AD-A140 879 19321AT MLRS MISSILE NUMBER 5345 5348 5346 5349 5347 1/1
5350 ROUND NUMBER 56..(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER 17 FEB 84
UNCLASSIFIED ERADCOM/ASL-DR-1336 FFG 4/2 NN

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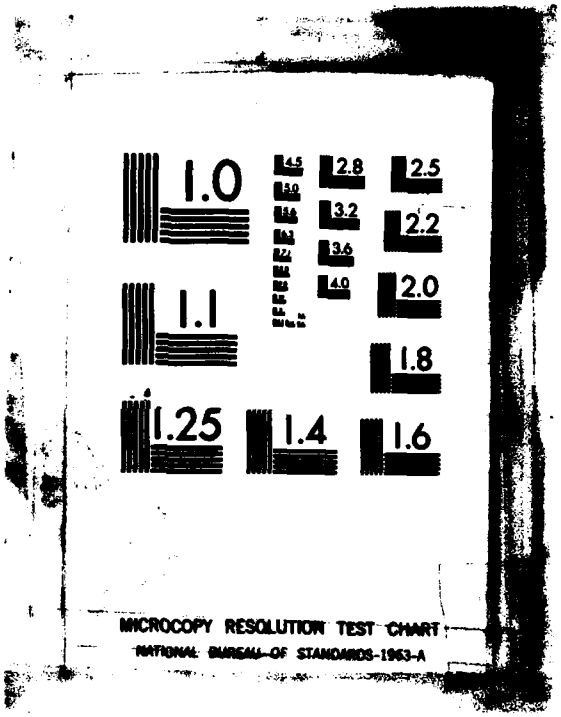
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2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

DR 1336
Feb 84

AD

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AD-A140 879

# METEOROLOGICAL DATA REPORT

19321AT MLRS
Missile Number 5345, 5348, 5346,
5349, 5347, 5350
Round Number 569/FB-12 Thru 574/FB-17
17 February 1984

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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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19321AT MLRS, Missile Number 5345, 5348, 5346, 5349, 5347, 5350, Round Number 569/FB-12 Thru 574/FB-17 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 0917 MST at Tula Gate | 4 |
| 2. T-Time Pilot-Balloon Measured Wind Data | 5 |
| 3. Aiming and T-Time Met Messages | 6 |
| 4. RITA Significant Level Data at 0715 MST | 7 |
| 5. RITA Upper Air Data at 0715 MST | 8 |
| 6. RITA Mandatory Levels at 0715 MST | 10 |
| 7. LANA Significant Level Data at 0730 MST | 11 |
| 8. LANA Upper Air Data at 0730 MST | 12 |
| 9. LANA Mandatory Levels at 0730 MST | 14 |
| 10. RITA Significant Level Data at 0917 MST | 15 |
| 11. RITA Upper Air Data at 0917 MST | 16 |
| 12. RITA Mandatory Levels at 0917 MST | 18 |
| 13. LANA Significant Level Data at 0917 MST | 19 |
| 14. LANA Upper Air Data at 0917 MST | 20 |
| 15. LANA Mandatory Levels at 0917 MST | 22 |



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Dist | Avail and/or Special
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## INTRODUCTION

19321 AT MLRS, Missile Numbers 5345, 5348, 5346, 5349, 5347 and 5350, Round Numbers 569/FB-12 Thru 574/FB-17, were launched from Tula Gate, White Sands Missile Range (WSMR). New Mexico, at 0917:04, 0917:08, 0917:13, 0917:17, 0917:22 and 0917:26 MST, 17 Feb 84. The scheduled launch times were 0900 MST with a 4.5 second separation.

## DISCUSSION

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

1. Observations

a. Surface

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

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

b. Upper Air

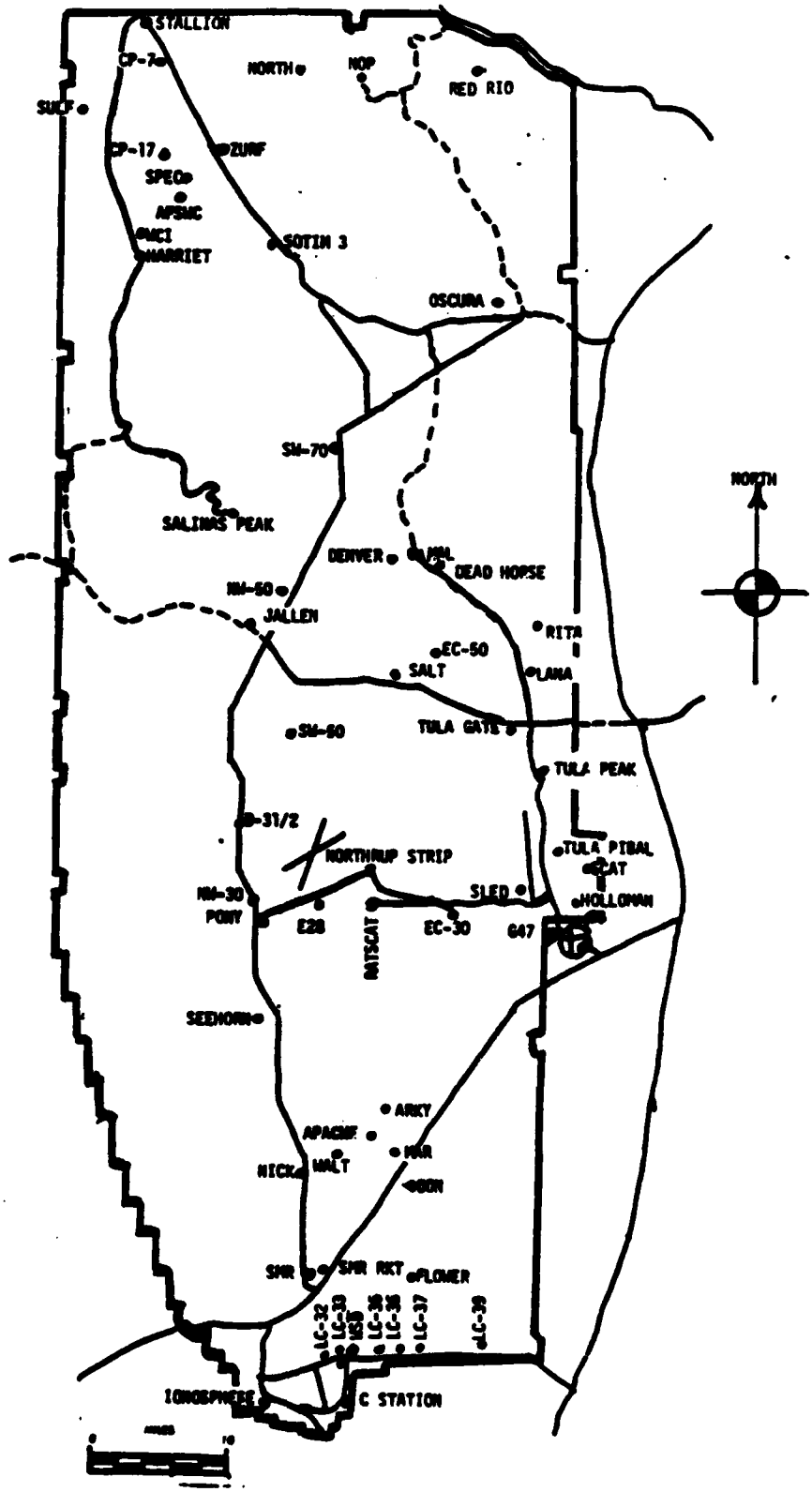
(1) Low level wind data were obtained from pilot-balloon observations at:

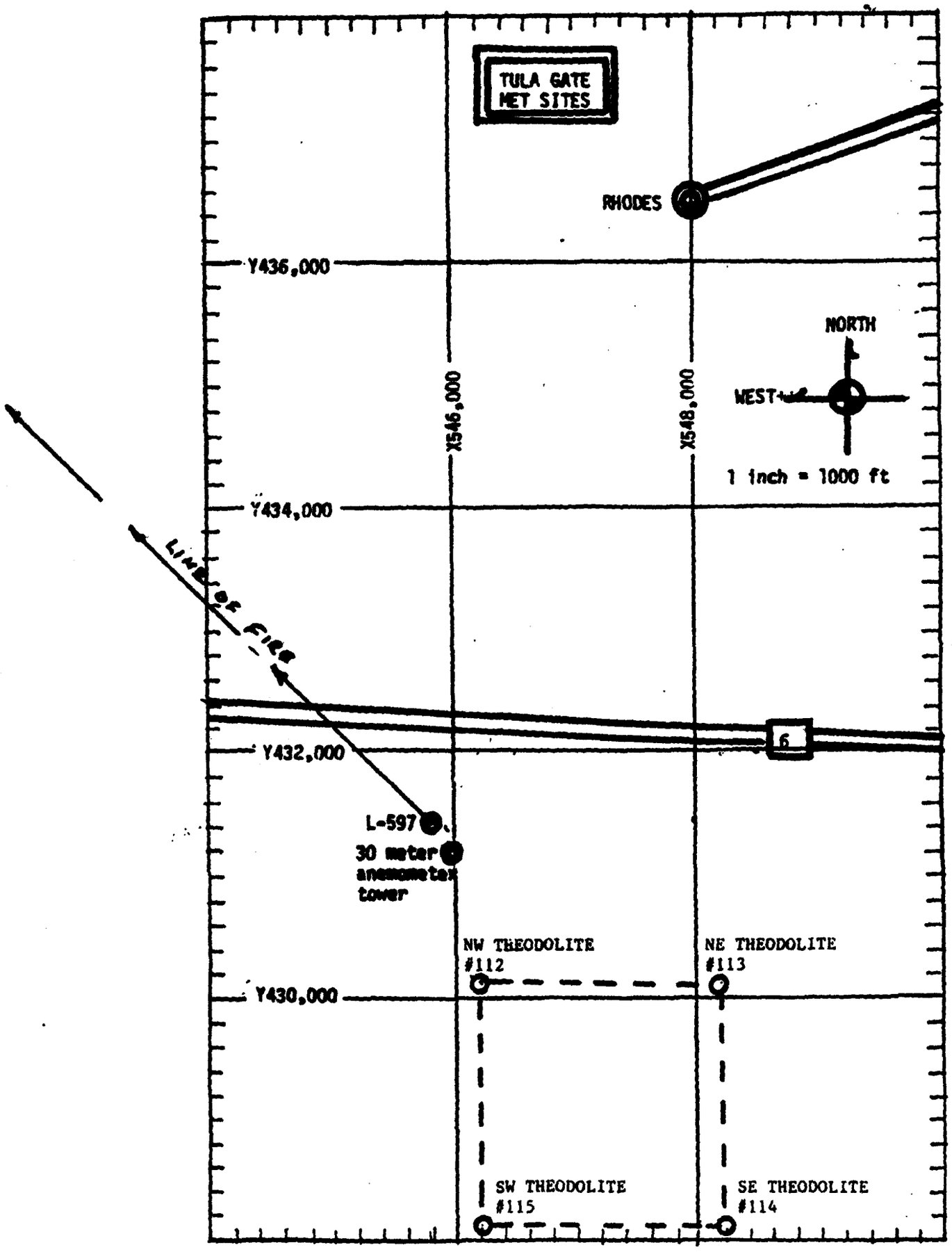
| SITE AND ALTITUDE | |
|---|---|
| Tula Gate | 950 Meters |
| Mal | 2000 Meters |

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

| SITE AND TIME |
|---|
| RITA 0715 MST |
| LANA 0730 MST |
| RITA 0917 MST |
| LANA 0917 MST |

# WSMR METEOROLOGICAL SITES




TULA GATE
MET SITES
RHODES
Y436,000
NORTH
WEST
X546,000
X548,000
1 inch = 1000 ft
Y434,000
LINE OF FIRE
6
Y432,000
L-597
30 meter
anemometer
tower
NW THEODOLITE
#112
NE THEODOLITE
#113
Y430,000
SW THEODOLITE
#115
SE THEODOLITE
#114

PROJECT SURFACE OBSERVATION

TABLE 1 STATION Tula Gate

DATE 17 (DAY) Feb (MONTH) 84 (YEAR) X= 545,944.89 Y= 431,158.70 H= 4102.47

| TIME H S T | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0917 | 864.2 | | 15.2 | | 7.1 | 32 | ~~142.82~~ 1428.2 | 190 | 11 | | 40+ |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

PSYCHROMETRIC COMPUTATION

| | | | |
|---|---|---|---|
| TIME: | 0917 | | |
| DRY BULB TEMP. | 15.2 | | |
| WET BULB TEMP. | 7.1 | | |
| WET BULB DEPR. | 8.1 | | |
| DEW POINT | -1.4 | | |
| RELATIVE HUMID. | 32 | | |

TABLE 2

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 17 Feb 1984

SITE: Tula Gate
TIME: 0917 MST
WSTM COORDINATES:
X= 545,944.58
Y= 531,158.70
H= 4,102.47

| LAYER MIDPOINT METERS AGL | DIRECTION DEGREES | SPEED KNOTS |
|---|---|---|
| SURFACE | 290 | 12 |
| 150 | 226 | 12 |
| 210 | 230 | 13 |
| 270 | 237 | 10 |
| 330 | 222 | 13 |
| 390 | 218 | 13 |
| 500 | 218 | 16 |
| 650 | 220 | 14 |
| 800 | 218 | 16 |
| 950 | 224 | 26 |
| 1150 | | |
| 1350 | | |
| 1550 | | |
| 1750 | | |
| 2000 | | |

Data obtained from a Double Theodolite Tracked pilot-balloon observation.

SITE: Mal
TIME 0919 MST
WSTM COORDINATES:
X= 509,421.05
Y= 497,563.78
H= 4,133.09

| LAYER MIDPOINT METERS AGL | DIRECTION DEGREES | SPEED KNOTS |
|---|---|---|
| SURFACE | 200 | 10 |
| 150 | 165 | 21 |
| 210 | 165 | 24 |
| 270 | 170 | 26 |
| 330 | 170 | 28 |
| 390 | 170 | 29 |
| 500 | 175 | 29 |
| 650 | 170 | 28 |
| 800 | 175 | 31 |
| 950 | 170 | 36 |
| 1150 | 165 | 35 |
| 1350 | 165 | 39 |
| 1550 | 170 | 44 |
| 1750 | 175 | 52 |
| 2000 | 180 | 74 |

Data obtained from a Single Theodolite Tracked pilot-balloon observation.

TABLE 3

## AIMING AND T-TIME COMPUTER MET MESSAGES

17 February 1984

RITA 0715 MST
METCM1332062
171430128864

| | |
|---|---|
| 00302008 | 28290864 |
| 01319023 | 28360854 |
| 02355031 | 28420829 |
| 03368028 | 28180790 |
| 04376030 | 27740743 |
| 05407044 | 27320698 |
| 06409058 | 27030656 |
| 07413062 | 26750616 |
| 08422067 | 26490577 |
| 09421066 | 26060541 |
| 10425068 | 25590507 |
| 11426059 | 25170474 |
| 12426085 | 24590427 |

LANA 0730 MST
METCM1331062
171450127864

| | |
|---|---|
| 00320007 | 28280864 |
| 01324019 | 28390854 |
| 02347034 | 28470829 |
| 03369031 | 28210790 |
| 04380035 | 27780743 |
| 05398046 | 27360699 |
| 06406059 | 27040656 |
| 07408070 | 26770616 |
| 08414074 | 26560578 |
| 09417073 | 26100542 |
| 10418074 | 25660507 |
| 11424075 | 25240474 |
| 12423087 | 24620428 |

RITA 0917 MST
METCM1332062
171630128864

| | |
|---|---|
| 00320015 | 28790864 |
| 01401013 | 28640854 |
| 02392020 | 28400829 |
| 03395027 | 28080790 |
| 04373028 | 27700743 |
| 05383035 | 27250698 |
| 06403052 | 26890656 |
| 07416067 | 26790615 |
| 08421066 | 26480577 |
| 09432074 | 26030541 |
| 10419077 | 25580506 |
| 11424078 | 25200474 |
| 12432101 | 24740427 |

LANA 0917 MST
METCM1331062
171630127864

| | |
|---|---|
| 00373012 | 28780864 |
| 01353014 | 28630854 |
| 02379023 | 28360829 |
| 03393026 | 28020790 |
| 04383028 | 27600743 |
| 05388035 | 27210698 |
| 06398055 | 26890655 |
| 07412073 | 26710615 |
| 08420071 | 26420577 |
| 09420079 | 25970540 |
| 10418087 | 25520506 |
| 11419093 | 25160473 |
| 12429104 | 24590427 |

SIGNIFICANT LEVEL DATA

STATION ALTITUDE 4186.74 FEET MSL
17 FEB. 84 1715 HRS MST
ASCENSION NO. 7

0480210007
PITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 4

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT |
|---|---|---|---|---|
| 864.3 | 4186.7 | 9.3 | -9.7 | 25.0 |
| 850.0 | 4641.5 | 10.5 | -12.1 | 19.0 |
| 818.5 | 5673.5 | 10.8 | -11.2 | 20.0 |
| 700.0 | 9866.6 | -.3 | -18.9 | 23.0 |
| 637.7 | 12298.3 | -4.2 | -24.9 | 18.0 |
| 624.7 | 12870.9 | -5.2 | -18.6 | 34.0 |
| 592.9 | 14173.4 | -7.6 | -24.6 | 24.0 |
| 584.1 | 14556.1 | -7.3 | -28.8 | 16.0 |
| 566.9 | 15318.5 | -9.3 | -31.1 | 15.0 |
| 500.0 | 18455.5 | -18.3 | -34.2 | 23.0 |
| 471.1 | 19906.7 | -22.0 | -33.9 | 33.0 |
| 458.2 | 20576.6 | -23.5 | -33.5 | 39.0 |
| 400.0 | 23795.5 | -31.0 | -43.8 | 27.0 |
| 391.4 | 24301.9 | -31.7 | -45.8 | 23.0 |
| 387.1 | 24558.5 | -32.6 | -47.0 | 22.0 |
| 357.5 | 26394.8 | -37.3 | -51.1 | 22.0 |
| 347.6 | 27022.7 | -37.7 | -51.8 | 21.0 |

UPPER AIR DATA
0480210007
RITA

STATION ALTITUDE 4186.74 FEET MSL
17 FEB. 84 0715 HRS MST
ASCENSION NO. 7

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 5

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 4186.7 | 864.3 | 9.3 | -9.7 | 25.0 | 1064.6 | 655.2 | 170.0 | 8.0 | 1.000251 |
| 4500.0 | 854.4 | 10.1 | -11.3 | 20.9 | 1049.5 | 656.1 | 184.8 | 10.8 | 1.000246 |
| 5000.0 | 838.9 | 10.6 | -11.8 | 19.3 | 1028.8 | 656.6 | 196.3 | 16.2 | 1.000241 |
| 5500.0 | 823.7 | 10.7 | -11.4 | 19.8 | 1009.6 | 656.8 | 202.0 | 21.8 | 1.000237 |
| 6000.0 | 808.6 | 9.9 | -11.8 | 20.2 | 993.9 | 655.8 | 205.4 | 27.6 | 1.000233 |
| 6500.0 | 793.7 | 8.6 | -12.7 | 20.6 | 980.2 | 654.3 | 206.0 | 28.7 | 1.000229 |
| 7000.0 | 779.0 | 7.3 | -13.6 | 20.9 | 966.7 | 652.7 | 206.2 | 28.3 | 1.000226 |
| 7500.0 | 764.6 | 6.0 | -14.5 | 21.3 | 953.4 | 651.2 | 207.8 | 28.9 | 1.000222 |
| 8000.0 | 750.5 | 4.6 | -15.4 | 21.7 | 940.3 | 649.6 | 211.0 | 29.7 | 1.000219 |
| 8500.0 | 736.6 | 3.3 | -16.3 | 22.0 | 927.4 | 648.0 | 216.5 | 30.9 | 1.000215 |
| 9000.0 | 723.0 | 2.0 | -17.2 | 22.4 | 914.6 | 646.5 | 222.3 | 34.5 | 1.000212 |
| 9500.0 | 709.6 | .7 | -18.2 | 22.7 | 902.1 | 644.9 | 227.0 | 39.7 | 1.000208 |
| 10000.0 | 696.4 | -.5 | -19.2 | 22.7 | 889.2 | 643.5 | 229.3 | 44.9 | 1.000205 |
| 10500.0 | 683.2 | -1.3 | -20.4 | 21.7 | 875.0 | 642.5 | 230.8 | 50.2 | 1.000201 |
| 11000.0 | 670.2 | -2.1 | -21.6 | 20.7 | 861.0 | 641.6 | 230.0 | 54.7 | 1.000197 |
| 11500.0 | 657.5 | -2.9 | -22.9 | 19.6 | 847.2 | 640.6 | 229.4 | 59.1 | 1.000194 |
| 12000.0 | 645.0 | -3.7 | -24.1 | 18.6 | 833.6 | 639.6 | 229.4 | 61.3 | 1.000190 |
| 12500.0 | 632.7 | -4.6 | -22.0 | 24.1 | 820.2 | 638.6 | 229.4 | 63.5 | 1.000188 |
| 13000.0 | 620.6 | -5.5 | -19.3 | 32.7 | 807.1 | 637.6 | 231.3 | 63.1 | 1.000187 |
| 13500.0 | 608.6 | -6.4 | -21.4 | 29.0 | 794.3 | 636.5 | 233.3 | 62.7 | 1.000183 |
| 14000.0 | 596.9 | -7.3 | -23.8 | 25.3 | 781.7 | 635.4 | 235.1 | 64.1 | 1.000179 |
| 14500.0 | 585.4 | -7.3 | -28.0 | 17.2 | 766.9 | 635.3 | 236.8 | 65.5 | 1.000174 |
| 15000.0 | 574.0 | -8.5 | -30.1 | 15.4 | 755.3 | 633.9 | 237.2 | 66.2 | 1.000171 |
| 15500.0 | 562.8 | -9.8 | -31.2 | 15.5 | 744.3 | 632.3 | 237.4 | 66.7 | 1.000168 |
| 16000.0 | 551.6 | -11.3 | -31.5 | 16.7 | 733.6 | 630.6 | 236.9 | 67.0 | 1.000166 |
| 16500.0 | 540.7 | -12.7 | -32.0 | 18.0 | 723.0 | 628.8 | 236.3 | 67.4 | 1.000163 |
| 17000.0 | 530.0 | -14.1 | -32.5 | 19.3 | 712.6 | 627.1 | 237.1 | 67.5 | 1.000161 |
| 17500.0 | 519.5 | -15.6 | -33.0 | 20.6 | 702.4 | 625.3 | 237.9 | 67.6 | 1.000159 |
| 18000.0 | 509.2 | -17.0 | -33.7 | 21.8 | 692.3 | 623.6 | 238.4 | 67.2 | 1.000156 |
| 18500.0 | 499.1 | -18.4 | -34.2 | 23.3 | 682.4 | 621.9 | 238.8 | 67.0 | 1.000154 |
| 19000.0 | 489.0 | -19.7 | -33.9 | 26.8 | 671.9 | 620.3 | 238.6 | 68.3 | 1.000152 |
| 19500.0 | 479.0 | -21.0 | -33.8 | 30.2 | 661.5 | 618.7 | 238.3 | 69.3 | 1.000149 |
| 20000.0 | 469.3 | -22.2 | -33.8 | 33.8 | 651.3 | 617.2 | 237.9 | 69.8 | 1.000147 |
| 20500.0 | 459.7 | -23.3 | -33.5 | 38.3 | 640.8 | 615.8 | 237.5 | 71.5 | 1.000145 |
| 21000.0 | 450.1 | -24.5 | -34.8 | 37.4 | 630.4 | 614.4 | 237.1 | 74.0 | 1.000142 |
| 21500.0 | 440.7 | -25.7 | -36.4 | 35.6 | 620.1 | 613.0 | 237.6 | 77.7 | 1.000140 |
| 22000.0 | 431.5 | -26.8 | -38.0 | 33.7 | 610.1 | 611.5 | 238.1 | 81.5 | 1.000137 |
| 22500.0 | 422.5 | -28.0 | -39.5 | 31.8 | 600.2 | 610.0 | 240.4 | 79.3 | 1.000135 |
| 23000.0 | 413.7 | -29.1 | -41.2 | 30.0 | 590.5 | 608.6 | 242.9 | 77.2 | 1.000133 |
| 23500.0 | 405.0 | -30.3 | -42.8 | 28.1 | 580.9 | 607.1 | 247.5 | 74.0 | 1.000130 |

5c

UPPER AIR DATA

STATION ALTITUDE 4126.74 FEET MSL
17 FEB. 84 0715 HRS MST
ASCENSION NO. 7

0480210007
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 5 Con't

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 24000.0 | 396.5 | -31.3 | -44.6 | 25.4 | 571.0 | 605.9 | 246.7 | 90.5 | 1.000128 |
| 24500.0 | 388.1 | -32.4 | -46.7 | 22.2 | 561.5 | 604.5 | 246.2 | 95.6 | 1.000126 |
| 25000.0 | 379.7 | -33.7 | -48.0 | 22.0 | 552.5 | 602.8 | 249.6 | 73.4 | 1.000124 |
| 25500.0 | 371.5 | -35.0 | -49.1 | 22.0 | 543.5 | 601.2 | 251.1 | 70.0 | 1.000122 |
| 26000.0 | 363.5 | -36.3 | -50.2 | 22.0 | 534.7 | 599.6 | | | 1.000119 |
| 26500.0 | 355.7 | -37.4 | -51.2 | 21.8 | 525.5 | 598.2 | | | 1.000117 |
| 27000.0 | 347.9 | -37.7 | -51.8 | 21.0 | 514.8 | 597.8 | | | 1.000115 |

MANDATORY LEVELS

STATION ALTITUDE 4186.74 FEET MSL
17 FEB. 84 0715 MBS MST
ASCENSION NO. 7

0480210007
PITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 6

| PRESSURE MILLIBARS | GEOPOTENTIAL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS |
|---|---|---|---|---|---|---|
| 850.0 | 4638. | 10.5 | -12.1 | 19. | 189.0 | 12.3 |
| 800.0 | 6292. | 9.2 | -12.3 | 20. | 206.0 | 28.9 |
| 750.0 | 8031. | 4.6 | -15.4 | 22. | 211.4 | 29.7 |
| 700.0 | 9858. | -.3 | -18.9 | 23. | 228.8 | 43.5 |
| 650.0 | 11791. | -3.4 | -23.6 | 19. | 229.4 | 60.4 |
| 600.0 | 13853. | -7.1 | -23.1 | 26. | 234.6 | 63.7 |
| 550.0 | 16065. | -11.5 | -31.6 | 17. | 236.8 | 67.1 |
| 500.0 | 18431. | -18.3 | -34.2 | 23. | 238.9 | 66.9 |
| 450.0 | 20980. | -24.5 | -34.8 | 37. | 237.1 | 74.0 |
| 400.0 | 23759. | -31.0 | -43.8 | 27. | 247.2 | 83.3 |
| 350.0 | 26820. | -37.6 | -51.6 | 21. | | |

SIGNIFICANT LEVEL DATA

0480320007

LANA

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0730 HRS MST
ASCENSION NO. 7

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

TABLE 7

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL.HUM. PERCENT |
|---|---|---|---|---|
| 864.3 | 4173.4 | 9.2 | -9.3 | 26.0 |
| 850.0 | 4628.5 | 10.9 | -10.5 | 21.0 |
| 830.9 | 5250.9 | 11.6 | -10.0 | 21.0 |
| 784.9 | 6803.9 | 8.3 | -12.1 | 22.0 |
| 700.0 | 9861.7 | .1 | -18.0 | 24.0 |
| 632.4 | 12510.8 | -4.7 | -24.7 | 19.0 |
| 617.7 | 13117.7 | -5.8 | -19.8 | 32.0 |
| 588.7 | 14354.1 | -6.6 | -28.2 | 16.0 |
| 580.0 | 14735.9 | -7.2 | -28.0 | 17.0 |
| 529.5 | 17040.0 | -13.9 | -32.4 | 19.0 |
| 500.0 | 18461.7 | -17.5 | -33.1 | 24.0 |
| 450.1 | 21018.1 | -24.1 | -33.1 | 43.0 |
| 415.0 | 22948.7 | -28.7 | -39.6 | 34.0 |
| 400.0 | 23812.4 | -30.7 | -42.5 | 30.0 |
| 395.3 | 24087.9 | -31.8 | -43.8 | 29.0 |
| 366.2 | 24628.3 | -33.0 | -45.2 | 28.0 |

UPPER AIR DATA

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0730 MS MST
ASCENSION NO. 7

0480320007
LANA

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

TABLE 8

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 4173.4 | 864.3 | 9.2 | -9.3 | 26.0 | 1065.0 | 655.1 | 180.0 | 7.0 | 1.000252 |
| 4500.0 | 854.0 | 10.4 | -10.1 | 22.4 | 1047.8 | 656.4 | 191.7 | 10.7 | 1.000247 |
| 5000.0 | 838.5 | 11.3 | -10.2 | 21.0 | 1025.6 | 657.5 | 199.1 | 16.8 | 1.000242 |
| 5500.0 | 823.3 | 11.1 | -10.3 | 21.2 | 1007.9 | 657.2 | 202.6 | 23.1 | 1.000238 |
| 6000.0 | 809.4 | 10.0 | -11.0 | 21.5 | 993.3 | 656.0 | 204.5 | 29.4 | 1.000234 |
| 6500.0 | 793.7 | 8.9 | -11.7 | 21.8 | 979.0 | 654.7 | 206.1 | 31.5 | 1.000230 |
| 7000.0 | 779.2 | 7.8 | -12.5 | 22.1 | 965.1 | 653.3 | 207.7 | 32.1 | 1.000226 |
| 7500.0 | 764.7 | 6.4 | -13.5 | 22.5 | 951.8 | 651.8 | 210.0 | 33.0 | 1.000223 |
| 8000.0 | 750.5 | 5.1 | -14.4 | 22.8 | 938.7 | 650.2 | 212.6 | 34.0 | 1.000219 |
| 8500.0 | 736.6 | 3.8 | -15.4 | 23.1 | 925.8 | 648.6 | 215.7 | 35.9 | 1.000215 |
| 9000.0 | 723.0 | 2.4 | -16.3 | 23.4 | 913.1 | 647.0 | 218.8 | 38.5 | 1.000212 |
| 9500.0 | 709.5 | 1.1 | -17.3 | 23.8 | 900.6 | 645.4 | 221.9 | 42.1 | 1.000209 |
| 10000.0 | 696.3 | -.2 | -18.4 | 23.7 | 887.8 | 643.9 | 224.9 | 46.3 | 1.000205 |
| 10500.0 | 683.1 | -1.1 | -19.6 | 22.8 | 873.9 | 642.8 | 226.7 | 51.4 | 1.000201 |
| 11000.0 | 670.1 | -2.0 | -20.9 | 21.9 | 860.3 | 641.8 | 227.7 | 57.0 | 1.000198 |
| 11500.0 | 657.4 | -2.9 | -22.1 | 20.9 | 846.8 | 640.7 | 227.7 | 61.5 | 1.000194 |
| 12000.0 | 644.9 | -3.8 | -23.4 | 20.0 | 833.6 | 639.6 | 227.2 | 65.2 | 1.000190 |
| 12500.0 | 632.7 | -4.7 | -24.7 | 19.0 | 820.5 | 638.5 | 227.7 | 67.8 | 1.000187 |
| 13000.0 | 620.5 | -5.6 | -20.6 | 29.5 | 807.3 | 637.5 | 229.0 | 69.2 | 1.000186 |
| 13500.0 | 608.6 | -6.0 | -21.9 | 27.1 | 793.2 | 636.9 | 230.4 | 70.2 | 1.000182 |
| 14000.0 | 596.9 | -6.4 | -25.3 | 20.6 | 779.0 | 636.5 | 232.0 | 70.6 | 1.000178 |
| 14500.0 | 585.4 | -6.6 | -26.1 | 16.4 | 765.4 | 635.9 | 233.1 | 71.0 | 1.000174 |
| 15000.0 | 574.0 | -8.0 | -28.5 | 17.2 | 753.7 | 634.5 | 233.7 | 71.3 | 1.000171 |
| 15500.0 | 562.7 | -9.4 | -29.5 | 17.7 | 743.1 | 632.8 | 234.1 | 71.7 | 1.000168 |
| 16000.0 | 551.7 | -10.9 | -30.4 | 18.1 | 732.6 | 631.0 | 234.4 | 72.1 | 1.000166 |
| 16500.0 | 540.9 | -12.3 | -31.4 | 18.5 | 722.3 | 629.3 | 234.6 | 72.7 | 1.000163 |
| 17000.0 | 530.3 | -13.8 | -32.4 | 19.0 | 712.1 | 627.5 | 234.9 | 74.1 | 1.000161 |
| 17500.0 | 519.8 | -15.1 | -32.6 | 20.6 | 701.4 | 625.9 | 235.1 | 75.4 | 1.000158 |
| 18000.0 | 509.4 | -16.3 | -32.8 | 22.4 | 690.8 | 624.4 | 235.9 | 75.0 | 1.000156 |
| 18500.0 | 499.2 | -17.6 | -33.1 | 24.3 | 680.3 | 622.9 | 236.7 | 74.7 | 1.000154 |
| 19000.0 | 489.1 | -19.9 | -32.8 | 28.0 | 669.9 | 621.3 | 236.9 | 74.0 | 1.000151 |
| 19500.0 | 479.1 | -20.2 | -32.6 | 31.7 | 659.6 | 619.7 | 236.9 | 74.3 | 1.000149 |
| 20000.0 | 469.3 | -21.5 | -32.7 | 35.4 | 649.5 | 618.1 | 236.3 | 76.5 | 1.000147 |
| 20500.0 | 459.8 | -22.8 | -32.8 | 39.1 | 639.5 | 616.6 | 235.8 | 78.8 | 1.000145 |
| 21000.0 | 450.4 | -24.1 | -33.1 | 42.9 | 629.7 | 615.0 | 235.4 | 81.1 | 1.000143 |
| 21500.0 | 441.1 | -25.2 | -34.7 | 40.8 | 619.6 | 613.5 | 236.2 | 81.8 | 1.000140 |
| 22000.0 | 431.9 | -26.4 | -36.3 | 38.4 | 609.7 | 612.0 | 237.7 | 82.2 | 1.000137 |
| 22500.0 | 422.9 | -27.6 | -38.0 | 36.1 | 599.9 | 610.5 | 240.2 | 81.9 | 1.000135 |
| 23000.0 | 414.1 | -28.8 | -39.7 | 33.8 | 590.3 | 609.0 | 242.5 | 85.1 | 1.000133 |
| 23500.0 | 405.4 | -30.0 | -41.4 | 31.4 | 580.6 | 607.6 | | | 1.000130 |

UPPER AIR DATA

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 [730 HRS MST
ASCENSION NO. 7

0480320007
LANA

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

TABLE 8 Con't

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 24000.0 | 396.8 | -31.4 | -43.4 | 29.3 | 571.8 | 605.7 | | | 1.000128 |
| 24500.0 | 388.3 | -32.7 | -44.9 | 28.2 | 562.6 | 604.1 | | | 1.000126 |

MANDATORY LEVELS

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0730 MRS MST
ASCENSION NO. 7

0480320007
LANA

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

TABLE 9

| 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 | 4625. | 10.9 | -10.5 | 21. | 194.3 | 12.3 |
| 800.0 | 6262. | 9.4 | -11.4 | 22. | 205.4 | 31.2 |
| 750.0 | 8063. | 5.0 | -14.4 | 23. | 212.7 | 34.0 |
| 700.0 | 9859. | .1 | -18.0 | 24. | 224.1 | 45.1 |
| 650.0 | 11788. | -3.4 | -22.9 | 20. | 227.4 | 63.7 |
| 600.0 | 13851. | -6.3 | -24.3 | 22. | 231.6 | 70.5 |
| 550.0 | 16067. | -11.1 | -30.6 | 18. | 234.4 | 72.2 |
| 500.0 | 18437. | -17.5 | -33.1 | 24. | 236.6 | 74.7 |
| 450.0 | 20993. | -24.1 | -33.1 | 43. | 235.4 | 81.1 |
| 400.0 | 23775. | -30.7 | -42.5 | 30. | | |

SIGNIFICANT LEVEL DATA

STATION ALTITUDE 4186.74 FEET MSL
17 FEB. 84 0917 HRS MST
ASCENSION NO. 8

0480210008
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 10

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT |
|---|---|---|---|---|
| 864.3 | 4186.7 | 14.3 | -9.0 | 19.0 |
| 850.0 | 4646.9 | 12.2 | -9.4 | 23.0 |
| 790.9 | 6610.5 | 7.3 | -10.9 | 26.0 |
| 740.5 | 8377.0 | 3.4 | -12.9 | 29.0 |
| 700.0 | 9843.7 | -.9 | -14.7 | 34.0 |
| 664.0 | 11239.7 | -4.3 | -17.8 | 34.0 |
| 647.4 | 11894.9 | -4.7 | -18.5 | 33.0 |
| 639.1 | 12228.2 | -5.4 | -17.8 | 37.0 |
| 619.5 | 13032.1 | -5.0 | -26.2 | 17.0 |
| 593.4 | 14140.5 | -6.5 | -28.8 | 15.0 |
| 560.9 | 15576.1 | -10.5 | -32.1 | 15.0 |
| 500.0 | 18440.7 | -18.3 | -34.7 | 22.0 |
| 474.0 | 19641.1 | -21.4 | -35.0 | 28.0 |
| 462.5 | 20338.2 | -21.9 | -35.8 | 27.0 |
| 428.8 | 22152.3 | -26.7 | -40.3 | 26.0 |
| 425.8 | 22319.8 | -24.3 | -39.8 | 22.0 |
| 423.5 | 22449.5 | -25.0 | -40.9 | 21.0 |
| 400.0 | 23803.4 | -29.1 | -44.4 | 21.0 |
| 359.4 | 26348.3 | -36.3 | -50.2 | 22.0 |
| 344.4 | 27252.9 | -39.0 | -52.5 | 22.0 |

UPPER AIR DATA

STATION ALTITUDE 4186.74 FEET MSL
17 FEB. 84 1917 HRS MST
ASCENSION NO. 8

0480290008
RITA

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 11

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 4186.7 | 864.3 | 14.3 | -9.0 | 19.0 | 1046.8 | 661.8 | 180.0 | 15.0 | 1.000247 |
| 4500.0 | 854.5 | 12.9 | -9.3 | 20.4 | 1039.4 | 659.3 | 189.2 | 15.6 | 1.000246 |
| 5000.0 | 839.1 | 11.3 | -9.7 | 21.9 | 1026.2 | 657.5 | 201.9 | 17.4 | 1.000242 |
| 5500.0 | 823.8 | 10.1 | -10.0 | 23.2 | 1012.0 | 656.1 | 211.9 | 19.8 | 1.000239 |
| 6000.0 | 808.8 | 8.8 | -10.4 | 24.4 | 998.8 | 654.6 | 219.5 | 22.7 | 1.000236 |
| 6500.0 | 794.1 | 7.6 | -10.8 | 25.7 | 984.2 | 653.1 | 221.6 | 25.3 | 1.000232 |
| 7000.0 | 779.5 | 6.4 | -11.3 | 26.7 | 970.0 | 651.8 | 219.2 | 27.4 | 1.000229 |
| 7500.0 | 765.1 | 5.3 | -11.9 | 27.5 | 955.9 | 650.5 | 215.5 | 26.9 | 1.000225 |
| 8000.0 | 751.0 | 4.2 | -12.5 | 28.4 | 942.0 | 649.2 | 211.1 | 25.7 | 1.000221 |
| 8500.0 | 737.1 | 3.0 | -13.1 | 29.4 | 928.6 | 647.8 | 211.1 | 27.4 | 1.000218 |
| 9000.0 | 723.3 | 1.6 | -13.6 | 31.1 | 916.0 | 646.1 | 211.3 | 29.2 | 1.000215 |
| 9500.0 | 709.7 | .2 | -14.3 | 32.8 | 903.6 | 644.4 | 213.7 | 33.8 | 1.000212 |
| 10000.0 | 696.3 | -1.2 | -15.0 | 34.0 | 891.2 | 642.7 | 216.0 | 37.8 | 1.000208 |
| 10500.0 | 683.1 | -2.5 | -16.1 | 34.0 | 878.3 | 641.3 | 219.2 | 40.3 | 1.000205 |
| 11000.0 | 670.1 | -3.7 | -17.2 | 34.0 | 865.7 | 639.8 | 223.0 | 45.3 | 1.000201 |
| 11500.0 | 657.4 | -4.5 | -18.0 | 33.6 | 851.6 | 638.9 | 226.4 | 51.9 | 1.000197 |
| 12000.0 | 644.8 | -4.9 | -18.2 | 34.3 | 836.7 | 638.3 | 229.0 | 58.6 | 1.000194 |
| 12500.0 | 632.4 | -5.3 | -20.0 | 30.2 | 821.8 | 637.9 | 231.2 | 63.9 | 1.000190 |
| 13000.0 | 620.3 | -5.0 | -25.7 | 17.8 | 805.5 | 638.1 | 233.5 | 65.9 | 1.000183 |
| 13500.0 | 608.3 | -5.6 | -27.3 | 16.2 | 791.9 | 637.3 | 235.4 | 65.0 | 1.000180 |
| 14000.0 | 596.6 | -6.3 | -28.4 | 15.3 | 778.7 | 636.5 | 237.1 | 62.3 | 1.000177 |
| 14500.0 | 585.1 | -7.5 | -29.6 | 15.0 | 767.8 | 635.1 | 237.2 | 64.1 | 1.000174 |
| 15000.0 | 573.7 | -8.9 | -30.7 | 15.0 | 756.1 | 633.4 | 237.1 | 67.1 | 1.000171 |
| 15500.0 | 562.6 | -10.3 | -31.9 | 15.0 | 745.4 | 631.7 | 240.0 | 73.2 | 1.000168 |
| 16000.0 | 551.4 | -11.7 | -32.3 | 16.0 | 734.4 | 630.1 | 242.3 | 78.8 | 1.000166 |
| 16500.0 | 540.5 | -13.0 | -32.7 | 17.3 | 723.6 | 628.4 | 241.4 | 75.8 | 1.000163 |
| 17000.0 | 529.8 | -14.4 | -33.1 | 18.5 | 713.0 | 626.8 | 240.1 | 73.0 | 1.000161 |
| 17500.0 | 519.2 | -15.7 | -33.6 | 19.7 | 702.5 | 625.1 | 236.3 | 71.3 | 1.000159 |
| 18000.0 | 508.9 | -17.1 | -34.2 | 20.9 | 692.2 | 623.5 | 235.2 | 72.8 | 1.000156 |
| 18500.0 | 498.8 | -18.5 | -34.7 | 22.3 | 682.1 | 621.8 | 236.9 | 77.4 | 1.000154 |
| 19000.0 | 488.7 | -19.7 | -34.7 | 24.8 | 671.6 | 620.2 | 237.5 | 79.4 | 1.000151 |
| 19500.0 | 478.8 | -21.0 | -34.9 | 27.3 | 661.4 | 618.7 | 238.2 | 80.1 | 1.000149 |
| 20000.0 | 469.0 | -21.7 | -35.4 | 27.5 | 649.5 | 617.9 | 239.4 | 78.8 | 1.000146 |
| 20500.0 | 459.4 | -22.3 | -36.2 | 26.9 | 637.9 | 617.1 | 241.1 | 75.4 | 1.000144 |
| 21000.0 | 449.9 | -23.7 | -37.4 | 26.6 | 628.1 | 615.4 | 243.2 | 72.6 | 1.000141 |
| 21500.0 | 440.6 | -25.0 | -38.7 | 26.4 | 618.4 | 613.8 | 243.8 | 84.6 | 1.000139 |
| 22000.0 | 431.5 | -26.3 | -40.0 | 26.1 | 608.9 | 612.1 | 241.6 | 117.4 | 1.000137 |
| 22500.0 | 422.6 | -25.2 | -41.0 | 21.0 | 593.5 | 613.5 | 241.4 | 128.0 | 1.000133 |
| 23000.0 | 413.8 | -26.7 | -42.3 | 21.0 | 584.7 | 611.7 | 244.6 | 93.3 | 1.000131 |
| 23500.0 | 405.2 | -28.2 | -43.6 | 21.0 | 576.1 | 609.8 | 245.9 | 88.2 | 1.000129 |

UPPER AIR DATA
0480210808
PITA

STATION ALTITUDE 4126.74 FEET MSL
17 FEB. 84 0917 HRS MST
ASCENSION NO. 8

GEODETIC COORDINATES
33.18295 LAT DEG
106.15114 LON DEG

TABLE 11 Con't

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 24000.0 | 396.6 | -29.7 | -44.8 | 21.1 | 567.4 | 607.9 | 246.6 | 88.9 | 1.000127 |
| 24500.0 | 388.2 | -31.1 | -46.0 | 21.3 | 558.5 | 606.2 | 246.0 | 97.3 | 1.000125 |
| 25000.0 | 379.9 | -32.5 | -47.1 | 21.5 | 549.8 | 604.4 | 245.6 | 105.7 | 1.000123 |
| 25500.0 | 371.8 | -33.9 | -48.3 | 21.7 | 541.3 | 602.6 | 245.6 | 109.6 | 1.000121 |
| 26000.0 | 363.8 | -35.3 | -49.4 | 21.9 | 532.9 | 600.8 | 246.1 | 107.8 | 1.000119 |
| 26500.0 | 356.0 | -36.6 | -50.6 | 22.0 | 524.6 | 599.0 | | | 1.000117 |
| 27000.0 | 348.3 | -38.2 | -51.9 | 22.0 | 516.4 | 597.1 | | | 1.000115 |

MANDATORY LEVELS

STATION ALTITUDE 4186.74 FEET MSL — 0480210008 — GEODETIC COORDINATES

17 FEB. 84 — 0917 MRS MST — RITA — 33.18295 LAT DEG

ASCENSION NO. 8 — 106.15114 LON DEG

TABLE 12

| PRESSURE MILLIBARS | GEOPOTENTIAL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT DEGREES CENTIGRADE | REL.HUM. PERCENT | WIND DATA DIRECTION DEGREES(TN) | WIND DATA SPEED KNOTS |
|---|---|---|---|---|---|---|
| 850.0 | 4644. | 12.2 | -9.4 | 21. | 193.1 | 16.0 |
| 800.0 | 6296. | 8.1 | -10.6 | 25. | 222.7 | 24.5 |
| 750.0 | 8030. | 4.2 | -12.5 | 28. | 211.1 | 25.8 |
| 700.0 | 9855. | -.9 | -14.7 | 34. | 215.1 | 37.1 |
| 650.0 | 11780. | -4.6 | -18.4 | 33. | 227.9 | 55.7 |
| 600.0 | 13841. | -6.1 | -28.1 | 16. | 236.6 | 63.1 |
| 550.0 | 16052. | -11.8 | -32.4 | 16. | 242.2 | 78.4 |
| 500.0 | 18416. | -18.3 | -34.7 | 22. | 236.7 | 76.8 |
| 450.0 | 20969. | -23.6 | -37.4 | 27. | 243.1 | 72.5 |
| 400.0 | 23766. | -29.1 | -44.4 | 21. | 246.4 | 87.9 |
| 350.0 | 26842. | -37.9 | -51.6 | 22. | | |

SIGNIFICANT LEVEL DATA
0480320008
LANA
TABLE 13

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0917 HRS MST
ASCENSION NO. 8

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

| PRESSURE MILLIBARS | GEOMETRIC ALTITUDE MSL FEET | TEMPERATURE AIR DEGREES CENTIGRADE | TEMPERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT |
|---|---|---|---|---|
| 864.3 | 4173.4 | 14.1 | -9.1 | 19.0 |
| 850.0 | 4633.4 | 12.1 | -10.1 | 20.0 |
| 829.3 | 5308.1 | 10.0 | -11.3 | 21.0 |
| 700.0 | 9638.4 | -1.3 | -15.8 | 32.0 |
| 632.1 | 12486.2 | -6.2 | -18.8 | 36.0 |
| 614.9 | 13196.0 | -5.9 | -27.6 | 16.0 |
| 606.3 | 13558.5 | -5.9 | -28.3 | 15.0 |
| 577.8 | 14790.7 | -8.9 | -31.5 | 14.0 |
| 500.0 | 18492.6 | -18.8 | -35.6 | 21.0 |
| 483.6 | 19216.5 | -20.8 | -35.2 | 26.0 |
| 457.1 | 20580.7 | -23.0 | -37.5 | 25.0 |
| 423.9 | 22379.7 | -28.1 | -41.9 | 25.0 |
| 400.0 | 23743.1 | -30.6 | -44.9 | 23.0 |
| 383.8 | 24705.5 | -32.6 | -46.6 | 23.0 |
| 377.1 | 25112.8 | -33.8 | -48.0 | 22.0 |
| 352.6 | 26649.9 | -37.7 | -51.4 | 22.0 |

UPPER AIR DATA

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0917 HRS MST
ASCENSION NO. 8

0480320008
LANA

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 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 |
|---|---|---|---|---|---|---|---|---|---|
| 4173.4 | 864.3 | 14.1 | -9.1 | 19.0 | 1046.8 | 660.7 | 210.0 | 12.0 | 1.000247 |
| 4500.0 | 854.1 | 12.7 | -9.9 | 19.7 | 1039.7 | 659.1 | 213.2 | 14.2 | 1.000245 |
| 5000.0 | 838.7 | 11.0 | -10.8 | 20.5 | 1027.1 | 657.1 | 216.6 | 17.6 | 1.000241 |
| 5500.0 | 823.4 | 9.5 | -11.4 | 21.5 | 1013.5 | 655.6 | 218.9 | 21.1 | 1.000238 |
| 6000.0 | 808.1 | 8.3 | -11.8 | 22.7 | 999.2 | 653.9 | 220.5 | 24.5 | 1.000234 |
| 6500.0 | 793.1 | 7.0 | -12.2 | 23.9 | 985.0 | 652.5 | 220.2 | 26.0 | 1.000231 |
| 7000.0 | 778.4 | 5.8 | -12.6 | 25.1 | 971.1 | 651.0 | 218.9 | 26.4 | 1.000228 |
| 7500.0 | 764.0 | 4.5 | -13.1 | 26.3 | 957.4 | 649.5 | 217.4 | 26.9 | 1.000224 |
| 8000.0 | 749.8 | 3.3 | -13.6 | 27.5 | 943.9 | 648.1 | 215.9 | 27.5 | 1.000221 |
| 8500.0 | 735.9 | 2.0 | -14.2 | 28.8 | 930.7 | 646.6 | 216.3 | 29.0 | 1.000217 |
| 9000.0 | 722.3 | .8 | -14.8 | 30.0 | 917.6 | 645.1 | 217.0 | 30.8 | 1.000214 |
| 9500.0 | 708.9 | -.5 | -15.4 | 31.2 | 904.8 | 643.6 | 217.9 | 33.1 | 1.000211 |
| 10000.0 | 695.7 | -1.6 | -16.0 | 32.2 | 891.6 | 642.3 | 218.6 | 35.4 | 1.000208 |
| 10500.0 | 682.4 | -2.5 | -16.5 | 33.0 | 877.6 | 641.2 | 220.3 | 41.0 | 1.000204 |
| 11000.0 | 669.4 | -3.4 | -17.1 | 33.8 | 863.8 | 640.1 | 221.8 | 46.8 | 1.000201 |
| 11500.0 | 656.6 | -4.4 | -17.7 | 34.5 | 850.3 | 639.0 | 224.3 | 53.7 | 1.000197 |
| 12000.0 | 644.1 | -5.3 | -18.2 | 35.3 | 836.9 | 637.9 | 226.2 | 60.7 | 1.000194 |
| 12500.0 | 631.8 | -6.2 | -18.9 | 35.6 | 823.7 | 636.8 | 228.7 | 66.5 | 1.000191 |
| 13000.0 | 619.6 | -6.0 | -24.4 | 21.5 | 807.5 | 636.9 | 230.9 | 72.4 | 1.000184 |
| 13500.0 | 607.7 | -5.9 | -28.2 | 15.2 | 791.8 | 637.0 | 232.4 | 74.4 | 1.000180 |
| 14000.0 | 595.9 | -7.0 | -29.4 | 14.6 | 779.7 | 635.7 | 233.9 | 75.8 | 1.000177 |
| 14500.0 | 584.4 | -8.2 | -30.7 | 14.2 | 768.1 | 634.2 | 234.9 | 75.0 | 1.000174 |
| 15000.0 | 573.0 | -9.5 | -31.6 | 14.4 | 756.8 | 632.7 | 235.8 | 73.3 | 1.000171 |
| 15500.0 | 561.6 | -10.8 | -32.1 | 15.4 | 745.7 | 631.0 | 236.3 | 73.2 | 1.000168 |
| 16000.0 | 550.5 | -12.2 | -32.6 | 16.3 | 734.7 | 629.4 | 236.5 | 75.0 | 1.000166 |
| 16500.0 | 539.6 | -13.6 | -33.1 | 17.3 | 724.0 | 627.7 | 236.4 | 77.1 | 1.000163 |
| 17000.0 | 528.9 | -15.0 | -33.7 | 18.3 | 713.4 | 626.1 | 236.0 | 79.8 | 1.000161 |
| 17500.0 | 518.4 | -16.3 | -34.4 | 19.3 | 703.0 | 624.4 | 235.6 | 82.5 | 1.000158 |
| 18000.0 | 508.1 | -17.7 | -35.0 | 20.2 | 692.8 | 622.7 | 235.3 | 84.6 | 1.000156 |
| 18500.0 | 498.0 | -19.0 | -35.5 | 21.6 | 682.6 | 621.1 | 234.9 | 86.7 | 1.000154 |
| 19000.0 | 487.9 | -20.3 | -35.2 | 24.7 | 672.0 | 619.6 | 235.2 | 90.6 | 1.000151 |
| 19500.0 | 478.0 | -21.3 | -35.7 | 25.8 | 660.9 | 618.4 | 235.4 | 94.4 | 1.000149 |
| 20000.0 | 468.2 | -22.1 | -36.5 | 25.4 | 649.5 | 617.4 | 236.4 | 95.9 | 1.000146 |
| 20500.0 | 458.6 | -22.9 | -37.3 | 25.1 | 638.2 | 616.4 | 237.5 | 97.2 | 1.000144 |
| 21000.0 | 449.1 | -24.2 | -38.5 | 25.0 | 628.4 | 614.8 | 238.9 | 97.3 | 1.000141 |
| 21500.0 | 439.8 | -25.6 | -39.8 | 25.0 | 618.9 | 613.0 | 240.5 | 97.1 | 1.000139 |
| 22000.0 | 430.7 | -27.0 | -41.0 | 25.0 | 609.5 | 611.2 | 241.3 | 98.1 | 1.000137 |
| 22500.0 | 421.7 | -28.3 | -42.2 | 24.8 | 600.0 | 609.6 | 242.0 | 99.4 | 1.000135 |
| 23000.0 | 412.9 | -29.2 | -43.3 | 24.1 | 589.6 | 608.5 | 241.9 | 104.4 | 1.000132 |
| 23500.0 | 404.2 | -30.2 | -44.3 | 23.4 | 579.4 | 607.3 | 241.7 | 110.6 | 1.000130 |

UPPER AIR DATA
0480320008
LANA

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0917 HRS MST
ASCENSION NO. 8

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

TABLE 14 Con't

| 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 |
|---|---|---|---|---|---|---|---|---|---|
| 24000.0 | 395.6 | -31.1 | -45.3 | 23.0 | 569.4 | 606.1 | 241.6 | 118.2 | 1.000127 |
| 24500.0 | 387.2 | -32.2 | -46.2 | 23.0 | 559.7 | 604.8 | 241.0 | 142.0 | 1.000125 |
| 25000.0 | 378.9 | -33.5 | -47.6 | 22.3 | 550.7 | 603.2 | 240.5 | 174.3 | 1.000123 |
| 25500.0 | 370.8 | -34.8 | -48.9 | 22.0 | 541.8 | 601.5 | 241.2 | 176.2 | 1.000121 |
| 26000.0 | 362.8 | -36.1 | -50.0 | 22.0 | 533.0 | 599.9 | | | 1.000119 |
| 26500.0 | 354.9 | -37.3 | -51.1 | 22.0 | 524.2 | 598.3 | | | 1.000117 |

MANDATORY LEVELS
0480320008
LANA

STATION ALTITUDE 4173.44 FEET MSL
17 FEB. 84 0917 HRS MST
ASCENSION NO. 8

GEODETIC COORDINATES
33.13510 LAT DEG
106.15446 LON DEG

TABLE 15

| 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 | 4630. | 12.1 | -10.1 | 20. | 214.2 | 15.1 |
| 800.0 | 6280. | 7.6 | -12.0 | 23. | 220.7 | 25.9 |
| 750.0 | 8010. | 3.3 | -13.6 | 28. | 215.9 | 27.5 |
| 700.0 | 9829. | -1.3 | -15.8 | 32. | 218.4 | 34.6 |
| 650.0 | 11755. | -4.9 | -18.0 | 35. | 225.3 | 57.4 |
| 600.0 | 13812. | -6.6 | -29.0 | 15. | 233.4 | 75.3 |
| 550.0 | 16018. | -12.3 | -32.6 | 16. | 236.5 | 75.1 |
| 500.0 | 18378. | -18.8 | -35.6 | 21. | 235.0 | 86.3 |
| 450.0 | 20927. | -24.1 | -38.4 | 25. | 238.8 | 97.3 |
| 400.0 | 23706. | -30.6 | -44.9 | 23. | 241.6 | 114.1 |

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