

AD-A103 685 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 13/13
193058 MLRS, MISSILE NUMBERS V01-023, V02-008, ROUND NUMBERS V---ETC(1)
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DR 1196
July 1981

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AD A103685

METEOROLOGICAL DATA REPORT

19305B MLRS
Missile Numbers V01-023, V02-008
Round Numbers V-170/PW-1, V-171/MD-35
20 July 1981

by

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

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

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 19305B MLRS, Missile Numbers V01-023, V02-008, Round Numbers V-170/PW-1, V-171/MD-35 presented in tabular form.		

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INTRODUCTION

19305B MLRS, Missile Numbers V01-023 and V02-008, Round Numbers V-170/PW-1 and V-171/MD-35, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0939 and 0939:05 MDT, 20 July 1981. The scheduled launch times were 0930 and 0930:04.5 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 ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind speed and direction, 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 RAPTS T-9 pibal observations at:

SITE AND ALTITUDE

LC-33	2000 Meters
NICK	1750 Meters

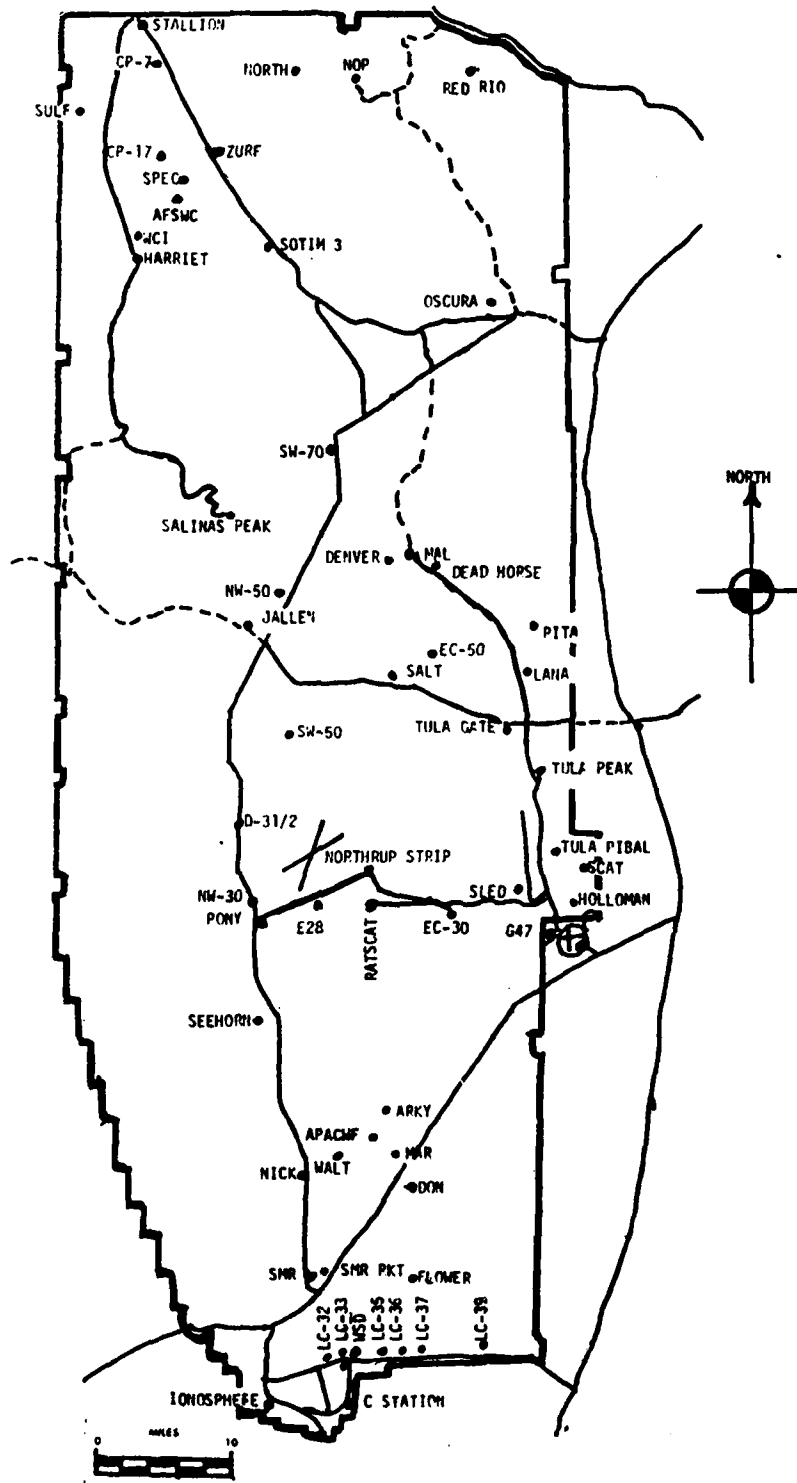
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

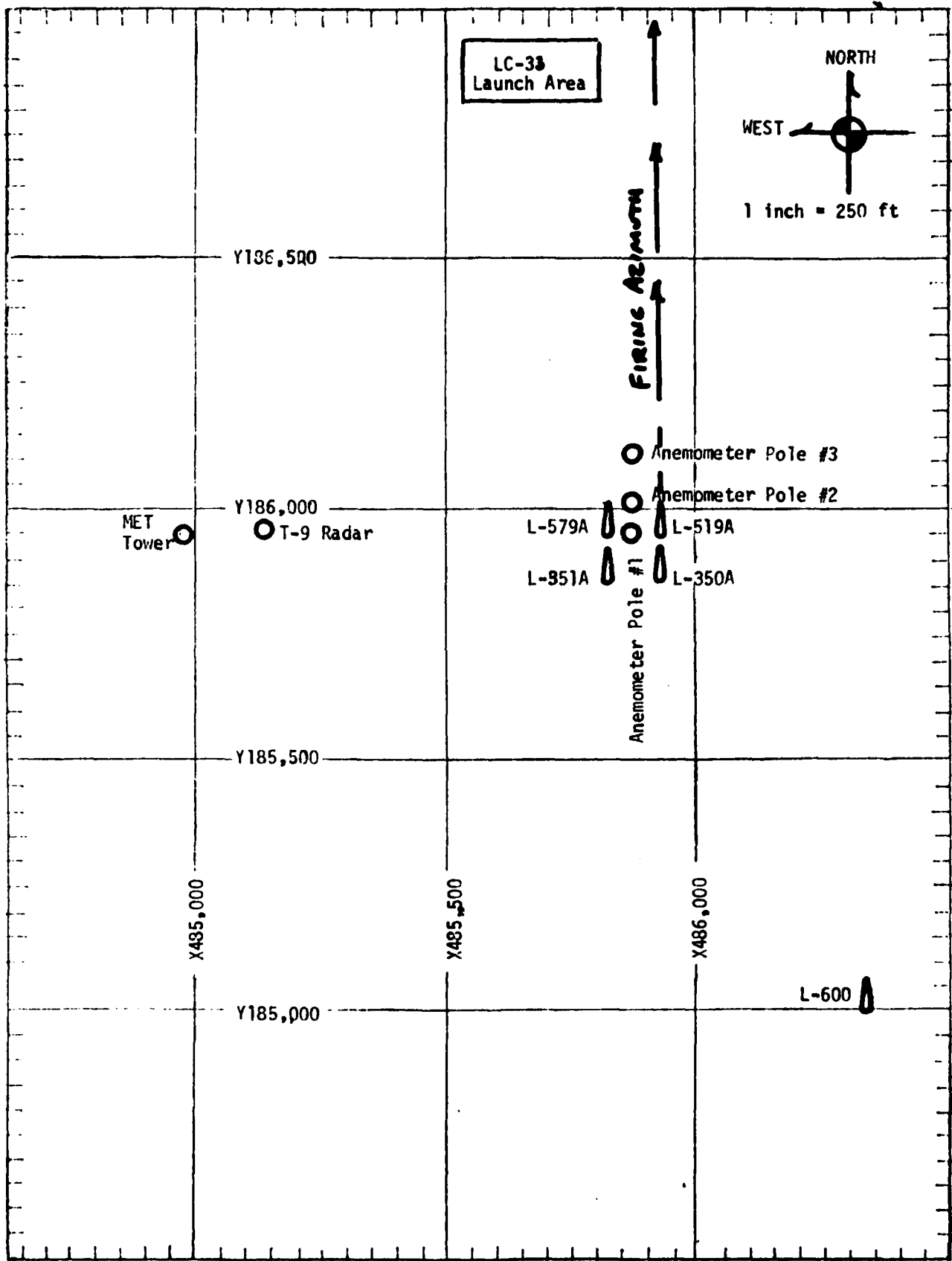
SITE AND TIME

WSD	0630 MDT
LC-37	0730 MDT
WSD	0830 MDT
LC-37	0930 MDT
WSD	1030 MDT

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By _____	
Distribution/	
Availability Codes	
Avail and/or	
Dist	Special
A	

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1											
STATION LC-33											
DATE 20		JULY		1981		X=484,982.64		Y=185,957.73		H=3983.0	
DAY		MONTH		YEAR							
TIME	PRESSURE	TEMPERATURE	DEW POINT	RELATIVE	DENSITY	DIRECTION	SPEED	CHARACTER	VISIBIL-		
M D J	mbs	OF	OF	HUMIDITY	gm/m ³	degs In	kts	kts	ITY		
0939	882.7	31.0	16.5	41	1000	078	03		50+		

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
NONE	6	CI	25000				

PSYCHROMETRIC COMPUTATION

TIME:	MDT	0939	
DRY BULB TEMP.		31.0	
WET BULB TEMP.		20.8	
WET BULB DEPR.		10.2	
DEW POINT		16.5	
RELATIVE HUMID.		41%	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

0939 MDT
20 July 1981

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	064	02	T-30	080	01	T-30	093	02
T-20	MISG	03	T-20	C A L M		T-20	107	03
T-10	087	03	T-10	096	02	T-10	119	04
T0.0	083	03	T0.0	100	03	T0.0	108	04
T+10	079	03	T+10	068	02	T+10	043	04

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	102	06	T-30	101	05
T-20	095	05	T-20	096	05
T-10	086	05	T-10	107	05
T0.0	103	05	T0.0	102	03
T+10	093	06	T+10	104	05

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 KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	095	05	T-30	108	04
T-20	095	06	T-20	106	03
T-10	091	05	T-10	106	03
T0.0	092	05	T0.0	095	04
T+10	093	05	T+10	087	04

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 20 July 1981

SITE: LC-33
 TIME: 0939 MDT
 NSTM COORDINATES:
 X= 485,135.76
 Y= 185,919.24
 H= 3,988.57

SITE: NICK
 TIME: 0936 MDT
 NSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	083	02
150	085	03
210	085	03
270	086	03
330	062	03
390	061	04
500	028	05
650	032	05
800	322	01
950	058	01
1150	109	04
1350	119	05
1550	120	02
1750	053	02
2000	029	02

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	C A L M	
150	006	04
210	006	05
270	006	05
330	006	04
390	008	04
500	014	04
650	359	04
800	343	03
950	092	02
1150	129	05
1350	141	05
1550	142	04
1750	169	02
2000	M I S G	

Data obtained from RAPTS T-9 radar
 tracked pilot-balloon observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
20 July 1981

WSD 0630 MDT

METCM1324064

201250122881

00391004	29530881
01407004	30130871
02343003	30340846
03425004	30060809
04418004	29690764
05344002	29210721
06131002	28770680
07068011	28380641
08056018	27960603
09083018	27470567
10093016	26990533
11078012	26550500
12132010	26140454

LC-37 0730 MDT

METCM1324063

201350124879

00249004	29820879
01232005	30020869
02206005	30180845
03293003	29970807
04564002	29650762
05624001	29200719
06633004	28770678
07073012	28350639
08081015	27900601
09093012	27430566
10087012	27010531
11113011	26610499
12104008	26140452

WSD 0830 MDT

METCM1324064

201450122882

00249003	30170882
01250005	30120872
02250007	30050848
03271004	29980810
04260002	29680765
05006001	29250722
06019003	28840681
07066012	28390641
08093017	27940604
09107016	27500568
10138016	27060533
11166011	26720501
12126010	26380455

LC-37 0930 MDT

METCM1324063

201550124880

00000000	30410880
01180002	30320870
02150002	30080846
03272001	29910808
04199003	29570763
05056002	29140720
06105003	28710679
07065009	28260640
08087016	27830602
09106015	27420566
10151012	27010532
11191009	26680499
12106007	26300453

WSD 1030 MDT

METCM1324064

201650122883

00622006	30560883
01626001	30470873
02024005	30250848
03191002	30000811
04133003	29650766
05100003	29190723
06065004	28760681
07094011	28350642
08108014	27910604
09143015	27470568
10167009	27070534
11146006	26790501
12090009	26360455

STATION ALTITUDE 3989.00 FEET MSL
 20 JULY 81 0600 HRS EDT
 ASCENSION NO. 403

SIGNIFICANT LEVEL DATA

2010020003
 WHITE SANDS

GEOGRAPHIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 6

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIBARS	FEET	AIR DEW POINT DEGREES CENTIGRADE	PERCENT
680.6	3989.0	20.2	40.0
674.6	4184.9	25.3	52.0
665.0	4505.9	28.6	46.0
850.0	5017.3	28.4	41.0
761.0	8182.0	22.0	43.0
700.0	10560.8	15.0	50.0
627.8	13564.2	8.1	54.0
500.0	19562.5	-8.7	99.0
492.1	19968.7	-9.3	96.0
478.8	20666.1	-9.5	53.0
434.0	23140.4	-14.5	47.0
419.4	23093.3	-14.9	40.0
400.0	25167.6	-17.2	50.0

STATION ALTITUDE 3980.0 FEET MSL
20 JULY 81
ASCENSION NO. 403

UPPER AIR DATA
2010020403
WHITE SANDS

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 7

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOTS	DIRECTION DEGREES (TN)	IND. DATA SPEED KILOTS	INDEX OF REFRACTION
3980.0	800.6	20.2	12.2	60.0	1034.4	669.3	270.0	4.1	1.000244
4000.0	800.3	20.5	12.3	59.6	1037.9	669.6	220.0	4.1	1.000244
4500.0	805.2	20.5	13.0	46.1	991.2	679.3	217.7	3.8	1.000246
5000.0	850.5	28.4	13.0	41.2	975.6	670.9	215.1	3.6	1.000244
5500.0	835.9	27.4	13.1	41.3	962.2	677.7	212.2	3.4	1.000278
6000.0	821.6	26.4	12.3	41.6	944.1	670.5	223.3	3.5	1.000272
6500.0	807.5	25.4	11.5	41.9	930.2	675.3	239.2	4.2	1.000267
7000.0	793.6	24.4	10.7	42.3	923.5	674.1	243.7	4.6	1.000261
7500.0	780.0	23.4	9.9	42.6	910.9	672.4	244.6	4.8	1.000256
8000.0	768.6	22.4	9.1	42.9	894.5	671.6	240.4	4.2	1.000251
8500.0	753.3	21.1	8.3	43.9	887.0	670.1	230.5	3.3	1.000246
9000.0	740.0	19.6	7.5	45.4	875.9	668.3	218.3	2.6	1.000241
9500.0	727.0	18.1	6.6	46.9	865.1	666.6	200.6	2.1	1.000236
10000.0	714.3	16.7	5.7	48.3	854.4	664.8	176.5	1.8	1.000232
10500.0	701.7	15.2	4.8	49.8	843.6	663.1	149.3	1.9	1.000227
11000.0	689.1	14.0	3.9	50.6	832.3	661.6	106.0	1.3	1.000223
11500.0	676.7	12.9	3.0	51.2	820.6	660.2	57.3	2.0	1.000218
12000.0	664.5	11.7	2.2	51.9	804.4	658.4	40.9	4.6	1.000214
12500.0	652.6	10.6	1.3	52.6	793.2	657.5	39.5	7.3	1.000209
13000.0	640.0	9.4	.4	53.2	787.1	656.1	42.5	10.1	1.000205
13500.0	629.3	8.2	-.5	53.9	776.3	654.7	38.0	12.9	1.000201
14000.0	617.5	6.9	-1.0	57.3	765.5	653.1	33.7	15.7	1.000198
14500.0	605.9	5.5	-1.4	61.0	754.9	651.4	31.0	17.4	1.000195
15000.0	594.5	4.1	-1.9	64.8	744.5	649.8	31.0	18.5	1.000192
15500.0	583.3	2.7	-2.5	68.5	734.3	648.1	37.2	17.9	1.000189
16000.0	572.4	1.3	-3.1	72.3	724.3	646.4	43.0	17.6	1.000186
16500.0	561.6	-.1	-3.8	76.0	714.4	644.7	49.8	17.7	1.000183
17000.0	551.1	-1.5	-4.5	79.8	704.6	643.0	52.2	17.2	1.000179
17500.0	540.7	-2.9	-5.3	83.5	695.0	641.3	53.7	16.4	1.000176
18000.0	530.5	-4.3	-6.1	87.3	685.6	639.6	52.0	15.6	1.000173
18500.0	520.6	-5.7	-6.9	91.0	676.3	637.9	51.7	14.7	1.000170
19000.0	510.8	-7.1	-7.8	94.9	667.2	636.2	55.4	14.1	1.000167
19500.0	501.2	-8.5	-8.7	98.5	658.2	634.5	59.3	13.4	1.000164
20000.0	491.5	-9.3	-10.1	94.1	647.5	633.5	63.3	12.2	1.000160
20500.0	481.9	-9.5	-10.1	63.2	635.7	633.1	66.9	11.0	1.000157
21000.0	472.5	-10.2	-11.1	52.2	625.2	632.1	68.2	9.7	1.000147
21500.0	463.2	-11.2	-13.3	51.0	615.3	630.9	68.1	9.0	1.000144
22000.0	454.1	-12.2	-20.5	49.8	605.0	629.6	67.4	9.3	1.000142
22500.0	445.2	-13.2	-21.7	48.6	595.1	628.4	62.9	9.6	1.000139
23000.0	436.4	-14.2	-22.9	47.3	585.7	627.1	60.1	10.0	1.000136

STATION ALTITUDE 3909.00 FEET MSL
20 JULY 61
ASCENSION IS. 463
0630 HRS LMT

UPPER AIR DATA
20100200003
WILITE SATUS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 7 CONT

GEOMETRIC ALTITUDE FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND METERS PER SECOND	REFRACTION INDEX	INDEX OF REFRACTION
23500.0	427.8	-14.7	44.0	574.1	626.6	43.6	1.000133
24000.0	419.3	-14.9	40.1	565.2	626.3	30.6	1.000130
24500.0	410.9	-15.9	44.3	556.0	625.1		1.000128
25000.0	402.7	-16.9	48.6	547.0	623.9		1.000126

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61
ASCESSION NO. 403

LANDATORY LEVELS
2010020463
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	WET-BULB DEGREES	PERCENT	DIRECTION DEGREES (TN)	SPEED KNOTS
650.0	5014.	24.4	13.9	41.	215.1	3.6
607.0	6772.	24.0	11.1	42.	243.1	4.5
750.0	8019.	20.7	8.1	44.	227.2	3.1
700.0	10558.	15.0	4.7	50.	145.7	1.8
650.0	12602.	10.3	1.1	53.	40.3	7.9
600.0	14770.	0.8	-1.7	63.	30.6	14.2
550.0	17074.	-1.7	-4.0	80.	52.5	17.0
500.0	19535.	-3.7	-8.4	49.	59.7	13.3
450.0	22199.	-12.7	-21.1	49.	66.8	9.5
400.0	25125.	-17.2	-25.1	50.		

GEODETTIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

SIGNIFICANT LEVEL DATA
2010140161
LC-37

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81
ASCENSION NO. 103

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MOL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
678.8	4051.4	23.2	13.7	55.0
661.6	4622.1	26.6	14.7	48.0
850.0	5016.0	27.1	13.8	44.0
771.4	7815.2	22.5	9.3	43.0
700.0	10559.6	15.4	4.8	49.0
629.0	13504.0	8.0	-7	54.0
567.0	16282.9	.2	-5.2	67.0
515.8	18752.5	-6.0	-8.0	82.0
500.0	19552.6	-7.4	-11.4	73.0
466.2	21335.4	-11.0	-16.1	60.0
458.0	21783.7	-11.5	-22.4	40.0
419.2	24004.2	-14.5	-27.2	33.0
400.0	25167.6	-17.2	-21.0	46.0
389.8	25804.1	-18.1	-27.1	45.0
368.4	27184.3	-21.4	-24.6	74.0
327.4	30019.2	-26.8	-31.4	65.0
300.0	32075.7	-31.7	-36.7	61.0

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

UPPER AIR DATA
2010140101
LC-37

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 61 0730 HRS MDT
ASCENSION NO. 101

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (IN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	870.8	23.2	55.0	1021.1	672.9	140.0	4.1	1.000296
4500.0	855.3	25.9	49.5	1000.7	676.1	139.0	3.8	1.000293
5000.0	850.5	27.1	44.2	979.9	677.4	138.0	3.5	1.000285
5500.0	835.9	26.3	43.8	965.8	676.5	138.3	3.2	1.000279
6000.0	821.5	25.5	43.6	952.0	675.4	143.9	2.5	1.000273
6500.0	807.4	24.7	43.5	934.5	674.4	144.0	1.7	1.000267
7000.0	793.9	23.8	43.3	925.1	673.4	222.9	.9	1.000261
8000.0	779.9	23.0	43.1	911.9	672.4	240.4	1.8	1.000256
8500.0	766.4	22.0	43.4	894.3	671.2	301.3	2.2	1.000250
9000.0	752.9	20.7	44.5	887.6	669.7	305.5	1.1	1.000246
9500.0	739.7	19.4	45.6	870.1	668.1	39.5	.2	1.000241
10000.0	726.7	18.1	46.7	864.7	666.6	114.5	1.3	1.000236
10500.0	714.0	16.8	47.8	853.5	665.0	43.5	.8	1.000232
11000.0	701.5	15.6	48.9	842.5	663.5	3.8	1.1	1.000227
11500.0	688.9	14.3	49.7	831.2	662.0	20.6	2.9	1.000222
12000.0	676.5	13.0	50.6	820.0	660.5	25.9	5.0	1.000218
12500.0	664.3	11.8	51.4	804.9	658.9	27.3	7.2	1.000213
13000.0	652.4	10.5	52.3	794.0	657.4	27.9	9.4	1.000209
13500.0	640.6	9.3	53.1	787.3	655.9	33.2	11.0	1.000205
14000.0	629.1	8.0	54.0	776.7	654.4	37.3	12.7	1.000201
14500.0	617.5	6.6	56.3	766.3	652.7	42.3	14.2	1.000197
15000.0	606.0	5.2	58.7	756.0	651.0	46.1	15.7	1.000194
15500.0	594.8	3.8	61.0	745.9	649.3	47.7	14.9	1.000190
16000.0	583.8	2.4	63.3	735.9	647.7	49.3	14.1	1.000187
16500.0	573.0	1.0	65.7	726.1	646.0	50.2	12.7	1.000184
17000.0	562.3	-.3	68.3	716.1	644.3	51.2	11.7	1.000180
17500.0	551.6	-1.6	71.4	705.8	642.8	52.3	11.7	1.000177
18000.0	541.2	-2.9	74.4	695.7	641.3	53.5	12.0	1.000174
18500.0	530.9	-4.1	77.4	685.7	639.8	54.9	12.5	1.000171
19000.0	520.8	-5.4	80.5	675.9	638.3	56.2	12.4	1.000168
19500.0	510.9	-6.4	79.2	665.8	636.9	57.5	11.9	1.000164
20000.0	501.0	-7.3	73.6	655.3	635.4	59.6	11.2	1.000160
20500.0	491.3	-8.3	71.2	645.1	634.6	62.7	10.4	1.000156
21000.0	481.7	-9.3	69.3	635.0	633.3	64.0	9.6	1.000153
21500.0	472.4	-10.3	67.3	625.2	632.1	65.9	8.9	1.000150
22000.0	463.2	-11.2	56.5	615.2	630.9	67.3	8.1	1.000145
22500.0	454.1	-11.8	39.3	604.7	630.1	67.9	7.4	1.000140
23000.0	445.1	-12.5	37.7	594.4	629.2	67.3	7.0	1.000137
23500.0	436.3	-13.1	36.2	584.2	628.4	65.5	7.0	1.000135
24000.0	427.7	-13.8	34.6	574.2	627.6	63.7	7.6	1.000132

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

UPPER AIR DATA
2010100101
LC-37

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 01 0730 HRS MDT
ASCENSION NO. 161

TABLE 10 CONT

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBI. METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4000.0	419.3	-14.5	33.0	564.4	626.7	26.7	7.6	1.000129
24500.0	410.9	-15.7	38.5	555.6	625.3	21.9	6.9	1.000128
25000.0	402.7	-16.8	44.1	546.9	623.9	16.4	5.8	1.000126
25500.0	394.6	-17.7	45.5	537.8	622.9	8.6	4.7	1.000124
26000.0	386.7	-18.6	49.1	528.8	621.8	7.9	3.5	1.000122
26500.0	378.9	-19.8	59.6	520.5	620.4	17.6	2.3	1.000120
27000.0	371.2	-21.0	70.1	512.3	618.9	24.2	1.7	1.000119
27500.0	363.6	-22.0	73.0	503.9	617.6	21.9	1.5	1.000117
28000.0	356.1	-23.0	71.4	495.5	616.4	351.7	1.5	1.000115
28500.0	348.8	-23.9	69.8	487.1	615.3	321.2	2.5	1.000112
29000.0	341.6	-24.9	68.2	479.0	614.1	311.1	4.0	1.000110
29500.0	334.6	-25.8	66.6	470.9	612.9	308.0	5.7	1.000108
30000.0	327.7	-26.8	65.1	463.0	611.7	308.0	7.0	1.000106
30500.0	320.8	-27.9	64.1	455.5	610.2	309.6	7.7	1.000104
31000.0	314.0	-29.1	63.1	448.1	608.7			1.000102
31500.0	307.4	-30.3	62.1	440.9	607.2			1.000100
32000.0	301.0	-31.5	61.1	433.8	605.7			1.000098

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 61
ASSEMBLY NO. 161

MANDATORY LEVELS
20101100161
LC-37

GEOGRAPHIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 11

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5012.	27.1	13.8	44.	139.0	3.5
800.0	6765.	24.2	11.0	43.	185.2	1.3
750.0	8609.	20.4	8.0	45.	308.0	.9
700.0	10549.	15.4	4.8	49.	.5	1.2
650.0	12594.	10.3	1.0	52.	28.9	9.7
600.0	14760.	4.5	-2.1	60.	47.0	15.3
550.0	17061.	-1.8	-6.2	72.	52.5	11.7
500.0	19525.	-7.4	-11.4	73.	59.9	11.2
450.0	22193.	-12.1	-23.3	39.	63.5	7.2
400.0	25125.	-17.2	-26.0	46.	14.3	5.5
350.0	28370.	-23.7	-27.6	70.	324.8	2.3
300.0	32011.	-31.7	-36.7	61.		

STATION ALTITUDE 3489.00 FEET MSL
20 JULY 61 0830 HRS MDT
ASCENSION NO. 404

SIGNIFICANT LEVEL DATA
2010020404
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 12

PRESSURE GEOMETRIC MILLIBARS	ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
691.0	3089.0	26.8	12.1	40.0
650.0	5052.3	25.0	13.2	48.0
637.8	5470.4	25.9	13.4	46.0
799.4	6026.0	24.5	11.1	43.0
751.4	6599.3	20.9	6.5	45.0
700.0	10596.5	15.5	5.7	52.0
523.4	18924.8	-4.6	-7.4	81.0
500.0	19606.3	-6.6	-9.8	78.0
476.0	20867.6	-8.3	-11.8	50.0
460.4	21716.7	-9.6	-20.3	41.0
422.8	23808.6	-12.9	-24.8	36.0
400.0	25250.7	-16.4	-23.3	55.0

STATION ALTITUDE 3977.00 FEET MSL
20 JULY 61 0837 HRS MDY
ASCENSION 110. 404

UPPER AIR DATA
20100210464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 13

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	INCL. DATA DIRECTION DEGREES (IN)	SPEED KNOTS	INDEX OF REFRACTION
3489.0	981.8	26.8	40.0	1017.4	676.8	140.0	2.9	1.000216
4000.0	841.5	26.8	40.1	1017.6	676.7	140.1	2.9	1.000216
4500.0	860.4	25.9	43.8	1002.7	675.4	143.1	3.2	1.000216
5000.0	851.5	25.1	47.6	985.0	675.1	145.0	3.5	1.000216
5500.0	836.9	25.9	45.9	965.3	676.0	147.7	3.9	1.000211
6000.0	822.6	25.4	44.8	953.6	675.3	149.3	4.0	1.000274
6500.0	806.5	24.8	43.7	934.1	674.7	150.7	4.0	1.000216
7000.0	794.6	24.1	43.2	925.3	673.8	148.0	3.8	1.000216
7500.0	780.8	23.1	43.8	912.5	672.6	143.0	3.4	1.000217
8000.0	767.3	22.1	44.3	900.0	671.4	141.3	2.3	1.000252
8500.0	754.0	21.1	44.9	887.6	670.2	144.6	.8	1.000247
9000.0	740.8	19.8	46.4	876.0	668.0	137.0	.2	1.000243
9500.0	727.8	18.5	48.2	864.8	667.0	135.0	.7	1.000238
10000.0	715.0	17.1	49.9	853.7	665.4	135.3	1.2	1.000234
10500.0	702.4	15.8	51.7	842.7	663.8	27.0	1.5	1.000230
11000.0	689.6	14.5	53.5	831.2	662.3	26.2	2.3	1.000220
11500.0	676.9	13.2	55.3	814.7	660.8	22.0	3.7	1.000221
12000.0	664.4	11.9	57.2	804.4	659.2	22.4	5.3	1.000217
12500.0	652.2	10.6	59.1	797.2	657.7	28.4	7.8	1.000213
13000.0	640.2	9.3	60.9	786.2	656.2	33.0	10.2	1.000209
13500.0	628.4	8.0	62.8	775.4	654.6	41.7	12.8	1.000205
14000.0	616.9	6.8	64.6	764.7	653.1	47.1	15.2	1.000201
14500.0	605.5	5.5	66.5	754.3	651.5	49.8	16.5	1.000197
15000.0	594.4	4.2	68.3	743.9	650.0	51.8	17.3	1.000194
15500.0	583.5	2.9	70.2	733.8	648.4	53.1	17.3	1.000190
16000.0	572.7	1.6	72.0	723.7	646.8	55.4	16.8	1.000186
16500.0	562.2	.3	73.9	713.9	645.3	60.4	15.8	1.000182
17000.0	551.8	-.9	75.7	704.1	643.7	66.0	15.5	1.000179
17500.0	541.7	-2.2	77.6	694.6	642.1	71.9	15.4	1.000176
18000.0	531.7	-3.5	79.4	685.1	640.6	78.0	14.9	1.000172
18500.0	521.9	-4.7	80.8	675.6	639.1	84.2	14.0	1.000169
19000.0	511.9	-5.6	79.5	664.8	638.0	91.5	12.1	1.000165
19500.0	502.1	-6.4	78.3	654.3	637.0	92.2	10.7	1.000162
20000.0	492.4	-7.1	76.3	643.6	636.0	99.5	9.6	1.000157
20500.0	482.9	-7.8	58.2	633.0	635.1	103.0	8.9	1.000152
21000.0	473.5	-8.5	48.6	622.6	634.2	111.1	8.3	1.000147
21500.0	464.3	-9.3	43.3	612.3	633.2	117.7	7.6	1.000144
22000.0	455.3	-10.0	40.3	602.2	632.2	128.0	7.9	1.000140
22500.0	446.3	-10.8	39.2	592.2	631.3	131.0	8.4	1.000138
23000.0	437.6	-11.6	38.0	582.3	630.3	147.5	7.7	1.000135

STATION ALTITUDE 3983.00 FEET MSL
20 JULY 61
ASCENSION NO. 404

UPPER AIR DATA
2010021464
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 13 CONT

GEOD. TRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	INCL. DATA DIRECTION DEGREES (IN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	981.8	26.8	40.0	1017.9	676.8	140.0	2.9	1.000286
4000.0	881.5	26.8	40.1	1017.6	676.7	140.1	2.9	1.000286
4500.0	866.4	25.9	43.8	1002.7	675.9	143.1	3.2	1.000286
5000.0	851.5	25.1	47.6	983.0	675.1	145.6	3.5	1.000285
5500.0	836.9	25.9	45.9	968.3	676.0	147.7	3.9	1.000281
6000.0	822.6	25.4	44.8	953.6	675.3	149.3	4.0	1.000274
6500.0	808.5	24.8	43.7	939.1	674.7	150.7	4.0	1.000268
7000.0	794.6	24.1	43.2	925.3	673.8	148.6	3.8	1.000262
7500.0	780.8	23.1	43.8	912.5	672.6	143.0	3.4	1.000257
8000.0	767.3	22.1	44.3	900.0	671.4	141.3	2.3	1.000252
8500.0	754.0	21.1	44.9	887.6	670.2	144.6	.8	1.000247
9000.0	740.8	19.8	46.4	876.0	668.6	137.8	.2	1.000238
9500.0	727.8	18.5	48.2	864.8	667.0	135.3	.7	1.000234
10000.0	715.0	17.1	49.9	853.7	665.4	15.3	1.2	1.000230
10500.0	702.4	15.8	51.7	842.7	663.8	27.6	1.5	1.000226
11000.0	689.6	14.5	53.5	831.2	662.3	28.2	2.3	1.000221
11500.0	676.9	13.2	55.3	814.7	660.8	22.0	3.7	1.000217
12000.0	664.2	11.9	57.2	801.4	659.2	22.4	5.3	1.000213
12500.0	652.2	10.6	59.1	787.2	657.7	28.9	7.8	1.000209
13000.0	640.2	9.3	60.9	775.4	656.2	41.7	10.2	1.000205
13500.0	628.4	8.0	62.8	764.7	654.6	47.1	15.2	1.000201
14000.0	616.9	6.8	64.6	754.3	653.1	49.6	16.5	1.000197
14500.0	605.5	5.5	66.5	743.9	650.0	51.8	17.3	1.000194
15000.0	594.4	4.2	68.3	733.8	648.4	53.1	17.3	1.000190
15500.0	583.5	2.9	70.2	723.7	646.8	55.9	16.8	1.000186
16000.0	572.7	1.6	72.0	713.9	645.3	60.4	15.8	1.000182
16500.0	562.2	.3	73.9	704.1	643.7	66.0	15.5	1.000179
17000.0	551.6	-.9	75.7	694.6	642.1	71.9	15.4	1.000176
17500.0	541.7	-2.2	77.6	685.1	639.1	76.0	14.9	1.000172
18000.0	531.7	-3.5	79.4	675.6	636.0	84.2	14.0	1.000169
18500.0	521.9	-4.7	80.8	664.8	636.0	91.5	12.1	1.000165
19000.0	511.9	-5.6	79.5	654.3	637.0	92.3	10.7	1.000162
19500.0	502.1	-6.4	78.3	643.6	636.0	89.5	9.6	1.000157
20000.0	492.4	-7.1	69.3	633.0	635.1	83.0	8.9	1.000152
20500.0	482.9	-7.8	58.2	622.6	634.2	77.1	8.3	1.000147
21000.0	473.5	-8.5	48.6	612.3	633.2	74.7	7.6	1.000144
21500.0	464.3	-9.3	43.3	602.2	632.2	68.6	7.9	1.000140
22000.0	455.3	-10.0	40.3	592.2	631.3	61.0	8.4	1.000138
22500.0	446.3	-10.8	39.2	582.3	630.3	47.5	7.7	1.000135
23000.0	437.6	-11.6	38.0					

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 81 0830 HRS MDT
ASCENSION NO. 464

UPPER AIR DATA
2010020464
WHITE SAUNDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.0	-12.3	36.9	572.6	629.4	30.0	6.6	1.000132
24000.0	420.6	-13.2	37.8	563.3	628.3			1.000130
24500.0	412.2	-14.5	44.7	554.8	620.4			1.000129
25000.0	404.0	-15.8	51.6	546.4	625.3			1.000127

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 21 0830 HRS MDT
ASCENSION: 140. 464

MANDATORY LEVELS
2010020004
WHITE SAILS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 14

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEW POINT CENTIGRADE		DIRECTION DEGREES (TH)	SPEED KNOTS
850.0	5049.	25.0	13.2	48.	145.0	3.6
800.0	6799.	24.5	11.1	43.	150.6	3.9
750.0	8644.	20.8	8.5	45.	150.1	.4
700.0	10586.	15.5	5.7	52.	24.2	1.6
650.0	12633.	10.4	2.6	59.	30.1	8.5
600.0	14801.	4.8	-.7	67.	51.3	17.3
550.0	17108.	-1.2	-4.6	76.	67.4	15.4
500.0	19578.	-6.6	-9.8	70.	91.8	10.5
450.0	22262.	-10.5	-21.5	40.	64.6	8.3
400.0	25208.	-16.4	-23.5	55.		

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 81 0930 LRS MDR
ASCENSION NO. 162

SIGNIFICANT LEVEL DATA
2010100162
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 15

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
680.2	4051.4	29.4	11.0
650.0	5067.3	25.9	10.9
617.4	6196.8	24.9	9.2
759.8	8280.9	20.9	8.4
700.0	10595.4	14.9	5.7
606.4	14518.2	4.5	-3.0
572.0	16074.0	.8	-2.9
547.0	17249.9	-2.1	-9.2
530.6	18043.5	-3.9	-9.9
522.6	18437.6	-5.0	-8.4
506.4	19251.4	-5.7	-14.7
500.0	19578.9	-6.7	-14.0
490.8	20055.3	-7.9	-14.5
483.0	20465.1	-7.9	-19.4
459.6	21727.3	-11.2	-25.3
436.8	23012.0	-11.4	-22.0
400.0	25210.5	-16.9	-24.7
379.2	26523.5	-19.6	-24.5
358.4	27895.8	-22.4	-24.4
337.0	29374.6	-25.9	-29.6
300.0	32117.3	-31.5	-37.3
			32.0
			39.0
			37.0
			39.0
			47.0
			58.0
			76.0
			58.0
			63.0
			77.0
			49.0
			56.0
			59.0
			39.0
			30.0
			41.0
			46.0
			65.0
			58.0
			71.0
			56.0

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 01 0930 HRS MDT
ASCENSION NO. 102

UPPER AIR DATA
2010100102
LC-37

GEODETIC COORDINATES
32.40175 LAT NEG
106.31232 LONG NEG

TABLE 16

GEOMETRIC ALTITUDE NSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	880.2	29.4	32.0	1007.8	679.6	0.0	0.0	1.000279
4500.0	860.7	27.9	35.1	997.3	677.8	1.9.0	.3	1.000277
5000.0	852.0	26.1	38.5	985.9	675.9	1.9.0	.7	1.000275
5500.0	837.4	25.5	38.2	971.2	675.2	1.9.0	1.1	1.000270
6000.0	825.0	25.1	37.3	955.1	674.6	1.9.0	1.5	1.000264
6500.0	808.8	24.3	37.3	942.1	673.7	1.9.0	2.0	1.000259
7000.0	794.8	23.4	37.8	928.9	672.6	1.9.0	2.4	1.000254
7500.0	781.0	22.4	38.2	915.9	671.4	1.9.0	2.6	1.000249
8000.0	767.5	21.5	38.7	903.1	670.3	1.9.0	2.6	1.000245
8500.0	754.1	20.4	39.7	890.8	669.0	1.9.0	2.3	1.000240
9000.0	740.8	19.1	41.5	874.1	667.5	1.9.0	2.2	1.000237
9500.0	727.8	17.7	43.2	867.6	666.0	1.9.0	2.5	1.000233
10000.0	715.0	16.4	44.9	856.2	664.4	1.9.0	2.8	1.000229
10500.0	702.4	15.1	46.7	845.0	662.9	1.9.0	3.0	1.000225
11000.0	689.7	13.8	48.1	833.8	661.3	1.9.0	3.2	1.000221
11500.0	677.2	12.5	49.5	822.6	659.8	1.9.0	3.4	1.000217
12000.0	664.9	11.2	50.9	811.6	658.2	1.9.0	4.5	1.000213
12500.0	652.9	9.9	52.3	800.7	656.6	1.9.0	6.7	1.000209
13000.0	641.0	8.5	53.7	790.0	655.0	1.9.0	9.1	1.000205
13500.0	629.4	7.2	55.1	779.5	653.4	1.9.0	11.7	1.000201
14000.0	618.0	5.9	56.5	769.1	651.8	1.9.0	13.7	1.000197
14500.0	606.8	4.5	57.9	758.9	650.2	1.9.0	14.7	1.000193
15000.0	595.5	3.4	63.6	747.9	648.8	1.9.0	15.4	1.000191
15500.0	584.5	2.2	69.4	737.2	647.5	1.9.0	15.6	1.000189
16000.0	573.6	1.0	75.1	726.6	646.1	1.9.0	15.5	1.000187
16500.0	562.8	-0.3	69.5	716.4	644.5	1.9.0	15.1	1.000181
17000.0	552.2	-1.5	61.8	706.5	642.9	1.9.0	14.4	1.000175
17500.0	541.8	-2.7	59.6	696.3	641.4	1.9.0	13.7	1.000171
18000.0	531.5	-3.8	62.7	686.0	640.0	1.9.0	12.4	1.000168
18500.0	521.3	-5.1	74.9	675.9	638.6	1.9.0	11.2	1.000167
19000.0	511.3	-5.5	57.6	664.4	637.9	1.9.0	10.2	1.000160
19500.0	501.5	-6.5	54.3	654.1	636.7	1.9.0	9.2	1.000157
20000.0	491.9	-7.8	58.7	644.7	635.1	1.9.0	8.7	1.000154
20500.0	482.3	-8.0	38.8	633.1	634.7	1.9.0	8.4	1.000148
21000.0	472.9	-9.3	35.2	623.9	633.1	1.9.0	8.2	1.000145
21500.0	463.7	-10.6	31.6	614.9	631.5	1.9.0	7.8	1.000142
22000.0	454.7	-11.2	32.3	604.3	630.7	1.9.0	7.3	1.000139
22500.0	445.7	-11.3	36.6	592.6	630.0	1.9.0	7.6	1.000137
23000.0	437.0	-11.4	40.9	581.1	630.0	1.9.0	8.5	1.000135
23500.0	428.4	-12.6	42.1	572.3	629.1	1.9.0	9.3	1.000133

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

UPPER AIR DATA
201010H162
LC-37

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 61
ASCENSION NO. 162

TABLE 16 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBI. METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (IN) SPEED KNOTS	INDEX OF REFRACTION
24000.0	414.9	-13.9	43.2	564.7	627.6	10.9	1.000131
24500.0	411.5	-15.1	44.4	555.2	626.0	2.8	1.000124
25000.0	403.4	-16.4	45.5	546.9	624.5	355.0	1.000126
25500.0	395.3	-17.5	50.2	534.3	623.1	330.5	1.000124
26000.0	387.4	-18.5	57.4	529.5	621.9	346.9	1.000123
26500.0	379.6	-19.6	64.7	521.0	620.7	345.2	1.000121
27000.0	371.8	-20.6	62.6	512.5	619.4	344.9	1.000119
27500.0	364.3	-21.6	60.0	504.1	618.1	345.4	1.000116
28000.0	356.8	-22.6	58.9	495.9	616.4	346.6	1.000114
28500.0	349.5	-23.8	63.3	484.0	615.3	342.5	1.000112
29000.0	342.3	-25.0	67.7	480.3	613.4	334.2	1.000110
29500.0	335.2	-26.2	70.3	472.5	612.4	327.2	1.000108
30000.0	328.2	-27.2	67.6	464.6	611.2	322.6	1.000106
30500.0	321.3	-28.2	64.8	456.7	609.9	317.8	1.000104
31000.0	314.6	-29.2	62.1	449.0	608.6		1.000102
31500.0	308.0	-30.2	59.4	441.5	607.3		1.000100
32000.0	301.5	-31.3	56.6	434.1	606.0		1.000098

STATION ALTITUDE 4051.37 FEET MSL
20 JULY 61
ASCENSION NO. 162

MANDATORY LEVELS
2010140162
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DEHLES(TN)	DIRECTION	SPEED KNOTS
850.0	5064.	25.9	10.9	39.	129.0		.8
800.0	6810.	23.7	8.4	38.	131.8		2.3
750.0	8650.	19.9	6.1	40.	89.1		2.2
700.0	10585.	14.9	3.7	47.	53.7		3.0
650.0	12625.	9.5	.4	53.	35.8		7.3
600.0	14785.	3.8	-2.9	61.	49.3		15.4
550.0	17084.	-1.7	-8.4	60.	70.8		14.3
500.0	19551.	-6.7	-14.0	56.	105.8		9.1
450.0	22226.	-11.3	-23.4	35.	50.8		7.3
400.0	25168.	-16.9	-25.7	46.	352.1		10.3
350.0	28415.	-23.7	-28.8	63.	343.0		2.6
300.0	32052.	-31.5	-37.3	56.			

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61 1030 HRS EDT
ASCENSION NO. 465

SIGNIFICANT LEVEL DATA
20100Z/0465
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 18

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIBARS	MSL FEET	AIR DEWPOINT DEGREES CENTIGRADE	PERCENT
682.5	3989.0	30.8	31.0
850.0	5087.2	27.6	41.0
833.2	5667.0	26.0	41.0
795.6	7001.0	24.7	38.0
700.0	10628.3	14.9	50.0
641.2	13046.5	9.1	54.0
579.6	15766.2	2.0	72.0
537.0	17737.3	-2.9	62.0
527.1	18260.6	-4.0	79.0
521.4	18543.0	-4.0	56.0
500.0	19627.6	-5.9	54.0
481.4	20603.2	-6.8	34.0
458.4	21853.9	-9.6	31.0
420.8	24011.9	-13.8	54.0
413.6	24443.3	-14.2	31.0
400.0	25274.5	-16.5	45.0

STATION ALTITUDE 3989.0 FEET MSL
20 JULY 61 1030 HRS MDT
ASCENSION NO. 405

UPPER AIR DATA

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 19

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 (T.M.)	SPEED KNOTS	
3989.0	802.5	30.8	31.0	1005.5	681.2	350.0	6.0	1.000281
4000.0	982.2	30.8	31.1	1005.2	681.2	350.1	6.0	1.000281
4500.0	867.2	29.3	35.7	992.5	679.7	350.0	4.8	1.000282
5000.0	852.5	27.9	40.2	986.1	678.2	10.4	3.8	1.000282
5500.0	836.0	26.5	41.0	964.1	676.5	29.4	3.1	1.000276
6000.0	823.6	25.7	40.3	954.3	675.5	44.6	2.6	1.000269
6500.0	809.5	25.2	39.1	934.7	674.9	72.4	2.2	1.000263
7000.0	795.6	24.7	38.0	925.3	674.2	110.0	2.4	1.000257
7500.0	781.7	23.4	39.7	913.4	672.7	47.3	2.4	1.000253
8000.0	769.0	22.0	41.3	901.6	671.1	80.6	2.5	1.000249
8500.0	754.6	20.7	43.0	890.1	669.5	63.2	2.6	1.000244
9000.0	741.4	19.3	44.6	878.7	667.9	55.4	2.8	1.000240
9500.0	728.4	17.9	46.3	867.4	666.3	55.4	3.0	1.000236
10000.0	715.7	16.6	47.9	856.4	664.7	50.6	3.1	1.000232
10500.0	703.2	15.2	49.6	845.5	663.1	52.7	3.2	1.000228
11000.0	690.6	14.0	50.6	834.1	661.6	41.7	3.6	1.000223
11500.0	678.2	12.8	51.4	822.7	660.2	40.2	5.3	1.000219
12000.0	666.0	11.6	52.3	811.5	658.7	42.1	7.4	1.000214
12500.0	654.0	10.4	53.1	800.4	657.3	49.1	9.5	1.000210
13000.0	642.3	9.2	53.9	789.5	655.8	53.3	11.2	1.000206
14000.0	610.9	6.6	57.0	776.6	654.3	59.2	12.4	1.000203
14500.0	607.5	5.3	60.3	767.9	652.8	57.9	13.0	1.000200
15000.0	596.3	4.0	63.6	757.3	651.2	59.9	13.6	1.000196
15500.0	585.4	2.7	66.9	747.0	649.7	64.2	14.3	1.000193
16000.0	574.5	1.4	70.8	736.6	648.1	69.6	14.8	1.000190
16500.0	563.7	.2	68.3	726.6	646.6	66.5	15.3	1.000186
17000.0	553.1	-1.1	65.7	716.4	645.0	66.9	14.5	1.000181
17500.0	542.7	-2.3	63.2	706.3	643.4	66.9	13.3	1.000176
18000.0	532.4	-3.5	70.5	696.4	641.9	60.2	11.3	1.000172
18500.0	522.3	-4.0	59.5	686.1	640.5	64.0	9.3	1.000170
19000.0	512.3	-4.8	55.2	674.7	639.8	102.0	7.2	1.000164
19500.0	502.5	-5.7	54.4	663.9	638.7	94.8	6.0	1.000160
20000.0	492.8	-6.2	46.4	653.4	637.7	61.3	5.3	1.000157
20500.0	483.3	-6.7	36.1	642.3	636.9	69.0	6.1	1.000153
21000.0	474.0	-7.7	33.0	631.3	636.2	61.0	6.9	1.000148
21500.0	464.8	-8.8	31.8	621.4	635.0	50.9	7.1	1.000145
22000.0	455.8	-9.9	32.6	612.0	633.7	52.7	7.8	1.000142
22500.0	446.8	-10.9	37.9	602.6	632.4	49.1	9.0	1.000139
23000.0	438.0	-11.8	43.2	592.9	631.2	48.1	10.1	1.000138
23500.0	430.0			583.4	630.1	48.0	11.3	1.000136

STATION ALTITUDE 3489.00 FEET MSL
20 JULY 61 1031 HRS MDT
ASCENSION, NO. 465

UPPER AIR DATA
20100214000
WHITE SANDS

MODELLIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 19 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND METERS PER SECOND	WIND DATA DIRECTION DEGREES (TR)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	429.4	-12.8	48.5	574.1	628.4	45.1	11.0	1.000134
24000.0	421.0	-13.6	53.9	564.9	627.7			1.000132
24500.0	412.7	-14.4	32.0	555.2	626.9			1.000127
25000.0	404.4	-15.7	40.4	547.0	625.2			1.000126

STATION ALTITUDE 3989.00 FEET MSL
20 JULY 61 10 30 AMRS 10T
ASCENSION, NO. 465

LABORATORY LEVELS

2010020465
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.57033 LONG DEG

TABLE 20

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEW POINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5083.	27.6	13.2	41.	13.1	3.6
800.0	6036.	24.9	9.7	38.	99.7	2.2
750.0	8681.	20.2	7.4	44.	58.7	2.6
700.0	10618.	14.9	4.6	50.	49.8	3.3
650.0	12660.	10.0	1.0	53.	50.8	10.2
600.0	14825.	4.4	-1.4	60.	62.9	14.1
550.0	17128.	-1.4	-7.1	65.	87.7	12.7
500.0	19599.	-5.9	-13.7	54.	78.0	5.5
450.0	22288.	-10.5	-22.7	30.	48.2	9.7
400.0	25231.	-16.5	-25.0	45.		

END

DATE
FILMED

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