

AD-A103 686 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193158 MLRS, MISSILE NUMBER V28-002, ROUND NUMBER V-172/AT-3, 2--ETC(11)
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July 1981

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METEOROLOGICAL DATA REPORT

19315B MLRS
Missile Number V28-002
Round Number V-172/AT-3
20 July 1981

by

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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 19315B MLRS, Missile number V28-002, Round Number V-172/AT-3 presented in tabular form.			

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INTRODUCTION

19315B MLRS, Missile Number V28-002, Round Number V-172/AT-3, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1043 MDT, 20 July 1981. The scheduled launch time was 0730 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 (°C), relative humidity, dew point (°C), density (gm/m³), 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 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

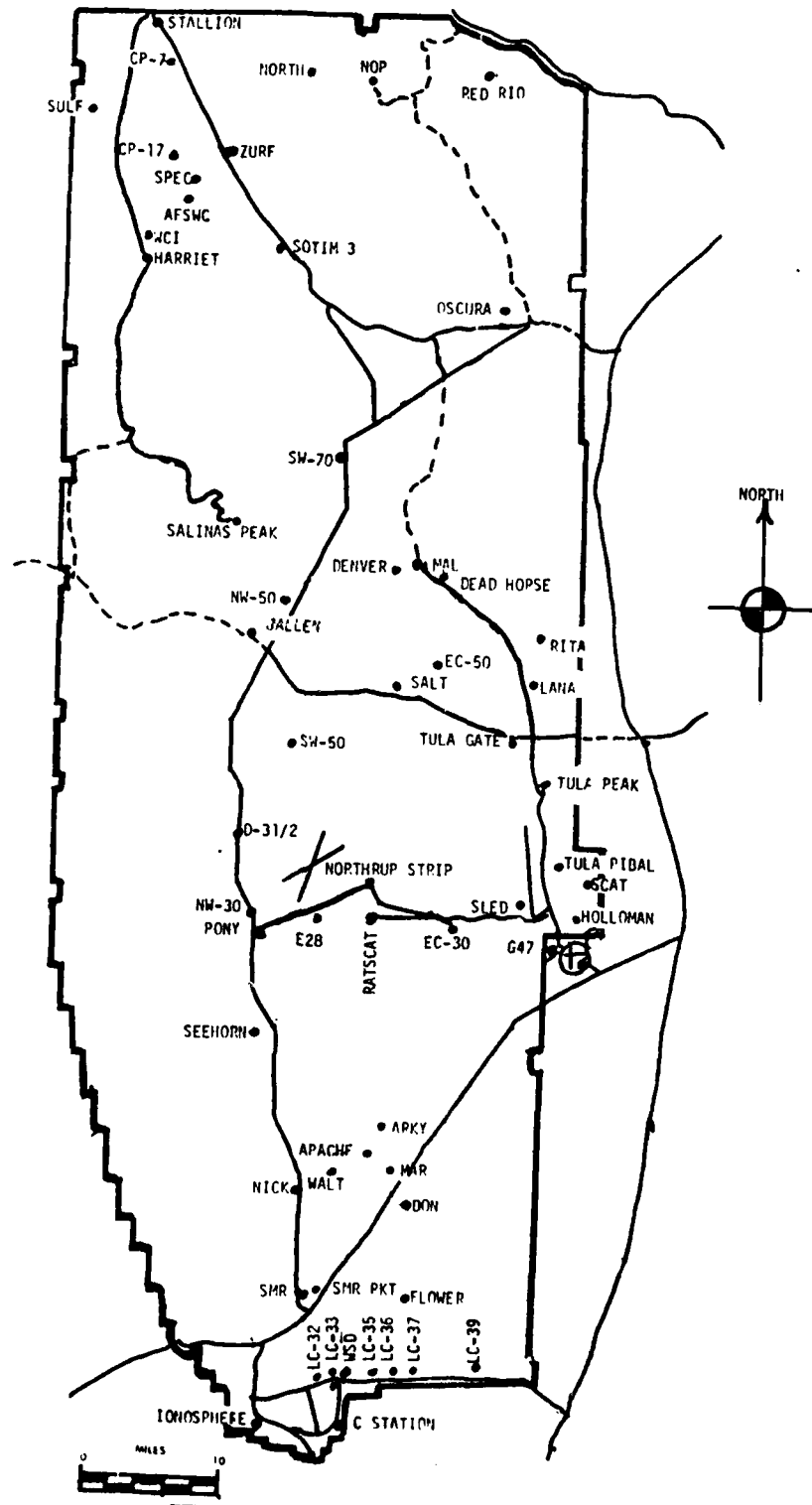
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

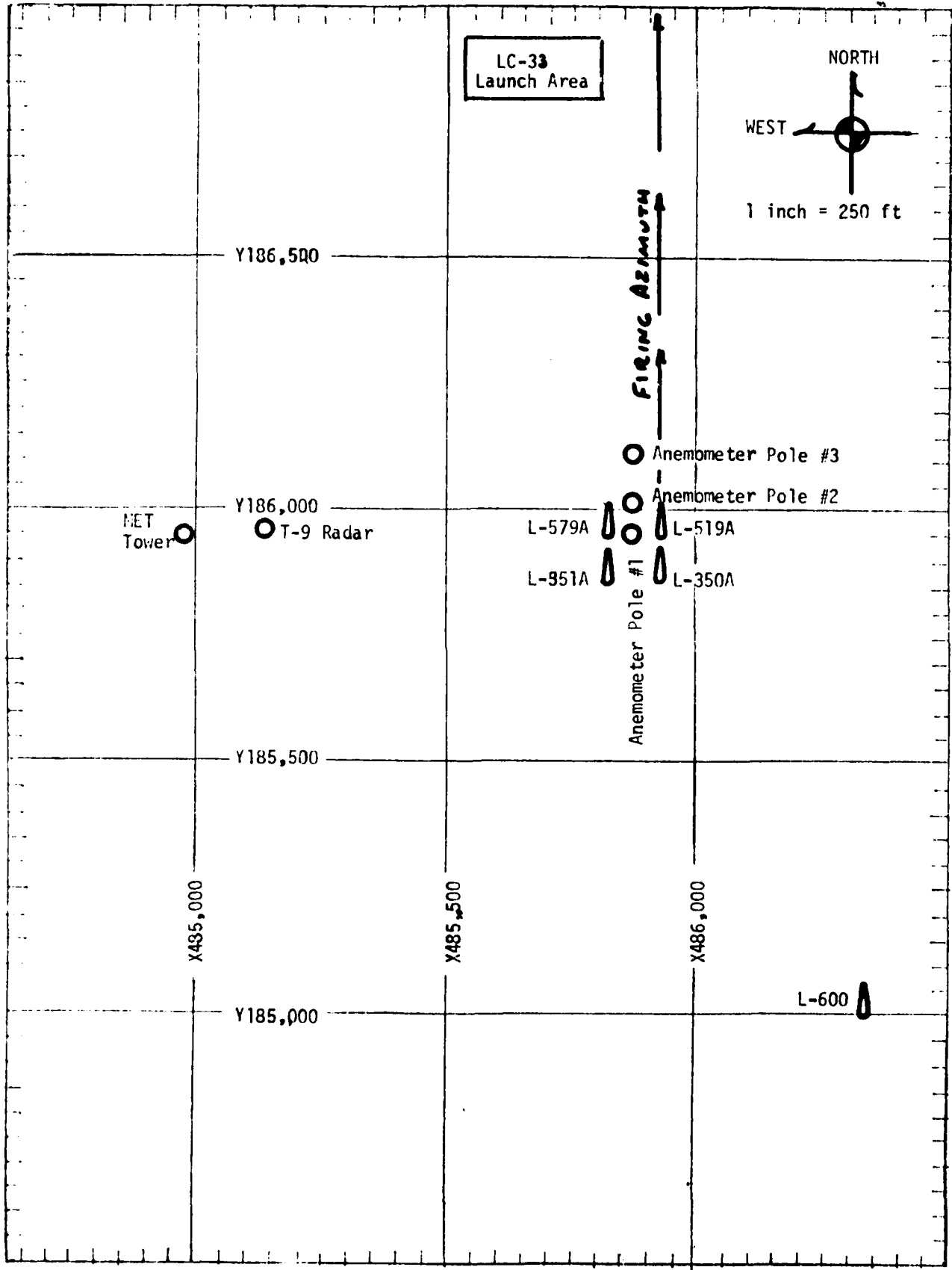
SITE AND TIME

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

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

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 20 DAY JULY MONTH 1981 YEAR X= 484.982.64 Y= 185.957.73 H= 3983.0

TIME M D T	PRESSURE mbs	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	WIND		VISIBIL- ITY
						DIRECTION degs Tn	SPEED kts	
1043	882.7	31.7	12.5	31	997	358	05	50+

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
NONE	1	CU	6500	5	CI	25000	

PSYCHROMETRIC COMPUTATION

TIME:	MDT	1043	
DRY BULB TEMP.		31.7	
WET BULB TEMP.		18.9	
WET BULB DEPR.		12.8	
DEW POINT		12.5	
RELATIVE HUMID.		31%	

TABLE 2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS
1043 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 X485,877.1 Y186,116.06 H4063.92 33.6 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	013	04	T-30	357	03	T-30	015	04
T-20	013	04	T-20	356	02	T-20	020	04
T-10	006	04	T-10	355	03	T-10	020	04
T0.0	011	03	T0.0	354	03	T0.0	015	04
T+10	003	04	T+10	342	03	T+10	359	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	358	04	T-30	003	05
T-20	348	03	T-20	351	05
T-10	360	04	T-10	348	05
T0.0	348	04	T0.0	349	05
T+10	348	04	T+10	354	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	003	05	T-30	018	05
T-20	003	06	T-20	021	04
T-10	003	05	T-10	033	04
T0.0	013	05	T0.0	033	04
T+10	012	05	T+10	026	04

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA
 DATE 20 July 1981

SITE: LC-33
 TIME: 1043 MDT
 WSTM COORDINATES:
 X= 485,135.76
 Y= 185,919.24
 H= 3,988.57

SITE: NICK
 TIME: 1043 MDT
 WSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	349	03
150	090	05
210	050	04
270	044	07
330	031	06
390	028	07
500	012	06
650	325	01
800	180	01
950	105	03
1150	096	02
1350	083	02
1550	061	03
1750	043	03
2000	058	03

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

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	010	02
150	358	04
210	353	04
270	347	04
330	340	04
390	343	04
500	002	03
650	019	04
800	187	02
950	189	07
1150	175	05
1350	170	04
1550	219	01
1750	298	02
2000	022	03

Data obtained from Single Theodolite
 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
09083013 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 3439.00 FEET MSL
 20 JULY 61 0630 HRS DT
 ASCENSION I.O. 403

SIGNIFICANT LEVEL DATA
 2010020003
 WHITE SANDS

GEOGRAPHIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREE CENTIGRADE	DEWPOINT CENTIGRADE	
680.6	3989.0	20.2	12.2	60.0
674.6	4184.9	25.3	14.7	52.0
665.0	4505.9	28.6	15.8	46.0
650.0	5017.3	28.4	13.9	41.0
761.8	8182.0	22.0	11.9	43.0
700.0	10568.8	15.0	4.7	50.0
627.8	13564.2	8.1	-0.0	54.0
500.0	19562.5	-8.7	-8.8	99.0
492.1	19968.7	-9.3	-9.8	96.0
478.8	20666.1	-9.5	-17.3	53.0
434.0	23140.4	-14.5	-23.5	47.0
419.4	23993.3	-14.9	-25.4	40.0
400.0	25167.6	-17.2	-25.1	50.0

STATION ALTITUDE 3980.0 FEET MSL
 20 JULY 61
 ASCENSION NO. 403

UPPER AIR DATA
 2310020400
 WHITE WINDS

STATION ALTITUDE 3980.0 FEET MSL
 20 JULY 61
 ASCENSION NO. 403

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 7

GEO. ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	WIND GM/CUBIC METER	SPEED OF WIND KNOTS	DIRECTION (DEGREES TRUE)	WIND DATA		INDEX OF REFRACTION
							SPEED KNOTS	REFRACTION	
3989.0	800.6	20.2	60.0	1034.4	669.3	270.0	4.1	1.000244	
4000.0	800.3	20.5	59.6	1037.9	669.6	220.0	4.1	1.000244	
4500.0	805.2	20.5	46.1	991.2	679.3	217.7	3.8	1.000246	
5000.0	850.5	20.4	41.2	975.6	670.9	215.1	3.6	1.000244	
5500.0	835.9	27.4	41.3	962.2	677.7	212.2	3.4	1.000274	
6000.0	821.6	26.4	41.6	949.1	670.5	223.3	3.5	1.000272	
6500.0	807.5	25.4	41.9	930.2	675.3	239.2	4.2	1.000267	
7000.0	793.6	24.4	42.3	923.5	674.1	243.7	4.6	1.000261	
7500.0	790.0	23.4	42.6	910.9	672.9	244.6	4.8	1.000256	
8000.0	766.6	22.4	42.9	894.5	671.6	240.4	4.2	1.000251	
8500.0	753.3	21.1	43.9	887.0	670.1	230.3	3.3	1.000246	
9000.0	740.0	19.6	45.4	875.9	668.3	218.3	2.6	1.000241	
9500.0	727.0	18.1	46.9	865.1	668.6	200.6	2.1	1.000236	
10000.0	714.3	16.7	48.3	854.4	664.8	170.5	1.8	1.000232	
10500.0	701.7	15.2	49.0	843.6	663.1	149.3	1.9	1.000227	
11000.0	689.1	14.0	50.6	832.3	661.6	106.0	1.3	1.000223	
11500.0	676.7	12.9	51.2	820.4	660.2	57.3	2.0	1.000218	
12000.0	664.5	11.7	51.9	809.4	658.9	40.9	4.6	1.000214	
12500.0	652.6	10.6	52.6	798.2	657.5	39.5	7.3	1.000209	
13000.0	640.8	9.4	53.2	787.1	656.1	42.5	10.1	1.000205	
13500.0	629.3	8.2	53.9	776.3	654.7	38.0	12.9	1.000201	
14000.0	617.5	6.9	57.3	765.5	653.1	33.7	15.7	1.000194	
14500.0	605.9	5.5	61.0	754.9	651.4	31.5	17.4	1.000195	
15000.0	594.5	4.1	64.8	744.5	649.8	31.0	18.5	1.000192	
15500.0	583.3	2.7	68.5	734.3	648.1	37.2	17.9	1.000189	
16000.0	572.4	1.3	72.3	724.3	646.4	43.0	17.6	1.000186	
16500.0	561.6	-1.1	76.0	714.4	644.7	49.6	17.7	1.000183	
17000.0	551.1	-1.5	79.8	704.6	643.0	52.2	17.2	1.000179	
17500.0	540.7	-2.9	83.5	695.0	641.3	53.7	16.4	1.000176	
18000.0	530.5	-4.3	87.3	685.6	639.6	52.0	15.8	1.000173	
18500.0	520.6	-5.7	91.0	676.3	637.9	51.7	14.7	1.000170	
19000.0	510.8	-7.1	94.0	667.2	636.2	55.4	14.1	1.000167	
19500.0	501.2	-8.5	93.5	658.2	634.5	53.3	13.4	1.000164	
20000.0	491.5	-9.3	94.1	647.5	633.5	53.3	12.2	1.000160	
20500.0	481.9	-9.5	63.2	635.7	633.2	56.9	11.0	1.000152	
21000.0	472.5	-10.2	52.2	625.2	632.1	50.2	9.7	1.000147	
21500.0	463.2	-11.2	51.0	615.3	630.9	50.1	9.0	1.000144	
22000.0	454.1	-12.2	49.8	605.6	629.6	57.1	9.3	1.000142	
22500.0	445.2	-13.2	48.6	596.1	628.6	52.9	9.6	1.000139	
23000.0	436.4	-14.2	47.3	586.7	627.1	50.1	10.0	1.000136	

STATION ALTITUDE 3900.00 FEET ASL
 20 JULY 61 0630 HRS EDT
 ASCENSION ISD. 463

UPPER AIR DATA
 2010020003
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 7 CONT

GEOMETRIC ALTITUDE ASL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOTS	REFRACTION DEGREE(SIN)	WIND DATA SPEED KILOTS	INDEX OF REFRACTION
2300.0	427.8	-14.7	44.0	574.1	625.6	43.8	9.7	1.000133
2400.0	419.3	-14.9	40.1	565.2	625.3	30.6	9.8	1.000130
2450.0	410.9	-15.9	44.3	556.0	625.1			1.000128
2500.0	402.7	-16.9	48.6	547.0	625.9			1.000126

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

MANDATORY LEVELS
 2010020463
 WHITE SANDS
 TABLE 8

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES (TN)	SPEED KNOTS	
850.0	5014.	24.4	13.9	41.	215.1	3.6	
800.0	6772.	24.0	11.1	42.	243.1	4.5	
750.0	8619.	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.	4.8	-1.7	63.	30.6	18.2	
550.0	17074.	-1.7	-4.6	80.	52.5	17.0	
500.0	19535.	-8.7	-8.4	99.	59.7	13.3	
450.0	22199.	-12.7	-21.1	49.	66.8	9.5	
400.0	25125.	-17.2	-25.1	50.			

STATION ALTITUDE 4051.37 FEET MSL
 20 JULY 81 0730 HRS MDT
 ASCENSION, MO. 101

SIGNIFICANT LEVEL DATA
 2010140161
 LC-37

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL 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
650.0	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	-8.6	82.0
500.0	19552.6	-7.4	-11.4	73.0
466.2	21335.4	-11.0	-16.1	66.0
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	-26.0	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	-30.7	61.0

GEOMETRIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

STATION ALTITUDE 4051.37 FEET MSL
 20 JULY 61
 A5CLINSON NO. 161

UPPER AIR DATA
 2010100161
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 10

GEOMETRIC ALTITUDE METER	GEOMETRIC ALTITUDE FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.4	870.8	23.2	13.7	55.0	1020.1	672.4	140.0	4.1	1.000246	
4500.0	865.3	25.9	14.5	49.5	1000.7	676.1	139.0	3.8	1.000293	
5000.0	850.5	27.1	13.8	44.2	979.9	677.4	138.0	3.5	1.000265	
5500.0	835.9	26.3	13.0	43.8	965.8	676.5	138.5	3.2	1.000279	
6000.0	821.5	25.5	12.2	43.6	952.0	675.4	143.9	2.5	1.000273	
6500.0	807.4	24.7	11.4	43.5	938.5	674.4	144.0	1.7	1.000267	
7000.0	793.5	23.8	10.6	43.3	925.1	673.4	222.9	.9	1.000261	
7500.0	779.9	23.0	9.8	43.1	911.9	672.4	240.4	1.8	1.000256	
8000.0	766.4	22.0	9.0	43.4	899.3	671.2	301.3	2.2	1.000250	
8500.0	752.9	20.7	8.2	44.5	887.6	669.7	305.5	1.1	1.000246	
9000.0	739.7	19.4	7.4	45.6	876.1	668.1	59.5	.2	1.000241	
9500.0	726.7	18.1	6.6	46.7	864.7	666.6	114.5	1.3	1.000236	
10000.0	714.0	16.8	5.7	47.8	853.5	665.0	83.5	.8	1.000232	
10500.0	701.5	15.6	4.9	48.9	842.5	663.5	3.8	1.1	1.000227	
11000.0	688.9	14.3	4.0	49.7	831.2	662.0	20.8	2.9	1.000222	
11500.0	676.5	13.0	3.0	50.6	820.0	660.5	25.9	5.0	1.000218	
12000.0	664.3	11.8	2.1	51.4	808.9	658.9	27.5	7.2	1.000213	
12500.0	652.4	10.5	1.2	52.3	798.0	657.4	27.9	9.4	1.000209	
13000.0	640.6	9.3	.2	53.1	787.3	655.9	33.2	11.0	1.000205	
13500.0	629.1	8.0	-.7	54.0	776.7	654.4	37.3	12.7	1.000201	
14000.0	617.5	6.6	-1.5	56.3	766.3	652.7	42.5	14.2	1.000197	
14500.0	606.0	5.2	-2.2	58.7	756.0	651.0	46.1	15.7	1.000194	
15000.0	594.8	3.8	-3.0	61.0	745.9	649.3	47.7	14.9	1.000190	
15500.0	583.8	2.4	-3.8	63.3	735.9	647.7	49.3	14.1	1.000187	
16000.0	573.0	1.0	-4.7	65.7	726.1	646.0	50.2	12.7	1.000184	
16500.0	562.3	-.3	-5.5	68.3	716.1	644.3	51.2	11.7	1.000180	
17000.0	551.6	-1.6	-6.1	71.4	705.8	642.8	52.5	11.7	1.000177	
17500.0	541.2	-2.9	-6.8	74.4	695.7	641.3	53.5	12.0	1.000174	
18000.0	530.9	-4.1	-7.5	77.4	685.7	639.8	54.9	12.5	1.000171	
18500.0	520.8	-5.4	-8.2	80.5	675.9	638.3	56.2	12.4	1.000168	
19000.0	510.9	-6.4	-9.4	79.2	665.8	636.9	57.5	11.9	1.000164	
19500.0	501.0	-7.3	-11.2	73.6	655.3	635.8	59.0	11.2	1.000160	
20000.0	491.3	-8.3	-12.6	71.2	645.1	634.6	62.7	10.4	1.000156	
20500.0	481.7	-9.3	-13.9	69.3	635.0	633.3	64.0	9.6	1.000153	
21000.0	472.4	-10.3	-15.2	67.3	625.2	632.1	65.9	8.9	1.000150	
21500.0	463.2	-11.2	-18.1	56.5	615.2	630.9	67.5	8.1	1.000145	
22000.0	454.1	-11.8	-22.8	39.3	604.7	630.1	67.9	7.4	1.000140	
22500.0	445.1	-12.5	-23.9	37.7	594.4	629.2	67.5	7.0	1.000137	
23000.0	436.3	-13.1	-25.0	36.2	584.2	628.4	45.5	7.0	1.000135	
23500.0	427.7	-13.8	-26.0	34.6	574.2	627.6	33.7	7.6	1.000132	

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

UPPER AIR DATA
 2010100161
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LONG DEG

TABLE 10 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBI. METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
24000.0	419.3	-14.5	-27.2	33.0	564.4	626.7	26.7	7.6	1.000129
24500.0	410.9	-15.7	-26.5	38.5	555.6	625.3	21.9	6.9	1.000128
25000.0	402.7	-16.8	-26.1	44.1	546.9	623.9	16.4	5.8	1.000126
25500.0	394.6	-17.7	-26.6	45.5	537.8	622.9	8.6	4.7	1.000124
26000.0	386.7	-18.6	-26.6	49.1	528.8	621.8	7.9	3.5	1.000122
26500.0	378.9	-19.8	-25.6	59.6	520.5	620.4	17.6	2.3	1.000120
27000.0	371.2	-21.0	-24.9	70.1	512.3	618.9	24.2	1.7	1.000119
27500.0	363.6	-22.0	-25.5	73.0	503.9	617.6	21.9	1.5	1.000117
28000.0	356.1	-23.0	-26.7	71.4	495.5	616.4	351.7	1.5	1.000115
28500.0	348.8	-23.9	-27.8	69.8	487.1	615.3	321.2	2.5	1.000112
29000.0	341.6	-24.9	-29.0	68.2	479.0	614.1	311.1	4.0	1.000110
29500.0	334.6	-25.8	-30.1	66.6	470.9	612.9	308.0	5.7	1.000108
30000.0	327.7	-26.8	-31.3	65.1	463.0	611.7	308.0	7.0	1.000106
30500.0	320.8	-27.9	-32.6	64.1	455.5	610.2	309.6	7.7	1.000104
31000.0	314.0	-29.1	-33.9	63.1	448.1	608.7			1.000102
31500.0	307.4	-30.3	-35.2	62.1	440.9	607.2			1.000100
32000.0	301.0	-31.5	-36.5	61.1	433.8	605.7			1.000098

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

MANDATORY LEVELS
 2010160161
 LC-37

GEODETIC COORDINATES
 32.40175 LAT JEG
 106.51232 LONG UEG

TABLE 11

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		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	4.6	49.	.5	1.2
650.0	12594.	10.3	1.0	52.	28.9	9.7
600.0	14760.	4.5	-2.6	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	40.	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 3989.00 FEET MSL
 20 JULY 61
 ASCENSION NO. 464

SIGNIFICANT LEVEL DATA
 2010020464
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
691.0	3989.0	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	6826.0	24.5	11.1	43.0
751.4	8599.3	20.9	6.5	45.0
700.0	10596.5	15.5	5.7	52.0
523.4	18424.8	-4.6	-7.4	81.0
500.0	19606.3	-6.6	-9.8	78.0
476.0	20867.6	-8.3	-16.8	50.0
460.4	21716.7	-9.6	-20.3	41.0
422.8	23868.6	-12.9	-24.8	36.0
400.0	25250.7	-16.4	-23.3	55.0

UPPER AIR DATA
 2010021004
 WHITE SANDS
 TABLE 13

STATION ALTITUDE 3989.00 FEET MSL
 20 JULY 61 087 HRS MDT
 ASCENSION NO. 404

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMPERATURE DEWPOINT DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	DIR. OF REF. (IN DEG)	INCL. DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	981.8	26.8	12.1	40.0	1017.4	676.8	140.0	2.9	1.000246
4000.0	881.5	26.8	12.1	40.1	1017.6	676.7	140.1	2.9	1.000246
4500.0	800.4	25.9	12.7	43.8	1002.7	675.9	143.1	3.2	1.000246
5000.0	851.5	25.1	13.2	47.6	988.0	675.1	143.0	3.5	1.000245
5500.0	830.9	25.9	13.3	45.9	968.8	676.0	147.7	3.9	1.000241
6000.0	824.6	25.4	12.5	44.8	953.6	675.3	149.3	4.0	1.000274
6500.0	806.5	24.8	11.7	43.7	939.1	674.7	150.7	4.0	1.000268
7000.0	794.6	24.1	10.9	43.2	925.3	673.8	148.0	3.8	1.000262
7500.0	780.8	23.1	10.1	43.8	912.5	672.6	143.0	3.4	1.000257
8000.0	767.3	22.1	9.4	44.3	900.0	671.4	141.3	2.3	1.000252
8500.0	754.0	21.1	9.7	44.9	887.6	670.2	144.6	.8	1.000247
9000.0	740.8	19.8	8.0	46.4	876.0	668.8	37.0	.2	1.000243
9500.0	727.8	18.5	7.3	48.2	864.8	667.0	6.5	.7	1.000238
10000.0	713.0	17.1	6.6	49.9	853.7	665.4	15.3	1.2	1.000234
10500.0	702.4	15.8	5.8	51.7	842.7	663.8	27.6	1.5	1.000230
11000.0	689.6	14.5	5.1	53.5	831.2	662.3	43.2	2.3	1.000226
11500.0	676.9	13.2	4.4	55.3	819.7	660.8	22.0	3.7	1.000221
12000.0	664.4	11.9	3.7	57.2	808.4	659.2	25.4	5.3	1.000217
12500.0	652.2	10.6	3.0	59.1	797.2	657.7	28.9	7.8	1.000213
13000.0	640.2	9.3	2.2	60.9	786.2	656.2	33.0	10.2	1.000209
13500.0	628.4	8.0	1.4	62.8	775.4	654.6	41.7	12.8	1.000205
14000.0	616.9	6.8	.6	64.6	764.7	653.1	47.1	15.2	1.000201
14500.0	605.5	5.5	-.3	66.5	754.3	651.5	49.8	16.5	1.000197
15000.0	594.4	4.2	-1.1	68.3	743.9	650.0	51.8	17.3	1.000194
15500.0	583.5	2.9	-2.0	70.2	733.8	648.4	53.1	17.3	1.000190
16000.0	572.7	1.6	-2.9	72.0	723.7	646.8	55.9	16.8	1.000186
16500.0	562.2	.3	-3.8	73.9	713.9	645.3	60.4	15.8	1.000182
17000.0	551.8	-.9	-4.7	75.7	704.1	643.7	66.0	15.5	1.000179
17500.0	541.7	-2.2	-5.6	77.6	694.6	642.1	71.9	15.4	1.000176
18000.0	531.7	-3.5	-6.5	79.4	685.1	640.6	78.0	14.9	1.000172
18500.0	521.9	-4.7	-7.5	80.8	675.6	639.1	84.2	14.0	1.000169
19000.0	511.9	-5.6	-8.5	79.5	666.8	638.0	91.5	12.1	1.000165
19500.0	502.1	-6.4	-9.6	78.3	658.3	637.0	92.3	10.7	1.000162
20000.0	492.4	-7.1	-10.8	69.3	649.8	636.0	69.5	9.6	1.000157
20500.0	482.9	-7.8	-14.6	58.2	638.0	635.1	63.0	8.9	1.000152
21000.0	473.5	-8.5	-17.4	48.6	627.6	634.2	77.1	8.3	1.000147
21500.0	464.3	-9.3	-19.4	43.3	617.3	633.2	74.7	7.6	1.000144
22000.0	455.3	-10.0	-21.9	40.3	607.2	632.2	68.0	7.9	1.000140
22500.0	446.3	-10.8	-23.0	39.2	597.2	631.3	61.0	8.4	1.000138
23000.0	437.6	-11.6	-25.0	38.0	587.3	630.3	47.5	7.7	1.000135

STATION ALTITUDE 3982.00 FEET MSL
 20 JULY 51 0839 HRS MDI
 WSCC 510.00. 404

UPPER AIR DATA
 2010021464
 WHITE SANDS

SYNOPTIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	INCL DATA		INDEX OF REFRACTION
							SPEED KNOTS	REFRACTION	
3409.00	881.8	26.8	40.0	1017.9	676.8	140.0	2.9	1.000266	
4000.00	841.5	26.0	40.1	1017.6	676.7	140.1	2.9	1.000266	
4500.00	800.4	25.9	43.8	1002.7	675.9	143.1	3.2	1.000266	
5000.00	851.5	25.1	47.6	988.0	675.1	145.6	3.5	1.000265	
5500.00	836.9	25.9	45.9	968.3	675.3	147.7	3.9	1.000261	
6000.00	822.6	25.4	44.8	953.6	675.3	149.3	4.0	1.000274	
6500.00	806.5	24.8	43.7	939.1	674.7	150.7	4.0	1.000268	
7000.00	794.6	24.1	43.2	925.3	673.8	148.6	3.8	1.000262	
7500.00	780.8	23.1	43.8	912.5	672.6	143.0	3.4	1.000252	
8000.00	767.3	22.1	44.3	900.0	671.4	141.3	2.3	1.000252	
8500.00	754.0	21.1	44.9	887.6	670.2	144.6	.8	1.000247	
9000.00	740.8	19.8	46.4	876.0	668.6	144.6	.2	1.000243	
9500.00	727.8	18.5	48.2	864.8	667.0	143.0	.7	1.000238	
10000.00	715.0	17.1	49.9	853.7	665.4	15.3	1.2	1.000234	
10500.00	702.4	15.8	51.7	842.7	663.8	27.6	1.5	1.000230	
11000.00	689.6	14.5	53.5	831.2	662.3	28.2	2.3	1.000226	
11500.00	676.9	13.2	55.3	819.7	660.8	22.0	3.7	1.000221	
12000.00	664.4	11.9	57.2	808.4	659.2	22.4	5.3	1.000217	
12500.00	652.2	10.6	59.1	797.2	657.7	28.9	7.8	1.000213	
13000.00	640.2	9.3	60.9	786.2	656.2	33.0	10.2	1.000209	
13500.00	628.4	8.0	62.8	775.4	654.6	41.7	12.8	1.000205	
14000.00	616.9	6.8	64.6	764.7	653.1	47.1	15.2	1.000201	
14500.00	605.5	5.5	66.5	754.3	651.5	49.8	16.5	1.000197	
15000.00	594.4	4.2	68.3	743.9	650.0	51.8	17.3	1.000194	
15500.00	583.5	2.9	70.2	733.8	648.4	53.1	17.3	1.000190	
16000.00	572.7	1.6	72.0	723.7	646.8	55.9	16.8	1.000186	
16500.00	562.2	.3	73.9	713.9	645.3	60.4	15.8	1.000182	
17000.00	551.8	-0.9	75.7	704.1	643.7	66.0	15.5	1.000179	
17500.00	541.7	-2.2	77.6	694.6	642.1	71.9	15.4	1.000176	
18000.00	531.7	-3.5	79.4	685.1	640.6	78.0	14.9	1.000172	
18500.00	521.9	-4.7	80.0	675.6	639.1	84.2	14.0	1.000169	
19000.00	511.9	-5.6	79.5	666.8	638.0	91.5	12.1	1.000165	
19500.00	502.1	-6.4	78.3	658.3	637.0	92.3	10.7	1.000162	
20000.00	492.4	-7.1	69.3	649.6	636.0	89.5	9.6	1.000157	
20500.00	482.9	-7.8	58.2	639.0	635.1	83.0	8.9	1.000152	
21000.00	473.5	-8.5	48.6	628.6	634.2	77.1	8.3	1.000147	
21500.00	464.3	-9.3	43.3	618.3	633.2	74.7	7.6	1.000144	
22000.00	455.3	-10.0	40.3	608.2	632.2	68.0	7.9	1.000140	
22500.00	446.3	-10.8	39.2	598.2	631.3	61.0	8.4	1.000138	
23000.00	437.6	-11.6	38.0	588.3	630.3	47.5	7.7	1.000135	

UPPER AIR DATA
 2010070404
 WHITE SANDS

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

WIND DATA
 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 DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23000.0	429.0	-12.3	36.9	572.6	629.4	50.0	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	626.8			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 0800 HRS MDT
 ASCENSION: 140. 464

MANDATORY LEVELS
 2010020404
 WHITE SANDS

GEODEIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 14

PRESSURE EQUIVALENT MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMID. PERCENT	WIND DATA	
			DIRECTION DEGREES (TN)	SPEED KNOTS
856.0	25.0	48.	145.0	3.6
806.0	24.5	43.	150.6	3.9
750.0	20.8	45.	150.1	.4
700.0	15.5	52.	29.2	1.6
650.0	10.4	59.	30.1	4.5
600.0	4.8	67.	51.3	17.3
550.0	-1.2	76.	67.4	15.4
500.0	-6.6	78.	91.8	10.5
450.0	-10.5	40.	64.6	8.3
400.0	-16.4	55.		
	-23.3			

STATION ALTITUDE 4051.37 FEET MSL
 20 JULY 81 0930 HRS MDT
 ASCENSION NO. 102

SIGNIFICANT LEVEL DATA
 20101.00102
 LC-37

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
680.2	4051.4	29.4	52.0
650.0	5067.3	25.9	39.0
617.4	6196.8	24.9	37.0
759.8	8288.9	20.9	59.0
700.0	10595.4	14.9	47.0
606.4	14518.2	4.5	58.0
572.0	16074.0	.8	76.0
547.0	17249.9	-2.1	58.0
530.6	18043.5	-3.9	63.0
522.6	18437.6	-5.0	77.0
506.4	19251.4	-5.7	49.0
500.0	19578.9	-6.7	56.0
490.8	20055.3	-7.9	59.0
483.0	20465.1	-7.9	39.0
459.6	21727.3	-11.2	30.0
436.8	23012.0	-11.4	41.0
400.0	25210.5	-16.9	46.0
379.2	26523.5	-19.6	65.0
358.4	27895.8	-22.4	58.0
337.0	29374.6	-25.9	71.0
300.0	32117.3	-31.5	56.0

STATION ALTITUDE 4051.37 FEET MSL
 20 JULY 61
 ASCENSION 100. 162 090 HRS MDT

UPPER AIR DATA
 2010100102
 LC-37

GEODETIC COORDINATES
 32.40175 LAT NEG
 106.31232 LON NEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DEW POINT DEGREES CENTIGRADE	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	IND. DATA			INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	WIND DATA	
4051.4	880.2	29.4	32.0	11.0	1007.8	679.6	.0	.0	1.000279	
4500.0	850.7	27.9	35.1	11.0	997.3	677.8	1.9.0	.3	1.000277	
5000.0	822.0	26.1	38.5	10.9	985.9	675.9	1.9.0	.7	1.000275	
5500.0	837.4	25.5	38.2	10.3	971.2	675.2	1.9.0	1.1	1.000270	
6000.0	823.0	25.1	37.3	9.5	958.1	674.6	1.9.0	1.5	1.000264	
6500.0	808.8	24.3	37.3	8.8	942.1	673.7	1.9.0	2.0	1.000259	
7000.0	794.8	23.4	37.8	8.2	928.9	672.6	1.32.3	2.4	1.000254	
7500.0	781.0	22.4	38.2	7.5	915.9	671.4	1.24.9	2.6	1.000249	
8000.0	767.5	21.5	38.7	6.8	903.1	670.3	1.14.1	2.6	1.000245	
8500.0	754.1	20.4	39.7	6.2	890.8	669.0	96.5	2.3	1.000240	
9000.0	740.8	19.1	41.5	5.7	874.1	667.5	70.8	2.2	1.000237	
9500.0	727.8	17.7	43.2	5.1	867.6	666.0	63.3	2.5	1.000233	
10000.0	715.0	16.4	44.9	4.5	856.2	664.4	59.6	2.8	1.000229	
10500.0	702.4	15.1	46.7	3.8	845.0	662.9	54.0	3.0	1.000225	
11000.0	689.7	13.8	48.1	3.1	833.8	661.3	48.1	3.2	1.000221	
11500.0	677.2	12.5	49.5	2.2	822.6	659.8	36.1	3.4	1.000217	
12000.0	664.9	11.2	50.9	1.4	811.6	658.2	31.8	4.5	1.000213	
12500.0	652.9	9.9	52.3	.6	800.7	656.6	35.3	6.7	1.000209	
13000.0	641.0	8.5	53.7	-.3	790.0	655.0	39.1	9.1	1.000205	
13500.0	629.4	7.2	55.1	-1.2	774.5	653.4	43.4	11.7	1.000201	
14000.0	618.0	5.9	56.5	-2.1	764.1	651.8	46.1	13.7	1.000197	
14500.0	606.8	4.5	57.9	-3.0	754.9	650.2	48.2	14.7	1.000193	
15000.0	595.5	3.4	63.6	-2.9	747.9	648.8	50.9	15.4	1.000191	
15500.0	584.5	2.2	69.4	-2.8	737.2	647.5	54.7	15.6	1.000189	
16000.0	573.6	1.0	75.1	-2.9	726.6	646.1	59.0	15.5	1.000187	
17000.0	562.8	-.3	61.8	-7.8	716.4	644.5	64.2	15.1	1.000181	
17500.0	552.2	-1.5	59.6	-9.4	706.5	642.9	69.7	14.4	1.000175	
18000.0	541.8	-2.7	62.7	-9.8	696.3	641.4	75.8	13.7	1.000171	
18500.0	531.5	-3.8	62.7	-9.8	686.0	640.0	81.4	12.4	1.000168	
19000.0	521.3	-5.1	74.9	-8.8	675.9	638.6	96.1	11.2	1.000167	
19500.0	511.3	-5.5	57.6	-12.5	664.4	637.9	111.4	10.2	1.000160	
20000.0	501.9	-6.5	54.3	-14.1	654.1	636.7	126.7	9.2	1.000157	
20500.0	491.9	-7.8	58.7	-14.4	644.7	635.1	140.0	8.7	1.000154	
21000.0	482.3	-8.0	38.8	-19.5	633.1	634.7	153.3	8.4	1.000148	
21500.0	472.9	-9.3	35.2	-21.8	623.9	633.1	168.7	8.2	1.000145	
22000.0	463.7	-10.6	31.6	-24.2	614.9	631.5	180.0	7.8	1.000142	
22500.0	454.7	-11.2	32.3	-24.5	604.3	630.7	191.1	7.3	1.000139	
23000.0	445.7	-11.3	36.6	-23.2	592.6	630.0	202.4	7.6	1.000137	
23500.0	437.0	-11.4	40.9	-22.0	581.1	630.0	213.0	8.5	1.000135	
24000.0	428.4	-12.6	42.1	-22.8	572.3	629.1	224.0	9.3	1.000133	

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

UPPER AIR DATA
 2010100162
 LC-37

TABLE 16 CON'T

STATION ALTITUDE 4051.37 FEET MSL
 20 JULY 61 0930 HRS MDZ
 ASCENSION NO. 162

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBI- METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (IN)	SPEED KNOTS	
24000.0	419.9	-13.9	43.2	564.7	627.6	10.9	9.7	1.000131
25000.0	411.5	-15.1	44.4	555.2	626.0	2.8	10.0	1.000128
25000.0	403.4	-16.4	45.5	546.9	624.5	355.0	10.3	1.000126
25500.0	395.3	-17.5	50.2	538.3	623.1	350.5	9.4	1.000124
26000.0	387.4	-18.5	57.4	529.5	621.9	348.9	7.7	1.000123
26500.0	379.6	-19.6	64.7	521.0	620.7	345.2	6.3	1.000121
27000.0	371.8	-20.6	62.6	512.5	619.4	344.9	5.0	1.000119
27500.0	364.3	-21.6	60.0	504.1	618.1	345.4	4.0	1.000116
28000.0	356.8	-22.6	58.9	495.9	616.8	346.6	3.2	1.000114
28500.0	349.5	-23.8	63.3	488.0	615.3	342.5	2.5	1.000112
29000.0	342.3	-25.0	67.7	480.3	613.4	334.2	1.9	1.000110
29500.0	335.2	-26.2	70.3	472.5	612.4	327.2	2.7	1.000108
30000.0	328.2	-27.2	67.6	464.6	611.2	322.8	3.5	1.000106
30500.0	321.3	-28.2	64.8	456.7	609.9	317.8	4.9	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 ASL
 20 JULY 61 0930 HRS MDT
 ASCENSION NO. 162

INDICATORY LEVELS
 2010140162
 LC-37

GEODETIC COORDINATES
 32.40175 LAT NEG
 106.31232 LONG NEG

TABLE 17

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	TEMPERATURE DEGREE CENTIGRADE	PERCENT	HUMIDITY PERCENT	DIRECTION DEGREES(TN)	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	10505.	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	50.		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
 ASCENSION NO. 405

SIGNIFICANT LEVEL DATA
 20100-0465
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 18

PRESSURE	GEOMETRIC	TEMPERATURE	REL. HUM.
MILLIBARS	ALTITUDE	AIR DEWPOINT	PERCENT
MSL FEET	FEET	DEGREES CENTIGRADE	
682.5	3989.0	30.8	31.0
650.0	5087.2	27.6	41.0
633.2	5567.0	26.0	41.0
795.6	7001.0	24.7	38.0
700.0	10528.3	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
509.0	19527.6	-5.9	54.0
481.4	20603.2	-6.8	34.0
458.4	21853.9	-9.6	51.0
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 3989.00 FEET MSL
29 JULY 61
ACCELERATION NO. 405

UPPER AIR DATA
2010020465
WHITE SANDS

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 (TN)	SPEED KNOTS	
3989.0	842.5	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	358.0	4.8	1.000282
5000.0	852.5	27.9	40.2	980.1	678.2	10.4	3.8	1.000282
5500.0	836.0	26.5	41.0	968.1	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	939.7	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	97.3	2.4	1.000253
8000.0	765.0	22.0	41.3	901.6	671.1	60.0	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	57.4	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	55.6	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
13500.0	630.5	7.9	57.0	778.6	654.3	50.2	12.4	1.000203
14000.0	618.9	6.6	60.3	767.9	652.8	57.9	13.0	1.000200
14500.0	607.5	5.3	63.6	757.3	651.2	59.9	13.6	1.000196
15000.0	596.3	4.0	66.9	747.0	649.7	64.2	14.3	1.000193
15500.0	585.4	2.7	70.2	736.8	648.1	69.8	14.8	1.000190
16000.0	574.5	1.4	70.8	726.6	646.6	76.5	15.3	1.000186
16500.0	563.7	.2	68.3	716.4	645.0	81.9	14.5	1.000181
17000.0	553.1	-1.1	65.7	706.3	643.4	86.9	13.3	1.000176
17500.0	542.7	-2.3	63.2	696.4	641.9	90.2	11.3	1.000172
18000.0	532.4	-3.5	70.5	686.1	640.5	94.6	9.3	1.000170
18500.0	522.3	-4.0	59.5	674.7	639.8	102.0	7.2	1.000164
19000.0	512.3	-4.8	55.2	663.9	638.7	102.0	6.0	1.000160
19500.0	502.5	-5.7	54.4	653.4	637.7	81.3	5.3	1.000157
20000.0	492.8	-6.2	46.4	642.3	636.9	69.0	6.1	1.000153
20500.0	483.3	-6.7	36.1	631.3	636.2	61.0	6.9	1.000148
21000.0	474.0	-7.7	33.0	621.4	635.0	50.9	7.1	1.000145
21500.0	464.8	-8.8	31.8	612.0	633.7	52.7	7.8	1.000142
22000.0	455.8	-9.9	32.6	602.6	632.4	49.1	9.0	1.000139
22500.0	446.8	-10.9	37.9	592.9	631.2	46.1	10.1	1.000138
23000.0	438.0	-11.8	43.2	583.4	630.1	40.0	11.3	1.000136

STATION ALTITUDE 3989.00 FEET MSL
 20 JULY 51
 ASCENSION NO. 465

UNDER AIR DATA
 2010020005
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 19 CONT

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TIN)	SPEED KILOTS	
29500.0	429.4	-12.8	-21.4	48.5	574.1	629.9	45.1	11.0	1.000134
24000.0	421.0	-13.6	-21.1	53.9	564.9	627.7			1.000132
24500.0	412.7	-14.4	-27.4	32.0	555.2	620.9			1.000127
25000.0	404.4	-15.7	-26.1	40.4	547.0	625.2			1.000126

STATION ALTITUDE 3989.00 FEET AMSL
 20 JULY 61
 ASCENSION. NO. 465

MANDATORY LEVELS
 2010020400
 WHITE SANDS

3989.00 FEET AMSL
 1050 KRS HD

GEOLOGIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 20

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUMID. PERCENT	WIND DATA		
		AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5083.	27.6	13.2	41.	13.1	4.6	
800.0	6636.	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.	49.6	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	36.	48.2		
400.0	25231.	-16.5	-25.6	45.			

END

DATE
FILMED

10-81

DTIC