

AD-A144 842

19318B MLRS MISSILE NUMBER 450 411 471 ROUND NUMBER  
V-587/AV-7 588/AV-8 589/AV-9(U) ARMY ELECTRONICS  
RESEARCH AND DEVELOPMENT COMMAND WSMR NM ATM.

1/1

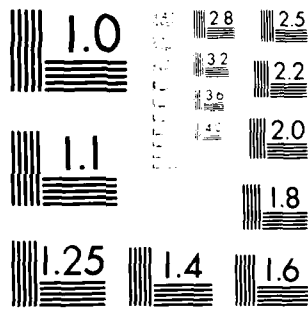
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May 84  
DR-1343

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METEOROLOGICAL DATA REPORT

19318B MLRS

Missile Number 450, 411, 471

Round Number V-587/AV-7, 588/AV-8, 589/AV-9

23 May 84

by

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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 19318B MLRS, Missile Number 450, 411, 471, Round Number V-587/AV-7, 588/AV-8, 589/AV-9 are presented in tabular form.			

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## INTRODUCTION

19318B MLRS, Missile Numbers 450, 411 and 471, Round Numbers V587/AV-7, V588/AV-8 and V589/AV-9, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1138:47, 1138:52 and 1138:57 MDT, 23 May 84. The scheduled launch times were 1130, 1130:04.5 and 1130:09 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 (°C), relative humidity, dew point (°C), density (gm/m<sup>3</sup>), 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 tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

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

#### SITE AND ALTITUDE

LC-33 2 km

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

#### SITE AND TIME

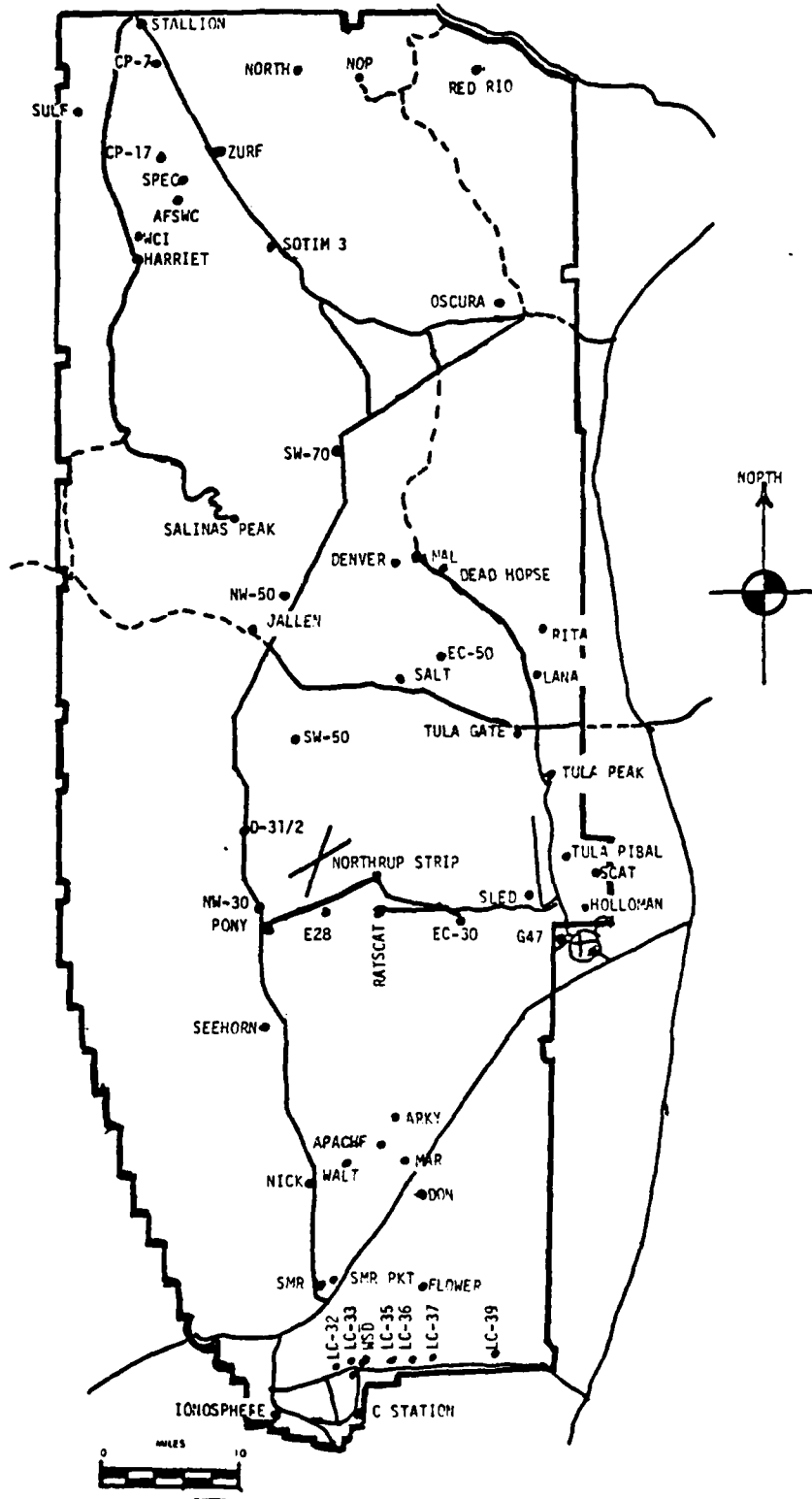
WSD	1000 MDT
SMR	1000 MDT
DON	1000 MDT
WSD	1139 MDT
SMR	1139 MDT
DON	1139 MDT

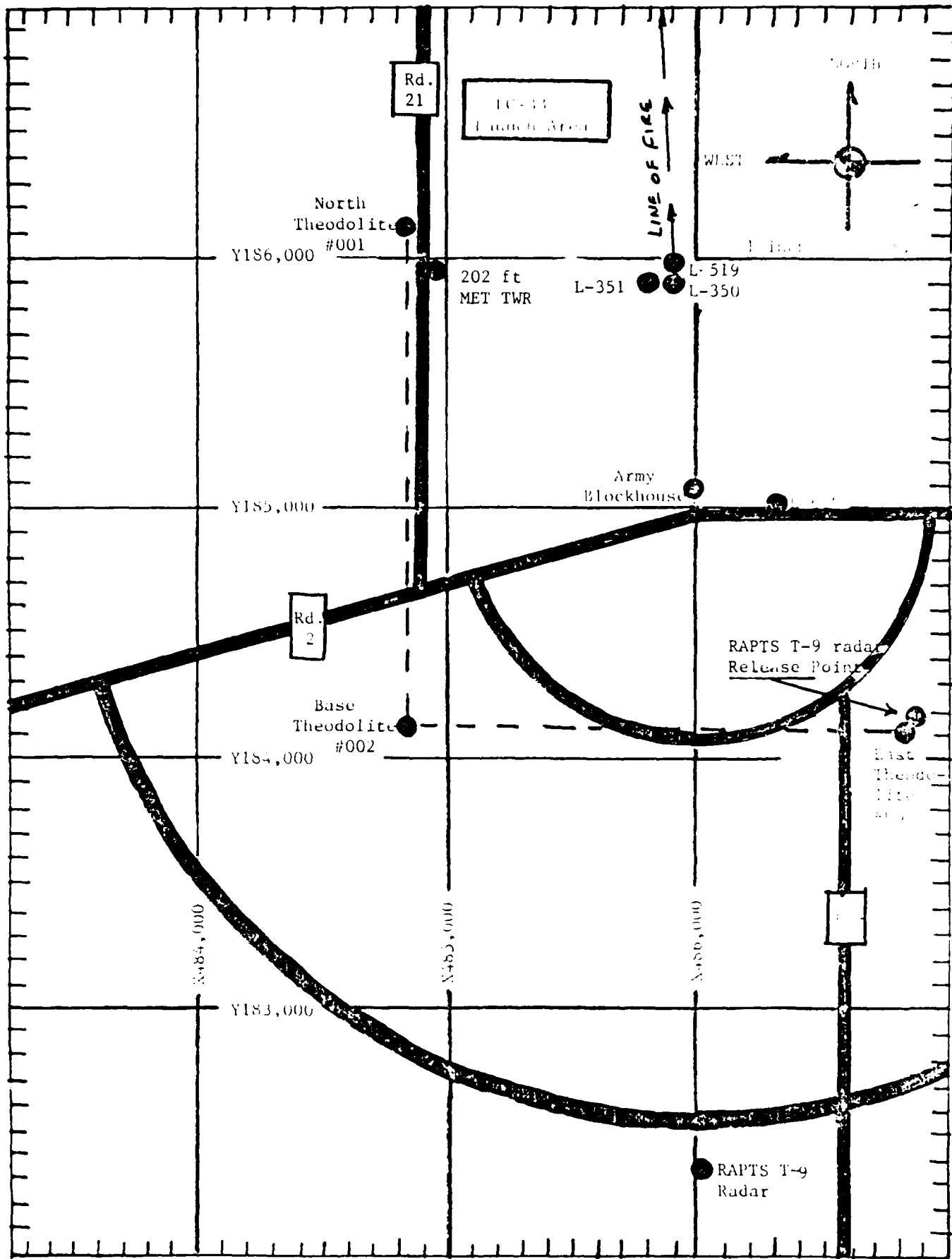
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# WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1		STATION LC-33									
DATE 23		05		84		X= 484,982.64		Y= 185,957.73		H= 3995.00	
DAY		MONTH		YEAR							
TIME M D T	PRESSURE mbs	TEMPERATURE °C	DEN POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	DIRECTION degs In	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY		
1139	885.9	31.9	14.6	35		130	14		40		

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
	2	CU	7,000				

PSYCHROMETRIC COMPUTATION

TIME: MDT	1139
DRY BULB TEMP.	31.9
WET BULB TEMP.	20.0
WET BULB DEPR.	11.9
DEN POINT	14.6
RELATIVE HUMID.	35

LC-33 METEOROLOGICAL TOWER  
ANEMOMETER MEASURED WIND DATA

WSTM COORDINATES X=484,982.64 Y=185,957.73 H=3983.00(BASE)

TABLE NO. 2

DATE 23 May 84 1139 M D T  
DAY MONTH YEAR TIME

LEVEL #1 12 FT AGL			LEVEL #2 62 FT AGL		
T-TIME (SEC)	DIR (DEG)	SPEED (KTS)	T-TIME (SEC)	DIR (DEG)	SPEED (KTS)
T-30	144	13	T-30	116	12
T-20	147	08	T-20	131	11
T-10	106	06	T-10	146	08
T- 0 (1st T)	117	08	T- 0 (1st T)	131	07
T+10	153	11	T+10	130	11
T+20	159	08	T+20	136	11
T+30	154	06	T+30	139	08
T+40			T+40		
T+50			T+50		
T+60			T+60		
LEVEL #3 102 FT AGL			LEVEL #4 202 FT AGL		
T-TIME (SEC)	DIR (DEG)	SPEED (KTS)	T-TIME (SEC)	DIR (DEG)	SPEED (KTS)
T-30	143	13	T-30	116	15
T-20	133	11	T-20	110	12
T-10	142	11	T-10	107	11
T- 0 (1st T)	127	11	T- 0 (1st T)	101	10
T+10	117	11	T+10	125	10
T+20	129	07	T+20	114	08
T+30	133	06	T+30	110	07
T+40			T+40		
T+50			T+50		
T+60			T+60		

TABLE 3

PILOT-BALLOON MEASURED WIND DATA

DATE 23 May 1984

SITE: LC-33  
TIME: 1045 MDT  
WSTM COORDINATES:  
X= 486,037.24  
Y= 182,350.16  
H= 3,997.30

SITE: LC-33  
TIME 1115 MDT  
WSTM COORDINATES:  
X= 486,037.24  
Y= 182,350.16  
H= 3,997.30

<u>LAYER MIDPOINT</u> <u>METERS AGL</u>	<u>DIRECTION</u> <u>DEGREES</u>	<u>SPEED</u> <u>KNOTS</u>
SURFACE	060	06
150	241	02
210	125	10
270	109	16
330	120	14
390	111	20
500	119	15
650	118	14
800	094	20
950	100	18
1150	107	15
1350	107	10
1550	122	08
1750	136	07
2000	158	07

<u>LAYER MIDPOINT</u> <u>METERS AGL</u>	<u>DIRECTION</u> <u>DEGREES</u>	<u>SPEED</u> <u>KNOTS</u>
SURFACE	020	08
150	289	02
210	126	14
270	150	12
330	134	12
390	101	19
500	099	16
650	120	12
800	121	15
950	102	16
1150	097	18
1350	132	11
1550	114	11
1750	122	10
2000	146	07

Data obtained from a RAPTIS T-9 radar tracked pilot-balloon observations.

TABLE 3 Cont'd

PILOT-BALLOON MEASURED WIND DATA

DATE 23 May 1984

SITE: LC-33  
 TIME: 1139  
 WSTM COORDINATES:  
 X= 486,037.24  
 Y= 182,350.16  
 H= 3,997.30

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

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	130	14
150	270	01
210	081	12
270	081	11
330	123	06
390	088	16
500	107	15
650	117	11
800	095	14
950	116	15
1150	126	12
1350	135	12
1550	171	12
1750	137	08
2000	156	09

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

AIMING AND T-TIME COMPUTER MET MESSAGE DATA

23 May 1984

WSD 1000 MDT

METCM1324064  
231600122885  
00231010 30300885  
01209014 30110875  
02196015 29840851  
03211014 29440813  
04228015 28970766  
05296008 28650722  
06340010 28600682

SMR 1000 MDT

METCM1325064  
231600122885  
00284010 30340885  
01275014 30070875  
02264013 29800851  
03257012 29400812  
04240013 28940766  
05304009 28690722

DON 1000 MDT

METCM1326063  
231600121884  
00249005 30310884  
01204010 30180874  
02244012 29860849  
03241015 29460811  
04281010 29000765  
05340008 28820721  
06370009 28610680

WSD 1139 MDT

METCM1324064  
231770122885  
00231010 30490885  
01238013 30280875  
02225020 29950851  
03229011 29500813  
04238005 29010767  
05331007 28730723  
06315013 28550681

SMR 1139 MDT

METCM1325064  
231770122884  
00293012 30780885  
01273014 30210875  
02256012 29890850  
03252011 29500812  
04217011 29040766  
05263008 28640722  
06343010 28570681

DON 1139 MDT

METCM1332063  
231770121885  
00213010 30710884  
01225014 30280874  
02252014 29990849  
03265008 29570811  
04267014 29070765  
05105016 28740722  
06373029 28570680

STATION ALTITUDE 3024.00 FEET MSL  
 23 MAY 64  
 ASCENSION NO. 001

SIGNIFICANT LEVEL DATA  
 1440020293  
 WHITE SANDS

GEODETIC COORDINATES  
 52.40043 LAT DEG  
 106.37033 LON DEG

TABLE 5

PRESSURE MILLIBARS	GLOMETRIC ALTITUDE MSL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	DEWPOINT TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT
505.6	3799.0	27.8	15.1	46.0
478.0	4273.0	26.2	14.0	47.0
468.5	4547.6	24.6	13.5	50.0
450.0	5157.0	23.2	13.4	54.0
436.6	6050.1	18.8	12.1	65.0
795.0	7474.1	16.2	11.2	72.0
758.4	8386.5	14.3	8.7	69.0
725.1	9077.0	10.8	5.6	75.0
719.4	9844.5	11.2	5.7	67.0
700.4	10270.4	13.1	8	43.0
700.0	10399.4	13.7	-4.9	27.0
681.3	11214.7	10.6	-7.1	23.0
606.7	14426.3	4.3	-10.9	32.0
570.9	15110.2	-3.3	-12.5	39.0
536.5	17735.1	-3.6	-23.2	20.0
517.0	18624.4	-5.0	-24.4	20.0
500.0	19556.1	-6.5	-25.7	20.0

STATION ALTITUDE 3279.33 FEET MSL  
 23 MAY 54  
 ASCENSION NO. 302

UPPER AIR DATA  
 1440020293  
 WHITE SANDS

GEODETIC COORDINATES  
 32.60043 LAT DEG  
 106.37933 LONG DEG

TABLE 6

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
39.9.0	885.4	27.6	46.0	1017.4	678.3	130.0	9.9	1.000209
40.00.0	875.1	27.7	46.0	1017.2	678.2	129.9	9.9	1.000209
45.30.0	849.9	24.8	49.5	1010.1	674.8	125.6	11.1	1.000202
50.50.0	824.9	23.6	52.9	996.9	673.4	122.1	12.3	1.000209
55.70.0	800.1	22.4	56.5	984.1	671.8	119.7	13.5	1.000255
60.90.0	775.5	20.7	60.1	971.9	670.1	116.9	14.8	1.000241
65.30.0	751.1	19.3	63.8	959.9	668.4	114.0	15.0	1.000277
70.00.0	726.9	17.6	67.1	948.5	666.5	120.0	14.7	1.0002.3
75.30.0	702.9	16.1	71.8	937.1	664.6	124.7	14.2	1.000268
80.00.0	679.3	15.1	76.2	924.0	663.3	128.5	13.4	1.000261
85.00.0	655.3	14.0	80.5	911.3	662.0	133.7	12.6	1.000254
90.00.0	631.5	12.9	84.8	899.5	660.3	143.8	10.6	1.000249
95.00.0	608.5	11.2	89.4	888.0	658.6	157.9	9.2	1.000244
100.00.0	585.4	12.0	94.1	877.3	659.2	171.5	8.6	1.000232
105.30.0	562.5	13.2	98.5	851.4	660.5	184.7	8.6	1.000212
110.70.0	539.9	12.9	102.3	838.3	659.6	190.9	9.0	1.000236
115.70.0	517.9	11.9	106.2	826.2	658.4	183.1	9.8	1.000202
120.00.0	495.1	9.6	109.6	814.2	657.3	174.0	10.6	1.000198
125.00.0	472.1	8.2	112.5	803.0	655.2	166.9	11.6	1.000195
130.00.0	449.4	7.0	115.3	792.1	654.2	159.1	12.8	1.000192
135.30.0	427.2	5.8	118.2	781.4	652.6	151.5	12.8	1.000189
140.00.0	405.9	5.0	121.2	770.9	651.0	143.9	13.0	1.000186
145.00.0	385.6	4.3	124.0	760.4	649.4	136.6	13.1	1.000182
150.00.0	365.5	3.7	126.2	750.1	647.8	129.6	13.3	1.000180
155.00.0	345.4	3.4	128.4	740.0	646.1	125.0	13.6	1.000177
160.00.0	325.5	3.2	130.5	730.0	644.4	120.0	13.5	1.000175
165.30.0	305.9	3.1	132.6	720.3	643.0	120.9	13.4	1.000170
170.00.0	286.6	3.1	134.6	710.5	641.7	122.2	13.4	1.000166
175.00.0	267.5	3.1	136.7	697.9	640.4	136.4	11.8	1.000161
180.00.0	248.7	3.1	138.6	686.2	639.4	147.0	10.4	1.000158
185.00.0	230.2	3.1	140.5	675.6	638.5			1.000155
190.00.0	211.9	3.1	142.3	665.7	637.5			1.000152
195.00.0	193.8	3.1	144.0	654.0	636.5			1.000150

STATION ALTITUDE 20,000 FEET  
 23 MAY 64  
 ASCENSION NO. 193

MANDATORY LEVELS  
 164002029Y  
 WHITE SANDS

GEODETTIC COORDINATES  
 32.46043 LAT DEG  
 106.37033 LON DEG

TABLE 7

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
950.0	5147.	23.2	54.	121.1	12.7
900.0	6404.	18.0	67.	120.2	14.8
750.0	8608.	13.4	70.	137.2	11.8
700.0	10500.	13.7	77.	187.1	8.6
650.0	12621.	9.3	29.	164.6	11.9
600.0	14775.	3.5	33.	137.6	13.2
550.0	17065.	-2.1	28.	137.9	11.6
500.0	19529.	-6.5	20.		

STATION ALTITUDE 2027.73 FEET MSL  
 25 MAY 84  
 ASCENSION NO. 53

SIGNIFICANT LEVEL DATA  
 144004J055  
 C M R

144004J055  
 C M R

TABLE 8

GEODETTIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE METERS	GEOMETRIC ALTITUDE FEET	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT
35.2	597.3	28.3	50.0
42.4	684.5	26.4	42.0
50.0	816.7	22.8	52.0
60.4	975.5	18.8	63.0
75.2	1163.9	13.2	87.0
87.2	1305.7	12.6	94.0
100.6	1496.4	11.4	70.0
119.0	1695.9	12.2	44.0
141.9	1911.6	13.9	26.0
160.0	2097.5	13.0	25.0
177.9	2181.0	11.8	26.0

STATION ALTITUDE 3927.75 FEET MSL  
 23 MAY 84  
 ASCENSION NO. 23

UPPER AIR DATA  
 1440000055  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CELSIUS	TEMPERATURE WETBULB DEGREE CELSIUS	REFLUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3927.7	685.4	29.3	16.9	56.0	1014.5	679.2	160.0	9.9	1.000306
4000.0	685.1	28.6	15.8	45.8	1016.7	679.1	160.0	9.9	1.000306
4500.0	659.9	25.0	12.5	45.8	1007.9	674.9	156.1	10.4	1.000297
5000.0	655.0	25.4	12.5	51.4	998.0	673.0	152.7	10.9	1.000295
5500.0	640.1	21.3	12.3	54.7	985.8	671.3	149.5	11.4	1.000292
6000.0	625.5	20.3	12.0	53.7	973.5	669.6	146.6	12.0	1.000279
6500.0	611.1	19.7	11.6	64.8	961.4	667.9	144.2	12.4	1.000275
7000.0	596.2	17.4	11.7	68.9	949.0	666.3	142.1	12.4	1.000273
7500.0	581.7	16.0	11.6	75.1	936.8	664.6	140.0	12.5	1.000271
8000.0	568.0	14.5	11.4	81.3	924.8	663.0	141.9	12.1	1.000269
8500.0	553.2	13.1	11.2	87.8	912.9	661.4	145.9	11.6	1.000265
9000.0	541.7	12.4	10.8	89.1	899.1	660.4	150.1	11.1	1.000260
9500.0	528.4	11.8	7.9	77.1	885.7	659.4	161.1	10.3	1.000247
10000.0	515.2	13.0	-1.7	36.0	868.5	659.9	173.6	10.0	1.000218
10500.0	502.5	13.4	-6.3	35.2	852.9	659.9			1.000208
11000.0	489.8	12.5	-5.0	35.5	839.7	659.0			1.000204

STATION ALTITUDE 2077.30 FEET MSL  
 23 MAY 64  
 ASCENSION NO. 55

MANDATORY LEVELS  
 1440060055  
 S M R

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

TABLE 10

PRESSURE & POTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
		DEGREES	CENTIGRADE		DEGREES(TN)	KNOTS
851.0	5164.	22.8	12.4	52.	151.6	11.0
800.0	6034.	17.9	11.7	67.	142.5	12.4
751.0	6634.	12.8	11.5	92.	147.4	11.4
701.0	7037.	13.0	-6.5	25.		

STATION ALTITUDE 4055.65 FEET MSL  
 23 MAY 84  
 ASCENSION NO. 3

SIGNIFICANT LEVEL DATA  
 1440.000UR  
 0.0"

GEODETIC COORDINATES  
 37.57209 LAT DEG  
 106.29459 LON DEG

TABLE 11

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE M/L FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
185.6	4005.7	28.1	14.0	42.0
189.8	4404.8	26.3	12.0	41.0
149.7	5176.1	23.6	11.0	45.0
155.7	5025.6	22.1	10.7	49.0
178.4	5972.9	18.5	10.1	58.0
209.7	7217.2	17.0	9.2	60.0
220.0	9445.3	12.7	6.1	64.0
210.0	9676.0	14.4	1.7	42.0
213.3	10049.3	15.5	-5.7	21.0
200.2	10564.2	14.4	-7.0	22.0
546.1	17773.1	9.0	-8.5	28.0

GEODETIC COORDINATES  
32.57209 LAT DEG  
106.29439 LONG DEG

UPPER AIR DATA  
1440000Z  
00P

STATION ALTITUDE 4005.69 FEET MSL  
23 MAY 84  
ASCENSION NO. 6 1000 MDT

TABLE 12

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIR. (FTN) DEGREES	SPEED KNOTS	
4005.7	32.6	20.1	42.0	1014.8	678.5	140.0	5.1	1.000293
4500.0	36.0	26.5	41.0	1004.4	676.2	139.5	7.4	1.000293
5000.0	39.7	34.0	44.2	994.4	673.7	139.2	9.8	1.000279
5500.0	43.0	42.5	48.0	983.8	671.8	139.0	12.2	1.000276
6000.0	46.4	51.1	51.6	973.3	670.2	138.1	13.9	1.000273
6500.0	50.0	59.7	55.1	957.9	668.6	135.3	14.1	1.000269
7000.0	53.3	68.1	58.5	946.4	666.8	137.0	13.1	1.000255
7500.0	57.7	76.5	60.5	935.2	664.8	140.9	11.8	1.000240
8000.0	62.0	85.0	61.4	921.8	663.6	155.2	10.8	1.000255
8500.0	66.0	93.5	63.3	908.5	662.5	169.0	10.2	1.000250
9000.0	70.7	102.0	67.2	895.5	661.3	178.3	9.2	1.000245
9500.0	75.0	110.5	68.9	881.7	660.5	187.6	8.3	1.000239
10000.0	79.5	119.0	70.7	867.1	662.4	197.1	7.4	1.000212
10500.0	84.0	127.5	71.5	848.2	661.4	204.8	7.8	1.000206
11000.0	88.0	136.0	73.2	834.4	660.0	200.0	8.6	1.000203
11500.0	92.7	144.5	74.5	824.9	658.6	205.3	9.2	1.000200
12000.0	97.0	153.0	75.9	817.5	657.2			1.000197
12500.0	101.5	161.5	77.3	807.3	655.8			1.000194

STATION ALTITUDE 5033.69 FEET ASL  
 25 MAY 82  
 ASCENSION MU. 3

MANDATORY LEVELS  
 14402000R  
 DUH

GEODETTIC COORDINATES  
 32.57209 LAT DEG  
 106.29439 LON DEG

TABLE 13

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
557.0	3122.	23.6	11.0	45.	139.1	10.4
800.0	6947.	18.7	10.1	58.	136.0	13.5
750.0	3650.	14.2	7.2	63.	171.7	9.9
700.0	10562.	14.4	-7.0	22.	205.6	7.9
650.0	15596.	9.4	-8.4	28.		

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

SIGNIFICANT LEVEL DATA

1740020294  
 WHITE SANDS

TABLE 14

STATION ALTITUDE 39\*2.00 FEET MSL  
 23 MAY 84  
 ASCENSION NO. 094 1139 MDT

PRESSURE MILLIBARS	GLOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEW POINT CENTIGRADE	
765.7	5989.0	29.7	14.3	39.0
775.1	4520.8	27.0	15.4	49.0
763.3	472.0	26.3	15.4	51.0
750.0	5170.3	24.1	13.6	52.0
742.8	7155.9	18.1	10.7	62.0
732.3	8674.3	14.2	9.2	72.0
743.9	8973.6	13.4	8.7	73.0
722.7	7776.3	12.2	6.5	68.0
719.1	10222.9	14.1	.0	38.0
700.0	10619.3	13.7	-4.9	27.0
655.7	12422.7	9.6	-6.3	32.0
642.1	17195.7	-2.9	-20.1	25.0
630.0	12569.7	-7.3	-25.8	21.0
600.0	25145.1	-20.5	-35.7	24.0
600.0	31909.6	-38.1	-48.0	34.0
592.2	3305.1	-39.5	-49.0	35.0
579.7	33422.1	-40.6		
559.0	35278.3	-46.1		
530.0	35963.8	-47.7		
530.0	40696.7	-59.2		
470.3	45966.4	-66.5		
466.9	45583.0	-69.7		
432.5	46142.1	-69.5		
431.2	46377.7	-66.7		
420.0	46470.2	-67.5		
425.5	48370.7	-69.0		
431.2	49106.5	-66.9		
417.7	51272.7	-69.3		
413.8	52110.0	-67.5		
405.7	53216.4	-68.4		
410.0	54499.6	-68.4		
413.8	52086.3	-67.3		
422.7	50516.3	-64.1		
400.0	61531.1	-63.2		
390.5	61974.8	-62.8		
381.7	67620.7	-59.0		
390.1	65514.0	-58.3		
390.3	70296.6	-51.3		
45.8	67552.2	-47.5		
20.0	58153.4	-45.1		

GEODETTIC COORDINATES  
 32.40043 LAT DEG  
 106.37333 LON DEG

SIGNIFICANT LEVEL DATA  
 1440070294  
 WHITE SANDS

TABLE 14 Cont'd

STATION ALTITUDE 39,970 FEET MSL  
 23 MAY 94 1139 MDT  
 ASCENSION NO. 294

PRESSURE MILLIBARS MSL FEET	GLOMETRIC ALTITUDE	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
15.5	95311.4	-42.0		
14.5	95194.6	-39.0		
13.7	97655.1	-18.6		

STATION ALTITUDE 10000 FT MSL  
 25 MAY 84  
 ASCENSION NO. 194

UPPER AIR DATA  
 1440020294  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LONG DEG

TABLE 15

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CELSIUS	DEWPOINT CELSIUS				DIRECTION DEGREES(TN)	SPEED KNOTS	
3900.0	885.0	29.7	14.3	35.0	1011.3	680.5	130.0	9.9	1.000293
4000.0	885.0	29.6	14.3	35.3	1011.2	680.2	130.0	9.9	1.000293
4500.0	869.9	26.7	15.4	44.9	1007.0	677.2	129.4	10.9	1.000297
5000.0	855.0	24.9	14.3	51.6	997.0	675.1	124.8	11.8	1.000291
5500.0	840.2	23.1	13.2	53.7	981.3	672.3	128.4	12.8	1.000284
6000.0	825.6	21.6	12.5	56.2	969.3	671.1	128.0	13.7	1.000279
6500.0	811.3	20.1	11.7	58.7	957.6	669.3	126.7	11.5	1.000274
7000.0	797.1	18.6	11.0	61.2	946.0	667.5	124.2	8.5	1.000269
7500.0	783.1	17.2	10.4	64.3	937.9	665.8	124.1	6.2	1.000265
8000.0	769.2	15.9	9.9	67.7	921.7	664.3	134.7	5.2	1.000261
8500.0	755.5	14.2	9.4	71.2	909.7	662.7	152.0	5.0	1.000257
9000.0	742.2	13.4	8.0	72.8	897.3	661.3	169.0	5.7	1.000252
9500.0	728.9	12.6	7.2	69.5	884.0	660.3	178.2	6.9	1.000244
10000.0	715.6	13.6	3.5	51.7	867.2	660.6	184.0	8.2	1.000230
10500.0	702.0	13.8	-3.3	30.3	851.2	660.8	182.7	10.0	1.000212
11000.0	688.4	12.3	-5.2	28.0	839.0	659.6	160.5	11.8	1.000206
11500.0	677.2	11.7	-5.5	29.4	827.2	658.3	175.0	13.4	1.000203
12000.0	665.7	10.6	-5.9	30.8	815.5	656.9	170.0	14.9	1.000200
12500.0	653.2	7.4	-6.5	31.9	804.1	655.6	168.0	14.5	1.000197
13000.0	641.3	6.1	-7.9	31.2	793.0	654.0	165.0	14.1	1.000193
13500.0	629.6	6.0	-8.4	30.4	782.0	652.4	162.2	13.3	1.000189
14000.0	617.9	5.3	-10.6	26.7	771.3	650.8	158.0	12.6	1.000185
14500.0	606.4	4.2	-12.3	29.0	760.4	649.2	150.5	12.9	1.000181
15000.0	595.1	3.9	-13.7	28.2	750.1	647.7	143.2	13.3	1.000178
15500.0	584.1	1.6	-15.2	27.5	739.9	646.1	136.5	14.2	1.000174
16000.0	573.2	1.2	-16.6	26.8	729.7	644.5	134.4	14.6	1.000171
16500.0	562.5	-1.1	-18.1	26.0	719.6	642.9	140.5	13.8	1.000168
17000.0	552.1	-2.4	-19.5	25.3	709.8	641.3	148.4	12.6	1.000165
17500.0	541.7	-3.5	-20.0	24.5	699.2	640.0	161.0	10.8	1.000162
18000.0	531.3	-4.7	-22.0	23.6	688.2	638.9	173.0	9.2	1.000159
18500.0	521.1	-5.3	-23.2	22.8	677.4	637.8	186.0	7.3	1.000156
19000.0	511.1	-6.2	-24.4	22.0	666.7	636.7	201.5	6.2	1.000153
19500.0	501.2	-7.5	-25.7	21.1	656.3	635.5	217.0	5.8	1.000150
20000.0	491.4	-8.3	-26.6	21.2	646.1	634.2	225.2	5.7	1.000148
20500.0	481.7	-9.3	-27.4	21.5	636.2	632.7	224.4	5.4	1.000145
21000.0	472.2	-10.7	-28.3	21.8	626.4	631.3	224.0	5.4	1.000143
21500.0	462.8	-11.9	-29.2	22.0	616.8	629.9	226.4	5.5	1.000140
22000.0	453.6	-13.1	-30.1	22.3	607.4	628.4	227.0	6.3	1.000138
22500.0	444.7	-14.2	-31.0	22.6	598.1	627.0	220.0	7.5	1.000136
23000.0	435.9	-15.4	-31.8	23.0	589.0	625.5	210.0	8.4	1.000134

STATION ALTITUDE 20,000 FEET MSL  
 22 MAY 84  
 ASCENSION NO. 294 1139 MDT

UPPER AIR DATA  
 1440070294  
 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	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TM)	SPEED KNOTS	
23500.0	427.2	-16.0	23.1	579.9	624.1	199.3	9.5	1.000131
24000.0	418.5	-17.5	23.4	571.1	622.6	191.2	9.3	1.000129
24500.0	410.5	-19.0	23.7	562.4	621.2	182.8	8.9	1.000127
25000.0	402.5	-20.5	23.9	553.8	619.7	178.0	8.4	1.000125
25500.0	394.0	-21.4	24.5	545.1	618.2	173.5	8.0	1.000123
26000.0	385.7	-22.7	25.3	536.4	616.6	167.6	7.8	1.000121
26500.0	377.0	-24.0	26.0	527.9	615.0	162.7	7.6	1.000119
27000.0	369.7	-25.3	26.7	519.5	613.4	165.1	7.6	1.000117
27500.0	361.9	-26.5	27.5	511.3	611.7	162.5	7.7	1.000115
28000.0	354.3	-27.9	28.2	503.2	610.1	164.6	7.6	1.000113
28500.0	346.8	-29.2	29.0	495.2	608.5	167.5	7.5	1.000111
29000.0	339.5	-30.5	29.7	487.4	606.9	169.0	7.0	1.000109
29500.0	332.4	-31.0	30.4	479.7	605.2	170.4	6.5	1.000108
30000.0	325.4	-33.1	31.2	472.2	603.6	172.3	6.5	1.000106
30500.0	318.5	-34.4	31.9	464.8	602.0	174.3	6.6	1.000104
31000.0	311.8	-35.7	32.7	457.5	600.5	181.7	5.6	1.000103
31500.0	305.3	-37.0	33.4	450.4	599.7	190.4	6.7	1.000101
32000.0	298.8	-38.3	34.2	443.2	597.0	194.6	7.1	1.000099
32500.0	292.5	-39.5	34.9	435.7	595.5	197.4	7.6	1.000098
33000.0	285.8	-40.1	35.0	427.2	594.8	197.4	8.3	1.000095
33500.0	279.5	-40.5	35.6	418.9	594.0	195.9	9.2	1.000093
34000.0	273.5	-42.2	36.2	412.2	592.1	197.9	9.4	1.000092
34500.0	267.2	-43.7	36.7	405.7	590.1	201.9	9.3	1.000090
35000.0	261.3	-45.2	37.3	399.3	588.1	207.0	9.3	1.000089
35500.0	255.4	-46.5	37.7	392.7	586.4	212.6	9.4	1.000087
36000.0	249.6	-47.8	38.1	385.8	584.8	213.4	10.4	1.000086
36500.0	243.8	-49.0	38.5	379.9	583.3	212.2	11.8	1.000084
37000.0	238.1	-50.2	38.9	374.1	581.7	209.5	13.8	1.000083
37500.0	232.5	-51.4	39.3	368.4	580.1	204.8	16.2	1.000081
38000.0	227.1	-52.0	39.6	362.6	578.5	205.2	18.2	1.000080
38500.0	221.8	-53.4	39.9	356.4	576.9	204.1	20.0	1.000078
39000.0	216.7	-54.1	40.2	350.1	575.3	203.3	21.4	1.000077
39500.0	211.5	-55.3	40.5	343.9	573.7	202.7	22.3	1.000076
40000.0	206.7	-56.7	40.7	337.0	572.1	202.9	23.4	1.000074
40500.0	201.9	-58.0	40.9	330.0	570.5	197.7	24.7	1.000073
41000.0	197.0	-59.9	41.1	323.8	568.9	195.7	25.9	1.000072
41500.0	192.3	-61.1	41.2	317.7	567.4	193.5	26.9	1.000070
42000.0	187.5	-62.1	41.3	311.6	565.9	193.5	27.8	1.000069
42500.0	182.5	-63.2	41.4	305.5	564.4	197.7	28.7	1.000068
43000.0	178.5	-64.4	41.4	299.9	562.7	201.7	29.6	1.000066

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 379.0 FEET ASL  
 22 MAY 85  
 ASCENSION NO. 294

UPPER AIR DATA  
 144000Z94  
 WHITE SANDS

32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 15 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIR(FCTN) DEGR(FCTN)	SPEED KNOTS	INDEX OF REFRACTION
455.00.0	174.2	-65.5		297.2	561.4	205.7	30.4	1.000045
440.00.0	170.0	-66.0		264.6	559.9	209.5	31.0	1.000044
445.00.0	165.7	-67.6		240.8	558.6	212.1	29.4	1.000043
430.00.0	161.6	-69.0		215.1	557.2	215.1	27.8	1.000041
425.00.0	157.6	-69.5		203.6	555.9	220.0	25.2	1.000040
420.00.0	152.6	-69.6		207.8	555.9	228.0	22.9	1.000039
405.00.0	147.8	-67.5		251.7	556.6	238.2	20.8	1.000037
470.00.0	146.0	-67.9		247.9	558.1	250.4	19.5	1.000035
475.00.0	142.4	-68.3		242.2	557.6	256.7	18.1	1.000034
450.00.0	136.6	-69.7		226.6	557.0	262.1	16.7	1.000033
425.00.0	133.4	-68.6		230.5	557.2	263.1	15.6	1.000031
440.00.0	132.0	-67.2		227.3	559.1	262.2	14.6	1.000030
495.00.0	129.7	-67.3		217.9	558.9	264.4	14.0	1.000049
510.00.0	125.5	-67.9		211.0	558.1	269.2	13.7	1.000047
505.00.0	122.4	-65.4		208.3	557.4	275.7	13.2	1.000046
510.00.0	119.3	-69.0		203.6	556.6	255.7	12.3	1.000045
515.00.0	116.4	-66.6		194.4	556.9	295.0	11.6	1.000044
540.00.0	112.5	-67.7		192.4	558.3	299.6	10.5	1.000043
535.00.0	110.6	-67.8		167.7	558.2	304.1	9.5	1.000042
530.00.0	107.9	-68.2		165.4	557.7	299.4	8.6	1.000041
525.00.0	105.2	-65.4		179.0	557.5	293.7	7.9	1.000040
540.00.0	102.6	-63.4		174.5	557.5	304.1	7.1	1.000039
545.00.0	100.0	-65.4		170.1	557.5	317.7	6.7	1.000038
530.00.0	97.3	-64.3		165.8	557.6	319.7	6.4	1.000037
555.00.0	95.1	-68.1		161.6	557.6	315.1	6.0	1.000036
560.00.0	92.7	-65.7		157.4	558.0	303.9	5.2	1.000035
565.00.0	90.4	-67.7		153.4	558.2	274.5	5.0	1.000034
570.00.0	88.0	-67.7		149.5	558.4	254.8	5.6	1.000033
575.00.0	85.0	-67.6		145.7	558.5	250.0	6.0	1.000032
580.00.0	82.8	-67.7		142.0	558.7	245.0	6.5	1.000031
585.00.0	81.7	-67.5		139.4	558.9	235.3	7.3	1.000031
590.00.0	79.7	-65.9		136.0	560.3	227.7	8.2	1.000030
595.00.0	77.5	-66.1		129.6	563.2	221.3	7.0	1.000029
600.00.0	75.9	-63.7		124.3	563.6	214.1	7.6	1.000028
605.00.0	74.0	-63.7		123.1	563.8	211.1	6.4	1.000027
610.00.0	72.5	-63.5		120.0	564.1	207.4	5.0	1.000027
615.00.0	70.3	-63.5		117.9	564.4	194.0	4.4	1.000026
620.00.0	68.7	-63.4		114.0	564.5	180.5	4.3	1.000025
625.00.0	67.1	-63.1		111.2	564.6	167.9	4.3	1.000025
630.00.0	65.4	-63.0		107.5	564.7	145.5	5.8	1.000024

UPPER AIR DATA  
 1440020294  
 WHITE SANDS

STATION ALTITUDE 6000 FT  
 22 MAY 84  
 ASCENSION NO. 294

GEOMETRIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 15 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR °C	TEMPERATURE DRY POINT °C	REL HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
6250.0	63.9	-63.7			105.8	564.8	139.7	7.7	1.000024
6400.0	62.3	-62.7			103.2	564.9	129.4	9.7	1.000023
6450.0	60.8	-62.4			100.7	565.0	123.5	10.5	1.000022
6500.0	59.3	-62.7			98.2	565.1	120.6	10.3	1.000022
6550.0	57.9	-62.1			95.5	566.0	118.4	8.9	1.000021
6600.0	56.5	-61.4			92.9	566.9	116.0	7.1	1.000021
6650.0	55.1	-60.7			90.4	567.8	115.3	5.4	1.000020
6700.0	53.8	-60.1			88.0	568.7	117.4	.2	1.000020
6750.0	52.5	-59.4			85.6	569.5	73.4	1.1	1.000019
6800.0	51.3	-58.9			83.4	570.2	84.9	3.3	1.000019
6850.0	50.0	-58.3			81.3	570.4	97.5	6.4	1.000018
6900.0	48.9	-58.5			79.3	570.8	102.4	10.3	1.000018
6950.0	47.7	-58.2			77.3	571.2	104.4	13.6	1.000017
7000.0	46.6	-57.8			75.4	571.7	103.0	12.8	1.000017
7050.0	45.5	-57.5			73.5	572.1	101.4	12.1	1.000016
7100.0	44.4	-57.2			71.7	572.5	103.6	11.3	1.000016
7150.0	43.4	-56.9			69.9	572.9	109.7	10.6	1.000016
7200.0	42.4	-56.5			68.2	573.4	116.7	9.9	1.000015
7250.0	41.4	-56.2			66.5	573.8	126.7	9.8	1.000015
7300.0	40.4	-55.9			64.8	574.2	136.1	9.9	1.000014
7350.0	39.5	-55.6			63.2	574.7	140.7	9.8	1.000014
7400.0	38.5	-55.2			61.6	575.1	137.6	8.9	1.000014
7450.0	37.6	-54.9			60.1	575.5	131.7	8.1	1.000013
7500.0	36.8	-54.6			58.6	575.9	123.0	6.7	1.000013
7550.0	35.9	-54.3			57.1	576.4	123.2	5.1	1.000013
7600.0	35.1	-53.9			55.7	576.8	117.1	3.6	1.000012
7650.0	34.2	-53.6			54.3	577.2	127.2	1.8	1.000012
7700.0	33.4	-53.3			53.0	577.7	206.7	.6	1.000012
7750.0	32.7	-53.0			51.7	578.1	282.7	.5	1.000012
7800.0	31.9	-52.6			50.4	578.5	22.4	1.0	1.000011
7850.0	31.1	-52.3			49.1	578.9	34.4	2.1	1.000011
7900.0	30.4	-52.0			47.9	579.4	55.0	3.5	1.000011
7950.0	29.7	-51.7			46.7	580.0	62.6	5.1	1.000010
8000.0	29.0	-51.4			45.5	580.8	65.5	6.3	1.000010
8050.0	28.4	-51.2			44.3	581.7	65.8	6.7	1.000010
8100.0	27.7	-49.5			43.2	582.5	63.1	7.0	1.000010
8150.0	27.1	-48.9			42.1	583.4	68.6	7.1	1.000009
8200.0	26.5	-48.3			41.0	584.3	72.7	7.0	1.000009
8250.0	25.9	-47.6			39.9	585.1	77.0	6.9	1.000009
8300.0	25.3	-47.5			39.0	585.5	87.1	7.2	1.000009

UPPER AIR DATA  
 1440020294  
 WHITE SANDS

STATION ALTITUDE 3010.0 FEET MSL  
 23 MAY 64 1139 MDT  
 ASCENSION NO. 29-

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 15 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIR (DEG) SPEED (KNOTS)	INDEX OF REFRACTION
8350.0	24.7	-47.1		39.1	585.7	96.8	1.000008
8400.0	24.2	-46.9		37.2	586.0	104.8	1.000008
8450.0	23.0	-46.7		36.3	586.3	107.7	1.000008
8500.0	22.1	-46.5		35.5	586.6	109.7	1.000008
8550.0	22.0	-46.6		34.6	586.8	111.4	1.000008
8600.0	24.1	-46.0		33.8	587.1	109.7	1.000008
8650.0	21.6	-45.6		33.0	587.4	107.7	1.000007
8700.0	21.1	-45.6		32.3	587.7	105.8	1.000007
8750.0	20.6	-45.4		31.5	588.0	104.6	1.000007
8800.0	20.1	-45.2		30.8	588.2	103.5	1.000007
8850.0	19.7	-44.9		30.1	588.6	102.6	1.000007
8900.0	19.3	-44.6		29.4	588.9	105.1	1.000007
8950.0	18.8	-44.4		28.7	589.3	108.7	1.000006
9000.0	18.4	-44.1		28.0	589.6	112.3	1.000006
9050.0	18.0	-43.8		27.3	590.0	113.0	1.000006
9100.0	17.6	-43.5		26.7	590.3	113.1	1.000006
9150.0	17.2	-43.3		26.1	590.7	113.1	1.000006
9200.0	16.8	-43.0		25.5	591.0	116.7	1.000006
9250.0	16.5	-42.7		24.9	591.4	120.7	1.000006
9300.0	16.1	-42.5		24.3	591.7	124.4	1.000005
9350.0	15.7	-42.2		23.7	592.1	124.6	1.000005
9400.0	15.4	-41.9		23.1	592.9	123.9	1.000005
9450.0	15.0	-41.6		22.5	594.8	123.3	1.000005
9500.0	14.7	-38.5		21.9	596.7	111.7	1.000005
9550.0	14.4	-38.1		21.3	597.3		1.000005
9600.0	14.1	-38.2		20.9	597.2		1.000005
9650.0	13.8	-38.3		20.4	597.0		1.000005
9700.0	13.5	-38.4		20.0	596.8		1.000004
9750.0	13.2	-38.5		19.6	596.7		1.000004

STATION ALTITUDE 2000 FEET "SL"  
 23 MAY 84  
 ASCENSION HG. 55

MANDATORY LEVELS  
 1440020294  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 16

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT	PERCENT	DIRECTION DEGREE(TN)	SPEED KNOTS
850.0	5167.	24.1	17.6	52.	124.7	12.1
800.0	6895.	18.9	11.1	61.	124.8	9.1
750.0	8702.	14.0	9.1	72.	150.5	5.2
700.0	10609.	13.7	-4.9	27.	187.4	10.4
650.0	12540.	9.0	-6.9	32.	167.1	14.4
600.0	14793.	3.4	-13.1	29.	144.0	13.1
550.0	17037.	-2.7	-19.9	25.	150.5	12.2
500.0	19541.	-7.3	-25.8	21.	219.9	5.8
450.0	22207.	-13.5	-30.4	22.	222.0	6.8
400.0	25102.	-20.5	-35.7	24.	176.9	8.3
350.0	28297.	-28.7	-41.2	29.	166.6	7.5
300.0	31845.	-38.1	-48.0	34.	194.0	7.0
250.0	35886.	-47.7			211.6	10.2
200.0	40597.	-59.2			196.7	25.2
175.0	43304.	-65.3			204.9	10.2
150.0	46344.	-67.5			237.0	21.0
125.0	49739.	-68.0			269.7	13.7
100.0	54331.	-68.4			316.9	6.7
80.0	58735.	-66.2			229.0	8.0
70.0	61419.	-63.2			193.9	4.3
60.0	64532.	-62.8			121.5	11.1
50.0	68256.	-58.8			97.2	6.3
40.0	72865.	-55.7			133.7	10.0
30.0	78950.	-51.9			50.5	4.3
25.0	82877.	-47.2			91.2	7.5
20.0	87740.	-45.1			101.2	14.6
10.0	94096.	-39.8			121.2	11.7

GEODETTIC COORDINATES  
 52.48034 LAT DEG  
 106.42107 LON DEG

SIGNIFICANT LEVEL DATA

1440060056  
 S M R

TABLE 17

STATION ALTITUDE 2907.7 FEET MSL  
 23 MAY 24 1139 MDT  
 ASCENSION NO. 52

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT
664.9	7997.3	32.2	39.0
578.5	4210.0	26.7	36.0
500.0	5142.4	24.0	45.0
495.6	7117.6	18.3	57.0
434.2	9289.8	12.4	78.0
409.3	10793.7	10.6	66.0
300.0	13003.0	12.6	40.0
296.3	13749.2	13.0	25.0
280.1	14526.0	12.3	24.0
212.9	16229.9	4.1	34.0

STATION ALTITUDE 2977.0 FEET MSL  
 23 MAY 81  
 ASCENSION NO. 1139 MDT

UPPER AIR DATA  
 144000Z  
 S W R  
 TABLE 18

GEODETIC COORDINATES  
 32.48334 LAT DEG  
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> AFTER	SPEED OF SOUND KNOTS	WIND DIR (DEGR) (TN)	WIND SPEED (KNOTS)	INDEX OF REFRACTION
1977.3	384.9	32.2	79.0	1001.5	683.5	165.0	12.0	1.000300
4979.0	224.3	24.1	39.0	1001.6	683.4	165.0	12.0	1.000299
4500.0	269.7	25.7	78.7	1007.5	675.6	160.0	11.8	1.000279
5000.0	254.9	24.5	43.5	994.7	674.1	154.0	11.6	1.000279
5500.0	240.0	23.0	47.1	967.1	672.5	149.7	11.6	1.000276
6000.0	225.4	21.2	50.1	969.9	670.8	144.4	11.6	1.000275
6500.0	211.0	20.1	53.2	957.8	669.1	139.4	11.5	1.000269
7000.0	196.9	18.3	56.3	945.9	667.4	135.4	11.1	1.000265
7500.0	182.8	17.3	60.7	933.6	665.8	131.4	10.8	1.000262
8000.0	168.7	15.7	64.5	921.3	664.3	130.2	10.4	1.000259
8500.0	155.3	14.5	70.4	909.2	662.7	128.0	10.0	1.000256
9000.0	141.9	13.4	75.2	897.3	661.2	135.3	9.0	1.000253
9500.0	128.6	12.3	78.4	885.2	659.7	145.7	8.1	1.000247
10000.0	115.3	11.1	69.4	873.6	658.4	157.3	7.5	1.000248
10500.0	102.0	12.0	46.3	858.4	659.0	170.0	8.1	1.000232
11000.0	88.7	12.7	46.0	839.1	659.4	190.5	9.0	1.000204
11500.0	77.5	12.0	24.4	824.2	658.5	181.5	10.1	1.000200
12000.0	66.5	12.6	26.1	815.2	656.8	179.4	11.2	1.000197
12500.0	55.0	9.1	27.9	804.5	655.1	174.0	12.3	1.000195
13000.0	44.1	7.6	29.7	793.9	653.4			1.000192
13500.0	33.4	6.2	11.4	763.5	651.7			1.000189
14000.0	21.7	4.7	13.2	773.3	650.0			1.000186

STATION ALTITUDE 1077.75 FEET MSL  
 23 MAY 57  
 ASCENSION HC. 56  
 1139 MDT

MANUALLY LEVELS  
 1440JAD056  
 C M R

GEODETIC COORDINATES  
 32.68734 LAT DEG  
 106.42707 LON DEG

TABLE 19

PRESSURE GEOPOTENTIAL MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
			DIRECTION DEGREES(TN)	SPEED KNOTS
55.0	24.0	45.	157.2	11.6
90.0	19.0	56.	136.4	11.2
75.0	14.0	72.	130.2	9.7
70.0	12.6	43.	177.2	8.3
65.0	9.7	28.		

GFOODTIC COORDINATES  
 37.57209 LAT DEG  
 104.29439 LON DEG

SIGNIFICANT LEVEL DATA  
 1440200009  
 DON

STATION ALTITUDE 4003.7 FEET MSL  
 23 MAY 84 1139 MDT  
 ASCENSION NO. 9

TABLE 20

GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREEFS CENTIGRADE	REL. HUMIDITY PERCENT
4003.7	15.9	19.0
4180.1	10.1	33.0
5105.7	11.0	41.0
7517.4	8.8	57.0
9667.3	7.4	73.0
9962.3	5.1	63.0
10437.5	-5.9	24.0
10583.6	-6.4	24.0
12604.7	-7.4	30.0

STATION ALTITUDE 4003.69 FEET MSL  
 23 MAY 64  
 ASCENSION NO. 9

UPPER AIR DATA  
 1440200009  
 NON

4003.69 FEET MSL  
 1139 MDT

GEODETIC COORDINATES  
 32.57209 LAT DFG  
 106.29439 LON DEG

TABLE 21

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REF. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4003.7	833.6	11.5	15.9	1002.6	682.6	120.0	9.9	1.000297
4500.0	868.7	27.0	10.5	1002.7	676.8	127.6	8.7	1.000277
5000.0	853.8	25.5	11.0	990.1	675.2	137.3	7.8	1.000276
5500.0	839.0	23.9	10.8	978.1	673.5	149.5	7.1	1.000274
6000.0	824.4	22.3	10.4	966.3	671.6	144.0	7.1	1.000270
6500.0	810.1	20.7	10.0	954.8	669.8	146.9	10.3	1.000267
7000.0	794.0	19.1	9.5	943.4	667.9	140.5	14.8	1.000263
7500.0	787.1	17.5	8.9	932.2	666.0	144.7	15.9	1.000259
8000.0	768.2	16.2	8.6	919.7	664.6	148.7	17.1	1.000256
8500.0	754.6	15.0	8.3	907.2	663.1	152.5	15.1	1.000252
9000.0	741.1	13.8	8.0	895.0	661.7	160.0	11.6	1.000249
9500.0	728.0	12.5	7.6	882.9	660.2	171.1	8.5	1.000245
10000.0	714.9	12.1	4.6	869.2	659.4	189.3	6.4	1.000233
10500.0	702.1	14.1	-6.1	849.6	661.0	189.1	7.5	1.000207
11000.0	689.5	12.8	-6.6	838.2	659.5			1.000204
11500.0	677.0	11.6	-4.9	826.5	658.1			1.000201
12000.0	664.8	10.4	-7.2	815.0	658.7			1.000198
12500.0	652.8	9.2	-7.5	803.7	655.3			1.000196

STATION ALTITUDE 4003.49 FEET MSI  
 23 MAY 84  
 ASCENSION NO. 9

MANDATORY LEVELS  
 1440200009  
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GEODETIC COORDINATES  
 37.57209 LAT DEG  
 106.29439 LON DEG

TABLE 22

PRESSURE MILLIBARS	GEOPOTENTIAL FFFT	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DFGREES	DEWPOINT CENTIGRADE		DIRECTION DFGREES(TN)	SPEED KNOTS
850.0	5126.	25.1	11.0	41.	140.2	7.5
800.0	6857.	19.6	9.6	53.	140.6	13.5
750.0	8666.	14.6	8.2	66.	154.6	13.9
700.0	10573.	13.8	-6.4	24.	189.0	7.6