AD-A127 353 19308B MLRS MISSILE NUMBERS BC-645 BC-649 BC-646 BC-650 1/1
BC-648 BC-651 ROU..(U) ARMY ELECTRONICS RESEARCH AND
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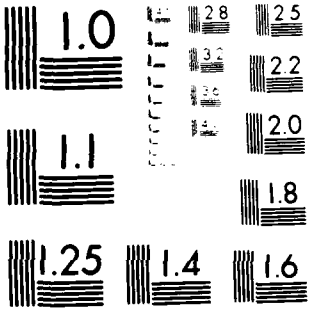


MICROCOPY RESOLUTION TEST CHART

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16 Feb 83
DR 1290
AD

METEOROLOGICAL DATA REPORT

19308B MLRS
Missile Number: BC-645, BC-649, BC-646
BC-650, BC-648, BC-651
Round Numbers: V-419/JOT-25, V-420/JOT-26, V-421/JOT-27
V-422/JOT-28, V-423/JOT-29, V-424/JOT-30
16 February 1983

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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# REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER
DR 1291

2. GOVT ACCESSION NO.
[illegible] 353

3. RECIPIENT'S CATALOG NUMBER

4. TITLE (and Subtitle)
19308B MLRS
Missile Number BC-645,BC-649,BC-646, BC-650,BC-648, BC-651, Round Number V-419/JOT-25,V-420/JOT-26, V-421/JOT-27,V-422/JOT-28,V-423/JOT-29,V-424/JOT-30

5. TYPE OF REPORT & PERIOD COVERED

6. PERFORMING ORG. REPORT NUMBER

7. AUTHOR(s)
White Sands Meteorological Team

8. CONTRACT OR GRANT NUMBER(s)
DA Task 1F665702D127-02

9. PERFORMING ORGANIZATION NAME AND ADDRESS

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS

11. CONTROLLING OFFICE NAME AND ADDRESS
US Army Electronics Research and Development Cmd
Atmospheric Sciences Laboratory
White Sands Missile Range, New Mexico 88002

12. REPORT DATE
February 1983

13. NUMBER OF PAGES
33

14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)
US Army Electronics Research and Development Cmd
Adelphi, MD 20783

15. SECURITY CLASS. (of this report)
UNCLASSIFIED

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)
[illegible]
Approved [illegible]
Distribution [illegible]

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)
Approved for public release; distribution unlimited.

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)
Meteorological data gathered for the launching of the 19308B MLRS, Missile Number BC-645, BC-649, BC-646, BC-650, BC-648, BC-651, Round Number V-419/JOT-25, V-420/JOT-26, V-421/JOT-27, V-422/JOT-28, V-423/JOT-29, V-424/JOT-30 are presented in tabular form.

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CONTENTS


| | PAGE |
|---|---|
| INTRODUCTION | 1 |
| DISCUSSION | 1 |
| GENERAL AREA MAP | 2 |
| LAUNCH AREA DIAGRAM | 3 |
| TABLES | |
| 1. Surface Observation Taken at 0930 MST at Brillo | 4 |
| 2. Anemometer Measured Wind Data at 30 FT. AGL | 5 |
| 3. Anemometer Measured Wind Data at 60 FT. AGL | 6 |
| 4. Anemometer Measured Wind Data at 90 FT. AGL | 7 |
| 5. Launch and Impact Area Pilot-Balloon Measured Wind Data | 8 |
| 6. Aiming and T-Time Computer Met Messages | 9 |
| 7. E-28 Significant Level Data at 0630 MST | 10 |
| 8. E-28 Upper Air Data at 0630 MST | 12 |
| 9. E-28 Mandatory Levels at 0630 MST | 16 |
| 10. NW-30 Significant Level Data at 0730 MST | 17 |
| 11. NW-30 Upper Air Data at 0730 MST | 19 |
| 12. NW-30 Mandatory Levels at 0730 MST | 23 |
| 13. E-28 Significant Level Data at 0930 MST | 24 |
| 14. E-28 Upper Air Data at 0930 MST | 25 |
| 15. E-28 Mandatory Levels at 0930 MST | 29 |



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## INTRODUCTION

19303B MLRS, Missile Numbers BC-645, BC-649, BC-646, BC-650, BC-648 and BC-651 Round Numbers V-419/JOT-25 Thru V-424/JOT-30, were launched from LC-33, White Sands Missile Range (WSMR). New Mexico, at 0940:43, 0940:52, 0940:56, 0941:01 and 0941:05 MST, 16 Feb 83. The scheduled launch times were 0930 MST with a 4.5 second separation.

## DISCUSSION

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

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{o}C$), relative humidity, dew point ($^{o}C$), density ($gm/m^3$), wind direction and speed, and cloud cover were made at the Brillo Met Site at T-0 minutes.

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

b. Upper Air

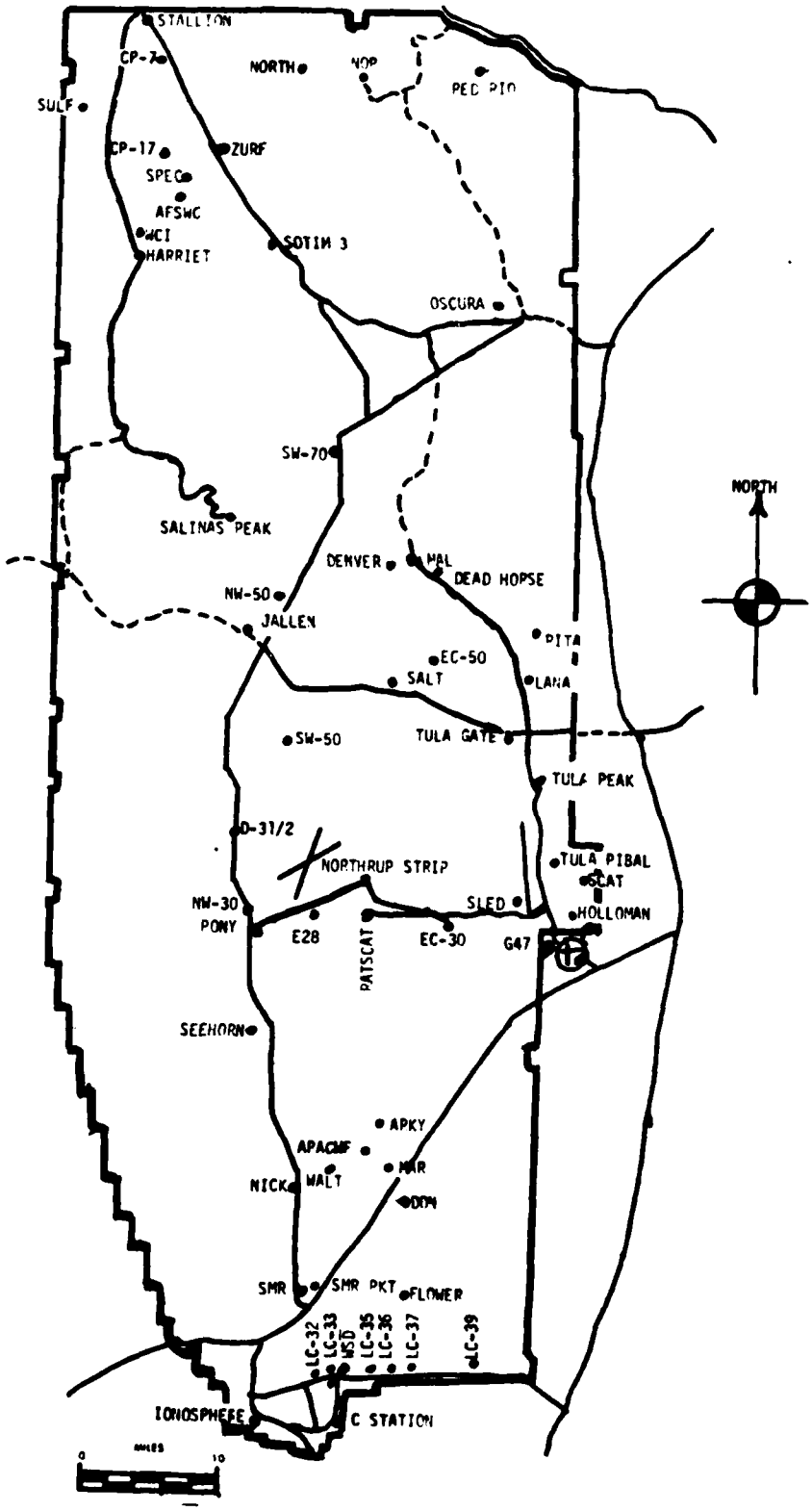
(1) Low level wind data were obtained from pilot-balloon observations at:

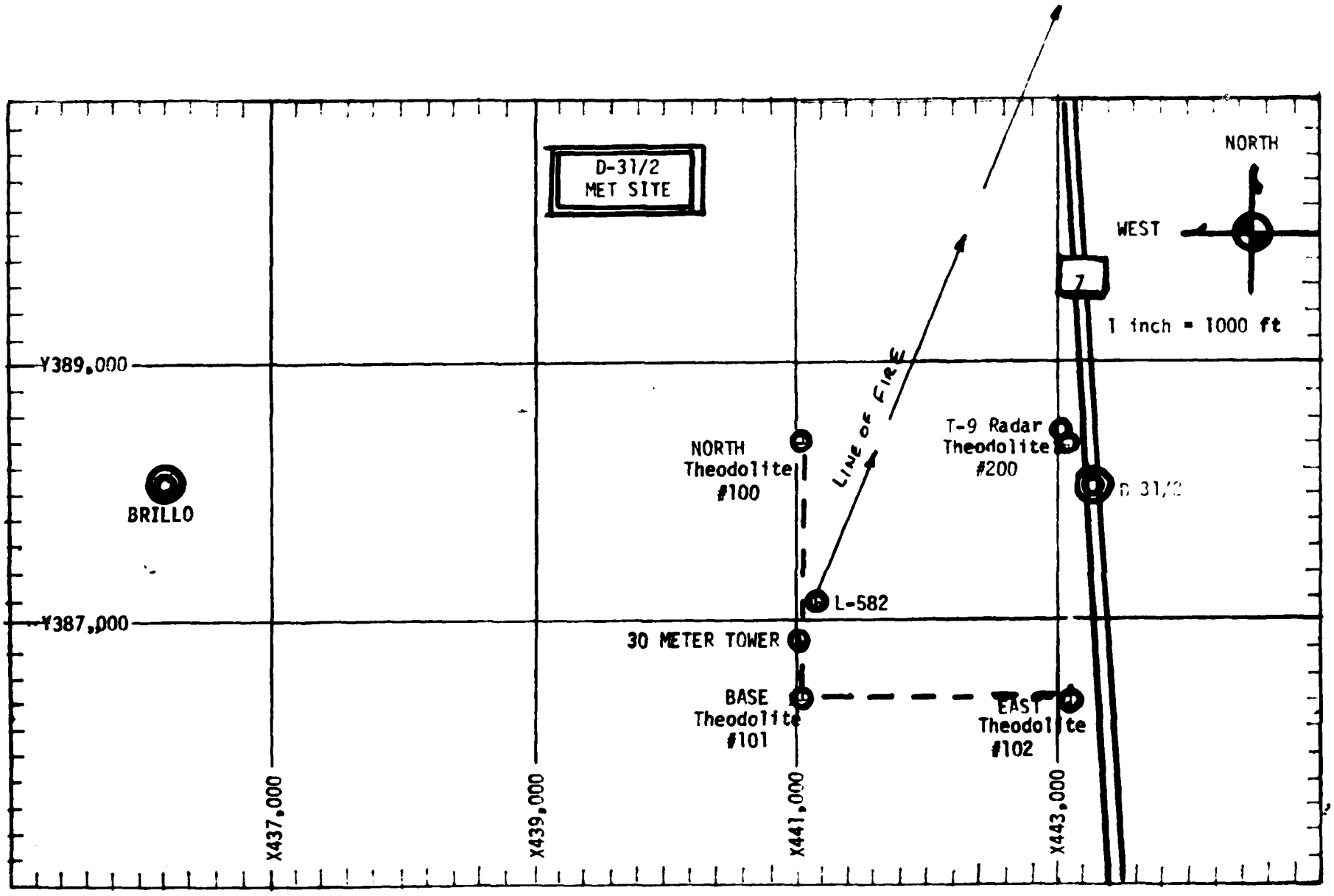
| SITE AND ALTITUDE | |
|---|---|
| D 3½ | 2 km |
| Deadhorse | 2 km |

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

| SITE AND TIME | |
|---|---|
| E-28 | 0630 MST |
| NW-30 | 0730 MST |
| E-28 | 0930 MST |

# WSMR METEOROLOGICAL SITES




D-31/2
MET SITE
NORTH
WEST
1 inch = 1000 ft
Y389,000
Y387,000
BRILLO
NORTH
Theodolite
#100
LINE OF FIRE
T-9 Radar
Theodolite
#200
D 31/2
L-582
30 METER TOWER
BASE
Theodolite
#101
EAST
Theodolite
#102
X437,000
X439,000
X441,000
X443,000

PROJECT SURFACE OBSERVATION

TABLE 1

STATION BRILLO (MLRS)

DATE 16 (DAY) Feb (MONTH) 83 (YEAR)

X= 441,121.6 Y= 387,107.8 H= 40005.2

| TIME M - - | PRESSURE mbs | TEMPERATURE °F | TEMPERATURE °C | DEW POINT °F | DEW POINT °C | RELATIVE HUMIDITY % | DENSITY gm/m³ | WIND DIRECTION degs Tn | WIND SPEED kts | WIND CHARACTER kts | VISIBILITY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0930 | 879.6 | | 8.1 | | 2.5 | 68 | 1110 | | CALM | | UNL. |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

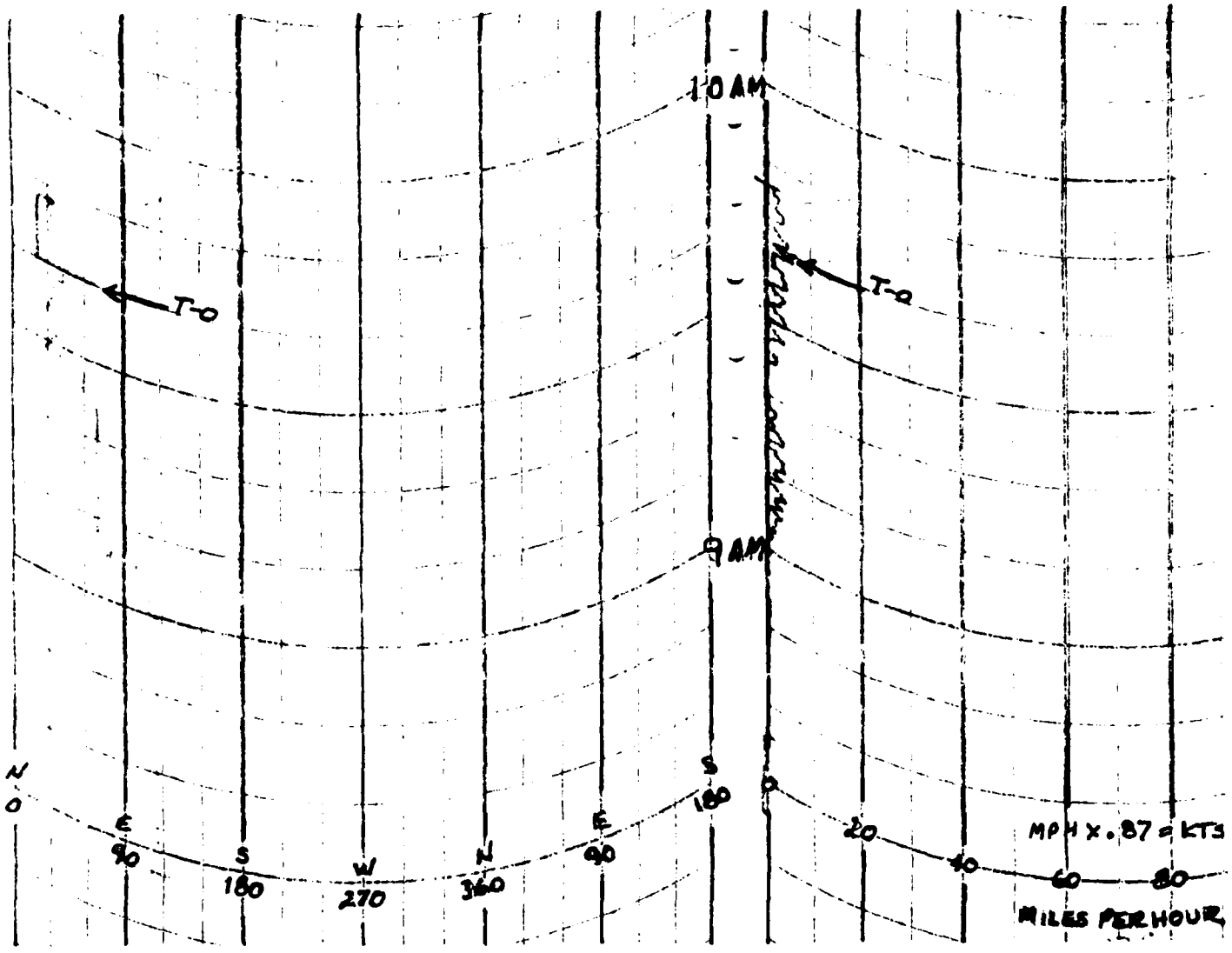
| OBSTRUCTIONS TO VISIBILITY | CLOUDS 1st LAYER AMT | 1st LAYER TYPE | 1st LAYER HGT | 2nd LAYER AMT | 2nd LAYER TYPE | 2nd LAYER HGT | 3rd LAYER AMT | 3rd LAYER TYPE | 3rd LAYER HGT | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| NONE | 2 | CI | 20,000 | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

PSYCHROMETRIC COMPUTATION

| | | | |
|---|---|---|---|
| TIME: MST | | 0930 | |
| DRY BULB TEMP. | | 8.1 | |
| WET BULB TEMP. | | 5.3 | |
| WET BULB DEPR. | | 2.8 | |
| DEW POINT | | 2.5 | |
| RELATIVE HUMID. | | 68 | |

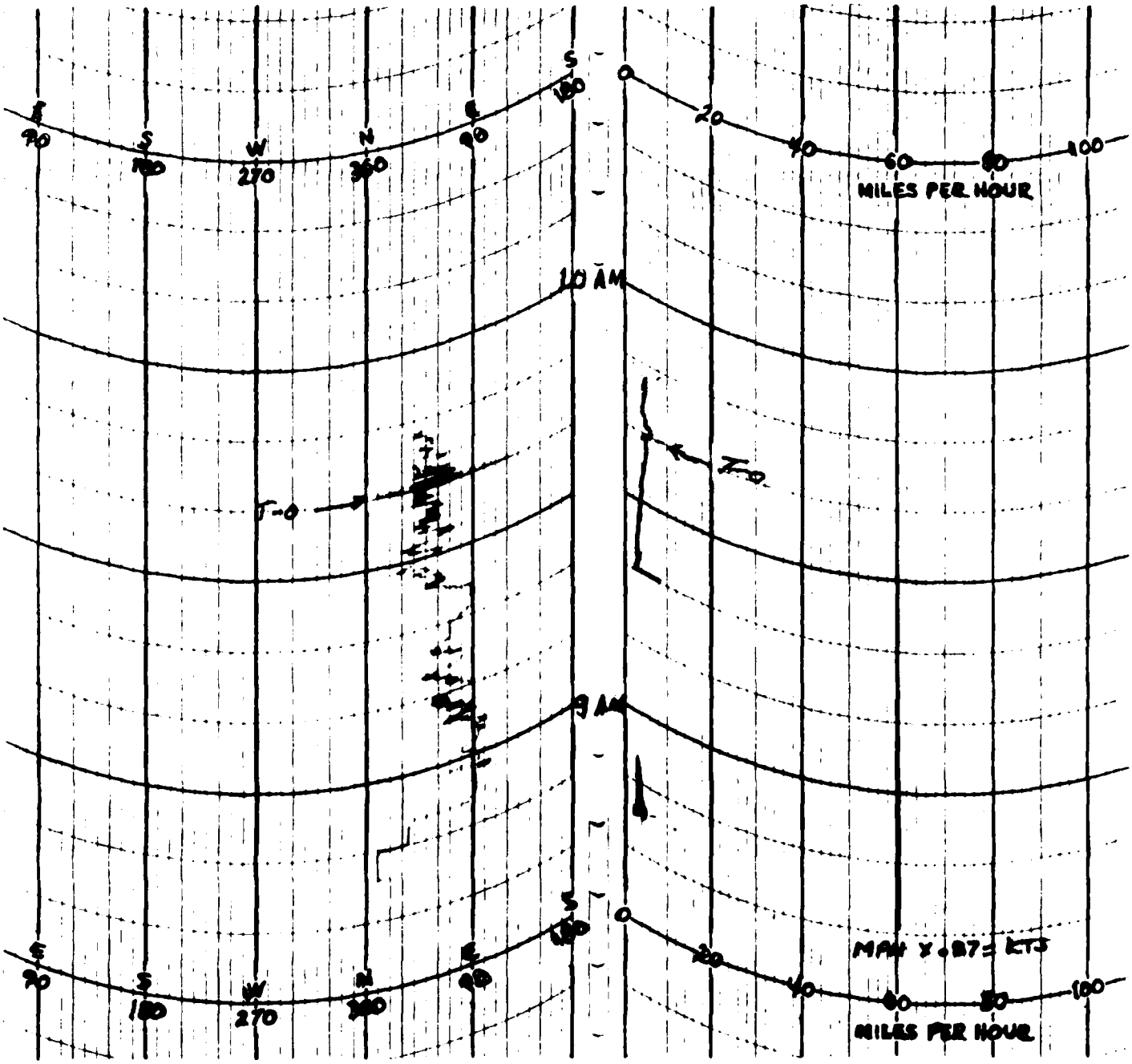
Anemometer Data - [illegible] Level of 30 Meter Tower

[illegible]



ABLE 3 Anemometer Data [illegible] Tower

X= 441,018.71 Y= [illegible] 4,004.[illegible] (BASE)



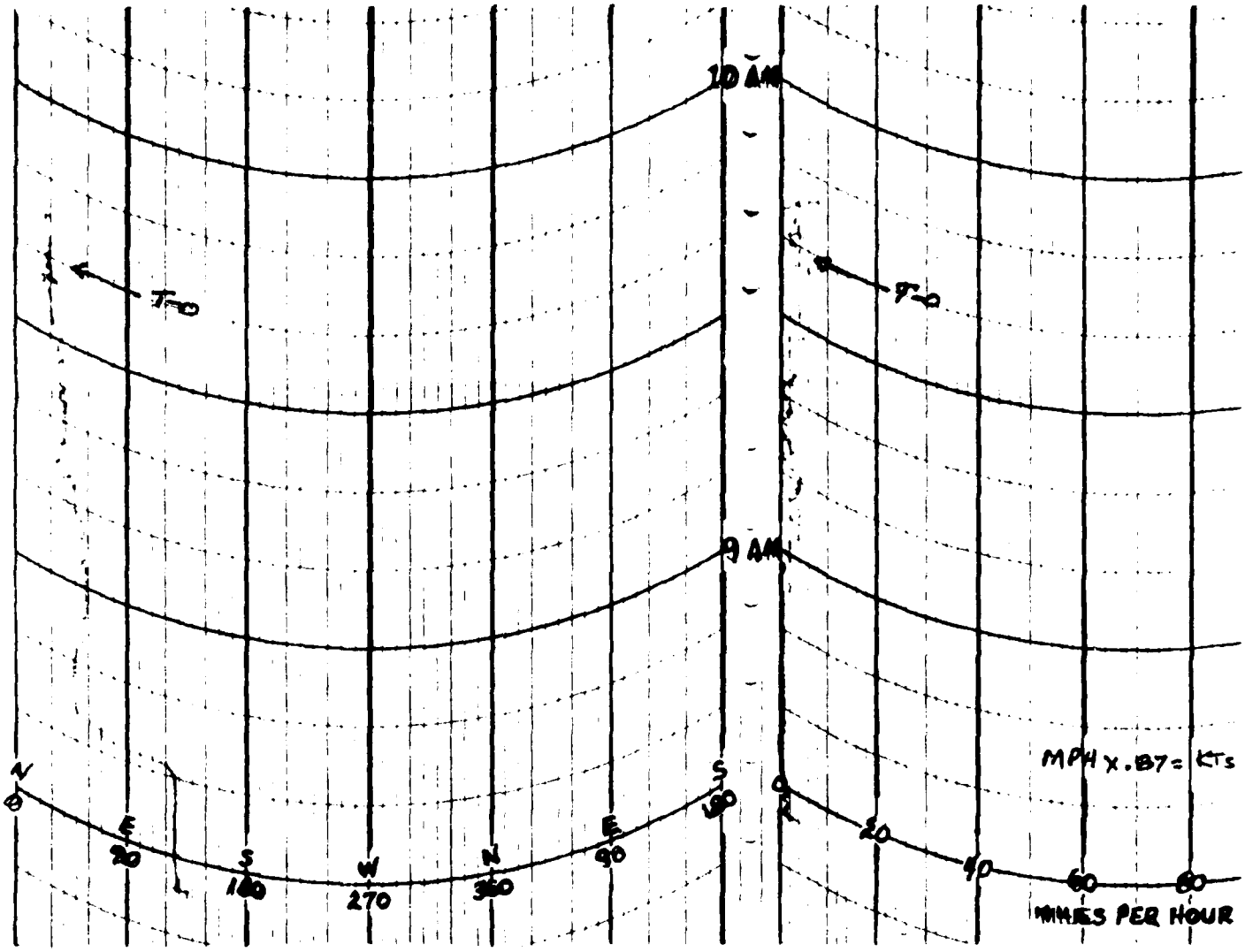

10 AM
9 AM
T=0
T=0
N
0
E
90
S
180
W
270
N
360
E
90
S
180
0
20
40
60
80
MPH x .87 = KTs
MILES PER HOUR

TABLE 5

TWO-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 16 Feb 83

SITE: D 3½
TIME: 0930 MST
WSTM COORDINATES:
X= 441,053.12
Y= 336,316.94
H= 4,008.31

SITE: Deadhorse
TIME: 0930 MST
WSTM COORDINATES:
X= 519,982.11
Y= 490,249.23
H= 4,133.12

| LAYER MIDPOINT METERS AGL | DIRECTION DEGREES | SPEED KNOTS |
|---|---|---|
| SURFACE | 360 | 01 |
| 150 | 345 | 02 |
| 210 | 345 | 03 |
| 270 | 345 | 03 |
| 330 | 345 | 04 |
| 390 | 340 | 04 |
| 500 | 340 | 05 |
| 650 | 340 | 04 |
| 800 | 350 | 04 |
| 950 | 015 | 04 |
| 1150 | 020 | 03 |
| 1350 | 015 | 03 |
| 1550 | 325 | 03 |
| 1750 | 290 | 04 |
| 2000 | 320 | 07 |

| LAYER MIDPOINT METERS AGL | DIRECTION DEGREES | SPEED KNOTS |
|---|---|---|
| SURFACE | | CALM |
| 150 | 021 | 02 |
| 210 | 021 | 03 |
| 270 | 028 | 03 |
| 330 | 041 | 03 |
| 390 | 054 | 03 |
| 500 | 036 | 02 |
| 650 | 328 | 04 |
| 800 | 311 | 05 |
| 950 | 321 | 09 |
| 1150 | 325 | 12 |
| 1350 | 325 | 10 |
| 1550 | 316 | 11 |
| 1750 | 300 | 05 |
| 2000 | 334 | 11 |

All data obtained from double Theodolite Tracked pilot-balloon observations.

TABLE [illegible]

[illegible]IMING AND T-TIME COMPUTER MET MESSAGES

16 February 1[illegible]

| [illegible] | | NW-30 0730 MST | | E-20 0930 MST | |
|---|---|---|---|---|---|
| [illegible] | | METCM1329065 | | METCM1329064 | |
| [illegible] | | 161450122879 | | 161650119881 | |
| [illegible] | [illegible] | 00537002 | 27640079 | 00071004 | 27810881 |
| [illegible] | [illegible] | 01615006 | 27970868 | 01044007 | 27970870 |
| [illegible] | [illegible] | 02608005 | 28200842 | 02576002 | 28200844 |
| [illegible] | [illegible] | 03012006 | 28000802 | 03007003 | 28080804 |
| [illegible] | [illegible] | 04573007 | 27750755 | 04603004 | 27910657 |
| [illegible] | [illegible] | 05527008 | 27530710 | 05551006 | 27640712 |
| [illegible] | [illegible] | 06568013 | 27210667 | 06589011 | 27320669 |
| [illegible] | [illegible] | 07585017 | 26920626 | 07617011 | 27040628 |
| [illegible] | [illegible] | 08572020 | 26710588 | 08544014 | 26780590 |
| [illegible] | [illegible] | 09535022 | 26360551 | 09504020 | 26430553 |
| [illegible] | [illegible] | 10523027 | 25980516 | 10511019 | 26020518 |
| [illegible] | [illegible] | 11531031 | 25530483 | 11511022 | 25580485 |
| [illegible] | 24760436 | 12529034 | 24840436 | 12527023 | 24960438 |
| [illegible] | [illegible] | 13531037 | 24010380 | 13553025 | 24190382 |
| [illegible] | [illegible] | 14556037 | 23250329 | 14559031 | 23320331 |
| [illegible] | [illegible] | 15554040 | 22380283 | 15555030 | 22410285 |
| [illegible] | [illegible] | 16544045 | 21530243 | 16555033 | 21570244 |
| [illegible] | [illegible] | 17523046 | 21120207 | 17529036 | 21010208 |
| [illegible] | [illegible] | 18514042 | 21400176 | 18516026 | 21510177 |
| [illegible] | [illegible] | 19494043 | 21540150 | 19482015 | 21630151 |
| [illegible] | [illegible] | 20511027 | 21790129 | 20515029 | 21830130 |
| [illegible] | [illegible] | 21460015 | 21500110 | 21484021 | 21590111 |
| [illegible] | [illegible] | 22462024 | 21380094 | 22467027 | 21610095 |
| [illegible] | [illegible] | 23489018 | 21320080 | 23532012 | 21590081 |
| [illegible] | [illegible] | 24475018 | 21160068 | 24486009 | 21230069 |
| [illegible] | [illegible] | 25569007 | 21440058 | 25522007 | 21360059 |
| [illegible] | [illegible] | | | 26578008 | [illegible] |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 63 0630 HRS MST
ASCENSION NO. 7

SIGNIFICANT LEVEL DATA
0470290007
EAST-28/CHERRY
TABLE 7

GEODETIC COORDINATES
32.89927 LAT DEG
136.40591 LON DEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL.HUM. PERCENT |
|---|---|---|---|---|
| 870.9 | 3912.7 | 1.0 | -4.6 | 66.0 |
| 875.8 | 4037.2 | 5.5 | -.8 | 64.0 |
| 850.0 | 4842.8 | 7.1 | -2.1 | 52.0 |
| 847.1 | 4935.4 | 8.6 | -1.5 | 49.0 |
| 823.6 | 5698.0 | 7.4 | -3.7 | 45.0 |
| 771.0 | 7473.0 | 4.3 | -5.7 | 48.0 |
| 760.6 | 7835.8 | 3.8 | -11.7 | 31.0 |
| 719.6 | 9309.0 | 1.9 | -15.1 | 27.0 |
| 700.0 | 10039.1 | .7 | -14.9 | 30.0 |
| 680.0 | 10802.8 | -.1 | -14.0 | 34.0 |
| 613.8 | 13470.0 | -5.7 | -16.5 | 42.0 |
| 535.0 | 16970.1 | -11.9 | -24.2 | 35.0 |
| 500.0 | 18658.9 | -16.3 | -30.5 | 28.0 |
| 447.6 | 21357.9 | -24.0 | -32.3 | 46.0 |
| 432.1 | 22200.2 | -26.3 | -31.5 | 61.0 |
| 400.0 | 24018.6 | -31.2 | -36.2 | 61.0 |
| 319.3 | 29137.5 | -43.8 | | |
| 310.7 | 29738.9 | -45.6 | | |
| 300.0 | 30504.7 | -47.4 | | |
| 250.0 | 34384.5 | -57.6 | | |
| 226.1 | 36450.2 | -62.5 | | |
| 212.1 | 37744.8 | -64.0 | | |
| 207.8 | 38158.1 | -64.0 | | |
| 200.0 | 38933.8 | -62.1 | | |
| 198.3 | 39108.0 | -61.2 | | |
| 184.7 | 40564.8 | -60.2 | | |
| 176.3 | 41525.8 | -58.3 | | |
| 162.9 | 43166.4 | -58.0 | | |
| 154.7 | 44239.3 | -58.0 | | |
| 150.0 | 44882.0 | -56.8 | | |
| 130.5 | 47782.2 | -58.2 | | |
| 120.5 | 49439.4 | -57.7 | | |
| 113.6 | 50663.0 | -59.0 | | |
| 111.1 | 51124.1 | -58.3 | | |
| 100.0 | 53309.8 | -58.2 | | |
| 89.1 | 55677.8 | -63.5 | | |
| 78.9 | 58148.3 | -62.4 | | |
| 70.0 | 60593.6 | -61.3 | | |
| 68.3 | 61099.4 | -59.5 | | |
| 57.3 | 64717.3 | -60.8 | | |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0630 HRS MST
ASCENSION NO. 7

SIGNIFICANT LEVEL DATA
0470290007
EAST-26/CHERRY

GEODETIC COORDINATES
32.69227 LAT DEG
136.40591 LON DEG

TABLE 7
Cont'd

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT |
|---|---|---|---|---|
| 50.0 | 67523.2 | -59.9 | | |
| 41.7 | 71293.4 | -57.2 | | |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0630 GMT, MST
ASCENSION NO. 7

UPPER AIR DATA
0470290007
EAST-28/CHERRY

TABLE 3

GEODETIC COORDINATES
32.84927 LAT DEG
136.[illegible] LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 3912.7 | 879.9 | 1.0 | -4.6 | 66.0 | 1116.0 | 645.6 | 20.0 | 4.1 | 1.000270 |
| 4000.0 | 877.0 | 4.2 | -1.9 | 64.6 | 1099.2 | 649.5 | 21.3 | 4.0 | 1.000271 |
| 4500.0 | 860.9 | 6.4 | -1.4 | 57.1 | 1070.1 | 652.2 | 30.0 | 3.6 | 1.000265 |
| 5000.0 | 845.1 | 8.5 | -1.7 | 48.7 | 1042.7 | 654.6 | 40.3 | 3.4 | 1.000258 |
| 5500.0 | 829.6 | 7.7 | -3.1 | 46.0 | 1026.8 | 653.6 | 48.1 | 2.9 | 1.000252 |
| 6000.0 | 814.4 | 6.9 | -4.1 | 45.5 | 1011.0 | 652.6 | 54.2 | 2.1 | 1.000247 |
| 6500.0 | 799.4 | 6.0 | -4.6 | 46.4 | 995.6 | 651.6 | 12.6 | 2.5 | 1.000241 |
| 7000.0 | 784.7 | 5.1 | -5.2 | 47.2 | 980.4 | 650.5 | 353.0 | 4.0 | 1.000239 |
| 7500.0 | 770.2 | 4.3 | -6.1 | 46.7 | 965.4 | 649.5 | 345.8 | 6.0 | 1.000234 |
| 8000.0 | 755.9 | 3.6 | -12.1 | 30.6 | 950.4 | 648.5 | 332.8 | 6.7 | 1.000224 |
| 8500.0 | 741.8 | 2.9 | -13.2 | 29.2 | 935.0 | 647.7 | 325.2 | 7.3 | 1.000219 |
| 9000.0 | 728.0 | 2.3 | -14.4 | 27.8 | 919.8 | 646.9 | 324.0 | 7.2 | 1.000215 |
| 9500.0 | 714.4 | 1.6 | -15.0 | 27.8 | 905.0 | 646.1 | 326.9 | 7.5 | 1.000211 |
| 10000.0 | 701.0 | .8 | -14.9 | 29.8 | 890.7 | 645.1 | 328.9 | 8.3 | 1.000208 |
| 10500.0 | 687.9 | .2 | -14.3 | 32.4 | 875.6 | 644.5 | 328.1 | 9.9 | 1.000205 |
| 11000.0 | 674.9 | -.5 | -14.2 | 34.6 | 861.3 | 643.6 | 326.3 | 11.5 | 1.000202 |
| 11500.0 | 662.0 | -1.6 | -14.6 | 36.1 | 848.2 | 642.4 | 324.1 | 12.9 | 1.000199 |
| 12000.0 | 649.4 | -2.6 | -15.1 | 37.6 | 835.4 | 641.1 | 321.6 | 14.2 | 1.000196 |
| 12500.0 | 637.1 | -3.7 | -15.5 | 39.1 | 822.7 | 639.9 | 322.7 | 15.2 | 1.000193 |
| 13000.0 | 625.0 | -4.7 | -16.0 | 40.6 | 810.2 | 638.6 | 322.2 | 16.0 | 1.000190 |
| 13500.0 | 613.1 | -5.8 | -16.6 | 41.9 | 797.9 | 637.4 | 319.8 | 16.9 | 1.000187 |
| 14000.0 | 601.2 | -6.6 | -17.7 | 40.9 | 785.0 | 636.3 | 317.0 | 18.4 | 1.000183 |
| 14500.0 | 589.5 | -7.5 | -18.8 | 39.9 | 772.4 | 635.2 | 314.4 | 19.6 | 1.000179 |
| 15000.0 | 578.0 | -8.4 | -19.9 | 38.9 | 760.0 | 634.1 | 311.9 | 19.9 | 1.000176 |
| 15500.0 | 566.8 | -9.3 | -21.0 | 37.9 | 747.8 | 633.1 | 310.2 | 19.6 | 1.000173 |
| 16000.0 | 555.8 | -10.2 | -22.1 | 36.9 | 735.7 | 632.0 | 308.9 | 19.5 | 1.000170 |
| 16500.0 | 545.0 | -11.1 | -23.2 | 35.9 | 723.9 | 630.9 | 308.4 | 20.1 | 1.000166 |
| 17000.0 | 534.4 | -12.0 | -24.3 | 34.9 | 712.3 | 629.8 | 304.5 | 20.4 | 1.000163 |
| 17500.0 | 523.8 | -13.3 | -26.1 | 32.8 | 701.8 | 628.2 | 300.6 | 20.9 | 1.000160 |
| 18000.0 | 513.4 | -14.6 | -28.0 | 30.7 | 691.4 | 626.6 | 297.9 | 22.0 | 1.000157 |
| 18500.0 | 503.2 | -15.9 | -29.9 | 28.7 | 681.1 | 625.0 | 296.0 | 23.7 | 1.000155 |
| 19000.0 | 493.1 | -17.3 | -30.5 | 30.3 | 671.0 | 623.3 | 295.5 | 24.7 | 1.000152 |
| 19500.0 | 483.0 | -18.7 | -30.7 | 33.6 | 661.1 | 621.5 | 297.1 | 24.2 | 1.000150 |
| 20000.0 | 473.2 | -20.1 | -31.0 | 36.9 | 651.3 | 619.8 | 297.5 | 24.0 | 1.000148 |
| 20500.0 | 463.6 | -21.6 | -31.4 | 40.3 | 641.7 | 618.1 | 294.8 | 24.9 | 1.000146 |
| 21000.0 | 454.2 | -23.0 | -31.9 | 43.6 | 632.3 | 616.3 | 291.4 | 26.7 | 1.000143 |
| 21500.0 | 444.9 | -24.4 | -32.1 | 48.5 | 622.9 | 614.6 | 291.1 | 28.5 | 1.000141 |
| 22000.0 | 435.7 | -25.8 | -31.6 | 57.4 | 613.3 | 612.9 | 291.8 | 29.4 | 1.000139 |
| 22500.0 | 426.6 | -27.1 | -32.3 | 61.0 | 603.8 | 611.2 | 291.8 | 29.2 | 1.000137 |
| 23000.0 | 417.7 | -28.5 | -33.6 | 61.0 | 594.4 | 609.5 | 291.3 | 28.9 | 1.000135 |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0630 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470290007
EAST-28/CHERRY
TABLE 9
CONTD

GEODETIC COORDINATES
32.83927 LAT DEG
136.40591 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 DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 23500.0 | 408.9 | -29.8 | -34.9 | 61.0 | 585.2 | 607.8 | 290.7 | 28.8 | 1.000132 |
| 24000.0 | 400.3 | -31.1 | -36.2 | 61.0 | 576.1 | 606.1 | 288.8 | 29.1 | 1.000130 |
| 24500.0 | 391.6 | -32.4 | -38.3 | 55.3** | 566.5 | 604.6 | 286.6 | 29.0 | 1.000128 |
| 25000.0 | 383.1 | -33.6 | -40.5 | 49.3** | 557.0 | 603.0 | 284.2 | 28.4 | 1.000125 |
| 25500.0 | 374.7 | -34.8 | -42.9 | 43.3** | 547.8 | 601.4 | 284.5 | 28.3 | 1.000123 |
| 26000.0 | 366.6 | -36.1 | -45.3 | 37.4** | 538.6 | 599.9 | 285.2 | 28.7 | 1.000121 |
| 26500.0 | 358.6 | -37.3 | -48.0 | 31.4** | 529.7 | 598.3 | 286.0 | 29.5 | 1.000118 |
| 27000.0 | 350.8 | -38.5 | -50.9 | 25.5** | 520.9 | 596.7 | 286.2 | 31.0 | 1.000116 |
| 27500.0 | 343.2 | -39.8 | -54.2 | 19.5** | 512.2 | 595.2 | 287.0 | 32.9 | 1.000114 |
| 28000.0 | 335.7 | -41.0 | -58.1 | 13.6** | 503.7 | 593.6 | 287.8 | 34.7 | 1.000112 |
| 28500.0 | 328.4 | -42.2 | -63.5 | 7.6** | 495.4 | 592.0 | 287.4 | 34.6 | 1.000110 |
| 29000.0 | 321.2 | -43.5 | -75.0 | 1.6** | 487.2 | 590.4 | 285.4 | 33.5 | 1.000109 |
| 29500.0 | 314.1 | -44.9 | | | 479.3 | 588.6 | 281.9 | 31.7 | 1.000107 |
| 30000.0 | 307.0 | -46.2 | | | 471.3 | 586.9 | 278.9 | 30.3 | 1.000105 |
| 30500.0 | 300.1 | -47.4 | | | 463.0 | 585.4 | 279.8 | 29.1 | 1.000103 |
| 31000.0 | 293.1 | -48.7 | | | 454.9 | 583.7 | 282.1 | 28.3 | 1.000101 |
| 31500.0 | 286.3 | -50.0 | | | 447.0 | 581.9 | 284.0 | 28.4 | 1.000100 |
| 32000.0 | 279.6 | -51.3 | | | 439.2 | 580.2 | 284.6 | 29.4 | 1.000098 |
| 32500.0 | 273.1 | -52.6 | | | 431.5 | 578.5 | 284.5 | 30.9 | 1.000096 |
| 33000.0 | 266.8 | -54.0 | | | 424.0 | 576.8 | 284.1 | 31.4 | 1.000094 |
| 33500.0 | 260.6 | -55.3 | | | 416.7 | 575.0 | 283.2 | 32.0 | 1.000093 |
| 34000.0 | 254.6 | -56.6 | | | 409.5 | 573.3 | 282.1 | 32.8 | 1.000091 |
| 34500.0 | 248.6 | -57.9 | | | 402.3 | 571.6 | 285.1 | 30.8 | 1.000090 |
| 35000.0 | 242.6 | -59.1 | | | 394.8 | 570.0 | 288.7 | 29.4 | 1.000088 |
| 35500.0 | 236.8 | -60.2 | | | 387.5 | 568.4 | 291.3 | 29.2 | 1.000086 |
| 36000.0 | 231.1 | -61.4 | | | 380.3 | 566.9 | 291.3 | 30.4 | 1.000085 |
| 36500.0 | 225.5 | -62.6 | | | 373.1 | 565.3 | 291.2 | 31.0 | 1.000083 |
| 37000.0 | 220.0 | -63.1 | | | 365.0 | 564.6 | 288.9 | 31.3 | 1.000081 |
| 37500.0 | 214.7 | -63.7 | | | 357.1 | 563.8 | 282.9 | 31.4 | 1.000080 |
| 38000.0 | 209.4 | -64.0 | | | 348.8 | 563.4 | 278.9 | 32.1 | 1.000078 |
| 38500.0 | 204.3 | -63.2 | | | 339.0 | 564.5 | 281.7 | 34.2 | 1.000075 |
| 39000.0 | 199.4 | -61.8 | | | 328.5 | 566.4 | 286.8 | 36.5 | 1.000073 |
| 39500.0 | 194.5 | -60.9 | | | 319.4 | 567.5 | 289.9 | 36.9 | 1.000071 |
| 40000.0 | 189.9 | -60.6 | | | 311.2 | 568.0 | 289.8 | 34.9 | 1.000069 |
| 40500.0 | 185.3 | -60.2 | | | 303.2 | 568.4 | 288.1 | 34.1 | 1.000068 |
| 41000.0 | 180.8 | -59.3 | | | 294.7 | 569.7 | 285.6 | 34.2 | 1.000066 |
| 41500.0 | 176.5 | -58.4 | | | 286.3 | 571.0 | 284.0 | 34.0 | 1.000064 |
| 42000.0 | 172.3 | -58.2 | | | 279.3 | 571.2 | 282.7 | 32.9 | 1.000062 |
| 42500.0 | 168.2 | -58.1 | | | 272.5 | 571.3 | 280.7 | 31.9 | 1.000061 |
| 43000.0 | 164.2 | -58.0 | | | 265.9 | 571.4 | 277.6 | 31.4 | 1.000059 |

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

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0630 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470290007
EAST-28/CHERRY
TABLE 5
Cont'd

GEODETIC COORDINATES
32.89927 LAT DEG
136.40191 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 43500.0 | 160.3 | -58.0 | | | 259.6 | 571.4 | 274.8 | 29.3 | 1.000058 |
| 44000.0 | 156.5 | -58.0 | | | 253.4 | 571.4 | 271.3 | 27.9 | 1.000056 |
| 44500.0 | 152.8 | -57.5 | | | 246.8 | 572.1 | 268.7 | 28.2 | 1.000055 |
| 45000.0 | 149.2 | -56.9 | | | 240.2 | 573.0 | 268.4 | 30.7 | 1.000053 |
| 45500.0 | 145.6 | -57.1 | | | 234.8 | 572.6 | 270.6 | 31.6 | 1.000052 |
| 46000.0 | 142.2 | -57.3 | | | 229.5 | 572.3 | 273.1 | 32.3 | 1.000051 |
| 46500.0 | 138.8 | -57.6 | | | 224.3 | 572.0 | 276.0 | 31.4 | 1.000050 |
| 47000.0 | 135.5 | -57.8 | | | 219.2 | 571.7 | 278.5 | 30.2 | 1.000049 |
| 47500.0 | 132.3 | -58.1 | | | 214.2 | 571.3 | 278.7 | 28.0 | 1.000048 |
| 48000.0 | 129.1 | -58.1 | | | 209.2 | 571.3 | 274.3 | 25.9 | 1.000047 |
| 48500.0 | 126.1 | -58.0 | | | 204.1 | 571.5 | 280.4 | 24.0 | 1.000045 |
| 49000.0 | 123.1 | -57.8 | | | 199.1 | 571.7 | 287.0 | 24.1 | 1.000044 |
| 49500.0 | 120.1 | -57.8 | | | 194.3 | 571.7 | 290.9 | 24.0 | 1.000043 |
| 50000.0 | 117.3 | -58.3 | | | 190.2 | 571.0 | 290.4 | 22.6 | 1.000042 |
| 50500.0 | 114.5 | -58.8 | | | 186.1 | 570.3 | 274.4 | 17.4 | 1.000041 |
| 51000.0 | 111.8 | -58.5 | | | 181.4 | 570.8 | 263.8 | 16.4 | 1.000040 |
| 51500.0 | 109.1 | -58.3 | | | 176.9 | 571.1 | 259.5 | 16.6 | 1.000039 |
| 52000.0 | 106.5 | -58.3 | | | 172.7 | 571.1 | 265.6 | 17.9 | 1.000038 |
| 52500.0 | 104.0 | -58.2 | | | 168.5 | 571.1 | 262.8 | 16.3 | 1.000038 |
| 53000.0 | 101.5 | -58.2 | | | 164.5 | 571.1 | 252.6 | 13.5 | 1.000037 |
| 53500.0 | 99.1 | -58.6 | | | 160.9 | 570.6 | 245.3 | 13.3 | 1.000036 |
| 54000.0 | 96.7 | -59.7 | | | 157.8 | 569.1 | 239.6 | 14.4 | 1.000035 |
| 54500.0 | 94.4 | -60.9 | | | 154.9 | 567.6 | 237.2 | 17.3 | 1.000034 |
| 55000.0 | 92.1 | -62.0 | | | 151.9 | 566.1 | 239.7 | 18.9 | 1.000034 |
| 55500.0 | 89.9 | -63.1 | | | 149.1 | 564.6 | 244.2 | 20.0 | 1.000033 |
| 56000.0 | 87.7 | -63.4 | | | 145.6 | 564.3 | 259.6 | 20.5 | 1.000032 |
| 56500.0 | 85.6 | -63.1 | | | 141.9 | 564.6 | 272.6 | 21.2 | 1.000032 |
| 57000.0 | 83.5 | -62.9 | | | 138.3 | 564.9 | 284.3 | 21.0 | 1.000031 |
| 57500.0 | 81.5 | -62.7 | | | 134.8 | 565.2 | 288.9 | 19.8 | 1.000030 |
| 58000.0 | 79.5 | -62.5 | | | 131.4 | 565.5 | 290.4 | 18.1 | 1.000029 |
| 58500.0 | 77.6 | -62.2 | | | 128.1 | 565.8 | 278.9 | 18.3 | 1.000029 |
| 59000.0 | 75.7 | -62.0 | | | 124.9 | 566.1 | 269.4 | 19.3 | 1.000028 |
| 59500.0 | 73.8 | -61.8 | | | 121.7 | 566.4 | 262.6 | 20.8 | 1.000027 |
| 60000.0 | 72.1 | -61.6 | | | 118.6 | 566.7 | 265.5 | 20.7 | 1.000026 |
| 60500.0 | 70.3 | -61.3 | | | 115.7 | 567.0 | 269.8 | 19.6 | 1.000026 |
| 61000.0 | 68.6 | -59.9 | | | 112.1 | 569.0 | 272.4 | 15.8 | 1.000025 |
| 61500.0 | 67.0 | -59.6 | | | 109.3 | 569.2 | 274.0 | 11.8 | 1.000024 |
| 62000.0 | 65.4 | -59.8 | | | 106.8 | 569.0 | 274.2 | 7.7 | 1.000024 |
| 62500.0 | 63.8 | -60.0 | | | 104.3 | 568.8 | 281.0 | 7.5 | 1.000023 |
| 63000.0 | 62.3 | -60.2 | | | 101.9 | 568.5 | 287.9 | 8.0 | 1.000023 |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0630 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470290007
EAST-28/CHERRY

TABLE 3
Cont'd

GEODETIC COORDINATES
32.89927 LAT DEG
136.40591 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 63500.0 | 60.8 | -60.4 | | | 99.5 | 568.3 | 293.5 | 9.2 | 1.000022 |
| 64000.0 | 59.3 | -60.5 | | | 97.2 | 568.0 | 295.8 | 9.3 | 1.000022 |
| 64500.0 | 57.9 | -60.7 | | | 95.0 | 567.8 | 296.7 | 8.6 | 1.000021 |
| 65000.0 | 56.5 | -60.7 | | | 92.7 | 567.8 | 291.5 | 7.8 | 1.000021 |
| 65500.0 | 55.2 | -60.5 | | | 90.4 | 568.0 | 290.1 | 7.1 | 1.000020 |
| 66000.0 | 53.8 | -60.4 | | | 88.2 | 568.3 | 306.2 | 6.9 | 1.000020 |
| 66500.0 | 52.5 | -60.2 | | | 86.0 | 568.5 | 318.7 | 7.9 | 1.000019 |
| 67000.0 | 51.3 | -60.1 | | | 83.8 | 568.7 | 325.9 | 9.6 | 1.000019 |
| 67500.0 | 50.1 | -59.9 | | | 81.8 | 568.9 | 323.4 | 10.5 | 1.000018 |
| 68000.0 | 48.9 | -59.6 | | | 79.7 | 569.4 | 320.0 | 11.3 | 1.000018 |
| 68500.0 | 47.7 | -59.2 | | | 77.7 | 569.8 | 314.3 | 9.6 | 1.000017 |
| 69000.0 | 46.6 | -58.8 | | | 75.7 | 570.3 | 306.7 | 7.9 | 1.000017 |
| 69500.0 | 45.5 | -58.5 | | | 73.8 | 570.8 | 295.7 | 6.0 | 1.000016 |
| 70000.0 | 44.4 | -58.1 | | | 71.9 | 571.3 | | | 1.000016 |
| 70500.0 | 43.3 | -57.8 | | | 70.1 | 571.7 | | | 1.000016 |
| 71000.0 | 42.3 | -57.4 | | | 68.3 | 572.2 | | | 1.000015 |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0630 HRS MST
ASCENSION NO. 7

MANDATORY LEVELS
0420290007
EAST-287/CHERRY

GEOGRAPHIC COORDINATES
32.00927 LAT DEG
136.40591 LON DEG

TABLE 9

| PRESSURE MILLIBARS | GEOPOTENTIAL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS |
|---|---|---|---|---|---|---|
| 850.0 | 4840. | 7.1 | -2.1 | 52. | 36.8 | 5.4 |
| 800.0 | 6477. | 6.0 | -4.6 | 46. | 13.9 | 2.5 |
| 750.0 | 8203. | 3.3 | -12.6 | 30. | 328.0 | 7.1 |
| 700.0 | 10030. | .7 | -14.9 | 30. | 328.8 | 8.4 |
| 650.0 | 11972. | -2.6 | -15.0 | 38. | 321.7 | 14.2 |
| 600.0 | 14039. | -6.7 | -17.8 | 41. | 316.7 | 18.5 |
| 550.0 | 16252. | -10.7 | -22.6 | 36. | 308.7 | 19.8 |
| 500.0 | 18634. | -16.3 | -30.5 | 28. | 295.6 | 24.2 |
| 450.0 | 21198. | -23.6 | -32.1 | 45. | 291.3 | 27.5 |
| 400.0 | 23980. | -31.2 | -36.2 | 61. | 288.8 | 29.1 |
| 350.0 | 27037. | -38.7 | -51.2 | 25.** | 286.3 | 31.2 |
| 300.0 | 30446. | -47.4 | | | 279.8 | 29.1 |
| 250.0 | 34312. | -57.6 | | | 284.3 | 31.3 |
| 200.0 | 38844. | -62.1 | | | 286.3 | 36.4 |
| 175.0 | 41577. | -58.3 | | | 283.6 | 33.8 |
| 150.0 | 44765. | -56.8 | | | 268.4 | 30.0 |
| 125.0 | 48541. | -57.9 | | | 282.5 | 24.0 |
| 100.0 | 53150. | -58.2 | | | 248.5 | 13.3 |
| 80.0 | 57690. | -62.5 | | | 290.9 | 18.6 |
| 70.0 | 60390. | -61.3 | | | 270.0 | 19.1 |
| 60.0 | 63547. | -60.5 | | | 295.5 | 9.7 |
| 50.0 | 67275. | -59.0 | | | 323.4 | 10.5 |

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

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 83 0730 HRS MST
ASCENSION NO. 7

SIGNIFICANT LEVEL DATA
0470220007
DW 30

GEODETIC COORDINATES
32.86497 LAT DEG
106.49714 LON DEG

TABLE 10

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT |
|---|---|---|---|---|
| 870.0 | 4010.4 | 2.5 | -1.5 | 75.0 |
| 868.6 | 4326.0 | 6.5 | -1.2 | 58.0 |
| 850.0 | 4912.0 | 8.8 | -2.5 | 45.0 |
| 773.6 | 7452.8 | 4.6 | -6.0 | 46.0 |
| 748.4 | 8337.7 | 3.7 | -13.1 | 28.0 |
| 700.0 | 10113.4 | 1.4 | -14.7 | 29.0 |
| 672.2 | 11180.8 | -1.0 | -11.1 | 46.0 |
| 650.0 | 12058.5 | -2.9 | -16.9 | 33.0 |
| 626.2 | 13026.9 | -4.6 | -14.4 | 46.0 |
| 608.0 | 13789.1 | -5.3 | -19.7 | 31.0 |
| 582.4 | 14896.8 | -6.5 | -19.7 | 34.0 |
| 530.4 | 16850.2 | -11.2 | -23.6 | 35.0 |
| 520.1 | 17766.3 | -13.2 | -33.6 | 16.0 |
| 500.0 | 18748.6 | -15.7 | -31.2 | 25.0 |
| 443.2 | 21691.4 | -24.1 | -31.1 | 52.0 |
| 435.4 | 22116.5 | -25.3 | -33.7 | 45.0 |
| 420.6 | 22939.0 | -27.5 | -35.7 | 45.0 |
| 400.0 | 24120.2 | -30.7 | -36.9 | 54.0 |
| 389.3 | 24751.9 | -32.2 | -34.7 | 47.0 |
| 381.4 | 25227.3 | -33.0 | -36.7 | 69.0 |
| 370.2 | 25915.3 | -34.4 | -39.1 | 62.0 |
| 361.0 | 26493.0 | -35.6 | -42.8 | 47.0 |
| 349.6 | 27225.4 | -37.2 | -47.0 | 35.0 |
| 335.8 | 28136.8 | -39.6 | -50.2 | 31.0 |
| 300.0 | 30640.1 | -46.1 | | |
| 250.0 | 34541.0 | -56.5 | | |
| 220.8 | 37101.6 | -62.4 | | |
| 209.4 | 38179.1 | -62.6 | | |
| 200.0 | 39113.4 | -62.1 | | |
| 183.6 | 40871.4 | -58.4 | | |
| 172.2 | 42197.1 | -59.4 | | |
| 164.6 | 43128.5 | -59.4 | | |
| 158.0 | 43979.0 | -56.4 | | |
| 150.0 | 45060.1 | -58.9 | | |
| 146.4 | 45562.1 | -59.4 | | |
| 137.8 | 46826.1 | -54.5 | | |
| 121.2 | 49528.3 | -55.9 | | |
| 105.8 | 52359.5 | -59.1 | | |
| 100.0 | 53524.9 | -59.4 | | |
| 80.8 | 57929.6 | -59.4 | | |

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 63 0730 HRS MST
ASCENSION NO. 7

SIGNIFICANT LEVEL DATA
04702.0007
NW 30

GEODETIC COORDINATES
32.88497 LAT DEG
107.47714 LON DEG

TABLE 10
Cont'd

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT |
|---|---|---|---|---|
| 70.0 | 60877.7 | -61.9 | | |
| 65.0 | 62391.1 | -62.1 | | |
| 60.7 | 63800.5 | -58.4 | | |
| 50.0 | 67822.2 | -59.2 | | |
| 47.4 | 68930.9 | -58.0 | | |

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 83 0730 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470220007
NW 30

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

TABLE 11

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 4010.4 | 878.9 | 2.5 | -1.5 | 75.0 | 1108.1 | 647.6 | 330.0 | 1.9 | 1.000274 |
| 4500.0 | 863.0 | 7.2 | -1.5 | 54.1 | 1069.9 | 653.1 | 337.9 | 2.7 | 1.000265 |
| 5000.0 | 847.2 | 8.7 | -2.6 | 45.0 | 1045.0 | 654.7 | 342.4 | 3.4 | 1.000257 |
| 5500.0 | 831.7 | 7.8 | -3.3 | 45.2 | 1028.9 | 653.7 | 345.3 | 4.2 | 1.000252 |
| 6000.0 | 816.4 | 7.0 | -4.0 | 45.4 | 1013.0 | 652.8 | 357.4 | 5.0 | 1.000248 |
| 6500.0 | 801.4 | 6.2 | -4.7 | 45.6 | 997.5 | 651.8 | 7.2 | 6.1 | 1.000243 |
| 7000.0 | 786.7 | 5.3 | -5.4 | 45.8 | 982.1 | 650.8 | 5.0 | 7.0 | 1.000239 |
| 7500.0 | 772.2 | 4.6 | -6.3 | 45.0 | 966.9 | 649.8 | 352.6 | 7.1 | 1.000234 |
| 8000.0 | 757.9 | 4.0 | -10.1 | 34.9 | 951.2 | 649.1 | 326.4 | 7.2 | 1.000226 |
| 8500.0 | 743.8 | 3.5 | -13.2 | 28.1 | 935.7 | 648.3 | 309.4 | 7.5 | 1.000219 |
| 9000.0 | 730.0 | 2.8 | -13.7 | 28.4 | 920.4 | 647.6 | 298.7 | 7.9 | 1.000216 |
| 9500.0 | 716.4 | 2.2 | -14.1 | 28.7 | 905.4 | 646.8 | 295.4 | 7.6 | 1.000212 |
| 10000.0 | 703.0 | 1.5 | -14.6 | 28.9 | 890.6 | 646.0 | 302.7 | 8.0 | 1.000208 |
| 10500.0 | 689.8 | .5 | -13.1 | 35.2 | 877.0 | 644.9 | 311.2 | 8.9 | 1.000207 |
| 11000.0 | 676.8 | -.6 | -11.6 | 43.1 | 863.9 | 643.6 | 317.5 | 10.9 | 1.000205 |
| 11500.0 | 664.0 | -1.7 | -13.1 | 41.3 | 851.1 | 642.3 | 321.4 | 12.7 | 1.000201 |
| 12000.0 | 651.5 | -2.8 | -16.5 | 33.9 | 838.5 | 640.9 | 324.0 | 14.2 | 1.000196 |
| 12500.0 | 639.0 | -3.7 | -15.6 | 38.9 | 825.2 | 639.9 | 326.9 | 15.6 | 1.000193 |
| 13000.0 | 626.8 | -4.6 | -14.5 | 45.6 | 812.0 | 638.9 | 329.6 | 17.0 | 1.000191 |
| 13500.0 | 614.8 | -5.0 | -17.5 | 36.7 | 798.1 | 638.2 | 330.2 | 18.4 | 1.000186 |
| 14000.0 | 603.0 | -5.5 | -19.7 | 31.6 | 784.4 | 637.6 | 328.2 | 19.5 | 1.000181 |
| 14500.0 | 591.4 | -6.1 | -19.7 | 32.9 | 770.8 | 636.9 | 323.1 | 20.1 | 1.000179 |
| 15000.0 | 580.0 | -6.7 | -19.9 | 34.1 | 757.9 | 636.1 | 314.3 | 20.1 | 1.000176 |
| 15500.0 | 568.8 | -8.0 | -20.9 | 34.3 | 746.6 | 634.7 | 306.2 | 20.5 | 1.000173 |
| 16000.0 | 557.7 | -9.2 | -21.9 | 34.6 | 735.4 | 633.2 | 301.9 | 21.3 | 1.000170 |
| 16500.0 | 546.9 | -10.4 | -22.9 | 34.8 | 724.5 | 631.8 | 298.8 | 23.2 | 1.000167 |
| 17000.0 | 536.2 | -11.5 | -24.9 | 31.9 | 713.6 | 630.3 | 296.7 | 25.5 | 1.000163 |
| 17500.0 | 525.6 | -12.6 | -30.1 | 21.5 | 702.6 | 628.9 | 295.5 | 27.0 | 1.000159 |
| 18000.0 | 515.2 | -13.8 | -32.8 | 18.1 | 691.9 | 627.5 | 295.3 | 27.9 | 1.000156 |
| 18500.0 | 505.0 | -15.1 | -31.6 | 22.7 | 681.5 | 626.0 | 296.2 | 28.1 | 1.000154 |
| 19000.0 | 494.9 | -16.4 | -30.9 | 27.3 | 671.3 | 624.3 | 297.5 | 28.9 | 1.000152 |
| 19500.0 | 484.8 | -17.8 | -30.5 | 31.9 | 661.3 | 622.6 | 298.8 | 30.1 | 1.000150 |
| 20000.0 | 475.0 | -19.3 | -30.4 | 36.5 | 651.5 | 620.9 | 299.2 | 32.0 | 1.000148 |
| 20500.0 | 465.4 | -20.7 | -30.4 | 41.1 | 641.9 | 619.1 | 299.6 | 33.5 | 1.000146 |
| 21000.0 | 455.9 | -22.1 | -30.6 | 45.7 | 632.5 | 617.4 | 300.1 | 34.0 | 1.000144 |
| 21500.0 | 446.7 | -23.6 | -31.0 | 50.2 | 623.2 | 615.6 | 299.6 | 33.8 | 1.000142 |
| 22000.0 | 437.5 | -25.0 | -33.0 | 46.9 | 613.9 | 613.8 | 298.3 | 33.3 | 1.000139 |
| 22500.0 | 428.4 | -26.3 | -34.7 | 45.0 | 604.5 | 612.1 | 295.8 | 33.0 | 1.000137 |
| 23000.0 | 419.5 | -27.7 | -35.8 | 45.5 | 595.2 | 610.5 | 294.1 | 33.0 | 1.000134 |
| 23500.0 | 410.7 | -29.0 | -36.3 | 49.3 | 585.9 | 608.8 | 293.7 | 33.4 | 1.000132 |

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 83 0730 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470220007
NW 30

TABLE 11
Cont'd

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 24000.0 | 402.0 | -30.4 | -36.8 | 53.1 | 576.8 | 607.1 | 294.4 | 34.4 | 1.000130 |
| 24500.0 | 393.5 | -31.6 | -38.6 | 49.8 | 567.4 | 605.5 | 295.5 | 35.7 | 1.000128 |
| 25000.0 | 385.2 | -32.6 | -38.0 | 58.5 | 557.7 | 604.3 | 298.1 | 38.1 | 1.000126 |
| 25500.0 | 376.9 | -33.6 | -37.6 | 66.2 | 547.9 | 603.1 | 300.0 | 39.0 | 1.000124 |
| 26000.0 | 368.8 | -34.6 | -39.6 | 59.8 | 538.5 | 601.8 | 301.5 | 38.4 | 1.000121 |
| 26500.0 | 360.9 | -35.6 | -42.9 | 46.9 | 529.2 | 600.5 | 304.6 | 36.5 | 1.000119 |
| 27000.0 | 353.1 | -36.7 | -45.6 | 38.7 | 520.1 | 599.1 | 308.5 | 34.9 | 1.000117 |
| 27500.0 | 345.4 | -37.9 | -47.9 | 33.8 | 511.5 | 597.5 | 312.8 | 35.6 | 1.000114 |
| 28000.0 | 337.8 | -39.2 | -49.7 | 31.6 | 503.1 | 595.8 | 315.1 | 36.3 | 1.000112 |
| 28500.0 | 330.4 | -40.5 | -52.3 | 26.5** | 494.7 | 594.2 | 315.6 | 36.7 | 1.000111 |
| 29000.0 | 323.0 | -41.8 | -55.7 | 20.3** | 486.4 | 592.5 | 313.0 | 37.2 | 1.000109 |
| 29500.0 | 315.8 | -43.1 | -59.6 | 14.1** | 478.3 | 590.8 | 309.3 | 37.7 | 1.000107 |
| 30000.0 | 308.8 | -44.4 | -65.0 | 7.9** | 470.3 | 589.2 | 308.5 | 38.7 | 1.000105 |
| 30500.0 | 301.9 | -45.7 | -76.3 | 1.7** | 462.5 | 587.5 | 308.5 | 39.6 | 1.000103 |
| 31000.0 | 295.0 | -47.1 | | | 454.5 | 585.8 | 310.8 | 40.2 | 1.000101 |
| 31500.0 | 288.2 | -48.4 | | | 446.7 | 584.1 | 312.1 | 40.7 | 1.000099 |
| 32000.0 | 281.5 | -49.7 | | | 439.0 | 582.3 | 312.4 | 40.8 | 1.000098 |
| 32500.0 | 275.0 | -51.1 | | | 431.4 | 580.6 | 312.5 | 40.9 | 1.000096 |
| 33000.0 | 268.7 | -52.4 | | | 424.0 | 578.8 | 312.4 | 41.0 | 1.000094 |
| 33500.0 | 262.5 | -53.7 | | | 416.7 | 577.1 | 311.3 | 42.0 | 1.000093 |
| 34000.0 | 256.4 | -55.1 | | | 409.6 | 575.3 | 310.1 | 43.0 | 1.000091 |
| 34500.0 | 250.5 | -56.4 | | | 402.6 | 573.6 | 309.0 | 44.2 | 1.000090 |
| 35000.0 | 244.5 | -57.6 | | | 395.1 | 572.0 | 306.9 | 44.8 | 1.000088 |
| 35500.0 | 238.6 | -58.7 | | | 387.7 | 570.5 | 304.4 | 45.3 | 1.000086 |
| 36000.0 | 232.9 | -59.9 | | | 380.4 | 569.0 | 302.3 | 46.2 | 1.000085 |
| 36500.0 | 227.3 | -61.0 | | | 373.3 | 567.4 | 300.5 | 47.1 | 1.000083 |
| 37000.0 | 221.9 | -62.2 | | | 366.4 | 565.9 | 298.9 | 47.8 | 1.000082 |
| 37500.0 | 216.5 | -62.5 | | | 358.0 | 565.5 | 296.9 | 47.2 | 1.000080 |
| 38000.0 | 211.3 | -62.6 | | | 349.5 | 565.3 | 293.8 | 44.5 | 1.000078 |
| 38500.0 | 206.1 | -62.4 | | | 340.8 | 565.5 | 291.9 | 43.2 | 1.000076 |
| 39000.0 | 201.1 | -62.2 | | | 332.1 | 565.9 | 291.2 | 42.8 | 1.000074 |
| 39500.0 | 196.3 | -61.3 | | | 322.7 | 567.1 | 293.2 | 43.5 | 1.000072 |
| 40000.0 | 191.6 | -60.2 | | | 313.4 | 568.5 | 296.6 | 44.8 | 1.000070 |
| 40500.0 | 186.9 | -59.2 | | | 304.4 | 569.9 | 296.3 | 45.1 | 1.000068 |
| 41000.0 | 182.5 | -58.5 | | | 296.1 | 570.8 | 294.4 | 45.0 | 1.000066 |
| 41500.0 | 178.1 | -58.9 | | | 289.6 | 570.3 | 290.4 | 45.0 | 1.000064 |
| 42000.0 | 173.8 | -59.3 | | | 283.1 | 569.8 | 285.6 | 45.3 | 1.000063 |
| 42500.0 | 169.7 | -59.4 | | | 276.6 | 569.6 | 283.5 | 44.7 | 1.000062 |
| 43000.0 | 165.6 | -59.4 | | | 269.9 | 569.6 | 282.4 | 43.5 | 1.000060 |
| 43500.0 | 161.7 | -58.1 | | | 261.9 | 571.3 | 281.2 | 42.4 | 1.000058 |

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

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 83 0730 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470220007
NW 30
TABLE 11
Cont'd

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL. HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 44000.0 | 157.8 | -56.4 | | | 253.7 | 573.5 | 279.9 | 41.3 | 1.000057 |
| 44500.0 | 154.1 | -57.6 | | | 249.0 | 572.0 | 277.8 | 40.8 | 1.000055 |
| 45000.0 | 150.4 | -58.8 | | | 244.4 | 570.4 | 275.1 | 40.9 | 1.000054 |
| 45500.0 | 146.8 | -59.3 | | | 239.2 | 569.7 | 274.1 | 41.1 | 1.000053 |
| 46000.0 | 143.4 | -57.7 | | | 231.8 | 571.8 | 274.6 | 41.5 | 1.000052 |
| 46500.0 | 140.0 | -55.8 | | | 224.3 | 574.4 | 276.3 | 41.2 | 1.000050 |
| 47000.0 | 136.7 | -54.6 | | | 217.8 | 575.9 | 280.3 | 39.9 | 1.000049 |
| 47500.0 | 133.5 | -54.8 | | | 213.0 | 575.6 | 284.3 | 38.8 | 1.000047 |
| 48000.0 | 130.3 | -55.1 | | | 208.2 | 575.3 | 287.4 | 38.2 | 1.000046 |
| 48500.0 | 127.3 | -55.4 | | | 203.6 | 574.9 | 290.6 | 37.8 | 1.000045 |
| 49000.0 | 124.3 | -55.6 | | | 199.0 | 574.6 | 292.2 | 33.6 | 1.000044 |
| 49500.0 | 121.4 | -55.9 | | | 194.6 | 574.2 | 294.2 | 29.3 | 1.000043 |
| 50000.0 | 118.5 | -56.4 | | | 190.5 | 573.5 | 293.3 | 24.3 | 1.000042 |
| 50500.0 | 115.7 | -57.0 | | | 186.4 | 572.8 | 289.2 | 18.8 | 1.000042 |
| 51000.0 | 112.9 | -57.6 | | | 182.5 | 572.0 | 278.2 | 14.4 | 1.000041 |
| 51500.0 | 110.3 | -58.1 | | | 178.6 | 571.3 | 254.0 | 13.2 | 1.000040 |
| 52000.0 | 107.6 | -58.7 | | | 174.9 | 570.5 | 229.9 | 14.5 | 1.000039 |
| 52500.0 | 105.1 | -59.1 | | | 171.1 | 569.9 | 233.6 | 15.7 | 1.000038 |
| 53000.0 | 102.6 | -59.3 | | | 167.1 | 569.8 | 237.1 | 16.9 | 1.000037 |
| 53500.0 | 100.1 | -59.4 | | | 163.2 | 569.6 | 248.8 | 19.3 | 1.000036 |
| 54000.0 | 97.7 | -59.4 | | | 159.3 | 569.6 | 261.0 | 23.2 | 1.000035 |
| 54500.0 | 95.4 | -59.4 | | | 155.5 | 569.6 | 266.7 | 26.9 | 1.000035 |
| 55000.0 | 93.1 | -59.4 | | | 151.7 | 569.6 | 265.6 | 28.6 | 1.000034 |
| 55500.0 | 90.9 | -59.4 | | | 148.1 | 569.6 | 264.5 | 30.3 | 1.000033 |
| 56000.0 | 88.7 | -59.4 | | | 144.6 | 569.6 | 268.3 | 29.4 | 1.000032 |
| 56500.0 | 86.6 | -59.4 | | | 141.1 | 569.6 | 272.4 | 28.6 | 1.000031 |
| 57000.0 | 84.5 | -59.4 | | | 137.7 | 569.6 | 275.5 | 26.3 | 1.000031 |
| 57500.0 | 82.5 | -59.4 | | | 134.5 | 569.6 | 278.4 | 23.0 | 1.000030 |
| 58000.0 | 80.5 | -59.5 | | | 131.3 | 569.5 | 280.4 | 20.0 | 1.000029 |
| 58500.0 | 78.6 | -59.9 | | | 128.4 | 568.9 | 275.3 | 17.3 | 1.000029 |
| 59000.0 | 76.7 | -60.3 | | | 125.5 | 568.4 | 268.4 | 14.9 | 1.000028 |
| 59500.0 | 74.9 | -60.7 | | | 122.8 | 567.8 | 263.6 | 16.0 | 1.000027 |
| 60000.0 | 73.1 | -61.2 | | | 120.0 | 567.2 | 260.3 | 17.9 | 1.000027 |
| 60500.0 | 71.3 | -61.6 | | | 117.4 | 566.7 | 259.3 | 19.0 | 1.000026 |
| 61000.0 | 69.6 | -61.9 | | | 114.8 | 566.2 | 260.7 | 18.7 | 1.000026 |
| 61500.0 | 67.9 | -62.0 | | | 112.0 | 566.1 | 262.3 | 18.4 | 1.000025 |
| 62000.0 | 66.3 | -62.0 | | | 109.3 | 566.0 | 269.3 | 17.2 | 1.000024 |
| 62500.0 | 64.7 | -61.8 | | | 106.6 | 566.3 | 277.1 | 16.3 | 1.000024 |
| 63000.0 | 63.1 | -60.5 | | | 103.4 | 568.1 | 282.2 | 15.1 | 1.000023 |
| 63500.0 | 61.6 | -59.2 | | | 100.3 | 569.9 | 286.0 | 13.7 | 1.000022 |

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 83 0730 HRS MST
ASCENSION NO. 7

UPPER AIR DATA
0470220007
NW 30
TABLE 11
Cont'd

GEODETIC COORDINATES
32.68497 LAT DEG
106.49714 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 64000.0 | 60.1 | -58.4 | | | 97.5 | 570.9 | 291.7 | 11.8 | 1.000022 |
| 64500.0 | 58.7 | -58.5 | | | 95.3 | 570.7 | 306.9 | 8.4 | 1.000021 |
| 65000.0 | 57.3 | -58.6 | | | 93.0 | 570.6 | 336.4 | 6.3 | 1.000021 |
| 65500.0 | 55.9 | -58.7 | | | 90.9 | 570.5 | 341.8 | 6.5 | 1.000020 |
| 66000.0 | 54.6 | -58.8 | | | 88.7 | 570.3 | 338.5 | 6.9 | 1.000020 |
| 66500.0 | 53.3 | -58.9 | | | 86.7 | 570.2 | | | 1.000019 |
| 67000.0 | 52.0 | -59.0 | | | 84.6 | 570.1 | | | 1.000019 |
| 67500.0 | 50.8 | -59.1 | | | 82.7 | 569.9 | | | 1.000018 |
| 68000.0 | 49.6 | -59.0 | | | 80.6 | 570.1 | | | 1.000018 |
| 68500.0 | 48.4 | -58.5 | | | 78.5 | 570.8 | | | 1.000017 |

STATION ALTITUDE 4010.40 FEET MSL
16 FEB. 83 0730 HRS MST
ASCENSION NO. 7

MANDATORY LEVELS
0470220007
NW 30
TABLE 12

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

| PRESSURE MILLIBARS | GEOPOTENTIAL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | WIND DATA DIRECTION DEGREES(IN) | WIND DATA SPEED KNOTS |
|---|---|---|---|---|---|---|
| 850.0 | 4909. | 8.8 | -2.5 | 45. | 341.8 | 3.3 |
| 800.0 | 6547. | 6.1 | -4.7 | 46. | 7.0 | 6.2 |
| 750.0 | 8274. | 3.8 | -12.5 | 29. | 316.3 | 7.4 |
| 700.0 | 10104. | 1.4 | -14.7 | 29. | 304.7 | 8.2 |
| 650.0 | 12046. | -2.9 | -16.9 | 33. | 324.2 | 14.3 |
| 600.0 | 14115. | -5.7 | -19.7 | 32. | 326.9 | 19.6 |
| 550.0 | 16338. | -10.0 | -22.6 | 35. | 299.6 | 22.5 |
| 500.0 | 18723. | -15.7 | -31.2 | 25. | 296.7 | 28.3 |
| 450.0 | 21294. | -23.0 | -30.8 | 49. | 300.0 | 34.0 |
| 400.0 | 24081. | -30.7 | -36.9 | 54. | 294.6 | 34.7 |
| 350.0 | 27152. | -37.1 | -46.8 | 35. | 310.1 | 35.1 |
| 300.0 | 30581. | -46.1 | | | 309.1 | 39.8 |
| 250.0 | 34468. | -56.5 | | | 308.9 | 44.2 |
| 200.0 | 39022. | -62.1 | | | 291.0 | 42.8 |
| 175.0 | 41761. | -59.1 | | | 287.1 | 45.2 |
| 150.0 | 44942. | -58.9 | | | 274.9 | 40.9 |
| 125.0 | 48743. | -55.6 | | | 291.7 | 34.8 |
| 100.0 | 53363. | -59.4 | | | 248.8 | 19.3 |
| 80.0 | 57947. | -59.6 | | | 279.4 | 19.4 |
| 70.0 | 60673. | -61.9 | | | 260.3 | 18.8 |
| 60.0 | 63816. | -58.4 | | | 291.9 | 11.7 |
| 50.0 | 67571. | -59.2 | | | | |

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

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0930 HRS MST
ASCENSION NO. 8

SIGNIFICANT LEVEL DATA
0470240006
EAST-28 CHERRY

[illegible]

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | WET HUM. PERCENT |
|---|---|---|---|---|
| 880.7 | 3912.7 | 3.9 | 1.9 | 87.0 |
| 874.6 | 4098.8 | 4.8 | -.4 | 69.0 |
| 862.2 | 4483.3 | 7.4 | -1.3 | 54.0 |
| 850.0 | 4869.5 | 8.5 | -1.9 | 48.0 |
| 805.9 | 6313.4 | 7.4 | -4.0 | 44.0 |
| 789.1 | 6881.8 | 6.1 | -5.2 | 44.0 |
| 771.6 | 7485.8 | 6.5 | -9.0 | 32.0 |
| 711.9 | 9641.8 | 2.9 | -12.1 | 32.0 |
| 700.0 | 10089.5 | 2.1 | -10.1 | 40.0 |
| 652.2 | 11953.0 | -1.7 | -12.6 | 43.0 |
| 583.8 | 14828.6 | -6.0 | -17.7 | 39.0 |
| 548.9 | 16405.4 | -9.4 | -22.6 | 33.0 |
| 500.0 | 18750.3 | -15.3 | -27.6 | 34.0 |
| 468.4 | 20358.3 | -19.8 | -33.6 | 28.0 |
| 441.8 | 21776.5 | -23.0 | -37.5 | 25.0 |
| 421.2 | 22920.5 | -26.1 | -37.2 | 34.0 |
| 400.0 | 24144.2 | -28.5 | -41.6 | 27.0 |
| 337.3 | 28081.8 | -38.6 | -50.2 | 28.0 |
| 300.0 | 30689.1 | -46.2 | | |
| 250.0 | 34589.2 | -56.5 | | |
| 207.9 | 38369.8 | -64.8 | | |
| 203.5 | 38799.7 | -65.0 | | |
| 200.0 | 39150.1 | -62.7 | | |
| 197.5 | 39405.5 | -62.9 | | |
| 191.8 | 40003.9 | -59.9 | | |
| 182.0 | 41087.4 | -58.3 | | |
| 166.8 | 42901.6 | -57.0 | | |
| 158.0 | 44029.3 | -58.3 | | |
| 150.0 | 45110.5 | -57.0 | | |
| 138.4 | 46801.0 | -54.3 | | |
| 124.0 | 49117.5 | -55.4 | | |
| 120.0 | 49807.2 | -55.4 | | |
| 109.0 | 51817.7 | -58.0 | | |
| 100.0 | 53609.3 | -58.0 | | |
| 85.9 | 56788.2 | -55.5 | | |
| 70.0 | 61038.3 | -61.3 | | |
| 64.5 | 62714.9 | -61.3 | | |
| 50.0 | 67995.6 | -56.3 | | |
| 41.3 | 72026.4 | -54.3 | | |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0930 HRS MST
ASCENSION NO. 8

UPPER AIR DATA
0470290008
EAST-28/CHERRY

GEODETIC COORDINATES
32.69927 LAT DEG
136.40591 LON DEG

TABLE 14

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 3912.7 | 880.7 | 3.9 | 1.9 | 87.0 | 1104.1 | 649.4 | 40.0 | 4.1 | 1.000281 |
| 4000.0 | 877.8 | 4.3 | .9 | 78.6 | 1099.0 | 649.9 | 38.4 | 3.9 | 1.000277 |
| 4500.0 | 861.7 | 7.4 | -1.3 | 53.7 | 1067.2 | 653.4 | 25.8 | 3.0 | 1.000264 |
| 5000.0 | 845.9 | 8.4 | -2.1 | 47.6 | 1044.2 | 654.5 | 4.2 | 2.3 | 1.000258 |
| 5500.0 | 830.5 | 8.0 | -2.8 | 46.3 | 1026.6 | 654.0 | 334.8 | 2.1 | 1.000253 |
| 6000.0 | 815.3 | 7.6 | -3.6 | 44.9 | 1009.3 | 653.5 | 354.9 | 2.6 | 1.000247 |
| 6500.0 | 800.3 | 7.0 | -4.4 | 44.0 | 993.3 | 652.7 | 2.0 | 3.3 | 1.000243 |
| 7000.0 | 785.6 | 6.2 | -5.9 | 41.7 | 978.0 | 651.7 | 357.6 | 4.1 | 1.000237 |
| 7500.0 | 771.2 | 6.5 | -9.0 | 32.0 | 959.3 | 651.9 | 351.9 | 4.1 | 1.000229 |
| 8000.0 | 756.9 | 5.6 | -9.7 | 32.0 | 944.4 | 651.0 | 343.5 | 3.7 | 1.000225 |
| 8500.0 | 742.9 | 4.8 | -10.5 | 32.0 | 929.8 | 650.0 | 332.3 | 3.9 | 1.000221 |
| 9000.0 | 729.2 | 4.0 | -11.2 | 32.0 | 915.4 | 649.0 | 320.9 | 4.5 | 1.000217 |
| 9500.0 | 715.7 | 3.1 | -11.9 | 32.0 | 901.2 | 648.0 | 310.2 | 5.5 | 1.000213 |
| 10000.0 | 702.4 | 2.3 | -10.4 | 38.4 | 887.1 | 647.0 | 315.5 | 6.8 | 1.000211 |
| 10500.0 | 689.2 | 1.3 | -10.6 | 40.7 | 873.6 | 645.8 | 323.4 | 8.4 | 1.000208 |
| 11000.0 | 676.2 | .2 | -11.3 | 41.5 | 860.4 | 644.6 | 329.1 | 9.8 | 1.000205 |
| 11500.0 | 663.5 | -.8 | -12.0 | 42.3 | 847.4 | 643.4 | 332.2 | 10.4 | 1.000201 |
| 12000.0 | 651.0 | -1.8 | -12.7 | 42.9 | 834.6 | 642.2 | 334.1 | 9.9 | 1.000198 |
| 12500.0 | 638.6 | -2.5 | -13.6 | 42.2 | 821.0 | 641.3 | 341.8 | 10.3 | 1.000194 |
| 13000.0 | 626.4 | -3.3 | -14.4 | 41.5 | 807.6 | 640.4 | 345.6 | 10.9 | 1.000190 |
| 13500.0 | 614.5 | -4.0 | -15.3 | 40.8 | 794.4 | 639.5 | 339.5 | 11.6 | 1.000187 |
| 14000.0 | 602.7 | -4.8 | -16.2 | 40.2 | 781.5 | 638.6 | 325.4 | 12.2 | 1.000183 |
| 14500.0 | 591.2 | -5.5 | -17.1 | 39.5 | 768.8 | 637.7 | 307.7 | 13.8 | 1.000180 |
| 15000.0 | 579.9 | -6.4 | -18.2 | 38.3 | 756.5 | 636.6 | 296.1 | 16.0 | 1.000176 |
| 15500.0 | 568.7 | -7.4 | -19.8 | 36.4 | 745.0 | 635.3 | 288.4 | 18.3 | 1.000173 |
| 16000.0 | 557.7 | -8.5 | -21.3 | 34.5 | 733.6 | 634.0 | 284.9 | 19.2 | 1.000169 |
| 16500.0 | 546.8 | -9.6 | -22.8 | 33.0 | 722.4 | 632.6 | 283.9 | 19.4 | 1.000166 |
| 17000.0 | 536.1 | -10.9 | -23.9 | 33.3 | 711.6 | 631.1 | 285.0 | 18.7 | 1.000163 |
| 17500.0 | 525.5 | -12.2 | -24.9 | 33.5 | 701.0 | 629.6 | 286.1 | 18.8 | 1.000161 |
| 18000.0 | 515.2 | -13.4 | -26.0 | 33.7 | 690.6 | 628.0 | 287.0 | 19.1 | 1.000158 |
| 18500.0 | 505.0 | -14.7 | -27.0 | 33.9 | 680.3 | 626.5 | 286.7 | 19.8 | 1.000155 |
| 19000.0 | 495.0 | -16.0 | -28.5 | 33.1 | 670.2 | 624.9 | 286.9 | 20.9 | 1.000153 |
| 19500.0 | 485.0 | -17.4 | -30.3 | 31.2 | 660.4 | 623.1 | 287.4 | 22.2 | 1.000150 |
| 20000.0 | 475.3 | -18.8 | -32.2 | 29.3 | 650.7 | 621.4 | 288.9 | 23.1 | 1.000147 |
| 20500.0 | 465.7 | -20.1 | -34.0 | 27.7 | 640.9 | 619.8 | 290.3 | 22.8 | 1.000145 |
| 21000.0 | 456.2 | -21.2 | -35.3 | 26.6 | 630.7 | 618.4 | 291.6 | 22.2 | 1.000142 |
| 21500.0 | 446.9 | -22.4 | -36.7 | 25.6 | 620.6 | 617.0 | 292.3 | 22.4 | 1.000140 |
| 22000.0 | 437.7 | -23.6 | -37.4 | 26.8 | 610.9 | 615.5 | 294.7 | 23.0 | 1.000138 |
| 22500.0 | 428.7 | -25.0 | -37.2 | 30.7 | 601.5 | 613.8 | 298.3 | 23.7 | 1.000135 |
| 23000.0 | 419.8 | -26.3 | -37.5 | 33.5 | 592.2 | 612.2 | 305.2 | 23.5 | 1.000133 |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0930 HRS MST
ASCENSION NO. 8

UPPER AIR DATA
0470290008
EAST-28/CHERRY
TABLE 14
Cont'd

GEODETIC COORDINATES
32.89427 LAT DEG
138.40591 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 DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 23500.0 | 411.0 | -27.2 | -39.2 | 30.7 | 582.2 | 611.0 | 309.4 | 23.7 | 1.000131 |
| 24000.0 | 402.4 | -28.2 | -41.0 | 27.8 | 572.3 | 609.7 | 311.5 | 23.8 | 1.000129 |
| 24500.0 | 393.9 | -29.4 | -42.3 | 27.1 | 562.9 | 608.3 | 309.4 | 23.8 | 1.000126 |
| 25000.0 | 385.4 | -30.7 | -43.4 | 27.2 | 553.8 | 606.6 | 309.6 | 24.0 | 1.000124 |
| 25500.0 | 377.2 | -32.0 | -44.5 | 27.3 | 544.8 | 605.0 | 311.1 | 24.4 | 1.000122 |
| 26000.0 | 369.1 | -33.3 | -45.6 | 27.5 | 536.0 | 603.4 | 312.7 | 26.2 | 1.000120 |
| 26500.0 | 361.2 | -34.5 | -46.7 | 27.6 | 527.3 | 601.8 | 313.5 | 27.7 | 1.000118 |
| 27000.0 | 353.5 | -35.8 | -47.8 | 27.7 | 518.8 | 600.2 | 313.8 | 28.9 | 1.000116 |
| 27500.0 | 345.9 | -37.1 | -48.9 | 27.9 | 510.5 | 598.6 | 314.1 | 30.6 | 1.000114 |
| 28000.0 | 338.5 | -38.4 | -50.0 | 28.0 | 502.3 | 596.9 | 314.2 | 32.2 | 1.000112 |
| 28500.0 | 331.0 | -39.8 | -52.7 | 23.5** | 494.2 | 595.1 | 314.1 | 33.4 | 1.000110 |
| 29000.0 | 323.7 | -41.3 | -56.1 | 18.1** | 486.3 | 593.2 | 314.2 | 33.0 | 1.000109 |
| 29500.0 | 316.5 | -42.7 | -60.1 | 12.8** | 478.5 | 591.4 | 314.2 | 31.3 | 1.000107 |
| 30000.0 | 309.4 | -44.2 | -65.3 | 7.4** | 470.8 | 589.5 | 314.0 | 29.9 | 1.000105 |
| 30500.0 | 302.6 | -45.6 | -75.2 | 2.0** | 463.3 | 587.6 | 313.7 | 29.1 | 1.000103 |
| 31000.0 | 295.7 | -47.0 | | | 455.5 | 585.8 | 313.4 | 30.1 | 1.000101 |
| 31500.0 | 288.8 | -48.3 | | | 447.6 | 584.1 | 313.0 | 30.8 | 1.000100 |
| 32000.0 | 282.2 | -49.7 | | | 439.8 | 582.4 | 312.7 | 31.1 | 1.000098 |
| 32500.0 | 275.6 | -51.0 | | | 432.2 | 580.7 | 311.2 | 30.4 | 1.000096 |
| 33000.0 | 269.3 | -52.3 | | | 424.8 | 579.0 | 310.4 | 30.5 | 1.000095 |
| 33500.0 | 263.1 | -53.6 | | | 417.4 | 577.2 | 310.4 | 31.8 | 1.000093 |
| 34000.0 | 257.0 | -54.9 | | | 410.3 | 575.5 | 311.4 | 32.3 | 1.000091 |
| 34500.0 | 251.0 | -56.3 | | | 403.2 | 573.7 | 312.4 | 32.6 | 1.000090 |
| 35000.0 | 245.0 | -57.4 | | | 395.7 | 572.2 | 312.7 | 32.4 | 1.000088 |
| 35500.0 | 239.1 | -58.5 | | | 388.1 | 570.8 | 313.1 | 32.3 | 1.000086 |
| 36000.0 | 233.4 | -59.6 | | | 380.7 | 569.3 | 312.7 | 32.1 | 1.000085 |
| 36500.0 | 227.8 | -60.7 | | | 373.4 | 567.8 | 309.0 | 30.9 | 1.000083 |
| 37000.0 | 222.3 | -61.8 | | | 366.3 | 566.4 | 304.1 | 31.1 | 1.000082 |
| 37500.0 | 216.9 | -62.9 | | | 359.4 | 564.9 | 298.9 | 32.3 | 1.000080 |
| 38000.0 | 211.7 | -64.0 | | | 352.6 | 563.4 | 296.0 | 35.2 | 1.000079 |
| 38500.0 | 206.6 | -64.9 | | | 345.5 | 562.3 | 294.5 | 37.9 | 1.000077 |
| 39000.0 | 201.5 | -63.7 | | | 335.1 | 563.8 | 295.8 | 39.2 | 1.000075 |
| 39500.0 | 196.6 | -62.4 | | | 325.0 | 565.5 | 299.3 | 38.0 | 1.000072 |
| 40000.0 | 191.8 | -59.9 | | | 313.4 | 568.9 | 304.6 | 35.3 | 1.000070 |
| 40500.0 | 187.2 | -59.2 | | | 304.8 | 569.9 | 302.8 | 29.8 | 1.000068 |
| 41000.0 | 182.8 | -58.4 | | | 296.5 | 570.9 | 296.7 | 25.5 | 1.000066 |
| 41500.0 | 178.4 | -58.0 | | | 288.9 | 571.4 | 284.4 | 23.5 | 1.000064 |
| 42000.0 | 174.2 | -57.6 | | | 281.6 | 571.9 | 278.7 | 23.7 | 1.000063 |
| 42500.0 | 170.1 | -57.3 | | | 274.4 | 572.4 | 275.4 | 24.3 | 1.000061 |
| 43000.0 | 166.0 | -57.1 | | | 267.7 | 572.6 | 274.9 | 24.5 | 1.000060 |

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

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0930 HRS MST
ASCENSION NO. 8

UPPER AIR DATA
047029000A
EAST-28/CHERRY

GEODETIC COORDINATES
32.89927 LAT DEG
136.40591 LON DEG

TABLE 14
Cont'd

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 43500.0 | 162.1 | -57.7 | | | 262.0 | 571.8 | 275.1 | 25.4 | 1.000058 |
| 44000.0 | 158.2 | -58.3 | | | 256.5 | 571.1 | 275.7 | 26.6 | 1.000057 |
| 44500.0 | 154.5 | -57.7 | | | 249.8 | 571.8 | 275.5 | 28.4 | 1.000056 |
| 45000.0 | 150.8 | -57.1 | | | 243.2 | 572.6 | 274.7 | 30.0 | 1.000054 |
| 45500.0 | 147.2 | -56.4 | | | 236.6 | 573.6 | 273.0 | 31.3 | 1.000053 |
| 46000.0 | 143.8 | -55.6 | | | 230.2 | 574.6 | 274.6 | 31.0 | 1.000051 |
| 46500.0 | 140.4 | -54.8 | | | 224.0 | 575.7 | 279.3 | 29.5 | 1.000050 |
| 47000.0 | 137.1 | -54.4 | | | 218.3 | 576.2 | 284.1 | 27.5 | 1.000049 |
| 47500.0 | 133.9 | -54.6 | | | 213.4 | 575.9 | 289.5 | 25.3 | 1.000048 |
| 48000.0 | 130.7 | -54.9 | | | 208.7 | 575.6 | 287.6 | 24.4 | 1.000046 |
| 48500.0 | 127.7 | -55.1 | | | 204.0 | 575.3 | 284.2 | 23.8 | 1.000045 |
| 49000.0 | 124.7 | -55.3 | | | 199.4 | 575.0 | 283.7 | 23.6 | 1.000044 |
| 49500.0 | 121.8 | -55.4 | | | 194.8 | 574.9 | 283.7 | 23.5 | 1.000043 |
| 50000.0 | 118.9 | -55.6 | | | 190.4 | 574.5 | 284.6 | 23.3 | 1.000042 |
| 50500.0 | 116.1 | -56.3 | | | 186.5 | 573.7 | 285.8 | 23.2 | 1.000042 |
| 51000.0 | 113.3 | -56.9 | | | 182.6 | 572.8 | 287.2 | 23.0 | 1.000041 |
| 51500.0 | 110.7 | -57.6 | | | 178.8 | 572.0 | 276.5 | 20.4 | 1.000040 |
| 52000.0 | 108.0 | -58.0 | | | 174.9 | 571.4 | 263.0 | 18.9 | 1.000039 |
| 52500.0 | 105.5 | -58.0 | | | 170.8 | 571.4 | 252.2 | 22.0 | 1.000038 |
| 53000.0 | 103.0 | -58.0 | | | 166.7 | 571.4 | 247.6 | 25.3 | 1.000037 |
| 53500.0 | 100.5 | -58.0 | | | 162.8 | 571.4 | 255.8 | 27.4 | 1.000036 |
| 54000.0 | 98.1 | -57.7 | | | 158.7 | 571.8 | 261.2 | 29.1 | 1.000035 |
| 54500.0 | 95.8 | -57.3 | | | 154.7 | 572.4 | 262.9 | 28.8 | 1.000034 |
| 55000.0 | 93.6 | -56.9 | | | 150.7 | 572.9 | 264.5 | 27.8 | 1.000034 |
| 55500.0 | 91.4 | -56.5 | | | 146.9 | 573.4 | 266.1 | 25.8 | 1.000033 |
| 56000.0 | 89.2 | -56.1 | | | 143.2 | 573.9 | 275.2 | 22.0 | 1.000032 |
| 56500.0 | 87.1 | -55.7 | | | 139.5 | 574.4 | 293.4 | 18.6 | 1.000031 |
| 57000.0 | 85.0 | -55.8 | | | 136.3 | 574.4 | 305.1 | 16.2 | 1.000030 |
| 57500.0 | 83.0 | -56.5 | | | 133.5 | 573.5 | 316.8 | 14.3 | 1.000030 |
| 58000.0 | 81.0 | -57.2 | | | 130.7 | 572.6 | 308.2 | 11.4 | 1.000029 |
| 58500.0 | 79.1 | -57.8 | | | 128.0 | 571.7 | 293.2 | 9.3 | 1.000029 |
| 59000.0 | 77.2 | -58.5 | | | 125.3 | 570.7 | 272.6 | 10.6 | 1.000028 |
| 59500.0 | 75.4 | -59.2 | | | 122.7 | 569.8 | 260.5 | 12.8 | 1.000027 |
| 60000.0 | 73.6 | -59.9 | | | 120.2 | 568.9 | 260.7 | 15.0 | 1.000027 |
| 60500.0 | 71.8 | -60.6 | | | 117.7 | 568.0 | 263.1 | 16.5 | 1.000026 |
| 61000.0 | 70.1 | -61.2 | | | 115.3 | 567.1 | 272.4 | 16.3 | 1.000026 |
| 61500.0 | 68.4 | -61.3 | | | 112.5 | 567.0 | 281.4 | 15.9 | 1.000025 |
| 62000.0 | 66.8 | -61.3 | | | 109.8 | 567.0 | 290.3 | 14.6 | 1.000024 |
| 62500.0 | 65.2 | -61.3 | | | 107.2 | 567.0 | 297.7 | 13.4 | 1.000024 |
| 63000.0 | 63.6 | -61.0 | | | 104.5 | 567.4 | 301.0 | 12.0 | 1.000023 |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0930 HRS MST
ASCENSION NO. 8

UPPER AIR DATA
047029000B
EAST-28/CHERRY
TABLE 14
Cont'd

GEODETIC COORDINATES
32.89927 LAT DEG
136.48591 LON DEG

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS | INDEX OF REFRACTION |
|---|---|---|---|---|---|---|---|---|---|
| 63500.0 | 62.1 | -60.6 | | | 101.8 | 568.0 | 302.1 | 9.9 | 1.000023 |
| 64000.0 | 60.6 | -60.1 | | | 99.1 | 568.7 | 298.9 | 7.1 | 1.000022 |
| 64500.0 | 59.2 | -59.6 | | | 96.5 | 569.3 | 296.6 | 4.8 | 1.000022 |
| 65000.0 | 57.8 | -59.1 | | | 94.0 | 569.9 | 296.6 | 2.7 | 1.000021 |
| 65500.0 | 56.4 | -58.7 | | | 91.6 | 570.6 | 311.1 | 2.1 | 1.000020 |
| 66000.0 | 55.1 | -58.2 | | | 89.2 | 571.2 | 328.7 | 2.5 | 1.000020 |
| 66500.0 | 53.7 | -57.7 | | | 86.9 | 571.8 | 348.5 | 2.8 | 1.000019 |
| 67000.0 | 52.5 | -57.2 | | | 84.6 | 572.4 | 350.1 | 3.1 | 1.000019 |
| 67500.0 | 51.2 | -56.8 | | | 82.4 | 573.1 | 3.4 | 3.3 | 1.000018 |
| 68000.0 | 50.0 | -56.3 | | | 80.3 | 573.7 | 14.3 | 3.7 | 1.000018 |
| 68500.0 | 48.8 | -56.0 | | | 78.3 | 574.0 | 8.8 | 3.2 | 1.000017 |
| 69000.0 | 47.7 | -55.8 | | | 76.4 | 574.3 | 358.4 | 2.9 | 1.000017 |
| 69500.0 | 46.6 | -55.6 | | | 74.5 | 574.7 | 339.8 | 3.8 | 1.000017 |
| 70000.0 | 45.5 | -55.3 | | | 72.7 | 575.0 | | | 1.000016 |
| 70500.0 | 44.4 | -55.1 | | | 70.9 | 575.3 | | | 1.000016 |
| 71000.0 | 43.4 | -54.8 | | | 69.2 | 575.7 | | | 1.000015 |
| 71500.0 | 42.3 | -54.6 | | | 67.5 | 576.0 | | | 1.000015 |
| 72000.0 | 41.4 | -54.3 | | | 65.8 | 576.3 | | | 1.000015 |

STATION ALTITUDE 3912.75 FEET MSL
16 FEB. 83 0930 HRS MST
ASCENSION NO. 8

MANDATORY LEVELS
0470290006
EAST-28/CHERRY

TABLE 15

GEODETIC COORDINATES
32.89927 LAT DEG
136.40591 LON DEG

| PRESSURE MILLIBARS | GEOPOTENTIAL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS |
|---|---|---|---|---|---|---|
| 850.0 | 4866. | 8.5 | -1.9 | 48. | 11.0 | 2.4 |
| 800.0 | 6507. | 6.0 | -4.4 | 44. | 1.9 | 3.3 |
| 750.0 | 8242. | 5.2 | -10.1 | 32. | 337.9 | 3.8 |
| 700.0 | 10080. | 2.1 | -10.1 | 40. | 317.1 | 7.1 |
| 650.0 | 12029. | -1.0 | -12.8 | 43. | 334.3 | 9.9 |
| 600.0 | 14106. | -4.0 | -16.4 | 40. | 320.9 | 12.4 |
| 550.0 | 16334. | -9.3 | -22.5 | 33. | 283.6 | 19.6 |
| 500.0 | 18725. | -15.3 | -27.6 | 34. | 286.7 | 20.2 |
| 450.0 | 21301. | -22.0 | -36.2 | 26. | 292.0 | 22.3 |
| 400.0 | 24105. | -28.5 | -41.6 | 27. | 310.9 | 23.8 |
| 350.0 | 27194. | -36.4 | -48.3 | 28. | 313.9 | 29.7 |
| 300.0 | 30630. | -46.2 | | | 313.6 | 29.5 |
| 250.0 | 34516. | -56.5 | | | 312.5 | 32.6 |
| 200.0 | 39059. | -62.7 | | | 296.1 | 39.6 |
| 175.0 | 41799. | -57.7 | | | 279.8 | 23.6 |
| 150.0 | 44993. | -57.0 | | | 274.4 | 30.2 |
| 125.0 | 48812. | -55.3 | | | 283.7 | 23.7 |
| 100.0 | 53448. | -58.0 | | | 257.1 | 27.9 |
| 80.0 | 58090. | -57.5 | | | 302.1 | 10.0 |
| 70.0 | 60832. | -61.3 | | | 272.6 | 16.3 |
| 60.0 | 63976. | -59.9 | | | 297.2 | 6.2 |
| 50.0 | 67744. | -56.3 | | | 14.4 | 3.7 |

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

END

DATE
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6-83

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