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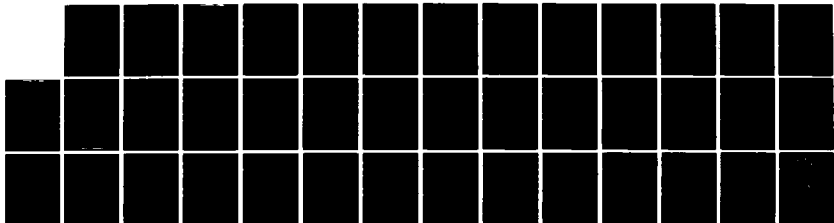
INVESTIGATIONS OF MICRO-TURBULENCE IN THE BOTTOM OF THE
BOUNDARY LAYER(U) SCHMITT (RAINER) GLASHUTTEN (GERMANY
F R) R SCHMITT OCT 84 DAJA45-83-C-0038

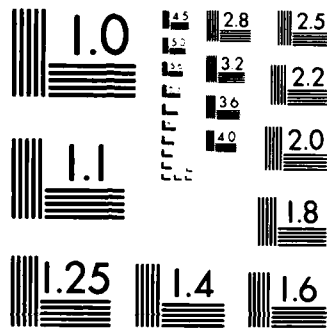
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Data representing preliminary first measurements of turbulence are presented, along with parallel meteorological data. Instrumentation problems are discussed, and the computer code for data reduction is provided.		

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Investigations of Micro-Turbulence
in the Bottom of the Boundary Layer

Second Interim Report

Dr. Palmer Schmitt

October 1964

United States Army

London England

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CONTRACT NUMBER : DAJA 45-83-C-0088

Dr. Palmer Schmitt

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This second interim report deals with the first series of measurements in Western Germany.

The data are presented and the weather weather maps are added.

Data-tapes (IBM-9-track) had been sent to White Sands Missile Range, F. EATON, we still expect the information of the readability of the data.

The measuring site in northern Germany had to be changed due to two reasons:

1. one farmer revoked the permission to work on his ground,
2. the area was unsecured at one end of the optical path. ←

We now have the permission of the port authority of BREMEN-Airport in northern Germany.

C O N T E N T S

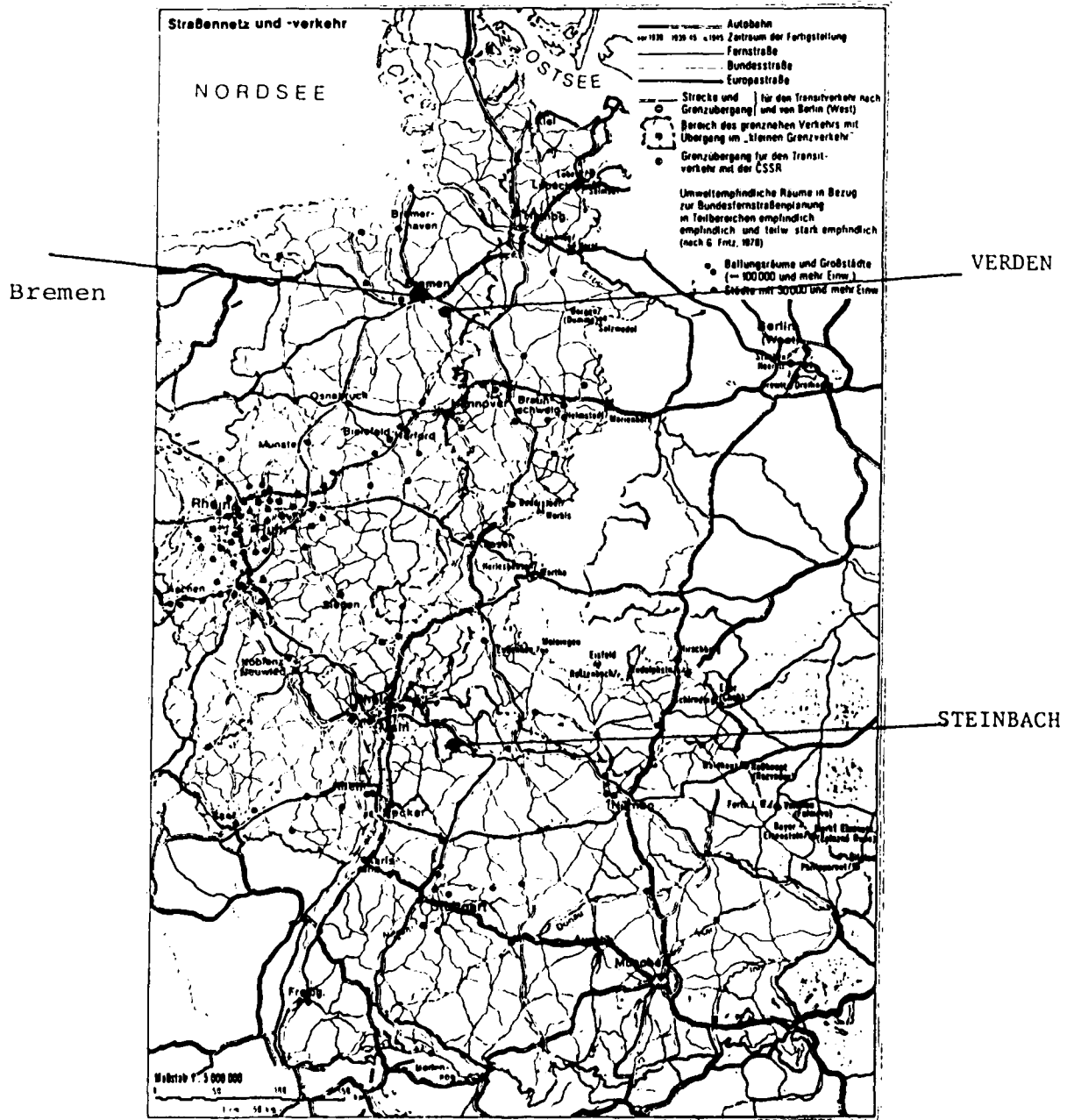
1. Description of the new site at BREMEN-Air-Field
2. Technical Problems
3. Presentation of data
4. Meteorological Maps
 - Period No. 1 : Sept. 1.- 5.1984
 - Period No. 2 : Oct. 8.-12.1984

1. Description of the measuring site at BREMEN-air-field

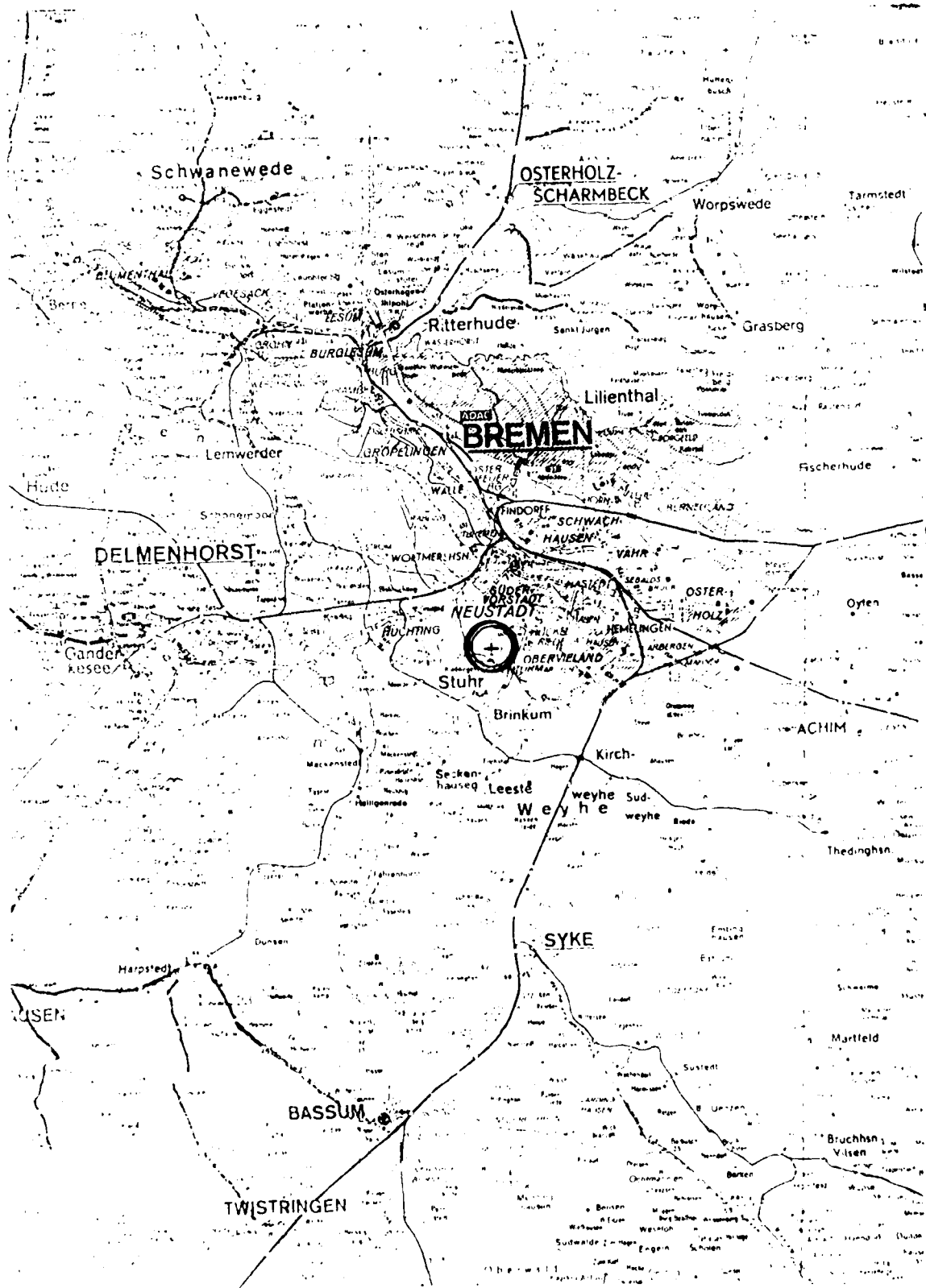
This measuring site is situated about 80 Km north of the first area at VERDEN/Aller. The position of the new and old measuring sites are marked in fig. no. 1. BREMEN is representative for maritime climate.

BREMEN-air-field is a commercial air port with few traffic only (approx. 20 LTO-cycles). The area is completely flat within the first 10 km. Some buildings are situated near the western edge of the measuring site, the area is open to the south and west. The measuring site itself is flat and grass is growing.

The distance between the light-source and the receiver is 750m. For this new site the measuring equipment had to be powered by batteries completely.

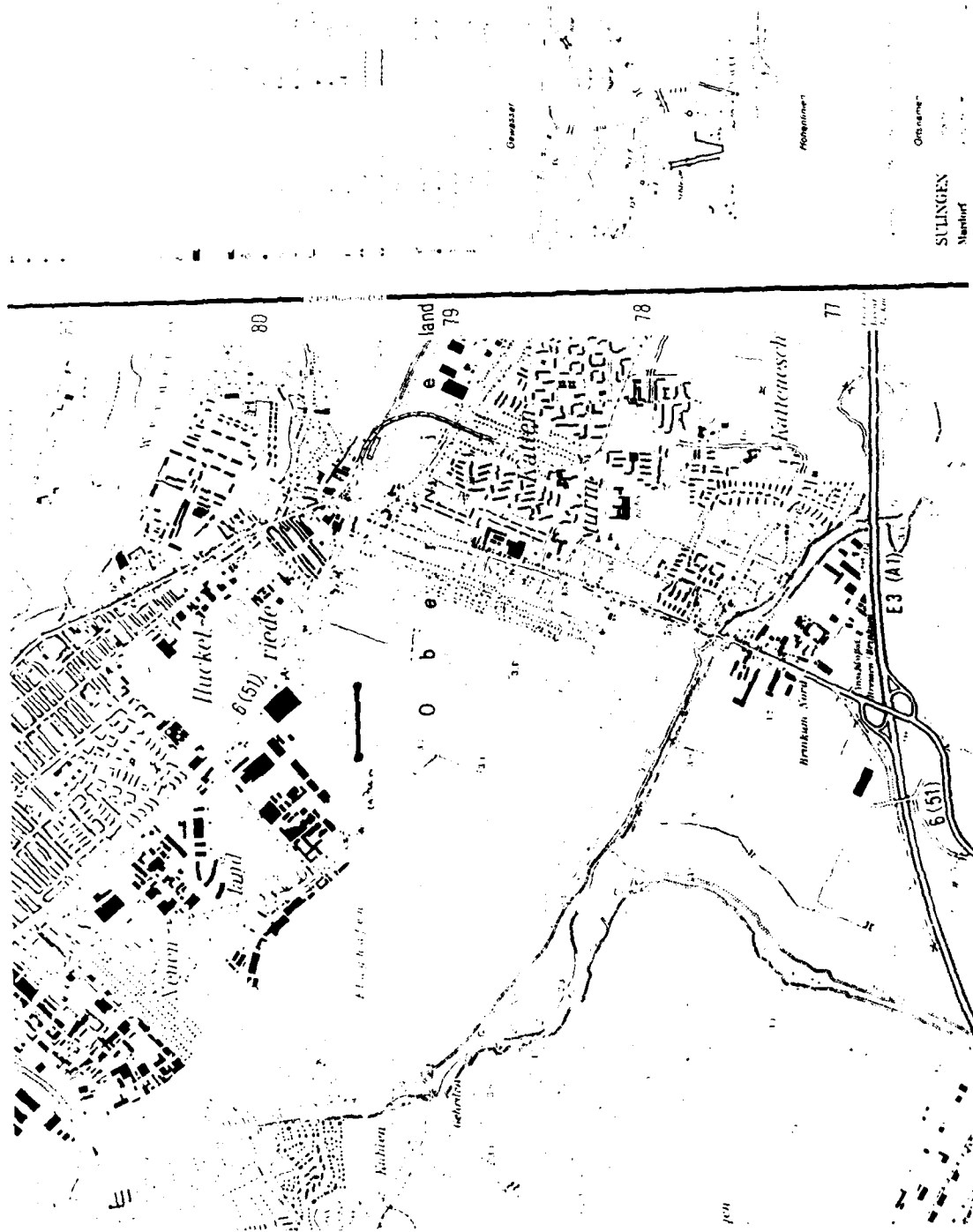


Locations of measurements in West-Germany



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SULINGEN
Markt

2. Technical problems.

There are some problems with the "old" system. It is impossible to align the instruments: the red control-lamps are in on position even if the system seems to be aligned perfectly. The lamps are off only if the system seems to be not aligned by some ten meters. But even in this position the leds go on after some seconds and remain on. The system seems to be influenced by even a slight shock. Our electronic engineer is ordered to repair the detector-system.

Other technical problems arise due to condensation of water at the outside of the windows of the instruments or the housing during nights with high humidity in the air. It was not possible to heat the outside of the windows because of the high power consumption of all heating systems used. Now we try to prevent condensation by disturbing the boundary layer using 12-VDC-fans.

In addition to this technical problems, 3 measuring campaigns had to be canceled after setting up the system due to heavy rain or fog (one at BREMEN and two at STEINBACH)

3. Presentation of data.

Table 3.1 gives the description of the IBM-9-track-tape.
Table 3.2 gives a complete listing of the 10-second single values of the c2n-signal and the 10-min values of the meteorological data.

Attention: from the temperatur-data a value of 65 has to be subtracted.

wind-speed : m/s
wind-direction : degree
Temperature : deg. celsius +65
Humidity : wet-bulbe temperature deg.celsius+65
radiation ballance: joule/m2

The c2n-data are plotted in Figure 3.1 ff.

Tape-description: one record of 256 bytes and two records of 128 bytes on IBM-Discet / 9 track tape: 1600 bpi, Block 80*80

Each day with measurements is a FILE, RECORD#1 gives the title and the location of the measurement.

RECORD#3 and #4 gives the description of the data-records.

RECORD#3

MX = sign
JJMMTT yearyearmonthmonthdayday 841001
hhmm hourhourminuteminute 0010

10 - MINUTE - MEAN VALUES OF METEOROLOGICAL PARAMETERS:

DDD wind-direction (deg)
dd.d standard deviation (deg)
VV.V Windspeed
vv.v standard deviation
-TT.T temperature (deg celsius)
tt.t standard deviation
-FF.F wet bulbe tempearure
ff.f standard deviation
-RR.R radiation balance
rr.r standard deviation
hhmm hourhour minuteminute
10-second single values of c2n-signal

RECORD#4

SMM = Signal (c2n)
JJMMThhmm Year month day hour second
c2n-signals until the end of 10 minut interval

RECORD#6 meteorological signal from second 10-minute interval and c2n signals

RECORD#7 time and c2n-signals until the end of the second 10-minute interval

.
. .
. .
. .

RECORD#294 : Last data of the day: 24:00 midnight

4. Meteorological maps.

The weather maps of the two campaigns are attached:

1. Sept. 1. - 5.
2. Oct. 8. - 12.

1009m2 Record length: 260

Record # 1

String length: 256

"2.measurement microturb. SteinbachFRG49500926disturb.. fog

.....
.....
....."

Record # 2

String length: 256

"MMXJIMTThmmDDddd.dVV.Vvv.v-TT.Ttt.t-FF.Fff.f-P.PPr.rhHhmm.....
.....SMXJIMTThmm.....
....."

Record # 3

String length: 256

"MM2841009001031417.65.4 1.8 6.8 0 7 0 -0.03 0 01 99999999999999999999
9999999999999 6 6 6 6 6 6 6 6 6 6 6 6 SM284100900106 6 6 6 6 7
6 6 6 6 6 6 6 5 5 6 5 5 6 6 5 5 6 6 6 6 6 6 5 5 6 6 6
5 6 5 6 *****"

Record # 4

String length: 256

"MM2841009002030516.85.5 1.6 6.9 0 7.1 0 -0.02 0 011 9996 6 6 6 6 6
6 5 5 5 6 7 6 6 5 6 6 5 5 5 5 6 SM284100900206 6 6 5 5 6
6 6 6 6 5 6 6 6 6 6 6 6 5 6 6 6 5 5 6 6 6 6 5 6 6 6 6
6 6 6 6 *****"

1009m2 Record length: 260

Record # 144

String length: 256

"MM2841009234032312.52 1.4 10.8.1 10.50 -0.08 .02 23319996 6 6 7 6 6
6 6 6 6 6 7 6 6 7 6 6 6 6 6 6 SM284100923406 6 7 6 7 6
6 6 6 6 7 6 6 7 6 7 7 7 7 7 6 6 6 7 7 7 7 7 7 7 7 6
7 7 7 7 *****"

Record # 145

String length: 256

"MM2841009235032810.61.8 1.5 10.7.1 10.40 -0.1 .02 23419997 7 7 7 7 7
7 7 7 7 7 7 7 7 7 7 7 7 7 7 6 SM284100923507 7 7 7 7 7
7 7 7 7 7 7 7 7 7 7 7 7 7 6 7 7 7 7 6 7 8 8 7 7 7 7
7 8 7 8 *****"

Record # 146

String length: 256

"MM2841009240032611.53.1 1.6 10.5.1 10.1.1 -0.24 .01 23519997 8 8 8 7 7
8 8 7 8 7 8 7 8 7 7 8 8 8 8 8 SM284100924008 8 8 8 8 8
8 8 8 8 9 8 8 9 9 8 8 8 9 8 9 8 8 8 8 8 8 8 9 8 8 8
8 9 8 8 *****"

Record # 147

EOF

Record #1:
2.measurement microturb. SteinbachFRG49500926disturb.. fog

Record #2:

Record #3:
MXXJ JMMTThhmDDdd.dVW.Vou.u-TT.Ttt.t-FF.Fff.f-R.RRr.rnhhmssssssssssssssssssss
ss

Record #4:
SNNJ JMMTThhmss
ss

Record #5:
MN2841011001099999990 0 9.8 .2 9.5 .1 -.14 0 01 999999999999999999
9999999915 19 15 16 19 18 17 18 17 19 19 15 20

Record #6:
SM2841011001018 19 20 18 19 17 16 17 17 18 21 21 19 20 21 22 18 19 18 17 17 20 1
7 17 15 19 18 14 24 21 20 19 19 19 20 23 18 ****

Record #7:
MN284101100202968.8 .1 .4 9.8 .2 9.4 .1 -.14 0 011 99925 23 24 26 25 26
25 29 22 23 24 19 22 24 25 26 26 23 24 23 19 22

Record #8:
SM2841011002021 22 20 22 26 19 20 20 25 19 20 25 21 21 18 20 20 19 26 19 22 17 2
3 17 19 20 22 24 22 20 23 21 26 20 22 19 21 ****

Record #9:
MN2841011003099999990 0 9.9 .2 9.5 .1 -.16 0 021 99921 18 24 18 21 17
19 18 24 19 19 18 20 22 17 19 21 17 17 20 19 19

Record #10:
SM2841011003018 17 18 16 20 20 22 22 20 18 20 18 18 20 20 18 18 19 19 19 22 19 1
7 20 16 16 16 19 18 15 16 16 14 17 15 12 17 ****

Record #11:
MN2841011004099999990 0 9.4 .2 9.2 .1 -.2 .01 031 99918 14 16 17 19 17
18 16 13 18 16 16 20 20 19 19 19 17 18 16 17 17

Record #12:
SM2841011004021 21 20 18 13 17 16 17 19 17 16 16 16 18 20 17 21 16 16 17 23 19 1
7 18 15 17 13 14 17 18 16 18 17 18 19 18 22 ****

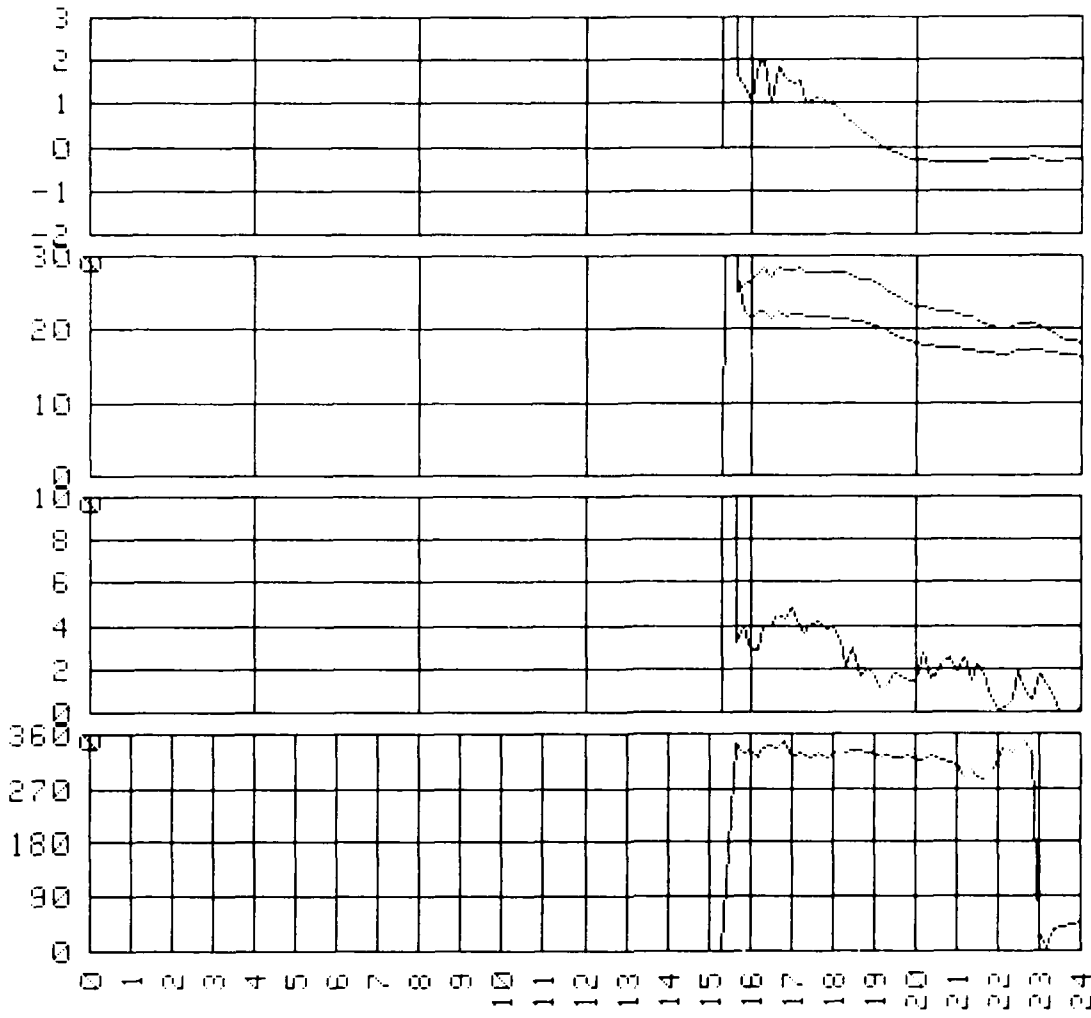
Record #13:
MN2841011005099999990 0 8.7 .2 8.8 .1 -.17 .02 041 99915 18 20 18 19 17
18 17 19 20 20 18 21 18 18 19 18 17 14 20 18 17

Record #14:
SM2841011005014 17 16 15 20 19 17 17 16 17 17 15 17 16 19 18 15 15 15 19 19 17 1
8 15 19 17 13 17 17 18 18 17 15 19 19 22 23 ****

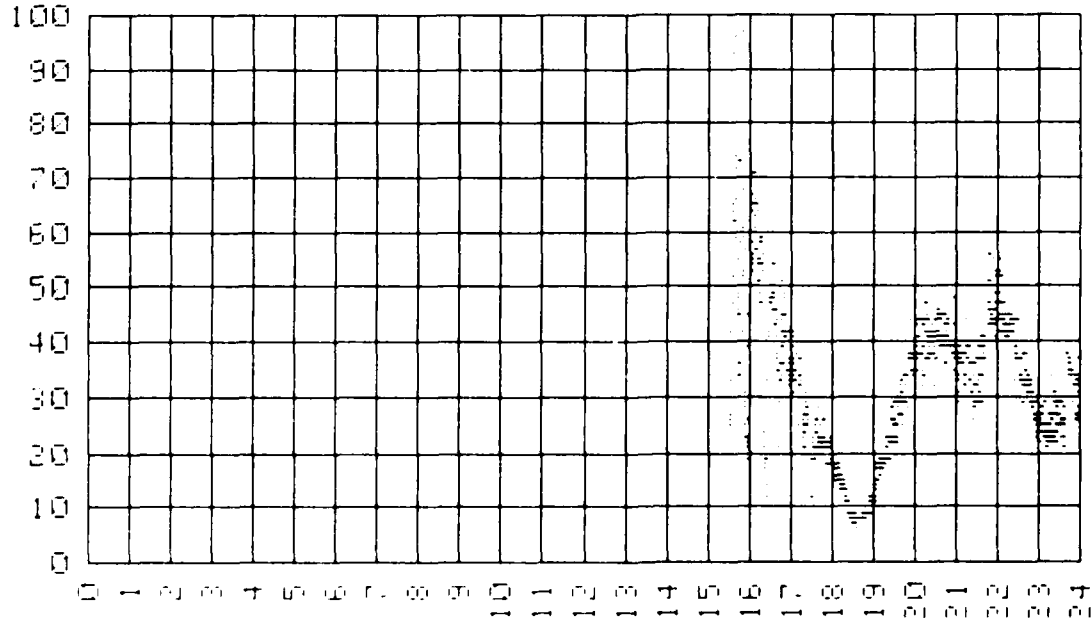
Record #15:
MN2841011010099999990 0 8.7 .2 8.8 .1 -.08 .01 051 99920 27 16 17 15 19
16 14 17 16 17 17 16 17 16 15 18 14 17 15 14 14

Record #16:
SM2841011010011 14 16 16 17 13 22 19 16 19 16 18 17 22 18 19 20 19 22 20 17 19 2
0 18 17 18 21 17 13 16 19 18 16 16 19 18 16 ****

1. Sept.
1964

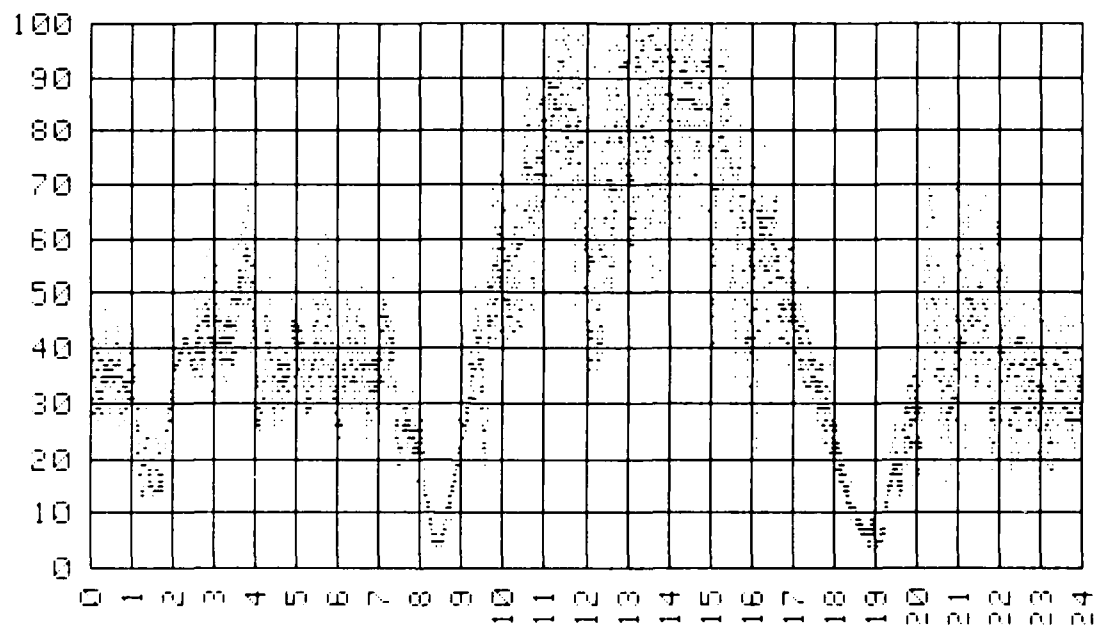
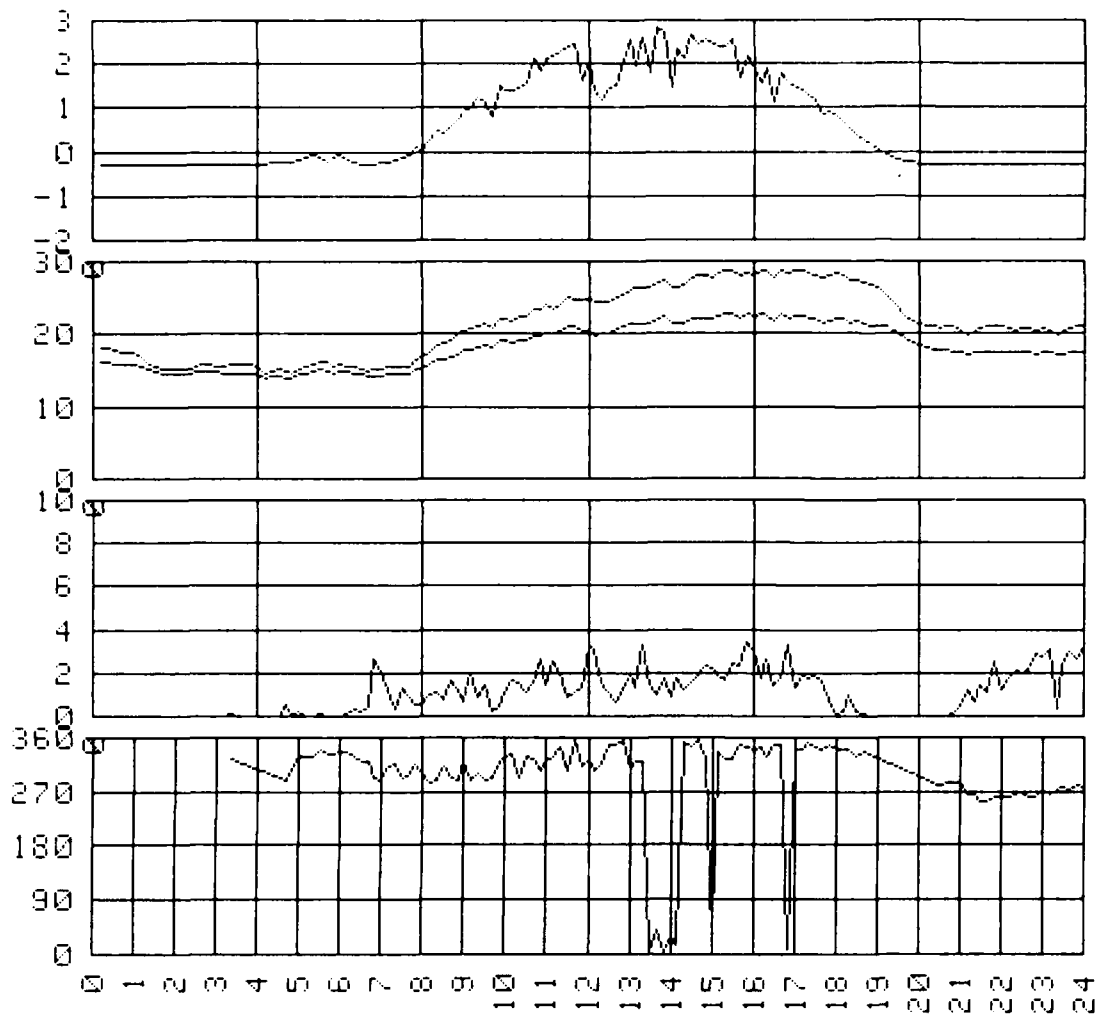


temp. (Cels) rad-balance
wet.bulb.temp.
wind-speed
wind-direct.

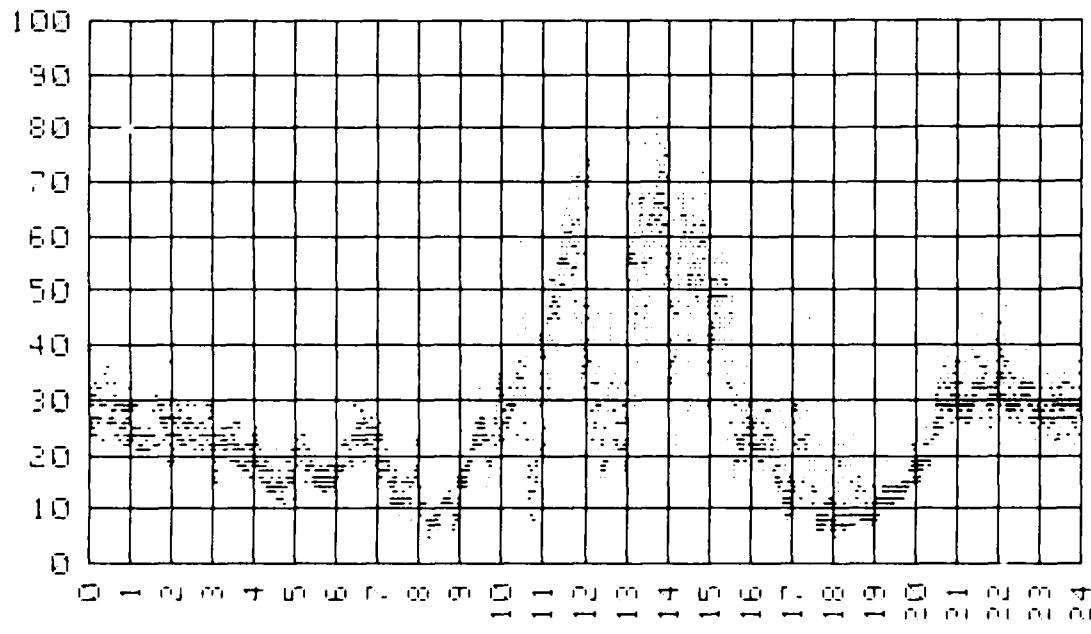
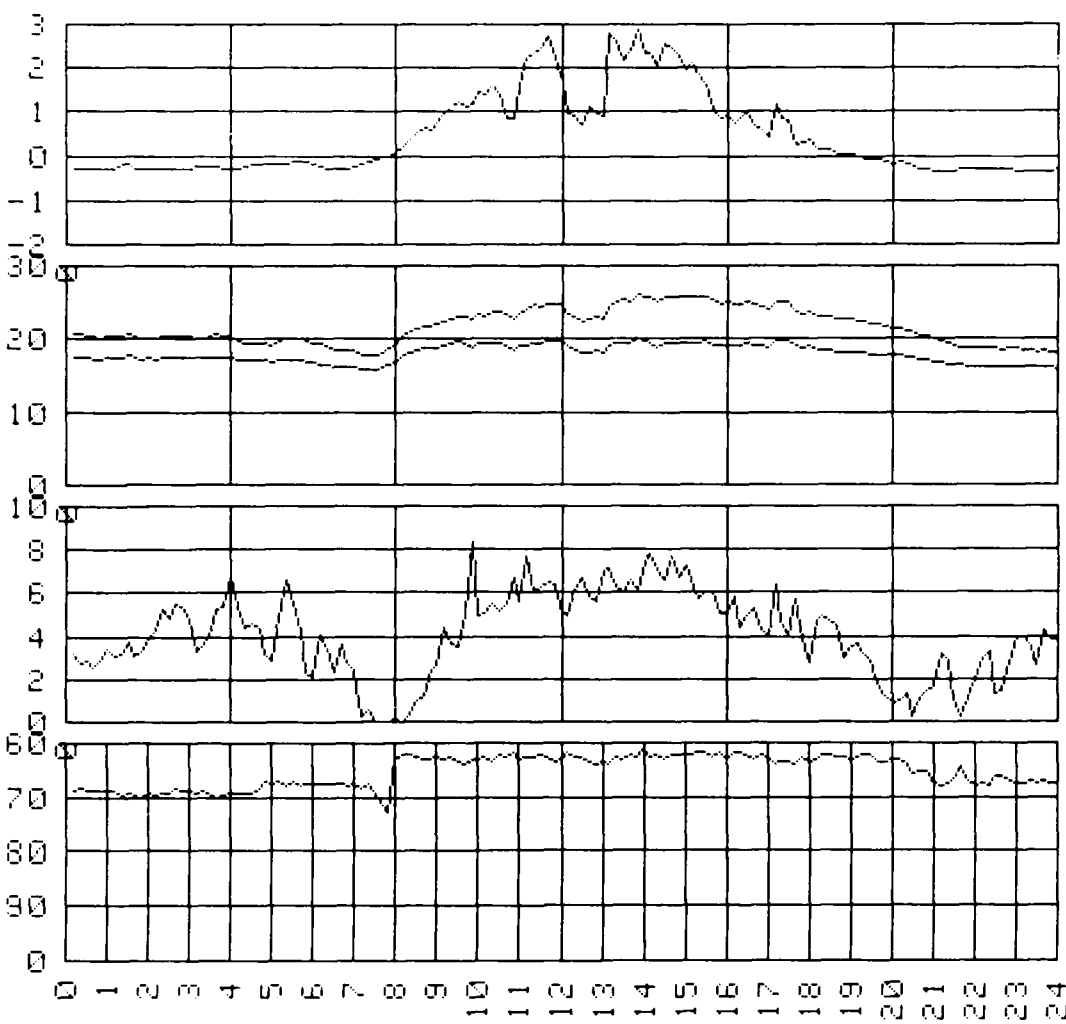


c2n-signal

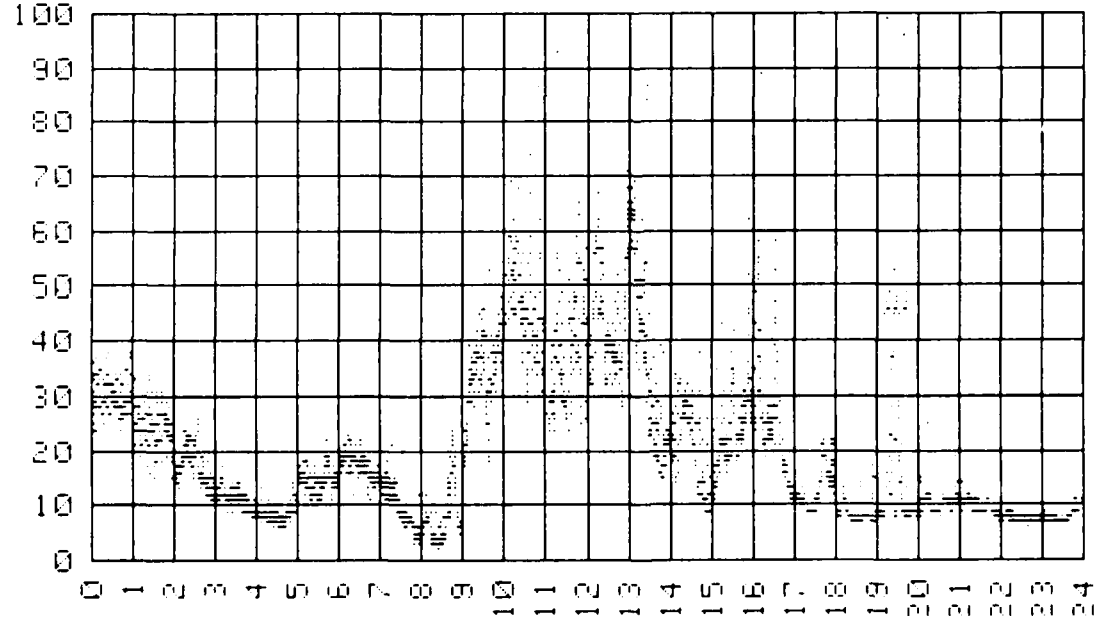
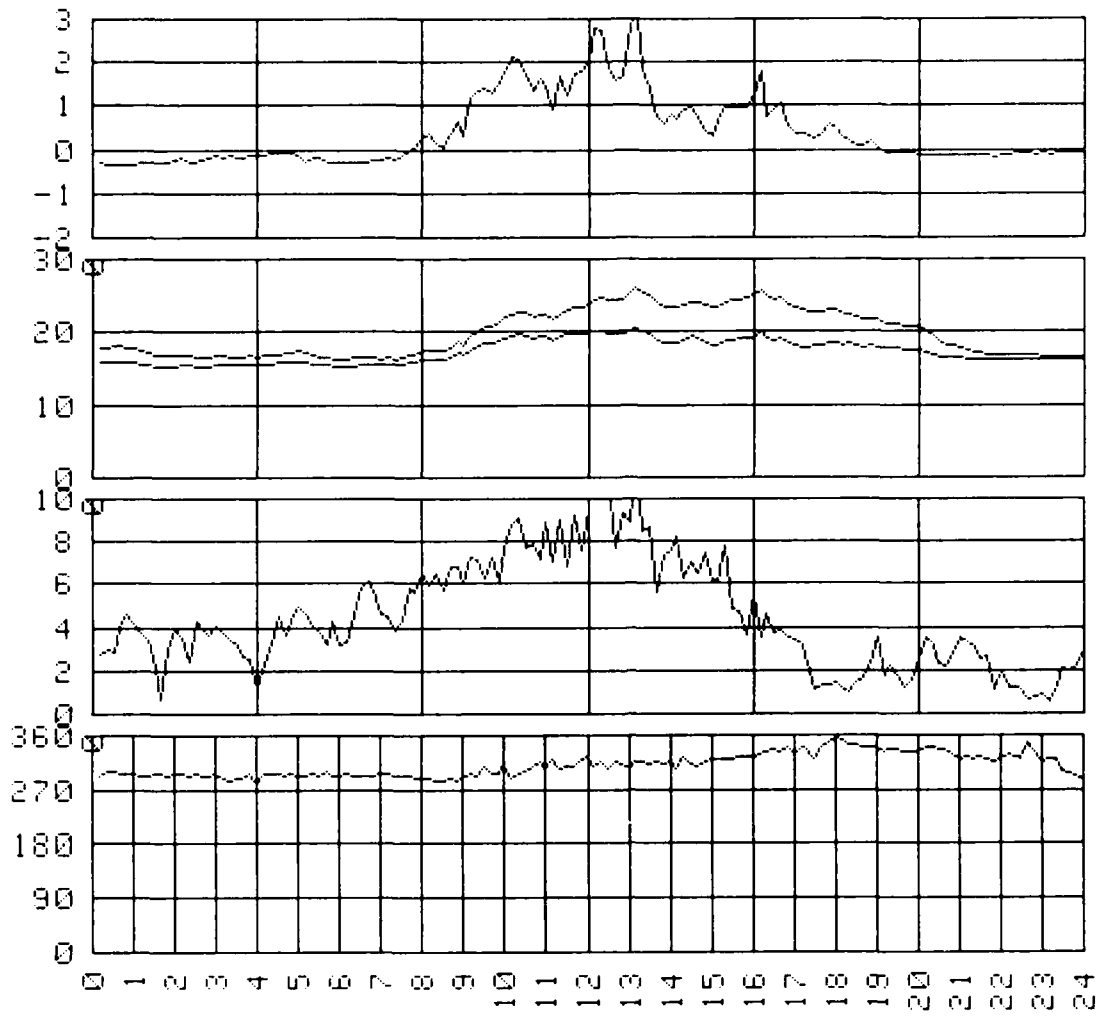
2. Sept
1984



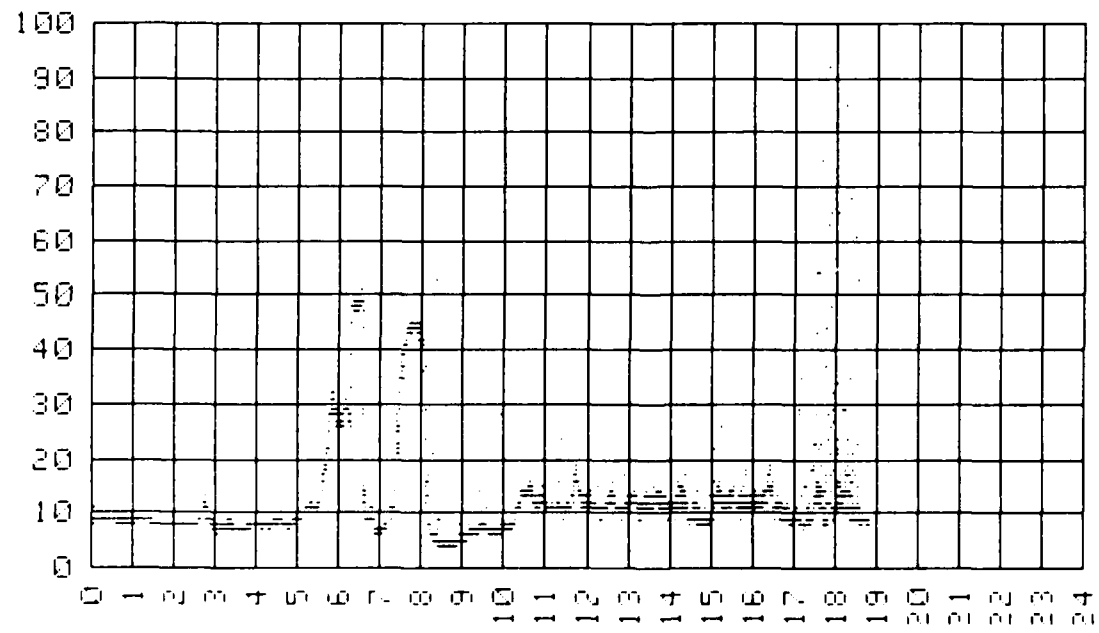
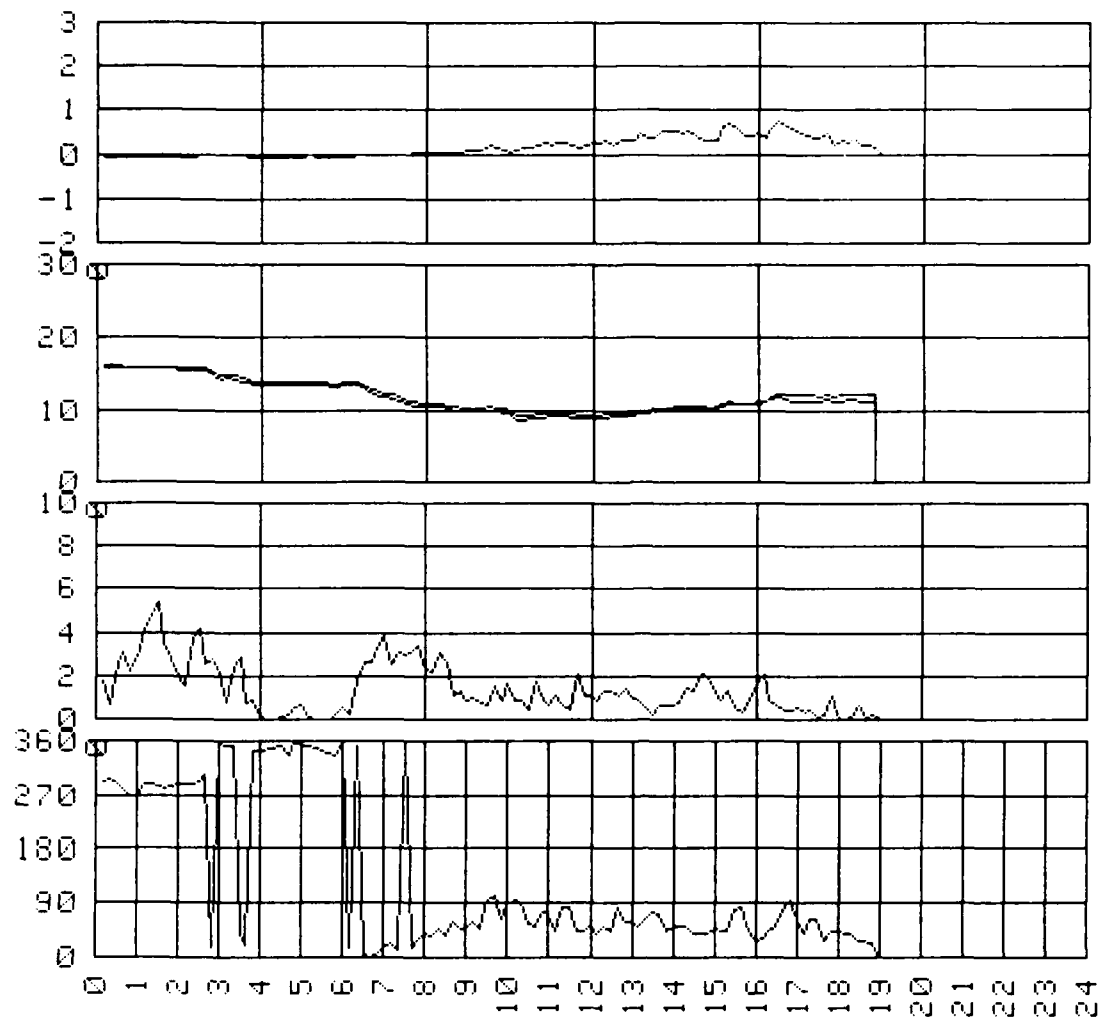
3. Oct
1984



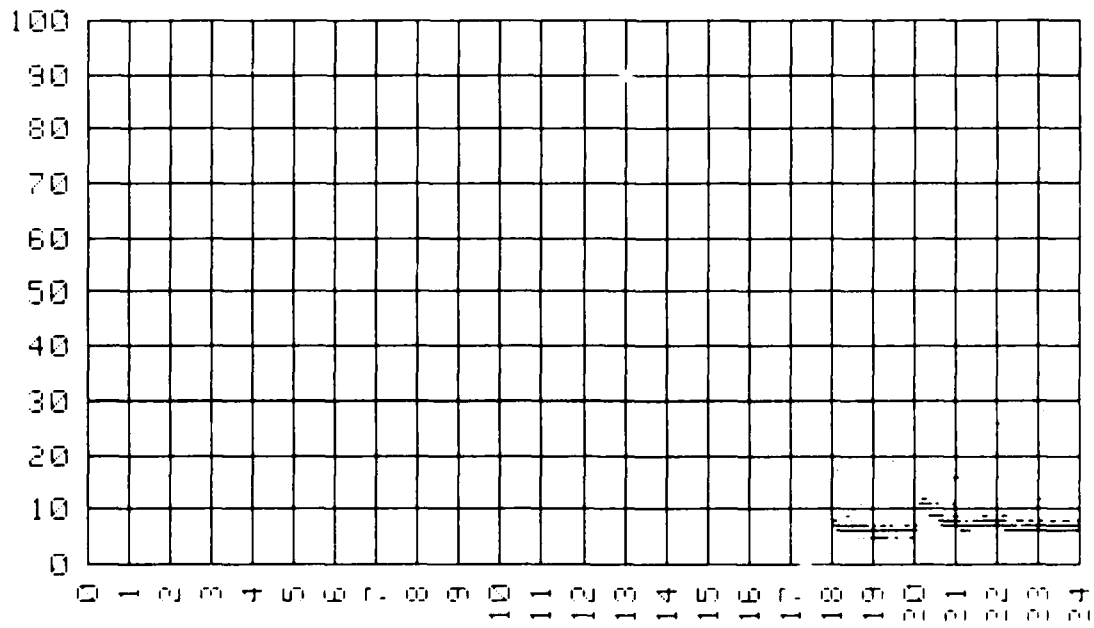
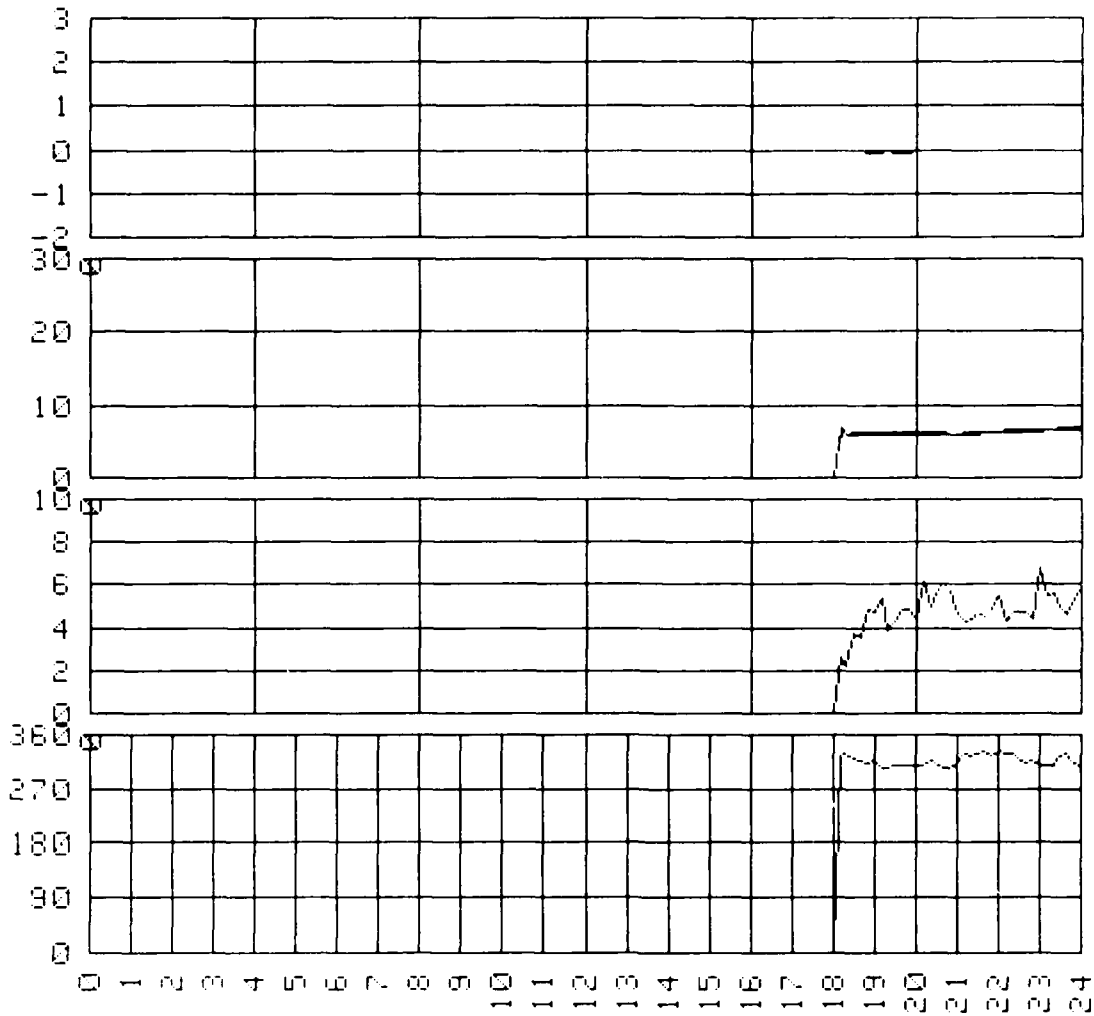
4. Sept
1984



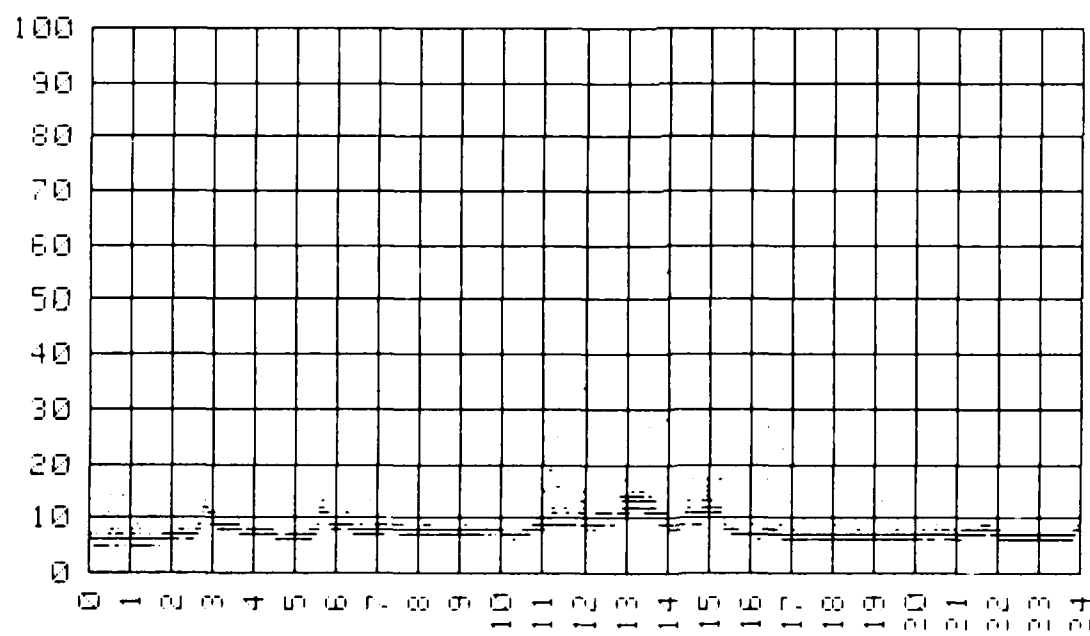
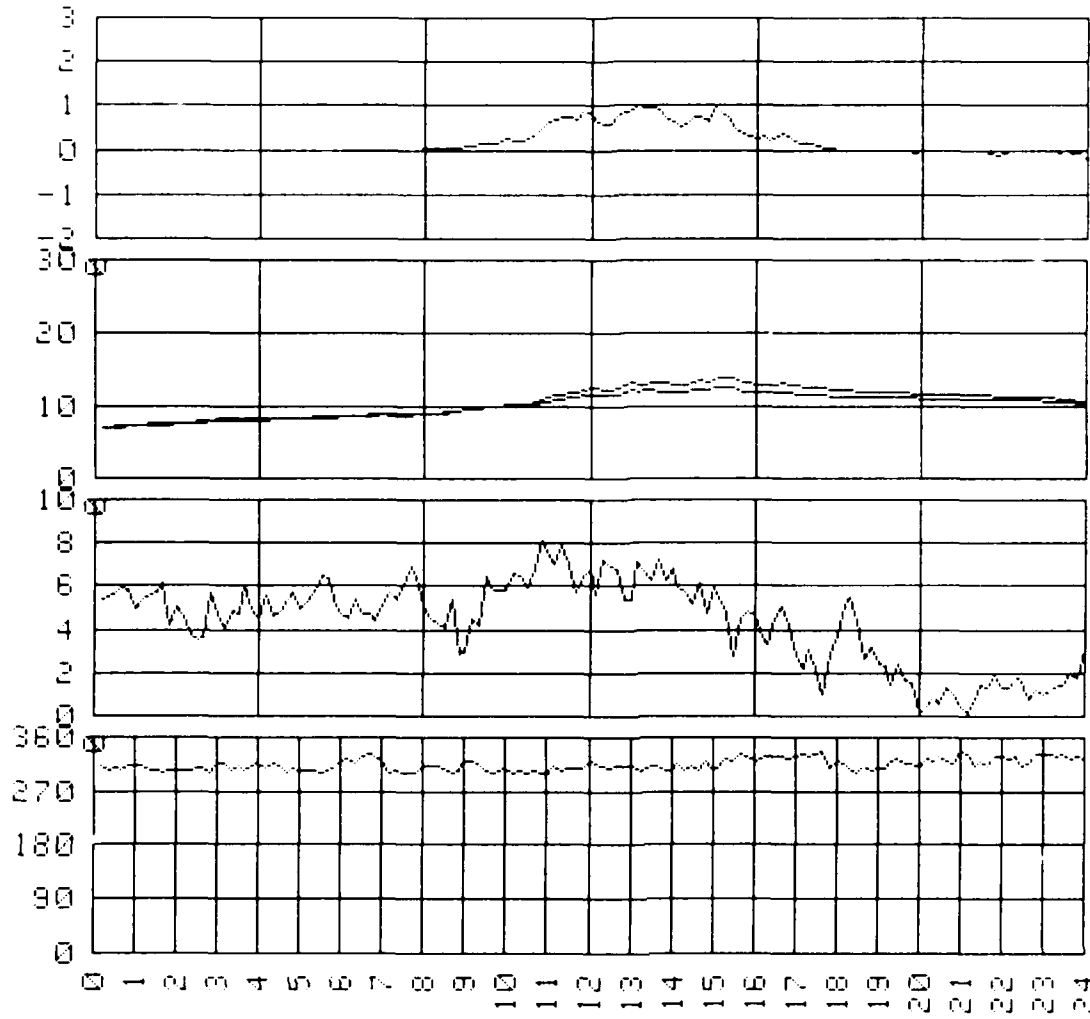
S. Est
1984.



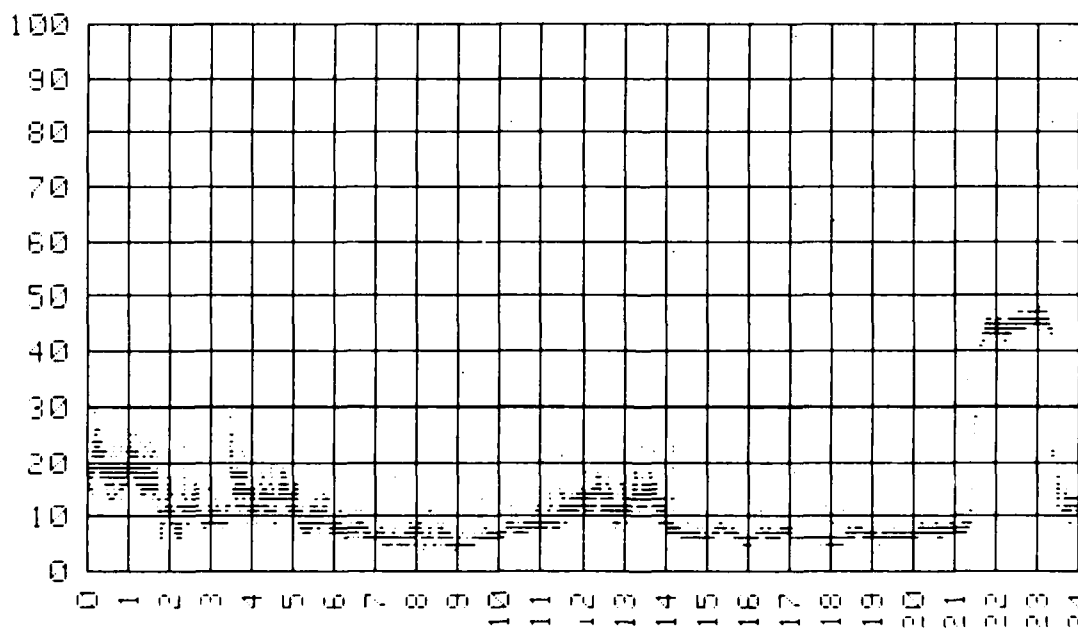
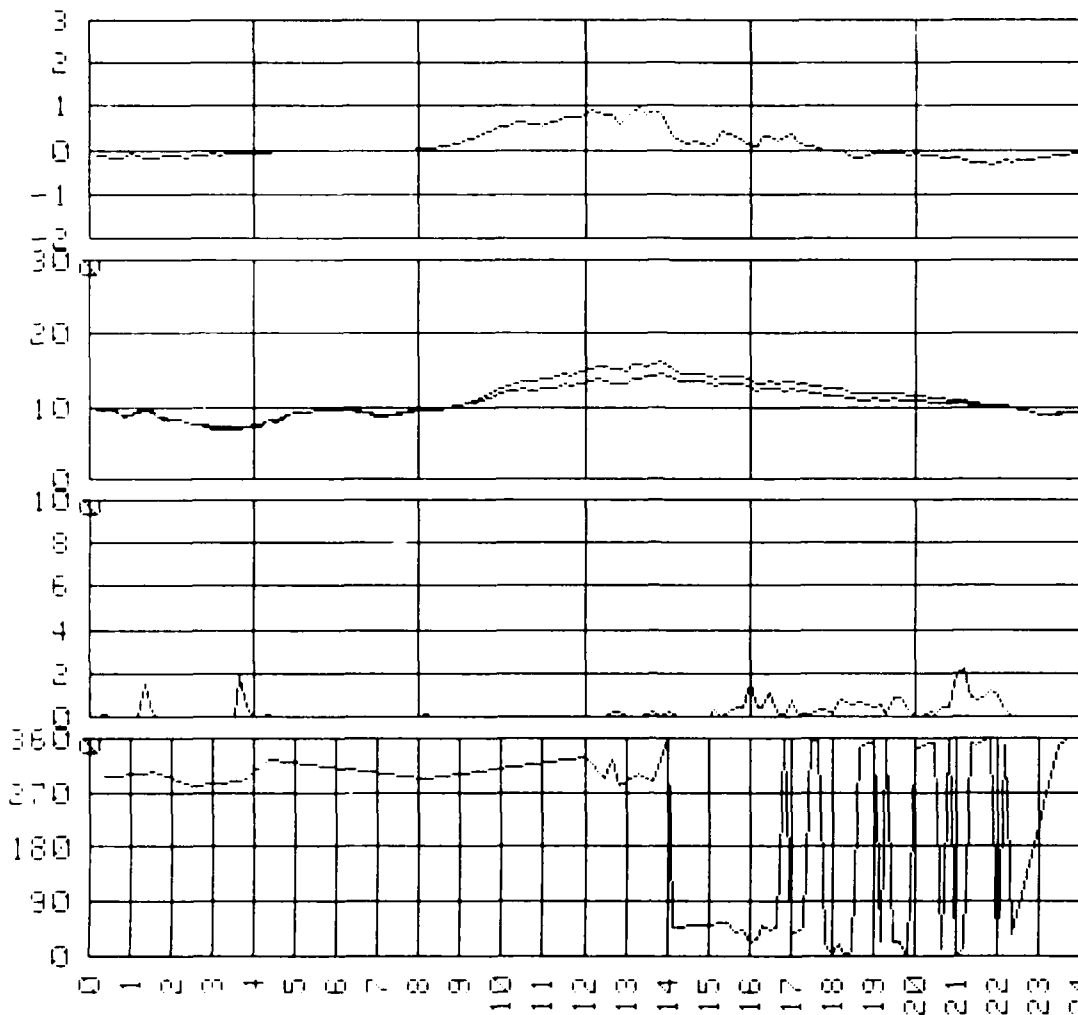
12.oct.1984



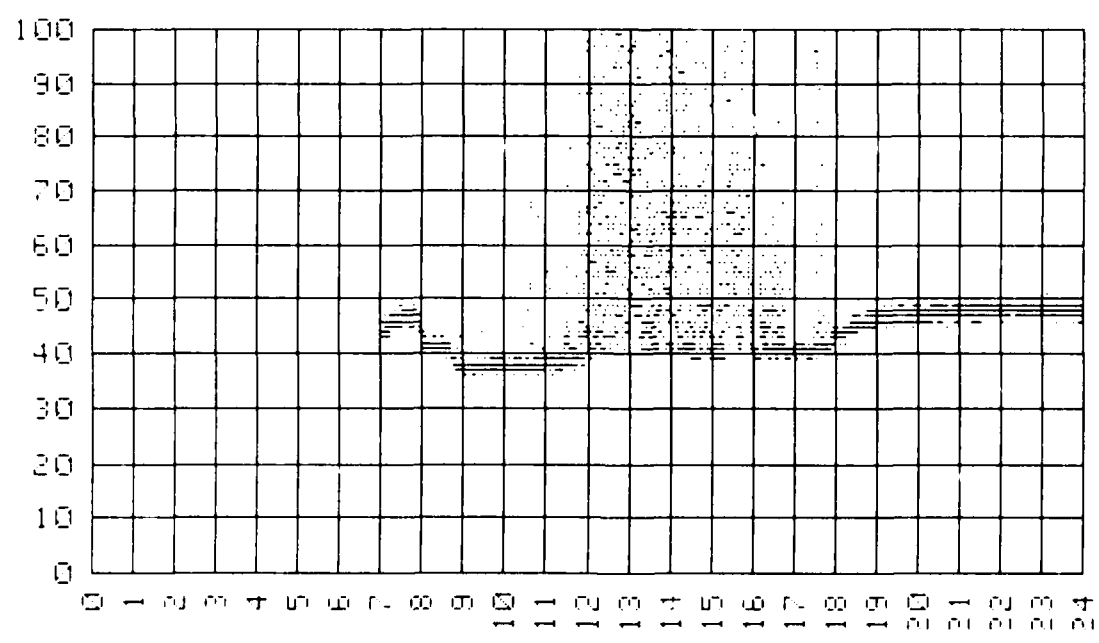
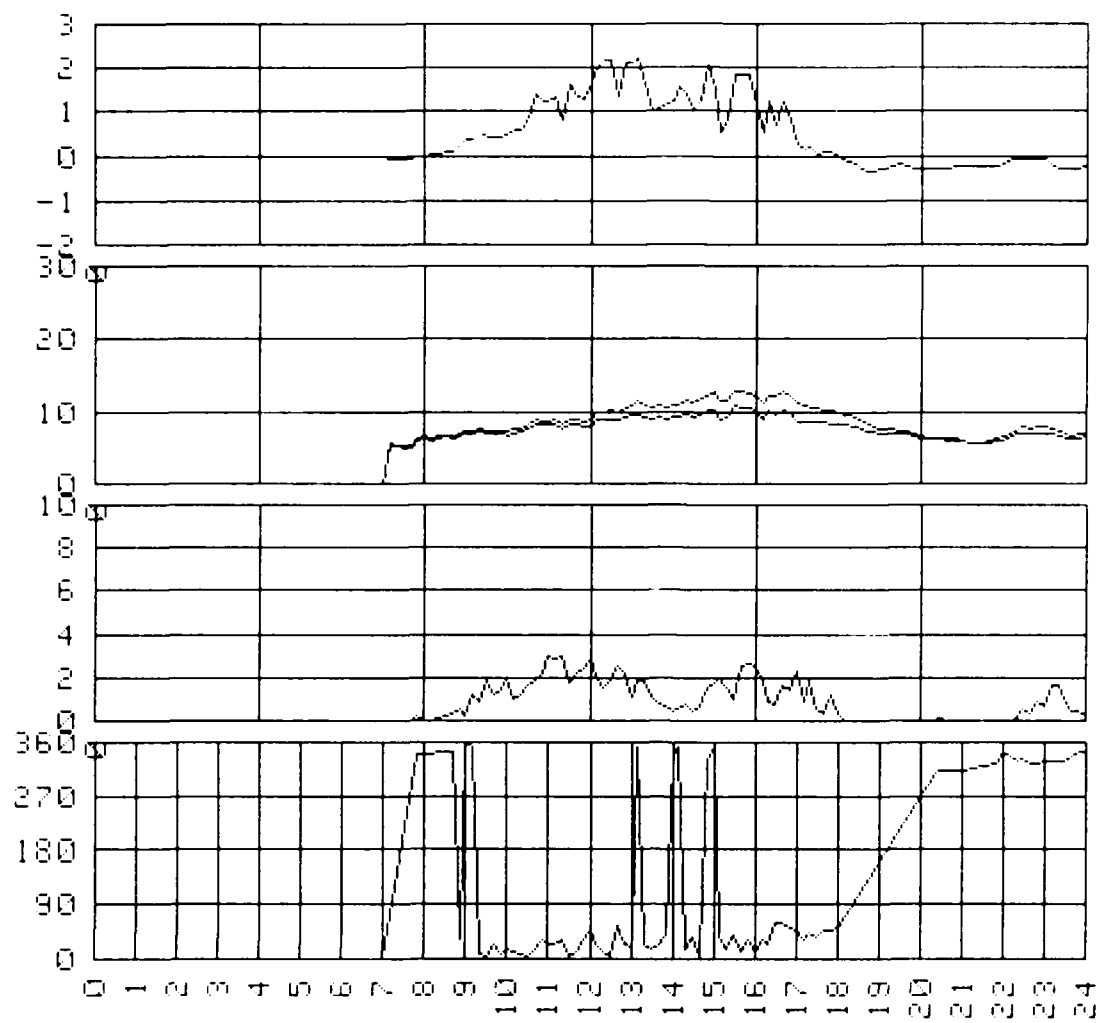
11.oct.1984



9.Oct.1984



8.oct.1984



4. Meteorological maps.

The weather maps of the two campaigns are attached:

1. Sept. 1. - 5.
2. Oct. 8. - 12.

```

10 | .....
20 |
30 | PROGRAMM AMI U.GEISLER 29.5.84
40 | MESSEN VON 5 meterol.Daten+1 Signal
50 | Zeitabstaende sind vorzugeben
60 |
70 | .....
80 |
90 | ASSIGN IO "ICA,DL"
100 | PRINTER IS "TU"
110 |
120 | INPUT : Standortkennung(2 Zeichen)
130 |
140 | Mess-,Speicher-,Kopierzeiten sind zu veraendern:
150 | in den Zeilen 1070 1080 1090
160 |
170 | Die Matrix S ist abhaengig vom Speicherintervall Z2
180 | zu dimensionieren:
190 | Zeile 470 = SHORT S(x,6), x=Z2
200 |
210 |
220 | Grenzen der Eichkurven :
230 | in den Zeilen 660 720
240 |
250 | Pi-punkte der Eichkurven :
260 | in den Zeilen 830 860
270 |
280 | Angabe der Kanalnr.und Art der Messung(Volt/Ohm)
290 | in Zeile 610, es bedeutet
300 | -negative Kanalnr=Volt(DCV)
310 | -positive Kanalnr=Ohm (IWO)
320 |
330 |
340 |
350 | KANAL 2=Wp(Ohm) KANAL 4=Wg(Volt)
360 | KANAL 5=Temp(Ohm) KANAL 6=Feuchte(Ohm)
370 | KANAL 7=Str(Volt) KANAL 8=USA(Volt)
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```

510 REAL X1(5),X2(5),Y1(5),Y2(5),Q(5)
520 I
530 STANDBY OFF - SYSTEM SCHALTET AUS
540 I
550 I
560 F#8 - Amp Kanäle n u n Meteorologie
570 I
580 I Kanalbelegung Volt Ohm
590 I z.B. 3 = "D003"
600 I 4 = "I004"
610 DATA 1,-4.5,8,-8
620 FOR I=1 TO 4
630 READ X1(I)
640 NEXT I
650 I
660 I Untere Grenzen Kanäle (Ohm/Volt)
670 DATA 2,0,30,30,1.1
680 FOR I=1 TO 4
690 READ X2(I) - Untere Grenze
700 NEXT I
710 I
720 I Obere Grenzen Kanäle
730 DATA 1000,125,200,200,1
740 FOR I=1 TO 4
750 READ Y1(I) - obere Grenze
760 NEXT I
770 I
780 I Wertpaare Untere Grenze USA (Volt)
790 I Wertpaare obere Grenze USA
800 I
810 I Wertpaare 1. Kanal fuer Geradenglchg
820 I Reihenfolge: W, w, i, f, str
830 I 5 Wertepaare -1/y1 :
840 DATA 0,0,0,0,95.07,-10,95.07,-10,-.00152,-1
850 I
860 I 5 Wertepaare -2/y2 :
870 DATA 1000,350,125,32,107.79,20,107.79,20,.00152,1
880 FOR I=1 TO 4
890 READ Y1(I),Y1(I)
900 NEXT I
910 FOR I=1 TO 4
920 READ X2(I),X2(I)
930 NEXT I
940 I
950 I konstanter Quotient (Geradengl)
960 I
970 FOR I=1 TO 4
980 Q(I)=(Y2(I)-Y1(I))/(X2(I)-X1(I))
990 NEXT I
1000

```

```

1010 I1=0
1020 R=662 ! bytes im Kernsp. bei PRINT(Z2=10min)
1030 I9=INT(MEM/R)-1 ! verfuegbare PRINTS
1040 IF I9 < 0 THEN I9=0
1050 !
1060 !     ZEITABSTAENDE
1070 !
1080 Z3=10 ! Messintervall (sec)
1090 Z2=10 ! Speicherintervall=MWBer(min)
1100 Z4=1 ! Kopierintervall (Std)
1110 !   Z4 : ganzzahl.Teil von 24 (z.B. 8)
1120 DISP "PROGRAMM AMI:" @ WAIT 1
1130 DISP "Messintervall=";Z3;" sec" @ WAIT 1
1140 DISP "Speicherintervall=";Z2;" min" @ WAIT 1
1150 DISP "Kopierintervall=";Z4;" Std" @ WAIT 1
1160 Z4=Z4*60
1170 Z5=INT(60/Z2)
1180 Z1=Z2*60
1190 !
1200 ! selbstdef.Fit = Geradengleichung
1210 !
1220 DEF FNG(D,C) = Q(C)*(D-X1(C))+Y1(C)
1230 !
1240 !     STANDORT-EINGABE
1250 INPUT "Standort ? (2 Zeichen)";O$
1260 DISP "Speicherplatz frei fuer ca." @ WAIT 1
1270 DISP "PRINTS=";INT(I9/Z5);" Std."
1280 WAIT 2
1290 IF INT(I9/Z5) > Z4/60 THEN DISP "Kopierintervall (Z4) verkleinern!!" @ STOP
1300 !
1310 ON ERROR GOTO 1380
1320 ASSIGN # 3 TO O$&"ZZA"
1330 PRINT # 3 : Z3,Z2,Z4/60 ! Intervalle -> LAMI
1340 ASSIGN # 3 TO *
1350 COPY O$&"ZZA" TO O$&"ZZA:CA"
1360 PURGE O$&"ZZA"
1370 GOTO 1410
1380 OFF ERROR
1390 IF ERR% < 64 THEN 3140
1400 !
1410 !     LESEN UHR
1420 T=TIME ! Tageszeit (sec)
1430 M5=INT(T/60)
1440 D$=DATE$ ! yy/mm/dd
1450 T$=D$[7,3]
1460 ON ERROR GOTO 3080
1470 F1$=O$&D$[4,5]&D$[7,3] ! Filename:xxmmtt,xx=Standort
1480 ASSIGN # 1 TO F1$
1490 !
1500 F=1

```

```

1510 M6=5000
1520 |
1530 I1=0
1540 |
1550 FOR I=1 TO F
1560 M9(I),M9(I),M9(I),S9(I)=0
1570 NEXT I
1580 M9=M9+1
1590 W,M9,M9
1600 FOR I=1 TO Z2
1610 FOR J=1 TO F
1620 S(I,J)=999 | Nachfragen
1630 NEXT J
1640 NEXT I
1650 |
1660 | ZEITSCHLEIFE
1670 |
1680 T=INT(TIME)
1690 IF MOD(T,Z3)≠0 THEN 1680
1700 D$=DATE$
1710 U1$=TIME$
1720 T2$=D$(7,8)
1730 M5=INT(T/60) | Zeit (min)
1740 |
1750 IF MOD(M5,Z2)=0 AND M5<M6 THEN 2430 | Mw,Staw
1760 |
1770 | Messen Signal (Z2 sec)
1780 |
1790 SENDIO "d1","unl,lad#","dcv8"&CHR$(13)&CHR$(10)
1800 A$=ENTIO$("DL","unl,tr:0a,tad#,sda")
1810 I=VAL(U1$(4,5))
1820 I=MOD(I,Z2)+1 | Zeilenindex=Minute+1
1830 J=VAL(U1$(7,8))
1840 J=INT(J/10+1) | Spaltenindex=sec+1
1850 S(I,J)=VAL(A$) | Signal
1860 DISP S(I,J)
1870 | IF S(I,J) < 61 OR S(I,J) > 69 THEN S(I,J)=999
1880 | DISP TIME$
1890 |
1900 | Messen Meteorologie
1910 |
1920 FOR I=1 TO F
1930 P1="TWO"
1940 IF L(I) = 0 THEN B$="DCV"
1950 P1=B$&STR$(ABS(L(I)))
1960 SENDIO "d1","unl,lad#",B$&CHR$(13)&CHR$(10)
1970 A$=ENTIO$("d1","unl,tr:0a,tad#,sda")
1980 D9(I)=VAL(A$)
1990 IF I=3 OR I=4 THEN D9(I)=D9(I)-24.5
2000 |

```

```

2010 * STOP (falls kein Wert)
2020 *
2030 FF=FF+1
2040 IF FF=7 THEN D10=0 STOP
2050 *
2060 *
2070 IF D9(I) < 0 OR D9(I) > 1 THEN 2130
2080 S8(I)=1
2090 *
2100 D=D9(I)*D9(I)+D9(I)+FNG(D,I) * Geradengl
2110 D10=D9(I)+1
2120 *
2130 NEXT I
2140 IF D10=0 THEN 2320
2150 D=D10+1 THEN 2100
2160 IF D10=1 THEN M9=D9(2)
2170 IF D10=15 THEN 2210
2180 W=W+1
2190 S8(I)=0
2200 GOTO 2320
2210 *
2220 IF N9(1)=0 THEN 2280
2230 IF ABS(M9(1)/N9(1)-D9(1))<=180 THEN 2280
2240 IF M9(1)/N9(1)>180 THEN 2270
2250 D9(1)=D9(1)-360
2260 GOTO 2280
2270 D9(1)=D9(1)+360
2280 M9(1)=M9(1)+D9(1)*D9(2) * Wn gewichtet
2290 S9(1)=S9(1)+D9(1)*D9(1)*D9(2)
2300 N1=N9(1)
2310 N9(1)=N9(1)+D9(2)
2320 *
2330 FOR I=2 TO K
2340 IF S8(I)=0 THEN 2390
2350 M9(I)=M9(I)+D9(I)
2360 S9(I)=S9(I)+D9(I)*D9(I)
2370 N9(I)=N9(I)+1
2380 S8(I)=0
2390 NEXT I
2400 S8(1)=0
2410 GOTO 1680 * Zeitschleife
2420 *
2430 * Mittelwert, Standardabw
2440 FOR I=1 TO K
2450 IF N9(I)=0 THEN M9(I),S9(I)=999 @ GOTO 2610
2460 D9(I)=M9(I)
2470 IF I=1 THEN GOTO 2540
2480 M9(I)=M9(I)/N9(I)
2490 D9(I)=D9(I)*D9(I)/N9(I)
2500 N9(I)=N1+1

```

```

2510 IF M9(1) = 0 THEN M9(1) = M9(1) + 360
2520 IF M9(1) > 360 THEN M9(1) = M9(1) - 360
2530 GOTO 2570
2540 |
2550 M9(I) = M9(I) / N9(I)
2560 D9(I) = D9(I) * D9(I) / N9(I)
2570 V = S9(I) - D9(I)
2580 IF N9(I) = 1 THEN GOTO 2600
2590 V = V / (N9(I) - 1)
2600 S9(I) = SQR(ABS(V))
2610 NEXT I
2620 |
2630 | WINDSTILLEN, max. WIND
2640 IF W = 0 THEN M9(K+1) = W
2650 IF M0 = 0 THEN M9(K+1) = M9(K+1) + INT(M0 * 100) / 10^5
2660 |
2670 |
2680 |
2690 | Doppelbelegung: INT(M9(I)) = Mw
2700 | FRACT(M9(I)) = Stabw
2710 FOR I = 1 TO K
2720 B1 = 1
2730 M9(I) = INT(M9(I) * 100)
2740 IF M9(I) < 0 THEN B1 = -1
2750 M9(I) = ABS(M9(I)) + INT(S9(I) * 100) / 10^5
2760 M9(I) = M9(I) * B1
2770 NEXT I
2780 | SPEICHERN
2790 ON ERROR GOTO 3080
2800 I1 = I1 + 1
2810 U$ = U1$(1,5)
2820 IF U$ = "00:00" THEN U$ = "24:00"
2830 PRINT # 1, I1 : U$, M9(I) : Uhr, MW/SA
2840 FOR I = 1 TO Z2
2850 FOR J = 1 TO 6
2860 P1(J) = S(I, J)
2870 NEXT J
2880 I1 = I1 + 1
2890 PRINT # 1, I1 : P1() : USA-Signale
2900 NEXT I
2910 M6 = M5
2920 |
2930 IF MOD(M5, 24) = 0 THEN 1550
2940 |
2950 | COPY Daten -- Band
2960 ASSIGN # 1 TO *
2970 COPY F14 TO F14&U$(1,2)&" : CA"
2980 PURGE F14
2990 F = 0
3000 GIE TIME

```

```
3010 IF (ERRN=95) THEN 3000
3020 IF (ERRN=95) THEN 3000
3030
3040 BYE @ DISP " •• ENDE PROGRAMM ••"
3050 WAIT 1 @ BYE
3060 STOP
3070
3080 OFF ERROR
3090 IF ERRN=95 THEN 3130
3100 BYE @ DISP "BAND VOLL !!"
3110 BYE @ DISP "RESTDATEN IN FILE:";F1$
3120 WAIT 3 @ GOTO 3040
3130
3140 BYE @ DISP "FEHLER!!!!!"
3150 WAIT 1 @ DISP "ERRL/ERRN:";ERRL;ERRN
3160 WAIT 5 @ GOTO 3110
3170
3180
3190
3200 ON ERROR GOTO 3080
3210 ASSIGN # 1 TO * @ IF I1 THEN COPY F1$ TO F1$&"99"&"CA"
3220 IF P THEN PURGE F1$
3230 BYE @ DISP "P-STOP:";DATE$;" ";U1$(1,S)
3240 WAIT 2
3250 GOTO 3040
3260 END ! *****
```

```

10 | PROGRAMM (LAMIIB2) 22.5.84 U.GEISLER
20 |
30 | liest Messdaten aus <AMI> mit HP75
40 | 2.Version :
50 | 5 meteor.Daten + 1 Signal
60 |
70 | Die Daten-Files aus <AMI> sollten n i c h t im Rechner sein
80 |
90 | Filename: "xxmmthh", xx=Standortkennung
100 |
110 | PESTFILE : hh=99
120 |
130 | *****
140 |
150 ASSIGN IO ":CA,:MB" : TV"
160 | PRINTER IS ":TV"
170 | DISPLAY IS ":TV"
180 OPTION BASE 1
190 DELAY .5 | DELAY FUER DISP.
200 DIM F1$(8),F2$(11),U$(5),D$(8),Z$(5)
210 DIM S$(80),S1$(80),E$(2),M$(2),T$(2),O$(2),K$(2)
220 INTEGER T,T1,T9,K,K1,Q
230 REAL M9(6),S9(5),W,M0
240 SHORT P1(6)
250 |
260 |
270 E$=CHR$(13)&CHR$(10) | CR/LF
280 SENDIO "","IFC",""
290 SENDIO ":MB","UNL,LAD#,DCL",""
300 |
310 INPUT "STANDORT ? (2 Zeichen)";O$
320 INPUT "MONAT (mm)?";M$
330 INPUT "TAGE (1,31) ?";T1,T9
340 INPUT "KOPIERINTERVALL (hh)?";K
350 INPUT "STARTZEIT (hh)?";Q
360 |
370 Z$=O$&"ZZA"
380 COPY Z$":CA" TO Z$
390 ASSIGN # 3 TO Z$
400 READ # 3 : Z3,Z2,Z4 | Intervalle -> LAMI -> AMIST$
410 PURGE Z$
420 S$=""
430 S$=STR$(Z3)&E$&STR$(Z2)&E$&STR$(Z4)&E$
440 SENDIO ":MB","UNL,LAD#",S$
450 WAIT 1 |
460 S$=""
470 T=T1-1
480 K1=Q-1
490 |
500 T=T+1 | naechster Tag

```

```

510 T$=STR$(T)
520 IF T.10 THEN T$="0"&T$
530 |
540 D$=0$&M$&T$
550 SENDIO ":MB", "UNL,LAD#",D$&E$
560 K1=K1+K
570 K$=STR$(K1)
580 IF K1.10 THEN K$="0"&K$
590 |
600 |
610 F1$=D$&K$
620 F2$=F1$&" :CA"
630 ON ERROR GOTO 1010
640 COPY F2$ TO F1$
650 DISP "FILE=";F1$ @ WAIT 1
660 ASSIGN # 5 TO F1$
670 |
680 I1=0
690 |
700 I1=I1+1
710 READ # 5,I1 : U$,M9( )
720 DISP U$&" ";
730 W=IP(M9(6)) @ M0=FP(M9(6))*10^5/100
740 S$=""
750 S$=U$&E$&STR$(W)&E$&STR$(M0)&E$
760 SENDIO ":ME", "UNL,LAD#",S$
770 S$="" @ S1$=""
780 FOR C=1 TO 5
790 S9(C)=FP(ABS(M9(C)))*10^5/100
800 M9(C)=IP(M9(C))/100
810 S$=S$&STR$(M9(C))&E$
820 S1$=S1$&STR$(S9(C))&E$
830 NEXT C
840 DISP USING 850 : M9(1),M9(2),M9(3),M9(4),M9(5),W,M0
850 IMAGE 3(50.DD)/2(50.DD)/DD,50.D
860 |
870 SENDIO ":MB", "UNL,LAD#",S$ | Mw
880 SENDIO ":ME", "UNL,LAD#",S1$ | Stabw
890 FOR C=1 TO 22
900 I1=I1+1 @ S$=""
910 READ # 5,I1 : P1( )
920 |
930 FOR C1=1 TO 6
940 S$=S$&STR$(P1(C1))&E$
950 NEXT C1
960 SENDIO ":MB", "UNL,LAD#",S$ | Signale
970 NEXT C
980 |
990 GOTO 700
1000 |

```

```
1010 OFF ERROR
1020 IF ERRN=62 THEN 1090
1030 ! File fehlt :
1040 IF F1$(7,8)="99" THEN 1150 ! naechster Tag
1050 PRINT "FILE NICHT DA: ";F1$
1060 IF F1$(7,8)<>"24" THEN 1140
1070 K$="99" @ GOTO 600
1080 !
1090 IF ERRN=34 THEN 1260
1100 ON ERROR GOTO 1260
1110 ! FILE ZU ENDE:
1120 DISP F1$(7,8); " Uhr fertig"
1130 PURGE F1$
1140 IF K1 24 THEN 560
1150 K1=0
1160 S$="99.99"&E$&"0"&E$&"0"&E$ ! Tag zu Ende
1170 SENDIO ":MB", "UNL,LAD#",S$
1180 IF T<T9 THEN 500
1190 PRINT
1200 PRINT "Uebertrag beendet fuer Monat ";M$
1210 PRINT "Tag ";T1;"-";T ! TAB(22)
1220 S$="9999"&E$&"0"&E$&"0"&E$
1230 SENDIO ":MB", "UNL,LAD#",S$ ! Uebertr. zu Ende
1240 STOP
1250 !
1260 PRINT "ERRL/ERRN: ";ERRL;ERRN
1270 STOP
1280 END ! *****
```

```

10  | PROGRAMM   AMIST$>      U. GEISLER      28.5.1984
20  | UMWANDLUNG VON DATEN EINES " AMI - LAMIB2 " DATENSATZES IN
30  | STRINGS MIT 2* 128 BYTES (METEOROLOGIE + SIGNALE )
40  | ZUR WEITERVERARBEITUNG MIT  HP - IBM - ROUTINE.
50  |
60  |
70  |
80  OPTION BASE 1
90  DIM S1$(128),S2$(128),F$(6),Y$(2)
100 DIM Uhr$(144),U$(5),U2$(144),U1$
110 SHOPT M(144,5),S(144,5),Umax(144),Wstille(144),Sig(10,6),Signal(144,10,6),
120 INTEGER Dim, I, J, Am(5), Em(5), As(5), Es(5), Pm(5), Ps(5)
130 INTEGER A1, A2, Ap1, Ap2, Zm, Z2, Min, Sec
140 |
150 |
160 | REIHENFOLGE :  Wr, Wg, t, f, str
170 DATA 14,21,30,39,48
180 MAT READ Am           | ANFANGSPUNKTE MW
190 DATA 16,24,33,42,51
200 MAT READ Em           | ENDPUNKTE MITTELWERTE
210 DATA 17,25,34,43,52
220 MAT READ As           | ANFANGSPKTE STANDARDABW.
230 DATA 20,28,37,46,55
240 MAT READ Es           | ENDPKTE Sw
250 |
260 DATA 0,-1,-1,-1,-2
270 MAT READ Pm           | PROUND MITTELWERTE
280 DATA -1,-1,-1,-1,-2
290 MAT READ Ps           | PROUND STANDARDABW
300 |
310 T14$=":H7 "          | AUSGABEFILE (STRINGS)
320 T15$=":H7 "          | EINGABEFILE
330 A1=60                 | Anfang Signale in S1$
340 A2=14                 | Anfang Signale in S2$
350 Ii=0
360 PRINTER IS 16
370 PRINT CHR$(27)&"E"    | CLEAR SCREEN
380 PRINT "PROGRAMM < AMIST$ >"
390 INPUT " FILENAME (mmtxxx)?",F$
400 INPUT " JAHR AKTUELL (yy)",Y$
410 ON ERROR GOTO Err1
420 ASSIGN #1 TO F$&T15$  | EINGABEFILE
430 ASSIGN #5 TO F$[1,4]&"SS"&T15$
440 ASSIGN #2 TO F$[5,6]&"ZZA"&T15$
450 READ #2;Zm,Z2,Z4
460 ASSIGN #2 TO *
470 Dim=60/Z2*24         | nec/Tag
480 |
490 REDIM Uhr$(Dim),Sig(Z2,6),Signal(Dim,Z2,6),U2$(Dim)
500 REDIM M(Dim,5),S(Dim,5),Umax(Dim),Wstille(Dim)
510 |
520 ON ERROR GOTO Error
530 F1$=F$[1,4]&LWC$(F$[5,6])
540 PRINT "NEUER FILENAME (STRINGS) : ";F1$
550 CREATE F1$&T14$,Dim+3,260      ! READ #3;S1$&S2$      ! 2*DIM(128)
560 ASSIGN #3 TO F1$&T14$         ! AUSGABEFILE
570 S1$=S2$=RPT$("*",128)
580 INPUT " TITEL ? (MAX 30)",S1$[1,30]
590 INPUT " LOCATION (MAX12) ",S1$[31,42]
600 INPUT " KOORD.:NORTH4(4),EAST(4)",S1$[43,46],S1$[47,50]

```



```

1210 C=C-10+1          ! Anfang Messung
1220 IF S1#[12,13]="00" THEN C=C-40
1230 S1#[56,60]=VAL#(C)
1240 IF C<1000 THEN S1#[56,60]="0"%S1#[56,59]
1250 Ap1=A1
1260 Ap2=A2
1270 FOR Min=1 TO 22
1280 FOR Sec=1 TO 6
1290 IF Ap1=126 THEN S2
1300 S1#[Ap1,Ap1+2]=VAL#(Signal(J,Min,Sec))
1310 Ap1=Ap1+3
1320 GOTO 1350
1330 S2: S2#[Ap2,Ap2+2]=VAL#(Signal(J,Min,Sec))
1340 Ap2=Ap2+3
1350 NEXT Sec
1360 NEXT Min
1370 In=In+1
1380 PRINT #3;S1#;S2#          ! LANGE IM FILE KONTROLLIEREN
1390 PRINT S1#;S2#            ! TEST
1400 S1#[10,13]=S2#[10,13]="    "
1410 Next j: NEXT J
1420 !
1430 ASSIGN * TO #3
1440 PRINT In;" Strings A 256 BYTES UBERTRAGEN"
1450 STOP
1460 !
1470 Err1: !
1480 OFF ERROR
1490 IF ERRN=56 THEN 1560
1500 PRINT LIN+5;"FILENAME PRUFEN!"
1510 GOTO 390
1520 !
1530 Error: !
1540 OFF ERROR
1550 IF ERRN=54 THEN 560          ! FILE WAR SCHON DA
1560 DISP "ERRN-ERPL:";ERPL;ERRN
1570 GOTO 1440
1580 !
1590 Fehler: !
1600 PRINT LIN+5 ,R;" te Uhrzeit stimmt nicht ueberein:"
1610 PRINT U2#;R;" " ;Uhr#;R;
1620 STOP
1630 END

```

```

10      ! PROGRAMM "LUSA"(<=>"lusaib"                GEISLER 22.5.84
20      ! PROGRAMM ZUR ÜBERTRAGUNG DER USA-DATEN VOM 75 IN DEN 45
30      ! SPEICHERN : 1 TAG = 1 FILE
40      ! FILE WIRD IM PROGRAMM ANGELEGT
50      ! data-transfer hp 71/75 to hp 45 via hp-ib-interface
60      OPTION BASE 1
70      DIM Datum#[10],U#[5],Tfile#[8],T#[15],Year#[2]
80      DIM Uhr#[288][5]
90      INTEGER Zm,Z2,Dim
100     SHORT M(8),S(8),U0,U9
110     SHORT Mittel(288,8),Standard(288,8),Wstille(288),Umax(288)
120     RESET 700
130     T15#=":T15"
140     Year#="84"      ! JAHR aktuell
150     !
160     DISP " ZUERST HP 75 STARTEN, VOR STANDORTEINGABE => CONT "
170     PAUSE
180     DISP CHR$(12)
190     WAIT 1000
200
210     ENTER 700 USING "+,3(F)";Zm,Z2,24
220     Zh=60/Z2      ! rec/Std.
230     Dim=Zh*24    ! rec/Tag
240     REDIM Uhr#(Dim)
250     REDIM Mittel(Dim,8),Standard(Dim,8),Umax(Dim),Wstille(Dim)
260     Anfang: !
270     Tfertig=0
280     MAT Mittel=(0)
290     MAT Standard=(0)
300     MAT Wstille=(0)
310     MAT Umax=(0)
320     FOR C=1 TO Dim
330     Uhr#(C)="-----"
340     NEXT C
350     !
360     PRINTER IS 16
370     PRINT "DATEN AUS PROGRAMM < USA >"
380     !
390     PRINT
400     GOSUB Kopf
410     IF Mfertig THEN Ende
420     GOSUB Einlesen
430     IF Tfertig THEN Teilende
440     GOSUB Print
450     GOTO 420
460     !
470     Kopf: !
480     !
490     ENTER 700 USING "+,T";Datum#
500     IF Datum#="9999" THEN 670      ! Datum#="XXmmTthh" , XX=STANDORT
510     Tag=VAL(Datum#[5,6])
520     Tfile#=Datum#[3,6]:Datum#[1,2]
530     ON ERROR GOTO Err1
540     CREATE Datum#[1,2]:"02":T15#,1,20
550     ASSIGN #4 TO Datum#[1,2]:"02":T15#
560     PRINT #4:Zm,Z2,24
570     ASSIGN #4 TO +
580     ON ERROR GOTO 690
590     CREATE Tfile#%T15#,1,13+Dim+4+Dim+4+Dim+4*8+Dim+4+8*Dim
600     ON ERROR GOTO Error

```

```

610  PRINTER IS 16
620  PRINT USING 630;"MESSDATEN STATION", " : ", Tfile#[05,6], Tfile#[03,4], ". ", Tfile#[01,2], ". ", Year#
630  IMAGE 15X, 17A, 3A, 2A, 3X, 2A, A, 2A, A, 2A
640  PRINT USING 650;"Uhr", "*" U=0", "Umax", "dd", "U", "Temp", "ff", "ppp", "RaB", "Sg
1", "Sg2"
650  IMAGE //5X3A, 3X6A, 2X4A, 3X2A, 4XA, 5X4A, 4X2A, 5X3A, 2X3A, 3X3A, 4X3A
660  RETURN
670  Mfertig=1
680  RETURN
690  OFF ERROR
700  IF ERRN<>54 THEN GOTO 1200
710  GOTO 600
720  !
730  Einlesen:  !
740  !
750  ENTER 700 USING "+,T,F,F";U#,U0,U9
760  IF U#="99.99" THEN 890
770  ENTER 700 USING "+,8(F)";M(*)
780  ENTER 700 USING "+,8(F)";S(*)
790  Z=VAL(U#[01,2])
800  Z=Z#Z+VAL(U#[04,5])#Z2          ! UMWANDLUNG UHRZEIT IN INDEX
810  Uhr#(Z)=U#
820  Wstille(Z)=U0
830  Umax(Z)=U9
840  FOR C=1 TO 8
850  Mittel(Z,C)=M(C)
860  Standard(Z,C)=S(C)
870  NEXT C
880  RETURN
890  Tfertig=1
900  RETURN          !***          ***
910  !
920  Print:  !
930  PRINT USING "#,5X5A,3A,DDZ,X2DZ.D";U#," * ",U0,U9
940  PRINT USING 950;M(*)
950  IMAGE 3XDDZ,3(2X2DZ.D),3X3DZ,XXDDZ,2(3XZ.DD)
960  PRINT USING 970;"*",S(*)
970  IMAGE 11X,A,13X,DDZ,3(2X2DZ.D),3X3DZ,XXDDZ,2(3XZ.DD)
980  RETURN
990  !
1000  Teilende:  !
1010  !
1020  PRINT LIN(2)
1030  DISP Tfile#;" wird gespeichert"
1040  WAIT 3000
1050  ASSIGN #1 TO Tfile#%T15#
1060  MAT PRINT #1;Uhr#,Wstille,Umax,Mittel,Standard
1070  ASSIGN * TO #1
1080  DISP CHR#(12)
1090  GOTO Anfang
1100  !
1110  Ende:  !
1120  DISP " Fertig"
1130  STOP
1140  Err1:  !
1150  OFF ERROR
1160  IF ERRN=54 THEN 580
1170  Error:  !
1180  OFF ERROR
1190  IF ERRN=56 THEN 1220
1200  DISP "ERRL/ERRN";ERRL;ERRN

```

END

FILMED

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DTIC