FARLEY NUCLEAR PLANT

SUMMARY REPORT ON MONITORING OF FOG CONDITIONS

DECEMBER, 1977 through NOVEMBER, 1978

Summary Report on Monitoring of Fog Conditions at the Farley Nuclear Plant

The purpose of this report is to comply with the Farley Nuclear Plant Technical Specifications 3.1.1(b)-2, Monitoring of Fog Conditions. The Monitoring of Fog Conditions Study was conducted in accordance with the Environmental Non-Radiological Surveillance Procedure for the Joseph M. Farley Nuclear Plant of Alabama Power Company, No. FNP-O-ENV-NR8, entitled Procedure for Determining Visibility, Farley Nuclear Plant (see Attachment 1).

The results of this study are summarized in Figures 1 thru 24 and Tables 1 thru 24. The figures are monthly scattergrams which illustrate the relationship between visibility and dew point data collected at the Farley Plant at the 10-meter level and the 61-meter level. As indicated in the legend on the figures, the weather conditions prevailing at the time of observations were broken down into seven basic categories, each category being assigned a letter code for plotting purposes. It should be noted that these scattergrams do not contain data classified as clear (c) or cloudy (L) for distances greater than 5875 ft. This data was not plotted because the large volume of data in these categories made the scattergram illegible. Therefore, a correlated monthly summary of all weather conditions by time of day and dew point sensor elevation has been included in Tables 1 thru 24. These tables illustrate the total occurrences of each type of weather condition and the time of day it occurred. Missing values in the figures and tables are due primarily to dew point sensor malfunction.

Tables 1 thru 24 indicate that fogging occurred more frequently in the fall, winter and spring months and the fog was observed primarily at sunrise. The incidence of fogging varied between 0 and 7 times per month and averaged between 2 and 3 times per month per year.

Based on this year's test program, it is recommended that the Monitoring of Fog Conditions required in the Technical Specifications for Unit #2 be deleted.

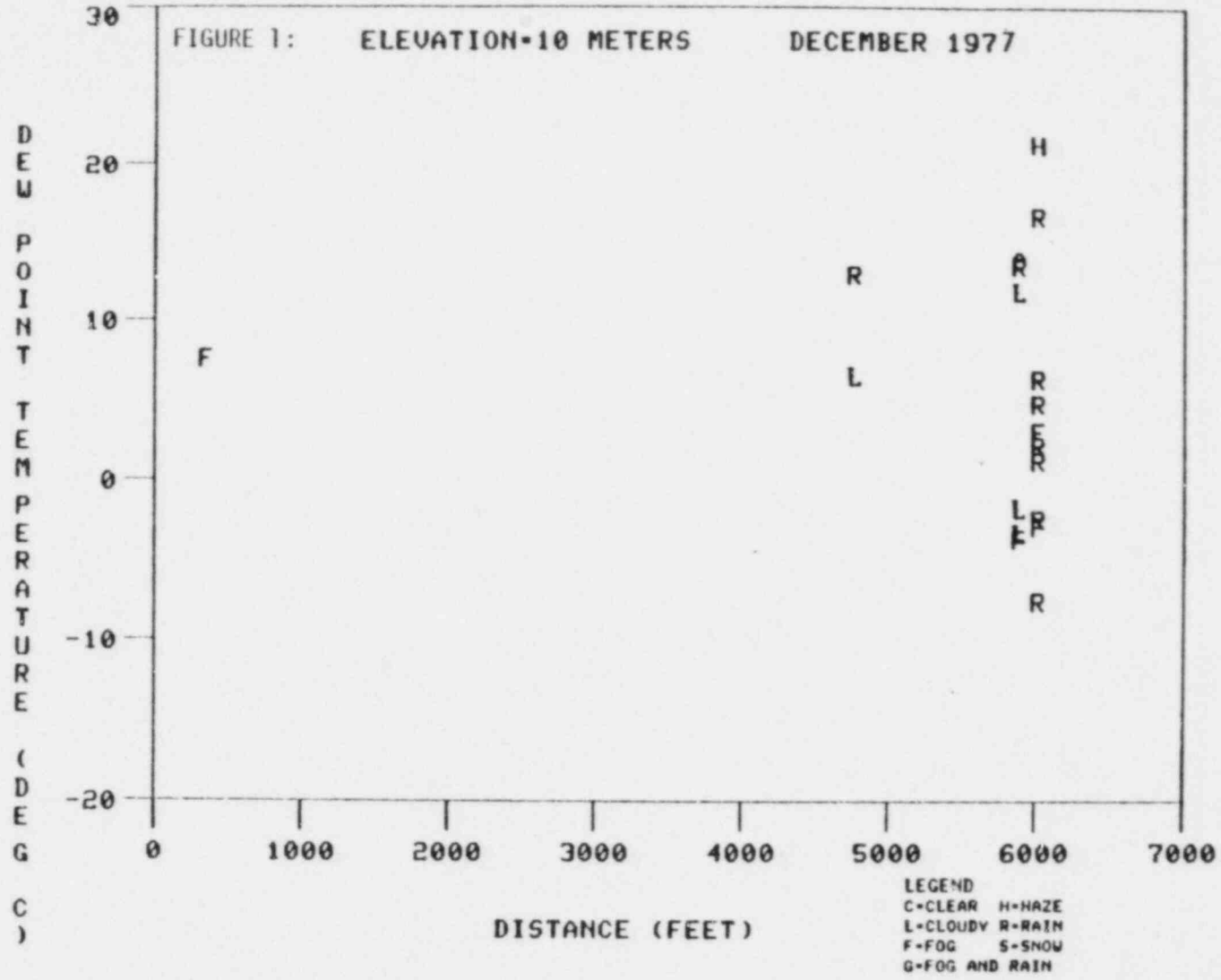
FIGURE 1: ELEVATION-10 METERS DECEMBER 1977
DEW POINT TEMPERATURE (DEG C)
30
20
10
0
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DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

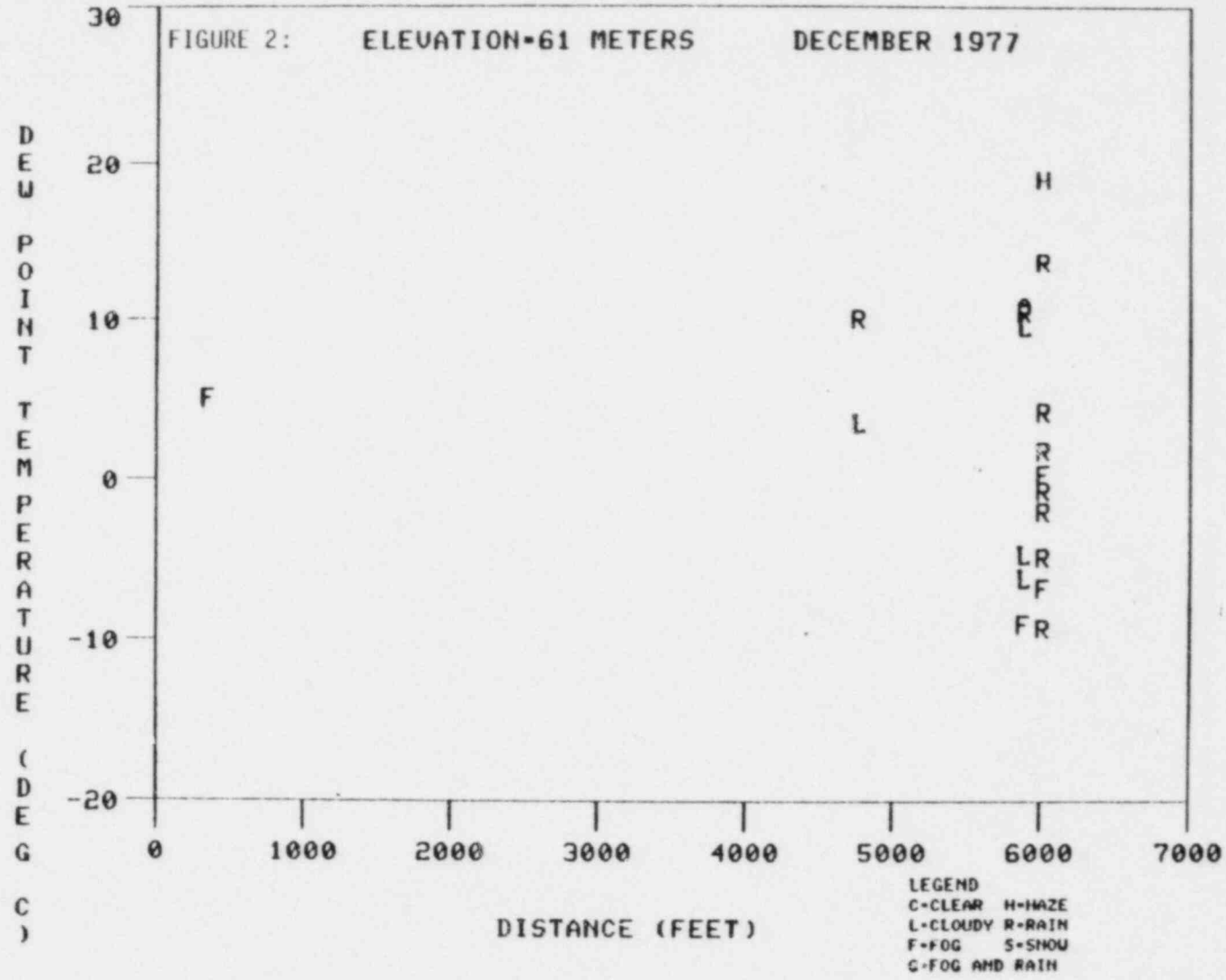
FIGURE 2: ELEVATION-61 METERS DECEMBER 1977
DEW POINT TEMPERATURE (DEG C)
30
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10
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-10
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DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

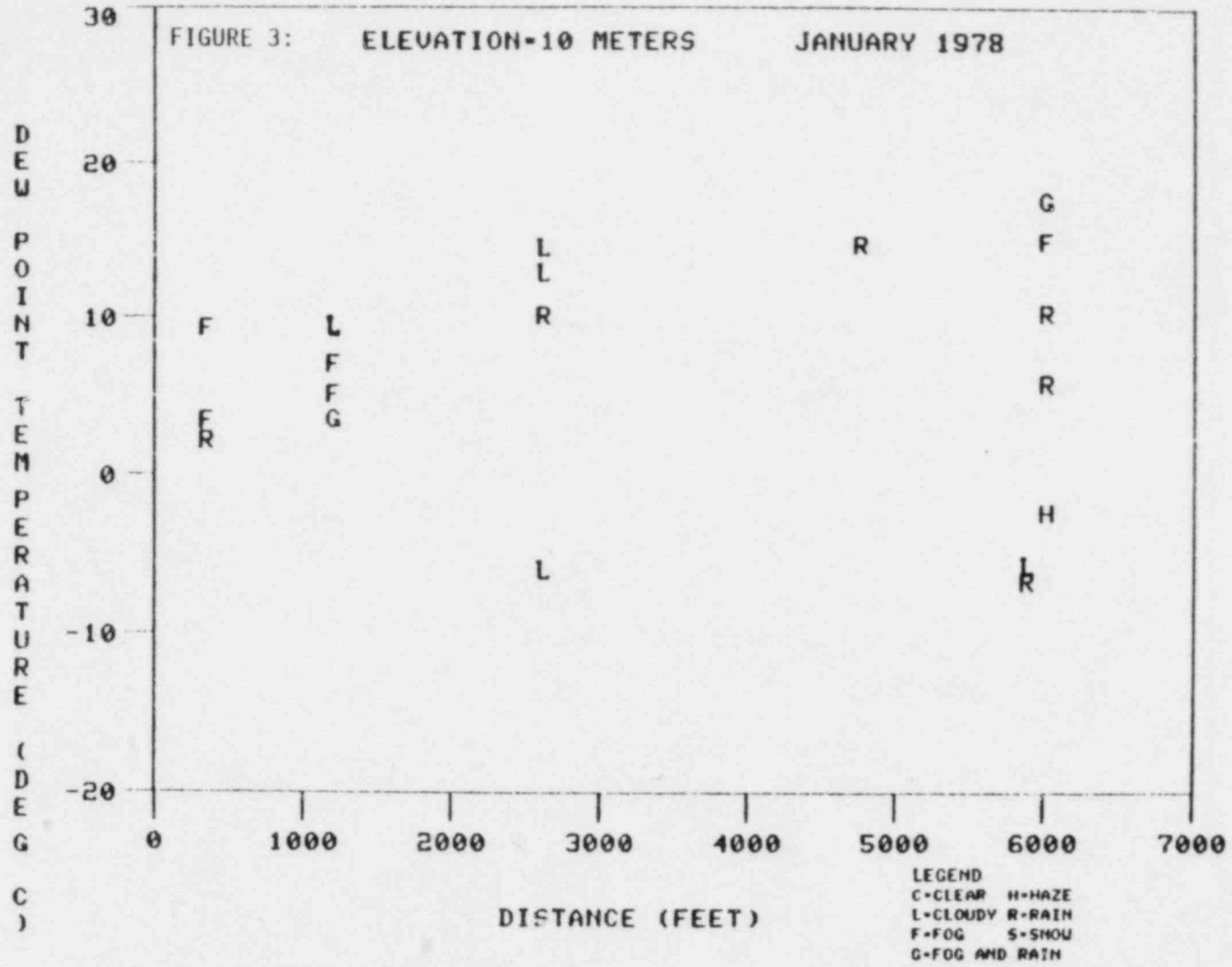
FIGURE 3: ELEVATION-10 METERS JANUARY 1978
DEW POINT TEMPERATURE (DEG C)
30
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DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

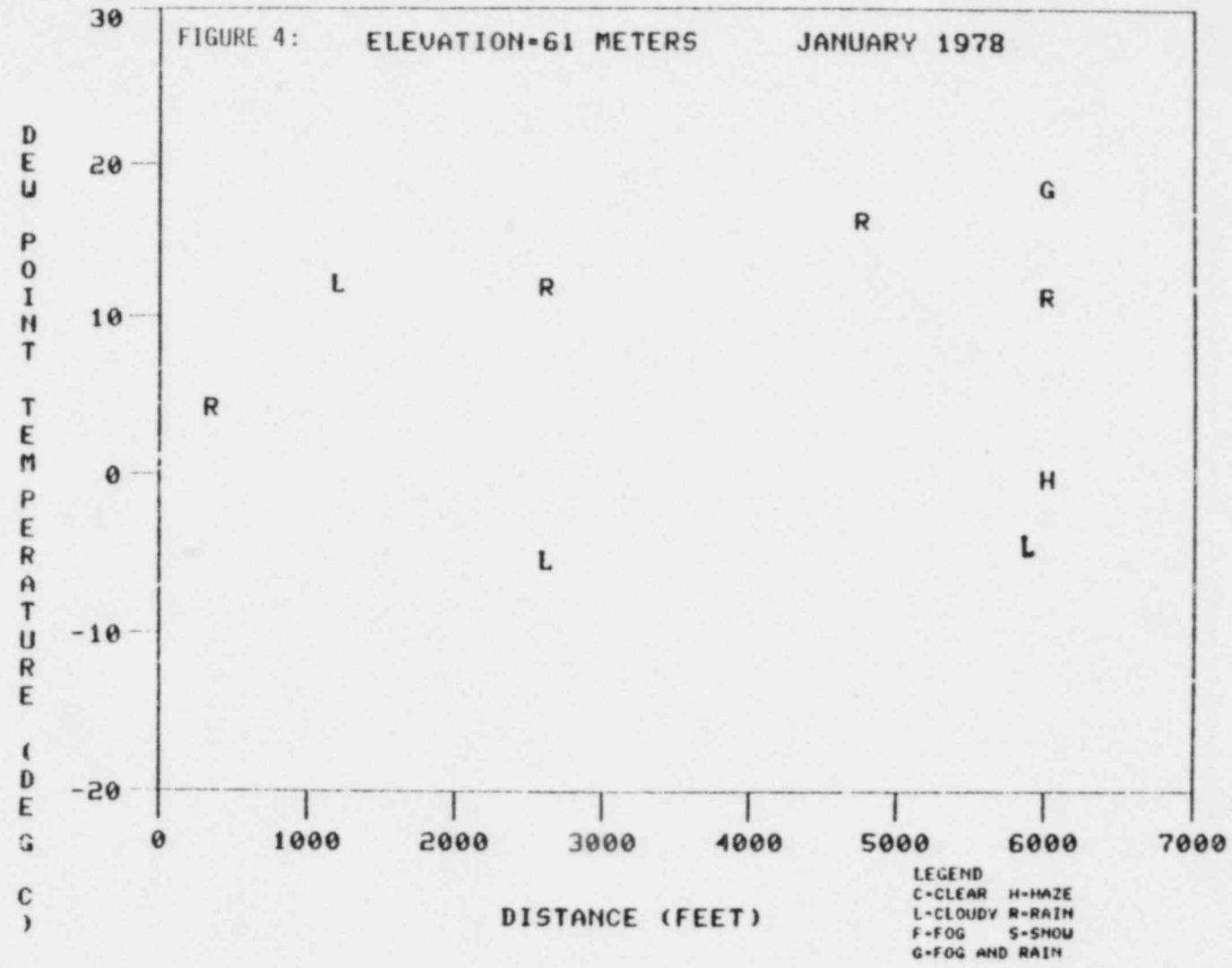
FIGURE 4: ELEVATION=61 METERS JANUARY 1978
DEW POINT TEMPERATURE (DEG C)
30
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DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

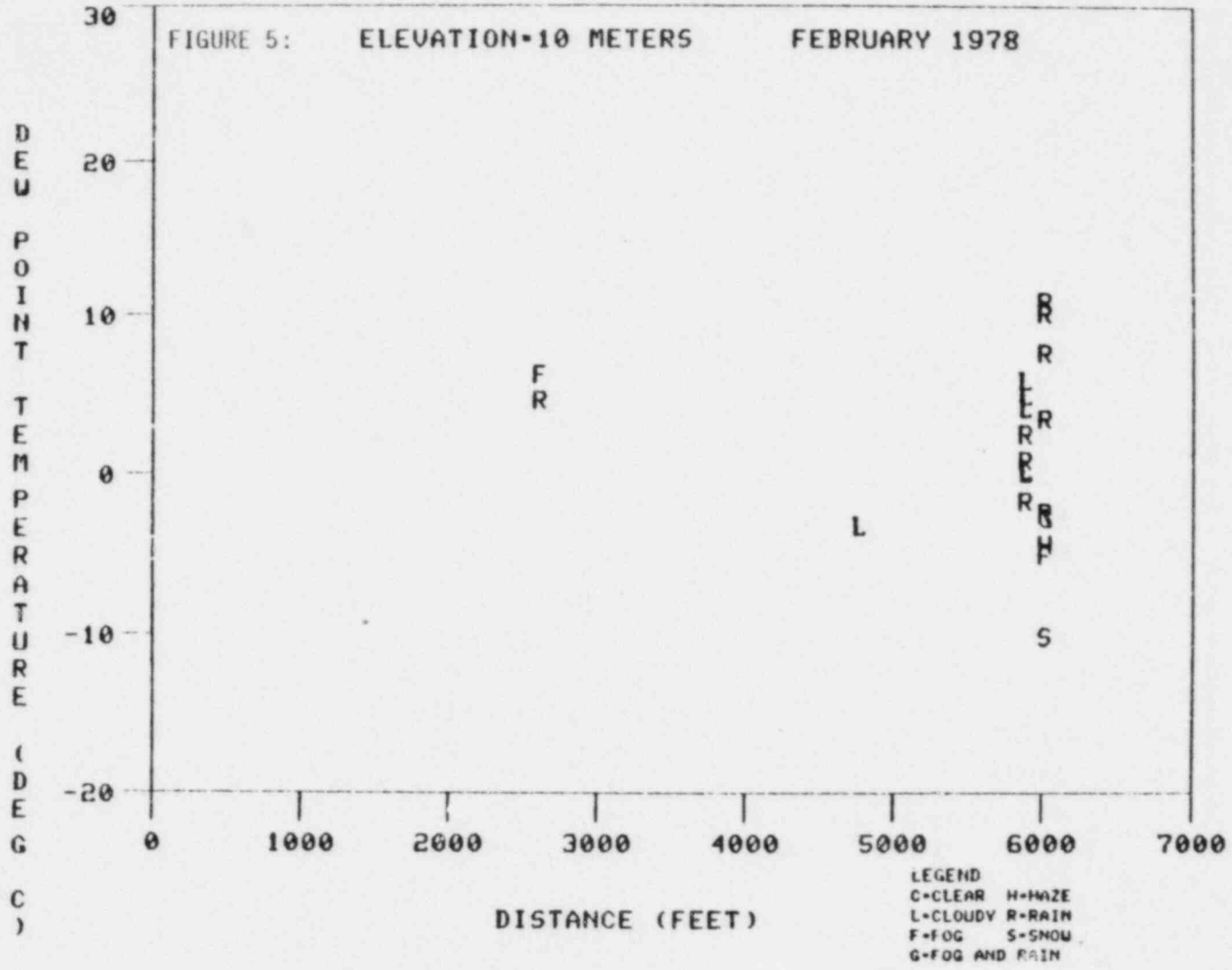
FIGURE 5: ELEVATION-10 METERS FEBRUARY 1978
DEW POINT TEMPERATURE (DEG C)
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DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

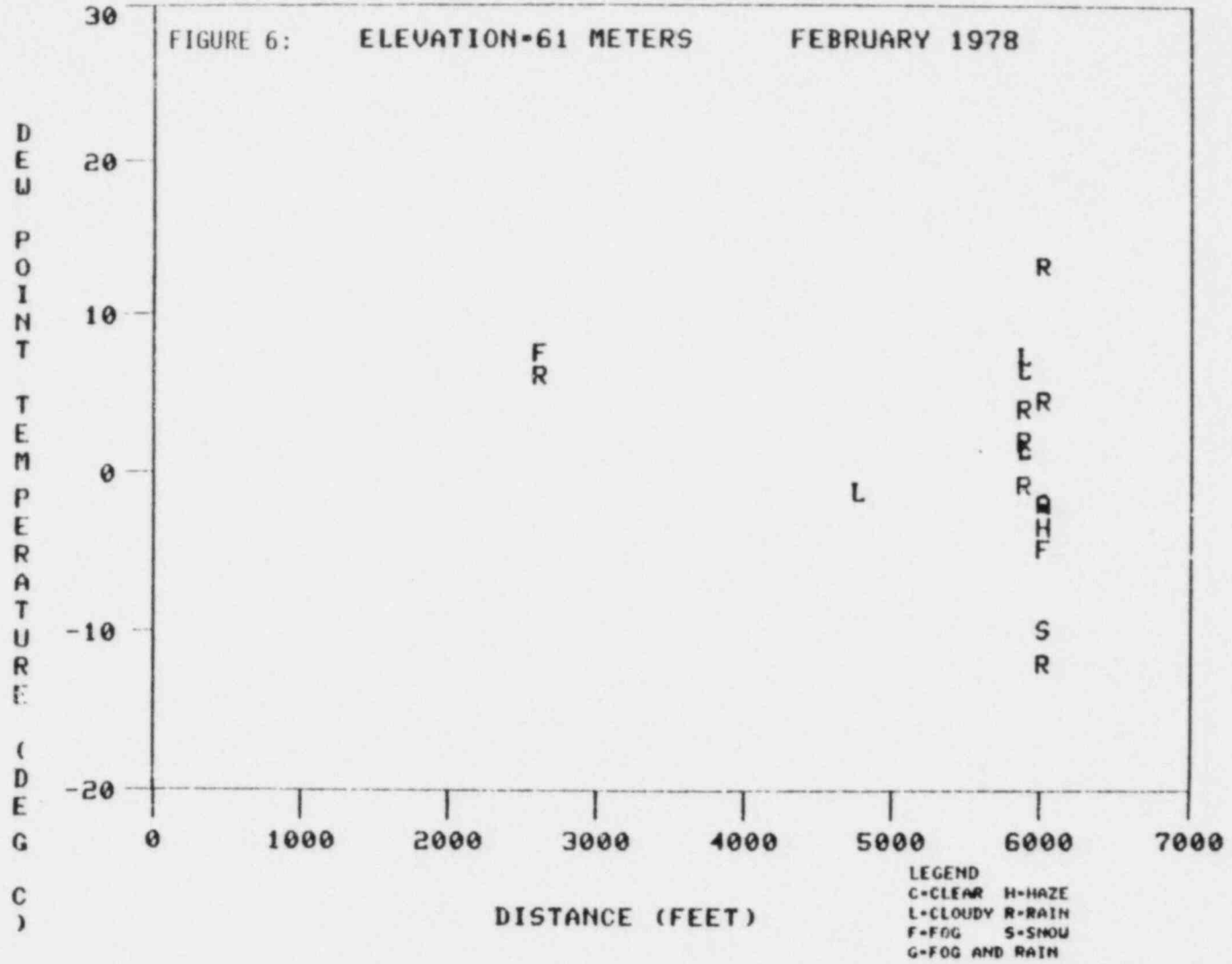
FIGURE 6: ELEVATION-61 METERS FEBRUARY 1978
DEW POINT TEMPERATURE (DEG C)
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7000
DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

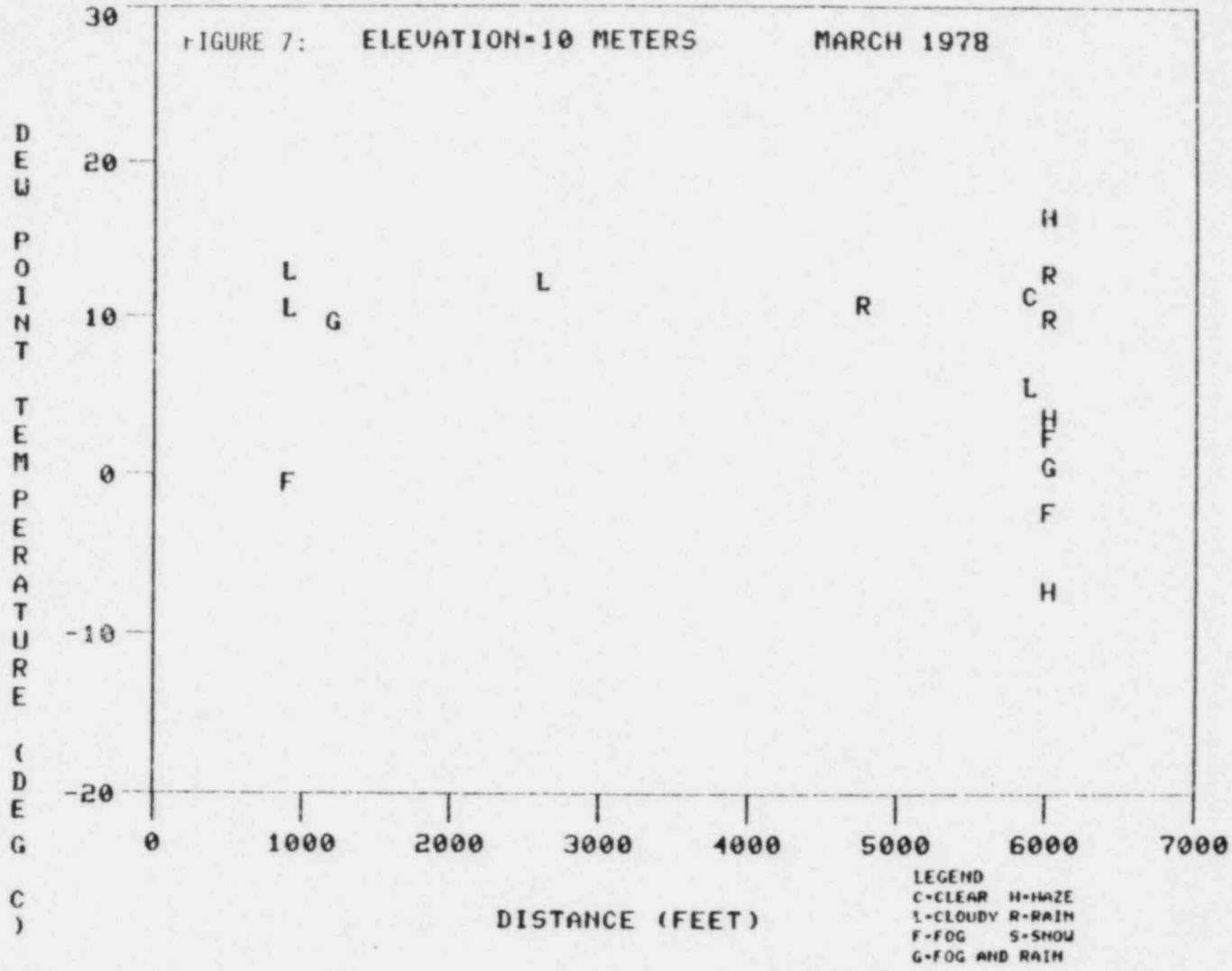
FIGURE 7: ELEVATION=10 METERS MARCH 1978
DEW POINT TEMPERATURE (DEG C)
30
20
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-10
-20
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1000
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7000
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

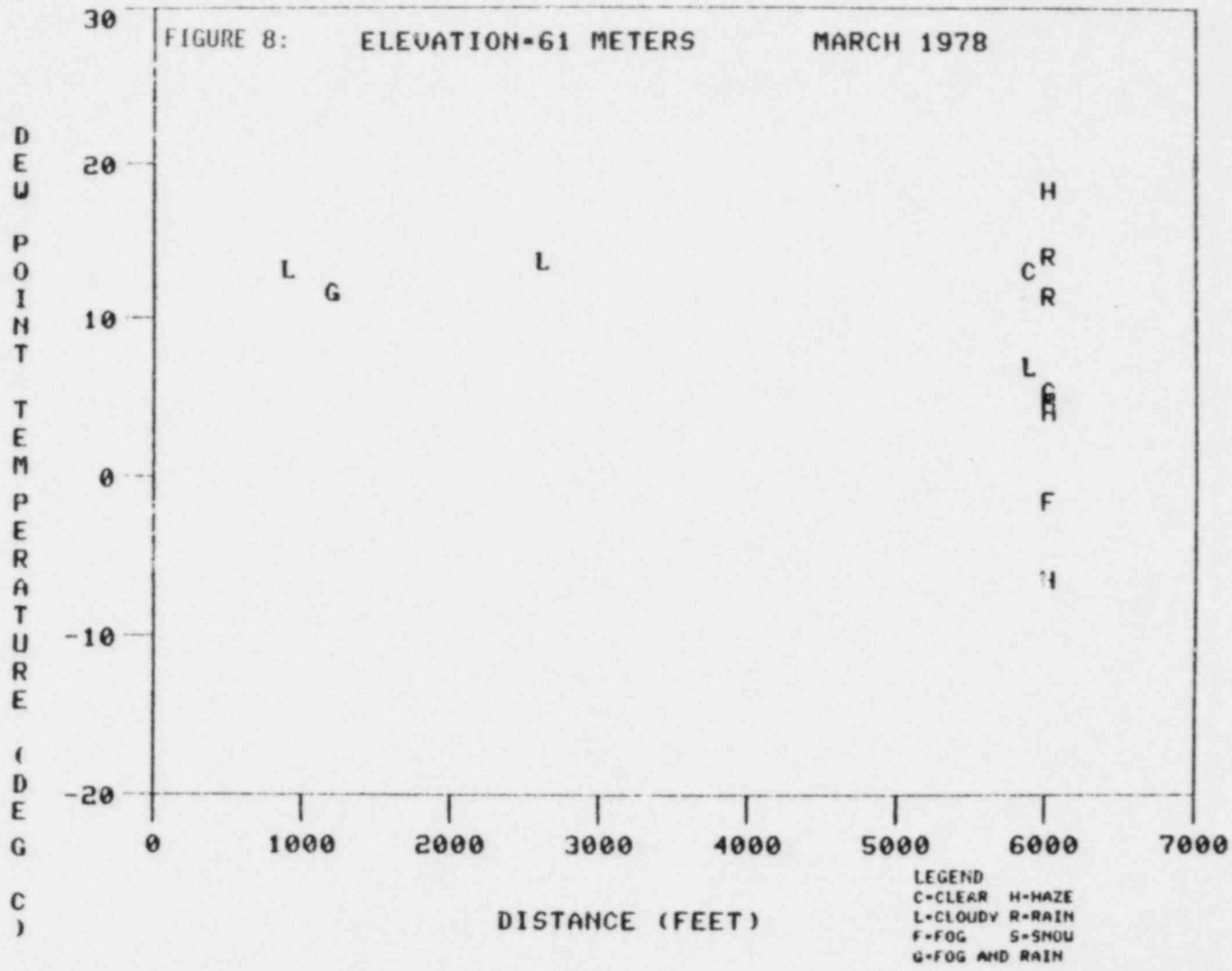
FIGURE 8: ELEVATION=61 METERS MARCH 1978
DEW POINT TEMPERATURE (DEG C)
30
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7000
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

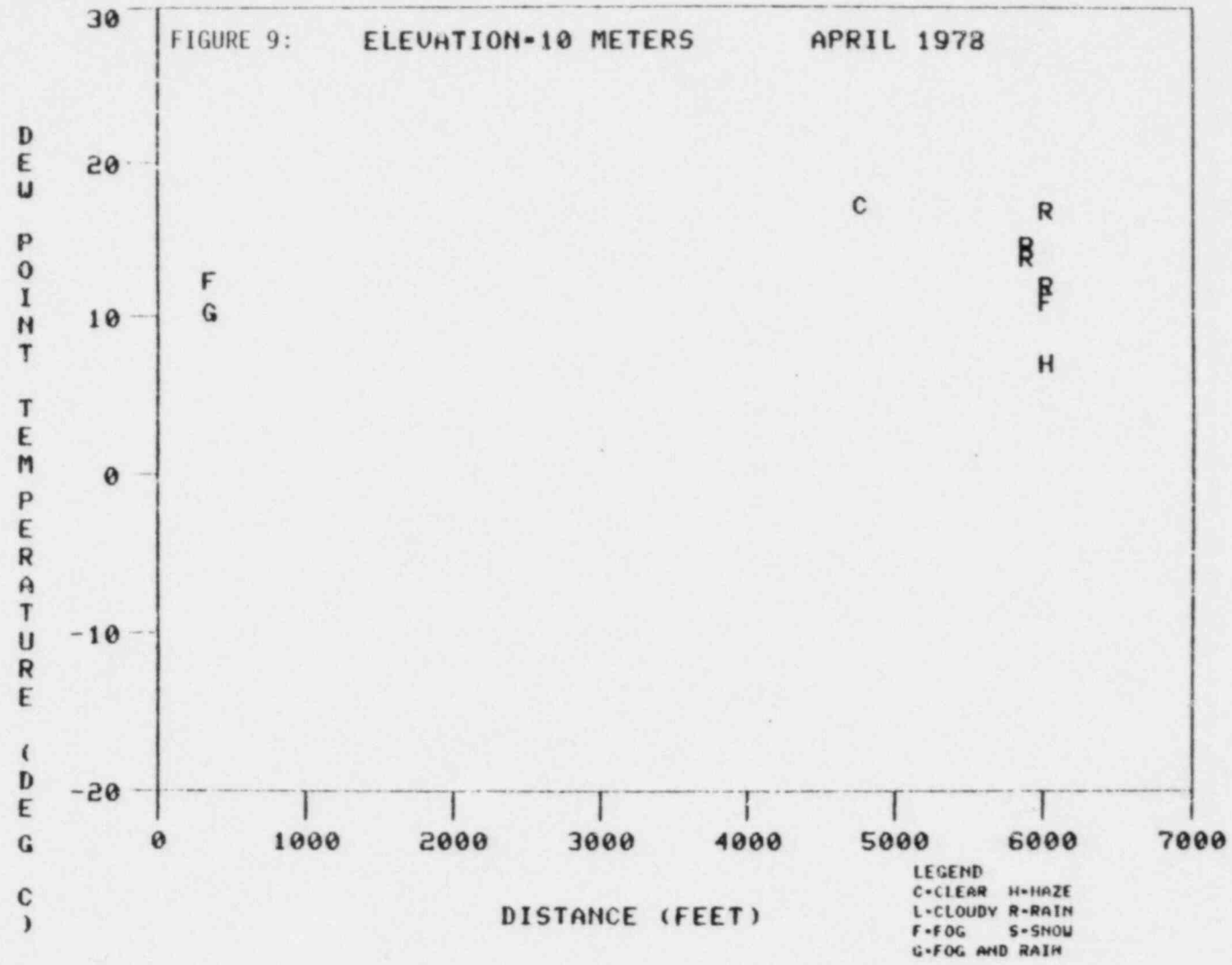
FIGURE 9: ELEVATION-10 METERS APRIL 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
0
-10
-20
0
1000
2000
3000
4000
5000
6000
7000
DISTANCE (FEET)
C
R
R
R
F
H
F
G
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

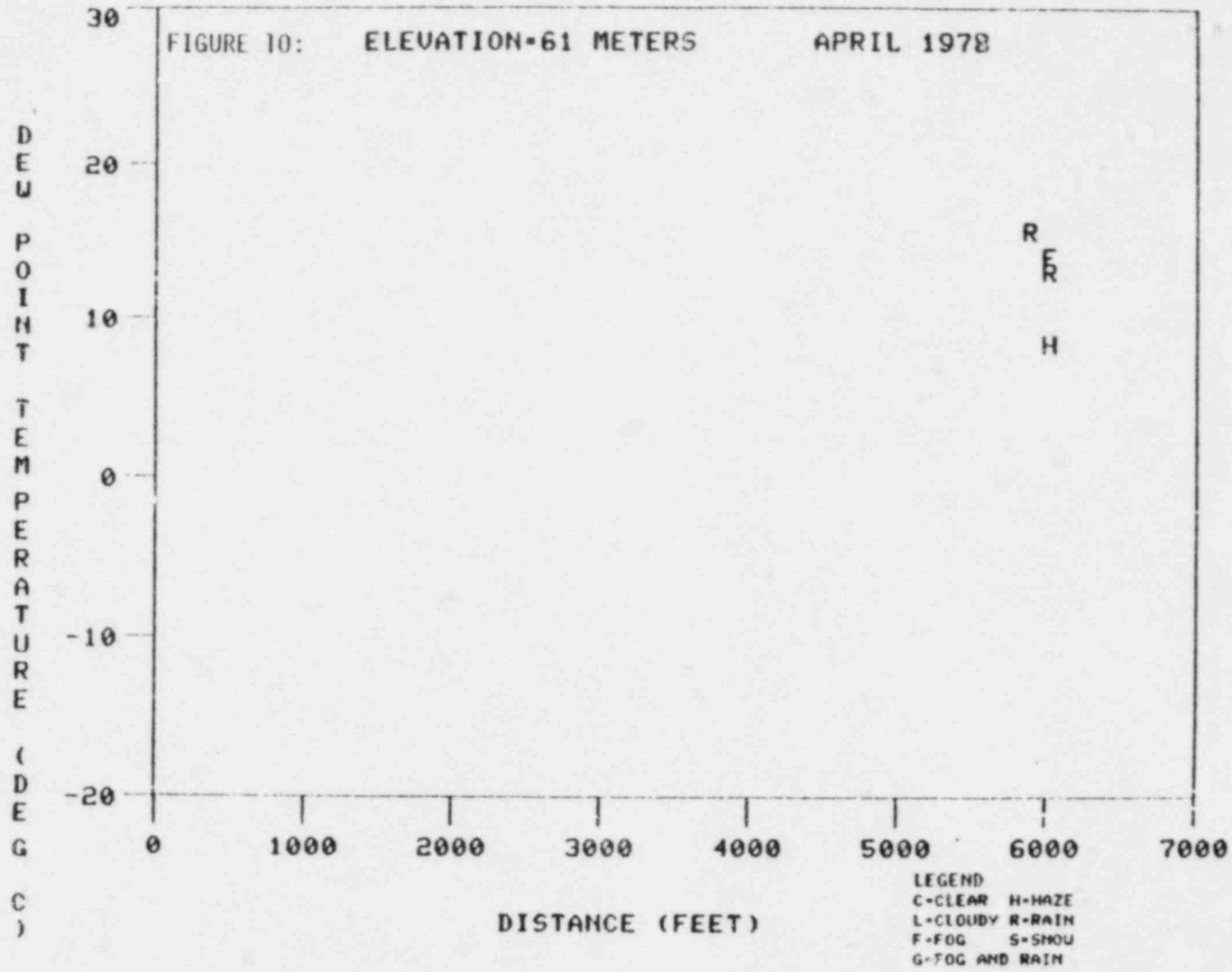
FIGURE 10: ELEVATION=61 METERS APRIL 1978
DEW POINT TEMPERATURE (DEG C)
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DISTANCE (FEET)
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LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOU
G-FOG AND RAIN

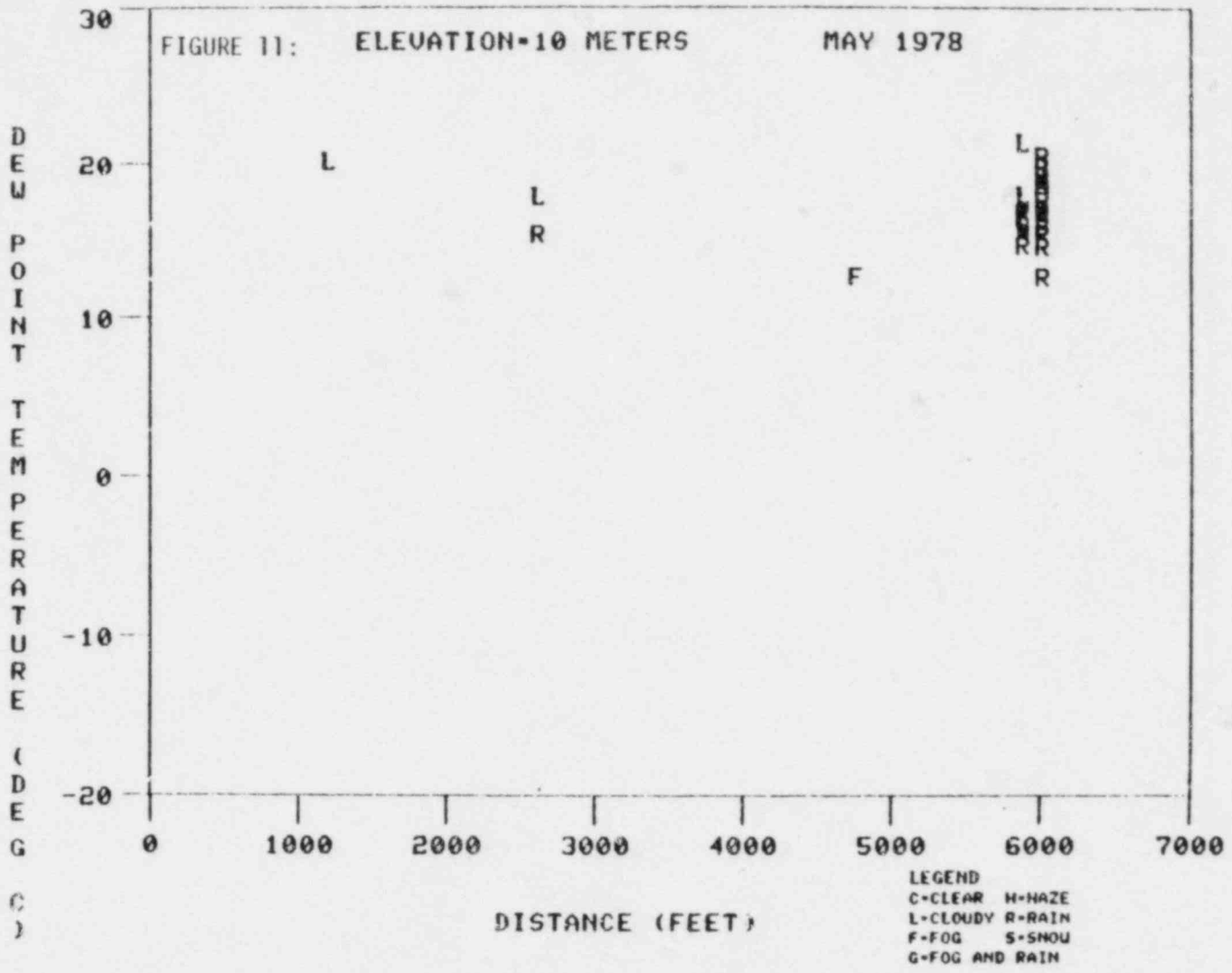
FIGURE 11: ELEVATION=10 METERS MAY 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
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-10
-20
0
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7000
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

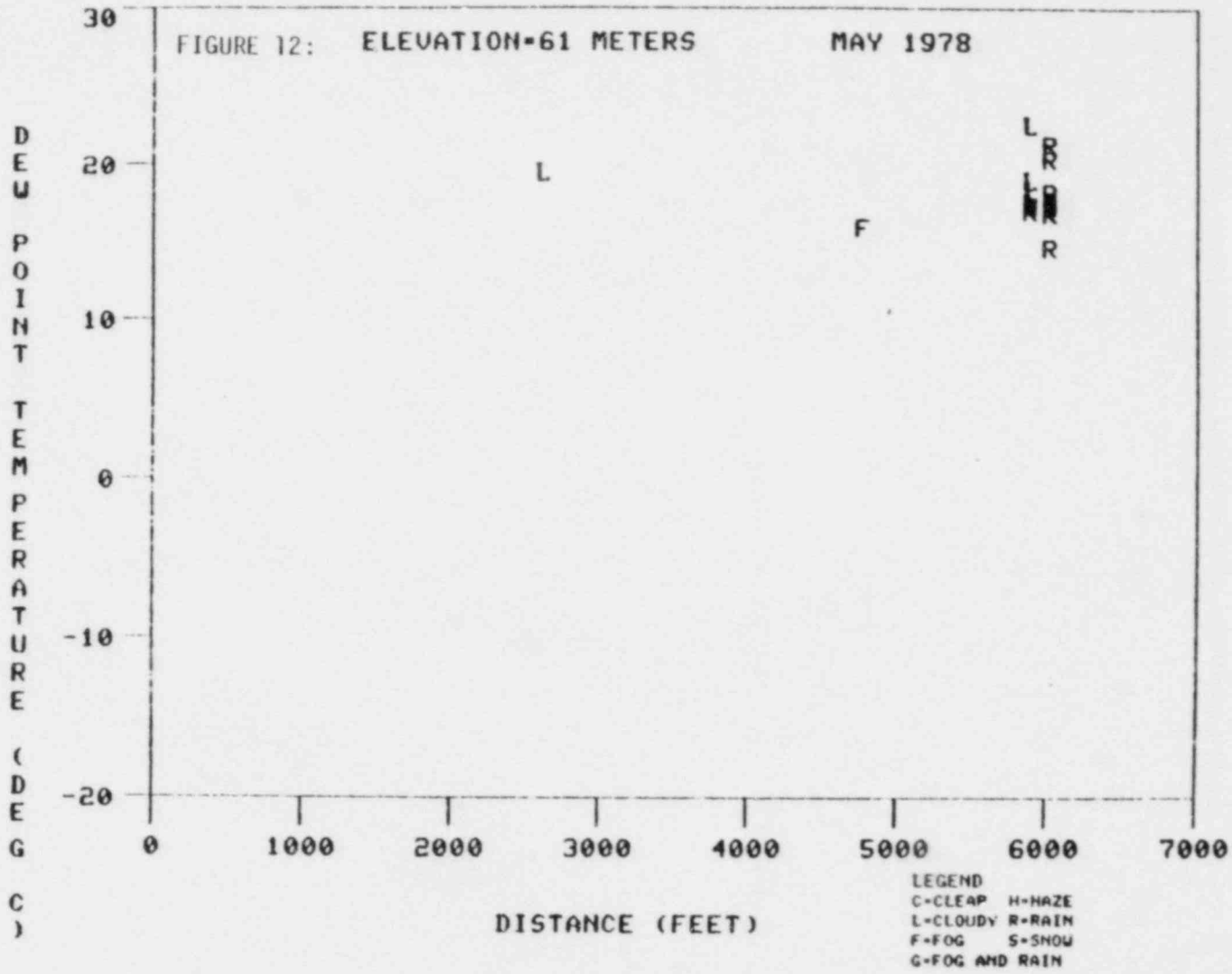
FIGURE 12: ELEVATION=61 METERS MAY 1978
DEW POINT TEMPERATURE (DEG C)
30
20
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-20
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5000
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7000
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

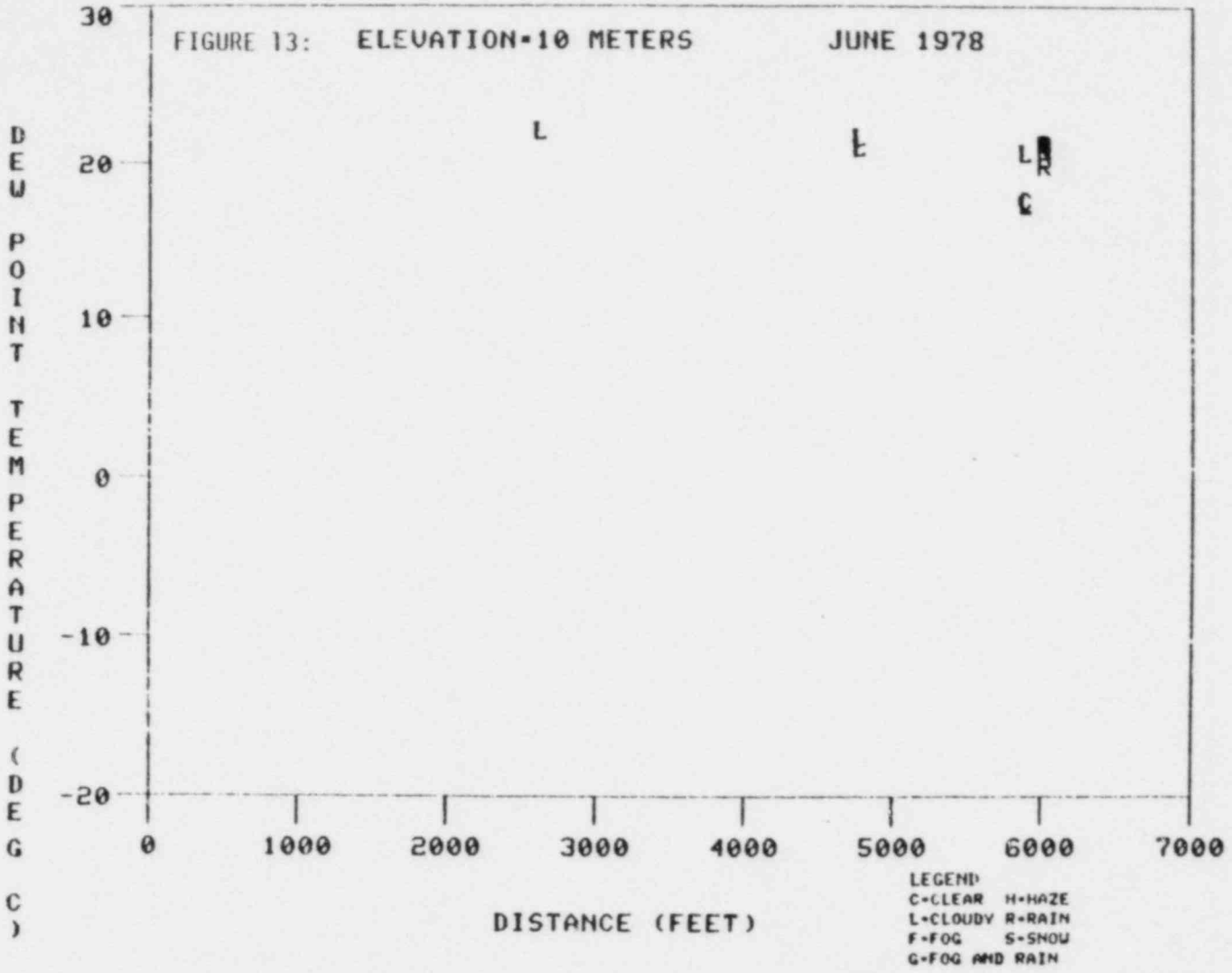
FIGURE 13: ELEVATION=10 METERS JUNE 1978
DEW POINT TEMPERATURE (DEG C)
30
20
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-10
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6000
7000
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

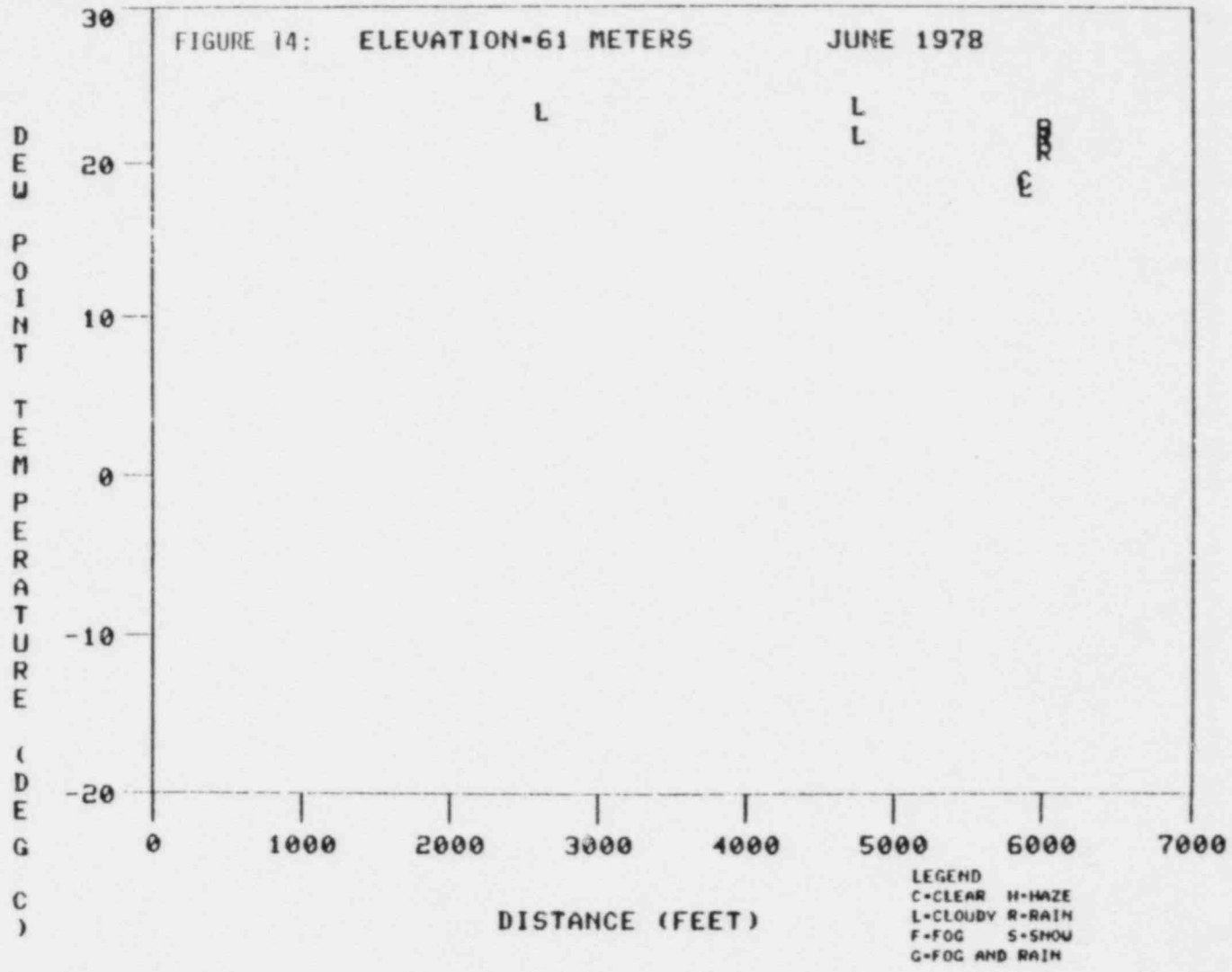
FIGURE 14: ELEVATION=61 METERS JUNE 1978
DEW POINT TEMPERATURE (DEG C)
30
20
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-20
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3000
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6000
7000
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

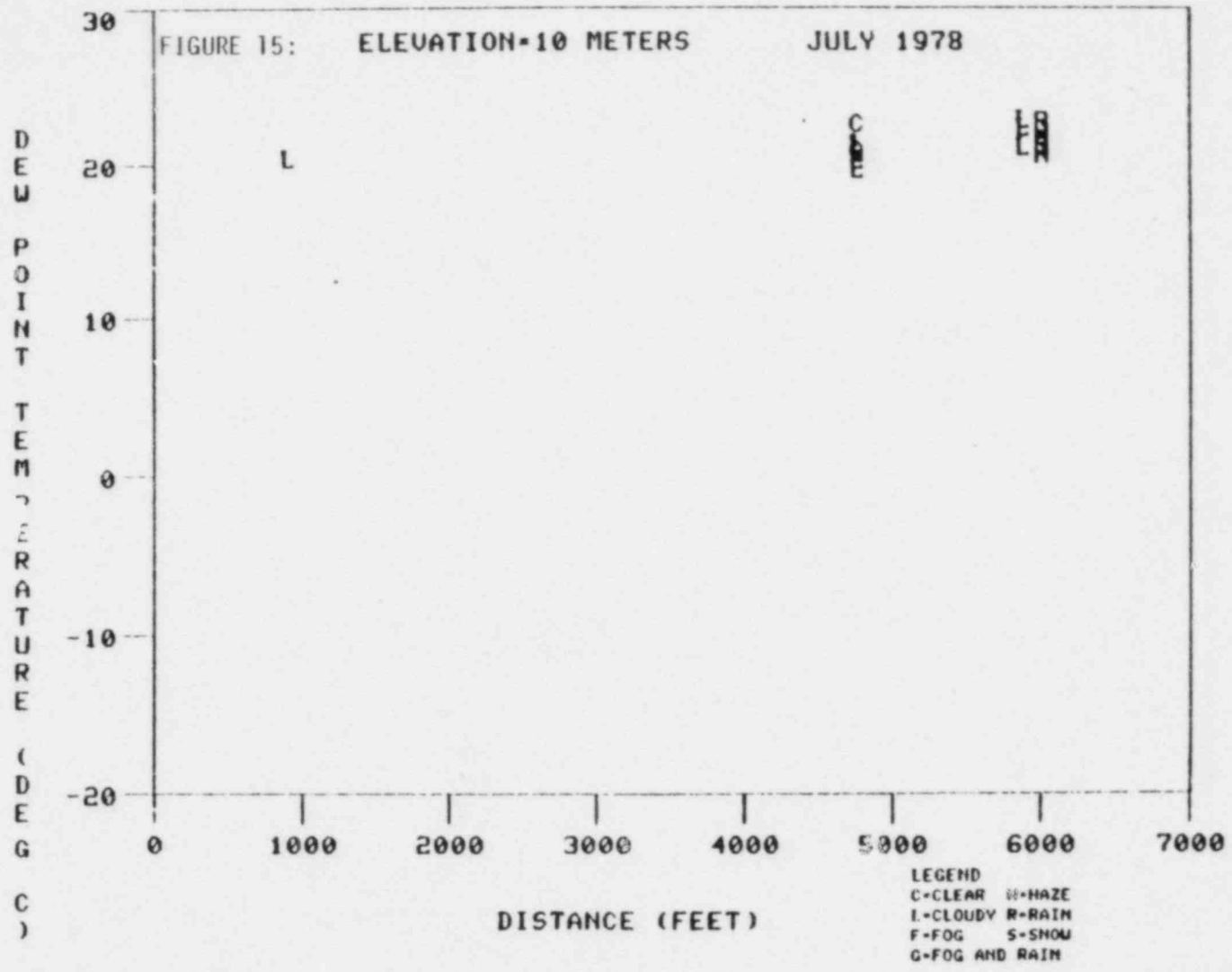
FIGURE 15: ELEVATION-10 METERS JULY 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
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-10
-20
0
1000
2000
3000
4000
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6000
7000
DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

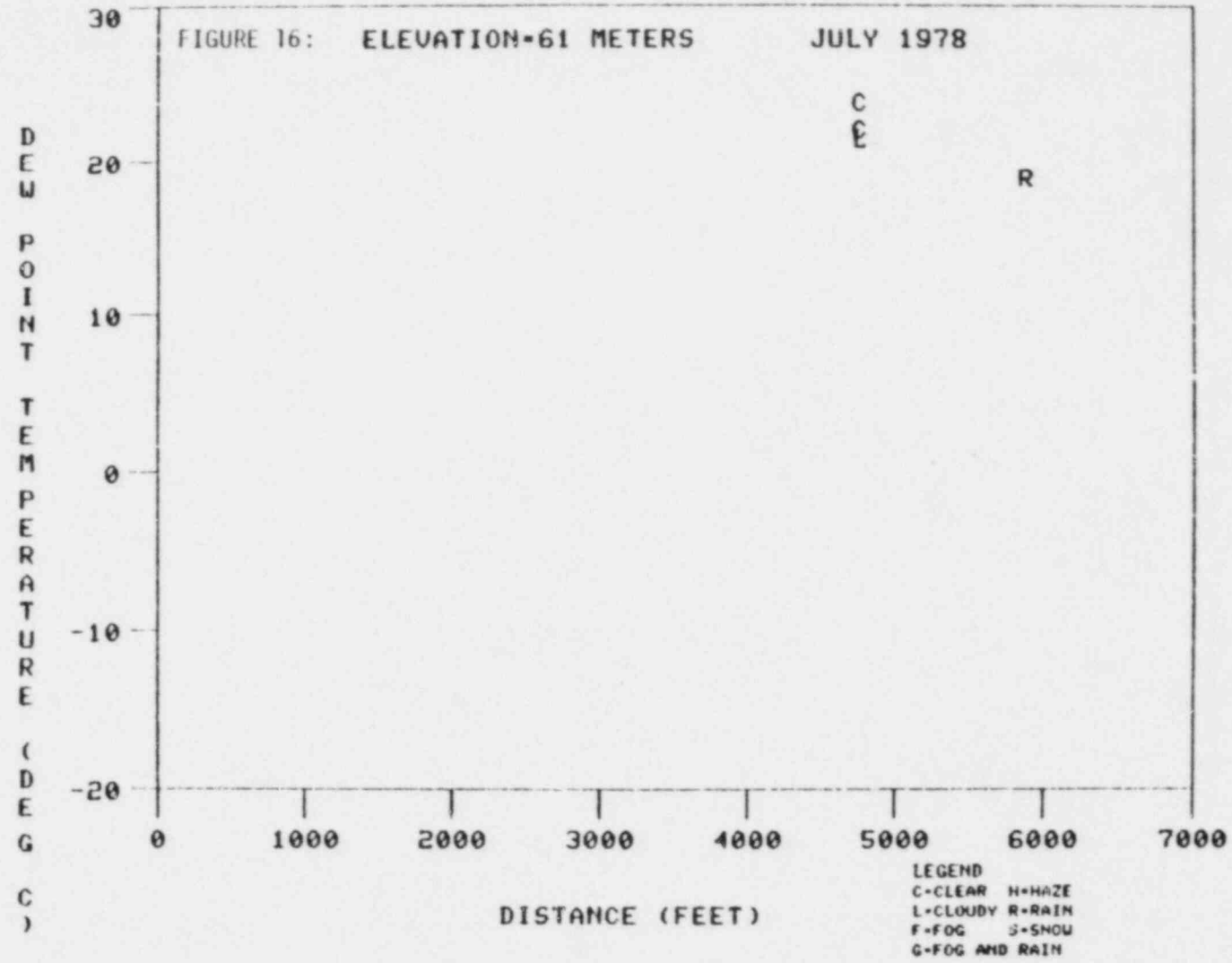
FIGURE 16: ELEVATION=61 METERS JULY 1978
C
R
30
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7000
DEW POINT TEMPERATURE (DEG C)
DISTANCE (FEET)
LEGEND
C=CLEAR H=HAZE
L=CLOUDY R=RAIN
F=FOG S=SNOW
G=FOG AND RAIN

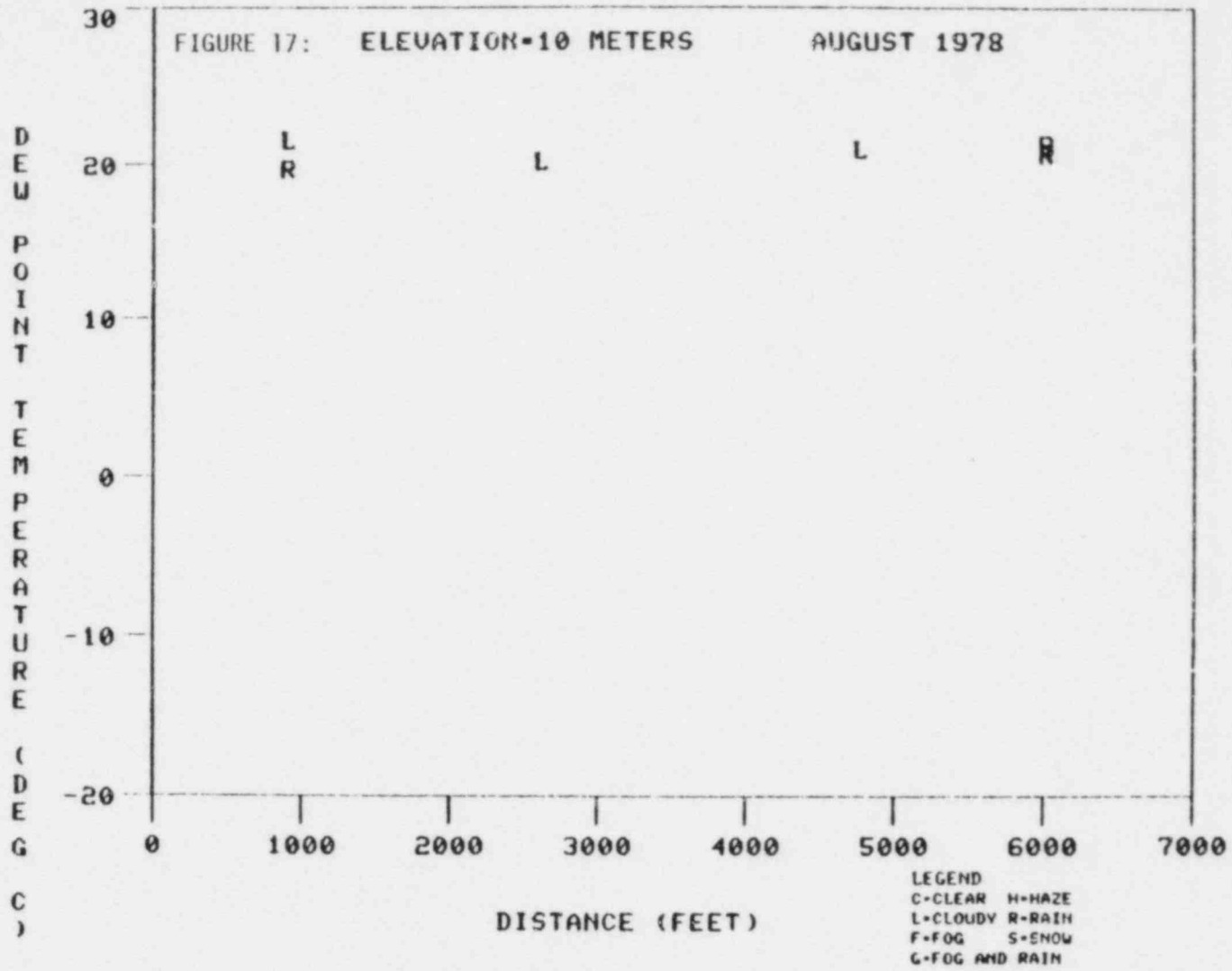
FIGURE 17: ELEVATION-10 METERS AUGUST 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
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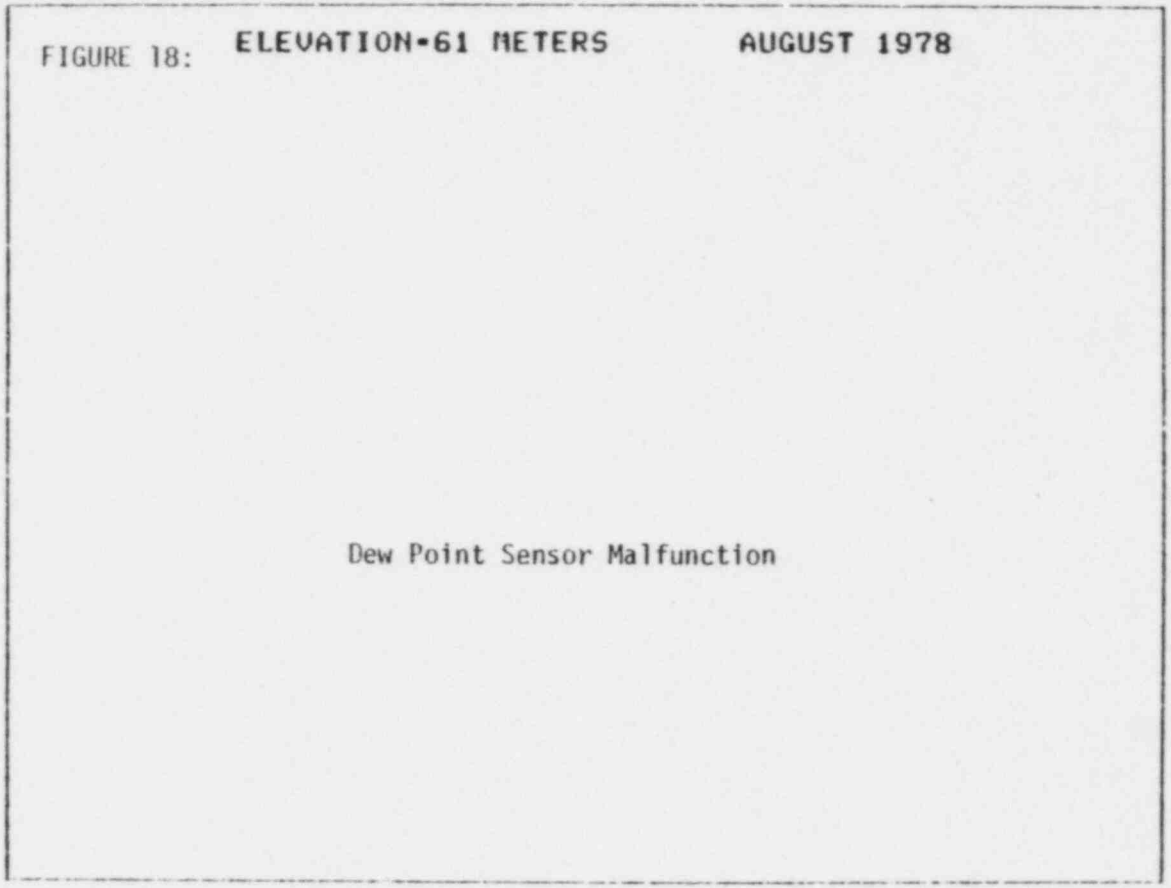
-10
-20
0
1000
2000
3000
4000
5000
6000
7000
DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

FIGURE 18: ELEVATION-61 METERS AUGUST 1978



DEW POINT TEMPERATURE (DEG C)

DISTANCE (FEET)

LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

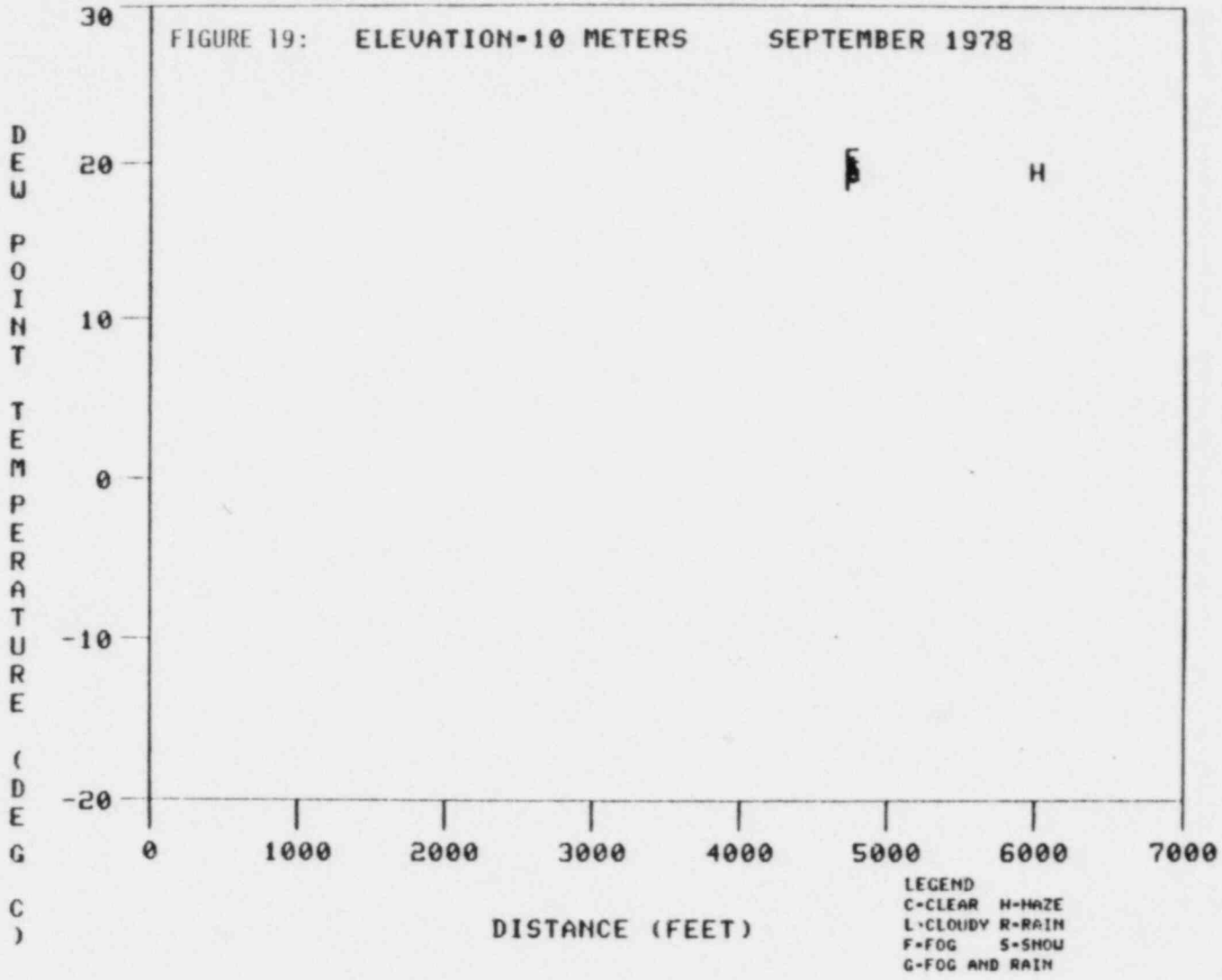


FIGURE 19: ELEVATION-10 METERS SEPTEMBER 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
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-10
-20
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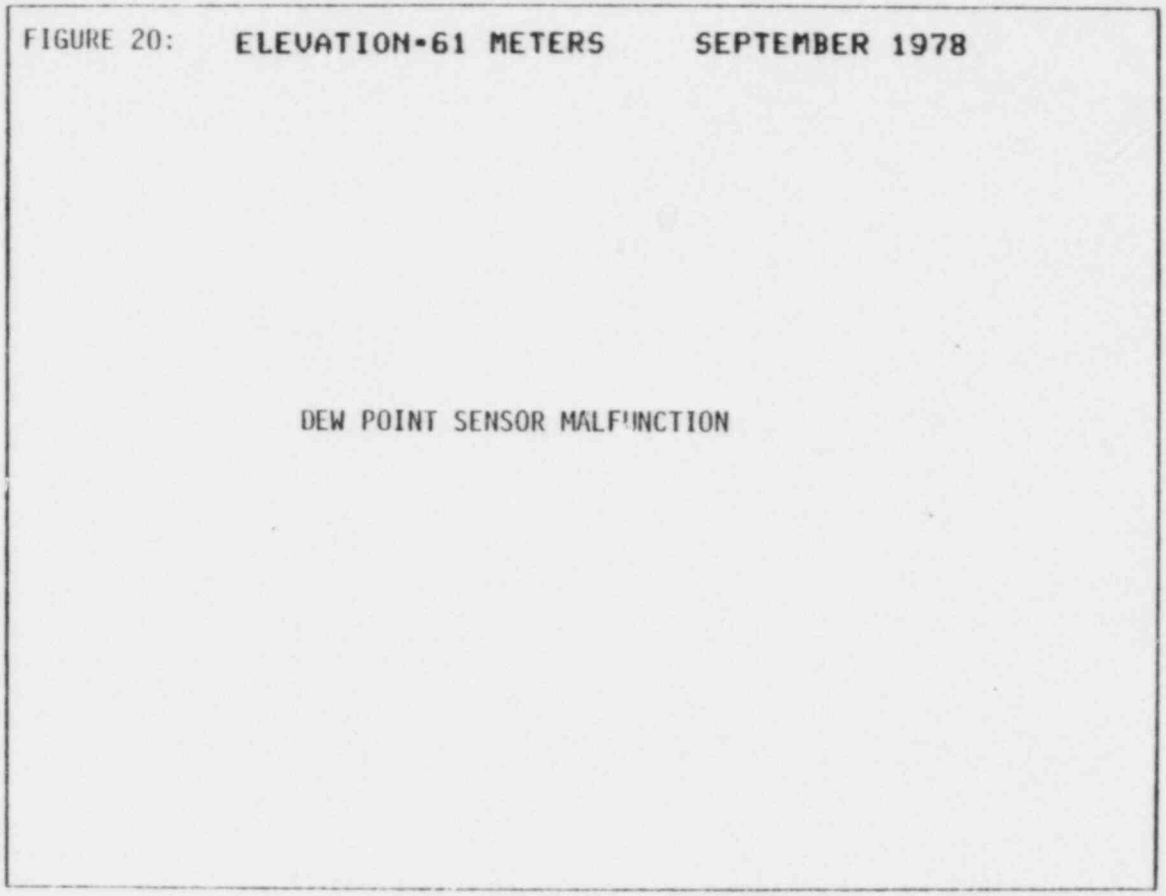
1000
2000
3000
4000
5000
6000
7000
DISTANCE (FEET)
H
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

FIGURE 20: ELEVATION-61 METERS SEPTEMBER 1978



DEW POINT TEMPERATURE (DEG C)

DISTANCE (FEET)

LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

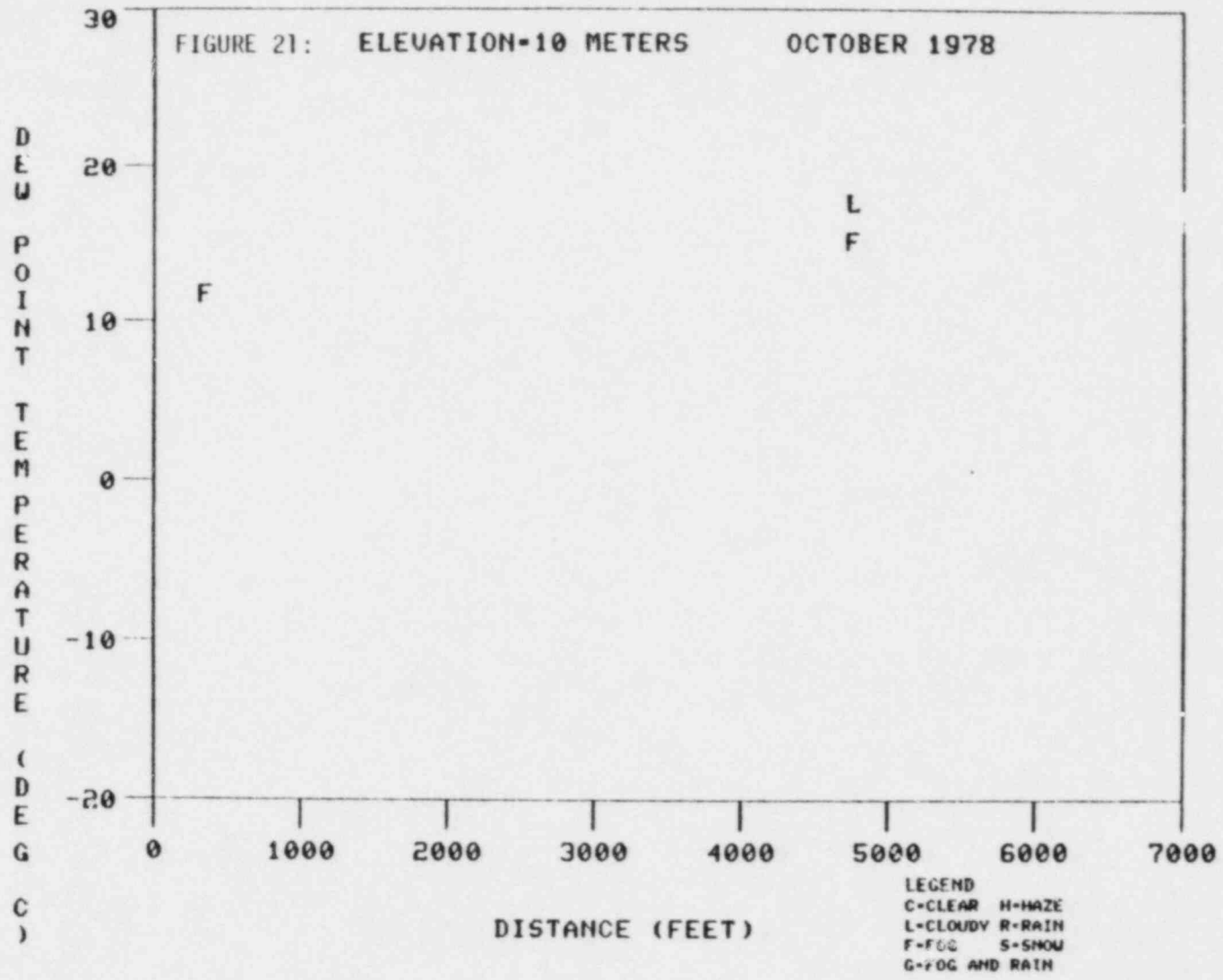
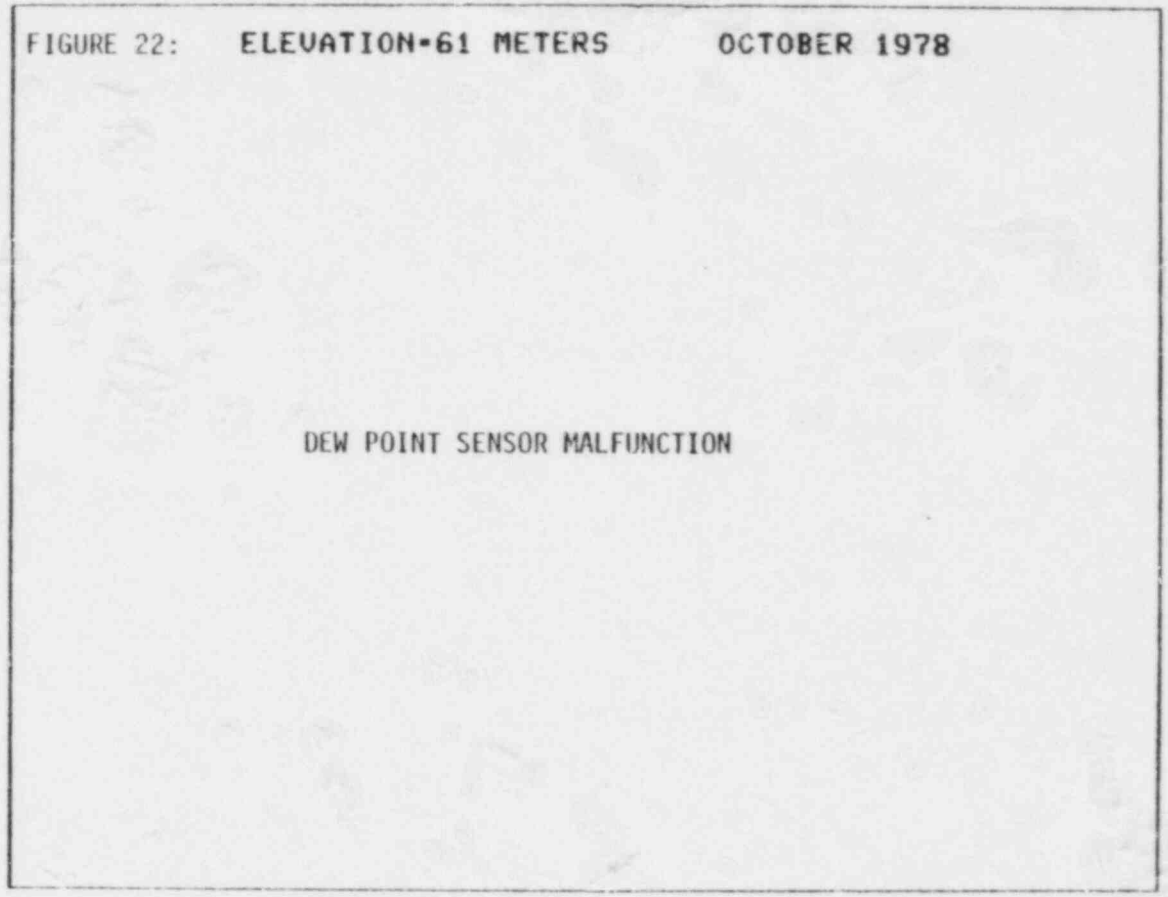


FIGURE 21: ELEVATION-10 METERS OCTOBER 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
0
-10
-20
0
1000
2000
3000
4000
5000
6000
7000
L
F
F
DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

FIGURE 22: ELEVATION-61 METERS OCTOBER 1978



DEW POINT TEMPERATURE (DEG C)

DISTANCE (FEET)

LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

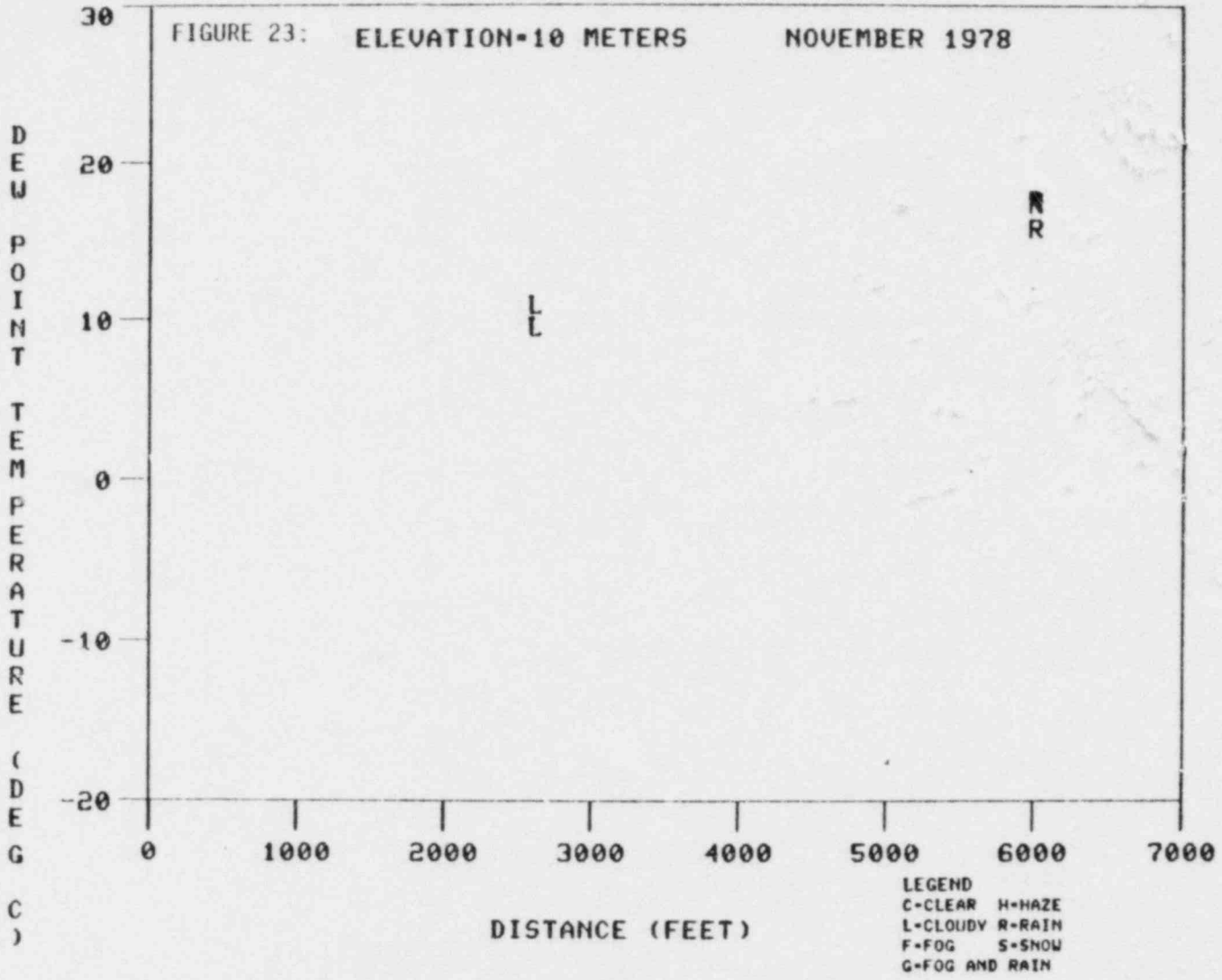


FIGURE 23: ELEVATION-10 METERS NOVEMBER 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
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-10
-20
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DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

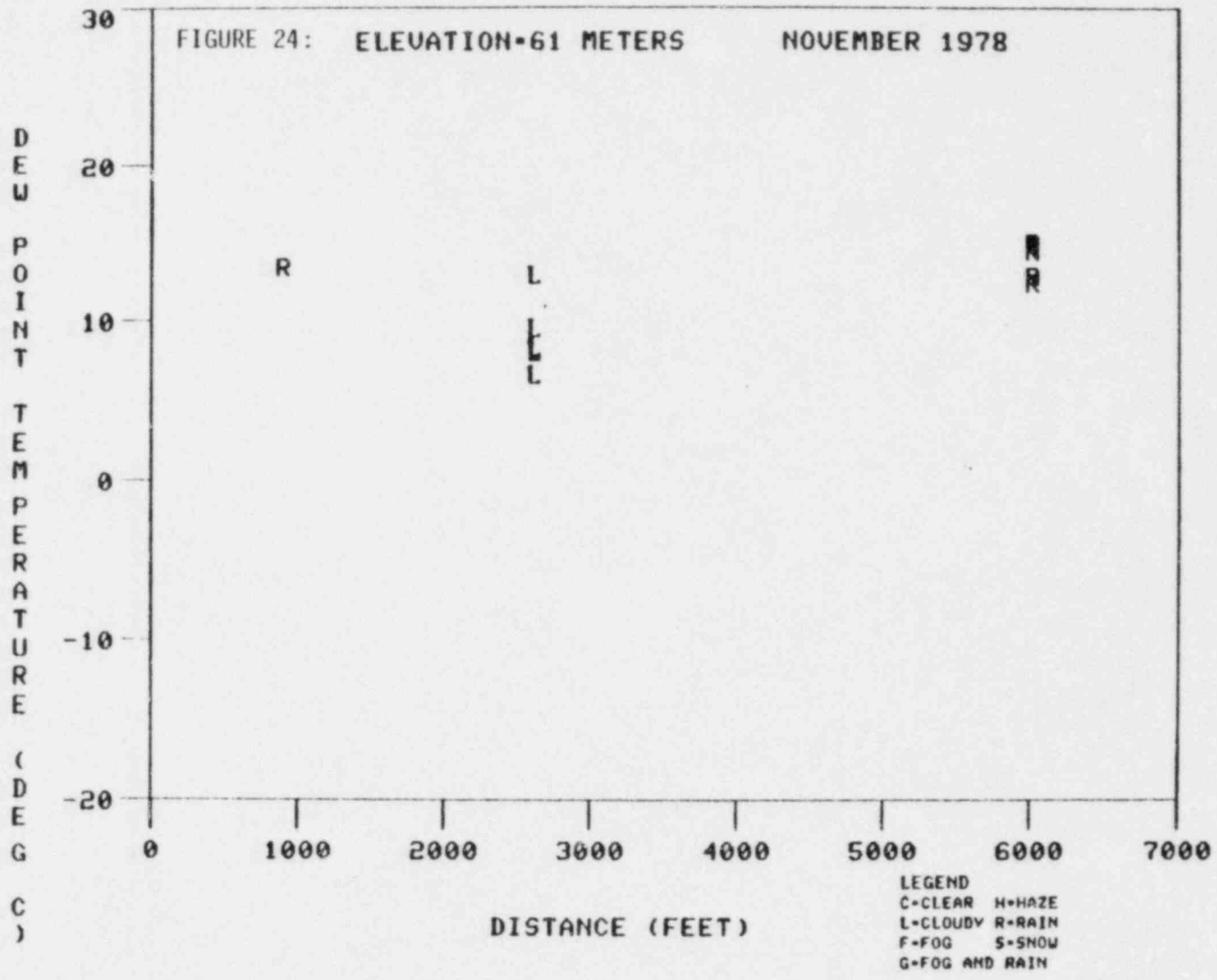
FIGURE 24: ELEVATION-61 METERS NOVEMBER 1978
DEW POINT TEMPERATURE (DEG C)
30
20
10
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-20
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1000
2000
3000
4000
5000
6000
7000
DISTANCE (FEET)
LEGEND
C-CLEAR H-HAZE
L-CLOUDY R-RAIN
F-FOG S-SNOW
G-FOG AND RAIN

TABLE 1:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH=12 ELEVATION=10 METERS

WEATHER \ TIME OF DAY	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	10	19	19	48
HAZE	1	0	0	1
CLOUDY	8	7	9	24
RAIN	2	4	3	9
FOG	4	0	0	4
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	25	30	31	86

Table 2:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH=12 ELEVATION=61 METERS

WEATHER \ TIME OF DAY	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	15	19	17	51
HAZE	1	0	0	1
CLOUDY	9	8	8	25
RAIN	2	4	3	9
FOG	4	0	0	4
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	31	31	28	90

TABLE 3:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 1 ELEVATION=10 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	12	15	15	42
HAZE	0	1	0	1
CLOUDY	9	11	12	32
RAIN	3	1	2	6
FOG	5	0	0	5
FOG AND RAIN	1	1	0	2
SNOW	0	0	0	0
TOTAL	30	29	29	88

TABLE 4:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 1 ELEVATION=61 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	8	8	6	22
HAZE	0	1	0	1
CLOUDY	5	6	4	15
RAIN	2	0	2	4
FOG	0	0	0	0
FOG AND RAIN	0	1	0	1
SNOW	0	0	0	0
TOTAL	15	16	12	43

TABLE 5:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 2 ELEVATION=10 METERS

WEATHER \ TIME OF DAY	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	10	19	19	48
HAZE	0	1	0	1
CLOUDY	12	3	6	21
RAIN	4	3	2	9
FOG	1	1	0	2
FOG AND RAIN	1	0	0	1
SNOW	0	1	0	1
TOTAL	28	28	27	83

TABLE 6:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 2 ELEVATION=61 METERS

WEATHER \ TIME OF DAY	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	10	17	17	44
HAZE	0	1	0	1
CLOUDY	10	3	4	17
RAIN	3	3	2	8
FOG	1	1	0	2
FOG AND RAIN	1	0	0	1
SNOW	0	1	0	1
TOTAL	25	26	23	74

TABLE 7:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 3 ELEVATION=10 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	7	18	19	44
HAZE	1	0	2	3
CLOUDY	10	5	4	19
RAIN	1	2	0	3
FOG	3	0	0	3
FOG AND RAIN	1	0	1	2
SNOW	0	0	0	0
TOTAL	23	25	26	74

TABLE 8:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 3 ELEVATION=61 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	6	16	12	34
HAZE	1	0	2	3
CLOUDY	9	4	3	16
RAIN	0	2	0	2
FOG	2	0	0	2
FOG AND RAIN	1	0	1	2
SNOW	0	0	0	0
TOTAL	19	22	18	59

TABLE 9:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 4 ELEVATION=10 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	17	19	25	61
HAZE	1	0	0	1
CLOUDY	7	7	4	18
RAIN	2	1	1	4
FOG	2	0	0	2
FOG AND RAIN	1	0	0	1
SNOW	0	0	0	0
TOTAL	30	27	30	87

TABLE 10:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 4 ELEVATION=61 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	14	12	14	40
HAZE	1	0	0	1
CLOUDY	4	5	3	12
RAIN	2	0	0	2
FOG	1	0	0	1
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	22	17	17	56

TABLE 11:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 5 ELEVATION=10 METERS

WEATHER	TIME OF DAY: SUNRISE	NOON	SUNSET	TOTAL
CLEAR	9	11	14	34
HAZE	2	0	0	2
CLOUDY	16	2	10	28
RAIN	2	5	7	14
FOG	2	0	0	2
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	31	18	31	80

TABLE 12:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 5 ELEVATION=61 METERS

WEATHER	TIME OF DAY: SUNRISE	NOON	SUNSET	TOTAL
CLEAR	9	19	11	39
HAZE	0	0	0	0
CLOUDY	12	3	5	20
RAIN	2	4	5	11
FOG	2	0	0	2
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	25	26	21	72

TABLE 13:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 5 ELEVATION=10 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	15	3	12	30
HAZE	0	0	0	0
CLOUDY	13	2	14	29
RAIN	1	0	4	5
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	29	5	30	64

TABLE 14:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 5 ELEVATION=61 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	15	22	12	49
HAZE	0	0	0	0
CLOUDY	11	7	14	32
RAIN	0	0	4	4
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	26	29	30	85

TABLE 15:

FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 7 ELEVATION=10 METERS

WEATHER	TIME OF DAY: SUNRISE	NOON	SUNSET	TOTAL
CLEAR	10	9	11	30
HAZE	4	0	0	4
CLOUDY	17	3	20	40
RAIN	0	3	0	3
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	31	15	31	77

TABLE 16:

FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 7 ELEVATION=61 METERS

WEATHER	TIME OF DAY: SUNRISE	NOON	SUNSET	TOTAL
CLEAR	3	3	4	10
HAZE	0	0	0	0
CLOUDY	1	0	1	2
RAIN	0	1	0	1
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	4	4	5	13

TABLE 17:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 8 ELEVATION=10 METERS

WEATHER	TIME OF DAY: SUNRISE	NOON	SUNSET	TOTAL
CLEAR	15	20	20	55
HAZE	0	0	0	0
CLOUDY	14	8	8	30
RAIN	1	0	3	4
FOG	1	0	0	1
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	31	28	31	90

TABLE 18:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 9 ELEVATION=61 METERS

WEATHER	TIME OF DAY: SUNRISE	NOON	SUNSET	TOTAL
CLEAR	0	0	0	0
HAZE	0	0	0	0
CLOUDY	0	0	0	0
RAIN	0	0	0	0
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	0	0	0	0

TABLE 19:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 9 ELEVATION=10 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	20	21	20	61
HAZE	0	0	1	1
CLOUDY	5	8	9	22
RAIN	0	0	0	0
FOG	4	0	0	4
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	29	29	30	88

TABLE 20:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH= 9 ELEVATION=61 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	0	0	0	0
HAZE	0	0	0	0
CLOUDY	0	0	0	0
RAIN	0	0	0	0
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	0	0	0	0

TABLE 21:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH=10 ELEVATION=10 METERS

WEATHER	TIME OF DAY SUNRISE	NOON	SUNSET	TOTAL
CLEAR	20	27	27	74
HAZE	0	0	0	0
CLOUDY	7	4	3	14
RAIN	0	0	0	0
FOG	2	0	0	2
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	29	31	30	90

TABLE 22:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH=10 ELEVATION=61 METERS

WEATHER	TIME OF DAY SUNRISE	NOON	SUNSET	TOTAL
CLEAR	2	4	4	10
HAZE	0	0	0	0
CLOUDY	2	1	1	4
RAIN	0	0	0	0
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	4	5	5	14

TABLE 23:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH=11 ELEVATION=10 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	12	19	21	51
HAZE	0	0	0	0
CLOUDY	7	6	6	19
RAIN	0	2	1	3
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	19	26	28	73

TABLE 24:
FREQUENCY TABLE OF WEATHER BY TIME OF DAY
MONTH=11 ELEVATION=61 METERS
TIME OF DAY

WEATHER	SUNRISE	NOON	SUNSET	TOTAL
CLEAR	14	20	21	55
HAZE	0	0	0	0
CLOUDY	11	7	8	26
RAIN	3	3	1	7
FOG	0	0	0	0
FOG AND RAIN	0	0	0	0
SNOW	0	0	0	0
TOTAL	28	30	30	88

FNP-O--ENV-NR8

DATE August 22, 1978

Procedure for Determining Visibility

FARLEY NECLEAR PLANT

DEVELOPED BY:

REVIEWED BY:

Dennis C. Cole

APPROVED BY:

ATTACHMENT I

1.0 Purpose

The purpose of this procedure is to provide instructions for taking visibility data at the Farley Nuclear Plant and obtaining visibility data from the United States Government's Federal Aviation Authority's Flight Service located at Napier Field, Alabama.

2.0 Prerequisites

2.1 A copy of this procedure and an active log sheet will be kept on the turbine building roof for the observer to use during the performance of this procedure.

2.2 A subscription to receive the Flight Service's weather determinations for Napier Field shall be kept current. This is available from the following address:

National Climatic Center
Environmental Data Service
Federal Building
Ashville, North Carolina 28801

3.0 Limitations

3.1 Visibility observations shall be made within + 15 minutes of sunrise, + 15 minutes of noon, and + 15 minutes of sunset. Sunrise and sunset times shall be determined from official sunrise and sunset tables contained in this procedure (Figures 4 and 5).

3.2 The Federal Avaiation Authority's visibility determination is made on a hourly basis, at 15 minutes till the hour; therefore, times of determinations between Farley Plant and Napier Field will vary accordingly.

3.3 To minimize the possibility of results being affected due to varied fog densities at different elevations, the visibility conditions shall be measured by focusing on the lowest ten feet of each reference point.

3.4 The sunrise and sunset tables in Figure 4 and 5 are sufficient to use for each year and need only be adjusted to reflect Day Light Savings time.

4.0 Procedure

4.1 Observation and Visibility Reference Locations

Visibility observations shall be made from the southwest corner of the turbine building roof. Visibility references are large landmarks and are located as shown in Figures 2 and 3. Reference designations, distances and locations are as follows:

Reference A - Two concrete poles, looking southwest and located between the railroad tracks and switch yard fence at a distance of 344 feet.

Reference B - East side of switchhouse wall looking west at a distance of 898 feet.

Reference C - Southeastern pillar post in the switch yard looking southwest at a distance of 1195 feet.

Reference D - The first Delta Pedestal Tower on the Farley/ Pinkard Line South, I. D. No. 2, looking southwest at a distance of 2603 feet.

Reference E - The third Delta Pedestal Tower on the Farley/ Pinkard Line South, I. D. No. 4, looking southwest and located on the far side of state highway 95 at a distance of 4750 feet.

Reference F - The fourth Delta Pedestal Tower on the Farley/ Pinkard Line South, I. D. No. 5, looking southwest and located on the far side of state highway 95 at a distance of 5875 feet.

4.2 Observation Instructions

The observer will look for the most distant reference he can see and place a check mark in the "Most Distant Marker Observed" column of the Farley Visibility Log Sheet Form No. 411 (Figure 1A, 1B, 1C). The observer will enter the date, time, weather condition and distance that corresponds to "Most Distant Marker Observed"* column. The observer will also place his initials in the appropriate column.

At the end of each month, Chemistry & Health Physics personnel will collect the visibility log sheets; at that time a new log sheet will be initiated for the next months visibility data. The collected log sheet will be submitted to Document Control for proper filing and a copy of the data will be transmitted to APCO's Chemistry and Health Physics Coordinator.

As data is received on a monthly basis from the National Climatic Service, it will also be transmitted to the Chemistry and Health Physics Coordinator.

A copy of the data shall be forwarded to Environmental and Technical Services, General Office, Room 584.

*NOTE: If it is determined that a distance beyond Reference "F" can be observed, a greater than (5875 feet) should be logged in "Most Distant Marker Observed" column and the "Reference G" block checked.

FARLEY NUCLEAR PLANT
VISIBILITY LOG SHEET
SUNRISE

MONTH OF _____ 19__

DATE	Observer init	TIME	WEATHER CONDITIONS				MOST DISTANT REFERENCE OBSERVED							
		HR. MIN.	CLEAR	CLOUDY	RAINY	OTHER	A	B	C	D	E	F	G	DISTANCE
1st														
2nd														
3rd														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1th														
2th														
3th														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1st														
2nd														
3rd														
4th														
5th														
6th														
7th														
8th														
9th														
30th														
31st														

Figure 1A

FNP-O-ENV-NR8
DATE August 22, 1978

FARLEY N[illegible]EAR PLANT
VISIBILITY LOG SHEET
NOON

MONTH OF _____ 19__

DATE	Obv. Init	TIME	WEATHER CONDITIONS				MOST DISTANT REFERENCE OBSERVED							
		HR. MIN.	CLEAR	CLOUDY	RAINY	OTHER	A	B	C	D	E	F	G	DISTANCE
1st														
2nd														
3rd														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1th														
2th														
3th														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1st														
2nd														
3rd														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1st														

Figure 1B

FNP-O-ENV-NR8
DATE August 22, 1978

FARLEY N[illegible]EAR PLANT
VISIBILITY LOG SHEET
SUNSET

MONTH OF _____ 19__

DATE	Obs. Init	TIME	WEATHER CONDITIONS				MOST DISTANT REFERENCE OBSERVED							
		HR. MIN.	CLEAR	CLOUDY	RAINY	OTHER	A	B	C	D	E	F	G	DISTANCE
1st														
2nd														
3rd														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1th														
2th														
3th														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1st														
2nd														
3rd														
4th														
5th														
6th														
7th														
8th														
9th														
0th														
1st														

Figure 1C

FNP-O-ENV-NR8
DATE August 22, 1978

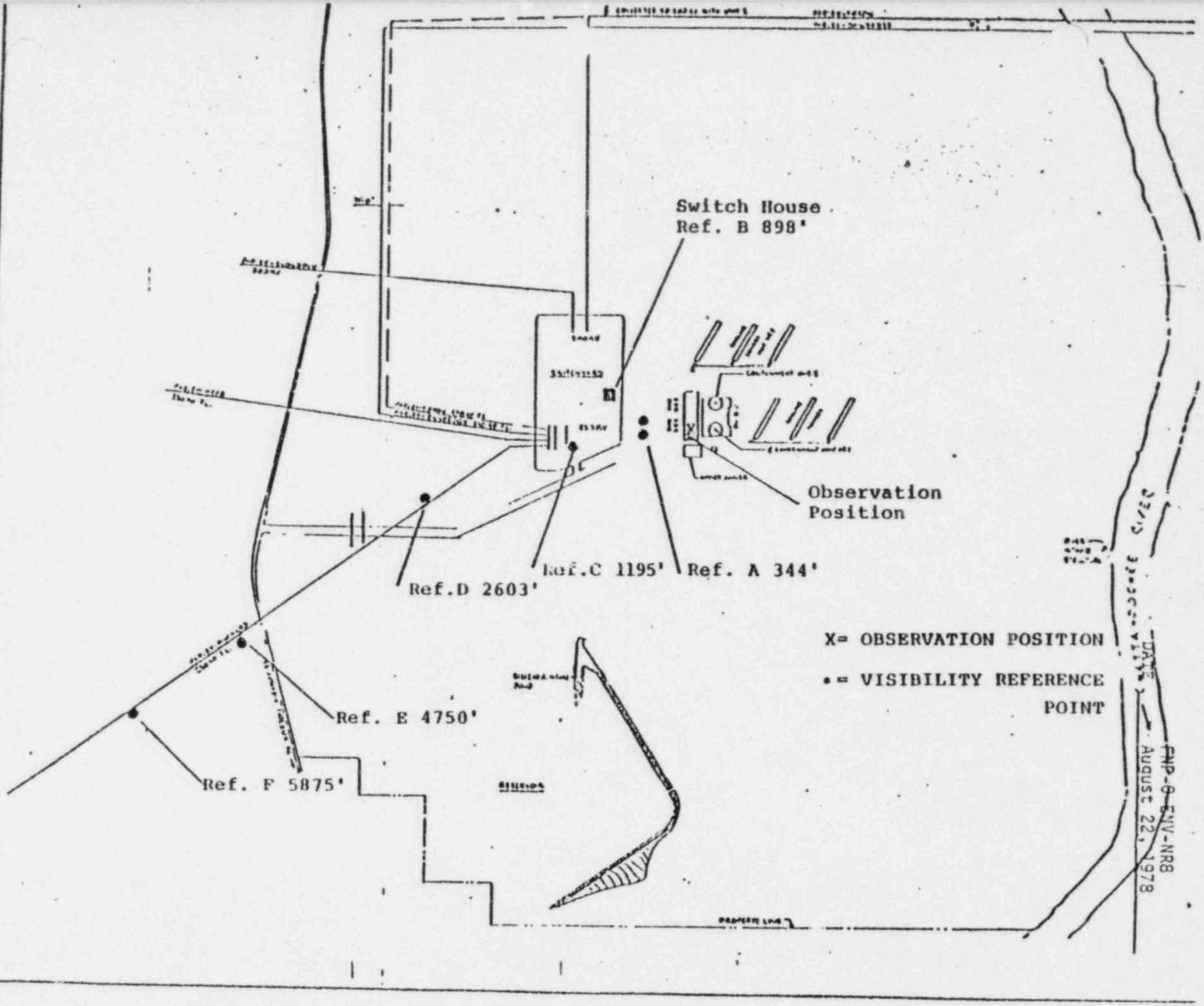
Switch House
Ref. B 898'
Observation
Position
Ref.C 1195'
Ref. A 344'
Ref.D 2603'
X= OBSERVATION POSITION
• = VISIBILITY REFERENCE
POINT
Ref. E 4750'
Ref. F 5875'
DATE August 22, 1978
FNP-0-ENV-NR8

Figure 2

DATE August 22, 1978

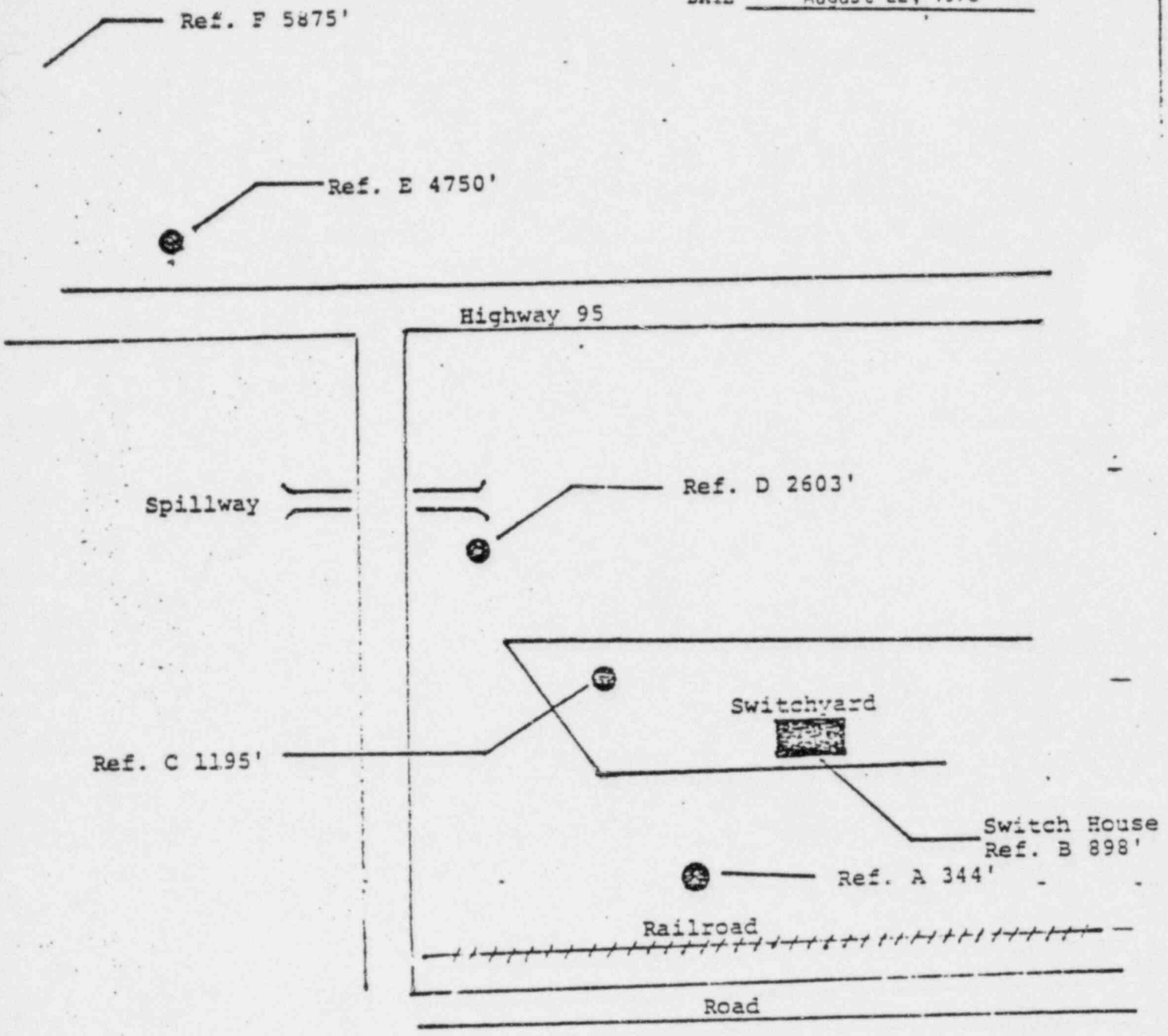

Figure 3

CENTRAL STANDARD TIME *

DATE August 22, 1978

SUNRISE

YEAR OF 1978

MONTH OF JANUARY		MONTH OF FEBRUARY		MONTH OF MARCH	
DATE	TIME	DATE	TIME	DATE	TIME
Jan 1	6:41	Feb 1	6:34	Mar 1	6:09
Jan 2	6:41	Feb 2	6:34	Mar 2	6:08
Jan 3	6:41	Feb 3	6:33	Mar 3	6:07
Jan 4	6:41	Feb 4	6:32	Mar 4	6:06
Jan 5	6:41	Feb 5	6:32	Mar 5	6:04
Jan 6	6:41	Feb 6	6:31	Mar 6	6:03
Jan 7	6:42	Feb 7	6:30	Mar 7	6:02
Jan 8	6:42	Feb 8	6:29	Mar 8	6:01
Jan 9	6:42	Feb 9	6:29	Mar 9	6:00
Jan 10	6:42	Feb 10	6:28	Mar 10	5:58
Jan 11	6:42	Feb 11	6:27	Mar 11	5:57
Jan 12	6:42	Feb 12	6:26	Mar 12	5:56
Jan 13	6:41	Feb 13	6:25	Mar 13	5:55
Jan 14	6:41	Feb 14	6:24	Mar 14	5:54
Jan 15	6:41	Feb 15	6:23	Mar 15	5:52
Jan 16	6:41	Feb 16	6:23	Mar 16	5:51
Jan 17	6:41	Feb 17	6:22	Mar 17	5:50
Jan 18	6:41	Feb 18	6:21	Mar 18	5:49
Jan 19	6:40	Feb 19	6:20	Mar 19	5:47
Jan 20	6:40	Feb 20	6:19	Mar 20	5:46
Jan 21	6:40	Feb 21	6:18	Mar 21	5:45
Jan 22	6:39	Feb 22	6:17	Mar 22	5:44
Jan 23	6:39	Feb 23	6:16	Mar 23	5:42
Jan 24	6:39	Feb 24	6:14	Mar 24	5:41
Jan 25	6:38	Feb 25	6:13	Mar 25	5:40
Jan 26	6:38	Feb 26	6:12	Mar 26	5:39
Jan 27	6:37	Feb 27	6:11	Mar 27	5:37
Jan 28	6:37	Feb 28	6:10	Mar 28	5:36
Jan 29	6:36			Mar 29	5:35
Jan 30	6:36			Mar 30	5:34
Jan 31	6:35			Mar 31	5:32

* SOURCE - Sunrise and Sunset Tables prepared by:
Nautical Almanac Office
United States Observatory
Washington, D. C.

Figure 4

DATE August 22, 1978

CENTRAL STANDARD TIME

SUNRISE

YEAR OF 1978

MONTH OF APRIL		MONTH OF MAY		MONTH OF JUNE	
DATE	TIME	DATE	TIME	DATE	TIME
Apr 1	5:31	May 1	5:57	Jun 1	5:38
Apr 2	5:30	May 2	5:56	Jun 2	5:38
Apr 3	5:29	May 3	5:56	Jun 3	5:38
Apr 4	5:27	May 4	5:55	Jun 4	5:38
Apr 5	5:26	May 5	5:54	Jun 5	5:37
Apr 6	5:25	May 6	5:53	Jun 6	5:37
Apr 7	5:24	May 7	5:52	Jun 7	5:37
Apr 8	5:22	May 8	5:51	Jun 8	5:37
Apr 9	5:21	May 9	5:50	Jun 9	5:37
Apr 10	5:20	May 10	5:50	Jun 10	5:37
Apr 11	5:19	May 11	5:49	Jun 11	5:37
Apr 12	5:18	May 12	5:48	Jun 12	5:37
Apr 13	5:16	May 13	5:48	Jun 13	5:37
Apr 14	5:15	May 14	5:47	Jun 14	5:37
Apr 15	5:14	May 15	5:46	Jun 15	5:37
Apr 16	5:13	May 16	5:46	Jun 16	5:37
pr 17	5:12	May 17	5:45	Jun 17	5:37
Apr 18	5:11	May 18	5:44	Jun 18	5:37
Apr 19	5:10	May 19	5:44	Jun 19	5:38
Apr 20	5:09	May 20	5:43	Jun 20	5:38
Apr 21	5:07	May 21	5:43	Jun 21	5:38
Apr 22	5:06	May 22	5:42	Jun 22	5:38
Apr 23	5:05	May 23	5:42	Jun 23	5:38
(Daylight Savings Time)		May 24	5:41	Jun 24	5:39
Apr 24	6:04	May 25	5:41	Jun 25	5:39
Apr 25	6:03	May 26	5:40	Jun 26	5:39
Apr 26	6:02	May 27	5:40	Jun 27	5:40
Apr 27	6:01	May 28	5:40	Jun 28	5:40
Apr 28	6:00	May 29	5:39	Jun 29	5:40
Apr 29	5:59	May 30	5:39	Jun 30	5:41
Apr 30	5:58	May 31	5:39		

Figure 4

CENTRAL DAY LIGHT SAVINGS TIME

SUNRISE

YEAR OF 1978

MONTH OF JULY		MONTH OF AUGUST		MONTH OF SEPTEMBER	
DATE	TIME	DATE	TIME	DATE	TIME
Jul 1	5:41	Aug 1	5:58	Sep 1	6:17
Jul 2	5:42	Aug 2	5:59	Sep 2	6:18
Jul 3	5:42	Aug 3	5:59	Sep 3	6:19
Jul 4	5:42	Aug 4	6:00	Sep 4	6:19
Jul 5	5:43	Aug 5	6:01	Sep 5	6:20
Jul 6	5:43	Aug 6	6:01	Sep 6	6:20
Jul 7	5:44	Aug 7	6:02	Sep 7	6:21
Jul 8	5:44	Aug 8	6:03	Sep 8	6:22
Jul 9	5:45	Aug 9	6:03	Sep 9	6:22
Jul 10	5:45	Aug 10	6:04	Sep 10	6:23
Jul 11	5:46	Aug 11	6:05	Sep 11	6:23
Jul 12	5:46	Aug 12	6:05	Sep 12	6:24
Jul 13	5:47	Aug 13	6:06	Sep 13	6:25
Jul 14	5:47	Aug 14	6:06	Sep 14	6:25
Jul 15	5:48	Aug 15	6:07	Sep 15	6:26
Jul 16	5:48	Aug 16	6:08	Sep 16	6:26
Jul 17	5:49	Aug 17	6:08	Sep 17	6:27
Jul 18	5:50	Aug 18	6:09	Sep 18	6:27
Jul 19	5:50	Aug 19	6:10	Sep 19	6:28
Jul 20	5:51	Aug 20	6:10	Sep 20	6:29
Jul 21	5:51	Aug 21	6:11	Sep 21	5:29
Jul 22	5:52	Aug 22	6:11	Sep 22	5:30
Jul 23	5:53	Aug 23	6:12	Sep 23	5:30
Jul 24	5:53	Aug 24	6:13	Sep 24	5:31
Jul 25	5:54	Aug 25	6:13	Sep 25	5:32
Jul 26	5:54	Aug 26	6:14	Sep 26	5:32
Jul 27	5:55	Aug 27	6:14	Sep 27	5:33
Jul 28	5:56	Aug 28	6:15	Sep 28	5:33
Jul 29	5:56	Aug 29	6:16	Sep 29	5:34
Jul 30	5:57	Aug 30	6:16	Sep 30	5:35
Jul 31	5:58	Aug 31	6:17		

Figure 4

CENTRAL DAY LIGHT SAVINGS TIME

SUNRISE

YEAR OF 1978

MONTH OF OCTOBER		MONTH OF NOVEMBER		MONTH OF DECEMBER	
DATE	TIME	DATE	TIME	DATE	TIME
Oct 1	6:35	Nov 1	5:57	Dec 1	6:23
Oct 2	6:36	Nov 2	5:58	Dec 2	6:23
Oct 3	6:36	Nov 3	5:59	Dec 3	6:24
Oct 4	6:37	Nov 4	6:00	Dec 4	6:25
Oct 5	6:38	Nov 5	6:00	Dec 5	6:26
Oct 6	6:38	Nov 6	6:01	Dec 6	6:27
Oct 7	6:39	Nov 7	6:02	Dec 7	6:27
Oct 8	6:40	Nov 8	6:03	Dec 8	6:28
Oct 9	6:40	Nov 9	6:04	Dec 9	6:29
Oct 10	6:41	Nov 10	6:05	Dec 10	6:30
Oct 11	6:42	Nov 11	6:05	Dec 11	6:30
Oct 12	6:42	Nov 12	6:06	Dec 12	6:31
Oct 13	6:43	Nov 13	6:07	Dec 13	6:32
Oct 14	6:44	Nov 14	6:08	Dec 14	6:32
Oct 15	6:44	Nov 15	6:09	Dec 15	6:33
Oct 16	6:45	Nov 16	6:10	Dec 16	6:34
Oct 17	6:46	Nov 17	6:11	Dec 17	6:34
Oct 18	6:47	Nov 18	6:11	Dec 18	6:35
Oct 19	6:47	Nov 19	6:12	Dec 19	6:35
Oct 20	6:48	Nov 20	6:13	Dec 20	6:36
Oct 21	6:49	Nov 21	6:14	Dec 21	6:36
Oct 22	6:49	Nov 22	6:15	Dec 22	6:37
Oct 23	6:50	Nov 23	6:16	Dec 23	6:37
Oct 24	6:51	Nov 24	6:17	Dec 24	6:38
Oct 25	6:52	Nov 25	6:18	Dec 25	6:38
Oct 26	6:52	Nov 26	6:18	Dec 26	6:39
Oct 27	6:53	Nov 27	6:19	Dec 27	6:39
Oct 28	6:54	Nov 28	6:20	Dec 28	6:39
Oct 29	6:55	Nov 29	6:21	Dec 29	6:40
(Central Standard Time)		Nov 30	6:22	Dec 30	6:40
Oct 30	5:56			Dec 31	6:40
Oct 31	5:56				

Figure 4

CENTRAL STANDARD TIME
SUNSET
YEAR OF 1978

MONTH OF JANUARY		MONTH OF FEBRUARY		MONTH OF MARCH	
DATE	TIME	DATE	TIME	DATE	TIME
Jan 1	4:50	Feb 1	5:17	Mar 1	5:40
Jan 2	4:51	Feb 2	5:18	Mar 2	5:41
Jan 3	4:52	Feb 3	5:19	Mar 3	5:41
Jan 4	4:52	Feb 4	5:20	Mar 4	5:42
Jan 5	4:53	Feb 5	5:20	Mar 5	5:43
Jan 6	4:54	Feb 6	5:21	Mar 6	5:44
Jan 7	4:55	Feb 7	5:22	Mar 7	5:44
Jan 8	4:56	Feb 8	5:23	Mar 8	5:45
Jan 9	4:56	Feb 9	5:24	Mar 9	5:46
Jan 10	4:57	Feb 10	5:25	Mar 10	5:46
Jan 11	4:58	Feb 11	5:26	Mar 11	5:47
Jan 12	4:59	Feb 12	5:26	Mar 12	5:48
Jan 13	5:00	Feb 13	5:27	Mar 13	5:48
Jan 14	5:01	Feb 14	5:28	Mar 14	5:49
Jan 15	5:02	Feb 15	5:29	Mar 15	5:50
Jan 16	5:02	Feb 16	5:30	Mar 16	5:50
Jan 17	5:03	Feb 17	5:31	Mar 17	5:51
Jan 18	5:04	Feb 18	5:31	Mar 18	5:52
Jan 19	5:05	Feb 19	5:32	Mar 19	5:52
Jan 20	5:06	Feb 20	5:33	Mar 20	5:53
Jan 21	5:07	Feb 21	5:34	Mar 21	5:54
Jan 22	5:08	Feb 22	5:35	Mar 22	5:55
Jan 23	5:09	Feb 23	5:35	Mar 23	5:55
Jan 24	5:10	Feb 24	5:36	Mar 24	5:56
Jan 25	5:11	Feb 25	5:37	Mar 25	5:56
Jan 26	5:11	Feb 26	5:38	Mar 26	5:57
Jan 27	5:12	Feb 27	5:38	Mar 27	5:58
Jan 28	5:13	Feb 28	5:39	Mar 28	5:58
Jan 29	5:14	Feb 29		Mar 29	5:59
Jan 30	5:15	Feb 30		Mar 30	6:00
Jan 31	5:16	Feb 31		Mar 31	6:00

*Source - Sunrise and sunset tables prepared by:
Nautical Almanac Office
United States Observatory
Washington, D. C.

Figure 5

CENTRAL STANDARD TIME
SUNSET
YEAR OF 1978

MONTH OF APRIL		MONTH OF MAY		MONTH OF JUNE	
DATE	TIME	DATE	TIME	DATE	TIME
Apr 1	6:01	May 1	7:21	Jun 1	7:41
Apr 2	6:02	May 2	7:22	Jun 2	7:41
Apr 3	6:02	May 3	7:22	Jun 3	7:42
Apr 4	6:03	May 4	7:23	Jun 4	7:43
Apr 5	6:04	May 5	7:24	Jun 5	7:43
Apr 6	6:04	May 6	7:24	Jun 6	7:44
Apr 7	6:05	May 7	7:25	Jun 7	7:44
Apr 8	6:05	May 8	7:26	Jun 8	7:44
Apr 9	6:06	May 9	7:26	Jun 9	7:45
Apr 10	6:07	May 10	7:27	Jun 10	7:45
Apr 11	6:07	May 11	7:28	Jun 11	7:46
Apr 12	6:08	May 12	7:28	Jun 12	7:46
Apr 13	6:09	May 13	7:29	Jun 13	7:47
Apr 14	6:09	May 14	7:30	Jun 14	7:47
Apr 15	6:10	May 15	7:30	Jun 15	7:47
Apr 16	6:11	May 16	7:31	Jun 16	7:48
Apr 17	6:11	May 17	7:32	Jun 17	7:48
Apr 18	6:12	May 18	7:32	Jun 18	7:48
19	6:13	May 19	7:33	Jun 19	7:48
A 20	6:13	May 20	7:34	Jun 20	7:49
Apr 21	6:14	May 21	7:34	Jun 21	7:49
Apr 22	6:15	May 22	7:35	Jun 22	7:49
Apr 23	6:15	May 23	7:36	Jun 23	7:49
(Daylight Savings Time)	6:15	May 24	7:36	Jun 24	7:49
Apr 24	7:16	May 25	7:37	Jun 25	7:50
Apr 25	7:17	May 26	7:37	Jun 26	7:50
Apr 26	7:17	May 27	7:38	Jun 27	7:50
Apr 27	7:18	May 28	7:39	Jun 28	7:50
Apr 28	7:19	May 29	7:39	Jun 29	7:50
Apr 29	7:19	May 30	7:40	Jun 30	7:50
Apr 30	7:20	May 31	7:40	Jun 31	7:50

Figure 5

DATE August 22, 1978

CENTRAL DAY LIGHT SAVINGS TIME
YEAR OF 1978

MONTH OF JULY		MONTH OF AUGUST		MONTH OF SEPTEMBER	
DATE	TIME	DATE	TIME	DATE	TIME
Jul 1	7:50	Aug 1	7:37	Sep 1	7:06
Jul 2	7:50	Aug 2	7:37	Sep 2	7:04
Jul 3	7:50	Aug 3	7:36	Sep 3	7:03
Jul 4	7:50	Aug 4	7:35	Sep 4	7:02
Jul 5	7:50	Aug 5	7:34	Sep 5	7:01
Jul 6	7:50	Aug 6	7:33	Sep 6	6:59
Jul 7	7:49	Aug 7	7:33	Sep 7	6:58
Jul 8	7:49	Aug 8	7:32	Sep 8	6:57
Jul 9	7:49	Aug 9	7:31	Sep 9	6:56
Jul 10	7:49	Aug 10	7:30	Sep 10	6:54
Jul 11	7:48	Aug 11	7:29	Sep 11	6:53
Jul 12	7:48	Aug 12	7:28	Sep 12	6:52
Jul 13	7:48	Aug 13	7:27	Sep 13	6:50
Jul 14	7:48	Aug 14	7:26	Sep 14	6:49
Jul 15	7:47	Aug 15	7:25	Sep 15	6:48
Jul 16	7:47	Aug 16	7:24	Sep 16	6:47
Jul 17	7:46	Aug 17	7:23	Sep 17	6:45
Jul 18	7:46	Aug 18	7:22	Sep 18	6:44
Jul 19	7:46	Aug 19	7:21	Sep 19	6:43
Jul 20	7:45	Aug 20	7:20	Sep 20	6:41
Jul 21	7:45	Aug 21	7:19	Sep 21	6:40
Jul 22	7:44	Aug 22	7:17	Sep 22	6:39
Jul 23	7:43	Aug 23	7:16	Sep 23	6:38
Jul 24	7:43	Aug 24	7:15	Sep 24	6:36
Jul 25	7:42	Aug 25	7:14	Sep 25	6:35
Jul 26	7:42	Aug 26	7:13	Sep 26	6:34
Jul 27	7:41	Aug 27	7:12	Sep 27	6:32
Jul 28	7:40	Aug 28	7:10	Sep 28	6:31
Jul 29	7:40	Aug 29	7:09	Sep 29	6.30
Jul 30	7:39	Aug 30	7:08	Sep 30	6:29
Jul 31	7:38	Aug 31	7:07	Sep 31	6:29

Figure 5

DATE August 22, 1978

CENTRAL DAY LIGHT SAVINGS TIME
YEAR OF 1978

MONTH OF OCTOBER		MONTH OF NOVEMBER		MONTH OF DECEMBER	
DATE	TIME	DATE	TIME	DATE	TIME
Oct 1	6:27	Nov 1	4:53	Dec 1	4:39
Oct 2	6:26	Nov 2	4:53	Dec 2	4:39
Oct 3	6:25	Nov 3	4:52	Dec 3	4:39
Oct 4	6:24	Nov 4	4:51	Dec 4	4:39
Oct 5	6:22	Nov 5	4:50	Dec 5	4:39
Oct 6	6:21	Nov 6	4:49	Dec 6	4:39
Oct 7	6:20	Nov 7	4:49	Dec 7	4:39
Oct 8	6:19	Nov 8	4:48	Dec 8	4:39
Oct 9	6:17	Nov 9	4:47	Dec 9	4:39
Oct 10	6:16	Nov 10	4:47	Dec 10	4:40
Oct 11	6:15	Nov 11	4:46	Dec 11	4:40
Oct 12	6:14	Nov 12	4:45	Dec 12	4:40
Oct 13	6:13	Nov 13	4:45	Dec 13	4:40
Oct 14	6:12	Nov 14	4:44	Dec 14	4:41
Oct 15	6:10	Nov 15	4:44	Dec 15	4:41
Oct 16	6:09	Nov 16	4:43	Dec 16	4:41
Oct 17	6:08	Nov 17	4:43	Dec 17	4:42
Oct 18	6:07	Nov 18	4:42	Dec 18	4:42
19	6:06	Nov 19	4:42	Dec 19	4:42
Oct 20	6:05	Nov 20	4:41	Dec 20	4:43
Oct 21	6:04	Nov 21	4:41	Dec 21	4:43
Oct 22	6:03	Nov 22	4:41	Dec 22	4:44
Oct 23	6:02	Nov 23	4:40	Dec 23	4:44
Oct 24	6:01	Nov 24	4:40	Dec 24	4:45
Oct 25	6:00	Nov 25	4:40	Dec 25	4:46
Oct 26	5:59	Nov 26	4:40	Dec 26	4:46
Oct 27	5:58	Nov 27	4:39	Dec 27	4:47
Oct 28	5:57	Nov 28	4:39	Dec 28	4:47
Oct 29	5:56	Nov 29	4:39	Dec 29	4:48
(Central Standard Time)					
Oct 30	4:55	Nov 30	4:39	Dec 30	4:49
Oct 31	4:54	Nov 31	4:39	Dec 31	4:49

Figure 5