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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2  
193158 MLRS, MISSILE NUMBER V-13-001, ROUND NUMBER V-162/AT2-1,--ETC(U)  
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METEOROLOGICAL DATA REPORT  
19315B MLRS  
Missile Number V-13-001,  
Round Number V-162/AT2-1,  
6 July 1981,

by

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Program Support Coordinator  
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AVN Number 349-9568

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ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

**ECOM**

UNITED STATES ARMY ELECTRONICS COMMAND

4/10/81

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  Meteorological data gathered for the launching of the 19315B MLRS, Missile No. V-13-001, Round No. V-162/AT2-1 presented in tabular form.		

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## INTRODUCTION

19315B MLRS, Missile Number V-13-001, Round Number V-162/AT2-1, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1300 MDT, 6 July 1981. The scheduled launch time was 1300 MDT.

## 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 in the following methods:

### 1. Observations:

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}$ C), relative humidity, dew point ( $^{\circ}$ C), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 Met Site 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 RAPTS T-9 pibal observations at:

#### SITE AND ALTITUDE

LC-33	2 KM
NICK	2 KM

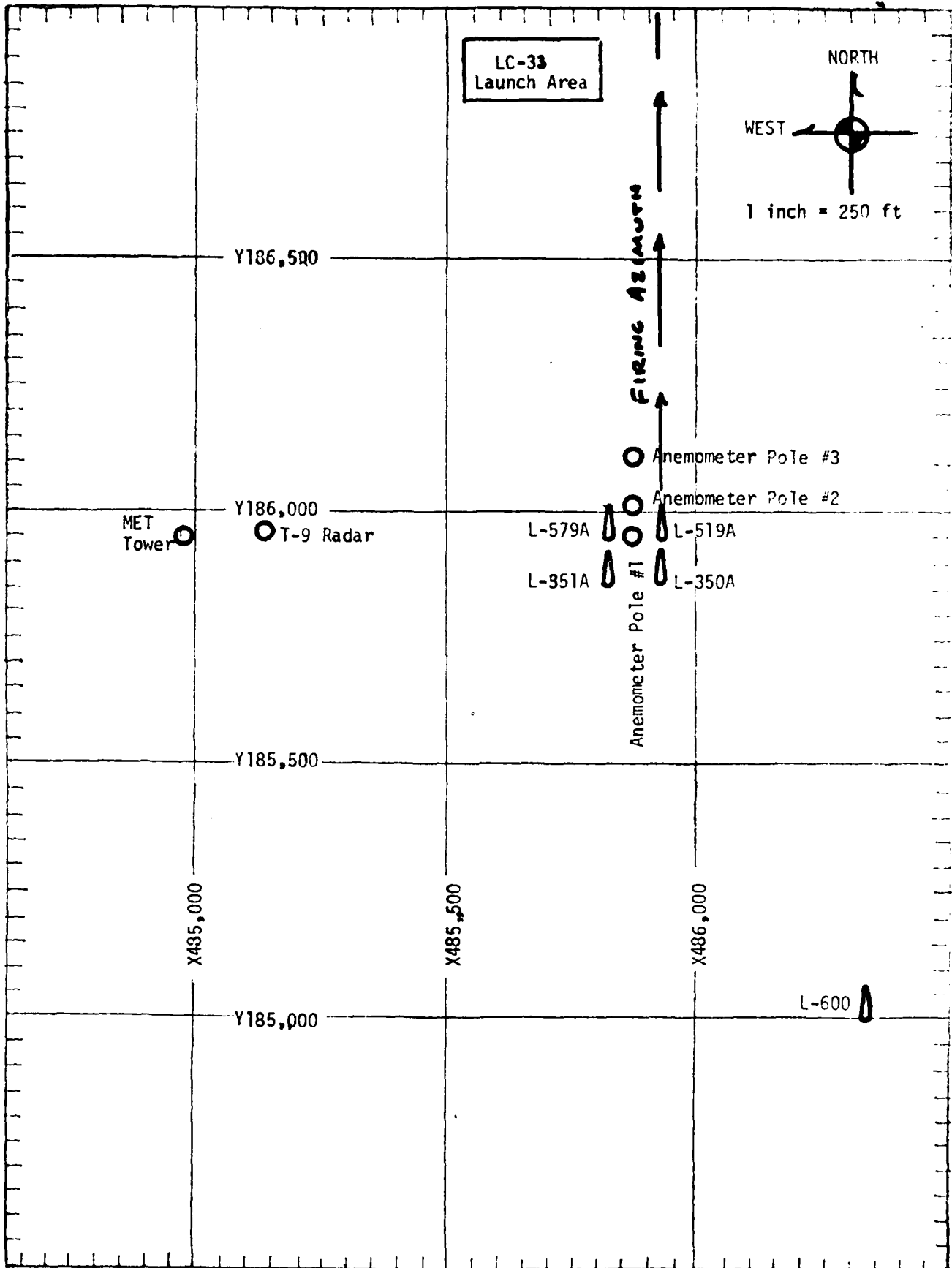
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

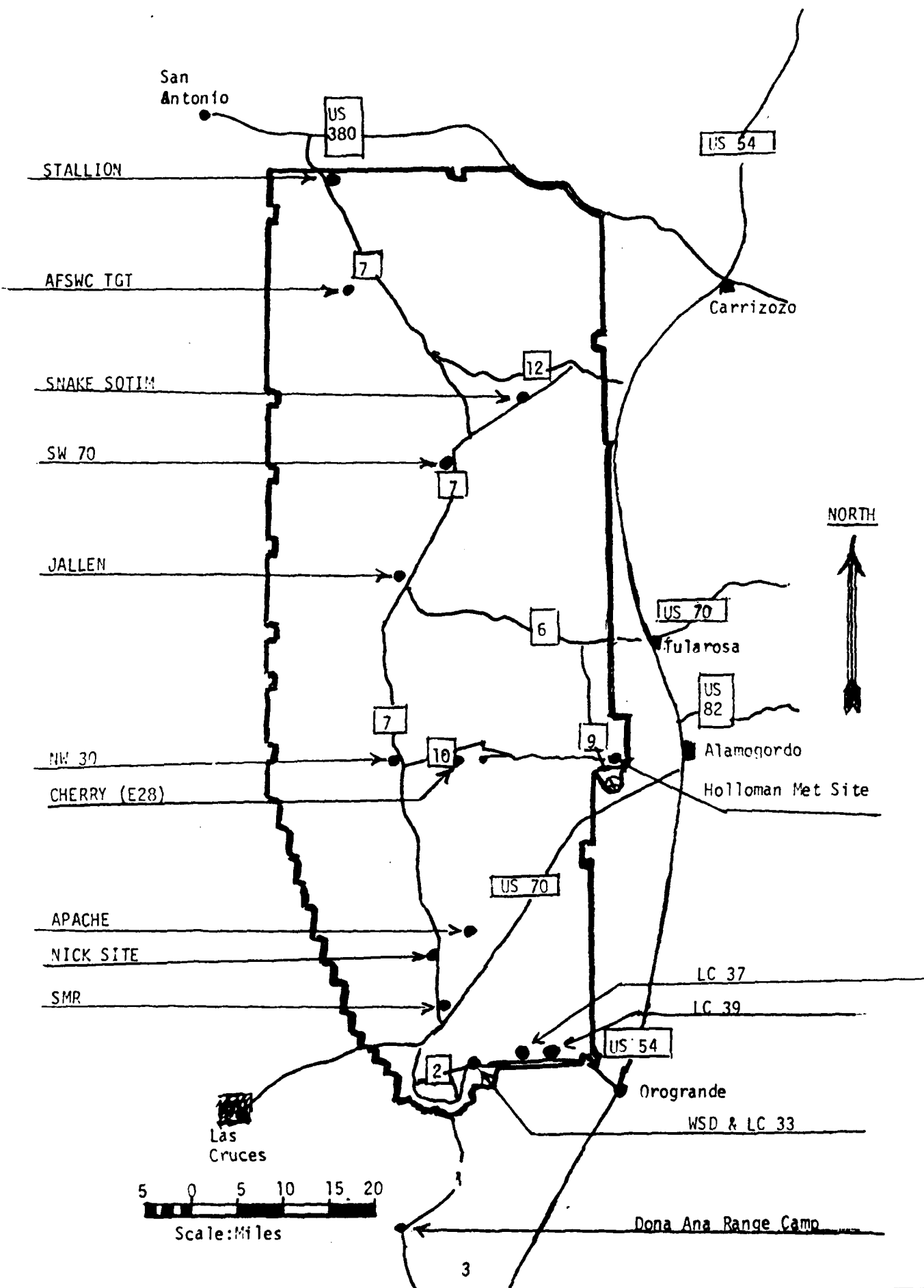
#### SITE AND TIME

SMR	1130 MDT
WSD	1215 MDT

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

A





PROJECT SURFACE OBSERVATION

STATION LC-33

TABLE 1		STATION LC-33									
DATE		06 July 1981		X= 484,982.64		Y= 185,957.73		H= 3983.0			
TIME	DAY	MONTH	YEAR	PRESSURE	TEMPERATURE	DEW POINT	RELATIVE	DEHSLTY	DIRECTION	WIND	VISIBIL-
M D T				mbs	of °C	of °C	HUMIDITY	gm/m <sup>3</sup>	degs In	SPEED	ITY
							%		kts	kts	
1300				878.9	32.9	9.6	24	994	C	A L M	50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
	4	CU 7000	0	AC 13000			

PSYCHROMETRIC COMPUTATION

TIME: MDT		1300
DRY BULB TEMP.		32.9
WET BULB TEMP.		17.9
WET BULB DEPR.		15.0
DEW POINT		9.6
RELATIVE HUMID.		24%

TABLE 2

T-TIME PILOT-BALLOON MEASURED WIND DATA  
 DATE 06 July 1981

SITE: LC-33  
 TIME: 1300 MDT  
 WSTM COORDINATES:  
 X= 485,135.76  
 Y= 185,919.24  
 H= 3,988.57

SITE: NICK  
 TIME: 1300 MDT  
 WSTM COORDINATES:  
 X= 470,734.56  
 Y= 255,775.64  
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES		SPEED KNOTS	
	C	A	L	M
SURFACE				
150	212		03	
210	220		03	
270	178		03	
330	173		03	
390	200		06	
500	156		04	
650	039		04	
800	004		03	
950	018		06	
1150	029		05	
1350	341		07	
1550	360		05	
1750	002		04	
2000	349		04	

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
	SURFACE	110
150	156	03
210	165	03
270	184	02
330	209	02
390	135	01
500	055	05
650	047	07
800	352	02
950	310	03
1150	294	03
1350	315	03
1550	325	03
1750	333	03
2000	333	03

Data obtained from T-9 radar Tracked  
 Pilot-Balloon Observation.

Data obtained from Single Theodolite  
 Tracked Pilot-Balloon Observation.

TABLE 3

AIMING COMPUTER MET MESSAGES  
06 July 1981

SMR 1130 MDT  
METCM1325064  
061750122879  
00160002 30730879  
01475001 30530870  
02118002 30270845  
03427001 29860808  
04484004 29360763  
05556007 28960719  
06056008 28560678  
07054009 28120638  
08019013 27740601  
09059023 27370565  
10076026 27050530  
11069017 26770498  
12062015 26200452

WSD 1215 MDT  
METCM1324064  
061830122879  
00311003 30830879  
01305004 30620869  
02320002 30340845  
03365001 29910808  
04264001 29370763  
05001003 28980720  
06075007 28570678  
07034009 28120639  
08020014 27680601  
09057022 27240565  
10075025 26930530  
11051018 26730498  
12066016 26190452



GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

UPPER AIR DATA  
1870060075  
S M R

STATION ALTITUDE 3997.30 FEET MSL  
6 JULY 81 1 130 HRS MDT  
ASCENSION NO. 75

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE					SPEED KNOTS	REFRACTION	
3997.3	879.3	32.8	10.8	26.0	995.6	683.3	90.0	1.9	1.000274	
4000.0	879.2	32.8	10.8	26.1	995.7	683.3	90.0	1.9	1.000274	
4500.0	864.4	30.0	10.3	29.5	987.7	680.2	95.8	1.3	1.000272	
5000.0	849.7	28.5	9.2	30.0	976.3	678.4	110.8	.8	1.000266	
5500.0	835.0	26.9	8.9	32.1	964.4	676.6	166.9	.4	1.000263	
6000.0	820.6	25.4	8.5	34.2	952.6	674.9	224.0	.7	1.000260	
6500.0	806.4	23.9	8.0	36.3	941.0	673.1	241.2	1.2	1.000256	
7000.0	792.4	22.3	7.5	38.4	929.6	671.3	256.7	1.4	1.000252	
7500.0	778.7	20.8	6.9	40.5	918.4	669.5	267.8	1.7	1.000248	
8000.0	765.2	19.2	6.2	42.6	907.4	667.7	279.5	3.0	1.000244	
8500.0	752.0	17.7	5.5	44.7	896.5	665.9	284.4	5.2	1.000240	
9000.0	738.7	16.6	5.0	46.1	884.1	664.6	294.8	6.9	1.000236	
9500.0	725.5	15.6	4.4	47.4	871.6	663.4	307.0	7.2	1.000232	
10000.0	712.6	14.5	3.9	48.7	859.3	662.2	330.1	6.2	1.000228	
10500.0	700.0	13.5	3.3	50.0	847.1	661.0	359.8	6.2	1.000224	
11000.0	687.3	12.2	2.5	51.4	835.7	659.4	20.6	7.3	1.000220	
11500.0	674.8	10.9	1.6	52.8	824.5	657.8	24.3	8.2	1.000216	
12000.0	662.6	9.6	.8	54.2	813.4	656.3	26.8	8.8	1.000212	
12500.0	650.5	8.3	-1.1	55.6	802.5	654.7	27.3	8.8	1.000208	
13000.0	638.7	6.9	-1.0	57.0	791.7	653.1	27.9	8.8	1.000204	
13500.0	627.1	5.6	-1.3	58.4	781.1	651.5	29.5	9.0	1.000200	
14000.0	615.6	4.3	-1.3	67.0	770.3	650.0	27.5	9.4	1.000199	
14500.0	604.2	2.9	-1.1	80.5	759.4	648.6	19.4	10.4	1.000199	
15000.0	592.9	2.0	-0.9	81.1	748.1	647.4	12.8	13.5	1.000195	
15500.0	581.9	1.1	-2.4	77.2	736.7	646.2	22.7	17.3	1.000190	
16000.0	571.0	.2	-4.0	73.2	725.4	645.1	30.0	20.9	1.000185	
16500.0	560.3	-1.2	-5.3	73.8	715.8	643.3	36.3	24.1	1.000181	
17000.0	549.7	-2.1	-10.2	54.1	705.2	642.0	39.8	25.7	1.000172	
17500.0	539.3	-2.6	-17.8	29.9	693.7	641.1	42.3	26.5	1.000162	
18000.0	529.0	-3.3	-20.8	24.4	682.4	640.2	42.1	24.9	1.000158	
18500.0	518.9	-4.1	-21.2	25.0	671.4	639.2	41.4	22.9	1.000155	
19000.0	509.0	-5.0	-21.7	25.5	660.6	638.3	40.3	20.2	1.000153	
19500.0	499.2	-5.8	-22.2	26.0	650.0	637.3	38.8	17.7	1.000150	
20000.0	489.4	-6.9	-23.2	25.0	640.0	636.9	34.8	15.4	1.000148	
20500.0	479.8	-8.1	-24.2	25.8	630.1	636.5	31.0	14.2	1.000145	
21000.0	470.3	-9.2	-25.3	25.7	620.4	635.1	29.4	14.1	1.000142	
21500.0	461.1	-10.4	-26.3	25.6	610.9	633.7	27.0	14.7	1.000140	
22000.0	452.0	-11.5	-27.1	25.5	601.5	632.3	24.9	15.5	1.000138	
22500.0	443.1	-12.7	-28.4	25.0	592.3	630.9	22.5	15.7	1.000135	
23000.0	434.4	-13.8	-29.4	25.4	583.3	629.5	21.3	15.1	1.000133	

UPPER AIR DATA  
 1870060075  
 S M R  
 TABLE 5

STATION ALTITUDE 3997.30 FEET MSL  
 6 JULY 81 1130 HRS MDT  
 ASCENSION NO. 75

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE					WIND DIRECTION	WIND SPEED	
23500.0	425.8	-15.0	-30.4	25.3	574.4	626.1	43.8	43.8	16.6	1.000131
24000.0	417.5	-16.1	-31.4	25.2	565.6	624.7	45.7	45.7	17.4	1.000128
24500.0	409.2	-17.3	-32.5	25.1	557.0	623.3	45.7	45.7	18.3	1.000126
25000.0	401.2	-18.4	-33.5	25.0	548.5	621.9	43.9	43.9	20.4	1.000124
25500.0	393.1	-19.3	-34.4	24.8	539.3	620.8	41.8	41.8	23.2	1.000122
26000.0	385.1	-20.2	-35.2	24.6	530.1	619.7	37.7	37.7	28.3	1.000120
26500.0	377.3	-21.0	-36.0	24.4	521.1	618.7	34.6	34.6	33.9	1.000118
27000.0	369.6	-21.9	-36.8	24.2	512.2	617.6	32.1	32.1	38.4	1.000116
27500.0	362.1	-22.7	-37.6	24.0	503.5	616.6	30.2	30.2	42.9	1.000114
28000.0	354.6	-23.6	-38.4	24.0	495.0	615.4	29.4	29.4	45.8	1.000112
28500.0	347.3	-24.6	-39.2	24.0	486.6	614.3	28.8	28.8	48.8	1.000110
29000.0	340.1	-25.5	-40.1	24.0	478.4	613.1	28.8	28.8	50.6	1.000108
29500.0	333.0	-26.6	-41.0	24.0	470.4	611.8	28.9	28.9	52.2	1.000106
30000.0	326.0	-27.7	-42.0	24.0	462.8	610.3	29.0	29.0	52.2	1.000104
30500.0	319.2	-28.9	-43.0	24.0	455.2	608.9	29.2	29.2	51.7	1.000102
31000.0	312.5	-30.1	-44.1	24.0	447.9	607.4	29.2	29.2	50.7	1.000101
31500.0	305.9	-31.3	-45.1	24.0	440.6	605.9	29.0	29.0	49.1	1.000099
32000.0	299.5	-32.5	-46.1	24.0	433.4	604.4	29.1	29.1	47.3	1.000097
32500.0	293.0	-33.5	-47.0	24.0	425.8	603.2	30.1	30.1	44.9	1.000095
33000.0	286.7	-34.4	-47.8	24.0	418.3	602.0	31.2	31.2	42.4	1.000094
33500.0	280.5	-35.4	-48.7	24.0	411.0	600.7	29.9	29.9	41.5	1.000092
34000.0	274.5	-36.4	-49.5	24.0	403.8	599.5	28.5	28.5	40.7	1.000090
34500.0	268.6	-37.3	-50.4	24.0	396.7	598.3	25.9	25.9	41.4	1.000089
35000.0	262.7	-38.2	-51.3	24.0	389.6	597.1	22.7	22.7	43.3	1.000087
35500.0	257.0	-39.1	-52.2	18.1**	382.5	596.0	19.9	19.9	45.1	1.000085
36000.0	251.4	-40.0	-53.1	10.1**	375.5	594.9	18.1	18.1	45.8	1.000084
36500.0	245.8	-41.0	-54.0	2.0**	368.8	593.6	16.3	16.3	46.5	1.000082
37000.0	240.3	-42.0	-54.9		362.2	592.3	15.5	15.5	46.7	1.000081
37500.0	234.9	-43.1	-55.8		355.7	590.9	15.4	15.4	46.5	1.000079
38000.0	229.7	-44.1	-56.7		349.4	589.6	15.3	15.3	46.2	1.000078
38500.0	224.6	-45.2	-57.6		343.2	588.2	16.5	16.5	46.2	1.000076
39000.0	219.6	-46.2	-58.5		337.1	586.9	17.7	17.7	46.2	1.000075
39500.0	214.6	-47.2	-59.4		330.8	585.7	18.5	18.5	45.0	1.000074
40000.0	209.7	-48.0	-60.3		324.5	584.5	18.9	18.9	43.1	1.000072
40500.0	204.9	-48.9	-61.2		318.4	583.4	19.2	19.2	41.6	1.000071
41000.0	200.3	-49.7	-62.1		312.3	582.3	19.2	19.2	41.0	1.000070
41500.0	195.6	-50.8	-63.0		306.4	580.9	19.1	19.1	40.4	1.000068
42000.0	191.0	-51.8	-63.9		300.6	579.6	18.7	18.7	39.4	1.000067
42500.0	186.5	-52.9	-64.8		294.9	578.2	18.2	18.2	38.5	1.000066
43000.0	182.1	-53.9	-65.7		289.3	576.8	17.4	17.4	36.5	1.000064

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

STATION ALTITUDE 3997.30 FEET MSL  
 6 JULY 81  
 ASCENSION NO. 75

UPPER AIR DATA  
 1870060075  
 S M R

GEOMETRIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SEEU KNOTS	
43500.0	177.8	-55.0	283.9	575.4	16.6	16.6	34.5	1.000063
44000.0	173.6	-56.1	278.5	574.0	15.9	15.9	33.2	1.000062
44500.0	169.5	-57.1	273.3	572.6	15.3	15.3	32.1	1.000061
45000.0	165.5	-58.2	268.1	571.2	15.0	15.0	31.2	1.000060
45500.0	161.6	-59.2	263.1	569.8	15.0	15.0	30.4	1.000059
46000.0	157.8	-60.3	258.2	568.4	15.0	15.0	29.5	1.000058
46500.0	154.0	-61.3	253.3	567.0	14.9	14.9	27.7	1.000056
47000.0	150.4	-62.4	248.6	565.6	14.7	14.7	25.9	1.000055
47500.0	146.7	-63.3	243.6	564.4	13.3	13.3	23.7	1.000054
48000.0	143.1	-64.1	238.6	563.2	10.7	10.7	21.3	1.000053
48500.0	139.6	-65.0	233.7	562.1	9.1	9.1	19.2	1.000052
49000.0	136.2	-65.9	228.9	560.9	14.3	14.3	18.2	1.000051
49500.0	132.9	-66.6	224.1	559.9	20.0	20.0	17.4	1.000050
50000.0	129.6	-66.6	218.5	559.9	28.2	28.2	16.5	1.000049
50500.0	126.4	-66.5	213.1	560.0	38.2	38.2	15.9	1.000047
51000.0	123.3	-66.5	207.8	560.0	47.7	47.7	15.1	1.000046
51500.0	120.2	-66.5	202.6	560.1	56.2	56.2	12.0	1.000045
52000.0	117.2	-66.5	197.6	560.1	69.9	69.9	9.4	1.000044
52500.0	114.3	-66.4	192.7	560.1	76.6	76.6	7.4	1.000043
53000.0	111.5	-66.6	188.1	559.9	76.6	76.6	5.5	1.000042
53500.0	108.7	-67.4	184.0	558.9	75.8	75.8	3.8	1.000041
54000.0	106.0	-68.1	180.1	557.8	64.6	64.6	4.7	1.000040
54500.0	103.4	-68.9	176.3	556.8	57.1	57.1	5.6	1.000039
55000.0	100.8	-69.7	172.0	555.7	68.7	68.7	6.7	1.000038
55500.0	98.3	-69.4	168.0	556.1	88.9	88.9	9.0	1.000037
56000.0	95.8	-68.7	163.3	557.1	101.1	101.1	12.0	1.000036
56500.0	93.4	-68.0	158.6	558.0	105.9	105.9	13.7	1.000035
57000.0	91.1	-67.2	154.1	559.0	108.8	108.8	14.8	1.000034
57500.0	88.8	-67.1	150.2	559.2	111.1	111.1	15.8	1.000033
58000.0	86.6	-67.6	146.8	558.6	107.7	107.7	16.4	1.000033
58500.0	84.5	-68.0	143.5	557.9	104.5	104.5	17.0	1.000032
59000.0	82.4	-67.3	139.4	559.0	101.9	101.9	17.7	1.000031
59500.0	80.4	-66.3	135.3	560.3	100.0	100.0	18.3	1.000030
60000.0	78.4	-65.5	131.5	561.4	98.4	98.4	19.0	1.000029
60500.0	76.4	-65.2	128.1	561.8	103.1	103.1	19.1	1.000029
61000.0	74.6	-65.0	124.8	562.1	108.3	108.3	17.4	1.000028
61500.0	72.7	-64.7	121.6	562.5	112.9	112.9	18.0	1.000027
62000.0	71.0	-64.4	118.4	562.8	115.7	115.7	20.2	1.000026
62500.0	69.2	-64.1	115.4	563.3	117.9	117.9	22.4	1.000026
63000.0	67.6	-63.6	112.3	563.9	113.6	113.6	23.5	1.000025

STATION ALTITUDE 3997.30 FEET MSL  
 6 JULY 81 1130 HRS MDT  
 ASCENSION NO. 75

UPPER AIR DATA  
 1H70060075  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.9	-63.2		109.4	564.5	107.6	24.3	1.000024
64000.0	64.4	-62.7		106.5	565.1	102.5	25.4	1.000024
64500.0	62.8	-62.3		103.7	565.7	97.9	25.6	1.000023
65000.0	61.3	-61.8		101.0	566.3	93.5	25.9	1.000023
65500.0	59.8	-61.4		98.4	567.0	92.1	26.4	1.000022
66000.0	58.4	-60.9		95.8	567.6	95.6	26.8	1.000021
66500.0	57.0	-60.4		93.3	568.2	99.5	27.4	1.000021
67000.0	55.6	-60.0		90.9	568.8	102.0	27.6	1.000020
67500.0	54.3	-59.5		88.5	569.4	103.9	27.4	1.000020
68000.0	52.9	-59.1		86.2	570.0	105.9	27.2	1.000019
68500.0	51.7	-58.6		83.9	570.6	106.9	26.0	1.000019
69000.0	50.4	-58.2		81.7	571.2	107.9	24.7	1.000018
69500.0	49.2	-57.5		79.5	572.1	109.5	23.7	1.000018
70000.0	48.1	-56.8		77.4	573.1	112.2	23.0	1.000017
70500.0	47.0	-56.0		75.4	574.0	115.1	22.4	1.000017
71000.0	45.9	-55.3		73.3	575.0	110.3	22.3	1.000016
71500.0	44.8	-54.5		71.4	576.0	103.4	22.6	1.000016
72000.0	43.8	-53.8		69.5	577.0	97.4	22.6	1.000015
72500.0	42.7	-53.0		67.6	578.0	92.8	21.4	1.000015
73000.0	41.7	-52.3		65.8	579.0	87.6	20.4	1.000015
73500.0	40.8	-51.6		64.1	579.9	84.3	19.7	1.000014
74000.0	39.8	-50.8		62.4	580.9	81.5	19.0	1.000014
74500.0	38.9	-50.6		60.9	581.2	81.2	19.4	1.000014
75000.0	38.0	-50.3		59.4	581.5	87.5	23.0	1.000013
75500.0	37.2	-50.1		58.0	581.8	92.1	26.8	1.000013
76000.0	36.3	-49.9		56.6	582.1	96.2	29.1	1.000013
76500.0	35.5	-49.7		55.3	582.4	99.8	31.2	1.000012
77000.0	34.7	-49.4		54.0	582.7	102.0	32.2	1.000012
77500.0	33.9	-49.2		52.7	583.0	101.6	30.6	1.000012
78000.0	33.1	-49.0		51.4	583.3	101.5	29.1	1.000011
78500.0	32.3	-48.7		50.2	583.6	102.4	29.6	1.000011
79000.0	31.6	-48.5		49.0	583.9	103.5	30.6	1.000011
79500.0	30.9	-48.3		47.9	584.2	103.8	31.7	1.000011
80000.0	30.2	-48.1		46.7	584.5	103.2	33.0	1.000010
80500.0	29.5	-47.9		45.6	584.7	102.5	34.4	1.000010
81000.0	28.8	-47.8		44.6	584.9	103.0	35.0	1.000010
81500.0	28.2	-47.0		43.4	585.9	103.7	35.6	1.000010
82000.0	27.6	-45.9		42.2	587.2	104.1	36.3	1.000009
82500.0	26.9	-44.8		41.1	588.6	104.2	37.2	1.000009
83000.0	26.3	-43.9		40.0	589.9	104.3	38.1	1.000009

STATION ALTITUDE 3997.30 FEET MSL  
 6 JULY 81 1 130 HRS MDT  
 ASCENSION NO. 75

UPPER AIR DATA  
 1870060075  
 S M R

GEODETTIC COORDINATES  
 32.48034 LAT UEG  
 106.42307 LON DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
83500.0	25.7	-43.6		39.1	590.2	105.5	38.4	1.000009
84000.0	25.2	-43.4		38.2	590.5	107.6	38.3	1.000008
84500.0	24.6	-43.2		37.3	590.8	109.7	38.2	1.000008
85000.0	24.1	-42.9		36.4	591.1	112.4	37.2	1.000008
85500.0	23.5	-42.7		35.6	591.4	115.4	36.1	1.000008
86000.0	23.0	-42.5		34.8	591.7	118.6	35.1	1.000008
86500.0	22.5	-42.2		34.0	592.0	116.6	33.0	1.000008
87000.0	22.0	-42.0		33.2	592.3	114.3	30.9	1.000007
87500.0	21.5	-41.8		32.4	592.6	111.7	28.9	1.000007
88000.0	21.1	-41.5		31.7	592.9	108.4	26.9	1.000007
88500.0	20.6	-41.3		30.9	593.2	104.7	25.1	1.000007
89000.0	20.1	-41.1		30.2	593.5	101.2	24.2	1.000007
89500.0	19.7	-41.0		29.5	593.6	98.5	24.3	1.000007
90000.0	19.3	-41.0		28.9	593.6	95.7	24.4	1.000006
90500.0	18.8	-40.9		28.3	593.7	96.4	23.4	1.000006
91000.0	18.4	-40.9		27.6	593.7	98.9	21.9	1.000006
91500.0	18.0	-40.9		27.0	593.7	101.7	20.5	1.000006
92000.0	17.6	-40.9		26.4	593.8			1.000006
92500.0	17.2	-40.8		25.8	593.8			1.000006
93000.0	16.9	-40.8		25.3	593.8			1.000006

STATION ALTITUDE 3997.30 FEET MSL  
 6 JULY 81 1 130 HRS MDT  
 ASCENSION NO. 75

MANDATORY LEVELS  
 1870060075  
 S M R  
 TABLE 6

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	WIND DATA		
				DIRECTION DEGREES(TN)	SPEED KNOTS	WIND DATA SPEED KNOTS
850.0	28.5	9.2	30.	110.3	.8	
800.0	23.2	7.8	37.	249.2	1.3	
750.0	17.5	5.4	45.	285.6	5.5	
700.0	13.5	3.3	50.	359.5	6.2	
650.0	8.2	-.1	56.	27.4	8.8	
600.0	2.5	.0	84.	14.9	11.6	
550.0	-2.1	-10.0	55.	39.7	25.7	
500.0	-5.7	-22.1	26.	30.9	17.9	
450.0	-11.8	-27.6	26.	35.6	15.6	
400.0	-18.6	-33.7	25.	43.6	20.8	
350.0	-24.2	-38.9	24.	29.0	47.6	
300.0	-32.4	-46.0	24.	29.0	47.6	
250.0	-40.2			17.7	45.9	
200.0	-49.8			19.2	41.0	
175.0	-55.7			16.1	33.5	
150.0	-62.5			14.7	25.7	
125.0	-66.5			42.2	15.8	
100.0	-69.9			73.8	7.2	
80.0	-66.2			99.8	16.4	
70.0	-64.3			116.8	21.3	
60.0	-61.4			91.1	26.3	
50.0	-58.0			108.2	24.4	
40.0	-51.0			82.3	19.2	
30.0	-48.0			103.0	33.3	
25.0	-43.3			108.1	38.2	
20.0	-41.0			100.6	24.2	

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

STATION ALTITUDE 3989.00 FEET MSL  
 6 JULY 81 1215 HRS MDT  
 ASCENSION NO. 434

SIGNIFICANT LEVEL DATA

1870020434  
 WHITE SANDS

TABLE 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
879.2	3989.0	33.8	9.1	22.0
859.6	4654.2	30.0	11.5	32.0
850.0	4983.1	29.1	11.2	33.0
750.6	8552.5	18.1	5.7	44.0
700.0	10503.3	13.9	3.7	50.0
638.6	13020.7	7.4	-8	56.0
620.0	13819.0	5.4	-6	65.0
611.4	14194.3	4.4	.4	75.0
602.6	14582.6	3.4	.1	79.0
550.4	16976.1	-2.9	-4.8	87.0
542.2	17367.2	-3.7	-6.5	69.0
517.0	18603.1	-4.2	-14.0	31.0
500.0	19468.2	-5.4	-19.1	33.0
468.8	21118.9	-9.5	-22.7	33.0
445.2	22426.7	-11.6	-25.3	31.0
400.0	25089.9	-18.7	-31.2	32.0

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

UPPER AIR DATA  
 1870020434  
 WHITE SANDS  
 TABLE 8

STATION ALTITUDE 3989.00 FEET MSL  
 6 JULY 81  
 12:5 HRS MDT  
 ASCENSION NO. 434

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/CURIC. METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.00	879.2	33.8	9.1	992.4	684.2	175.0	2.9	1.000268
4000.00	878.9	33.7	9.2	992.7	684.2	175.0	2.9	1.000268
4500.00	864.1	30.9	11.1	984.4	681.5	175.1	2.5	1.000274
5000.00	849.5	29.0	11.2	973.5	679.2	175.2	2.1	1.000272
5500.00	834.8	27.5	10.5	961.7	677.5	175.3	1.8	1.000268
6000.00	820.4	26.0	9.8	950.1	675.7	174.0	1.5	1.000263
6500.00	806.2	24.4	9.1	938.7	673.9	172.2	1.3	1.000259
7000.00	792.3	22.9	8.3	927.5	672.1	176.9	.9	1.000254
7500.00	778.6	21.3	7.5	916.4	670.2	196.1	.6	1.000250
8000.00	765.2	19.8	6.6	905.5	668.4	234.0	.6	1.000245
8500.00	752.0	18.3	5.8	894.8	666.6	234.1	.6	1.000240
9000.00	738.7	17.1	5.2	882.4	665.3	308.9	.8	1.000237
9500.00	725.6	16.1	4.7	870.1	664.0	348.9	2.1	1.000233
10000.00	712.7	15.0	4.2	857.9	662.7	8.5	3.9	1.000229
10500.00	700.1	13.9	3.7	846.0	661.5	30.9	5.3	1.000225
11000.00	687.4	12.6	2.8	834.6	659.9	38.7	6.4	1.000221
11500.00	675.0	11.3	1.9	823.4	658.4	39.8	6.7	1.000216
12000.00	662.8	10.0	1.1	812.3	656.8	32.8	6.8	1.000212
12500.00	650.8	8.7	.2	801.4	655.3	26.1	7.5	1.000208
13000.00	639.1	7.5	-.8	790.7	653.7	21.0	9.4	1.000204
13500.00	627.4	6.2	-.7	779.6	652.3	16.3	11.0	1.000202
14000.00	615.8	4.9	-.1	768.7	650.8	11.4	12.3	1.000201
14500.00	604.5	3.6	.2	757.9	649.4	11.1	13.7	1.000199
15000.00	593.2	2.3	-.7	747.4	647.8	14.4	15.1	1.000196
15500.00	582.0	1.0	-1.7	737.0	646.2	20.1	16.7	1.000191
16000.00	571.1	-.3	-2.7	726.9	644.5	27.8	19.0	1.000187
16500.00	560.4	-1.6	-3.8	716.8	642.9	33.1	21.4	1.000183
17000.00	549.9	-2.9	-5.0	706.9	641.3	36.6	23.9	1.000179
17500.00	539.4	-3.8	-9.4	696.1	640.1	38.9	25.1	1.000171
18000.00	529.1	-4.0	-12.9	683.7	639.7	40.7	25.4	1.000164
18500.00	519.1	-4.2	-17.6	671.5	639.3	39.7	23.5	1.000158
19000.00	509.1	-4.8	-18.9	660.1	638.6	37.4	20.9	1.000154
19500.00	499.4	-5.5	-19.2	649.3	637.7	34.0	18.9	1.000152
20000.00	489.7	-6.7	-20.3	639.7	636.2	29.8	17.1	1.000149
20500.00	480.3	-8.0	-21.4	630.4	634.7	26.2	16.3	1.000146
21000.00	471.0	-9.2	-22.5	621.1	633.2	24.9	15.9	1.000144
21500.00	461.8	-10.1	-23.5	611.1	632.1	26.0	15.7	1.000141
22000.00	452.8	-10.9	-24.4	601.1	631.1	37.6	15.0	1.000139
22500.00	443.9	-11.8	-25.4	591.3	630.0	46.7	15.2	1.000136
23000.00	435.1	-13.1	-26.6	582.5	628.4	47.0	15.9	1.000134

UPPER AIR DATA  
 1870020434  
 WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
 6 JULY 81  
 ASCENSION NO. 434

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 8

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	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	426.4	-14.5	-27.7	31.4	573.9	626.8	46.1	16.6	1.000131
24000.0	417.9	-15.8	-28.8	31.6	565.4	625.1			1.000129
24500.0	409.6	-17.1	-29.9	31.8	557.1	623.5			1.000127
25000.0	401.4	-18.5	-31.0	32.0	548.9	621.9			1.000125

STATION ALTITUDE 3989.00 FEET MSL  
 6 JULY 81  
 ASCENSION NO. 434

MANDATORY LEVELS  
 1870020434  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 9

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4979.	29.1	11.2	33.	175.2	2.2	
800.0	6735.	23.7	8.7	38.	174.0	1.1	
750.0	8567.	18.1	5.6	44.	234.0	.6	
700.0	10493.	13.9	3.7	50.	30.8	5.3	
650.0	12526.	8.7	.1	55.	25.7	7.6	
600.0	14680.	3.1	-.1	79.	12.5	14.2	
550.0	16973.	-2.9	-4.9	86.	36.5	23.8	
500.0	19440.	-5.4	-19.1	33.	34.3	19.1	
450.0	22122.	-11.2	-24.7	31.	41.5	14.9	
400.0	25047.	-18.7	-31.2	32.			

