AD-A107 351 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19315 AT MLRS, MISSILE NUMBERS V13-002, V15-003, ROUND NUMBERS --ETC(U)
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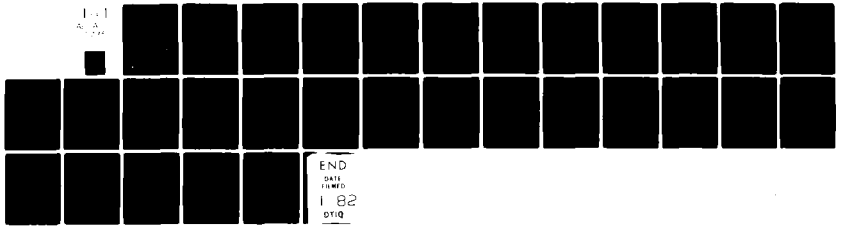

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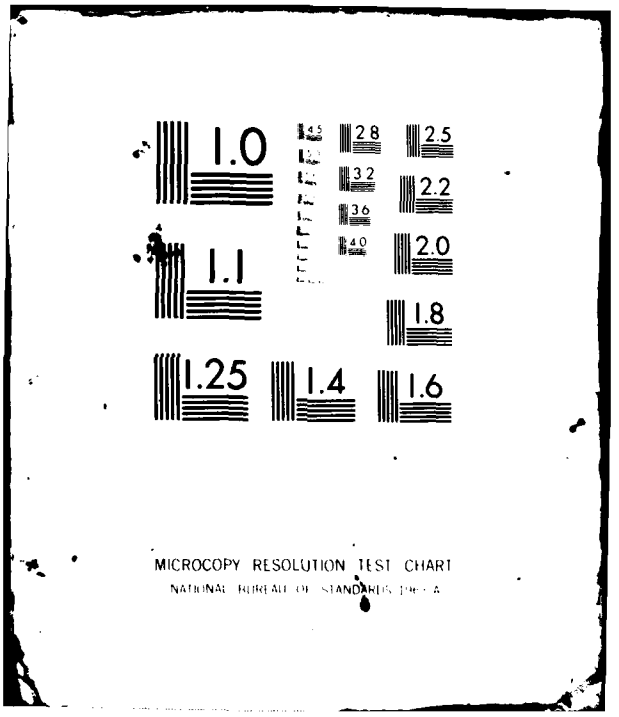
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1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

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Aug 1981
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AD A107351

METEOROLOGICAL DATA REPORT
19315 AT MLRS
Missile Numbers V13-002, V15-003
Round Numbers V-185/AT-9, V-186/AT-10
18 August 1981

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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(9) Meteorological data rept., (10) Donald C. /Keller

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for launching of the 19315 AT MLRS, Missile Numbers V13-002, V15-003 presented in tabular form.

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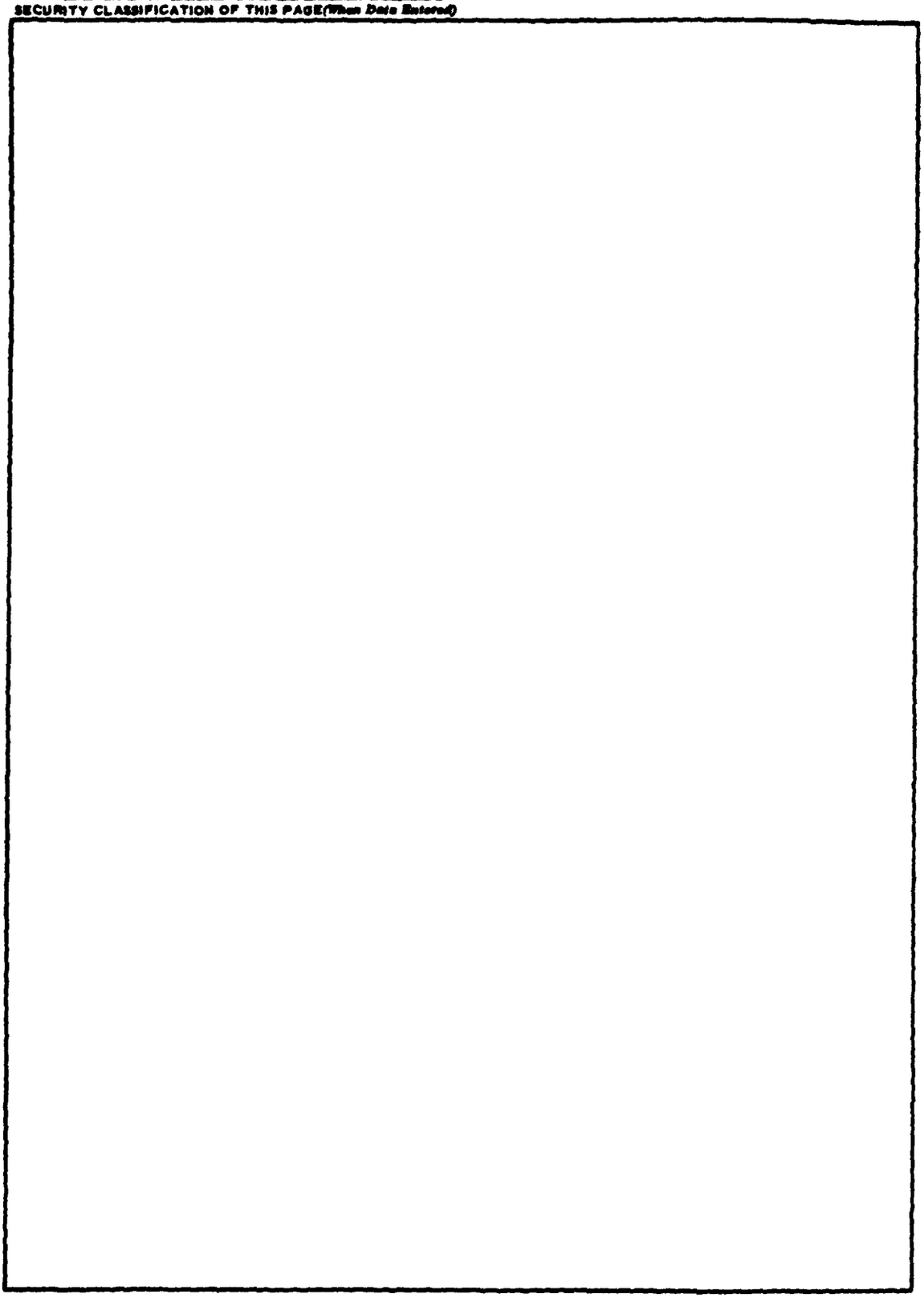
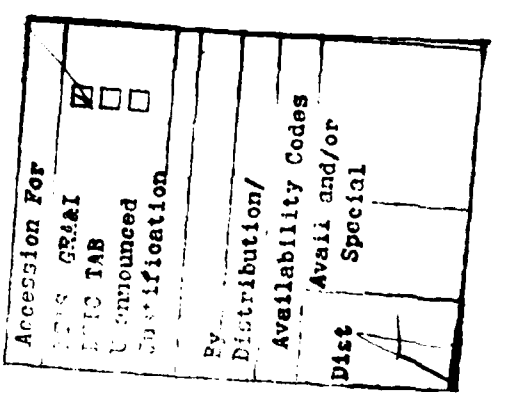


CONTENTS



TABLES CON'T:

INTRODUCTION

19315AT MLRS, Missile Numbers V-13-002 and V-15-003, Round Numbers V-185/AT-9 and V-186/AT-10, were launched from LC-33, White Sands Missile Range, (WSMR) New Mexico, at 1130 and 1230 MDT, 18 Aug 1981. The scheduled launch times were 1130 and 1230 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 a 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:

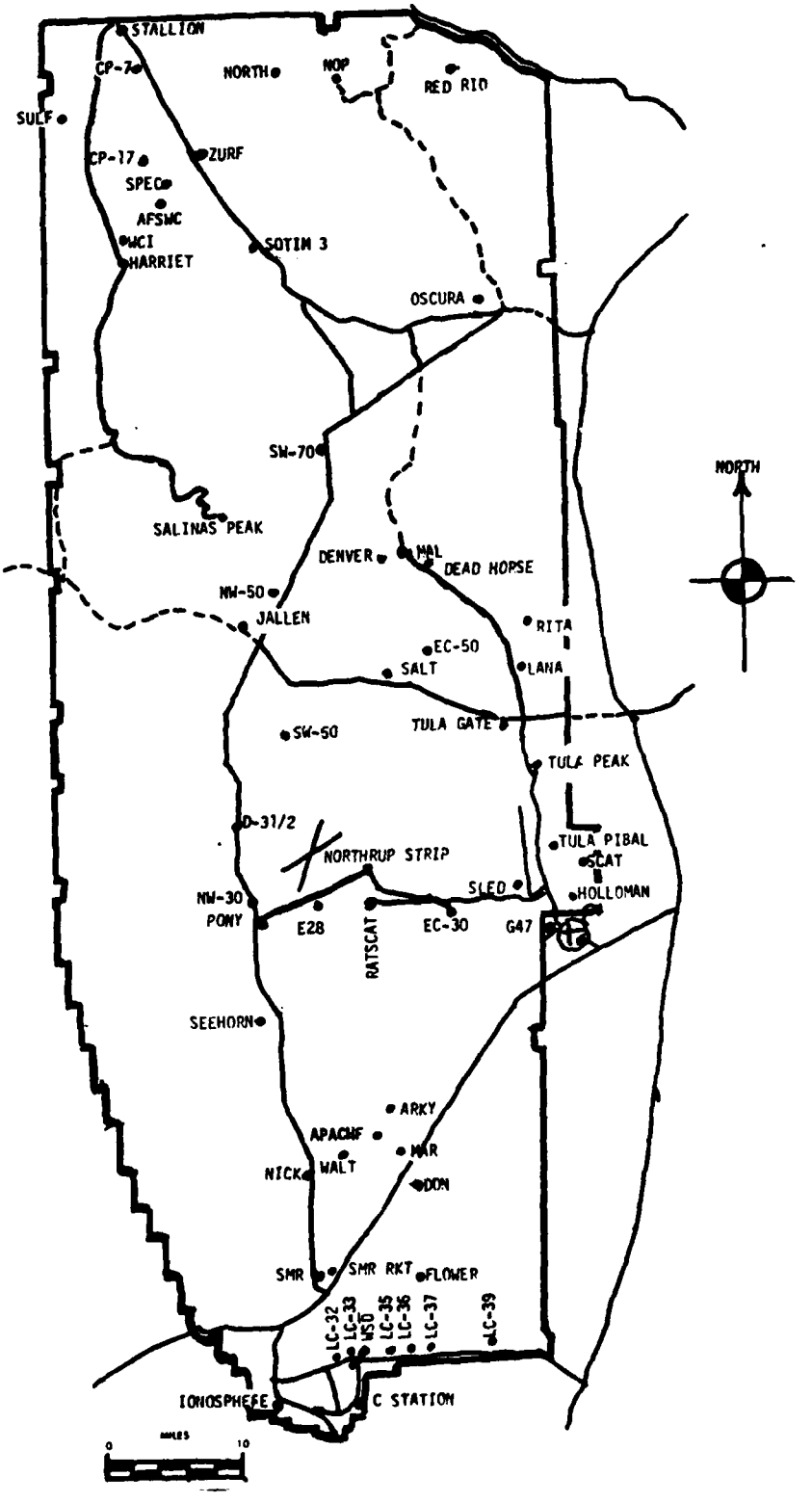
(1) Low level wind data were obtained from Pilot-Balloon observations at:

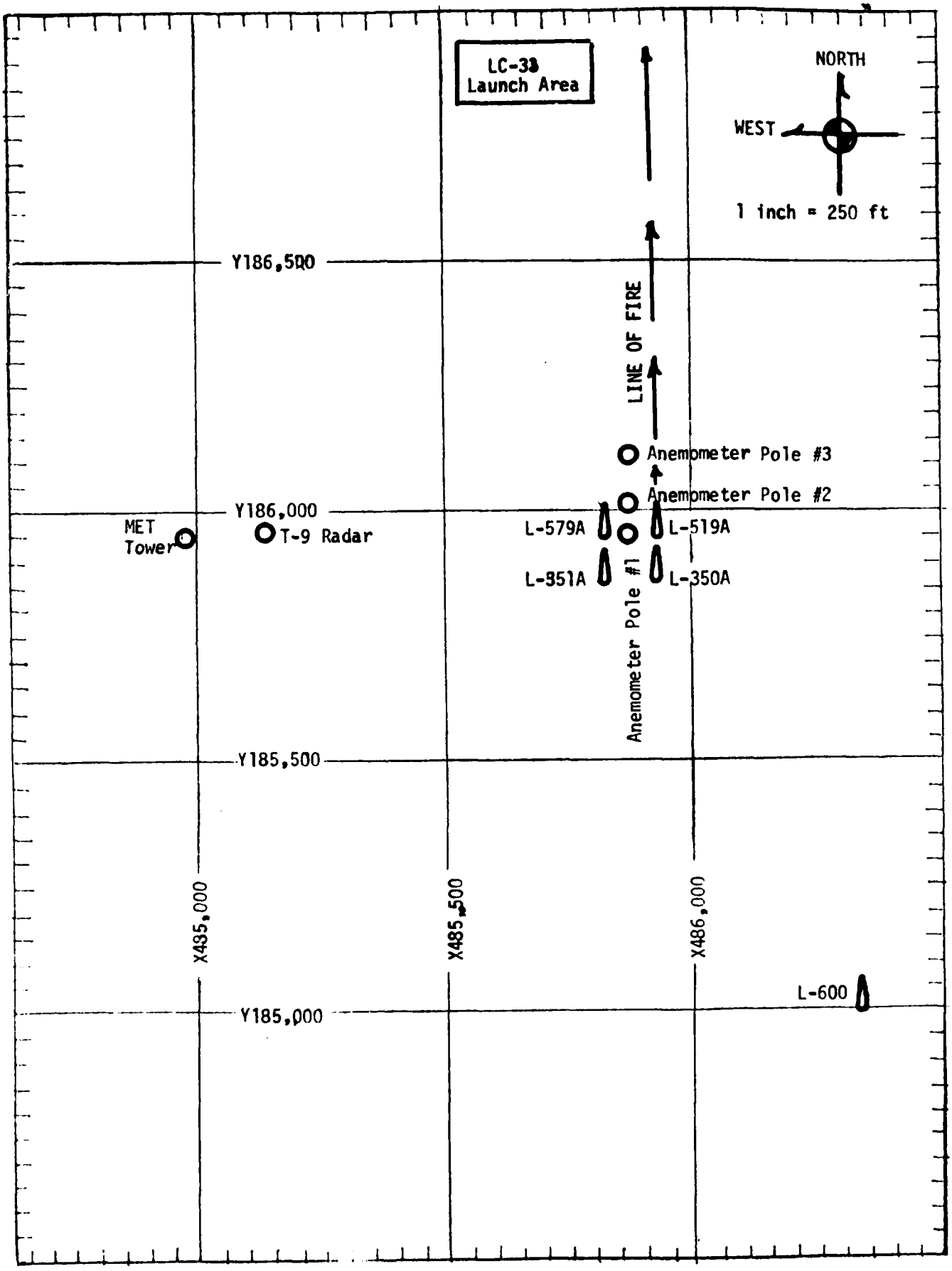
SITE AND ALTITUDE	
LC-33	2 KM
SMR	2 KM

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

SITE AND TIME	
WSD	0830 MDT
WSD	0930 MDT
WSD	1030 MDT
WSD	1130 MDT
WSD	1230 MDT

WSMR METEOROLOGICAL SITES




LC-38
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
LINE OF FIRE
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1

STATION LC-33

DATE 18 (DAY) Aug (MONTH) 1981 (YEAR)

X= 485,135.76 Y= 185,919.24 H= 3,988.60

TIME MDT	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1130	883.2		25.7		17.4	60	1028	C A L	M		50
1230	882.9		26.9		17.3	55	1024	150	02		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	2	CU	6,000	1	AC	10,000				
	3	CU	6,000	1	AC	10,000				

PSYCHROMETRIC COMPUTATION

TIME: MDT	130	1230	
DRY BULB TEMP.	25.7	26.9	
WET BULB TEMP.	19.9	20.2	
WET BULB DEPR.	5.8	6.7	
DEW POINT	17.4	17.3	
RELATIVE HUMID.	60	55	

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	C A L M		T-30	C A L M		T -30	128	MISG
T-20	C A L M		T-20	C A L M		T -20	118	MISG
T-10	C A L M		T-10	C A L M		T -10	096	MISG
T0.0	C A L M		T0.0	105	MISG	T 0.0	096	MISG
T+10	C A L M		T+10	110	MISG	T +10	125	MISG

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	047	MISG	T-30	C A L M	
T-20	083	MISG	T-20	C A L M	
T-10	083	MISG	T-10	064	MISG
T0.0	056	MISG	T0.0	058	MISG
T+10	120	MISG	T+10	088	MISG

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	073	MISG	T-30	080	MISG
T-20	084	MISG	T-20	080	MISG
T-10	081	MISG	T-10	083	MISG
T0.0	081	MISG	T0.0	088	MISG
T+10	084	MISG	T+10	094	MISG

TABLE 4 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 Y186,115.06 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}	097	MISG	T_{-30}	245	MISG	T_{-30}	129	MISG
T_{-20}	104	MISG	T_{-20}	236	MISG	T_{-20}	132	MISG
T_{-10}	110	MISG	T_{-10}	236	MISG	T_{-10}	145	MISG
$T_{0.0}$	104	MISG	$T_{0.0}$	232	MISG	$T_{0.0}$	129	MISG
T_{+10}	113	MISG	T_{+10}	238	MISG	T_{+10}	129	MISG

TABLE 5 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	252	MISG	T-30	234	MISG
T-20	273	MISG	T-20	227	MISG
T-10	298	MISG	T-10	196	MISG
T0.0	299	MISG	T0.0	186	MISG
T+10	256	MISG	T+10	120	MISG

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	C A	L M	T-30	132	MISG
T-20	C A	L M	T-20	137	MISG
T-10	220	MISG	T-10	138	MISG
T0.0	178	MISG	T0.0	166	MISG
T+10	173	MISG	T+10	172	MISG

TABLE 6

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 18 Aug 1981

SITE: LC-33
TIME: 1130 MDT
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	100	02
150	M I S S	G
210	M I S S	G
270	105	04
330	124	08
390	125	09
500	110	09
650	113	10
800	118	08
950	137	06
1150	153	06
1350	143	03
1550	287	03
1750	326	04
2000	002	04

SITE: SMR
TIME: 1130 MDT
WSTM COORDINATES:
X= 472,257.00
Y= 214,426.00
H= 3,999.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	C A L M	
150	113	05
210	111	04
270	121	03
330	149	04
390	170	04
500	225	03
650	192	06
800	161	06
950	171	04
1150	152	02
1350	277	05
1550	286	04
1750	354	06
2000	M I S S	G

All data obtained from Single Theodolite Tracked Pilot-Balloon Observations.

TABLE 7

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 18 Aug 1981

SITE: LC-33
TIME: 1230 MDT
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	150	02
150	084	03
210	081	04
270	096	05
330	107	05
390	115	06
500	121	06
650	137	05
800	170	06
950	182	05
1150	201	04
1350	227	03
1550	354	07
1750	351	09
2000	350	08

Data obtained from Double Theodolite Tracked Pilot-Balloon Observations.

SITE: SMR
TIME: 1230 MDT
WSTM COORDINATES:
X= 472,257.00
Y= 214,426.00
H= 3,999.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	C A L M	
150	177	07
210	175	07
270	169	07
330	161	06
390	152	05
500	141	05
650	166	05
800	211	04
950	267	03
1150	318	04
1350	324	05
1550	339	07
1750	359	09
2000	359	09

Data obtained from Single Theodolite Tracked Pilot-Balloon Observations.

TABLE 8

AIMING AND T-TIME COMPUTER MET MESSAGES
18 Aug 1981

WSD 0830 MDT
METCM1324064
181450122883
00089004 29650883
01005006 29550872
02634003 29360848
03146004 29140809
04018002 28870763
05585008 28590719
06604007 28290677

WSD 0930 MDT
METCM1324064
181550122883
00107002 29860883
01004007 29650873
02272001 29360848
03204006 29140809
04000000 28870763
05588009 28610719
06588009 28260677

WSD 1030 MDT
METCM1324064
181650122883
00480002 30000883
01190003 29820873
02282004 29500848
03241005 29240810
04000000 28940764
05604008 28640720
06603010 29310678

WSD 1130 MDT
METCM1324064
181750122883
00169007 30020883
01317006 29900873
02162008 29610848
03278004 29260810
04494002 28880764
05625008 28600720
06604012 28280678
07009009 27910638

WSD 1230 MDT
METCM1324064
181850122883
00302003 30200883
01173002 29950873
02204005 29650848
03275005 29290810
04549002 28900764
05617008 28580720
06009010 28230678
07014013 27900638
08024012 27550600

STATION ALTITUDE 3989.00 FEET MSL
15 AUG. 91 0830 HRS M DT
ASCENSION NO. 555

SIGNIFICANT LEVEL DATA
2300020555
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
882.6	3989.0	20.5	18.4	88.0
862.0	4659.5	18.5	15.9	85.0
850.0	5055.4	18.1	13.2	73.0
700.0	10450.7	9.9	4.9	71.0
670.4	11628.5	7.5	5.5	87.0
635.6	13067.5	4.6	.4	74.0

STATION ALTITUDE 3959.00 FEET MSL
16 AUG. 81 0830 HRS MDT
ASCENSION NO. 555

UPPER AIR DATA
2300020555
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10

GEOPETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3959.0	882.6	20.5	18.4	86.0	1037.5	670.7	50.0	4.1	1.000325
4000.0	882.3	20.5	18.4	86.0	1037.3	670.6	50.1	4.1	1.000324
4500.0	866.9	19.0	16.5	85.7	1025.2	668.6	56.1	3.9	1.000312
5000.0	851.7	18.2	13.6	74.7	1011.4	667.2	62.4	3.8	1.000295
5500.0	836.5	17.4	12.5	72.8	996.3	666.3	69.1	3.7	1.000287
6000.0	821.6	16.7	11.7	72.6	981.3	665.3	74.8	3.7	1.000281
6500.0	806.9	15.9	11.0	72.5	966.5	664.4	75.7	3.5	1.000275
7000.0	792.6	15.1	10.2	72.3	952.0	663.4	76.2	3.2	1.000269
7500.0	778.4	14.4	9.4	72.1	937.7	662.5	56.4	2.1	1.000263
8000.0	764.5	13.6	8.7	71.9	923.6	661.6	11.5	1.6	1.000258
8500.0	750.9	12.9	7.9	71.7	909.7	660.6	341.7	3.5	1.000252
9000.0	737.5	12.1	7.1	71.5	896.0	659.7	334.1	5.6	1.000247
9500.0	724.4	11.3	6.4	71.4	882.5	658.8	331.9	7.2	1.000242
10000.0	711.4	10.6	5.6	71.2	869.3	657.8	331.0	8.4	1.000237
10500.0	698.7	9.8	4.9	71.7	856.2	656.9	332.7	7.8	1.000232
11000.0	686.0	8.8	5.2	78.5	843.5	655.7	335.1	7.2	1.000230
11500.0	673.6	7.8	5.4	85.3	831.1	654.6	341.2	6.7	1.000226
12000.0	661.2	6.8	4.2	83.6	819.1	653.3			1.000222
12500.0	649.1	5.7	2.4	79.1	807.4	652.0			1.000215
13000.0	637.2	4.7	.6	74.6	795.8	650.7			1.000209

STATION ALTITUDE 3969.00 FEET MSL
18 AUG. 91 0800 HRS MDT
ASCENSION NO. 555

MANDATORY LEVELS
2300020555
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5052.	18.1	13.2	73.	69.1	3.8
800.0	6752.	15.5	10.6	72.	76.2	3.4
750.0	8544.	12.8	7.9	72.	340.5	3.7
700.0	10440.	9.9	4.9	71.	332.5	7.9
650.0	12451.	5.8	2.3	79.		

STATION ALTITUDE 3959.00 FEET MSL
18 AUG. 91 0930 HRS M DT
ASCENSION NO. 556

SIGNIFICANT LEVEL DATA
2300020556
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
883.0	2989.0	23.0	17.2	70.0
866.4	4570.5	19.4	13.8	70.0
850.0	5070.6	18.1	12.1	68.0
700.0	10465.5	10.0	4.8	70.0
683.0	11136.6	8.5	2.9	66.0
665.4	11844.9	6.5	3.7	82.0
631.2	13264.7	4.0	-.6	72.0

STATION ALTITUDE 3959.00 FEET MSL
1c AUG. 81 0930 HRS MDT
ASCENSION NO. 556

UPPER AIR DATA
23000205S6
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3959.0	883.0	23.0	17.2	70.0	1029.9	673.3	60.0	1.9	1.000315
4000.0	882.7	22.9	17.2	70.0	1029.9	673.2	60.5	1.9	1.000314
4500.0	867.3	19.6	14.0	70.0	1024.9	668.9	83.2	2.1	1.000299
5000.0	852.1	18.3	12.3	68.3	1012.2	667.2	99.9	2.6	1.000290
5500.0	837.0	17.5	11.5	68.2	997.1	666.2	111.0	3.2	1.000283
6000.0	822.0	16.7	10.9	68.3	982.1	665.3	116.6	3.9	1.000278
6500.0	807.4	16.0	10.2	68.5	967.2	664.3	116.5	4.7	1.000272
7000.0	793.0	15.2	9.5	68.7	952.6	663.4	117.0	4.2	1.000266
7500.0	778.8	14.5	8.8	68.9	938.2	662.5	119.3	2.4	1.000261
8000.0	764.9	13.7	8.1	69.1	924.0	661.6	29.2	.8	1.000256
8500.0	751.3	13.0	7.5	69.3	910.0	660.7	335.4	3.2	1.000251
9000.0	737.9	12.2	6.8	69.5	896.3	659.8	332.1	5.5	1.000246
9500.0	724.7	11.4	6.1	69.6	882.8	658.8	331.1	7.8	1.000241
10000.0	711.8	10.7	5.4	69.8	869.4	657.9	328.7	8.9	1.000236
10500.0	699.1	9.9	4.7	69.9	856.4	657.0	326.9	10.0	1.000231
11000.0	686.4	8.8	3.3	68.4	844.5	655.6	328.8	9.7	1.000225
11500.0	673.9	7.5	3.4	75.2	832.9	654.0			1.000223
12000.0	661.6	6.2	3.2	80.9	821.7	652.6			1.000220
12500.0	649.4	5.3	1.7	77.4	809.0	651.5			1.000214
13000.0	637.4	4.5	.2	73.9	796.9	650.3			1.000208

STATION ALTITUDE 3989.00 FEET MSL
18 AUG. 81 0900 HRS M DT
ASCENSION NO. 556

MANDATORY LEVELS
2300020556
WHITE SANDS

GEODETIC COORDINATES
32.46043 LAT DEG
106.37033 LON DEG

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5067.	18.1	12.1	69.	101.7	2.7
800.0	6767.	15.6	9.8	69.	116.5	5.0
750.0	8559.	12.9	7.4	69.	334.2	3.5
700.0	10455.	10.0	4.8	70.	327.0	9.9
650.0	12463.	5.4	1.8	78.		

STATION ALTITUDE 3969.00 FEET MSL
16 AUG. 81 1030 HRS MDT
ASCENSION NO. 557

SIGNIFICANT LEVEL DATA
2300020557
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
983.2	3999.0	24.0	16.0	61.0
967.0	4519.8	21.4	14.3	64.0
950.0	5082.6	19.2	12.9	67.0
700.0	10489.9	10.2	3.9	65.0
629.2	13377.7	4.0	-.8	71.0

STATION ALTITUDE 3989.00 FEET MSL
15 AUG. 81 1030 HRS MDT
ASCENSION NO. 557

UPPER AIR DATA
2300020557
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37053 LON DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	883.2	24.0	16.0	61.0	1027.3	674.2	270.0	1.9	1.000307
4000.0	882.4	23.9	16.0	61.1	1027.2	674.1	269.2	1.9	1.000307
4500.0	867.6	21.5	14.4	63.9	1018.4	671.1	195.7	1.3	1.000299
5000.0	852.5	19.5	13.1	66.6	1007.9	668.7	154.6	2.8	1.000292
5500.0	837.4	18.5	12.2	66.8	993.7	667.5	143.8	4.6	1.000285
6000.0	822.5	17.7	11.4	66.7	979.1	666.4	140.0	5.3	1.000279
6500.0	807.8	16.8	10.6	66.5	964.6	665.4	137.0	4.3	1.000273
7000.0	793.4	16.0	9.7	66.3	950.4	664.4	138.5	2.9	1.000267
7500.0	779.3	15.2	8.9	66.1	936.4	663.4	151.5	1.3	1.000261
8000.0	765.5	14.3	8.1	65.9	922.6	662.3	348.5	.6	1.000255
8500.0	751.8	13.5	7.2	65.7	909.0	661.3	342.0	2.6	1.000250
9000.0	738.5	12.7	6.4	65.6	895.6	660.3	339.6	5.1	1.000244
9500.0	725.3	11.8	5.6	65.4	882.4	659.2	338.4	7.3	1.000239
10000.0	712.4	11.0	4.7	65.2	869.4	658.2	336.3	8.6	1.000234
10500.0	699.7	10.2	3.9	65.0	856.6	657.2	336.5	9.5	1.000229
11000.0	686.9	9.1	3.1	66.1	844.3	655.9	339.8	9.7	1.000224
11500.0	674.4	8.0	2.3	67.1	832.1	654.6	344.2	9.4	1.000220
12000.0	662.0	7.0	1.5	68.1	820.2	653.3	350.9	8.4	1.000216
12500.0	649.9	5.9	.7	69.2	808.4	652.0			1.000211
13000.0	638.0	4.8	-.1	70.2	796.8	650.7			1.000207

STATION ALTITUDE 3959.00 FEET MSL
18 AUG. 81 1030 HRS MDT
ASCENSION NO. 557

MANDATORY LEVELS
2309020557
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 17

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5079.	19.2	12.9	67.	152.0	3.1
800.0	6785.	16.4	10.1	66.	136.5	3.6
750.0	8581.	13.4	7.1	66.	141.4	3.0
700.0	10479.	10.2	3.9	65.	336.4	9.5
650.0	12490.	5.9	.7	69.		

STATION ALTITUDE 3989.00 FEET MSL
16 AUG. 81 1130 HRS MDT
ASCENSION NO. 55d

SIGNIFICANT LEVEL DATA
23000205S
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 18

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
933.1	3989.0	24.7	15.1	55.0
850.0	5083.5	20.5	13.5	64.0
777.6	7587.9	14.3	9.7	74.0
732.0	9263.4	12.5	6.8	66.0
700.0	10492.3	9.9	4.2	68.0
643.4	12779.9	5.4	-.0	66.0
600.4	14628.3	1.5	-1.9	76.0

STATION ALTITUDE [illegible] FEET MSL
TC AUG. 81 1130 HRS MDT
ASCENSION NO. 553

UPPER AIR DATA
23000220558
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 19

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
[illegible]989.0	895.1	24.7	15.1	55.0	1025.3	674.8	95.0	7.0	1.000302
4000.0	883.8	24.7	15.0	55.1	1025.0	674.6	95.1	7.0	1.000302
4500.0	867.5	22.7	14.4	59.2	1014.0	672.5	99.7	6.0	1.000297
5000.0	852.5	20.8	13.6	63.3	1003.2	670.3	105.0	5.2	1.000292
5500.0	837.5	19.5	12.9	65.7	990.4	668.7	113.0	4.3	1.000287
6000.0	822.8	18.2	12.2	67.7	977.2	667.2	124.4	3.6	1.000281
6500.0	808.3	17.0	11.4	69.7	964.3	665.7	138.0	3.2	1.000276
7000.0	794.0	15.3	10.7	71.7	951.6	664.2	153.8	2.9	1.000270
7500.0	780.0	14.5	9.9	73.6	939.0	662.7	166.5	1.7	1.000265
8000.0	766.1	13.9	9.0	72.5	926.6	661.9	287.5	.6	1.000259
8500.0	752.4	13.3	8.1	70.7	910.0	661.2	330.7	2.5	1.000253
9000.0	739.0	12.8	7.2	68.9	895.6	660.5	340.5	4.6	1.000247
9500.0	725.7	12.0	6.3	68.0	882.3	659.5	347.2	6.7	1.000241
10000.0	712.6	10.9	5.2	68.0	870.0	658.1	342.4	8.7	1.000235
10500.0	699.8	9.8	4.2	68.0	857.8	656.8	341.9	10.7	1.000230
11000.0	687.0	8.8	3.3	68.0	845.2	655.6	346.8	12.7	1.000225
11500.0	674.5	7.9	2.3	68.0	832.7	654.4	350.7	14.9	1.000220
12000.0	662.2	6.9	1.4	68.0	820.5	653.2	353.6	14.6	1.000216
12500.0	650.1	5.9	.5	68.0	808.4	652.0	357.4	11.6	1.000211
13000.0	638.1	4.9	-.2	69.2	796.5	650.8	3.9	8.7	1.000207
13500.0	626.3	3.9	-.7	71.9	784.8	649.6			1.000204
14000.0	614.7	2.8	-1.2	74.6	773.3	648.3			1.000200
14500.0	603.3	1.8	-1.8	77.3	761.9	647.0			1.000197

STATION ALTITUDE 3969.00 FEET MSL
18 AUG. 81 1130 HRS M DT
ASCENSION NO. 558

MANDATORY LEVELS
23000?055?
WHITE SANDS

GEODETIC COORDINATES
32.46043 LAT DEG
106.37033 LON DEG

TABLE 20

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	5060.	20.5	13.5	64.	106.2	5.0
800.0	6789.	16.3	11.0	71.	146.9	3.0
750.0	8584.	13.2	9.0	70.	333.5	2.8
700.0	10482.	9.8	4.2	68.	341.9	10.6
650.0	12491.	5.9	.5	68.	357.4	11.6

STATION ALTITUDE 3989.00 FEET MSL
18 AUG. 81 1230 HRS M DT
ASCENSION NO. 559

SIGNIFICANT LEVEL DATA
23UC020559
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 21

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
982.7	3989.0	26.7	15.1	49.0
972.8	4315.1	24.1	13.0	50.0
950.0	5072.9	21.1	11.4	54.0
777.8	7573.1	14.9	3.5	60.0
751.6	9270.3	12.1	5.0	62.0
722.2	9626.4	11.4	4.2	61.0
700.0	10481.9	9.1	5.5	78.0
641.6	12841.0	4.9	-.1	70.0
556.4	16615.4	-2.7	-5.0	84.0
540.0	17396.7	-2.5	-12.0	48.0
500.0	19394.3	-5.7	-13.7	53.0
491.6	19831.0	-6.0	-24.7	21.0
467.4	21124.9	-8.5	-25.4	24.0
459.6	21553.9	-9.1	-20.8	38.0
452.0	21977.6	-10.3	-16.7	59.0
429.6	23259.1	-13.3	-20.6	54.0
421.8	23717.4	-14.3	-23.3	16.0
400.0	25036.9	-16.1	-36.0	16.0
337.4	29183.7	-24.8	-41.6	19.0
300.0	31950.6	-33.1	-46.7	24.0

STATION ALTITUDE 3989.00 FEET MSL
16 AUG. 81 1230 HRS MDT
ASCENSION NO. 559

UPPER AIR DATA
2300020559
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 22

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	892.7	26.7	15.1	49.0	1018.0	677.1	170.0	2.9	1.000299
4000.0	892.4	26.6	15.0	49.0	1017.9	677.0	169.8	2.9	1.000299
4500.0	867.2	23.4	12.7	51.0	1012.3	673.0	160.9	3.1	1.000289
5000.0	852.2	21.4	11.6	53.6	1001.9	670.6	153.3	3.4	1.000283
5500.0	837.2	20.0	11.0	56.0	988.9	669.0	147.0	3.9	1.000278
6000.0	822.5	18.8	10.5	58.4	975.8	667.6	141.8	4.1	1.000274
6500.0	808.0	17.5	9.9	60.8	962.9	666.1	150.6	3.6	1.000269
7000.0	793.8	16.2	9.3	63.2	950.2	664.6	177.4	2.9	1.000265
7500.0	779.8	15.0	8.6	65.6	937.7	663.1	206.3	1.7	1.000260
8000.0	765.9	14.1	7.6	65.0	924.0	662.0	290.0	1.3	1.000254
8500.0	752.2	13.3	6.6	63.8	910.2	661.0	336.1	3.0	1.000248
9000.0	738.8	12.5	5.6	62.6	896.7	660.0	349.3	5.3	1.000242
9500.0	725.5	11.6	4.5	61.4	883.6	658.9	352.6	7.1	1.000236
10000.0	712.4	10.4	4.8	68.4	871.3	657.5	353.8	8.6	1.000235
10500.0	699.5	9.1	5.4	77.9	859.3	656.1	357.3	9.6	1.000234
11000.0	686.7	8.2	4.3	76.2	846.5	654.9	5.8	9.6	1.000228
11500.0	674.2	7.3	3.1	74.5	833.9	653.8	13.8	9.9	1.000223
12000.0	661.9	6.4	1.9	72.9	821.5	652.7	11.0	10.3	1.000217
12500.0	649.7	5.5	.7	71.2	809.3	651.5	8.5	10.8	1.000212
13000.0	637.8	4.6	-.3	70.6	797.1	650.4	10.1	11.5	1.000207
13500.0	625.8	3.6	-.9	72.4	785.1	649.2	12.6	12.3	1.000203
14000.0	614.1	2.6	-1.5	74.3	773.3	648.0	13.4	12.4	1.000200
14500.0	602.7	1.6	-2.2	76.2	761.7	646.8	13.5	12.3	1.000196
15000.0	591.4	.6	-2.8	78.0	750.3	645.5	8.1	11.8	1.000192
15500.0	580.3	-.5	-3.5	79.9	739.1	644.3	358.8	11.3	1.000189
16000.0	569.5	-1.5	-4.2	81.7	728.0	643.1	350.3	10.8	1.000185
16500.0	558.8	-2.5	-4.9	83.6	717.1	641.9	346.0	9.3	1.000182
17000.0	548.3	-2.6	-6.0	66.3	706.3	641.5	339.9	7.8	1.000174
17500.0	537.9	-2.7	-12.1	48.3	695.5	641.3	331.0	6.0	1.000167
18000.0	527.6	-3.5	-12.5	49.5	684.4	640.3	315.6	4.6	1.000164
18500.0	517.5	-4.3	-12.9	50.8	673.4	639.3	300.3	3.7	1.000161
19000.0	507.7	-5.1	-13.4	52.0	662.6	638.4	280.5	3.2	1.000158
19500.0	498.0	-5.8	-15.7	45.3	652.1	637.5	274.3	3.7	1.000154
20000.0	488.4	-6.3	-24.8	21.4	641.8	636.6	275.1	4.4	1.000146
20500.0	478.9	-7.3	-25.0	22.6	631.6	635.4	274.0	5.2	1.000144
21000.0	469.7	-8.3	-25.3	23.7	621.7	634.3	271.8	6.1	1.000142
21500.0	460.6	-9.0	-21.2	36.2	612.0	633.4	269.6	6.8	1.000141
22000.0	451.6	-10.4	-16.8	56.9	602.5	632.0	259.4	7.1	1.000142
22500.0	442.7	-11.5	-16.3	57.0	593.2	630.5	251.2	7.6	1.000139
23000.0	434.0	-12.7	-19.8	55.0	584.1	629.1	248.0	8.5	1.000136

STATION ALTITUDE 3969.00 FEET MSL
16 AUG. 81 1230 HRS MDT
ASCENSION NO. 559

UPPER AIR DATA
2300020559
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 22 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	425.5	-13.8	-25.9	35.1	571.2	627.6	246.2	9.5	1.000121
24000.0	417.0	-14.7	-33.9	17.6	561.9	626.4	245.1	10.8	1.000127
24500.0	408.7	-15.4	-34.9	16.8	552.2	625.6	245.2	12.8	1.000125
25000.0	400.6	-16.0	-35.9	16.1	542.7	624.7	245.3	14.8	1.000122
25500.0	392.5	-17.1	-36.6	16.3	533.8	623.5	244.9	16.3	1.000120
26000.0	384.5	-18.1	-37.3	16.7	525.1	622.2	244.4	17.7	1.000118
26500.0	376.7	-19.2	-37.9	17.1	516.6	620.9	244.8	18.9	1.000116
27000.0	369.0	-20.2	-38.6	17.4	508.2	619.6	248.5	19.7	1.000114
27500.0	361.5	-21.3	-39.3	17.8	499.9	618.4	251.9	20.5	1.000113
28000.0	354.2	-22.3	-40.0	18.1	491.8	617.1	256.0	21.9	1.000111
28500.0	347.0	-23.4	-40.7	18.5	483.9	615.8	260.0	23.7	1.000109
29000.0	340.0	-24.4	-41.4	18.9	476.0	614.5	263.5	25.6	1.000107
29500.0	333.9	-25.7	-42.2	19.6	468.7	612.8	264.6	27.0	1.000105
30000.0	325.9	-27.2	-43.0	20.5	461.4	611.0	265.6	28.4	1.000104
30500.0	319.1	-28.7	-43.9	21.4	454.7	609.1			1.000102
31000.0	312.4	-30.2	-44.8	22.3	447.9	607.2			1.000100
31500.0	305.8	-31.7	-45.8	23.2	441.2	605.3			1.000099

STATION ALTITUDE 3969.00 FEET MSL
16 AUG. 81 1230 HRS MDT
ASCENSION NO. 559

MANDATORY LEVELS
2300020559
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 23

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5069.	21.1	11.4	54.	152.4	3.5
800.0	6781.	16.8	9.5	62.	164.3	3.1
750.0	8576.	13.2	6.5	64.	339.4	3.4
700.0	10471.	9.1	5.5	78.	356.9	9.6
650.0	12477.	5.5	.7	71.	8.5	10.7
600.0	14613.	1.3	-2.3	77.	13.5	12.2
550.0	16895.	-2.6	-7.3	70.	341.2	8.0
500.0	19367.	-5.7	-13.7	53.	274.1	3.5
450.0	22056.	-10.6	-17.1	59.	258.1	7.2
400.0	24995.	-16.1	-36.0	16.	245.3	14.9
350.0	28250.	-22.9	-40.4	18.	258.4	23.0
300.0	31886.	-33.1	-46.7	24.		