U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE
NATIONAL METEOROLOGICAL CENTER

OFFICE NOTE 298

Procedures for Summarizing Data Availability in NMC

James E. McDonell
Automation Division

NOVEMBER 1984

1. Introduction

This Office Note describes procedures developed for obtaining information about the availability of observational data. The project was initiated in response to a task assigned to the Working Group on NMC Data Receipt which was established in July 1982. Enhancements have been made since then and as a result of these efforts, capabilities to summarize and display information on data amounts and receipt times have been developed. Some results from the work have been used for schedule planning and general interest in the subject has been expressed by a number of people and organizations interested in observational data. Emphasis has been given to the data bases used for our numerical guidance runs and the work does not address all aspects of data receipt at the Center.

2. Data Receipt Times

Ascertaining data availability for our production runs can be done by utilizing the run history tapes. This is ideal for determining with certainity what data was available for a production run. Since the NMC schedule varies somewhat, one cannot use these tapes to determine accurately the data availability for a specific cut-off time. Another drawback of the using run history tapes for data summaries is the awkwardness of accumulating the data counts over a period of time.

To circumvent some of the problems mentioned above, it was decided to make the report receipt time available as part of the information stored with each report. Several of the data handling programs required modifications in order to accomplish this. The data format described in Office Note 124 (NMC Format for Surface Reports) already had a slot for the receipt time (characters 21-24 of the report identification). The same characters had been designated as reserved in Office Note 29 (NMC Format for Upper-air Reports) and this slot was selected for storing the receipt time for upper-air reports except for radiosonde and wind reports. For these reports, the receipt time for each part of the transmitted message is appended to the report as Category 08 data. There are 8 possible parts to a complete sounding - parts A,B,C, and D of the TEMP (radiosonde) code and parts A,B,C, and D of the PILOT (upper-wind) code; however not more than 6 of these parts are used for transmitting a complete report from a station. The receipt time which is retained with each report (or the parts of a complete report) is that time when the bulletin containing the data was first encountered by an NMC automatic processing system, i.e., the communications facility in FB4 Suitland. Satellite wind and moisture estimates are generated by NESDIS and are entered directly into the Central Facility files. For these data, the receipt time is obtained from the system clock when the file is loaded by the NESDIS processors. Manual Quality Control Data[1] (QCD) also has its receipt time taken from the system clock.

3. Summary and Display Procedures

Programs were written which extract receipt times from the observational data stored in members of our rotating partioned data sets, which contain the most current 10 days of reports stored in ON 29 and ON 124 formats. The contents of the members are copies of our production data

1 Manually derived estimates ("bogus")

sets or are produced from later cut offs than those used in our operations if appropriate to enhance the data. Satellite soundings are not included in these data sets. The following is a summary of the data sets and member names which the programs can process:

'NWS.NMC.ARKV.SFCBOG(CxxA-J)'	(xx = 00,12)
'NWS.NMC.ARKV.SFCSM(CxxA-J)'	(xx = 00,06,12,18)
'NWS.NMC.ARKV.SFCSI(CxxA-J)'	(xx = 03,09,15,21)
'NWS.NMC.ARKV.SFCSHP(CxxA-J)'	(xx = 00,06,12,18)
'NWS.NMC.ARKV.UPABOG(CxxA-J)'	(xx = 00,12)
'NWS.NMC.ARKV.ADPUPA.T0012Z(CxxA-J)'	(xx = 00,12)
'NWS.NMC.ARKV.ADPUPA.T0618Z(CxxA-J)'	(xx = 06,18)
'NWS.NMC.ARKV.AIRCFT(CxxA-J)'	(xx = 00,06,12,18)
'NWS.NMC.ARKV.SATWND(CxxA-J)'	(xx = 00,06,12,18)

There are several options which are controlled by providing input to the programs:

1) the data set to process;

2) the members to select;

3) the report types to accept, as defined in ON 29 and ON 124;

4) the geographical area for retention (specified either by latitude/longitude limits or by supplying the parameters defining a northern or southern hemisphere polar stereographic grid area);

5) the part (A,B,C,D) of the TEMP or PILOT to process (for report types 021, 022, 023 and 031);

6) the class intervals (equal or unequal in size as desired) of differences between receipt time and map time or differences between receipt time and observation time for tallying the differences; and

7) the range of block numbers when processing reports with international station numbers.

The program generates the cumulative frequency distributions of receipt time minus map time (R-M) or of receipt time minus observation time (R-O) for up to 16 class intervals. For examining data availability for a map time, for example, the distributions of (R-M) are useful. The program has been designed to accommodate all the reports in a given data set member. This implies that report observation times of map time $\pm$ 3 hours are accepted. An exception to this is for surface reports (types

511, 512, 521, 522 and 523) where reports of map time ± 2 hours are accepted. The class interval values can be negative in order to deal with the reports received prior to map time (for example, a 1030Z AIREP could easily arrive by 1100Z and be used in a 1200Z map analysis). The U.S. synoptic reports arrive via AFOS and commonly have receipt times 10 minutes earlier than the observation time. If no negative class intervals are selected, the reports with negative values of (R-M) or (R-O) are included with the smallest positive class interval selected.

Reports which have international station numbers can be processed in subsets of block numbers. In the case of upper-air soundings, the Ocean Weather Station (OWS) reports are assigned the block number 99 and then are treated as a subset. The retention tests made on block number range and on geographical area are mutually exclusive.

The cumulative frequency (CF) is computed for each subset (block number) and the results are displayed in two tables. One of the tables expresses the CFs as percentages of the totals in the usual fashion. Additionally, for each subset the average numbers of reports is computed by dividing the cumulative frequencies by the number of data set members (cases) in the sample. The mean value and standard deviation of (R-M) are also computed. In the latter two calculations, any negative (R-M) values are set equal to zero. The other table shows the cumulative frequencies expressed as averages (frequencies divided by the number of cases) for each subset. When the sample contains 10 cases, the actual receipt accumulations for the class intervals can be computed readily by visualizing the decimal point one place to the right of its printed position.

4. Examples

Figure 1 illustrates the results produced by the procedures described for processing receipt time minus map time (R-M). For this example, the options (refer to options listed earlier) selected were:

1) 'NWS.NMC.ARKV.ADPUPA.T0012Z'

2) C00A, C00B,.....C00J (10, 00Z cases, 17-26 October 1984)

3) 011 and 021

4) (0.0N, 0.0W) to (90.0N, 0.0W)

5) TTAA (TEMP PART A - mandatory levels 1000-100 mb)

6) 0000, 0030,...0400,0500,...0800,9999,9999

7) 01 to 98 and 99 (OWS).

Figure 2 illustrates the results for the same options as Figure 1 except that the cumulative frequencies are expressed as percentages of the total and the values of the mean and standard deviation of (R-M) are provided.

Another version of the processing program provides for examining data receipt in subsets of 10x10 degree latitude/longitude "boxes" rather than in subsets of block numbers as described previously. All of the options mentioned earlier apply except that only 14 class intervals are permitted. The "boxes" are positioned such that the values of latitude and longitude each are evenly divisible by 10. Each report is assigned a "box" in a 2-dimensional array by indexing from its latitude and longitude in a manner which considers that the left (longitude) side and bottom (latitude) side of the "box" bound the "box".

Figures 3 and 4 illustrate the results from processing with the same options as illustrated in Figures 1 and 2. The cumulative frequency distributions again were determined for (R-M). The (lat) (lon) indices are in decadegrees. Negative values indicate south latitudes and east longitudes.

A variation for processing by "boxes" is available which computes the receipt time minus observation time (R-O) rather than (R-M). For examining availability of asynoptic reports to determine the delay time between the observation times and their receipt times at NMC, the distribution of (R-O) is a better choice than the distribution of (R-M).

A graphics package was developed to display the cumulative frequency distributions such as illustrated in Figure 4. The background chosen is a latitude/longitude "projection". This background has latitude and longitude intervals of 10 degrees and these lines outline the "boxes" discussed earlier. For each "box" containing a cumulative frequency distribution, a plot is made to reflect the information for that "box". Each heavy horizontal line has 14 tick marks which indicate the class intervals. A heavy vertical line, just to the right of the horizontal line, has 10 tick marks for indicating the cumulative frequency in 10 percent intervals. These templates are completed by constructing a light vertical line at each of the class intervals. Each line has its height proportional to the cumulative frequency for the class interval. Beneath each template, the average number of reports (total cumulative frequency divided by the number of cases) is plotted. If the number of cases is 10, the total number of reports for the sample is given by visualizing the decimal point one place to the right. In the situation where all reports for a "box" are received after the largest class interval value requested, the template will appear but without any light vertical lines. However, it still will have the average number plotted. Figure 5 illustrates the graphics display for the data sample that was illustrated in Figure 4.

Figure 6 demonstrates the graphics display where the receipt times minus observtion times (R-O) have been processed. For this example, the options selected were:

1) 'NWS.NMC.ARKV.AIRCFT'

2) C00A.....C00J, C06A....C06J, C12A...C12J, C18A....C18J (40 cases, 12Z October 19 thru 06Z October 29, 1984)

3) 041

4) (0.0N, 0.0W) to (90.0N, 0.0W)

5) N/A

6) 0000, 0020,.....0420

7) N/A

Since 40 members were processed for the 10-day period, the daily average number of reports for each template can be determined by multiplying the the plotted number by 4.

5. Concluding Remarks

Using the procedures outlined above, we intend to summarize data receipt at NMC on a routine basis. A selection of the results will be published in the NMC Monthly Performance Summary.

Acknowledgements

The programming to produce the graphics display was done by Ray Crayton of the Data, Analysis, and Display Branch and the manuscript was prepared by Donna Thomas of the Meteorological Operations Division.

TTAA OBSERVATION RECEIPT AVERAGES FOR 00Z 84/10/17 TO 00Z 84/10/26 10 CASES
RETENTION INFO: 0.0 0.0 0.0 0.0 0.0 90.00 0.0 0.0 0

BLK	00+00	00+30	01+00	01+30	02+00	02+30	03+00	03+30	04+00	04+30	05+00	06+00	07+00	08+00	99+99	99+99	TOTAL	BLK
1	0.0	0.0	0.80	2.40	4.20	5.40	5.60	5.60	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	5.70	1
2	0.0	0.20	4.10	7.00	7.90	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	2
3	0.0	0.0	0.90	8.50	8.60	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	3
4	0.0	0.30	1.00	3.40	5.60	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	4
6	0.30	3.10	4.00	5.60	5.70	5.90	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6
7	0.0	1.70	4.40	5.00	5.00	5.00	5.00	5.00	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	7
8	0.40	0.90	4.40	5.40	5.70	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.90	5.90	5.90	5.90	5.90	8
9	0.0	0.0	0.0	0.60	2.90	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	9
10	0.0	0.70	4.70	5.60	5.60	5.80	5.80	8.40	8.40	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	10
11	0.0	0.10	1.60	2.70	2.90	2.90	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	11
12	0.0	0.0	0.10	1.40	4.90	5.40	5.50	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	12
13	0.0	0.10	0.90	1.80	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	13
15	0.0	0.0	0.0	0.0	0.90	3.60	3.80	3.90	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	15
16	0.0	0.0	0.30	2.10	7.10	7.60	7.80	7.90	7.90	7.90	8.00	8.00	8.00	8.00	8.00	8.00	8.00	16
17	0.0	0.0	0.0	0.0	2.70	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	17
20	0.0	0.0	0.0	0.0	6.60	7.60	7.90	8.00	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	20
21	0.0	0.0	0.0	0.0	6.20	6.50	6.70	6.70	6.70	6.70	6.90	6.90	6.90	6.90	6.90	6.90	6.90	21
22	0.0	0.0	0.0	2.80	5.60	6.10	6.40	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	22
23	0.0	0.0	0.10	2.80	8.60	9.40	9.70	10.00	10.00	10.20	10.30	10.50	10.50	10.50	10.50	10.50	10.50	23
24	0.0	0.0	0.0	0.20	7.00	8.10	8.50	8.50	8.60	8.60	8.60	8.60	8.80	8.80	8.80	8.80	8.80	24
25	0.0	0.0	0.0	0.0	7.10	8.60	10.00	10.20	10.20	10.30	10.60	10.60	10.70	10.70	10.70	10.70	10.70	25
26	0.10	0.10	0.60	4.50	8.80	9.30	9.30	9.50	9.60	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70	26
27	0.0	0.0	0.30	2.10	5.20	6.00	6.00	6.40	6.50	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	27
28	0.0	0.0	0.0	3.50	6.10	6.60	6.60	7.00	7.10	7.10	7.10	7.20	7.20	7.20	7.20	7.20	7.20	28
29	0.0	0.0	0.30	3.00	5.30	6.70	7.40	7.40	7.50	7.50	7.60	7.70	7.70	7.70	7.70	7.70	7.70	29
30	0.0	0.0	0.0	1.60	8.50	10.60	11.00	11.20	11.30	11.40	11.50	11.50	11.50	11.50	11.50	11.50	11.50	30
31	0.0	0.0	0.0	0.50	7.60	9.70	10.40	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	31
32	0.0	0.0	0.0	2.30	6.90	7.50	8.20	8.30	8.30	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	32
33	0.0	0.0	0.0	1.50	8.30	9.00	9.20	9.30	9.30	9.30	9.30	9.40	9.40	9.40	9.40	9.40	9.40	33
34	0.0	0.0	0.0	0.50	6.20	7.10	7.40	7.90	8.00	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	34
35	0.0	0.0	0.0	1.40	6.40	6.80	7.00	7.10	7.30	7.40	7.40	7.70	7.70	7.70	7.70	7.70	7.70	35
36	0.0	0.0	0.0	0.80	2.00	3.00	3.10	3.30	4.00	4.00	4.00	4.50	4.50	4.50	4.50	4.50	4.50	36
37	0.0	0.0	0.0	0.10	1.90	3.40	3.80	4.30	4.60	4.70	4.70	4.70	4.90	4.90	5.00	5.00	5.00	37
38	0.0	0.0	0.0	3.70	6.70	7.90	8.40	8.60	9.00	9.30	9.40	9.80	9.90	9.90	9.90	9.90	9.90	38
40	0.20	1.30	2.40	3.80	7.40	7.70	8.70	9.00	9.00	9.10	9.10	9.50	9.60	9.90	10.10	10.10	10.10	40
41	0.0	0.10	1.00	1.40	5.00	6.30	7.30	8.00	8.40	8.90	8.90	9.40	9.60	10.00	10.10	10.10	10.10	41
42	0.0	0.0	0.0	0.0	0.0	0.90	3.40	5.40	7.40	8.20	8.60	10.30	11.60	11.90	12.30	12.30	12.30	42
43	0.10	0.10	0.10	0.10	0.10	1.70	3.40	5.60	7.40	9.40	10.30	11.40	11.50	11.70	12.10	12.10	12.10	43
44	0.0	0.0	0.0	0.0	1.70	6.00	6.00	6.50	6.70	6.70	6.80	6.80	6.90	6.90	6.90	6.90	6.90	44
45	0.0	0.0	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	45
46	0.0	0.0	0.0	0.0	0.70	1.40	1.90	3.10	3.40	3.40	3.50	3.50	3.50	3.50	3.50	3.50	3.50	46
47	0.0	0.0	0.0	14.70	21.90	23.00	24.80	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	25.50	47
48	0.0	0.0	0.0	1.30	3.60	4.60	8.70	8.90	9.70	9.90	10.00	10.10	10.10	10.10	10.10	10.10	10.10	48
50	0.0	0.0	0.0	0.30	3.80	5.40	5.80	5.80	5.80	5.80	5.80	5.80	6.00	6.00	6.00	6.00	6.00	50
51	0.0	0.0	0.0	2.90	8.70	12.10	12.90	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	51
52	0.0	0.0	0.0	0.20	10.30	12.80	12.90	12.90	12.90	12.90	13.00	13.00	13.00	13.00	13.00	13.00	13.00	52
53	0.0	0.0	0.0	0.0	6.10	9.10	9.80	9.90	10.10	10.10	10.10	10.10	10.20	10.20	10.20	10.20	10.20	53
54	0.0	0.0	0.0	0.0	10.50	13.30	14.50	14.50	14.50	14.50	14.50	14.60	14.90	14.90	14.90	14.90	14.90	54
55	0.0	0.0	0.0	0.0	1.70	2.40	2.90	2.90	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	55
56	0.0	0.0	0.0	0.0	13.70	19.30	19.80	19.90	20.10	20.10	20.10	20.10	20.10	20.10	20.10	20.10	20.10	56
57	0.0	0.0	0.0	0.0	13.30	16.10	16.80	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	57
58	0.0	0.0	0.0	0.0	11.20	11.80	11.90	12.00	12.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	58
59	0.0	0.0	0.0	0.0	8.60	11.50	13.00	13.00	13.00	15.30	15.70	15.70	15.70	15.70	15.70	15.70	15.70	59
60	0.0	0.0	1.30	2.50	2.70	3.00	3.20	3.20	3.30	3.30	3.30	3.30	3.30	3.30	3.40	3.40	3.40	60
61	0.0	0.90	1.70	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	61
62	0.0	0.0	0.0	1.00	1.30	1.30	1.50	1.90	2.60	2.70	2.70	2.90	3.50	3.60	3.80	3.80	3.80	62
65	0.0	0.20	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	65
70	0.0	0.0	10.70	13.30	14.00	14.30	14.70	15.00	15.20	15.20	15.20	15.30	15.40	15.40	15.40	15.40	15.40	70
71	0.0	0.90	13.80	21.60	29.80	32.10	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	32.60	71
72	1.20	19.40	66.50	68.20	68.70	68.80	68.80	68.80	68.80	68.80	68.80	68.80	68.80	68.80	68.80	68.80	68.80	72
74	0.0	0.60	1.00	1.00	1.00	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	74
76	0.0	0.20	2.40	5.90	6.50	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	7.10	76
78	0.20	0.90	4.40	5.60	7.10	7.80	8.60	8.70	9.20	9.20	9.30	9.30	9.30	9.30	9.30	9.30	9.30	78
80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	80
91	0.0	1.30	4.70	6.20	8.50	10.10	10.90	11.70	12.30	12.40	12.40	12.40	12.40	12.50	12.50	12.50	12.50	91
96	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	96
98	0.0	0.10	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	98
99	0.0	0.0	0.0	0.60	2.20	2.20	2.20	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	99
TOTAL	2.5	33.2	140.1	237.2	466.6	537.9	568.9	585.9	597.9	606.9	610.1	616.0	619.8	621.2	622.7	622.7	622.7	

Figure 1. Receipt time minus map time (R-M) for TEMP Part A for ten 00Z cases, October 17-26, 1984 segmented by station block number. See text for description of listing and parameters selected.

TTAA OBSERVATION RECEIPT PERCENTAGES FOR 00Z 84/10/17 TO 00Z 84/10/26 10 CASES

RETENTION INFO: 0.0 0.0 0.0 0.0 0.0 90.00 0.0 0.0 0

BLOCK	00+ 00	00+ 30	01+ 00	01+ 30	02+ 00	02+ 30	03+ 00	03+ 30	04+ 00	04+ 30	05+ 00	06+ 00	07+ 00	08+ 00	99+ 99	99+ 99	TOTAL	AV NUM	AV DELAY	STD DEV	BLOCK
1	0	0	14	42	73	94	98	98	100	100	100	100	100	100	100	100	100	5.70	1.40	0.34	1
2	0	2	51	87	98	100	100	100	100	100	100	100	100	100	100	100	100	8.00	1.02	0.23	2
3	0	0	10	94	95	100	100	100	100	100	100	100	100	100	100	100	100	9.00	1.19	0.17	3
4	0	4	14	50	82	100	100	100	100	100	100	100	100	100	100	100	100	6.80	1.30	0.30	4
6	5	51	66	93	95	98	100	100	100	100	100	100	100	100	100	100	100	6.00	0.43	0.38	6
7	0	33	86	98	98	98	98	98	100	100	100	100	100	100	100	100	100	5.10	0.44	0.31	7
8	6	15	74	91	96	98	98	98	98	98	98	98	100	100	100	100	100	5.90	0.58	0.47	8
9	0	0	0	20	96	100	100	100	100	100	100	100	100	100	100	100	100	3.00	1.38	0.14	9
10	0	7	52	62	62	65	65	94	94	100	100	100	100	100	100	100	100	8.90	1.47	1.11	10
11	0	3	53	90	96	96	100	100	100	100	100	100	100	100	100	100	100	3.00	1.04	0.27	11
12	0	0	1	25	87	96	98	100	100	100	100	100	100	100	100	100	100	5.60	1.44	0.24	12
13	0	5	45	90	95	100	100	100	100	100	100	100	100	100	100	100	100	2.00	1.04	0.26	13
15	0	0	0	0	20	83	88	90	100	100	100	100	100	100	100	100	100	4.30	2.14	0.32	15
16	0	0	3	26	88	95	97	98	98	98	100	100	100	100	100	100	100	8.00	1.41	0.30	16
17	0	0	0	0	56	100	100	100	100	100	100	100	100	100	100	100	100	4.80	2.00	0.13	17
20	0	0	0	0	81	93	97	98	100	100	100	100	100	100	100	100	100	8.10	1.54	0.22	20
21	0	0	0	0	89	94	97	97	97	97	100	100	100	100	100	100	100	6.90	1.53	0.34	21
22	0	0	0	41	83	91	95	100	100	100	100	100	100	100	100	100	100	6.70	1.43	0.28	22
23	0	0	0	26	81	89	92	95	95	97	98	100	100	100	100	100	100	10.50	1.51	0.46	23
24	0	0	0	2	79	92	96	96	97	97	97	97	100	100	100	100	100	8.80	1.58	0.43	24
25	0	0	0	0	66	80	93	95	95	96	99	99	100	100	100	100	100	10.70	2.10	0.46	25
26	1	1	6	46	90	95	95	97	98	100	100	100	100	100	100	100	100	9.70	1.34	0.32	26
27	0	0	4	31	77	89	89	95	97	100	100	100	100	100	100	100	100	6.70	1.47	0.43	27
28	0	0	0	48	84	91	91	97	98	98	98	100	100	100	100	100	100	7.20	1.41	0.40	28
29	0	0	3	38	68	87	96	96	97	97	98	100	100	100	100	100	100	7.70	1.51	0.45	29
30	0	0	0	13	73	92	95	97	98	99	100	100	100	100	100	100	100	11.50	1.54	0.33	30
31	0	0	0	4	72	92	99	100	100	100	100	100	100	100	100	100	100	10.50	1.56	0.20	31
32	0	0	0	27	82	89	97	98	98	100	100	100	100	100	100	100	100	8.40	1.44	0.29	32
33	0	0	0	15	88	95	97	98	98	98	98	100	100	100	100	100	100	9.40	1.47	0.29	33
34	0	0	0	6	76	87	91	97	98	100	100	100	100	100	100	100	100	8.10	1.55	0.33	34
35	0	0	0	18	83	88	90	92	94	96	96	100	100	100	100	100	100	7.70	1.56	0.53	35
36	0	0	0	17	44	66	68	73	88	88	88	100	100	100	100	100	100	4.50	2.35	1.17	36
37	0	0	0	2	38	68	76	86	92	94	94	94	98	98	100	100	100	5.00	2.39	1.23	37
38	0	0	0	37	67	79	84	86	90	93	94	98	100	100	100	100	100	9.90	2.05	1.07	38
40	1	12	23	37	73	76	86	89	89	90	90	94	95	98	100	100	100	10.10	2.01	1.48	40
41	0	1	9	13	49	62	72	79	83	88	88	93	95	99	100	100	100	10.10	2.37	1.44	41
42	0	0	0	0	0	7	27	43	60	66	69	83	94	96	100	100	100	12.30	4.13	1.35	42
43	0	0	0	0	0	14	28	46	61	77	85	94	95	96	100	100	100	12.10	3.52	1.27	43
44	0	0	0	0	24	86	86	94	97	97	98	98	100	100	100	100	100	6.90	2.19	0.47	44
45	0	0	70	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.56	0.05	45
46	0	0	0	0	20	40	54	88	97	97	100	100	100	100	100	100	100	3.50	2.49	0.44	46
47	0	0	0	57	85	90	97	100	100	100	100	100	100	100	100	100	100	25.50	1.38	0.29	47
48	0	0	0	12	35	45	86	88	96	98	99	100	100	100	100	100	100	10.10	2.25	0.51	48
50	0	0	0	5	63	50	96	96	96	96	96	96	100	100	100	100	100	6.00	1.59	0.51	50
51	0	0	0	22	66	93	99	100	100	100	100	100	100	100	100	100	100	13.00	1.47	0.26	51
52	0	0	0	1	79	98	99	99	99	99	100	100	100	100	100	100	100	13.00	1.46	0.23	52
53	0	0	0	0	59	89	96	97	99	99	99	99	100	100	100	100	100	10.20	1.59	0.38	53
54	0	0	0	0	70	89	97	97	97	97	97	97	100	100	100	100	100	14.90	1.55	0.46	54
55	0	0	0	0	56	80	96	96	100	100	100	100	100	100	100	100	100	3.00	2.01	0.32	55
56	0	0	0	0	68	96	98	99	100	100	100	100	100	100	100	100	100	20.10	1.51	0.22	56
57	0	0	0	0	78	94	98	100	100	100	100	100	100	100	100	100	100	17.00	1.46	0.20	57
58	0	0	0	0	86	90	91	92	92	100	100	100	100	100	100	100	100	13.00	1.51	0.44	58
59	0	0	0	0	54	73	82	82	82	97	100	100	100	100	100	100	100	15.70	2.20	1.01	59
60	0	0	38	73	79	88	94	94	97	97	97	97	97	97	100	100	100	3.40	1.35	1.23	60
61	0	45	85	95	100	100	100	100	100	100	100	100	100	100	100	100	100	2.00	0.39	0.22	61
62	0	0	0	26	34	34	39	50	68	71	71	76	92	94	100	100	100	3.80	3.44	2.09	62
65	0	33	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0.60	0.38	0.07	65
70	0	0	69	86	90	92	95	97	98	98	98	99	100	100	100	100	100	15.40	1.16	0.46	70
71	0	2	42	66	91	98	100	100	100	100	100	100	100	100	100	100	100	32.60	1.17	0.30	71
72	1	28	96	99	99	100	100	100	100	100	100	100	100	100	100	100	100	68.80	0.36	0.14	72
74	0	54	90	90	90	90	100	100	100	100	100	100	100	100	100	100	100	1.10	0.40	0.38	74
76	0	2	33	83	91	100	100	100	100	100	100	100	100	100	100	100	100	7.10	1.13	0.27	76
78	2	9	47	60	76	83	92	93	98	98	100	100	100	100	100	100	100	9.30	1.26	0.59	78
80	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	0.10	3.30	0.0	80
91	0	10	37	49	68	80	87	93	98	99	99	99	99	100	100	100	100	12.50	1.38	1.07	91
96	0	0	0	0	0	0	50	50	100	100	100	100	100	100	100	100	100	1.80	3.15	0.30	96
98	0	33	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0.30	0.38	0.07	98
99	0	0	0	26	95	95	95	100	100	100	100	100	100	100	100	100	100	2.30	1.44	0.26	99
TOTAL	0	5	22	38	74	86	91	94	96	97	97	98	99	99	100	100	100	622.70	1.44	1.04	

Figure 2. Receipt time minus map time (R-M) for TEMP Part A for ten 00Z cases, October 17-26, 1984 segmented by station block number. See text for description of listing and parameters selected.

TTAA OBSERVATION RECEIPT AVERAGES FOR 00Z 84/10/17 TO 00Z 84/10/26 10 CASES

RETENTION INFO: 0.0 0.0 0.0 0.0 0.0 90.00 0.0 0.0 0

REPORT TYPES: 11 21 0 0 0 LZFR]=

(LAT)(LON)	INDEX	00+00	00+30	01+00	01+30	02+00	02+30	03+00	03+30	04+00	04+30	05+00	06+00	07+00	08+00	TOTAL
(8, 9)	(-5, -6)	0.0	0.0	0.0	0.0	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(8, 9)	(9, 8)	0.0	0.0	0.30	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(8, 9)	(7, 6)	0.0	0.0	0.0	0.20	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(-1, -2)	0.0	0.0	0.0	0.0	1.10	1.60	1.80	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(7, 8)	(-5, -6)	0.0	0.0	0.0	0.0	0.60	0.70	0.70	0.70	0.80	0.80	0.80	0.80	0.80	0.80	0.80
(7, 8)	(-6, -7)	0.0	0.0	0.0	0.0	0.70	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(7, 8)	(-7, -8)	0.0	0.0	0.0	0.0	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(-8, -9)	0.0	0.0	0.0	0.0	0.90	1.20	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
(7, 8)	(-10,-11)	0.0	0.0	0.0	0.0	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(7, 8)	(-11,-12)	0.0	0.0	0.0	0.0	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(-12,-13)	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(-13,-14)	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(-14,-15)	0.0	0.0	0.0	0.0	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(-15,-16)	0.0	0.0	0.0	0.0	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(7, 8)	(-16,-17)	0.0	0.0	0.0	0.0	0.70	0.70	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00
(7, 8)	(18, 17)	0.0	0.0	0.0	0.0	0.90	0.90	0.90	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00
(7, 8)	(16, 15)	0.0	0.0	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(15, 14)	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(13, 12)	0.0	0.0	0.0	0.10	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(12, 11)	0.0	0.0	0.10	0.10	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(10, 9)	0.0	0.0	0.30	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(7, 6)	0.0	0.20	0.40	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(7, 8)	(3, 2)	0.0	0.0	0.0	0.30	0.70	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(7, 8)	(2, 1)	0.0	0.0	0.0	0.40	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(7, 8)	(1, 0)	0.0	0.0	0.0	0.0	0.30	0.70	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
(6, 7)	(0, -1)	0.0	0.0	0.40	1.40	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
(6, 7)	(-1, -2)	0.0	0.0	0.40	2.10	2.80	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
(6, 7)	(-2, -3)	0.0	0.20	3.50	3.80	3.90	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
(6, 7)	(-3, -4)	0.0	0.0	0.0	2.80	4.10	4.40	4.60	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70
(6, 7)	(-4, -5)	0.0	0.0	0.0	0.0	1.50	1.70	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(6, 7)	(-5, -6)	0.0	0.0	0.0	0.0	2.40	2.60	2.70	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(6, 7)	(-6, -7)	0.0	0.0	0.10	1.90	3.60	3.80	3.80	3.80	3.80	3.90	4.00	4.00	4.00	4.00	4.00
(6, 7)	(-7, -8)	0.0	0.0	0.0	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
(6, 7)	(-8, -9)	0.0	0.0	0.0	0.20	1.30	1.70	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
(6, 7)	(-9,-10)	0.0	0.0	0.0	0.10	0.50	0.50	0.50	0.50	0.50	0.60	0.60	0.60	0.60	0.60	0.60
(6, 7)	(-10,-11)	0.0	0.0	0.0	0.20	2.40	2.60	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
(6, 7)	(-11,-12)	0.0	0.0	0.0	0.0	0.0	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(-12,-13)	0.0	0.0	0.0	0.0	3.90	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
(6, 7)	(-13,-14)	0.0	0.0	0.0	0.0	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
(6, 7)	(-14,-15)	0.0	0.0	0.0	0.0	0.50	0.60	0.60	0.60	0.70	0.70	0.70	0.70	0.90	0.90	0.90
(6, 7)	(-15,-16)	0.0	0.0	0.0	0.0	1.50	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(6, 7)	(-16,-17)	0.0	0.0	0.0	0.0	0.90	0.90	2.20	2.30	2.30	2.40	2.40	2.40	2.50	2.50	2.50
(6, 7)	(-17,-18)	0.0	0.0	0.0	0.0	1.30	2.10	2.10	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
(6, 7)	(18, 17)	0.0	0.0	0.0	0.0	1.80	1.80	1.80	1.80	1.80	1.80	2.00	2.00	2.00	2.00	2.00
(6, 7)	(17, 16)	0.0	0.0	1.90	2.40	3.50	3.60	3.60	3.80	3.90	3.90	4.00	4.00	4.00	4.00	4.00
(6, 7)	(16, 15)	0.0	0.0	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(6, 7)	(15, 14)	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(14, 13)	0.0	0.10	0.70	1.00	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(6, 7)	(13, 12)	0.0	0.0	0.0	0.30	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(6, 7)	(12, 11)	0.0	0.0	0.30	0.80	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(11, 10)	0.0	0.0	0.10	0.40	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
(6, 7)	(10, 9)	0.0	0.0	0.50	0.70	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(9, 8)	0.0	0.0	0.90	1.60	1.80	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(6, 7)	(7, 6)	0.0	0.0	0.70	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(6, 5)	0.0	0.0	0.20	0.40	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(5, 4)	0.0	0.0	0.20	0.40	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(4, 3)	0.0	0.0	0.0	0.40	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(3, 2)	0.0	0.10	0.20	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(6, 7)	(1, 0)	0.30	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(5, 6)	(0, -1)	0.0	2.10	5.00	7.50	8.00	8.70	8.80	9.40	9.40	9.60	9.60	9.60	9.60	9.60	9.60
(5, 6)	(-1, -2)	0.0	0.80	2.10	5.10	10.60	11.00	11.00	11.70	11.70	11.70	11.70	11.70	11.70	11.70	11.70
(5, 6)	(-2, -3)	0.0	0.0	0.50	3.70	7.90	8.60	8.60	8.80	8.80	8.90	8.90	8.90	8.90	8.90	8.90
(5, 6)	(-3, -4)	0.10	0.10	0.30	3.00	8.60	9.10	9.20	9.70	9.90	10.20	10.20	10.20	10.20	10.20	10.20
(5, 6)	(-4, -5)	0.0	0.0	0.10	1.20	4.50	5.30	5.40	5.70	5.80	5.80	5.80	5.80	5.80	5.80	5.80
(5, 6)	(-5, -6)	0.0	0.0	0.0	1.50	4.30	4.90	4.90	5.40	5.50	5.50	5.50	5.60	5.60	5.60	5.60
(5, 6)	(-6, -7)	0.0	0.0	0.0	1.80	3.30	3.60	3.70	3.70	3.90	3.90	3.90	4.00	4.00	4.00	4.00
(5, 6)	(-7, -8)	0.0	0.0	0.0	1.60	1.90	2.00	2.00	2.00	2.30	2.30	2.30	2.60	2.60	2.60	2.60
(5, 6)	(-8, -9)	0.0	0.0	0.30	1.70	2.70	3.00	3.00	3.20	3.30	3.30	3.30	3.50	3.50	3.50	3.50
(5, 6)	(-9,-10)	0.0	0.0	0.0	0.80	2.70	4.40	5.10	5.10	5.10	5.10	5.20	5.20	5.20	5.20	5.20
(5, 6)	(-10,-11)	0.0	0.0	0.0	0.60	3.60	5.50	5.80	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
(5, 6)	(-11,-12)	0.0	0.0	0.0	1.00	4.80	4.80	4.80	4.80	4.80	4.80	4.90	4.90	4.90	4.90	4.90
(5, 6)	(-12,-13)	0.0	0.0	0.0	0.10	2.10	2.30	2.40	2.40	2.50	2.60	2.60	2.60	2.60	2.60	2.60
(5, 6)	(-13,-14)	0.0	0.0	0.0	0.20	2.40	3.20	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70

Figure 3. Receipt time minus map time (R-M) for TEMP Part A for ten 00Z cases, October 17-26, 1984 segmented by 10x10 degree latitude/longitude "boxes". See text for description of listing and parameters selected.

CONTINUATION OF ABOVE LIST

(LAT)(LON) INDEX	00+00	00+30	01+00	01+30	02+00	02+30	03+00	03+30	04+00	04+30	05+00	06+00	07+00	08+00	TOTAL
(5, 6)(-14,-15)	0.0	0.0	0.0	0.40	2.20	2.60	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(5, 6)(-15,-16)	0.0	0.0	0.0	0.60	2.30	2.90	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(5, 6)(-16,-17)	0.0	0.0	0.0	0.40	1.20	1.50	1.60	1.70	1.70	1.80	1.80	1.80	1.80	1.80	1.80
(5, 6)(-17,-18)	0.0	0.0	0.0	0.0	0.20	0.30	0.70	0.70	0.80	0.80	0.80	0.90	1.00	1.00	1.00
(5, 6)(18, 17)	0.0	0.0	1.00	1.40	1.50	1.60	1.60	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
(5, 6)(17, 16)	0.0	0.0	0.70	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(5, 6)(16, 15)	0.0	0.0	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(5, 6)(14, 13)	0.0	0.0	0.90	1.60	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
(5, 6)(13, 12)	0.0	0.20	2.10	2.10	2.80	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(5, 6)(12, 11)	0.0	0.0	1.40	1.60	1.70	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(5, 6)(11, 10)	0.0	0.10	0.60	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(5, 6)(10, 9)	0.0	0.0	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(5, 6)(9, 8)	0.0	0.0	1.10	1.70	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(5, 6)(8, 7)	0.0	0.0	0.30	1.10	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(5, 6)(7, 6)	0.0	0.10	1.10	1.80	2.80	2.90	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(5, 6)(4, 3)	0.0	0.0	0.0	0.0	0.80	0.80	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(5, 6)(2, 1)	0.0	0.0	0.90	0.90	1.10	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
(5, 6)(1, 0)	0.0	0.0	0.0	5.70	5.80	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
(4, 5)(0, -1)	0.0	0.70	3.60	5.50	6.40	6.40	6.40	7.70	7.80	8.10	8.10	8.10	8.10	8.10	8.10
(4, 5)(-1, -2)	0.0	0.0	1.20	3.30	5.70	6.20	6.50	6.50	6.50	6.50	6.60	6.60	6.60	6.60	6.60
(4, 5)(-2, -3)	0.0	0.10	1.80	3.20	6.80	10.20	10.50	10.70	11.10	11.10	11.10	11.10	11.10	11.10	11.10
(4, 5)(-3, -4)	0.0	0.0	0.0	0.10	5.20	6.10	6.10	6.10	6.10	6.10	6.10	6.20	6.20	6.20	6.20
(4, 5)(-4, -5)	0.0	0.0	0.0	0.20	2.70	4.20	4.80	5.30	5.50	5.60	5.60	5.60	5.80	5.80	5.90
(4, 5)(-5, -6)	0.0	0.0	0.0	1.30	2.70	2.70	2.80	2.90	2.90	2.90	3.00	3.00	3.00	3.00	3.00
(4, 5)(-6, -7)	0.0	0.0	0.0	1.10	2.60	2.90	3.10	3.20	3.20	3.30	3.30	3.50	3.50	3.50	3.50
(4, 5)(-7, -8)	0.0	0.0	0.0	1.70	4.00	4.40	4.50	4.50	5.00	5.20	5.20	5.50	5.50	5.50	5.50
(4, 5)(-8, -9)	0.0	0.0	0.0	1.70	4.30	6.40	7.20	7.20	7.40	7.40	7.40	7.40	7.40	7.40	7.40
(4, 5)(-9,-10)	0.0	0.0	0.0	0.50	3.40	4.90	5.10	5.30	5.40	5.40	5.60	5.60	5.60	5.60	5.60
(4, 5)(-10,-11)	0.0	0.0	0.0	0.0	2.80	6.50	6.80	7.00	7.10	7.10	7.10	7.10	7.30	7.30	7.30
(4, 5)(-11,-12)	0.0	0.0	0.0	0.0	3.80	7.10	7.60	7.80	7.90	7.90	7.90	7.90	8.10	8.10	8.10
(4, 5)(-12,-13)	0.0	0.0	0.0	0.30	9.00	10.80	11.60	11.60	11.60	11.60	11.60	11.60	11.90	11.90	11.90
(4, 5)(-13,-14)	0.0	0.0	0.0	0.10	1.80	2.70	2.70	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
(4, 5)(-14,-15)	0.0	0.0	0.0	4.10	6.60	6.60	6.90	6.90	6.90	6.90	6.90	6.90	6.90	6.90	6.90
(4, 5)(-15,-16)	0.0	0.0	0.0	0.30	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
(4, 5)(13, 12)	0.0	1.20	2.80	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(4, 5)(12, 11)	0.10	1.10	4.80	4.90	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
(4, 5)(11, 10)	0.0	2.80	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90
(4, 5)(10, 9)	0.0	1.30	3.80	3.90	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
(4, 5)(9, 8)	0.0	1.20	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
(4, 5)(8, 7)	0.0	0.70	3.40	3.80	3.90	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
(4, 5)(7, 6)	0.0	0.80	2.50	3.20	3.90	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
(4, 5)(6, 5)	0.0	0.30	1.70	1.70	1.70	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
(4, 5)(2, 1)	0.0	0.0	0.0	0.0	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
(4, 5)(1, 0)	0.0	1.00	3.10	3.30	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.40	3.50	3.50	3.50
(3, 4)(0, -1)	0.0	0.0	1.10	1.80	2.60	2.80	2.80	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90
(3, 4)(-1, -2)	0.0	0.0	0.20	1.00	2.00	2.00	2.20	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
(3, 4)(-2, -3)	0.0	0.0	0.30	2.00	3.20	3.60	3.70	3.80	4.10	4.10	4.10	4.10	4.30	4.40	4.50
(3, 4)(-3, -4)	0.10	0.60	1.20	1.70	2.80	4.00	4.40	4.50	4.50	4.50	4.50	4.50	4.50	4.60	4.60
(3, 4)(-4, -5)	0.0	0.0	0.0	0.0	0.40	0.70	0.70	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(3, 4)(-5, -6)	0.0	0.0	0.0	0.10	0.30	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
(3, 4)(-6, -7)	0.0	0.0	0.0	0.70	2.00	2.70	3.40	3.50	3.50	3.70	3.70	3.80	3.90	4.20	4.40
(3, 4)(-7, -8)	0.0	0.0	0.0	0.50	2.10	3.00	3.60	3.90	4.10	4.50	4.50	5.30	5.70	6.00	6.10
(3, 4)(-8, -9)	0.0	0.0	0.0	0.50	1.80	1.90	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(3, 4)(-9,-10)	0.0	0.0	0.0	0.0	8.00	10.70	10.80	10.90	11.00	11.00	11.00	11.00	11.00	11.00	11.00
(3, 4)(-10,-11)	0.0	0.0	0.0	0.0	12.30	16.60	16.90	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
(3, 4)(-11,-12)	0.0	0.0	0.0	0.0	10.20	12.10	12.90	13.00	13.10	13.10	13.10	13.10	13.10	13.10	13.10
(3, 4)(-12,-13)	0.0	0.0	0.0	0.30	6.00	8.50	10.60	10.90	10.90	10.90	10.90	11.00	11.00	11.00	11.00
(3, 4)(-13,-14)	0.0	0.0	0.0	5.30	7.10	7.10	7.10	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
(3, 4)(-14,-15)	0.0	0.0	0.0	2.40	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
(3, 4)(13, 12)	0.0	0.10	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
(3, 4)(12, 11)	0.0	0.70	4.80	4.90	5.00	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10
(3, 4)(11, 10)	0.0	1.20	5.90	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
(3, 4)(10, 9)	0.10	2.50	8.80	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10	9.10
(3, 4)(9, 8)	0.10	2.50	7.40	7.70	7.90	7.90	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
(3, 4)(8, 7)	0.0	1.70	4.90	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
(3, 4)(7, 6)	0.0	0.20	0.50	0.60	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(3, 4)(3, 2)	0.40	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(3, 4)(1, 0)	0.0	0.0	1.00	1.90	2.20	2.40	2.60	2.60	2.70	2.70	2.70	2.70	2.70	2.70	2.70
(2, 3)(0, -1)	0.0	0.0	0.0	0.20	0.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.40
(2, 3)(-3, -4)	0.0	0.0	0.0	0.40	3.80	3.80	3.80	4.00	4.40	4.50	4.50	4.70	5.10	5.10	5.20
(2, 3)(-4, -5)	0.10	0.70	1.00	1.00	1.60	1.60	1.70	1.80	1.80	1.80	1.80	2.20	2.20	2.20	2.20
(2, 3)(-5, -6)	0.0	0.10	1.20	1.90	2.50	2.70	2.80	2.80	2.80	2.80	2.80	2.90	2.90	2.90	2.90
(2, 3)(-6, -7)	0.0	0.0	0.0	0.10	0.50	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(2, 3)(-7, -8)	0.0	0.0	0.0	0.0	0.0	0.80	2.00	3.10	3.80	3.90	3.90	4.20	4.60	4.70	4.70
(2, 3)(-8, -9)	0.0	0.0	0.0	0.0	0.0	0.70	2.30	2.80	4.00	4.50	4.90	5.40	5.90	6.00	6.20
(2, 3)(-9,-10)	0.0	0.0	0.0	0.0	2.70	4.60	5.30	6.00	6.50	6.80	6.80	7.40	7.60	7.60	7.80
(2, 3)(-10,-11)	0.0	0.0	0.0	0.0	10.00	12.50	13.70	13.80	13.90	13.90	14.00	14.00	14.00	14.00	14.00
(2, 3)(-11,-12)	0.0	0.0	0.70	1.00	14.40	16.70	17.50	18.30	18.50	20.00	20.30	20.30	20.30	20.30	20.30
(2, 3)(-12,-13)	0.0	0.0	0.0	1.80	4.70	5.00	5.30	5.80	5.90	7.70	7.90	7.90	7.90	7.90	7.90
(2, 3)(-13,-14)	0.0	0.0	0.0	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(2, 3)(-14,-15)	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(2, 3)(-15,-16)	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(2, 3)(18, 17)	0.0	0.0	0.0	0.10	0.80	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(2, 3)(16, 15)	0.0	0.0	0.50	0.80	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(2, 3)(12, 11)	0.0	0.20	0.80	1.70	1.70	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
(2, 3)(11, 10)	0.70	0.70	1.60	3.10	3.40	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
(2, 3)(10, 9)	0.0	0.40	1.80	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(2, 3)(9, 8)	0.20	1.20	5.60	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80
(2, 3)(2, 1)	0.0	0.0	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(1, 2)(0, -1)	0.0	0.40	0.80	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(1, 2)(-4, -5)	0.0	0.0	0.0	0.10	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.90	2.00	2.00
(1, 2)(-7, -8)	0.0	0.0	0.0	0.0	0.0	0.90	1.60	2.90	4.00	5.40	6.00	6.60	6.70	6.70	6.70
(1, 2)(-8, -9)	0.10	0.10	0.10	0.10	0.10	0.80	1.30	1.90	2.00	2.00	2.10	2.10	2.10	2.20	2.60
(1, 2)(-9,-10)	0.0	0.0	0.0	0.10	0.80	0.90	1.30	1.30	1.40	1.60	1.60	1.80	1.80	1.90	1.90
(1, 2)(-10,-11)	0.0	0.0	0.0	0.60	1.60	2.50	4.00	4.00	4.00	4.20	4.20	4.30	4.30	4.30	4.30
(1, 2)(-11,-12)	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(1, 2)(-12,-13)	0.0	0.10	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
(1, 2)(-14,-15)	0.0	0.10	0.80	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(1, 2)(-16,-17)	0.0	0.60	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(1, 2)(17, 16)	0.0	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(1, 2)(16, 15)	0.0	0.0	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(1, 2)(10, 9)	0.0	0.0	0.20	1.20	1.50	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
(1, 2)(9, 8)	0.20	0.20	0.60	0.70	1.30	1.30	1.60	1.60	1.90	1.90	1.90	1.90	1.90	1.90	1.90
(1, 2)(8, 7)	0.0	0.10	0.80	0.80	0.80	0.80	0.80	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.90
(1, 2)(7, 6)	0.0	0.10	1.70	2.60	3.10	3.50	3.70	3.70	3.80	3.80	3.80	3.80	3.80	3.80	3.80
(1, 2)(6, 5)	0.0	0.0	0.0	0.0	0.0	0.30	0.60	0.70	0.70	0.70	0.80	0.80	0.80	0.80	0.80
(1, 2)(2, 1)	0.0	0.50	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
(0, 1)(-7, -8)	0.0	0.0	0.0	0.0	0.0	0.0	0.20	0.50	1.00	1.40	1.60	1.90	1.90	1.90	1.90
(0, 1)(-10,-11)	0.0	0.0	0.0	0.60	1.20	1.60	4.00	4.10	4.90	4.90	4.90	4.90	4.90	4.90	4.90
(0, 1)(-11,-12)	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.90	1.80	1.80	1.80	1.80	1.80	1.80	1.80
(0, 1)(-13,-14)	0.0	0.0	0.10	0.10	0.40	0.70	1.10	1.50	1.70	1.80	1.80	1.80	1.80	1.90	1.90
(0, 1)(-15,-16)	0.0	0.0	0.0	0.0	0.20	0.70	0.90	1.20	1.60	1.60	1.60	1.60	1.60	1.60	1.60
(0, 1)(-16,-17)	0.0	0.0	0.10	0.20	0.70	0.90	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
(0, 1)(-17,-18)	0.0	0.0	0.50	1.20	1.60	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
(0, 1)(8, 7)	0.0	0.30	0.80	0.90	1.00	1.00	1.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
(0, 1)(1, 0)	0.0	0.20	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
TOTAL	2.50	33.20	140.10	237.20	466.60	537.90	568.90	585.90	597.90	606.90	610.10	616.00	619.80	621.20	622.70

Figure 3 continued (2).

TTAA OBSERVATION RECEIPT PERCENTAGES FOR 00Z 84/10/17 TO 00Z 84/10/26 10 CASES

RETENTION INFO: 0.0 0.0 0.0 0.0 0.0 90.00 0.0 0.0 0

REPORT TYPES: 11 21 0 0 0 LZERO=

(LAT)(LON)	INDEX	00+ 00	00+ 30	01+ 00	01+ 30	02+ 00	02+ 30	03+ 00	03+ 30	04+ 00	04+ 30	05+ 00	06+ 00	07+ 00	08+ 00	TOTAL	AV NUM	AV DELAY	STD DEV
(8, 9)	(-5, -6)	0	0	0	0	90	100	100	100	100	100	100	100	100	100	100	1.00	1.47	0.10
(8, 9)	(9, 8)	0	0	30	80	100	100	100	100	100	100	100	100	100	100	100	1.00	1.16	0.19
(8, 9)	(7, 6)	0	0	0	20	70	100	100	100	100	100	100	100	100	100	100	1.00	1.47	0.17
(7, 8)	(-1, -2)	0	0	0	0	55	80	90	95	100	100	100	100	100	100	100	2.00	2.11	0.32
(7, 8)	(-5, -6)	0	0	0	0	75	87	87	87	100	100	100	100	100	100	100	0.80	2.05	0.43
(7, 8)	(-6, -7)	0	0	0	0	77	100	100	100	100	100	100	100	100	100	100	0.90	1.49	0.13
(7, 8)	(-7, -8)	0	0	0	0	90	100	100	100	100	100	100	100	100	100	100	1.00	1.49	0.13
(7, 8)	(-8, -9)	0	0	0	0	64	85	100	100	100	100	100	100	100	100	100	1.40	2.01	0.23
(7, 8)	(-10,-11)	0	0	0	0	90	100	100	100	100	100	100	100	100	100	100	2.00	1.48	0.09
(7, 8)	(-11,-12)	0	0	0	0	90	100	100	100	100	100	100	100	100	100	100	1.00	1.48	0.10
(7, 8)	(-12,-13)	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	1.00	1.45	0.07
(7, 8)	(-13,-14)	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	1.00	1.46	0.07
(7, 8)	(-14,-15)	0	0	0	0	90	100	100	100	100	100	100	100	100	100	100	1.00	1.46	0.08
(7, 8)	(-15,-16)	0	0	0	0	88	100	100	100	100	100	100	100	100	100	100	0.90	1.53	0.06
(7, 8)	(-16,-17)	0	0	0	0	70	70	90	90	90	90	100	100	100	100	100	1.00	2.16	0.59
(7, 8)	(18, 17)	0	0	0	0	90	90	90	90	90	90	100	100	100	100	100	1.00	2.03	0.58
(7, 8)	(16, 15)	0	0	40	100	100	100	100	100	100	100	100	100	100	100	100	1.00	1.06	0.07
(7, 8)	(15, 14)	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.58	0.01
(7, 8)	(13, 12)	0	0	0	10	90	100	100	100	100	100	100	100	100	100	100	1.00	1.39	0.11
(7, 8)	(12, 11)	0	0	10	10	80	100	100	100	100	100	100	100	100	100	100	1.00	1.46	0.19
(7, 8)	(10, 9)	0	0	30	90	90	100	100	100	100	100	100	100	100	100	100	1.00	1.20	0.24
(7, 8)	(7, 6)	0	22	44	100	100	100	100	100	100	100	100	100	100	100	100	0.90	0.56	0.28
(7, 8)	(3, 2)	0	0	0	33	77	100	100	100	100	100	100	100	100	100	100	0.90	1.42	0.22
(7, 8)	(2, 1)	0	0	0	40	80	100	100	100	100	100	100	100	100	100	100	1.00	1.40	0.22
(7, 8)	(1, 0)	0	0	0	0	37	87	100	100	100	100	100	100	100	100	100	0.80	2.11	0.19
(6, 7)	(0, -1)	0	0	23	82	100	100	100	100	100	100	100	100	100	100	100	1.70	1.11	0.14
(6, 7)	(-1, -2)	0	0	13	72	96	100	100	100	100	100	100	100	100	100	100	2.90	1.20	0.19
(6, 7)	(-2, -3)	0	5	87	95	97	100	100	100	100	100	100	100	100	100	100	4.00	0.49	0.21
(6, 7)	(-3, -4)	0	0	0	59	87	93	97	100	100	100	100	100	100	100	100	4.70	1.37	0.25
(6, 7)	(-4, -5)	0	0	0	0	75	85	90	100	100	100	100	100	100	100	100	2.00	1.58	0.28
(6, 7)	(-5, -6)	0	0	0	0	80	86	90	100	100	100	100	100	100	100	100	3.00	1.56	0.28
(6, 7)	(-6, -7)	0	0	2	47	90	95	95	95	95	97	100	100	100	100	100	4.00	1.39	0.41
(6, 7)	(-7, -8)	0	0	0	60	80	80	80	80	80	80	100	100	100	100	100	1.00	2.13	1.28
(6, 7)	(-8, -9)	0	0	0	10	68	89	100	100	100	100	100	100	100	100	100	1.90	1.53	0.23
(6, 7)	(-9,-10)	0	0	0	16	83	83	83	83	83	100	100	100	100	100	100	0.60	2.02	1.02
(6, 7)	(-10,-11)	0	0	0	7	88	96	100	100	100	100	100	100	100	100	100	2.70	1.44	0.16
(6, 7)	(-11,-12)	0	0	0	0	0	70	100	100	100	100	100	100	100	100	100	1.00	2.26	0.08
(6, 7)	(-12,-13)	0	0	0	0	97	100	100	100	100	100	100	100	100	100	100	4.00	1.47	0.04
(6, 7)	(-13,-14)	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	0.20	1.46	0.04
(6, 7)	(-14,-15)	0	0	0	0	55	66	66	66	77	77	77	77	100	100	100	0.90	2.59	1.46
(6, 7)	(-15,-16)	0	0	0	0	75	95	100	100	100	100	100	100	100	100	100	2.00	1.58	0.14
(6, 7)	(-16,-17)	0	0	0	0	36	36	88	92	92	96	96	96	100	100	100	2.50	2.40	1.01
(6, 7)	(-17,-18)	0	0	0	0	59	95	95	100	100	100	100	100	100	100	100	2.20	2.04	0.16
(6, 7)	(18, 17)	0	0	0	0	90	90	90	90	90	90	100	100	100	100	100	2.00	2.03	0.58
(6, 7)	(17, 16)	0	0	47	60	87	90	90	95	97	97	100	100	100	100	100	4.00	1.31	0.52
(6, 7)	(16, 15)	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	2.00	0.58	0.01
(6, 7)	(15, 14)	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.58	0.01
(6, 7)	(14, 13)	0	5	35	50	95	100	100	100	100	100	100	100	100	100	100	2.00	1.19	0.31
(6, 7)	(13, 12)	0	0	0	33	100	100	100	100	100	100	100	100	100	100	100	0.90	1.35	0.07
(6, 7)	(12, 11)	0	0	30	80	90	100	100	100	100	100	100	100	100	100	100	1.00	1.15	0.27
(6, 7)	(11, 10)	0	0	12	50	75	75	100	100	100	100	100	100	100	100	100	0.80	1.41	0.38
(6, 7)	(10, 9)	0	0	50	70	80	100	100	100	100	100	100	100	100	100	100	1.00	1.19	0.31
(6, 7)	(9, 8)	0	0	45	80	90	95	100	100	100	100	100	100	100	100	100	2.00	1.14	0.31
(6, 7)	(7, 6)	0	0	70	90	90	100	100	100	100	100	100	100	100	100	100	1.00	1.05	0.23
(6, 7)	(6, 5)	0	0	20	40	70	100	100	100	100	100	100	100	100	100	100	1.00	1.37	0.31
(6, 7)	(5, 4)	0	0	20	40	70	100	100	100	100	100	100	100	100	100	100	1.00	1.37	0.31
(6, 7)	(4, 3)	0	0	0	40	80	100	100	100	100	100	100	100	100	100	100	1.00	1.40	0.22
(6, 7)	(3, 2)	0	10	20	60	100	100	100	100	100	100	100	100	100	100	100	1.00	1.16	0.23
(6, 7)	(1, 0)	15	50	50	100	100	100	100	100	100	100	100	100	100	100	100	2.00	0.43	0.38
(5, 6)	(0, -1)	0	21	52	78	83	90	91	97	97	100	100	100	100	100	100	9.60	1.14	0.52
(5, 6)	(-1, -2)	0	6	17	43	90	94	94	100	100	100	100	100	100	100	100	11.70	1.31	0.38
(5, 6)	(-2, -3)	0	0	5	41	88	96	96	98	98	100	100	100	100	100	100	8.90	1.38	0.31
(5, 6)	(-3, -4)	1	1	2	29	84	89	90	95	97	100	100	100	100	100	100	10.20	1.47	0.42
(5, 6)	(-4, -5)	0	0	1	20	77	91	93	98	100	100	100	100	100	100	100	5.80	1.46	0.32
(5, 6)	(-5, -6)	0	0	0	26	76	87	87	96	98	98	98	100	100	100	100	5.60	1.53	0.44
(5, 6)	(-6, -7)	0	0	0	45	82	90	92	92	97	97	97	100	100	100	100	4.00	1.47	0.49
(5, 6)	(-7, -8)	0	0	0	61	73	76	76	76	88	88	88	100	100	100	100	2.60	2.09	1.25
(5, 6)	(-8, -9)	0	0	8	48	77	85	85	91	94	94	94	100	100	100	100	3.50	1.52	1.05
(5, 6)	(-9,-10)	0	0	0	15	51	84	98	98	98	98	100	100	100	100	100	5.20	2.02	0.34
(5, 6)	(-10,-11)	0	0	0	10	60	91	96	100	100	100	100	100	100	100	100	6.00	1.57	0.25
(5, 6)	(-11,-12)	0	0	0	20	98	98	98	98	98	98	100	100	100	100	100	4.90	1.42	0.29
(5, 6)	(-12,-13)	0	0	0	3	80	88	92	92	96	100	100	100	100	100	100	2.60	2.01	0.40
(5, 6)	(-13,-14)	0	0	0	5	64	86	100	100	100	100	100	100	100	100	100	3.70	1.59	0.22

Figure 4. Receipt time minus map time (R-M) for TEMP Part A for ten 00Z cases, October 17-26, 1984 segmented by 10x10 degree latitude/longitude "boxes". See text for description of listing and parameters selected.

CONTINUATION OF ABOVE LIST

(LAT)(LON) INDEX	00+ 00	00+ 30	01+ 00	01+ 30	02+ 00	02+ 30	03+ 00	03+ 30	04+ 00	04+ 30	05+ 00	06+ 00	07+ 00	08+ 00	TOTAL	AV NUM	AV DELAY	STD DEV
(5, 6)(-14,-15)	0	0	0	13	73	86	100	100	100	100	100	100	100	100	100	3.00	1.54	0.25
(5, 6)(-15,-16)	0	0	0	20	76	96	100	100	100	100	100	100	100	100	100	3.00	1.47	0.19
(5, 6)(-16,-17)	0	0	0	22	66	83	88	94	94	100	100	100	100	100	100	1.80	1.57	0.43
(5, 6)(-17,-18)	0	0	0	0	20	30	70	70	80	80	80	90	100	100	100	1.00	3.15	1.31
(5, 6)(18, 17)	0	0	58	82	88	94	94	100	100	100	100	100	100	100	100	1.70	1.17	0.35
(5, 6)(17, 16)	0	0	77	100	100	100	100	100	100	100	100	100	100	100	100	0.90	1.01	0.07
(5, 6)(16, 15)	0	0	90	100	100	100	100	100	100	100	100	100	100	100	100	2.00	0.59	0.04
(5, 6)(14, 13)	0	0	50	88	100	100	100	100	100	100	100	100	100	100	100	1.80	1.11	0.16
(5, 6)(13, 12)	0	6	70	70	93	100	100	100	100	100	100	100	100	100	100	3.00	1.04	0.32
(5, 6)(12, 11)	0	0	70	80	85	95	100	100	100	100	100	100	100	100	100	2.00	1.06	0.33
(5, 6)(11, 10)	0	10	60	80	100	100	100	100	100	100	100	100	100	100	100	1.00	1.07	0.27
(5, 6)(10, 9)	0	0	60	100	100	100	100	100	100	100	100	100	100	100	100	1.00	1.06	0.16
(5, 6)(9, 8)	0	0	55	85	95	100	100	100	100	100	100	100	100	100	100	2.00	1.07	0.23
(5, 6)(8, 7)	0	0	15	55	100	100	100	100	100	100	100	100	100	100	100	2.00	1.28	0.16
(5, 6)(7, 6)	0	3	36	60	93	96	100	100	100	100	100	100	100	100	100	3.00	1.17	0.32
(5, 6)(4, 3)	0	0	0	0	88	88	88	100	100	100	100	100	100	100	100	0.90	2.01	0.25
(5, 6)(2, 1)	0	0	75	75	91	100	100	100	100	100	100	100	100	100	100	1.20	1.03	0.37
(5, 6)(1, 0)	0	0	0	95	96	100	100	100	100	100	100	100	100	100	100	6.00	1.22	0.10
(4, 5)(0, -1)	0	8	44	67	79	79	79	95	96	100	100	100	100	100	100	8.10	1.31	1.02
(4, 5)(-1, -2)	0	0	18	50	86	93	98	98	98	98	100	100	100	100	100	6.60	1.32	0.36
(4, 5)(-2, -3)	0	0	16	28	61	91	94	96	100	100	100	100	100	100	100	11.10	1.46	0.41
(4, 5)(-3, -4)	0	0	0	1	83	98	98	98	98	98	98	100	100	100	100	6.20	1.52	0.28
(4, 5)(-4, -5)	0	0	0	3	45	71	81	89	93	94	94	94	98	98	100	5.90	2.29	1.19
(4, 5)(-5, -6)	0	0	0	43	90	90	93	96	96	96	100	100	100	100	100	3.00	1.41	0.43
(4, 5)(-6, -7)	0	0	0	31	74	82	88	91	91	94	94	100	100	100	100	3.50	2.01	1.02
(4, 5)(-7, -8)	0	0	0	30	72	80	81	81	90	94	94	100	100	100	100	5.50	2.07	1.07
(4, 5)(-8, -9)	0	0	0	23	58	86	97	97	100	100	100	100	100	100	100	7.40	1.53	0.33
(4, 5)(-9,-10)	0	0	0	8	60	87	91	94	96	96	100	100	100	100	100	5.60	1.59	0.45
(4, 5)(-10,-11)	0	0	0	0	38	89	93	95	97	97	97	97	100	100	100	7.30	2.13	0.49
(4, 5)(-11,-12)	0	0	0	0	46	87	93	96	97	97	97	97	100	100	100	8.10	2.07	0.47
(4, 5)(-12,-13)	0	0	0	2	75	90	97	97	97	97	97	97	100	100	100	11.90	1.52	0.46
(4, 5)(-13,-14)	0	0	0	3	64	96	96	100	100	100	100	100	100	100	100	2.80	1.59	0.23
(4, 5)(-14,-15)	0	0	0	59	95	95	100	100	100	100	100	100	100	100	100	6.90	1.31	0.18
(4, 5)(-15,-16)	0	0	0	42	100	100	100	100	100	100	100	100	100	100	100	0.70	1.29	0.05
(4, 5)(13, 12)	0	40	93	100	100	100	100	100	100	100	100	100	100	100	100	3.00	0.33	0.14
(4, 5)(12, 11)	2	22	96	98	100	100	100	100	100	100	100	100	100	100	100	5.00	0.38	0.14
(4, 5)(11, 10)	0	57	100	100	100	100	100	100	100	100	100	100	100	100	100	4.90	0.27	0.10
(4, 5)(10, 9)	0	32	95	97	100	100	100	100	100	100	100	100	100	100	100	4.00	0.36	0.15
(4, 5)(9, 8)	0	24	100	100	100	100	100	100	100	100	100	100	100	100	100	5.00	0.37	0.10
(4, 5)(8, 7)	0	17	85	95	97	100	100	100	100	100	100	100	100	100	100	4.00	0.47	0.22
(4, 5)(7, 6)	0	20	62	80	97	100	100	100	100	100	100	100	100	100	100	4.00	1.01	0.32
(4, 5)(6, 5)	0	15	89	89	89	100	100	100	100	100	100	100	100	100	100	1.90	0.51	0.28
(4, 5)(2, 1)	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	0.50	1.52	0.01
(4, 5)(1, 0)	0	28	88	94	97	97	97	97	97	97	97	97	100	100	100	3.50	0.53	0.55
(3, 4)(0, -1)	0	0	37	62	89	96	96	100	100	100	100	100	100	100	100	2.90	1.23	0.32
(3, 4)(-1, -2)	0	0	8	41	83	83	91	100	100	100	100	100	100	100	100	2.40	1.43	0.40
(3, 4)(-2, -3)	0	0	6	44	71	80	82	84	91	91	91	91	95	97	100	4.50	2.15	1.43
(3, 4)(-3, -4)	2	13	26	37	60	87	95	97	97	97	97	97	97	100	100	4.60	1.47	1.10
(3, 4)(-4, -5)	0	0	0	0	40	70	70	90	100	100	100	100	100	100	100	1.00	2.25	0.41
(3, 4)(-5, -6)	0	0	0	25	75	100	100	100	100	100	100	100	100	100	100	0.40	1.44	0.16
(3, 4)(-6, -7)	0	0	0	15	45	61	77	79	79	84	84	86	88	95	100	4.40	2.54	1.59
(3, 4)(-7, -8)	0	0	0	8	34	49	59	63	67	73	73	86	93	98	100	6.10	3.20	1.59
(3, 4)(-8, -9)	0	0	0	25	90	95	95	100	100	100	100	100	100	100	100	2.00	1.36	0.25
(3, 4)(-9,-10)	0	0	0	0	72	97	98	99	100	100	100	100	100	100	100	11.00	1.50	0.22
(3, 4)(-10,-11)	0	0	0	0	72	97	99	100	100	100	100	100	100	100	100	17.00	1.48	0.19
(3, 4)(-11,-12)	0	0	0	0	77	92	98	99	100	100	100	100	100	100	100	13.10	1.47	0.23
(3, 4)(-12,-13)	0	0	0	2	54	77	96	99	99	99	99	100	100	100	100	11.00	2.04	0.37
(3, 4)(-13,-14)	0	0	0	70	94	94	94	100	100	100	100	100	100	100	100	7.50	1.32	0.26
(3, 4)(-14,-15)	0	0	0	80	100	100	100	100	100	100	100	100	100	100	100	3.00	1.25	0.05
(3, 4)(13, 12)	0	5	100	100	100	100	100	100	100	100	100	100	100	100	100	1.90	0.41	0.07
(3, 4)(12, 11)	0	13	94	96	98	100	100	100	100	100	100	100	100	100	100	5.10	0.43	0.20
(3, 4)(11, 10)	0	20	98	100	100	100	100	100	100	100	100	100	100	100	100	6.00	0.38	0.10
(3, 4)(10, 9)	1	27	96	100	100	100	100	100	100	100	100	100	100	100	100	9.10	0.34	0.11
(3, 4)(9, 8)	1	31	92	96	98	98	100	100	100	100	100	100	100	100	100	8.00	0.38	0.21
(3, 4)(8, 7)	0	34	98	100	100	100	100	100	100	100	100	100	100	100	100	5.00	0.38	0.14
(3, 4)(7, 6)	0	22	55	66	100	100	100	100	100	100	100	100	100	100	100	0.90	1.03	0.29
(3, 4)(3, 2)	40	90	100	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.08	0.11
(3, 4)(1, 0)	0	0	37	70	81	88	96	96	100	100	100	100	100	100	100	2.70	1.26	0.42
(2, 3)(0, -1)	0	0	0	50	50	75	75	75	75	75	75	75	75	75	100	0.40	3.22	3.01
(2, 3)(-3, -4)	0	0	0	7	73	73	73	76	84	86	86	90	98	98	100	5.20	2.28	1.44
(2, 3)(-4, -5)	4	31	45	45	72	72	77	81	81	81	81	100	100	100	100	2.20	1.58	2.01
(2, 3)(-5, -6)	0	3	41	65	86	93	96	96	96	96	96	100	100	100	100	2.90	1.23	0.57
(2, 3)(-6, -7)	0	0	0	11	55	88	100	100	100	100	100	100	100	100	100	0.90	1.59	0.22
(2, 3)(-7, -8)	0	0	0	0	0	17	42	66	80	83	83	89	97	100	100	4.70	3.38	1.20
(2, 3)(-8, -9)	0	0	0	0	0	11	37	45	64	72	79	87	95	96	100	6.20	3.56	1.31
(2, 3)(-9,-10)	0	0	0	0	34	59	67	76	83	87	87	94	97	97	100	7.80	2.53	1.35
(2, 3)(-10,-11)	0	0	0	0	71	89	97	98	99	99	100	100	100	100	100	14.00	1.52	0.28
(2, 3)(-11,-12)	0	0	3	4	70	82	86	90	91	98	100	100	100	100	100	20.30	2.02	0.54
(2, 3)(-12,-13)	0	0	0	22	59	63	67	73	74	97	100	100	100	100	100	7.90	2.29	1.14
(2, 3)(-13,-14)	0	0	0	50	100	100	100	100	100	100	100	100	100	100	100	1.00	1.32	0.09
(2, 3)(-14,-15)	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	1.00	1.23	0.02
(2, 3)(-15,-16)	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	1.00	1.36	0.0
(2, 3)(18, 17)	0	0	0	10	80	90	100	100	100	100	100	100	100	100	100	1.00	1.52	0.19
(2, 3)(16, 15)	0	0	50	80	90	100	100	100	100	100	100	100	100	100	100	1.00	1.09	0.27
(2, 3)(12, 11)	0	11	44	94	94	100	100	100	100	100	100	100	100	100	100	1.80	1.02	0.24
(2, 3)(11, 10)	18	18	43	83	91	100	100	100	100	100	100	100	100	100	100	3.70	1.02	0.37
(2, 3)(10, 9)	0	20	90	100	100	100	100	100	100	100	100	100	100	100	100	2.00	0.38	0.13
(2, 3)(9, 8)	3	20	96	100	100	100	100	100	100	100	100	100	100	100	100	5.80	0.37	0.15
(2, 3)(2, 1)	0	0	90	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.50	0.08
(1, 2)(0, -1)	0	40	80	90	100	100	100	100	100	100	100	100	100	100	100	1.00	0.43	0.23
(1, 2)(-4, -5)	0	0	0	5	90	90	90	90	90	90	90	90	95	100	100	2.00	2.03	1.35
(1, 2)(-7, -8)	0	0	0	0	0	13	23	43	59	80	89	98	100	100	100	6.70	3.43	0.58
(1, 2)(-8, -9)	3	3	3	3	3	30	50	73	76	76	80	80	80	84	100	2.60	3.52	2.23
(1, 2)(-9,-10)	0	0	0	5	42	47	68	68	73	84	84	94	94	100	100	1.90	3.01	1.41
(1, 2)(-10,-11)	0	0	0	14	37	58	93	93	93	97	97	100	100	100	100	4.30	2.17	0.52
(1, 2)(-11,-12)	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	1.00	1.35	0.01
(1, 2)(-12,-13)	0	33	100	100	100	100	100	100	100	100	100	100	100	100	100	0.30	0.38	0.07
(1, 2)(-14,-15)	0	10	80	90	100	100	100	100	100	100	100	100	100	100	100	1.00	0.46	0.19
(1, 2)(-16,-17)	0	66	100	100	100	100	100	100	100	100	100	100	100	100	100	0.90	0.28	0.08
(1, 2)(17, 16)	0	60	100	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.29	0.11
(1, 2)(16, 15)	0	0	80	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.47	0.14
(1, 2)(10, 9)	0	0	11	70	88	100	100	100	100	100	100	100	100	100	100	1.70	1.26	0.27
(1, 2)(9, 8)	10	10	31	36	68	68	84	84	100	100	100	100	100	100	100	1.90	1.45	1.09
(1, 2)(8, 7)	0	11	88	88	88	88	88	88	100	100	100	100	100	100	100	0.90	1.01	1.02
(1, 2)(7, 6)	0	2	44	68	81	92	97	97	100	100	100	100	100	100	100	3.80	1.21	0.44
(1, 2)(6, 5)	0	0	0	0	0	37	75	87	87	87	100	100	100	100	100	0.80	2.53	0.41
(1, 2)(2, 1)	0	50	90	100	100	100	100	100	100	100	100	100	100	100	100	1.00	0.35	0.19
(0, 1)(-7, -8)	0	0	0	0	0	0	10	26	52	73	84	100	100	100	100	1.90	4.07	0.55
(0, 1)(-10,-11)	0	0	0	12	24	32	81	83	100	100	100	100	100	100	100	4.90	2.34	0.45
(0, 1)(-11,-12)	0	0	0	0	0	0	50	50	100	100	100	100	100	100	100	1.80	3.15	0.30
(0, 1)(-13,-14)	0	0	5	5	21	36	57	78	89	94	94	94	94	100	100	1.90	2.57	1.23
(0, 1)(-15,-16)	0	0	0	0	12	43	56	75	100	100	100	100	100	100	100	1.60	2.50	0.40
(0, 1)(-16,-17)	0	0	9	18	63	81	90	100	100	100	100	100	100	100	100	1.10	1.52	0.37
(0, 1)(-17,-18)	0	0	25	60	80	100	100	100	100	100	100	100	100	100	100	2.00	1.28	0.28
(0, 1)(8, 7)	0	27	72	81	90	90	90	100	100	100	100	100	100	100	100	1.10	0.59	0.53
(0, 1)(1, 0)	0	33	100	100	100	100	100	100	100	100	100	100	100	100	100	0.60	0.38	0.07
TOTAL	0	5	22	38	74	86	91	94	96	97	98	98	99	99	100	622.70	1.44	1.04

Figure 4 continued (2).

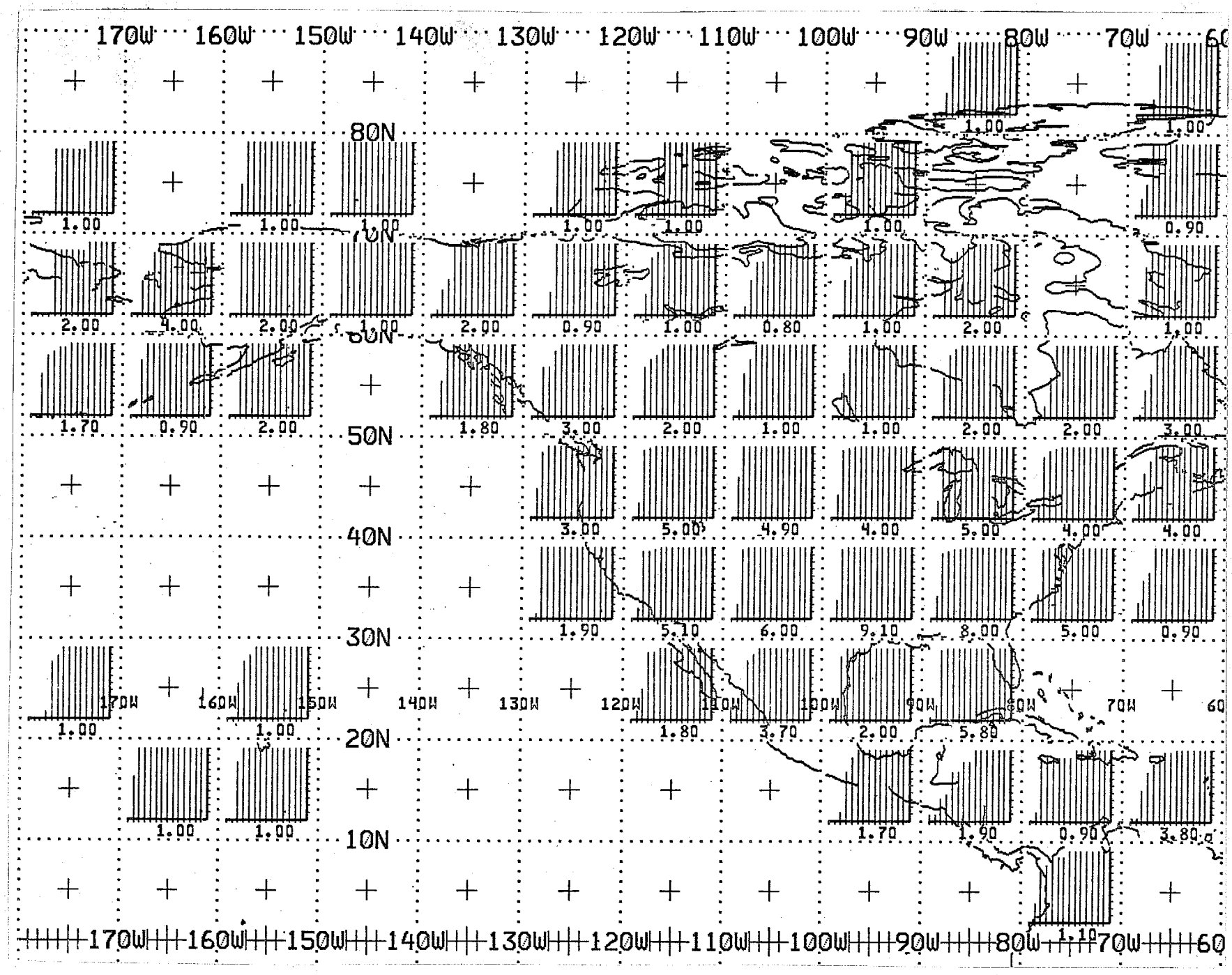

Figure 5. Receipt time minus map time (R-M) for TEMP Part A for ten 00Z cases, October 17-26, 1984. See text for description of display and parameters selected.

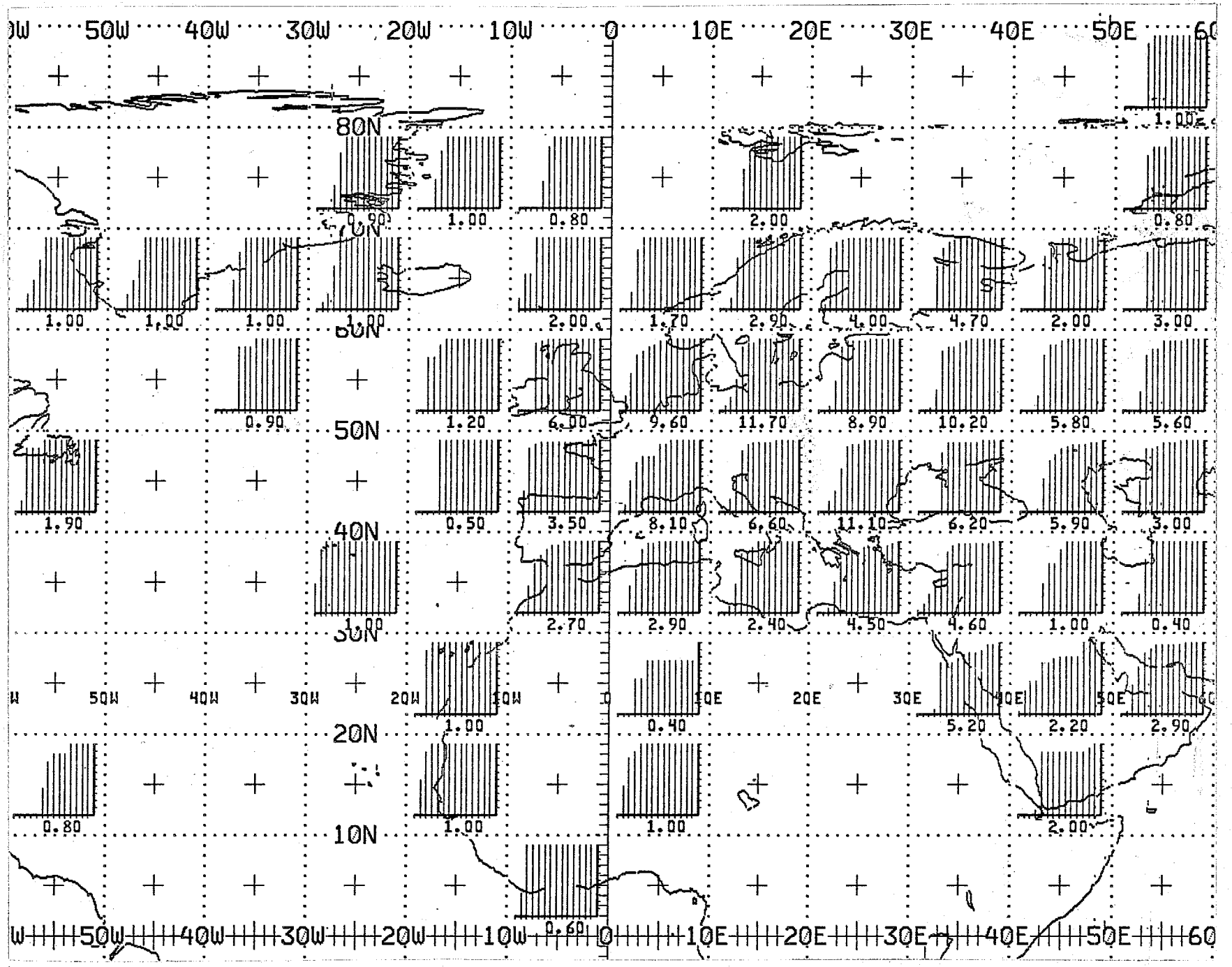

Figure 5 continued (2).

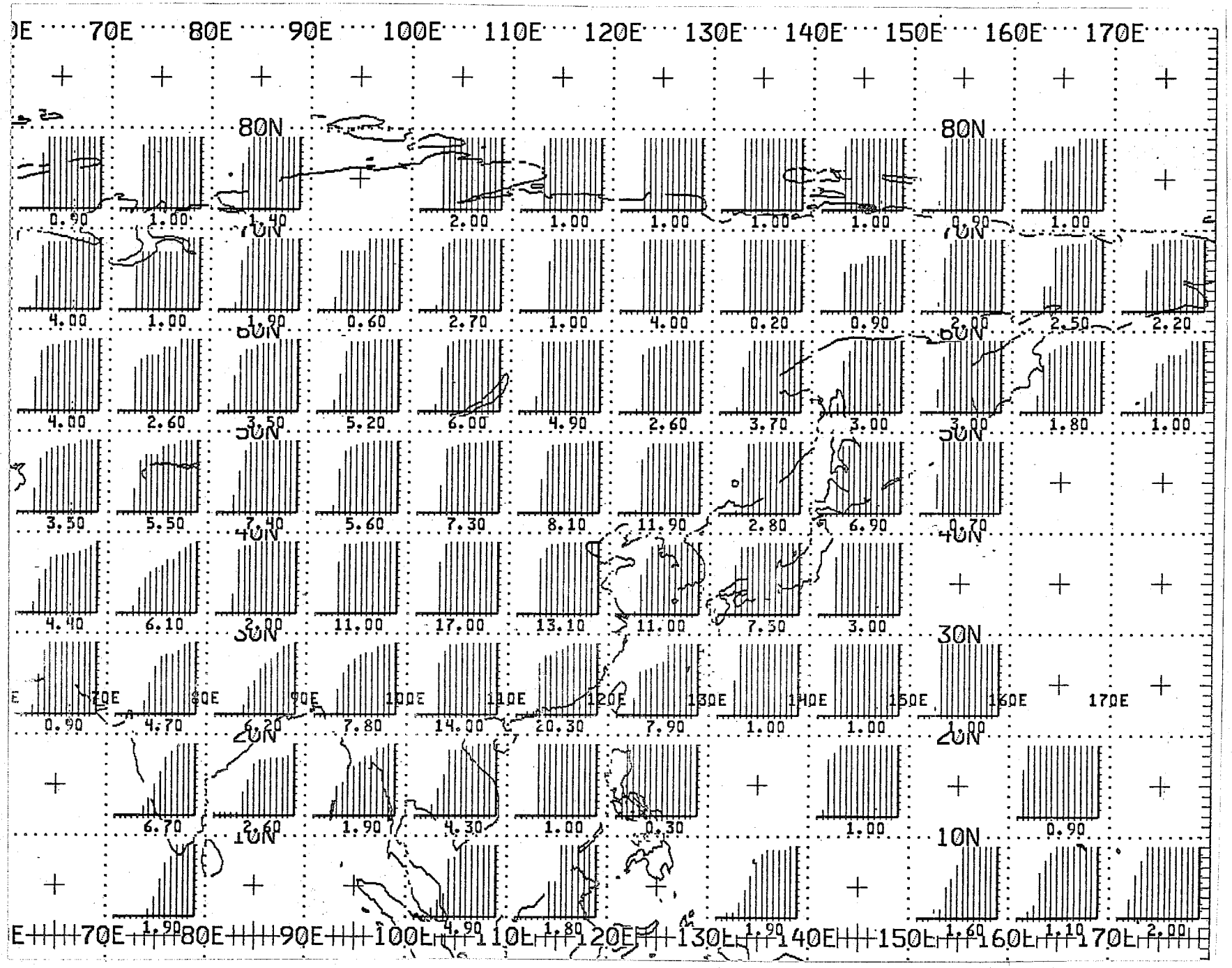

Figure 5 continued (3).

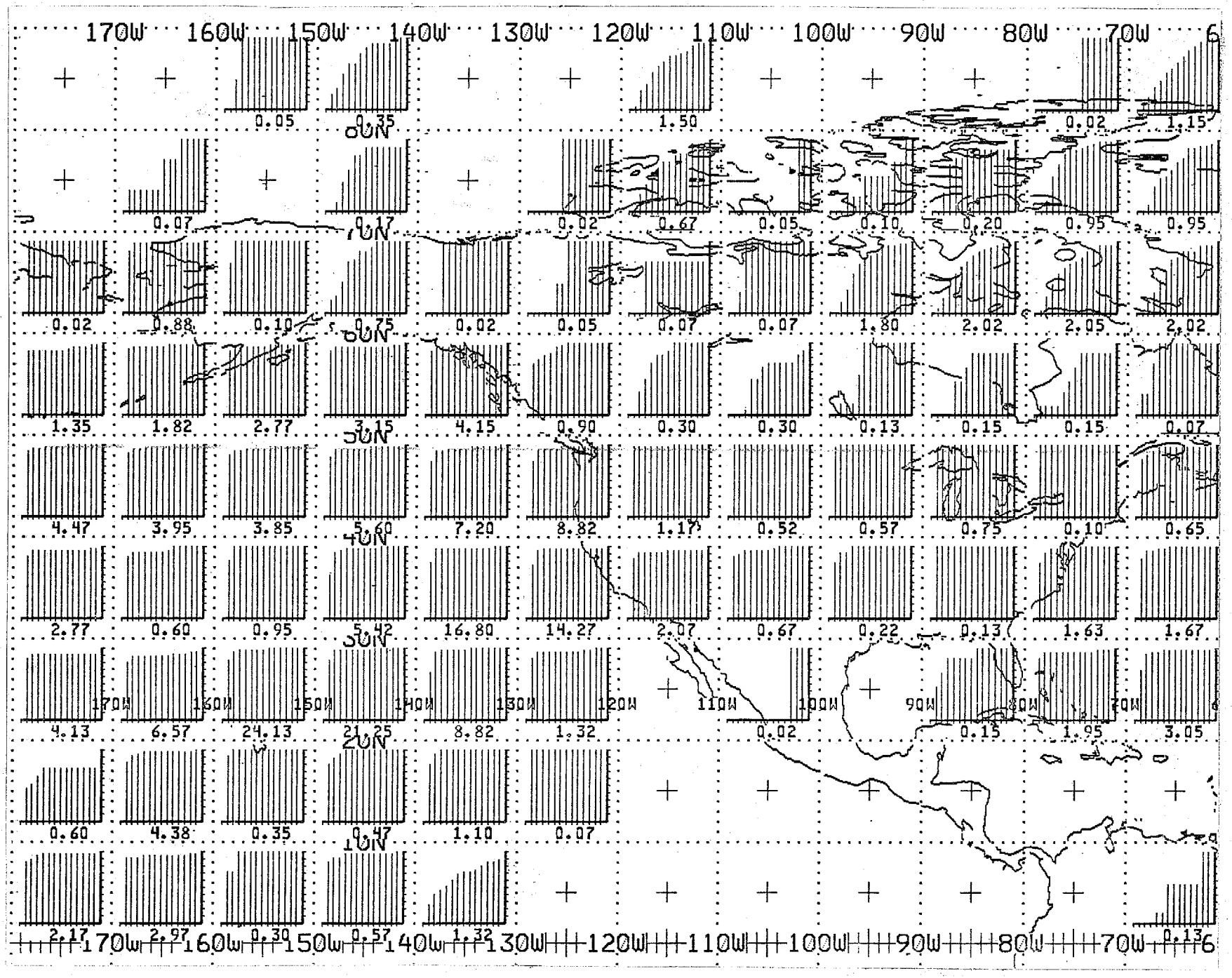

Figure 6. Receipt time minus observation time (R-O) for AIRCFT for forty cases (00, 06, 12, 18Z), 12Z October 19 thru 06Z October 29, 1984. See text for description of display and parameters selected.

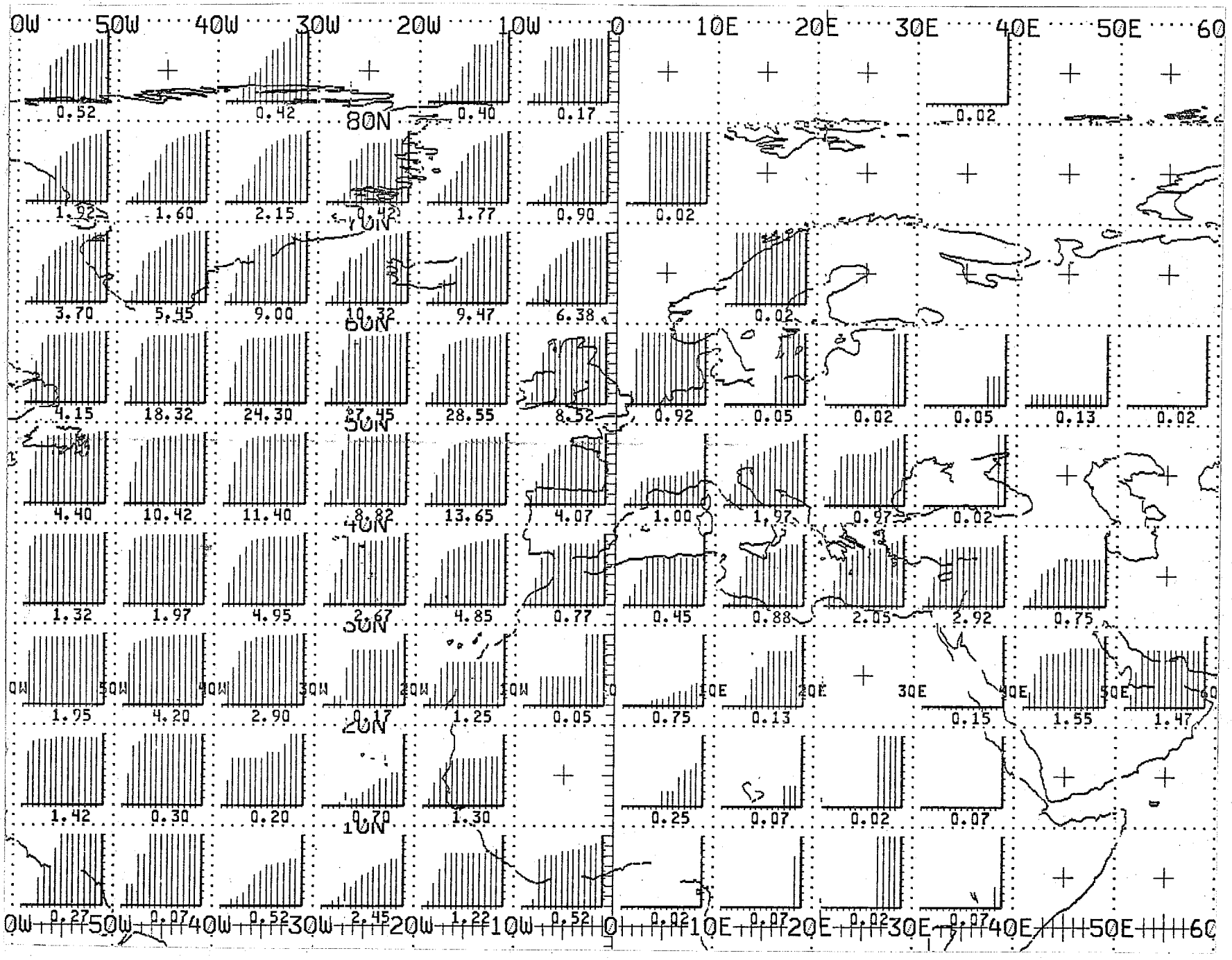

Figure 6 continued (2).

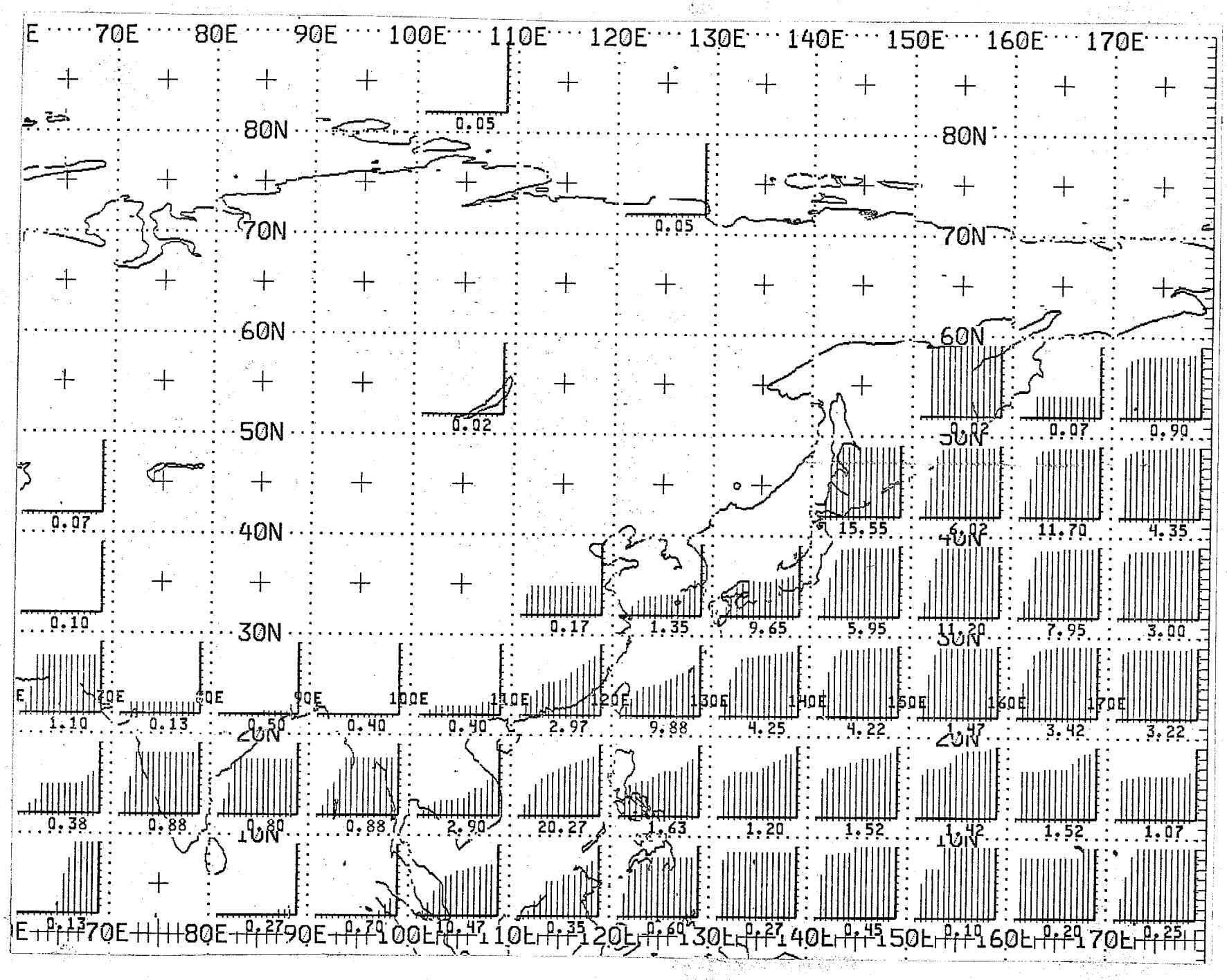

Figure 6 continued (3).