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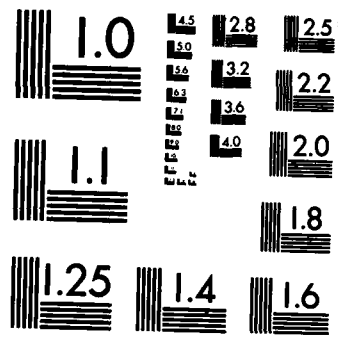
19313B MLRS MISSILE NUMBERS DK-101 DK-102 DK-104 ROUND 1/1  
NUMBERS V-402/PH-8. (U) ARMY ELECTRONICS RESEARCH AND  
DEVELOPMENT COMMAND WSMR NM ATH. JAN 83  
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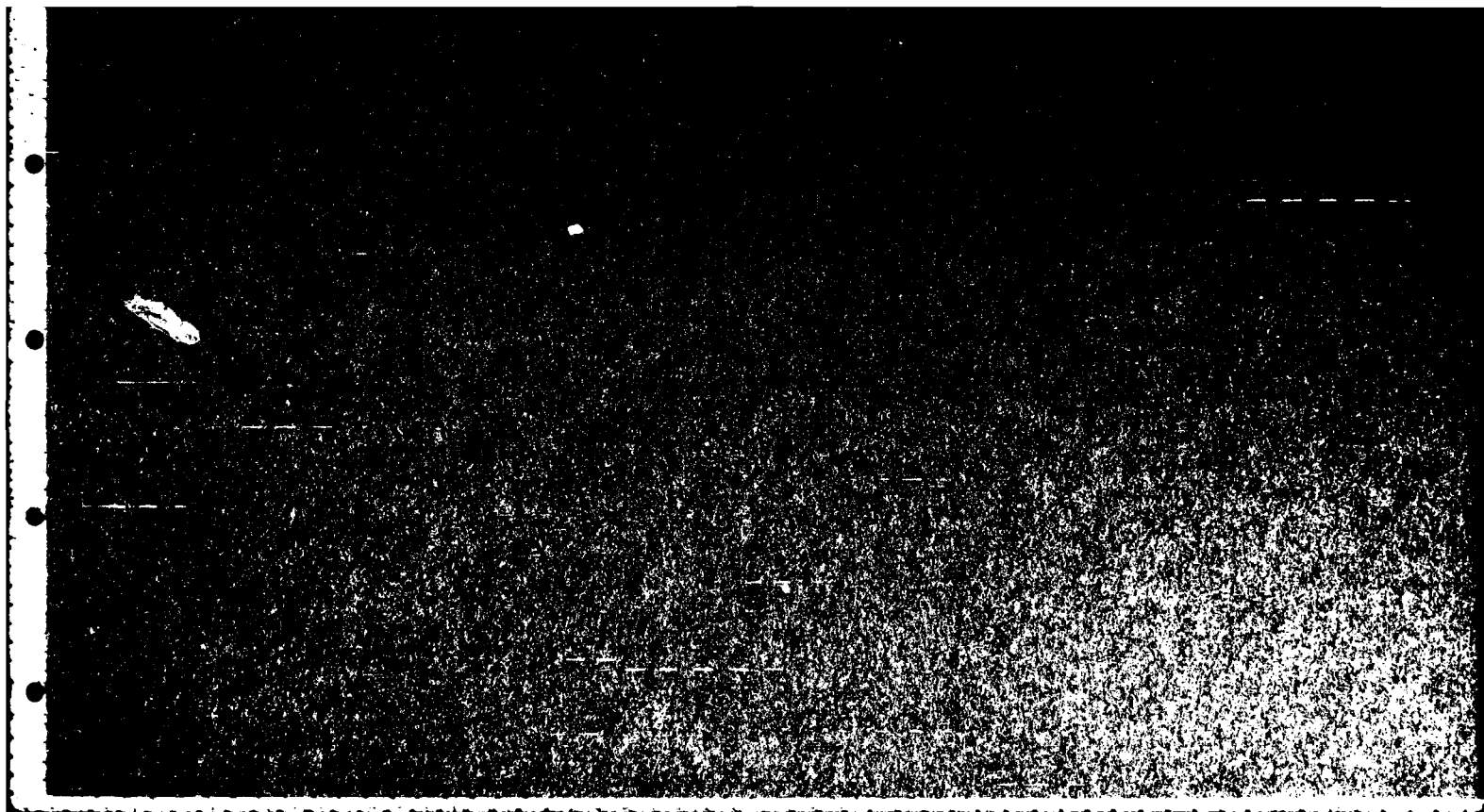
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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19313B MLRS, Missile Numbers DK-101, DK-102, DK-104, Round Numbers V-402/PW-05, V-403/PW-06, V-404/PW-07 are presented in tabular form.		

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CONTENTS

PAGE

INTRODUCTION----- 1

DISCUSSION----- 1

GENERAL AREA MAP----- 2

LAUNCH AREA DIAGRAM----- 3

TABLE:

1. Surface Observation Taken at 1615 MST at Tula Gate----- 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. T-Time Pilot-Balloon Measured Wind Data----- 8
6. Aiming and T-Time Met Messages----- 9
7. Lana Significant Level Data at 1300 MST----- 10
8. Lana Upper Air Data at 1300 MST----- 11
9. Lana Mandatory Levels at 1300 MST----- 13
10. Rita Significant Level Data at 1400 MST----- 14
11. Rita Upper Air Data at 1400 MST----- 15
12. Rita Mandatory Levels at 1400 MST----- 17
13. Lana Significant Level Data at 1530 MST----- 18
14. Lana Upper Air Data at 1530 MST----- 19
15. Lana Mandatory Levels at 1530 MST----- 21



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## INTRODUCTION

19313B MLRS, Missile Numbers DK-101, DK-102 and DK-104, Round Numbers V-402/PW-05, V-403/PW-06 and V-404/PW-07, were launched from Tula Gate, White Sands Missile Range (WSMR), New Mexico, at 1614:49, 1614:53 and 1614:57 MST, 25 Jan 83. The scheduled launch times were 1600 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 ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the Tula Gate Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at Tula Gate. 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

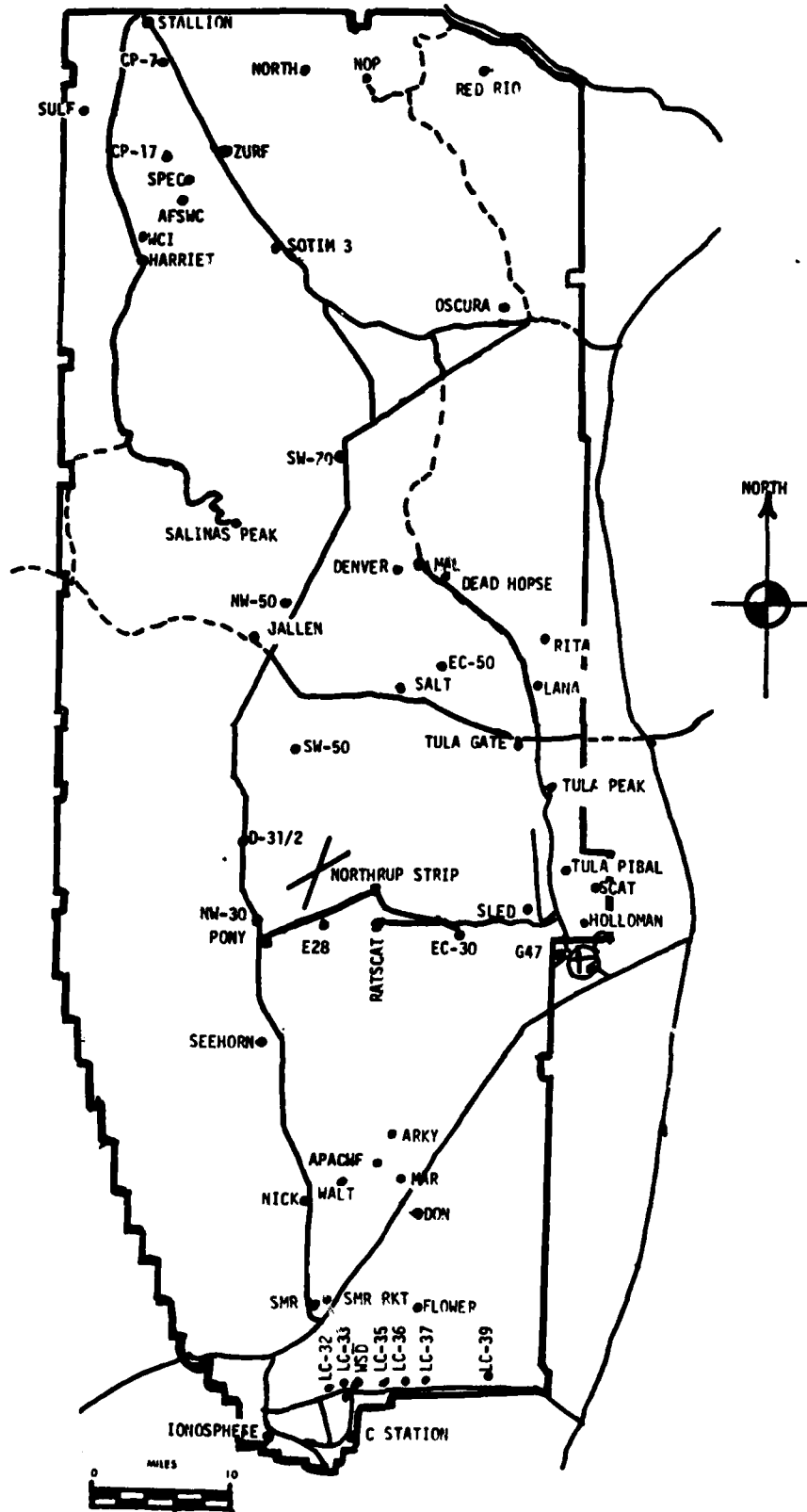
Tula Gate 2000 Meters  
Deadhorse 1750 Meters

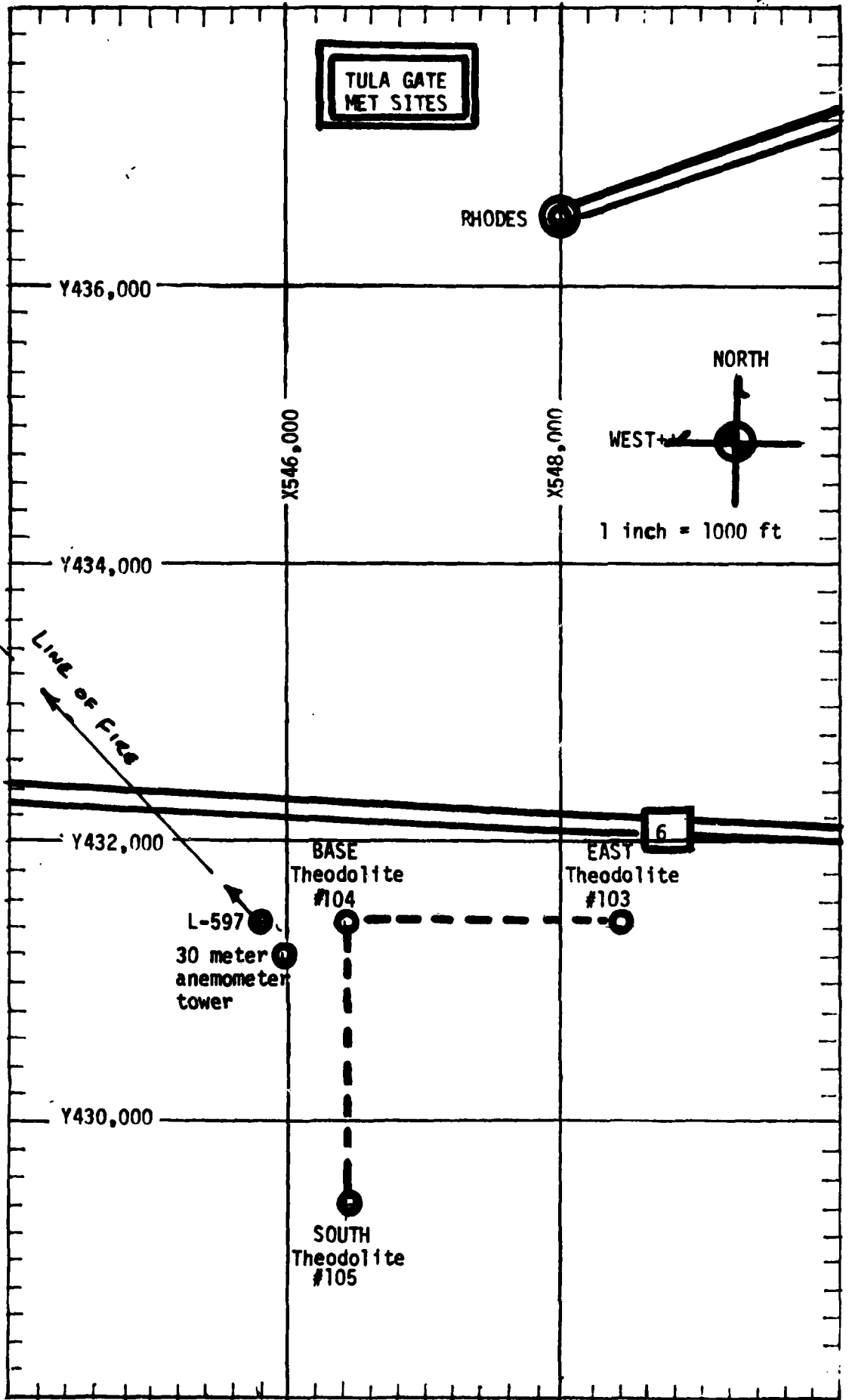
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

#### SITE AND TIME

Lana 1300 MST  
Rita 1400 MST  
Lana 1530 MST

# WSMR METEOROLOGICAL SITES







PROJECT SURFACE OBSERVATION

TABLE 1									
STATION: <u>IULA GATE</u>									
X = <u>545,785.7</u> Y = <u>431,459.0</u> H = <u>4103.3</u>									
DATE <u>25</u> <u>Jan</u> <u>83</u>									
DAY MONTH YEAR									
TIME M S I	PRESSURE mbs	TEMPERATURE OF OC	DEW POINT OF OC	RELATIVE HUMIDITY %	DENSITY gm/m <sup>3</sup>	DIRECTION degs Tn	WIND SPEED kts	CHARACTER kts	VISIBIL- ITY
1615	870.4	12.2	-0.3	42	1061	320	11		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
	2	SC	6,000	a	AC	12,000	

PSYCHROMETRIC COMPUTATION

TIME:	1615
DRY BULB TEMP.	12.2
WET BULB TEMP.	6.1
WET BULB DEPR.	6.1
DEW POINT	-0.3
RELATIVE HUMID.	42

TABLE 2

Anemometer Data - 30 FT. Level of 30 Meter Tower  
X = 545,944.89 Y = 431,153.70 H = 4102.47 (Base)

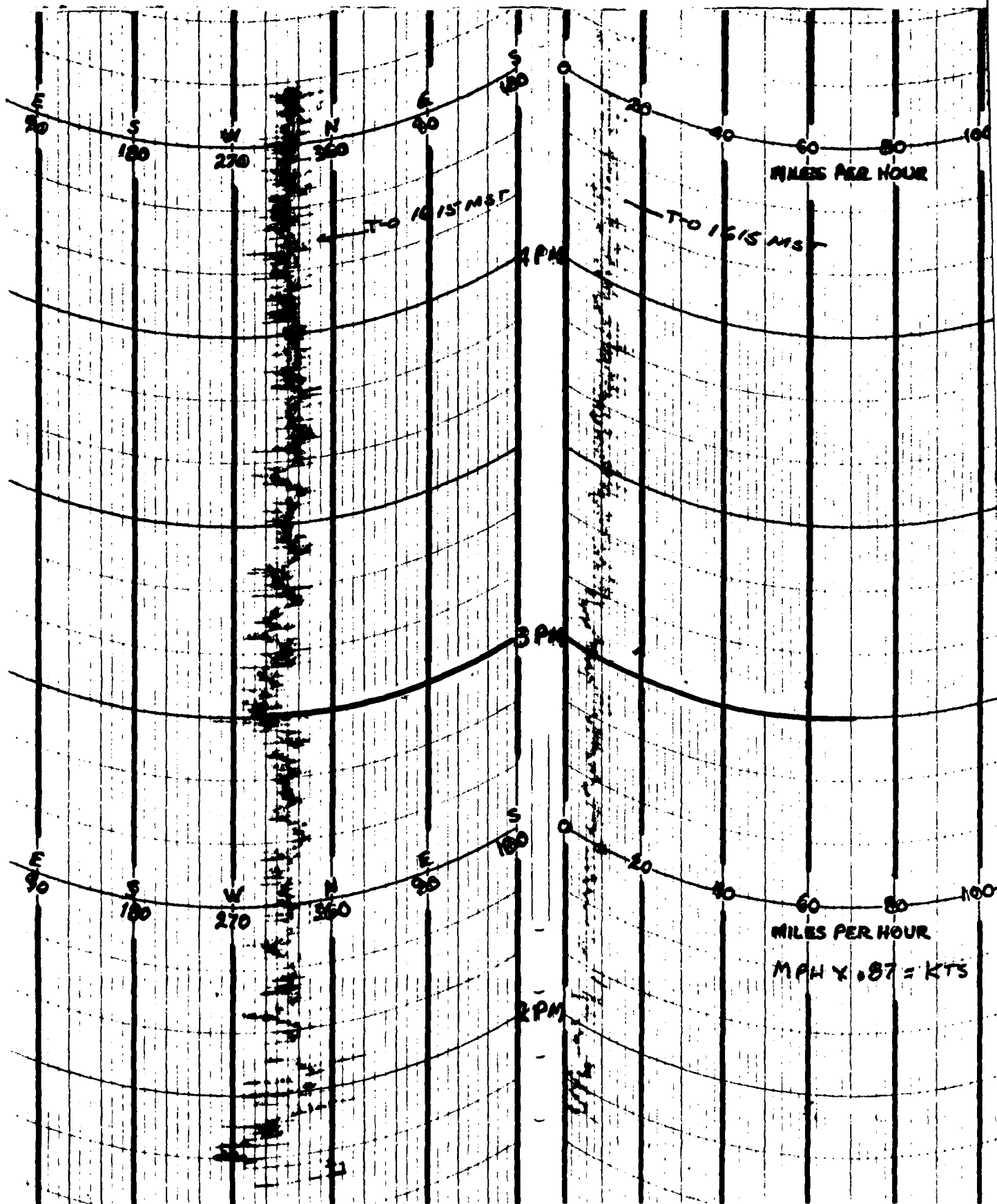




TABLE 4

Anemometer Data - 90 FT. Level of 31 Meter Tower  
 X = 545,944.39 Y = 431,158.70 H = 4102.47 (Base)

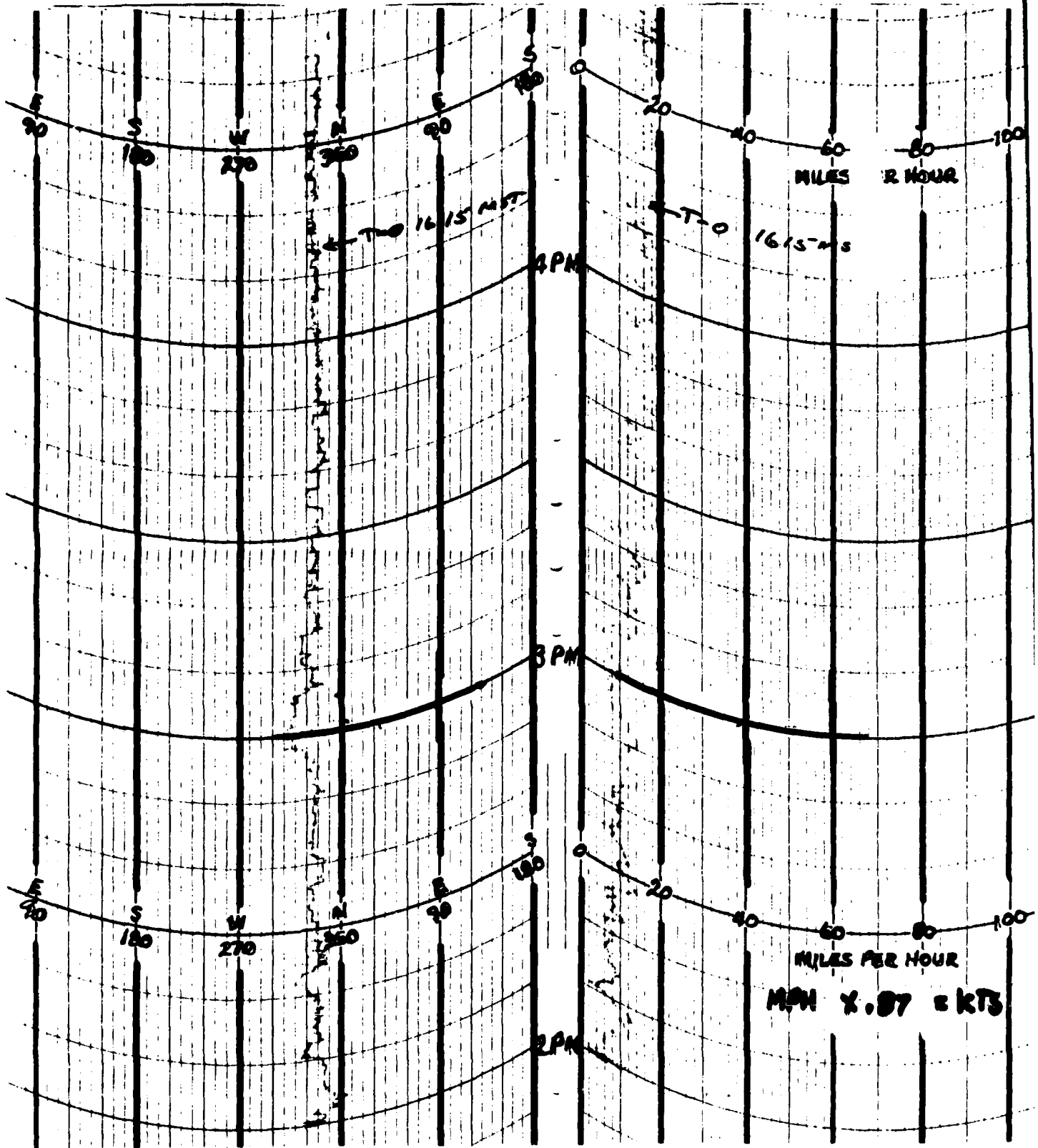


TABLE 5

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 25 Jan 83

SITE: TULA GATE  
 TIME: 1615 MST  
 WSTM COORDINATES:  
 X= 546,402.29  
 Y= 431,426.23  
 H= 4,105.36

SITE: DEADHORSE  
 TIME 1615 MST  
 WSTM COORDINATES:  
 X= 519,982.11  
 Y= 490,249.23  
 H= 4,133.12

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	320	11
150	342	17
210	347	19
270	346	19
330	345	19
390	344	19
500	343	19
650	343	17
800	341	15
950	331	15
1150	315	14
1350	297	13
1550	306	15
1750	318	18
2000	323	24

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	350	08
150	350	08
210	350	08
270	350	08
330	355	10
390	352	09
500	345	19
650	342	24
800	335	27
950	331	28
1150	325	25
1350	315	27
1550	309	26
1750	302	24
2000	Lost in Clouds	

All data obtained from Double Theodolite pilot-balloon observations.

TABLE 6

## AIMING AND T-TIME MET MESSAGES

25 Jan 83

LANA 1300 MST		RITA 1400 MST	
METCM1331062		METCM1332062	
252000127870		252100128371	
00036004	28560870	00587005	28640871
01603011	28420859	01556012	28490861
02570007	28160834	02573016	28190835
03566009	27800794	03596016	27800796
04573015	27310746	04603017	27270748
05578018	26840701	05591020	26790702
06585021	26460657	06556022	26400659
07579034	26300616	07581029	26360617
08586043	26110577	08578037	26090579
09577033	25750541	09575038	25700542
10565034	25340506	10547037	25320507
11578069	24900473	11549039	24900473
12563041	24300426	12552037	24230427

LANA 1530 MST	
METCM1331062	
252250127870	
00089008	28620870
01636015	28530860
02611019	28300834
03610015	27900795
04604023	27390747
05578018	26910702
06577027	26560658
07600037	26320617
08590041	26090578
09582043	25730542
10573042	25330507
11574047	24980473
12572072	24590427

STATION ALTITUDE 4173.44 FEET MSL  
 25 JAN. 83  
 ASCENSION NO. 2

SIGNIFICANT LEVEL DATA  
 0250320002  
 LANA

GEODLTIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LON DEG

TABLE 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE		TEMPERATURE		REL. HUM. PERCENT
	MSL FEET	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	
869.5	4173.4		11.5	.3	46.0
850.0	4793.3		9.1	-2.8	43.0
814.8	5938.1		6.1	-2.7	53.0
769.6	7462.7		1.8	-6.0	50.0
751.8	8080.8		-.1	-6.7	61.0
730.6	8831.1		-2.0	-6.5	71.0
700.0	9942.9		-5.2	-8.9	75.0
670.2	11059.4		-8.6	-9.7	92.0
656.4	11589.6		-9.0	-12.4	76.0
639.8	12240.4		-9.9	-17.4	54.0
629.0	12672.4		-9.6	-20.1	42.0
607.4	13557.4		-10.9	-21.5	41.0
599.0	13909.1		-11.1	-20.4	46.0
574.6	14956.7		-12.2	-25.1	33.0
500.0	18396.3		-20.6	-32.9	32.0
453.6	20735.6		-27.1	-37.6	36.0
432.0	21887.6		-29.1	-40.5	32.0
400.0	23678.6		-34.2	-45.3	31.0
374.6	25419.7		-38.8	-49.2	32.0

STATION ALTITUDE 4173.44 FEET MSL  
 25 JAN. 83  
 ASCENSION NO. 2

UPPER AIR DATA  
 0250320002  
 LANA  
 TABLE 8

GEODETIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INUEX OF REFRACTION
						DIRECTION DEG(RES(TN)	SPEED KNOTS	
4173.4	869.5	11.5	46.0	1061.2	658.2	20.0	4.1	1.000266
4500.0	859.2	10.2	44.4	1053.6	656.6	4.7	4.3	1.000261
5000.0	843.5	8.6	44.8	1040.8	654.6	345.8	5.1	1.000256
5500.0	828.1	7.2	49.2	1028.5	653.1	333.1	6.3	1.000253
6000.0	812.9	5.9	53.1	1012.4	651.6	324.7	7.7	1.000250
6500.0	797.8	4.5	54.1	998.8	649.9	319.0	9.2	1.000245
7000.0	783.0	3.1	55.1	985.4	648.2	320.2	10.9	1.000240
7500.0	768.5	1.7	56.3	972.3	646.5	322.9	12.8	1.000236
8000.0	754.1	.1	60.3	959.4	644.6	324.9	14.6	1.000233
8500.0	739.9	-1.2	66.6	945.8	643.1	325.0	15.8	1.000230
9000.0	725.9	-2.5	71.6	932.5	641.5	325.2	16.9	1.000227
9500.0	712.0	-3.9	73.4	919.7	639.8	325.1	17.8	1.000222
10000.0	698.4	-5.4	75.9	907.1	638.0	324.5	18.0	1.000218
10500.0	685.0	-6.9	83.5	894.7	636.2	324.0	18.2	1.000216
11000.0	671.8	-8.4	91.1	882.5	634.4	324.9	19.5	1.000213
11500.0	658.7	-8.9	78.7	867.3	633.7	326.1	21.1	1.000206
12000.0	645.9	-9.6	62.1	852.7	632.8	326.6	23.8	1.000200
12500.0	633.3	-9.7	46.8	836.8	632.6	326.8	27.2	1.000194
13000.0	620.9	-10.1	41.6	821.7	632.1	327.5	31.0	1.000189
13500.0	608.8	-10.8	41.1	807.9	631.2	328.6	35.2	1.000186
14000.0	596.8	-11.2	44.9	793.1	630.8	329.9	39.4	1.000183
14500.0	585.1	-11.7	38.7	779.2	630.1	330.8	43.3	1.000179
15000.0	573.6	-12.3	33.0	765.7	629.4	329.0	44.4	1.000175
15500.0	562.1	-13.5	32.8	753.9	627.9	327.6	42.8	1.000172
16000.0	550.9	-14.7	32.7	742.3	626.4	326.2	40.1	1.000169
16500.0	539.8	-16.0	32.6	731.0	624.9	325.1	38.6	1.000166
17000.0	529.0	-17.2	32.4	719.8	623.4	324.1	38.1	1.000163
17500.0	518.5	-18.4	32.3	708.8	621.9	323.2	38.7	1.000161
18000.0	508.1	-19.6	32.1	697.9	620.4	322.6	39.2	1.000158
18500.0	497.8	-20.9	32.2	687.3	618.8	322.3	39.6	1.000155
19000.0	487.6	-22.3	33.0	676.9	617.1	321.8	40.4	1.000153
19500.0	477.5	-23.7	33.9	666.7	615.4	321.2	41.7	1.000150
20000.0	467.7	-25.1	34.7	656.6	613.7	320.6	42.6	1.000148
20500.0	458.1	-26.4	35.6	646.7	612.0	320.0	42.5	1.000146
21000.0	448.5	-27.6	35.1	636.1	610.6	319.3	42.4	1.000143
21500.0	439.1	-28.4	33.3	625.0	609.5	317.5	41.5	1.000140
22000.0	429.9	-29.4	31.9	614.4	608.2	315.7	40.8	1.000138
22500.0	420.8	-30.8	31.7	604.9	606.5	314.3	40.5	1.000136
23000.0	411.8	-32.3	31.4	595.5	604.7	313.1	41.2	1.000133
23500.0	403.1	-33.7	31.1	586.3	602.9	312.5	44.8	1.000131



UPPER AIR DATA  
 0250320002  
 LANA

STATION ALTITUDE 4173.44 FEET MSL  
 25 JAN. 83 1300 HRS MST  
 ASCENSION NO. 2

GEODETIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LON DEG

TABLE 8 (Cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
24000.0	594.4	-35.0	-46.0	31.2	577.0	601.2			1.000129
24500.0	585.8	-36.4	-47.1	31.5	567.6	599.5			1.000127
25000.0	577.5	-37.7	-48.3	31.8	558.5	597.8			1.000125

STATION ALTITUDE 4173.44 FEET MSL  
 25 JAN. 83  
 ASCENSION NO. 2

MANDATORY LEVELS  
 0250320002  
 LANA  
 TABLE 9

GEODETIC COORDINATES  
 53.13510 LAT DEG  
 106.15446 LONG DEG

PRESSURE (GEOPOTENTIAL) MILLIBARS	FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4790.	9.1	-2.8	43.	352.9	4.7
800.0	6426.	4.7	-3.8	54.	319.7	9.0
750.0	8137.	-3.3	-6.7	62.	324.9	14.9
700.0	9934.	-5.2	-8.9	75.	324.6	18.0
650.0	11827.	-9.3	-14.2	68.	326.6	22.7
600.0	13852.	-11.1	-20.5	45.	329.4	38.2
550.0	16032.	-14.8	-27.6	33.	326.1	40.0
500.0	18372.	-20.6	-32.9	32.	322.4	39.5
450.0	20894.	-27.4	-38.0	35.	319.6	42.5
400.0	23641.	-34.2	-45.3	31.	312.3	46.0

STATION ALTITUDE 4186.74 FEET MSL  
 25 JAN. 83  
 ASCENSION NO. 2 1400 HRS MST

SIGNIFICANT LEVEL DATA  
 0250210002  
 HITA  
 TABLE 10

GEODEIC COORDINATES  
 33.18295 LAT DEG  
 106.15114 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT
871.3	4186.7	12.6	-5.9	27.0
850.0	4864.6	9.6	-6.3	52.0
790.6	6817.5	3.6	-6.4	48.0
729.2	8947.9	-3.1	-7.4	72.0
700.0	10006.1	-6.0	-8.0	86.0
665.1	11315.4	-9.2	-9.5	98.0
632.4	12592.7	-11.5	-11.8	98.0
628.2	12761.7	-8.3	-21.3	34.0
574.2	15035.6	-12.7	-25.9	32.0
534.4	16822.6	-17.1	-30.5	30.0
500.0	18452.2	-20.7	-35.5	25.0
487.3	19076.0	-22.2	-37.2	24.0
427.4	22190.3	-31.2	-43.6	28.0
400.0	23726.1	-34.0	-46.4	27.0
364.4	25856.5	-38.0	-49.9	27.0

STATION ALTITUDE 4186.74 FEET MSL  
 25 JAN. 83 1400 HRS MST  
 ASCENSION NO. 2

UPPER AIR DATA  
 0250210002  
 RITA  
 TABLE II

GEODETIC COORDINATES  
 33.18295 LAT UEG  
 106.15114 LON UEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INFLX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
4186.7	871.3	12.6	27.0	1060.4	659.1	330.0	5.1	1.000255
4500.0	861.4	11.2	29.3	1053.5	657.5	328.5	7.1	1.000253
5000.0	845.7	9.2	33.1	1041.7	655.2	327.4	10.4	1.000250
5500.0	830.2	7.6	37.2	1028.1	653.4	326.8	13.8	1.000248
6000.0	814.9	6.1	41.3	1014.8	651.6	329.3	15.0	1.000245
6500.0	800.0	4.6	45.4	1001.6	649.8	333.6	15.0	1.000242
7000.0	785.1	3.0	50.1	988.6	648.0	336.0	15.6	1.000239
7500.0	770.4	1.5	55.7	975.5	646.2	337.8	16.3	1.000236
8000.0	755.9	-1.1	61.3	962.7	644.3	338.6	16.8	1.000233
8500.0	741.7	-1.7	67.0	950.1	642.5	339.8	16.3	1.000230
9000.0	727.7	-3.2	72.7	937.6	640.6	340.1	15.9	1.000227
9500.0	713.8	-4.6	79.3	924.3	639.0	337.1	17.7	1.000224
10000.0	700.2	-6.0	85.9	911.3	637.4	330.0	20.4	1.000221
10500.0	686.6	-7.2	90.5	897.8	635.9	323.9	23.1	1.000217
11000.0	673.3	-8.4	95.1	884.6	634.4	318.0	21.4	1.000214
11500.0	660.3	-9.5	98.0	871.1	633.1	311.3	19.2	1.000210
12000.0	647.4	-10.4	98.0	857.1	631.9	317.4	19.4	1.000206
12500.0	634.7	-11.3	98.0	843.3	630.8	320.3	39.5	1.000202
13000.0	622.3	-8.8	33.8	819.4	633.7	331.6	26.5	1.000168
13500.0	610.1	-9.7	33.4	806.4	632.5	327.4	32.0	1.000185
14000.0	598.2	-10.7	32.9	793.6	631.3	325.6	37.7	1.000182
14500.0	586.5	-11.7	32.5	780.9	630.1	324.6	40.6	1.000178
15000.0	575.0	-12.6	32.0	768.5	629.0	324.7	37.3	1.000175
15500.0	563.6	-13.8	31.5	756.8	627.5	326.2	36.2	1.000172
16000.0	552.4	-15.1	30.9	745.3	626.0	326.4	38.6	1.000169
16500.0	541.4	-16.3	30.4	734.0	624.5	324.7	40.5	1.000166
17000.0	530.5	-17.5	29.5	722.7	623.0	317.7	38.6	1.000164
17500.0	519.8	-18.6	27.9	711.2	621.6	310.7	36.4	1.000161
18000.0	509.3	-19.7	26.4	699.9	620.3	307.7	35.8	1.000158
18500.0	499.0	-20.8	24.9	688.8	618.9	305.8	34.7	1.000155
19000.0	488.8	-22.0	24.1	678.0	617.4	305.2	33.7	1.000153
19500.0	478.7	-23.4	24.5	667.6	615.7	307.1	35.5	1.000150
20000.0	468.7	-24.9	25.2	657.5	613.9	308.6	36.4	1.000148
20500.0	458.9	-26.3	25.8	647.6	612.1	308.8	35.5	1.000145
21000.0	449.4	-27.8	26.5	637.9	610.3	309.7	36.2	1.000143
21500.0	440.0	-29.2	27.1	628.3	608.5	310.7	38.0	1.000141
22000.0	430.8	-30.7	27.8	618.9	606.7	310.8	39.5	1.000139
22500.0	421.7	-31.8	27.8	608.6	605.3	310.3	41.3	1.000136
23000.0	412.7	-32.7	27.5	597.8	604.2	309.8	43.4	1.000134
23500.0	403.9	-33.6	27.1	587.3	603.0	309.5	45.9	1.000131

STATION ALTITUDE 4186.74 FF, T MSL  
 25 JAN. 63  
 ASCENSION NO. 2

UPPER AIR DATA  
 0250210002  
 NITA  
 TABLE 11 (Cont'd)

GEODETI. COORDINATES  
 33.18295 LAT DEG  
 106.15114 LON UEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
24000.0	395.2	-34.5	27.0	576.9	601.8	309.2	49.3	1.000129
24500.0	386.7	-35.5	27.0	566.7	600.7	308.3	53.6	1.000127
25000.0	378.3	-36.4	27.0	556.6	599.5	306.9	56.4	1.000124
25500.0	370.1	-37.3	27.0	546.7	598.3			1.000122

STATION ALTITUDE 4186.74 FEET MSL  
 25 JAN. 63  
 ASCENSION NO. 2

MANDATORY LEVELS  
 0250210002  
 HITA  
 TABLE 12

GEODETIIC COORDINATES  
 33.18295 LAT DEG  
 106.15114 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4861.	9.6	-6.3	32.	327.0	9.5
800.0	6497.	4.6	-6.2	45.	333.6	15.0
750.0	8206.	-0.8	-6.8	64.	338.9	16.9
700.0	9997.	-6.0	-8.0	86.	330.0	20.5
650.0	11887.	-10.2	-10.5	98.	313.4	16.9
600.0	13913.	-10.5	-23.7	33.	325.8	37.1
550.0	16091.	-15.3	-28.6	31.	326.2	39.2
500.0	18428.	-20.7	-35.5	25.	305.9	34.9
450.0	20950.	-27.7	-41.0	26.	309.6	36.2
400.0	23689.	-34.0	-46.4	27.	309.4	47.0

STATION ALTITUDE 4173.44 FEET MSL  
 25 JAN. 83  
 ASCENSION NO. 5

SIGNIFICANT LEVEL DATA  
 0250320003  
 LANA  
 TABLE 13

GEODETIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
870.0	4173.4	12.3	41.0
850.0	4811.8	10.7	43.0
762.8	7728.2	1.9	61.0
724.8	9072.7	-2.4	72.0
700.0	9977.4	-4.9	86.0
669.6	11120.5	-7.4	97.0
660.6	11467.1	-7.7	98.0
651.6	11817.3	-9.0	97.0
633.8	12521.7	-9.7	76.0
616.4	13227.5	-10.4	55.0
599.0	13951.9	-10.7	43.0
532.0	16914.5	-17.1	35.0
500.0	18433.6	-20.8	33.0
445.2	21224.1	-26.5	32.0
437.8	21623.0	-25.9	32.0
423.0	22440.3	-27.1	32.0
400.0	23757.1	-30.4	33.0
352.4	26686.1	-36.2	32.0

GEODETIC COORDINATES  
33-13510 LAT DEG  
106-15446 LONG DEG

UPPER AIR DATA  
0250320003  
LANA  
TABLE 14

STATION ALTITUDE 4173.44 FEET MSL  
25 JAN. 83  
ASCENSION NO. 3  
1530 HRS MST

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INJEX OF REFRACTION
		AIR DEGREES	DEWPOINT DEGREES				DIRECTION (DEGREES(TN))	SPEED (KNOTS)	
4173.4	870.0	12.3	-6	41.0	1059.0	659.0	50.0	8.0	1.000263
4500.0	859.7	11.5	-1.0	42.0	1049.6	658.1	27.9	8.4	1.000261
5000.0	844.1	10.1	-1.5	44.2	1035.5	656.5	3.3	11.0	1.000257
5500.0	828.6	8.6	-2.0	47.2	1021.9	654.7	349.6	14.8	1.000253
6000.0	813.3	7.1	-2.5	50.3	1008.6	653.0	341.8	19.1	1.000249
6500.0	798.4	5.6	-3.1	53.4	995.4	651.2	341.2	19.6	1.000245
7000.0	783.7	4.1	-3.8	56.5	982.5	649.4	341.8	19.3	1.000242
7500.0	769.3	2.6	-4.5	59.6	969.8	647.6	341.3	18.9	1.000238
8000.0	755.0	1.0	-5.2	63.2	957.2	645.8	339.8	18.4	1.000234
8500.0	740.8	-6	-5.9	67.3	944.8	643.8	337.9	17.9	1.000231
9000.0	726.8	-2.2	-6.6	71.4	932.5	641.9	334.4	17.7	1.000227
9500.0	713.0	-3.6	-6.7	78.6	919.6	640.3	330.9	17.5	1.000224
10000.0	699.4	-4.9	-6.9	86.2	906.6	638.6	326.3	18.6	1.000221
10500.0	685.9	-6.0	-7.3	91.0	892.9	637.3	322.3	19.8	1.000218
11000.0	672.7	-7.1	-7.7	95.8	879.3	636.0	323.7	21.9	1.000214
11500.0	659.7	-7.8	-8.1	97.9	864.6	635.2	325.0	24.1	1.000210
12000.0	646.9	-9.2	-10.3	91.6	852.4	633.5	320.8	28.5	1.000205
12500.0	634.3	-9.7	-13.0	76.6	837.6	632.8	334.9	33.1	1.000199
13000.0	622.0	-10.2	-16.1	61.8	823.0	632.1	335.0	36.9	1.000193
13500.0	609.8	-10.5	-18.8	50.5	808.1	631.6	335.1	40.7	1.000188
14000.0	597.8	-10.8	-20.9	42.9	793.3	631.2	334.1	41.1	1.000183
14500.0	586.0	-11.9	-22.3	41.5	780.8	629.9	333.1	41.6	1.000180
15000.0	574.4	-13.0	-23.6	40.2	768.6	628.6	331.5	41.4	1.000176
15500.0	563.0	-14.0	-25.0	38.8	756.5	627.3	329.8	41.3	1.000173
16000.0	551.8	-15.1	-26.4	37.5	744.7	625.9	328.1	42.1	1.000170
16500.0	540.9	-16.2	-27.7	36.1	733.0	624.6	327.4	42.7	1.000167
17000.0	530.1	-17.3	-29.1	34.9	721.6	623.3	327.1	43.0	1.000164
17500.0	519.4	-18.5	-30.4	34.2	710.4	621.8	325.0	43.0	1.000161
18000.0	508.4	-19.7	-31.7	33.6	699.4	620.3	323.8	43.1	1.000158
18500.0	498.6	-20.9	-32.9	33.0	688.5	618.8	324.5	43.1	1.000156
19000.0	488.4	-22.0	-33.9	32.8	677.1	617.5	325.9	43.9	1.000153
19500.0	478.3	-23.0	-34.8	32.6	665.9	616.3	327.7	45.2	1.000150
20000.0	468.5	-24.0	-35.8	32.4	654.9	615.0	328.3	49.4	1.000148
20500.0	458.8	-25.0	-36.8	32.3	644.0	613.7	328.6	54.3	1.000145
21000.0	449.4	-26.0	-37.7	32.1	633.4	612.5	325.1	62.0	1.000143
21500.0	440.1	-26.1	-37.8	32.0	620.4	612.4	322.2	69.3	1.000140
22000.0	430.9	-26.5	-38.1	32.0	608.4	612.0	319.1	74.3	1.000137
22500.0	421.9	-27.2	-38.8	32.0	597.6	611.0	317.2	77.4	1.000134
23000.0	413.1	-28.5	-39.8	32.4	588.1	609.4	317.2	75.6	1.000132
23500.0	404.4	-29.8	-40.8	32.8	578.7	607.8	318.1	73.7	1.000130



STATION ALTITUDE 4173.44 FF T MSL  
 25 JAN. 43  
 ASCENSION NO. 5

UPPER AIR DATA  
 0250320003  
 LANA

TABLE 14 (Cont'd)

GEODETIC COORDINATES  
 33.15510 LAT DEG  
 106.15446 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	395.8	-30.9	32.9	569.1	606.4	319.6	71.9	1.000128
24500.0	387.4	-31.9	32.7	559.2	605.2	321.7	72.5	1.000125
25000.0	379.1	-32.9	32.6	549.5	603.9	323.8	74.0	1.000123
25500.0	371.0	-33.9	32.4	540.0	602.7			1.000121
26000.0	363.0	-34.8	32.2	530.6	601.4			1.000119
26500.0	355.2	-35.8	32.1	521.4	600.2			1.000117

STATION ALTITUDE 4173.44 FEET MSL  
 25 JAN. 83  
 ASCENSION NO. 3

MANDATORY LEVELS  
 0250320003  
 LANA  
 TABLE 15

GEODETIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4809.	10.7	-1.4	43.	11.1	9.9
800.0	6452.	5.8	-3.0	53.	341.2	19.6
750.0	8169.	.5	-5.4	65.	339.3	18.2
700.0	9968.	-4.9	-6.9	86.	320.0	18.5
650.0	11868.	-9.1	-9.7	95.	329.5	27.4
600.0	13894.	-10.7	-20.6	44.	334.3	41.1
550.0	16071.	-15.3	-26.6	37.	327.8	42.3
500.0	18409.	-20.8	-32.8	33.	324.4	43.1
450.0	20939.	-26.0	-37.7	32.	325.3	61.4
400.0	23720.	-30.4	-41.4	33.	318.8	72.8

END

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