

AD-A104 202 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2
19304D MLRS MISSILE NUMBER V-02-009, ROUND NUMBER V-181/MD-39, --ETC(U)
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AD A104202

METEOROLOGICAL DATA REPORT

19304D MLRS
Missile Number V-02-009
Round Number V181/MD-39
6 Aug 1981

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SELECTED
SEP 16 1981
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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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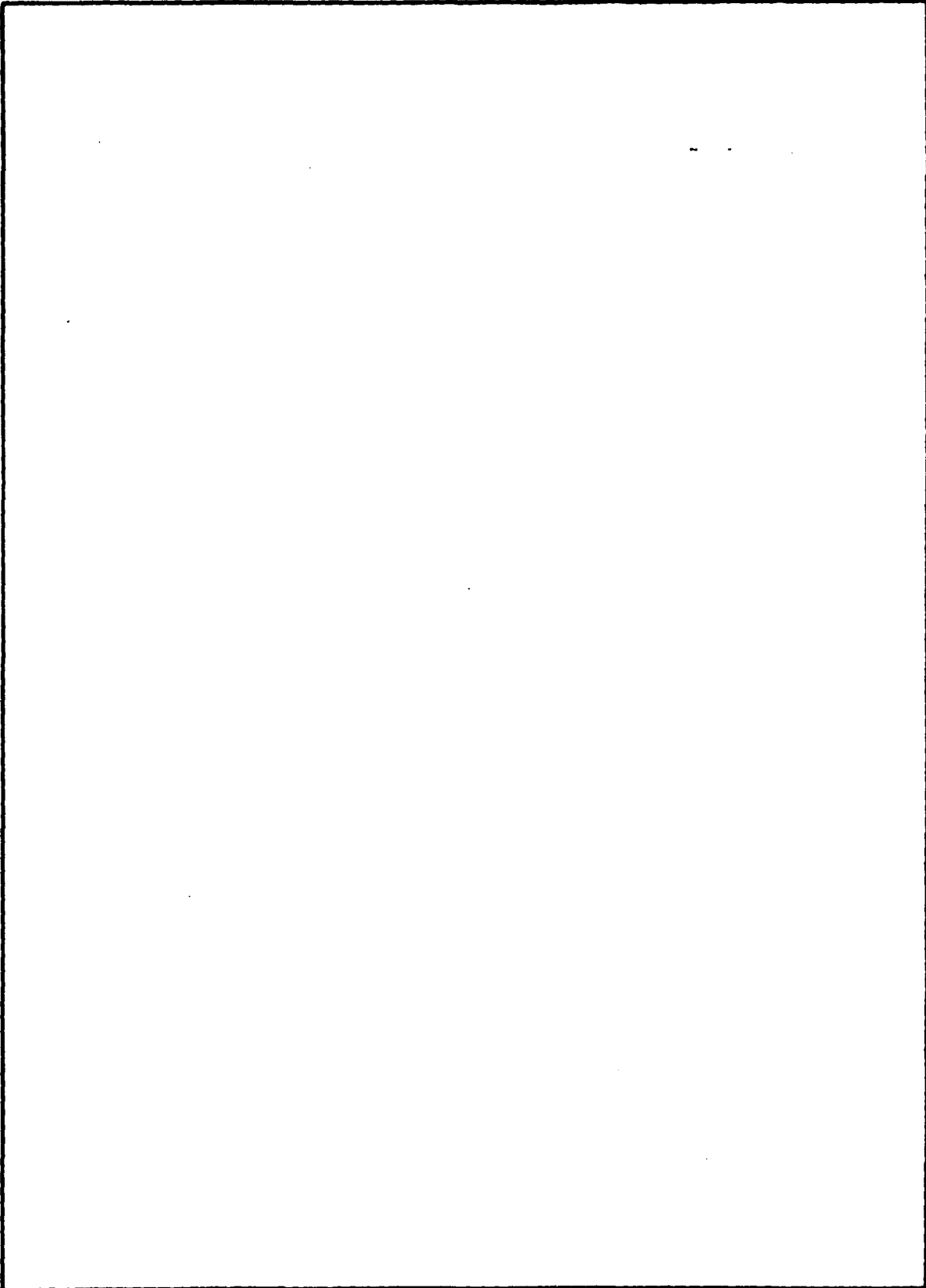
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → Meteorological data gathered for the launching of the 19304D MLRS, Missile No. V-02-009, Round No. V-181/MD-39 presented in tabular form. ←		

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INTRODUCTION

19304D MLRS, Missile Number V-02-009, Round Number V-181/MD-39, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1311:27 MDT, 06 Aug 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 by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature ($^{\circ}$ C), relative humidity, dew point ($^{\circ}$ C), density (gm/m^3), wind speed and direction and cloud cover were made at 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

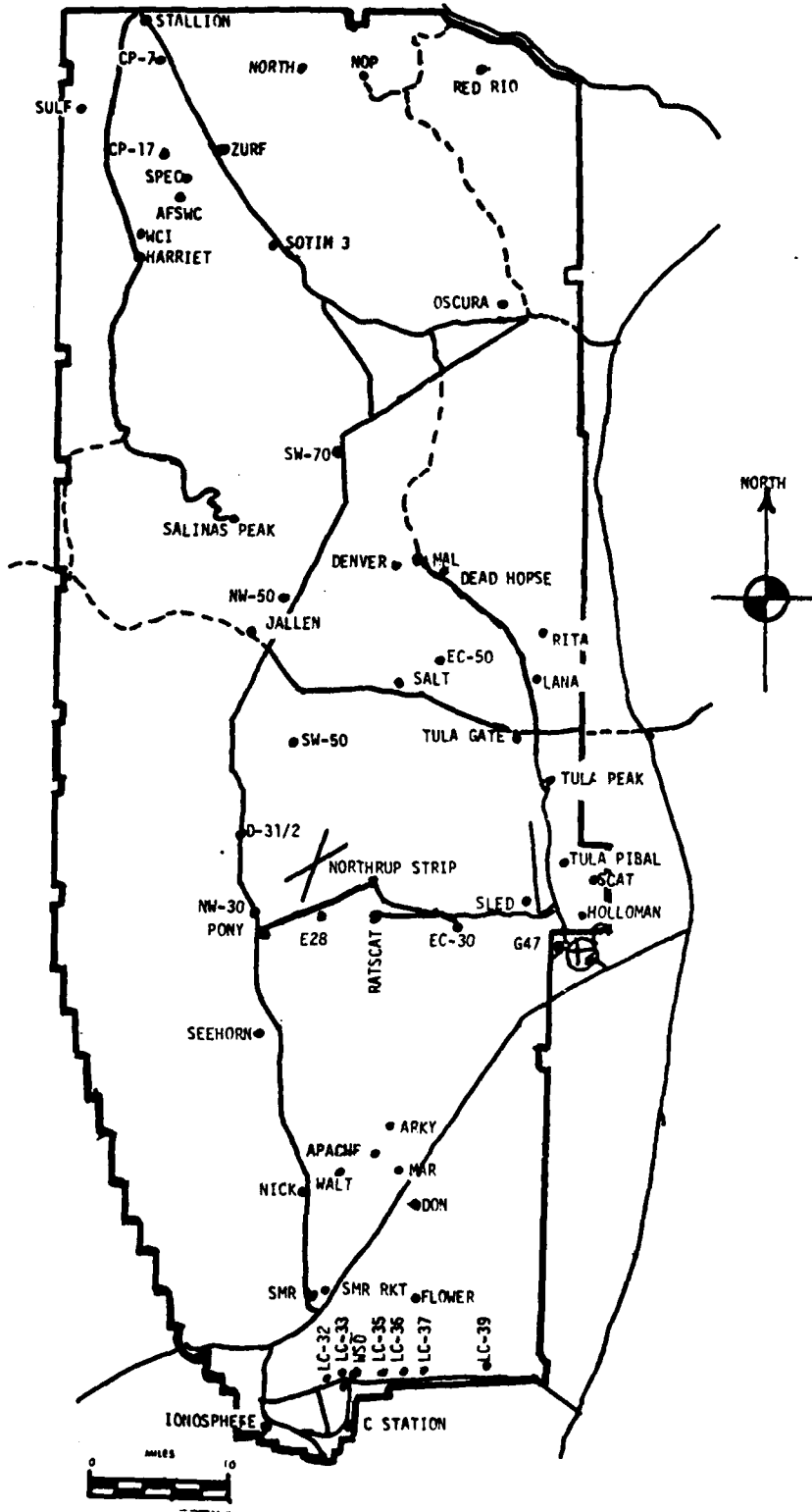
LC-33	2 KM
NICK	2 KM

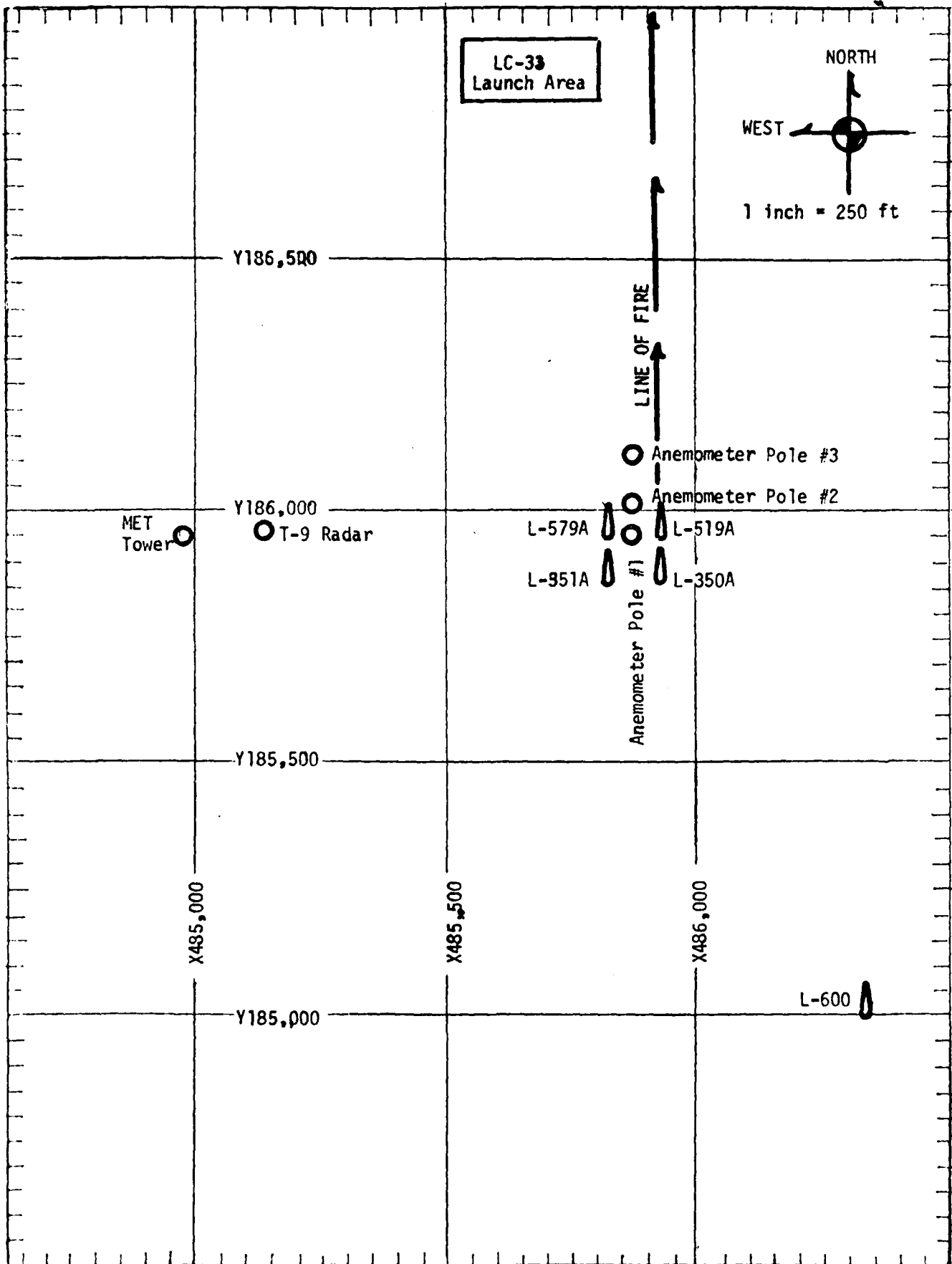
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

WSD	1014 MDT
LC-37	1100 MDT
WSD	1230 MDT

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 06 Aug 1981
 DAY MONTH YEAR

X = 485,135.76 Y = 185,919.24 H = 3,988.57

TIME M D I	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND		VISIBIL- ITY
						DIRECTION degs Tn	SPEED kts	
1312	881.1	32.8	17.0	39	1003	350	04	40

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS			
	1st LAYER		2nd LAYER		3rd LAYER					
	AMT	HGT	AMT	HGT	AMT	HGT				
	2	CB	6000	4	AC	12000	1	CI	25000	

PSYCHROMETRIC COMPUTATION

TIME: MDT	1312	
DRY BULB TEMP.	32.8	
WET BULB TEMP.	21.6	
WET BULB DEPR.	11.2	
DEW POINT	17.0	
RELATIVE HUMID.	39%	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 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 KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	028	07	T-30	022	07	T-30	358	09
T-20	024	07	T-20	010	05	T-20	359	08
T-10	026	07	T-10	011	06	T-10	349	07
T-0	027	05	T-0	009	05	T-0	354	08
T+10	033	08	T+10	020	07	T+10	350	09

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 KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	038	07	T-30	008	06
T-20	028	06	T-20	035	08
T-10	016	09	T-10	006	05
T-0	032	07	T-0	033	07
T+10	031	05	T+10	033	06

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	006	08	T-30	012	10
T-20	007	09	T-20	008	09
T-10	015	07	T-10	020	09
T-0	014	07	T-0	003	10
T+10	020	07	T+10	012	09

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 06 Aug 1981

SITE: LC-33
 TIME: 1312 MDT
 WSTM COORDINATES:
 X= 484,837.34
 Y= 184,124.44
 H= 3,975.57

SITE: NICK
 TIME: 1312 MDT
 WSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	010	05
150	003	14
210	001	14
270	360	14
330	360	14
390	360	14
500	359	13
650	358	11
800	350	06
950	233	04
1150	241	06
1350	248	06
1550	255	06
1750	283	08
2000	285	10

Data obtained from Double
 Theodolite Tracked Pilot-
 Balloon Observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	355	04
150	336	12
210	334	14
270	333	14
330	331	15
390	329	14
500	324	13
650	309	12
800	301	13
950	300	10
1150	306	03
1350	306	03
1550	275	03
1750	247	02
2000	102	01

Data obtained from Single Theodolite
 Tracked Pilot-Balloon Observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
06 Aug 1981

WSD 1014 MDT
METCM1324064
061620122882
00000000 30550882
01245002 30470872
02596001 30270848
03582006 29930810
04558006 29510765
05548007 29080722
06513005 28670681
07456004 29320641
08135004 27980603
09097010 27590567

LC-37 1100 MDT
METCM1324063
061700124880
00622004 30650880
01059004 30410870
02502002 30260846
03622004 29820808
04560006 29360763
05482004 29050720
06524007 28680678
07436005 28250639
08069001 27850601
09118005 27570566

WSD 1230 MDT
METCM1324064
061850122882
00044007 30950882
01028009 30610872
02044008 30340848
03600002 30020810
04492006 29610765
05513005 29210722
06585008 28820681
07012003 28430642
08113004 28010624
09066004 27610568

STATION ALTITUDE 3989.00 FEET MSL
 6 AUG. 81 1014 HRS MDT
 ASCENSION NO. 521

SIGNIFICANT LEVEL DATA
 2180020521
 WHITE SAHUS
 TABLE 6

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEOMETRIC ALTITUDE	PRESSURE	TEMPERATURE	REL. HUM.
MILLIBARS MSL FEET	MILLIBARS	AIR DEWPOINT DEGREES CENTIGRADE	PERCENT
3989.0	081.9	30.4	41.0
5068.2	850.0	27.9	42.0
8303.9	759.6	20.2	48.0
10600.4	700.0	14.3	64.0
12242.8	659.6	10.4	71.0
12602.4	651.0	9.8	63.0
13984.5	618.8	7.5	65.0
17819.9	536.0	-1.2	74.0
19635.8	500.0	-4.1	58.0
21026.3	473.8	-6.6	27.0
21733.4	460.9	-8.4	32.0
22276.2	451.2	-8.5	21.0
23137.0	436.2	-9.6	17.0
23975.1	422.0	-11.4	23.0
24603.2	411.6	-13.0	66.0
25319.0	400.0	-14.3	51.0

STATION ALTITUDE 3989.00 FEET MSL
 6 AUG. 81
 ASCENSION NO. 521

UPPER AIR DATA
 21800205Z
 WHITE SANDS

GEOMETRIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
3989.00	881.9	30.4	41.0	1004.4	681.4	.0	.0	1.000297
4000.0	881.6	30.4	41.0	1004.1	681.3	328.1	.0	1.000297
4500.0	866.6	29.2	41.5	991.2	679.9	320.1	1.4	1.000291
5000.0	852.0	28.1	41.9	978.4	678.5	328.1	2.7	1.000285
5500.0	837.3	26.9	42.8	965.6	677.1	328.1	4.0	1.000279
6000.0	822.9	25.7	43.7	953.0	675.7	326.3	5.0	1.000274
6500.0	808.7	24.5	44.7	940.5	674.3	322.2	5.3	1.000268
7000.0	794.8	23.3	45.6	928.2	672.9	319.6	5.6	1.000263
7500.0	781.1	22.1	46.5	916.1	671.4	318.1	5.7	1.000258
8000.0	767.7	20.9	47.4	904.1	670.0	317.5	6.1	1.000253
8500.0	754.3	19.7	48.4	892.2	668.6	317.5	6.6	1.000249
9000.0	741.0	18.4	52.8	880.3	667.1	314.1	6.9	1.000246
9500.0	728.0	17.1	56.3	868.6	665.7	309.5	7.1	1.000243
10000.0	715.1	15.8	59.8	857.1	664.2	305.2	7.0	1.000240
10500.0	702.5	14.6	63.3	845.8	662.7	300.8	6.8	1.000237
11000.0	689.9	13.4	65.7	834.3	661.2	294.5	6.1	1.000232
11500.0	677.6	12.2	67.8	822.9	659.8	285.8	5.5	1.000228
12000.0	665.4	11.0	70.0	811.6	658.4	273.3	4.8	1.000224
12500.0	653.4	10.0	65.3	800.3	657.0	263.4	4.4	1.000216
13000.0	641.6	9.1	63.6	788.3	656.0	258.1	3.8	1.000211
13500.0	629.9	8.3	64.3	776.3	655.0	253.3	2.4	1.000207
14000.0	618.4	7.5	65.0	764.6	654.0	227.8	.6	1.000203
14500.0	607.0	6.3	66.2	753.6	652.6	78.4	2.3	1.000199
15000.0	595.7	5.2	67.4	742.7	651.2	73.5	5.7	1.000195
15500.0	584.7	4.1	68.6	732.1	649.8	65.0	7.8	1.000191
16000.0	573.8	2.9	69.7	721.5	648.4	57.8	9.7	1.000187
16500.0	563.2	1.8	70.9	711.2	647.0	53.7	9.6	1.000183
17000.0	552.7	.7	72.1	701.0	645.7	49.5	9.3	1.000180
17500.0	542.5	-.5	73.2	690.9	644.3	45.5	8.3	1.000176
18000.0	532.3	-1.5	72.4	680.7	643.0	39.7	7.3	1.000172
18500.0	522.2	-2.3	68.0	669.9	642.0	26.9	7.6	1.000167
19000.0	512.3	-3.1	63.6	659.3	641.0	20.6	7.7	1.000163
19500.0	502.6	-3.9	59.2	648.9	639.9	31.0	6.7	1.000159
20000.0	493.0	-4.8	49.9	638.8	638.8	48.2	5.6	1.000154
20500.0	483.6	-5.7	38.7	629.0	637.6	75.4	5.1	1.000148
21000.0	474.3	-6.6	27.6	619.2	636.4	79.4	5.0	1.000143
21500.0	465.1	-7.8	30.3	610.1	634.9	76.1	4.8	1.000141
22000.0	456.1	-8.4	26.6	599.8	634.1	59.6	4.9	1.000138
22500.0	447.3	-8.8	20.0	589.1	633.6	46.2	5.5	1.000135
23000.0	438.6	-9.4	17.6	579.0	632.8	38.4	6.6	1.000132

STATION ALTITUDE 3989.00 FEET MSL
 6 AUG. 81 1014 HRS MDT
 ASCENSION NO. 521

UPPER AIR DATA
 2180020521
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	430.0	-10.4	-29.2	49.6	569.8	631.7	37.5	7.7	1.000130	
24000.0	421.6	-11.5	-27.6	24.7	560.9	630.4	42.5	9.0	1.000128	
24500.0	413.3	-12.7	-19.1	58.9	552.2	629.1			1.000131	
25000.0	405.1	-13.7	-20.2	57.7	543.4	627.8			1.000128	

MANDATORY LEVELLS
 2100020521
 WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
 6 AUG. 61
 ASCENSION NO. 521

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 8

PRESSURE GEOPOTENTIAL MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
			DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	27.9	42.	328.1	2.9
800.0	23.7	45.	320.2	5.5
750.0	19.3	50.	317.4	6.8
700.0	14.3	64.	299.7	6.7
650.0	9.7	63.	262.1	4.2
600.0	5.6	67.	74.4	4.4
550.0	.4	72.	48.5	9.0
500.0	-4.1	58.	34.0	6.5
450.0	-8.6	21.	49.6	5.2
400.0	-14.3	51.		

STATION ALTITUDE 4051.37 FEET MSL
 6 AUG. 61
 ASCENSION NO. 176

SIGNIFICANT LEVEL DATA
 21801.00176
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEW POINT CENTIGRADE	
879.8	4051.4	30.8	13.2	59.0
874.6	4225.2	28.2	13.7	41.0
864.8	4554.7	29.2	13.5	43.0
850.0	5054.5	28.0	14.0	44.0
835.8	5549.2	25.6	13.5	47.0
779.8	7539.0	20.6	10.7	53.0
734.2	9238.6	16.0	7.2	50.0
725.4	9576.5	16.9	8.0	58.0
700.0	10573.2	14.7	6.5	58.0
637.2	13159.1	7.8	3.5	73.0
603.4	14029.1	3.9	-1.1	70.0
594.8	15013.7	4.4	-0	70.0
545.2	17328.7	-5	-2.7	85.0
520.8	18527.2	-3.9	-0.7	81.0
500.0	19584.1	-5.2	-11.7	60.0
480.8	20591.4	-7.8	-19.3	39.0
473.0	21011.0	-6.5	-20.1	33.0
442.8	22697.7	-9.6	-22.2	35.0
413.6	24419.4	-13.5	-17.9	69.0
400.0	25256.4	-13.9	-21.0	55.0
378.2	26646.2	-18.2	-31.5	30.0
364.2	27572.7	-18.7	-34.6	23.0
330.0	29387.4	-23.5	-39.6	21.0
300.0	32215.3	-31.1	-43.5	20.0

STATION ALTITUDE 4051.37 FEET MSL
 6 AUG. 61 10 00 HRS MDT
 ASCENSION NO. 176

UPPER AIR DATA
 218010176
 LC-37

GEODETIC COORDINATES
 32-40175 LAT DEG
 106-51232 LONG DEG

TABLE 10

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND M/SEC	ANGLE OF DIRECTION DEGREES (TN)	WIND VELOCITY KNOTS	INDEX OF REFRACTION
4051.4	979.8	70.8	39.0	1000.0	081.7	350.0	4.1	1.000294
4500.0	800.4	29.0	42.7	991.4	079.8	353.5	4.0	1.000292
5000.0	851.7	28.1	43.9	977.5	079.7	357.1	4.0	1.000288
5500.0	831.2	25.8	46.7	960.0	078.0	359	3.9	1.000282
6000.0	822.8	24.5	48.4	950.5	074.4	355.4	3.9	1.000277
6500.0	806.6	23.2	49.9	944.1	072.9	340.5	4.0	1.000272
7000.0	797.6	22.0	51.4	931.9	071.4	325.0	4.5	1.000267
7500.0	780.9	20.7	52.9	919.9	069.9	312.5	5.1	1.000262
8000.0	757.2	19.4	53.8	906.2	068.5	299.2	5.2	1.000256
8500.0	755.7	18.0	54.7	896.7	065.0	290.5	5.1	1.000250
9000.0	740.4	16.6	55.6	885.3	065.0	261.9	4.8	1.000245
9500.0	727.4	16.7	57.5	869.3	065.1	278.5	4.5	1.000243
10000.0	714.5	16.0	58.0	850.1	064.5	276.7	4.9	1.000239
10500.0	701.8	14.9	58.0	844.4	062.9	281.4	5.4	1.000233
11000.0	689.2	13.6	60.5	833.1	061.4	283.5	6.5	1.000229
11500.0	670.8	12.2	63.4	822.0	059.8	280.2	7.3	1.000225
12000.0	652.7	10.9	66.3	811.1	058.2	275.5	6.8	1.000221
12500.0	640.9	8.2	69.2	800.4	056.6	262.5	6.0	1.000217
13000.0	629.2	6.9	72.3	779.3	055.4	251.5	4.3	1.000214
13500.0	617.6	5.6	71.3	760.9	051.7	251.1	3.1	1.000208
14000.0	600.3	4.2	70.3	750.7	050.0	266.4	2.2	1.000203
14500.0	595.1	4.4	70.0	744.2	050.2	73.2	.1	1.000198
15000.0	584.0	3.4	73.2	735.0	049.0	78.0	2.1	1.000195
15500.0	575.1	2.3	76.4	722.2	047.8	71.0	4.3	1.000192
16000.0	562.5	1.3	79.6	711.5	046.5	61.2	5.0	1.000188
17000.0	552.0	.2	82.9	701.0	045.2	48.4	5.2	1.000185
17500.0	541.6	-1.0	84.4	691.0	043.8	39.5	5.4	1.000182
18000.0	531.4	-2.4	82.8	681.7	042.0	41.6	5.3	1.000179
18500.0	521.3	-3.6	81.1	672.5	040.2	45.0	5.2	1.000174
19000.0	511.4	-4.5	71.6	661.5	039.3	45.0	4.9	1.000169
19500.0	501.6	-5.1	61.7	650.7	038.5	42.5	4.5	1.000164
20000.0	492.6	-6.3	51.5	641.2	036.9	39.5	4.5	1.000159
20500.0	475.2	-7.6	40.9	632.2	035.2	39.0	4.0	1.000153
21000.0	473.2	-6.5	33.2	617.7	030.4	42.0	3.8	1.000148
21500.0	464.6	-7.4	33.0	607.7	030.4	37.9	4.0	1.000144
22000.0	455.1	-8.3	34.2	590.0	034.5	34.0	5.0	1.000142
22500.0	446.2	-9.2	34.0	580.5	035.2	32.9	5.2	1.000139
23000.0	437.5	-10.3	41.0	579.5	031.9	35.6	6.7	1.000137
23500.0	428.9	-11.4	50.8	574.5	030.6	37.0	7.1	1.000135
							7.4	1.000134

UPPER AIR DATA
218010176
LC-37

STATION ALTITUDE 4051.77 FEET MSL
6 W/G. CL 1100 MRS MDT
ASCENSION. NO. 176

OPTIC COORDINATES
32.40175 LAT DEG
106.51252 LONG DEG

TABLE 10 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED SOUND KNOTS	WIND DATA DIRECTION DEGREES (TIN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	420.5	-12.5	60.7	561.4	629.3	35.9	0.7	1.000133
24500.0	412.3	-13.5	67.7	552.5	626.1	35.2	10.0	1.000131
25000.0	404.1	-13.5	59.3	542.1	627.8	40.2	16.3	1.000128
25500.0	395.1	-14.7	50.6	533.5	625.7	46.6	10.5	1.000124
26000.0	386.2	-16.2	41.6	525.9	624.7	60.1	10.5	1.000121
26500.0	380.4	-17.7	32.6	518.7	622.7	72.9	11.0	1.000118
27000.0	372.8	-18.4	27.3	509.6	621.9	85.5	11.6	1.000116
27500.0	365.3	-18.7	23.5	499.9	621.0	96.2	12.6	1.000113
28000.0	357.9	-19.8	22.5	492.0	620.1	102.5	12.5	1.000111
28500.0	350.6	-21.2	22.0	484.5	618.5	107.5	12.4	1.000109
29000.0	343.4	-22.5	21.4	477.2	616.9	106.6	11.5	1.000108
29500.0	337.4	-23.8	21.3	469.4	615.2	103.7	10.9	1.000106
30000.0	327.5	-25.1	22.5	462.6	613.6	95.1	11.5	1.000104
30500.0	322.5	-26.5	23.8	455.4	611.9			1.000102
31000.0	315.8	-27.8	25.0	448.3	610.2			1.000101
31500.0	307.2	-29.2	26.2	441.4	608.6			1.000099
32000.0	302.7	-30.5	27.5	434.0	606.9			1.000098

STATION ALTITUDE 4051.37 FEET MSL
 6 AUG. 61 1100 HRS MDI
 ASCENSION NO. 176

MANUATORY LEVELS
 2,801,001/0
 LC-37

GEOMETRIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 11

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMIDITY PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5056.	28.0	14.0	44.	357.5	4.0
800.0	6864.	22.4	11.7	51.	346.3	4.3
750.0	8633.	17.6	8.5	55.	295.8	5.0
700.0	10563.	14.7	6.5	50.	277.4	5.6
650.0	12603.	9.3	4.0	70.	273.3	5.6
600.0	14763.	4.1	-0.9	70.	65.5	1.1
550.0	17075.	-0	-2.5	83.	46.2	5.3
500.0	19556.	-5.2	-11.7	60.	42.1	4.4
450.0	22252.	-3.8	-21.6	35.	33.3	6.5
400.0	25213.	-13.9	-21.0	55.	42.0	10.5
350.0	28491.	-21.3	-37.3	22.	107.4	12.3
300.0	32150.	-31.1	-43.5	28.		

STATION ALTITUDE 3489.00 FEET MSL
 6 AUG. 61 1230 HRS PDT
 OBSERVATOR NO. 322

SIGNIFICANT LEVEL DATA
 21800, 0.22
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MEL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
881.5	3789.0	34.0	15.4	33.0
871.4	4329.8	30.6	11.1	30.0
850.0	5054.6	28.8	12.2	36.0
700.0	10508.8	16.0	2.0	41.0
601.0	12201.1	12.6	1.3	40.0
602.4	14423.2	6.9	-1.1	61.0
575.6	15957.5	3.2	-0	76.0
551.0	17119.5	1.0	-3.1	74.0
503.8	19158.6	-4.1	-6.9	61.0
505.0	19404.2	-4.6	-9.4	69.0
500.0	19562.6	-3.5	-14.8	41.0
494.0	19676.3	-3.9	-20.1	27.0
455.4	22070.5	-8.5	-23.3	29.0
447.8	22499.5	-9.1	-20.2	40.0
443.4	22751.2	-8.8	-17.3	50.0
433.0	23355.6	-9.6	-18.5	48.0
411.0	24674.2	-12.5	-21.7	46.0
400.0	25354.5	-13.9	-21.8	51.0

STATION ALTITUDE 3989.00 FEET MSL
 6 AUG. 61 1230 HRS MD
 ASCENSIVE 140. 022

UPPER AIR DATA
 2180020522
 WHITE SOUNDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/S	DIRECTION DEGREES(TN)	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE					SPEED KNOTS	ANGLE KNOTS	
3989.0	881.5	34.0	15.4	33.0	992.2	685.4	25.0	7.0	1.000292	
4000.0	861.2	33.9	15.3	32.9	992.3	685.2	25.0	7.0	1.000291	
4500.0	800.4	30.2	11.4	31.4	989.1	680.5	22.7	6.2	1.000276	
5000.0	851.7	28.9	12.2	35.5	970.0	679.3	19.7	5.4	1.000277	
5500.0	837.0	27.0	11.5	36.4	962.9	677.9	15.7	4.6	1.000272	
6000.0	822.5	26.6	10.7	36.8	959.1	676.5	10.2	3.9	1.000266	
6500.0	805.2	25.5	9.8	37.3	937.5	675.1	35.8	3.1	1.000261	
7000.0	794.2	24.3	9.0	37.7	925.0	673.8	29.7	3.8	1.000255	
7500.0	780.4	23.2	8.2	38.2	912.7	672.4	24.8	4.4	1.000250	
8000.0	765.6	22.0	7.3	38.6	900.5	671.0	27.5	5.0	1.000245	
8500.0	750.9	20.9	6.4	39.1	888.6	669.6	27.5	5.0	1.000240	
9000.0	740.5	19.7	5.6	39.6	876.0	668.2	27.8	4.8	1.000236	
9500.0	727.7	18.6	4.7	40.0	865.2	666.9	26.2	4.6	1.000231	
10000.0	715.1	17.4	3.8	40.5	853.7	665.5	29.2	4.7	1.000226	
10500.0	702.7	16.3	3.0	40.9	842.4	664.1	31.2	5.7	1.000222	
11000.0	690.2	15.2	2.4	42.2	830.6	662.8	32.8	7.1	1.000218	
11500.0	677.9	14.1	2.0	43.8	818.9	661.6	32.4	6.9	1.000215	
12000.0	665.8	13.0	1.5	45.4	807.3	660.3	32.6	6.5	1.000211	
12500.0	653.8	11.8	1.2	48.0	795.1	658.9	33.8	4.8	1.000209	
13000.0	642.0	10.6	1.0	51.4	785.2	657.5	5.9	3.3	1.000206	
13500.0	630.3	9.3	.6	54.8	774.5	656.0	34.7	3.3	1.000203	
14000.0	618.9	8.0	.3	58.1	764.0	654.5	53.6	4.0	1.000200	
14500.0	607.7	6.7	-.1	61.8	753.5	653.0	57.1	3.9	1.000197	
15000.0	596.5	5.5	-.2	66.6	742.8	651.6	57.2	3.5	1.000195	
15500.0	585.5	4.3	-.4	71.5	732.3	650.2	52.0	3.3	1.000192	
16000.0	574.7	3.1	-.7	75.9	721.9	648.8	44.7	3.2	1.000190	
16500.0	564.0	2.2	-1.8	75.1	711.0	647.6	33.5	3.8	1.000185	
17000.0	553.5	1.2	-2.8	74.2	700.4	646.4	24.8	5.0	1.000181	
17500.0	543.1	.0	-3.8	75.3	690.3	645.0	19.2	6.0	1.000177	
18000.0	532.8	-1.2	-4.7	77.0	680.4	643.4	14.9	6.8	1.000174	
18500.0	522.8	-2.5	-5.6	78.7	670.0	641.9	13.9	7.1	1.000170	
19000.0	512.9	-3.7	-6.6	80.5	661.3	640.4	18.0	6.4	1.000167	
19500.0	503.1	-4.2	-11.1	58.0	650.4	639.5	25.0	5.8	1.000159	
20000.0	493.5	-4.0	-20.9	27.0	638.1	639.5	37.9	5.4	1.000149	
20500.0	484.1	-5.1	-20.9	27.0	628.4	638.2	47.7	5.5	1.000146	
21000.0	474.7	-6.1	-21.6	28.0	618.9	636.9	50.2	6.1	1.000144	
21500.0	465.6	-7.2	-22.4	28.5	609.5	635.5	43.7	6.8	1.000141	
22000.0	456.6	-8.3	-23.2	28.9	600.3	634.2	41.6	7.5	1.000139	
22500.0	447.8	-9.1	-24.2	28.0	590.2	633.4	35.9	6.4	1.000138	
23000.0	439.1	-9.1	-17.3	49.2	578.0	633.4	31.5	9.3	1.000137	

STATION ALTITUDE 3989.60 FEET MSL
 6 AUG 61 1230 HRS MDT
 ASCENDING, NO. 222

UPPER AIR DATA
 2100Z0522
 WHITE SAHUS

GEODETIC COORDINATES
 32.40343 LAT DEG
 100.37033 LONG DEG

TABLE 13 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOMETERS PER SECOND	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	430.5	-9.9	47.0	569.1	632.5			1.000134
24000.0	422.1	-11.0	47.0	560.3	631.1			1.000132
24500.0	413.8	-12.1	46.3	551.7	629.7			1.000129
25000.0	405.7	-13.2	48.4	543.1	628.5			1.000127

STATION ALTITUDE 3989.00 FEET MSL
 6 AUG. 61 1230 HRS MD
 ASCENDING 10. 222

MANDATORY LEVELS
 2180020522
 WHITE SALTS

GEODETIC COORDINATES
 52.40043 LAT DEG
 106.57033 LONG DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5055.	28.8	12.2	36.	19.3	5.3
700.0	6013.	24.6	9.4	36.	309.3	3.3
750.0	8657.	20.5	6.2	39.	277.3	4.9
700.0	10598.	16.0	2.6	41.	314.9	6.0
650.0	12650.	11.4	1.1	49.	344.9	4.2
600.0	14825.	5.9	-2.	65.	57.2	3.6
550.0	17145.	.9	-3.2	74.	22.8	5.3
500.0	19634.	-3.5	-14.6	41.	28.7	5.7
450.0	22340.	-8.9	-21.0	37.	37.4	6.2
400.0	25311.	-13.9	-21.8	51.		

DATE
ILMED
- 8