AD-A117 138 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19319A MLRS, MISSILE NUMBERS BN-118, BN-137, BN-116, ROUND NUMB--ETC(U)
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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 19319A MLRS, Missile Number BN-118, BN-137, BN-116, Round Number V-261/PQ-1, V-262/PQ-2, V-263/PQ-3 are presented in tabular form.

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INTRODUCTION

19319A MLRS, Missile Numbers BN-118, BN-137, and BN-116, Round Numbers V-261/PQ-1, V-262/PQ-2, and V-263/PQ-3, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1416:17, 1416:27, and 1416:34 MDT, 27 May 1982. The scheduled launch times were 1400, 1400:04.5, and 1400:09 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

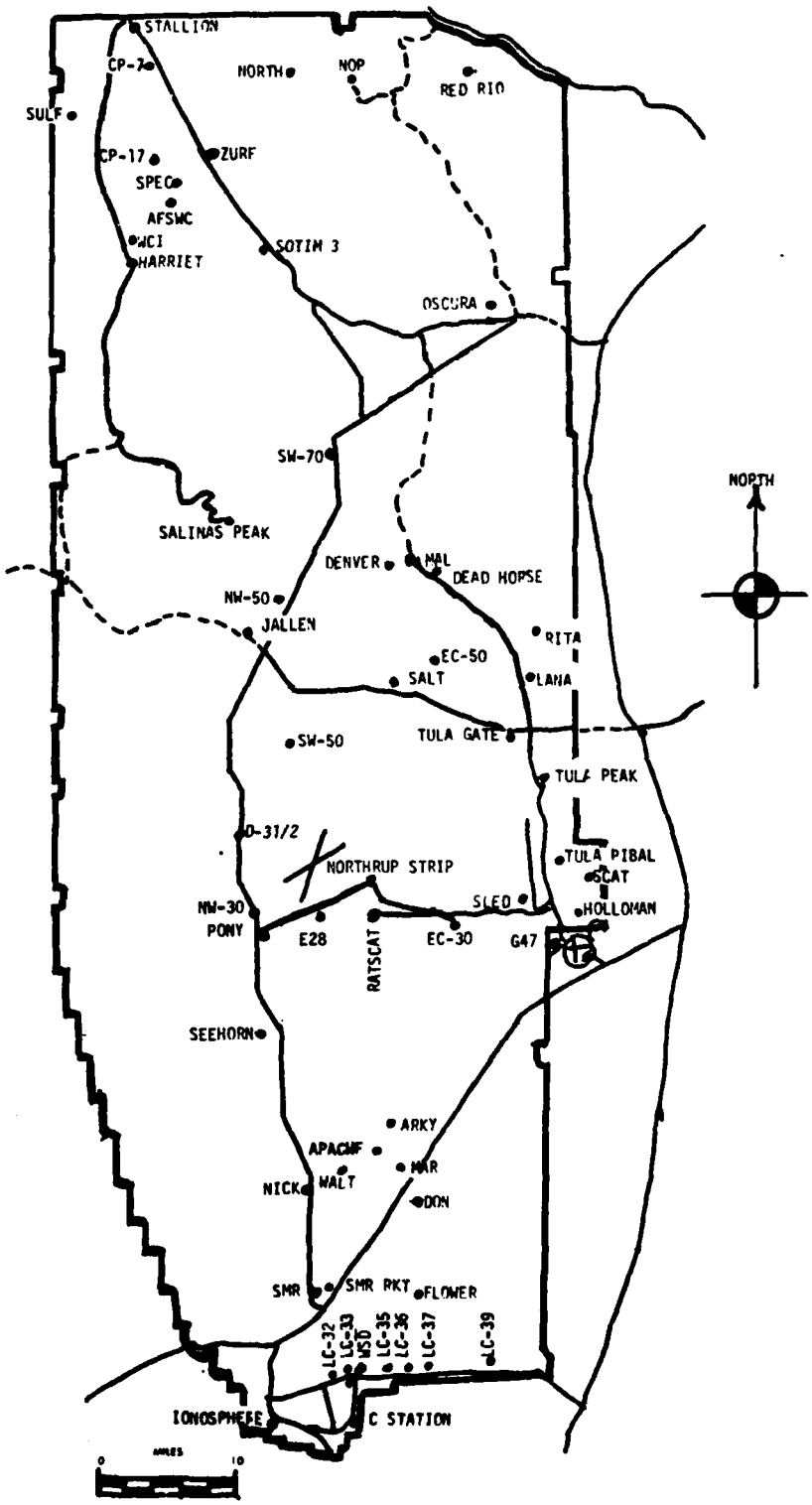
   (1) Low level wind data were obtained from pilot-balloon observations at:

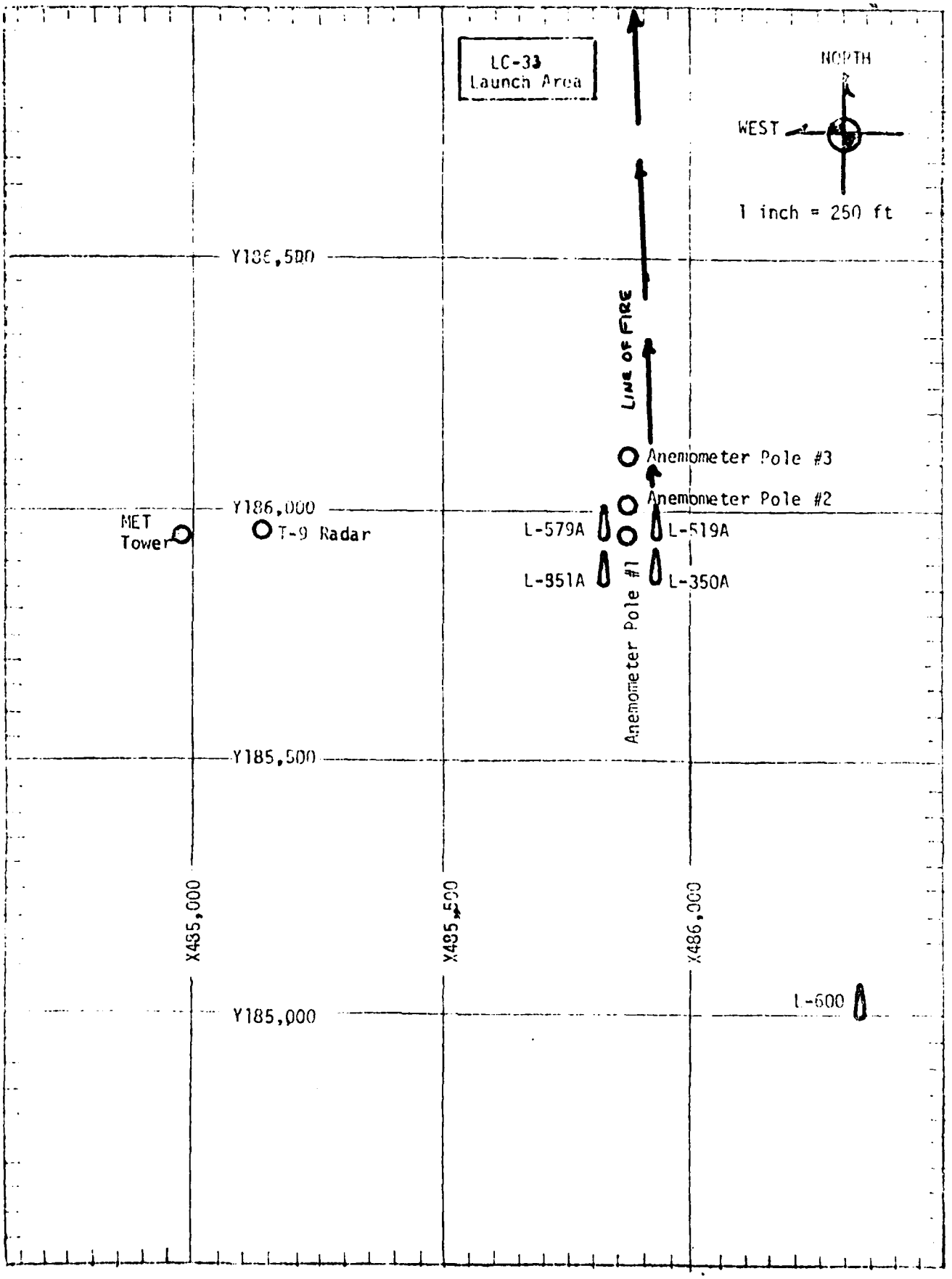
SITE AND ALTITUDE
WSD 2 km
DON 2 km

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

SITE AND TIME
WSD 1100 MDT
LC-37 1200 MDT
WSD 1300 MDT
LC-37 1400 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 E and A

DATE 27 (DAY) May (MONTH) 82 (YEAR)

X=484,982.64 Y=185,957.73 H=3983.00

TIME MD J	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1418	871.9		26.0		7.2	30	1011	005	08		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	8	CB	6000	1	AS	10,000	1	CL	25,000	OCNL LTG CG SW
										VSBY LESS SW

PSYCHROMETRIC COMPUTATION

TIME:	1418		
DRY BULB TEMP.	26.0		
WET BULB TEMP.	14.6		
WET BULB DEPR.	11.4		
DEW POINT	7.2		
RELATIVE HUMID.	30		

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 X485,874.29 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 KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
-30	035	09	-30	040	06	-30	037	10
-20	027	07	-20	048	07	-20	038	10
-10	041	08	-10	045	08	-10	043	10
0.0	035	06	0.0	045	07	0.0	041	10
+10	040	07	+10	055	07	+10	036	10

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185.057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
-30	005	09	-30	002	11
-20	351	09	-20	004	12
-10	348	09	-10	002	11
0.0	004	08	0.0	016	10
+10	360	09	+10	003	06

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
-30	357	12	-30	005	14
-20	003	13	-20	005	12
-10	003	11	-10	006	12
0.0	357	11	0.0	019	11
+10	357	11	+10	015	13

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 27 May 1982

SITE: WSD
TIME: 1417 MDT
WSTM COORDINATES:
X= 488,580.00
Y= 185,045.00
H= 3,989.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	010	07
150	033	07
210	025	06
270	020	11
330	005	12
390	360	13
500	353	08
650	334	09
800	294	11
950	296	14
1150	298	16
1350	286	18
1550	281	19
1750	267	18
2000	254	16

Data obtained from Nike-Herc Radar Tracked pilot-balloon observation.

SITE: DON
TIME 1418 MDT
WSTM COORDINATES:
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	030	05
150	023	13
210	020	14
270	016	14
330	012	14
390	009	14
500	004	13
650	350	08
800	310	06
950	286	08
1150	281	13
1350	280	16
1550	280	18
1750	285	22
2000	282	23

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

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
27 May 1982

WSD 1100 MDT		LC-37 1200 MDT	
METCM1324064		METCM1324063	
271700122875		271800124873	
00533005	29980875	00409004	29770873
01584018	29850865	01597014	29670863
02324009	29580840	02614012	29430839
03409005	29260802	03629012	29050800
04318003	28800757	04005008	28620754
05265004	28240713	05447006	28250711
06389006	27780671	06411016	27810669
07309009	27300630	07405019	27410629
08331013	26890592	08350024	27110591
09331017	26570555	09330028	26700554
10351016	26260521	10338038	26240520
11357020	25940488	11347040	25930487
12362022	25440442	12350039	25370441

WSD 1300 MDT		LC-37 1400 MDT	
METCM1324064		METCM1324063	
271900122875		272000124872	
00569010	29920875	00418008	29850872
01002011	29740865	01639018	29710862
02024011	29380840	02633014	29430838
03614004	29010802	03018007	29040800
04425006	28590755	04460007	28610754
05413009	28190711	05450018	28240710
06400015	27790669	06451020	27830668
07383021	27420629	07397020	27430628
08355031	27050591	08362024	27020590
09341035	26670555	09348028	26630554
10352034	26270520	10347028	26230519
11367033	25850487	11352020	25840486
12370034	25290441	12401038	25320440

STATION ALTITUDE 3989.00 FEET MSL
27 MAY 82
ASCENSION NO. 256 1100 MDT

SIGNIFICANT LEVEL DATA
14700202
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE-6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE PERCENT
874.9	3989.0	25.2	5.4	28.0
850.0	4816.6	22.3	2.9	28.0
773.8	7466.3	15.9	2.3	40.0
700.0	10219.0	6.7	-1.0	58.0
656.7	11931.0	2.4	-1.6	75.0
630.7	12999.0	-1.1	-2.7	89.0
605.3	14072.9	-4.0	-4.7	95.0
500.0	18955.1	-12.9	-13.8	93.0
467.9	20610.6	-16.1	-17.6	88.0
400.0	24437.2	-24.1	-26.4	81.0

STATION ALTITUDE 3989.0 FEET MSL
27 MAY 82 1100 MDT
ASCENSION NO. 236

UPPER AIR DATA
14700208236
WHITE SANDS

TABLE-7

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	874.9	25.2	5.4	28.0	1017.6	674.2	300.0	5.1	1.000265
4000.0	874.6	25.2	5.4	28.0	1017.4	674.2	299.0	5.0	1.000265
4500.0	859.4	23.4	3.9	28.0	1000.0	672.1	290.0	4.4	1.000259
5000.0	844.5	21.9	3.0	28.8	995.9	670.3	278.7	3.9	1.000254
5500.0	829.7	20.6	3.0	31.1	980.4	668.9	264.2	3.6	1.000252
6000.0	815.1	19.4	2.9	33.4	967.1	667.6	248.4	3.6	1.000249
6500.0	800.8	18.2	2.8	35.6	954.0	666.2	233.6	3.8	1.000246
7000.0	786.7	17.0	2.6	37.9	941.1	664.8	221.3	4.3	1.000243
7500.0	772.9	15.8	2.3	40.2	928.5	663.4	210.0	3.8	1.000240
8000.0	758.9	14.1	1.9	43.5	917.1	661.4	195.6	3.4	1.000237
8500.0	745.2	12.4	1.4	46.8	905.9	659.5	179.0	3.3	1.000233
9000.0	731.8	10.8	.8	50.0	894.9	657.5	166.4	3.4	1.000230
9500.0	718.6	9.1	.1	53.3	884.0	655.6	175.0	3.6	1.000226
10000.0	705.6	7.4	-.6	56.6	873.3	653.6	182.4	3.8	1.000223
10500.0	692.7	6.0	-1.0	60.8	861.8	651.9	188.2	4.1	1.000220
11000.0	679.9	4.7	-1.1	65.8	849.7	650.4	188.1	4.7	1.000217
11500.0	667.3	3.5	-1.3	70.7	837.7	649.0	186.7	5.4	1.000214
12000.0	655.0	2.2	-1.6	75.9	826.2	647.4	185.6	6.0	1.000211
12500.0	642.7	.5	-2.1	82.5	815.0	645.5	184.7	6.7	1.000208
13000.0	630.7	-1.1	-2.7	89.0	805.2	643.5	181.4	8.1	1.000205
13500.0	618.7	-2.5	-3.6	91.8	794.8	641.9	178.6	9.6	1.000201
14000.0	607.0	-3.8	-4.5	94.6	782.9	640.2	179.4	11.1	1.000197
14500.0	595.3	-4.8	-5.5	94.8	770.7	639.0	184.9	12.7	1.000193
15000.0	583.7	-5.7	-6.4	94.6	758.4	637.9	188.5	14.4	1.000189
15500.0	572.4	-6.6	-7.3	94.4	746.4	636.8	187.6	16.0	1.000185
16000.0	561.3	-7.5	-8.3	94.2	734.5	635.7	187.5	17.1	1.000181
16500.0	550.4	-8.4	-9.2	94.0	722.8	634.5	188.1	17.5	1.000177
17000.0	539.8	-9.3	-10.1	93.8	711.4	633.4	190.0	17.5	1.000174
17500.0	529.3	-10.2	-11.1	93.6	700.1	632.3	194.0	17.0	1.000170
18000.0	519.0	-11.2	-12.0	93.4	688.9	631.1	197.4	17.0	1.000167
18500.0	509.0	-12.1	-12.9	93.2	678.0	630.0	199.4	17.7	1.000164
19000.0	499.1	-13.0	-13.9	92.9	667.3	628.9	201.0	18.5	1.000160
19500.0	489.2	-14.0	-15.0	91.4	656.5	627.7	201.7	19.9	1.000157
20000.0	479.5	-14.9	-16.2	89.8	646.0	626.5	202.5	21.3	1.000154
20500.0	470.0	-15.9	-17.4	88.3	635.6	625.3	202.6	21.7	1.000151
21000.0	460.5	-16.9	-18.5	87.3	625.3	624.0	202.9	22.1	1.000147
21500.0	451.2	-18.0	-19.7	86.4	615.2	622.7	203.2	22.5	1.000145
22000.0	442.0	-19.0	-20.8	85.5	605.3	621.4			1.000142
22500.0	433.0	-20.0	-22.0	84.5	595.5	620.1			1.000139
23000.0	424.3	-21.1	-23.1	83.6	586.9	618.8			1.000136

STATION ALTITUDE 3989.00 FEET MSL
27 MAY 82 1100 MDT
ASCENSION NO. 236

UPPER AIR DATA
14700[illegible]
WHITE SANDS

TABLE-7 cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	415.7	-22.1	-24.3	82.7	576.4	617.5			1.000134
24000.0	407.2	-23.2	-25.4	81.8	567.1	616.2			1.000131

STATION ALTITUDE 3989.00 FEET MSL
27 MAY 82 1100 MDT
ASCENSION NO. 236

MANDATORY LEVELS
1470020236
WHITE SANDS
TABLE-8

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	4813.	22.3	2.9	28.	285.5	4.1
800.0	6528.	18.2	2.8	36.	252.8	5.9
750.0	8326.	13.8	1.6	46.	184.8	5.3
700.0	10209.	6.7	-1.8	58.	185.8	5.9
650.0	12190.	1.5	-1.8	79.	185.2	6.3
600.0	14284.	-4.4	-5.1	95.	182.6	12.1
550.0	16520.	-8.5	-9.2	94.	188.1	17.5
500.0	18928.	-12.9	-13.8	93.	200.9	18.3
450.0	21541.	-18.1	-19.8	86.		
400.0	24397.	-24.1	-26.4	81.		

STATION ALTITUDE 4051.4 FEET MSL
27 MAY 82 1200 MDT
ASCENSION NO. 48

SIGNIFICANT LEVEL DATA
14701-0004
LC-37

TABLE-9

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
873.2	4051.4	23.3	7.4	36.0
850.0	4819.6	21.0	6.2	38.0
785.0	7055.4	14.7	2.9	45.0
748.2	8382.5	11.5	1.5	50.0
700.0	10200.3	7.7	-.8	55.0
649.4	12213.8	2.0	-5.7	66.0
623.4	13294.1	-.5	-4.4	75.0
606.4	14020.8	-1.2	-5.2	74.0
589.6	14756.2	-2.8	-5.9	79.0
556.2	16267.0	-6.7	-7.5	84.0
539.8	17034.7	-8.1	-8.9	94.0
523.8	17800.4	-10.7	-13.9	77.0
519.8	17994.1	-11.6	-16.3	68.0
507.8	18562.0	-12.6	-16.6	63.0
500.0	18970.8	-12.7	-17.5	67.0
492.2	19364.9	-13.7	-20.8	55.0
484.2	19774.4	-14.2	-27.2	32.0
468.6	20589.3	-15.7	-28.2	33.0
438.8	22207.0	-19.7	-33.8	27.0
423.6	23063.8	-22.3	-34.4	32.0
400.0	24441.9	-25.2	-39.4	25.0
387.6	25192.4	-26.6	-40.2	26.0

STATION: ALTITUDE 4051.47 FEET MSL
27 MAY 82 1200 MDT
ASCENSION NO. 48

UPPER AIR DATA
14701800046
LC-37
TABLE-10

GEODETIC COORDINATES
32.40175 LAT DEG
106.51252 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
4051.4	873.2	23.3	7.4	36.0	1021.5	672.3	230.0	4.1	1.000272
4500.0	859.6	22.0	6.7	37.2	1010.3	670.7	234.0	3.0	1.000268
5000.0	844.6	20.5	5.9	38.6	997.8	669.0	328.4	5.3	1.000263
5500.0	829.7	19.1	5.2	40.1	985.0	667.3	342.7	8.6	1.000259
6000.0	815.0	17.7	4.5	41.7	972.5	665.7	343.6	12.2	1.000255
6500.0	800.7	16.3	3.8	43.3	960.1	664.0	353.0	12.5	1.000250
7000.0	786.5	14.9	3.0	44.8	947.9	662.4	357.7	11.9	1.000246
7500.0	772.5	13.6	2.4	46.7	935.0	660.9	359.6	10.1	1.000242
8000.0	758.6	12.4	1.9	48.6	922.2	659.5	1.8	8.2	1.000238
8500.0	745.0	11.3	1.3	50.3	909.4	658.1	348.1	5.9	1.000234
9000.0	731.5	10.2	.7	51.7	896.3	656.9	313.3	4.8	1.000230
9500.0	718.2	9.2	.1	53.1	883.3	655.6	275.6	5.3	1.000226
10000.0	705.2	8.1	-.5	54.4	870.6	654.4	251.4	7.3	1.000222
10500.0	692.2	6.9	-1.1	56.6	858.0	652.9	238.0	10.0	1.000218
11000.0	679.4	5.4	-1.8	59.4	847.1	651.2	231.7	12.9	1.000215
11500.0	666.9	4.0	-2.6	62.1	835.8	649.5	229.0	15.6	1.000211
12000.0	654.6	2.6	-3.3	64.8	824.7	647.8	229.2	18.1	1.000208
12500.0	642.4	1.3	-3.8	68.4	813.1	646.3	226.1	19.1	1.000204
13000.0	630.4	.2	-4.2	72.5	801.3	644.9	222.4	19.8	1.000201
13500.0	618.5	-.7	-4.6	74.7	788.8	643.9	219.1	20.2	1.000198
14000.0	606.9	-1.2	-5.2	74.0	775.3	643.3	217.7	20.9	1.000194
14500.0	595.4	-2.2	-5.7	77.3	763.7	642.0	199.0	21.9	1.000191
15000.0	584.1	-3.4	-6.1	81.4	752.5	640.6	192.6	23.2	1.000188
15500.0	572.9	-4.7	-6.6	86.4	741.7	639.1	189.2	25.2	1.000185
16000.0	562.0	-6.0	-7.2	91.3	731.1	637.5	188.5	27.3	1.000182
16500.0	551.2	-7.1	-7.9	94.0	720.1	636.1	188.9	30.1	1.000178
17000.0	540.5	-8.0	-8.8	94.0	708.7	635.0	188.3	33.2	1.000175
17500.0	530.9	-9.7	-11.9	85.7	699.6	633.9	189.4	35.7	1.000169
18000.0	519.7	-11.6	-16.3	67.9	691.3	630.4	190.3	37.5	1.000163
18500.0	509.5	-12.5	-17.9	63.7	680.0	629.4	191.6	38.9	1.000160
19000.0	499.4	-12.8	-17.8	66.1	667.4	629.0	193.3	39.9	1.000157
19500.0	489.5	-13.9	-22.6	47.4	657.2	627.6	194.6	40.2	1.000152
20000.0	479.8	-14.6	-27.5	32.3	646.2	626.6	196.2	40.1	1.000148
20500.0	470.3	-15.5	-28.1	32.9	635.6	625.4	194.6	39.2	1.000145
21000.0	460.8	-16.7	-29.6	31.5	625.6	624.0	192.7	38.2	1.000142
21500.0	451.6	-18.0	-31.4	29.6	616.2	622.5	192.6	37.6	1.000140
22000.0	442.5	-19.2	-33.1	27.8	606.8	620.9	194.6	37.8	1.000137
22500.0	433.5	-20.6	-34.0	28.7	597.6	619.2	199.7	38.3	1.000135
23000.0	424.7	-22.1	-34.4	31.6	589.2	617.4	204.3	38.5	1.000133
23500.0	416.0	-23.2	-36.0	29.6	579.7	616.0	206.4	38.6	1.000131

STATION ALTITUDE 4051.37 FEET MSL
27 MAY 62 1200 MDT
ASCENSION NO. 48

UPPER AIR DATA
14701800Z
LC-37
TABLE-10 cont'd

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 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
24000.0	407.4	-24.3	-37.8	27.2	570.2	614.7	210.1	30.6	1.000128
24500.0	399.0	-25.3	-39.5	25.1	560.8	613.4			1.000126
25000.0	390.7	-26.2	-40.0	25.7	551.2	612.2			1.000124

STATION ALTITUDE 4651.37 FEET MSL
27 MAY 82 1200 MDT
ASCENSION NO. 48

MANDATORY LEVELS
14701 0004
LC-37

TABLE-11

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LON DEG

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	4816.	21.0	6.2	38.	317.7	4.2
800.0	6523.	16.2	3.7	43.	353.2	12.5
750.0	8309.	11.7	1.5	50.	354.5	6.7
700.0	10190.	7.7	-.8	55.	245.6	8.3
650.0	12176.	2.1	-3.6	60.	228.5	16.7
600.0	14282.	-1.8	-5.5	70.	203.0	21.4
550.0	16534.	-7.2	-8.0	94.	187.1	30.4
500.0	18944.	-12.7	-17.5	67.	193.2	39.8
450.0	21556.	-18.2	-31.7	29.	192.6	37.8
400.0	24401.	-25.2	-39.4	25.		

STATION ALTITUDE 3989.0 FEET MSL
27 MAY 82 1300 MDT
ASCENSION NO. 237

SIGNIFICANT LEVEL DATA
14700237
WHITE SANDS
TABLE-12

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
874.5	3989.0	24.6	7.7	34.0
850.0	4800.6	20.4	5.6	38.0
787.9	6929.8	14.6	2.2	43.0
700.0	10171.5	6.9	-2.0	55.0
690.1	10555.7	5.7	-2.1	57.0
655.9	11916.5	2.7	-2.4	69.0
605.7	14018.9	-2.0	-4.0	86.0
548.7	16578.6	-7.5	-14.3	56.0
517.1	18087.8	-11.2	-13.4	84.0
500.0	18933.6	-13.6	-15.6	85.0
427.1	22812.1	-22.3	-25.1	78.0
400.0	24388.9	-25.1	-28.4	74.0
351.7	27426.5	-31.6	-36.4	62.0

STATION ALTITUDE 3982.00 FEET MSL
27 MAY 62 1300 MDT
ASCENSION NO. 237

UPPER AIR DATA
14700202J7
WHITE SANDS

TABLE-13

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	874.5	24.6	7.7	34.0	1016.5	673.8	320.0	9.9	1.000272
4000.0	874.2	24.5	7.7	34.1	1018.3	673.7	320.3	9.9	1.000272
4500.0	859.0	22.0	6.4	36.5	1009.7	670.7	334.9	8.5	1.000267
5000.0	844.0	19.9	5.3	38.5	999.4	666.2	353.4	7.8	1.000262
5500.0	829.1	18.5	4.5	39.6	986.5	660.6	13.1	6.0	1.000257
6000.0	814.4	17.1	3.7	40.8	973.8	655.0	5.2	6.0	1.000253
6500.0	800.1	15.8	2.9	42.0	961.2	653.4	343.5	4.2	1.000248
7000.0	785.9	14.4	2.1	43.2	948.7	651.8	303.5	3.9	1.000244
7500.0	771.7	13.2	1.5	44.8	935.5	650.4	271.0	4.5	1.000240
8000.0	757.7	12.1	.9	46.3	922.5	649.0	247.4	5.1	1.000236
8500.0	744.0	10.9	.3	47.8	909.7	647.6	234.0	6.2	1.000232
9000.0	730.6	9.7	-.4	49.4	897.1	646.2	227.0	7.4	1.000228
9500.0	717.4	8.5	-1.1	50.9	884.7	644.8	229.1	8.8	1.000224
10000.0	704.4	7.3	-1.8	52.5	872.4	643.4	228.5	10.3	1.000220
10500.0	691.5	5.9	-2.1	56.4	860.9	642.7	226.4	12.0	1.000217
11000.0	678.7	4.7	-2.2	60.9	848.5	642.4	226.3	14.2	1.000215
11500.0	666.2	3.6	-2.3	65.3	836.1	642.1	226.0	16.3	1.000212
12000.0	653.8	2.5	-2.5	69.7	823.8	641.8	223.7	18.2	1.000209
12500.0	641.6	1.4	-2.8	73.7	811.7	641.5	219.9	19.7	1.000206
13000.0	629.5	.3	-3.1	77.8	799.7	641.1	216.0	21.2	1.000203
13500.0	617.7	-.8	-3.5	81.8	788.0	640.8	210.3	23.9	1.000200
14000.0	606.1	-2.0	-4.0	85.8	776.4	640.5	205.5	26.7	1.000196
14500.0	594.6	-3.0	-5.9	80.7	764.9	641.1	200.5	29.4	1.000191
15000.0	583.2	-4.1	-7.8	75.3	753.5	639.7	196.6	31.9	1.000186
15500.0	572.0	-5.2	-9.8	69.8	742.2	638.3	194.3	32.9	1.000181
16000.0	561.1	-6.3	-11.9	64.3	731.2	637.0	192.5	34.0	1.000176
16500.0	550.4	-7.3	-14.0	58.9	720.2	635.6	193.0	34.4	1.000172
17000.0	539.7	-8.5	-13.9	65.3	709.5	634.2	193.4	34.9	1.000169
17500.0	529.2	-9.8	-13.5	73.9	698.8	63_.7	195.9	34.3	1.000167
18000.0	518.9	-11.0	-13.4	82.5	688.4	631.3	198.5	33.7	1.000165
18500.0	508.7	-12.4	-14.4	84.5	678.5	629.8	201.5	33.3	1.000162
19000.0	498.7	-13.7	-15.7	84.9	668.8	628.4	204.0	32.9	1.000159
19500.0	488.8	-14.9	-17.0	84.0	658.2	626.9	207.0	33.5	1.000156
20000.0	478.9	-16.0	-18.2	83.1	647.9	625.1	209.0	34.5	1.000153
20500.0	469.2	-17.1	-19.4	82.2	637.7	623.7	209.5	34.9	1.000150
21000.0	459.7	-18.2	-20.6	81.3	627.7	622.3	209.0	34.9	1.000147
21500.0	450.5	-19.4	-21.9	80.4	617.8	620.9	208.5	34.7	1.000144
22000.0	441.4	-20.5	-23.1	79.5	608.1	619.5	207.5	34.2	1.000141
22500.0	432.6	-21.6	-24.3	78.6	598.6	618.1	206.0	33.8	1.000138
23000.0	423.8	-22.6	-25.5	77.5	589.2	616.6	204.5	34.8	1.000136

STATION ALTITUDE 3989.0 FEET MSL
27 MAY 62 1300 MDT
ASCENSION NO. 237

UPPER AIR DATA
147002023
WHITE SANDS
TABLE-13 cont'd

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
23500.0	415.1	-23.5	-26.5	76.3	578.9	615.7	206.7	35.7	1.000133
24000.0	406.5	-24.4	-27.5	75.0	569.0	614.6	207.6	37.0	1.000131
24500.0	398.1	-25.3	-28.7	73.6	559.4	613.4	208.3	38.3	1.000128
25000.0	389.8	-26.4	-30.0	71.6	550.0	612.1	210.9	39.2	1.000126
25500.0	381.6	-27.5	-31.3	69.6	540.9	610.8	213.9	39.8	1.000123
26000.0	373.6	-28.5	-32.6	67.6	531.9	609.4			1.000121
26500.0	365.8	-29.6	-34.0	65.7	523.0	608.1			1.000119
27000.0	358.1	-30.7	-35.3	63.7	514.4	606.7			1.000116

STATION ALTITUDE 3989.0 FEET MSL
27 MAY 82 1300 MDT
ASCENSION NO. 237

RADIATORY LEVELS
14700202S7
WHITE SANDS
TABLE-14

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEW POINT CENTIGRADE	REL HUM PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4797.	20.4	5.6	38.	345.6	8.0
800.0	6500.	15.8	2.9	42.	345.3	4.2
750.0	8284.	11.4	.5	47.	238.3	5.8
700.0	10161.	6.9	-2.0	53.	227.4	10.9
650.0	12144.	2.2	-2.5	71.	222.9	18.8
600.0	14249.	-2.5	-5.0	83.	202.8	28.1
550.0	16497.	-7.4	-14.0	59.	195.0	34.4
500.0	18907.	-13.6	-15.6	83.	204.1	33.0
450.0	21508.	-19.4	-21.9	80.	208.3	34.6
400.0	24348.	-25.1	-28.4	74.	208.5	36.0

STATION ALTITUDE 4051.37 FEET MSL
27 MAY 82 1400 MDT
ASCENSION NO. 49

SIGNIFICANT LEVEL DATA
1770160049
LC-37
TABLE-15

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT
672.4	4051.4	24.0	6.7	33.0
850.0	4794.2	21.1	4.2	33.0
766.5	7691.0	12.9	2.5	49.0
720.9	9374.7	9.5	-1.2	47.0
700.0	10174.2	7.5	-1.1	55.0
675.8	11122.8	5.0	-2.6	58.0
632.0	12908.2	.8	-4.0	70.0
589.5	14733.9	-3.5	-11.0	56.0
564.3	15864.5	-6.0	-17.4	40.0
547.7	16631.0	-7.7	-18.3	42.0
531.3	17405.9	-9.8	-17.5	53.0
500.0	18937.3	-13.2	-25.7	34.0
475.0	20214.6	-16.4	-24.6	49.0
452.0	21435.4	-19.6	-24.0	68.0
429.4	22686.4	-20.8	-25.5	66.0
419.2	23269.9	-22.0	-28.9	53.0
414.8	23525.4	-22.1	-27.7	60.0
407.5	23954.6	-22.8	-28.6	59.0
400.0	24402.8	-23.9	-28.9	63.0

STATION ALTITUDE 4051.47 FEET MSL
27 MAY 82 1400 MDT
ASCENSION NO. 49

UPPER AIR DATA
14701d0049
LC-37

TABLE-16

GEODETIC COORDINATES
32:40175 LAT DEG
106.31232 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
4051.4	872.4	24.0	6.7	33.0	1016.4	670.0	255.0	3.0	1.000269
4500.0	856.8	22.2	5.2	33.0	1008.8	670.9	259.1	6.7	1.000265
5000.0	843.8	20.5	4.2	34.1	997.2	668.8	249.7	5.4	1.000258
5500.0	828.9	19.1	4.0	36.9	984.5	667.2	256.5	4.2	1.000256
6000.0	814.2	17.7	3.8	39.7	971.8	665.6	274.5	3.3	1.000252
6500.0	799.8	16.3	3.5	42.4	959.1	664.0	301.0	2.8	1.000249
7000.0	785.6	14.9	3.1	45.2	946.8	662.4	330.2	3.1	1.000246
7500.0	771.7	13.4	2.6	47.9	934.7	660.7	310.5	3.5	1.000242
8000.0	757.9	12.3	1.8	48.6	921.8	659.3	271.5	5.0	1.000238
8500.0	744.2	11.3	.7	48.0	908.8	658.1	257.0	8.8	1.000235
9000.0	730.8	10.3	-.4	47.4	895.8	656.9	255.5	12.2	1.000228
9500.0	717.6	9.2	-1.2	48.3	882.9	655.5	253.4	15.6	1.000223
10000.0	704.5	7.8	-1.1	53.3	871.0	654.0	253.6	17.7	1.000221
10500.0	691.6	6.5	-1.6	56.0	858.9	652.5	250.7	18.5	1.000218
11000.0	678.9	5.3	-2.4	57.6	846.9	651.0	250.1	19.1	1.000214
11500.0	666.3	4.1	-2.8	60.5	834.8	649.6	252.8	19.6	1.000210
12000.0	653.9	2.9	-3.2	63.9	822.8	648.2	248.9	20.2	1.000207
12500.0	641.8	1.8	-3.6	67.3	811.0	646.8	250.6	21.0	1.000204
13000.0	629.8	.6	-4.4	69.3	799.4	645.4	249.8	21.6	1.000200
13500.0	617.9	-.6	-6.2	65.5	787.9	643.9	247.3	22.1	1.000195
14000.0	606.2	-1.8	-8.1	61.6	776.6	642.4	245.6	23.0	1.000190
14500.0	594.8	-2.9	-10.1	57.8	765.5	641.0	247.8	24.1	1.000185
15000.0	583.5	-4.1	-12.4	52.2	754.5	639.5	248.4	25.3	1.000180
15500.0	572.3	-5.2	-15.2	45.2	743.1	638.1	199.0	26.1	1.000175
16000.0	561.3	-6.3	-17.5	40.4	732.0	636.7	198.3	26.7	1.000171
16500.0	550.5	-7.4	-18.2	41.7	720.9	635.4	198.4	27.1	1.000168
17000.0	539.8	-8.7	-17.9	47.2	710.4	634.0	198.8	27.0	1.000166
17500.0	529.3	-10.0	-18.0	51.8	700.0	632.5	199.1	26.9	1.000164
18000.0	518.9	-11.1	-20.5	45.6	689.5	630.9	198.5	25.8	1.000160
18500.0	508.7	-12.2	-23.2	30.4	679.8	629.3	199.9	24.7	1.000156
19000.0	498.7	-13.4	-25.6	34.7	668.4	628.1	197.9	23.2	1.000153
19500.0	488.8	-14.6	-25.0	40.6	658.3	626.8	200.3	21.7	1.000151
20000.0	479.1	-15.9	-26.7	46.5	648.3	625.1	204.2	21.1	1.000149
20500.0	469.5	-17.1	-24.3	53.4	638.5	623.5	209.5	22.5	1.000147
21000.0	460.1	-18.5	-24.0	61.2	628.8	622.0	214.2	24.1	1.000145
21500.0	450.8	-19.7	-24.0	67.9	619.1	620.5	219.0	28.7	1.000143
22000.0	441.7	-20.1	-24.6	67.1	607.7	619.9	222.4	33.5	1.000140
22500.0	432.7	-20.6	-25.2	66.3	598.5	619.3	225.0	39.1	1.000138
23000.0	423.9	-21.4	-27.3	59.0	588.3	618.3	226.4	45.2	1.000134
23500.0	415.2	-22.1	-27.8	59.3	579.0	617.5			1.000132

STATION ALTITUDE 4651.37 FEET MSL
27 MAY 82 1400 MDT
ASCENSION NO. 49

UPPER AIR DATA
1.701E0004
LC-37

TABLE-16 cont'd

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE, CENTIGRADE	DEWPOINT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES TRUE)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	406.7	-22.9	-28.6	59.4	565.9	616.1			1.000130

STATION ALTITUDE 4051.37 FEET MSL
27 MAY 82 1400 MDT
ASCENSION NO. 49

LABORATORY LEVELS
19701800045
LC-37
TABLE-17

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	RELATIVE HUMIDITY PERCENT	WIND DATA DIRECTION DEGREES(TRU)	WIND DATA SPEED KNOTS
850.0	4791.	21.1	4.2	33.	242.0	5.9
800.0	6497.	16.3	3.5	42.	301.0	2.8
750.0	8293.	11.7	1.1	48.	261.7	7.4
700.0	10164.	7.3	-1.1	55.	256.1	10.0
650.0	12150.	2.6	-3.3	65.	244.0	20.4
600.0	14257.	-2.4	-9.2	60.	210.4	23.5
550.0	16502.	-7.5	-16.2	42.	194.4	27.1
500.0	18911.	-13.2	-25.7	34.	197.0	25.5
450.0	21511.	-19.7	-24.1	66.	219.2	29.0
400.0	24361.	-23.9	-28.9	63.		