AD-A115 792 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
193158 MLRS MISSILE NUMBER V28-010, V28-011, V28-012 ROUND NUMB--ETC(U)
APR 82 D C KELLER

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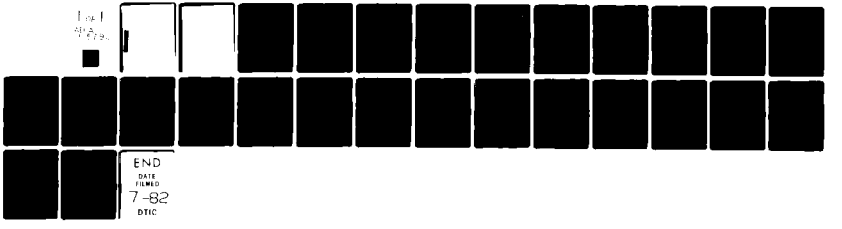

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1234	2. GOVT ACCESSION NO. A115 792	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* 19315B MLRS Missile Number V28-010, V28-011, V28-012 Round Number V250/AT2-19, V251/AT2-20, V252/AT2-21		5. TYPE OF REPORT & PERIOD COVERED 6. PERFORMING ORG. REPORT NUMBER
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18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

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 V28-010, V28-011, V28-012, Round Number V250/AT2-19, V251/AT2-20, V252/AT2-21 are presented in tabular form.

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CONTENTS

INTRODUCTION

19315B MLRS, Missile Numbers V28-010, V28-011 and V28-012, Round Numbers V250/AT2-19, V251/AT2-20,and V252/AT2-21, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1114:20, 1114:28 and 1114:33 MDT, 27 April 1982. The scheduled launch times were 1100, 1100:04.5 and 1100:09 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 (^{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

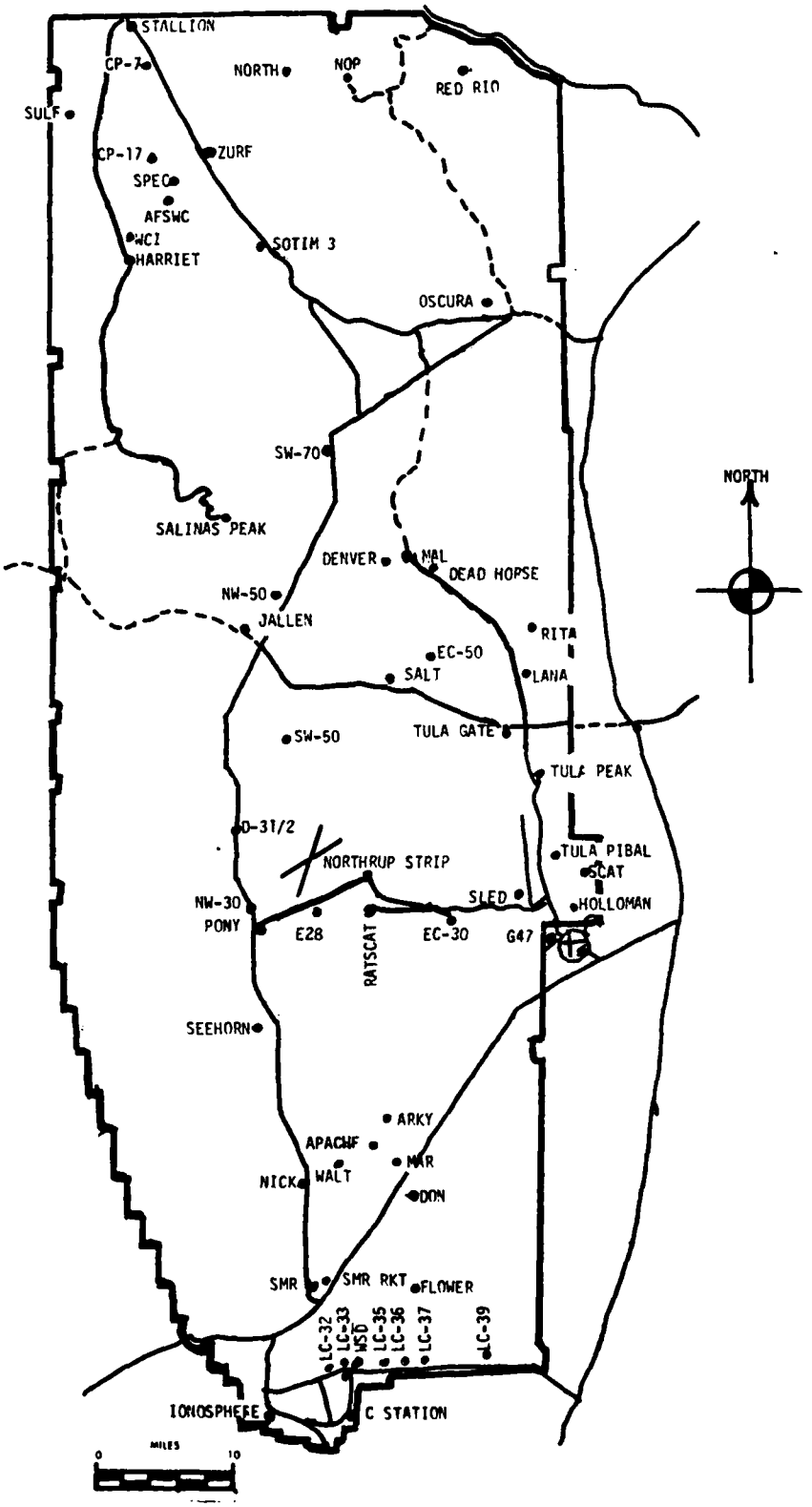
(1) Low level wind data were obtained from Pilot-Balloon observations at:

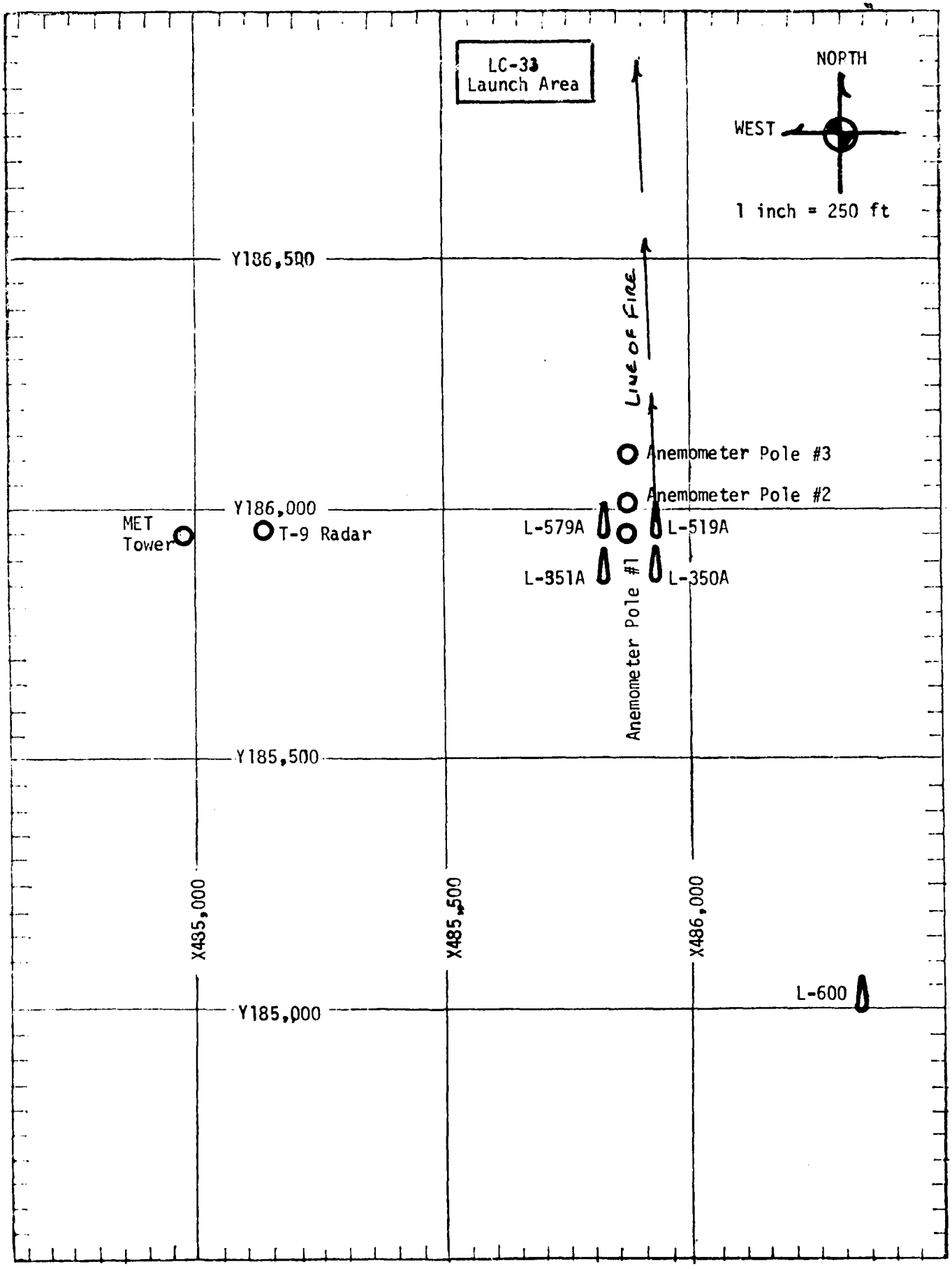
SITE AND ALTITUDE	
WSD	2 Km
DON	2 Km

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

SITE AND TIME	
WSD	0800 MDT
LC-37	0900 MDT
WSD	1000 MDT
LC-37	1114 MDT

WSMR METEOROLOGICAL SITES




LC-33
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
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 27 APR 82 (DAY / MONTH / YEAR) X= 484,982.65 Y= 185,957.73 H= 3995.00

TIME MDT	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1114	878.5		24.4		-3.6	15	1025	012	07		40

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
	4	AS	13,000	6	CS	23,000				

PSYCHROMETRIC COMPUTATION

TIME:	1114		
DRY BULB TEMP.	24.4		
WET BULB TEMP.	10.4		
WET BULB DEPR.	14.0		
DEW POINT	-3.6		
RELATIVE HUMID.	15		

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	010	06	T-30	070	04	T-30	087	05
T-20	008	06	T-20	090	07	T-20	069	04
T-10	025	07	T-10	058	07	T-10	013	07
T0.0	027	04	T0.0	067	05	T 0.0	045	06
T+10	014	05	T+10	080	04	T +10	037	07

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 X484,982.61, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	047	08	T -30	051	08
T-20	047	08	T-20	047	08
T-10	027	07	T-10	045	07
T0.0	012	07	T 0.0	045	06
T+10	027	07	T +10	051	07

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	041	08	T -30	038	08
T-20	041	06	T -20	036	09
T-10	042	07	T -10	043	10
T0.0	044	07	T 0.0	053	09
T+10	045	05	T +10	047	06

CONT'D

TABLE 4 CONT'D FROM 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+20	007	07	T+20	60	06	T+20	054	07

TABLE 5 CONT'D FROM 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+20	026	07	T+20	054	06

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T+20	045	05	T+20	045	05

27 APRIL 1982

SITE: WSD
TIME: 1114 MDT
X= 488,580
Y= 185,045
H= 3.989

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	020	04
[illegible]	068	07
[illegible]	068	05
[illegible]	060	07
[illegible]	064	06
[illegible]	088	03
[illegible]	125	01
[illegible]	205	04
[illegible]	214	04
[illegible]	234	06
[illegible]	257	09
[illegible]	249	10
[illegible]	247	11
[illegible]	245	14
[illegible]	257	20

Data obtained from Nike-Herc Radar
Tracked pilot-balloon observations

SITE: DON
TIME: 1114 MDT
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
[illegible]	048	03
[illegible]	043	04
[illegible]	033	04
[illegible]	024	04
[illegible]	021	04
[illegible]	019	04
[illegible]	244	02
[illegible]	234	07
950	242	09
1150	241	10
1350	242	09
1550	248	09
1750	252	10
2000	260	16

Data obtained from Single-Theodolite
Tracked pilot-balloon observations.

TABLE 7

AIMING AND T-TIME COMPUTER MET MESSAGES
27 April 1982

WSD 0800 MDT

METCM1324064

271400122878

00622006 28600878
01041012 28690867
02000000 29160842
03467005 29060804
04516010 28630757
05443013 28210713
06434014 27790671
07422022 27380631
08414030 27030593
09446028 26660556
10454030 26210522
11458028 25720488
12476035 25330442

LC-37 0900 MDT

METCM1324063

271500124877

00569004 29120877
01010012 29060867
02558002 29280842
03456006 29090804
04472011 28680758
05462015 28250714
06429016 27810671
07413024 27370631
08404032 26990593
09424031 26610556
10439027 26200522
11461021 25760489
12477035 25460442

WSD 1000 MDT

METCM1324064

271600122878

00053010 29350878
01034010 29280868
02588003 29250843
03469007 29070804
04473009 28660758
05463014 28250714
06448023 27850672
07411028 27440632
08408032 27030594
09438024 26620557
10450023 26150522
11442025 25790489
12473035 25470443

LC-37 1114 MDT

METCM1324063

271720124877

00071003 29670878
01081008 29550868
02190002 29270843
03392005 29070804
04451008 28650758
05474014 28230714
06438023 27920672
07436022 27500632
08439020 27040594
09421023 26590557
10425025 26120522
11447026 25800489
12481035 25530443

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 0800 HRS MDT
ASCENSION NO. 176

SIGNIFICANT LEVEL DATA
117002017
WHITE SANDS

TABLE 8

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
877.7	3989.0	12.5	-7.0	25.0
869.4	4250.9	13.5	-5.6	26.0
850.0	4877.3	16.1	-2.4	28.0
836.3	5333.3	19.6	.1	27.0
754.2	8214.3	12.3	-5.2	29.0
700.0	10248.1	7.1	-8.1	33.0
627.4	13168.0	-.3	-10.0	48.0
601.0	14294.7	-2.4	-12.4	46.0
584.0	15041.4	-4.2	-11.4	57.0
567.0	15805.5	-5.5	-19.9	31.0
525.8	17733.1	-10.6	-20.2	45.0
500.0	18996.8	-14.6	-20.1	63.0
477.4	20142.7	-17.8	-20.5	79.0
454.0	21374.4	-20.2	-21.7	88.0
445.2	21852.3	-19.7	-26.7	92.0
422.4	23134.1	-21.0	-22.7	86.0
400.0	24453.9	-23.0	-24.9	84.0

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 0800 HRS MDT
ASCENSION NO. 176

UPPER AIR DATA
1170020176
WHITE SANDS
TABLE 9

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

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	877.7	12.5	-7.0	25.0	1068.7	658.9	350.0	6.0	1.000255
4000.0	877.3	12.5	-6.9	25.0	1068.1	659.0	349.8	6.0	1.000255
4500.0	861.6	14.5	-4.3	26.8	1041.4	661.4	337.5	4.6	1.000252
5000.0	846.3	17.0	-1.7	27.7	1013.5	664.4	316.7	3.6	1.000250
5500.0	831.3	19.2	-.2	27.1	988.0	667.0	287.3	3.3	1.000247
6000.0	816.5	17.9	-1.1	27.5	974.8	665.5	260.6	3.9	1.000242
6500.0	802.0	16.6	-2.0	27.8	961.7	664.0	274.3	5.0	1.000238
7000.0	787.8	15.4	-2.9	28.2	948.9	662.5	286.4	6.5	1.000234
7500.0	773.8	14.1	-3.9	28.5	936.3	661.0	288.0	7.9	1.000230
8000.0	760.0	12.8	-4.8	28.9	923.8	659.5	286.2	9.3	1.000226
8500.0	746.3	11.6	-5.6	29.6	911.3	658.0	279.1	10.1	1.000222
9000.0	732.8	10.3	-6.3	30.5	898.9	656.5	265.8	10.7	1.000218
9500.0	719.5	9.0	-7.0	31.5	886.6	655.0	255.4	11.6	1.000215
10000.0	706.4	7.7	-7.7	32.5	874.5	653.5	248.4	12.5	1.000211
10500.0	693.4	6.5	-8.1	34.3	862.4	652.0	244.1	13.5	1.000208
11000.0	680.5	5.2	-8.3	36.9	850.2	650.5	244.9	14.3	1.000205
11500.0	667.9	3.9	-8.6	39.4	838.2	649.1	245.1	15.3	1.000202
12000.0	655.5	2.7	-8.9	42.0	826.4	647.6	242.0	17.2	1.000200
12500.0	643.3	1.4	-9.3	44.6	814.9	646.1	239.5	19.2	1.000197
13000.0	631.4	.1	-9.8	47.1	803.4	644.6	236.1	22.4	1.000194
13500.0	619.5	-.9	-10.7	47.4	791.4	643.3	233.4	25.9	1.000190
14000.0	607.8	-1.9	-11.8	46.5	779.2	642.2	233.4	28.2	1.000186
14500.0	596.3	-2.9	-12.1	49.0	767.4	640.9	235.2	29.6	1.000184
15000.0	584.9	-4.1	-11.5	56.4	756.1	639.5	237.2	30.7	1.000182
15500.0	573.7	-5.0	-16.0	41.4	744.5	638.3	241.5	29.6	1.000175
16000.0	562.7	-6.0	-19.8	32.4	733.2	637.0	246.1	28.8	1.000170
16500.0	551.8	-7.3	-19.8	36.0	722.5	635.4	250.0	28.3	1.000168
17000.0	541.1	-8.7	-19.9	39.7	712.1	633.9	252.5	28.3	1.000165
17500.0	530.6	-10.0	-20.1	43.3	701.8	632.3	255.1	28.3	1.000163
18000.0	520.2	-11.4	-20.0	48.8	691.9	630.5	255.7	28.5	1.000161
18500.0	510.0	-13.0	-19.9	55.9	682.4	628.6	256.0	28.8	1.000159
19000.0	499.9	-14.6	-20.1	63.0	673.0	626.7	256.6	28.9	1.000157
19500.0	489.9	-16.0	-20.2	70.0	663.1	625.0	257.8	28.8	1.000155
20000.0	480.2	-17.4	-20.4	77.0	653.4	623.3	258.9	28.8	1.000152
20500.0	470.5	-18.5	-20.8	81.6	643.0	622.0	261.5	29.6	1.000150
21000.0	461.0	-19.5	-21.3	85.3	632.5	620.8	264.4	30.9	1.000147
21500.0	451.7	-20.1	-21.4	89.1	621.1	620.0	267.1	32.3	1.000145
22000.0	442.5	-19.8	-20.9	91.3	608.0	620.3			1.000142
22500.0	433.5	-20.4	-21.7	89.0	596.9	619.7			1.000139
23000.0	424.7	-20.9	-22.5	86.6	586.0	619.1			1.000136

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 0800 HRS MDT
ASCENSION NO. 176

UPPER AIR DATA
1170020176
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 9 CONT'D

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	416.1	-21.6	-23.3	85.4	575.6	618.2			1.000134
24000.0	407.6	-22.3	-24.2	84.7	565.6	617.3			1.000131

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 0800 HRS MDT
ASCENSION NO. 176

MANDATORY LEVELS
117002017b
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 10

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	4874.	16.1	-2.4	28.	322.9	3.8
800.0	6574.	16.5	-2.1	28.	276.6	5.2
750.0	8360.	11.9	-5.4	29.	282.9	10.1
700.0	10238.	7.1	-8.1	33.	245.4	13.0
650.0	12220.	2.1	-9.1	43.	240.8	18.1
600.0	14321.	-2.5	-12.3	47.	234.6	29.1
550.0	16566.	-7.6	-19.8	37.	250.4	28.3
500.0	18970.	-14.6	-20.1	63.	256.6	28.9
450.0	21557.	-20.0	-21.2	90.		
400.0	24413.	-23.0	-24.9	84.		

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 0000 HRS MDT
ASCENSION NO. 38

SIGNIFICANT LEVEL DATA
1170180038
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
877.3	4051.4	17.5	-5.0	21.0
867.7	4358.7	16.1	-7.5	19.0
859.3	4630.6	17.9	-7.5	17.0
850.0	4936.2	18.7	-6.8	17.0
834.0	5471.6	19.8	-5.9	17.0
741.4	8748.8	11.8	-10.4	20.0
700.0	10314.8	7.5	-10.7	26.0
635.4	12901.3	.4	-10.1	45.0
544.0	16929.2	-8.7	-18.7	44.0
500.0	19057.6	-14.0	-22.6	48.0
473.2	20423.0	-18.1	-23.6	62.0
465.4	20831.0	-18.9	-23.0	70.0
461.7	21026.7	-18.8	-21.8	77.0
458.1	21219.4	-17.1	-18.5	69.0
436.1	22431.3	-18.6	-21.0	81.0
400.0	24536.8	-22.4	-25.0	79.0

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 0900 HRS MDT
ASCENSION NO. 38

UPPER AIR DATA
117018003B
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 12

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
4051.4	877.3	17.5	-5.0	21.0	1049.6	664.8	320.0	4.1	1.000253
4500.0	863.3	17.0	-7.5	18.0	1034.8	664.1	303.3	3.7	1.000246
5000.0	848.1	18.8	-6.7	17.0	1010.2	666.2	282.8	3.7	1.000241
5500.0	833.2	19.7	-6.0	17.0	989.2	667.3	264.6	4.2	1.000238
6000.0	818.3	18.5	-6.6	17.5	975.7	665.9	251.1	4.9	1.000234
6500.0	803.8	17.3	-7.3	17.9	962.5	664.5	259.5	6.0	1.000230
7000.0	789.5	16.1	-7.9	18.4	949.4	663.1	266.7	7.2	1.000227
7500.0	775.4	14.8	-8.6	18.9	936.5	661.6	266.0	8.9	1.000223
8000.0	761.6	13.6	-9.3	19.3	923.8	660.2	266.6	10.4	1.000220
8500.0	748.1	12.4	-10.0	19.8	911.3	658.8	269.4	11.7	1.000216
9000.0	734.6	11.1	-10.4	21.0	899.0	657.3	268.6	12.9	1.000213
9500.0	721.2	9.7	-10.4	22.9	886.9	655.7	265.5	14.2	1.000211
10000.0	708.1	8.4	-10.6	24.8	875.0	654.1	257.6	15.1	1.000208
10500.0	695.2	7.0	-10.5	27.4	863.2	652.5	248.3	16.3	1.000206
11000.0	682.3	5.6	-10.1	31.0	851.3	651.0	243.1	17.0	1.000203
11500.0	669.6	4.2	-9.9	34.7	839.6	649.4	239.1	17.7	1.000201
12000.0	657.2	2.9	-9.9	38.4	828.1	647.8	237.3	19.5	1.000199
12500.0	645.0	1.5	-10.0	42.1	816.8	646.2	235.0	21.6	1.000196
13000.0	633.0	.2	-10.3	45.0	805.4	644.6	231.0	24.0	1.000194
13500.0	620.9	-1.0	-11.4	44.9	793.4	643.2	228.0	26.3	1.000190
14000.0	609.0	-2.1	-12.5	44.7	781.6	641.9	225.7	28.3	1.000186
14500.0	597.4	-3.2	-13.5	44.6	769.9	640.5	225.7	29.8	1.000183
15000.0	586.0	-4.3	-14.6	44.5	758.5	639.1	227.5	30.9	1.000179
15500.0	574.8	-5.5	-15.7	44.4	747.2	637.8	231.7	30.7	1.000176
16000.0	563.8	-6.6	-16.7	44.2	736.1	636.4	236.3	30.5	1.000173
16500.0	553.1	-7.7	-17.8	44.1	725.2	635.0	240.5	30.2	1.000170
17000.0	542.5	-8.9	-18.8	44.1	714.4	633.6	243.4	29.8	1.000167
17500.0	531.8	-10.1	-19.7	45.1	703.7	632.1	244.5	29.0	1.000164
18000.0	521.4	-11.4	-20.6	46.0	693.3	630.6	247.7	27.3	1.000161
18500.0	511.2	-12.6	-21.6	47.0	682.9	629.1	252.5	25.3	1.000158
19000.0	501.1	-13.9	-22.5	47.9	672.8	627.6	255.7	23.6	1.000156
19500.0	491.2	-15.3	-22.8	52.5	663.1	625.8	258.8	21.9	1.000153
20000.0	481.3	-16.8	-23.2	57.7	653.7	623.9	260.5	23.1	1.000151
20500.0	471.7	-18.3	-23.4	63.5	644.2	622.2	261.8	24.6	1.000149
21000.0	462.2	-18.8	-22.0	76.0	632.5	621.6	266.3	28.5	1.000147
21500.0	452.9	-17.4	-19.1	87.1	616.3	623.3	269.9	32.9	1.000145
22000.0	443.8	-18.1	-20.1	83.8	605.5	622.5	270.1	35.9	1.000142
22500.0	434.9	-18.7	-21.2	80.9	594.9	621.7	269.5	38.4	1.000139
23000.0	426.0	-19.6	-22.1	80.5	584.9	620.6			1.000136
23500.0	417.4	-20.5	-23.1	80.0	575.1	619.5			1.000134

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 0900 HRS MDT
ASCENSION NO. 38

UPPER AIR DATA
1170180036
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 12 CONT'D

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	408.9	-21.4	-24.0	79.5	565.5	618.3			1.000131
24500.0	400.6	-22.3	-25.0	79.0	556.0	617.2			1.000129

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 62 0900 HRS MDT
ASCENSION NO. 38

MANDATORY LEVELS
1170180038
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 13

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	4933.	18.7	-6.8	17.	285.5	3.7
800.0	6636.	17.0	-7.4	18.	262.0	6.3
750.0	8424.	12.6	-9.9	20.	269.0	11.5
700.0	10305.	7.5	-10.7	26.	251.7	15.8
650.0	12287.	2.1	-9.9	41.	236.4	20.7
600.0	14387.	-3.0	-13.3	45.	225.4	29.6
550.0	16628.	-8.1	-18.1	44.	241.7	30.1
500.0	19031.	-14.0	-22.6	48.	255.9	23.4
450.0	21626.	-17.6	-19.4	86.	270.6	34.1
400.0	24496.	-22.4	-25.0	79.		

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 1000 HRS MDT
ASCENSION NO. 177

SIGNIFICANT LEVEL DATA
1170020177
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 14

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	TEMPERATURE DEWPOINT	REL.HUM.
MILLIBARS	MSL FEET	DEGREES CENTIGRADE		PERCENT
878.0	3989.0	19.8	-3.1	21.0
854.8	4742.9	18.1	-4.5	21.0
850.0	4901.0	18.3	-4.4	21.0
836.0	5368.4	19.4	-4.1	20.0
700.0	10273.4	7.5	-9.8	28.0
581.2	15195.2	-4.8	-13.8	49.0
547.8	16715.8	-8.5	-17.5	48.0
500.0	19016.4	-15.1	-19.3	70.0
472.4	20425.8	-16.4	-18.7	82.0
460.0	21082.5	-17.9	-19.5	87.0
429.6	22760.8	-19.4	-21.0	87.0
400.0	24495.6	-23.0	-24.7	86.0

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 1000 HRS MDT
ASCENSION NO. 177

UPPER AIR DATA
1170020177
WHITE SANDS

TABLE 15

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

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	878.0	19.8	-3.1	21.0	1041.9	667.5	30.0	9.9	1.000254
4000.0	877.7	19.8	-3.1	21.0	1041.6	667.5	29.9	9.8	1.000253
4500.0	862.2	18.6	-4.1	21.0	1027.3	666.1	20.4	6.6	1.000249
5000.0	847.0	18.5	-4.3	20.8	1009.6	666.0	355.0	3.8	1.000245
5500.0	832.0	19.1	-4.2	20.2	989.8	666.7	295.5	3.3	1.000240
6000.0	817.1	17.9	-4.7	21.0	976.2	665.3	266.1	5.2	1.000237
6500.0	802.4	16.7	-5.2	21.8	962.7	663.9	268.8	6.4	1.000233
7000.0	788.1	15.4	-5.8	22.7	949.5	662.4	269.8	7.5	1.000230
7500.0	773.9	14.2	-6.3	23.5	936.4	661.0	268.8	8.5	1.000226
8000.0	760.0	13.0	-6.9	24.3	923.6	659.6	266.6	9.5	1.000223
8500.0	746.4	11.8	-7.5	25.1	910.9	658.2	262.5	10.8	1.000219
9000.0	733.0	10.6	-8.1	25.9	898.4	656.8	259.6	12.3	1.000216
9500.0	719.9	9.4	-8.8	26.7	886.2	655.4	259.5	14.3	1.000212
10000.0	707.0	8.2	-9.4	27.6	874.1	653.9	258.9	16.3	1.000209
10500.0	694.0	6.9	-9.9	29.0	861.9	652.5	256.4	18.8	1.000206
11000.0	681.0	5.7	-10.1	31.1	849.5	651.0	253.5	21.0	1.000203
11500.0	668.3	4.4	-10.3	33.2	837.4	649.6	248.2	22.4	1.000200
12000.0	655.8	3.2	-10.6	35.4	825.4	648.1	243.0	24.1	1.000197
12500.0	643.5	1.9	-11.0	37.5	813.7	646.6	237.2	26.2	1.000194
13000.0	631.5	.7	-11.5	39.6	802.1	645.2	233.1	28.4	1.000192
13500.0	619.6	-.6	-11.9	41.8	790.7	643.7	231.6	30.6	1.000189
14000.0	608.1	-1.8	-12.5	43.9	779.5	642.2	230.3	32.7	1.000186
14500.0	596.7	-3.1	-13.0	46.0	768.5	640.7	230.9	31.4	1.000183
15000.0	585.5	-4.3	-13.6	48.2	757.7	639.2	231.5	30.2	1.000180
15500.0	574.3	-5.5	-14.6	48.8	746.7	637.7	235.4	27.7	1.000177
16000.0	563.3	-6.8	-15.8	48.5	735.7	636.2	240.6	25.2	1.000173
16500.0	552.4	-8.0	-17.0	48.1	724.9	634.7	245.1	24.2	1.000170
17000.0	541.7	-9.3	-17.6	50.7	714.4	633.1	249.5	23.6	1.000167
17500.0	531.0	-10.7	-17.9	55.5	704.2	631.4	252.2	23.4	1.000165
18000.0	520.6	-12.2	-18.3	60.3	694.2	629.7	252.5	23.3	1.000163
18500.0	510.4	-13.6	-18.7	65.1	684.3	627.9	252.6	23.2	1.000160
19000.0	500.3	-15.1	-19.3	69.8	674.6	626.2	251.6	23.8	1.000158
19500.0	490.4	-15.5	-19.1	74.1	662.4	625.6	250.5	24.5	1.000155
20000.0	480.6	-16.0	-18.9	78.4	650.4	625.1	252.8	26.2	1.000153
20500.0	471.0	-16.6	-18.8	82.6	638.8	624.4	256.5	28.4	1.000150
21000.0	461.5	-17.7	-19.4	86.4	628.8	623.0	259.7	30.7	1.000148
21500.0	452.2	-18.3	-19.9	87.0	617.5	622.3	263.6	33.3	1.000145
22000.0	443.1	-18.7	-20.3	87.0	606.1	621.7	267.3	35.9	1.000142
22500.0	434.2	-19.2	-20.8	87.0	594.9	621.2			1.000139
23000.0	425.4	-19.9	-21.5	86.9	584.6	620.3			1.000137

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 1000 HRS MDT
ASCENSION NO. 177

UPPER AIR DATA
1170020177
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 15 CONT'D

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	416.7	-20.9	-22.6	86.6	575.1	619.0			1.000134
24000.0	408.2	-22.0	-23.6	86.3	565.7	617.7			1.000131

STATION ALTITUDE 3989.00 FEET MSL
27 APR. 82 1000 HRS MDT
ASCENSION NO. 177

MANDATORY LEVELS
1170020177
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 16

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	4897.	18.3	-4.4	21.	2.7	4.3
800.0	6598.	16.4	-5.3	22.	269.2	6.7
750.0	8384.	12.1	-7.3	25.	263.4	10.5
700.0	10263.	7.5	-9.8	28.	257.5	17.6
650.0	12248.	2.6	-10.8	36.	239.9	25.1
600.0	14351.	-2.7	-12.8	45.	230.7	31.8
550.0	16592.	-8.2	-17.3	48.	246.0	24.1
500.0	18990.	-15.1	-19.3	70.	251.6	23.9
450.0	21590.	-18.4	-20.0	87.	264.6	33.9
400.0	24455.	-23.0	-24.7	86.		

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 1114 HRS MDT
ASCENSION NO. 39

SIGNIFICANT LEVEL DATA
1170180039
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 17

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE		REL.HUM.
		AIR	DEWPOINT	PERCENT
MILLIBARS	MSL FEET	DEGREES CENTIGRADE		
877.9	4051.4	23.2	-6.7	13.0
850.0	4968.0	19.6	-5.3	18.0
836.6	5415.1	18.1	-6.6	18.0
823.7	5851.7	18.7	-5.4	19.0
700.0	10339.8	7.3	-10.0	28.0
673.8	11368.6	5.8	-6.7	40.0
544.4	16950.5	-9.2	-17.7	50.0
500.0	19090.5	-15.3	-19.3	71.0
479.0	20156.8	-15.6	-17.1	68.0
433.2	22638.8	-18.6	-22.1	74.0
400.0	24578.1	-23.3	-26.5	75.0

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 1114 HRS MDT
ASCENSION NO. 39

UPPER AIR DATA
1170180039
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GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 18

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
4051.4	877.9	23.2	-6.7	13.0	1030.4	671.2	40.0	2.9	1.000246
4500.0	864.1	21.4	-5.9	15.4	1020.1	669.2	42.3	1.5	1.000245
5000.0	849.0	19.5	-5.4	18.0	1008.9	667.0	158.1	.1	1.000243
5500.0	834.1	18.2	-6.3	18.2	995.5	665.6	213.3	1.6	1.000239
6000.0	819.3	18.3	-5.5	19.3	977.4	665.7	215.4	3.2	1.000236
6500.0	804.6	17.1	-5.9	20.3	964.0	664.3	222.5	4.2	1.000233
7000.0	790.1	15.8	-6.3	21.3	950.9	662.8	227.4	5.2	1.000229
7500.0	775.9	14.5	-6.7	22.3	938.0	661.3	238.9	6.2	1.000226
8000.0	762.0	13.2	-7.2	23.3	925.2	659.9	248.1	7.4	1.000223
8500.0	748.3	12.0	-7.8	24.3	912.7	658.4	256.0	8.8	1.000219
9000.0	734.8	10.7	-8.3	25.3	900.3	656.9	262.0	10.2	1.000216
9500.0	721.6	9.4	-8.9	26.3	888.2	655.4	264.0	12.5	1.000213
10000.0	708.7	8.2	-9.5	27.3	876.2	653.9	264.9	15.0	1.000209
10500.0	695.9	7.1	-9.4	29.9	863.7	652.7	258.6	18.4	1.000207
11000.0	683.1	6.3	-7.7	35.7	849.8	651.9	254.3	21.5	1.000206
11500.0	670.4	5.4	-7.0	40.2	836.6	650.9	249.3	22.9	1.000204
12000.0	657.7	4.1	-7.9	41.1	824.8	649.3	245.4	23.8	1.000200
12500.0	645.3	2.8	-8.8	42.0	813.3	647.7	243.7	22.5	1.000197
13000.0	633.1	1.4	-9.8	42.9	801.9	646.1	242.1	21.2	1.000193
13500.0	621.1	.1	-10.8	43.8	790.6	644.5	241.9	20.4	1.000190
14000.0	609.4	-1.3	-11.7	44.7	779.6	642.9	241.4	19.9	1.000186
14500.0	597.8	-2.6	-12.7	45.6	768.7	641.2	240.6	19.9	1.000183
15000.0	586.5	-4.0	-13.7	46.5	758.0	639.6	239.9	20.4	1.000180
15500.0	575.4	-5.3	-14.7	47.4	747.4	638.0	239.4	21.3	1.000177
16000.0	564.5	-6.6	-15.7	48.3	737.1	636.4	239.3	22.1	1.000174
16500.0	553.9	-8.0	-16.7	49.2	726.8	634.7	239.9	23.0	1.000171
17000.0	543.3	-9.3	-17.7	50.5	716.7	633.1	240.4	23.7	1.000168
17500.0	532.6	-10.8	-17.9	55.4	706.4	631.4	241.0	24.1	1.000166
18000.0	522.2	-12.2	-18.3	60.3	696.3	629.7	241.7	24.7	1.000163
18500.0	511.9	-13.6	-18.7	65.2	686.4	627.9	242.4	25.6	1.000161
19000.0	501.8	-15.0	-19.2	70.1	676.6	626.2	245.6	25.9	1.000158
19500.0	491.8	-15.4	-18.4	77.5	664.0	625.8	250.3	25.9	1.000156
20000.0	482.0	-15.6	-17.4	85.5	651.1	625.6	255.8	26.3	1.000154
20500.0	472.4	-16.0	-17.8	86.1	639.2	625.1	261.4	26.9	1.000151
21000.0	462.9	-16.6	-18.8	83.2	627.9	624.3	265.6	29.0	1.000148
21500.0	453.6	-17.2	-19.8	80.4	616.8	623.6	268.6	31.8	1.000145
22000.0	444.6	-17.8	-20.8	77.6	606.0	622.8	271.2	34.8	1.000142
22500.0	435.6	-18.4	-21.8	74.8	595.3	622.1	273.3	37.8	1.000139
23000.0	426.8	-19.5	-22.9	74.2	585.6	620.8			1.000136
23500.0	418.1	-20.7	-24.0	74.4	576.5	619.2			1.000134

UPPER AIR DATA
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STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 1114 HRS MDT
ASCENSION NO. 39

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 18 CONT'D

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	409.6	-21.9	-25.2	74.7	567.5	617.7			1.000131
24500.0	401.3	-23.1	-26.3	75.0	558.7	616.2			1.000129

STATION ALTITUDE 4051.37 FEET MSL
27 APR. 82 1114 HRS MDT
ASCENSION NO. 39

MANDATORY LEVELS
1170180039
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 19

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	4964.	19.6	-5.3	18.	111.2	.1
800.0	6665.	16.7	-6.0	21.	224.4	4.5
750.0	8451.	12.1	-7.7	24.	255.3	8.6
700.0	10330.	7.3	-10.0	28.	260.5	17.3
650.0	12318.	3.3	-8.5	42.	244.3	22.9
600.0	14426.	-2.4	-12.5	45.	240.7	19.9
550.0	16668.	-8.5	-17.1	50.	240.0	23.3
500.0	19064.	-15.3	-19.3	71.	246.3	25.9
450.0	21669.	-17.5	-20.2	79.	269.8	32.9
400.0	24537.	-23.3	-26.5	75.		


DAT
ILM