NASA Technical Memorandum

NASA TM - 100400

ATMOSPHERIC ENVIRONMENT FOR SPACE SHUTTLE (STS-32) LAUNCH

By G.L. Jasper and G.W. Batts

Space Science Laboratory

March 1990

(NASA-TM-100400) ATMOSPHERIC ENVIRONMENT FOR SPACE SHUTTLE (STS-32) LAUNCH (NASA) 41 D CSCL 138 N90-28912

Unclas 93/45 0303925



National Aeronautics and Space Administration

George C. Marshall Space Flight Center

		
-	•.	
·		

National Aeronautics and	F	Report Documer	ntation Page		
1. Report No. NASA TM -100400		Government Accession No.		3. Recipient's Catalog N	0.
4. Title and Subtitle Atmospheric Environmen	nt for S	Snace Shuttle (STS-	32)	5. Report Date March 1990)
Launch				6. Performing Organizat	ion Code
7. Author(s)				Performing Organizal	ion Report No.
G.L. Jasper and G.W. Ba	itts*			10. Work Unit No.	
9. Performing Organization Name and Add	ress			11. Contract or Grant No	
George C. Marshall Space	e Flig	tht Center		The Constant of Charles	•
Marshall Space Flight Co	enter,	Alabama 35812		13. Type of Report and F	Period Covered
Sponsoring Agency Name and Address				Technical Me	
National Aeronautics and Washington, DC 20546		ce Administration		14. Sponsoring Agency	Code
*Computer Sciences Co. This report presents shuttle STS-32 launch ti ambient pressure, temperaloft are included. The given in this report. The parameters versus altitudatmospheric data tape has Applications Division to ance assessments and reby the STS-32 vehicle.	a sum me on crature sequer e final de, for as been	mary of selected atm January 9, 1990, at moisture, ground w nce of pre-launch Jin atmospheric tape, w STS-32 vehicle asc n constructed by Ma	nospheric conditions Kennedy Space winds, visual observablere-measure which consists of ent has been congraphall Space Fliggistent data set for	Center, Florida. ervations (cloud), and vertical wind provined and thermostructed. The ST ght Center's Earth or use in postflight	values of and winds rofiles is dynamic S-32 ascent Science and at perform-
17. Key Words (Suggested by Author(s)) STS-32 Launch Atmospheressure, Temperature, Winds, Winds Aloft, Claspace Shuttle	Relati	Summary ve Humidity	18. Distribution Stateme Unclassi	^{nt} fied – Unlimited	
19. Security Classif. (of this report)		20. Security Classif. (of this		21. No. of pages	22. Price
Unclassified		Unclassifie	ea	41	NTIS

ACKNOWLEDGMENTS

The authors wish to thank the personnel of NASA Kennedy Space Center (KSC), along with those at the Cape Canaveral Air Force Station and their Computer Sciences Raytheon contractors, for the acquisition and distribution of all related KSC atmospheric data received at MSFC.

Thanks are due to Paul Meyer and Deanna Skow of the Earth Science and Applications Division, MSFC, for their help in extracting atmospheric data and satellite cloud photographs that are used in this report. Also, special thanks to Bill Jeffries of Computer Sciences Corporation for his assistance in processing all the upper air data used in producing the STS-32 final atmospheric data tapes. Finally, appreciation is expressed to Bill Page and Kimberly Wilkie of NTI for the computer support in attaining pad measurements.

TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	SOURCES OF DATA	1
III.	GENERAL SYNOPTIC SITUATION AT LAUNCH TIME	2
IV.	SURFACE OBSERVATIONS AT LAUNCH TIME	2
V.	UPPER AIR MEASUREMENTS DURING LAUNCH	2
	A. Wind Speed B. Wind Direction C. Prelaunch/Launch Wind Profiles D. Thermodynamic Data E. SRB Upper Air and Surface Measurements	3
REF	FERENCES	33

LIST OF ILLUSTRATIONS

Figure	Title	Page
1.	Surface synoptic chart 35 min before launch of STS-32	23
2.	500 mb map 35 min before launch of STS-32	24
3.	GOES-7 infrared imagery of cloud cover 4 min before the launch of STS-32 (1235 u.t., January 9, 1990). 500-mb heights (meters) and wind barbs are also included for 1200 u.t.	25
4.	Enlarged view of GOES-7 visible imagery of cloud cover taken 4 min before the launch of STS-32 (1235 u.t., January 9, 1990). Surface temperatures, isobaric parameters, and wind barbs for 1200 u.t. are also included	26
5.	Scalar wind speed and direction at launch time of STS-32	27
6.	STS-32 prelaunch/launch Jimsphere-measured wind speeds (FPS)	28
7.	STS-32 prelaunch/launch Jimsphere-measured wind directions (degrees)	29
8.	STS-32 prelaunch/launch Jimsphere-measured in-plane component winds (FPS). Flight azimuth = 90 degrees.	30
9.	STS-32 prelaunch/launch Jimsphere-measured out-of-plane component winds (FPS). Flight azimuth = 90 degrees	31
10.	STS-32 temperature profiles versus altitude for launch (ascent)	32

LIST OF TABLES

Γable	Title	Page
1.	Selected atmospheric observations for the flights of the space shuttle vehicles	4
2.	Systems used to measure upper air wind data for STS-32 ascent	7
3.	Surface observations at STS-32 launch time	8
4.	STS-32 pre-launch through launch KSC pad 39B atmospheric measurements	9
5.	STS-32 ascent atmospheric data tape	10

TECHNICAL MEMORANDUM

ATMOSPHERIC ENVIRONMENT FOR SPACE SHUTTLE (STS-32) LAUNCH

I. INTRODUCTION

This report presents an evaluation of the atmospheric environmental data taken during the launch of the space shuttle/STS-32 vehicle. This space shuttle vehicle was launched from Pad 39A at Kennedy Space Center (KSC). Florida, on a reference bearing of 90-degrees east of north, at 1235 u.t. (0735 e.s.t.) on January 9, 1990.

This report presents a summary of the atmospheric environment at launch time (L+0) of the STS-32, together with the sequence of prelaunch Jimsphere-measured winds aloft profiles from L-4.15 h through liftoff. The general atmospheric situation for the launch and flight area is described, and surface and upper level wind/thermodynamic observations near launch time are given. Since a ship was unavailable for STS-32 duty, the solid rocket booster (SRB) descent/impact atmospheric data were not taken. However, one can use the STS-32 ascent data for SRB studies as the best substitute.

Previous MSFC-related launch vehicle atmospheric environmental conditions have been published as appendix A of individual MSFC Saturn Flight Evaluation Working Group reports [1]. Office memorandums have been issued for previous flights giving launch pad wind information. A report has also been published [2] which summarizes most launch atmospheric conditions observed for the past 155 MSFC/ABMA-related vehicle launches through SA-208 (Skylab 4). Reports summarizing ASTP, STS-1 through STS-33 launch conditions are presented in references 3 through 28, respectively. Table 1 gives the atmospheric L+0 launch conditions for all the space shuttle missions.

II. SOURCES OF DATA

Atmospheric observational data used in this report were taken from synoptic maps made by the National Weather Service, plus all available surface observations and measurements from around the launch area. Upper air observations were taken from balloon-released instruments sent aloft from Cape Canaveral Air Force Station (CCAFS). High-altitude winds and thermodynamic data were measured by the Super-Loki rocketsondes launched from the CCAFS. However, the data from the rocketsondes were bad and the Global Reference Atmosphere Model (GRAM) [29] parameters for January KSC conditions were used to replace the Super-Loki rocketsonde data. Table 2 presents a listing of systems used to obtain the upper level wind profiles used in compiling the final ascent atmospheric data tape. Data cutoff altitudes are also given in table 2.

III. GENERAL SYNOPTIC SITUATION AT LAUNCH TIME

A large area of high pressure prevailed over all of Florida during the liftoff of STS-32. Surface winds were mostly light and variable just prior to the launch time. Figure 1 shows the surface map 35 min before the launch of STS-32. Southwesterly winds dominated the flow aloft over the KSC region. Figure 2 presents the winds aloft condition at the 500-mb level 35 min before launch.

Scattered clouds were over the launch area prior to and during the launch of STS-32. Figure 3 depicts the GOES-7 infrared satellite picture at 1231 u.t. (4 min before liftoff) with 500-mb heights denoted in meters and wind barbs superimposed. Figure 4 gives an up-close visible shot of the Florida peninsula as recorded by GOES-7 also taken at 1231 u.t. with surface temperatures, wind barbs, and pressure superimposed.

IV. SURFACE OBSERVATIONS AT LAUNCH TIME

Surface observations at launch time for selected KSC locations are given in table 3. Included are pad 39A, shuttle runway, and CCAFS balloon release station observations. Neither precipitation nor lightning was observed at launch time.

Table 4 presents pad 39A wind data along with other standard hourly atmospheric measurements and sky observations for the 6-h period prior to launch of STS-32. Values for wind speed and direction are given for the 18-m (60-ft) pad light pole level.

V. UPPER AIR MEASUREMENTS DURING LAUNCH

The FPS-16 Jimsphere (1125 u.t.) and the MSS Rawinsonde (0705 u.t.) systems were used to measure the upper level wind and thermodynamic parameters for STS-32 launch. At altitudes above the measured data, the GRAM [29] parameters for January KSC conditions were used. A tabulation of the STS-32 final atmospheric data for ascent is presented in table 5 which lists the wind and thermodynamic parameters versus altitude. A brief summary of parameters is given in the following paragraphs.

A. Wind Speed

At launch time, wind speeds were 6.8 ft/s (4.0 kn) at the 60-ft level and increased to a maximum of 160 ft/s (94.7 kn) at 43,800 ft (13,350 m). The winds decrease above this level and began increasing at the 67,000-ft (20,421.6-m) level. The maximum wind speed above this level was 67.6 ft/s (40.0 kn) at the 88,000-ft (26,822-m) level which was 2,000 ft below the last measurable wind speed level.

B. Wind Direction

At launch time, the 60-ft wind direction was from the west southwest and was variable until the 1.900-ft (579-m) level where winds became southwesterly. Winds maintained a southwesterly component until near the 67.000-ft (20,422-m) level where they became westerly. The winds continued from this direction throughout the 90,000-ft (27,432-m) level which was the last measurable wind direction level.

C. Prelaunch/Launch Wind Profiles

Prelaunch/launch wind profiles given in figures 6 through 9 were measured by the Jimsphere FPS-16 system. Data are shown for four measurement periods beginning at L-4.15 h and extending through $L+15\,$ min.

The wind speed and direction profiles for the 4.15-h period prior to and including L+15 min are shown in figures 6 and 7. The in-plane (head-tail wind) and out-of-plane (left-right crosswind) profiles are given in figures 8 and 9. The wind speeds and in-plane component speeds were generally equal to the January mean wind values at mostly all altitude levels. The out-of-plane component speeds were less than the January mean wind values at mostly all altitudes.

D. Thermodynamic Data

The thermodynamic data, taken at STS-32 launch time, consisted of atmospheric temperature, dew-point temperature, pressure, and density. These data have been compiled as the STS-32 ascent atmospheric data and are presented in table 5. The vertical structure of temperature and dew-point temperature for STS-32 ascent are shown graphically versus altitude in figure 10.

E. SRB Upper Air and Surface Measurements

As has been mentioned in the introduction, since there was no ship available, an SRB descent atmospheric data tape has not been constructed. The tabular values for the ascent atmospheric tape, as presented in table 5, should be used for SRB descent/impact studies since it is the closest measured data source.

Table 1. Selected atmospheric observations for the flights of the space shuttle vehicles.

					Surfac	e Obse	rvations		Inf	light Cond		
	Vehicl	e Data ^h		There	modynan	oic ^a	Wine	ı ^b	Ве	Max. Willow 60,00		
Seq. No.	Vehicle No.	Launch Date	Time (EST) Nearest Minute	Press. ^C N/cm ²	Temp.	Rel. Hum. (%)	Speed (ft/sec)	Dir. (deg)	Alt. (ft)	Speed (ft/sec)	Dir. (deg)	Count Down and Launch Comments of Meterological Significance
1	STS-1 Columbia	4/12/81	0700	10.234 ^d	21	82	11.8 15.2	125 120	44,300	98	250	
2	STS-2 Columbia	11/12/81	1010	10.166	23	61	27.0 27.0	345 355	36,300	158	286	
3	STS-3 Columbia	3/22/82	1100	10.160	24	71	7.0 ^e 8.0 ^e	50 ^e 145 ^e	45,000	119	250	Wind directional change observed at Pad just prior to L+0. Onset of sca breeze.
4	STS-4 Columbia	6/27/82	1100 ^f	10.200	29	70	5.8g 4.9g	133 ^g 141 ^g	47,900	37	329	
5	STS-5 Columbia	11/11/82	0719	10.227	22	68	22.0 35.0	90 90	40,600	146	336	
6	STS-6 Challenger	4/4/83	1330	10.183	23	55	12.7 16.4	63 55	46,100	155	277	
7	STS-7 Challenger	6/18/83	0733 [£]	10.146	25	80	5.9 ^e 10.3 ^e	10 ^e 350 ^e	45,900	76	278	
8	STS-8 Challenger	8/30/83	0232 ^f	10.111	24	97	8.8 14.0	269 268	45,100	30	349	17-min countdown delay due to adverse weather conditions.
9	STS-9 (SL-1) Columbia	11/28/83	1100	10.153	24	83	19.1 32.0	183 190	47,100	117	252	
10	STS-11 (41-B) Challenger	2/3/84	0800	10.173	17	75	0.0 NA	0 NA	38,200	143	288	
11	STS-13 (41-C) Challenger	4/6/84	0858	10.149	16	56	21.5 18.6	320 275	37,700	176	289	
12	STS-41D Discovery	8/30/84	0842 ^f	10.172	26	81	3.0 3.6	106 39	40,300	44	270	
13	STS-41G Challenger	10/5/84	0703 ^f	10.210	23	60	16.5 14.8	73 58	40,600	78	303	
14	STS-51A Discovery	11/8/84	0715	10.227	20	59	23.0 31.1	24 10	33,100	131	272	l-day delay due to excessive wind loads, calculated at high altitudes.
15	STS-51C Discovery	1/24/85	1450	10.173	18	46	17.1 15.5	228 253	42,900	199	265	l-day delay due to extreme cold surface temperatures.

Table 1. Selected atmospheric observations for the flights of the space shuttle vehicles (continued).

					Surface	Observa	itions		Inflight Conditions Max. Wind					
	Vehicle	Datah		Thermodynamic ^a			Windb		Below 60,000 ft					
Seq.	Vehicle No.	Launch Date	Time (EST) Nearest Minute	Press.c N/cm ²	Temp.	Rel. Hum. (%)	Speed (ft/sec)	Dir. (deg)	Alt. (ft)	Speed (ft/sec)	Dir. (deg)	Count Down and Launch Comments of Meteorological Significance		
16	STS-51D Discovery	4/12/85	1359	10.257	21	55	19.9 22.3	82 82	42,600	134	265	55-min delay due to a ship in the SRB impact area, and concerns over potential weather related impacts (cloud cover).		
17	STS-51B Challenger	4/29/85	1202 ^f	10.128	27	65	11.5 18.4	005 337	32,900 40,700	68 68	320 297			
18	STS-51G Discovery	6/17/85	0733 [£]	10.201	23	91	2.9 11.8	201 206	40,100 46,700	55 55	298 302	<u>.</u>		
19	STS-51F Challenger	7/29/85	1700 ^f	10.174	28	72	14.9 13.4	101 113	48,000	53	035	une une	4 launch scrub due to exceptable weather in	
20	STS-51I Discovery	8/27/85	0658 ^f	10.225	24	86	14.2 16.6	073 070	41,000	43	123	cou	nch area. Rain during ntdown.	
21	STS-51J Atlantis	10/3/85	1115 ^f	10.185	28	79	17.0 13.7	213 171	48,000	48	283	une TA	launch scrub due to exceptable weather at W sites. 1/10 launch	
_22	STS-61A Challenger	10/30/85	1200	10.059	28	72	12.7 14.1	217 174	43,000	81	218	in	ub due to heavy rain launch area.	
23	STS-61B Atlantis	11/26/85	1929	10.202	23	81	10.1 10.4	165 112	49,300	75	270	to	26 launch scrub due in part potential bad weather sociated with frontal passage.	
24	STS-61C Columbia	1/12/86	0655	10.206	12	84	15.4 18.6	323 342	40,000	221	263	to	27 launch scrub due in part strong cross winds at X68. 28 2-hr delay due in part	
25 ^j	STS-51L ⁱ Challenger	1/28/86	1138	10.253	3	27	20.1 15.3	331 262	42,000	174	264	26 1-1	cold early morning temps.	
26 ^j	STS-26 Discovery	9/29/88	1137 ^f	10.182	29	56	13.7 13.5	058 047	53,100	44	304	27) 1-1	light winds. day delay due to excessive	
27 ^j	STS-27 Atlantis	12/2/88	930	10.270	14	50	25.5 22.0	314 352	40,200	187	245	al1	nd loads, calculated at high citudes.	
28 ^j	STS-29 Discovery	3/13/89	957	10.190	18	78	16.9	242	45,200		283	st	hr delay due to fog and rong winds aloft.	
29 ^j	STS-30 Atlantis	5/4/89	1437 ^f	10.200	26	57	21.6	106	44,200	157	255	29 59 co	-min delay due to cloud ver over the launch area.	

					Surface	Observa	ations		Infli	ght Condi	tions	
	Vehic	le Data ^h		Ther	modynam	íc ^a	Wind ^b			ax. Wind w 60,000		
Seq. No.	Vehicle No.	Launch Date	Time (EST) Nearest Minute	Press.c N/cm ²	Temp.	Rel. Hum. (%)	Speed (ft/sec)	Dir. (deg)	Alt. (ft)	Speed (ft/sec)	Dir. (deg)	Count Down and Launch Comments of Meteorological Significance
30 ^j	STS-28 Columbia	8/8/89	0837 ^f	10.120	27	80	12.5	252	24,100	35	286	
31 ^j	STS-34 Atlantis	10/18/89	12 54^f	10.152	30	52	13.5	193	45,800 47,100	61 61	287 294	31 1 day delay due to rain showers in launch area.
32 ^j	STS-33 Discovery	11/22/89	1924	10.132	19	80	16.9	208	41,900	110	237	
33	STS-32 Columbia	1/9/90	0735	10.194	12	100	6.8	246	42, 800	160	242	33) 1-day delay due to cloud cover over the launch area.
		:										
						;						

a. Pad 39A thermodynamic measurements taken at approximately 1.2 m (4 ft) above natural grade at camera site No. 3.

b. 1-min average prior to L+0 of 60-ft PLP (listed first) and 275-ft FSS winds measured above natural grade. 275-ft FSS winds were not available after sequence No. 27.

c. Pressure measurement applicable to 21 ft above MSL unless otherwise indicated.

d. Pressure measurement applicable to 14 ft above MSL.

e. 10-sec average prior to L+0.

f. Eastern daylight time.

g. 30-sec average prior to L+0.

h. All vehicles launched from LC 39A except where noted.

i. Shuttle exploded in flight.

j. Vehicle launched from 39B.

Table 2. Systems used to measure upper air wind data for STS-32 ascent.

	Date: Jan 1990		Portion of Data Used						
	Release	Time	Star	t	End	1			
Type of Data	Time (u.t.) (h:min)	Time After L+0 (min)	Altitude m (ft)	Time After L+0 (min)	Altitude m (ft)	Time After L+0 (min)			
FPS-16 Jimsphere	11:25	-70	6 (21)	-70	14,935 (49,000)	- 21			
MSS Rawinsonde	07:05	- 330	15,240 (50,000)	- 280	27,432 (90,000)	- 240			

Table 3. Surface observations at STS-32 launch time.

								Sky Cover		Win	nd.
Location ⁸	Time After L+0 (min)	Pressure (MSL) N/cm ² (psia)	Temperature K (°F)	Dew Point K (°F)	Relative Humidity (%)	Visibility km (miles)	Cloud Amount*	Cloud Type	Height of Base Meters (ft)	Speed ft/s (kt)	Direction (deg)
NASA Space Shuttle Runway X68 ^d Winds Measured at	0	10.207 (14.804)	285.4 (54.0)	284.8 (53.0)	95	8 (10)	4	Altocumulus	2,743 (9,000)	3.4 (2.0)	230
10.4 m (34 ft)							1	Cirrostratus	9,144 (30,000)		
CCAFS XMR ^C Surface Measurements	0	10.203 (14.798)	285.4 (54.0)	284.8 (53.0)	95	8 (10)	8	Altocumulus	2,743 (9,000)	6.8 (4.0)	280
							1	Cirrus	8,230 (27,000)		
Pad 39A Lightpole SE 18.3 m (60.0 ft) ^b	0	10.194 (14.785)	285.4 (54.0)	285.4 (54.0)	100	-	-	-	-	6.8 (4.0)	246

^{*5/10} total sky cover at X68 and 9/10 total sky cover at XMR.

a. Altitudes of measurements are above natural grade, except where noted.

b. Approximately 1-min average prior to L+0.

c. Balloon release site.

d. Official STS-32 sky observational site.

Table 4. STS-32 pre-launch through launch KSC pad 39A atmospheric measurements.

Hourly	Atmospheric Me	asuremen	nts ^a			Sky Condition ^b					
		Dew	Relative	60' Level (SE)			Total Sky	Vis.			
January 9, 1990 Time u.t.	Temperature (°F)	Point (°F)	Humidity (%)	WS Kt	WD°	Clouds	Cover	(mi.)	Other Remarks		
0700	53	52	96	8	270	Scattered at 11,000 ft	1/10	10			
0800	52	51	99	6	276	Scattered at 11,000 ft	1/10	10			
0900	52	52	100	7	275	Scattered at 10,000 ft	1/10	10			
1000	52	52	100	6	289	Scattered at 30,000 ft	4/10	10			
1100	52	51	97	7	286	Scattered at 500, 9,000, and 30,000 ft	4/10	10			
1200	52	51	99	6	291	Broken at 9,500 and 30,000 ft	8/10	10			
L+0 ^c 1235	54	54	100	4	246	Scattered at 9,000 and 30,000 ft	5/10	10			

a. Hourly pad observations (obtained via MSFC/HOSC) averaged over 5 min, centered on the hour.

b. Sky observations taken at the shuttle runway site X68.

c. L+0 pad wind and thermodynamic parameters obtained from HOSC strip charts. The SE anemometer was used at the 60-ft level for L+0 wind conditions (approximately 1-min average prior to L+0). Pad 39A L+0 atmospheric pressure at sea level was 10.194 N/cm².

Table 5. STS-32 ascent atmospheric data tape.

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
21.	4.92	320.00	13.61	0.1019E+04	O. 1231E+04	12.51
100.	7.55	323.00	13.71	O.1016E+04	O. 1227E+04	11.99
200.	9.84	324.00	13.85	0.1012E+04	O.1223E+04	11.34
300.	12.14	325.00	13.98	0.1009E+04	O.1218E+04	10.69
400.	14.44	325.00	14.11	0.1005E+04	O. 1213E+04	10.03
500.	15.42	328.00	14.25	0.1002E+04	O.1209E+04	9.38
600.	18.70	338.00	14.38	0.9979E+03	O.1204E+04	8.72
` 700 .	18.37	349.00	14.51	0.9943E+03	O.1199E+04	8.07
800.	18.70	0.00	14.64	0.9907E+03	O.1195E+04	7.42
900.	21.00	1.00	14.78	0.9872E+03	O.1190E+04	6.7 6
1000.	18.04	21.00	14.91	0.9836E+03	O.1185E+04	6.11
1100.	14.11	350.00	15.07	0.9801E+03	O.1181E+04	5.18
1200.	13.78	355 . 00	15.23	0.9766E+03	O.1176E+04	4.25
1300.	10.50	358.00	15.39	0.9731E+03	0.1171E+04	3.32
1400.	9.84	4.00	15.55	0.9696E+03	O.1167E+04	2.39
1500.	6.89	16.00	15.71	0.9661E+03	O.1162E+04	1.46
1600.	5.58	17.00	15.87	0.9626E+03	O.1157E+04	0.53
1700.	5.58	27.00	16.03	0.9592E+03	O.1153E+04	-0.40
1800.	2.30	35.00	16.19	0.9557E+03	O.1148E+04	-1.33
1900.	1.64	228.00	16.35	0.9523E+03	O.1144E+04	-2.26
2000.	2.95	346.00	16.51	0.9489E+03	O.1139E+04	-3.19
2100.	3.94	244.00	16.51	0.9455E+03	O.1135E+04	-3.28
2200 .	4.92	232.00	16.51	0.9421E+03	O.1131E+04	-3.37
2300.	4.27	235.00	16.51	0.9388E+03	O.1127E+04	-3.46
2400.	5.58	233.00	16.51	0.9354E+03	O.1123E+04	-3.55
2500 .	7.87	258.00	16.51	0.9321E+03	O.1119E+04	-3.64
2600.	12.80	241.00	16.51	0.9288E+03	O.1115E+04	-3.73
2700.	15.75	233.00	16.51	0.9255E+03	O.1111E+04	-3.82
2800.	13.78	235.00	16.51	0.9222E+03	0.1107E+04	-3.91
2900.	18.04	232.00	16.51	0.9189E+03	O.1103E+04	-4.00
3000.	25.92	222.00	16.51	0.9156E+03	O.1099E+04	-4.09
3100.	25.59	223.00	16.44	0.9123E+03	O.1095E+04	-3.34
3200.	22.31	221.00	16.37	0.9091E+03	0.1092E+04	-2.59
3300.	25.26	222.00	16.30	0.9058E+03	O.1088E+04	-1.84
3400.	24.61	229.00	16.23	0.9026E+03	O.1084E+04	-1.09
3500.	23.62	237.00	16.16	0.8994E+03	O. 1080E+04	-0.34
3600.	28.22	237.00	16.09	0.8961E+03	O. 1076E+04	0.41
3700.	29.86	239.00	16.02	0.8929E+03	O. 1073E+04	1.16
3800.	31.82	247.00	15.95	0.8897E+03	0.1069E+04	1.91
3900.	32.81	244.00	15.88	0.8866E+03	0.1065E+04	2.66
4000.	39.04	246.00	15.81	0.8834E+03	0.1061E+04	3.41
4100.	40.35	244.00	15.70	0.8802E+03	O.1058E+04	3.63
4200.	41.99	242.00	15.59	0.8771E+03	O. 1055E+04	3.85
4300.	44.62	242.00	15.48	0.8739E+03	O. 1051E+04	4.07
4400.	44.29	239.00	15.37	0.8708E+03	O.1048E+04	4.29
4500.	44.95	236.00	15.26	0.8677E+03	O. 1044E+04	4.51
4600.	48.23	237.00	15 . 15	0.8645E+03	O. 1041E+04	4.73
4700.	47.57	236.00	15.04	0.8614E+03	0.1037E+04	4.95
4800.	47.57	232.00	14.93	0.8583E+03	O. 1034E+04	5.17
4900.	53.15	228.00	14.82	0.8553E+03	0.1031E+04	5.39

Table 5. STS-32 ascent atmospheric data tape (continued).

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY (GRAM/M3)	DEW POINT (DEG C)
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)		5.61
5000.	50.85	227.00	14.71	0.8522E+03	O. 1027E+04	
5100.	50. 85	223.00	14.51	0.8491E+03	0.1024E+04	5.17
5200 .	52.17	224.00	14.31	0.8461E+03	0.1021E+04	4.73
5300.	51.51	225.00	14.11	0.8430E+03	0.1019E+04	4.29
5400.	50.52	226.00	13.91	0.8400E+03	0.1016E+04	3.85
5500.	50.85	228.00	13.71	0.8370E+03	0.1013E+04	3.41
5600.	51.51	230.00	13.51	0.8339E+03	0.1010E+04	2.97
5700.	51.84	232.00	13.31	0.8309E+03	0.1007E+04	2.53
5800.	52 . 17	234.00	13.11	O.8280E+03	0.1004E+04	2.09
5900 .	52.82	235.00	12.91	O.8250E+03	0.1001E+04	1.65
6000.	53.48	237.00	12.71	0.8220E+03	0.9987E+03	1.21
6100.	53.81	239.00	12.59	O.8190E+03	0.9954E+03	1.64
6200.	54.13	240.00	12.47	0.8161E+03	0.9921E+03	2.07
6300.	54.7 9	242.00	12.35	0.8131E+03	O.9888E+O3	2.50
6400.	55 . 12	244.00	12.23	O.8102E+03	O.9855E+O3	2.93
6500 .	55.77	245.00	12.11	0.8072E+03	O.9822E+03	3.36
6600.	56.10	247.00	11.99	0.8043E+03	0.9789E+03	3.79
6700.	56.43	248.00	11.87	0.8014E+03	O.9757E+O3	4.22
6800.	53.48	245.00	11.75	O.7985E+03	0.9724E+03	4.65
6900.	55.12	245.00	11.63	O.7956E+03	0.9692E+03	5 .0 8
7000.	52.17	249.00	11.51	O.7927E+03	0.9659E+03	5.51
7100.	57.74	250.00	11.34	O.7898E+03	0.9630E+03	5.44
7200.	58.40	251.00	11.17	O.7870E+03	0.9601E+03	5.37
7300.	.57 , 74	251.00	11.00	O.7841E+03	O.9572E+O3	5.30
7400.	60. 04	252.00	10.83	O.7813E+O3	O.9543E+03	5.23
7500.	63.32	253.00	10.66	O.7784E+O3	0.9514E+03	5.16
7600.	65.29	251.00	10.49	O.7756E+O3	O.9485E+O3	5.09
7700.	63.98	251.00	10.32	Q.7728E+03	0.9456E+03	5.02
7800.	62.99	249.00	10.15	0.7700E+03	0.9428E+03	4.95
7900.	61.02	247.00	9.98	O.7672E+03	O.9399E+03	4 . 88
8000.	57.41	246.00	9.81	O.7644E+03	0.9371E+03	4.81
8100.	62.01	245.00	9.58	O.7616E+O3	0.9344E+03	4.65
8200.	60.70	245.00	9.35	O.7588E+O3	0.9318E+03	4 . 49
8300.	60.7 0	245.00	9.12	0.7560E+03	0.9292E+03	4.33
8400.	60.04	246.00	8.89	0.7532E+03	0.9265E+03	4 . 17
8500.	60. 70	243.00	8.66	O.7505E+03	O.9239E+03	4.01
8600.	61.02	243.00	8.43	O.7477E+O3	0.9213E+03	3.85
8700.	58.07	244.00	8.20	O.7450E+03	O.9187E+03	3.69
8800.	61.02	244.00	7 . 97	O.7422E+O3	O.9161E+03	3.53
8900.	59.71	244.00	7.74	O.7395E+03	O.9135E+O3	3.37
9000.	64.96	242.00	7.51	O.7368E+03	O.9109E+03	3.21
9100.	65.29	245.00	7 . 25	O.7341E+03	O.9084E+03	3.28
9200.	62.6 6	244.00	6.99	O.7314E+03	O.9058E+03	3.35
9300.	64.30	245.00	6.73	O.7287E+03	0.9033E+03	3.42
9400.	60.37	245.00	6.47	O.7260E+03	O.9008E+03	3.49
9500.	63.32	245.00	6.21	O.7233E+03	O.8983E+O3	3.56
9600.	59.38	249.00	5.95	0.7207E+03	O.8958E+O3	3.63
9700.	56.10	246.00	5.69	0.7180E+03	0.8933E+03	3.70
9800.	54.46	243.00	5.43	0.7154E+03	O.8908E+03	3.77
9900.	58.07	242.00	5.17	0.7127E+03	O.8883E+O3	3.84

ALTITUDE (FT)	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
10000.	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
	57.74	237.00	4.91	0.7101E+03	O.8858E+O3	3.91
10100.	60.37	237.00	4 . 90	0.7075E+03	O.8827E+03	3.14
10200.	60.04	240.00	4.89	0.7048E+03	O.8797E+03	2.37
10300.	60.04	237.00	4.88	0.7022E+03	O.8766E+O3	1.60
10400.	59.71	240.00	4.87	0.6996E+03	0.8735E+03	0.83
10500.	62.34	240.00	4 . 86	0.6970E+03	0.8705E+03	0.06
10600.	63.98	241.00	4.85	0.6944E+03	O.8674E+03	-0.71
10700.	67.59	239.00	4.84	0.6918E+03	O.8643E+03	-1.48
10800.	68.57	239.00	4.83	0.6892E+03	O.8613E+03	-2.25
10900.	65.94	240.00	4.82	0.6867E+03	O.8582E+O3	-3.02
11000.	66.27	236.00	4.81	0.6841E+03	O.8552E+03	-3.79
11100.	68.57	236.00	4.66	0.6815E+03	O.8525E+O3	-4.32
11200.	65.94	236.00	4.51	0.6790E+03	0.8499E+03	-4.85
11300.	66.93	234.00	4 . 36	0.6765E+03	O.8473E+03	-5.38
11400.	69.55	237.00	4.21	0.6739E+03	O.8446E+03	-5.91
11500.	67.59	237.00	4.06	0.6714E+03	O.8420E+03	-6.44
11600.	71.19	237.00	3.91	O.6689E+03	O.8394E+03	-6.97
11700.	68.24	239.00	3.76	O.6664E+03	O.8368E+O3	-7.50
11800.	70.21	236.00	3.61	0.6639E+03	0.8341E+03	-8.03
11900.	69.88	237.00	3.46	0.6615E+03	O.8315E+03	-8.56
12000.	67.26	238.00	3.31	O.6590E+03	O.8289E+03	-9.09
12100.	66.27	237.00	3.21	0.6565E+03	0.8262E+03	-9.66
12200.	69.23	237.00	3.11	0.6541E+03	0.8234E+03	-10.23
12300.	73.49	238.00	3.01	0.6516E+03	O.8207E+03	-10.80
12400.	71.19	236.00	2.91	0.6492E+03	O.8180E+03	-11.37
12500.	74.48	235.00	2.81	0.6467E+03	0.8153E+03	-11.94
12600.	72.51	235.00	2.71	0.6443E+03	0.8125E+03	-12.51
12700.	73.82	235.00	2.61	0.6419E+03	O.8098E+03	-13.08
12800.	71.52	235.00	2.51	0.6395E+03	O.8071E+03	-13.65
12900.	72.83	232.00	2.41	0.6371E+03	0.8044E+03	-14.22
13000.	73.49	234.00	2.31	0.6347E+03	0.8018E+03	-14.79
13100.	69.23	235.00	2.09	0.6323E+03	0.7994E+03	-14.84
13200.	70.87	237.00	1.87	0.6299E+03	O.7970E+03	-14.89
13300.	70.87	239.00	1.65	0.6276E+03	0.7946E+03	-14.94
13400.	71.52	238.00	1.43	O.6252E+03	0.7923E+03	-14.99
13500.	70.87	238.00	1.21	O.6228E+Q3	0.7899E+03	-15.04
13600.	70.21	237.00	0.99	0.6205E+03	0.7876E+03	-15.09
13700.	67.59	238.00	0.77	O.6182E+03	O.7853E+03	-15.14
13800.	67.91	236.00	O.55	0.6158E+03	0.7829E+03	-15.19
13900.	69.23	233.00	0.33	0.6135E+Q3	0.7806E+03	-15.24
14000.	72.18	232.00	0.11	0.6112E+03	0.7783E+03	-15.29
14100.	67 . 26	236.00	-O.O9	O.6089E+03	O.7759E+03	-15.28
14200.	67.26	233.00	-0.29	0.6066E+03	O.7735E+03	- 15 . 27
14300.	65.94	234.00	-0.49	0.6043E+03	0.7711E+03	-15.26
14400.	67.59	236.00	-0.69	0.6020E+03	O.7688E+03	- 15 . 25
14500.	65.94	236.00	-0.89	0.5997E+03	0.7664E+03	-15.24
14600.	67.26	239.00	-1.09	0.5974E+03	0.7641E+03	-15.23
14700.	67.59	239.00	- 1 . 29	0.5951E+03	0.7617E+03	-15.22
14800.	68.90	240.00	-1.49	0.5929E+03	0.7594E+03	-15.21
14900.	68.90	243.00	-1.69	0.5906E+03	0.7571E+03	-15.20

Table 5. STS-32 ascent atmospheric data tape (continued).

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
15000.	71.85	244.00	-1.89	O.5884E+O3	O.7547E+O3	- 15 . 19
15100.	71.19	243.00	-2.00	O.5862E+O3	O.7522E+O3	- 15 . 87
15200.	74.48	244.00	-2.11	O.5839E+O3	0.7497E+03	- 16 . 55
15300.	75.46	243.00	-2.22	O.5817E+O3	O.7472E+O3	- 17 . 23
15400.	77 . 10	242.00	-2.33	O.5795E+03	O.7447E+O3	-17.91
15500.	79.40	242.00	-2.44	O.5772E+03	O.7422E+03	- 18.59
15600.	80.05	238.00	-2.55	O.5750E+03	O.7397E+03	-19.27
15700.	81.04	237.00	-2.66	O.5728E+03	O.7372E+03	-19.95
15800.	82.35	235.00	-2.77	0.5707E+03	O.7347E+03	-20.63
15900.	84.65	234.00	~2.88	O.5685E+O3	O.7322E+O3	-21.31
16000.	83.99	238.00	-2.99	O.5663E+O3	O.7297E+O3	-21.99
16100.	80.05	236.00	-3.20	O.5641E+03	O.7275E+03	-22.04
16200.	82.02	235.00	-3.41	O.5620E+03	O.7253E+03	-22.09
16300.	81.69	236.00	-3.62	O.5598E+03	O.7230E+03	-22.14
16400.	81.04	236.00	-3.83	O.5576E+O3	O.7208E+03	-22.19
16500.	84.97	234.00	-4.04	O.5555E+O3	O.7186E+03	-22.24
16600.	84.65	235.00	-4.25	O.5534E+03	O.7164E+03	-22.29
16700.	83.01	236.00	-4.46	O.5512E+03	O.7142E+03	-22.34
16800.	84.97	234.00	-4.67	O.5491E+03	0.7120E+03	-22.39
16900.	87.60	235.00	~4.88	O.5470E+03	O.7098E+03	-22.44
17000.	81.69	236.00	-5.09	O.5449E+O3	O.7077E+03	-22.49
17100.	81.36	235.00	-5.32	O.5428E+O3	O.7055E+03	-22.53
17200.	78.41	235.00	-5.55	O.5407E+03	O.7034E+03	-22.57
17300.	84.32	233.00	-5.78	O.5386E+O3	O.7012E+03	-22.61
17400.	84.65	234.00	-6.01	O.5365E+O3	O.6991E+03	-22.65
17500.	80. 05	234.00	-6.24	O.5344E+03	O.6970E+03	-22.69
17600.	84.97	233.00	-6.47	O.5323E+O3	O.6949E+03	-22.73
17700.	86.94	234.00	-6.70	0.5303E+03	O.6928E+03	-22.77
17800.	85. 96	234.00	-6.93	O.5282E+O3	O.6907E+03	-22.81
17900.	91.54	235.00	-7.16	O.5261E+O3	O.6886E+03	-22.85
18000.	90.55	236.00	-7.39	0.5241E+03	O.6865E+03	-22.89
18100.	89.57	235.00	-7.62	O.5221E+O3	O.6845E+03	-23.31
18200.	90.88	237.00	-7.85	O.5200E+03	O.6824E+03	-23.73
18300.	89.24	236.00	~8.08	O.5180E+03	O.6803E+03	-24.15
18400.	90.22	236.00	-8.31	O.5160E+03	O.6783E+03	-24.57
18500.	88.58	238.00	-8.54	O.5140E+03	O.6762E+03	-24.99
18600.	90.55	238.00	-8.77	0.5119E+03	0.6742E+03	-25.41
18700.	90.88	238.00	-9.00	O.5099E+03	O.6722E+03	-25.83
18800.	92.52	238.00	-9.23	O.5080E+03	0.6701E+03	-26.25
18900.	92.85	239.00	-9.46	O.5060E+03	O.6681E+03	-26.67
19000.	95.80	239.00	-9.69	0.5040E+03	O.6661E+03	-27.09
19100.	94.49	239.00	-9.93	O.5020E+03	0.6641E+03	-27.28
19200.	94.49	239.00	-10.17	O.5000E+03	0.6621E+03	-27.47
19300.	97.44	240.00	-10.41	O.4980E+03	O.6600E+03	-27.66
19400.	97.44	242.00	-10.65	0.4961E+03	0.6580E+03	-27.85
19500.	95.14	241.00	-10.89	0.4941E+03	0.6560E+03	-28.04
19600.	99.74	239.00	-11.13	0.4921E+03	0.6540E+03	-28.23
19700.	99.41	240.00	-11.37	0.4902E+03	0.6520E+03	-28.42
19800.	94.82	239.00	-11.61	0.4883E+03	0.6501E+03	-28.61
19900.	97.44	238.00	-11.85	O.4863E+O3	O.6481E+03	-28.80

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
20000.	97.44	239.00	-12.09	O.4844E+O3	0.6461E+03	-28.99
20100.	95.14	238.00	-12.31	O.4825E+O3	0.6441E+03	-29.18
20200.	97.77	238.00	-12.53	0.4806E+03	0.6421E+03	-29.37
20300.	99.41	239.00	-12.75	0.4787E+03	0.6401E+03	-29.56
20400.	98 . 10	238.00	-12.97	0.4767E+03	O.6381E+03	-29.75
20500.	98.75	239.00	-13.19	0.4749E+03	O.6361E+03	-29.94
20600.	99.41	240.00	-13.41	0.4730E+03	0.6341E+03	-30.1 3
20700.	102.36	238.00	-13.63	0.4711E+03	0.6321E+03	-30.32
208 00.	99.74	238.00	-13.85	0.4692E+03	O.6302E+03	-30.51
20900.	98.43	238.00	-14.07	0.4674E+03	0.6282E+03	-30.70
21000.	103.02	237.00	-14.29	0.4655E+03	O.6262E+03	-30. 89
21100.	102.69	238.00	-14.52	0.4636E+03	O.6243E+03	-31.06
21200.	100.07	237.00	-14.75	0.4618E+03	O.6223E+03	~31.23
21300.	101.3 8	236.00	-14.98	0.4599E+03	O.6204E+03	-31.40
21400.	96.46	235.00	-15.21	0.4581E+03	O.6184E+03	-31.57
21500.	101.38	235.00	-15.44	0.4562E+03	O.6165E+03	-31.74
21600.	97.11	237.00	-15.67	0.4544E+03	O.6145E+O3	-31.91
21700.	98.75	235.00	-15.90	0.4525E+03	O.6126E+03	-32.08
21800.	100.07	235.00	-16,13	0.4507E+03	0.6107E+03	~32.25
21900.	97.11	236.00	-16.36	0.4489E+03	O.6088E+03	-32.42
22000.	100.39	234.00	-16.59	0.4471E+03	0.6069E+03	-32.59
22100 .	102.03	234.00	-16.74	0.4453E+03	0.6048E+03	-32.74
22200.	105.97	234.00	-16.89	0.4435E+03	0.6027E+03	-32.89
22300.	107.61	234.00	-17.04	0.4417E+03	O.6006E+03	-33.04
22400.	107.28	234.00	-17.19	0.4399E+03	O.5986E+O3	-33.19
22500.	109.58	235.00	-17.34	0.4382E+03	0.5965E+03	-33.34
22600.	104.99	236.00	-17.49	0.4364E+03	0.5945E+03	-33.49
22700.	106 . 96	234.00	-17.64	0.4346E+03	O.5924E+03	-33.64
22800.	107.94	233.00	-17.79	0.4329E+03	0.5904E+03	-33.7 9
22900.	105.31	231.00	-17.94	0.4311E+03	O.5883E+O3	-33.94
23000.	109.91	231.00	- 18 . 09	0.4294E+03	O.5863E+O3	-34.09
23100.	106.63	232.00	-18.28	0.4276E+03	0.5844E+03	-34.22
23200.	106.63	232.00	-18.47	0.4259E+03	0.5824E+03	-34. 35
23300.	104.99	232.00	- 18 . 66	0.4242E+03	0.5805E+03	-34.48
23400.	108.92	232.00	- 18 . 85	0.4224E+03	O.5785E+O3	-34.61
23500.	109.58	232.00	-19.04	0.4207E+03	0.5766E+03	-34.74
23600.	109.91	231.00	-19.23	0.4190E+03	O.5747E+O3	-34.87
23700.	106.63	230.00	- 19 . 42	0.4173E+03	O.5728E+O3	-35.00
23800.	104.33	230.00	-19.61	0.4156E+03	O.5709E+03	-35.13
23900.	104.00	229.00	- 19 . 80	0.4139E+03	0.5690E+03	-3 5 .26
24000.	105.97	230.00	- 19 . 99	0.4122E+03	O.5671E+03	-35.39
24100.	104.00	233.00	-20.29	0.4105E+03	O.5654E+O3	-35.56
24200.	104.66	233.00	-20.59	0.4088E+03	O.5638E+O3	-35.73
24300.	101.05	233.00	-20.89	0.4071E+03	O.5621E+O3	-35.90
24400.	103.35	235.00	-21.19	0.4055E+03	O.5605E+03	-36.07
24500.	102.36	235.00	-21.49	0.4038E+03	O.5588E+O3	-36.24
24600.	101.71	236.00	-21.79	0.4022E+03	O.5572E+O3	-36.41
24700.	102.69	237.00	-22.09	O.4005E+03	O.5556E+O3	-36.58
24800.	102.36	237.00	-22.39	0.3989E+03	O.5540E+03	-36.75
24900.	102.69	238.00	-22.69	0.3972E+03	O.5524E+O3	-36.92

Table 5. STS-32 ascent atmospheric data tape (continued).

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
25000.	103.02	239.00	-22.99	O.3956E+03	O.5508E+O3	-37.09
25100.	104.33	240.00	-23.18	0.3940E+03	O.5489E+O3	-37 . 15
25200.	104.00	240.00	-23.37	0.3923E+03	O.5470E+03	-37.21
25300.	106.63	240.00	-23.56	0.3907E+03	0.5452E+03	-37.27
25400.	108.92	240.00	-23.75	0.3891E+03	O.5433E+O3	-37.33
25500.	107.61	240.00	-23.94	O.3875E+03	0.5415E+03	-37.39
25600.	106.96	240.00	-24.13	O.3859E+03	O.5397E+O3	-37.45
25700.	104.66	242.00	-24.32	O.3843E+03	O. 5378E+ O3	-37.51
25800.	107.28	241.00	-24.51	0.3827E+03	O.5360E+03	-37.57
25900.	107.28	241.00	-24.70	0.3811E+03	O.5342E+O3	-37.6 3
26000.	105.97	240.00	-24.89	0.3795E+03	0.5324E+03	-37.69
26100.	108.27	239.00	-25.05	O.3779E+O3	0.5305E+03	-37.87
26200.	110.56	238.00	-25.21	O.3763E+O3	O.5286E+O3	-38.0 5
26300.	107.94	239.00	-25.37	O.3748E+Q3	O.5268E+O3	-38.23
26400.	106.63	239.00	-25.53	0.3732E+03	0.5249E+03	-38.41
26500.	109.91	239.00	-25.69	O.3716E+03	0.5230E+03	-38.59
26600.	110.56	239.00	-25.85	0.3701E+03	O.5212E+O3	-38 . 77
26700.	104.99	242.00	-26.01	O.3685E+03	O.5193E+03	-38.95
26800.	109.91	240.00	-26 . 17	Q.3670E+03	O.5175E+O3	-39.13
26900.	105.64	242.00	-26.33	O.3654E+03	0.5157E+03	-39.31
27000.	106.63	243.00	-26.49	O.3639E+03	O.5138E+O3	-39.49
27100.	106.63	243.00	-26.64	O.3624E+03	O.5120E+03	-39.61
27200.	107.61	245.00	-26.79	O.3608E+03	0.5102E+03	-39.73
27300.	110.56	245.00	-26.94	O.3593E+03	O.5083E+03	-39.85
27400.	107.61	246.00	-27.09	O.3578E+O3	0.5065E+03	-39.97
27500.	109.91	246.00	-27.24	O.3563E+03	0.5047E+03	-40.09
27600.	i09.58	250.00	-27.39	O.3548E+O3	0.5029E+03	-40.21
27700.	113.19	249.00	-27.54	0.3533E+03	0.5011E+03	-40.33
27800.	115.81	252.00	-27.69	0.3518E+03	0.4993E+03	-40.45
27900.	120.73	255.00	-27.84	0.3504E+03	O.4975E+03	-40.57
28000.	118.44	253.00	-27.99	O.3489E+O3	O.4957E+O3	-40.69
28100.	121.72	253.00	-28.18	O.3474E+O3	0.4940E+03	-40.86
28200.	121.06	251.00	-28.37	O.3460E+03	0.4923E+03	-41.03
28300.	121.06	252.00	-28.56	0.3445E+03	0.4906E+03	-41.20
28400.	119.42	253.00	-28.75	0.3430E+03	0.4889E+03	-41.37
28500.	118.77	252.00	-28.94	O.3416E+O3	O.4872E+03	-41.54
28600.	119.42	252.00	-29.13	0.3401E+03	O.4855E+O3	-41.71
28700.	117.45	252.00	-29.32	O.3387E+03	O.4838E+O3	-41.88
28800.	117.78	251.00	-29.51	0.3373E+03	O.4821E+03	-42.05
28900.	117.45	249.00	-29.70	O.3358E+O3	O.4805E+03	-42.22
29000.	116.14	248.00	-29.89	O.3344E+03	O.4788E+03	-42.39
29100.	111.88	249.00	-30.14	O.3330E+03	O.4773E+O3	-42.55
29200.	115.81	247.00	-30.39	O.3316E+03	O.4757E+O3	-42.71
29300.	119.09	248.00	-30.64	0.3301E+03	0.4742E+03	-42.87
29400.	110.89	250.00	-30.89	0.3287E+03	0.4726E+03	-43.03
29500.	117.45	245.00	-31.14	0.3273E+03	0.4711E+03	-43.19
29600.	116.80	244.00	-31.39	0.3259E+03	O.4696E+O3	-43.35
29700.	118.44	245.00	-31.64	0.3245E+03	O.4681E+03	-43.51
29800.	114.83	246.00	-31.89	O.3232E+O3	O.4665E+O3	-43.67
29900.	114.83	244.00	-32.14	O.3218E+03	0.4650E+03	-43.83

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
30000.	118.11	243.00	-32.39	0.3204E+03	0.4635E+03	-43.99
30100.	119.75	243.00	-32.68	O.3190E+03	0.4621E+03	-44.21
30200.	120.73	243.00	-32.97	0.3176E+03	0.4606E+03	-44.43
30300.	122.70	242.00	-33.26	0.3163E+03	0.4592E+03	-44.65
30400.	121.06	240.00	-33.55	0.3149E+03	0.4578E+03	-44.87
30500.	121.72	241.00	-33.84	0.3135E+03	0.4563E+03	-45.09
30600.	122.70	240.00	-34.13	0.3122E+03	0.4549E+03	-45.31
30700.	121.39	240.00	-34.42	0.3108E+03	0.4535E+03	-45.53
30800.	122.38	241.00	-34.71	0.3095E+03	0.4521E+03	-45.7 5
30900.	122.70	241.00	-35.00	0.3081E+03	0.4507E+03	-45.97
31000.	121.72	240.00	-35.29	0.3068E+03	0.4493E+03	-46.19
31100.	120.73	241.00	-35.58	0.3055E+03	0.4479E+03	-46.50
31200.	122.70	240.00	-35.87	0.3041E+03	0.4465E+03	-46.81
31300.	121.39	240.00	-36,16	0.3028E+03	0.4451E+03	-47.12
31400.	120.73	240.00	-36.45	0.3015E+03	0.4437E+03	-47.43
31500.	122.38	240.00	-36.74	0.3002E+03	0.4423E+03	-47.74
31600.	120.41	240.00	-37.03	0.2989E+03	0.4409E+03	-48.05
31700.	122.05	239.00	-37.32	0.2976E+03	0.4395E+03	-48.36
31800.	120.73	240.00	-37.61	0.2963E+03	0.4382E+03	-48.67
31900.	121.06	239.00	-37.90	0.2950E+03	0.4368E+03	-48.98
32000.	120.41	241.00	-38.19	0.2937E+03	0.4354E+03	-49.29
32100.	122.38	240.00	-38.45	0.2924E+03	0.4340E+03	-49.51
32200 .	124.34	240.00	-38.71	0.2911E+03	0.4325E+03	-49.73
32300.	122.05	241.00	-38.97	O.2898E+03	0.4311E+03	-49.95
32400.	125.00	240.00	-39.23	0.2885E+03	0.4296E+03	-50.17
32500.	122.70	240.00	-39.49	O.2872E+03	0.4282E+03	-50.39
32600.	124.02	240.00	-39.75	O.2860E+03	0.4268E+03	-50.61
32700.	124.02	241.00	-40.01	0.2847E+03	0.4254E+03	-50.83
32800.	124.02	240.00	-40.27	O.2834E+03	0.4239E+03	-51.05
32900.	123.03	240.00	-40.53	O.2822E+03	0.4225E+03	-51.27
33000 .	120.08	242.00	-40.79	0.2809E+03	0.4211E+03	-51.49
33100.	121.06	242.00	-41.09	0.2796E+03	0.4198E+03	-51.74
33200.	125.33	243.00	-41.39	O.2784E+Q3	0.4184E+03	-51.99
33300.	122.70	242.00	-41.69	O.2772E+03	0.4171E+03	-52.24
33400.	123.36	243.00	-41.99	O.2759E+03	0.4158E+03	-52.49
33500.	123.03	243.00	-42.29	0.2747E+03	0.4145E+03	-52.74
33600 .	124.34	244.00	-42.59	0.2735E+03	0.4132E+03	-52.99
33700 .	122.70	244.00	-42.89	O.2722E+03	0.4118E+03	-53.24
33800.	124.67	245.00	-43.19	0.2710E+03	0.4105E+03	-53.49
33900.	123.03	246.00	-43.49	0.2698E+03	0.4092E+03	-53.74
34000.	123.36	246.00	-43.79	O.2686E+03	0.4079E+03	-53.99
34100.	124.67	247.00	-44.07	0.2674E+03	0.4066E+03	-54.21
34200.	128.94	246.00	-44.35	0.2662E+03	0.4053E+03	-54.43
34300.	126.97	248.00	-44.63	0.2650E+03	0.4039E+03	-54.65
34400.	125.00	248.00	-44.91	0.2638E+03	0.4026E+03	-54.87
34500.	126.64	248.00	~45.19	0.2626E+03	0.4013E+03	-55.09
34600.	126.97	249.00	-45.47	0.2614E+03	0.3999E+03	-55.31
34700.	126.64	249.00	-45.75	0.2602E+03	O.3986E+O3	-55.53
34800.	128.28	249.00	-46.03	0.2590E+03	0.3973E+03	-55.75
34900.	129.27	250.00	-46.31	0.2579E+03	0.3960E+03	-55.97

Table 5. STS-32 ascent atmospheric data tape (continued).

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
35000 .	127.30	252.00	-46.59	O.2567E+03	0.3947E+03	-56.19
35100.	129.27	253.00	-46.81	O.2555E+03	O.3933E+03	-56.37
35200.	129.92	254.00	-47.03	O.2543E+03	O.3918E+03	-56.55
35300.	130.91	255.00	-47.25	O.2532E+03	0.3904E+03	-56.73
35400.	128.61	254.00	-47.47	O.2520E+03	O.3890E+03	-56.91
35500.	130.5 8	255.00	-47.69	O.2508E+03	O.3876E+O3	-57.09
35600.	127.95	253.00	~47.91	0.2497E+03	O.3861E+03	-57 . 27
35700.	129.27	252.00	-48.13	O.2485E+03	O.3847E+O3	-57.45
35800.	131. 23	251.00	-48.35	O.2474E+03	0.3833E+03	-57.63
35900.	130.91	251.00	-48.57	O.2462E+03	0.3819E+03	-57.81
36000.	129.92	252.00	-48.79	O. 2451E+03	O.3806E+03	-57.99
36100.	130.25	251.00	-48.97	O.2440E+03	0.3791E+03	-58.16
36200.	129.92	250.00	-49.15	O.2428E+03	0.3777E+03	-58.33
36300.	130.58	250.00	-49.33	0.2417E+03	0.3762E+03	-58.50
36400.	129.92	247.00	-49.51	0.2406E+03	0.3748E+03	-58.67
36500.	128.61	247.00	-49.69	0.2395E+03	0.3733E+03	-58.84
36600.	128.28	247.00	-49.87	0.2384E+03	0.3719E+03	-59.01
36700.	129.59	246.00	-50.05	0.2373E+03	0.3705E+03	-59.18
36800.	130.91	245.00	-50.23	0.2362E+03	0.3691E+03	-59.35
36900.	128.61	246.00	-50.41	0.2351E+03	0.3677E+03	-59.52
37000.	128.61	246.00	-50.59	0.2340E+03	0.3663E+03	-59.69
37100.	127.62	244.00	-50.91	0.2329E+03	0.3651E+03	-59.97
37200.	126.64	243.00	-51.23	0.2318E+03	0.3639E+03	-60.25
37300.	125.66	244.00	-51.55	0.2307E+03	0.3627E+03	-60.53
37400.	127.62	245.00	-51.87	0.2297E+03	0.3616E+03	-60.81
37500.	127.62	246.00	-52.19	0.2286E+03	0.3604E+03	-61.09
37600.	125.33	244.00	-52.51	0.2275E+03	0.3592E+03	-61.37
37700.	127.30	245.00	-52.83	0.2265E+03	0.3581E+03	-61.65
37800.	130.25	245.00	-53.15	0.2254E+03	0.3569E+03	-61.93
37900.	125.00	247.00	-53.47	0.2243E+03	0.3558E+03	-62.21
38000.	125.33	245.00	-53.79	0.2233E+03	O.3546E+03	-62.49
38100.	127.62	243.00	-53.94	0.222E+03	0.3532E+03	-62.62
38200.	127.30	248.00	-54.09	0.2212E+03	0.3518E+03	-62.75
38300.	126.64	251.00	-54.24	0.2202E+03	0.3503E+03	-62.88
38400.	131.89	248.00	-54.39	0.2191E+03	0.3489E+03	-63.01
38500.	136.48	253.00	-54.54	0.2181E+03	0.3475E+03	-63.14
38600.	135.50	250.00	-54.69	0.2171E+03	0.3461E+03	-63.27
38700.	139.11	250.00	-54.84	0.2160E+03	0.3447E+03	-63.40
38800.	138.78	251.00	-54.99	O.2150E+03	0.3433E+03	-63.53
38900.	141.08	253.00	-55.14	0.2140E+03	0.3420E+03	-63.66
39000.	144.03	252.00	-55.29	0.2130E+03	0.3406E+03	-63.79
39100.	144.03	253.00	-55.09	O.2120E+03	0.3387E+03	-63.63
39200.	140.09	254.00	-54.89	0.2110E+03	0.3368E+03	-63.47
39300.	143.04	256.00	-54.69	0.2100E+03	0.3349E+03	-6331
39400.	143.04	254.00	-54.49	0.2090E+03	0.3330E+03	-63.15
39500.	145.34	256.00	-54.29	0.2080E+03	0.3311E+03	~62.99
39600.	143.37	259.00	-54.09	0.2071E+03	0.3293E+03	-62.83
39700.	142.06	258.00	-53.89	0.2061E+03	0.3274E+03	-62.67
39800.	141.40	258.00	-53.69	0.2051E+03	0.3256E+03	-62.51
39900.	142.06	258.00	-53.49	0.2042E+03	0.3238E+03	-62.35
00000.	142.00	255.00	33.73	0.20421.00	0.02002.00	02.00

(FT) (FT/SEC) (DEG C) (DEG C) (MILLBARS) (GRAM/M3) (DEG C) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A	ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
40100. 139.44 299.00 -53.39 0.2022E+03 0.3206E+03 -62.39 40200. 137.47 259.00 -53.49 0.203E+03 0.3178E+03 -62.39 40300. 139.11 262.00 -53.59 0.2003E+03 0.3178E+03 -62.49 40400 137.80 262.00 -53.69 0.1994E+03 0.3165E+03 -62.59 40500 134.84 260.00 -53.79 0.1984E+03 0.3165E+03 -62.59 40500 134.84 260.00 -53.79 0.1984E+03 0.3165E+03 -62.59 40500 140.42 288.00 -53.89 0.1975E+03 0.313E+03 -62.79 40700 140.42 288.00 -53.89 0.1975E+03 0.313E+03 -62.89 40500 142.73 257.00 -54.09 0.195E+03 0.3115E+03 -62.89 40500 142.73 257.00 -54.09 0.195E+03 0.3115E+03 -62.89 40500 142.73 257.00 -54.49 0.1947E+03 0.303E+03 -63.09 14000 143.77 257.00 -54.49 0.1947E+03 0.303E+03 -63.09 14000 143.77 257.00 -54.46 0.1947E+03 0.303E+03 -63.09 14000 143.77 259.00 -54.43 0.1920E+03 0.305TE+03 -63.09 14000 143.77 259.00 -54.43 0.1920E+03 0.305TE+03 -63.34 14100 141.08 253.00 -54.45 0.1920E+03 0.305TE+03 -63.34 14100 141.08 253.00 -54.45 0.1920E+03 0.305TE+03 -63.35 14100 141.08 253.00 -54.45 0.1920E+03 0.300E+03 -63.35 14100 143.77 252.00 -54.45 0.1920E+03 0.300E+03 -63.35 14100 143.77 252.00 -54.64 0.182E+03 0.300TE+03 -63.63 14100 143.77 252.00 -54.64 0.182E+03 0.300TE+03 -63.63 14100 143.77 252.00 -54.64 0.182E+03 0.300TE+03 -63.63 14100 143.77 252.00 -54.78 0.185E+03 0.300TE+03 0.300TE+03 -63.63 14100 143.77 250.00 -55.78 0.185E+03 0.300TE+03 0.300T	(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
40200. 137.47 259.00 -53.49 0.2013E+03 0.3192E+03 -62.39 40300. 139.11 262.00 -53.69 0.2003E+03 0.3165E+03 -62.49 40400. 137.80 262.00 -53.69 0.1994E+03 0.3165E+03 -62.59 40500 134.84 260.00 -53.69 0.1994E+03 0.3165E+03 -62.59 40500 136.48 237.00 -53.89 0.1975E+03 0.3165E+03 -62.79 40700. 140.42 258.00 -53.89 0.1975E+03 0.3165E+03 -62.79 40700. 140.42 258.00 -53.89 0.195E+03 0.3165E+03 -62.79 40700. 140.42 258.00 -53.89 0.195E+03 0.3165E+03 -62.79 40700. 140.42 258.00 -54.49 0.195E+03 0.316E+03 -62.79 40700. 140.47 259.00 -54.49 0.195E+03 0.307E+03 -62.39 40700. 141.73 254.00 -54.49 0.195E+03 0.307E+03 -62.39 40700. 141.73 255.00 -54.49 0.195E+03 0.307E+03 -63.43 41000. 141.73 255.00 -54.49 0.192E+03 0.307E+03 -63.33 41300. 141.08 253.00 -54.43 0.192E+03 0.307E+03 -63.33 41300. 141.08 253.00 -54.50 0.191E+03 0.304E+03 0.307E+03 -63.34 14100. 139.44 251.00 -54.57 0.190E+03 0.300E+03 -63.47 41500. 143.37 252.00 -54.57 0.190E+03 0.300E+03 -63.47 41500. 143.37 252.00 -54.57 0.190E+03 0.300E+03 -63.47 41500. 143.37 252.00 -54.57 0.190E+03 0.300E+03 -63.61 41600. 142.37 252.00 -54.57 0.190E+03 0.300E+03 -63.61 41600. 142.37 252.00 -54.71 0.185E+03 0.300E+03 -63.61 41700. 142.39 250.00 -55.73 0.185E+03 0.300E+03 -63.61 41700. 142.39 250.00 -55.73 0.185E+03 0.295E+03 -63.82 42000. 141.73 250.00 -55.63 0.185E+03 0.295E+03 -63.82 42000. 141.73 250.00 -55.67 0.185E+03 0.295E+03 -63.82 42000. 141.79 247.00 -55.31 0.185E+03 0.295E+03 -63.82 64.04 42000. 152.89 246.00 -55.67 0.185E+03 0.295E+03 -63.82 64.04 42000. 157.88 246.00 -55.67 0.185E+03 0.295E+03 -69.99 0.00 -66.49 24000. 157.88 246.00 -56.59 0.185E+03 0.285E+03 -9999.00 44000. 157.88 244.00 -56.59 0.185E+03 0.285E+03 -9999.00 44000. 157.88 24		_			0.2032E+03	O.3220E+03	-62.19
40300. 139.11 262.00 53.59 0.2003E+03 0.3175E+03 -62.49 40400. 137.80 262.00 53.69 0.1994E+03 0.3165E+03 -62.59 40500. 134.84 260.00 53.79 0.1984E+03 0.3165E+03 -62.59 40500. 136.48 257.00 53.89 0.1975E+03 0.3138E+03 -62.79 40700. 140.42 258.00 53.89 0.1975E+03 0.3138E+03 -62.89 40800. 142.72 257.00 54.09 0.1956E+03 0.3116E+03 -62.89 40800. 143.73 257.00 54.29 0.1956E+03 0.315E+03 -62.89 40800. 143.73 257.00 54.29 0.1956E+03 0.3038E+03 -63.09 41000. 143.73 257.00 54.29 0.1936E+03 0.3038E+03 -63.09 41000. 141.03 257.00 54.29 0.1936E+03 0.3038E+03 -63.09 41000. 141.03 257.00 54.29 0.1936E+03 0.3038E+03 -63.09 41000. 141.03 257.00 54.49 0.1936E+03 0.3038E+03 -63.09 41000. 141.08 253.00 54.43 0.1930E+03 0.305E+03 -63.23 41000. 141.08 253.00 54.43 0.1930E+03 0.305E+03 -63.23 41400. 139.44 251.00 54.45 0.00 54.55 0.00 1910E+03 0.3030E+03 -63.43 41500. 141.08 253.00 54.45 0.00 1910E+03 0.3030E+03 -63.43 41600. 139.44 250.00 54.47 0.00 54.57 0.1901E+03 0.3030E+03 -63.43 41600. 139.44 250.00 54.47 0.1901E+03 0.3030E+03 -63.43 41600. 142.39 252.00 54.71 0.1883E+03 0.3030E+03 -63.61 41700. 142.39 252.00 54.78 0.1885E+03 0.3030E+03 -63.61 41700. 142.39 252.00 554.78 0.1885E+03 0.3030E+03 -63.61 41700. 142.39 252.00 554.78 0.1885E+03 0.2990E+03 -63.61 41800. 143.37 250.00 54.78 0.1885E+03 0.2990E+03 -63.61 41800. 143.37 250.00 54.78 0.1885E+03 0.2990E+03 -63.61 41800. 143.37 250.00 554.78 0.1885E+03 0.2990E+03 -63.61 41800. 143.37 250.00 554.78 0.1885E+03 0.2990E+03 -63.61 61 41800. 143.37 250.00 554.78 0.1885E+03 0.2990E+03 -63.61 61 41800. 143.79 250.00 554.78 0.1885E+03 0.2990E+03 -63.61 61 41800. 143.37 250.00 555.79 0.1885E+03 0.2990E+03 -63.61 61 41800. 143.79 250.00 555.79 0.1804E+03 0.2990E+03 -63.61 61 41800. 143.79 250.00 555.79 0.1804E+03 0.2990E+03 -64.64 424000. 152.89 245.00 555.79 0.1804E+03 0.2990E+03 -64.64 424000. 152.89 245.00 555.79 0.1804E+03 0.2990E+03 -64.64 424000. 155.84 243.00 556.47 0.170E+03 0.2990E+03 -64.64 424000. 155.84 243.00 556.79 0.170E+03 0.2990E+03 -64.64 424000. 155.84 243.00 556.57 0.					O.2022E+03	O.3206E+03	
40400. 137.80 262.00 -53.69 0.1994E+03 0.315EE+03 -62.59 40500. 134.84 260.00 -53.79 0.1984E+03 0.315E+03 -62.69 40600. 136.48 257.00 -53.89 0.1976E+03 0.315E+03 -62.79 40700. 140.42 258.00 -53.89 0.1966E+03 0.3125E+03 -62.89 40800. 142.72 257.00 -54.09 0.1956E+03 0.3125E+03 -62.89 40800. 143.70 257.00 -54.19 0.1947E+03 0.308E+03 -63.09 41000. 141.73 254.00 -54.19 0.1947E+03 0.308E+03 -63.09 41000. 141.73 254.00 -54.29 0.1938E+03 0.308E+03 -63.19 41100. 146.33 255.00 -54.36 0.1938E+03 0.308E+03 -63.19 41100. 146.33 255.00 -54.36 0.1938E+03 0.3057E+03 -63.19 41100. 141.37 254.00 -54.43 0.1920E+03 0.3057E+03 -63.34 14300. 141.04 253.00 -54.50 0.191E+03 0.3057E+03 -63.34 14300. 141.04 253.00 -54.50 0.191E+03 0.3057E+03 -63.34 14300. 141.04 253.00 -54.50 0.191E+03 0.300E+03 -63.47 14100. 143.37 252.00 -54.76 0.190E+03 0.300E+03 -63.47 14100. 142.39 252.00 -54.76 0.190E+03 0.300E+03 -63.47 14100. 142.39 252.00 -54.78 0.190E+03 0.300E+03 -63.61 14100. 142.39 252.00 -54.78 0.190E+03 0.300E+03 -63.61 14100. 142.39 252.00 -54.78 0.180E+03 0.2990E+03 -63.61 14100. 142.39 250.00 -54.78 0.180E+03 0.2990E+03 -63.61 14100. 142.39 250.00 -54.78 0.180E+03 0.2990E+03 -63.63 14100. 141.73 250.00 -54.85 0.180E+03 0.2990E+03 -63.63 14100. 141.73 250.00 -54.85 0.180E+03 0.2990E+03 -63.63 14100. 142.39 250.00 -54.78 0.180E+03 0.2990E+03 -63.63 14100. 142.39 250.00 -55.15 0.180BE+03 0.2990E+03 0.64.04 14200. 142.39 250.00 -55.15 0.180BE+03 0.2990E+03 0.2990E+03 0.64.64 14200. 152.89 245.00 -55.15 0.180BE+03 0.2990E+03 0.2990E+03 0.64.64 14200. 153.89 245.00 -55.69 0.180BE+03 0.2990E+03 0.2990E+03 0.2990E+03 0.2990E+03 0.2990E+03 0.2990E+03 0.2990						O.3192E+O3	-62.39
40500. 134. 84 260.00 -53. 79 0.1984E+03 0.3151E+03 -62.69 40500. 140.42 258.00 -53.89 0.1975E+03 0.3128E+03 -62.79 40700. 140.42 258.00 -53.89 0.1956E+03 0.3128E+03 -62.89 40800. 142.72 257.00 -54.09 0.1956E+03 0.3111E+03 -62.89 40800. 143.70 257.00 -54.19 0.1947E+03 0.3098E+03 -63.09 41000. 141.73 254.00 -54.29 0.1938E+03 0.3098E+03 -63.09 41000. 141.73 254.00 -54.29 0.1938E+03 0.3098E+03 -63.09 41000. 141.33 255.00 -54.36 0.1929E+03 0.3071E+03 -63.26 11200. 143.37 254.00 -54.43 0.1920E+03 0.3071E+03 -63.26 11200. 143.37 254.00 -54.43 0.1920E+03 0.3071E+03 -63.26 11200. 143.37 254.00 -54.50 0.1911E+03 0.304E+03 -63.47 14100. 139.44 2551.00 -54.50 0.1911E+03 0.304E+03 -63.47 14100. 139.44 2551.00 -54.64 0.1892E+03 0.3017E+03 -63.47 14100. 139.44 2551.00 -54.64 0.1892E+03 0.3017E+03 -63.54 14100. 139.44 2550.00 -54.64 0.1892E+03 0.3017E+03 -63.54 14100. 142.39 252.00 -54.64 0.1892E+03 0.3017E+03 -63.54 14100. 142.39 252.00 -54.86 0.1875E+03 0.2990E+03 -63.61 141700. 142.39 250.00 -54.86 0.1875E+03 0.2990E+03 -63.61 141700. 142.39 250.00 -54.86 0.1875E+03 0.2990E+03 -63.62 141000. 141.39 250.00 -54.86 0.1875E+03 0.2990E+03 -63.62 141000. 141.37 250.00 -54.85 0.1866E+03 0.2977E+03 -63.82 142000. 141.37 250.00 -54.85 0.1866E+03 0.2977E+03 -63.82 142000. 141.37 0.286 0.0980E+03 0.285E+03 0.285E+03 -63.82 142000. 147.97 247.00 -55.57 0.185E+03 0.285E+03 0.285E+03 -64.94 14200. 152.89 245.00 -55.55 0.196E+03 0.285E+03 0.285E+03 -64.94 14200. 152.89 245.00 -55.57 0.185E+03 0.285E+03 0.285E+03 -64.94 14200. 152.89 245.00 -55.57 0.185E+03 0.285E+03 0.285E+03 0.999.00 14200. 156.82 242.00 -55.59 0.196E+03 0.285E+03 0.999.00 14200. 156.84 243.00 -56.59 0.176E+03 0.285E+03 0.999.00 14200. 156.84 243.00 -56.59 0.176E+03 0.287E+03 0.999.00 14200. 156.84 241.00 -57.75 0.185E+03 0.285E+03 0.999.				-53.59	0.2003E+03	O.3179E+O3	-62.49
40600			262.00		O. 1994E+03	O.3165E+O3	-62.59
40700. 140.42 258.00 -53.99 0.196E+03 0.3125E+03 -62.89 40800. 142.72 257.00 -54.09 0.1947E+03 0.308E+03 -63.09 41000. 141.73 254.00 -54.29 0.193E+03 0.308E+03 -63.09 41000. 141.73 254.00 -54.36 0.192E+03 0.308E+03 -63.09 41100. 146.33 255.00 -54.36 0.1920E+03 0.3071E+03 -63.26 41200. 143.37 254.00 -54.36 0.1920E+03 0.3071E+03 -63.26 41200. 143.37 254.00 -54.50 0.191E+03 0.305E+03 -63.33 41300. 141.08 253.00 -54.50 0.191E+03 0.305E+03 -63.33 41300. 141.08 253.00 -54.50 0.191E+03 0.305E+03 -63.40 41400. 139.44 251.00 -54.57 0.190E+03 0.305E+03 -63.41 41600. 139.44 250.00 -54.64 0.1892E+03 0.301E+03 -63.54 41600. 139.44 250.00 -54.71 0.1883E+03 0.300E+03 -63.61 41700. 142.39 252.00 -54.78 0.189E+03 0.300E+03 -63.61 41700. 142.39 252.00 -54.78 0.189E+03 0.300E+03 -63.61 41700. 142.39 250.00 -54.78 0.189E+03 0.289E+03 0.301E+03 -63.61 41700. 142.39 250.00 -54.78 0.189E+03 0.289E+03 0.289E+03 -63.61 41800 143.37 250.00 -54.85 0.186E+03 0.289E+03 0.289E+03 -63.61 41800 143.37 250.00 -54.89 0.186E+03 0.289E+03 0.289E+03 -63.61 42000 142.39 251.00 -54.89 0.186E+03 0.289E+03 0.289E+03 -63.62 42000 142.39 251.00 -55.89 0.186E+03 0.289E+03 -63.62 42000 147.97 247.00 -55.57 9 0.185E+03 0.289E+03 -64.04 42400 152.89 245.00 -55.77 0.182E+03 0.289E+03 -64.04 42400 152.89 245.00 -55.79 0.183E+03 0.289E+03 -64.64 42600 152.89 245.00 -55.79 0.183E+03 0.289E+03 -64.64 42600 152.89 245.00 -55.79 0.183E+03 0.289E+03 -64.64 42600 155.84 243.00 -56.57 0.179E+03 0.289E+03 -64.64 42600 155.84 243.00 -56.59 0.179E+03 0.289E+03 -64.64 42600 155.84 243.00 -56.57 0.179E+03 0.289E+03 -64.69 0.289E+03 -69.69			260.00	-53.79	O. 1984E+03	O.3151E+03	-62.69
40800. 142.72 257.00 -54.09 0.1956E+03 0.311E+03 -62.99 40900. 143.70 257.00 -54.19 0.197E+03 0.3098E+03 -63.09 41000. 141.73 254.00 -54.29 0.1938E+03 0.305E+03 -63.19 41100. 146.33 255.00 -54.36 0.1920E+03 0.307E+03 -63.26 41200. 143.37 254.00 -54.43 0.1920E+03 0.307E+03 -63.33 41300. 141.08 253.00 -54.50 0.1911E+03 0.304E+03 -63.40 41400. 139.44 251.00 -54.57 0.1901E+03 0.3030E+03 -63.47 41500. 143.37 252.00 -54.64 0.1892E+03 0.301E+03 -63.54 41600. 139.44 250.00 -54.71 0.1882E+03 0.300E+03 -63.54 41600. 139.44 250.00 -54.71 0.1882E+03 0.300E+03 -63.68 41800. 142.39 252.00 -54.78 0.1875E+03 0.2990E+03 -63.68 41800. 142.39 252.00 -54.85 0.1866E+03 0.2997E+03 -63.68 41800. 142.39 251.00 -54.85 0.1866E+03 0.2997E+03 -63.75 41900. 141.73 250.00 -54.85 0.1866E+03 0.2997E+03 -63.76 42000. 141.73 250.00 -54.99 0.1848E+03 0.2995E+03 -63.82 42100. 143.70 248.00 -55.15 0.1809E+03 0.2995E+03 -63.89 42100. 147.97 247.00 -55.31 0.1809E+03 0.2997E+03 -63.89 42100. 147.97 247.00 -55.31 0.1809E+03 0.2997E+03 -64.04 42200. 147.97 247.00 -55.47 0.1809E+03 0.2997E+03 -64.04 42300. 149.28 245.00 -55.47 0.1802E+03 0.2997E+03 -64.19 42400. 152.89 246.00 -55.63 0.1806E+03 0.2997E+03 -64.19 42500. 152.89 245.00 -55.63 0.1806E+03 0.2997E+03 -64.94 42500. 154.53 243.00 -55.63 0.1806E+03 0.2997E+03 -64.94 42500. 154.53 243.00 -55.63 0.1806E+03 0.2997E+03 -64.94 42500. 154.53 243.00 -55.63 0.1806E+03 0.2997E+03 -64.94 42500. 155.88 245.00 -55.69 0.1806E+03 0.2997E+03 -64.94 42500. 156.82 242.00 -56.67 0.1797E+03 0.2880E+03 -64.99 42500. 157.48 243.00 -56.27 0.1797E+03 0.2880E+03 -64.99 42500. 157.48 243.00 -56.93 0.1806E+03 0.280EE+03 -64.99 42500. 157.48 243.00 -56.59 0.1806E+03 0.280EE+03 -69.99 0.1900. 159.78 241.00 -56.43 0.1796E+03 0.280EE+03 -69.99 0.1900. 159.78 241.00 -56.99 0.1806E+03 0.280EE+03 -69.99 0.1900. 159.78 241.00 -56.99 0.1806E+03 0.280EE+03 -99.99 0.1900. 157.48 241.00 -58.29 0.1806E+03 0.280EE+03 -99.99 0.1900. 157.48 241.00 -58.29 0.1806E+03 0.280EE+03 -99.99 0.1900. 157.59 241.00 -58.89 0.1806E+03 0.2795E+03 -99.			257.00	-53.89	O. 1975E+03	O.3138E+O3	-62.79
40900. 143.70 257.00 -54.19 0.1947E+03 0.3098E+03 -63.19 41100. 141.73 254.00 -54.29 0.1938E+03 0.309FE+03 -63.19 41100. 146.33 255.00 -54.36 0.1938E+03 0.309FE+03 -63.26 41200. 143.37 254.00 -54.36 0.1932E+03 0.309FE+03 -63.23 41300. 141.08 253.00 -54.50 0.191E+03 0.304E+03 -63.40 41400. 139.44 251.00 -54.57 0.1901E+03 0.300FE+03 -63.47 41500. 143.37 252.00 -54.64 0.1892E+03 0.301FE+03 -63.47 41500. 143.37 252.00 -54.64 0.1892E+03 0.301FE+03 -63.47 41500. 143.37 252.00 -54.64 0.1892E+03 0.301FE+03 -63.54 41600. 143.37 250.00 -54.71 0.1892E+03 0.300FE+03 -63.61 41700. 142.39 252.00 -54.78 0.1875E+03 0.2990E+03 -63.61 41700. 142.39 252.00 -54.85 0.1866E+03 0.2997E+03 -63.65 41800. 143.37 250.00 -54.85 0.1866E+03 0.2997E+03 -63.75 41900. 142.39 251.00 -54.99 0.1887E+03 0.2996E+03 -63.89 42100. 141.73 250.00 -54.99 0.1887E+03 0.2996E+03 -63.89 42100. 141.73 250.00 -55.31 0.1880E+03 0.2997E+03 -64.04 42200. 147.97 247.00 -55.31 0.1880E+03 0.2997E+03 -64.04 42200. 147.97 247.00 -55.31 0.1880E+03 0.2997E+03 -64.04 42200. 149.28 245.00 -55.67 0.1880E+03 0.2991E+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.2991E+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.2991E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.2891E+03 -64.64 42500. 155.89 245.00 -55.79 0.1804E+03 0.2891E+03 -64.64 42500. 157.48 243.00 -56.11 0.1787E+03 0.2889E+03 -64.64 42500. 157.48 243.00 -56.51 0.1803E+03 0.2891E+03 -64.69 42500. 157.48 243.00 -56.61 0.1786E+03 0.2891E+03 -9999.00 43500. 157.15 243.00 -56.63 0.1796E+03 0.2891E+03 -9999.00 43500. 157.48 241.00 -57.78 0.1806E+03 0.2831E+03 -9999.00 43500. 157.48 241.00 -58.29 0.0 -56.63 0.1779E+03 0.2869E+03 -64.69 0.9999.00 43500. 157.18 241.00 -59.89 0.0 -59.80 0.0 -59.80 0.0 -59.80 0.0 -59.80 0.0 -59.90 0.0 0.2831E+03 0.2999.00 0.0 43000. 157.18 241.00 -58.29 0.0 -59.80 0.0 0.2731E+03 0.2801E+03 0.9999.00 43000. 157.18 241.00 -58.29 0.0 -59.80 0.0 0.2731E+03 0.2801E+03 0.9999.00 43000. 157.18 241.00 -59.80 0.0 -59.80 0.0 0.2731E+03 0.2731E+03 0.9999.00 44000. 157.15 243.00 -59.80 0.0		140.42	258.00	-53.99	O. 1966E+03	0.3125E+03	~62.89
41000. 141.73 254.00 -54.29 0.1938F+03 0.305F+03 -63.26 41200. 143.37 254.00 -54.43 0.1920F+03 0.307F+03 -63.26 41200. 141.08 253.00 -54.50 0.1910F+03 0.305F+03 -63.31 41300. 141.08 253.00 -54.50 0.1910F+03 0.3030F+03 -63.40 41400. 139.44 251.00 -54.57 0.1901F+03 0.3030F+03 -63.41 41500. 143.37 252.00 -54.64 0.1832F+03 0.301F+03 -63.54 41600. 139.44 250.00 -54.71 0.1882F+03 0.301F+03 -63.54 41600. 143.37 250.00 -54.71 0.1882F+03 0.300F+03 -63.61 41700. 142.39 252.00 -54.78 0.1875F+03 0.2890F+03 -63.61 41800. 143.37 250.00 -54.85 0.1875F+03 0.2890F+03 -63.62 41800. 142.39 251.00 -54.85 0.1856F+03 0.2897F+03 -63.75 42000. 141.73 250.00 -54.99 0.1848F+03 0.2890F+03 -63.82 42100. 143.70 248.00 -55.31 0.1830F+03 0.2893F+03 -63.89 42100. 143.70 248.00 -55.31 0.1830F+03 0.2893F+03 -64.04 42200. 147.87 247.00 -55.31 0.1830F+03 0.2893F+03 -64.19 42200. 149.28 245.00 -55.47 0.1822F+03 0.2893F+03 -64.19 42400. 152.89 246.00 -55.63 0.1813F+03 0.2893F+03 -64.48 42500. 152.89 246.00 -55.63 0.1830F+03 0.2893F+03 -64.48 42500. 154.53 243.00 -55.79 0.1806F+03 0.2893F+03 -64.48 42500. 155.84 243.00 -55.79 0.1806F+03 0.2883F+03 -64.49 42500. 155.84 243.00 -55.79 0.1806F+03 0.2883F+03 -64.64 42500. 155.84 243.00 -55.95 0.1806F+03 0.2883F+03 -64.64 42500. 155.84 243.00 -56.71 0.1770F+03 0.2868F+03 -64.64 42500. 155.84 243.00 -56.57 0.1770F+03 0.2868F+03 -65.24 42500. 157.15 243.00 -56.57 0.1770F+03 0.2868F+03 -65.24 42500. 157.16 243.00 -56.71 0.1770F+03 0.2868F+03 -65.99 42500. 157.16 243.00 -56.71 0.1770F+03 0.2868F+03 -9899.00 43500. 155.84 243.00 -56.79 0.1770F+03 0.2868F+03 -9899.00 43500. 155.84 243.00 -56.89 0.1770F+03 0.2868F+03 -9899.00 43500. 155.84 243.00 -56.89 0.1770F+03 0.2868F+03 -9899.00 43500. 157.16 241.00 -57.79 0.1770F+03 0.286F+03 -9999.00 43500. 157.16 241.00 -57.79 0.1770F+03 0.286F+03 -9999.00 43500. 157.18 241.00 -58.89 0.1770F+03 0.286F+03 -9999.00 43500. 157.18 241.00 -58.89 0.10 0.166F+03 0.2770F+03 -9999.00 44500. 157.15 243.00 -59.37 0.10 0.1770F+03 0.286F+03 -9999.00 44500. 157.16 240.00 -59.80 0.10 0		142.72	257.00	-54.09	O.1956E+03	O.3111E+03	-62.99
41100. 146.33 255.00 -54.36 0.1928+03 0.30718+03 -63.26 41200. 143.37 254.00 -54.43 0.19208+03 0.30578+03 -63.33 41300. 141.08 253.00 -54.55 0.19118+03 0.30448+03 -63.47 41500. 139.44 251.00 -54.57 0.19018+03 0.3048+03 -63.47 41500. 139.44 250.00 -54.64 0.18328+03 0.30178+03 -63.54 41600. 139.44 250.00 -54.71 0.18828+03 0.30178+03 -63.54 41600. 139.44 250.00 -54.71 0.18828+03 0.30084+03 -63.61 41700. 142.39 252.00 -54.85 0.18758+03 0.2990E+03 -63.68 41800. 143.37 250.00 -54.85 0.18758+03 0.2990E+03 -63.68 41800. 143.37 250.00 -54.85 0.18758+03 0.2990E+03 -63.68 41800. 142.39 251.00 -54.92 0.18578+03 0.2964E+03 -63.82 42000. 141.73 250.00 -54.92 0.18578+03 0.2964E+03 -63.82 42000. 141.73 250.00 -54.99 0.1848E+03 0.2951E+03 -63.89 42100. 143.70 248.00 -55.15 0.18388+03 0.2931E+03 -64.04 42200. 147.97 247.00 -55.31 0.1830E+03 0.2931E+03 -64.04 42200. 149.28 245.00 -55.57 0.1830E+03 0.2931E+03 -64.34 42400. 152.89 246.00 -55.63 0.1813E+03 0.2931E+03 -64.34 42500. 152.89 245.00 -55.79 0.1804E+03 0.2951E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.2951E+03 -64.64 42500. 155.84 243.00 -55.95 0.1804E+03 0.2951E+03 -64.64 42500. 157.48 243.00 -55.95 0.1804E+03 0.2951E+03 -64.64 42500. 157.48 243.00 -55.95 0.1804E+03 0.2951E+03 -64.64 42500. 157.48 243.00 -56.67 0.1779E+03 0.2851E+03 -64.54 42500. 157.48 243.00 -56.67 0.1779E+03 0.2851E+03 -64.54 42500. 157.48 243.00 -56.67 0.1779E+03 0.2851E+03 -64.54 42500. 157.48 243.00 -56.69 0.1779E+03 0.2851E+03 -65.24 43000. 157.48 243.00 -56.69 0.1779E+03 0.2851E+03 -65.99 0.24300. 157.48 243.00 -56.69 0.1779E+03 0.2851E+03 -65.99 0.24300. 157.48 243.00 -56.69 0.1779E+03 0.2851E+03 -69.99 0.0 43000. 157.48 241.00 -57.76 0.1779E+03 0.2851E+03 -99.99 0.0 43000. 157.48 241.00 -57.76 0.1779E+03 0.2851E+03 -99.99 0.0 43000. 157.48 241.00 -57.76 0.1779E+03 0.2851E+03 -99.99 0.0 43000. 157.58 241.00 -57.76 0.1779E+03 0.2851E+03 -99.99 0.0 43000. 157.48 241.00 -58.89 0.100000000000000000000000000000000000			257.00	-54.19	O.1947E+03	O.3098E+03	-63.09
41200. 143.37			254.00	-54.29	O. 1938E+03	O.3085E+03	-63.19
41300. 141.08 253.00 -54.57 0.1911E+03 0.304E+03 -63.40 41400. 139.44 251.00 -54.57 0.1901E+03 0.3030E+03 -63.40 41500. 139.44 250.00 -54.64 0.1892E+03 0.301TE+03 -63.54 41500. 139.44 250.00 -54.71 0.1893E+03 0.301TE+03 -63.54 41500. 142.39 252.00 -54.78 0.1875E+03 0.290TE+03 -63.68 41800. 143.37 250.00 -54.85 0.186E+03 0.297TE+03 -63.68 41800. 143.37 250.00 -54.85 0.186E+03 0.297TE+03 -63.75 41900. 142.39 251.00 -54.99 0.1857E+03 0.296E+03 -63.82 42000. 141.73 250.00 -54.99 0.1857E+03 0.295E+03 -63.89 42100. 143.70 248.00 -55.15 0.1839E+03 0.293TE+03 -64.04 42200. 147.97 247.00 -55.31 0.1830E+03 0.293TE+03 -64.19 42300. 149.28 245.00 -55.63 0.1813E+03 0.293TE+03 -64.49 42400. 152.89 246.00 -55.63 0.1813E+03 0.290TE+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.290TE+03 -64.49 42500. 155.85 243.00 -55.95 0.1796E+03 0.280E+03 -64.79 42500. 155.85 243.00 -56.51 0.1796E+03 0.280E+03 -64.64 42600. 155.88 243.00 -56.51 0.1796E+03 0.280E+03 -64.79 42500. 155.84 243.00 -56.27 0.1779E+03 0.286E+03 -64.94 42800. 155.84 243.00 -56.62 7 0.1779E+03 0.286E+03 -65.94 42800. 155.84 243.00 -56.59 0.1762E+03 0.284E+03 -65.94 42800. 155.84 243.00 -56.63 0.170E+03 0.284E+03 -65.94 42800. 155.84 243.00 -56.59 0.1762E+03 0.284E+03 -65.94 42800. 157.15 243.00 -56.59 0.1762E+03 0.284E+03 -65.94 42800. 157.15 243.00 -56.59 0.1762E+03 0.284E+03 -65.99 0.43000. 156.84 243.00 -56.59 0.1762E+03 0.284E+03 -65.99 0.43000. 156.87 9 243.00 -56.59 0.1762E+03 0.284E+03 -9999.00 43000. 156.10 244.00 -57.71 0.1737E+03 0.284E+03 -9999.00 43000. 156.00 0.44 0.00 -57.71 0.1737E+03 0.284E+03 -9999.00 43000. 157.48 241.00 -57.78 0.170E+03 0.284E+03 -9999.00 43000. 157.81 241.00 -58.89 0.1762E+03 0.2776E+03 -9999.00 43000. 157.15 241.00 -57.78 0.170E+03 0.284E+03 -9999.00 43000. 157.15 241.00 -58.59 0.1762E+03 0.2776E+03 -9999.00 43000. 157.15 241.00 -58.59 0.160E+03 0.2776E+03 -9999.00 43000. 157.15 241.00 -58.59 0.160E+03 0.2776E+03 -9999.00 43000. 157.15 241.00 -58.59 0.160E+03 0.2776E+03 -9999.00 44000. 157.15 243.00 -59.80 0.160.10 0.274E+03			255.00	-54.36	O. 1929E+03	O.3071E+03	-63.26
41400. 139.44 251.00 -54.57 0.1901E+03 0.303E+03 -63.47 41500. 143.37 252.00 -54.64 0.1892E+03 0.301TE+03 -63.54 41600. 139.44 250.00 -54.78 0.1893E+03 0.3004E+03 -63.64 41700. 142.39 252.00 -54.78 0.1875E+03 0.2990E+03 -63.68 41800. 143.37 250.00 -54.85 0.1865E+03 0.297E+03 -63.68 41800. 143.37 250.00 -54.92 0.1857E+03 0.295E+03 -63.82 42000. 141.73 250.00 -54.92 0.1857E+03 0.295E+03 -63.82 42000. 141.73 250.00 -54.99 0.1848E+03 0.2951E+03 -63.89 42100. 142.39 251.00 -55.515 0.1839E+03 0.293E+03 -64.04 42200. 147.97 247.00 -55.515 0.1839E+03 0.293E+03 -64.04 42200. 147.97 247.00 -55.51 0.1830E+03 0.293E+03 -64.04 42400. 152.89 245.00 -55.63 0.1813E+03 0.290E+03 -64.49 42500. 152.89 245.00 -55.63 0.1813E+03 0.289E+03 -64.49 42500. 152.89 245.00 -55.95 0.1804E+03 0.289E+03 -64.49 42600. 154.53 243.00 -55.95 0.196E+03 0.2880E+03 -64.64 42600. 155.82 242.00 -55.95 0.196E+03 0.2880E+03 -64.94 42600. 155.82 242.00 -56.11 0.1787E+03 0.2880E+03 -64.94 42600. 155.82 242.00 -56.27 0.1779E+03 0.2857E+03 -65.93 42900. 157.48 243.00 -56.27 0.1779E+03 0.2857E+03 -65.24 43000 -156.82 242.00 -56.77 0.1779E+03 0.2857E+03 -65.24 43000 -156.82 242.00 -56.79 0.1779E+03 0.2857E+03 -65.24 43000 -157.84 243.00 -56.59 0.1762E+03 0.283E+03 -9999.00 43300. 160.10 241.00 -57.27 0.1779E+03 0.2857E+03 -9999.00 43300. 160.10 241.00 -57.27 0.173E+03 0.283E+03 -9999.00 43300. 160.10 241.00 -57.27 0.173E+03 0.280E+03 -9999.00 43000. 157.18 241.00 -58.21 0.176E+03 0.282E+03 -9999.00 43000. 157.18 241.00 -58.21 0.176E+03 0.2779E+03 -9999.00 43000. 157.18 241.00 -58.85 0.166E+03 0.2779E+03 -9999.00 43000. 157.18 241.00 -58.29 0.166E+03 0.2779E+03 -9999.00 43000. 157.15 241.00 -58.29 0.166E+03 0.2776E+03 -9999.00 44000. 157.15 243.00 -59.90 0.59.90 0.166E+03 0.2776E+03 -9999.00 44000. 157.15 243.00 -59.90 0.59.90 0.166		143.37	254.00	-54.43	O.1920E+03	O.3057E+03	-63.33
41500. 143.37 252.00 -54.64 0.1892E-03 0.3017E+03 -63.61 41500. 139.44 250.00 -54.78 0.1885E-03 0.3004E+03 -63.61 41700. 142.39 252.00 -54.78 0.1875E+03 0.2890E+03 -63.68 41800. 143.37 250.00 -54.85 0.1875E+03 0.2890E+03 -63.68 41800. 142.39 251.00 -54.85 0.1875E+03 0.2890E+03 -63.75 41900. 142.39 251.00 -54.99 0.1875E+03 0.285E+03 -63.82 42000. 141.73 250.00 -54.99 0.1848E+03 0.2851E+03 -63.89 42100. 143.70 248.00 -55.51 0.1839E+03 0.2893E+03 -64.04 42200. 147.97 247.00 -55.31 0.1830E+03 0.2893E+03 -64.19 42300. 149.28 245.00 -55.63 0.1833E+03 0.2893E+03 -64.34 42400. 152.89 246.00 -55.63 0.1813E+03 0.2893E+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.2893E+03 -64.49 42500. 152.89 243.00 -55.55 0.1893E+03 0.2893E+03 -64.64 42600. 152.89 243.00 -55.55 0.1893E+03 0.2893E+03 -64.64 42600. 157.48 243.00 -56.27 0.1802E+03 0.2893E+03 -64.94 42600. 157.48 243.00 -56.51 0.187E+03 0.2893E+03 -64.94 42600. 157.48 243.00 -56.57 0.1802E+03 0.2893E+03 -64.94 42600. 156.82 242.00 -56.27 0.1779E+03 0.2895E+03 -64.94 42600. 156.82 242.00 -56.27 0.1779E+03 0.2895E+03 -64.94 42600. 156.84 243.00 -56.59 0.1762E+03 0.2893E+03 -65.09 43000. 157.15 243.00 -56.59 0.1762E+03 0.2893E+03 -65.99 0.43000. 158.79 243.00 -56.59 0.1762E+03 0.2893E+03 -65.99 0.43000. 158.79 243.00 -56.59 0.1762E+03 0.2893E+03 -9999.00 43000. 158.79 243.00 -56.59 0.1762E+03 0.2893E+03 -9999.00 43000. 158.79 243.00 -56.59 0.1762E+03 0.2893E+03 -9999.00 43000. 158.79 243.00 -57.58 0.1762E+03 0.2893E+03 -9999.00 43000. 159.78 241.00 -57.78 0.1779E+03 0.2779E+03 0.2993E+03 -9999.00 43000. 159.78 241.00 -57.78 0.1779E+03 0.2779E+03 0.2995E+03 -9999.00 43000. 159.78 241.00 -57.78 0.1745E+03 0.2779E+03 -9999.00 43000. 159.78 241.00 -57.78 0.1745E+03 0.2779E+03 -9999.00 43000. 159.78 241.00 -58.59 0.1686E+03 0.2775E+03 -9999.00 43000. 157.15 243.00 -59.85 0.1686E+03 0.2775E+03 -9999.00 43000. 159.78 241.00 -58.56 0.1686E+03 0.2775E+03 -9999.00 43000. 159.78 241.00 -58.66 0.160E+03 0.2775E+03 -9999.00 44000. 159.58 46 241.00 -58.66 0.160E+03 0.2776E+03 -9999.00		141.08	253.00	-54.50	O. 1911E+03	O.3044E+03	-63.40
41600. 139.44 250.00 -54.71 0.1883E+03 0.3004E+03 -63.68 41800. 142.39 252.00 -54.78 0.1875E+03 0.290E+03 -63.68 41800. 142.39 251.00 -54.92 0.1857E+03 0.290E+03 -63.75 41900. 142.39 251.00 -54.92 0.1857E+03 0.2964E+03 -63.82 42000. 141.73 250.00 -54.99 0.1848E+03 0.295TE+03 -63.89 42100. 143.70 248.00 -55.51 0.1839E+03 0.295TE+03 -64.04 42200. 147.97 247.00 -55.31 0.1830E+03 0.295TE+03 -64.04 42400. 152.89 246.00 -55.63 0.1813E+03 0.2915E+03 -64.49 42300. 149.28 245.00 -55.63 0.1813E+03 0.2915E+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.290E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.290E+03 -64.64 42600. 152.89 245.00 -55.95 0.1796E+03 0.280E+03 -64.64 42600. 154.53 243.00 -55.95 0.1796E+03 0.280E+03 -64.64 42600. 156.82 242.00 -56.11 0.187E+03 0.280E+03 -64.64 42600. 157.48 243.00 -56.11 0.187E+03 0.280E+03 -64.94 42600. 156.82 242.00 -56.11 0.1787E+03 0.280E+03 -64.94 42600. 156.82 242.00 -56.27 0.1779E+03 0.280E+03 -65.99 42800. 156.82 242.00 -56.27 0.1779E+03 0.280E+03 -65.99 42800. 157.15 243.00 -56.59 0.1762E+03 0.280E+03 -65.39 42800. 156.82 242.00 -56.59 0.1762E+03 0.280E+03 -65.39 43000 155.84 243.00 -56.59 0.1762E+03 0.280E+03 -65.39 43000 155.84 243.00 -56.59 0.1762E+03 0.280E+03 -65.39 43000 155.84 244.00 -56.59 0.1762E+03 0.280E+03 -65.39 43000 155.84 244.00 -56.76 0.1754E+03 0.280E+03 -9999.00 43000 158.79 243.00 -56.59 0.1762E+03 0.280E+03 -9999.00 43000 158.79 243.00 -56.59 0.1762E+03 0.280E+03 -9999.00 43000 157.81 241.00 -57.27 0.1729E+03 0.280E+03 -9999.00 43000 157.81 241.00 -57.75 0.1762E+03 0.280E+03 -9999.00 43000 157.18 241.00 -57.75 0.1762E+03 0.280E+03 -9999.00 43000 157.18 241.00 -57.85 0.1762E+03 0.2779E+03 0.9999.00 43000 157.18 241.00 -57.86 0.1762E+03 0.2779E+03 0.9999.00 43000 157.18 241.00 -58.29 0.1680E+03 0.2779E+03 0.9999.00 43000 157.18 241.00 -58.59 0.1680E+03 0.2779E+03 0.9999.00 43000 157.18 241.00 -58.59 0.1680E+03 0.2779E+03 0.9999.00 43000 157.18 241.00 -58.59 0.1680E+03 0.2779E+03 0.9999.00 43000 157.18 241.00 -59.99 0.0 1680E+03 0.2776E+03 0.9999.00			251.00	-54.57	O.1901E+03	O.3030E+03	-63.47
41700. 142.39 252.00 -54.78 0.1875E+03 0.2990E+03 -63.68 1800. 143.37 250.00 -54.92 0.186EE+03 0.297TE+03 -63.75 1900. 142.39 251.00 -54.92 0.185TE+03 0.295TE+03 -63.89 1200. 143.70 248.00 -55.95 0.1839E+03 0.295TE+03 -63.89 1200. 143.70 248.00 -55.31 0.1830E+03 0.293TE+03 -64.19 12200. 147.97 247.00 -55.31 0.1830E+03 0.293TE+03 -64.19 12200. 149.28 245.00 -55.47 0.1822E+03 0.291SE+03 -64.19 12200. 149.28 245.00 -55.63 0.1813E+03 0.291SE+03 -64.19 12200. 152.89 246.00 -55.63 0.1813E+03 0.290E+03 -64.49 125.89 245.00 -55.63 0.1813E+03 0.290E+03 -64.49 125.89 245.00 -55.95 0.180E+03 0.289EE+03 -64.49 125.00 152.89 245.00 -55.95 0.179E+03 0.280E+03 -64.94 125.00 152.89 245.00 -55.95 0.179E+03 0.2880E+03 -64.94 125.00 156.82 243.00 -56.11 0.178TE+03 0.2889E+03 -64.79 125.00 156.82 242.00 -56.27 0.1779E+03 0.2889E+03 -64.99 125.00 156.82 242.00 -56.27 0.1779E+03 0.2846E+03 -65.09 125.00 155.84 243.00 -56.43 0.1770E+03 0.2846E+03 -65.09 125.00 155.84 243.00 -56.43 0.1770E+03 0.2846E+03 -65.29 125.00 155.84 243.00 -56.76 0.175E+03 0.283EE+03 -999.00 125.45 125.00 158.79 243.00 -56.76 0.175E+03 0.283EE+03 -999.00 125.24 125.00 158.79 243.00 -56.76 0.175E+03 0.283EE+03 -999.00 125.24 125.00 158.79 243.00 -56.76 0.175E+03 0.283EE+03 -999.00 125.24 125.00 158.79 243.00 -56.99 0.176E+03 0.283EE+03 0.299.00 125.24 125.00 158.79 243.00 -57.78 0.170E+03 0.286E+03 0.2775E+03 0.999.00 125.24 125.00 0.266EE+03 0.999.00 125.89 0.00 0.266EE+03 0.999.00 0.266		143.37	252.00	-54.64	O.1892E+03	O.3017E+03	-63.54
41800. 143.37 250.00 -54.85 0.1866E+03 0.297E+03 -63.75 41900. 142.39 251.00 -54.99 0.1857E+03 0.2951E+03 -63.82 4200. 141.73 250.00 -55.99 0.1848E+03 0.2951E+03 -63.82 42100. 143.70 248.00 -55.15 0.1839E+03 0.2951E+03 -64.04 42200. 147.97 247.00 -55.31 0.1830E+03 0.2927E+03 -64.19 42300. 149.28 245.00 -55.47 0.1822E+03 0.2915E+03 -64.34 42400. 152.89 246.00 -55.63 0.1813E+03 0.2904E+03 -64.34 42400. 152.89 246.00 -55.579 0.1804E+03 0.292E+03 -64.64.49 42500. 152.89 245.00 -55.95 0.1796E+03 0.2892E+03 -64.64 42600. 154.53 243.00 -55.95 0.1796E+03 0.280E+03 -64.79 42700. 157.48 243.00 -56.11 0.1787E+03 0.280E+03 -64.94 42800. 156.82 242.00 -56.27 0.1779E+03 0.2857E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.2857E+03 -65.09 43900. 155.84 243.00 -56.69 0.1762E+03 0.283E+03 -65.24 43000. 158.46 246.00 -56.59 0.1762E+03 0.283E+03 -65.29 43100. 158.46 246.00 -56.59 0.1762E+03 0.283E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1762E+03 0.283E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1762E+03 0.281E+03 -9999.00 4300. 158.79 243.00 -56.93 0.1762E+03 0.281E+03 -9999.00 4300. 160.10 242.00 -57.27 0.173E+03 0.281E+03 -9999.00 43500. 159.78 241.00 -57.27 0.173E+03 0.281E+03 -9999.00 43500. 159.45 243.00 -57.64 0.1712E+03 0.281E+03 -9999.00 43500. 159.45 243.00 -57.64 0.1712E+03 0.287E+03 -9999.00 43500. 159.45 243.00 -57.64 0.1712E+03 0.287E+03 -9999.00 43500. 159.45 243.00 -57.64 0.1712E+03 0.2779E+03 -9999.00 43500. 159.45 243.00 -57.64 0.172E+03 0.2779E+03 -9999.00 43500. 159.45 243.00 -57.86 0.1762E+03 0.2779E+03 -9999.00 43500. 159.45 243.00 -57.86 0.160.60 0.2779E+03 -9999.00 43500. 157.81 241.00 -58.56 0.1672E+03 0.2779E+03 -9999.00 43000. 157.81 241.00 -58.56 0.1672E+03 0.2779E+03 -9999.00 44000. 157.81 241.00 -58.56 0.1662E+03 0.2779E+03 -9999.00 44000. 155.86 240.00 -59.91 0.1662E+03 0.266E+03 -9999.00 44000. 155.89 239.00 -59.91 0.1662		139.44	250.00	-54.71	O. 1883E+03	O.3004E+03	-63.61
41900. 142.39 251.00 -54.99 0.1857E+03 0.2964E+03 -63.82 42000. 141.73 250.00 -54.99 0.1848E+03 0.2951E+03 -63.82 42100. 143.70 248.00 -55.15 0.1839E+03 0.2951E+03 -64.04 42200. 147.97 247.00 -55.31 0.1830E+03 0.2951E+03 -64.19 42300. 149.28 245.00 -55.47 0.1822E+03 0.2915E+03 -64.19 42300. 149.28 246.00 -55.63 0.1813E+03 0.2904E+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.2904E+03 -64.49 42500. 152.89 246.00 -55.95 0.1796E+03 0.280E+03 -64.79 42600. 154.53 243.00 -55.95 0.1796E+03 0.280E+03 -64.79 42600. 157.48 243.00 -56.10 0.1787E+03 0.280E+03 -64.94 42800. 156.82 242.00 -56.27 0.1779E+03 0.285E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.284E+03 -65.24 43000. 156.82 242.00 -56.43 0.1770E+03 0.284E+03 -65.39 43000. 155.84 243.00 -56.59 0.1762E+03 0.283E+03 -65.39 43100. 158.46 246.00 -56.59 0.1762E+03 0.283E+03 -65.39 43200. 158.79 243.00 -56.59 0.175E+03 0.283E+03 -9999.00 43300. 160.10 242.00 -56.99 0.175E+03 0.283E+03 -9999.00 43500. 159.78 241.00 -57.79 0.1779E+03 0.283E+03 -9999.00 43500. 159.78 241.00 -57.79 0.1779E+03 0.283E+03 -9999.00 43500. 159.78 241.00 -57.79 0.1779E+03 0.2801E+03 -9999.00 43500. 159.78 241.00 -57.79 0.1779E+03 0.2801E+03 -9999.00 43500. 159.78 241.00 -57.79 0.1779E+03 0.2801E+03 -9999.00 43600. 159.45 243.00 -57.79 0.1779E+03 0.2801E+03 -9999.00 43600. 159.45 243.00 -57.78 0.1704E+03 0.2801E+03 -9999.00 43600. 159.45 243.00 -57.78 0.1704E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.78 0.1704E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.79 0.1696E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -59.91 0.1696E+03 0.2766E+03 -9999.00 44000. 157.15 241.00 -59.91 0.1696E+03 0.2665E+03 -9999.00 44000. 155.18 240.00 -59.		142.39	252.00	-54.78	O.1875E+03	O.2990E+03	-63.68
42000. 141.73 250.00 -54.99 0.1848E+03 0.295E+03 -63.89 42100. 143.70 248.00 -55.15 0.1839E+03 0.293E+03 -64.04 19200. 147.97 247.00 -55.31 0.1830E+03 0.293E+03 -64.19 42300. 149.28 245.00 -55.47 0.1822E+03 0.293E+03 -64.19 42400. 152.89 246.00 -55.63 0.1813E+03 0.290E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.289E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.2880E+03 -64.64 49 42500. 157.48 243.00 -55.39 0.1796E+03 0.2880E+03 -64.64 49 42600. 157.48 243.00 -56.11 0.1787E+03 0.2869E+03 -64.94 42800. 156.82 242.00 -56.27 0.1779E+03 0.285E+03 -65.09 43100. 155.84 243.00 -56.43 0.1770E+03 0.2846E+03 -65.24 43000. 155.84 243.00 -56.59 0.1762E+03 0.2846E+03 -65.24 43000. 158.46 246.00 -56.76 0.1754E+03 0.282E+03 -65.39 43100. 158.46 246.00 -56.76 0.1754E+03 0.282E+03 -9999.00 43200. 158.79 243.00 -56.99 0.1762E+03 0.282E+03 -9999.00 43200. 150.10 242.00 -57.10 0.1737E+03 0.2812E+03 -9999.00 43000. 150.10 242.00 -57.10 0.1737E+03 0.2812E+03 -9999.00 43000. 150.10 242.00 -57.10 0.1737E+03 0.2812E+03 -9999.00 43000. 150.10 242.00 -57.10 0.1737E+03 0.280E+03 -9999.00 43000. 150.10 242.00 -57.10 0.1737E+03 0.280E+03 -9999.00 43000. 150.10 242.00 -57.10 0.1737E+03 0.280E+03 -9999.00 43000. 150.10 241.00 -57.44 0.1721E+03 0.2799E+03 -9999.00 43000. 157.48 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43000. 157.48 241.00 -57.78 0.1704E+03 0.2779E+03 -9999.00 43000. 157.81 241.00 -58.56 0.1704E+03 0.2775E+03 -9999.00 43000. 157.81 241.00 -58.56 0.160E+03 0.2775E+03 -9999.00 43000. 157.81 241.00 -58.56 0.160E+03 0.2775E+03 -9999.00 43000. 157.58 241.00 -58.56 0.160E+03 0.2775E+03 -9999.00 43000. 157.58 240.00 -59.30 0.160E+03 0.2765E+03 -9999.00 44000. 155.89 239.00 -59.40 0.160E+03 0.2665E+03 -9999.00 44000. 155.89 239.00 -59		143.37	250.00	-54.85	O.1866E+03	O.2977E+03	-63.75
42100. 143.70		142.39	251.00	-54.92	O.1857E+03	O.2964E+03	-63.82
42200. 147.97 247.00 -55.31 0.1830E+03 0.2927E+03 -64.19 42300. 149.28 245.00 -55.63 0.1813E+03 0.2915E+03 -64.49 42500. 152.89 246.00 -55.63 0.1813E+03 0.290E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.2892E+03 -64.64 42600. 155.83 243.00 -55.95 0.1796E+03 0.2892E+03 -64.64 42600. 157.48 243.00 -56.95 0.1796E+03 0.2892E+03 -64.64 42800. 156.82 242.00 -56.11 0.1787E+03 0.2869E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.2869E+03 -65.09 42900. 155.84 243.00 -56.43 0.1770E+03 0.2846E+03 -65.24 43000. 158.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.86 246.00 -56.76 0.1754E+03 0.2832E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2832E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43400. 160.10 242.00 -57.10 0.1737E+03 0.281E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.78 241.00 -57.78 0.1704E+03 0.2779E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.276EE+03 -9999.00 43900. 157.48 241.00 -57.78 0.1704E+03 0.276EE+03 -9999.00 43900. 157.48 241.00 -57.89 0.1704E+03 0.276EE+03 -9999.00 43900. 157.48 241.00 -58.12 0.168E+03 0.276EE+03 -9999.00 43900. 157.48 241.00 -58.29 0.1660E+03 0.275EE+03 -9999.00 43900. 157.48 241.00 -58.12 0.168EE+03 0.276EE+03 -9999.00 43900. 157.81 241.00 -58.29 0.1660E+03 0.275EE+03 -9999.00 43900. 157.81 241.00 -58.29 0.1660E+03 0.275EE+03 -9999.00 43900. 155.18 241.00 -58.83 0.1664E+03 0.276EE+03 -9999.00 44000. 155.18 241.00 -58.29 0.1660E+03 0.275EE+03 -9999.00 44000. 155.18 241.00 -58.93 0.1664E+03 0.276EE+03 -9999.00 44000. 155.18 241.00 -58.93 0.1664E+03 0.276EE+03 -9999.00 44000. 155.18 241.00 -58.93 0.1664E+03 0.276EE+03 -9999.00 44000. 155.18 241.00 -59.93 0.0 -60.18 0.166EE+03 0.266EE+03 -9999.00 44000. 155.84 241.00 -59.93 0.0 -60.18 0.166EE+03 0.266EE+03 -9999.00 44000. 155.84 249.00 -59.93 0.0 -60.18 0.166EE+03 0.266EE+03 -9999.00		141.73	250.00	-54.99	O.1848E+03	O.2951E+03	-63.89
42300. 149.28 245.00 -55.47 0.1822E+03 0.2815E+03 -64.34 42400. 152.89 246.00 -55.63 0.1813E+03 0.2804E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.2808E+03 -64.64 42600. 154.53 243.00 -55.95 0.1796E+03 0.2808E+03 -64.79 42700. 157.48 243.00 -56.11 0.1787E+03 0.2809E+03 -64.94 42800. 156.82 242.00 -56.27 0.1779E+03 0.2859E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.2846E+03 -65.24 43000. 155.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.46 246.00 -56.59 0.1762E+03 0.2834E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2812E+03 -9999.00 43500. 160.10 241.00 -57.27 0.1729E+03 0.2779E+03 -9999.00 43600. 159.78 241.00 -57.27 0.1729E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -56.50 0.57.27 0.1729E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.27 0.1729E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.27 0.1729E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.27 0.1729E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2796E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2757E+03 -9999.00 43600. 159.45 243.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43600. 159.45 243.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43600. 159.45 243.00 -57.81 0.1704E+03 0.2757E+03 -9999.00 43600. 159.45 243.00 -57.81 0.1704E+03 0.2757E+03 -9999.00 43600. 159.45 243.00 -57.85 0.1696E+03 0.2746E+03 -9999.00 44000. 157.81 241.00 -58.29 0.1668E+03 0.2746E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1668E+03 0.2746E+03 -9999.00 44000. 155.18 241.00 -58.29 0.1668E+03 0.2746E+03 -9999.00 44000. 155.54 239.00 -59.85 0.1668E+03 0.2704E+03 -9999.00 44000. 155.54 239.00 -59.37 0.1648E+03 0.265E+03 -9999.00 44000. 155.58 239.00 -59.40 0.1664E+03 0.265E+03 -9999.00 44000. 155.58 239.00 -59.40 0.1664E+03 0.265E+03 -9999		143.70	248.00	-55 . 15	O. 1839E+03	O.2939E+03	-64.04
42400. 152.89 246.00 -55.63 0.1813E+03 0.2904E+03 -64.49 42500. 152.89 245.00 -55.79 0.1804E+03 0.2880E+03 -64.64 64 64 64 650. 154.53 243.00 -55.95 0.1796E+03 0.2880E+03 -64.79 42700. 157.48 243.00 -56.11 0.1787E+03 0.2880E+03 -64.94 42800. 156.82 242.00 -56.27 0.1779E+03 0.286E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.2846E+03 -65.24 43000. 155.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.46 246.00 -56.76 0.1754E+03 0.2834E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43200. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.78 241.00 -57.61 0.1712E+03 0.2759E+03 -9999.00 43600. 159.78 241.00 -57.80 0.1704E+03 0.2758E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2758E+03 -9999.00 43600. 157.81 241.00 -57.85 0.1696E+03 0.2758E+03 -9999.00 43600. 157.81 241.00 -58.52 0.1680E+03 0.2746E+03 -9999.00 43600. 157.81 241.00 -58.52 0.1680E+03 0.2746E+03 -9999.00 43600. 157.81 241.00 -58.52 0.1680E+03 0.2746E+03 -9999.00 44000. 157.15 241.00 -58.59 0.1680E+03 0.2746E+03 -9999.00 44000. 157.15 241.00 -58.56 0.1672E+03 0.2746E+03 -9999.00 44000. 157.15 241.00 -58.56 0.1672E+03 0.2746E+03 -9999.00 44000. 157.15 243.00 -59.37 0.1680E+03 0.2746E+03 -9999.00 44000. 157.15 243.00 -59.37 0.1680E+03 0.2746E+03 -9999.00 44000. 157.15 243.00 -59.37 0.1680E+03 0.2665E+03 -9999.00 44000. 157.55 243.00 -59.37 0.1680E+03 0.2665E+03 -9999.00 44000. 157.55 243.00 -59.37 0.1680E+03 0.2665E+03 -9999.00 44000. 157.55 243.00 -59.37 0.1680E+03 0.2665E+03 -9999.00 44000. 155.58 239.00 -59.37 0.1680E+03 0.2665E+03 -9999.00 44000. 155.88 239.00 -59.37 0.1660E+03 0.2665E+03 -9999.00 44000. 155.88 239.00 -59.40 0.160.60 0.160.60 0.		147.97	247.00	-55.31	O.1830E+03	O.2927E+03	-64.19
42500. 152.89		149.28	245.00	-55.47	O. 1822E+03	O.2915E+03	-64.34
42600. 154.53		152.89	246.00	-55.63	O.1813E+03	O.2904E+03	-64.49
42700. 157.48 243.00 -56.11 0.1787E+03 0.2869E+03 -64.94 42800. 156.82 242.00 -56.27 0.1779E+03 0.2857E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.2857E+03 -65.09 43000. 155.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.46 246.00 -56.76 0.1754E+03 0.2823E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.275E+03 -9999.00 43800. 150.43 242.00 -57.95 0.1696E+03 0.275E+03 -9999.00 43800. 157.48 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 43900. 157.58 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 4300. 157.58 241.00 -58.12 0.1686E+03 0.2746E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.274E+03 -9999.00 44000. 155.18 240.00 -58.83 0.1664E+03 0.270E+03 -9999.00 44000. 155.18 240.00 -58.83 0.1664E+03 0.270E+03 -9999.00 44000. 155.18 240.00 -58.83 0.1664E+03 0.270E+03 -9999.00 44500. 155.518 249.00 -59.91 0.1632E+03 0.2685E+03 -9999.00 44500. 155.518 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 155.89 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00				-55.79	O.1804E+03	O.2892E+03	-64.64
42800. 156.82 242.00 -56.27 0.1779E+03 0.2857E+03 -65.09 42900. 157.15 243.00 -56.43 0.1770E+03 0.2846E+03 -65.24 43000. 155.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.46 246.00 -56.76 0.1754E+03 0.2823E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2812E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.78 241.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2768E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.56 0.1672E+03 0.274E+03 -9999.00 44000. 158.46 241.00 -58.56 0.1672E+03 0.274E+03 -9999.00 44000. 157.51 241.00 -58.56 0.1672E+03 0.274E+03 -9999.00 44000. 155.18 240.00 -58.83 0.1664E+03 0.274E+03 -9999.00 44200. 155.51 243.00 -59.91 0.1680E+03 0.274E+03 -9999.00 44300. 157.55 243.00 -59.91 0.1680E+03 0.2665E+03 -9999.00 44500. 155.58 239.00 -59.91 0.1640E+03 0.2665E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 152.89 238.00 -60.45 0.1616E+03 0.2665E+03 -9999.00			243.00	-55.95	O.1796E+03	O.2880E+03	-64. 79
42900. 157.15 243.00 -56.43 0.1770E+03 0.2846E+03 -65.24 43000. 155.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.46 246.00 -56.76 0.1754E+03 0.2823E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2779E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2779E+03 -9999.00 43800. 160.43 242.00 -57.86 0.1704E+03 0.275E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1696E+03 0.2735E+03 -9999.00 44000. 158.46 241.00 -58.29 0.1680E+03 0.2735E+03 -9999.00 44000. 155.16 241.00 -58.29 0.1680E+03 0.2714E+03 -9999.00 44000. 155.46 241.00 -58.29 0.1680E+03 0.2714E+03 -9999.00 44000. 155.15 241.00 -58.29 0.1680E+03 0.2714E+03 -9999.00 44000. 155.16 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44000. 155.16 241.00 -58.83 0.1664E+03 0.2714E+03 -9999.00 44000. 155.16 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44000. 155.18 240.00 -58.83 0.1664E+03 0.2714E+03 -9999.00 44000. 155.18 240.00 -59.80 0.1666E+03 0.2704E+03 -9999.00 44000. 155.16 243.00 -59.37 0.1668E+03 0.2665E+03 -9999.00 44000. 155.58 239.00 -59.37 0.1668E+03 0.2665E+03 -9999.00 44000. 155.58 239.00 -59.37 0.1666E+03 0.2665E+03 -9999.00 44000. 155.58 239.00 -59.37 0.1664E+03 0.2665E+03 -9999.00 44600. 155.58 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 155.58 239.00 -60.18 0.1624E+03 0.2665E+03 -9999.00 44600. 155.58 239.00 -60.45 0.1666E+03 0.2665E+03 -9999.00 44600. 155.89 238.00 -60.45 0.1616E+03 0.2665E+03 -9999.00		157.48	243.00	-56.11	O. 1787E+03	O.2869E+03	-64.94
43000. 155.84 243.00 -56.59 0.1762E+03 0.2834E+03 -65.39 43100. 158.46 246.00 -56.76 0.1754E+03 0.2823E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2812E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2778E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.275E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.275E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.275E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.275E+03 -9999.00 44000. 157.15 241.00 -58.12 0.1688E+03 0.275E+03 -9999.00 44000. 157.15 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2714E+03 -9999.00 44200. 155.15 243.00 -59.10 0.1656E+03 0.2704E+03 -9999.00 44200. 155.51 243.00 -59.10 0.1656E+03 0.265EE+03 -9999.00 44400. 153.54 239.00 -59.91 0.1648E+03 0.265EE+03 -9999.00 44500. 150.59 239.00 -59.91 0.1648E+03 0.265EE+03 -9999.00 44500. 155.18 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44500. 155.18 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 155.51 239.00 -60.18 0.1632E+03 0.2665E+03 -9999.00 44600. 155.51 239.00 -60.18 0.1632E+03 0.2665E+03 -9999.00 44600. 155.51 239.00 -60.18 0.1632E+03 0.2665E+03 -9999.00 44600. 155.51 239.00 -60.45 0.1632E+03 0.2665E+03 -9999.00			242.00	-56 . 27	O.1779E+03	O.2857E+03	-65.09
43100. 158.46 246.00 -56.76 0.1754E+03 0.2823E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.275E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.275E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.518 240.00 -58.83 0.1664E+03 0.2714E+03 -9999.00 44300. 157.55 243.00 -59.10 0.1656E+03 0.2704E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2665E+03 -9999.00 44500. 155.59 239.00 -59.64 0.1640E+03 0.2665E+03 -9999.00 44500. 155.58 239.00 -59.64 0.1640E+03 0.2665E+03 -9999.00 44500. 155.58 239.00 -59.64 0.1640E+03 0.2665E+03 -9999.00 44800. 155.18 239.00 -59.91 0.1622E+03 0.2665E+03 -9999.00 44800. 155.18 239.00 -60.18 0.1624E+03 0.2666E+03 -9999.00			243.00	-56.43	O. 1770E+03	O.2846E+03	-65.24
43100. 158.46 246.00 -56.76 0.1754E+03 0.282E+03 -9999.00 43200. 158.79 243.00 -56.93 0.1745E+03 0.2812E+03 -9999.00 43300. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2779E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.275E+03 -9999.00 43800. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2735E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2714E+03 -9999.00 44300. 157.15 243.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44400. 153.54 249.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44500. 157.55 249.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44500. 155.59 239.00 -59.64 0.1640E+03 0.2695E+03 -9999.00 44500. 155.59 239.00 -59.64 0.1640E+03 0.2656E+03 -9999.00 44500. 155.18 239.00 -59.64 0.1640E+03 0.2656E+03 -9999.00 44800. 155.18 239.00 -59.64 0.1640E+03 0.2656E+03 -9999.00 44800. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00		155.84	243.00	-56.59	O. 1762E+03	O.2834E+03	-65.39
43300. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44500. 150.59 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 151.57 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44700. 155.18 239.00 -59.91 0.1632E+03 0.2656E+03 -9999.00 44700. 155.18 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44800. 152.89 238.00 -60.18 0.1624E+03 0.2666E+03 -9999.00			246.00	-56.76	O. 1754E+03		
43300. 160.10 242.00 -57.10 0.1737E+03 0.2801E+03 -9999.00 43400. 160.10 241.00 -57.27 0.1729E+03 0.2790E+03 -9999.00 43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.273E+03 -9999.00 44100. 158.46 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44500. 153.54 239.00 -59.37 0.1648E+03 0.2695E+03 -9999.00 445		158.79	243.00	-56.93	O. 1745E+03	O.2812E+03	-9999.00
43500. 159.78 241.00 -57.44 0.1721E+03 0.2779E+03 -9999.00 43600. 159.45 243.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.10 0.1656E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2656E+03 -9999.00		160.10	242.00	-57 . 10		O.2801E+03	
43600. 159.45 243.00 -57.61 0.1712E+03 0.2768E+03 -9999.00 43700. 157.48 241.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44500. 150.59 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2656E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2656E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00			241.00	-57.27	O. 1729E+03	O.2790E+03	~9999.00
43700. 157.48 241.00 -57.78 0.1704E+03 0.2757E+03 -9999.00 43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2714E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.160E+03 0.2665E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44600. 155.18 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00		159.78	241.00	-57.44	O. 1721E+03	O.2779E+O3	-9999.00
43800. 160.43 242.00 -57.95 0.1696E+03 0.2746E+03 -9999.00 43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1600E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00			243.00	-57.61	O. 1712E+03	O.2768E+O3	-9999.00
43900. 157.81 241.00 -58.12 0.1688E+03 0.2735E+03 -9999.00 44000. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00		157.48	241.00	-57.78	O. 1704E+03		-9999.00
4400. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	43800.	160.43	242.00	-57.95	O. 1696E+03	0.2746E+03	-9999.00
44000. 157.15 241.00 -58.29 0.1680E+03 0.2724E+03 -9999.00 44100. 158.46 241.00 -58.56 0.1672E+03 0.2714E+03 -9999.00 44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	43900.	157.81	241.00	-58.12	O. 1688E+03	0.2735E+03	-9999.00
44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	44000.	157 . 15	241.00	-58.29	O. 1680E+03		-9999.00
44200. 155.18 240.00 -58.83 0.1664E+03 0.2704E+03 -9999.00 44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	44100.	158.46	241.00	-58.56	O. 1672E+03	0.2714E+03	-9999.00
44300. 157.15 243.00 -59.10 0.1656E+03 0.2694E+03 -9999.00 44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2656E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	44200.	155.18	240.00	-58.83			
44400. 153.54 239.00 -59.37 0.1648E+03 0.2685E+03 -9999.00 44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00		157 . 15	243.00				
44500. 150.59 239.00 -59.64 0.1640E+03 0.2675E+03 -9999.00 44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	44400.	153.54					
44600. 151.57 239.00 -59.91 0.1632E+03 0.2665E+03 -9999.00 44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	44500.	150.59	239.00				
44700. 155.18 239.00 -60.18 0.1624E+03 0.2656E+03 -9999.00 44800. 152.89 238.00 -60.45 0.1616E+03 0.2646E+03 -9999.00	44600.	151.57					
44800. 152.89 238.00 -60.45 0,1616E+03 0,2646E+03 -9999.00	44700.	155 . 18					
44900. 149.93 236.00 -60.72 0.1608E+03 0.2637E+03 -9999.00	44800.		238.00				
	44900.	149.93	236.00				

Table 5. STS-32 ascent atmospheric data tape (continued).

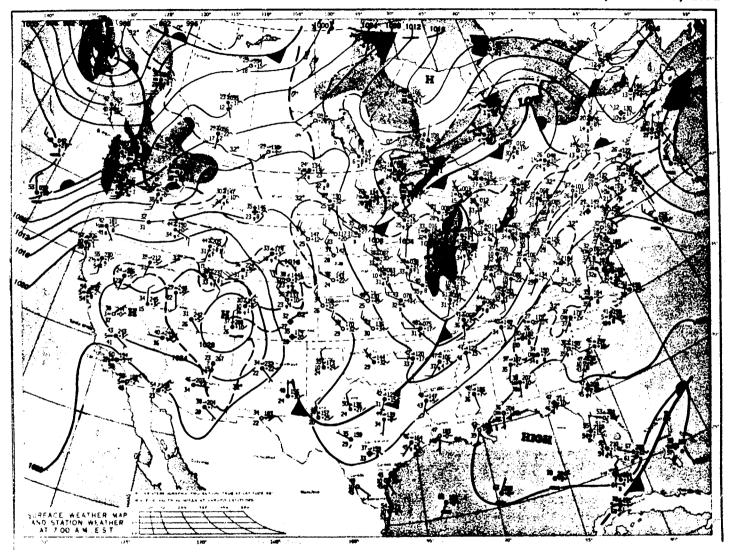
ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
45000.	143.04	236.00	-60.99	O.1600E+03	O.2627E+03	-9999.00
45100.	147.31	235.00	-61.30	O. 1592E+03	O.2618E+03	-9999.00
45200.	148.29	234.00	-61.61	O. 1584E+03	O.2609E+03	-9999.00
45300.	147.31	234.00	-61.92	O. 1576E+03	O.2600E+03	-9999.00
45400.	146.65	233.00	-62.23	O.1569E+03	O.2591E+03	-9999.00
45500.	145.34	233.00	-62.54	O.1561E+03	O.2582E+O3	-9999.00
45600.	143. 37	234.00	-62.85	O. 1553E+03	O.2573E+03	-9999.00
45700.	145.01	236.00	-63.16	0.1546E+03	O.2564E+O3	-9999.00
45800.	143.70	235.00	-63.47	O.1538E+03	O.2555E+O3	-9999.00
45900.	145.34	237.00	-63.78	O.1531E+03	O.2547E+O3	-9999.00
46000.	143.37	236.00	-64.09	O. 1523E+03	O.2538E+03	-9999.00
46100.	145.01	238.00	-64.36	Q. 1515E+Q3	O.2529E+03	-9999.00
46200.	146.00	237.00	-64.63	O.1508E+03	O.2519E+03	-9999.00
46300.	146.9 8	237.00	-64.90	0.1500E+03	O.2510E+03	-9999.00
46400.	145.01	239.00	-65.17	O. 1493E+03	0.2501E+03	-9999.00
46500.	148.95	240.00	-65.44	O.1486E+03	O.2492E+03	-9999.00
46600.	147.31	240.00	-65.71	O.1478E+03	O.2482E+03	-9999.00
46700.	147.31	240.00	-65.98	O. 1471E+03	O.2473E+03	-9999.00
46800.	147.64	240.00	-66.25	O.1464E+03	O.2464E+03	-9999.00
46900.	146.33	239.00	-66.52	O.1456E+03	O.2455E+03	-9999.00
47000.	146.33	243.00	-66.79	O.1449E+03	O.2446E+03	-9999.00
47100.	140.09	240.00	-66.94	0.1442E+03	0.2436E+03	-9999.00
47200.	143.04	244.00	-67.09	0.1435E+03	O.2425E+03	-999 9 .00
47300.	139.11	238.00	-67.24	0.1427E+03	O. 2415E+03	-9999.00
47400.	142.72	240.00	-67.39	0.1420E+03	O.2404E+03	-9999.00
47500.	138.45	239.00	-67.54	Q.1413E+03	0.2394E+03	-9999.00
47600.	137.80	241.00	-67.69	O.1406E+03	O.2384E+03	-9999.00
47700.	137.47	239.00	-67.84	O.1399E+03	O.2374E+03	-99 99 .00
47800.	135.83	240.00	-67.99	O.1392E+03	O.2364E+03	-9999.00
47900.	135.50	240.00	-68.14	O.1385E+03	O.2353E+03	-9999.00
48000.	135.50	238.00	-68.29	O.1378E+03	O.2343E+03	-9999.00
48100.	137 . 14	239.00	-68.51	O. 1371E+03	O.2334E+O3	-9999.00
48200.	135.83	237.00	-68.73	0.1364E+03	O.2325E+03	-9999.00
48300.	138.45	237.00	-68.95	O. 1357E+O3	O.2315E+03	-9999.00
48400.	137 , 14	237.00	-69.17	O.1350E+03	O.2306E+03	-9999.00
48500.	135.50	240.00	-69.39	0.1344E+03	O.2297E+03	-9999.00
48600.	133.20	241.00	-69.61	O. 1337E+03	O.2288E+O3	-9999.00
48700.	137.14	242.00	-69.83	0.1330E+03	O.2279E+03	-9999.00
48800.	129.92	245.00	-70.05	0.1323E+03	0.2270E+03	-9999.00
48900.	132.22	248.00	-70.27	O. 1317E+03	0.2261E+03	-9999.00
49000.	130.25	248.00	-70.49	0.1310E+03	O.2252E+03	-9999.00
50000.	124.34	247.00	-70.59	O. 1245E+03	0.2141E+03	-9999.00
51000.	118.11	252.00	-70.59	O.1183E+03	O.2035E+03	-9999.00
52000.	111.55	256.00	-70.89	0.1124E+03	O.1936E+03	-9999.00
53000.	100.72	255.00	-72.79	0.1068E+03	O. 1857E+03	-9999.00
54000.	88.91	249.00	-72.69	0.1014E+03	O. 1762E+03	-9999.00
55000.	80.71	245.00	-72.29	0.9630E+02	0.1670E+03	-9999.00
56000.	72.83	244.00	-72.79	0.9146E+02	0.1590E+03	-9999.00
57000.	62.99	244.00	-72.79	0.8686E+02	0.1510E+03	-9999.00
58000.	49.54	243.00	-72.09	0.8250E+02	O 1429E+O3	-9999.00
30000.		2,3.33		· · · · -		

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
59000 .	43.31	240.00	-70.59	O.7838E+02	O.1348E+03	-9999.00
60000.	38.71	242.00	-71.29	O.7448E+O2	O. 1285E+03	-9999.00
61000.	31.82	250.00	-71.69	0.7076E+02	O. 1224E+03	-9999.00
62000.	27.23	259.00	-70. 89	0.6723E+02	0.1158E+03	-9999.00
63000.	24.28	269.00	-69.89	0.6389E+02	O. 1095E+03	-9999.00
64000.	17.39	269.00	-70.69	O.6072E+02	O. 1045E+03	-9999.00
65000 .	9.19	256 .00	-67.09	O.5772E+02	O.9758E+O2	-9999.00
66000 .	1.97	261.00	-65.99	0.5491E+02	0.9234E+02	-9999.00
67000.	5.58	170.00	-66.39	O.5224E+02	O.8802E+02	-9999.00
68000.	17.39	192.00	-66.09	O.4970E+02	O.8362E+O2	-9999.00
69000.	25.26	214.00	-64.39	0.4729E+02	O.7892E+02	-9999.00
70000.	25.92	239.00	-63.89	0.4501E+02	0.7493E+02	-9999.00
71000.	24.61	269.00	-63.19	O.4285E+02	0.7110E+02	-9999.00
72000 .	21.65	289.00	-63.69	O.4080E+02	O.6786E+O2	-9999.00
73000.	18.37	300.00	-61.39	O.3885E+02	0.6391E+02	-9999.00
74000.	16.73	298.00	-60.89	0.3700E+02	O.6073E+02	-9999.00
75000.	15.09	272.00	-62.19	O.3524E+02	O.5819E+O2	-9999.00
76000	18.37	249.00	-60.59	O.3356E+02	0.5500E+02	-9999.00
77000.	23.62	255.00	-59.39	O.3198E+O2	O.5212E+O2	-9999.00
78000.	28.54	260.00	-59.29	0.3047E+02	O.4963E+O2	-9999.00
79000.	32.15	260.00	-58.29	0.2904E+02	0.4708E+02	-9999.00
80000.	34.45	262.00	-58.59	O.2768E+02	O.4494E+02	-9999.00
81000.	38.06	266.00	-57.79	O.2638E+02	0.4267E+02	-9999.00
82000.	42.32	268.00	~59 . 59	O.2514E+O2	0.4101E+02	-9999.00
83000.	45.93	266.00	-60.69	O.2396E+O2	O.3929E+O2	-9999.00
84000.	52.49	266.00	-59 . 09	O.2282E+O2	O.3714E+O2	-9999.00
85000 .	57.74	267.00	-57.89	O.2175E+O2	O.3520E+02	-9999.00
86000.	60.37	272.00	-54.79	O.2074E+02	O.3309E+02	-9999.00
87000.	63.65	280.00	-52.89	0.1979E+02	O.3130E+02	-9999.00
88000.	67.59	286.00	-51.49	O. 1889E+02	O.2969E+O2	-9999.00
89000.	65.29	282.00	-50.79	O.1803E+02	O.2825E+O2	-9999.00
90000.	58.07	271.00	-50.69	O. 1721E+02	O.2695E+O2	-9999.00
91000.	55.09	271.92	-49.71	O.1613E+02	O.2516E+O2	-9999.00
94000.	46.27	275.36	-46.77	O. 1330E+02	O.2046E+02	-9999.00
97000.	37.70	280.41	-43.82	O. 1096E+02	O. 1664E+02	-9999.00
100000.	29.58	288.31	-40.88	O.9029E+01	O. 1354E+02	-9999.00
103000.	22.43	301.67	-37.94	0.7440E+01	O.1102E+02	-9999.00
106000.	24.00	298.95	-35 . 89	O.6550E+O1	0.9617E+01	-9999.00
109000.	25.57	296.60	-33.83	0.5770E+01	O.8399E+O1	-9999.00
112000.	25.43	294.55	-30.97	O.5100E+01	0.7336E+01	-9999.00
115000.	23.82	292.43	-27.46	O.4520E+01	0.6409E+01	-9999.00
118000.	22.27	289.98	-23.94	0.4010E+01	0.5606E+01	-9999.00
121000.	20.74	287.20	-20.41	O.3550E+01	O.4893E+O1	-9999.00
124000.	19.30	283.97	-16.88	O.3150E+O1	O.4282E+O1	-9999.00
127000.	17.91	280.34	-13.33	O.2790E+01	0.3741E+01	-9999.00
130000.	18.40	273.37	-11.30	O.2490E+O1	O.3313E+01	-9999.00
133000.	19.16	266 . 86	-9.28	O.2230E+01	0.2944E+01	-9999.00
136000.	20.10	260.89	-7 . 25	0.2000E+01	0.2620E+01	-9999.00
139000.	21.28	255.54	-5.23	O.1790E+01	0.2327E+01	-9999.00
142000.	22.62	250.78	-3.21	O. 1600E+01	0.2065E+01	-9999.00

Table 5. STS-32 ascent atmospheric data tape (continued).

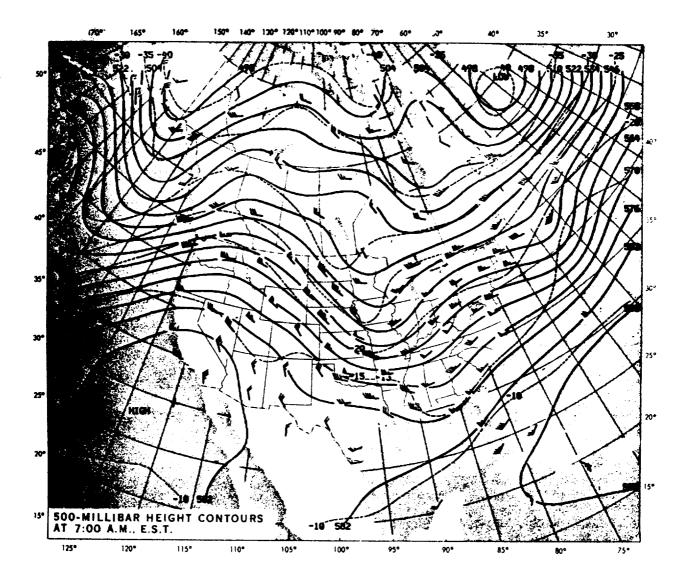
ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
145000.	24.31	247.21	-1.81	0.1430E+01	O.1836E+O1	-9999.00
148000.	26.26	244.94	-1.20	O.1280E+01	O.1640E+01	-9999.00
151000.	28.26	242.93	~O.58	0.1150E+01	O.1470E+01	-9999.00
154000.	30. 32	241.22	0.04	O. 1030E+01	0.1313E+01	-9999.00
157000.	32.38	239.69	0.65	0.9200E+00	O. 1171E+O1	-9999.00
160000.	34.45	238.35	1.26	0.8240E+00	0.1046E+01	-9999.00
163000.	39.94	242.82	-0.03	0.7390E+00	0.9426E+00	-9999.00
166000.	46.04	246.70	-1.57	0.6630E+00	0.8505E+00	-9999.00
169000.	52.34	249.68	-3.16	0.5940E+00	0.7664E+00	-9999.00
172000.	58.74	252.01	-4.77	0.5320E+00	0.6906E+00	-9999.00
175000.	65.23	253.88	-6.39	0.4770E+00	0.6229E+00	-9999.00
178000.	72.10	255.32	-8.35	0.4260E+00	0.5604E+00	-9999.00
181000.	79.67	256.38	-11.00	0.3780E+00	0.5023E+00	-9999.00
184000.	87.26	257.25	-13.65	0.3360E+00	0.4511E+00	-9999.00
187000.	94.87	257.96	- 16 . 29	0.2990E+00	0.4055E+00	-9999.00
190000.	102.48	258.59	-18.93	0.2660E+00	0.3645E+00	-9999.00
193000.	110.12	259.11	-21.56	0.2360E+00	0.3268E+00	-9999.00
196000.	121.80	262.07	-24.57	0.2090E+00	0.2929E+00	-9999.00
199000.	135.00	265.12	-27.70	O. 1850E+00	0.2626E+00	-9999.00
202000.	148.52	267.61	-30.82	O. 1640E+00	0.2358E+00	-9999.00
205000.	162.24	269.69	-33.94	0.1450E+00	O.2112E+00	-9999.00
208000.	176 . 17	271.43	-37.06	O.1280E+00	0.1889E+00	-9999.00
211000.	185.27	272.87	-40.23	0.1130E+00	0.1690E+00	-9999.00
214000.	177 . 10	274.11	-43.59	0.9870E-01	0.1498E+00	-9999.00
217000.	168.98	275 . 46	-46.94	0.8620E-01	0.1327E+00	-9999.00
220000.	160. 96	276 . 95	-50.30	0.7530E-01	0.1177E+00	-9999.00
223000.	153.06	278.59	-53.28	0.6580E-01	0.1043E+00	-9999.00
226000.	145.31	280.42	-56.23	0.5750E-01	0.9234E-01	-9999.00
229000.	139.98	279.91	-58.36	0.5000E-01	0.8110E-01	-9999.00
232000.	135.93	278.08	-60.08	0.4340E-01	0.7096E-01	-9999.00
235000.	132.02	276 . 13	-61.81	0.3770E-01	O.6214E-01	-9999.00
238000.	128.24	274.08	-63.55	0.3270E-01	0.5435E-01	-9999.00
241000.	124.68	271.92	-65.29	O.2840E-01	O.4760E-01	-9999.00
244000.	120.64	269.64	-66.93	0.2460E-01	O.4156E-01	-9999.00
247000.	111.50	267.39	~67.62	0.2120E-01	O.3593E-01	-9999.00
250000 .	102. 56	264 . 75	-68.82	0.1820E-01	0.3103E-01	-9999.00
253000 .	93.92	261.60	-70.02	O.1570E-01	O.2693E-01	-9999.00
256000.	85. 58	257.85	-71.22	0.1350E-01	O.2329E-01	-9999.00
259000.	77.69	253.29	-72.41	0.1170E-01	0.2030E-01	-9999.00
262000.	73.27	249.89	-73.42	0.1000E-01	O. 1744E-01	-9999.00
265000.	71.37	247.86	-74.28	0.8640E-02	O. 1514E-01	-9999.00
268000.	69. 53	245.73	-75.13	0.7440E-02	O.1309E-01	-9999.00
27 1000 .	67. 83	243.48	-75.99	0.6400E-02	0.1131E-01	-9999.00
274000.	66.24	241.12	-76.86	O.5510E-02	0.9779E-02	-9999.00
277000.	64.75	238.68	-77.84	O.4740E-02	0.8455E-02	-9999.00
280000.	54.50	236.49	-79.04	0.4050E-02	0.7269E-02	-9999.00
283000.	44.36	233.30	-80.23	O.3470E-02	0.6266E-02	-9999.00
286000.	34.44	228.24	-81.42	O.2970E-02	0.5396E-02	-9999.00
289000.	25.O2	219.31	-82.60	O.2540E-02	O.4644E-02	-9999.00
292000.	16.87	200.73	-83.78	O.2170E-02	O.3992E-02	-9999.00

ALTITUDE	WIND SPEED	WIND DIRECTION	TEMPERATURE	PRESSURE	DENSITY	DEW POINT
(FT)	(FT/SEC)	(DEG)	(DEG C)	(MILLIBARS)	(GRAM/M3)	(DEG C)
295000.	18.29	192.22	-84.01	O. 1860E-02	O.3426E-02	-9999.00
298000.	29.59	200.10	-83.0 5	O. 1590E-02	O.2914E-02	-9999.00
301000.	40.33	199.04	-82.09	O.1360E-02	O.2480E-02	-9999.00
304000.	49.08	192.39	-81.13	O.1160E-02	O.2105E-02	-9999.00
307000.	55.88	178.99	-80.16	O.9900E-03	O.1787E-02	-9999.00
310000.	65.26	156.79	-79.20	O.8460E-03	O.1520E-02	-9999.00
313000.	70.15	152.06	-77.65	0.7260E-03	O.1294E-02	-9999.00
316000.	73.12	149.59	-76.03	O.6240E-03	O.1103E-02	-9999.00
319000.	75 . 12	146.40	-74.41	0.5360E-03	O.9395E-03	-9999.00
322000.	75.84	142.13	-72.79	0.4600E-03	O.7998E-03	-9999.00
325000.	75 . 18	136.20	- 71.17	0.3950E-03	O.6813E-03	-9999.00
328000.	75 . 19	130.29	-68.90	0.3400E-03	0.5799E-03	~9999.00
331000.	78.89	128.87	-65.32	0.2950E-03	Q.4945E-03	-9999.00
334000.	81.56	127.05	-61.73	O.2550E-03	O.4202E-03	-9999.00
337000 .	82.90	124.63	-58.15	O. 22 10E-03	O.3581E-03	-9999.00
340000.	82.36	121.35	-54 . 57	O.1910E-03	0.3044E-03	-9999.00
343000.	79.49	116.58	-50.99	O.1660E-03	O.2603E-03	-9999.00
346000.	79.77	113.72	-45.39	O.1450E-03	O.2218E-03	-9999.00
349000.	81.42	113.49	-39.22	O.1280E-03	O.1906E-03	-9999.00
352000.	81.38	113.20	-33.05	O.1130E-03	O.1640E-03	-9999.00
355000.	79.02	112.76	-26 . 88	0.9940E-04	O.1406E-03	-9999.00
358000.	73.58	112.10	-20.71	0.8740E-04	O.1206E-03	-9999.00
361000.	64. 88	105.46	-14.08	0.7730E-04	O. 1039E-03	-9999.00
364000.	67.08	106.83	-5.79	0.6980E-04	0.9095E-04	-9999.00
367000 .	68.62	108 . 54	2.49	0.6290E-04	O.7950E-04	-9999.00
370000.	69.23	110.70	10.77	0.5670E-04	O.6957E-04	-9999.00
373000.	68.75	113.54	19.05	0.5100E-04	O.6080E-04	-9999.00
376000.	66.90	117.42	27.33	0.4590E-04	O.5322E-04	-9999.00
379000.	58.41	106 . 38	36.54	0.4170E-04	O.4691E-04	-9999.00
382000.	56.75	108 . 85	46.53	0.3820E-04	O.4163E-04	-9999.00
385000.	55 . 30	111.51	56.84	0.3510E-04	O.3705E-04	-9999.00
388000.	54.05	114.42	67.47	0.3240E-04	O.3314E-04	-9999.00
39 1000 .	53.02	117.53	78.37	0.2990E-04	O.2963E-04	-9999.00
394000.	52.19	120.90	89.52	O.2770E-04	O.2661E-04	-9999.00
397000.	51.61	124.46	100.89	O.2580E-04	0.2403E-04	-9999.00
400000.	51.26	128.19	112.45	0.2400E-04	O.2168E-04	-9999.00



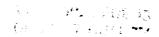
Surface synoptic map at 1200 u.t. January 9, 1990—isobaric, frontal, and precipitation patterns are shown in standard symbolic form.

Figure 1. Surface synoptic chart 35 min before launch of STS-32.



500-mb height
Contours at 1200 u.t.
January 9, 1990
Continuous lines indicate height contours at feet above sea level.
Dashed lines are isotherms in degrees centigrade. Arrows show wind direction and speed at the 500-mb level.

Figure 2. 500-mb map 35 min before launch of STS-32.



ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH

Figure 3. GOES-7 infrared imagery of cloud cover 4 min before the launch of STS-32 (1235 u.t., January 9, 1990). 500-mb heights (meters) and wind barbs are also included for 1200 u.t.



Figure 4. Enlarged view of GOES-7 visible imagery of cloud cover taken 4 min before the launch of STS-32 (1235 u.t., January 9, 1990). Surface temperatures, isobaric parameters, and wind barbs for 1200 u.t. are also included.

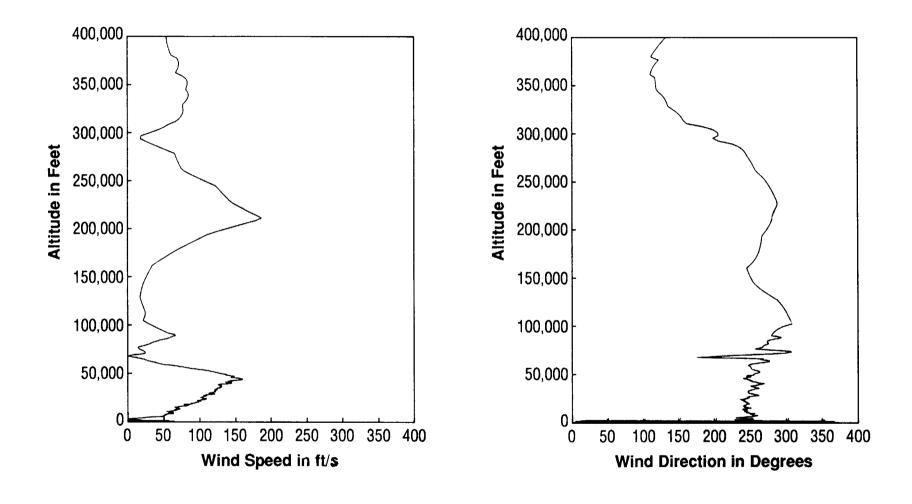


Figure 5. Scalar wind speed and direction at launch time of STS-32.

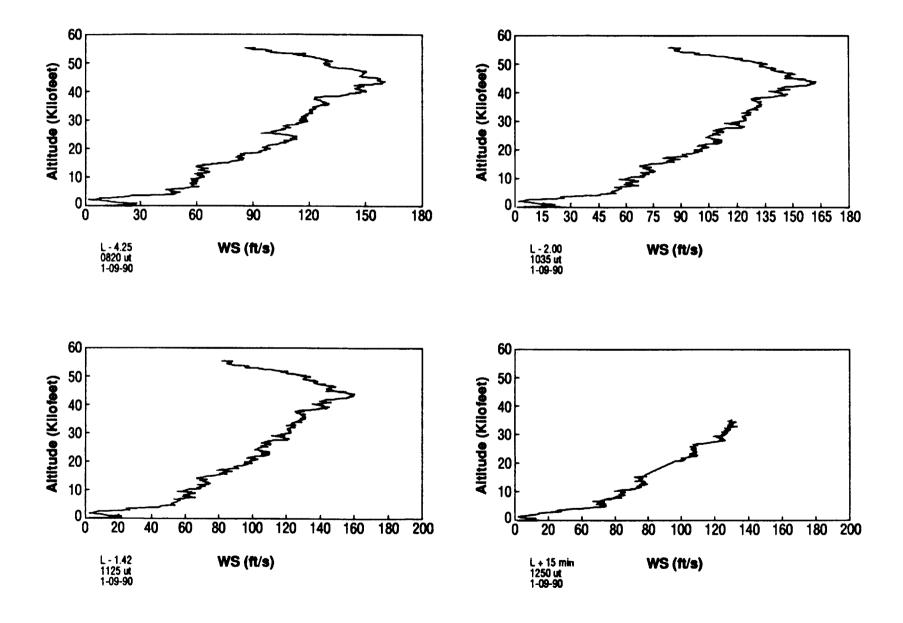


Figure 6. STS-32 prelaunch/launch Jimsphere-measured wind speeds (FPS).

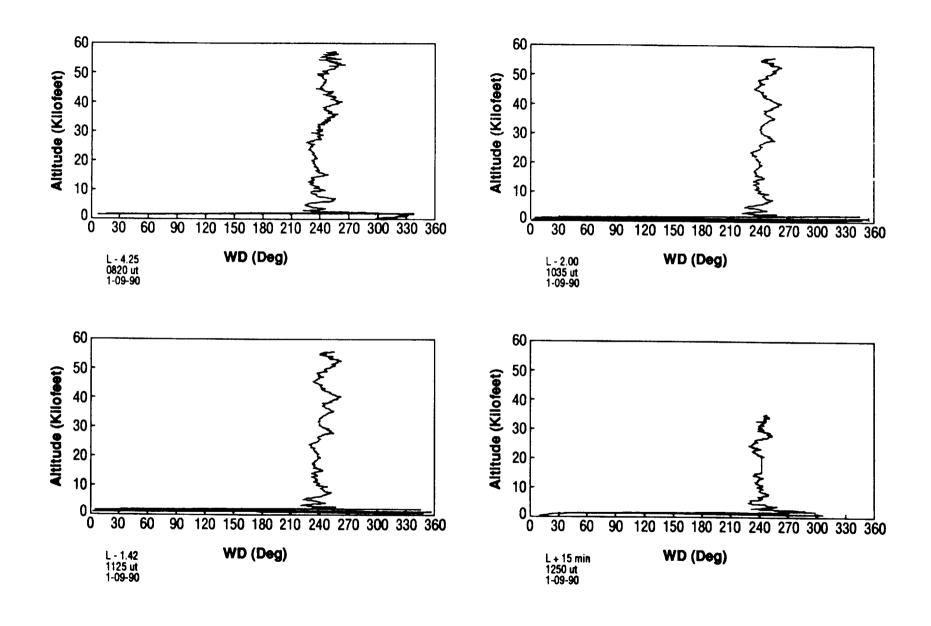


Figure 7. STS-32 prelaunch/launch Jimsphere-measured wind directions (degrees).

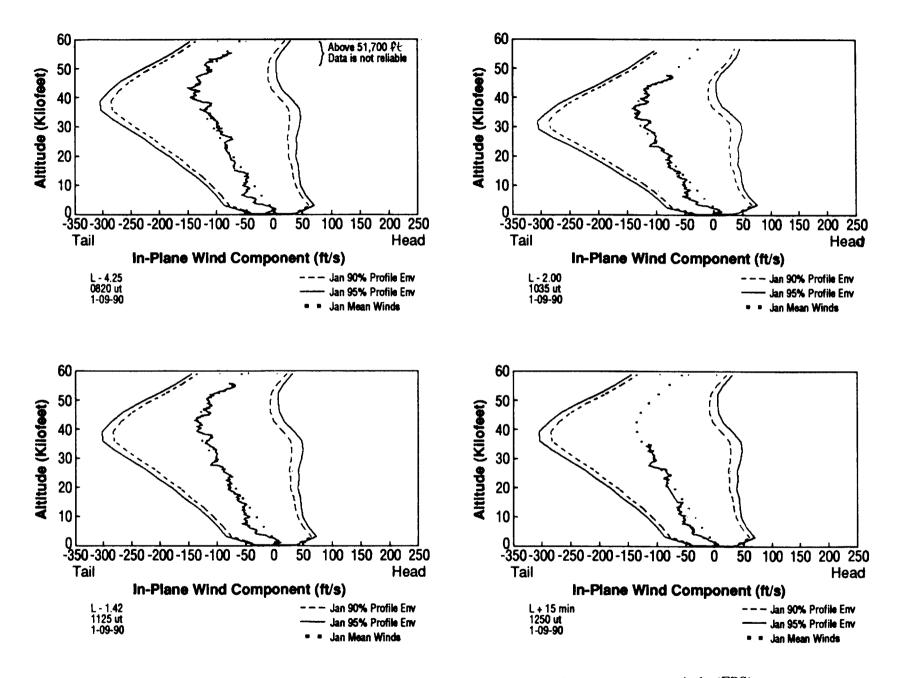


Figure 8. STS-32 prelaunch/launch Jimsphere-measured in-plane component winds (FPS). Flight azimuth = 90 degrees.

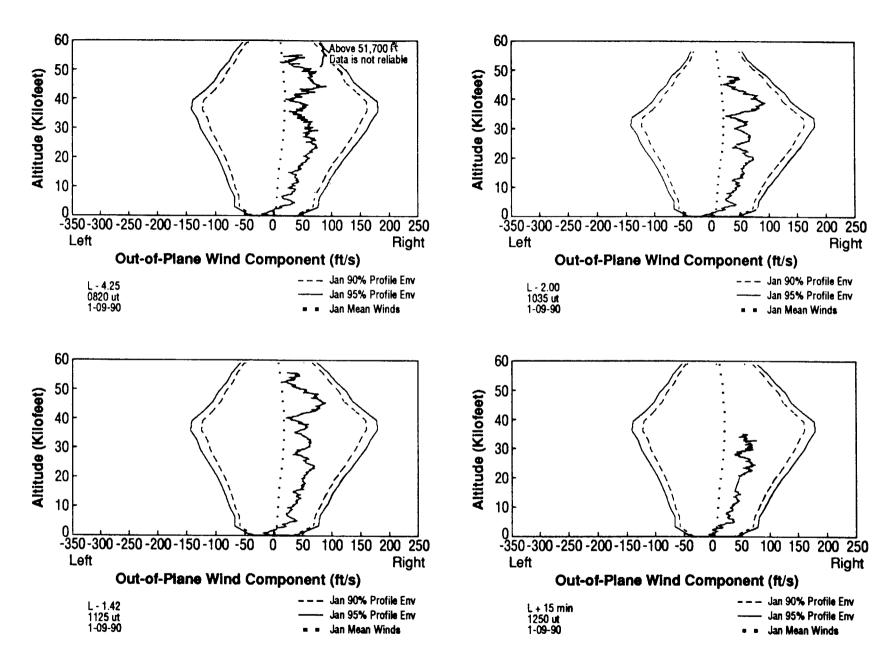


Figure 9. STS-32 prelaunch/launch Jimsphere-measured out-of-plane component winds (FPS). Flight azimuth = 90 degrees.

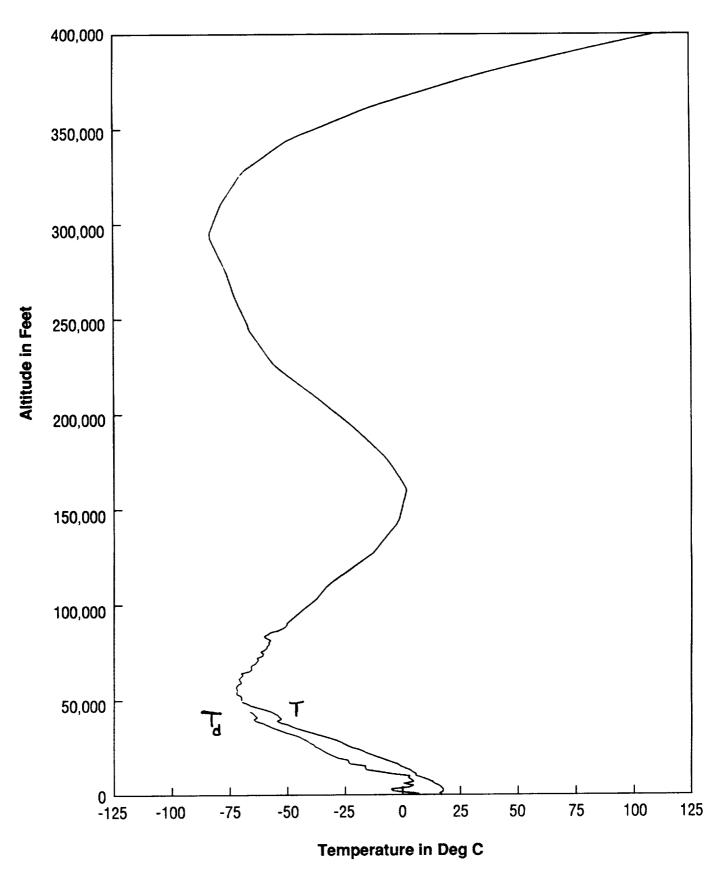


Figure 10. STS-32 temperature profiles versus altitude for launch (ascent).

REFERENCES

- 1. Saturn Flight Evaluation Working Group: Saturn Launch Vehicle Flight Evaluation Report Appendix A Atmosphere (A separate report is prepared for each Saturn vehicle launch operation). George C. Marshall Space Flight Center, Alabama.
- 2. Johnson, D.L.: Summary of Atmospheric Data Observations for 155 Flights of MSFC/ABMA Related Aerospace Vehicles. NASA TM X-64796, December 5, 1973.
- 3. Johnson, D.L.: Atmospheric Environment for ASTP (SA-210) Launch. NASA TM X-64990, February 1976.
- 4. Johnson, D.L., Jasper, G., and Brown, S.C.: Atmospheric Environment for Space Shuttle (STS-1) Launch. NASA TM 82436, July 1981.
- 5. Johnson, D.L. and Brown, S.C.: Atmospheric Environment for Space Shuttle (STS-2) Launch. NASA TM 82463, December 1981.
- 6. Johnson, D.L., Brown, S.C., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-3) Launch. NASA TM 82480, April 1982.
- 7. Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-4) Launch. NASA TM 82498, July 1982.
- 8. Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-5) Launch. NASA TM 82515, March 1983.
- 9. Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-6) Launch. NASA TM 82529, May 1983.
- 10. Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-7) Launch. NASA TM 82542, July 1983.
- 11. Johnson, D.L., Hill, C.K., Turner, R.E., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-8) Launch. NSAS TM 82560, October 1983.
- 12. Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-9) Launch. NASA TM 82572, January 1984.
- 13. Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-11) Launch. NASA TM 82580, March 1984.
- 14. Johnson, D.L., Hill, C.K., Jasper, G., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-13) Launch. NASA TM 82588, May 1984.

- 15. Johnson, D.L., Hill, C.K., Jasper, G., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-41D) Launch. NASA TM 86484, October 1984.
- 16. Johnson, D.L., Hill, C.K., Jasper, G., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-41G) Launch. NASA TM 86486, November 1984.
- 17. Johnson, D.L., Jasper, G., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-51A) Launch. NASA TM 84697. December 1984.
- 18. Jasper, G.L., Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-51C) Launch. NASA TM 86508, April 1985.
- 19. Jasper, G.L., Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-51D) Launch. NASA TM 86524, June 1985.
- 20. Jasper, G.L., Johnson, D.L., Hill, C.K., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-51B) Launch. NASA TM 86525, July 1985.
- 21. Jasper, G.L., Johnson, D.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-51L) Launch. NASA TM 86577, December 1986.
- 22. Jasper, G.L., Johnson, D.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-26) Launch. NASA TM 100359, March 1989.
- 23. Jasper, G.L., Johnson, D.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-27) Launch. NASA TM 100370, May 1989.
- 24. Jasper, G.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-29) Launch. NASA TM 100376, July 1989.
- 25. Jasper, G.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-30) Launch. NASA TM 100381, September 1989.
- 26. Jasper, G. L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-28) Launch. NASA TM 100386, July 1990.
- 27. Jasper, G.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-34) Launch. NASA TM 100396, 1990.
- 28. Jasper, G.L., and Batts, G.W.: Atmospheric Environment for Space Shuttle (STS-33) Launch. NASA TM 100399, March 1990.
- 29. Justus, C.G., et al.: The NASA/MSFC Global Reference Atmosphere Model Mod 3 (with Spherical Harmonic Wind Model). NASA CR-3256, March 1980.

APPROVAL

ATMOSPHERIC ENVIRONMENT FOR SPACE SHUTTLE (STS-32) LAUNCH

By G.L. Jasper and G.W. Batts

The information in this report has been reviewed for technical content. Review of any information concerning Department of Defense or nuclear energy activities or programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

E. TANDBERG-HANSSEN

Director, Space Science Laboratory

		-	