AD-A127 271 19318B MLRS MISSILE NUMBER BN-197 BN-157 BN-167 BN-206 1/1
BN-195 BN-191 ROUN..(U) ARMY ELECTRONICS RESEARCH AND
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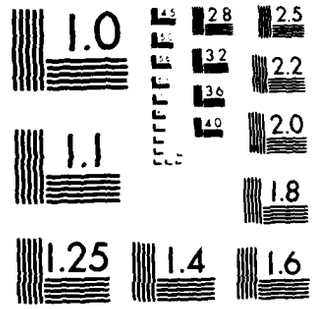

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DR 1291
4 Mar 83

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METEOROLOGICAL DATA REPORT

19318B MLRS
Missile Number BN-197, BN-157, BN-167,
BN-206, BN-195, BN-191
Round Number V-425/OT-31 THRU V-430/OT-36
4 March 1983

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

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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 193100 MLRS, Missile Number BU-197, BU-157, BU-167, BU-206, BU-195, BU-191, Round Number V-425/OT-31 Thru V-430/OT-36 are presented in tabular form.

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INTRODUCTION

19318B MLRS, Missile Numbers BN-197, BN-157, BN-167, BN-206, BN-195 and BN-191, Round Numbers V-425/OT-31 Thru V-430/OT-36, were launched from LC-33, White Sands Missile Range (WSMR). New Mexico, at 1300:00, 1300:05, 1300:09, 1300:14, 1300:18 and 1300:23 MST, 4 Mar 83. The scheduled launch times were 1300 MST 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 (^{o}C), relative humidity, dew point (^{o}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

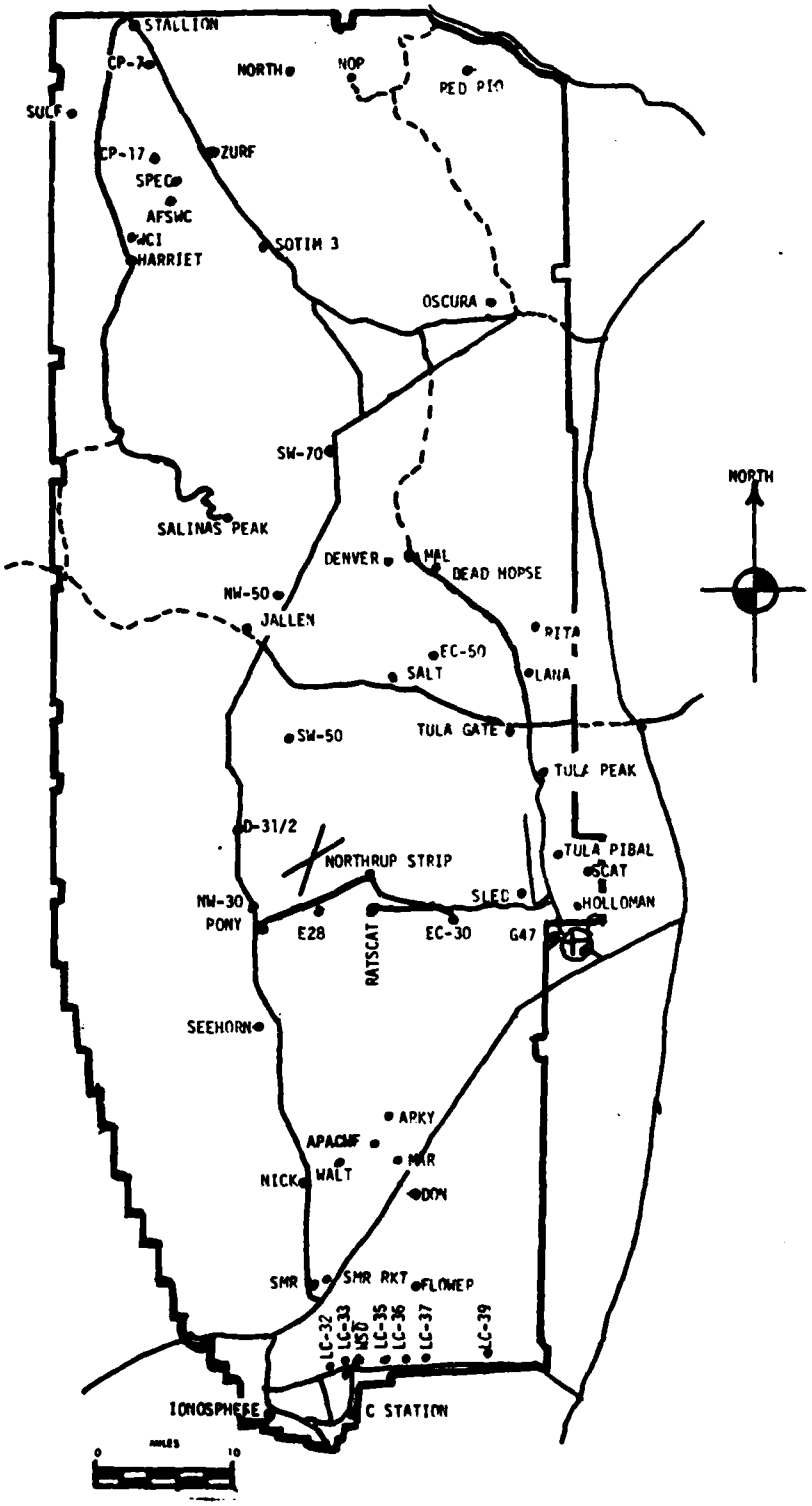
(1) Low level wind data were obtained from pilot-balloon observations at:

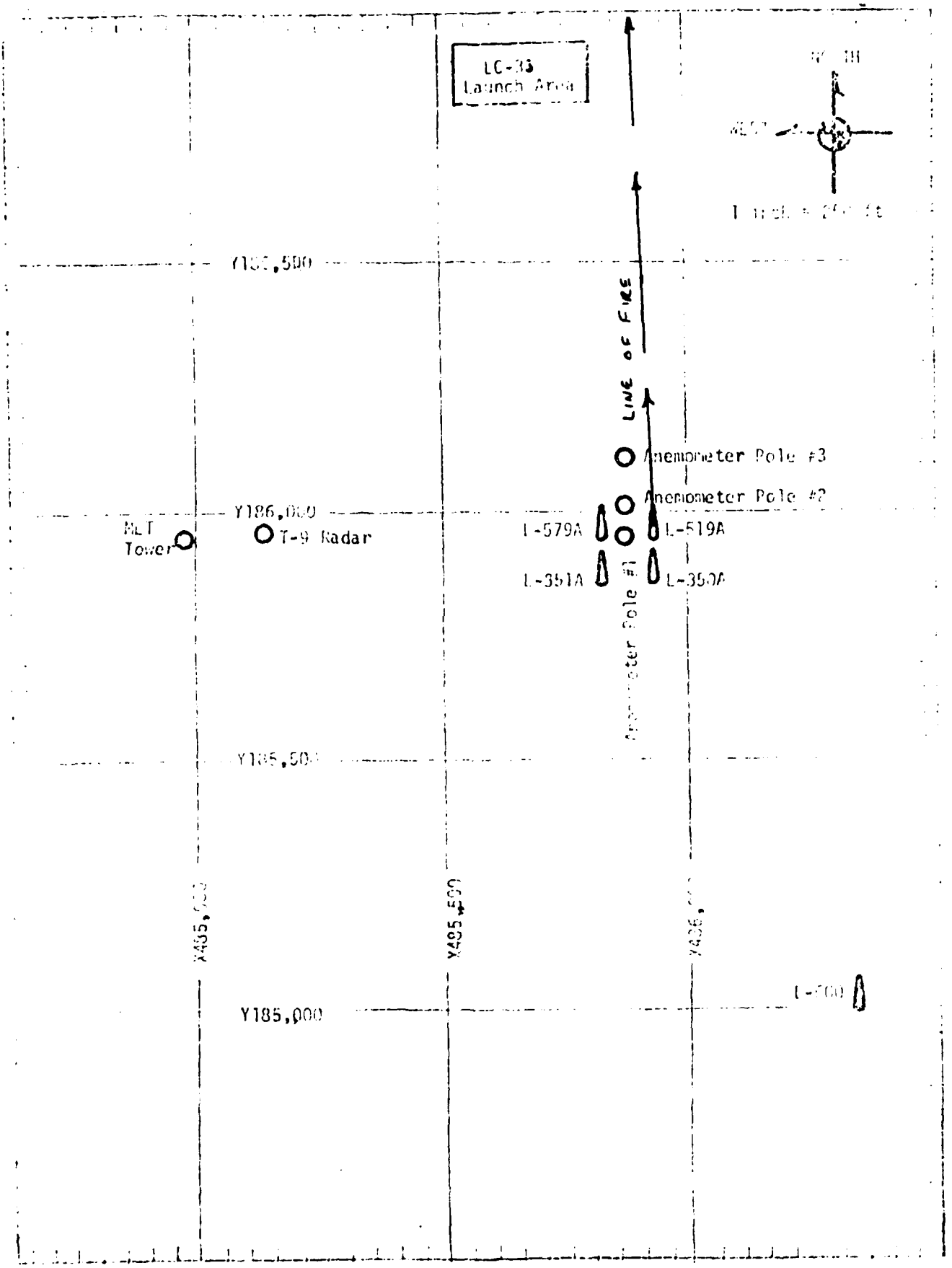
SITE AND ALTITUDE	
LC-33	1550 Meters

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

SITE AND TIME	
WSD	1100 MST
WSD	1231 MST

WSMR METEOROLOGICAL SITES




LC-33
Launch Area
LINE OF FIRE
Anemometer Pole #3
Anemometer Pole #2
Anemometer Pole #1
Y186,000
Y185,500
Y185,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
X485,500

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33 E & A

DATE 04 (DAY) MAR (MONTH) 83 (YEAR) X= 484,982.64 Y= 185,957.73 H= 3995.00

TIME M	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
1300	864.5		10.4		3.9	64	1061	285	16		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
	8	Sc	2,500	1	As	12,000	0	Cs	20,000	RWU SE-S

PSYCHROMETRIC COMPUTATION

TIME: MST	1300		
DRY BULB TEMP.	10.4		
WET BULB TEMP.	7.0		
WET BULB DEPR.	3.4		
DEW POINT	3.9		
RELATIVE HUMID.	64		

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,058.30 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 H4058.42 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	243	25	T-30	233	18	T -30	258	22
T -20	260	22	T-20	255	16	T -20	252	18
T -10	252	18	T-10	251	15	T -10	261	22
T 0.0	252	15	T0.0	250	19	T 0.0	247	20
T +10	265	19	T+10	248	13	T +10	248	27

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	278	12	T -30	245	23
T -20	282	14	T -20	267	23
T -10	283	16	T -10	250	22
T 0.0	284	16	T 0.0	265	22
T +10	287	14	T +10	272	16

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	260	26	T -30	269	29
T -20	276	25	T -20	266	27
T -10	282	20	T -10	267	26
T 0.0	280	21	T 0.0	272	29
T +10	275	23	T +10	271	28

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 4 Mar 83

SITE: LC-33
TIME: 1300 MST
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

SITE:
TIME:
WSTM COORDINATES:
X=
Y=
H=

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	285	16
150	284	16
210	274	17
270	264	18
330	255	19
390	254	21
500	258	24
650	261	27
800	262	28
950	263	29
1150	267	32
1350	271	33
1550	274	31
1750	MISG	
2000	MISG	

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		
150		
210		
270		
330		
390		
500		
650		
800		
950		
1150		
1350		
1550		
1750		
2000		

TABLE 5

AIMING COMPUTER MET MESSAGES

04 March 1983

WSD 1100 MST
METCM1324064
041800122865

00462012	28690865
01506015	28360855
02489019	28010829
03482023	27660789
04486026	27190742
05495032	26820696
06496039	26660653
07495034	26310623
08497035	25910574
09492039	25490537

WSD 1231 MST
METCM1324064
041950122865

00409012	28660865
01432030	28410854
02450020	28090829
03466021	27720489
04468023	27250742
05493022	26810697
06499034	26460653
07498030	26050612
08500039	25710573
09516031	25350537

STATION ALTITUDE 3989.00 FEET MSL
4 MAR. 83 1100 HRS MST
ASCENSION NO. 117

SIGNIFICANT LEVEL DATA
0630020117
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
866.9	3989.0	13.0	4.4	56.0
850.0	4464.5	7.9	-.8	54.0
782.6	6681.3	2.2	-1.1	79.0
770.1	7107.8	.7	-3.0	76.0
748.6	7993.3	-1.7	-2.8	92.0
706.8	9348.6	-5.2	-5.5	98.0
700.0	9598.1	-5.8	-9.7	74.0
684.6	10171.3	-5.8	-12.1	61.0
679.2	10375.4	-5.5	-14.5	49.0
660.8	11082.8	-6.1	-17.5	40.0
607.4	13232.2	-10.6	-22.4	37.0
548.0	15802.9	-17.1	-26.7	43.0
500.0	18038.3	-23.0	-27.6	66.0

STATION ALTITUDE 3989.00 FEET MSL
4 MAR. 83 1100 HRS. MST
ASCENSION NO. 117

UPPER AIR DATA
063002117
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7

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 DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	864.9	13.0	4.4	56.0	1049.1	660.[illegible]	260.0	12.0	1.000273
4000.0	864.6	12.9	4.3	56.0	1049.1	660.1	260.1	12.1	1.000272
4500.0	848.9	7.8	-.8	54.4	1049.8	653.8	262.9	14.2	1.000262
5000.0	833.2	6.5	-.7	60.0	1035.1	652.4	265.0	16.4	1.000259
5500.0	817.8	5.2	-.7	65.7	1020.6	650.9	266.6	18.5	1.000256
6000.0	802.7	4.0	-.8	71.3	1006.4	649.4	267.9	20.7	1.000253
6500.0	787.9	2.7	-1.0	77.0	992.4	647.9	268.9	22.9	1.000249
7000.0	773.2	1.1	-2.5	76.8	979.8	645.9	269.5	24.2	1.000244
7500.0	758.7	-.4	-2.9	83.1	966.5	644.2	270.1	25.3	1.000241
8000.0	744.4	-1.7	-2.8	92.0	953.0	642.6	273.2	26.1	1.000238
8500.0	730.2	-3.0	-3.8	94.2	939.4	641.1	276.6	27.0	1.000233
9000.0	716.3	-4.3	-4.8	96.5	926.1	639.5	278.4	28.7	1.000229
9500.0	702.7	-5.6	-7.9	83.4	913.1	637.9	279.2	30.7	1.000221
10000.0	689.2	-5.8	-11.3	64.9	896.7	637.4	278.7	32.8	1.000213
10500.0	675.9	-5.6	-15.0	47.4	879.2	637.6	278.5	34.5	1.000206
11000.0	662.9	-6.0	-17.1	41.1	863.8	637.0	278.5	36.1	1.000201
11500.0	650.1	-7.0	-18.4	39.4	850.1	635.9	278.8	36.5	1.000197
12000.0	637.5	-8.0	-19.6	38.7	836.9	634.6	279.2	37.0	1.000193
12500.0	625.1	-9.1	-20.7	38.0	824.0	633.3	279.1	37.4	1.000190
13000.0	613.0	-10.1	-21.9	37.3	811.3	632.0	278.9	37.8	1.000187
13500.0	600.9	-11.3	-22.8	37.6	798.9	630.6	278.8	38.2	1.000183
14000.0	589.0	-12.5	-23.6	38.8	786.9	629.1	278.6	38.0	1.000180
14500.0	577.3	-13.8	-24.5	40.0	775.1	627.6	278.4	37.6	1.000177
15000.0	565.9	-15.1	-25.3	41.1	763.5	626.0	278.2	37.2	1.000174
15500.0	554.7	-16.3	-26.1	42.3	752.1	624.5	278.1	36.8	1.000172
16000.0	543.6	-17.6	-26.6	45.0	740.7	622.9			1.000169
16500.0	532.6	-18.9	-26.7	50.2	729.5	621.3			1.000167
17000.0	521.7	-20.3	-26.9	55.3	718.4	619.7			1.000164
17500.0	511.2	-21.6	-27.1	60.5	707.5	618.1			1.000162
18000.0	500.8	-22.9	-27.5	65.6	696.8	616.4			1.000159

STATION ALTITUDE 3489.00 FEET MSL
8 MAR. 83 1100 HRS MST
ASCENSION NO. 117

MANDATORY LEVELS
0630020117
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 8

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	4461.	7.9	-.8	54.	262.7	14.1
800.0	6091.	3.7	-.8	72.	266.1	21.1
750.0	7797.	-1.2	-2.8	84.	271.7	25.8
700.0	9589.	-5.8	-9.7	74.	279.1	31.0
650.0	11494.	-7.0	-18.4	39.	278.8	36.5
600.0	13526.	-11.4	-22.9	38.	278.7	38.2
550.0	15693.	-16.0	-26.5	43.		
500.0	18014.	-23.0	-27.6	66.		

STATION ALTITUDE 3989.00 FEET MSL
4 MAR. 83 1231 HRS MST
ASCENSION NO. 118

SIGNIFICANT LEVEL DATA
063002011B
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
864.8	3989.0	12.8	2.6	50.0
850.0	4462.1	9.2	-1.2	48.0
794.3	6289.9	3.8	-2.4	64.0
736.9	8273.1	-1.9	-2.3	97.0
700.0	9608.5	-5.4	-5.7	98.0
672.7	10631.3	-7.7	-8.0	98.0
654.8	11321.0	-8.2	-8.5	98.0
637.1	12017.1	-11.1	-12.5	89.0
619.1	12739.2	-12.3	-18.4	60.0
559.2	15271.2	-17.5	-23.5	59.0
550.9	15638.9	-18.3	-23.2	65.0
526.4	16750.7	-20.7	-29.9	43.0
500.0	17994.3	-23.8	-39.9	21.0

UPPER AIR DATA
06300201A
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
4 MAR. 83 1231 HRS MST
ASCENSION NO. 118

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10

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	864.8	12.8	2.6	50.0	1050.2	659.4	210.0	12.0	1.000268
4000.0	864.5	12.7	2.6	50.0	1050.1	659.7	210.3	12.0	1.000268
4500.0	848.8	9.1	-1.2	48.3	1045.1	655.3	224.0	12.5	1.000259
5000.0	833.2	7.6	-1.4	52.7	1031.3	653.6	236.2	13.6	1.000256
5500.0	817.9	6.1	-1.7	57.1	1017.7	651.9	246.1	15.2	1.000253
6000.0	802.9	4.7	-2.1	61.5	1004.3	650.1	253.9	17.2	1.000249
6500.0	788.0	3.2	-2.2	67.5	990.9	648.4	260.1	19.4	1.000247
7000.0	773.3	1.8	-2.0	75.8	977.3	646.8	261.9	20.7	1.000244
7500.0	758.8	.3	-2.0	84.1	964.0	645.1	262.9	21.8	1.000241
8000.0	744.6	-1.1	-2.2	92.5	950.9	643.4	263.8	22.9	1.000239
8500.0	730.5	-2.5	-2.9	97.2	937.8	641.7	267.1	23.7	1.000235
9000.0	716.6	-3.8	-4.1	97.5	924.6	640.1	270.6	24.7	1.000229
9500.0	702.9	-5.1	-5.4	97.9	911.6	638.5	273.8	25.7	1.000225
10000.0	689.4	-6.3	-6.5	98.0	898.1	637.1	277.3	26.6	1.000220
10500.0	676.1	-7.4	-7.7	98.0	884.7	635.7	280.6	27.6	1.000216
11000.0	663.1	-8.0	-8.2	98.0	869.4	635.0	282.5	29.0	1.000211
11500.0	650.2	-8.9	-9.5	95.7	855.8	633.8	280.5	31.7	1.000207
12000.0	637.5	-11.0	-12.4	89.2	846.1	631.2	279.0	33.9	1.000201
12500.0	625.0	-11.9	-16.3	69.6	832.6	630.0	278.2	34.7	1.000195
13000.0	612.6	-12.8	-19.0	59.9	819.2	628.8	278.5	35.8	1.000190
13500.0	600.5	-13.9	-20.0	59.7	806.1	627.6	279.8	37.1	1.000187
14000.0	588.5	-14.9	-21.0	59.5	793.3	626.3	280.4	39.3	1.000183
14500.0	576.8	-15.9	-22.0	59.3	780.6	625.0	281.4	39.4	1.000180
15000.0	565.3	-16.9	-23.0	59.1	768.2	623.8	283.3	35.8	1.000177
15500.0	554.0	-18.0	-23.3	62.7	755.9	622.5	286.3	31.4	1.000174
16000.0	542.8	-19.1	-25.3	57.9	743.9	621.1	288.4	29.4	1.000170
16500.0	531.8	-20.2	-28.3	48.0	732.0	619.8	286.9	33.0	1.000167
17000.0	521.0	-21.3	-31.6	38.6	720.5	618.3			1.000163
17500.0	510.3	-22.6	-35.4	29.7	709.3	616.8			1.000160

STATION ALTITUDE 3989.00 FEET MSL
4 MAR. 83 1231 HRS MST
ASCENSION NO. 118

MANDATORY LEVELS
0630020110
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	4459.	9.2	-1.2	48.	223.0	12.4
800.0	6094.	4.4	-2.2	62.	255.2	17.6
750.0	7804.	-.6	-2.1	89.	263.4	22.4
700.0	9599.	-5.4	-5.7	98.	274.5	25.9
650.0	11497.	-9.0	-9.6	96.	280.5	31.7
600.0	13509.	-13.9	-20.0	60.	279.9	37.2
550.0	15660.	-18.4	-23.4	64.	287.5	29.9
500.0	17970.	-23.8	-39.9	21.		

END

DATE
FILMED

5 -83

DTIC