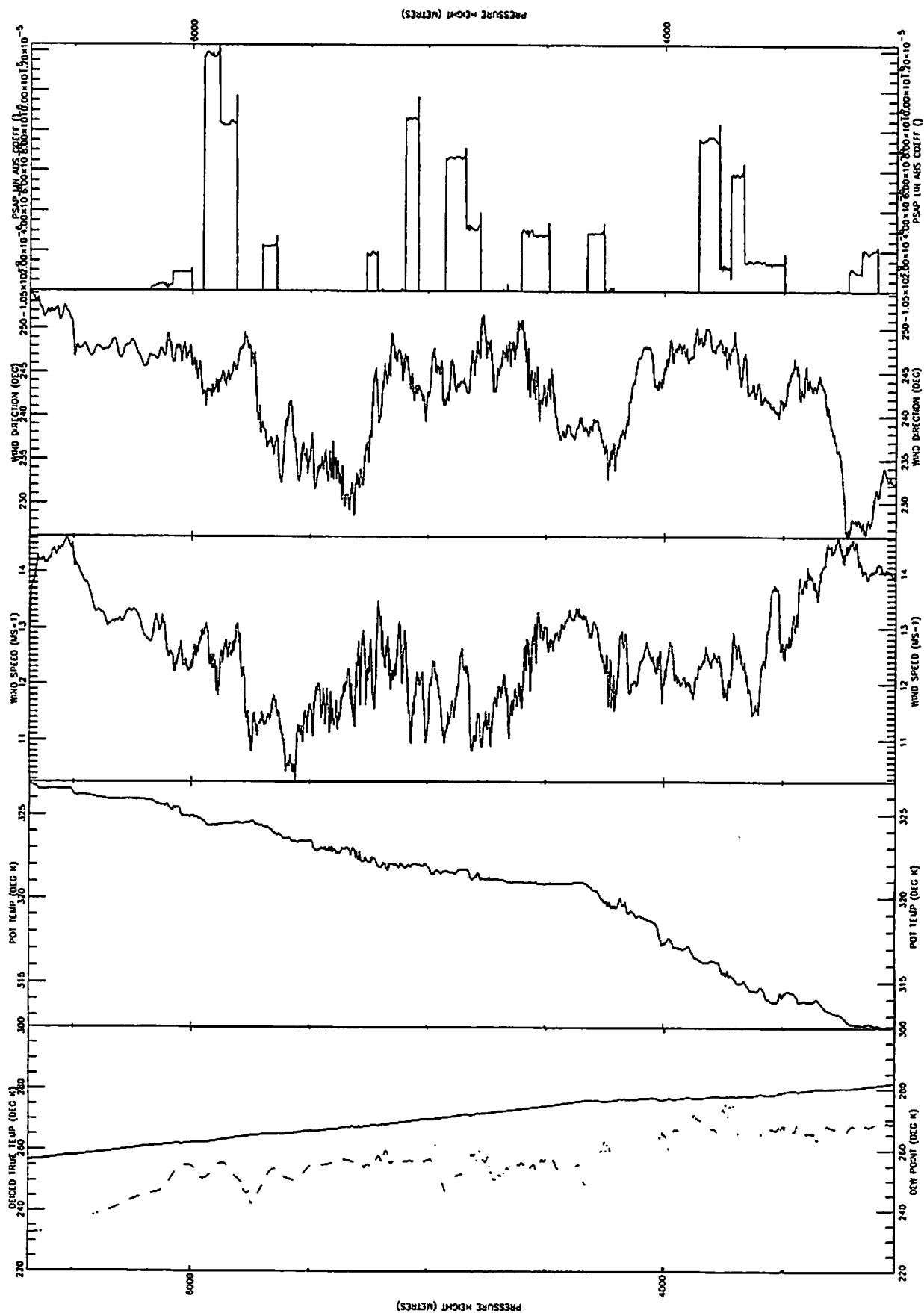
A575 14-SEP-97 P4 FL200-FL100 From 152949-155514 Plotted 6-May-1998 17:09



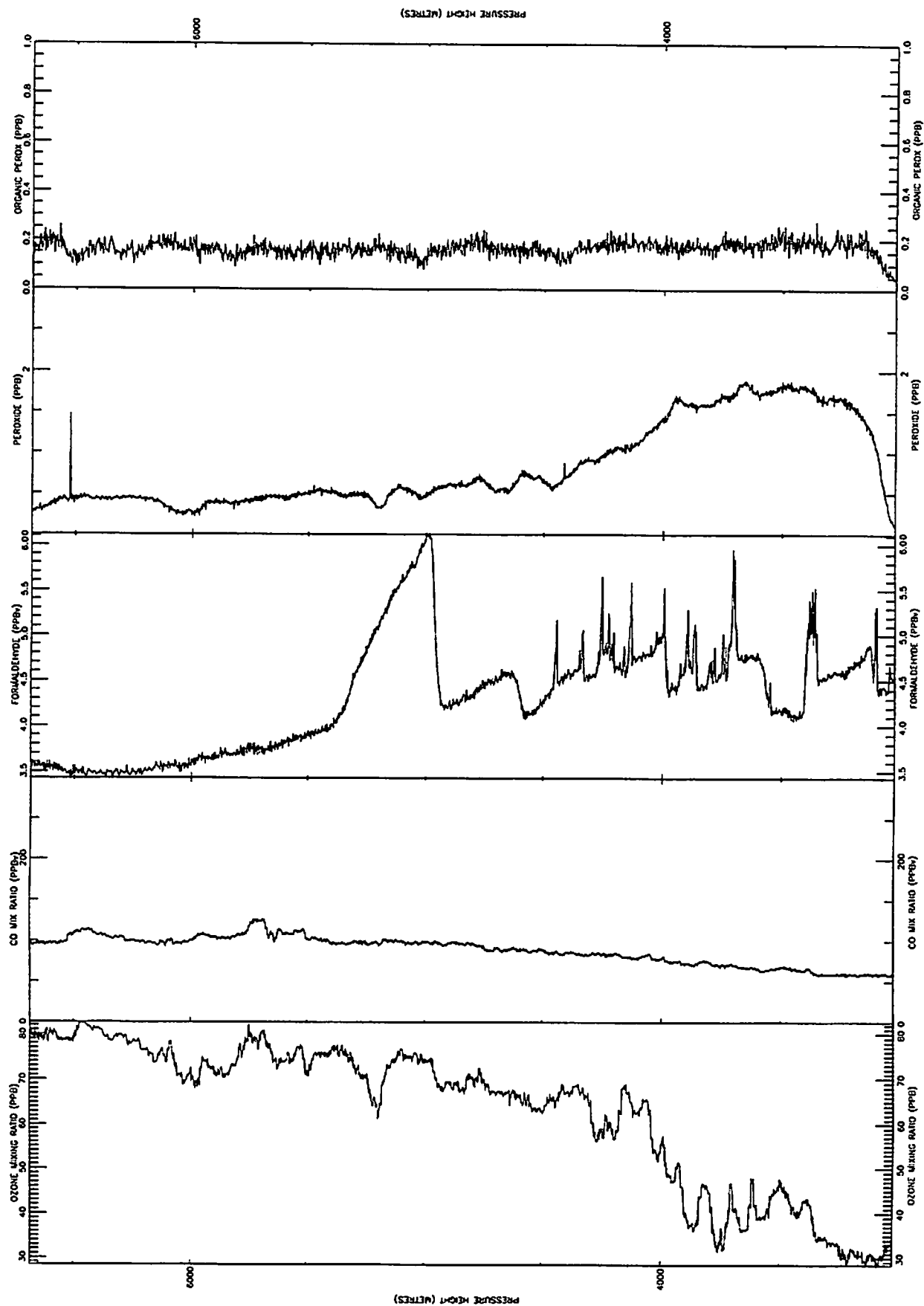
A575 14-SEP-97 P4 FL200-FL100 From 152949-155514 Plotted 6-May-1998 17:09



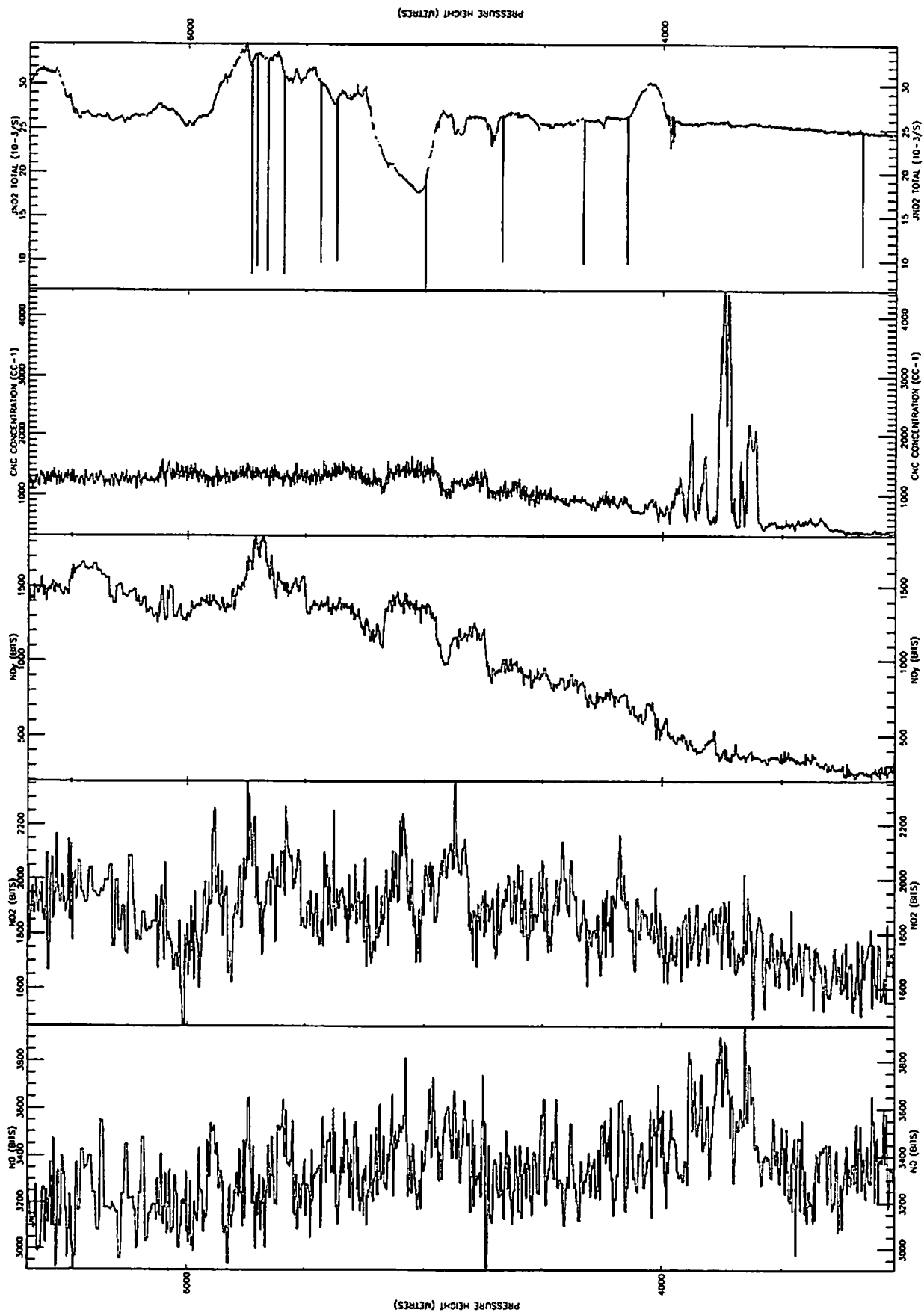
A575 14-SEP-97 P5 FL100-FL220 From 160110-162751 Plotted 6-May-1998 17:16



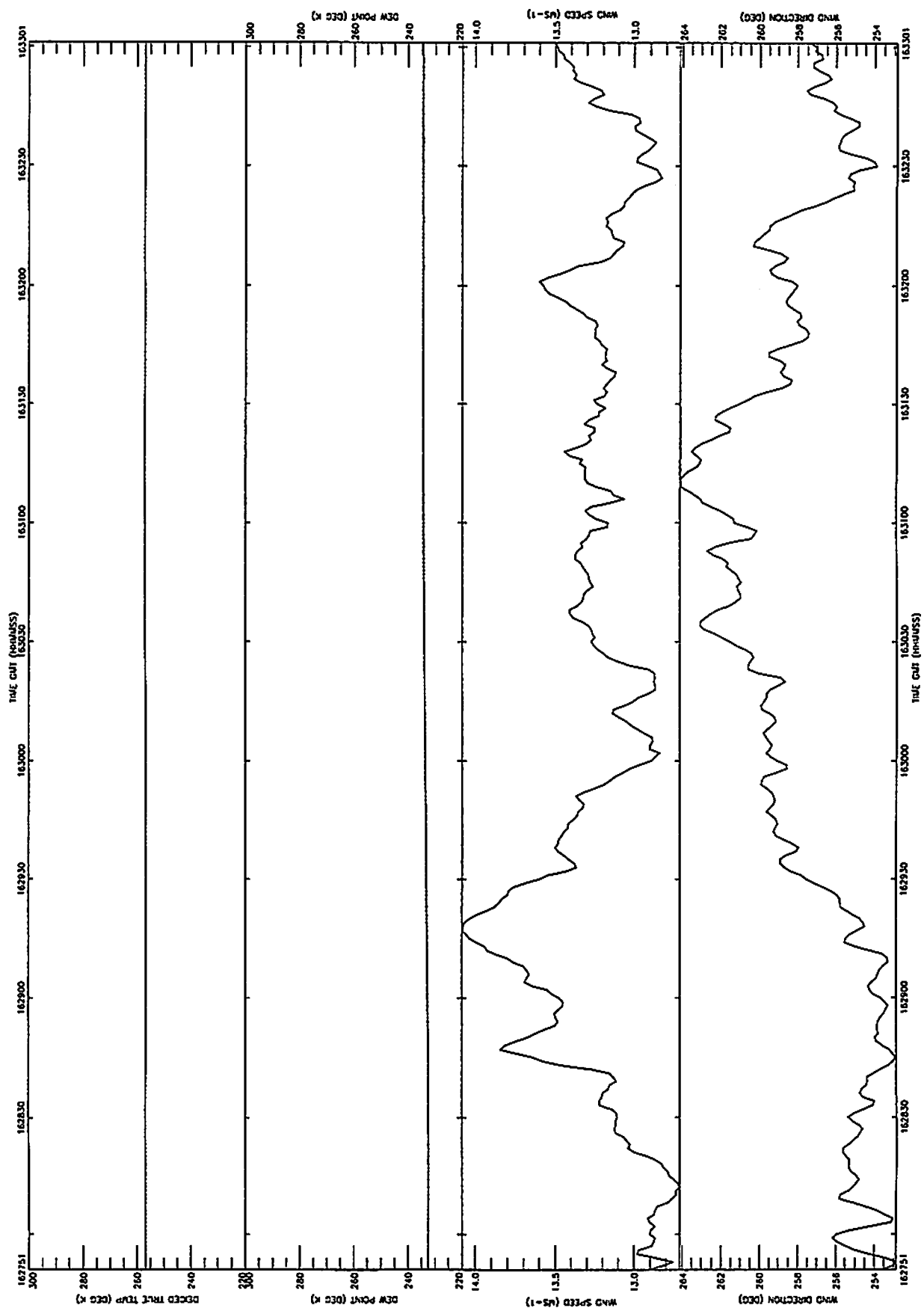
A575 14-SEP-97 P5 FL100-FL220 From 160110-162751 Plotted 6-May-1998 17:16



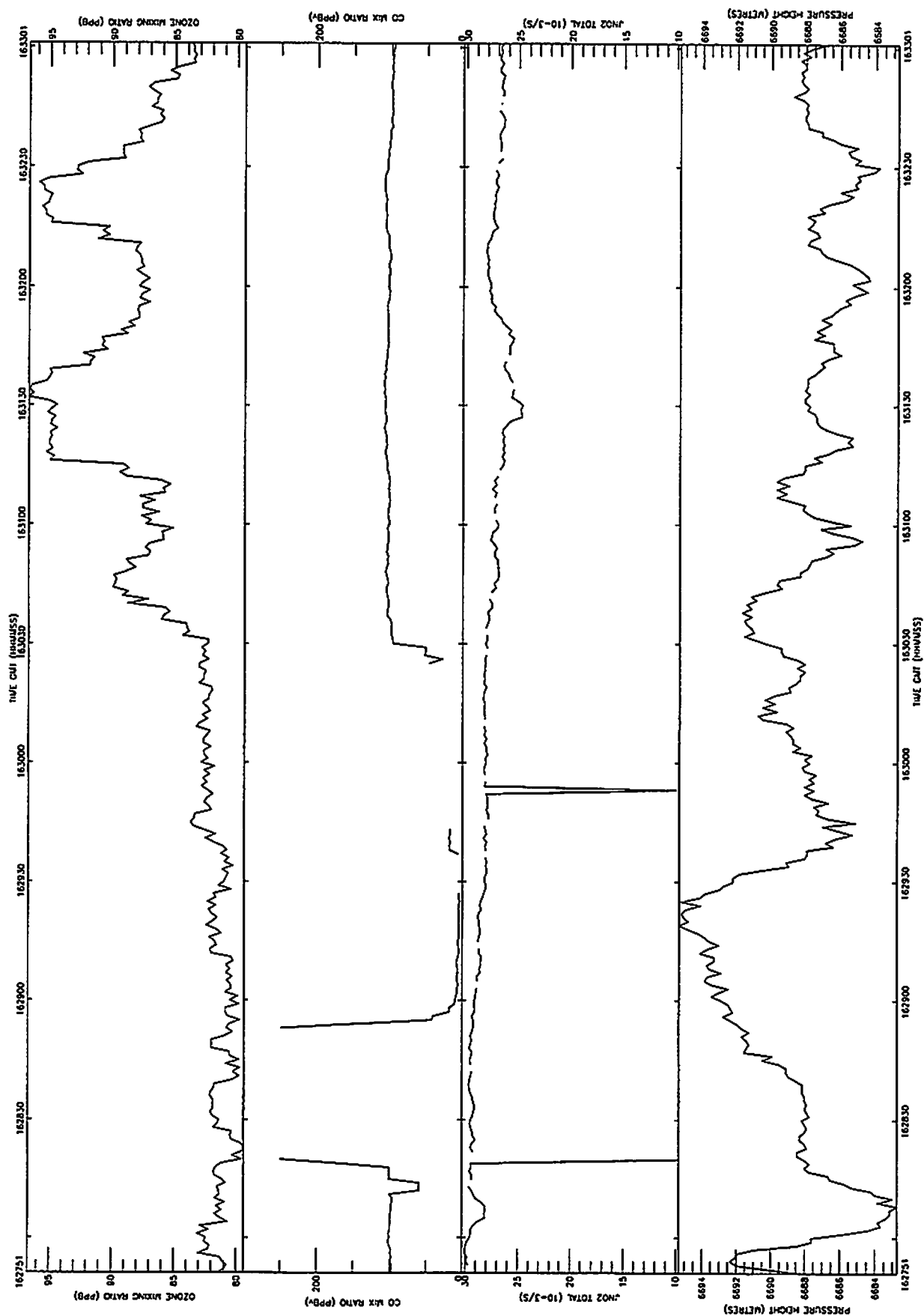
A575 14-SEP-97 P5 FL100-FL220 From 160110-162751 Plotted 6-May-1998 17:16



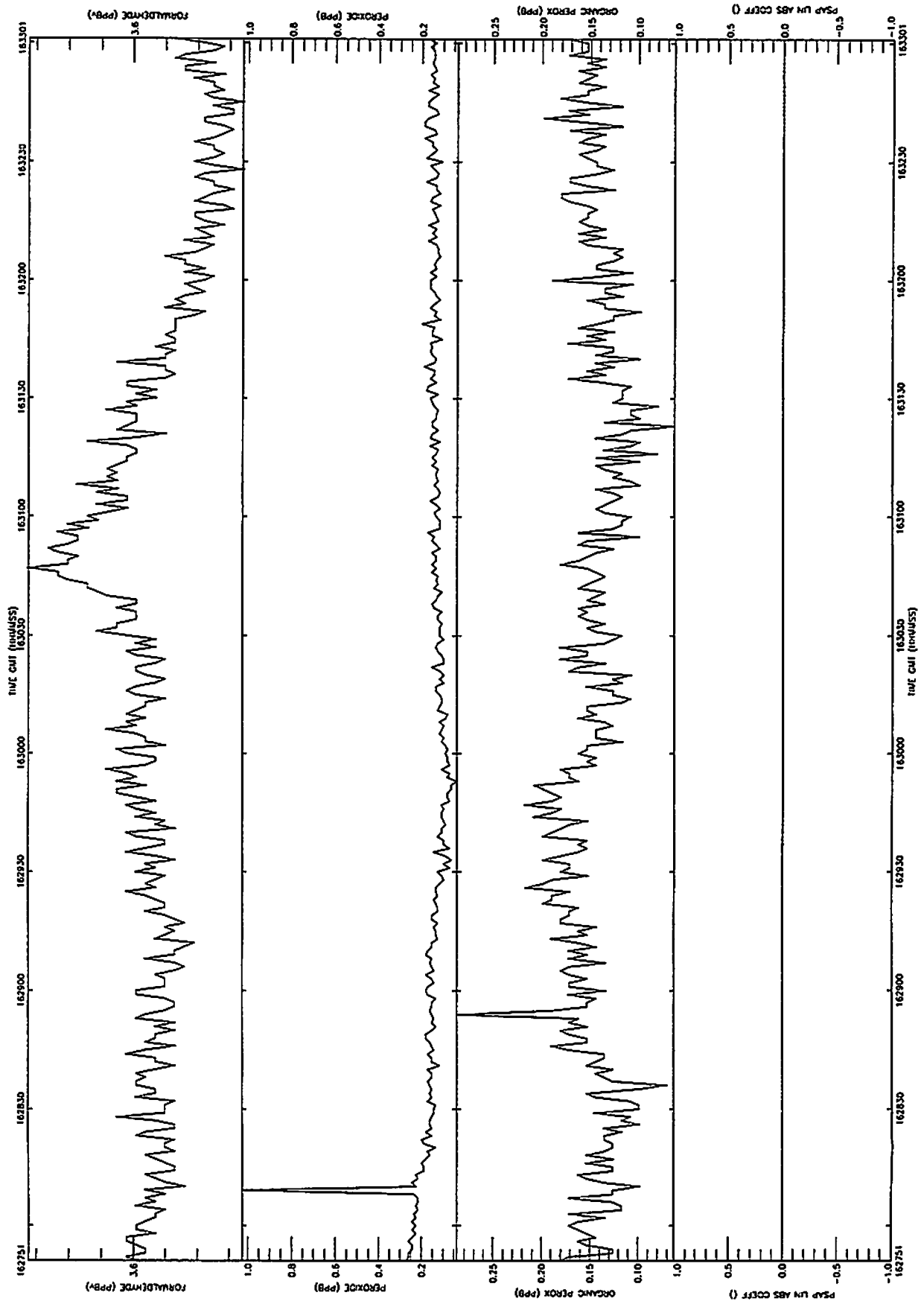
A575 14-SEP-97 R5 FL220 From 162751-163301 *Plotted* 6-May-1998 17:18



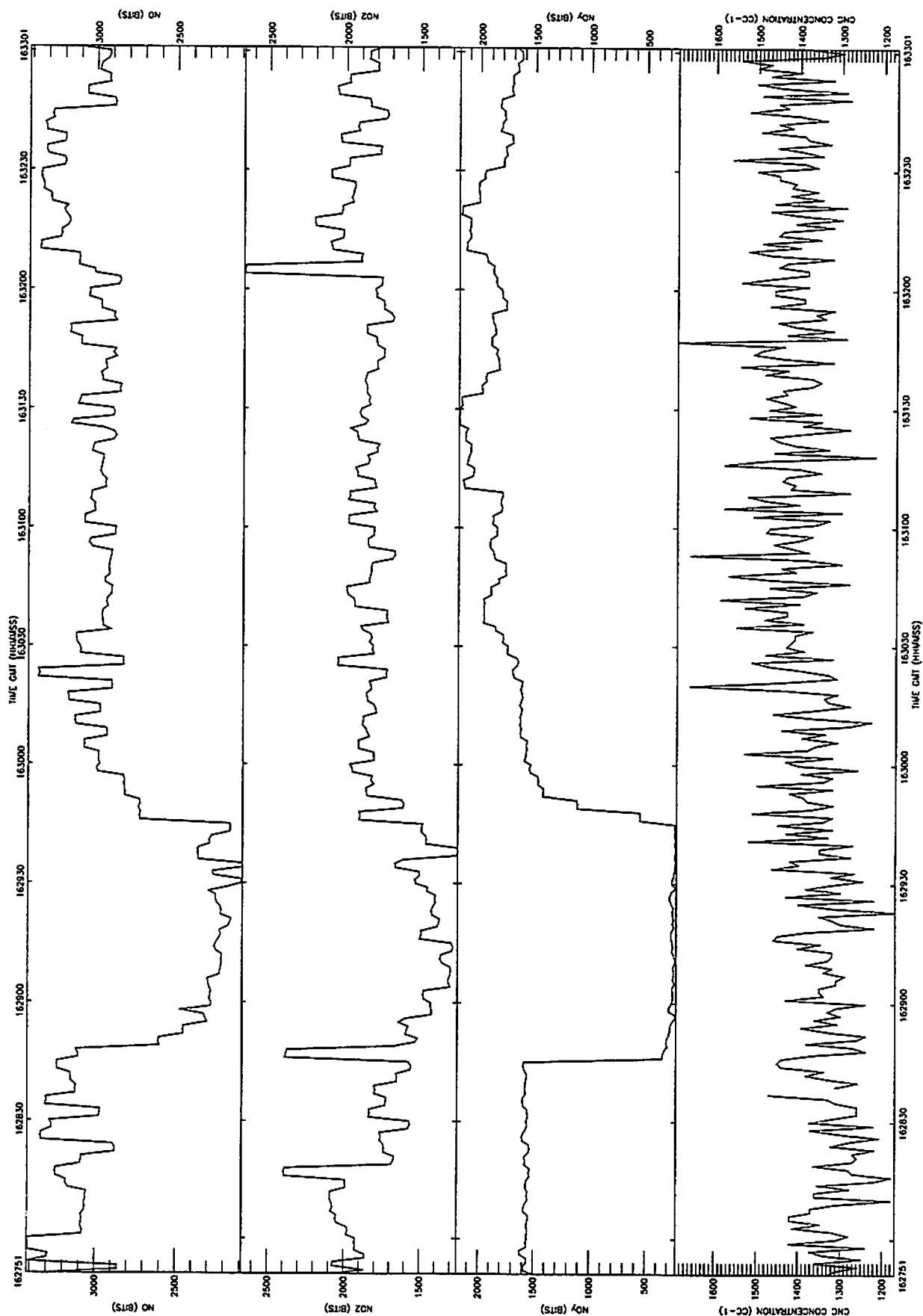
A575 14-SEP-97 R5 FL220 From 162751-163301 Plotted 6-May-1998 17:18



A575 14-SEP-97 R5 FL220 From 162751-163301 Plotted 6-May-1998 17:18



A575 14-SEP-97 R5 FL220 From 162751-163301 Plotted 6-May-1998 17:18



A575 14-SEP-97 R5 FL220 From 162751-163301 Plotted 6-May-1998 17:18

STATIC PRESSURE (MB)

No of obs 311
Mean 428.936
Standard dev 0.158554
Max value 429.276
Min value 428.522

DEICED TRUE TEMP (DEG K)

No of obs 311
Mean 256.910
Standard dev 0.220795
Max value 257.329
Min value 256.534

DEW POINT (DEG K)

No of obs 311
Mean 233.679
Standard dev 0.789614
Max value 234.564
Min value 232.404

OZONE MIXING RATIO (PPB)

No of obs 311
Mean 85.4234
Standard dev 4.76614
Max value 96.7121
Min value 79.4103

PSAP LIN ABS COEFF ()

No of obs 311
Mean $-1.046657e-09$
Standard dev 0.000000
Max value $-1.046657e-09$
Min value $-1.046657e-09$

JNO2 TOTAL (10-3/S)

No of obs 311
Mean 26.4674
Standard dev 4.94489
Max value 30.3455
Min value 8.78930

PRESSURE HEIGHT (METRES)

No of obs 311
Mean 6688.43
Standard dev 2.64723
Max value 6695.34
Min value 6682.75

CORRECTED LATITUDE (DEGREES)

No of obs 311
Mean 31.2664
Standard dev 1.420988e-02
Max value 31.2896
Min value 31.2419

CORRECTED LONGITUDE (DEGREES)

No of obs 311
Mean -33.2458
Standard dev 0.127963
Max value -33.0322
Min value -33.4709

NORTHWARD WIND COMPT (M S-1)

No of obs 311
Mean 2.79038
Standard dev 0.688792
Max value 4.00636
Min value 1.36107

EASTWARD WIND COMPT (M S-1)

No of obs 311
Mean 12.9359
Standard dev 0.306554
Max value 13.5944
Min value 12.1942

VERTICAL WIND COMPT (M S-1)

No of obs 311
Mean -0.629300
Standard dev 0.413982
Max value 0.125198
Min value -1.28475

WIND SPEED (MS-1)

No of obs 311
Mean 13.2517
Standard dev 0.290485
Max value 14.0824
Min value 12.7144

WIND DIRECTION (DEG)

Mean 257.827

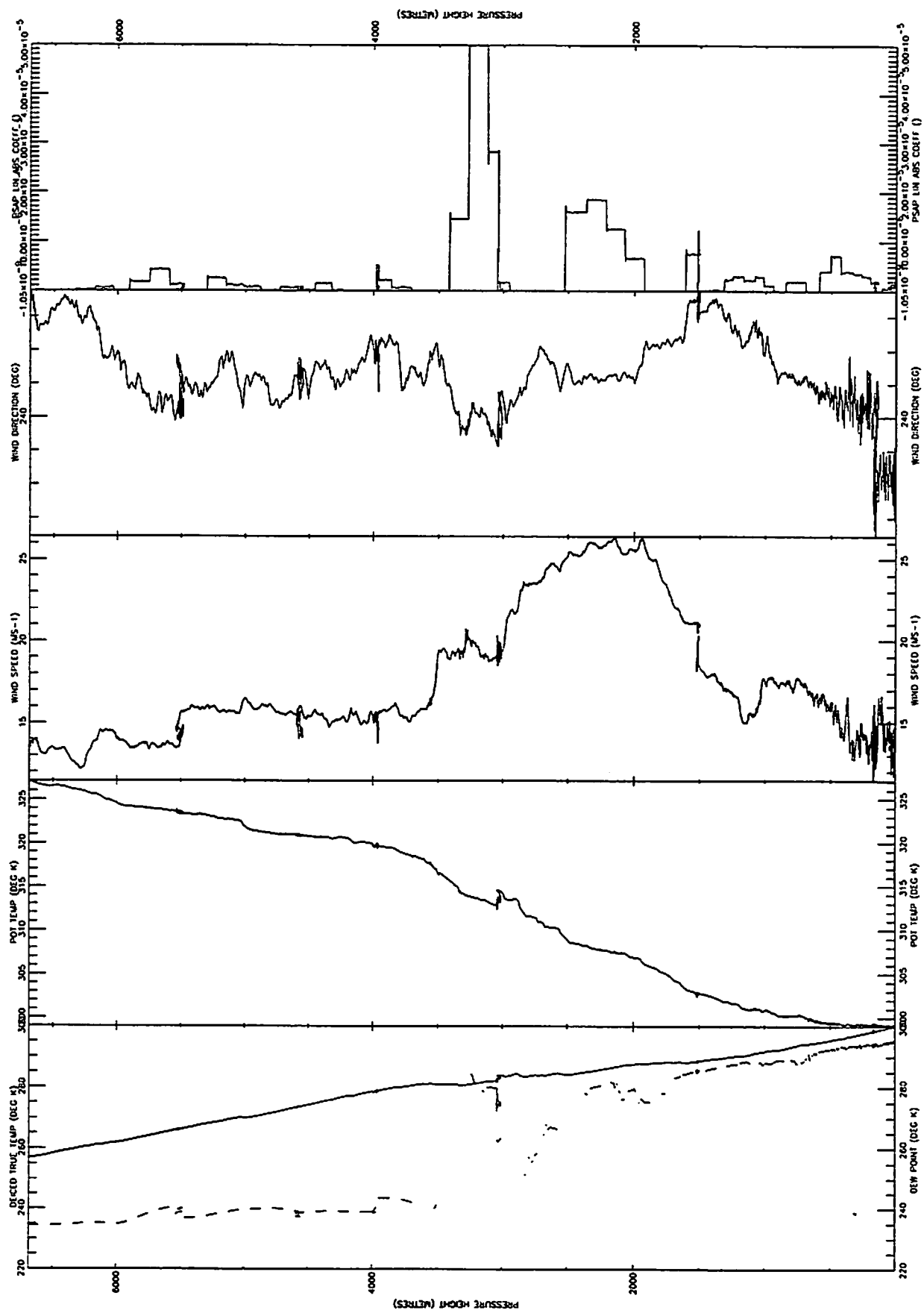
TRUE AIR SPEED (M S-1)

No of obs 311
Mean 149.045
Standard dev 6.55771
Max value 156.903
Min value 132.735

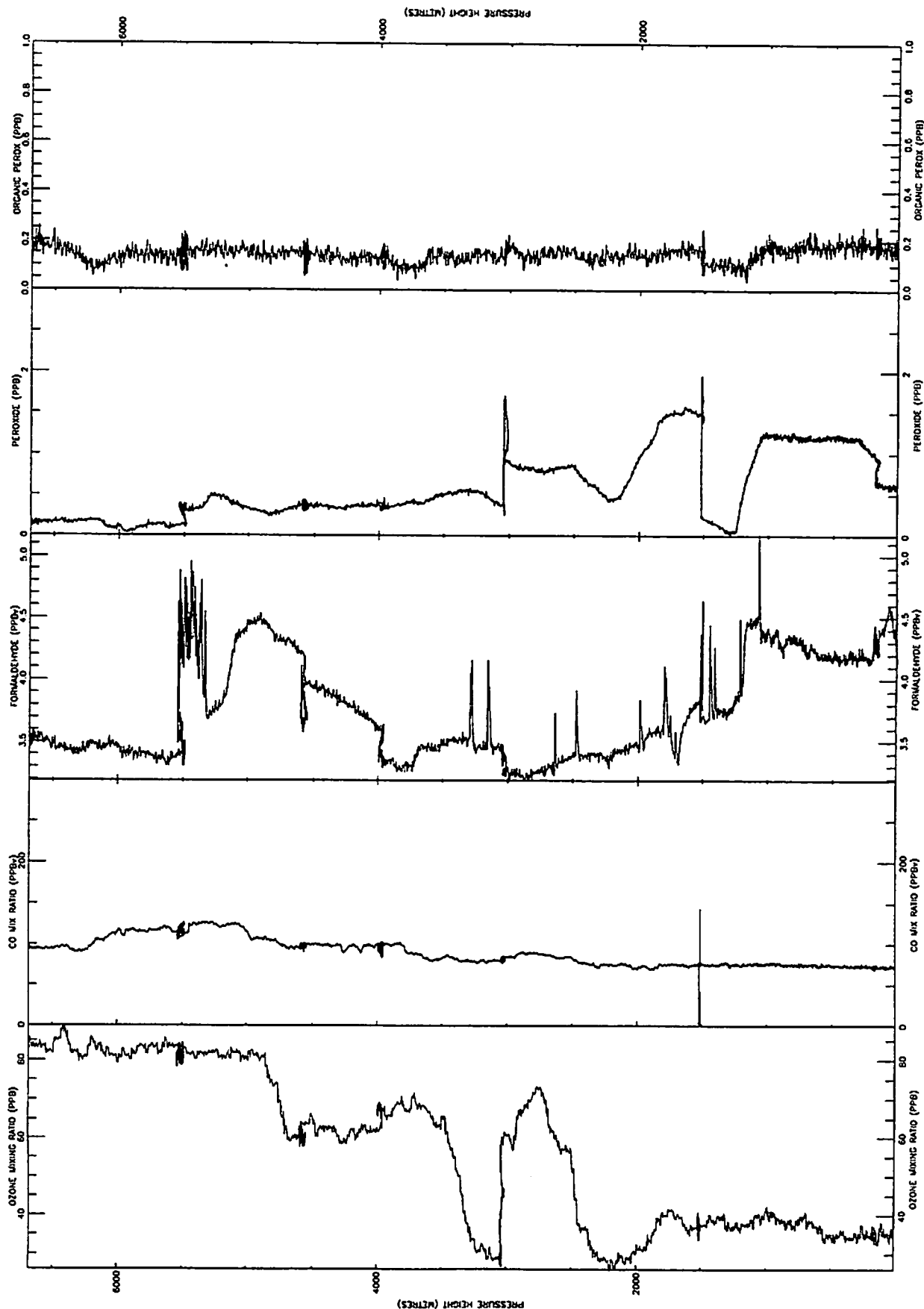
HEADING (DEG)

Mean 262.794

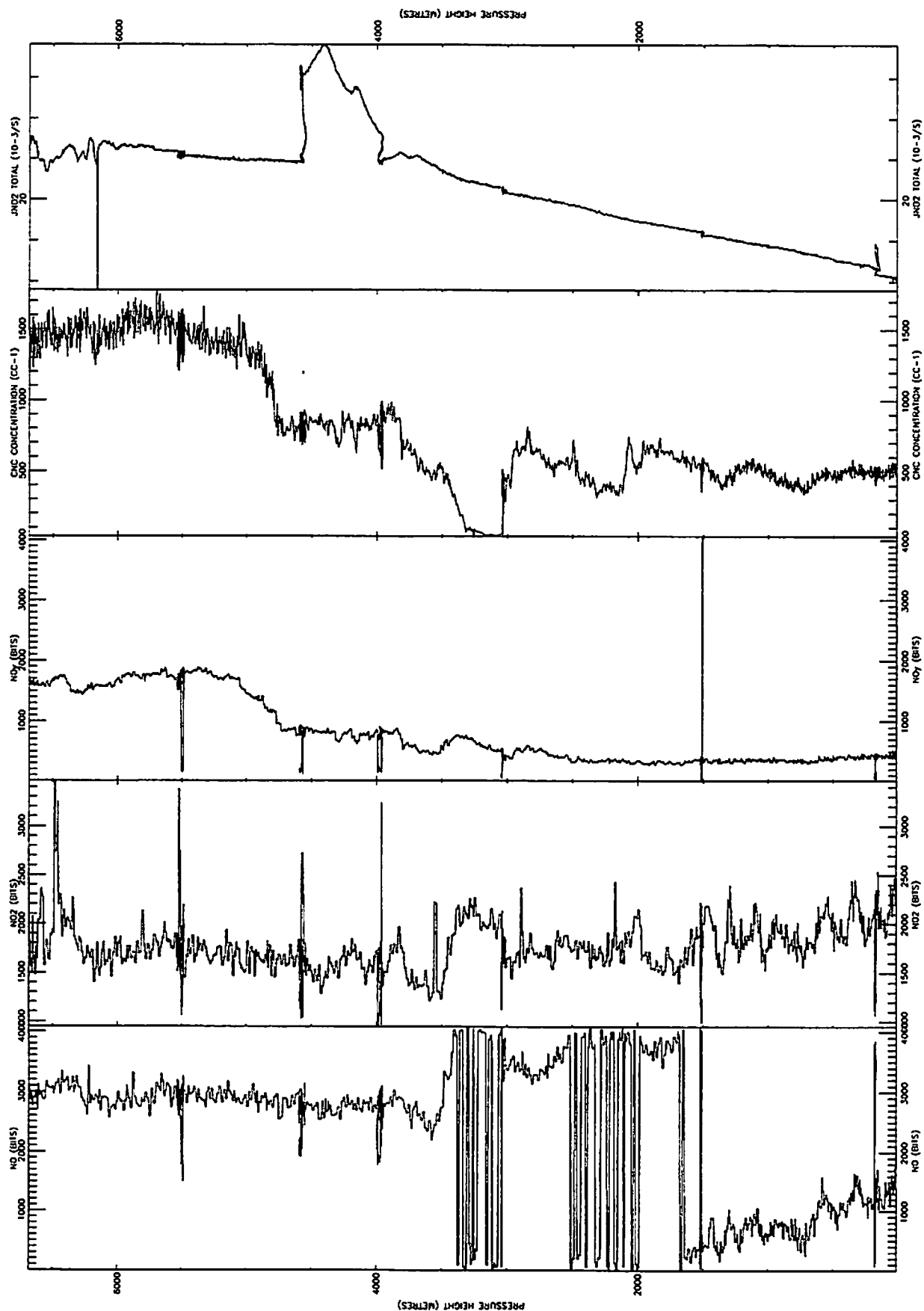
A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:29



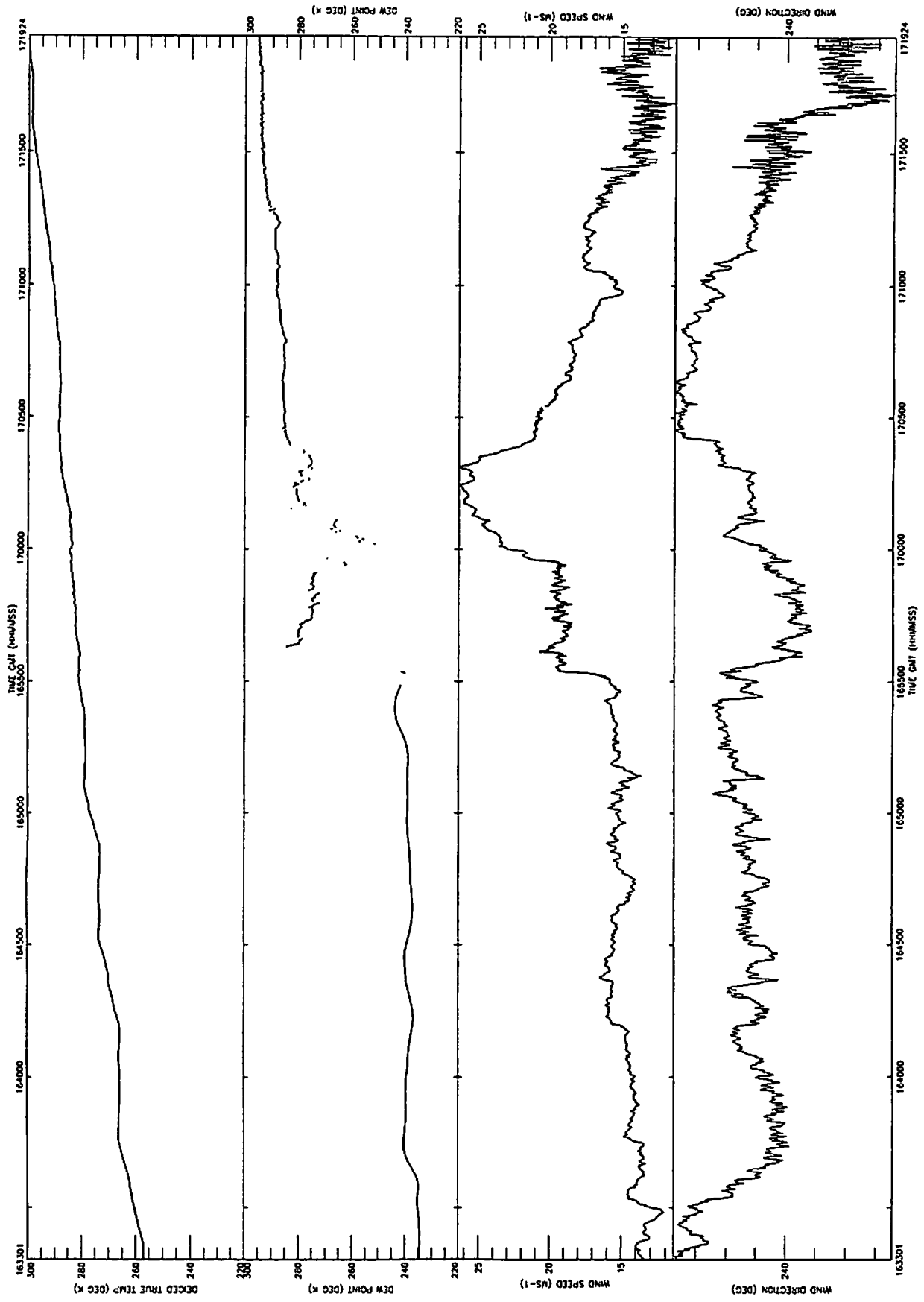
A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:29



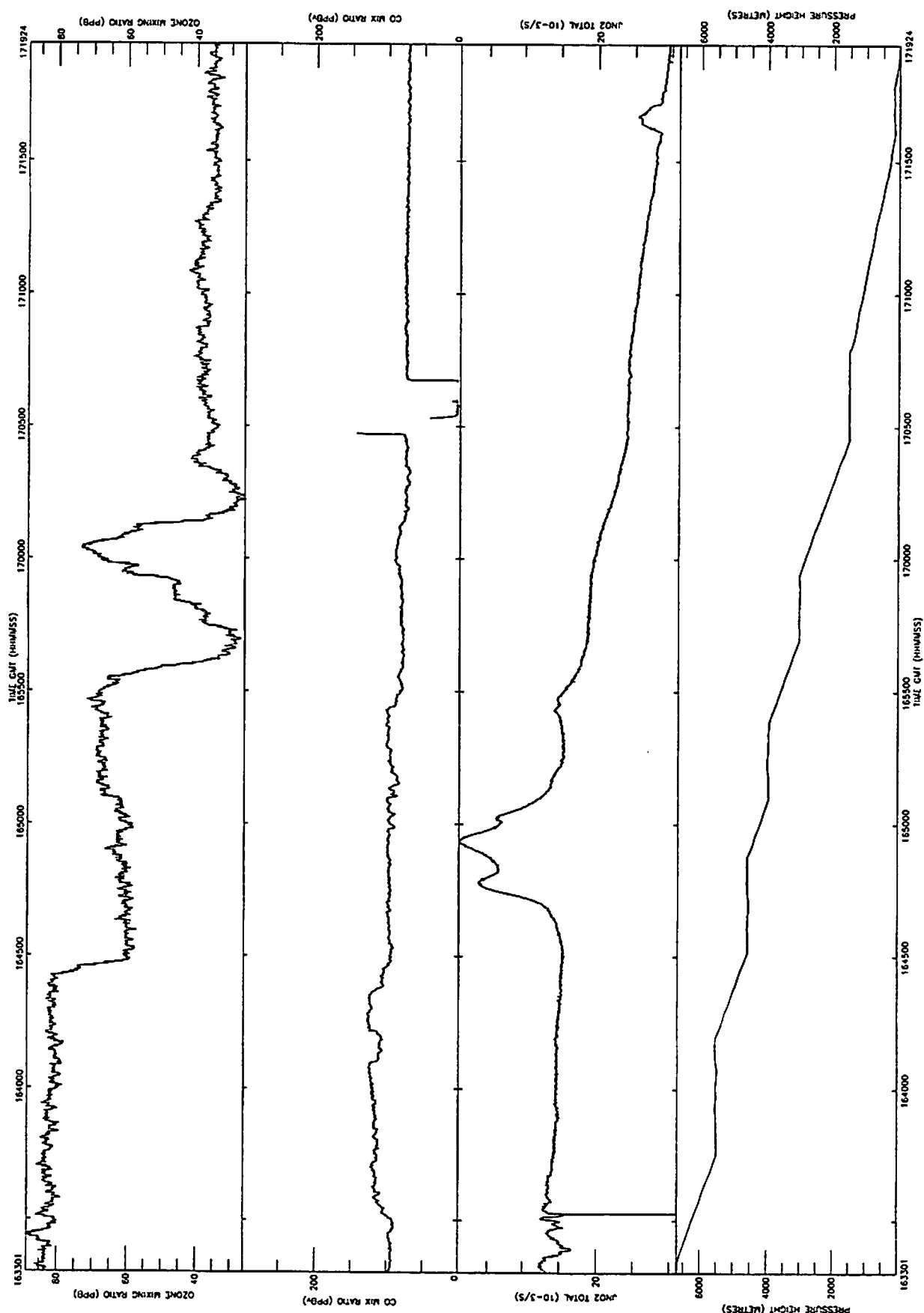
A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:29



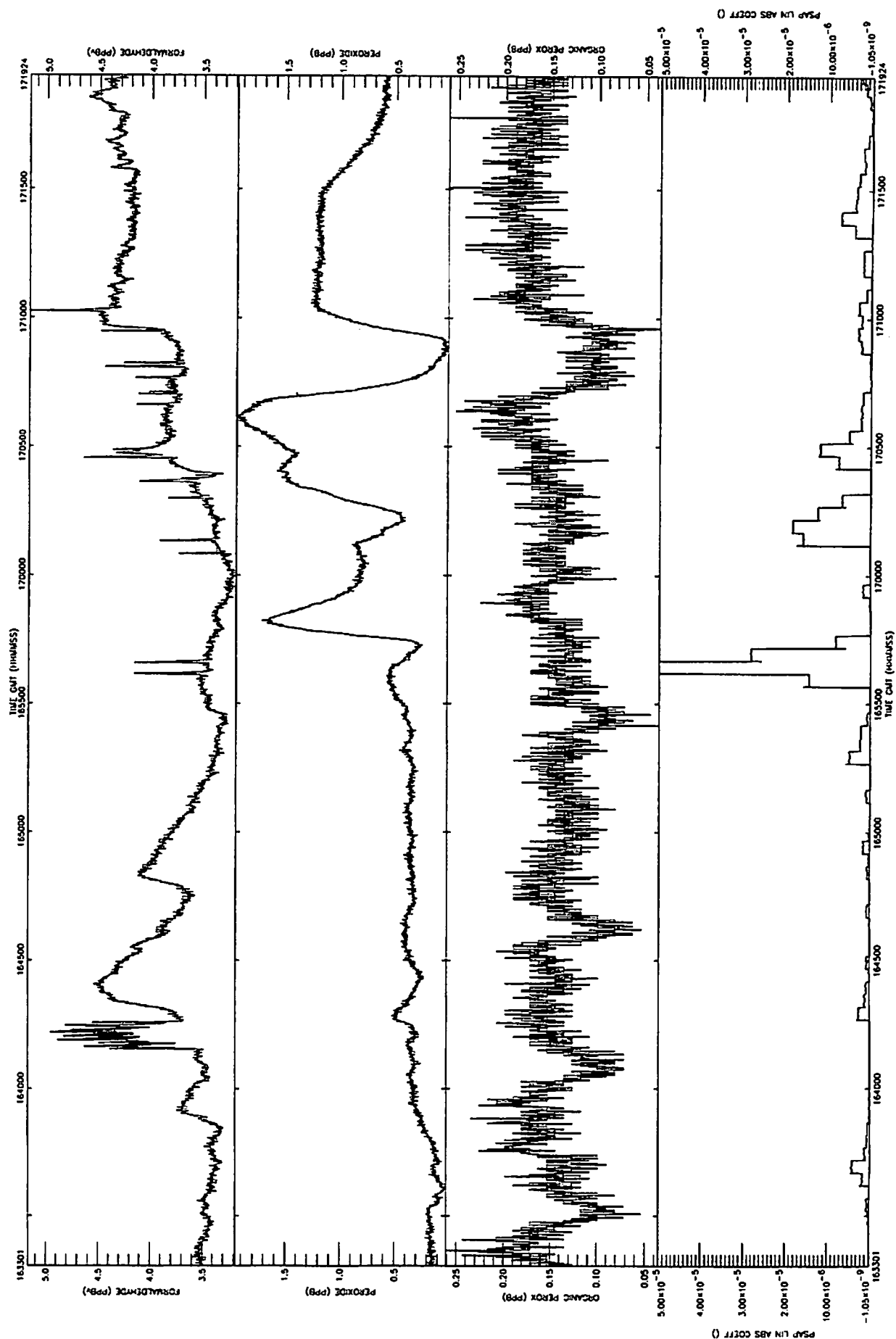
A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:29



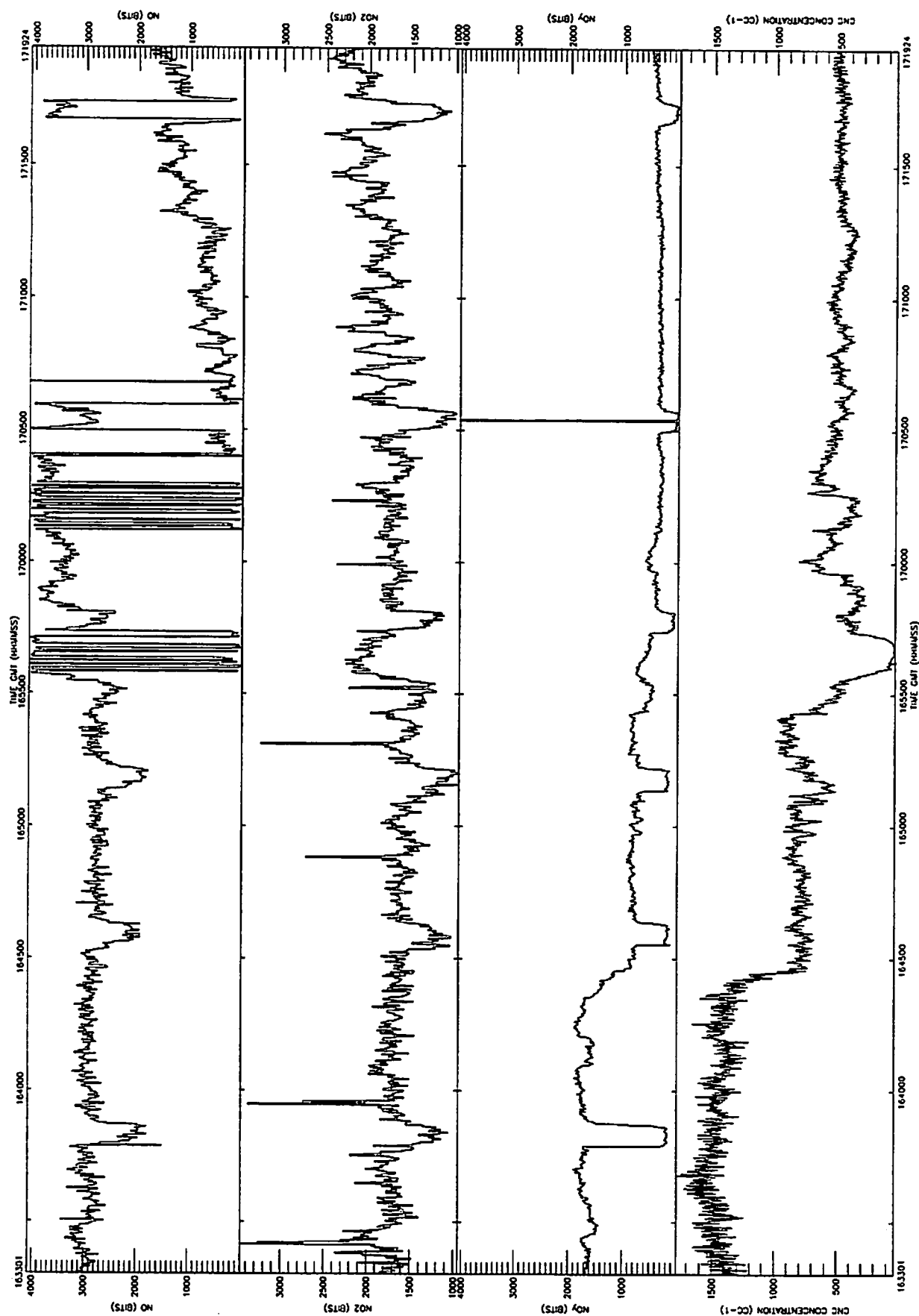
A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:29



A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:30



A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:30



A575 14-SEP-97 P6 FL220-50' From 163301-171924 Plotted 6-May-1998 17:30

STATIC PRESSURE (MB)

No of obs 2784
Mean 702.703
Standard dev 176.340
Max value 1012.01
Min value 429.033

DEICED TRUE TEMP (DEG K)

No of obs 2784
Mean 280.549
Standard dev 11.6402
Max value 300.151
Min value 256.907

DEW POINT (DEG K)

No of obs 2784
Mean 261.941
Standard dev 23.6851
Max value 295.607
Min value 234.364

OZONE MIXING RATIO (PPB)

No of obs 2784
Mean 55.5919
Standard dev 19.2590
Max value 88.7353
Min value 26.0789

PSAP LIN ABS COEFF ()

No of obs 2784
Mean 2.821758e-06
Standard dev 6.649434e-06
Max value 5.000437e-05
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 2784
Mean 21.2435
Standard dev 6.53291
Max value 39.0742
Min value 8.76763

PRESSURE HEIGHT (METRES)

No of obs 2784
Mean 3183.10
Standard dev 1977.84
Max value 6686.81
Min value 10.3248

CORRECTED LATITUDE (DEGREES)

No of obs 2784
Mean 31.1302
Standard dev 9.269220e-02
Max value 31.2419
Min value 30.9435

CORRECTED LONGITUDE (DEGREES)

No of obs 2784
Mean -35.0512
Standard dev 1.90185
Max value -33.4709
Min value -126.527

NORTHWARD WIND COMPT (M S-1)

No of obs 2784
Mean 6.71815
Standard dev 4.97817
Max value 248.502
Min value 2.68371

EASTWARD WIND COMPT (M S-1)

No of obs 2784
Mean 14.7790
Standard dev 24.7632
Max value 24.6665
Min value -1279.95

VERTICAL WIND COMPT (M S-1)

No of obs 2784
Mean 0.365628
Standard dev 11.3725
Max value 599.555
Min value -1.69834

WIND SPEED (MS-1)

No of obs 2782
Mean 16.7328
Standard dev 3.27951
Max value 26.4044
Min value 11.4480

WIND DIRECTION (DEG)

Mean 245.555

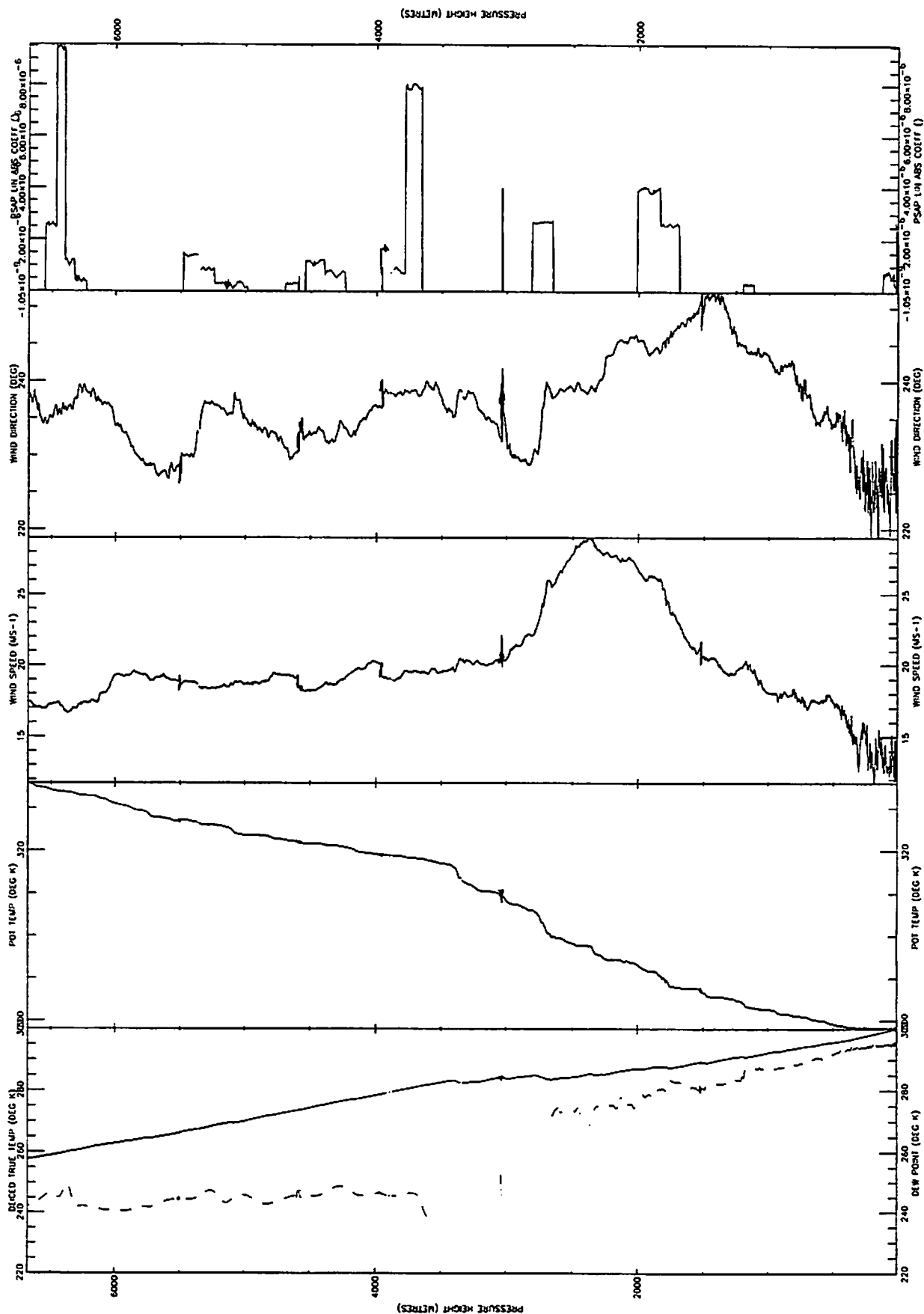
TRUE AIR SPEED (M S-1)

No of obs 2784
Mean 115.319
Standard dev 17.0992
Max value 173.138
Min value 92.6270

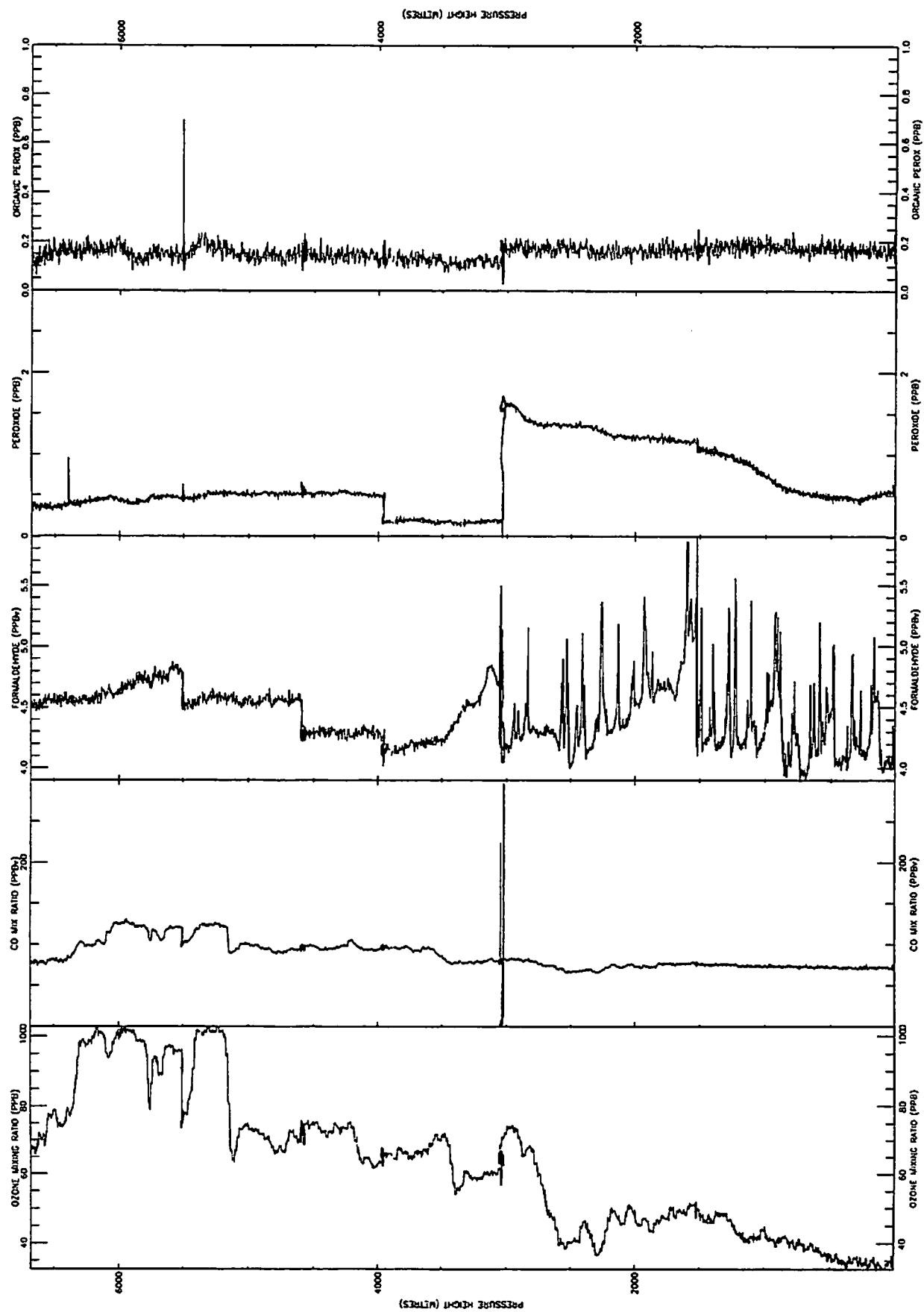
HEADING (DEG)

Mean 263.500

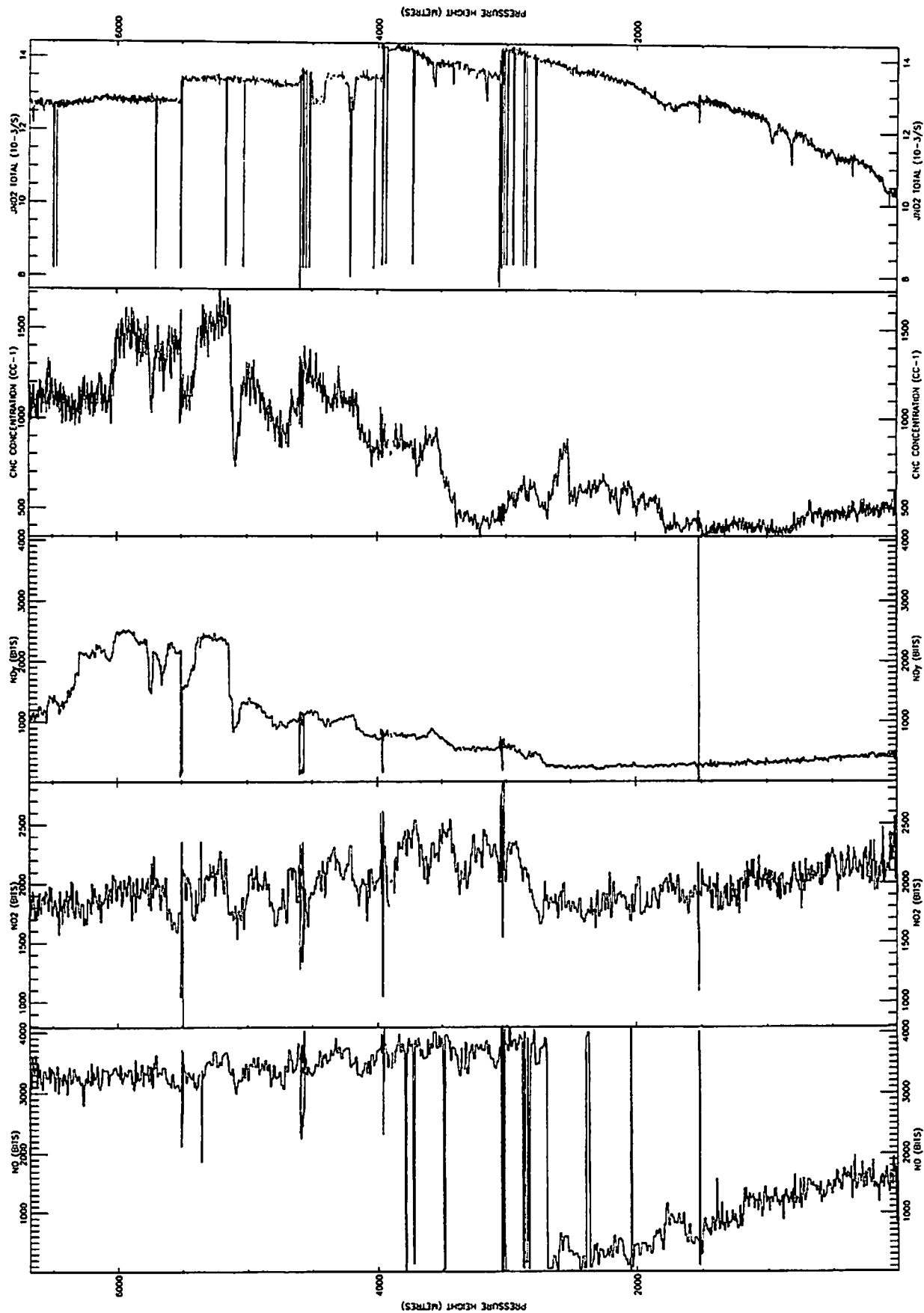
A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



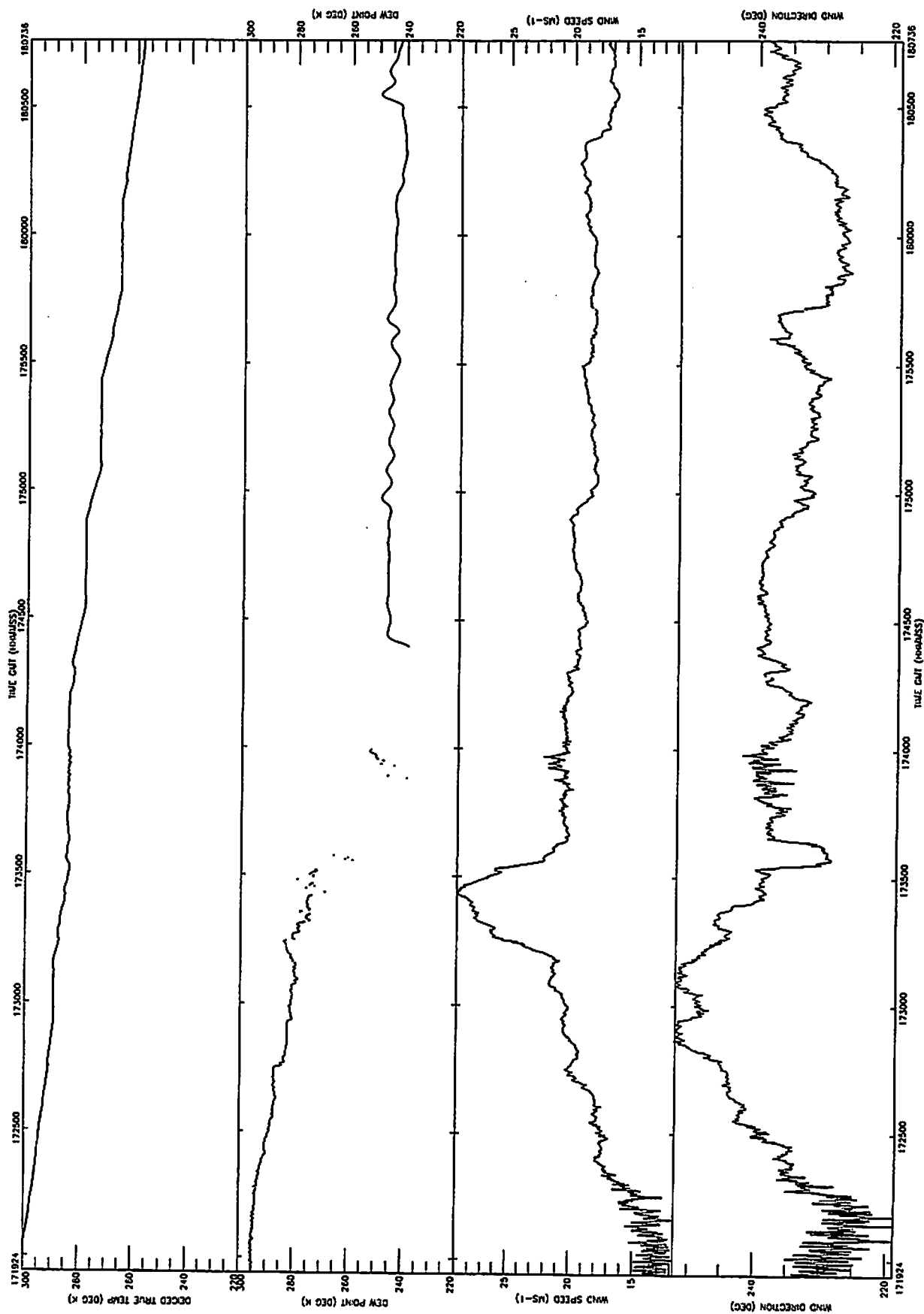
A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



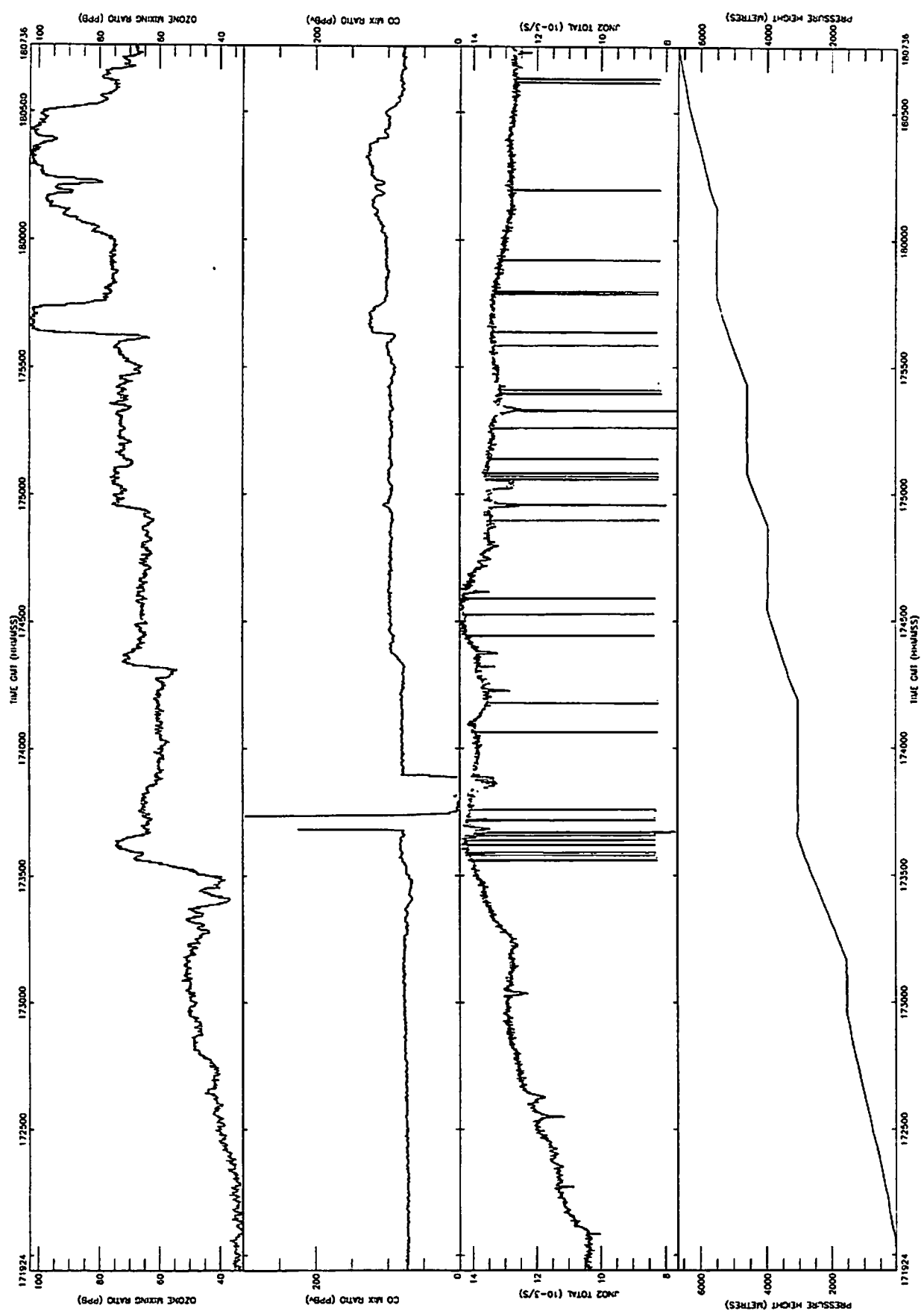
A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



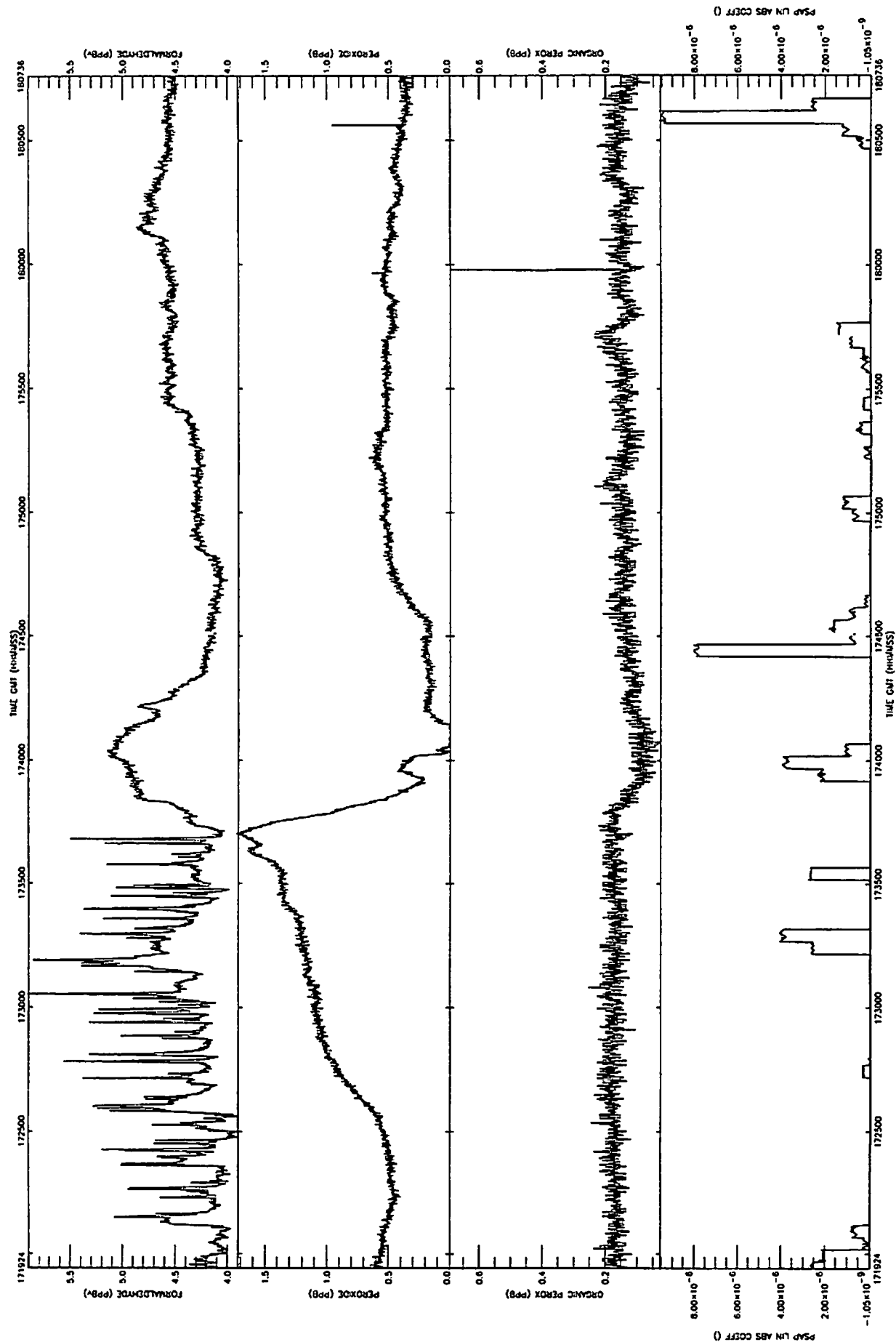
A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



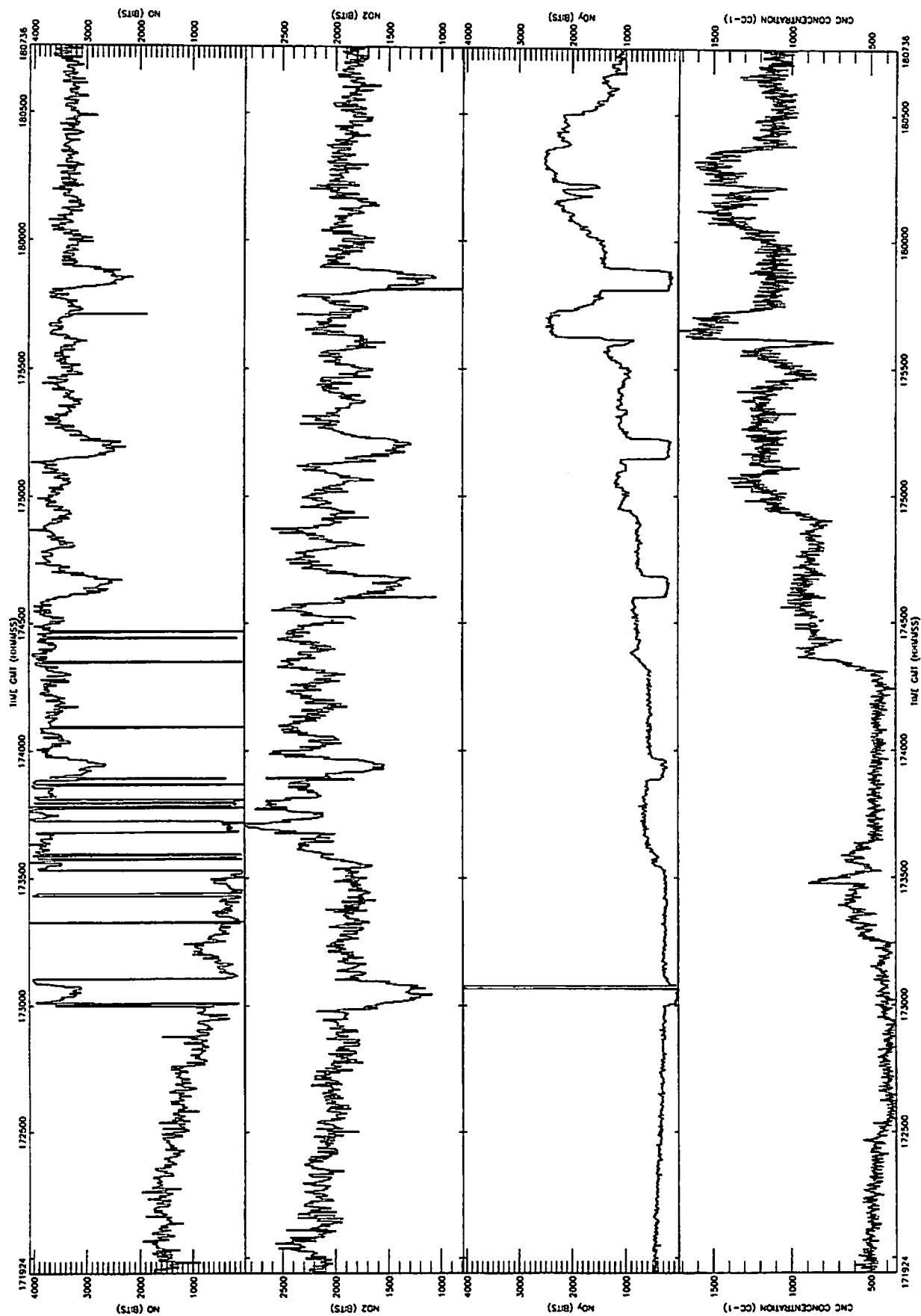
A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



A575 14-SEP-97 P7 50'-FL220 From 171924-180736 Plotted 6-May-1998 17:38



A575 14-SEP-97 P7 50'-FL220 From 171924-180736 *Plotted 6-May-1998 17:39*

STATIC PRESSURE (MB)

No of obs 2881
Mean 683.140
Standard dev 168.165
Max value 1011.95
Min value 429.268

DEICED TRUE TEMP (DEG K)

No of obs 2881
Mean 279.809
Standard dev 11.4332
Max value 300.161
Min value 257.625

DEW POINT (DEG K)

No of obs 2881
Mean 258.112
Standard dev 20.0497
Max value 295.703
Min value 236.990

OZONE MIXING RATIO (PPB)

No of obs 2881
Mean 62.9945
Standard dev 18.2067
Max value 102.807
Min value 32.4807

PSAP LIN ABS COEFF ()

No of obs 2881
Mean 5.305006e-07
Standard dev 1.441111e-06
Max value 9.560426e-06
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 2881
Mean 12.3314
Standard dev 1.82690
Max value 14.4096
Min value 7.32622

PRESSURE HEIGHT (METRES)

No of obs 2881
Mean 3392.89
Standard dev 1909.68
Max value 6682.88
Min value 10.7982

CORRECTED LATITUDE (DEGREES)

No of obs 2881
Mean 31.9507
Standard dev 0.623389
Max value 33.0715
Min value 30.9871

CORRECTED LONGITUDE (DEGREES)

No of obs 2881
Mean -34.4741
Standard dev 0.923619
Max value -32.8028
Min value -36.0052

NORTHWARD WIND COMPT (M S-1)

No of obs 2881
Mean 10.5128
Standard dev 1.75330
Max value 15.0913
Min value 6.18201

EASTWARD WIND COMPT (M S-1)

No of obs 2881
Mean 16.1073
Standard dev 3.04021
Max value 25.2870
Min value 7.88285

VERTICAL WIND COMPT (M S-1)

No of obs 2881
Mean -0.574460
Standard dev 0.454077
Max value 0.768425
Min value -1.65181

WIND SPEED (MS-1)

No of obs 2881
Mean 19.3565
Standard dev 2.75741
Max value 29.0352
Min value 11.7391

WIND DIRECTION (DEG)

Mean 236.869

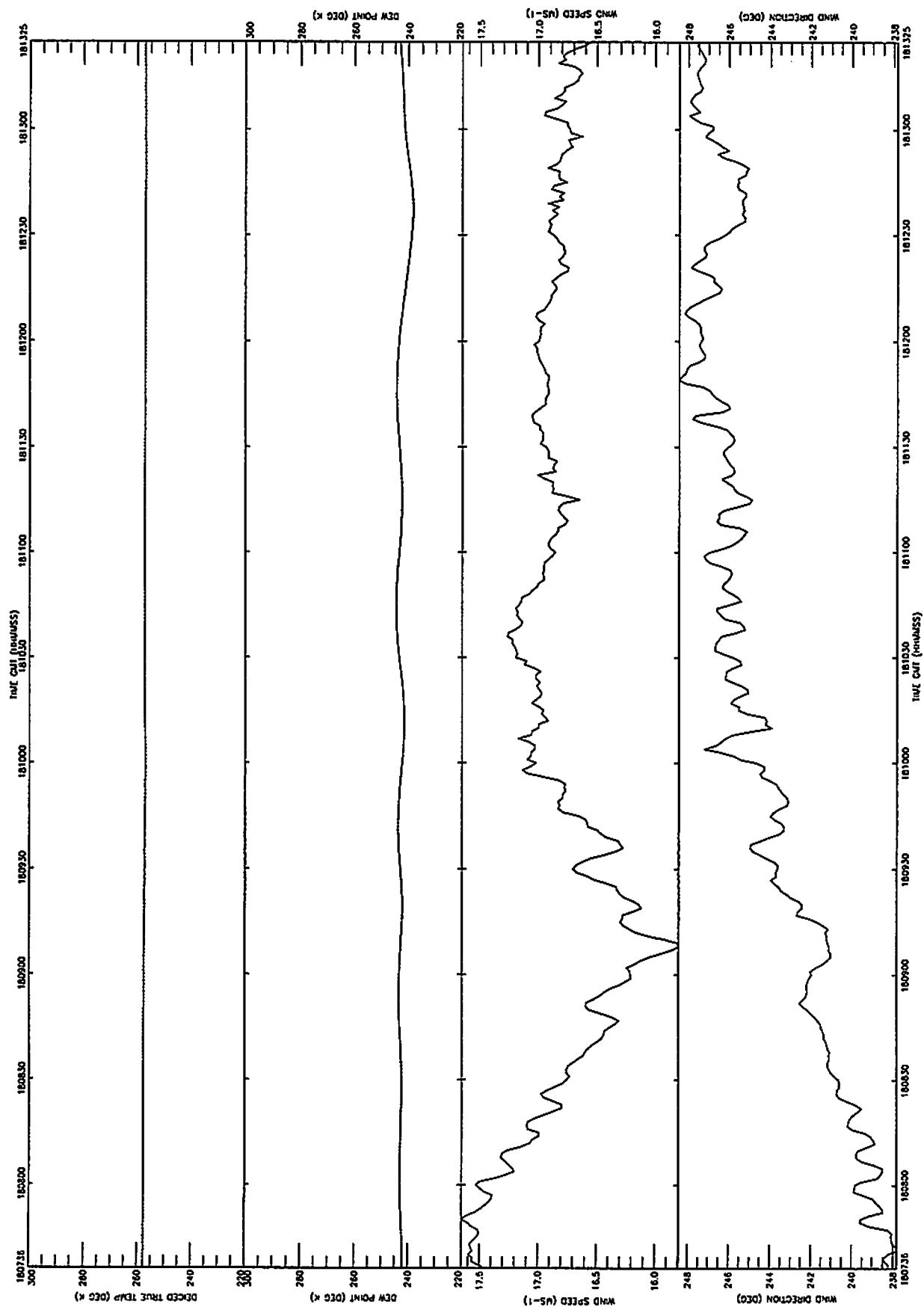
TRUE AIR SPEED (M S-1)

No of obs 2881
Mean 113.249
Standard dev 10.9937
Max value 132.822
Min value 91.3908

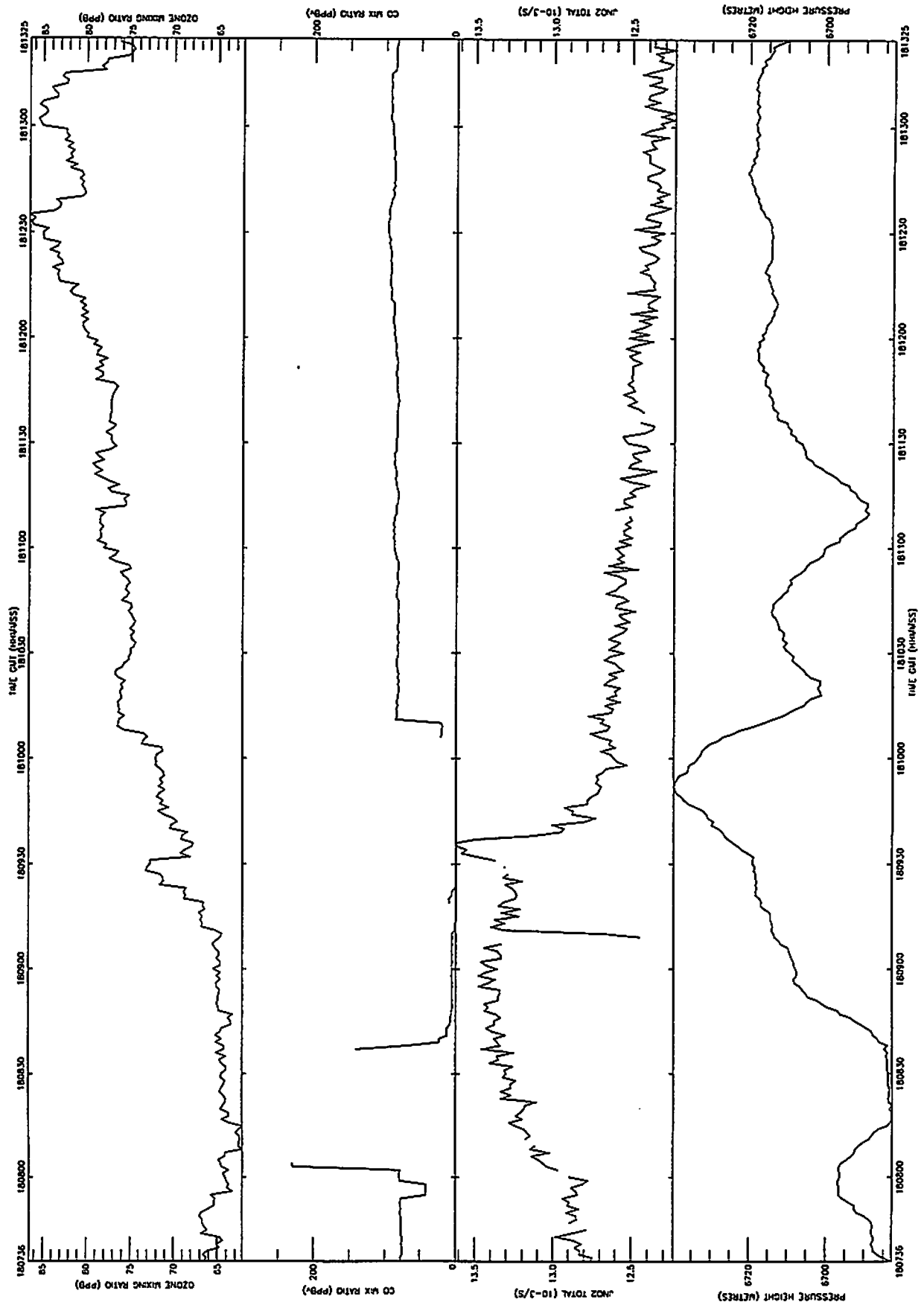
HEADING (DEG)

Mean 52.6886

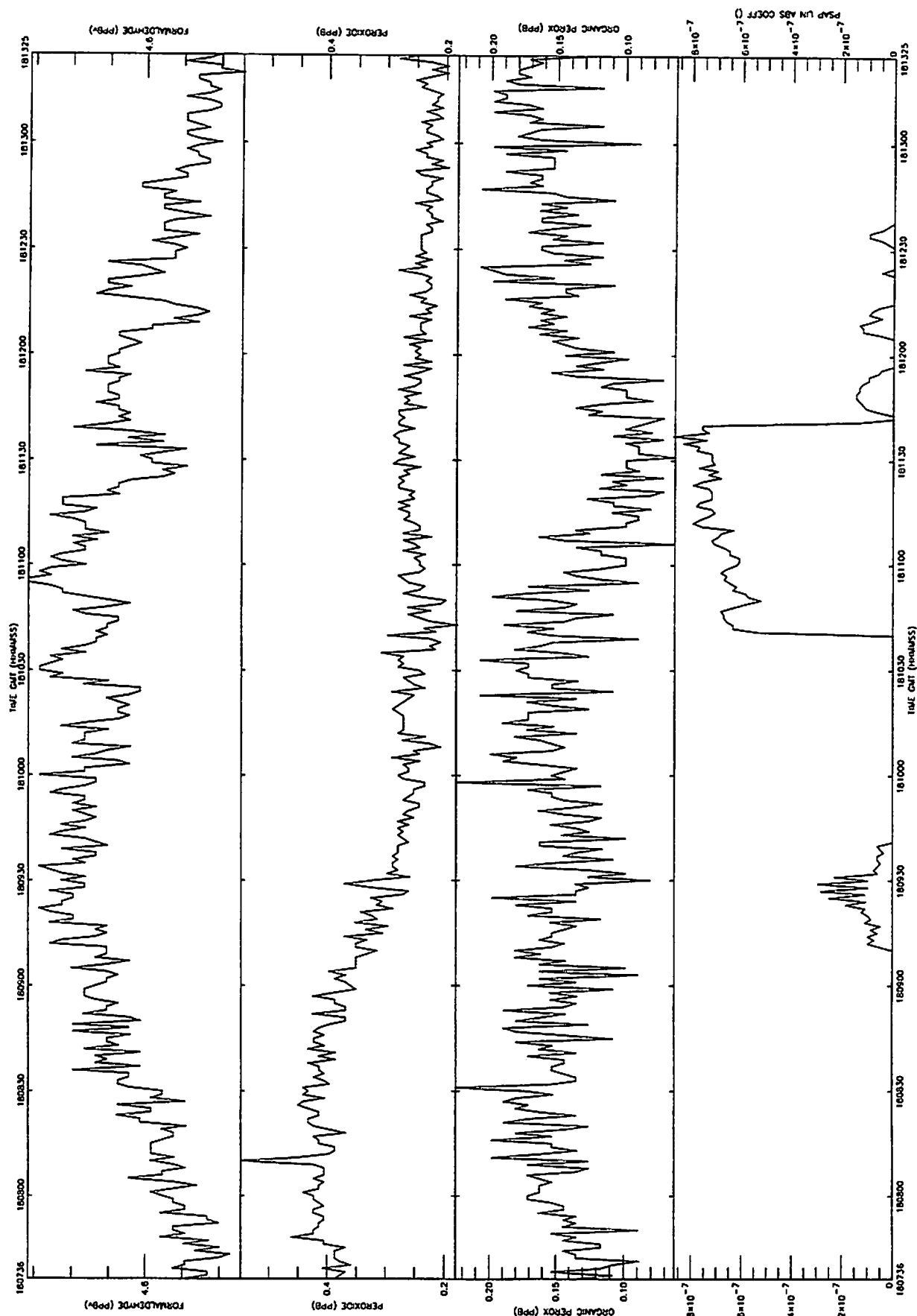
A575 14-SEP-97 R6 FL220 From 180736-181325 Plotted 6-May-1998 17:39



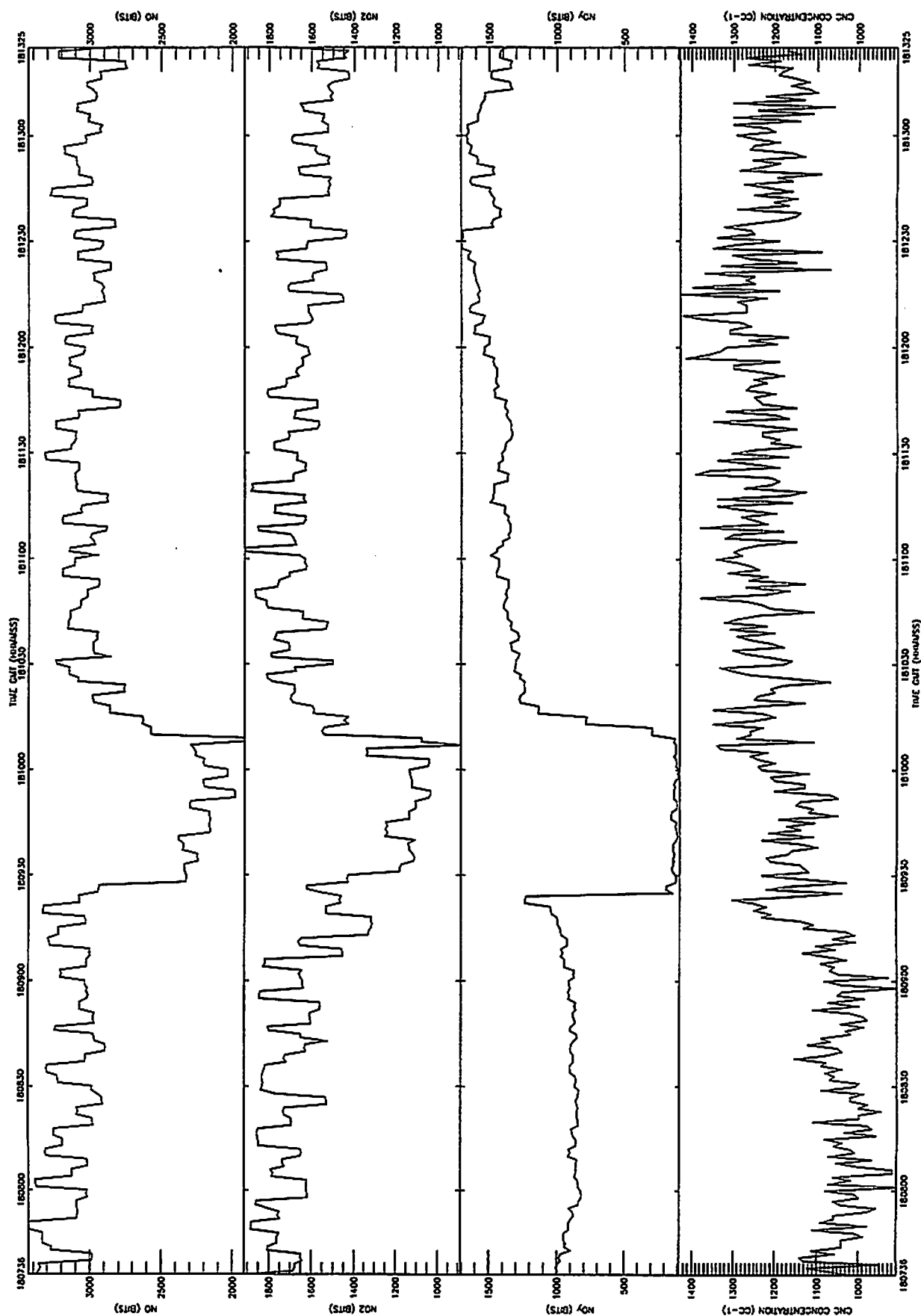
A575 14-SEP-97 R6 FL220 From 180736-181325 Plotted 6-May-1998 17:39



A575 14-SEP-97 R6 FL220 From 180736-181325 Plotted 6-May-1998 17:39



A575 14-SEP-97 R6 FL220 From 180736-181325 Plotted 6-May-1998 17:39



A575 14-SEP-97 R6 FL220 From 180736-181325 Plotted 6-May-1998 17:39

STATIC PRESSURE (MB)

No of obs 350
Mean 427.733
Standard dev 0.817909
Max value 429.268
Min value 425.870

DEICED TRUE TEMP (DEG K)

No of obs 350
Mean 257.249
Standard dev 0.210837
Max value 257.625
Min value 256.928

DEW POINT (DEG K)

No of obs 350
Mean 242.475
Standard dev 1.36869
Max value 244.453
Min value 238.324

OZONE MIXING RATIO (PPB)

No of obs 350
Mean 73.6592
Standard dev 6.87998
Max value 86.5262
Min value 62.2113

PSAP LIN ABS COEFF ()

No of obs 350
Mean 1.350923e-07
Standard dev 2.597779e-07
Max value 8.659579e-07
Min value -1.046657e-09

JN02 TOTAL (10-3/5)

No of obs 350
Mean 12.6328
Standard dev 0.777069
Max value 13.6218
Min value 8.11737

PRESSURE HEIGHT (METRES)

No of obs 350
Mean 6708.55
Standard dev 13.6855
Max value 6739.78
Min value 6682.88

CORRECTED LATITUDE (DEGREES)

No of obs 350
Mean 33.1408
Standard dev 3.164698e-02
Max value 33.1872
Min value 33.0715

CORRECTED LONGITUDE (DEGREES)

No of obs 350
Mean -32.8603
Standard dev 9.621365e-02
Max value -32.7432
Min value -33.0480

NORTHWARD WIND COMPT (M S-1)

No of obs 350
Mean 7.29926
Standard dev 0.797598
Max value 9.36088
Min value 6.20987

EASTWARD WIND COMPT (M S-1)

No of obs 350
Mean 15.1712
Standard dev 0.459562
Max value 15.8148
Min value 13.8328

VERTICAL WIND COMPT (M S-1)

No of obs 350
Mean -0.688193
Standard dev 0.559396
Max value 0.276176
Min value -1.67519

WIND SPEED (MS-1)

No of obs 350
Mean 16.8575
Standard dev 0.336212
Max value 17.6573
Min value 15.7985

WIND DIRECTION (DEG)

Mean 244.307

TRUE AIR SPEED (M S-1)

No of obs 350
Mean 132.631
Standard dev 4.89560
Max value 140.099
Min value 123.966

HEADING (DEG)

Mean 277.798

Pressure Height (Meters)

Pressure (Atmospheres)

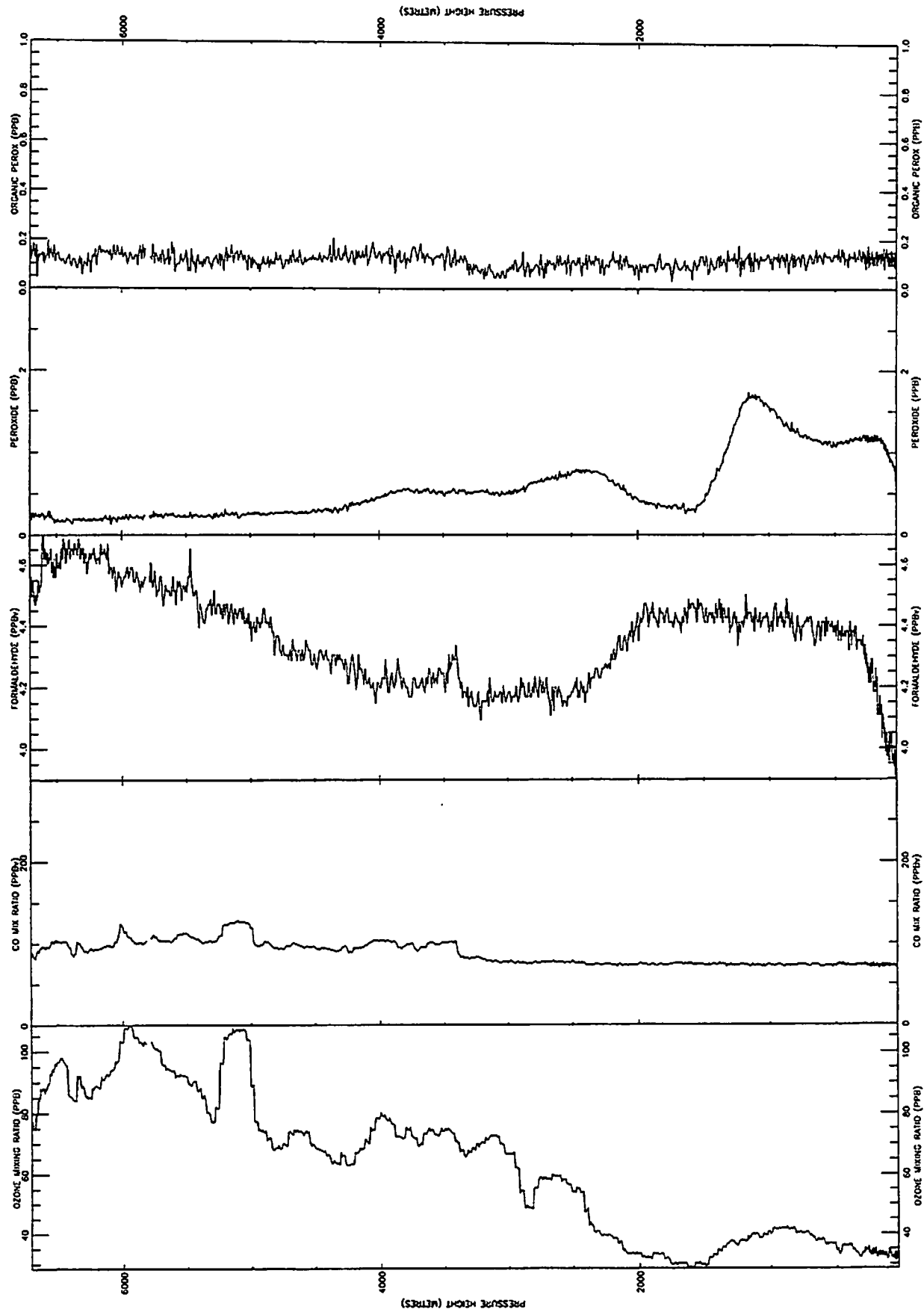
Wind Direction (deg)

Wind Speed (m/s)

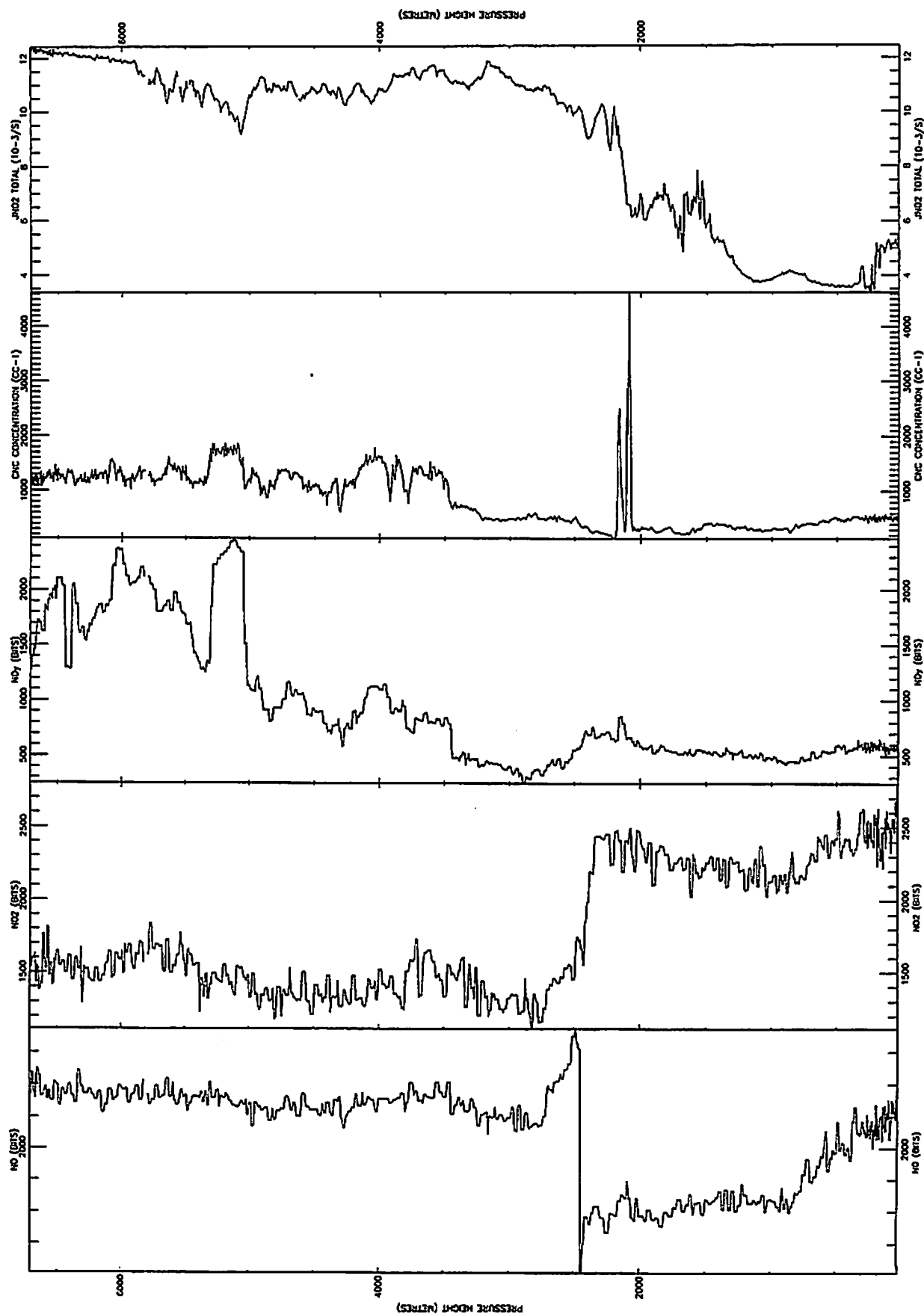
Pot Temp (deg K)

Observed True Temp (deg K)

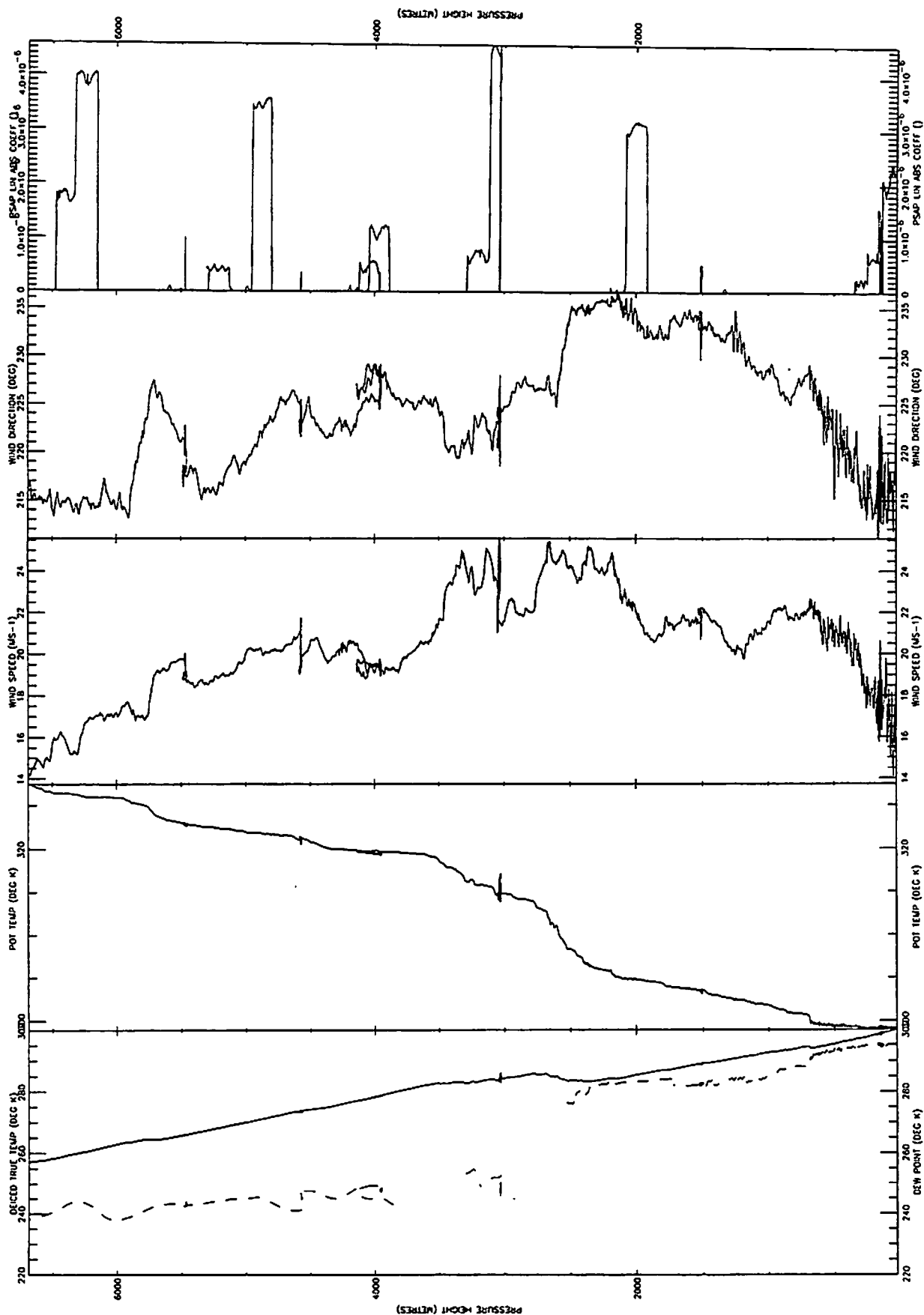
A575 14-SEP-97 Descent From 181325-182814 Plotted 6-May-1998 17:41



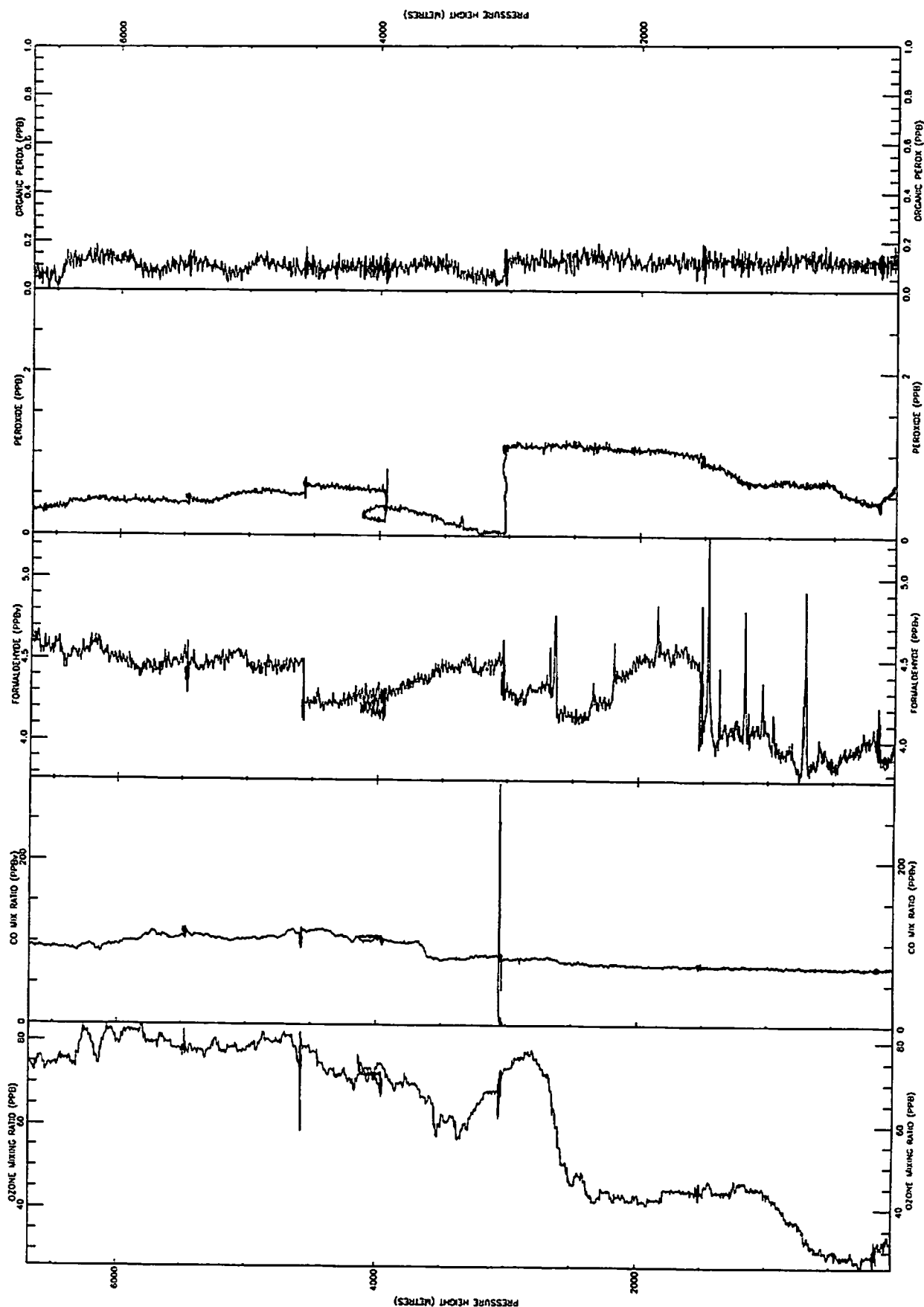
A575 14-SEP-97 Descent From 181325-182814 Plotted 6-May-1998 17:41



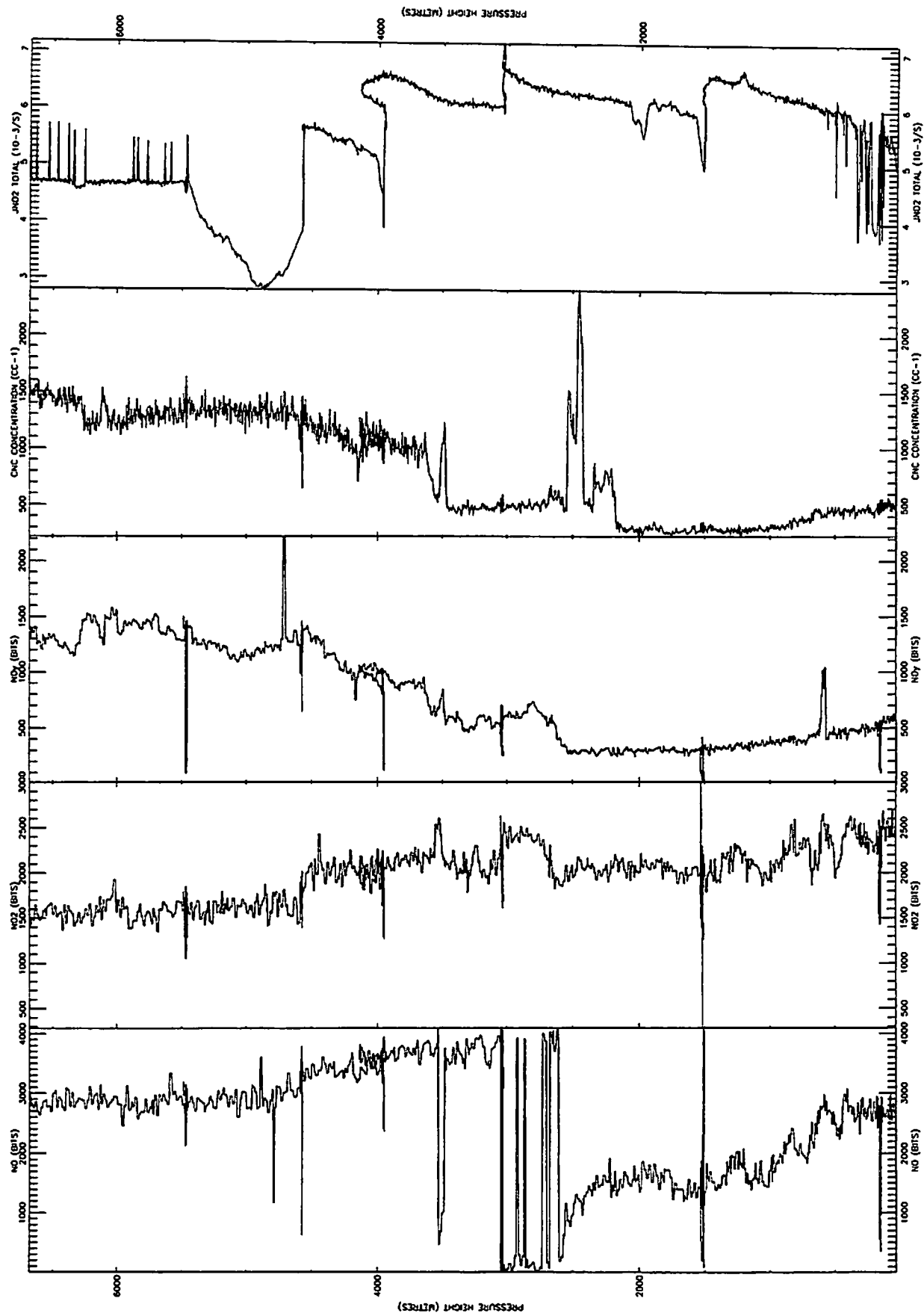
A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:46



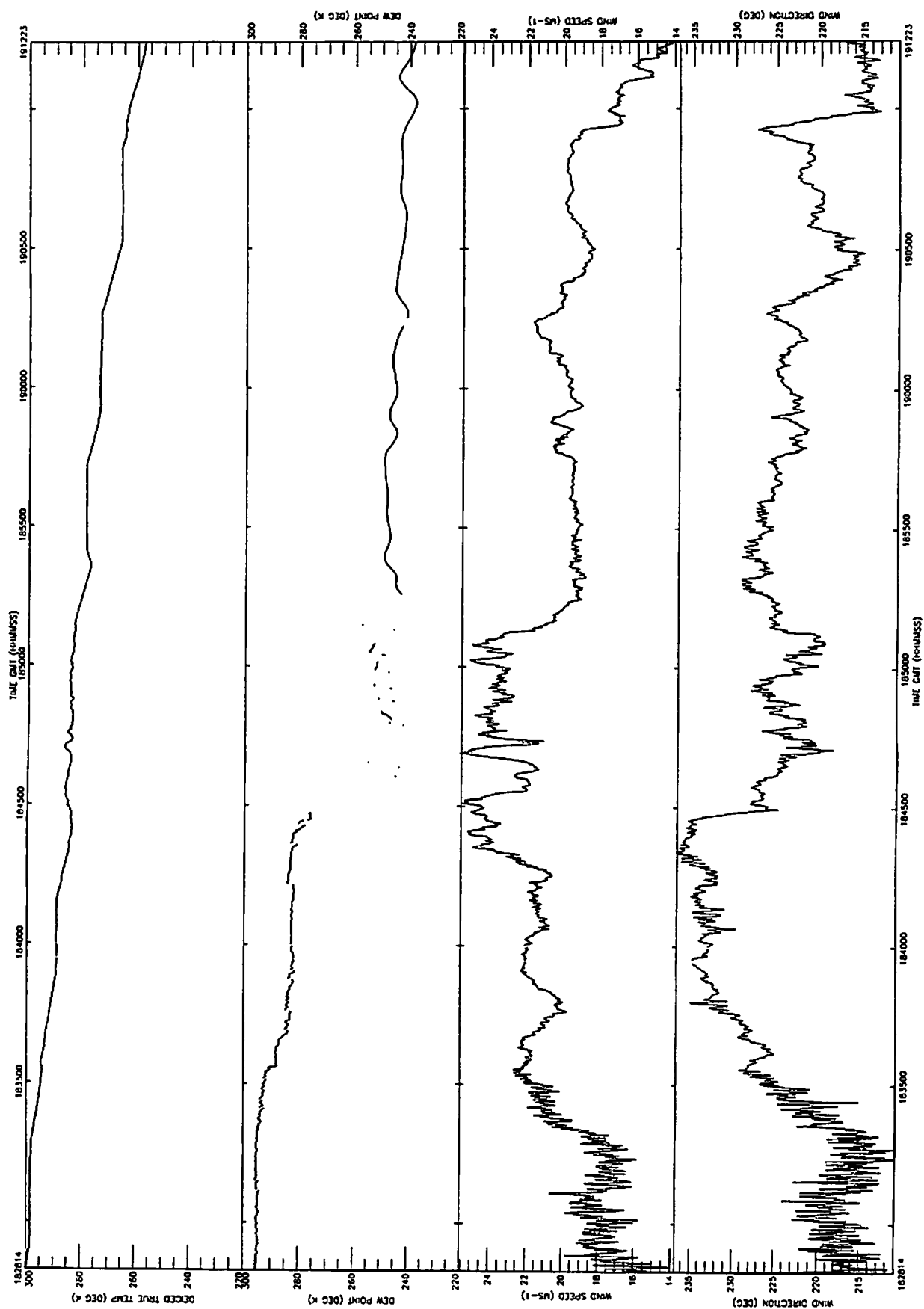
A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47



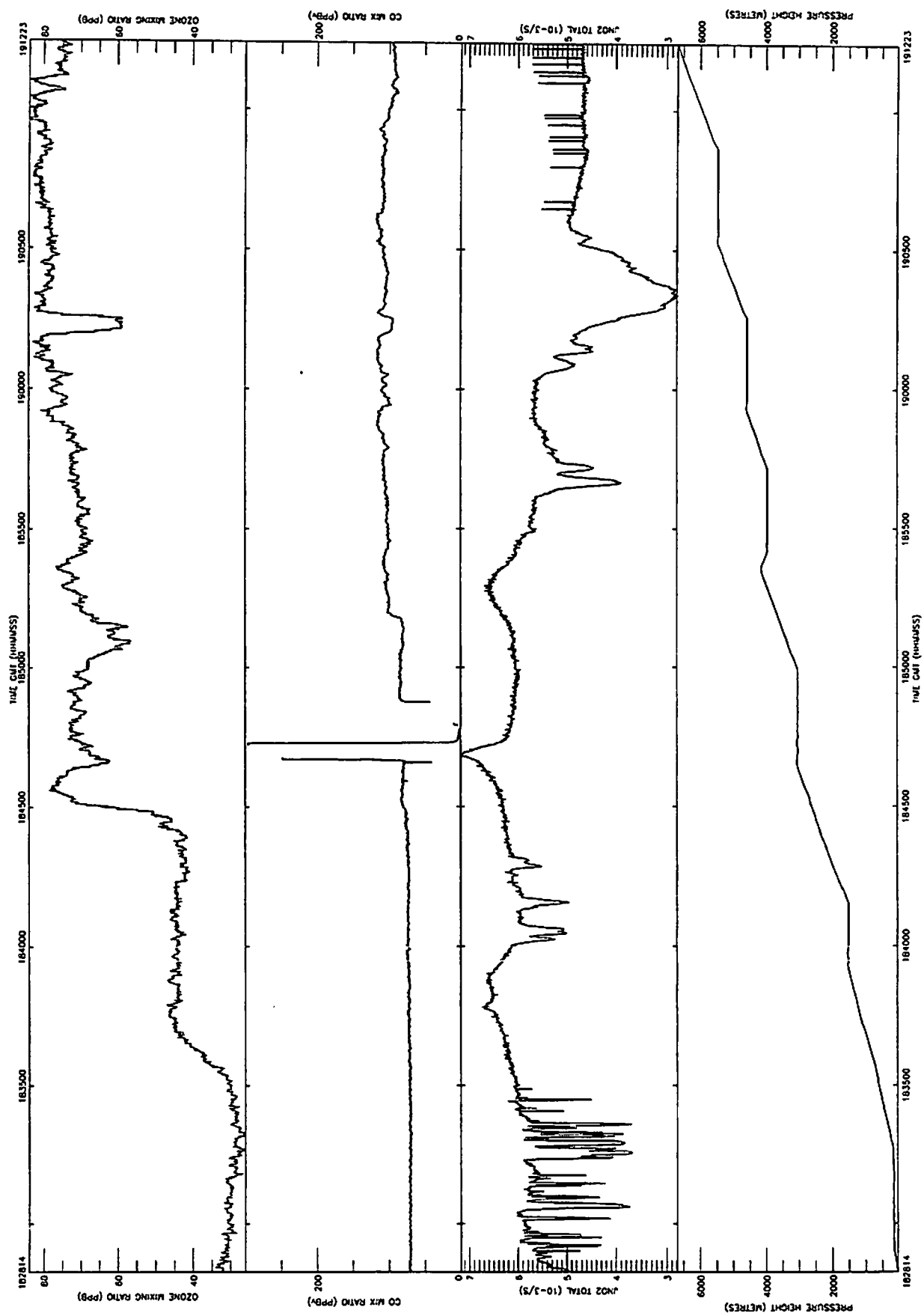
A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47



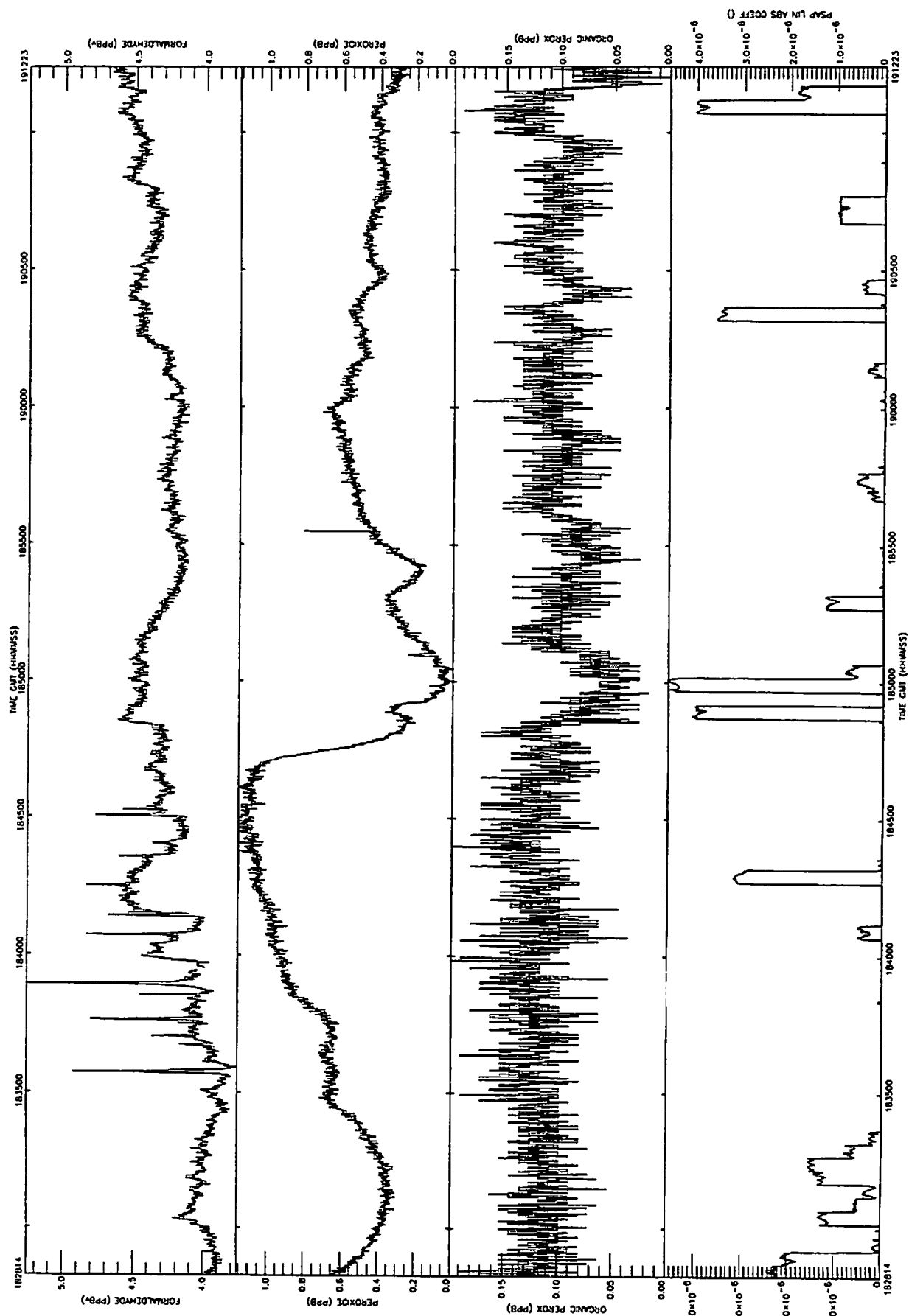
A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47



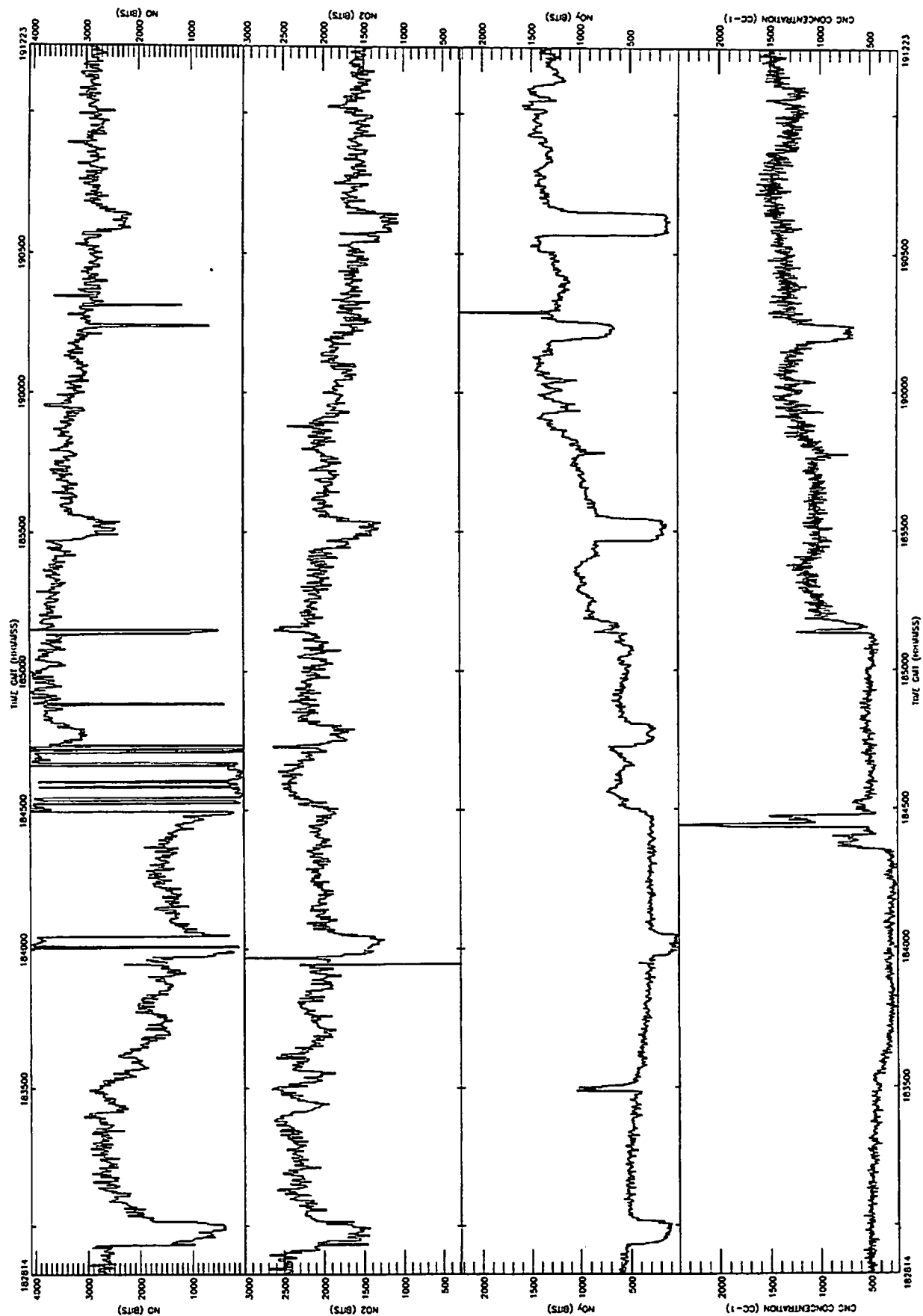
A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47



A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47



A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47



A575 14-SEP-97 P8 50'-FL220 From 182814-191223 Plotted 6-May-1998 17:47

STATIC PRESSURE (MB)

No of obs 2644
Mean 707.129
Standard dev 172.790
Max value 1009.80
Min value 429.049

DEICED TRUE TEMP (DEG K)

No of obs 2644
Mean 281.385
Standard dev 11.2848
Max value 299.979
Min value 257.116

DEW POINT (DEG K)

No of obs 2644
Mean 261.650
Standard dev 21.0924
Max value 295.767
Min value 237.938

OZONE MIXING RATIO (PPB)

No of obs 2644
Mean 60.1783
Standard dev 18.7119
Max value 83.9197
Min value 26.0346

PSAP LIN ABS COEFF ()

No of obs 2644
Mean 4.058858e-07
Standard dev 9.526928e-07
Max value 4.590414e-06
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 2644
Mean 5.50983
Standard dev 0.868296
Max value 7.17259
Min value 2.79191

PRESSURE HEIGHT (METRES)

No of obs 2644
Mean 3121.46
Standard dev 1915.13
Max value 6686.54
Min value 28.7412

CORRECTED LATITUDE (DEGREES)

No of obs 2644
Mean 33.6767
Standard dev 0.411778
Max value 34.4019
Min value 32.9947

CORRECTED LONGITUDE (DEGREES)

No of obs 2644
Mean -31.4364
Standard dev 0.973402
Max value -29.7050
Min value -33.0277

NORTHWARD WIND COMPT (M S-1)

No of obs 2644
Mean 14.4724
Standard dev 1.42227
Max value 19.4389
Min value 11.1500

EASTWARD WIND COMPT (M S-1)

No of obs 2644
Mean 14.1623
Standard dev 2.65022
Max value 20.6945
Min value 7.54798

VERTICAL WIND COMPT (M S-1)

No of obs 2644
Mean -0.397445
Standard dev 0.557155
Max value 1.66745
Min value -3.05379

WIND SPEED (MS-1)

No of obs 2643
Mean 20.3478
Standard dev 2.23825
Max value 25.5752
Min value 13.7240

WIND DIRECTION (DEG)

Mean 224.380

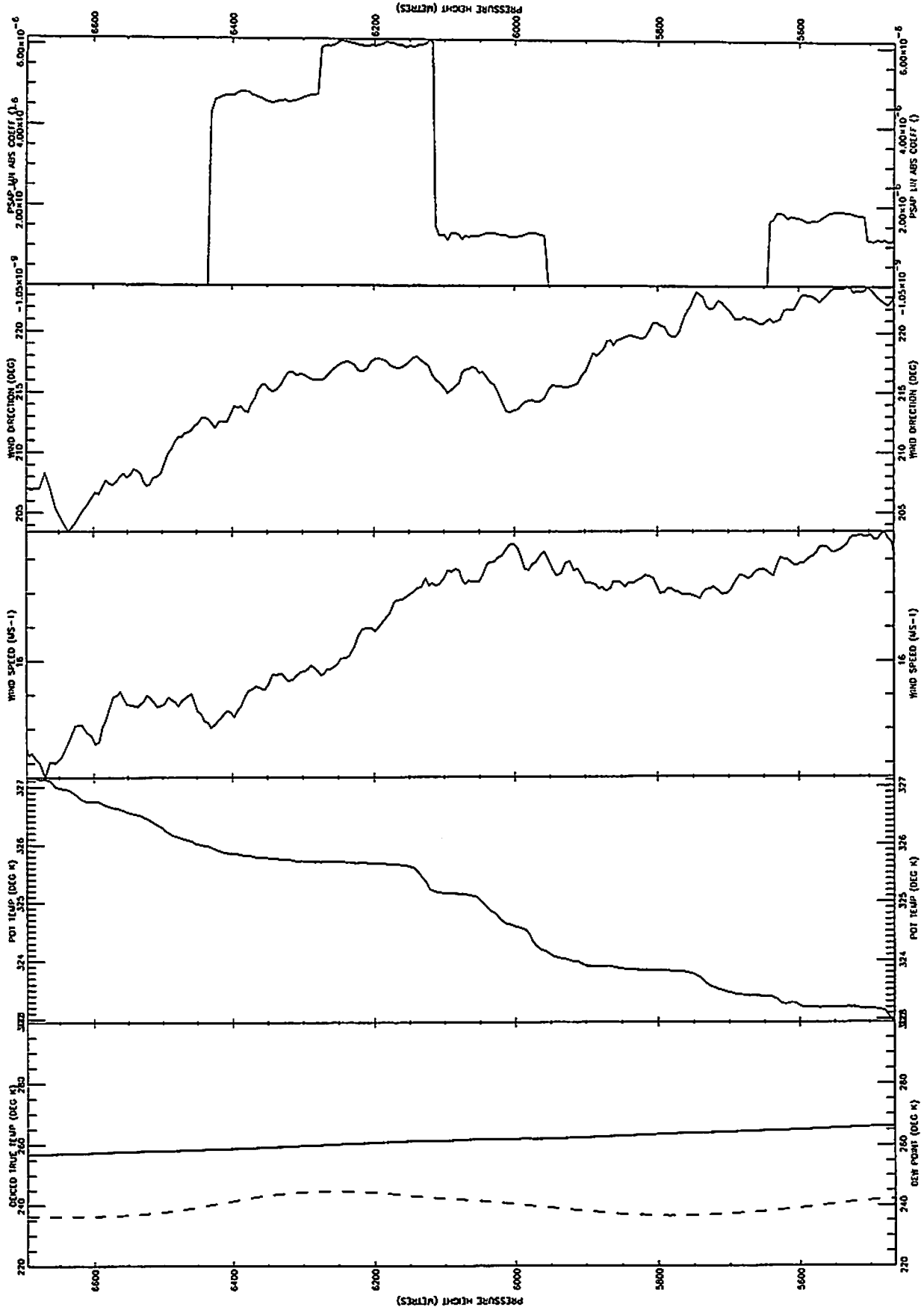
TRUE AIR SPEED (M S-1)

No of obs 2644
Mean 111.329
Standard dev 10.2058
Max value 130.020
Min value 90.3095

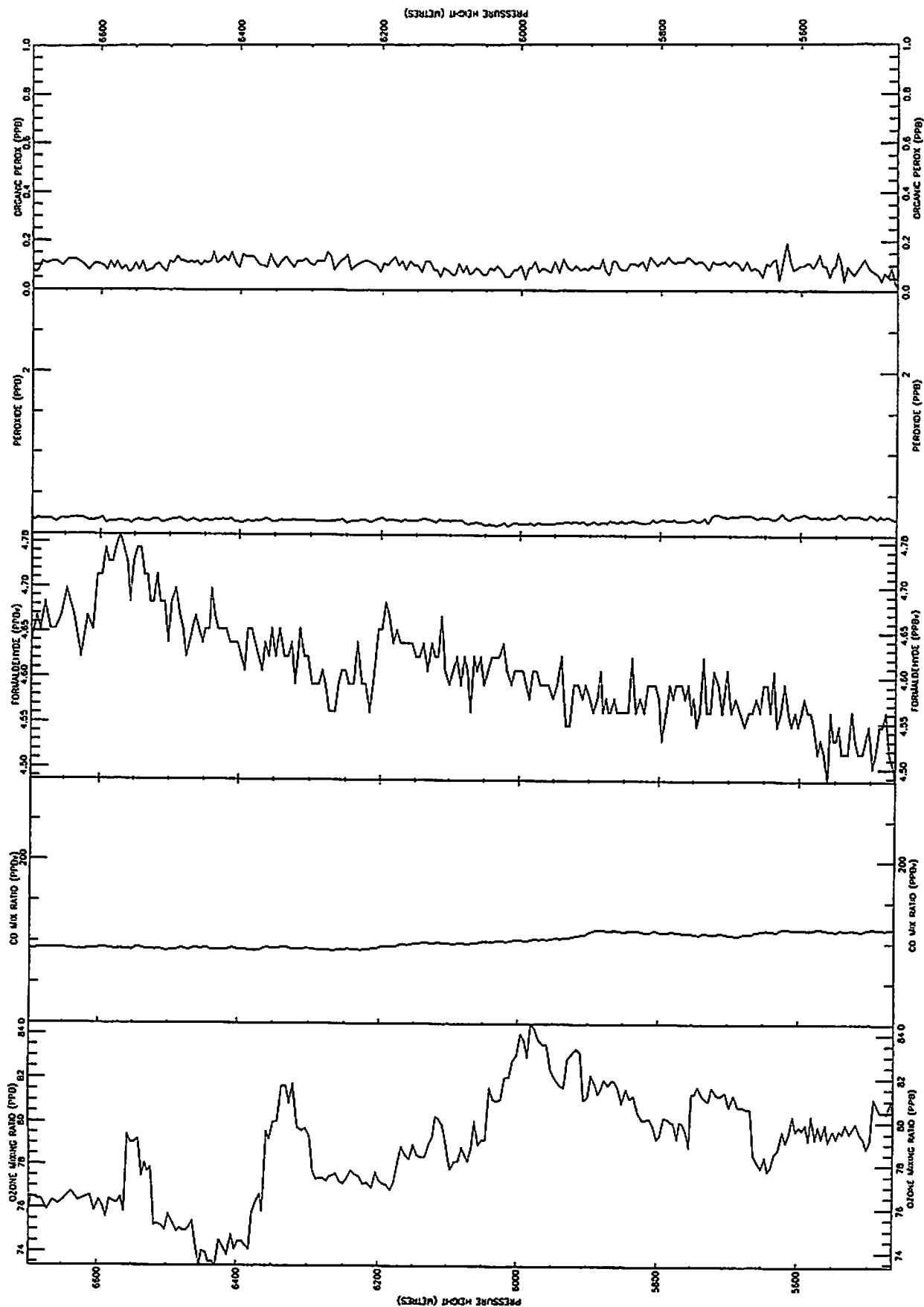
HEADING (DEG)

Mean 63.1343

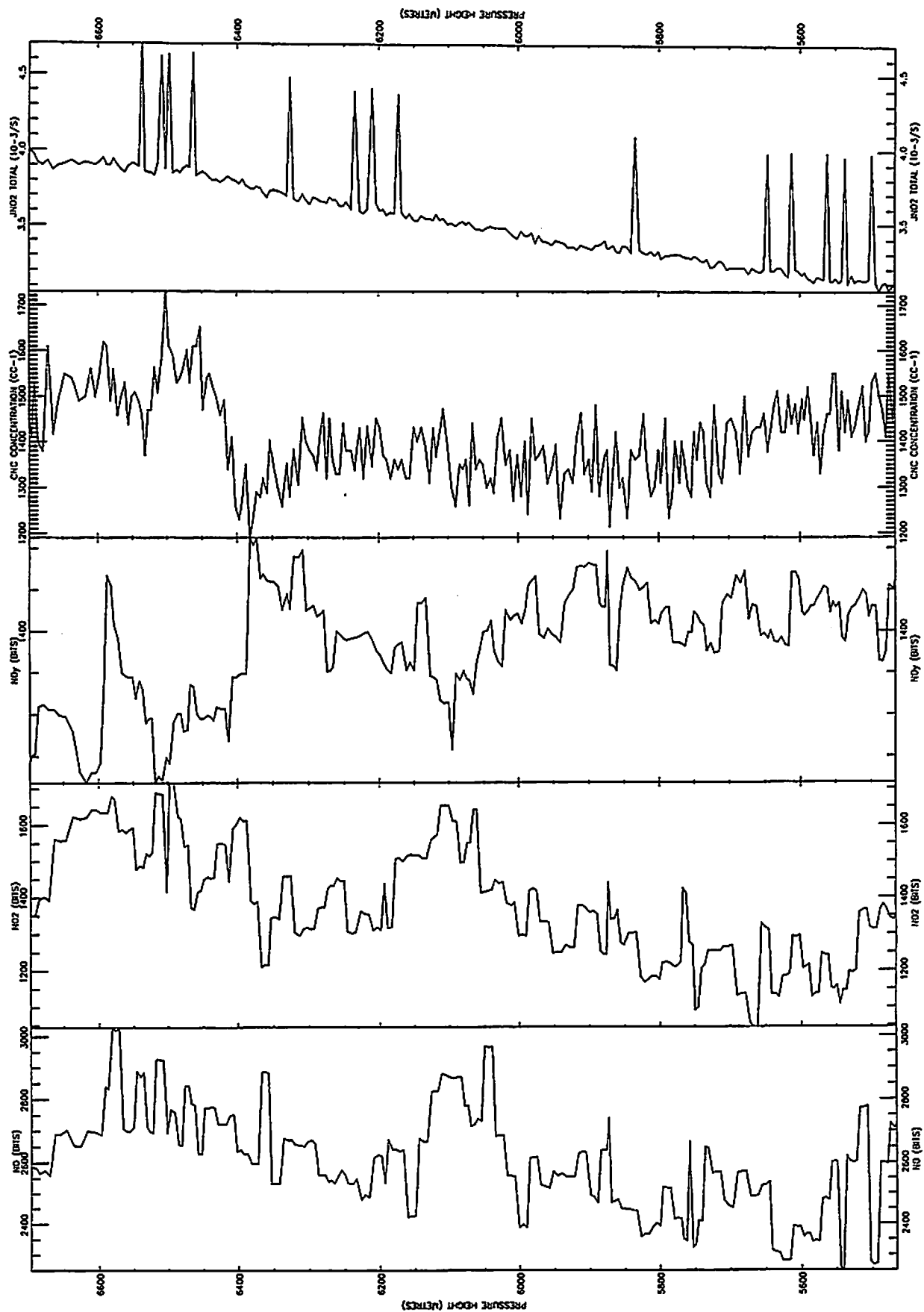
A575 14-SEP-97 P9 FL220-FL180 From 191623-192019 Plotted 6-May-1998 17:48



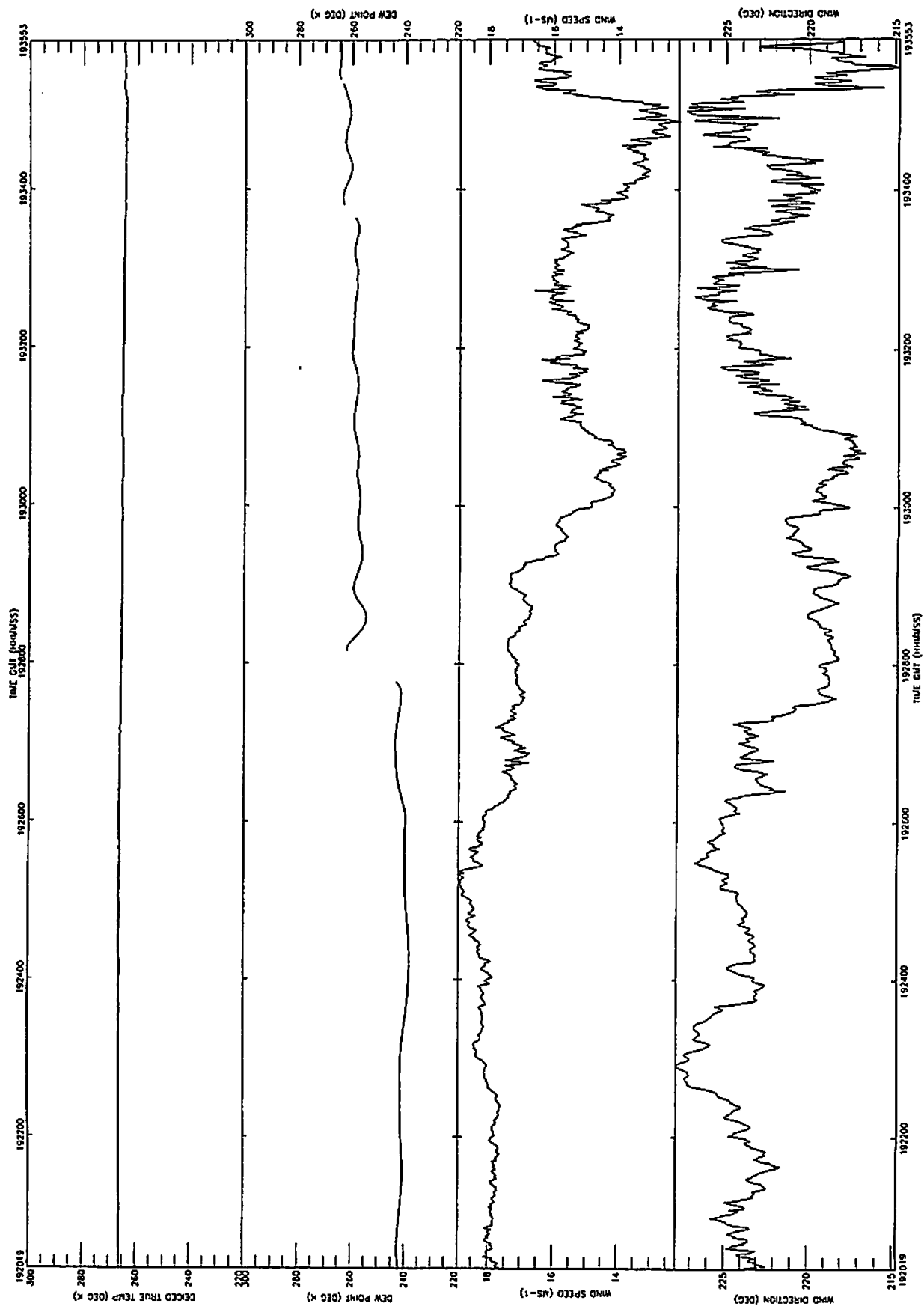
A575 14-SEP-97 P9 FL220-FL180 From 191623-192019 Plotted 6-May-1998 17:48



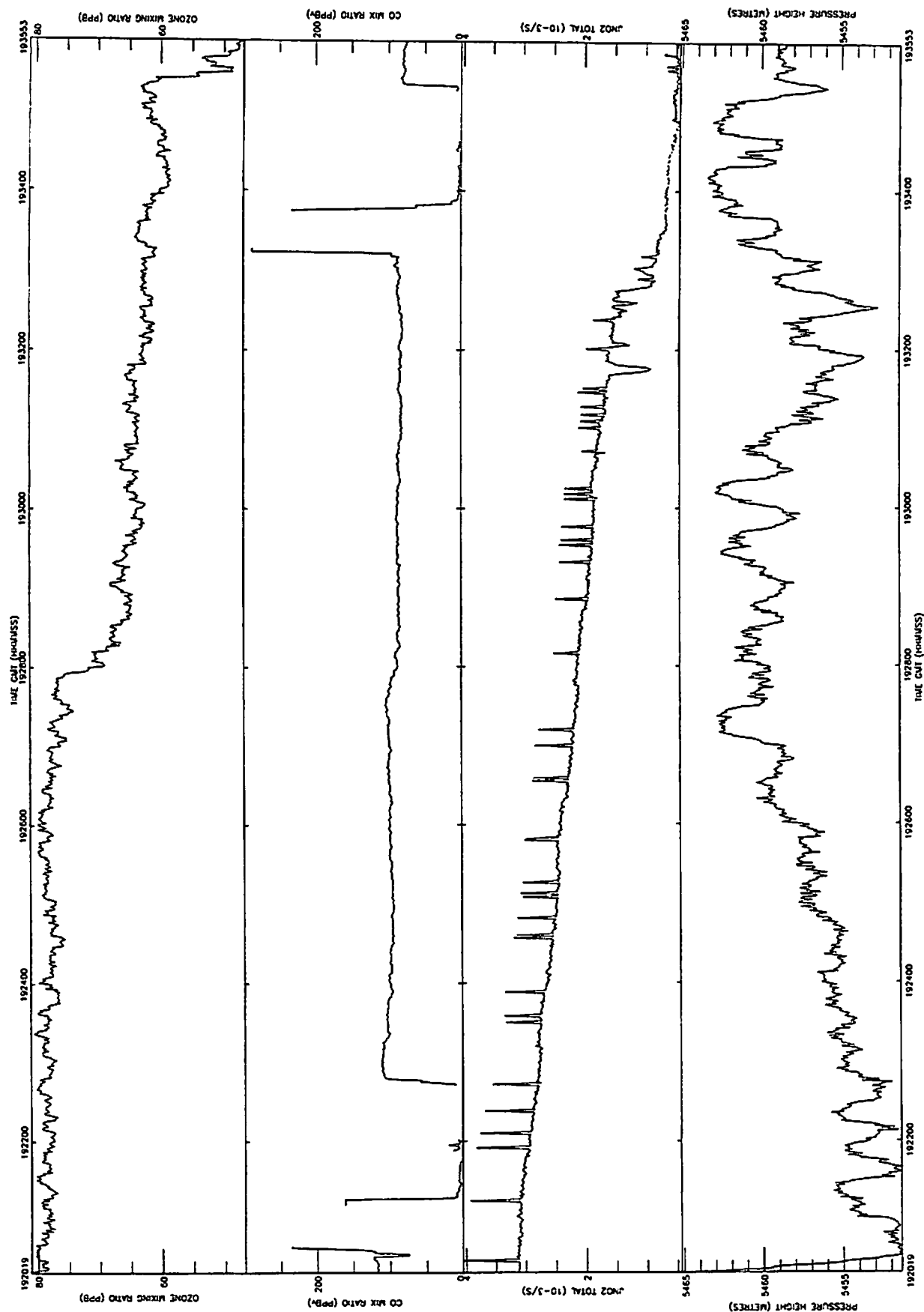
A575 14-SEP-97 P9 FL220-FL180 From 191623-192019 Plotted 6-May-1998 17:48



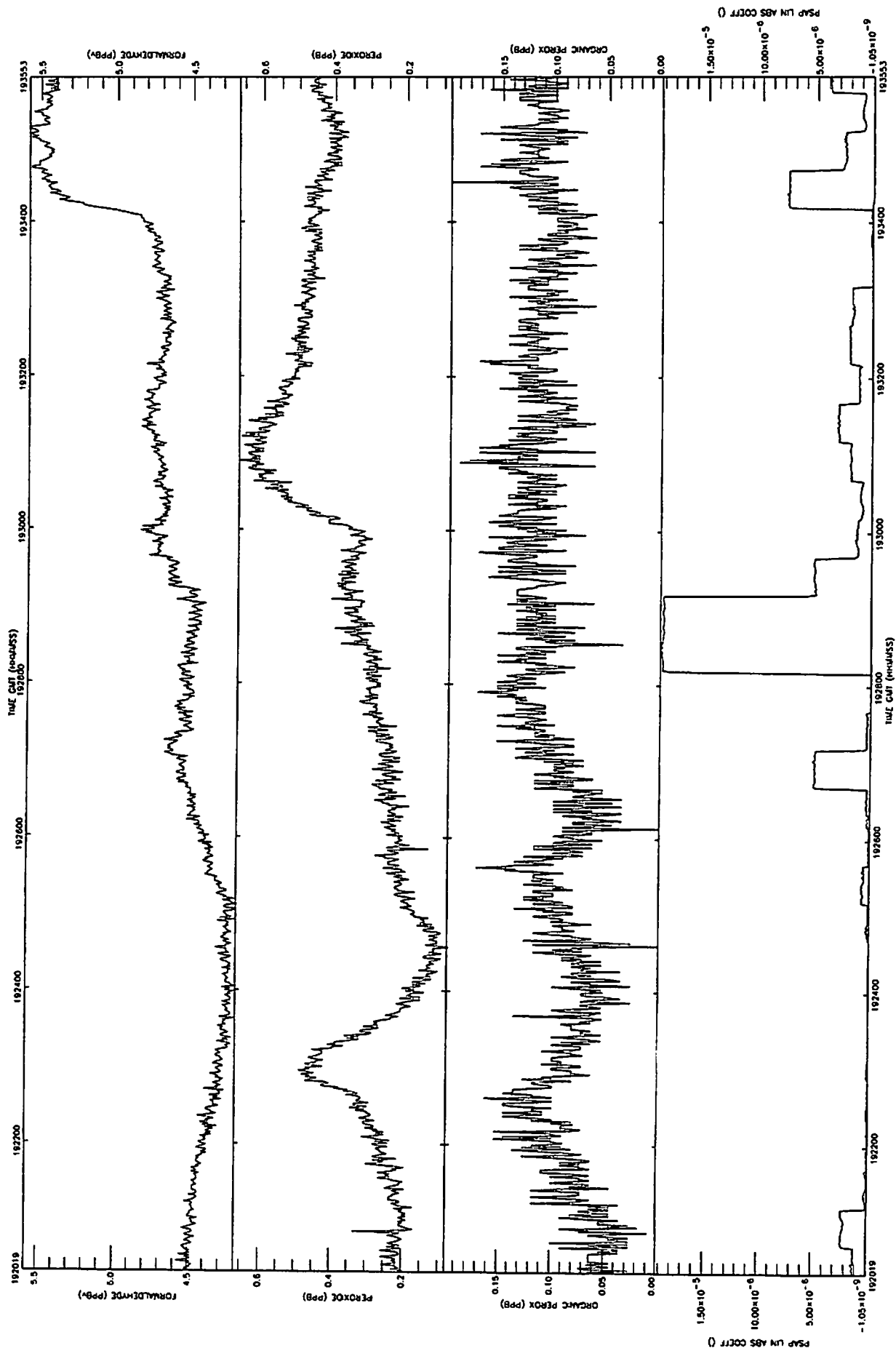
A575 14-SEP-97 R7 FL180 From 192019-193553 Plotted 6-May-1998 17:50



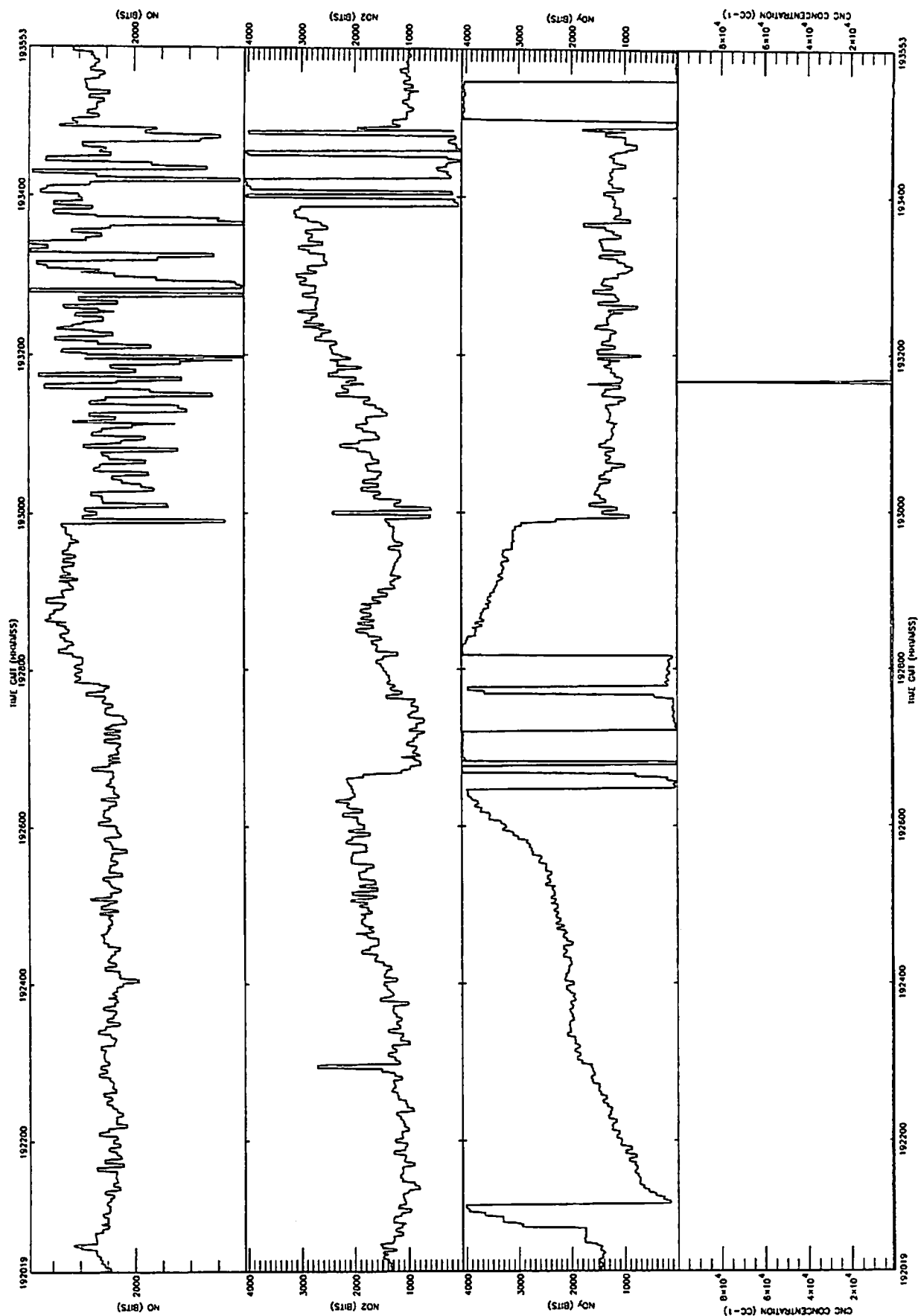
A575 14-SEP-97 R7 FL180 From 192019-193553 Plotted 6-May-1998 17:50



A575 14-SEP-97 R7 FL180 From 192019-193553 Plotted 6-May-1998 17:50



A575 14-SEP-97 R7 FL180 From 192019-193553 Plotted 6-May-1998 17:50



A575 14-SEP-97 R7 FL180 From 192019-193553 *Plotted 6-May-1998 17:50*

STATIC PRESSURE (MB)

No of obs 935
Mean 507.956
Standard dev 0.204795
Max value 508.398
Min value 507.449

DEICED TRUE TEMP (DEG K)

No of obs 935
Mean 265.802
Standard dev 0.639278
Max value 266.609
Min value 264.054

DEW POINT (DEG K)

No of obs 935
Mean 250.470
Standard dev 9.40811
Max value 265.001
Min value 238.300

OZONE MIXING RATIO (PPB)

No of obs 935
Mean 70.3312
Standard dev 8.23750
Max value 81.1026
Min value 46.8679

PSAP LIN ABS COEFF ()

No of obs 935
Mean 2.500448e-06
Standard dev 4.687943e-06
Max value 1.928065e-05
Min value -1.046657e-09

JNO2 TOTAL (10-3/S)

No of obs 935
Mean 1.99548
Standard dev 0.825479
Max value 4.05386
Min value 0.436751

PRESSURE HEIGHT (METRES)

No of obs 935
Mean 5457.76
Standard dev 2.98197
Max value 5465.15
Min value 5451.33

CORRECTED LATITUDE (DEGREES)

No of obs 935
Mean 34.9423
Standard dev 0.166667
Max value 35.2264
Min value 34.6615

CORRECTED LONGITUDE (DEGREES)

No of obs 935
Mean -28.4135
Standard dev 0.365120
Max value -27.7924
Min value -29.0497

NORTHWARD WIND COMPT (M S-1)

No of obs 935
Mean 12.1931
Standard dev 1.10055
Max value 13.7520
Min value 8.44720

EASTWARD WIND COMPT (M S-1)

No of obs 935
Mean 11.2396
Standard dev 1.39758
Max value 13.5229
Min value 8.24944

VERTICAL WIND COMPT (M S-1)

No of obs 935
Mean 0.167273
Standard dev 0.443103
Max value 1.76196
Min value -0.958618

WIND SPEED (MS-1)

No of obs 935
Mean 16.6014
Standard dev 1.59886
Max value 18.9158
Min value 12.1840

WIND DIRECTION (DEG)

Mean 222.670

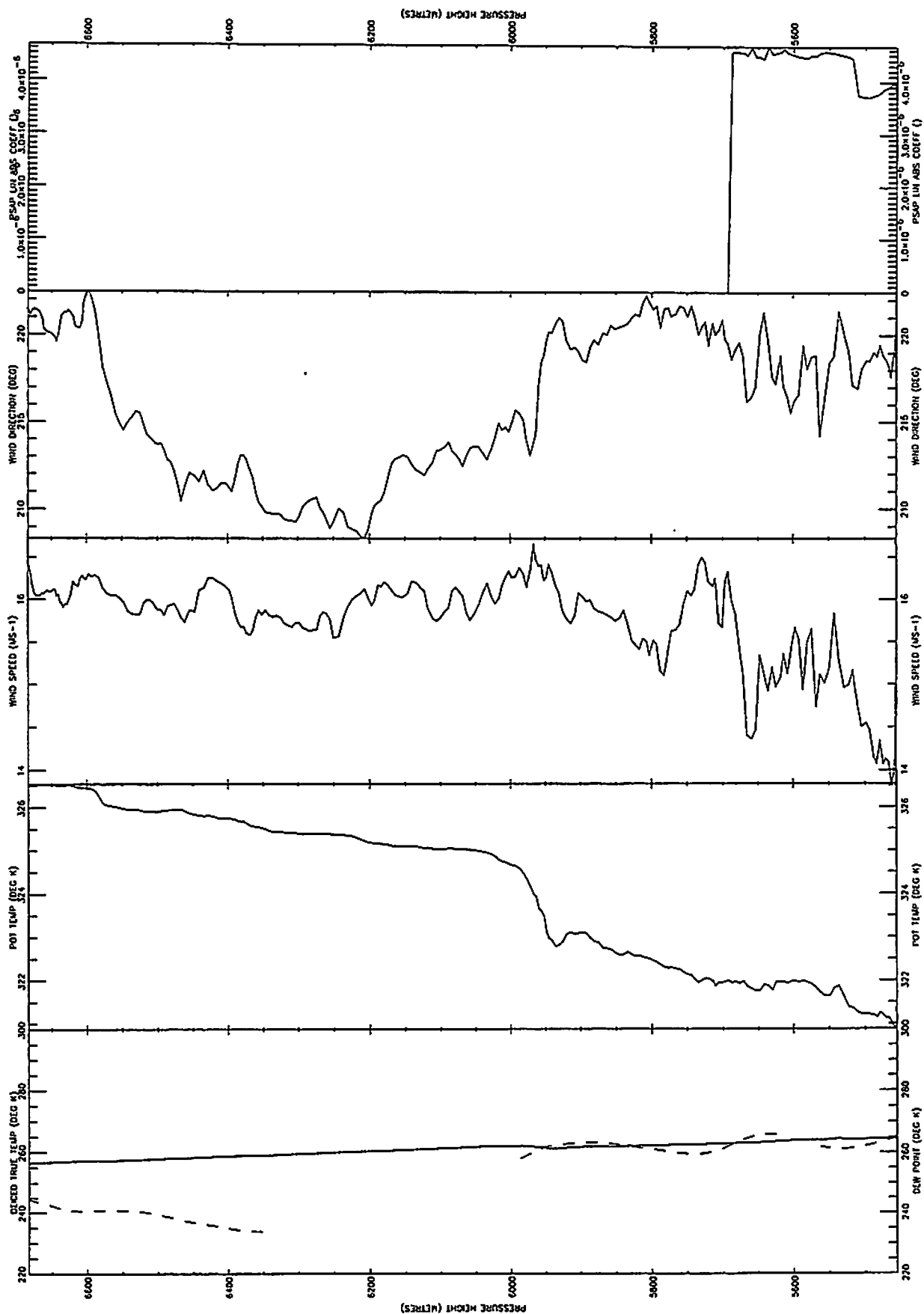
TRUE AIR SPEED (M S-1)

No of obs 935
Mean 124.398
Standard dev 3.14002
Max value 130.453
Min value 118.278

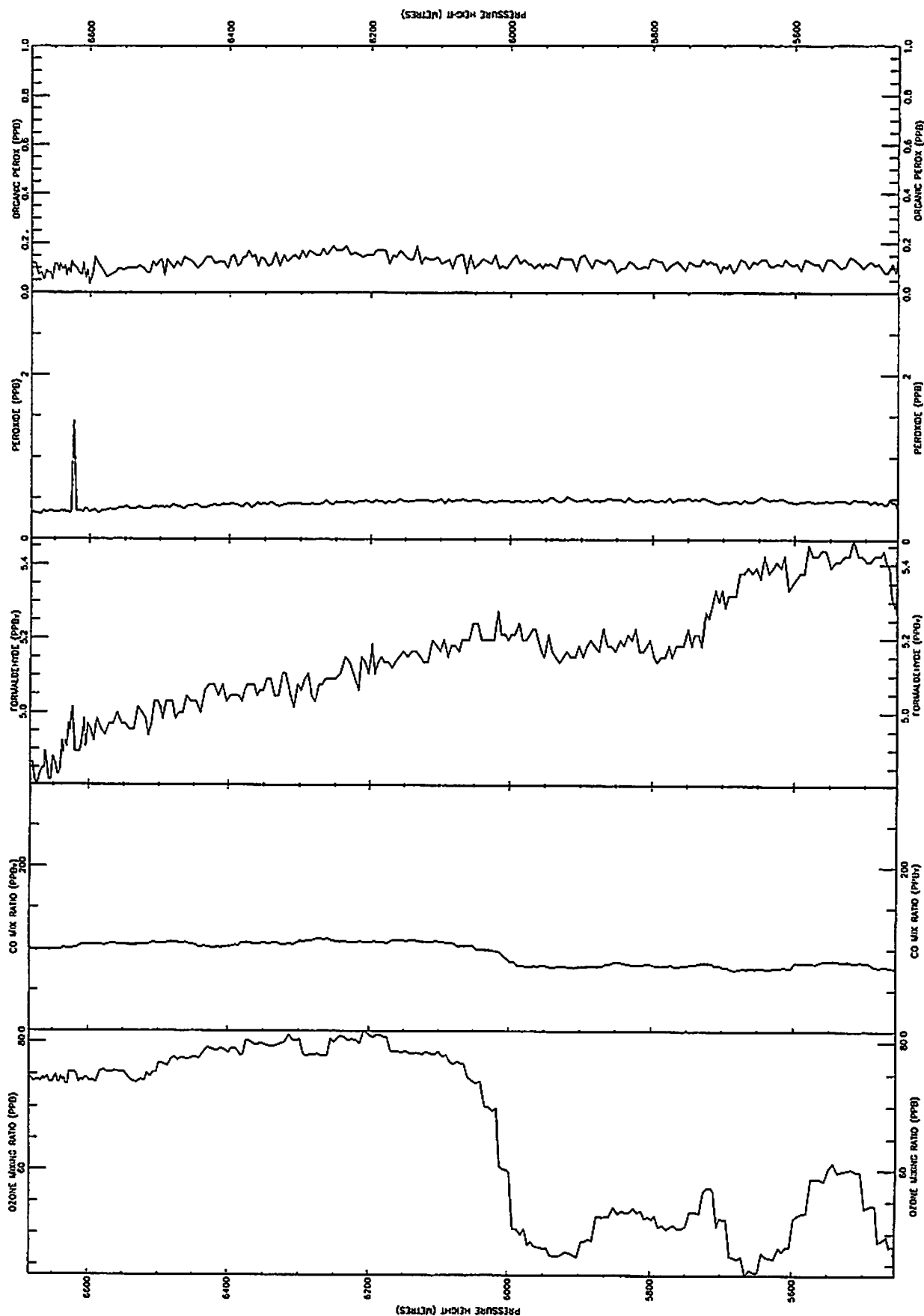
HEADING (DEG)

Mean 61.3891

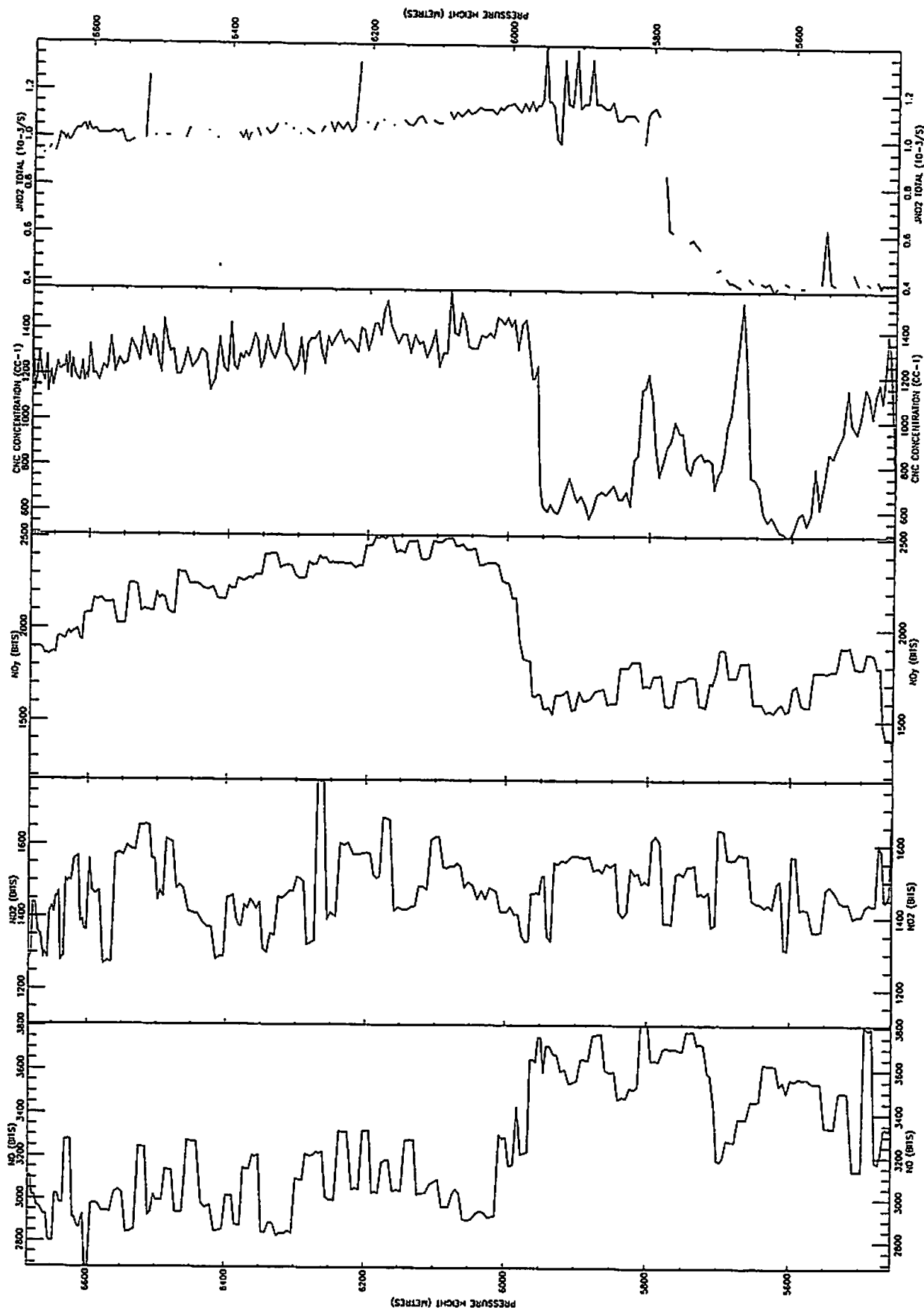
A575 14-SEP-97 P10 FL180-FL220 From 193553-194004 Plotted 6-May-1998 17:51



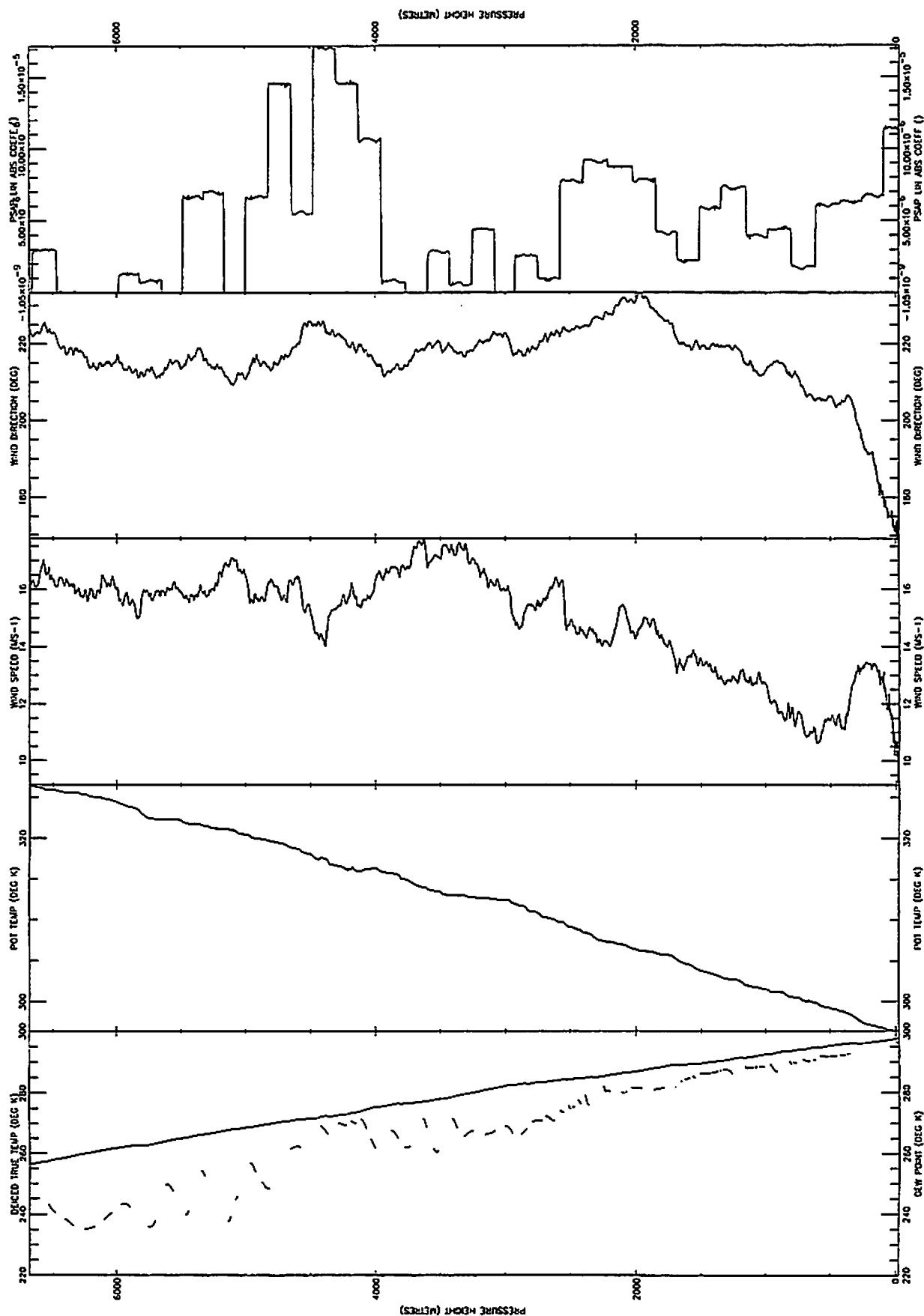
A575 14-SEP-97 P10 FL180-FL220 From 193553-194004 Plotted 6-May-1998 17:51



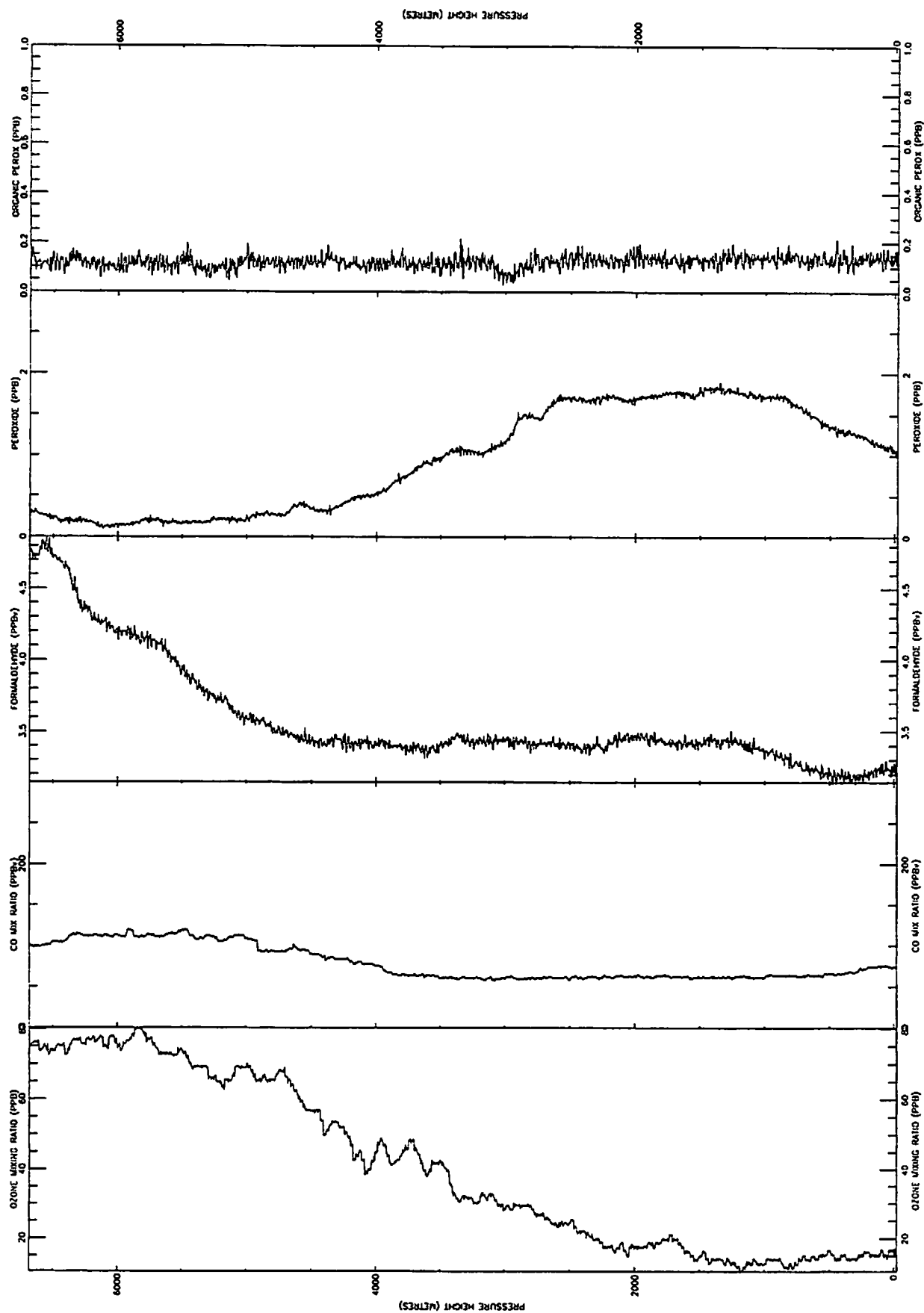
A575 14-SEP-97 P10 FL180-FL220 From 193553-194004 Plotted 6-May-1998 17:51



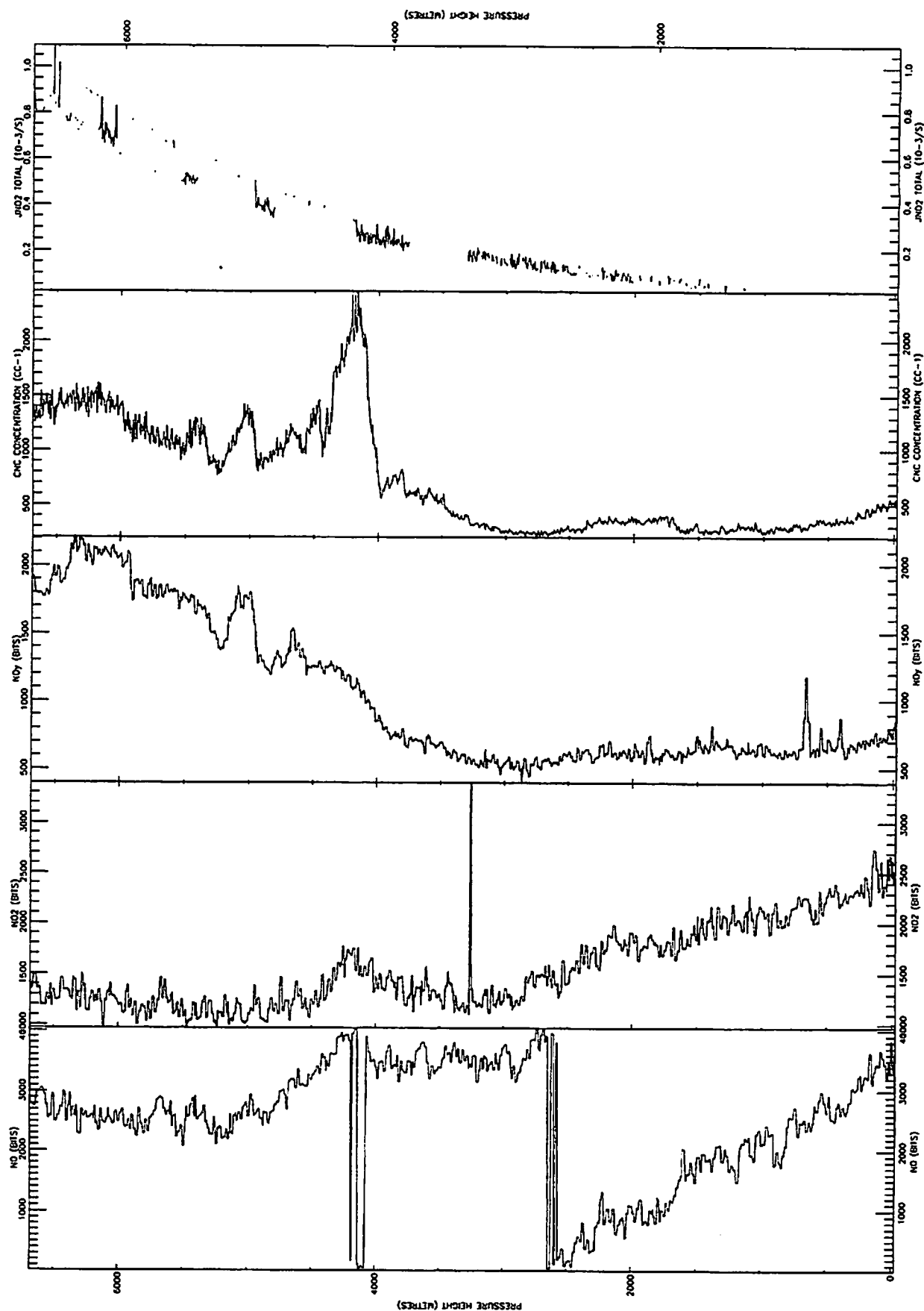
A575 14-SEP-97 P11 FL220-50' From 194004-195948 Plotted 6--May-1998 17:53



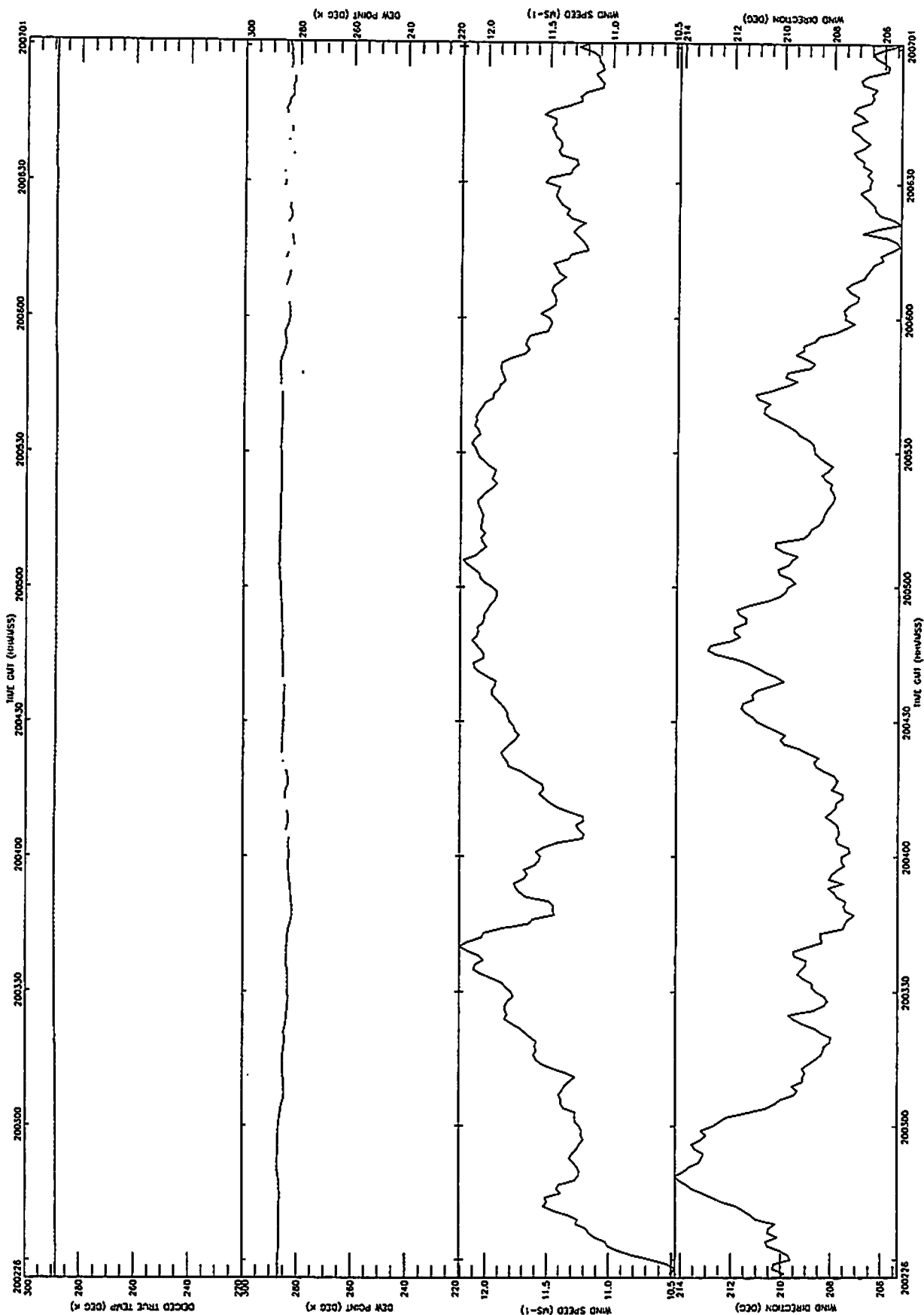
A575 14-SEP-97 P11 FL220-50' From 194004-195948 Plotted 6-May-1998 17:53



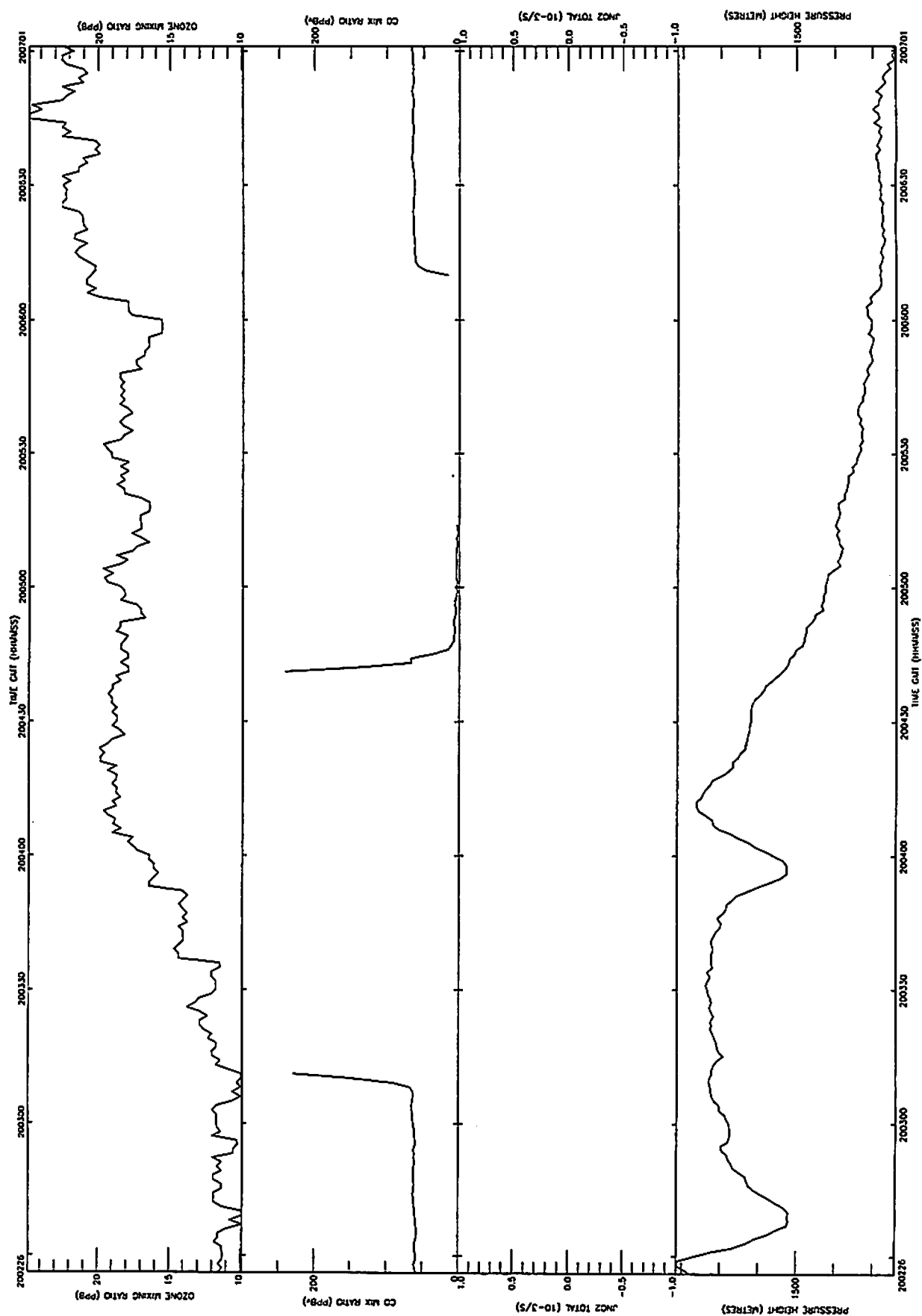
A575 14-SEP-97 P11 FL220-50' From 194004-195948 Plotted 6-May-1998 17:53



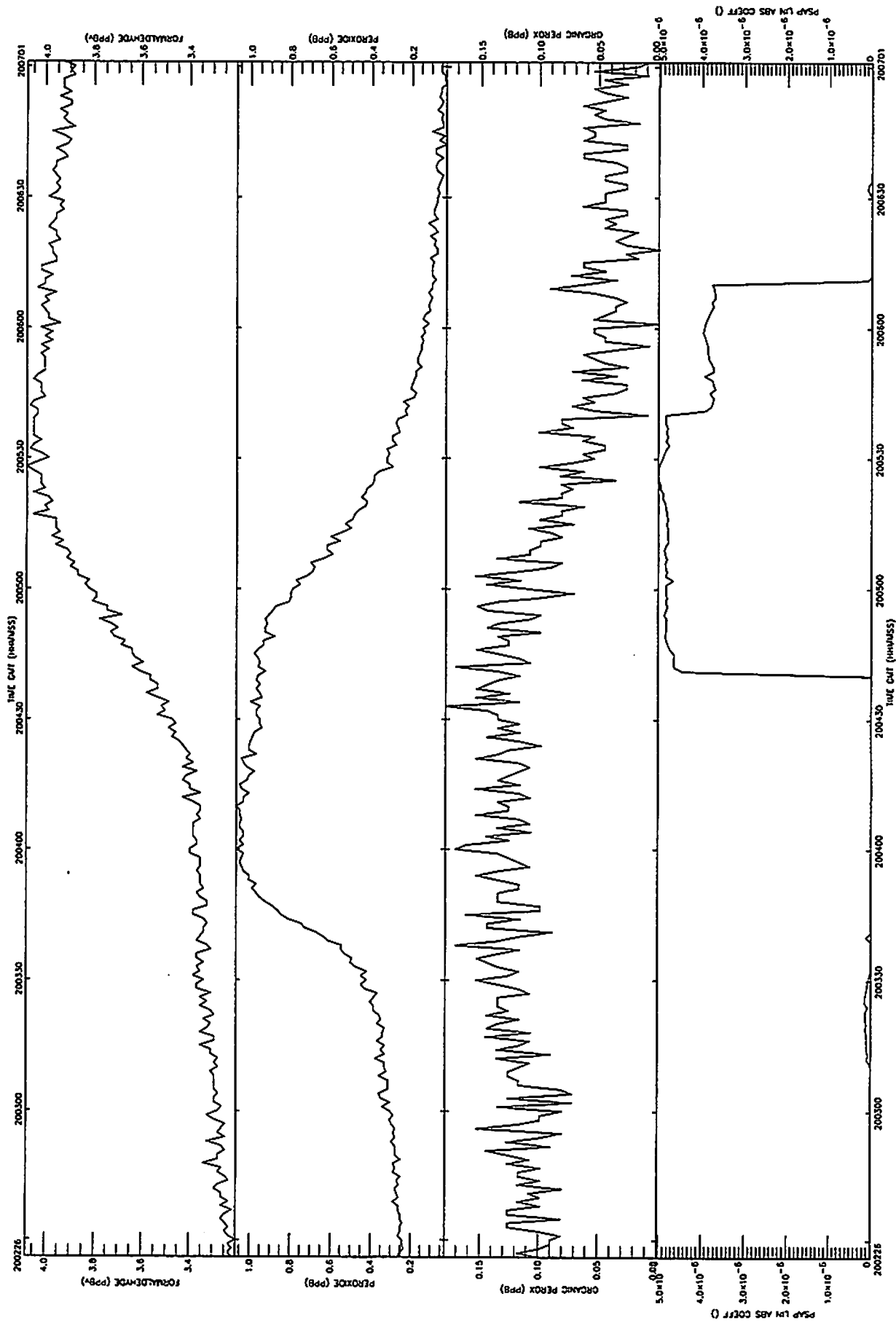
A575 14-SEP-97 R8 5000' From 200226-200701 Plotted 6-May-1998 17:54



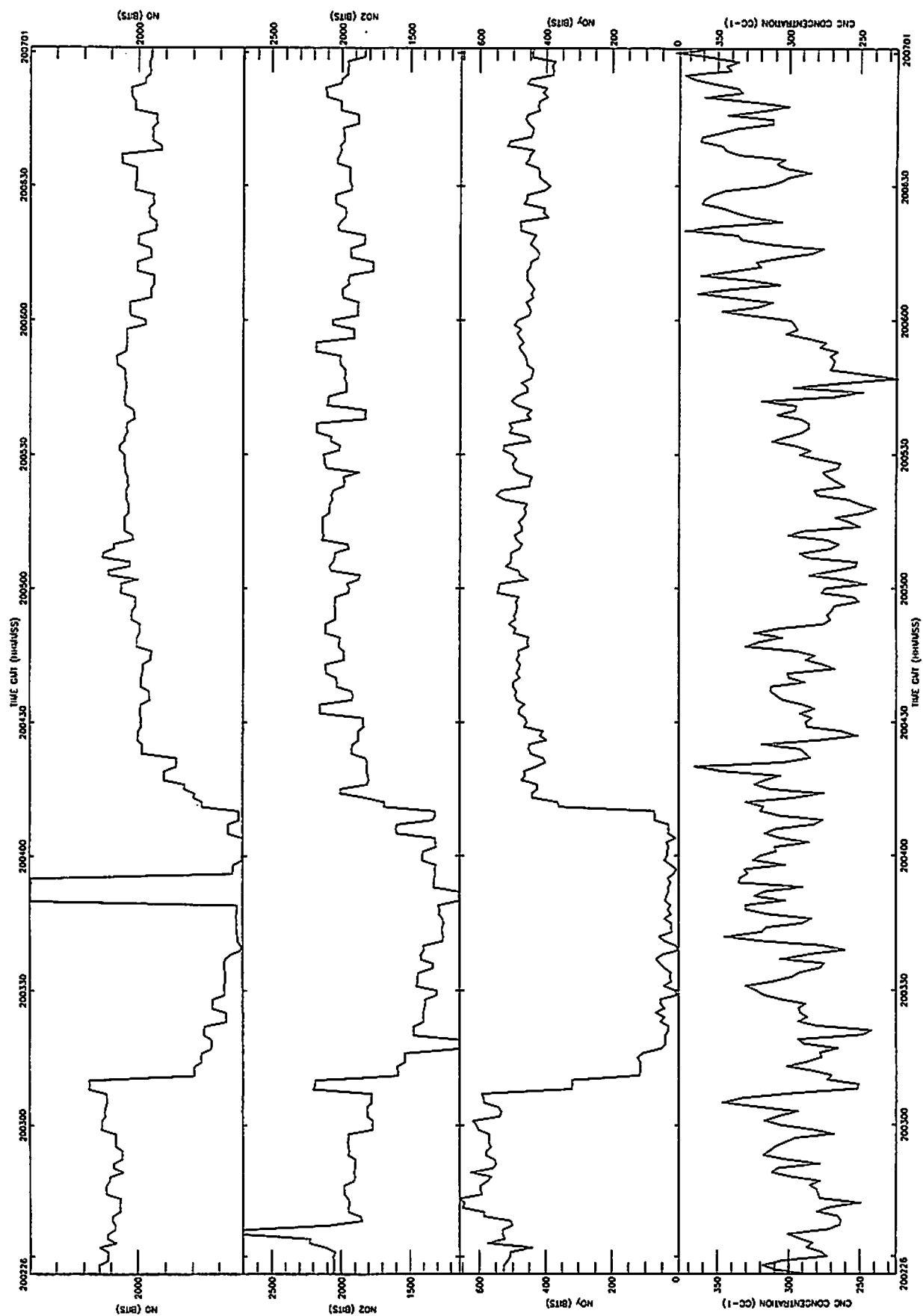
A575 14-SEP-97 R8 5000' From 200226-200701 Plotted 6-May-1998 17:54



A575 14-SEP-97 R8 5000' From 200226-200701 Plotted 6-May-1998 17:54



A575 14-SEP-97 R8 5000' From 200226-200701 Plotted 6-May-1998 17:54



STATIC PRESSURE (MB)
No of obs 276
Mean 845.553
Standard dev 0.941866
Max value 846.914
Min value 843.927

OZONE MIXING RATIO (PPB)
No of obs 276
Mean 16.8583
Standard dev 3.77227
Max value 24.7946
Min value 9.87182

PRESSURE HEIGHT (METRES)
No of obs 276
Mean 1500.04
Standard dev 9.07750
Max value 1515.72
Min value 1486.93

NORTHWARD WIND COMPT (M S-1)
No of obs 276
Mean 10.1544
Standard dev 0.336924
Max value 10.6863
Min value 9.03696

WIND SPEED (MS-1)
No of obs 276
Mean 11.6165
Standard dev 0.355734
Max value 12.2094
Min value 10.4703

WIND DIRECTION (DEG)
Mean 208.994

DEICED TRUE TEMP (DEG K)
No of obs 276
Mean 288.942
Standard dev 0.262675
Max value 289.455
Min value 288.435

PSAP LIN ABS COEFF (%)
No of obs 276
Mean 1.474622e-06
Standard dev 2.124338e-06
Max value 5.030022e-06
Min value -1.046657e-09

CORRECTED LATITUDE (DEGREES)
No of obs 276
Mean 36.0848
Standard dev 9.112076e-02
Max value 36.2441
Min value 35.9362

EASTWARD WIND COMPT (M S-1)
No of obs 276
Mean 5.62733
Standard dev 0.419942
Max value 6.55378
Min value 4.76383

TRUE AIR SPEED (M S-1)
No of obs 276
Mean 141.630
Standard dev 10.9730
Max value 147.718
Min value 101.760

DEW POINT (DEG K)
No of obs 276
Mean 284.912
Standard dev 1.44092
Max value 287.027
Min value 281.830

JN02 TOTAL (10-3/S)
No of obs 276
Mean 5.437881e-04
Standard dev 2.356701e-03
Max value 1.072039e-02
Min value 1.000000e-38

CORRECTED LONGITUDE (DEGREES)
No of obs 276
Mean -25.8765
Standard dev 8.090639e-02
Max value -25.7371
Min value -26.0104

VERTICAL WIND COMPT (M S-1)
No of obs 276
Mean -0.757632
Standard dev 0.275906
Max value -0.105217
Min value -1.26963

HEADING (DEG)
Mean 35.7718

Glossary

Aircraft Position, Speed and Attitude

- **Navigation:** The aircraft carries GPS, OMEGA, and inertial navigation systems.
- **Pressure height:** is based on the standard atmosphere as specified by the International Civil Aviation Organisation (sea level pressure of 1013.25 hPa). Pressure height is quoted in terms of Flight Levels (height in hundreds of feet *e.g.* FL100 = 10000 feet).
- **Radar height:** altitude of the aircraft above surface, measured by radar.
- **Time:** All times are UTC.

General meteorology

- **Tephigrams:** are given for every major profile of each flight. A tephigram is a thermodynamic diagram (temperature (T) - entropy (ϕ) diagram) used to assess the static stability of a given atmospheric profile. Other meteorological organisations use similar diagrams such as the Emagram or the Skew T log p diagram.
- **Deiced true temperature:** air temperature with corrections for aircraft speed and altitude.
- **Potential temperature:** the temperature that a parcel of air would have if it follows a dry adiabatic lapse rate to the 1000 hPa level.
- **Dew point:** dew point (the temperature at which a sample of air would just become saturated with respect to a plane surface of water if cooled at a constant pressure) calculated from the chilled mirror General Eastern hygrometer.

Particle Data

- **CNC:** Condensation nucleus counter (this data is provisional and requires further validation). The measurement is from a commercial instrument: TSI INC Model 3025A. Although CNC data were recorded on the flight no post flight processing has been carried out. Rather than delay this booklet further, I have decided to wait and process the data when the validation has been carried out by the cloud physics group.
- **PSAP:** The Radiance Research Particle Soot Absorption Photometer gives a measurement of optical absorption by black carbon, using a quartz filter with the absorption measured at 565 nm.

Chemistry Parameters

- **Ozone:** Calibrated readings from the TECO 49 ozone analyser in ppb. Instrument scientist: Joss Kent and Ken Dewey (UK Met. Office).
- **JNO₂:** The sum of upward and downward facing radiometers (data not quality controlled). Instrument scientists: Christoph Gerbig and Sandra Schmitgen (FZ Jülich).
- **Hydrogen peroxide:** Raw data recorded in ppb (approx.). Instrument scientist: Brian Bandy (UEA Norwich).
- **Organic peroxide:** Raw data recorded in ppb (approx.). Instrument scientist: Brian Bandy (UEA Norwich).
- **Formaldehyde:** Raw data (approx) converted to ppb using approximate scale factor and offset. Instrument scientist: Graham Mills (UEA, Norwich).
- **NO_x:** Parameters (NO, NO₂, NO_y) were recorded on MRF's data recording system and are plotted in bits. Only one NO_y channel was available for this flight. Instrument scientist: Stephane Bauguitte (UEA, Norwich).
- **Bottles:** Please refer to the bottle flight logs (within the flight folder section) to see when these were filled. Analysis carried out at NILU.
- **CO:** Approximate data in ppb from the DRS. Instrument scientist: Sandra Schmitgen (fz-Jülich).



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