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ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
14818C LANCE MISSILE NO. 2835, ROUND NO. 313 APT (15 MARCH 1978--ETC(U)
APR 78

UNCLASSIFIED

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VEHICLE NO. 2435, BOARD NO. 313 APT
(15 MARCH 1978)

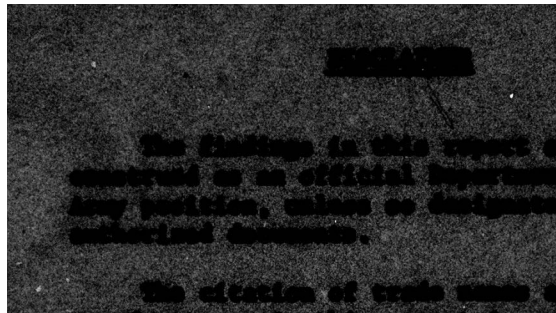
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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 14818C Lance, Missile Number 2835, Round Number 313 APT, are presented in tabular form. | | | | | |

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INTRODUCTION

14818C Lance, Missile Number 2835, Round Number 313 APT, was launched from LC-39, White Sands Missile Range (WSMR), New Mexico, at 1557 HRS MST, 15 Mar 78. The scheduled launch time was 1530 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

| | | |
|-------------------|-------|-------------------|
| ELEVATION | 4,064 | FEET/MSL |
| PRESSURE | 881.7 | MBS |
| TEMPERATURE | 16.6 | °C |
| RELATIVE HUMIDITY | 13 | % |
| DEW POINT | -11.8 | °C |
| DENSITY | 1,057 | GM/M ³ |
| WIND SPEED | 06 | MPH |
| WIND DIRECTION | 340 | DEGREES |
| CLOUD COVER | CLEAR | |

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-39,
1600 HRS MST/15 MAR 78.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) | HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| SUR | 340 | 6.0 | 2500 | 353 | 5.5 |
| 800 | 010 | 6.0 | 2600 | 349 | 5.0 |
| 900 | 007 | 8.5 | 2700 | 322 | 4.5 |
| 1000 | 004 | 11.0 | 2800 | 294 | 4.0 |
| 1100 | 359 | 10.0 | 2900 | 298 | 3.5 |
| 1200 | 354 | 8.5 | 3000 | 302 | 3.0 |
| 1300 | 360 | 9.0 | 3100 | 298 | 3.0 |
| 1400 | 005 | 9.0 | 3200 | 294 | 3.0 |
| 1500 | 003 | 9.5 | 3300 | 266 | 3.0 |
| 1600 | 360 | 10.0 | 3400 | 237 | 3.0 |
| 1700 | 356 | 10.5 | 3500 | 241 | 4.0 |
| 1800 | 352 | 10.5 | 3600 | 245 | 4.5 |
| 1900 | 352 | 9.5 | 3700 | 258 | 5.0 |
| 2000 | 351 | 8.0 | 3800 | 270 | 5.0 |
| 2100 | 352 | 10.0 | 3900 | 283 | 4.5 |
| 2200 | 353 | 12.0 | 4000 | 296 | 4.0 |
| 2300 | 355 | 9.0 | 4100 | 291 | 5.5 |
| 2400 | 357 | 6.0 | | | |

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM LC-39
AT 1550 HRS MST/15 MARCH 1978
14818C LANCE, MISSILE NO. 2835, ROUND NO. 313 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) | HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| 4200 | 286 | 6.5 | 6700 | 335 | 27.5 |
| 4300 | 302 | 8.5 | 6800 | 335 | 30.0 |
| 4400 | 317 | 10.0 | 6900 | 334 | 28.5 |
| 4500 | 320 | 11.0 | 7000 | 333 | 27.0 |
| 4600 | 323 | 12.0 | 7100 | 334 | 27.5 |
| 4700 | 328 | 15.5 | 7200 | 335 | 28.0 |
| 4800 | 332 | 18.5 | 7300 | 334 | 31.0 |
| 4900 | 328 | 16.0 | 7400 | 332 | 33.5 |
| 5000 | 323 | 13.0 | 7500 | 336 | 36.0 |
| 5100 | 321 | 14.5 | 7600 | 340 | 38.5 |
| 5200 | 318 | 15.5 | 7700 | 340 | 42.0 |
| 5300 | 312 | 15.5 | 7800 | 339 | 45.0 |
| 5400 | 306 | 15.5 | 7900 | 340 | 44.5 |
| 5500 | 312 | 17.0 | 8000 | 340 | 43.5 |
| 5600 | 318 | 18.5 | 8100 | 341 | 43.0 |
| 5700 | 320 | 19.5 | 8200 | 341 | 42.5 |
| 5800 | 322 | 20.5 | 8300 | 342 | 43.0 |
| 5900 | 325 | 22.0 | 8400 | 343 | 43.0 |
| 6000 | 328 | 23.0 | 8500 | 343 | 41.5 |
| 6100 | 330 | 24.0 | 8600 | 342 | 39.5 |
| 6200 | 331 | 24.5 | 8700 | 341 | 40.0 |
| 6300 | 330 | 23.5 | 8800 | 339 | 40.5 |
| 6400 | 329 | 22.5 | 8900 | 336 | 42.0 |
| 6500 | 332 | 24.0 | 9000 | 332 | 43.0 |
| 6600 | 335 | 25.0 | | | |

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) | HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| SUR | 340 | 6.0 | 2100 | 329 | 2.5 |
| 100 | 260 | 3.0 | 2200 | 344 | 2.5 |
| 200 | CALM | | 2300 | 344 | 4.5 |
| 300 | 176 | 2.0 | 2400 | 343 | 6.0 |
| 400 | 171 | 4.0 | 2500 | 319 | 5.0 |
| 500 | 192 | 3.5 | 2600 | 295 | 4.0 |
| 600 | 212 | 3.0 | 2700 | 305 | 4.0 |
| 700 | 286 | 6.5 | 2800 | 314 | 4.0 |
| 800 | 359 | 10.0 | 2900 | 324 | 5.5 |
| 900 | 354 | 7.0 | 3000 | 334 | 7.0 |
| 1000 | 348 | 4.0 | 3100 | 328 | 7.5 |
| 1100 | 349 | 3.5 | 3200 | 322 | 7.5 |
| 1200 | 350 | 3.0 | 3300 | 326 | 8.0 |
| 1300 | 347 | 4.0 | 3400 | 329 | 8.0 |
| 1400 | 343 | 4.5 | 3500 | 327 | 7.0 |
| 1500 | 351 | 4.0 | 3600 | 324 | 5.5 |
| 1600 | 358 | 3.5 | 3700 | 301 | 5.0 |
| 1700 | 359 | 3.5 | 3800 | 277 | 4.0 |
| 1800 | 360 | 3.5 | 3900 | 294 | 4.5 |
| 1900 | 337 | 3.0 | 4000 | 311 | 5.0 |
| 2000 | 313 | 2.0 | 4100 | 318 | 8.5 |

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM LC-39
 AT 1600 HRS MST/15 MARCH 1978
 14818C LANCE, MISSILE NO. 2835, ROUND NO. 313 APT

PIBAL RELEASE POINT WSTM COORDINATES:

X = 530,938.82 Y = 186,564.96 Z = 4,063.75

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) | HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|------------------|------------------------|----------------|
| 4200 | 325 | 11.5 | 6700 | 335 | 29.0 |
| 4300 | 325 | 11.5 | 6800 | 335 | 33.5 |
| 4400 | 325 | 11.5 | 6900 | 335 | 32.0 |
| 4500 | 327 | 12.0 | 7000 | 334 | 30.0 |
| 4600 | 328 | 12.5 | 7100 | 335 | 29.5 |
| 4700 | 331 | 15.5 | 7200 | 336 | 29.0 |
| 4800 | 334 | 18.5 | 7300 | 337 | 31.5 |
| 4900 | 328 | 15.5 | 7400 | 337 | 33.5 |
| 5000 | 322 | 12.0 | 7500 | 340 | 36.5 |
| 5100 | 322 | 15.0 | 7600 | 342 | 39.0 |
| 5200 | 322 | 17.5 | 7700 | 339 | 38.0 |
| 5300 | 324 | 19.5 | 7800 | 336 | 37.0 |
| 5400 | 325 | 21.5 | 7900 | 337 | 37.5 |
| 5500 | 328 | 24.0 | 8000 | 337 | 37.5 |
| 5600 | 330 | 26.0 | 8100 | 337 | 38.5 |
| 5700 | 329 | 25.0 | 8200 | 336 | 39.5 |
| 5800 | 328 | 23.5 | 8300 | 338 | 40.5 |
| 5900 | 331 | 26.0 | 8400 | 340 | 41.5 |
| 6000 | 333 | 28.0 | 8500 | 342 | 41.5 |
| 6100 | 334 | 26.5 | 8600 | 343 | 41.5 |
| 6200 | 334 | 25.0 | 8700 | 343 | 46.5 |
| 6300 | 334 | 23.5 | 8800 | 343 | 51.0 |
| 6400 | 334 | 22.0 | 8900 | 343 | 54.5 |
| 6500 | 334 | 23.0 | 9000 | 342 | 57.5 |
| 6600 | 334 | 24.0 | | | |

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

STATION ALTITUDE 3951.40 FEET MSL
 15 MAR. 78 1530 HRS MST
 ASCENSION NO. 10

SIGNIFICANT LEVEL DATA
 0740050010
 APACHE
 TABLE IV.

GEODETTIC COORDINATES
 32.62700 LAT DEG
 106.39352 LON DEG

| PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET | TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT |
|--|---|----------------------|
| 885.4 3951.4 | 13.4 -11.9 | 16.0 |
| 870.6 4419.4 | 12.7 -9.0 | 21.0 |
| 850.0 5074.3 | 9.5 -11.1 | 22.0 |
| 700.0 10225.5 | -4.0 -19.8 | 28.0 |
| 653.2 12001.7 | -8.1 -23.7 | 27.0 |
| 607.2 13858.6 | -8.8 -26.2 | 19.0 |
| 565.4 15658.5 | -12.0 -31.4 | 18.0 |
| 547.0 16486.2 | -13.2 -31.9 | 19.0 |
| 500.0 18704.7 | -18.7 -34.6 | 23.0 |
| 451.8 21154.5 | -24.0 -34.6 | 22.0 |
| 444.6 21537.6 | -25.3 -40.7 | 22.0 |
| 428.2 22429.6 | -26.3 -42.4 | 20.0 |
| 400.0 24031.6 | -29.8 -44.6 | 22.0 |
| 372.0 25710.7 | -34.1 -46.3 | 22.0 |
| 359.0 26524.7 | -35.0 -48.7 | 23.0 |
| 314.4 29508.3 | -42.2 | |
| 300.0 30539.3 | -45.3 | |
| 279.0 32109.7 | -49.5 | |
| 268.0 32969.8 | -50.6 | |
| 257.4 33832.7 | -49.5 | |
| 250.0 34456.7 | -50.3 | |
| 225.6 36623.5 | -55.6 | |
| 209.2 38184.6 | -58.9 | |
| 200.0 39105.6 | -59.8 | |
| 182.4 40976.4 | -62.4 | |
| 172.6 42072.0 | -60.7 | |
| 168.8 42553.1 | -56.5 | |
| 161.6 43439.6 | -52.5 | |
| 150.0 45026.4 | -56.1 | |
| 126.8 48459.1 | -63.0 | |

STATION ALTITUDE 3951.40 FEET MSL
 15 MAR. 78 1530 HRS MST
 ASCENSION NO. 10

SIGNIFICANT LEVEL DATA
 U74005C010
 APACHE
 TABLE IV. (CONT)

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|---|----------------------|
| 123.4 | 49004.6 | -63.6 | |
| 116.2 | 50221.5 | -59.6 | |
| 110.0 | 51340.3 | -60.2 | |
| 100.0 | 53267.7 | -63.3 | |
| 97.8 | 53713.7 | -63.8 | |

GFODETIC COORDINATES
 32.62700 LAT NEG
 106.39352 LON DEG

70° 30' 00" TOR DEG
 28° 05' 00" EPI DEG
 GODETIC COORDINATES

STATION ALTITUDE 3951.40 FEET MSL
 15 MAR. 78 1530 HRS MST
 ASCENSION NO. 10

UPPER AIR DATA
 0740050010
 APACHE
 TABLE V.

GEODETIC COORDINATES
 32.62700 LAT DEG
 106.39352 LON DEG

| 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 CENTIGRADE | DEWPOINT CENTIGRADE | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 3951.4 | 885.4 | 13.4 | -11.9 | 16.0 | 1075.3 | 659.8 | 20.0 | 9.9 | 1.000251 |
| 4000.0 | 883.9 | 13.3 | -11.5 | 16.5 | 1073.6 | 659.7 | 19.1 | 9.7 | 1.000251 |
| 4500.0 | 868.0 | 12.3 | -9.3 | 21.1 | 1057.9 | 658.6 | 8.2 | 8.1 | 1.000250 |
| 5000.0 | 852.3 | 9.9 | -10.9 | 21.9 | 1047.9 | 655.8 | 32.7 | 6.9 | 1.000246 |
| 5500.0 | 836.5 | 8.4 | -11.8 | 22.5 | 1033.9 | 654.0 | 33.7 | 6.3 | 1.000242 |
| 6000.0 | 820.9 | 7.1 | -12.6 | 23.1 | 1019.4 | 652.5 | 31.2 | 6.6 | 1.000238 |
| 6500.0 | 805.5 | 5.8 | -13.4 | 23.7 | 1005.1 | 651.0 | 29.6 | 8.3 | 1.000234 |
| 7000.0 | 793.5 | 4.5 | -14.2 | 24.2 | 991.0 | 649.4 | 29.0 | 11.6 | 1.000231 |
| 7500.0 | 775.7 | 3.1 | -15.0 | 24.8 | 977.2 | 647.9 | 28.7 | 14.8 | 1.000227 |
| 8000.0 | 761.3 | 1.8 | -15.9 | 25.4 | 963.6 | 646.3 | 29.3 | 17.7 | 1.000224 |
| 8500.0 | 747.0 | .5 | -16.7 | 26.0 | 950.1 | 644.7 | 29.6 | 20.7 | 1.000220 |
| 9000.0 | 733.1 | -.8 | -17.6 | 26.6 | 936.9 | 643.2 | 30.4 | 23.2 | 1.000217 |
| 9500.0 | 719.4 | -2.1 | -18.5 | 27.2 | 923.9 | 641.6 | 31.1 | 25.9 | 1.000213 |
| 10000.0 | 706.0 | -3.4 | -19.4 | 27.7 | 911.1 | 640.1 | 31.4 | 28.6 | 1.000210 |
| 10500.0 | 692.6 | -4.6 | -20.4 | 27.6 | 897.9 | 638.6 | 31.4 | 31.1 | 1.000206 |
| 11000.0 | 679.2 | -5.8 | -21.5 | 27.6 | 884.4 | 637.2 | 31.3 | 34.0 | 1.000203 |
| 11500.0 | 666.1 | -6.9 | -22.6 | 27.3 | 871.2 | 635.8 | 31.2 | 37.5 | 1.000199 |
| 12000.0 | 653.2 | -8.1 | -23.7 | 27.0 | 858.1 | 634.4 | 31.3 | 41.9 | 1.000196 |
| 12500.0 | 640.5 | -8.3 | -24.8 | 24.9 | 842.1 | 634.2 | 31.6 | 48.0 | 1.000192 |
| 13000.0 | 628.1 | -8.5 | -26.0 | 22.7 | 826.3 | 633.9 | 31.9 | 54.2 | 1.000188 |
| 13500.0 | 615.8 | -8.7 | -27.2 | 20.5 | 810.8 | 633.7 | 32.1 | 60.6 | 1.000184 |
| 14000.0 | 603.8 | -9.1 | -28.4 | 18.9 | 796.2 | 633.2 | 32.2 | 64.9 | 1.000181 |
| 14500.0 | 592.0 | -9.9 | -29.3 | 18.6 | 783.2 | 632.1 | 32.3 | 68.1 | 1.000177 |
| 15000.0 | 580.3 | -10.6 | -30.2 | 18.4 | 770.5 | 631.1 | 32.4 | 70.5 | 1.000174 |
| 15500.0 | 569.0 | -11.7 | -31.1 | 18.1 | 757.9 | 630.0 | 32.4 | 72.4 | 1.000171 |
| 16000.0 | 557.7 | -12.5 | -31.6 | 18.4 | 745.2 | 629.1 | 32.4 | 74.9 | 1.000168 |
| 16500.0 | 546.7 | -13.2 | -31.9 | 19.0 | 732.5 | 628.2 | 32.4 | 77.8 | 1.000166 |
| 17000.0 | 535.7 | -14.5 | -32.4 | 19.9 | 721.3 | 626.7 | 32.4 | 77.8 | 1.000163 |
| 17500.0 | 525.0 | -15.7 | -33.0 | 20.8 | 710.2 | 625.2 | 32.4 | 76.9 | 1.000160 |
| 18000.0 | 514.5 | -17.0 | -33.7 | 21.7 | 699.4 | 623.6 | 32.3 | 75.5 | 1.000158 |

STATION ALTITUDE 3951.40 FEET MSL
 15 MAR. 78 1530 HRS MST
 ASCENSION NO. 10

UPPER AIR DATA
 0740050010
 APACHE
 TABLE V. (CONT)

GEODETIC COORDINATES
 32.62700 LAT DEG
 106.39352 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SO'UND KNOTS | WIND DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|------------------------|----------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|---------------------------|
| 18500.0 | 504.2 | -18.2 | -34.3 | 22.6 | 688.7 | 622.1 | 321.7 | 75.8 | 1.000155 |
| 19000.0 | 493.9 | -19.3 | -35.2 | 22.9 | 677.8 | 620.7 | 320.2 | 80.2 | 1.000153 |
| 19500.0 | 483.8 | -20.4 | -36.2 | 22.7 | 666.8 | 619.4 | 318.7 | 84.3 | 1.000150 |
| 20000.0 | 473.9 | -21.5 | -37.2 | 22.5 | 655.9 | 618.1 | 317.0 | 86.2 | 1.000148 |
| 20500.0 | 464.2 | -22.6 | -38.2 | 22.3 | 645.3 | 616.7 | 314.7 | 84.6 | 1.000145 |
| 21000.0 | 454.7 | -23.7 | -39.3 | 22.1 | 634.8 | 615.4 | 312.4 | 79.9 | 1.000143 |
| 21500.0 | 445.3 | -25.2 | -40.6 | 22.0 | 625.5 | 613.5 | 310.4 | 77.4 | 1.000140 |
| 22000.0 | 436.0 | -25.8 | -41.6 | 21.0 | 614.1 | 612.7 | 308.8 | 77.4 | 1.000138 |
| 22500.0 | 426.9 | -26.5 | -42.5 | 20.1 | 602.8 | 611.9 | 307.4 | 79.8 | 1.000135 |
| 23000.0 | 417.9 | -27.5 | -43.2 | 20.7 | 592.7 | 610.6 | 306.1 | 62.5 | 1.000133 |
| 23500.0 | 409.1 | -28.6 | -43.9 | 21.3 | 582.9 | 609.2 | 304.4 | 80.6 | 1.000131 |
| 24000.0 | 400.5 | -29.7 | -44.5 | 22.0 | 573.2 | 607.8 | 302.5 | 78.1 | 1.000128 |
| 24500.0 | 392.0 | -31.0 | -45.6 | 22.0 | 563.9 | 606.3 | 299.5 | 73.0 | 1.000126 |
| 25000.0 | 383.6 | -32.3 | -46.7 | 22.0 | 554.3 | 604.7 | 296.0 | 69.0 | 1.000124 |
| 25500.0 | 375.4 | -33.6 | -47.8 | 22.0 | 545.8 | 603.0 | 292.4 | 69.8 | 1.000122 |
| 26000.0 | 367.3 | -34.4 | -48.4 | 22.4 | 536.0 | 602.0 | 288.9 | 71.2 | 1.000120 |
| 26500.0 | 359.4 | -35.0 | -48.7 | 23.0 | 525.6 | 601.3 | 285.9 | 75.3 | 1.000118 |
| 27000.0 | 351.5 | -36.1 | -51.2 | 19.3** | 516.6 | 599.8 | 283.3 | 79.2 | 1.000115 |
| 27500.0 | 343.8 | -37.4 | -54.0 | 15.5** | 507.9 | 598.2 | 280.6 | 80.5 | 1.000113 |
| 28000.0 | 336.2 | -38.6 | -57.3 | 11.6** | 499.3 | 596.7 | 278.3 | 81.7 | 1.000111 |
| 28500.0 | 328.8 | -39.8 | -61.4 | 7.8** | 490.8 | 595.2 | 277.5 | 81.9 | 1.000109 |
| 29000.0 | 321.6 | -41.0 | -67.3 | 3.9** | 482.5 | 593.6 | 277.0 | 82.1 | 1.000108 |
| 29500.0 | 314.5 | -42.2 | -92.8 | .1** | 474.4 | 592.1 | 277.7 | 82.4 | 1.000106 |
| 30000.0 | 307.4 | -43.7 | | | 466.7 | 590.1 | 276.5 | 83.2 | 1.000104 |
| 30500.0 | 300.5 | -45.2 | | | 459.3 | 588.2 | 279.6 | 84.8 | 1.000102 |
| 31000.0 | 293.7 | -46.5 | | | 451.5 | 586.5 | 280.2 | 85.8 | 1.000101 |
| 31500.0 | 287.0 | -47.9 | | | 443.6 | 584.7 | 281.1 | 85.9 | 1.000099 |
| 32000.0 | 280.4 | -49.2 | | | 436.2 | 583.0 | 282.7 | 84.5 | 1.000097 |
| 32500.0 | 274.0 | -50.0 | | | 427.7 | 582.0 | 283.7 | 77.4 | 1.000095 |
| 33000.0 | 267.6 | -50.6 | | | 418.8 | 581.2 | 284.7 | 68.8 | 1.000093 |

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

STATION ALTITUDE 3451.40 FEET MSL
 15 MAR. 78
 ASCENSION NO. 10

UPPER AIR DATA
 074000JJ10
 APACHE
 TABLE V. (CONT)

GEODETIC COORDINATES
 32.62700 LAT DEG
 106.39352 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|------------------------|---------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | | | | | | DIRECTION DEGREFS(TN) | SPEED KNOTS | |
| 33500.0 | 261.4 | -49.9 | | | 408.0 | 582.1 | 262.7 | 60.8 | 1.000091 |
| 34000.0 | 255.4 | -49.7 | | | 396.2 | 582.3 | 280.3 | 55.7 | 1.000089 |
| 34500.0 | 249.5 | -50.4 | | | 393.2 | 581.4 | 279.6 | 63.3 | 1.000087 |
| 35000.0 | 243.6 | -51.6 | | | 383.2 | 579.8 | 279.0 | 70.9 | 1.000065 |
| 35500.0 | 237.9 | -52.9 | | | 376.3 | 578.2 | 278.8 | 76.8 | 1.000084 |
| 36000.0 | 232.4 | -54.1 | | | 369.5 | 576.6 | 278.7 | 82.4 | 1.000082 |
| 36500.0 | 226.9 | -55.3 | | | 362.9 | 575.0 | 278.5 | 85.7 | 1.000081 |
| 37000.0 | 221.5 | -56.4 | | | 356.0 | 573.6 | 277.9 | 83.0 | 1.000079 |
| 37500.0 | 216.2 | -57.5 | | | 349.2 | 572.2 | 277.7 | 80.6 | 1.000078 |
| 38000.0 | 211.1 | -58.5 | | | 342.6 | 570.8 | 278.9 | 79.2 | 1.000076 |
| 38500.0 | 206.0 | -59.2 | | | 335.4 | 569.8 | 280.3 | 78.2 | 1.000075 |
| 39000.0 | 201.0 | -59.7 | | | 328.1 | 569.2 | 281.7 | 76.0 | 1.000073 |
| 39500.0 | 196.2 | -60.3 | | | 321.1 | 568.3 | 282.5 | 79.3 | 1.000072 |
| 40000.0 | 191.4 | -61.0 | | | 314.3 | 567.4 | 282.3 | 82.8 | 1.000070 |
| 40500.0 | 186.7 | -61.7 | | | 307.7 | 566.4 | 281.3 | 87.0 | 1.000069 |
| 41000.0 | 182.2 | -62.4 | | | 301.1 | 565.6 | 279.4 | 92.2 | 1.000067 |
| 41500.0 | 177.7 | -61.6 | | | 292.7 | 566.7 | 278.0 | 97.7 | 1.000065 |
| 42000.0 | 173.4 | -60.8 | | | 284.5 | 567.7 | 277.0 | 103.7 | 1.000063 |
| 42500.0 | 169.2 | -57.0 | | | 272.7 | 572.8 | 277.4 | 107.4 | 1.000061 |
| 43000.0 | 165.2 | -54.5 | | | 263.2 | 576.1 | 278.1 | 109.5 | 1.000059 |
| 43500.0 | 161.3 | -52.6 | | | 254.9 | 578.5 | 276.9 | 95.0 | 1.000057 |
| 44000.0 | 157.5 | -53.6 | | | 250.2 | 577.0 | 275.6 | 81.9 | 1.000056 |
| 44500.0 | 153.6 | -54.9 | | | 245.5 | 575.5 | 274.5 | 71.9 | 1.000055 |
| 45000.0 | 150.2 | -56.0 | | | 241.0 | 574.0 | 274.0 | 66.0 | 1.000054 |
| 45500.0 | 146.6 | -57.1 | | | 236.3 | 572.6 | 276.3 | 71.7 | 1.000053 |
| 46000.0 | 143.0 | -58.1 | | | 231.7 | 571.2 | 278.2 | 77.3 | 1.000052 |
| 46500.0 | 139.6 | -59.2 | | | 227.2 | 569.9 | 278.6 | 81.4 | 1.000051 |
| 47000.0 | 136.2 | -60.2 | | | 222.8 | 568.5 | 279.0 | 85.4 | 1.000050 |
| 47500.0 | 132.9 | -61.3 | | | 218.5 | 567.1 | 277.6 | 81.9 | 1.000049 |
| 48000.0 | 129.7 | -62.3 | | | 214.3 | 565.6 | 276.1 | 78.1 | 1.000048 |

STATION ALTITUDE 3951.40 FEET MSL
 15 MAR. 78
 ASCENSION NO. 10

UPPER AIR DATA
 0740050010
 APACHE
 TABLE V. (CONT)

GEODETIC COORDINATES
 32.62700 LAT DEG
 106.39352 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES DELPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------|----------------|---------------------------|
| | | | | | | DIRECTION DEGREES (TM) | SPEED KNOTS | |
| 46500.0 | 126.5 | -63.3 | 210.1 | 564.3 | 275.0 | 275.0 | 72.8 | 1.000047 |
| 49000.0 | 123.4 | -63.6 | 205.2 | 564.0 | 274.4 | 274.4 | 68.7 | 1.000046 |
| 49500.0 | 120.4 | -62.0 | 198.0 | 566.1 | 275.9 | 275.9 | 68.6 | 1.000044 |
| 50000.0 | 117.5 | -60.3 | 192.3 | 568.3 | 278.1 | 278.1 | 71.1 | 1.000043 |
| 50500.0 | 114.6 | -59.7 | 187.1 | 569.1 | 281.2 | 281.2 | 79.0 | 1.000042 |
| 51000.0 | 111.8 | -60.0 | 182.6 | 568.7 | 283.4 | 283.4 | 84.8 | 1.000041 |
| 51500.0 | 109.1 | -60.5 | 178.7 | 568.2 | 284.7 | 284.7 | 86.2 | 1.000040 |
| 52000.0 | 106.5 | -61.3 | 175.0 | 567.1 | | | | 1.000039 |
| 52500.0 | 103.9 | -62.1 | 171.4 | 566.0 | | | | 1.000038 |
| 53000.0 | 101.3 | -62.9 | 167.9 | 564.9 | | | | 1.000037 |
| 53500.0 | 98.8 | -63.6 | 164.3 | 564.0 | | | | 1.000037 |

STATION ALTITUDE 3951.40 FEET MSL
 15 MAR. 78
 ASCENSION NO. 10

MANDATORY LEVELS
 U74005CU10
 APACHE
 TABLE VI.

GEODETIC COORDINATES
 32.62700 LAT NEG
 106.39352 LONG DEG

| PRESSURE MILLIBARS | GEOPOTENTIAL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | WIND DATA | |
|-----------------------|----------------------|---|----------------------|--------------------------|----------------|
| | | | | DIRECTION DEGREES(TP) | SPEED KNOTS |
| 850.0 | 5073. | 9.5 | 22. | 349.9 | 0.7 |
| 800.0 | 6709. | 5.3 | 24. | 293.6 | 9.7 |
| 750.0 | 8424. | .8 | 26. | 296.4 | 20.3 |
| 700.0 | 10226. | -4.0 | 28. | 314.5 | 29.8 |
| 650.0 | 12128. | -8.1 | 26. | 314.6 | 43.5 |
| 600.0 | 14164. | -9.3 | 19. | 323.0 | 66.0 |
| 550.0 | 16355. | -13.0 | 19. | 324.4 | 77.0 |
| 500.0 | 18713. | -18.7 | 23. | 320.9 | 77.8 |
| 450.0 | 21261. | -24.3 | 22. | 311.0 | 77.4 |
| 400.0 | 24048. | -29.8 | 22. | 302.1 | 77.4 |
| 350.0 | 27125. | -36.4 | 19.** | 282.4 | 79.6 |
| 300.0 | 30570. | -45.3 | | 274.8 | 65.2 |
| 250.0 | 34497. | -50.3 | | 279.5 | 64.1 |
| 200.0 | 39161. | -59.8 | | 282.4 | 77.9 |
| 175.0 | 41879. | -61.1 | | 277.1 | 103.3 |
| 150.0 | 45103. | -56.1 | | 275.0 | 68.2 |
| 125.0 | 48837. | -63.5 | | 274.3 | 68.7 |
| 100.0 | 53379. | -63.3 | | | |

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

STATION ALTITUDE 3989.00 FEET MSL
 15 MAR. 78
 ASCENSION NO. 178

SIGNIFICANT LEVEL DATA
 0740020178
 WHITE SANDS
 TABLE VII.

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | |
|-----------------------|-----------------------------------|---|----------------------|------|
| 883.8 | 3989.0 | 16.9 | -11.7 | 13.0 |
| 873.0 | 4333.8 | 13.1 | -10.0 | 19.0 |
| 850.0 | 5066.6 | 11.1 | -11.6 | 19.0 |
| 802.6 | 6623.9 | 6.9 | -15.1 | 19.0 |
| 762.6 | 7991.2 | 3.1 | -17.6 | 20.0 |
| 700.0 | 10239.8 | -3.2 | -20.8 | 24.0 |
| 660.4 | 11739.9 | -7.0 | -23.6 | 25.0 |
| 640.8 | 12509.6 | -7.5 | -25.5 | 22.0 |
| 623.6 | 13201.8 | -9.2 | -26.4 | 23.0 |
| 606.4 | 13910.9 | -9.2 | -29.1 | 18.0 |
| 577.2 | 15160.1 | -10.0 | -29.7 | 18.0 |
| 554.8 | 16157.3 | -11.6 | -31.1 | 18.0 |
| 500.0 | 18739.0 | -17.6 | -35.6 | 19.0 |
| 475.0 | 19988.5 | -21.1 | -38.5 | 19.0 |
| 436.6 | 22011.4 | -25.1 | -42.4 | 18.0 |
| 400.0 | 24081.6 | -28.3 | -45.1 | 16.0 |
| 366.6 | 26114.0 | -32.0 | -47.8 | 19.0 |
| 360.8 | 26481.9 | -33.3 | -48.9 | 19.0 |
| 315.6 | 29501.9 | -42.4 | | |
| 300.0 | 30616.8 | -45.1 | | |
| 274.2 | 32563.1 | -49.6 | | |
| 268.4 | 33020.5 | -50.3 | | |
| 257.8 | 33883.4 | -49.1 | | |
| 250.0 | 34541.8 | -49.9 | | |
| 215.0 | 37706.6 | -58.4 | | |
| 201.2 | 39066.2 | -60.0 | | |
| 200.0 | 39188.3 | -59.9 | | |
| 183.2 | 40974.0 | -61.4 | | |
| 180.2 | 41308.9 | -61.4 | | |
| 176.4 | 41747.4 | -55.2 | | |

STATION ALTITUDE 3969.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 178

SIGNIFICANT LEVEL DATA
 0740020178
 WHITE SANDS
 TABLE VII. (CONT)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|---|----------------------|
| 173.8 | 42058.0 | -54.2 | |
| 169.6 | 42570.2 | -54.8 | |
| 165.6 | 43069.9 | -54.2 | |
| 161.4 | 43609.6 | -53.2 | |
| 150.0 | 45141.6 | -56.2 | |
| 138.0 | 46858.4 | -59.9 | |
| 124.2 | 48991.0 | -63.4 | |
| 116.8 | 50225.2 | -63.0 | |
| 107.7 | 51862.3 | -61.4 | |
| 103.6 | 52608.7 | -61.8 | |
| 100.0 | 53359.9 | -63.4 | |
| 85.6 | 56448.5 | -67.5 | |
| 79.4 | 57930.6 | -66.5 | |
| 72.4 | 59750.9 | -67.2 | |
| 70.0 | 60414.9 | -67.0 | |
| 59.0 | 63774.2 | -68.1 | |
| 52.0 | 66280.5 | -62.8 | |
| 50.0 | 67069.2 | -62.5 | |
| 45.8 | 68835.5 | -62.3 | |
| 43.4 | 69929.2 | -58.5 | |
| 33.4 | 75267.9 | -60.8 | |
| 30.0 | 77461.2 | -57.4 | |
| 28.4 | 78586.7 | -58.5 | |
| 26.0 | 80410.6 | -54.8 | |
| 22.2 | 83718.9 | -52.5 | |
| 20.0 | 85929.3 | -49.6 | |
| 14.3 | 93186.7 | -42.8 | |
| 11.9 | 97280.6 | -35.7 | |

STATION ALTITUDE 3989.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 176

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII.

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DIRECTION DEGREES(TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|--------------------|-------------------------|---------------------------------|-------------------|------------------------|----------------------|----------------------------|------------------|---------------------|
| 3989.0 | 883.8 | 16.9 | -11.7 | 13.0 | 1060.4 | 663.8 | .0 | .0 | 1.000247 |
| 4000.0 | 883.5 | 16.8 | -11.6 | 13.2 | 1060.4 | 663.7 | | | 1.000248 |
| 4500.0 | 867.7 | 12.6 | -10.3 | 19.0 | 1056.4 | 659.0 | | | 1.000248 |
| 5000.0 | 852.1 | 11.3 | -11.5 | 19.0 | 1042.4 | 657.4 | | | 1.000244 |
| 5500.0 | 836.5 | 9.9 | -12.6 | 19.0 | 1028.4 | 655.8 | | | 1.000240 |
| 6000.0 | 821.3 | 8.6 | -13.7 | 19.0 | 1014.5 | 654.2 | | | 1.000236 |
| 6500.0 | 806.3 | 7.2 | -14.8 | 19.0 | 1000.5 | 652.6 | | | 1.000232 |
| 7000.0 | 791.4 | 5.9 | -15.8 | 19.3 | 987.3 | 651.0 | 283.8 | 12.1 | 1.000229 |
| 7500.0 | 776.7 | 4.5 | -16.7 | 19.6 | 973.5 | 649.4 | 286.4 | 13.2 | 1.000225 |
| 8000.0 | 762.3 | 3.1 | -17.7 | 20.0 | 960.7 | 647.7 | 286.2 | 15.1 | 1.000222 |
| 8500.0 | 748.0 | 1.7 | -18.3 | 20.9 | 947.4 | 646.1 | 286.9 | 18.4 | 1.000218 |
| 9000.0 | 733.9 | .3 | -19.0 | 21.8 | 934.3 | 644.4 | 291.3 | 21.9 | 1.000215 |
| 9500.0 | 720.0 | -1.1 | -19.7 | 22.7 | 921.5 | 642.7 | 296.1 | 25.3 | 1.000212 |
| 10000.0 | 706.4 | -2.5 | -20.5 | 23.6 | 908.8 | 641.1 | 301.1 | 28.8 | 1.000209 |
| 10500.0 | 693.0 | -3.9 | -21.3 | 24.2 | 895.9 | 639.5 | 305.3 | 30.4 | 1.000205 |
| 11000.0 | 679.6 | -5.1 | -22.3 | 24.5 | 882.9 | 638.0 | 309.3 | 31.1 | 1.000202 |
| 11500.0 | 666.6 | -6.4 | -23.2 | 24.8 | 870.0 | 636.5 | 312.5 | 32.9 | 1.000199 |
| 12000.0 | 653.7 | -7.2 | -24.3 | 24.0 | 855.8 | 635.5 | 315.3 | 35.1 | 1.000195 |
| 12500.0 | 641.0 | -7.5 | -25.5 | 22.0 | 840.2 | 635.1 | 318.5 | 39.9 | 1.000191 |
| 13000.0 | 628.6 | -8.7 | -26.2 | 22.7 | 827.7 | 633.7 | 321.0 | 44.7 | 1.000188 |
| 13500.0 | 616.3 | -9.2 | -27.5 | 20.9 | 813.1 | 633.1 | 323.7 | 50.3 | 1.000185 |
| 14000.0 | 604.3 | -9.3 | -29.1 | 18.0 | 797.4 | 633.0 | 326.3 | 56.4 | 1.000181 |
| 14500.0 | 592.5 | -9.6 | -29.4 | 18.0 | 782.8 | 632.6 | 325.5 | 60.3 | 1.000177 |
| 15000.0 | 580.9 | -9.9 | -29.7 | 18.0 | 768.4 | 632.2 | 324.1 | 63.4 | 1.000174 |
| 15500.0 | 569.5 | -10.5 | -30.2 | 18.0 | 755.2 | 631.4 | 322.7 | 65.8 | 1.000171 |
| 16000.0 | 558.3 | -11.3 | -30.9 | 18.0 | 742.6 | 630.4 | 322.7 | 67.0 | 1.000168 |
| 16500.0 | 547.2 | -12.4 | -31.7 | 18.1 | 730.8 | 629.2 | 322.5 | 67.4 | 1.000165 |
| 17000.0 | 536.3 | -13.6 | -32.5 | 18.3 | 719.5 | 627.6 | 321.7 | 66.6 | 1.000162 |
| 17500.0 | 525.6 | -14.7 | -33.4 | 18.5 | 708.3 | 626.4 | 320.5 | 67.2 | 1.000160 |
| 18000.0 | 515.1 | -15.9 | -34.3 | 18.7 | 697.3 | 624.9 | 319.2 | 68.2 | 1.000157 |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 178

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII. (CONT)

6FODETC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT DEGREES | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DIRECTION DEGREES(TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|--------------------|-------------------------|------------------------------|-------------------|------------------------|----------------------|----------------------------|------------------|---------------------|
| 18500.0 | 504.8 | -17.0 | -35.1 | 18.9 | 686.5 | 623.5 | 317.9 | 70.7 | 1.000155 |
| 19000.0 | 494.7 | -18.3 | -36.2 | 19.0 | 676.1 | 621.9 | 316.7 | 73.3 | 1.000152 |
| 19500.0 | 484.6 | -19.7 | -37.4 | 19.0 | 666.1 | 620.2 | 315.5 | 75.4 | 1.000150 |
| 20000.0 | 474.8 | -21.1 | -38.5 | 19.0 | 656.1 | 618.5 | 314.4 | 77.3 | 1.000147 |
| 20500.0 | 465.0 | -22.1 | -39.5 | 18.7 | 645.2 | 617.3 | 313.2 | 78.2 | 1.000145 |
| 21000.0 | 455.4 | -23.1 | -40.5 | 18.5 | 634.4 | 616.1 | 312.1 | 78.6 | 1.000142 |
| 21500.0 | 446.0 | -24.1 | -41.4 | 18.3 | 623.7 | 614.9 | 310.8 | 76.8 | 1.000140 |
| 22000.0 | 436.8 | -25.1 | -42.4 | 18.0 | 613.3 | 613.6 | 309.5 | 74.3 | 1.000137 |
| 22500.0 | 427.7 | -25.9 | -43.0 | 18.0 | 602.4 | 612.7 | 308.0 | 70.0 | 1.000135 |
| 23000.0 | 418.7 | -26.6 | -43.7 | 18.0 | 591.6 | 611.7 | 306.0 | 65.7 | 1.000133 |
| 23500.0 | 410.0 | -27.4 | -44.3 | 18.0 | 581.1 | 610.7 | 303.4 | 61.4 | 1.000130 |
| 24000.0 | 401.4 | -28.2 | -45.0 | 18.0 | 570.7 | 609.8 | 299.3 | 59.1 | 1.000128 |
| 24500.0 | 392.9 | -29.1 | -45.7 | 18.2 | 560.7 | 608.7 | 294.6 | 57.9 | 1.000126 |
| 25000.0 | 384.5 | -30.0 | -46.3 | 18.5 | 550.8 | 607.5 | 290.2 | 58.9 | 1.000123 |
| 25500.0 | 376.4 | -30.9 | -47.0 | 18.7 | 541.2 | 606.4 | 286.1 | 60.4 | 1.000121 |
| 26000.0 | 368.4 | -31.8 | -47.6 | 18.9 | 531.7 | 605.3 | 283.7 | 61.6 | 1.000119 |
| 26500.0 | 360.5 | -33.4 | -49.0 | 18.9 | 523.7 | 603.3 | 281.6 | 63.0 | 1.000117 |
| 27000.0 | 352.6 | -34.9 | -51.8 | 15.7 | 515.5 | 601.4 | 280.8 | 65.4 | 1.000115 |
| 27500.0 | 344.9 | -36.4 | -54.9 | 12.6 | 507.4 | 599.5 | 280.1 | 67.7 | 1.000113 |
| 28000.0 | 337.3 | -37.9 | -58.4 | 9.4 | 499.5 | 597.6 | 279.7 | 69.8 | 1.000111 |
| 28500.0 | 329.9 | -39.4 | -62.7 | 6.3 | 491.7 | 595.7 | 279.2 | 72.0 | 1.000110 |
| 29000.0 | 322.7 | -40.9 | -68.8 | 3.2 | 484.0 | 593.7 | 278.5 | 72.1 | 1.000108 |
| 29500.0 | 315.6 | -42.4 | -100.9 | .0 | 476.5 | 591.8 | 277.6 | 71.9 | 1.000106 |
| 30000.0 | 308.5 | -43.6 | | | 468.2 | 590.2 | 277.6 | 71.4 | 1.000104 |
| 30500.0 | 301.6 | -44.8 | | | 460.1 | 588.7 | 278.0 | 70.7 | 1.000102 |
| 31000.0 | 294.7 | -46.0 | | | 452.0 | 587.2 | 279.2 | 70.5 | 1.000101 |
| 31500.0 | 288.0 | -47.1 | | | 443.5 | 585.7 | 280.8 | 70.6 | 1.000099 |
| 32000.0 | 281.4 | -48.3 | | | 436.0 | 584.2 | 281.9 | 69.8 | 1.000097 |
| 32500.0 | 275.0 | -49.5 | | | 428.3 | 582.7 | 282.9 | 66.9 | 1.000095 |
| 33000.0 | 268.7 | -50.3 | | | 419.9 | 581.6 | 283.0 | 67.9 | 1.000094 |

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

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII. (CONT)

STATION ALTITUDE 3989.00 FEET MSL
 15 MAR. 76
 ASCENSION NO. 178

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| 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(TN) | SPEED KNOTS | |
| 33500.0 | 262.5 | -49.6 | | 409.1 | 582.4 | 282.7 | 67.1 | 1.000091 |
| 34000.0 | 256.4 | -49.2 | | 398.9 | 582.9 | 281.4 | 66.6 | 1.000089 |
| 34500.0 | 250.5 | -49.8 | | 390.8 | 582.2 | 279.9 | 66.1 | 1.000087 |
| 35000.0 | 244.6 | -51.1 | | 383.8 | 580.5 | 278.4 | 65.1 | 1.000085 |
| 35500.0 | 238.8 | -52.5 | | 377.0 | 578.7 | 276.8 | 64.1 | 1.000084 |
| 36000.0 | 233.2 | -53.8 | | 370.4 | 577.0 | 276.5 | 65.5 | 1.000083 |
| 36500.0 | 227.7 | -55.2 | | 363.9 | 575.2 | 276.4 | 67.1 | 1.000081 |
| 37000.0 | 222.4 | -56.5 | | 357.6 | 573.4 | 276.8 | 70.0 | 1.000080 |
| 37500.0 | 217.1 | -57.8 | | 351.3 | 571.6 | 277.6 | 73.8 | 1.000078 |
| 38000.0 | 211.9 | -58.7 | | 344.4 | 570.4 | 278.1 | 76.6 | 1.000077 |
| 38500.0 | 206.8 | -59.3 | | 337.0 | 569.7 | 278.0 | 77.5 | 1.000075 |
| 39000.0 | 201.9 | -59.9 | | 329.8 | 568.9 | 277.7 | 76.1 | 1.000073 |
| 39500.0 | 197.0 | -60.2 | | 322.1 | 568.6 | 276.3 | 76.6 | 1.000072 |
| 40000.0 | 192.2 | -60.6 | | 315.0 | 568.0 | 274.8 | 75.1 | 1.000070 |
| 40500.0 | 187.5 | -61.0 | | 307.9 | 567.4 | 272.4 | 73.3 | 1.000069 |
| 41000.0 | 183.0 | -61.4 | | 301.0 | 566.9 | 269.9 | 71.7 | 1.000067 |
| 41500.0 | 178.5 | -58.7 | | 290.0 | 570.5 | 267.9 | 69.8 | 1.000065 |
| 42000.0 | 174.3 | -54.4 | | 277.5 | 576.2 | 265.9 | 68.0 | 1.000062 |
| 42500.0 | 170.2 | -54.7 | | 271.4 | 575.8 | 266.3 | 66.4 | 1.000060 |
| 43000.0 | 166.2 | -54.3 | | 264.5 | 576.3 | 267.3 | 64.8 | 1.000059 |
| 43500.0 | 162.2 | -53.4 | | 257.2 | 577.5 | 269.0 | 64.7 | 1.000057 |
| 44000.0 | 158.4 | -54.0 | | 251.8 | 576.8 | 270.9 | 65.0 | 1.000056 |
| 44500.0 | 154.7 | -54.9 | | 246.9 | 575.5 | 272.2 | 66.0 | 1.000055 |
| 45000.0 | 151.0 | -55.9 | | 242.2 | 574.2 | 272.9 | 67.4 | 1.000054 |
| 45500.0 | 147.4 | -57.0 | | 237.5 | 572.8 | 273.6 | 68.8 | 1.000053 |
| 46000.0 | 143.9 | -58.1 | | 233.0 | 571.4 | 274.4 | 69.6 | 1.000052 |
| 46500.0 | 140.4 | -59.1 | | 228.6 | 569.9 | 275.2 | 70.5 | 1.000051 |
| 47000.0 | 137.0 | -60.1 | | 224.1 | 568.6 | 275.8 | 71.3 | 1.000050 |
| 47500.0 | 133.7 | -61.0 | | 219.5 | 567.5 | 276.4 | 72.1 | 1.000049 |
| 48000.0 | 130.4 | -61.8 | | 215.0 | 566.4 | 276.0 | 72.5 | 1.000048 |

STATION ALTITUDE 3989.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 178

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII. (CONT)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT DEGREES | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------|----------------------|---------------------------|-------------------------|--------------------------|----------------|------------------------|
| | | | | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 46500.0 | 127.2 | -62.6 | | | 210.5 | 565.3 | 274.9 | 72.6 | 1.000047 |
| 49000.0 | 124.1 | -63.4 | | | 206.2 | 564.2 | 273.7 | 71.9 | 1.000046 |
| 49500.0 | 121.1 | -63.2 | | | 201.0 | 564.4 | 272.5 | 69.0 | 1.000045 |
| 50000.0 | 118.1 | -63.1 | | | 195.9 | 564.7 | 271.5 | 66.1 | 1.000044 |
| 50500.0 | 115.2 | -62.7 | | | 190.8 | 565.1 | 273.2 | 62.1 | 1.000042 |
| 51000.0 | 112.4 | -62.2 | | | 185.7 | 565.8 | 275.2 | 58.2 | 1.000041 |
| 51500.0 | 109.7 | -61.8 | | | 180.7 | 566.4 | 277.7 | 55.8 | 1.000040 |
| 52000.0 | 107.0 | -61.5 | | | 176.0 | 566.6 | 280.5 | 53.7 | 1.000039 |
| 52500.0 | 104.4 | -61.7 | | | 172.0 | 566.4 | 281.3 | 53.0 | 1.000038 |
| 53000.0 | 101.8 | -62.6 | | | 168.5 | 565.2 | 281.2 | 52.9 | 1.000038 |
| 53500.0 | 99.3 | -63.6 | | | 165.1 | 564.0 | 280.3 | 52.8 | 1.000037 |
| 54000.0 | 96.8 | -64.2 | | | 161.5 | 563.1 | 278.5 | 52.6 | 1.000036 |
| 54500.0 | 94.4 | -64.9 | | | 158.0 | 562.2 | 276.7 | 52.1 | 1.000035 |
| 55000.0 | 92.1 | -65.6 | | | 154.5 | 561.3 | 274.8 | 49.4 | 1.000034 |
| 55500.0 | 89.8 | -66.2 | | | 151.2 | 560.4 | 272.7 | 46.8 | 1.000034 |
| 56000.0 | 87.6 | -66.9 | | | 147.9 | 559.5 | 271.0 | 44.3 | 1.000033 |
| 56500.0 | 85.4 | -67.5 | | | 144.6 | 558.7 | 269.2 | 41.8 | 1.000032 |
| 57000.0 | 83.2 | -67.1 | | | 140.7 | 559.2 | 268.3 | 40.3 | 1.000031 |
| 57500.0 | 81.2 | -66.8 | | | 137.0 | 559.6 | 268.8 | 39.9 | 1.000031 |
| 58000.0 | 79.1 | -66.5 | | | 133.4 | 560.0 | 269.5 | 39.6 | 1.000030 |
| 58500.0 | 77.1 | -66.7 | | | 130.2 | 559.7 | 272.2 | 39.6 | 1.000029 |
| 59000.0 | 75.2 | -66.9 | | | 127.0 | 559.5 | 275.0 | 39.6 | 1.000028 |
| 59500.0 | 73.3 | -67.1 | | | 124.0 | 559.2 | 277.7 | 39.3 | 1.000028 |
| 60000.0 | 71.5 | -67.1 | | | 120.9 | 559.2 | 280.4 | 38.8 | 1.000027 |
| 60500.0 | 69.7 | -67.0 | | | 117.8 | 559.3 | 283.1 | 38.4 | 1.000026 |
| 61000.0 | 67.9 | -67.2 | | | 114.9 | 559.1 | 284.0 | 37.8 | 1.000026 |
| 61500.0 | 66.2 | -67.4 | | | 112.1 | 558.9 | 284.9 | 37.2 | 1.000025 |
| 62000.0 | 64.6 | -67.5 | | | 109.4 | 558.7 | 284.8 | 36.8 | 1.000024 |
| 62500.0 | 63.0 | -67.7 | | | 106.7 | 558.4 | 283.5 | 36.6 | 1.000024 |
| 63000.0 | 61.4 | -67.8 | | | 104.1 | 558.2 | 282.1 | 36.5 | 1.000023 |

STATION ALTITUDE 3969.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 178

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII. (CONT)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DIRECTION (TN) DEGREES | WIND SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|--------------------------------|---------------------|---------------------------|
| 63500.0 | 59.8 | -68.0 | 101.6 | 558.0 | 279.9 | 36.6 | 1.000023 | |
| 64000.0 | 58.3 | -67.6 | 98.9 | 558.5 | 277.5 | 36.9 | 1.000022 | |
| 64500.0 | 56.9 | -66.6 | 95.9 | 559.9 | 275.5 | 37.2 | 1.000021 | |
| 65000.0 | 55.5 | -65.5 | 93.1 | 561.4 | 274.7 | 37.7 | 1.000021 | |
| 65500.0 | 54.1 | -64.5 | 90.3 | 562.8 | 273.8 | 38.3 | 1.000020 | |
| 66000.0 | 52.7 | -63.4 | 87.6 | 564.2 | 273.7 | 37.3 | 1.000020 | |
| 66500.0 | 51.4 | -62.7 | 85.1 | 565.1 | 274.2 | 35.4 | 1.000019 | |
| 67000.0 | 50.2 | -62.5 | 83.0 | 565.4 | 274.7 | 33.4 | 1.000018 | |
| 67500.0 | 48.9 | -62.5 | 80.9 | 565.5 | 275.6 | 30.6 | 1.000018 | |
| 68000.0 | 47.7 | -62.4 | 78.9 | 565.6 | 276.7 | 27.8 | 1.000018 | |
| 68500.0 | 46.6 | -62.3 | 77.0 | 565.6 | 278.0 | 25.2 | 1.000017 | |
| 69000.0 | 45.4 | -61.7 | 74.9 | 566.5 | 279.2 | 23.7 | 1.000017 | |
| 69500.0 | 44.3 | -60.0 | 72.4 | 568.8 | 280.5 | 22.2 | 1.000016 | |
| 70000.0 | 43.2 | -58.5 | 70.2 | 570.7 | 281.7 | 20.6 | 1.000016 | |
| 70500.0 | 42.2 | -58.7 | 68.6 | 570.4 | 282.0 | 18.4 | 1.000015 | |
| 71000.0 | 41.2 | -59.0 | 67.0 | 570.2 | 282.5 | 16.3 | 1.000015 | |
| 71500.0 | 40.2 | -59.2 | 65.4 | 569.9 | 282.8 | 14.4 | 1.000015 | |
| 72000.0 | 39.2 | -59.4 | 63.9 | 569.6 | 282.7 | 12.8 | 1.000014 | |
| 72500.0 | 38.3 | -59.6 | 62.4 | 569.3 | 282.6 | 11.3 | 1.000014 | |
| 73000.0 | 37.3 | -59.8 | 61.0 | 569.0 | 282.4 | 10.8 | 1.000014 | |
| 73500.0 | 36.4 | -60.0 | 59.5 | 568.7 | 282.2 | 11.0 | 1.000013 | |
| 74000.0 | 35.5 | -60.3 | 58.2 | 568.4 | 282.1 | 11.3 | 1.000013 | |
| 74500.0 | 34.7 | -60.5 | 56.8 | 568.1 | 282.4 | 13.3 | 1.000013 | |
| 75000.0 | 33.8 | -60.7 | 55.5 | 567.9 | 282.8 | 16.0 | 1.000012 | |
| 75500.0 | 33.0 | -60.4 | 54.1 | 568.2 | 283.1 | 18.7 | 1.000012 | |
| 76000.0 | 32.2 | -59.7 | 52.6 | 569.2 | 283.1 | 20.6 | 1.000012 | |
| 76500.0 | 31.4 | -58.9 | 51.1 | 570.3 | 283.1 | 22.2 | 1.000011 | |
| 77000.0 | 30.7 | -58.1 | 49.7 | 571.3 | 283.1 | 23.9 | 1.000011 | |
| 77500.0 | 29.9 | -57.4 | 48.4 | 572.2 | 282.8 | 23.6 | 1.000011 | |
| 78000.0 | 29.2 | -57.9 | 47.3 | 571.5 | 282.5 | 22.9 | 1.000011 | |

STATION ALTITUDE 3989.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 178

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII. (CONT)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

| 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 | DEWPOINT DEGREES | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 76500.0 | 28.5 | -58.4 | | 46.3 | 570.9 | 282.2 | 22.2 | 1.000010 | |
| 79000.0 | 27.8 | -57.7 | | 45.0 | 571.9 | 283.8 | 22.6 | 1.000010 | |
| 79500.0 | 27.2 | -56.6 | | 43.7 | 573.2 | 285.6 | 23.3 | 1.000010 | |
| 80000.0 | 26.5 | -55.6 | | 42.5 | 574.6 | 287.3 | 23.9 | 1.000009 | |
| 80500.0 | 25.9 | -54.7 | | 41.3 | 575.7 | 289.5 | 24.0 | 1.000009 | |
| 81000.0 | 25.3 | -54.4 | | 40.3 | 576.2 | 291.7 | 24.1 | 1.000009 | |
| 81500.0 | 24.7 | -54.0 | | 39.2 | 576.7 | 293.9 | 24.2 | 1.000009 | |
| 82000.0 | 24.1 | -53.7 | | 38.3 | 577.1 | 294.1 | 23.4 | 1.000009 | |
| 82500.0 | 23.5 | -53.3 | | 37.3 | 577.6 | 294.0 | 22.5 | 1.000008 | |
| 83000.0 | 23.0 | -53.0 | | 36.4 | 578.0 | 293.9 | 21.5 | 1.000008 | |
| 83500.0 | 22.4 | -52.7 | | 35.4 | 578.5 | 292.0 | 22.4 | 1.000008 | |
| 84000.0 | 21.9 | -52.1 | | 34.5 | 579.2 | 290.0 | 23.3 | 1.000008 | |
| 84500.0 | 21.4 | -51.5 | | 33.6 | 580.0 | 288.4 | 24.4 | 1.000007 | |
| 85000.0 | 20.9 | -50.8 | | 32.7 | 580.9 | 287.6 | 25.8 | 1.000007 | |
| 85500.0 | 20.4 | -50.2 | | 31.9 | 581.7 | 286.8 | 27.2 | 1.000007 | |
| 86000.0 | 19.9 | -49.5 | | 31.1 | 582.6 | 285.9 | 26.4 | 1.000007 | |
| 86500.0 | 19.5 | -49.1 | | 30.3 | 583.2 | 284.6 | 29.0 | 1.000007 | |
| 87000.0 | 19.0 | -48.6 | | 29.5 | 583.8 | 283.3 | 29.7 | 1.000007 | |
| 87500.0 | 18.6 | -48.1 | | 28.8 | 584.4 | 281.3 | 30.6 | 1.000006 | |
| 88000.0 | 18.2 | -47.7 | | 28.1 | 585.0 | 278.7 | 31.6 | 1.000006 | |
| 88500.0 | 17.8 | -47.2 | | 27.4 | 585.6 | 276.3 | 32.7 | 1.000006 | |
| 89000.0 | 17.4 | -46.7 | | 26.7 | 586.2 | 274.3 | 33.8 | 1.000006 | |
| 89500.0 | 17.0 | -46.3 | | 26.0 | 586.8 | 272.5 | 34.9 | 1.000006 | |
| 90000.0 | 16.6 | -45.8 | | 25.4 | 587.4 | 270.9 | 36.0 | 1.000006 | |
| 90500.0 | 16.2 | -45.3 | | 24.8 | 588.0 | 271.8 | 37.8 | 1.000006 | |
| 91000.0 | 15.6 | -44.8 | | 24.1 | 588.6 | 272.9 | 39.6 | 1.000005 | |
| 91500.0 | 15.5 | -44.4 | | 23.5 | 589.2 | 274.0 | 41.5 | 1.000005 | |
| 92000.0 | 15.1 | -43.9 | | 23.0 | 589.8 | 276.8 | 44.0 | 1.000005 | |
| 92500.0 | 14.8 | -43.4 | | 22.4 | 590.4 | 279.3 | 46.6 | 1.000005 | |
| 93000.0 | 14.4 | -43.0 | | 21.8 | 591.0 | 281.4 | 48.7 | 1.000005 | |

STATION ALTITUDE 3969.00 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 178

UPPER AIR DATA
 0740020178
 WHITE SANDS
 TABLE VIII. (CONT)

GEODETIC COORDINATES
 32.40043 LAT NEG
 106.37033 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT DEGREES | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DIRECTION DEGREES(TN) | WIND SPEED KNOTS | INDEX OF REFRACTION |
|-----------------------------|--------------------|-------------------------|------------------------------|-------------------|------------------------|----------------------|----------------------------|------------------|---------------------|
| 93500.0 | 14.1 | -42.3 | | | 21.3 | 592.0 | 282.8 | 48.6 | 1.000005 |
| 94000.0 | 13.8 | -41.4 | | | 20.7 | 593.1 | 284.3 | 48.5 | 1.000005 |
| 94500.0 | 13.5 | -40.5 | | | 20.2 | 594.2 | 285.4 | 48.1 | 1.000004 |
| 95000.0 | 13.2 | -39.7 | | | 19.7 | 595.3 | 285.8 | 46.8 | 1.000004 |
| 95500.0 | 12.9 | -38.8 | | | 19.2 | 596.4 | 286.2 | 45.5 | 1.000004 |
| 96000.0 | 12.6 | -37.9 | | | 18.7 | 597.5 | | | 1.000004 |
| 96500.0 | 12.3 | -37.1 | | | 18.2 | 598.6 | | | 1.000004 |
| 97000.0 | 12.1 | -36.2 | | | 17.7 | 599.7 | | | 1.000004 |

STATION ALTITUDE 3469.00 FEET MSL
 15 MAR. 78
 ASCENSION NO. 178

MANDATORY LEVELS
 0740020178
 WHITE SANDS
 TABLE IX.

GEODETIC COORDINATES
 32.40043 LAT NEG
 106.37033 LON DEG

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. | | WIND DATA | |
|-----------------------|--------|-------------|---------------------|-----------|-----------------------|-------------|--|
| MILLIBARS | FEET | AIR DEGREES | DEWPOINT CENTIGRADE | PERCENT | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 850.0 | 5065. | 11.1 | -11.6 | 19. | 9999.0 | 9999.0XX | |
| 800.0 | 6710. | 6.7 | -15.3 | 19. | 282.6 | 10.6 | |
| 750.0 | 8432. | 1.9 | -18.2 | 21. | 286.2 | 17.9 | |
| 700.0 | 10240. | -3.2 | -20.8 | 24. | 303.2 | 30.1 | |
| 650.0 | 12147. | -7.3 | -24.6 | 23. | 316.4 | 36.5 | |
| 600.0 | 14182. | -9.4 | -29.2 | 18. | 326.2 | 58.1 | |
| 550.0 | 16380. | -12.1 | -31.4 | 18. | 322.6 | 67.5 | |
| 500.0 | 18747. | -17.6 | -35.6 | 19. | 317.3 | 72.1 | |
| 450.0 | 21301. | -23.7 | -41.0 | 18. | 311.3 | 77.5 | |
| 400.0 | 24098. | -28.3 | -45.1 | 18. | 298.2 | 58.8 | |
| 350.0 | 27200. | -35.4 | -52.8 | 15.** | 280.4 | 66.5 | |
| 300.0 | 30647. | -45.1 | | | 278.3 | 70.5 | |
| 250.0 | 34582. | -49.9 | | | 279.5 | 65.8 | |
| 200.0 | 39243. | -59.9 | | | 276.8 | 77.1 | |
| 175.0 | 41978. | -54.7 | | | 265.6 | 67.8 | |
| 150.0 | 45217. | -56.2 | | | 273.3 | 68.4 | |
| 125.0 | 48953. | -63.2 | | | 273.6 | 71.5 | |
| 100.0 | 53471. | -63.4 | | | 279.9 | 52.7 | |
| 80.0 | 57914. | -66.6 | | | 269.9 | 39.6 | |
| 70.0 | 60561. | -67.0 | | | 283.5 | 38.1 | |
| 60.0 | 63607. | -68.0 | | | 276.4 | 36.8 | |
| 50.0 | 67253. | -62.5 | | | 275.6 | 30.8 | |
| 40.0 | 71810. | -59.2 | | | 282.7 | 12.7 | |
| 30.0 | 77712. | -57.4 | | | 282.5 | 22.9 | |
| 25.0 | 81506. | -54.2 | | | 294.1 | 23.7 | |
| 20.0 | 86243. | -49.6 | | | 284.3 | 29.2 | |
| 15.0 | 92504. | -43.8 | | | 281.1 | 48.7 | |

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

STATION ALTITUDE 4010.40 FEET MSL
 15 MAR. 78
 ASCENSION NO. 1

SIGNIFICANT LEVEL DATA
 0740220001
 NW 30
 TABLE X.

GEODETIC COORDINATES
 32.88497 LAT DEG
 106.49714 LON DEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE | | REL. HUM. PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
| | | AIR DEGREES | DEWPOINT CENTIGRADE | |
| 882.8 | 4010.4 | 15.1 | -9.0 | 18.0 |
| 870.8 | 4392.3 | 13.1 | -10.0 | 19.0 |
| 850.0 | 5056.3 | 11.5 | -10.6 | 20.0 |
| 817.6 | 6113.0 | 7.4 | -10.8 | 26.0 |
| 797.4 | 6788.1 | 7.3 | -10.0 | 28.0 |
| 775.8 | 7526.7 | 5.6 | -13.3 | 24.0 |
| 700.0 | 10241.2 | -2.7 | -18.2 | 29.0 |
| 670.6 | 11350.4 | -5.7 | -20.5 | 30.0 |
| 633.2 | 12818.2 | -8.2 | -24.2 | 26.0 |
| 555.6 | 16126.4 | -11.2 | -29.6 | 20.0 |
| 500.0 | 18744.9 | -17.8 | -32.6 | 26.0 |
| 476.0 | 19942.6 | -21.2 | -35.5 | 26.0 |
| 446.8 | 21463.9 | -24.3 | -39.0 | 24.0 |
| 410.0 | 23501.4 | -27.9 | -43.4 | 21.0 |
| 400.0 | 24081.3 | -28.8 | -43.7 | 22.0 |
| 387.8 | 24805.5 | -30.0 | -44.7 | 22.0 |
| 374.6 | 25613.1 | -30.1 | -44.8 | 22.0 |
| 343.2 | 27630.2 | -35.7 | -49.7 | 22.0 |
| 311.6 | 29802.0 | -41.6 | | |
| 300.0 | 30639.4 | -44.2 | | |
| 260.8 | 33671.2 | -50.3 | | |
| 250.0 | 34572.6 | -51.2 | | |
| 229.2 | 36410.7 | -53.4 | | |
| 205.0 | 38735.7 | -57.9 | | |
| 200.0 | 39245.0 | -57.7 | | |
| 178.0 | 41621.6 | -62.7 | | |
| 174.0 | 42081.0 | -61.4 | | |
| 164.2 | 43273.9 | -55.1 | | |
| 153.6 | 44664.1 | -56.0 | | |
| 150.0 | 45155.5 | -57.4 | | |

STATION ALTITUDE 4010.40 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 1

UPPER AIR DATA
 0740220C01
 NW 30
 TABLE XI.

GEODETIC COORDINATES
 32.88497 LAT DEG
 100.49714 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT DEGREES | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|----------------------------|---------------------------------|----------------------|---------------------------|-------------------------|------------------------------------|----------------|---------------------------|
| 4010.4 | 882.8 | 15.1 | -9.0 | 18.0 | 1065.5 | 661.9 | 120.0 | 15.9 | 1.000251 |
| 4500.0 | 867.4 | 12.8 | -10.1 | 19.2 | 1055.3 | 659.2 | | | 1.000248 |
| 5000.0 | 851.7 | 11.6 | -10.6 | 19.9 | 1040.6 | 657.8 | | | 1.000245 |
| 5500.0 | 836.2 | 9.8 | -10.6 | 22.5 | 1028.4 | 655.7 | | | 1.000242 |
| 6000.0 | 821.0 | 7.8 | -10.8 | 25.4 | 1016.6 | 653.4 | | | 1.000239 |
| 6500.0 | 806.0 | 7.3 | -10.3 | 27.1 | 999.7 | 652.9 | | | 1.000236 |
| 7000.0 | 791.1 | 6.8 | -10.9 | 26.9 | 983.2 | 652.3 | | | 1.000232 |
| 7500.0 | 776.6 | 5.7 | -13.2 | 24.1 | 969.3 | 650.9 | | | 1.000227 |
| 8000.0 | 762.0 | 4.2 | -14.1 | 24.9 | 956.3 | 649.1 | | | 1.000223 |
| 8500.0 | 747.7 | 2.6 | -15.0 | 25.8 | 943.6 | 647.3 | | | 1.000220 |
| 9000.0 | 733.7 | 1.1 | -15.9 | 26.7 | 931.1 | 645.4 | | | 1.000216 |
| 9500.0 | 719.9 | -0.4 | -16.8 | 27.6 | 918.8 | 643.6 | 302.2 | 20.1 | 1.000213 |
| 10000.0 | 706.4 | -2.0 | -17.8 | 28.6 | 906.7 | 641.8 | 301.7 | 22.7 | 1.000210 |
| 10500.0 | 693.0 | -3.4 | -18.7 | 29.2 | 894.3 | 640.1 | 306.2 | 25.3 | 1.000206 |
| 11000.0 | 679.8 | -4.8 | -19.7 | 29.7 | 881.7 | 638.5 | 311.1 | 28.0 | 1.000203 |
| 11500.0 | 666.7 | -6.0 | -20.8 | 29.6 | 868.7 | 637.0 | 313.2 | 29.7 | 1.000200 |
| 12000.0 | 653.8 | -6.8 | -22.1 | 28.2 | 854.6 | 636.0 | 314.8 | 31.6 | 1.000196 |
| 12500.0 | 641.1 | -7.7 | -23.4 | 26.9 | 840.8 | 634.9 | 315.0 | 34.7 | 1.000192 |
| 13000.0 | 628.7 | -8.4 | -24.5 | 25.7 | 826.7 | 634.1 | 316.0 | 38.8 | 1.000189 |
| 13500.0 | 616.4 | -8.8 | -25.3 | 24.8 | 811.9 | 633.5 | 318.0 | 44.4 | 1.000185 |
| 14000.0 | 604.3 | -9.3 | -26.1 | 23.9 | 797.4 | 633.0 | 320.5 | 49.6 | 1.000182 |
| 14500.0 | 592.5 | -9.7 | -26.9 | 22.9 | 783.2 | 632.4 | 323.0 | 54.8 | 1.000178 |
| 15000.0 | 580.9 | -10.2 | -27.7 | 22.0 | 769.2 | 631.9 | 324.1 | 57.8 | 1.000175 |
| 15500.0 | 569.5 | -10.6 | -28.6 | 21.1 | 755.5 | 631.3 | 324.5 | 60.2 | 1.000171 |
| 16000.0 | 558.4 | -11.1 | -29.4 | 20.2 | 742.0 | 630.8 | 324.2 | 61.5 | 1.000168 |
| 16500.0 | 547.3 | -12.1 | -30.0 | 20.9 | 730.2 | 629.5 | 324.3 | 63.0 | 1.000165 |
| 17000.0 | 536.4 | -13.4 | -30.5 | 22.0 | 719.2 | 628.0 | 324.3 | 64.3 | 1.000163 |
| 17500.0 | 525.7 | -14.7 | -31.1 | 23.1 | 708.3 | 626.4 | 324.0 | 64.5 | 1.000160 |
| 18000.0 | 515.2 | -15.9 | -31.6 | 24.3 | 697.6 | 624.9 | 322.9 | 63.9 | 1.000158 |
| 18500.0 | 505.0 | -17.2 | -32.3 | 25.4 | 687.0 | 623.4 | 321.6 | 63.5 | 1.000155 |
| | | | | | | | 320.9 | 64.6 | 1.000155 |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 4010.40 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 1

UPPER AIR DATA
 0740220001
 NW 30
 TABLE XI. (CONT)

GEODETTIC COORDINATES
 32.88497 LAT DEG
 106.49714 LONG DEG

| 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 | DEWPOINT CENTIGRADE | | | | DIRECTION DEGREES(TN) | SPEED KNOTS | |
| 19000.0 | 494.8 | -18.5 | -33.2 | 26.0 | 676.8 | 621.7 | 320.5 | 65.5 | 1.000153 |
| 19500.0 | 484.7 | -19.9 | -34.4 | 26.0 | 666.7 | 620.0 | 320.2 | 66.3 | 1.000150 |
| 20000.0 | 474.9 | -21.3 | -35.7 | 25.9 | 656.7 | 618.3 | 319.2 | 67.2 | 1.000148 |
| 20500.0 | 465.1 | -22.3 | -36.8 | 25.3 | 645.6 | 617.0 | 318.3 | 68.2 | 1.000145 |
| 21000.0 | 455.5 | -23.4 | -37.9 | 24.6 | 635.1 | 615.8 | 317.4 | 69.6 | 1.000143 |
| 21500.0 | 446.1 | -24.4 | -39.1 | 23.9 | 624.6 | 614.5 | 316.6 | 71.7 | 1.000140 |
| 22000.0 | 436.8 | -25.2 | -40.1 | 23.2 | 613.7 | 613.4 | 315.5 | 74.2 | 1.000138 |
| 22500.0 | 427.7 | -26.1 | -41.2 | 22.5 | 603.1 | 612.3 | 314.1 | 75.6 | 1.000135 |
| 23000.0 | 418.8 | -27.0 | -42.3 | 21.7 | 592.6 | 611.2 | 312.8 | 76.6 | 1.000133 |
| 23500.0 | 410.0 | -27.9 | -43.4 | 21.0 | 582.3 | 610.1 | 311.5 | 74.4 | 1.000131 |
| 24000.0 | 401.4 | -28.7 | -43.7 | 21.9 | 571.9 | 609.2 | 309.8 | 66.1 | 1.000128 |
| 24500.0 | 392.9 | -29.5 | -44.3 | 22.0 | 561.7 | 608.1 | 305.4 | 52.6 | 1.000126 |
| 25000.0 | 384.6 | -30.0 | -44.8 | 22.0 | 551.0 | 607.5 | 296.0 | 43.7 | 1.000123 |
| 25500.0 | 376.4 | -30.1 | -44.8 | 22.0 | 539.4 | 607.4 | 291.9 | 55.2 | 1.000121 |
| 26000.0 | 368.4 | -31.2 | -45.8 | 22.0 | 530.3 | 606.0 | 290.9 | 63.4 | 1.000119 |
| 26500.0 | 360.5 | -32.6 | -47.0 | 22.0 | 521.9 | 604.3 | 290.4 | 71.2 | 1.000117 |
| 27000.0 | 352.7 | -34.0 | -48.2 | 22.0 | 513.6 | 602.5 | 288.3 | 71.7 | 1.000415 |
| 27500.0 | 345.1 | -35.3 | -49.4 | 22.0 | 505.6 | 600.8 | 285.9 | 71.2 | 1.000113 |
| 28000.0 | 337.6 | -36.7 | -52.1 | 18.3** | 497.4 | 599.1 | 284.0 | 70.1 | 1.000111 |
| 28500.0 | 330.2 | -38.1 | -55.9 | 13.2** | 489.3 | 597.3 | 282.3 | 68.9 | 1.000109 |
| 29000.0 | 322.9 | -39.4 | -60.8 | 8.1** | 481.3 | 595.6 | 281.1 | 67.8 | 1.000107 |
| 29500.0 | 315.8 | -40.8 | -68.9 | 3.1** | 473.5 | 593.9 | 280.0 | 66.8 | 1.000105 |
| 30000.0 | 308.8 | -42.2 | | | 465.8 | 592.0 | 278.6 | 64.6 | 1.000104 |
| 30500.0 | 301.9 | -43.8 | | | 458.5 | 590.0 | 277.5 | 62.6 | 1.000102 |
| 31000.0 | 295.0 | -44.9 | | | 450.4 | 588.5 | 277.4 | 61.4 | 1.000100 |
| 31500.0 | 288.3 | -45.9 | | | 442.0 | 587.2 | 277.9 | 60.9 | 1.000098 |
| 32000.0 | 281.7 | -46.9 | | | 433.9 | 585.9 | 278.7 | 61.2 | 1.000097 |
| 32500.0 | 275.3 | -47.9 | | | 425.8 | 584.6 | 280.0 | 63.6 | 1.000095 |
| 33000.0 | 269.0 | -48.9 | | | 418.0 | 583.3 | 281.4 | 65.0 | 1.000093 |
| 33500.0 | 262.9 | -50.0 | | | 410.3 | 582.0 | 282.1 | 63.1 | 1.000091 |

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

STATION ALTITUDE 4010.40 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 1

UPPER AIR DATA
 074022JCO1
 NW 30
 TABLE XI. (CONT)

GEODETTIC COORDINATES
 32.88497 LAT DEG
 106.49714 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE | | REL. HUM. PERCENT | DENSITY GM/CURIC METER | SPEED OF SOUND KNOTS | WIND DATA | | INDEX OF REFRACTION |
|--------------------------------|-----------------------|------------------------------|-----------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
| | | AIR DEGREES CENTIGRADE | DEWPOINT DEGREES CENTIGRADE | | | | DTRECTION DEGREES(TN) | SPEED KNOTS | |
| 34000.0 | 256.8 | -50.6 | | 402.0 | 581.1 | 280.6 | 53.4 | 1.000090 | |
| 34500.0 | 250.9 | -51.1 | | 393.6 | 580.5 | 277.6 | 42.3 | 1.000088 | |
| 35000.0 | 245.0 | -51.7 | | 385.4 | 579.7 | 278.2 | 41.0 | 1.000086 | |
| 35500.0 | 239.3 | -52.3 | | 377.5 | 578.9 | 281.0 | 49.1 | 1.000084 | |
| 36000.0 | 233.7 | -52.9 | | 369.6 | 578.2 | 282.0 | 59.4 | 1.000082 | |
| 36500.0 | 228.2 | -53.6 | | 362.1 | 577.3 | 280.8 | 63.1 | 1.000081 | |
| 37000.0 | 222.8 | -54.5 | | 355.1 | 576.0 | 276.4 | 54.0 | 1.000079 | |
| 37500.0 | 217.5 | -55.5 | | 348.2 | 574.7 | 270.1 | 43.0 | 1.000078 | |
| 38000.0 | 212.4 | -56.5 | | 341.4 | 573.5 | 265.6 | 35.2 | 1.000076 | |
| 38500.0 | 207.3 | -57.4 | | 334.8 | 572.2 | 268.8 | 33.8 | 1.000075 | |
| 39000.0 | 202.4 | -57.8 | | 327.4 | 571.7 | 279.2 | 44.0 | 1.000073 | |
| 39500.0 | 197.5 | -58.2 | | 320.2 | 571.1 | 285.6 | 59.9 | 1.000071 | |
| 40000.0 | 192.7 | -59.3 | | 313.9 | 569.7 | 288.9 | 77.3 | 1.000070 | |
| 40500.0 | 188.1 | -60.3 | | 307.9 | 568.3 | 288.0 | 81.1 | 1.000069 | |
| 41000.0 | 183.5 | -61.4 | | 301.9 | 566.9 | 284.8 | 75.8 | 1.000067 | |
| 41500.0 | 179.1 | -62.4 | | 296.1 | 565.5 | 275.7 | 59.0 | 1.000066 | |
| 42000.0 | 174.7 | -61.6 | | 287.7 | 566.6 | 260.0 | 41.8 | 1.000064 | |
| 42500.0 | 170.5 | -59.2 | | 277.6 | 569.9 | 235.3 | 31.5 | 1.000062 | |
| 43000.0 | 166.4 | -56.5 | | 267.6 | 573.4 | 234.2 | 30.3 | 1.000060 | |
| 43500.0 | 162.4 | -55.2 | | 259.7 | 575.1 | 251.0 | 35.6 | 1.000058 | |
| 44000.0 | 158.6 | -55.6 | | 253.9 | 574.7 | 269.4 | 51.1 | 1.000057 | |
| 44500.0 | 154.8 | -55.9 | | 248.2 | 574.2 | 277.5 | 66.6 | 1.000055 | |
| 45000.0 | 151.1 | -57.0 | | 243.5 | 572.8 | 281.6 | 80.2 | 1.000054 | |
| 45500.0 | 147.5 | -58.2 | | 239.0 | 571.2 | 282.9 | 88.1 | 1.000053 | |
| 46000.0 | 144.0 | -59.3 | | 234.5 | 569.7 | 282.4 | 90.3 | 1.000052 | |
| 46500.0 | 140.5 | -59.9 | | 229.5 | 568.9 | 280.5 | 86.2 | 1.000051 | |
| 47000.0 | 137.1 | -60.2 | | 224.2 | 568.5 | 275.5 | 71.3 | 1.000050 | |
| 47500.0 | 133.7 | -60.5 | | 219.1 | 568.1 | 268.9 | 58.8 | 1.000049 | |
| 48000.0 | 130.5 | -60.8 | | 214.1 | 567.7 | 260.2 | 49.7 | 1.000048 | |
| 48500.0 | 127.3 | -59.9 | | 208.1 | 568.9 | 253.4 | 44.8 | 1.000046 | |

UPPER AIR DATA
 0740220J01
 NW 30
 TABLE XI. (CONT)

STATION ALTITUDE 4010.40 FEET MSL
 15 MAR. 78 1557 HRS MST
 ASCENSION NO. 1

GEODETIC COORDINATES
 32.88497 LAT DEG
 106.49714 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES DEWPOINT DEGREES CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION (TM) DEGREES | SPEED KNOTS | INDEX OF REFRACTION |
|--------------------------------|-----------------------|--|---------------------|------------------------------|----------------------------|--|----------------|---------------------------|
| 49000.0 | 124.3 | -58.6 | | 201.6 | 570.6 | 257.7 | 47.0 | 1.000045 |
| 49500.0 | 121.3 | -59.0 | | 197.2 | 570.2 | 265.5 | 51.6 | 1.000044 |
| 50000.0 | 118.3 | -59.3 | | 192.8 | 569.7 | 272.8 | 55.8 | 1.000043 |
| 50500.0 | 115.5 | -59.6 | | 188.4 | 569.3 | 278.1 | 57.5 | 1.000042 |
| 51000.0 | 112.7 | -60.6 | | 184.7 | 567.9 | 282.8 | 60.0 | 1.000041 |
| 51500.0 | 109.9 | -61.3 | | 180.8 | 567.0 | 286.9 | 64.1 | 1.000040 |
| 52000.0 | 107.3 | -61.8 | | 176.8 | 566.4 | 288.3 | 66.3 | 1.000039 |
| 52500.0 | 104.6 | -62.2 | | 172.8 | 565.8 | 288.2 | 67.4 | 1.000038 |
| 53000.0 | 102.1 | -62.7 | | 169.0 | 565.1 | 286.6 | 67.4 | 1.000037 |
| 53500.0 | 99.6 | -63.2 | | 165.2 | 564.4 | | | 1.000036 |
| 54000.0 | 97.1 | -64.0 | | 161.7 | 563.4 | | | 1.000036 |

STATION ALTITUDE 4010.40 FEET MSL
 15 MAR. 78
 ASCENSION NO. 1

MANDATORY LEVELS
 0740220001
 NW 30
 TABLE XII.

GEODETTIC COORDINATES
 32.88497 LAT DEG
 106.49714 LON DEG

| PRESSURE GEOPOTENTIAL | | TEMPERATURE | | REL. HUM. | WIND DATA | |
|-----------------------|--------|----------------|------------------------|-----------|--------------------------|----------------|
| MILLIBARS | FEET | AIR DEGREES | DEWPOINT CENTIGRADE | PERCENT | DIRECTION DEGREES(TM) | SPEED KNOTS |
| 850.0 | 5055. | 11.5 | -10.6 | 20. | 9999.0 | 9999.OXX |
| 800.0 | 6699. | 7.3 | -10.1 | 28. | 9999.0 | 9999.OXX |
| 750.0 | 8428. | 2.9 | -14.9 | 26. | 9999.0 | 9999.OXX |
| 700.0 | 10242. | -2.7 | -18.2 | 29. | 308.7 | 26.6 |
| 650.0 | 12152. | -7.1 | -22.5 | 28. | 315.0 | 35.7 |
| 600.0 | 14169. | -9.4 | -26.4 | 24. | 323.5 | 56.1 |
| 550.0 | 16386. | -11.8 | -29.9 | 21. | 324.4 | 64.2 |
| 500.0 | 18753. | -17.8 | -32.6 | 26. | 320.6 | 65.2 |
| 450.0 | 21305. | -24.0 | -38.6 | 24. | 316.9 | 70.9 |
| 400.0 | 24098. | -28.8 | -43.7 | 22. | 308.9 | 62.6 |
| 350.0 | 27205. | -34.4 | -48.6 | 22. | 267.2 | 71.4 |
| 300.0 | 30671. | -44.2 | | | 277.5 | 62.1 |
| 250.0 | 34614. | -51.2 | | | 276.2 | 38.5 |
| 200.0 | 39301. | -57.7 | | | 284.3 | 55.4 |
| 175.0 | 42031. | -61.7 | | | 254.5 | 38.3 |
| 150.0 | 45233. | -57.4 | | | 282.5 | 85.4 |
| 125.0 | 48972. | -58.5 | | | 259.1 | 47.9 |
| 100.0 | 53527. | -63.1 | | | | |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.