

AD-A065 003

ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
19303A GSRS MISSILE NUMBERS 1015 AND 1016, ROUND NUMBERS V-15 A--FTC(U)
FEB 79

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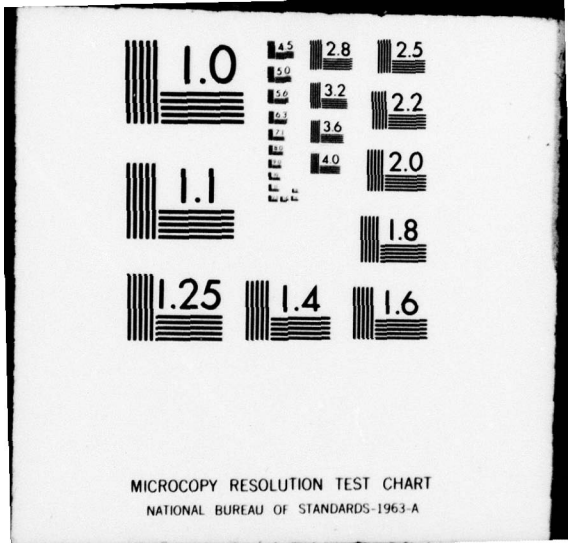
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February 1979

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METEOROLOGICAL DATA REPORT

19303A GSRS
Missile Nos. 1015 and 1016
Round Nos. V-15 and V-16
(14 December 1978)

By

WSMR Meteorological Team

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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14 REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19303A GSRS, Missile Number 1015 and 1016, Round Numbers V-15 and V-16, are presented in tabular form.			

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INTRODUCTION

(FB) 19303 GSRS, Missile Numbers 1015 and 1016, Round Numbers V-15 and V-16, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0827 and 0837 MST, 14 December 1978. The scheduled launch times were 0830 and 0840 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction, wind velocity and cloud cover were made at the LC-33 Met Site at T-0 mins.

(2) Anemometer data were provided from existing pole mounted and tower mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS-T-9 pibals observation at T-0 mins as follows:

SITE & ALT.

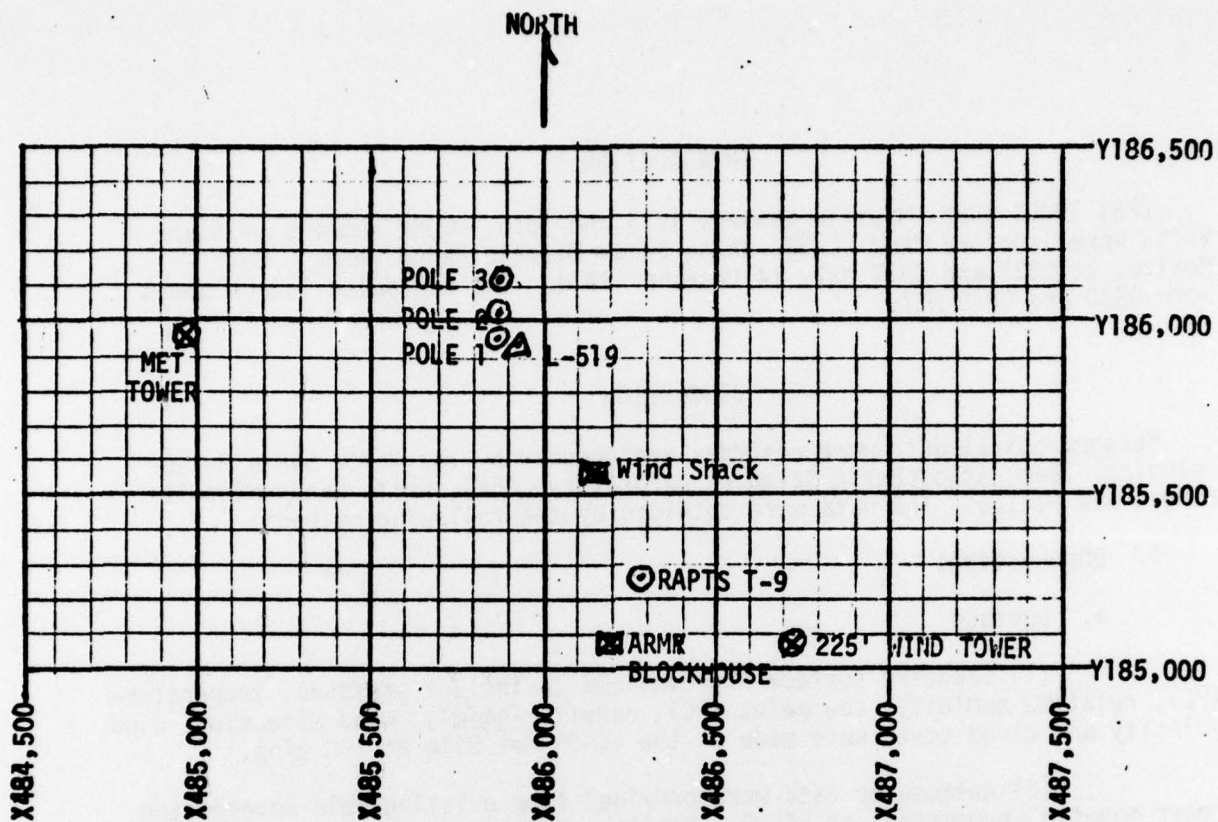
LC-33 900 meters (15 meter incs)
APA 900 meters (30 meter incs)

(2) Air structure data (rawinsonde) were collected at the SMR Met Site at T-0 mins. Data were collected from surface to 125% of apogee in 100 meter incs.

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DDI	Ball Section <input type="checkbox"/>
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1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 62 ft, 102 ft and 202 ft with E/A recorders in Wind Shack.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders in Wind Shack
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.
4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

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NOV 22 1954

DATE	NOV 22 1954
TIME	10:00 AM
STATION	WIND TOWER
OPERATOR	
REMARKS	
WIND DIRECTION	
WIND VELOCITY	
TEMPERATURE	
HUMIDITY	
SEA LEVEL PRESSURE	
STATION PRESSURE	
WIND TOWER	

The data are presented in the following tabulations:

ELEVATION	3989	FEET/MSL
PRESSURE	887.6	MBS
TEMPERATURE	1.7	°C
RELATIVE HUMIDITY	73	%
DEW POINT	-2.5	°C
DENSITY	1121	GM/M ³
WIND SPEED	03	MPH
WIND DIRECTION	050	DEGREES
CLOUD COVER	1	C1

TABLE I. SURFACE OBSERVATIONS TAKEN AT WSD
AT 0830 MST/14 DECEMBER 1978
19303 GSRS, MISSILE NUMBER 1015
ROUND NUMBER V-15

The data are presented in the following tabulations:

ELEVATION	3989	FEET/MSL
PRESSURE	887.6	MBS
TEMPERATURE	1.7	°C
RELATIVE HUMIDITY	73	%
DEW POINT	-2.5	°C
DENSITY	1121	GM/M ³
WIND SPEED	CALM	MPH
WIND DIRECTION	0	DEGREES
CLOUD COVER	CLEAR	

TABLE II. SURFACE OBSERVATIONS TAKEN AT WSD
AT 0840 MST/14 DECEMBER 1978
19303 GSRs, MISSILE NUMBER 1016
ROUND NUMBER V-16

T-TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	05	035
-20.0	04	035
-10.0	04	035
-00.0	03	035
+10.0	03	035
+20.0	02	035
+30.0	02	035

TABLE III. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 1
RELEASED FROM LC-33 AT 0827 MST/14 DECEMBER 1978
19303 GSRS/ROUND NUMBER V-15

WSTM COORDINATES: X = 485,874.29 Y = 185,958.90 Z = 4018.74

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

T-TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	04	030
-20.0	04	030
-10.0	04	030
-00.0	04	030
+10.0	04	030
+20.0	03	035
+30.0	04	055

TABLE IV. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 2
RELEASED FROM LC-33 AT 0827 MST/14 DECEMBER 1978
19303 GSRs/ROUND NUMBER V-15

WSTM COORDINATES: X = 485,874.93 Y = 186,012.00 Z = 4033.57

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

T-TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	00	00
-20.0	00	00
-10.0	00	00
00.0	00	00
+10.0	00	00
+20.0	00	00
+30.0	00	00

TABLE V. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 3
 RELEASED FROM LC-33 AT 0827 MST/14 DECEMBER 1978
 19303 GSRS/ROUND NUMBER V-15

WSTM COORDINATES: X = 485,877.29 Y = 186,116.06 Z = 4063.92

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

T-TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	07	045
-20.0	07	045
-10.0	07	040
00.0	07	040
+10.0	06	040
+20.0	07	040
+30.0	07	040

TABLE VI. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 1
RELEASED FROM LC-33 AT 0837 MST/14 DECEMBER 1978
19303 GSRS/ROUND NUMBER V-16

WSTM COORDINATES: X = 485,874.29 Y = 185,958.90 Z = 4018.74

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

T-TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	05	050
-20.0	05	045
-10.0	05	040
00.0	05	040
+10.0	05	040
+20.0	05	045
+30.0	05	045

TABLE VII. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 2
RELEASED FROM LC-33 AT 0837 MST/14 DECEMBER 1978
19303 GSRS/ROUND NUMBER V-16

WSTM COORDINATES: X = 485,874.93 Y = 186,012.00 Z = 4033.57

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

T-TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	00	00
-20.0	00	00
-10.0	00	00
00.0	00	00
+10.0	00	00
+20.0	00	00
+30.0	00	00

TABLE VIII. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 3
RELEASED FROM LC-33 AT 0837 MST/14 DECEMBER 1978
19303 GSRS/ROUND NUMBER V-16

WSTM COORDINATES: X = 485,877.29 Y = 186,116.06 Z = 4063.92

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	000	0.0
50	M	M
100	M	M
150	M	M
200	M	M
250	M	M
300	M	M
350	M	M
400	M	M
450	045	2.5
500	011	2.5
550	159	2.7
600	295	1.2
650	224	2.1
700	224	1.7
750	165	1.9
800	135	1.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
850	135	1.8
900	135	2.1
950	124	3.0
1000	113	3.8
1050	102	3.2
1100	090	2.5
1150	014	2.1
1200	360	2.0
1250	360	3.5
1300	360	4.9
1350	328	3.5
1400	297	2.2
1450	259	4.1
1500	221	6.0
1550	218	6.0
1600	212	6.0
1650	181	6.5

TABLE IX. PILOT-BALLOON-MEASURED WIND DATA RELEASED FROM LC-33
AT 0831 MST/14 DECEMBER 1978
19303 GSRS, MISSILE NUMBER 1015, ROUND NUMBER V-15

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24 Y = 182,350.16 Z = 3977.30

APPROXIMATELY: 0.5 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1700	149	7.0
1750	206	5.5
1800	263	4.0
1850	292	3.7
1900	320	3.4
1950	290	3.2
2000	260	3.0
2050	265	2.9
2100	270	2.7
2150	268	2.6
2200	265	2.5
2250	257	1.8
2300	248	1.1
2350	237	1.6
2400	225	2.1
2450	196	2.6
2500	167	3.1

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
2550	159	3.1
2600	150	3.0
2650	165	2.7
2700	180	2.3
2750	257	3.4
2800	334	4.5
2850	315	2.2

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	000	0.0
50	M	M
100	M	M
150	M	M
200	M	M
250	M	M
300	M	M
350	M	M
400	104	8.0
450	108	9.0
500	129	6.0
550	008	1.4
600	173	1.0
650	309	1.0
700	043	1.0
750	113	1.1
800	149	1.8

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
850	099	1.9
900	107	4.1
950	111	5.3
1000	119	5.1
1050	114	4.9
1100	109	4.7
1150	091	3.6
1200	073	2.4
1250	045	2.1
1300	004	2.5
1350	002	3.0
1400	335	3.0
1450	316	3.6
1500	296	2.6
1550	238	2.5
1600	180	2.3
1650	187	3.0

TABLE X. PILOT-BALLOON-MEASURED WIND DATA RELEASED FROM LC-33
AT 0840 MST/14 DECEMBER 1978
19303 GSRS, MISSILE NUMBER 1016, ROUND NUMBER V-16

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24 Y = 182,350.16 Z = 3977.30

APPROXIMATELY: 0.5 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1700	194	3.6
1750	185	3.3
1800	176	3.0
1850	178	2.5
1900	180	2.0
1950	202	1.7
2000	224	1.3
2050	253	1.6
2100	282	1.9
2150	292	2.2
2200	301	2.5
2250	288	1.9
2300	275	1.3
2350	316	1.6
2400	357	1.8
2450	342	1.8
2500	326	1.8

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
2550	245	2.6
2600	163	3.3
2650	151	2.7
2700	139	2.0
2750	155	2.1
2800	214	5.2
2850	236	5.4
2900	253	5.1
2950	283	4.6
3000	310	3.9

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	350	4.0
100	353	9.0
200	354	14.0
300	353	13.5
400	351	11.5
500	348	9.0
600	339	5.0
700	291	2.0
800	240	2.0
900	216	2.5
1000	210	2.5
1100	225	1.5
1200	256	1.0
1300	250	1.5
1400	248	2.5
1500	247	3.0
1600	247	3.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1700	254	3.5
1800	264	3.5
1900	274	3.5
2000	284	4.0
2100	290	4.0
2200	292	3.5
2300	293	3.0
2400	289	2.5
2500	284	2.5
2600	281	2.0
2700	277	1.5
2800	284	1.5
2900	290	1.5
3000	297	2.0

TABLE XI. PILOT-BALLOON-MEASURED WIND DATA RELEASED FROM APACHE
AT 0820 MST/14 DECEMBER 1978
19303 GSRS, MISSILE NUMBER 1015, ROUND NUMBER V-15

PIBAL RELEASE POINT WSTM COORDINATES:

X = 481,408 Y = 267,771 Z = 3956

APPROXIMATELY: 10.0 MILES NORTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	340	6.0
100	344	7.0
200	348	8.0
300	346	7.0
400	342	5.5
500	335	4.0
600	306	2.0
700	230	2.0
800	207	2.5
900	196	3.0
1000	194	3.0
1100	202	2.5
1200	219	2.0
1300	234	2.5
1400	244	3.0
1500	257	3.5
1600	265	4.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1700	275	4.5
1800	285	4.5
1900	292	4.5
2000	298	4.0
2100	305	3.5
2200	314	3.0
2300	324	3.0
2400	330	3.0
2500	334	3.5
2600	333	4.0
2700	333	4.0
2800	319	5.5
2900	311	6.5
3000	308	7.5

TABLE XII. PILOT-BALLOON-MEASURED WIND DATA RELEASED FROM APACHE
AT 0845 MST/14 DECEMBER 1978
19303 GSRs, MISSILE NUMBER 1016, ROUND NUMBER V-16

PIBAL RELEASE POINT WSTM COORDINATES:

X = 481,408 Y = 267,771 Z = 3956

APPROXIMATELY: 10.0 MILES NORTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

STATION ALTITUDE 3439.00 FEET MSL
 14 DEC. 78 0630 HRS MST
 ACQUISITION NO. 197

SIGNIFICANT LEVEL DATA
 346050797
 WHITE CARDS

GEODETTIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

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PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
690.0	5009.0	-4.0	66.0
650.0	5204.3	-4.9	52.0
722.4	7305.6	-9.4	41.0
782.0	7797.0	-6.7	46.0
775.2	7719.9	3.3	95.0
754.0	8392.3	-2.4	64.0
749.3	8519.5	-5.5	48.0
739.9	8898.1	-5.0	45.0
760.0	10379.4	-9.7	51.0
834.0	12001.0	-8.0	58.0
630.3	13158.4	-9.2	50.0
535.0	15169.0	-10.0	52.0
507.0	19096.4	-31.0	17.0
449.0	21734.2	-16.0	16.0
400.0	24608.5	-23.0	17.0
373.0	30872.1	-36.0	15.0
330.0	37704.2	-40.0	
269.4	53094.3	-45.0	
250.0	5529.1	-47.2	
200.0	40118.9	-54.2	
169.0	43603.3	-50.7	
150.5	44601.8	-53.7	
130.0	46696.1	-60.3	
136.4	47749.0	-60.7	
121.2	48901.8	-57.4	
116.0	51122.1	-68.3	
100.0	54716.1	-70.3	
95.0	57941.0	-73.6	
70.0	61043.4	-71.4	
50.0	67912.8	-65.7	

STATION: ALTITUDE 3439.00 FEET MSL
14 DEC. 78
ASCENSION NO. 797

SIGNIFICANT LEVEL DATA
34JUC20797
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
35.6 74735.3	-62.6	
30.0 76315.3	-57.8	
22.0 84750.0	-53.3	
20.0 86776.1	-55.9	

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STATION ALTITUDE 3989.00 FEET MSL
 14 DEC. 78 0230 HRS MST
 ASCENSION NO. 797

UPPER AIR DATA
 3400020797
 WHITE SANDS

GEODETTIC COORDINATES
 32.40043 LAT DEG
 106.37035 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	890.0	.5	66.0	1129.7	643.4	.0	.0	1.000273
4050.0	889.6	.5	66.0	1129.2	643.4	218.0	.0	1.000273
4500.0	873.0	1.1	64.3	1100.7	643.3	218.0	1.6	1.000268
5000.0	850.5	1.5	62.7	1084.0	643.2	218.0	3.2	1.000263
5500.0	840.6	1.7	58.7	1065.0	643.5	218.0	4.7	1.000257
6000.0	824.9	2.0	53.0	1042.7	643.6	226.3	5.9	1.000251
6500.0	809.5	2.2	47.4	1022.4	647.0	266.5	7.7	1.000245
7000.0	794.4	2.5	41.7	1002.0	647.2	266.6	10.5	1.000239
7500.0	779.6	3.0	32.0	975.1	647.2	303.6	12.1	1.000243
8000.0	765.1	3.9	22.7	959.1	649.3	315.6	14.2	1.000247
8500.0	751.0	4.3	13.7	941.0	649.6	323.4	13.5	1.000232
9000.0	737.1	5.3	4.4	920.0	650.7	332.0	13.0	1.000225
9500.0	723.4	4.2	7.4	906.7	649.5	329.8	13.4	1.000221
10000.0	710.0	3.2	49.5	893.2	646.0	327.7	13.9	1.000218
10500.0	696.3	2.2	51.8	880.0	647.0	321.5	12.0	1.000215
11000.0	683.7	1.1	55.1	868.0	648.6	312.6	10.2	1.000211
11500.0	670.3	.4	50.4	855.5	644.6	293.1	9.3	1.000208
12000.0	558.2	-.9	61.7	843.6	643.4	284.3	9.1	1.000205
12500.0	645.6	-2.0	65.0	831.9	641.2	279.7	9.2	1.000202
13000.0	633.7	-2.2	65.2	814.9	641.2	275.1	9.2	1.000199
13500.0	621.6	-2.7	53.0	799.4	641.2	291.5	9.4	1.000192
14000.0	609.0	-3.1	48.1	783.5	640.7	302.9	10.2	1.000187
14500.0	596.2	-3.4	41.2	771.9	640.3	309.2	12.0	1.000182
15000.0	583.6	-3.7	34.3	757.9	639.6	311.9	13.7	1.000177
15500.0	575.3	-4.4	30.7	743.5	633.9	303.4	14.9	1.000173
16000.0	564.4	-5.4	22.6	733.6	637.7	308.1	15.9	1.000170
16500.0	550.4	-6.4	26.9	722.0	636.5	303.3	16.7	1.000166
17000.0	542.7	-7.4	26.0	711.0	630.0	305.2	17.1	1.000163
17500.0	532.2	-8.4	23.1	699.3	634.1	303.6	17.1	1.000160
18000.0	521.9	-9.3	21.2	688.9	632.9	305.6	17.3	1.000157

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STATION ALTITUDE 3989.00 FEET MSL
 14 DEC. 78
 ASCENSION NO. 797

UPPER AIR DATA
 3430020797
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY G/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
43500.0	511.3	-10.3	-20.3	19.8	679.2	651.7	303.8	18.1	1.000154
43000.0	501.9	-11.3	-21.2	17.4	667.8	639.5	302.1	18.8	1.000151
42500.0	492.0	-12.2	-22.2	15.8	656.0	629.4	305.8	19.5	1.000149
42000.0	482.3	-13.0	-23.1	16.7	643.7	629.4	308.9	20.2	1.000146
41500.0	472.7	-13.9	-23.9	15.5	631.9	627.4	313.7	21.0	1.000143
41000.0	463.4	-14.7	-24.7	16.3	620.5	625.4	318.9	21.9	1.000141
40500.0	454.2	-15.5	-25.5	16.1	609.1	623.9	320.4	23.1	1.000138
40000.0	445.1	-16.7	-26.4	16.1	604.5	624.0	320.8	24.5	1.000136
39500.0	435.1	-18.0	-27.4	16.5	595.2	622.4	320.1	25.4	1.000134
39000.0	427.2	-19.3	-28.4	15.4	586.2	620.7	318.4	25.7	1.000132
38500.0	418.6	-20.8	-29.4	16.6	577.4	619.1	315.8	26.4	1.000130
38000.0	410.1	-22.0	-30.4	16.8	568.7	617.9	311.8	27.8	1.000128
37500.0	401.5	-23.3	-31.5	17.0	560.1	616.9	308.2	29.4	1.000126
37000.0	393.4	-24.5	-32.4	17.1	551.2	616.9	305.0	31.6	1.000124
36500.0	385.2	-25.7	-33.4	17.2	542.2	616.9	302.5	33.8	1.000122
36000.0	377.1	-26.9	-34.3	17.5	533.4	616.9	300.1	35.5	1.000120
35500.0	369.1	-28.1	-35.2	17.4	524.6	619.3	295.2	37.2	1.000118
35000.0	361.4	-29.3	-36.2	17.6	516.3	625.4	297.1	39.4	1.000116
34500.0	353.6	-30.5	-37.1	17.7	507.9	630.9	298.3	41.6	1.000114
34000.0	345.4	-31.7	-38.1	17.8	499.8	636.4	295.3	43.5	1.000112
33500.0	337.1	-32.9	-39.1	17.9	491.7	641.9	294.2	45.2	1.000110
33000.0	331.2	-34.1	-40.5	17.1**	483.7	647.9	292.8	45.2	1.000108
32500.0	324.7	-35.4	-41.6	13.4**	475.3	650.7	290.9	43.2	1.000106
32000.0	317.7	-36.7	-42.6	9.7**	466.9	653.1	289.4	41.5	1.000104
31500.0	310.5	-37.9	-43.8	5.0**	458.6	657.9	287.0	40.5	1.000103
31000.0	304.5	-39.2	-45.2	2.1**	452.8	663.8	285.8	39.5	1.000101
30500.0	297.4	-40.5	-46.5		446.3	674.3	285.0	41.0	1.000099
30000.0	290.7	-41.8	-47.8		440.5	681.8	291.3	42.7	1.000097
29500.0	284.5	-42.8	-49.1		434.9	691.3	290.2	43.8	1.000096
29000.0	278.9	-43.9	-50.4		429.3	698.8	287.8	44.6	1.000094

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

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

UPPER AIR DATA
 340020797
 WHITE SANDS

STATION ALTITUDE 5459.00 FEET MSL
 14 DEC. 78
 ASCENSION NO. 797

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	REL. HUM. PERCENT	DENSITY CM/GM CU METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES(TV)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3350.0	271.0	-45.1		413.2	502.0	284.4	45.4	1.000092
3400.0	265.7	-45.9		407.2	507.0	279.0	46.2	1.000091
3450.0	259.7	-46.4		399.9	503.7	275.8	47.4	1.000089
3500.0	253.8	-46.9		390.7	500.0	271.1	49.3	1.000087
3550.0	248.0	-47.4		382.1	505.0	263.6	51.4	1.000085
3600.0	242.3	-48.2		375.2	504.0	268.4	54.8	1.000084
3650.0	236.7	-48.9		367.9	500.4	269.9	52.6	1.000082
3700.0	231.3	-49.5		360.0	505.4	269.0	51.6	1.000080
3750.0	226.0	-50.4		353.0	501.0	269.8	63.7	1.000079
3800.0	220.5	-51.1		346.0	500.0	269.9	66.0	1.000077
3850.0	215.7	-51.6		339.0	519.0	270.0	68.6	1.000076
3900.0	210.7	-52.0		332.8	573.0	270.1	71.2	1.000074
3950.0	205.9	-53.3		326.2	577.0	270.0	74.0	1.000073
4000.0	201.1	-54.0		319.7	570.7	270.5	76.8	1.000071
4050.0	196.4	-54.8		313.0	570.7	269.8	77.8	1.000070
4100.0	191.7	-55.5		307.0	574.0	263.9	79.2	1.000068
4150.0	187.2	-56.4		300.0	570.0	267.9	77.5	1.000067
4200.0	182.6	-57.1		294.7	574.0	268.8	74.2	1.000066
4250.0	178.1	-57.9		288.8	571.0	265.0	70.0	1.000064
4300.0	174.2	-58.7		283.0	570.0	265.0	68.4	1.000063
4350.0	170.1	-59.5		277.0	569.0	265.0	66.2	1.000062
4400.0	166.0	-60.0		270.5	569.0	267.0	64.9	1.000060
4450.0	162.1	-60.9		265.0	570.0	271.1	65.8	1.000059
4500.0	158.2	-61.1		257.4	570.0	274.8	67.0	1.000057
4550.0	154.4	-61.5		251.0	569.0	274.9	64.4	1.000056
4600.0	150.7	-62.1		245.4	568.0	270.1	61.8	1.000055
4650.0	147.1	-62.3		240.7	560.0	270.0	59.8	1.000054
4700.0	143.5	-62.5		235.1	569.1	269.7	58.2	1.000052
4750.0	140.1	-62.6		229.0	567.9	268.1	56.4	1.000051
4800.0	136.7	-62.8		223.7	560.0	268.7	60.4	1.000050

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GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

UPPER AIR DATA
 340020797
 WHITE SANDS

STATION ALTITUDE 3489.00 FEET MSL
 14 DEC. 76
 ASCENSION NO. 797

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND METS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4550.0	133.5	-59.1		217.2	569.9	269.1	61.8	1.000048
4900.0	130.3	-55.2		211.7	576.4	260.5	59.7	1.000047
4950.0	127.1	-60.1		207.9	580.6	267.5	57.5	1.000046
5000.0	124.0	-61.5		204.1	583.0	260.0	55.1	1.000045
5050.0	121.0	-62.6		200.5	585.0	264.1	52.7	1.000045
5100.0	118.1	-64.1		196.9	587.2	262.2	50.8	1.000044
5150.0	115.2	-65.1		192.9	589.7	261.0	50.6	1.000043
5200.0	112.3	-66.0		189.9	590.7	259.7	50.5	1.000042
5250.0	109.6	-66.9		185.6	593.5	260.1	49.4	1.000041
5300.0	106.8	-67.8		181.5	596.3	261.1	48.0	1.000040
5350.0	104.2	-68.7		177.5	597.0	261.0	46.8	1.000040
5400.0	101.6	-69.6		173.9	598.5	261.7	46.0	1.000039
5450.0	99.1	-70.4		170.2	594.6	261.7	45.3	1.000038
5500.0	96.5	-70.6		166.2	594.1	259.2	44.3	1.000037
5550.0	94.1	-71.3		162.4	595.5	256.9	43.4	1.000036
5600.0	91.7	-71.7		158.0	592.9	254.1	42.8	1.000035
5650.0	89.4	-72.2		154.9	594.5	259.9	42.7	1.000035
5700.0	87.1	-72.6		151.4	591.5	259.7	42.6	1.000034
5750.0	84.9	-73.1		147.9	591.0	262.1	41.6	1.000033
5800.0	82.9	-73.5		144.4	590.5	264.4	40.2	1.000032
5850.0	80.9	-73.1		140.4	591.0	260.6	38.9	1.000031
5900.0	78.9	-72.5		136.0	593.5	260.0	38.1	1.000030
5950.0	76.9	-72.4		132.5	592.0	267.8	37.4	1.000030
6000.0	74.7	-72.1		129.0	592.4	265.7	36.9	1.000029
6050.0	72.5	-71.7		125.2	591.9	265.4	37.2	1.000028
6100.0	70.3	-71.4		122.4	595.4	267.0	37.5	1.000027
6150.0	69.1	-71.0		119.1	593.9	268.5	36.7	1.000027
6200.0	67.9	-70.8		116.0	594.5	269.0	31.3	1.000026
6250.0	65.7	-70.3		112.0	595.0	269.9	25.9	1.000025
6300.0	64.1	-69.9		109.7	595.5	268.0	20.6	1.000024

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UPPER AIR DATA
 3430020757
 WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
 14 DEC. 73 0600 HRS MST
 ASCENSION NO. 797

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
03500.0	92.5	-69.3		106.8	550.4	260.3	16.2	1.000024
04000.0	88.9	-68.8		105.9	553.7	261.7	11.7	1.000023
04500.0	85.4	-68.3		101.1	557.3	257.3	6.8	1.000023
05000.0	81.9	-68.1		88.4	557.9	261.4	9.0	1.000022
05500.0	76.5	-67.7		85.3	558.4	265.3	9.1	1.000021
06000.0	73.1	-67.3		83.2	559.0	276.7	9.7	1.000021
06500.0	69.7	-66.9		80.7	559.3	294.1	11.5	1.000020
07000.0	66.4	-66.5		76.2	560.1	300.0	14.0	1.000020
07500.0	61.1	-66.0		69.3	560.7	307.6	15.8	1.000019
08000.0	49.8	-65.7		65.8	561.2	303.7	16.7	1.000019
08500.0	40.6	-65.4		61.5	561.3	300.3	17.8	1.000018
09000.0	47.4	-65.2		79.4	561.6	298.4	17.0	1.000018
09500.0	49.2	-65.0		77.7	562.1	290.8	14.7	1.000017
70000.0	45.1	-64.8		75.4	562.4	283.3	12.6	1.000017
70500.0	44.5	-64.5		73.5	562.7	279.3	10.6	1.000016
71000.0	42.8	-64.3		71.6	563.0	283.2	8.5	1.000016
71500.0	41.0	-64.1		69.3	563.3	289.6	6.6	1.000016
72000.0	40.3	-63.9		66.0	563.6	290.6	5.8	1.000015
72500.0	39.6	-63.6		60.3	563.9	297.8	7.1	1.000015
73000.0	38.8	-63.4		54.6	564.2	290.7	8.3	1.000014
73500.0	37.9	-63.2		52.9	564.5	299.1	9.7	1.000014
74000.0	37.0	-63.0		61.3	564.8	298.5	11.4	1.000014
74500.0	36.1	-62.7		59.8	565.1	298.1	13.1	1.000013
75000.0	35.2	-62.5		58.2	565.7	297.6	14.7	1.000013
75500.0	34.4	-61.6		56.5	566.0	294.3	15.9	1.000013
76000.0	33.5	-61.9		55.1	567.3	291.4	17.0	1.000012
76500.0	32.6	-61.3		53.3	568.4	288.4	18.2	1.000012
77000.0	32.0	-59.5		42.2	569.3	280.6	16.9	1.000012
77500.0	31.2	-58.9		30.7	570.4	280.3	19.4	1.000011
78000.0	30.5	-58.2		29.4	571.1	283.3	20.0	1.000011

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STATION ALTITUDE 3439.00 FEET MSL
 14 DEC. 75 0630 HRS MST
 ASCENSION NO. 797

UPPER AIR DATA
 340020797
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY G/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
7850.0	29.7	-57.8		86.1	571.7	288.4	20.4	1.000011
7900.0	29.0	-57.9		87.0	571.0	290.3	20.6	1.000010
7950.0	28.3	-57.9		85.9	571.0	288.2	20.9	1.000010
8000.0	27.7	-57.9		84.8	571.0	288.2	21.1	1.000010
8050.0	27.0	-58.0		83.7	571.0	288.2	21.0	1.000010
8100.0	26.4	-58.0		82.7	571.7	288.2	21.0	1.000010
8150.0	25.7	-58.0		81.7	571.4	288.2	20.9	1.000009
8200.0	25.1	-58.1		80.7	571.0	287.2	21.5	1.000009
8250.0	24.5	-58.1		79.6	571.0	285.0	22.5	1.000009
8300.0	24.0	-58.2		78.6	571.2	284.1	23.6	1.000009
8350.0	23.4	-58.2		77.9	571.2	282.8	24.7	1.000008
8400.0	22.8	-58.2		77.0	571.1			1.000008
8450.0	22.3	-58.3		76.2	571.1			1.000008
8500.0	21.8	-58.0		75.0	571.4			1.000008
8550.0	21.3	-57.4		74.3	572.2			1.000008
8600.0	20.8	-56.6		73.4	570.0			1.000007
8650.0	20.3	-56.2		72.5	570.0			1.000007

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STATION ALTITUDE 3733.00 FEET MSL
 14 DEC. 70 0600 HRS MST
 ASULUTION NO. 797

MRS SIGNIFICANT LEVEL DATA
 3489920797
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOPOTENTIAL ALTITUDE DECIMETERS	DIRECTION DEG (T.V)	WIND DATA		DEM PT DEP DEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	DIR MPS		AIR DEG C		
2033.	9999.**	9999.**	-9999.**	99	-55.9	2.000+1	
2572.	9999.**	9999.**	-9999.**	99	-58.3	2.200+1	
3377.	203.	10.	10.	99	-57.8	3.000+1	
2270.	298.	7.	0.	99	-62.6	3.560+1	
2002.	304.	5.	7.	99	-65.7	5.000+1	
1660.	208.	19.	19.	99	-71.2	7.000+1	
1760.	204.	21.	21.	99	-73.5	8.300+1	
1650.	252.	23.	23.	99	-70.2	1.000+2	

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

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STATION ALTITUDE 9999.00 FEET MSL
 14 DEC. 78
 ASCENSION NO. 797
 0830 HRS MST

MANDATORY LEVELS
 346020797
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

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PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
350.0	5201.	1.6	62.	218.0	3.8
300.0	6207.	2.4	44.	279.0	9.8
700.0	8227.	4.4	50.	323.9	13.4
700.0	10369.	2.4	51.	320.3	12.5
650.0	12321.	-1.0	64.	281.0	9.1
600.0	14400.	-3.3	42.	300.3	11.6
550.0	16352.	-0.7	40.	305.1	10.9
500.0	19071.	-11.5	17.	302.8	10.9
450.0	21899.	-16.0	16.	320.0	23.8
400.0	24587.	-23.6	17.	307.6	29.8
350.0	27722.	-31.1	18.	295.9	42.6
300.0	31242.	-40.0		289.3	40.3
250.0	35252.	-47.2		269.5	50.6
200.0	40022.	-54.2		270.5	77.4
175.0	42504.	-58.6		265.4	60.9
150.0	45972.	-60.2		275.2	61.4
125.0	49700.	-61.0		260.0	50.0
100.0	54130.	-70.2		261.7	43.6
80.0	58460.	-73.0		267.0	38.6
70.0	61040.	-71.2		267.7	37.6
50.0	64050.	-63.7		250.0	9.6
35.0	67659.	-65.7		304.0	10.5
40.0	72113.	-63.7		297.0	6.8
30.0	77860.	-67.8		288.4	20.2
20.0	81754.	-66.1		286.9	21.6
20.0	86370.	-50.5			

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

STATION ALTITUDE 3939.00 FEET MSL
 14 DEC. 75 0030 HRS MST
 ASCENSION NO. 797

MRA (INDICATOR) LEVELS
 340020797
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOMETRIC ALTITUDE METERS	DIRECTION DEG (TN)	WIND DATA		WIND KTS	WIND DIR	WIND SPEED KTS	WIND DIR DEG C	TEMPERATURE AIR DEG C	PRESSURE MILLIBARS
		SPEED KTS	DIR						
2633.	999.**	999.**	-999.**	-999.**	99	-55.9	2.000+1		
2492.	287.	11.	11.	11.	99	-58.1	2.500+1		
2377.	285.	10.	10.	10.	99	-57.8	3.000+1		
2198.	298.	9.	9.	9.	99	-63.7	4.000+1		
2062.	305.	8.	8.	8.	99	-65.7	5.000+1		
1952.	258.	5.	5.	5.	99	-66.7	6.000+1		
1869.	268.	19.	19.	19.	99	-71.2	7.000+1		
1782.	267.	20.	20.	20.	99	-73.0	8.000+1		
1650.	202.	20.	20.	20.	99	-70.2	1.000+2		
1515.	267.	27.	27.	27.	99	-61.0	1.250+2		
1401.	275.	32.	32.	32.	99	-60.2	1.500+2		
1305.	265.	30.	30.	30.	99	-58.6	1.750+2		
1220.	271.	40.	40.	40.	99	-54.2	2.000+2		
1074.	270.	20.	20.	20.	99	-47.2	2.500+2		
952.	289.	21.	21.	21.	99	-40.0	3.000+2		
845.	296.	22.	22.	22.	17	-31.1	3.500+2		
749.	308.	15.	15.	15.	18	-23.6	4.000+2		
661.	321.	12.	12.	12.	20	-16.0	4.500+2		
561.	303.	10.	10.	10.	20	-11.5	5.000+2		
508.	305.	9.	9.	9.	10	-6.7	5.500+2		
439.	308.	6.	6.	6.	11	-3.3	6.000+2		
370.	261.	5.	5.	5.	06	-1.6	6.500+2		
310.	220.	5.	5.	5.	09	2.4	7.000+2		
260.	224.	7.	7.	7.	09	4.4	7.500+2		
207.	290.	5.	5.	5.	11	2.4	8.000+2		
159.	216.	2.	2.	2.	05	1.6	8.500+2		

WIND DATA NOT COMPUTED DUE TO MISSING WIND VELOCITY AND ELEVATION ANGLES.