

AD-A094 840 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/6 4/2
19310AT MLRS, MISSILE NUMBER V18-005, ROUND NUMBER V130/DF-3, 2--ETC(U)
DEC 80

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DR 1163
DECEMBER 1980

(12)

LEVEL II

METEOROLOGICAL DATA REPORT

1931QAT MLRS
Missile No. Y18-005
Round No. Y130/DF-3
20 November 1980

by

White Sands Meteorological Team

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FEB 10 1981
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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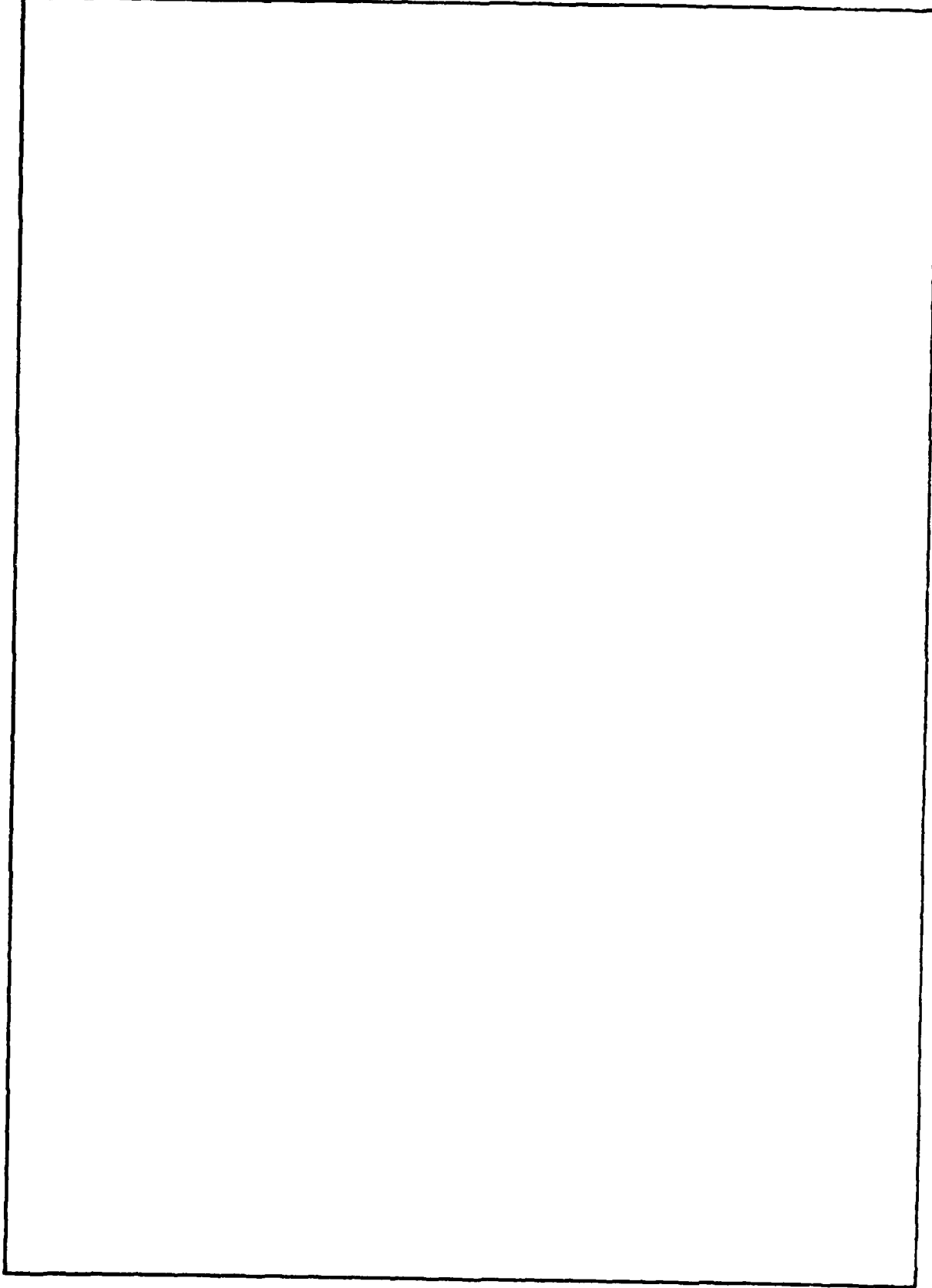
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Accompanied For	
NTIS	X
PILOT	
Upper	
Lower	
DATE	
A	

INTRODUCTION

19310AT MLRS, Missile Number V18-005, Round Number V130/DF-3, was launched from Brillo, White Sands Missile Range (WSMR), New Mexico, at 1542 MST on 20 Nov 1980. The scheduled launch time was 1530 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 and speed, and cloud cover were made at the D 3 $\frac{1}{2}$ met site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

D 3 $\frac{1}{2}$	2000 meters
Denver	7830 meters

(b) Air structure data (rawinsonde) were collected at the following met sites. Data were collected from surface to as high as possible in 500-foot increments.

SITE AND TIME

NW30	1530MST
------	---------

TABLE 1. Surface Observations taken at 1547 MST,
20 Nov 1980, at Brillo Site, 19310AT MLRS
Missile Number V18-005, Round Number V130/DF-3

ELEVATION	3974.86	FT/MSL
PRESSURE	886.2	MBS
TEMPERATURE	12.2	°C
RELATIVE HUMIDITY	33	%
DEW POINT	-03.7	°C
DENSITY	1078	GM/M ³
WIND SPEED	02	KTS
WIND DIRECTION	300	DEGREES
CLOUD COVER	1st 4/AS/140 2nd 4/CS/E250	AMT/Type/HGT

PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM DOG 3½

DATE 20 Nov 80

1545 MST

COORDINATES (WGS 84)

X 443018.90

338189-24

3974.86

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL XX OR FEET AGL

[illegible]

PILLOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM DENVER Site

DATE 20 Nov 80

TIME 1545 MST

COORDINATES (WSTED)

499,064.03

493,904.12

4123.10

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHTS ARE METERS AGE XX OR FEET AC

HEIGHT AGE	DIRECTION DEGREES	SPEED KTS	HEIGHT AGE	DIRECTION DEGREES	SPEED KTS	HEIGHT AGE	DIRECTION DEGREES	SPEED KTS
sfc	180	6	1950	220	5	3810	025	9
150	190	8	2010	220	5	3870	025	9
210	190	9	2070	230	5	3930	030	8
270	195	10	2130	230	6	3990	035	8
330	195	11	2190	235	6	4040	040	7
390	195	11	2250	235	6	4110	040	7
450	195	12	2310	240	6	4170	045	6
510	195	13	2370	250	7	4230	045	6
570	195	12	2430	260	7	4290	050	6
630	195	12	2490	270	7	4350	055	5
690	195	12	2550	280	7	4410	060	4
750	195	12	2610	290	7	4470	065	4
810	195	11	2670	300	7	4530	065	4
870	195	11	2730	300	7	4590	079	4
930	195	11	2790	310	8	4650	070	5
990	195	11	2850	330	8	4710	075	5
1050	195	11	2910	345	9	4770	080	5
1110	195	11	2970	345	9	4830	085	6
1170	200	11	3030	350	9	4890	090	7
1230	200	10	3090	355	9	4950	095	9
1290	200	10	3150	355	9	5010	100	5
1350	205	9	3210	355	9	5070	110	11
1410	210	9	3270	360	8	5130	115	12
1470	210	9	3330	360	8	5190	120	13
1530	210	8	3390	005	8	5250	120	14
1590	210	8	3450	010	8	5310	120	15
1650	215	7	3510	015	9	5370	115	17
1710	215	7	3570	015	9	5430	115	17
1770	215	6	3630	015	9	5490	110	17
1830	215	6	3690	020	9	5550	110	18
1890	220	6	3750	020	9	5610	110	18

PILOT BALLOON MEASUREMENT AND DATA

TABLE 3 Page 2

RELEASED FROM DENVER SITE

DATE 20 Nov 80

TIME 1545 MST

COORDINATES (WSTP)

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL OR FEET AGL

HEIGHT AGL	DIRECTION DEGREES	WIND KTS	HEIGHT AGL	DIRECTION DEGREES	WIND KTS	HEIGHT AGL	DIRECTION DEGREES	WIND KTS
5670	110	19	7530	170	19			
5730	100	19	7590	185	19			
5790	100	19	7650	190	19			
5850	105	19	7710	195	19			
5910	105	19	7770	195	19			
5970	110	20	7830	190	19			
6030	115	20						
6090	115	20						
6150	115	20						
6210	115	21						
6270	120	20						
6330	120	21						
6390	125	21						
6450	130	21						
6510	135	21						
6570	135	21						
6630	135	21						
6690	140	21						
6750	140	21						
6810	140	21						
6870	145	21						
6930	145	21						
6990	150	21						
7050	150	20						
7110	150	20						
7170	150	20						
7230	155	20						
7290	160	20						
7350	165	19						
7410	165	19						
7470	165	19						

STATION ALTITUDE 4010.40 FEET MSL
20 NOV. 60
ASCENSION, MD. 27

SIGNIFICANT LEVEL DATA
32502200Z
174 30

GEOGRAPHIC COORDINATES
32.88497 LAT DEG
106.49714 LONG DEG

TABLE 4

PRESSURE GEOPHIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
685.0	12.0	34.0
674.8	10.6	41.0
625.2	6.7	741.0
605.8	5.3	753.0
748.4	1.4	736.0
734.0	.4	747.0
730.0	.4	742.0
657.6	-5.6	746.0
640.0	-6.5	731.0
631.4	-5.8	731.0
605.2	-9.0	732.0
588.0	-7.8	731.0
546.6	-11.7	734.0
499.0	-17.6	737.0
491.2	-17.2	732.0
483.2	-17.8	731.0
424.4	-26.1	732.0
403.4	-29.6	742.0
396.4	-30.8	752.0
362.6	-31.6	768.0
362.4	-34.6	772.0
357.2	-39.4	777.0
312.4	-46.0	767.0
296.6	-47.6	700.0
255.6	-55.6	700.0
239.8	-57.8	700.0
210.0	-60.1	700.0
174.8	-61.6	700.0
162.2	-59.3	700.0
161.0	-60.3	700.0
146.6	-59.4	700.0
142.8	-61.2	700.0
134.2	-59.5	700.0
125.2	-60.6	700.0
114.4	-62.7	700.0
115.0	-61.6	700.0
102.4	-61.8	700.0
96.4	-67.1	700.0
87.8	-62.0	700.0
76.8	-64.9	700.0

STATION ALTITUDE 4010.40 FEET MSL
20 NOV. 80
ASCENSION, MO. 27

SIGNIFICANT LEVEL DATA
3250220027
10.30

GEOCLTIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

TABLE 4 (cont)

PRESSURE GEOPHYSIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEW POINT DEGREES CENTIGRADE	
71.4 60619.3	-62.5	-46.7	700.0
56.4 65632.1	-62.1	-46.2	700.0
43.6 70665.4	-56.9	-40.0	700.0
28.6 79658.4	-57.1	-40.2	700.0
23.6 85688.2	-56.4	-37.0	700.0
16.0 91670.4	-53.6	-36.0	700.0
10.4 101196.0	-59.7	-37.4	700.0
7.8 107610.9	-47.7	-26.9	700.0
5.1 117272.7	-45.2	-25.9	700.0

STATION ALTITUDE 4010.40 FEET MSL
20 DEG. 20' 15.30 HRS MIST
ABSCISSA NO. 27

WIND DATA
3250220027
117 30

GLONOTIC COORDINATES
32.68497 LAT DEG
106.49714 LONG DEG

TABLE 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND, KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
4010.4	885.0	12.0	34.0	1079.0	658.5	00	0.0	1.000263
4500.0	869.4	10.2	115.0	1062.2	657.8	62.1	.3	1.000305
5000.0	853.8	9.0	332.4	1036.4	660.0	62.1	.6	1.000413
5500.0	838.4	7.8	550.1	1012.5	661.7	62.1	.9	1.000505
6000.0	823.0	6.6	740.3	991.5	662.6	85.2	1.0	1.000571
6500.0	803.7	5.5	38.0	979.5	660.7	153.0	2.2	1.000543
7000.0	794.1	4.5	36.8	966.8	659.0	162.7	4.9	1.000520
7500.0	779.7	3.6	35.5	954.0	657.4	161.0	0.0	1.000500
8000.0	762.6	2.6	30.3	941.5	655.8	152.4	12.3	1.000460
8500.0	751.7	1.6	33.1	928.7	654.2	147.4	14.8	1.000401
9000.0	730.0	0.0	32.3	915.0	653.0	138.9	15.9	1.000449
9500.0	724.4	-0.0	31.1	902.2	651.9	129.7	16.4	1.000451
10000.0	710.9	-1.1	29.7	890.1	649.8	121.1	15.9	1.000413
10500.0	697.7	-2.2	28.4	878.2	648.1	112.1	15.7	1.000396
11000.0	684.7	-3.5	27.0	866.4	646.4	104.8	16.2	1.000379
11500.0	671.9	-4.4	25.7	854.7	644.7	101.0	16.6	1.000364
12000.0	659.4	-5.4	24.5	843.1	643.1	104.9	16.0	1.000349
12500.0	646.9	-6.1	23.2	830.0	642.0	111.8	14.5	1.000336
13000.0	634.7	-6.1	22.2	815.8	642.1	120.4	12.0	1.000332
13500.0	622.6	-6.5	22.6	799.0	641.5	142.0	10.3	1.000325
14000.0	610.8	-7.5	21.5	783.4	640.0	157.7	9.1	1.000312
14500.0	599.2	-7.9	20.8	774.8	639.4	173.0	8.5	1.000305
15000.0	587.7	-7.8	20.0	759.3	639.7	189.3	8.2	1.000303
15500.0	576.4	-8.9	19.0	744.4	638.2	190.8	8.6	1.000291
16000.0	565.4	-9.9	18.5	737.5	636.6	199.2	9.2	1.000280
16500.0	554.4	-10.9	17.1	720.8	635.1	201.5	10.2	1.000269
17000.0	543.7	-12.1	15.7	710.4	633.4	203.4	11.5	1.000259
17500.0	533.0	-13.4	14.0	700.7	631.5	203.1	12.4	1.000247
18000.0	522.5	-14.7	12.5	697.0	629.6	213.2	13.3	1.000237
18500.0	512.2	-16.0	10.7	687.5	627.7	219.6	13.3	1.000227
19000.0	502.1	-17.4	9.0	673.0	625.3	223.9	13.3	1.000218
20000.0	492.2	-17.5	7.1	658.1	623.0	223.9	13.4	1.000215
20500.0	482.6	-17.9	5.2	642.7	620.4	233.4	13.7	1.000209
21000.0	472.9	-19.2	6.6	625.2	617.2	231.6	14.1	1.000201
21500.0	463.0	-20.5	5.0	603.9	614.4	229.8	14.7	1.000193
22000.0	453.6	-21.8	3.5	587.5	611.9	220.2	15.3	1.000186
22500.0	444.5	-23.2	1.7	565.6	608.8	227.1	17.1	1.000179
23000.0	435.5	-24.5	0.1	547.7	606.6	227.9	18.6	1.000173
23500.0	426.5	-25.4	-1.6	529.7	604.2	227.9	18.6	1.000167
24000.0	417.6	-27.2	-3.3	509.0	602.5	223.0	18.0	1.000161

STATION ALTITUDE 4010-40 FEET MSL
23 NOV. 67
ABSOLUTE ALT. 40. 27
1530 HRS PST

UPPER AIR DATA
32562400Z
107 50

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LONG DEG

TABLE 5 (cont)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DIRECTION DEGREES	WIND SPEED KNOTS	INDEX OF REFRACTION
24000.0	400.9	-70.7	73.5	589.4	010.5	1.000156
24500.0	400.4	-70.1	70.5	571.9	000.9	1.000151
25000.0	391.9	-71.1	75.1	562.5	007.1	1.000147
25500.0	385.6	-71.7	76.6	551.0	006.5	1.000144
26000.0	379.5	-72.9	76.2	542.7	004.0	1.000140
26500.0	367.5	-74.1	771.0	539.0	003.2	1.000136
27000.0	357.6	-75.4	772.0	525.0	001.9	1.000132
27500.0	351.7	-76.0	770.1	517.7	002.9	1.000129
28000.0	344.1	-76.5	775.0	509.9	007.5	1.000125
28500.0	330.6	-77.0	776.0	502.1	003.5	1.000122
29000.0	329.2	-71.2	773.0	493.7	003.3	1.000119
29500.0	321.9	-72.4	770.6	485.5	002.2	1.000116
30000.0	314.8	-73.6	768.0	477.1	000.0	1.000113
30500.0	307.7	-74.9	749.7	469.2	000.0	1.000110
31000.0	300.8	-76.3	723.7	461.5	007.0	1.000108
31500.0	294.0	-77.7	700.0	454.0	003.1	1.000105
32000.0	287.2	-79.0	700.0	446.1	003.4	1.000103
32500.0	280.5	-80.4	700.0	438.4	001.7	1.000101
33000.0	274.1	-81.7	700.0	430.9	002.9	1.000099
33500.0	267.7	-83.0	700.0	423.4	000.2	1.000097
34000.0	261.5	-84.3	700.0	416.2	000.4	1.000095
34500.0	255.5	-85.6	700.0	409.0	007.7	1.000093
35000.0	249.4	-86.9	700.0	400.9	003.0	1.000091
35500.0	243.5	-88.3	700.0	392.9	002.5	1.000089
36000.0	237.8	-89.7	700.0	386.0	001.0	1.000087
36500.0	232.1	-91.0	700.0	379.5	001.0	1.000085
37000.0	226.5	-92.3	700.0	373.0	001.0	1.000083
37500.0	221.0	-93.6	700.0	366.0	002.9	1.000081
38000.0	215.8	-94.9	700.0	359.5	003.5	1.000079
38500.0	210.7	-96.2	700.0	352.1	003.0	1.000078
39000.0	205.6	-97.5	700.0	344.5	003.0	1.000076
39500.0	200.6	-98.8	700.0	336.5	003.4	1.000074
40000.0	195.5	-100.1	700.0	328.0	001.1	1.000072
40500.0	191.1	-101.4	700.0	321.2	007.7	1.000071
41000.0	186.5	-102.7	700.0	313.0	007.9	1.000069
41500.0	182.0	-104.0	700.0	306.7	007.0	1.000067
42000.0	177.5	-105.3	700.0	299.0	006.7	1.000065
42500.0	173.0	-106.6	700.0	292.4	006.6	1.000064
43000.0	168.5	-107.9	700.0	284.9	006.0	1.000063
43500.0	164.0	-109.2	700.0	276.0	005.5	1.000061
44000.0	159.5	-110.5	700.0	269.4	004.0	1.000060

STATION ALTITUDE 4010.00 FEET MSL
20 NOV. 63 1530 HRS MST
ASCENSION, I.O. 27

UPPER AIR DATA
32502200Z
120 50

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LONG DEG

TABLE 5 (cont)

GEOMETRIC ALTITUDE PSL FLLI	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4400.0	101.1	-58.4	70.0	261.3	571.0	246.0	63.6	1.000059
4450.0	157.5	-58.7	70.0	255.4	570.6	250.2	56.1	1.000058
4500.0	153.5	-59.1	70.0	249.6	570.1	253.2	49.8	1.000057
4550.0	149.8	-59.5	70.0	244.3	569.5	254.4	44.9	1.000055
4600.0	146.3	-60.0	70.0	239.0	568.8	253.7	41.8	1.000054
4650.0	142.7	-61.2	70.0	234.5	567.3	247.6	43.5	1.000053
4700.0	139.3	-59.6	70.0	227.1	569.5	242.7	46.1	1.000052
4750.0	136.0	-59.7	70.0	221.9	569.2	241.3	51.5	1.000050
4800.0	132.7	-60.0	70.0	216.8	568.9	240.2	56.5	1.000049
4850.0	129.5	-60.2	70.0	211.9	568.5	241.3	55.8	1.000048
4900.0	126.4	-60.5	70.0	207.0	568.2	242.4	55.1	1.000047
4950.0	123.4	-61.2	70.0	202.7	567.3	243.9	54.9	1.000046
5000.0	120.4	-62.1	70.0	196.6	566.1	245.5	54.8	1.000045
5050.0	117.5	-62.5	70.0	194.2	565.5	246.8	56.1	1.000044
5100.0	114.6	-61.8	70.0	188.9	566.5	247.5	57.5	1.000043
5150.0	111.9	-61.8	70.0	184.3	566.5	243.5	55.0	1.000042
5200.0	109.2	-61.8	70.0	179.9	566.5	249.7	51.5	1.000041
5250.0	106.5	-61.8	70.0	175.5	566.5	251.1	49.1	1.000040
5300.0	103.9	-61.8	70.0	171.3	566.5	252.6	47.4	1.000039
5350.0	101.4	-62.0	70.0	167.3	566.2	254.0	46.4	1.000038
5400.0	99.0	-62.5	70.0	163.6	565.5	255.1	46.1	1.000037
5450.0	96.6	-63.1	70.0	160.1	564.8	256.3	45.4	1.000036
5500.0	94.2	-63.1	70.0	156.2	564.3	258.0	42.6	1.000035
5550.0	91.9	-63.0	70.0	152.3	564.9	260.7	40.2	1.000035
5600.0	89.7	-62.0	70.0	148.6	564.9	262.3	40.0	1.000034
5650.0	87.5	-62.9	70.0	145.0	564.9	263.9	39.8	1.000033
5700.0	85.4	-63.3	70.0	141.7	564.4	264.7	38.4	1.000032
5750.0	83.3	-63.7	70.0	138.5	563.9	265.4	36.8	1.000031
5800.0	81.3	-64.1	70.0	135.3	563.4	265.6	33.6	1.000031
5850.0	79.3	-64.4	70.0	132.3	562.9	265.7	29.0	1.000030
5900.0	77.3	-64.3	70.0	129.3	562.4	264.9	24.6	1.000029
5950.0	75.3	-64.3	70.0	125.6	563.1	263.6	22.6	1.000029
6000.0	73.3	-63.5	70.0	122.3	564.2	251.6	20.8	1.000028
6050.0	71.8	-62.7	70.0	118.6	565.3	246.7	20.8	1.000027
6100.0	70.1	-62.5	70.0	115.6	565.6	242.9	21.3	1.000027
6150.0	68.4	-62.4	70.0	113.0	565.7	241.9	21.5	1.000026
6200.0	66.7	-62.4	70.0	110.2	565.7	240.9	21.2	1.000025
6250.0	65.1	-62.3	70.0	107.5	565.8	240.0	21.4	1.000025
6300.0	63.5	-62.3	70.0	104.9	565.8	231.0	23.6	1.000024
6350.0	62.0	-62.3	70.0	102.4	565.9	234.7	26.0	1.000024

STATION ALTITUDE 1010.40 FEET MSL
20 NOV. 53 1530 HRS EST
ASCENSION IS. 27

UPPER AIR DATA
3250220027
NW 30

GEOCLTIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

TABLE 5 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND M/SEC	WIND DATA DIRECTION (HD) SPEED KNOTS	INDEX OF REFRACTION
64000.0	60.5	-62.2	700.0	99.9	566.0	255.6	1.000023
64500.0	59.0	-62.2	700.0	97.4	566.0	250.0	1.000022
65000.0	57.6	-62.1	700.0	95.0	566.1	250.9	1.000022
65500.0	56.2	-62.0	700.0	92.7	566.2	257.0	1.000021
66000.0	54.9	-61.5	700.0	90.3	566.9	253.3	1.000021
66500.0	53.6	-61.0	700.0	87.9	567.5	262.4	1.000020
67000.0	52.3	-60.5	700.0	85.6	568.3	260.3	1.000020
67500.0	51.0	-60.0	700.0	83.4	569.0	270.3	1.000020
68000.0	49.8	-59.5	700.0	81.2	569.7	274.9	1.000019
68500.0	48.6	-59.1	700.0	79.0	570.3	276.0	1.000019
69000.0	47.3	-58.6	700.0	77.0	571.0	280.4	1.000018
69500.0	46.3	-58.1	700.0	74.9	571.7	283.2	1.000018
70000.0	45.2	-57.6	700.0	73.0	572.4	287.9	1.000018
70500.0	44.2	-57.1	700.0	71.1	573.1	290.2	1.000017
71000.0	43.1	-56.9	700.0	69.3	573.3	283.9	1.000017
71500.0	42.1	-56.9	700.0	67.7	573.3	269.4	1.000017
72000.0	41.1	-56.9	700.0	66.1	573.3	281.3	1.000016
72500.0	40.1	-56.9	700.0	64.5	573.3	275.3	1.000016
73000.0	39.2	-57.0	700.0	63.0	573.3	271.2	1.000016
73500.0	38.3	-57.0	700.0	61.5	573.3	272.9	1.000015
74000.0	37.4	-57.0	700.0	60.1	573.3	274.5	1.000015
74500.0	36.5	-57.0	700.0	58.7	573.3	275.7	1.000015
75000.0	35.6	-57.0	700.0	57.3	573.3	276.4	1.000014
75500.0	34.8	-57.0	700.0	55.9	573.3	277.0	1.000014
76000.0	34.0	-57.0	700.0	54.6	573.3	277.8	1.000014
76500.0	33.2	-57.0	700.0	53.3	573.3	273.5	1.000013
77000.0	32.4	-57.1	700.0	52.1	573.3	273.3	1.000013
77500.0	31.6	-57.1	700.0	50.9	573.3	277.7	1.000013
78000.0	30.9	-57.1	700.0	49.7	573.3	277.1	1.000013
78500.0	30.1	-57.1	700.0	48.5	573.3	277.6	1.000012
79000.0	29.4	-57.1	700.0	47.4	573.3	273.3	1.000012
79500.0	28.7	-57.1	700.0	46.2	573.3	260.2	1.000012
80000.0	28.1	-56.7	700.0	45.1	573.3	263.2	1.000012
80500.0	27.4	-56.4	700.0	43.9	574.3	260.0	1.000011
81000.0	26.8	-56.1	700.0	42.8	574.3	263.6	1.000011
81500.0	26.1	-55.7	700.0	41.6	575.3	264.9	1.000011
82000.0	25.5	-55.4	700.0	40.5	575.3	264.3	1.000011
82500.0	24.9	-55.1	700.0	39.7	576.3	263.6	1.000011
83000.0	24.3	-54.7	700.0	38.7	576.3	263.2	1.000011
83500.0	23.8	-54.3	700.0	37.7	577.4	263.5	1.000010

STATION ALTITUDE 4010.00 FEET MSL
20 NOV. 58 1530 HRS MST
ASCENSION NO. 27

OFFICE AIR DATA
32502200Z7
117 30

GLONALIC COORDINATES
32.8897 LAT DEG
106.49714 LONG DEG

TABLE 5 (cont)

GLONALIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUMIDITY PERCENT	DENSITY GM/CM ³	SPEED OF SOUND METERS PER SECOND	DIRECTION DEGREES (True)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
34000.0	23.2	-54.4	700.0	36.8	577.5	285.2	25.0	1.000010
34500.0	22.7	-54.3	700.0	36.0	577.5	285.1	23.6	1.000010
35000.0	22.2	-54.3	700.0	35.1	577.6	285.5	23.9	1.000010
35500.0	21.7	-54.2	700.0	34.3	577.7	285.6	24.4	1.000010
36000.0	21.2	-54.2	700.0	33.5	577.8	285.7	24.9	1.000010
36500.0	20.7	-54.1	700.0	32.7	577.9	279.2	25.2	1.000009
37000.0	20.2	-54.1	700.0	31.9	578.1	279.7	25.7	1.000009
37500.0	19.7	-54.0	700.0	31.2	578.2	272.3	26.2	1.000009
38000.0	19.3	-54.0	700.0	30.5	578.3	270.1	28.1	1.000009
38500.0	18.8	-53.9	700.0	29.8	578.4	268.3	30.1	1.000009
39000.0	18.4	-53.9	700.0	29.1	578.5	268.7	32.2	1.000009
39500.0	18.0	-53.8	700.0	28.4	578.6	267.5	34.4	1.000008
40000.0	17.5	-53.8	700.0	27.7	578.7	263.3	36.7	1.000008
40500.0	17.1	-53.7	700.0	27.0	578.8	263.0	38.9	1.000008
41000.0	16.7	-53.7	700.0	26.4	578.9	263.5	38.9	1.000008
41500.0	16.4	-53.6	700.0	25.8	579.0	270.1	38.8	1.000008
42000.0	16.0	-53.6	700.0	25.2	579.1	270.6	38.7	1.000008
42500.0	15.6	-53.7	700.0	24.6	579.1	269.1	38.2	1.000008
43000.0	15.2	-53.7	700.0	24.0	579.1	267.4	37.7	1.000007
43500.0	14.9	-53.8	700.0	23.5	579.0	265.7	37.2	1.000007
44000.0	14.5	-53.8	700.0	23.0	579.0	264.0	37.2	1.000007
44500.0	14.2	-53.9	700.0	22.4	578.9	262.4	37.2	1.000007
45000.0	13.9	-54.0	700.0	21.9	578.9	260.7	37.3	1.000007
45500.0	13.6	-54.0	700.0	21.4	578.8	261.3	37.2	1.000007
46000.0	13.3	-54.1	700.0	20.9	578.8	262.0	37.0	1.000007
46500.0	12.9	-54.1	700.0	20.4	578.7	262.7	36.9	1.000007
47000.0	12.7	-54.2	700.0	20.0	578.7	263.1	36.1	1.000006
47500.0	12.4	-54.3	700.0	19.5	578.7	263.4	35.2	1.000006
48000.0	12.1	-54.3	700.0	19.1	578.6	263.6	34.3	1.000006
48500.0	11.8	-54.4	700.0	18.6	578.6	263.4	34.5	1.000006
49000.0	11.5	-54.4	700.0	18.2	578.5	262.8	34.8	1.000006
49500.0	11.3	-54.5	700.0	17.0	578.5	262.3	35.1	1.000006
50000.0	11.1	-54.6	700.0	17.4	578.5	259.8	41.8	1.000006
50500.0	10.7	-54.6	700.0	17.0	578.4	257.9	49.1	1.000006
51000.0	10.5	-54.7	700.0	16.6	578.4	256.5	56.5	1.000006
51500.0	10.3	-54.4	700.0	16.2	579.0	257.8	61.1	1.000006
52000.0	10.2	-53.8	700.0	15.6	579.9	253.2	65.5	1.000006
52500.0	10.2	-53.3	700.0	15.4	581.0	260.4	60.9	1.000006
53000.0	9.9	-52.7	700.0	15.0	582.0	261.5	71.3	1.000006
53500.0	9.9	-52.1	700.0	14.9	583.1	264.0	74.7	1.000006

STATION ALTITUDE 4010.40 FEET MSL
20 NOV. 60 1530 HRS MST
ASCENSION NO. 27

UPPER AIR DATA
3250220027
11W 30

GEOMETRIC COORDINATES
32.88497 LAT DEG
106.49714 LONG DEG

TABLE 5 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	JETPOINT TEMPERATURE CENTIGRADE	REFL. HPT. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KIPTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KIPTS	INDEX OF REFRACTION
10400.0	9.2	-51.6	-33.6	700.0	14.2	594.2	260.9	74.1	1.000006
10450.0	8.9	-51.0	-33.0	700.0	13.8	595.3	270.0	73.7	1.000006
10500.0	8.7	-50.5	-32.3	700.0	13.4	596.5	275.1	73.4	1.000006
10550.0	8.5	-49.9	-31.6	700.0	13.1	597.7	276.9	73.2	1.000006
10600.0	8.4	-49.4	-31.0	700.0	12.7	598.9	275.4	72.7	1.000006
10650.0	8.2	-48.8	-30.3	700.0	12.4	599.2	275.9	72.2	1.000006
10700.0	8.0	-48.3	-29.6	700.0	12.1	599.6	276.4	71.8	1.000007
10750.0	7.8	-47.7	-29.0	700.0	11.7	599.0	276.7	71.3	1.000007
10800.0	7.6	-47.6	-28.3	700.0	11.5	593.5	276.2	70.9	1.000007
10850.0	7.5	-47.4	-28.6	700.0	11.2	593.9	275.7	70.5	1.000007
10900.0	7.3	-47.3	-28.5	700.0	10.9	594.4	275.2	70.1	1.000007
10950.0	7.2	-47.2	-28.3	700.0	10.7	595.0	274.7	69.7	1.000007
11000.0	7.0	-47.1	-28.2	700.0	10.4	595.5	275.1	70.6	1.000007
11050.0	6.8	-46.9	-28.0	700.0	10.2	596.0	275.8	71.9	1.000007
11100.0	6.7	-46.8	-27.9	700.0	10.0	596.6	276.6	73.3	1.000007
11150.0	6.5	-46.7	-27.7	700.0	9.7	597.1	277.5	74.7	1.000007
11200.0	6.4	-46.6	-27.6	700.0	9.5	597.7	277.9	76.1	1.000007
11250.0	6.3	-46.4	-27.4	700.0	9.3	598.3	278.2	77.2	1.000007
11300.0	6.1	-46.3	-27.2	700.0	9.1	598.9	278.5	78.4	1.000007
11350.0	6.0	-46.2	-27.1	700.0	8.8	599.5	278.8	79.6	1.000007
11400.0	5.9	-46.0	-26.9	700.0	8.6	600.2	279.1	80.8	1.000007
11450.0	5.8	-45.9	-26.8	700.0	8.4	600.9			1.000007
11500.0	5.6	-45.8	-26.6	700.0	8.2	601.6			1.000007
11550.0	5.5	-45.7	-26.5	700.0	8.0	602.3			1.000007
11600.0	5.4	-45.5	-26.3	700.0	7.8	603.0			1.000007
11650.0	5.3	-45.4	-26.2	700.0	7.7	603.7			1.000007
11700.0	5.2	-45.3	-26.0	700.0	7.5	604.5			1.000007

STATION ALTITUDE 9010.00 FEET MSL
20 NOV. 66 1530 HRS EST
ACQUISITION NO. 27

COMPUTATION LEVELS
32502200027
100 30

GEOMETRIC COORDINATES
32.84497 LAT DEG
106.49714 LONG DEG

TABLE 6

PRESSURE GEOPOTENTIAL		TEMPERATURE		WIND		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CELSIUS	DEWPOINT CELSIUS	WIND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	WIND SPEED KNOTS
853.0	5115.	8.7	30.4	500.	62.1	7	7
800.0	6704.	4.0	37.3	733.	163.0	3.3	3.3
755.0	8557.	1.5	32.9	736.	140.6	15.2	15.2
700.0	10411.	-2.0	28.6	744.	113.5	15.7	15.7
650.0	12364.	-6.0	23.5	740.	108.3	15.2	15.2
600.0	14447.	-7.9	20.8	732.	172.5	3.5	3.5
550.0	16627.	-11.0	16.5	734.	202.5	10.7	10.7
500.0	19002.	-17.7	8.7	737.	220.7	13.3	13.3
450.0	21674.	-22.4	2.7	732.	224.9	10.4	10.4
400.0	24423.	-30.2	-5.8	707.	220.0	2.0.3	2.0.3
350.0	27569.	-37.3	-15.1	774.	219.8	2.9.5	2.9.5
300.0	30908.	-46.5	-27.2	721.	235.3	37.8	37.8
250.0	34800.	-56.4	-39.4	700.	230.9	49.6	49.6
200.0	39476.	-60.6	-44.4	700.	240.1	77.4	77.4
175.0	42105.	-61.2	-45.2	700.	240.9	73.6	73.6
150.0	45360.	-59.5	-43.1	700.	254.3	45.3	45.3
125.0	49004.	-60.7	-44.5	700.	243.0	55.0	55.0
100.0	53626.	-62.3	-46.5	700.	254.0	40.3	40.3
80.0	58130.	-64.3	-48.8	700.	265.7	30.9	30.9
70.0	60818.	-62.5	-46.6	700.	242.9	21.3	21.3
60.0	63942.	-62.2	-46.3	700.	250.0	30.3	30.3
50.0	67657.	-59.6	-43.3	700.	273.7	31.5	31.5
40.0	72203.	-56.9	-40.1	700.	274.9	10.4	10.4
30.0	78271.	-57.1	-40.2	700.	277.6	27.9	27.9
25.0	82081.	-55.1	-37.8	700.	283.9	30.2	30.2
20.0	86703.	-54.0	-36.6	700.	274.0	25.8	25.8
15.0	92825.	-53.8	-36.2	700.	260.3	37.4	37.4
10.0	101404.	-53.7	-36.2	700.	259.2	65.4	65.4
7.0	109330.	-47.1	-28.2	700.	274.9	70.3	70.3

DATE
FILMED
-8-