

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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Nov 82
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METEOROLOGICAL DATA REPORT
19318C MLRS

Missile Numbers BN-216, BN-223, BN-210, BN-187, BN-186, BN-202
Round Numbers V-366/OT-1, V-367/OT-2, V-368/OT-3, V-369/OT-4,
V-370/OT-5, V-371/OT-6

by

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19318C MLRS, Missile Numbers BN-216, BN-223, BN-210, BN-187, BN-186, BN-202, Round Missiles V-366/OT-1, V-367/OT-2, V-368/OT-3, V-369/OT-4, V-370/OT-5, V-371/OT-6 are presented in tabular form.			

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INTRODUCTION

19318C MLRS, Missile Numbers BN-216, BN-223, BN-210, BN-187, BN-186 and BN-202, Round Numbers V-366/OT-1, 367/OT-2, V-368/OT-3, V-369/OT-4, V-370/OT-5 and V-371/OT-6, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1000:00, 1000:04, 1000:09, 1000:13, 1000:18 and 1000:22 MST, 23 Nov 82. The scheduled launch times were 1005 with a 4.5 second separation.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

SITE AND ALTITUDE	
WSD	2km
DON	2km

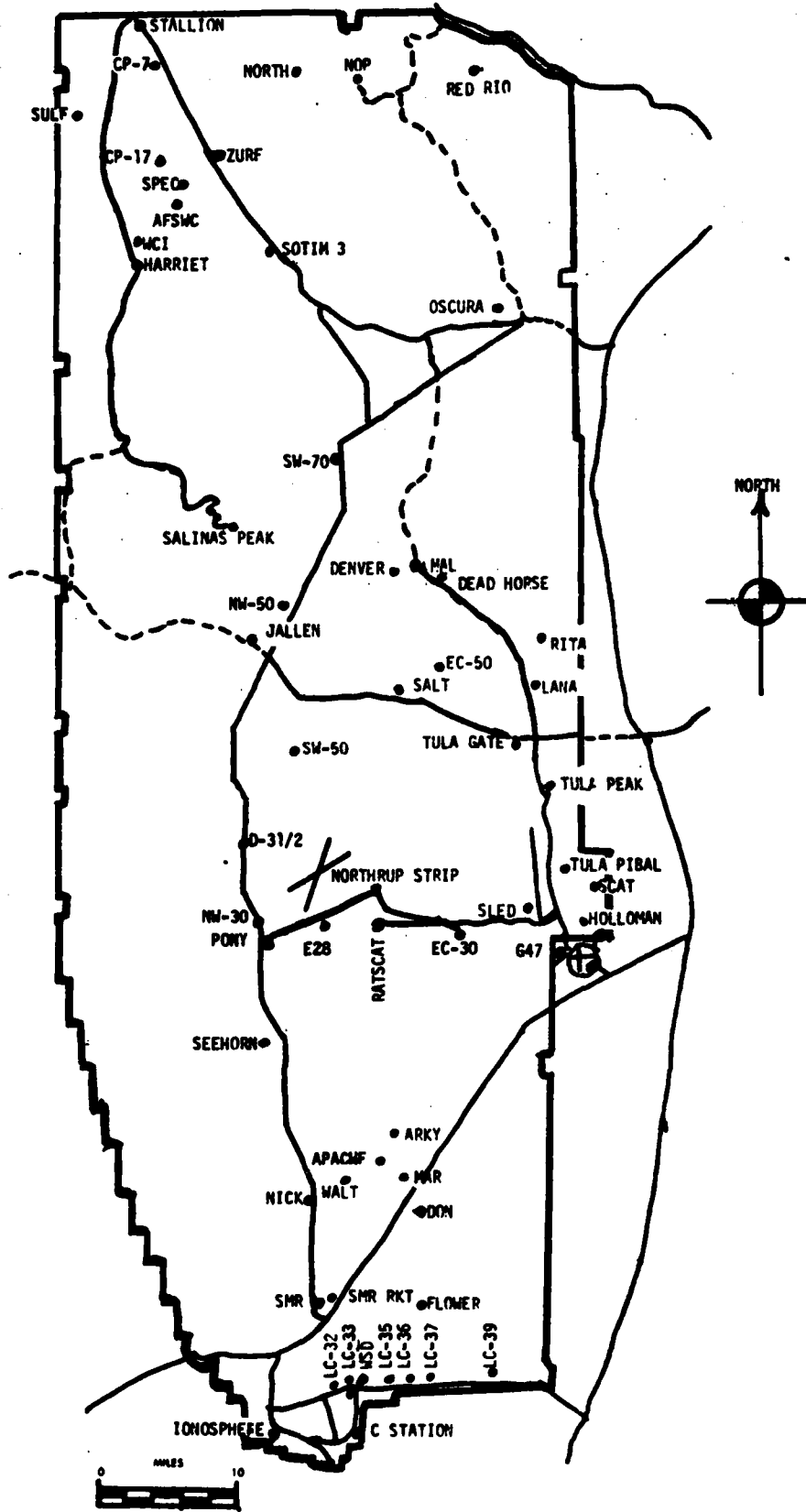
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

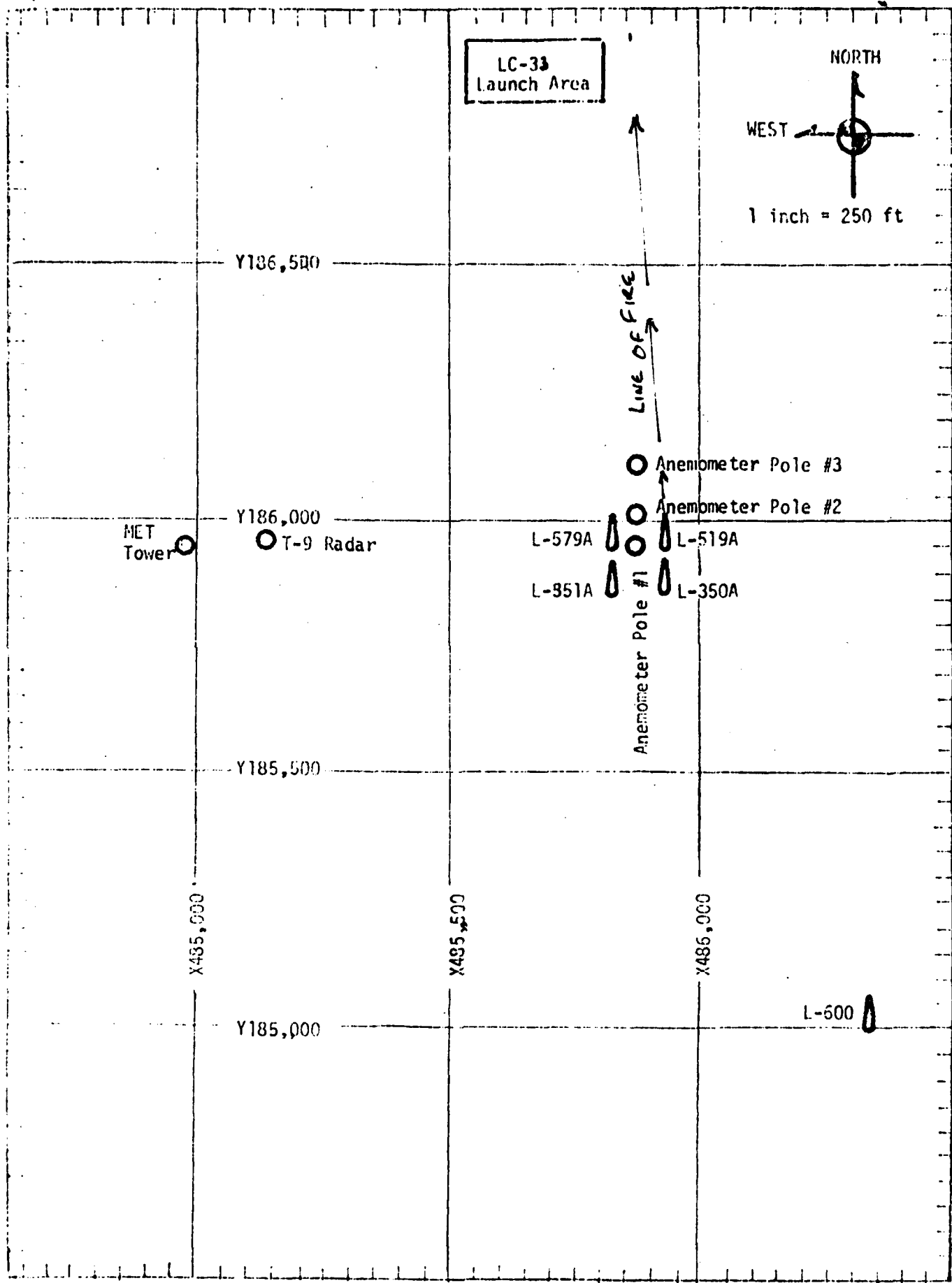
SITE AND TIME	
LC-37	0800 MST
WSD	0830 MST
WSD	1000 MST

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A	



WSMR METEOROLOGICAL SITES





LC-33
Launch Area

NORTH
WEST
1 inch = 250 ft

Y186,500

Line of Fire

Anemometer Pole #3

Y186,000

Anemometer Pole #2

MET
Tower

T-9 Radar

L-579A

L-519A

L-351A

L-350A

Anemometer Pole #1

Y185,500

X485,000

X485,500

X486,000

Y185,000

L-500

PROJECT SURFACE OBSERVATION

TABLE 1

STATION LC-33 E & A

X = 484,982.64 Y = 185,957.73 H = 3995.00

DATE	DAY	MONTH	YEAR	PRESSURE mbs	TEMPERATURE OF	TEMPERATURE OF	DEW POINT OF	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND		VISIBIL- ITY
										DIRECTION degs	Sp kts	
23		Nov	82	879.4	14.6		-0.9	34	1063	109	03	70

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
	3	AC 12,000	7	CS 22,000			

PSYCHROMETRIC COMPUTATION

TIME:	1000
DRY BULB TEMP.	14.6
WET BULB TEMP.	7.0
WET BULB DEPR.	7.6
DEW POINT	-0.9
RELATIVE HUMID.	34

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,959.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186.012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	100	02	T -30	088	03	T -30	096	04
T -20	100	02	T -20	088	02	T -20	097	05
T -10	100	02	T -10	088	02	T -10	096	05
T 0.0	100	02	T 0.0	088	02	T 0.0	093	04
T +10	100	02	T +10		CALM	T +10	081	05

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	108	03	T -30	097	02
T -20	108	02	T -20	096	03
T -10	114	03	T -10	095	03
T 0.0	109	03	T 0.0	094	03
T +10	102	03	T +10	093	03

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	106	02	T -30	092	03
T -20	106	02	T -20	091	03
T -10	105	02	T -10	091	03
T 0.0	104	02	T 0.0	092	03
T +10	102	02	T +10	093	03

* POLE #1 DIRS ARE ESTIMATED

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 23 Nov 82

SITE: WSD

TIME: 1002 MST

WSTM COORDINATES:

X= 488,852.29

Y= 184,982.45

H= 3,993.75

SITE: DON

TIME 1000 MST

WSTM COORDINATES:

X= 511,988.37

Y= 247,396.36

H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	090	03
150	010	10
210	024	11
270	042	07
330	058	06
390	065	05
500	064	06
650	080	03
800	293	03
950	272	07
1150	263	09
1350	255	16
1550	250	19
1750	247	16
2000	243	20

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	280	01
150	338	05
210	335	05
270	322	04
330	300	03
390	236	02
500	172	07
650	160	09
800	159	07
950	184	06
1150	233	08
1350	242	12
1550	243	14
1750	246	15
2000	251	15

Data obtained from a NIKE-HERCULES
Radar Tracked pilot-balloon observation

Data obtained from a Single
Theodolite Tracked pilot-balloon
observation

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES

23 Nov 82

LC-37 0800 MST	WSD 0830 MST
METCM1324063	METMC1324064
231500124876	231550122878
00000000 28070876	00631003 28260878
01640005 28420866	01614010 28440868
02103006 28570840	02078008 28560842
03537002 28430801	03142002 28380803
04459013 28160754	04458011 28140756
05439018 27880710	05438019 27860711
06436022 27490667	06437023 27450669
07447022 27070627	07448023 27010628
08457026 26740588	08451026 26680590
09455026 26330552	09452028 26300553

WSD 1000 MST
METCM1324064
231700122879
00160003 28890879
01141005 28730869
02072002 28610843
03243008 28420804
04321006 28120757
05431016 27860712
06426019 27490669
07428021 27050629
08438023 26670590
09451025 26310554
10439029 25930519

STATION ALTITUDE 4051.37 FEET MSL
 23 NOV. 42
 ASCENSION NO. 114

SIGNIFICANT LEVEL DATA
 3270100114
 LC-37
 TABLE 6

GEODETIC COORDINATES
 32-40175 LAT DEG
 106-31232 LON DEG

GEOMETRIC ALTITUDE MILLIBARS	GEOMETRIC ALTITUDE FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	
876.2	4051.4	7.0	-3.8	46.0
871.4	4200.1	8.5	-3.7	42.0
860.6	4541.1	12.5	-2.9	34.0
850.0	4881.9	11.9	-6.0	28.0
822.1	5798.3	11.7	-6.6	27.0
777.6	7319.2	9.2	-7.9	29.0
749.4	8321.6	7.6	-7.6	33.0
700.0	10157.2	4.8	-16.8	19.0
641.6	12465.8	-1.2	-8.6	57.0
616.2	13520.2	-3.7	-11.0	57.0
591.4	14583.9	-5.4	-18.7	34.0
574.6	15325.4	-6.9	-19.7	35.0
546.9	16504.4	-10.6	-19.9	46.0
531.8	17291.3	-11.7	-24.0	35.0
516.3	18035.5	-12.4	-31.2	19.0
500.0	18388.8	-14.2	-23.7	44.0
485.8	19556.0	-15.5	-27.1	36.0
457.0	21061.1	-19.8	-25.9	58.0
437.6	22115.2	-22.4	-24.6	82.0
427.4	22686.0	-21.9	-23.0	91.0
400.0	24284.7	-24.0	-25.5	87.0
365.5	26431.9	-28.6	-30.8	81.0
336.3	28374.3	-33.9	-37.3	71.0
300.0	30982.2	-38.9	-42.8	66.0
279.7	32552.0	-42.8		
264.1	33819.1	-45.7		
250.0	35015.2	-48.6		
218.1	37924.6	-55.9		
200.0	39734.8	-57.4		
187.5	41080.6	-56.8		
159.7	44403.1	-60.6		
154.6	45070.2	-60.0		
150.0	45691.0	-60.6		
132.6	48198.9	-64.5		
119.1	50373.0	-62.6		
107.1	52534.5	-62.4		
100.0	53928.9	-63.2		
89.1	56269.2	-63.5		
76.9	59223.3	-67.8		
70.0	61117.9	-61.7		

STATION ALTITUDE 4351.37 FEET NSL
 23 NOV. 62 0800 HRS MST
 ASCENSION NO. 114

SIGNIFICANT LEVEL DATA
 3270130114
 LC-37
 TABLE 6 Cont'd

GEODETTIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
56.9	65373.0	-60.0		
50.0	68038.6	-60.1		
42.7	71300.0	-59.2		
39.0	78706.2	-53.8		
25.0	82583.8	-53.5		
20.0	87379.1	-49.4		
19.1	88378.0	-49.4		

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LONG DEG

UPPER AIR DATA
3270180114
LC-37
TABLE 7

STATION ALTITUDE 4051.17 FLEET NSL
23 NOV. 82
0400 HRS MST
ASCENSION NO. 114

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	876.2	7.0	46.0	1087.4	652.7	0	0	1.000265
4500.0	861.0	12.0	35.0	1050.6	650.6	336.2	3	1.000257
5000.0	846.4	11.9	27.9	1032.6	650.3	336.2	6	1.000248
5500.0	831.1	11.8	27.3	1014.4	658.2	336.2	1.0	1.000244
6000.0	816.1	11.4	27.3	997.5	657.7	336.2	1.3	1.000239
6500.0	801.3	10.5	27.9	982.3	650.7	303.7	2.0	1.000236
7000.0	786.7	9.7	28.6	967.3	655.8	271.6	5.1	1.000232
7500.0	772.4	8.9	29.7	952.4	654.8	264.5	8.6	1.000228
8000.0	758.3	8.1	31.7	937.6	653.9	258.2	11.3	1.000225
8500.0	744.4	7.3	31.6	923.1	653.0	254.2	13.9	1.000221
9000.0	730.7	6.6	27.8	908.8	652.0	251.3	16.0	1.000216
9500.0	717.3	5.8	24.0	894.7	651.0	248.9	17.5	1.000210
10000.0	704.1	5.0	20.2	880.9	650.1	246.9	19.0	1.000205
10500.0	691.0	3.9	24.6	867.9	648.8	246.1	19.9	1.000203
11000.0	678.1	2.6	32.9	855.5	647.4	245.4	20.8	1.000203
11500.0	665.4	1.3	41.1	843.3	645.9	245.8	21.2	1.000202
12000.0	653.0	0	49.3	831.3	644.4	246.9	21.3	1.000201
12500.0	640.8	-1.3	57.0	819.5	643.0	248.2	21.5	1.000199
13000.0	628.6	-2.5	57.0	807.6	641.5	250.5	21.9	1.000195
13500.0	616.7	-3.7	57.0	795.8	640.1	252.7	22.3	1.000191
14000.0	604.9	-4.5	46.6	783.3	639.0	254.6	23.6	1.000185
14500.0	593.3	-5.3	35.8	770.8	637.9	256.2	25.2	1.000180
15000.0	581.9	-6.2	34.6	758.9	636.7	257.2	26.6	1.000176
15500.0	570.7	-7.4	36.5	747.5	635.3	258.7	27.2	1.000173
16000.0	559.6	-8.9	40.9	737.0	633.8	256.2	27.8	1.000171
16500.0	548.7	-10.4	45.3	726.7	631.8	259.3	28.5	1.000169
17000.0	538.0	-11.2	39.5	715.1	630.7	252.6	29.7	1.000165
17500.0	527.4	-11.9	30.5	702.9	629.9	250.1	31.0	1.000161
18000.0	517.0	-12.4	19.8	690.4	629.2	248.0	33.1	1.000156
18500.0	506.8	-13.4	33.5	679.5	628.0	246.2	35.5	1.000155
19000.0	496.8	-14.5	42.2	668.6	626.8	244.9	38.1	1.000154
19500.0	486.9	-15.4	36.6	657.7	625.6	244.3	41.0	1.000150
20000.0	477.1	-16.8	42.5	647.9	624.0	243.8	44.0	1.000148
20500.0	467.5	-18.2	49.8	638.5	622.2	243.1	47.1	1.000146
21000.0	458.1	-19.6	57.1	629.1	620.5	242.4	50.2	1.000144
21500.0	448.8	-20.9	68.0	619.4	619.0	241.7	53.3	1.000143
22000.0	439.7	-22.1	79.4	609.7	617.5	241.7	56.4	1.000141
22500.0	430.7	-23.5	88.1	599.1	617.6	241.6	59.6	1.000139
23000.0	421.9	-23.5	90.2	585.4	617.3	241.9	62.7	1.000136
23500.0	413.2	-23.0	89.0	574.9	616.4	242.9	65.6	1.000133

UPPER AIR DATA
 3270180114
 LC-37

STATION ALTITUDE 4051.37 F T MSL
 23 NOV. 62 0900 HRS MST
 ASCENSION NO. 114

GEODETIC COORDINATES
 32.40175 LAT UEG
 106.31232 LON WEG

TABLE 7 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	
24000.0	404.7	-23.6	-25.1	87.7	564.7	615.6	243.8	68.6	1.000131
24500.0	398.4	-24.5	-26.1	86.4	554.9	614.6	244.8	71.4	1.000128
25000.0	392.2	-25.5	-27.3	85.0	545.7	613.2	246.0	73.2	1.000126
25500.0	386.1	-26.6	-28.5	83.6	536.6	611.9	247.3	75.0	1.000123
26000.0	379.2	-27.7	-29.8	82.2	527.9	610.5	248.0	76.0	1.000121
26500.0	372.4	-28.8	-31.0	80.6	519.3	609.1	248.1	75.8	1.000119
27000.0	364.7	-30.2	-32.7	78.1	511.2	607.4	248.1	75.6	1.000116
27500.0	357.1	-31.5	-34.4	75.5	503.2	605.7	247.4	76.2	1.000114
28000.0	349.7	-32.9	-36.0	72.9	495.3	604.0	246.5	76.9	1.000112
28500.0	342.5	-34.1	-37.6	70.8	487.3	602.4	245.6	77.6	1.000110
29000.0	335.2	-35.1	-38.6	69.8	478.7	601.1	244.9	78.2	1.000108
29500.0	327.1	-36.1	-40.7	68.8	470.3	599.9	244.2	78.8	1.000106
30000.0	318.2	-37.0	-42.7	67.9	461.9	598.7	244.1	78.5	1.000104
30500.0	309.4	-38.0	-44.8	66.9	453.8	597.5	244.3	77.8	1.000102
31000.0	299.8	-38.9	-46.8	65.3**	445.8	596.3	244.5	77.3	1.000100
31500.0	290.1	-40.2	-48.6	44.2**	438.3	594.8	245.8	78.3	1.000098
32000.0	280.7	-41.4	-50.2	23.2**	431.0	593.0	247.1	79.4	1.000096
32500.0	270.4	-42.7	-52.6	2.2**	423.7	591.4	248.3	81.1	1.000094
33000.0	274.1	-43.8			416.4	590.0	249.3	84.0	1.000093
33500.0	267.9	-45.0			409.1	588.5	250.2	86.8	1.000091
34000.0	261.9	-46.1			401.9	587.0	250.7	89.8	1.000090
34500.0	256.0	-47.4			394.9	585.4	251.0	92.9	1.000088
35000.0	250.2	-48.6			388.1	583.8	251.2	95.1	1.000086
35500.0	244.4	-49.8			381.2	582.2	251.2	94.7	1.000085
36000.0	238.7	-51.1			374.5	580.6	251.2	94.3	1.000083
36500.0	233.2	-52.3			367.9	579.0	251.3	94.1	1.000082
37000.0	227.8	-53.6			361.4	577.3	251.4	93.8	1.000080
37500.0	222.5	-54.8			355.0	575.6	251.7	94.8	1.000079
38000.0	217.3	-56.0			348.6	574.1	252.0	96.4	1.000078
38500.0	212.2	-56.4			341.0	573.6	252.7	97.1	1.000076
39000.0	207.2	-56.8			333.6	573.0	253.9	96.8	1.000074
39500.0	202.3	-57.2			326.3	572.5	255.2	95.7	1.000073
40000.0	197.5	-57.3			318.7	572.4	257.3	91.6	1.000071
40500.0	192.8	-57.1			310.8	572.7	259.8	87.7	1.000069
41000.0	188.2	-56.8			303.1	573.0	261.0	81.6	1.000068
41500.0	183.7	-57.3			296.5	572.4	262.5	75.4	1.000066
42000.0	179.4	-57.9			290.2	571.6	261.0	71.9	1.000065
42500.0	175.1	-58.4			284.0	570.9	258.4	69.4	1.000063
43000.0	170.9	-59.0			278.0	570.1	255.6	68.7	1.000062
43500.0	166.8	-59.6			272.1	569.3	252.6	69.2	1.000061

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
 3270160114
 LC-37

STATION ALTITUDE 4051.37 FEET MSL
 23 NOV. 62
 ASCENSION NO. 114

GEODETIC COORDINATES
 32-40175 LAT DEG
 106-31232 LONG DEG

TABLE 7 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT				DIRECTION DEGREES(TN)	SPEED KNOTS	
44000.0	162.8	-60.1		266.3	568.6	251.0	69.8	1.000059	
44500.0	158.9	-60.5		260.4	568.1	250.8	70.3	1.000058	
45000.0	155.1	-60.1		253.6	568.7	251.1	70.7	1.000056	
45500.0	151.4	-60.4		247.9	568.2	252.3	70.9	1.000055	
46000.0	147.7	-61.1		242.7	567.3	253.6	70.9	1.000054	
46500.0	144.2	-61.9		237.7	566.3	255.5	69.8	1.000053	
47000.0	140.7	-62.6		232.8	565.2	257.6	68.7	1.000052	
47500.0	137.2	-63.4		227.9	564.2	260.6	66.5	1.000051	
48000.0	133.9	-64.2		223.2	563.2	263.9	64.5	1.000050	
48500.0	130.6	-64.8		217.8	563.1	266.5	62.3	1.000049	
49000.0	127.5	-63.8		212.1	563.7	269.3	60.3	1.000047	
49500.0	124.3	-63.4		206.5	564.3	270.9	57.0	1.000046	
50000.0	121.3	-62.9		201.0	564.9	272.4	53.5	1.000045	
50500.0	118.4	-62.6		195.8	565.3	273.3	49.5	1.000044	
51000.0	115.5	-62.5		191.0	565.4	273.6	44.9	1.000043	
51500.0	112.7	-62.5		186.3	565.4	273.5	40.8	1.000041	
52000.0	110.0	-62.4		181.8	565.5	271.9	37.7	1.000040	
52500.0	107.3	-62.4		177.3	565.6	270.1	34.7	1.000039	
53000.0	104.7	-62.7		173.2	565.2	270.3	31.0	1.000039	
53500.0	102.1	-63.0		169.3	564.8	270.7	27.3	1.000038	
54000.0	99.6	-63.2		165.4	564.5	274.3	21.5	1.000037	
54500.0	97.2	-63.3		161.4	564.4	282.8	15.0	1.000036	
55000.0	94.9	-63.3		157.5	564.3	297.2	9.9	1.000035	
55500.0	92.5	-63.4		153.7	564.2	321.5	6.3	1.000034	
56000.0	90.3	-63.5		150.0	564.1	357.1	5.0	1.000033	
56500.0	88.1	-63.8		146.6	563.6	334.3	3.8	1.000033	
57000.0	85.9	-64.6		143.5	562.7	300.6	3.5	1.000032	
57500.0	83.8	-65.3		140.4	561.7	272.5	6.3	1.000031	
58000.0	81.7	-66.0		137.5	560.7	263.1	10.0	1.000031	
58500.0	79.7	-66.7		134.6	559.7	261.1	12.9	1.000030	
59000.0	77.8	-67.5		131.7	558.7	263.2	14.2	1.000029	
59500.0	75.9	-67.9		128.1	559.5	265.0	15.6	1.000029	
60000.0	74.0	-65.3		124.0	561.7	270.8	14.0	1.000028	
60500.0	72.2	-63.7		120.0	563.8	278.2	12.5	1.000027	
61000.0	70.4	-62.1		116.2	566.0	288.9	11.0	1.000026	
61500.0	68.7	-61.5		113.1	566.7	304.2	9.8	1.000025	
62000.0	67.1	-61.3		110.3	567.0	322.0	9.4	1.000025	
62500.0	65.4	-61.1		107.5	567.2	336.0	9.8	1.000024	
63000.0	63.9	-60.9		104.9	567.5	348.4	10.7	1.000023	
63500.0	62.3	-60.7		102.2	567.8	357.5	11.0	1.000023	

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

UPPER AIR DATA
3270180114
LC-37
TABLE 7 Cont'd

STATION ALTITUDE 4951.37 FEET MSL
23 NOV. 82 0807 HRS MST
ASCENSION NO. 114

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
6400.0	60.8	-60.5			99.7	568.0	5.6	10.9	1.000022
6450.0	59.4	-60.3			97.2	568.3	13.4	11.0	1.000022
6500.0	57.9	-60.1			94.8	568.6	17.2	10.3	1.000021
6550.0	56.6	-60.0			92.4	568.8	21.5	9.7	1.000021
6600.0	55.2	-60.0			90.2	568.7	23.0	9.5	1.000020
6650.0	53.9	-60.0			88.1	568.7	23.0	9.5	1.000020
6700.0	52.6	-60.1			86.0	568.7	22.6	9.5	1.000019
6750.0	51.3	-60.1			83.9	568.7	25.3	9.6	1.000019
6800.0	50.1	-60.1			81.9	568.6	28.3	9.8	1.000018
6850.0	48.9	-60.0			79.9	568.8	31.8	10.0	1.000018
6900.0	47.7	-59.8			77.9	569.0	37.2	10.2	1.000017
6950.0	46.6	-59.7			76.0	569.2	42.3	10.4	1.000017
7000.0	45.5	-59.6			74.2	569.4	44.5	10.2	1.000017
7050.0	44.4	-59.4			72.3	569.5	45.4	9.7	1.000016
7100.0	43.3	-59.3			70.6	569.7	46.3	9.2	1.000016
7150.0	42.3	-59.1			68.8	570.0	42.8	8.0	1.000015
7200.0	41.3	-58.7			67.1	570.5	38.0	6.8	1.000015
7250.0	40.3	-58.3			65.4	571.0	35.1	5.9	1.000015
7300.0	39.4	-58.0			63.7	571.5	42.8	5.9	1.000014
7350.0	38.4	-57.6			62.1	572.0	50.4	6.0	1.000014
7400.0	37.5	-57.2			60.6	572.5	56.5	6.6	1.000013
7450.0	36.7	-56.9			59.0	572.9	60.0	7.8	1.000013
7500.0	35.8	-56.5			57.6	573.4	62.6	9.0	1.000013
7550.0	35.0	-56.1			56.1	573.9	61.6	9.9	1.000012
7600.0	34.1	-55.8			54.7	574.4	59.0	10.6	1.000012
7650.0	33.3	-55.4			53.3	574.9	56.8	11.2	1.000012
7700.0	32.5	-55.0			52.0	575.3	56.7	11.7	1.000012
7750.0	31.8	-54.7			50.7	575.8	57.1	12.2	1.000011
7800.0	31.0	-54.3			49.4	576.3	57.5	12.6	1.000011
7850.0	30.3	-54.0			48.1	576.8	55.4	11.3	1.000011
7900.0	29.6	-53.8			47.0	577.0	52.8	10.0	1.000010
7950.0	28.9	-53.7			45.9	577.1	50.4	8.7	1.000010
8000.0	28.2	-53.7			44.8	577.1	55.2	7.1	1.000010
8050.0	27.6	-53.7			43.8	577.2	62.6	5.6	1.000010
8100.0	26.9	-53.6			42.7	577.2	75.2	4.2	1.000010
8150.0	26.3	-53.6			41.7	577.3	84.6	3.8	1.000009
8200.0	25.7	-53.5			40.8	577.3	95.7	3.5	1.000009
8250.0	25.1	-53.5			39.8	577.4	108.2	3.4	1.000009
8300.0	24.5	-53.1			38.8	577.4	93.4	3.2	1.000009
8350.0	24.0	-52.7			37.9	578.4	71.6	3.4	1.000008

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

UPPER AIR DATA
 3270160114
 LC-37
 TABLE 7 Cont'd

STATION ALTITUDE 4051.37 FE. T MSL
 23 NOV. 62 0800 HRS MST
 ASCENSION NO. 114

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
84100.0	23.4	-52.3			36.9	579.0	54.5	4.0	1.000008
84500.0	22.9	-51.9			36.0	579.5	45.9	4.6	1.000008
85000.0	22.3	-51.4			35.1	580.1	41.3	5.1	1.000008
85500.0	21.8	-51.0			34.2	580.6	37.6	5.6	1.000008
86000.0	21.3	-50.6			33.4	581.2			1.000007
86500.0	20.8	-50.2			32.5	581.8			1.000007
87000.0	20.4	-49.7			31.7	582.3			1.000007
87500.0	19.9	-49.4			31.0	582.7			1.000007
88000.0	19.4	-49.4			30.3	582.7			1.000007

STATION ALTITUDE 1051.77 FEET MSL
 23 NOV. 82
 ASCENSION NO. 117

MANDATORY LEVELS
 3270100114
 LC-37
 TABLE 8

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIPARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES (TN)	SPEED KNOTS	
450.0	4878.	11.9	-6.0	28.	336.2	06	
600.0	6539.	10.5	-7.2	28.	297.8	2.2	
750.0	8203.	7.6	-7.6	33.	255.6	12.8	
700.0	10147.	4.8	-16.8	19.	240.7	19.3	
650.0	12111.	-3	-9.1	51.	247.2	21.4	
600.0	14194.	-4.8	-15.7	42.	255.3	24.2	
550.0	16420.	-10.2	-19.9	45.	255.7	28.4	
500.0	18012.	-14.2	-23.7	44.	245.2	37.1	
450.0	21405.	-20.7	-25.3	67.	241.8	52.9	
400.0	24244.	-24.0	-25.5	87.	244.3	70.2	
350.0	27398.	-31.4	-34.2	76.	247.5	76.1	
300.0	30921.	-38.9	-42.8	66.	244.4	77.2	
250.0	34939.	-48.6			251.2	95.2	
200.0	39640.	-57.4			256.1	94.0	
175.0	42408.	-58.4			256.5	69.4	
150.0	45568.	-60.6			252.7	71.0	
125.0	49250.	-63.5			270.5	57.9	
100.0	53763.	-63.2			273.2	22.8	
80.0	58244.	-66.6			260.6	12.6	
70.0	60909.	-61.7			291.3	10.7	
60.0	64051.	-60.4			9.6	10.9	
50.0	67784.	-60.1			28.3	9.8	
40.0	72368.	-58.2			36.9	5.9	
30.0	78371.	-53.8			54.6	10.9	
25.0	82217.	-53.5			109.3	5.4	
20.0	86971.	-49.4					

STATION ALTITUDE 3989.00 FEET MSL
 23 NOV. 82 0830 HRS MST
 ASCENSION NO. 586

SIGNIFICANT LEVEL DATA
 3270020586
 WHITE SANDS
 TABLE 9

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
878.4	3989.0	8.6	55.0
867.8	4320.3	11.1	37.0
850.0	4489.4	12.4	30.0
792.7	6800.9	9.6	35.0
719.0	9442.3	5.9	19.0
708.0	10160.1	4.3	22.0
621.8	13278.6	-4.3	56.0
612.6	13664.4	-5.0	54.0
599.7	14214.0	-5.5	31.0
540.8	16432.4	-10.8	43.0
525.0	17594.8	-12.8	23.0
508.0	18813.2	-15.2	40.0

STATION ALTITUDE 3989.00 FEET MSL
 23 NOV. 62 0830 HRS MST
 ASCENSION NO. 586

UPPER AIR DATA
 3270020586
 WHITE SANDS
 TABLE 10

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INJEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
3989.0	870.4	8.6	55.0	1083.2	654.8	355.0	2.9	1.000271
4000.0	870.0	8.7	54.4	1082.5	654.9	355.0	2.9	1.000270
4500.0	862.1	11.5	34.8	1052.9	656.0	355.7	2.3	1.000257
5000.0	840.6	12.2	30.3	1031.4	658.8	356.9	1.7	1.000250
5500.0	831.3	11.5	31.6	1015.3	657.9	359.2	1.1	1.000246
6000.0	810.2	10.8	32.9	999.5	657.1	6.4	.6	1.000243
6500.0	801.5	10.0	34.2	983.9	656.2	99.2	.1	1.000239
7000.0	780.9	9.3	33.8	968.6	655.4	251.3	2.5	1.000235
7500.0	772.5	8.6	30.8	953.5	654.5	254.8	6.3	1.000229
8000.0	750.3	7.9	27.7	938.5	653.6	255.6	10.1	1.000223
8500.0	744.5	7.2	24.7	923.8	652.7	253.0	12.8	1.000218
9000.0	730.8	6.5	21.7	909.4	651.9	251.2	15.4	1.000213
9500.0	717.5	5.8	19.2	895.2	650.9	249.8	17.9	1.000208
10000.0	704.2	4.7	21.3	882.2	649.6	247.5	19.1	1.000205
10500.0	691.0	3.4	25.7	869.6	648.2	245.6	20.3	1.000204
11000.0	678.0	2.0	31.2	857.4	646.6	245.8	21.2	1.000202
11500.0	665.3	.6	36.6	845.5	645.0	247.5	21.8	1.000200
12000.0	652.7	-0.8	42.1	833.7	643.4	249.1	22.3	1.000198
12500.0	640.5	-2.2	47.5	822.1	641.8	250.3	22.9	1.000196
13000.0	628.4	-3.5	53.0	810.7	640.2	251.5	23.4	1.000194
13500.0	616.5	-4.7	54.9	798.9	638.8	252.5	23.9	1.000190
14000.0	604.7	-5.3	40.0	785.7	637.9	253.1	24.7	1.000184
14500.0	593.0	-6.2	32.5	773.2	636.8	253.7	25.5	1.000179
15000.0	581.5	-7.4	35.3	761.6	635.4	253.9	26.4	1.000176
15500.0	570.2	-8.6	38.0	750.2	633.9	253.3	27.6	1.000174
16000.0	559.2	-9.8	40.7	739.0	632.5	252.8	28.8	1.000171
16500.0	548.3	-10.9	41.8	727.9	631.1			1.000168
17000.0	537.5	-11.8	33.2	716.0	630.0			1.000164
17500.0	527.0	-12.6	24.6	704.4	628.9			1.000160
18000.0	516.6	-13.6	28.7	693.0	627.8			1.000158
18500.0	506.3	-14.6	35.6	681.8	626.6			1.000156

STATION ALTITUDE 3989.00 FEET MSL
 23 NOV. 52
 ASCENSION NO. 386

MANDATORY LEVELS
 3270020580
 WHITE SANDS
 TABLE 11

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION (DEGREES TN)	SPEED KNOTS
950.0	12.4	-4.7	30.	350.5	1.9
800.0	10.0	-5.0	34.	117.7	.2
750.0	7.5	-10.8	25.	254.0	11.8
700.0	4.3	-15.5	22.	246.9	19.5
650.0	-1.1	-12.0	43.	249.4	22.5
600.0	-5.5	-19.7	32.	253.4	25.0
550.0	-10.8	-20.9	43.		
500.0	-15.2	-25.7	40.		

STATION ALTITUDE 3989.00 FEET MSL
 23 NOV. 82 1000 HRS. MST
 ASCENSION NO. 307

SIGNIFICANT LEVEL DATA
 3270020587
 WHITE SANDS
 TABLE 12

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
879.0	3989.0	14.7	1.6	41.0
859.0	4624.9	12.0	-3.4	34.0
850.0	4914.7	12.6	-3.6	32.0
838.6	5286.5	12.5	-4.6	30.0
808.4	6293.3	10.8	-4.8	33.0
768.6	7668.6	8.0	-4.8	40.0
729.8	9067.8	6.2	-12.8	24.0
700.0	10186.2	4.3	-10.1	34.0
596.0	14402.8	-6.7	-13.6	58.0
587.6	14767.3	-6.7	-19.9	34.0
571.4	15483.0	-8.3	-18.9	42.0
516.2	18045.9	-14.5	-24.0	44.0
500.0	18838.9	-15.6	-31.1	25.0

STATION ALTITUDE 3989.0 FEET MSL
 23 NOV. 82
 ASCENSION NO. 307

UPPER AIR DATA
 3270020587
 WHITE SANDS
 TABLE 13

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TH)	WIND SPEED KNOTS	INDEX OF REFRACTION
3989.0	879.0	14.7	41.0	1060.7	661.9	90.0	2.9	1.000268
4000.0	870.7	14.7	40.9	1060.4	661.9	90.5	2.9	1.000267
4500.0	862.9	12.5	35.4	1049.9	659.2	109.2	3.4	1.000258
5000.0	847.4	12.6	31.5	1031.0	659.2	122.1	4.2	1.000251
5500.0	832.1	12.1	30.6	1014.1	658.7	130.8	5.1	1.000246
6000.0	817.1	11.3	32.1	998.7	657.7	130.7	6.1	1.000243
6500.0	802.3	10.4	34.1	983.6	656.6	141.0	7.1	1.000239
7000.0	787.7	9.4	36.6	969.3	655.5	146.1	7.7	1.000236
7500.0	773.4	8.3	39.1	955.1	654.3	163.4	6.6	1.000233
8000.0	759.2	7.6	36.2	940.4	653.3	185.3	6.2	1.000228
8500.0	745.3	6.9	30.5	925.6	652.5	210.9	7.3	1.000221
9000.0	731.6	6.3	24.8	911.0	651.6	229.1	10.0	1.000214
9500.0	718.1	5.5	27.9	896.7	650.7	239.0	13.3	1.000212
10000.0	704.9	4.6	32.3	882.7	649.8	239.7	15.5	1.000210
10500.0	691.7	3.5	35.8	869.7	648.5	240.1	17.6	1.000208
11000.0	678.6	2.2	38.6	857.3	646.9	240.3	19.1	1.000205
11500.0	665.8	.9	41.5	845.1	645.4	240.1	19.5	1.000202
12000.0	653.2	-.4	44.3	833.1	643.8	240.0	19.9	1.000199
12500.0	640.9	-1.7	47.2	821.3	642.3	240.8	20.3	1.000196
13000.0	628.8	-3.0	50.0	809.7	640.7	242.2	20.7	1.000193
13500.0	616.9	-4.3	52.9	798.3	639.2	243.5	21.2	1.000190
14000.0	605.2	-5.6	55.7	787.1	637.6	244.7	22.0	1.000187
14500.0	593.7	-6.7	51.6	775.3	636.3	245.8	22.8	1.000183
15000.0	582.3	-7.2	36.6	762.1	635.6	247.0	23.5	1.000177
15500.0	571.0	-8.3	42.0	750.5	634.2	248.3	24.3	1.000175
16000.0	559.8	-9.6	42.4	739.2	632.8	249.6	25.0	1.000172
16500.0	548.8	-10.8	42.8	728.1	631.3			1.000169
17000.0	538.1	-12.0	43.2	717.1	629.8			1.000166
17500.0	527.5	-13.2	43.6	706.4	628.4			1.000163
18000.0	517.1	-14.4	44.0	695.6	626.9			1.000160
18500.0	506.9	-15.1	33.1	684.0	625.9			1.000156

STATION ALTITUDE 3989.00 FT; T MSL
 23 NOV. 62
 ASCENSION NO. 587

INDICATORY LEVELS
 3270020567
 WHITE SANDS
 TABLE 14

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4911.	12.6	-3.6	32.	120.2	4.0
800.0	6574.	10.2	-4.7	34.	141.5	7.3
750.0	8324.	7.1	-6.2	32.	201.5	0.6
700.0	10176.	4.3	-10.1	34.	239.9	16.3
650.0	12137.	-0.8	-11.2	45.	239.9	20.0
600.0	14214.	-6.2	-13.3	57.	245.2	22.3
550.0	16432.	-10.6	-20.8	43.		
500.0	18813.	-15.6	-31.1	29.		

FILM
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