DATA ANALYSIS REPORT

for

ATS-F
COMSAT MILLIMETER WAVE PROPAGATION EXPERIMENT
PART II

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND

Under

NASA CONTRACT NAS 5-21616

By

COMSAT Laboratories
Clarksburg, Maryland 20734

November 1976

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16. Abstract

The Data Analysis Report: Part II is a collection of all the plots and tables resulting from the analysis of the propagation data collected by the 13/18 GHz COMSAT Propagation Experiment under NASA Contract NAS 5-21616. Plots and tables are presented for the duration of the experiment and for each of the four time periods (quarters); tables only are presented for each month of the data collection period.

These data are derived from measurements of path attenuation for signals transmitted from ground transmit terminals to the ATS-6 from dual frequency sites and single frequency diversity sites, and from point rain rate measurements at each transmit site. A discussion of the experiment and data reduction techniques and a detailed discussion of each type of plot and table is given in Part I.

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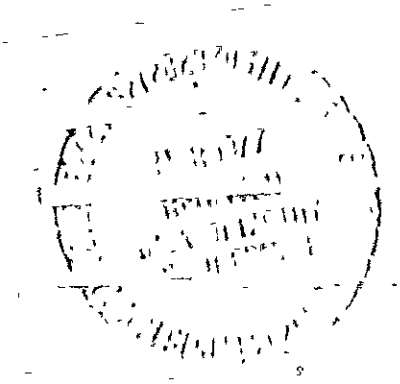

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1.0 SUMMARY

The Data Analysis Report: Part II is a collection of the results of the 13/18 GHz COMSAT Propagation Experiment (CPE) whose purpose was to measure attenuation caused by hydrometeors along slant paths from transmitting terminals on the ground in the eastern U.S.A. to the ATS-6 satellite and to assess the effectiveness of diversity in overcoming such attenuation. This document consists almost entirely of plots and tables of the results of analysis of the data base collected, reduced and analyzed for the CPE under NASA contract NAS 5-21616. (A thorough review of the experiment, experimental hardware, data reduction problems and procedures, and a detailed discussion of the various types of plots and tables is presented in the Data Analysis Report: Part I.)

The plots and tables resulting from the statistical analyses are presented for 15 dual frequency (13 and 18 GHz) transmit sites and the 3 four-station site diversity locations. These include, for the dual frequency sites for the individual 13 and 18 GHz carriers, cumulative attenuation (fading) statistics, fade duration tabulations at 3, 6, 10, 15, 20 and 25 dB, diurnal fade distribution histograms and tabulations, joint cumulative fading for the 13 GHz carriers taken 1 to 10 at a time and joint cumulative fading for the 18 GHz dual frequency site carriers taken 1 to 10 at a time. For the joint on times of the dual frequency site 13 and 18 GHz carriers, cumulative fading statistics and 13-18 GHz fade depth correlation results are presented. For the diversity sites, these plots and tables include cumulative attenuations statistics for the individual carriers (four 18 GHz and one 13 GHz), for the joint on time of pairs of 18 GHz carriers and the better of either (i.e. simple

switched diversity) for each of the six pairs. The six diversity carriers are then compared. Diversity gain is then presented in plot and tabular form. Cumulative point rain rate statistics are given for each site. Finally, the results of extrapolation of the point rainfall and attenuation data base are presented in terms of extrapolated cumulative statistics for attenuation and for rain rate.

The above results were accumulated in monthly, "quarterly" and duration of the experiment files (except for the extrapolation work, which was performed only for the duration of the experiment). Tables were printed for the duration of the experiment, "quarterly" and monthly files. Plots were made for the duration of the experiment and "quarterly" files.

2.0 INTRODUCTION

The purpose of this document is to present the output of the data analysis phase of the 13/18 GHz COMSAT Propagation Experiment (CPE). As such, it is restricted to summary presentation of textual material, and references to other reports and papers will be used to provide further elaboration and comment.

The purpose of the CPE was to measure the attenuation at 13 and 18 GHz caused by rain, clouds and snow along the slant paths from ground transmitting terminals (GTT's) to the ATS-6 satellite, to analyze the resultant data base to obtain the statistics of attenuation at 13 and 18 GHz, and to measure the effectiveness of site diversity in reducing such attenuation for sites located in the eastern U.S.A. [1]. 15 dual frequency (13 and 18 GHz) GTT's were located at 15 sites east of the Mississippi River. 9 single frequency GTT's (18 GHz only) were

located at 3 diversity sites, 3 to a site. Each diversity site consisted of a dual frequency GTT and 3 single frequency GTT's in a more or less east-west line spaced over 24 miles to achieve 4 mile spacing increments. A pictorial representation of the CPE is given in Figure 2-1. The GTT's typified by that shown in Figure 2-2 transmitted to the ATS-6 satellite stationed in geostationary orbit at about 94° West Longitude. The 13 and 18 GHz signals were received at the ATS-6 by the COMSAT Labs-built ATS-6 CPE transponder [2] shown in Figure 2-3 which translated them into two frequency bands near 4.15 GHz and relayed them to a central receiving and data acquisition site (DAQS) at Andover, Me., shown in Figure 2-4, where the signals were digitized and recorded for later analysis at COMSAT Labs [3]. Detailed descriptions of the hardware elements of the CPE are given in the "ATS-F COMSAT Millimeter Wave Experiment Final Hardware Report" [4].

The dual frequency GTT's were located near Tampa, Fla., Atlanta, Ga., New Orleans, La., Fayetteville, N.C., Asheville, N.C., Nashville, Tenn., Washington, D.C., Philadelphia, Pa., Andover, Me., Detroit, Mich., Wallops Island, Va., Miami, Fla., Mississippi State University (Starkville), Miss., Ohio State University (Columbus), Ohio, and Boston (Cambridge), Mass. The latter three locales were equipped with three additonal 18 GHz space diversity terminals (as portrayed in the inset of Figure 2-1). Each GTT site was equipped with a tipping bucket rain gauge and recorder.

A significant body of data was collected, reduced and processed. A description of the data reduction and processing is given in "Data Processing Report on the ATS-F COMSAT Millimeter Wave Propagation Experiment" [5]. Some 50,000 hours of processed 13 GHz transmit path data and 51,000 hours of processed

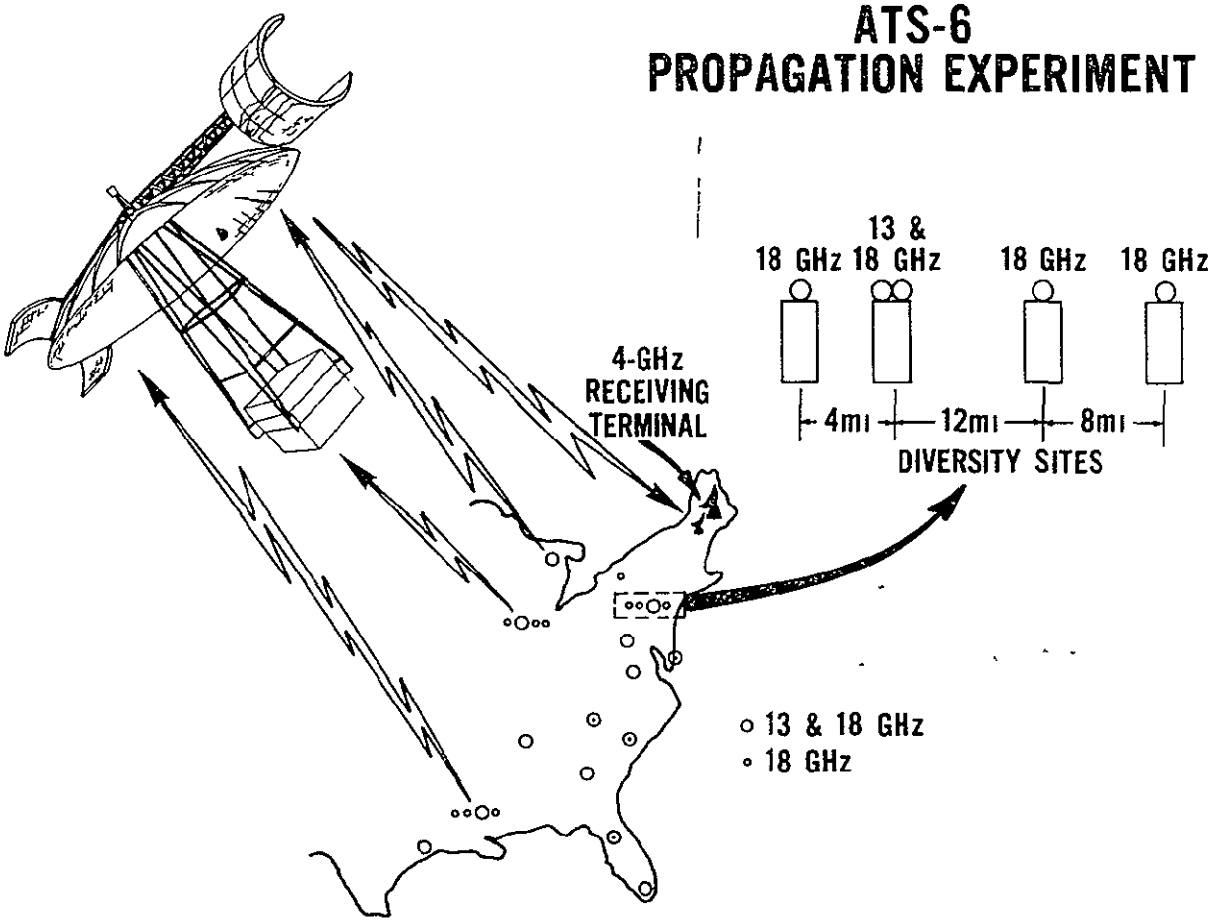

Figure 2-1 - ATS-6 13/18 GHz COMSAT Propagation Experiment

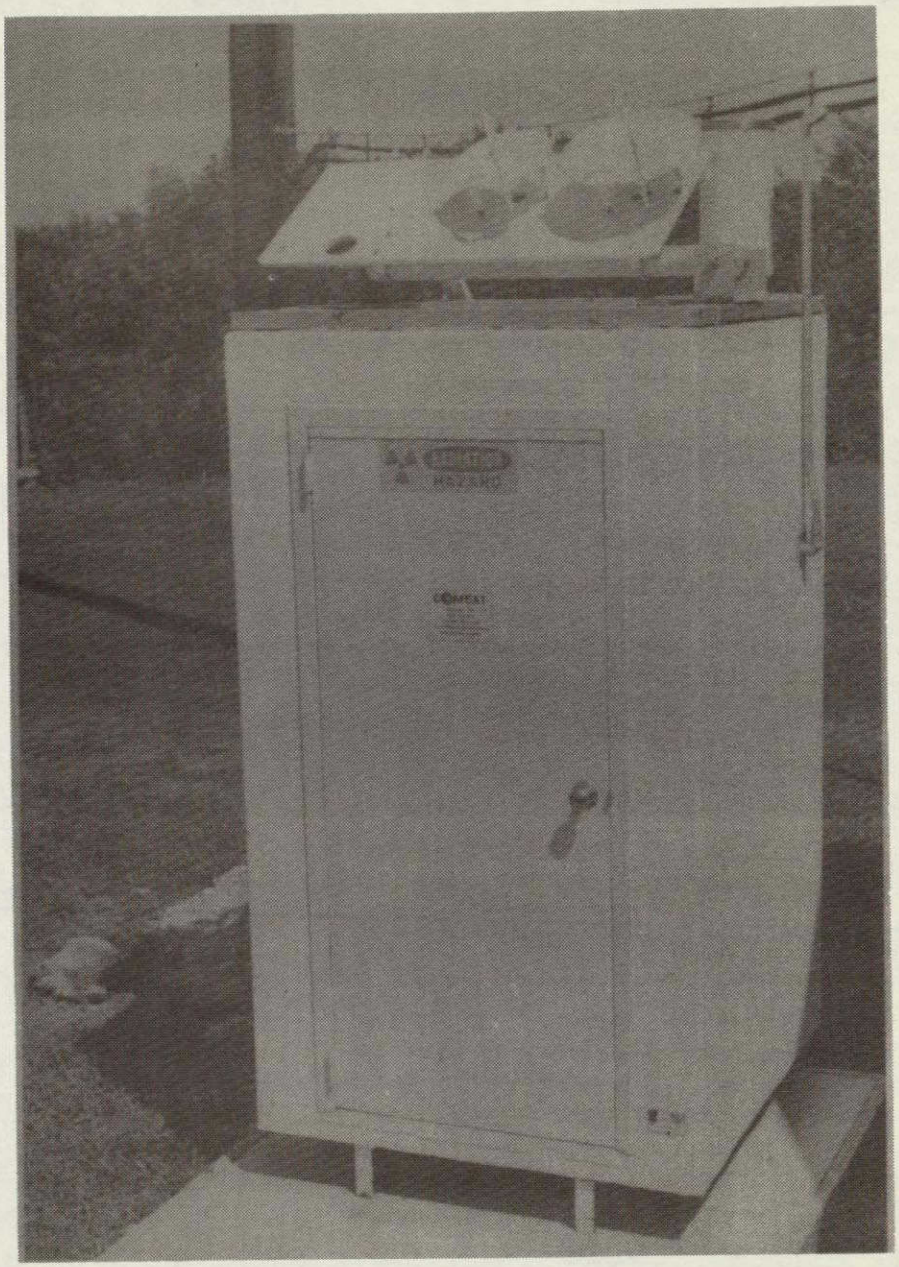

Figure 2-2 - ATS-6 CPE Ground Transmit Terminal

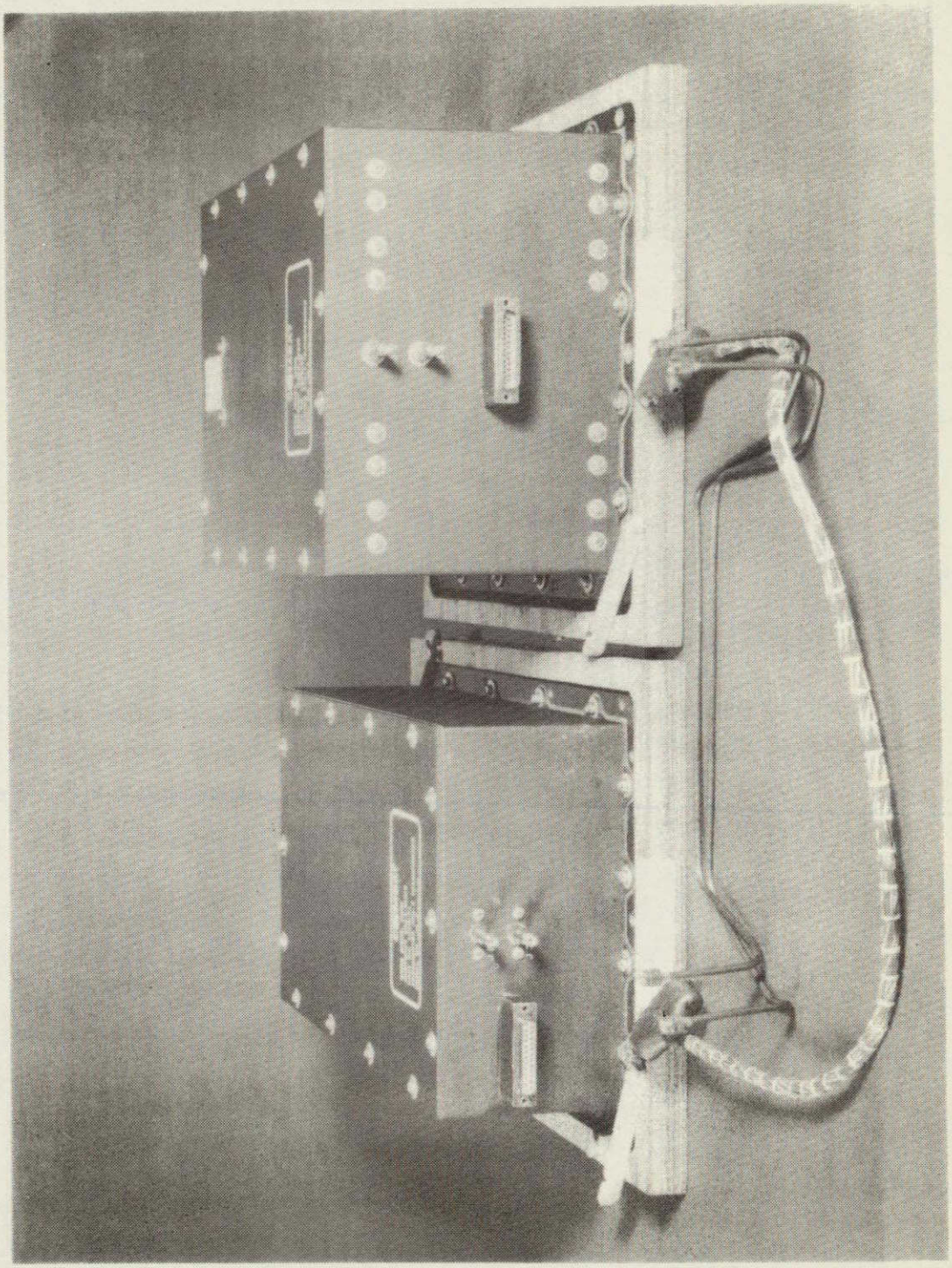

Figure 2-3 - ATS-6 CPE Flight Transponder

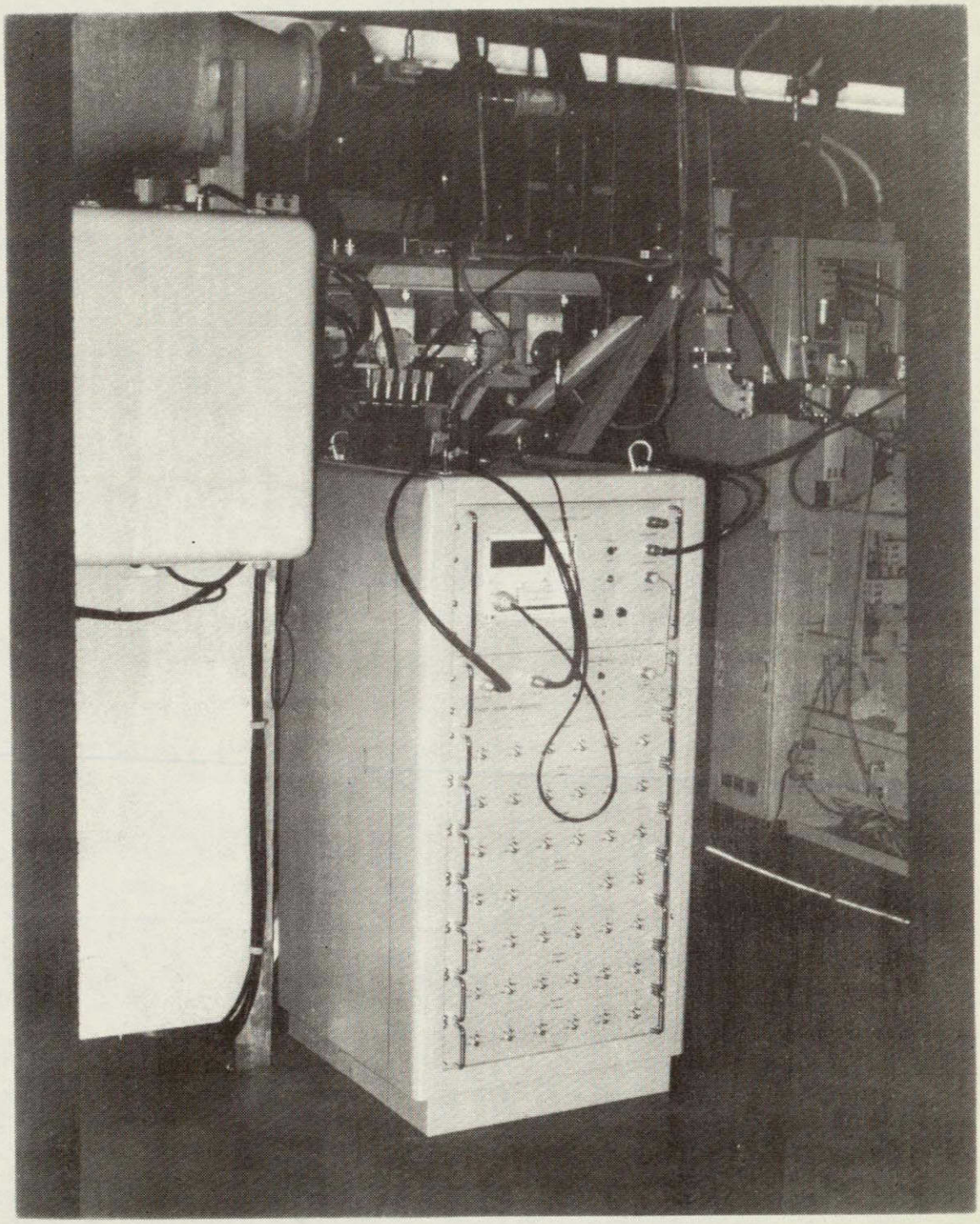

Figure 2-4 a. ATS-6 CPE Receiving and Data Acquisition System - Upper Cab Unit

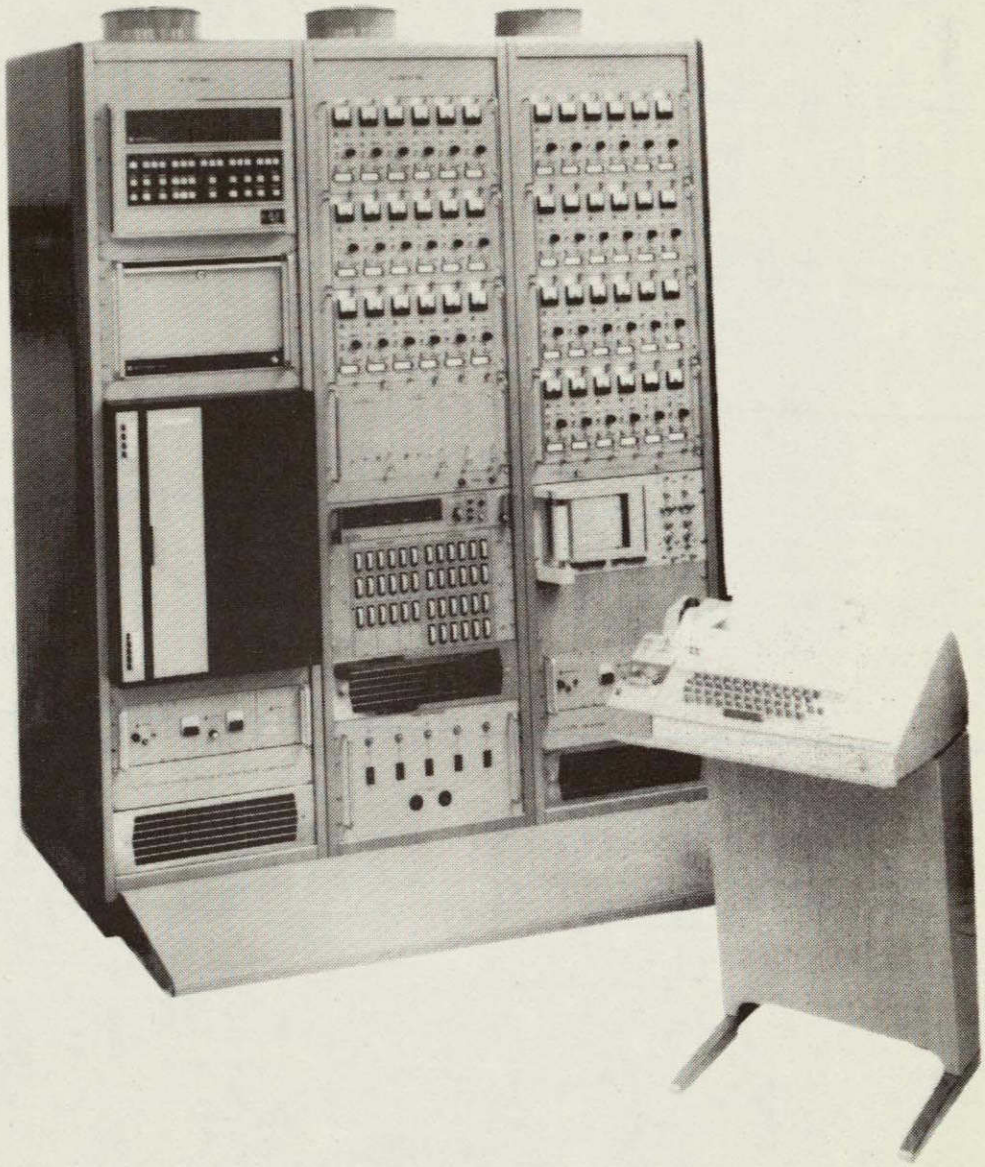

Figure 2-4 b. ATS-6 CPE Receiving and Data Acquisition System - Lower Cab Unit

18 GHz transmit path data were input into the final data base along with some 113,000 hours of processed point rain data taken at the GTT sites. Data was lost principally because of satellite attitude changes required by other ATS-6 experiments and projects, equipment failures and receive system calibration, and the limited time the CPE was conducted in the U.S.A. (from mid July 1974 to mid May 1975).

The "Data Analysis Report on the ATS-F COMSAT Millimeter Wave Propagation Experiment: Part I" [6] contains a description of the experiment, its hardware, the problems encountered in data reduction, the procedures used in obtaining the various statistics and descriptions of the various plots and tables, using data collected from the Fayetteville dual frequency GTT site and the Boston diversity GTT sites as examples. This report, "Data Analysis Report on ATS-F COMSAT Millimeter Wave Propagation Experiment: Part II", provides a full set of plots and tables.

3.0 RESULTS OF COMPUTER DATA ANALYSIS

The results of the data analysis performed on the computer are given in attachments to this section in the form of plots and tables of attenuation (fade) statistics and rain statistics for the dual frequency sites and the diversity sites. Plots (graphs) of these results are presented for the duration of the experiment and for quarters*. Tables are presented for

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* Quarters were defined by NASA/GSFC as follows:
First quarter: 1974 days 202 to 273
Second quarter: 1974 days 274 to 365
Third quarter: 1975 days 1 to 59
Fourth quarter: 1975 days 60 to 137

the duration of the experiment, quarters and calendar months. Additionally, graphs and tables are presented for the duration of the experiment for the extrapolated cumulative fade and rain statistics. Attachment 3-1 contains the plots and tables for the duration of the experiment; Attachment 3-2 contains those for the quarters; and Attachment 3-3 contains the monthly tables. The Lists of Illustrations and Tables provides the means for locating results for specific locations and periods of time.

4.0 ACKNOWLEDGEMENT

The results of the data analysis necessarily builds on the work that was performed in all the earlier stages of the ATS-F 13/18 GHz COMSAT Propagation Experiment. The contributions of those who performed this work is again gratefully acknowledged.

The work entailed in producing the information contained in this particular document was performed by my colleagues in the Propagation Studies Department, the Mini/Micro-Based Systems Department and the Computer Operations Department. In particular, the efforts of J. P. Steinhorn, J. Stein, H. L. Parker, P. L. Clark, P. Ackerman, K. Mekhayarajjananonth, and W. Holloway and his crew are acknowledged. Organizing, assembling and listing the tables and graphs in this document was no small task. The services of Mrs. Norma Broughman and clerical staff particularly Mrs. Karen Crook and Mrs. Carl Daganhardt are acknowledged.

The support and encouragement of Messrs. Davis and Pollack are most gratefully acknowledged, as is that of J. L. King of NASA/GSFC.

Geoffrey Hyde

5.0 REFERENCES

[1] L. H. Westerlund, J. L. Levatich and A. Buige, "The ATS-F COMSAT Millimeter Wave Propagation Experiment," CTR, Vol. 3, No. 2, Fall 1973, pp. 323-340.

[2] A. L. Berman, et. al., "The ATS-F COMSAT Propagation Experiment Transponder," CTR, Vol. 3, No. 2, Fall 1973, pp. 341-373.

[3] G. Hyde, "ATS-6: Preliminary Results from the 13/18 GHz COMSAT Propagation Experiment," IEEE Transaction No. 6, November 1975, pp. 1084-1094.

[4] G.Szarvas, et. al., "ATS-F COMSAT Millimeter Wave Experiment Final Hardware Report," report under NASA contract NAS 5-21616, September 1976.

[5] H. L. Parker, et. al., "Data Processing Report on the ATS-F COMSAT Millimeter Wave Propagation Experiment," report under NASA contract NAS 5-21616, October 1976.

[6] G. Hyde, "Data Analysis Report: Part I on the ATS-F COMSAT Millimeter Wave Propagation Experiment," report under NASA contract NAS 5-21616, October 1976.

DATA ANALYSIS REPORT

for

ATS–F
COMSAT MILLIMETER WAVE PROPAGATION EXPERIMENT
PART II

ATTACHMENT I

Prepared for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND

Under

NASA CONTRACT NAS 5–21616

By

COMSAT Laboratories
Clarksburg, Maryland 20734

September 1976

ATTACHMENT 1

Graphs and Tables for the Duration of the CPE

Attachment 1 contains graphs and tables of data representing the output of the data analysis performed on the computer for the processible data collected by the CPE, for the duration of the CPE, starting with July, 1974 and ending with May 1975. It contains graphical and/or tabular presentations for the dual frequency paths of the following:

(i) % time attenuation is exceeded for the 13 GHz carriers

(ii) The number of fades at each site, by depth and duration, at 13 GHz

(iii) The distribution of fades over the 24 hour day, for the 13 GHz carriers

(iv) Joint fading of 13 GHz carriers

(v) % time attenuation is exceeded for the 18 GHz carriers

(vi) The number of fades at each site, by depth and duration, at 18 GHz

(vii) The distribution of fades over the 24 hour day for the 18 GHz carriers

(viii) Joint fading of 18 GHz carriers - % time attenuation exceeded

(ix) Station "on times"

(x) Joint fading of 18 GHz carriers - number of fades by depth and duration

(xi) The number of fades for each dual frequency site (13 and 18 GHz carriers), by depth and duration

(xii) % time attenuation is exceeded for 13 and 18 GHz carriers at each site for coincident operation

(xiii) The distribution of joint fading over the 24 hour day, of 13 GHz carriers

(xiv) The distribution of joint fading over the 24 hour day, of 18 GHz carriers

(xv) The correlation of coincident 13 and 18 GHz fade depths

For each of the diversity sites, for the duration of the CPE graphical and/or tabular presentations are provided for the following:

(i) Diversity site configuration

(ii) A summary of the hours of processible data collected

(iii) % time attenuation is exceeded for the individual carriers transmitted

(iv) % time attenuation is exceeded for the simple switched diversity pairs.

(v) Diversity gain for the diversity pairs

For each site, for the duration of the CPE, for the rain data, graphs and/or tables are presented for the following:

(i) A summary of the point rainfall data collected at each transmitter site.

(ii) % time point rain-rate is exceeded for each rain gauge, for the total rain data collected and for the rain data coincident with the carrier(s) at that site.

For each site, for the duration of the CPE, for the rain and attenuation data, graphs and tables are presented for the following:

(i) A summary of the hours of processible attenuation data collected ("collected data") and the extrapolated attenuation data calculated

(ii) % time attenuation is exceeded for each carrier, for processible attenuation data collected and extrapolated attenuation data calculated

(iii) A summary of the hours of point-rain data is collected and the extrapolated rain data is calculated

(iv) % time point rain-rate is exceeded for the rain gauge for each carrier for the actual rain data collected and for the extrapolated rain data calculated

LIST OF FIGURES

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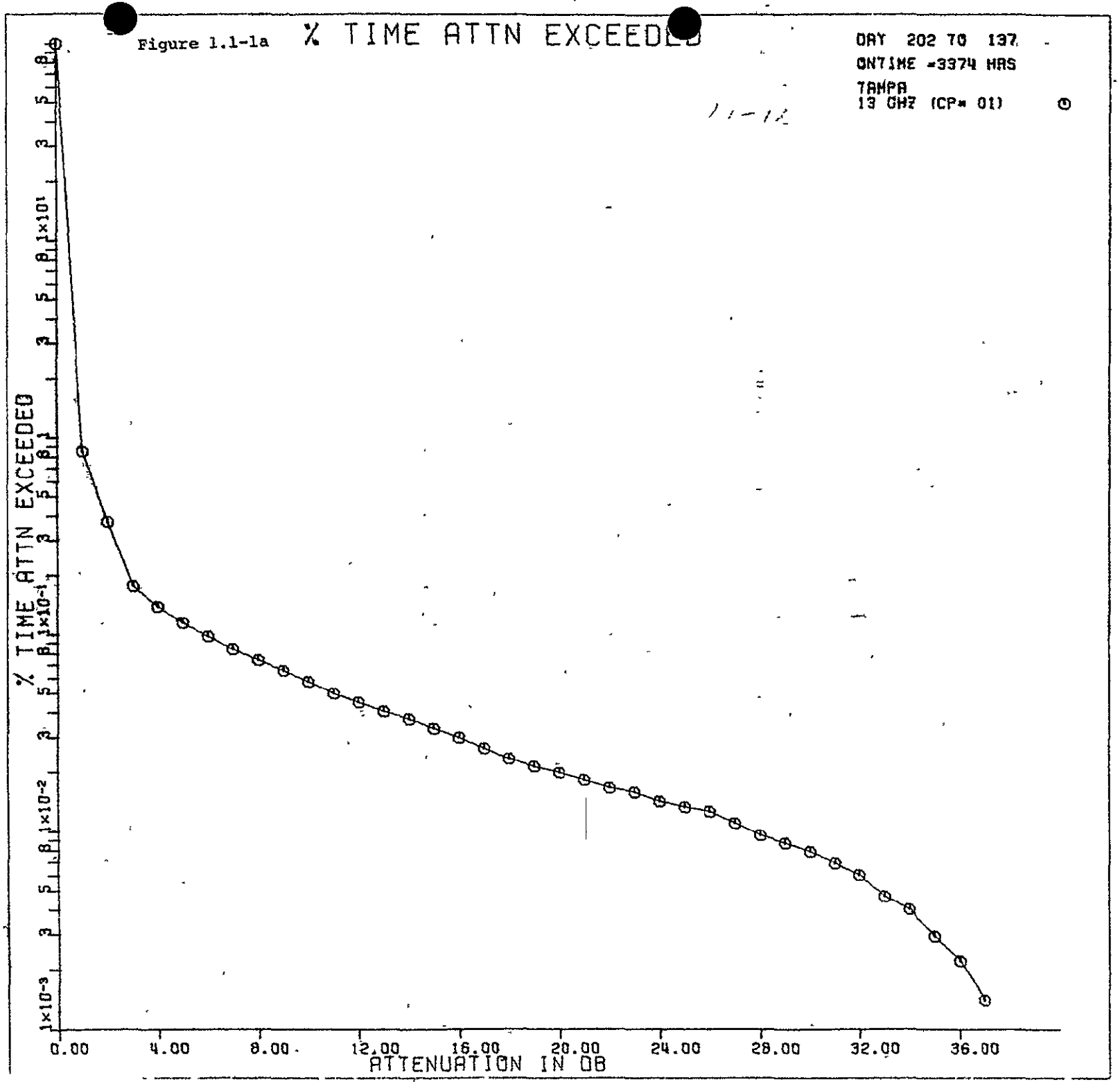
Figure 1.1-1a



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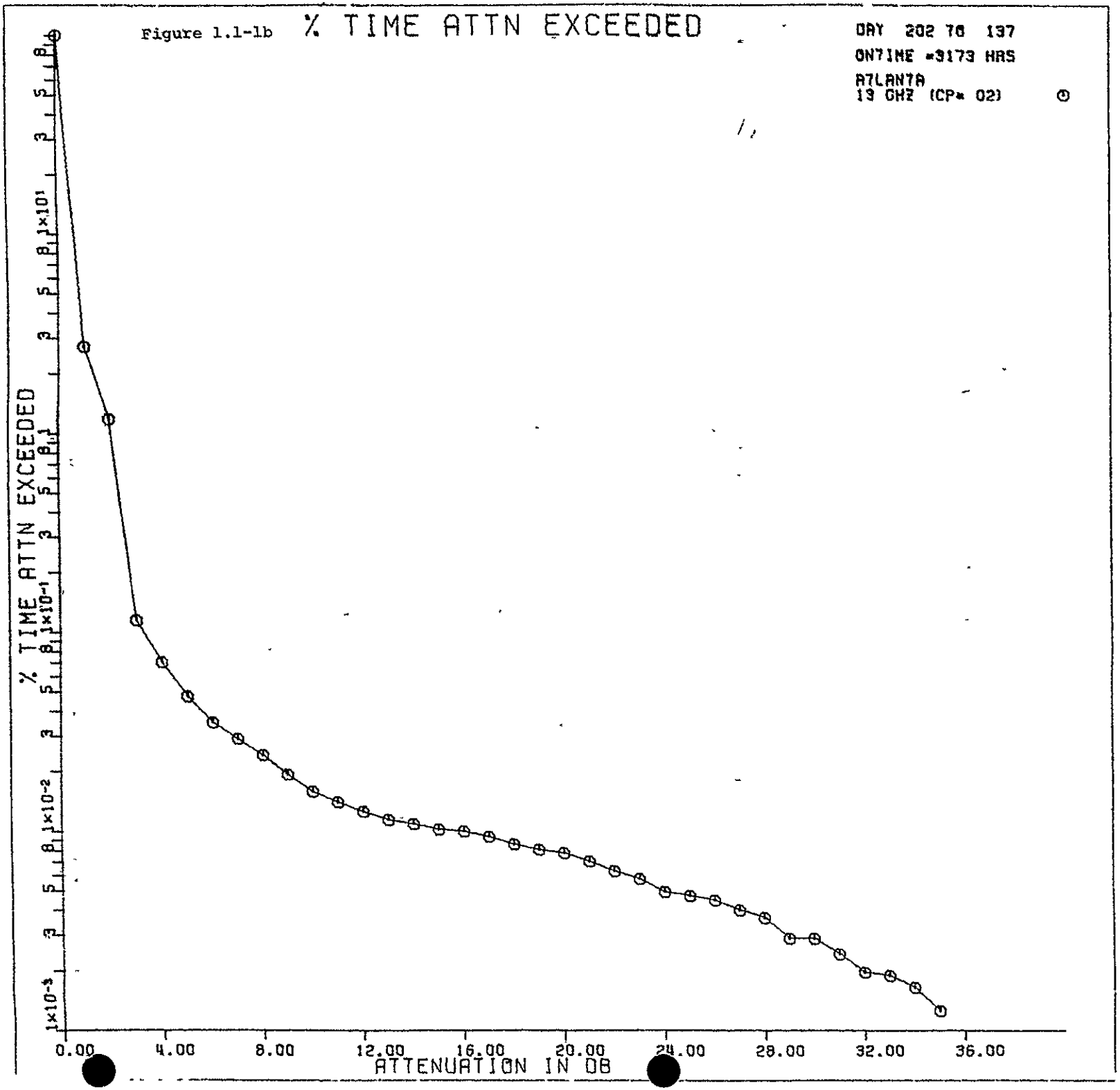
1-1

Figure 1.1-1b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DAY 202 TO 137
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ATLANTA
19 GHZ (CP= 02)
% TIME ATTN EXCEEDED
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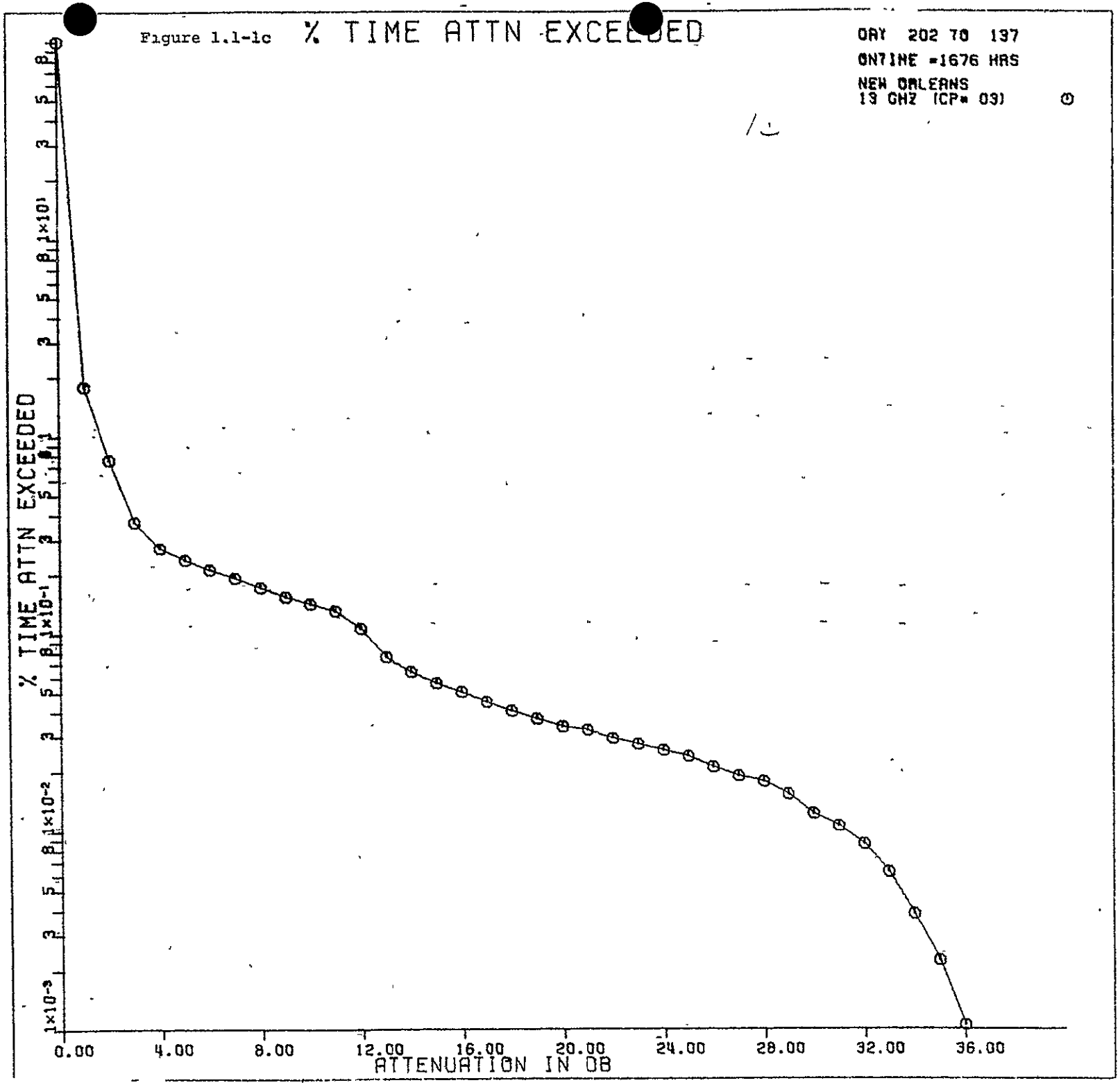
1x10-2
1x10-1
1x10
1x101
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1c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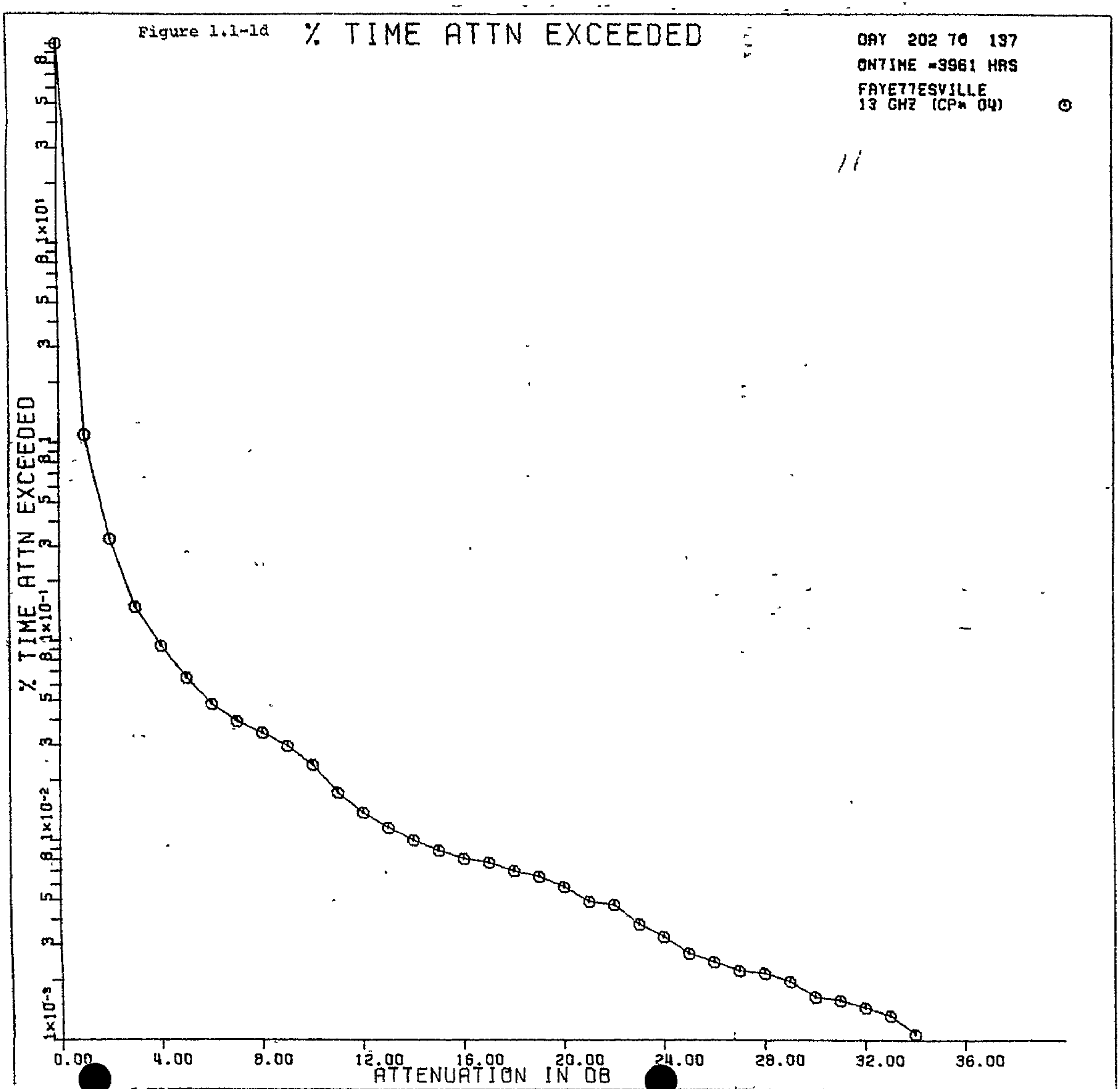
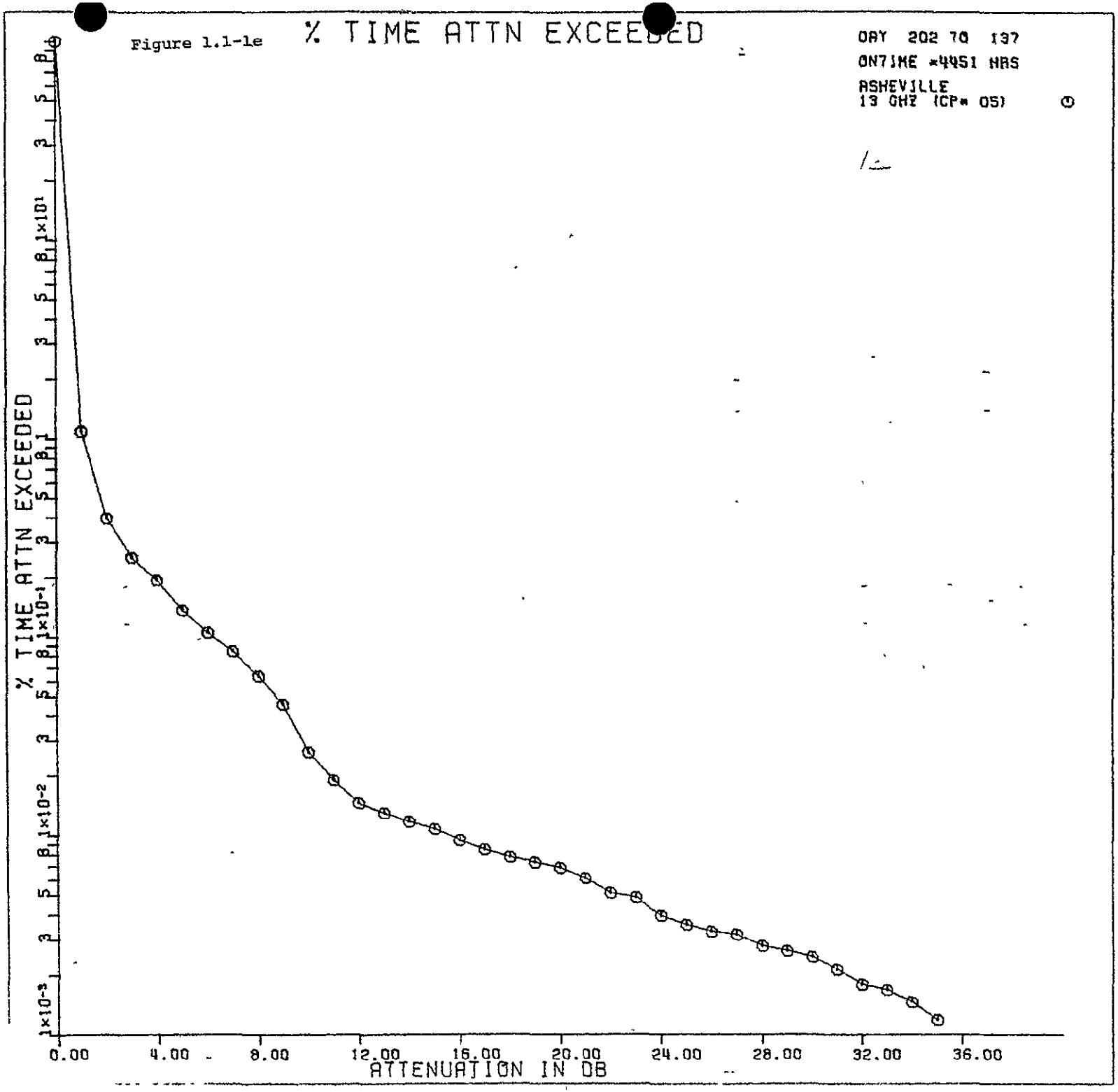
DAY 202 TO 137
ONTIME =1676 HRS
NEW ORLEANS
19 GHZ (CP= 03)
% TIME ATTN EXCEEDED
1×10⁻³
1×10⁻²
1×10⁻¹
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1d



% TIME ATTN EXCEEDED
DAY 202 76 137
ONTIME =3961 HRS
FAYETTESVILLE
13 GHZ (CP= 04)
% TIME ATTN EXCEEDED
ATTENUATION IN DB
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00

Figure 1.1-1e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DAY 202 TO 137
ONTIME *4451 HRS
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13 GHZ (CP* 05)
% TIME ATTN EXCEEDED
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1x10-2
1x10-1
1x10
0.00
4.00
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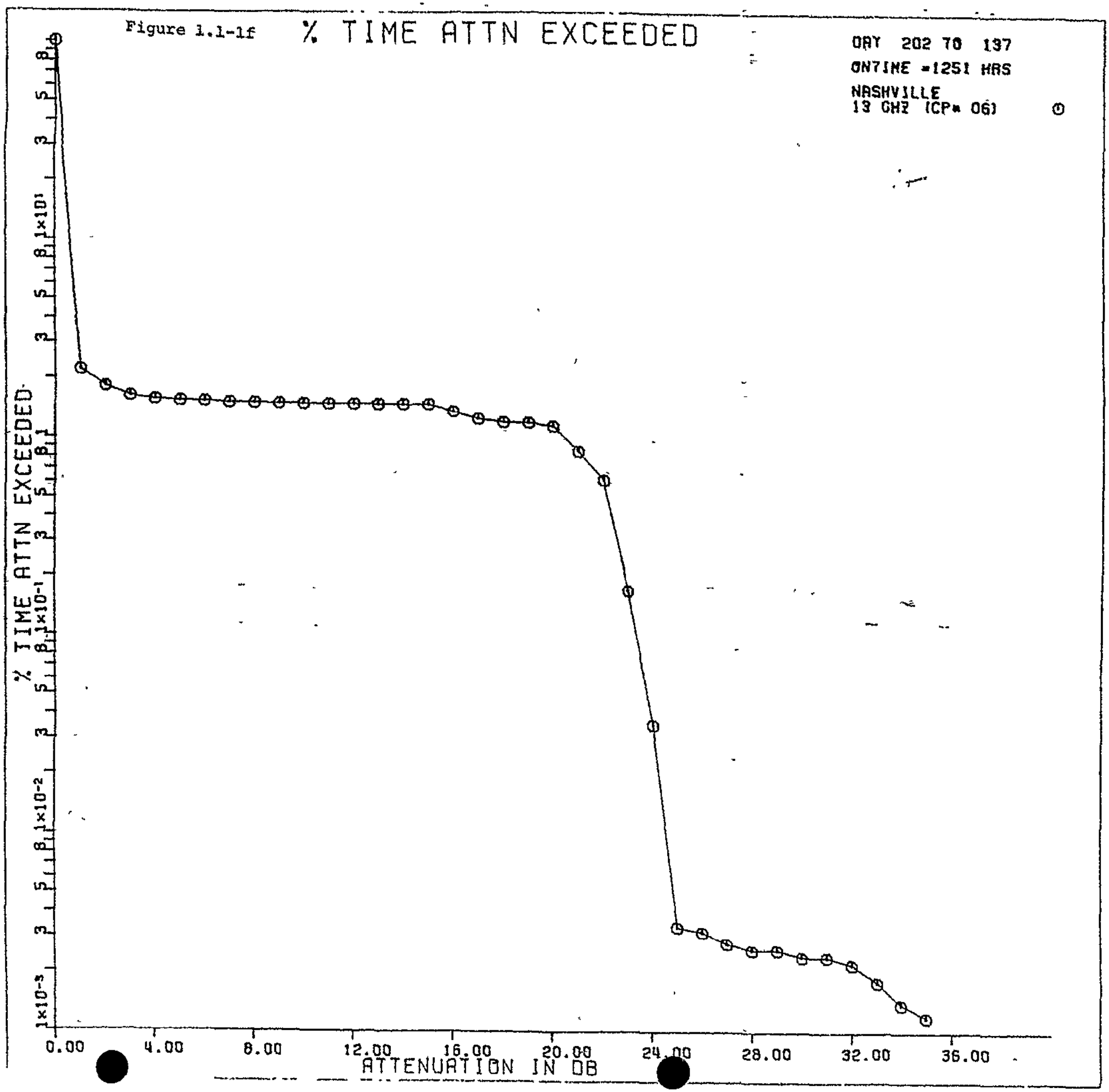
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1f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NASHVILLE
13 GHZ (CP= 06)
% TIME ATTN EXCEEDED
ATTENUATION IN DB
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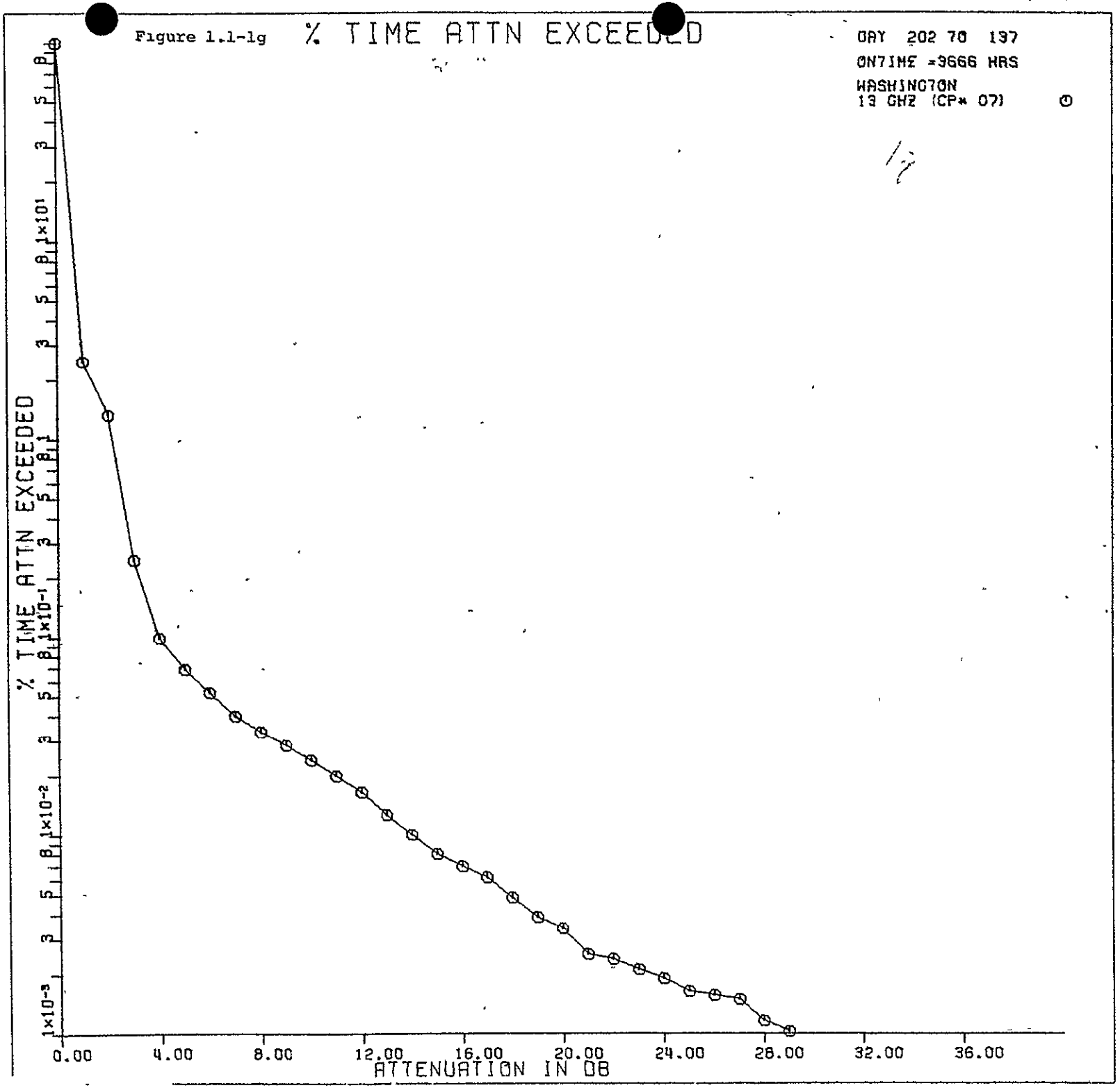
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
1x10¹
1x10⁻¹
1x10⁻²
1x10⁻³

Figure 1.1-1g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DAY 202 70 197
ONTIME =9666 HRS
WASHINGTON
13 GHZ (CP* 07)
% TIME ATTN EXCEEDED
1x10-3
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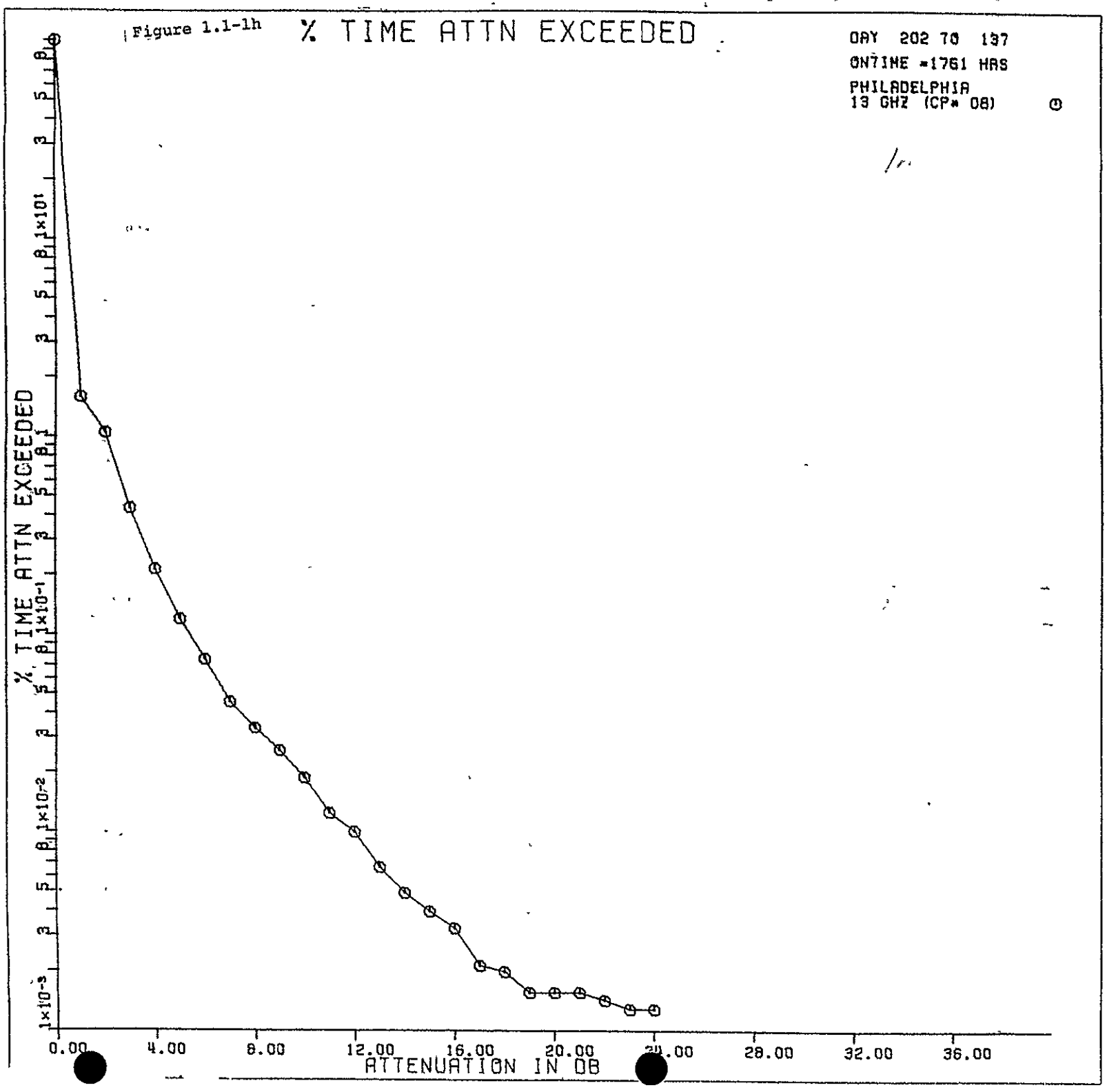
1x10-1
1x10^0
1x10^1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1h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DAY 202 TO 137
ONTIME =1761 HRS
PHILADELPHIA
13 GHZ (CP* 08)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1i

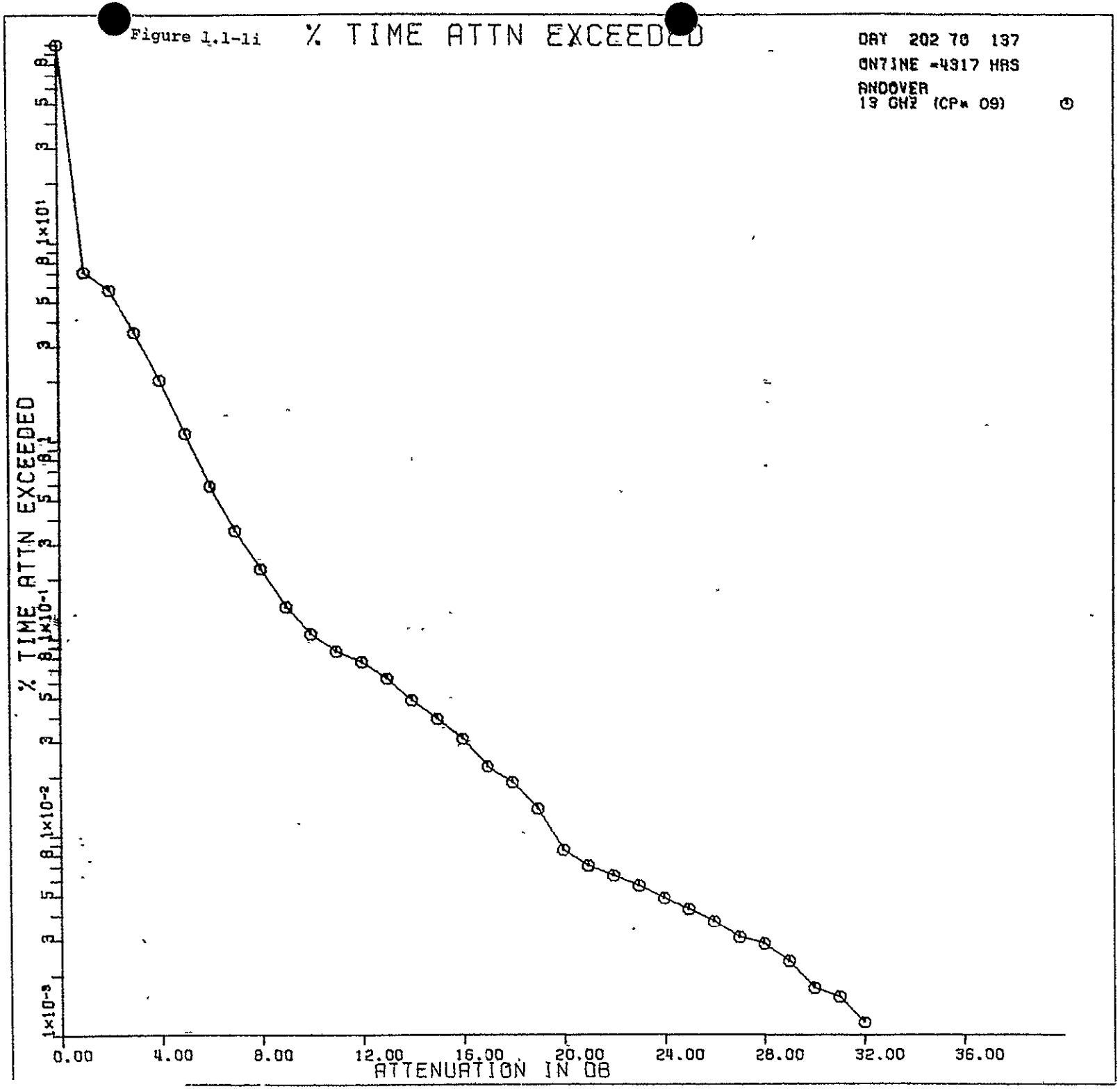
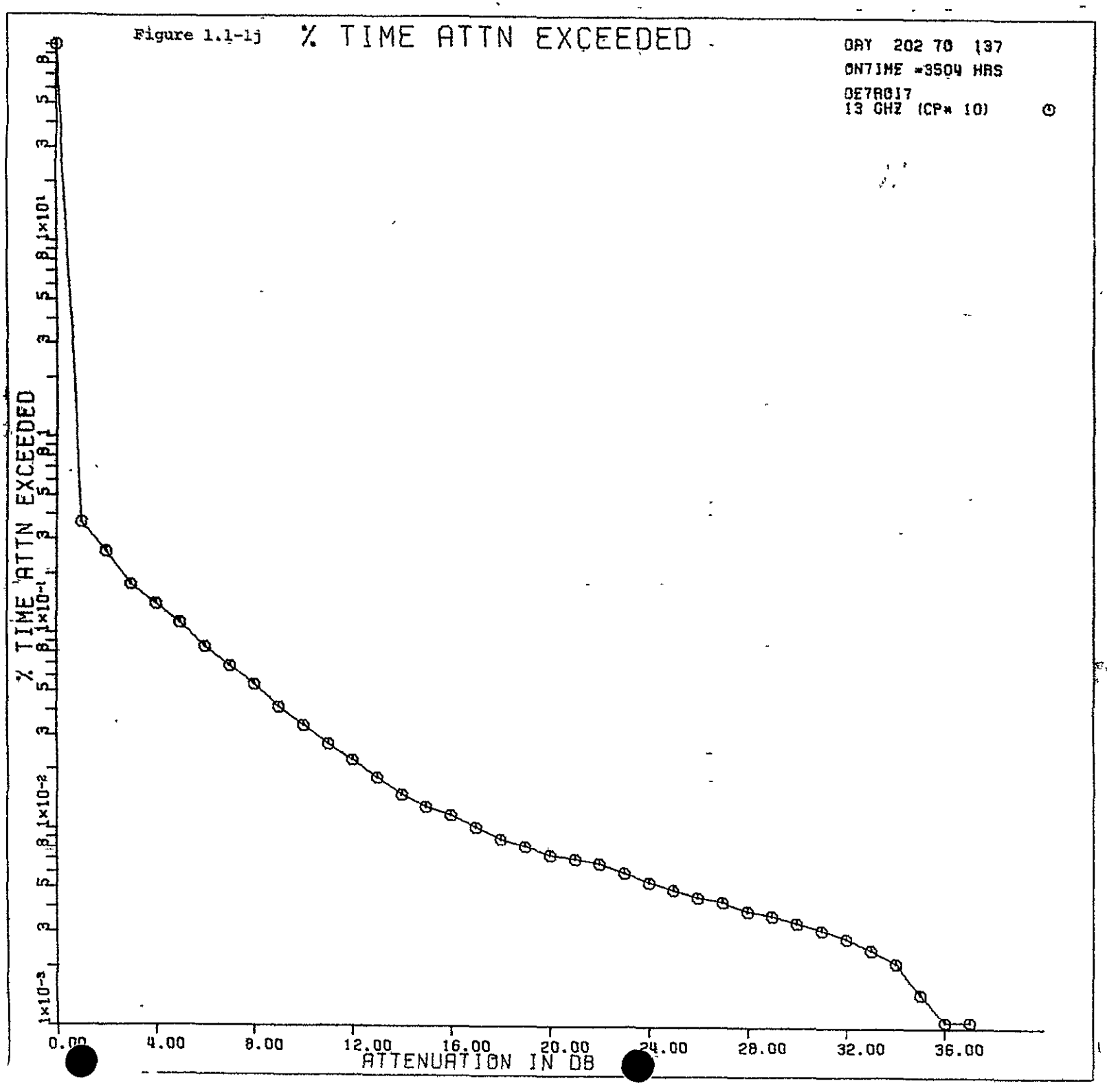

% TIME ATTN EXCEEDED
DAY 202 78 137
ONTIME =4917 HRS
ANDOVER
13 GHz (CPM 09)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1j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DAY 202 78 137
ON TIME =3504 HRS
DE7RGI7
13 GHZ (CP= 10)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10¹
0.00
4.00
8.00
12.00
16.00
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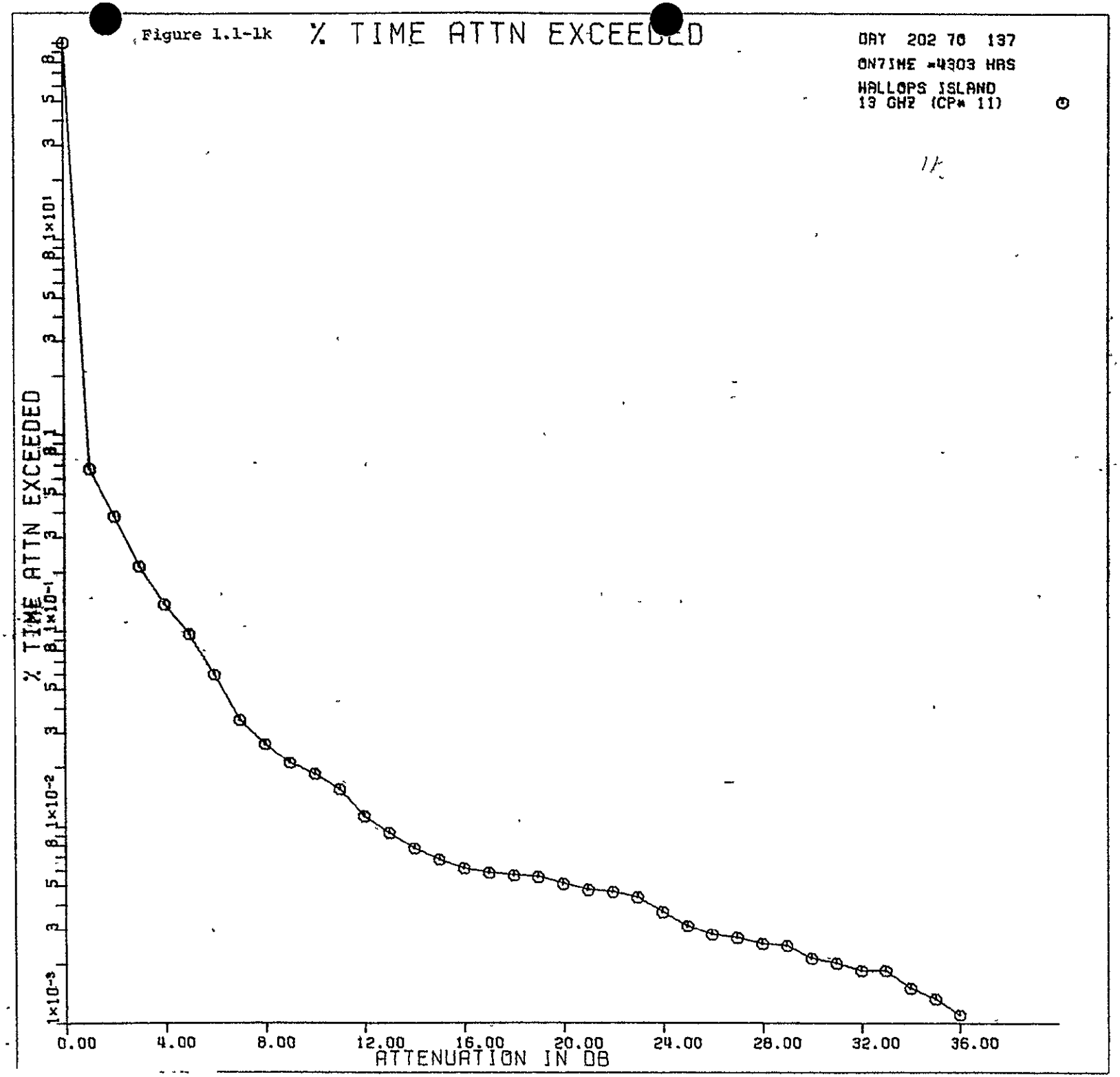
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1k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DAY 202 78 137
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WALLOPS ISLAND
13 GHZ (CP# 11)
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1×10⁻³
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1×10⁻¹
1×10¹
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16.00
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24.00
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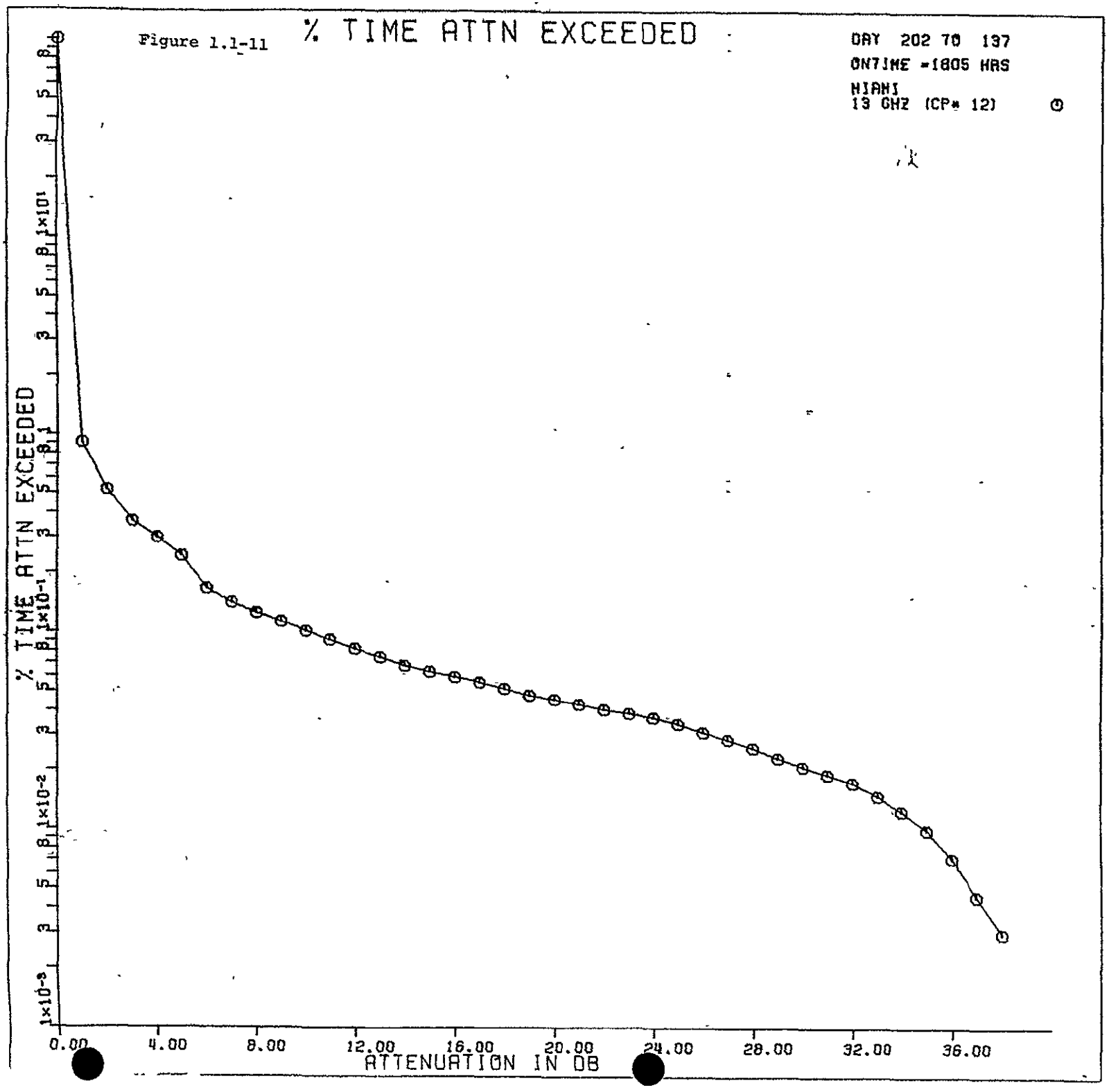
36.00
ATTENUATION IN DB

Figure 1.1-11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ONTIME =1805 HRS
MIAMI
13 GHZ (CP# 12)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x101
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1m

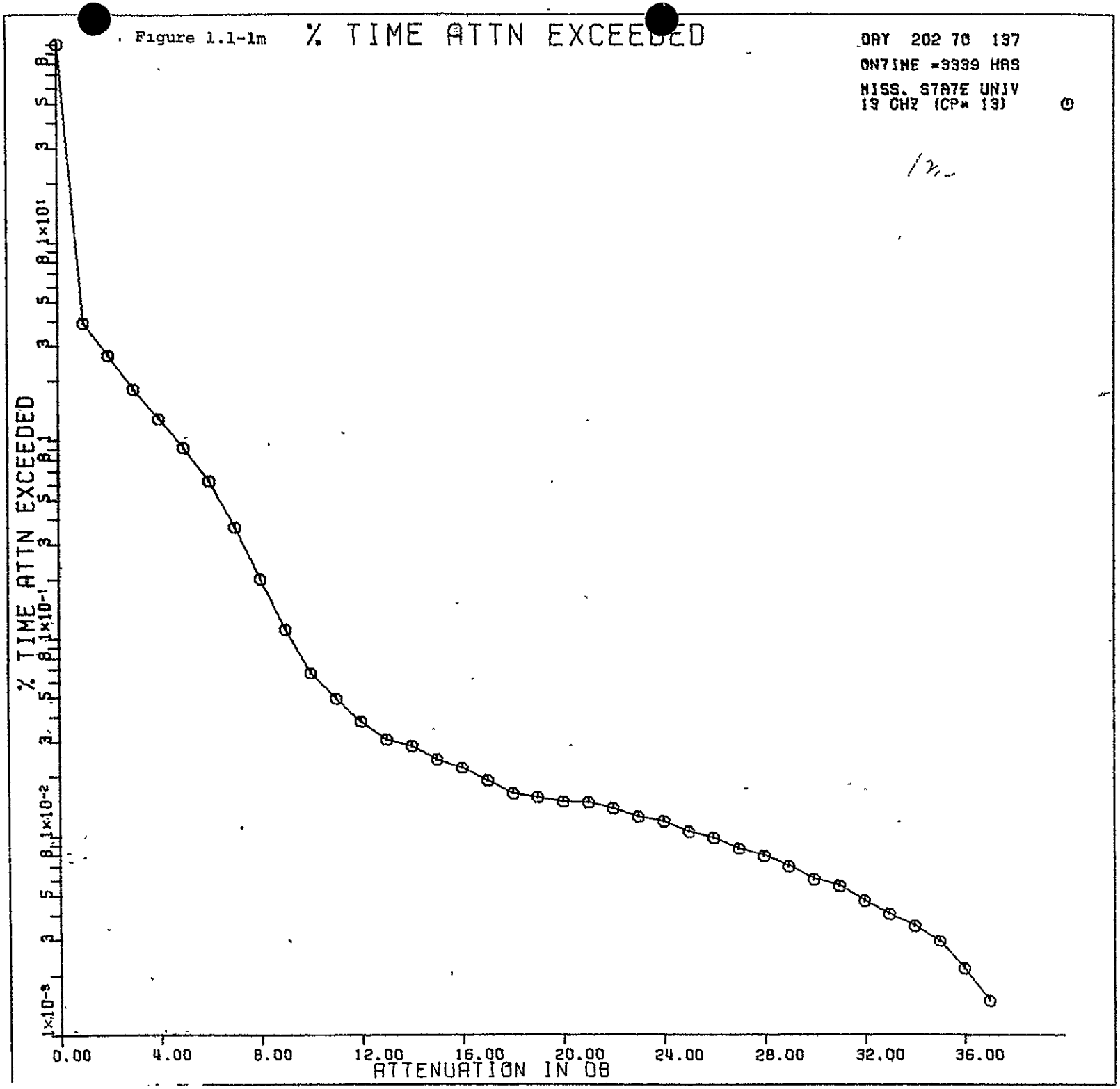

% TIME ATTN EXCEEDED
DAY 202 78 137
ONTIME =3339 HRS
MISS. STATE UNIV
13 GHZ (CP= 13)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-1n

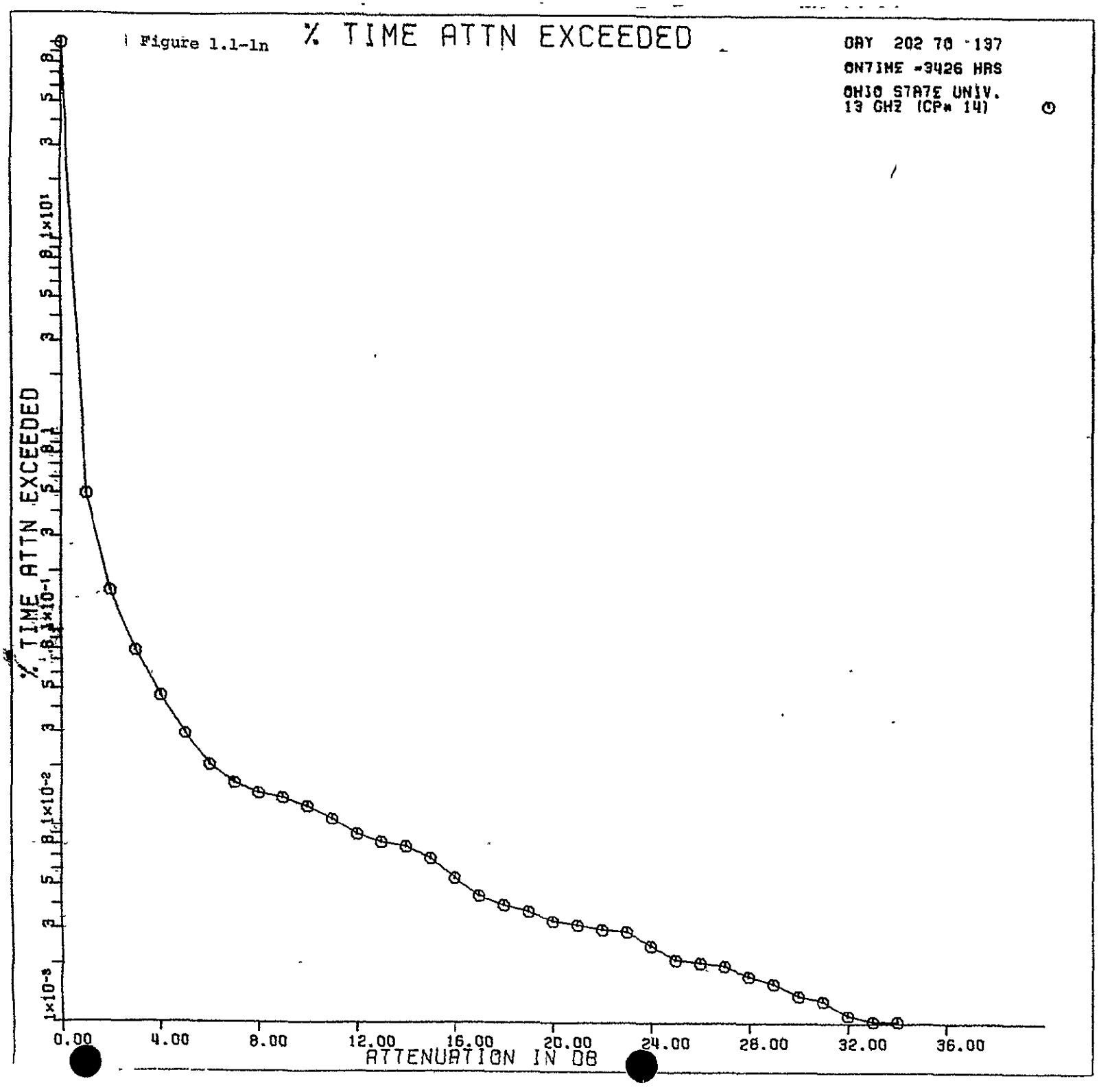
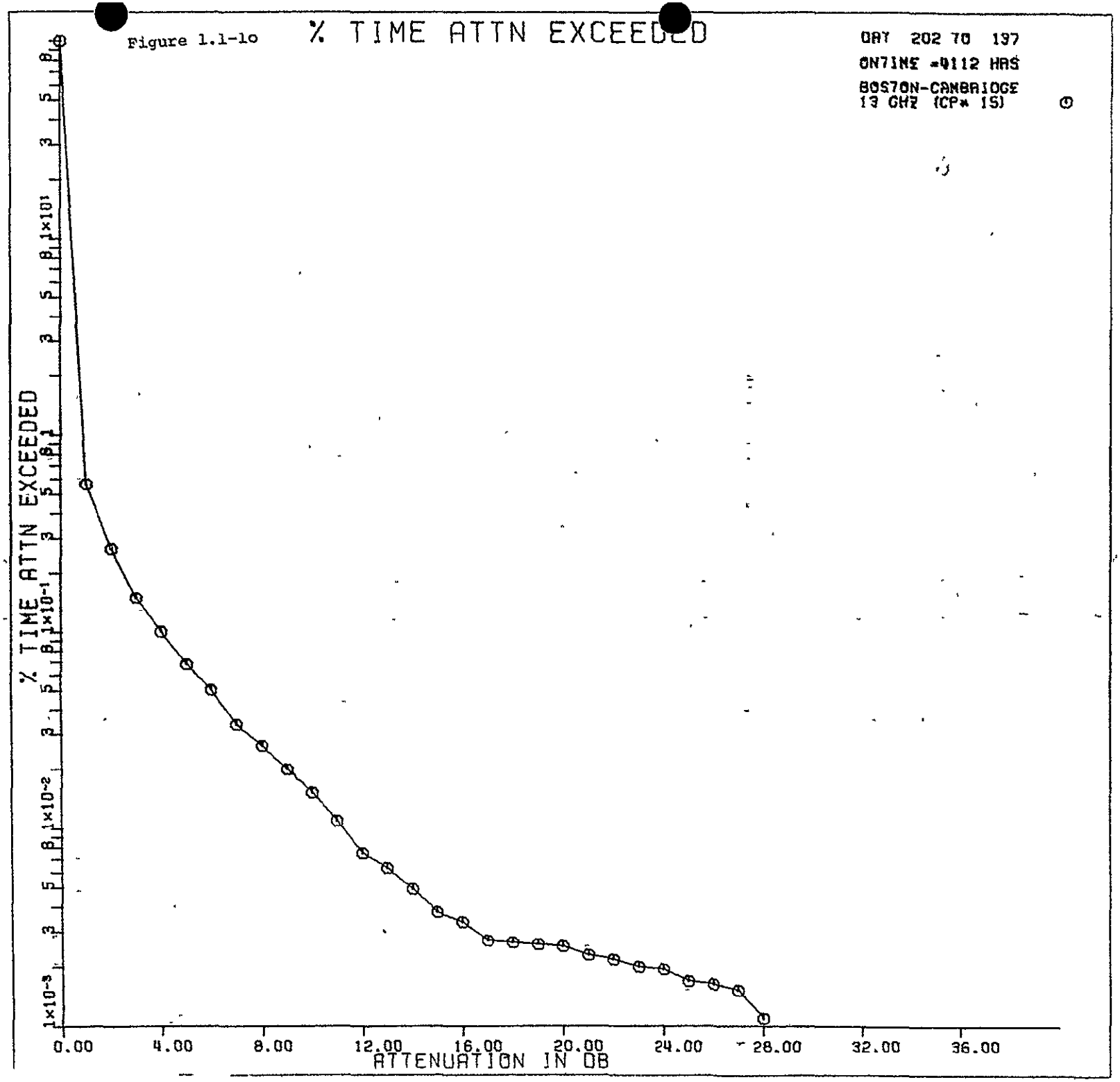

% TIME ATTN EXCEEDED
DAY 202 70 197
ONTIME =3426 HRS
OHIO STATE UNIV.
13 GHZ (CP# 14)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-10


% TIME ATTN EXCEEDED
DAY 202 78 197
ONTIME =0112 HRS
BOSTON-CAMBRIDGE
13 GHZ (CP* IS)
% TIME ATTN EXCEEDED
1x10-3
3
5
1x10-2
3
5
1x10-1
3
5
1
3
5
1x10¹
3
5
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

13 GHZ FREQ. BAND Table 1.1-1 % TIME ATTENUATION EXCEEDED AT EACH SITE 1.1-1 0 202 TO 75 137

DB	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
1	0.85	2.72	1.78	1.09	1.09	2.18	2.47	1.57	7.10	0.37	0.67	0.91	3.90	0.50	0.56
2	0.37	1.18	0.76	0.33	0.39	1.80	1.33	1.05	5.75	0.26	0.38	0.52	2.68	0.16	0.26
3	0.18	0.11	0.37	0.15	0.25	1.61	0.25	0.43	3.52	0.18	0.21	0.37	1.81	0.08	0.15
4	0.14	0.07	0.27	0.09	0.19	1.56	0.10	0.21	2.02	0.14	0.14	0.30	1.28	0.05	0.10
5	0.11	0.05	0.24	0.07	0.14	1.53	0.07	0.12	1.09	0.11	0.10	0.24	0.92	0.03	0.07
6	0.10	0.04	0.21	0.05	0.11	1.52	0.05	0.07	0.59	0.09	0.06	0.17	0.62	0.02	0.05
7	0.08	0.03	0.19	0.04	0.08	1.51	0.04	0.05	0.35	0.07	0.04	0.14	0.37	0.02	0.03
8	0.07	0.02	0.17	0.03	0.06	1.49	0.03	0.03	0.22	0.05	0.03	0.13	0.20	0.01	0.03
9	0.07	0.02	0.15	0.03	0.05	1.49	0.03	0.03	0.15	0.04	0.02	0.11	0.11	0.01	0.02
10	0.06	0.02	0.14	0.02	0.03	1.48	0.02	0.02	0.11	0.03	0.02	0.10	0.07	0.01	0.02
11	0.05	0.01	0.13	0.02	0.02	1.48	0.02	0.01	0.09	0.03	0.02	0.09	0.05	0.01	0.01
12	0.05	0.01	0.11	0.01	0.01	1.48	0.02	0.01	0.08	0.02	0.01	0.08	0.04	0.01	0.01
13	0.04	0.01	0.08	0.01	0.01	1.48	0.01	0.01	0.06	0.02	0.01	0.08	0.03	0.01	0.01
14	0.04	0.01	0.06	0.01	0.01	1.48	0.01	0.00	0.05	0.02	0.01	0.07	0.03	0.01	0.00
15	0.03	0.01	0.06	0.01	0.01	1.48	0.01	0.00	0.04	0.01	0.01	0.06	0.02	0.01	0.00
16	0.03	0.01	0.05	0.01	0.01	1.36	0.01	0.00	0.03	0.01	0.01	0.06	0.02	0.01	0.00
17	0.03	0.01	0.05	0.01	0.01	1.26	0.01	0.00	0.02	0.01	0.01	0.06	0.02	0.00	0.00
18	0.02	0.01	0.04	0.01	0.01	1.21	0.00	0.00	0.02	0.01	0.01	0.05	0.02	0.00	0.00
19	0.02	0.01	0.04	0.01	0.01	1.20	0.00	0.00	0.01	0.01	0.01	0.05	0.02	0.00	0.00
20	0.02	0.01	0.03	0.01	0.01	1.15	0.00	0.00	0.01	0.01	0.01	0.05	0.01	0.00	0.00
21	0.02	0.01	0.03	0.00	0.01	0.87	0.00	0.00	0.01	0.01	0.00	0.04	0.01	0.00	0.00
22	0.02	0.01	0.03	0.00	0.01	0.63	0.00	0.00	0.01	0.01	0.00	0.04	0.01	0.00	0.00
23	0.02	0.01	0.03	0.00	0.00	0.17	0.00	0.00	0.01	0.01	0.00	0.04	0.01	0.00	0.00
24	0.01	0.00	0.03	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.04	0.01	0.00	0.00
25	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
26	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
27	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
28	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.00
29	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00
30	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00
31	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00
32	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
33	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
39	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00
40	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	0.00
URS ON	3374.	3173.	1676.	3961.	4451.	1251.	3666.	1761.	4317.	3504.	4303.	1805.	3339.	3426.	4112.

13 GHZ FREQ. BAND Table 1.1-2a NUMBER OF FADES AT EACH SITE 1/- 3.2 0 202 TO 75 137

3. DB LEVEL

MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	5	0	0	0	3	0	0
56 - 60	0	0	0	0	0	0	0	1	4	0	0	0	2	0	0
51 - 55	0	0	0	0	0	0	0	0	3	0	1	0	1	0	0
46 - 50	0	0	0	0	0	0	0	0	6	0	1	1	1	0	0
41 - 45	0	0	0	1	0	0	0	0	8	0	0	0	2	0	0
36 - 40	0	0	1	0	0	0	1	0	9	1	1	0	1	0	0
31 - 35	0	0	0	0	0	0	1	0	9	0	0	0	3	0	2
26 - 30	0	0	0	0	2	0	1	0	9	0	1	0	4	0	1
21 - 25	0	0	1	0	2	0	2	0	9	0	0	1	4	0	1
16 - 20	3	0	0	2	1	0	1	5	18	2	2	0	9	1	3
11 - 15	5	1	0	1	2	1	2	8	27	6	2	7	16	2	6
6 - 10	9	7	5	10	11	8	10	8	33	9	4	7	55	3	3
1 - 5	32	30	25	47	50	11	60	33	165	42	50	46	344	24	30
0.60 - 1.00	39	24	31	23	27	7	44	26	141	27	39	45	247	13	14
0.10 - 0.50	284	188	1216	229	246	59	490	332	1265	137	216	219	1503	119	164

13 GHZ FREQ. BAND Table 1.1-2b NUMBER OF FADES AT EACH SITE 26 0 202 TO 75 137

6. DB LEVEL

MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
46 - 50	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
36 - 40	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0
26 - 30	0	0	0	0	0	0	1	0	3	0	1	0	2	0	0
21 - 25	0	0	0	0	1	0	0	0	2	0	1	0	2	0	0
16 - 20	1	0	1	0	0	0	1	0	4	1	1	0	5	0	0
11 - 15	1	0	0	1	3	1	1	1	5	3	1	1	3	1	4
6 - 10	7	2	2	3	2	0	2	6	6	5	3	4	8	0	7
1 - 5	19	10	20	8	18	10	10	8	20	26	12	33	78	6	7
.60 - 1.00	23	3	23	5	9	1	3	1	5	15	11	37	43	6	2
.10 - 0.50	203	101	508	105	111	22	45	15	78	58	74	153	298	29	35

13 GHZ FREQ. BAND Table 1.1-2c NUMBER OF FADES AT EACH SITE 0 202 TO 75 137

10. DB LEVEL MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	1	0	0	0	2	1	2	0	1	0	0	0	1	0	0
6 - 10	2	0	1	1	1	0	0	0	3	3	3	1	4	1	1
1 - 5	9	6	17	5	9	0	5	5	9	12	7	25	18	3	7
0.60 - 1.00	26	1	15	1	2	3	2	3	4	10	2	28	12	5	3
0.10 - 0.50	179	86	322	92	91	18	41	16	67	51	62	141	118	25	31

13 GHZ FREQ. BAND Table 1.1-2d NUMBER OF FADES AT EACH SITE 2d 0 202 TO 75 137

15. DB LEVEL

MINUTES		TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-G
> 100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
6 -	10	1	0	0	0	1	0	1	0	1	0	0	0	1	0	0
1 -	5	5	1	7	1	2	0	2	1	5	2	1	2	6	2	1
0.60 -	1.00	19	3	19	3	3	0	2	0	5	7	4	31	11	2	2
0.10 -	0.50	162	76	143	73	80	16	28	13	60	48	51	136	91	25	27

13 GHZ FREQ. BAND Table 1.1-2e NUMBER OF FADES AT EACH SITE 2 ← 0 202 TO 75 137

20. DB LEVEL
MINUTES

	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 - 5	0	0	0	0	1	0	1	0	3	0	0	0	2	0	0
0.60 - 1.00	5	2	17	3	1	0	1	0	5	4	3	18	11	0	1
0.10 - 0.50	148	67	102	59	68	12	27	8	46	45	43	127	77	24	25

13 GHZ FREQ. BAND

Table 1.1-2f NUMBER OF FADES AT EACH SITE

2P

0 202 TO 75 137

25. DB LEVEL

MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 - 5	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0
0.60 - 1.00	0	0	3	0	0	0	0	0	3	0	0	1	2	0	0
0.10 - 0.50	114	39	94	25	39	9	17	4	35	33	24	118	59	15	20

Figure 1.1-2a HOURLY FADE DISTBN

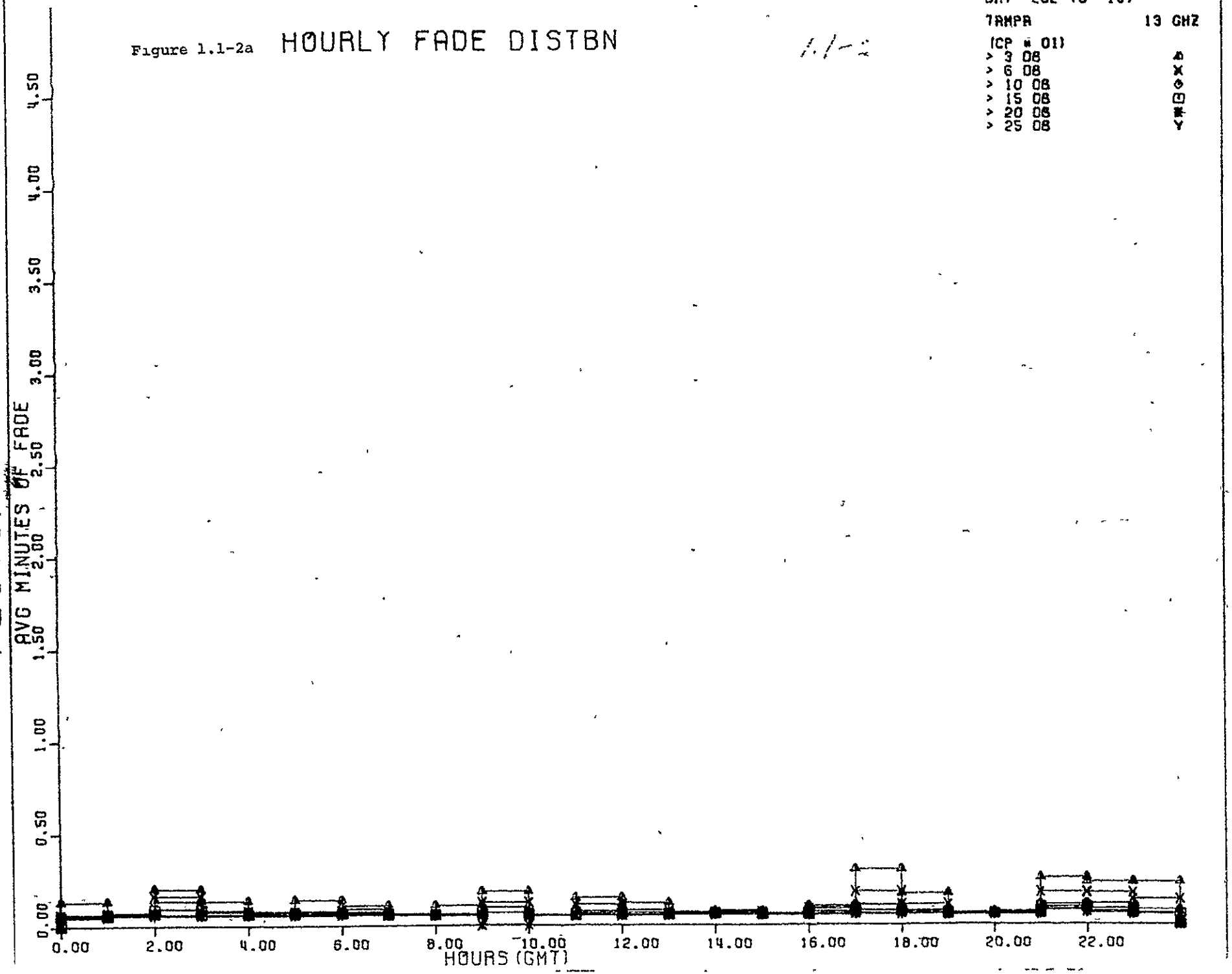


Figure 1.1-2b

HOURLY FADE DISTBN

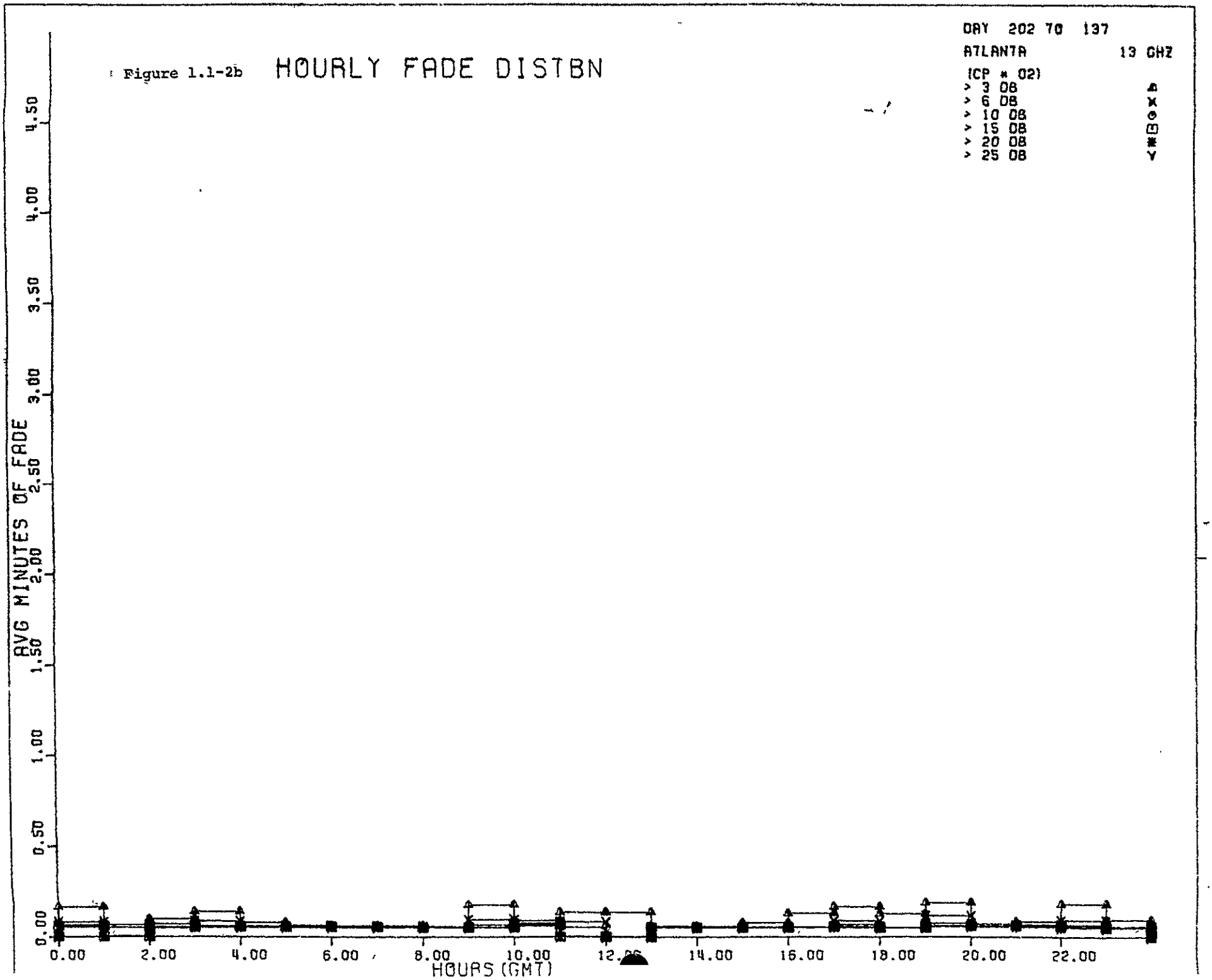


Figure 1.1-2c HOURLY FADE DISTBN

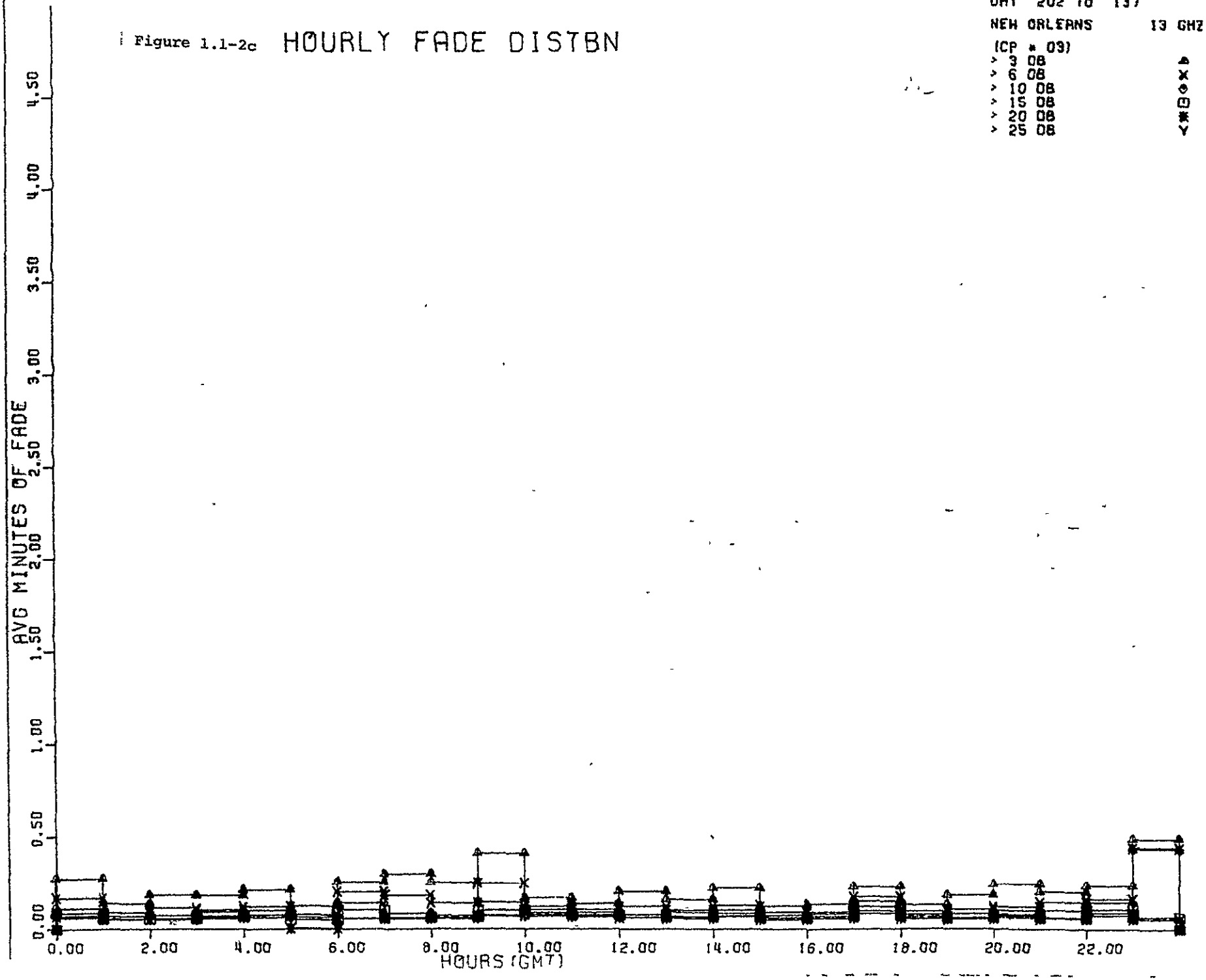


Figure 1.1-2d

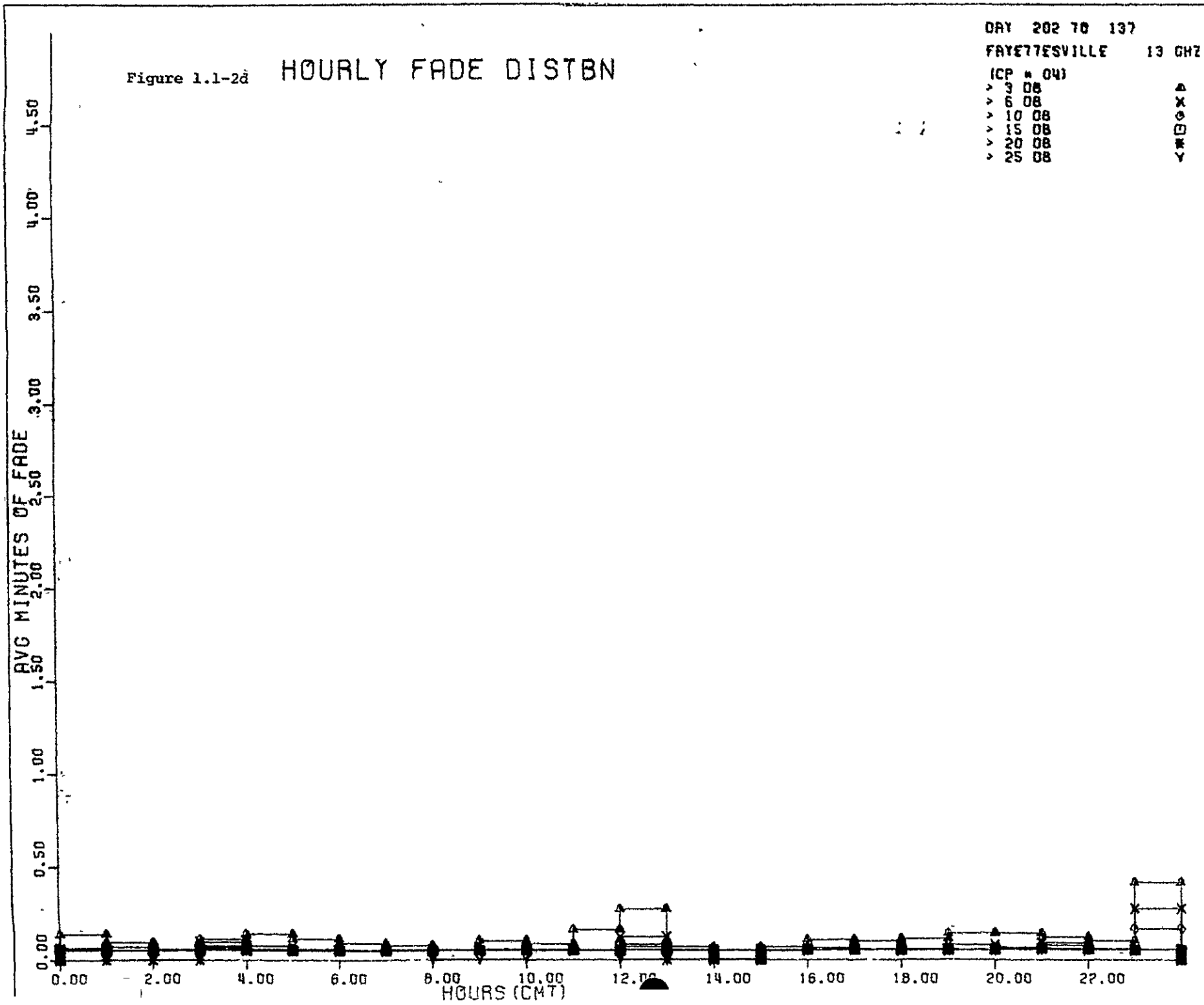

HOURLY FADE DISTBN
DAY 202 TO 137
FAYETTESVILLE 13 GHZ
(CP = 04)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure-1.1-2e HOURLY FADE DISTBN

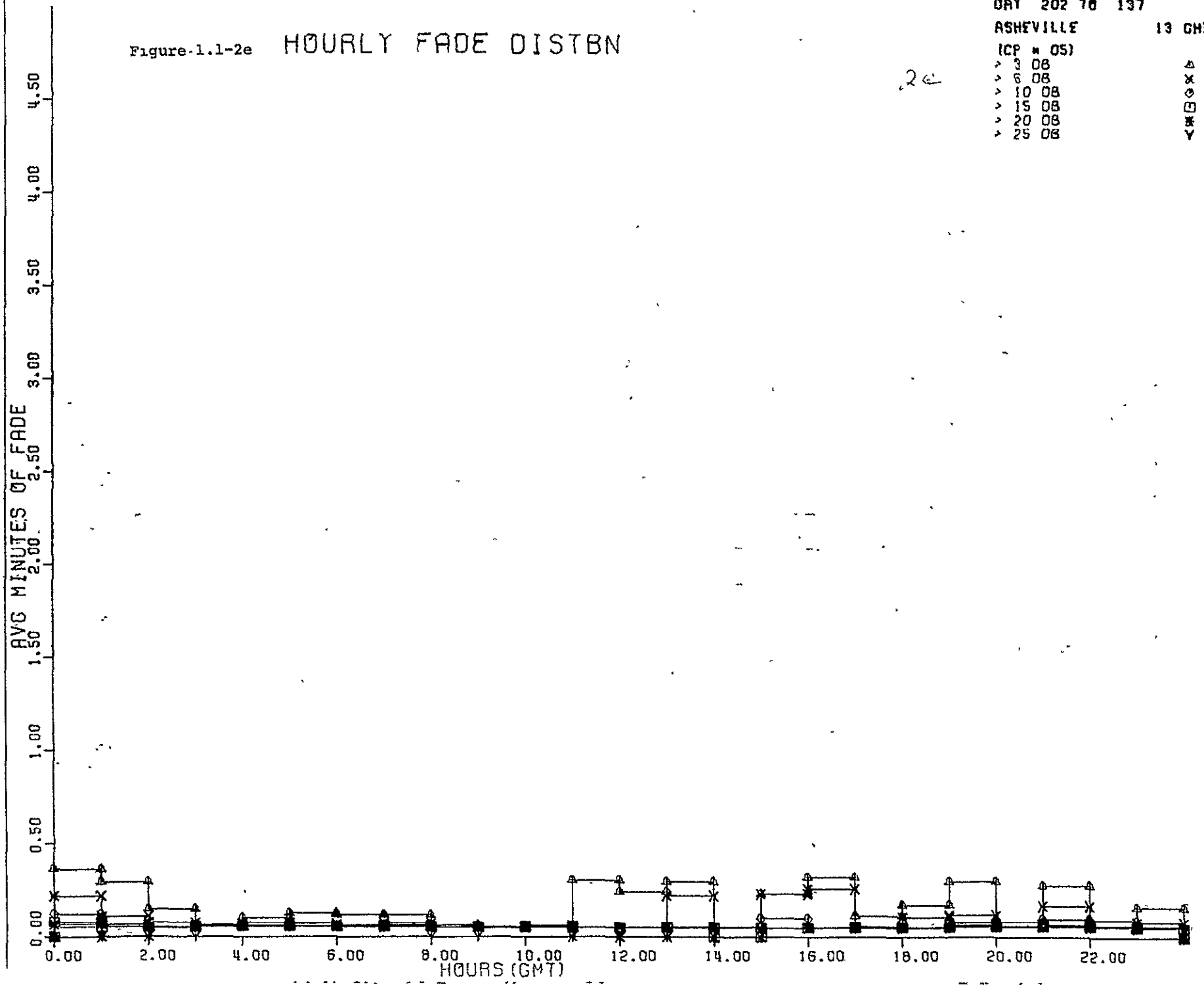


Figure 1.1-2f HOURLY FADE DISTBN

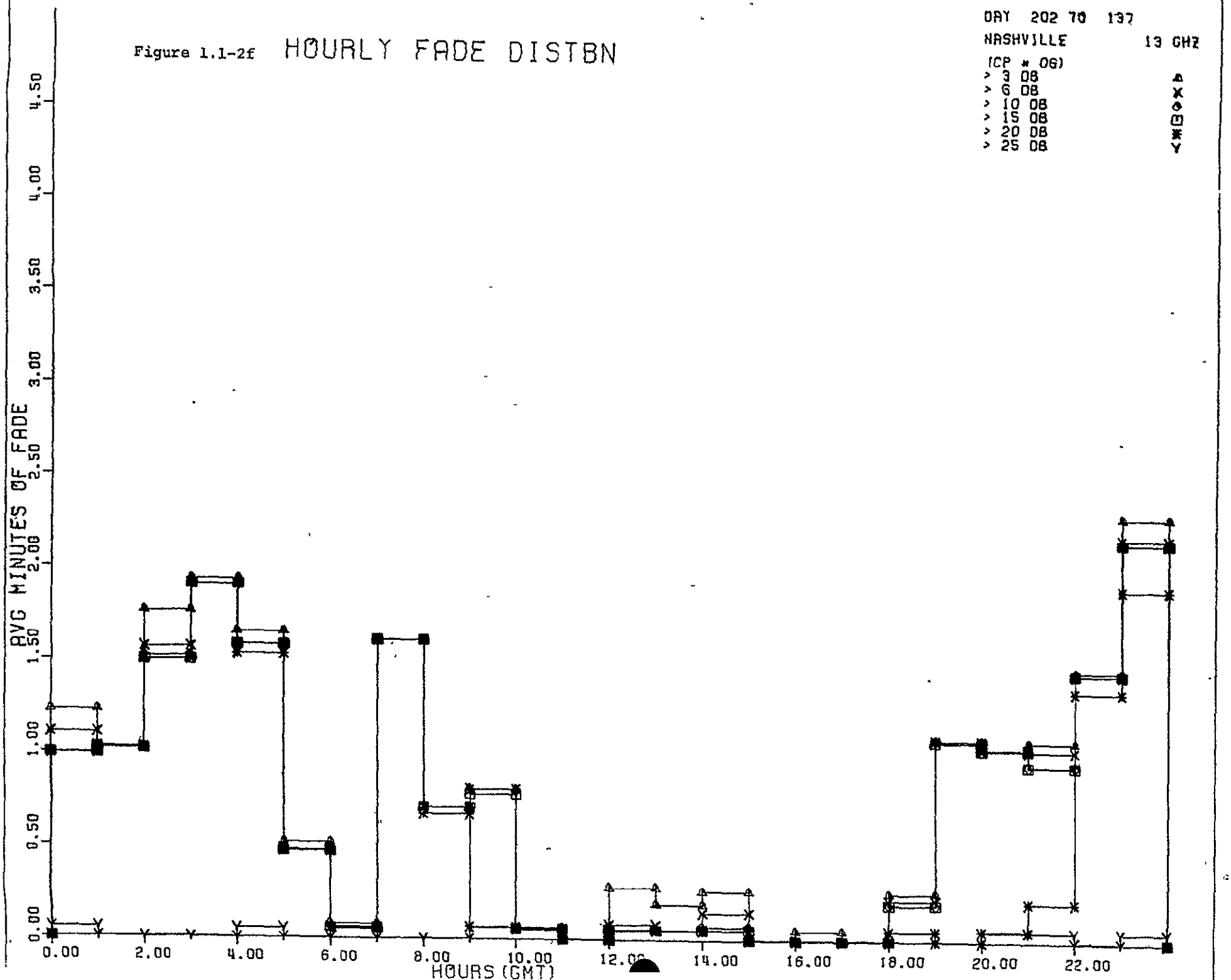


Figure 1.1-2g HOURLY FADE DISTBN

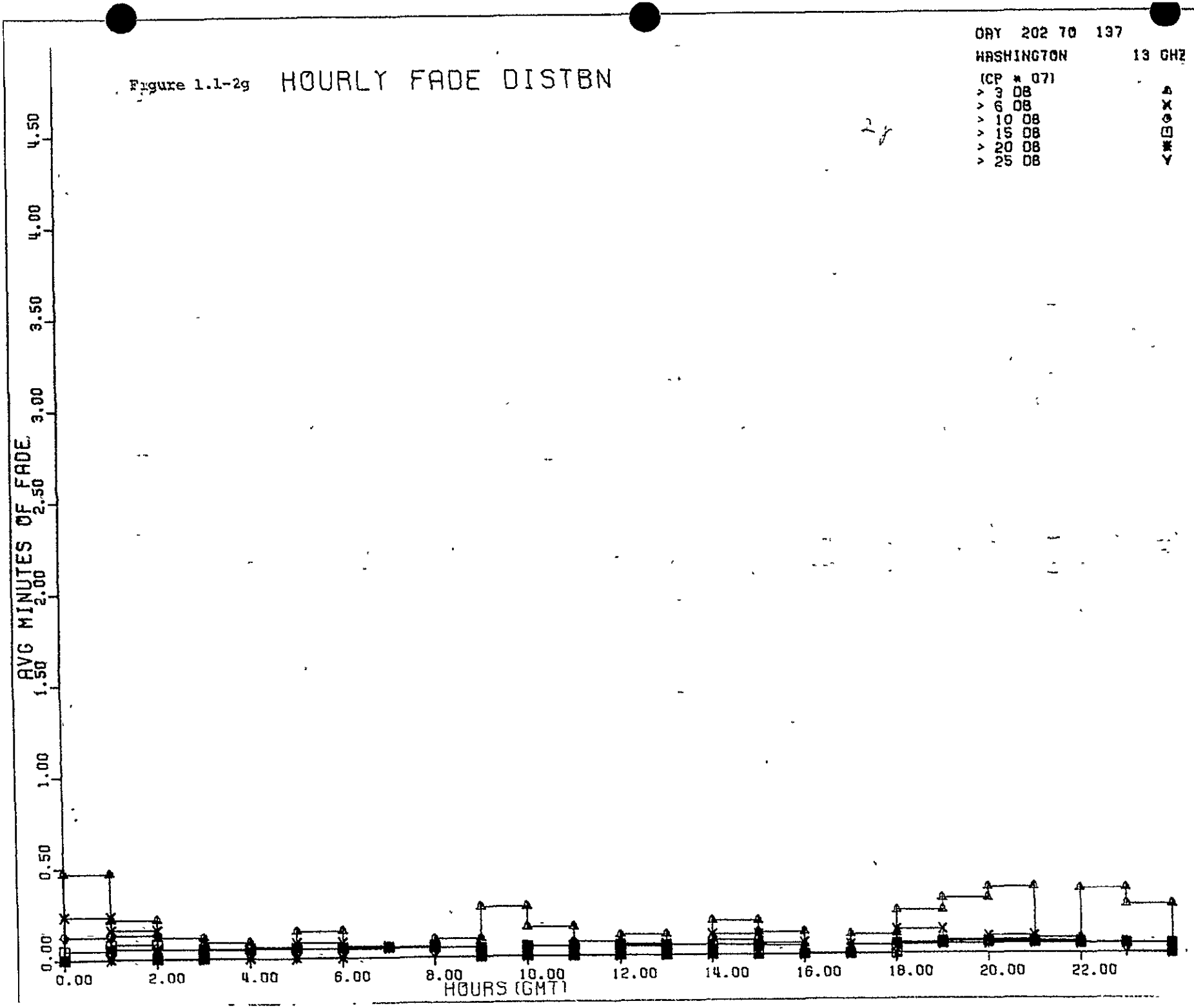


Figure 1.1-2h

HOURLY FADE DISTBN

2h

DAY 202 70 137
PHILADELPHIA 19 GHZ
(CP = 08)
> 3 08
> 6 08
> 10 08
> 15 08
> 20 08
> 25 08

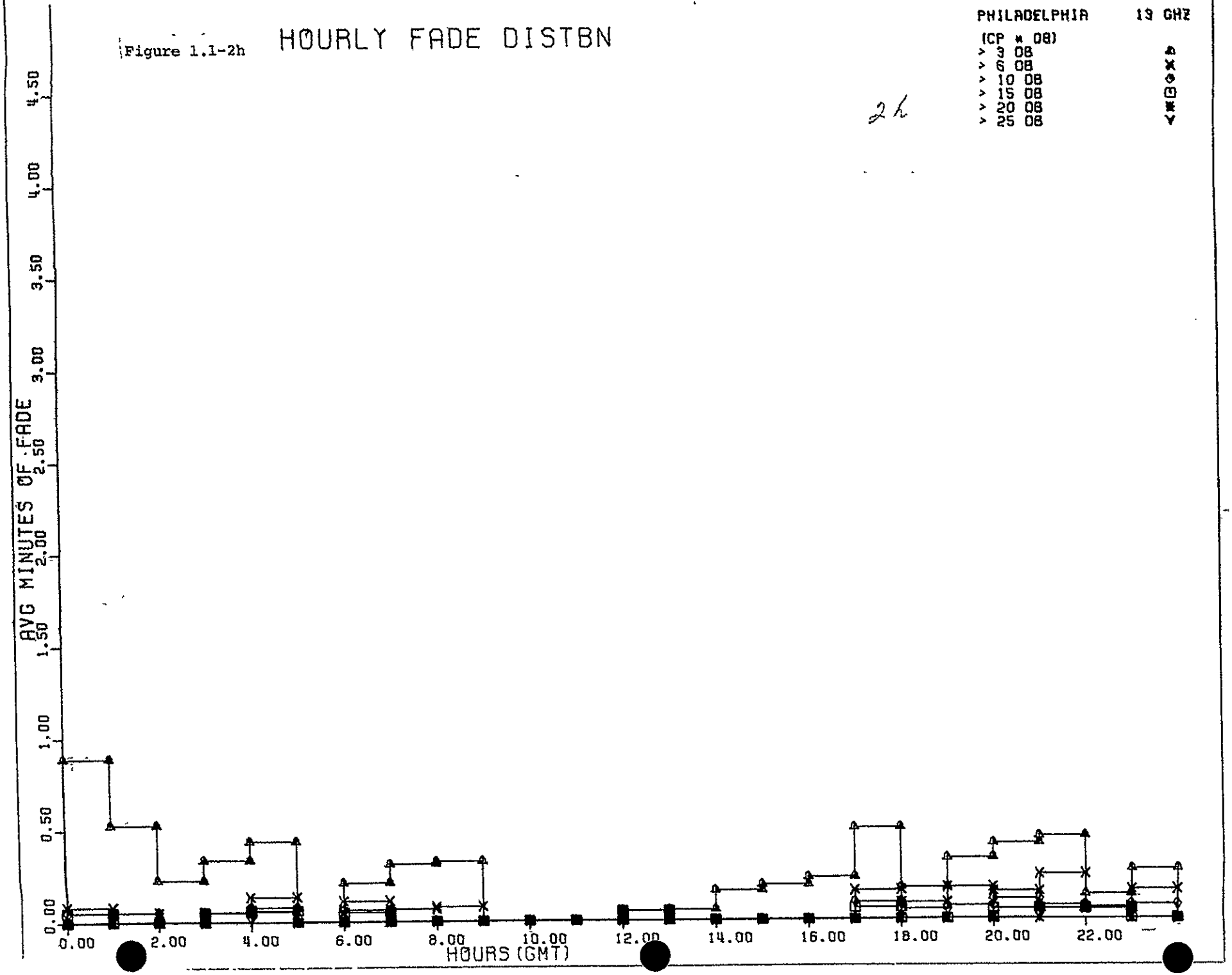


Figure 1.1-2i

HOURLY FADE DISTBN

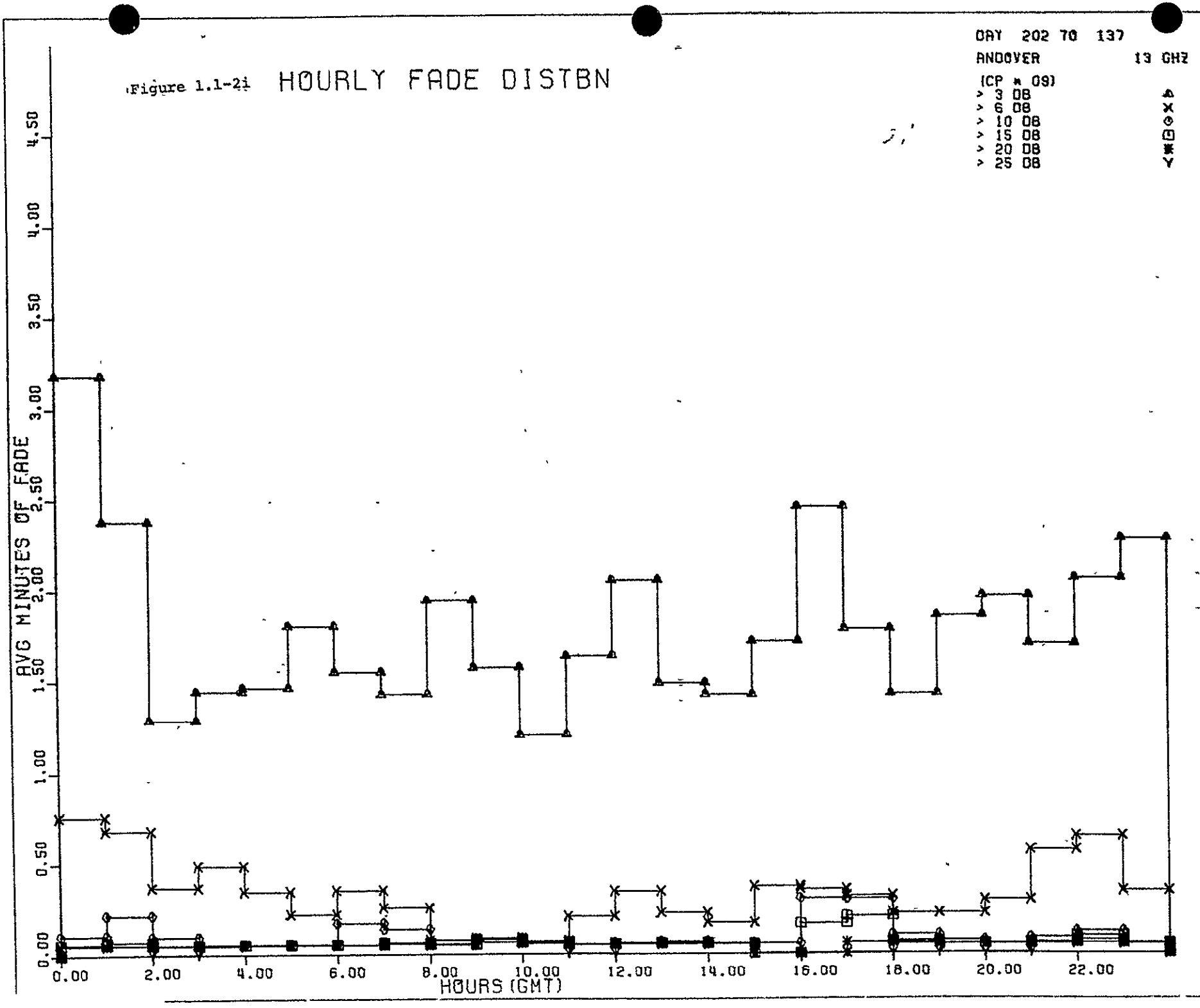


Figure 1.1-2j

HOURLY FADE DISTBN

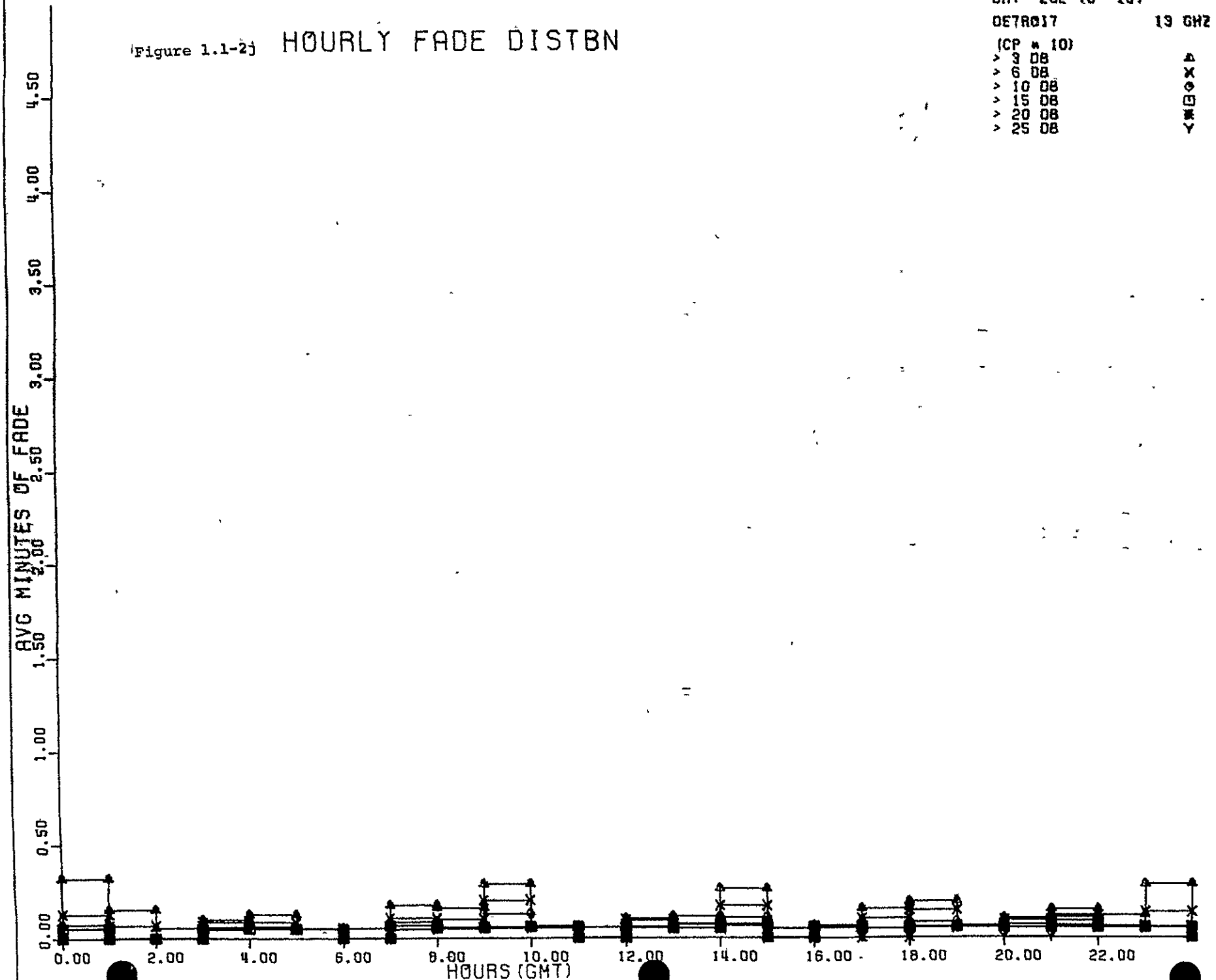


Figure 1.1-2k HOURLY FADE DISTBN

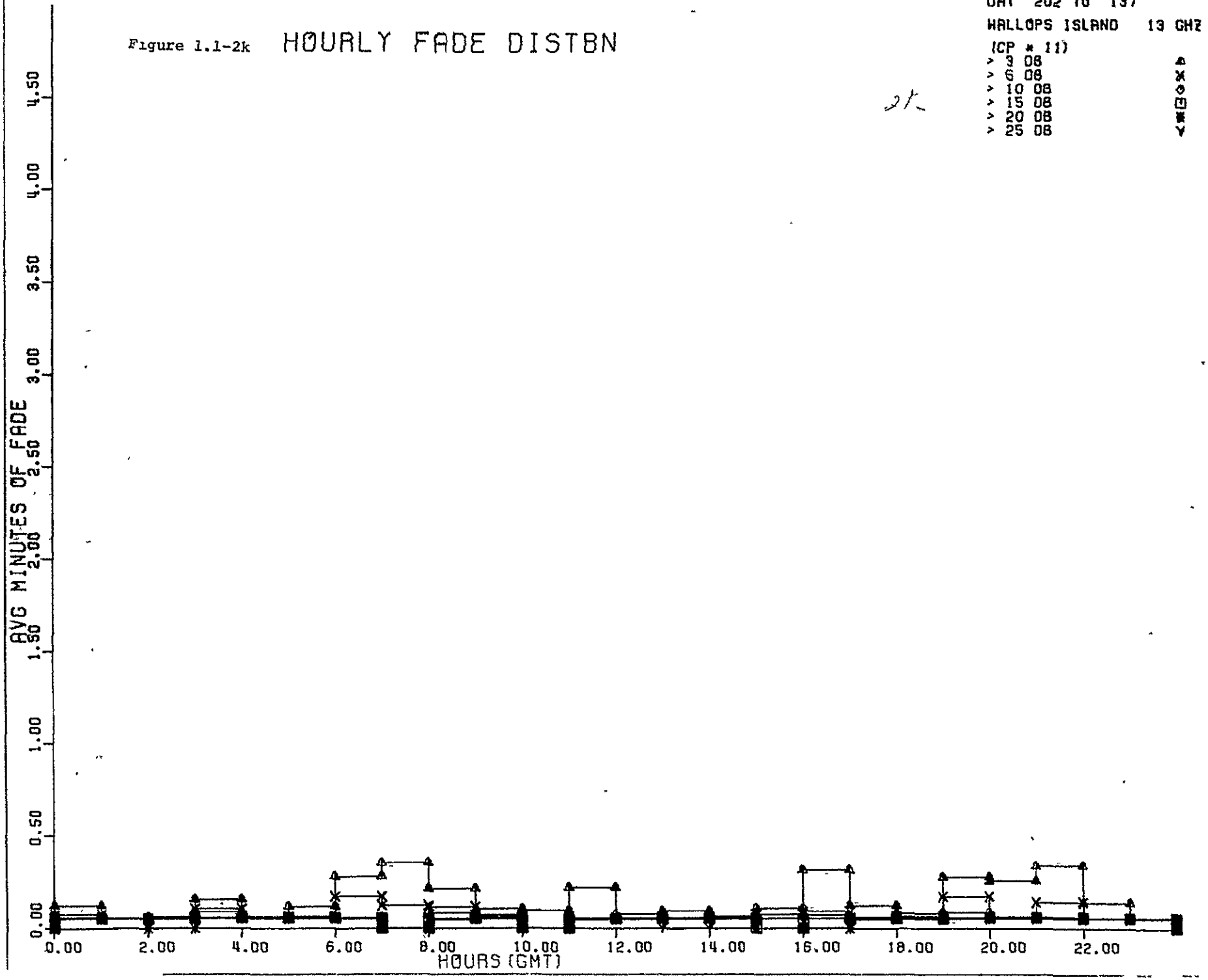


Figure 1.1-21 HOURLY FADE DISTBN

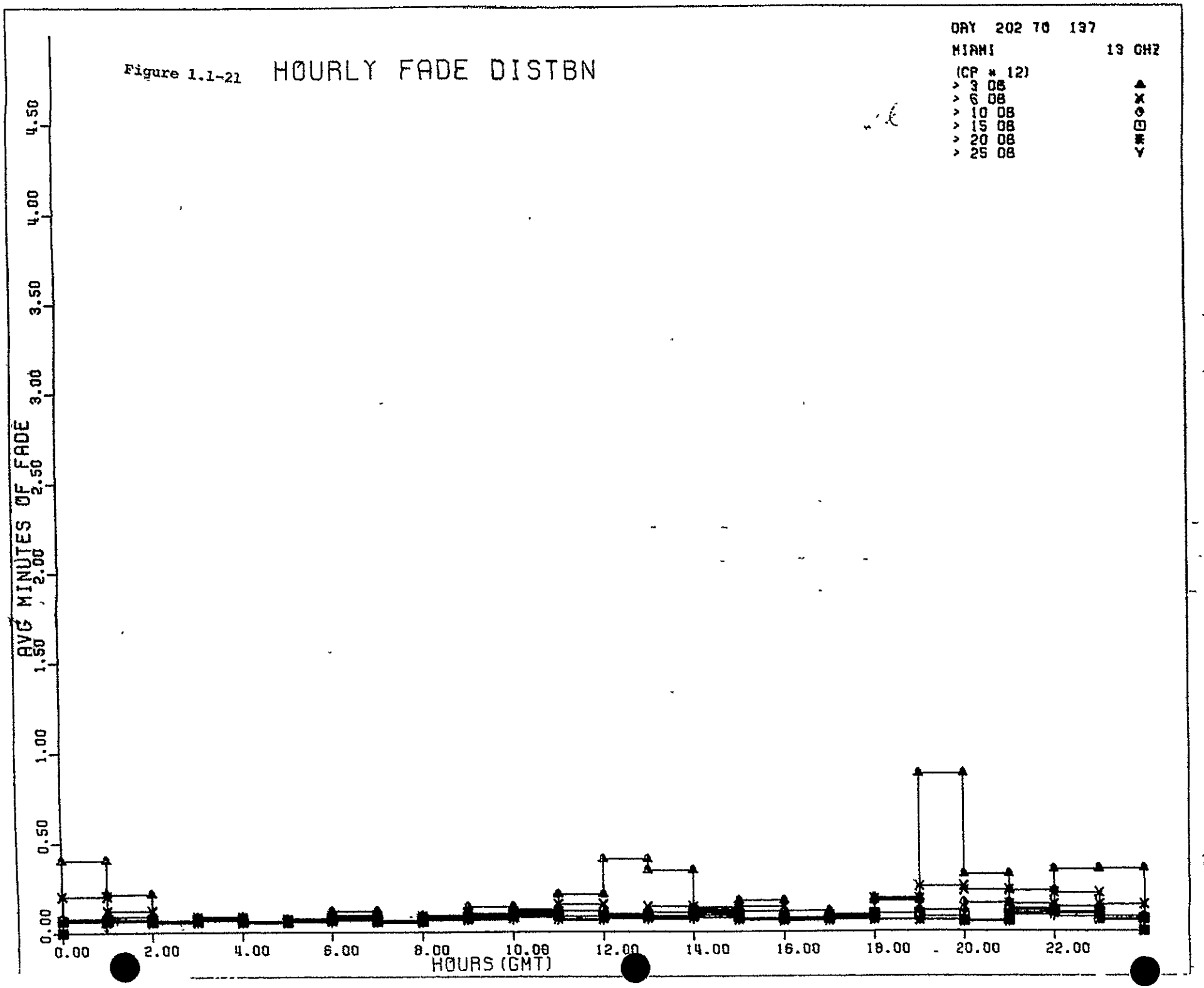


Figure 1.1-2m

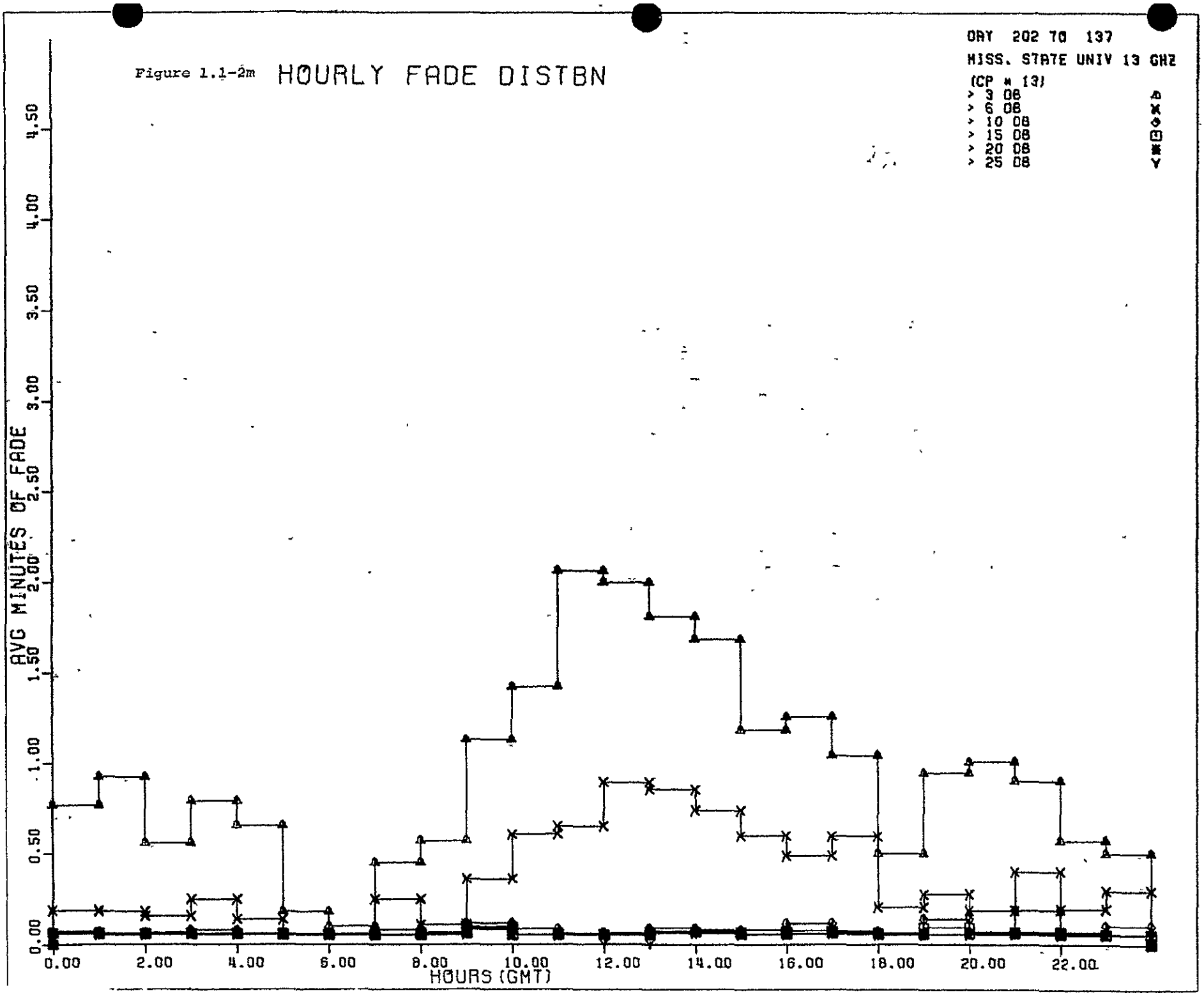

HOURLY FADE DISTBN
DAY 202 70 137
MISS. STATE UNIV 13 GHZ
(CP = 13)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-2n

HOURLY FADE DISTBN

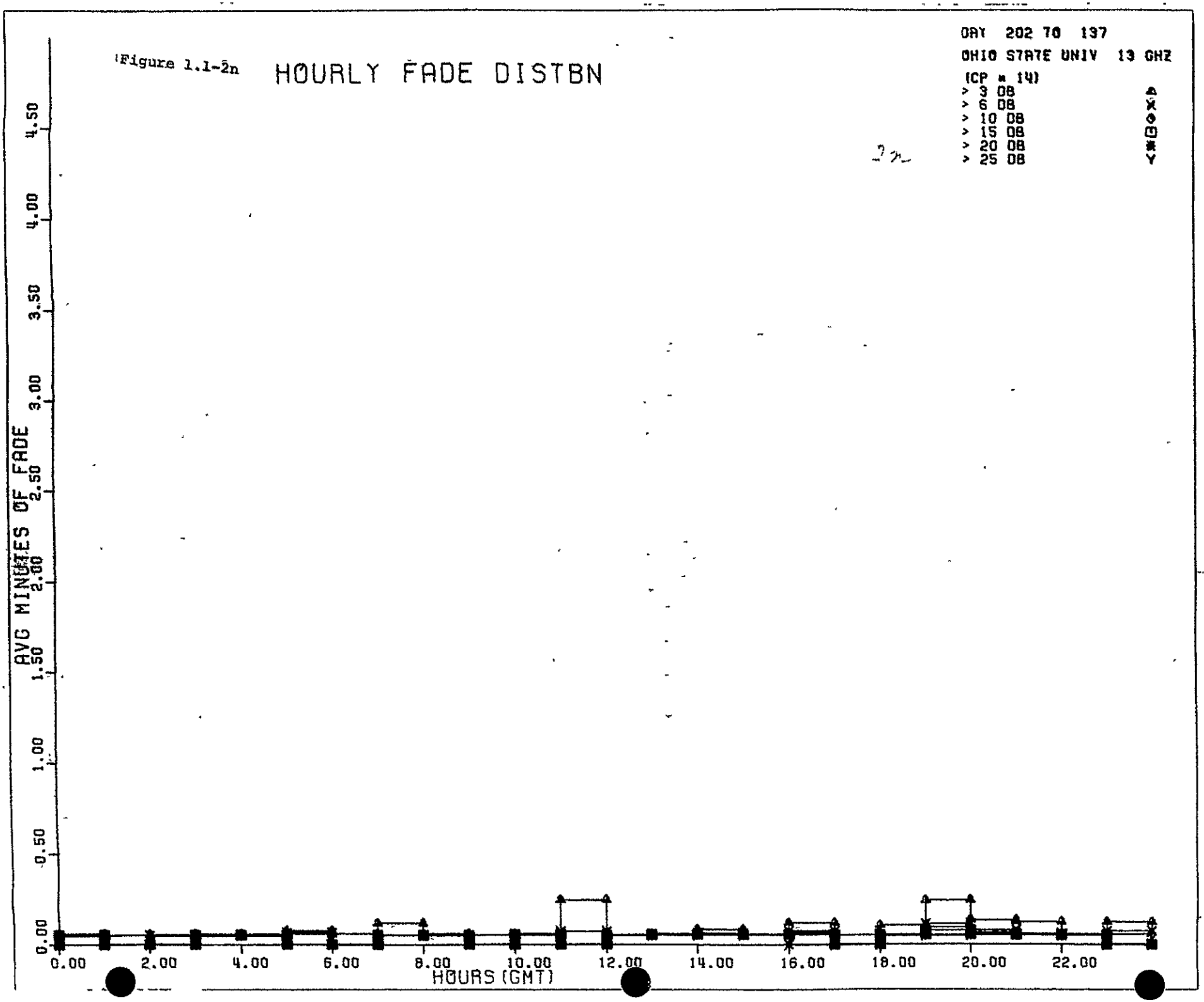


Figure 1.1-20 HOURLY FADE DISTBN

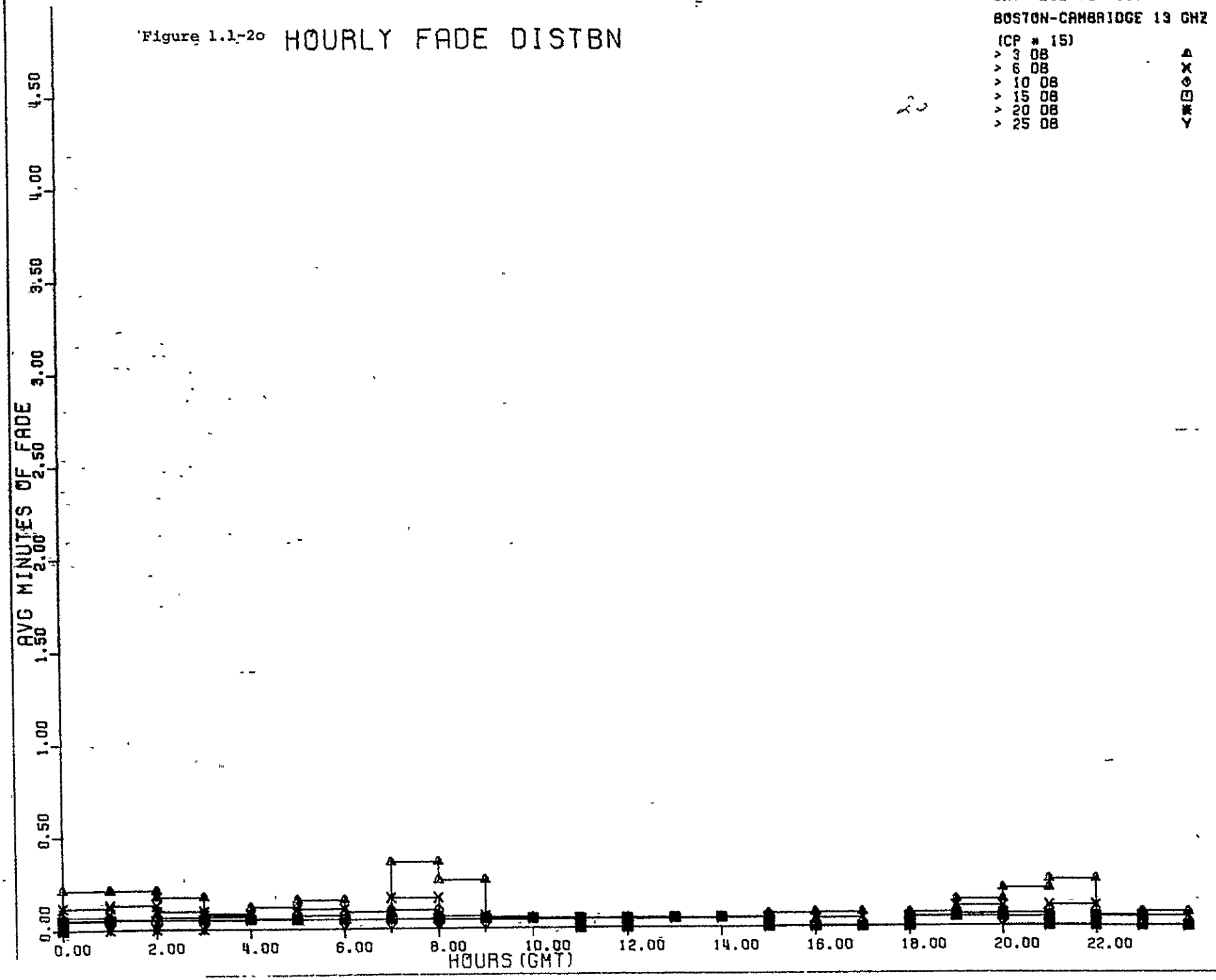


Table 1.1-3a DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

1.1-3a

ADE DEPTH(DB)	AVG. MINUTES OF FADE																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
13 GHZ FREQ. BAND TAMPA																								
> 0	0.8	0.4	0.5	0.6	0.6	0.6	0.8	0.2	0.3	0.3	0.3	0.4	0.3	0.1	0.2	0.3	0.3	0.6	0.4	0.4	0.2	0.8	0.7	0.8
> 3	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.3	0.2	0.2
> 6	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
O. OF DAYS ON BY HOUR	189	179	180	187	174	141	121	180	185	179	175	184	195	197	182	205	199	173	171	170	141	154	200	196
13 GHZ FREQ. BAND ATLANTA																								
> 0	1.5	0.7	0.8	1.3	1.1	0.4	0.2	1.0	1.4	1.9	1.3	2.0	2.2	1.9	1.9	1.5	1.2	1.3	1.5	2.1	1.4	1.2	1.6	2.0
> 3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1
> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 10	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
O. OF DAYS ON BY HOUR	176	170	162	167	169	132	108	160	159	149	144	150	160	159	146	165	170	166	166	165	164	162	173	176
13 GHZ FREQ. BAND NEW ORLEANS																								
> 0	1.0	0.6	0.6	0.9	1.0	0.8	0.8	0.9	1.0	1.4	0.7	1.4	1.6	1.1	0.7	0.5	0.6	0.8	0.6	0.7	1.0	0.7	0.9	1.0
> 3	0.3	0.1	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.4	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.5
> 6	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.4
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
O. OF DAYS ON BY HOUR	112	100	94	97	105	100	85	92	83	67	64	64	72	79	88	103	110	104	93	98	99	91	105	112

Table 1.1-3b DISTRIBUTION OF FADES OVER 24 HOUR PERIOD Ø 202 TO 75 137

36

FADE DEPTH(DB)	AVG. MINUTES OF FADE																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
13 GHZ FREQ. BAND FAYETTESVILLE																								
> 0	0.8	0.3	0.4	0.5	0.8	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.4	0.4	1.2	0.8	0.8	0.5	0.4	0.5	0.4	0.4	1.0
> 3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4
> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	212	205	197	207	208	170	142	193	192	181	180	188	196	198	183	210	212	217	212	212	210	208	214	210
13 GHZ FREQ. BAND ASHEVILLE																								
> 0	1.0	0.7	0.5	0.3	0.7	0.4	0.4	0.5	0.7	0.8	0.7	0.9	0.5	0.4	0.3	0.6	0.8	0.4	0.3	0.8	0.4	0.7	0.6	0.9
> 3	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.3	0.1	0.2
> 6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	243	237	224	234	234	196	164	215	212	201	202	210	216	222	207	232	234	234	229	236	233	235	239	232
13 GHZ FREQ. BAND NASHVILLE																								
> 0	1.6	1.1	2.0	2.1	1.8	0.9	0.6	1.9	0.9	1.2	0.4	0.3	1.1	1.0	0.9	0.2	0.2	0.1	0.4	1.2	1.1	1.3	1.6	2.5
> 3	1.2	1.0	1.8	1.9	1.7	0.5	0.1	1.6	0.7	0.8	0.1	0.0	0.3	0.2	0.3	0.0	0.1	0.0	0.3	1.1	1.0	1.1	1.5	2.3
> 6	1.1	1.0	1.6	1.9	1.6	0.5	0.1	1.6	0.7	0.8	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.2	1.1	1.0	1.0	1.4	2.2
> 10	1.0	1.0	1.5	1.9	1.6	0.5	0.1	1.6	0.7	0.8	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2	1.1	1.0	1.0	1.4	2.2
> 15	1.0	1.0	1.5	1.9	1.6	0.5	0.1	1.6	0.7	0.8	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.2	1.1	1.0	0.9	1.4	2.2
> 20	1.0	1.0	1.5	1.9	1.5	0.5	0.1	1.6	0.7	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.2	1.4	1.9
> 25	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
NO. OF DAYS ON BY HOUR	63	62	71	77	77	63	57	69	66	57	59	57	60	59	58	63	66	61	57	57	62	63	60	63

Table 1.1-3c DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

3c

DE DEPTH(DB)	AVG. MINUTES OF FADE																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
13 GHZ FREQ. BAND WASHINGTON																								
0	1.8	1.3	0.8	1.0	0.8	0.5	0.2	1.0	1.2	1.2	0.9	1.2	1.4	1.3	1.6	1.5	0.7	1.0	1.5	1.8	2.4	1.6	1.6	1.9
3	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.2	0.3	0.4	0.1	0.4	0.3
6	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
20	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
25	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
. OF DAYS ON BY HOUR																								
	199	193	184	196	195	153	122	169	173	170	166	171	180	184	167	197	197	198	197	199	198	199	199	193
13 GHZ FREQ. BAND PHILADELPHIA																								
0	1.1	0.9	0.9	0.6	0.6	0.1	0.4	0.8	1.7	1.4	1.1	1.5	1.0	0.8	1.1	0.8	0.8	1.0	0.5	0.5	0.6	1.1	0.2	0.5
3	0.9	0.5	0.2	0.3	0.4	0.0	0.2	0.3	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.5	0.2	0.3	0.4	0.4	0.1	0.3
6	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.2	0.1	0.2
10	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
15	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0
20	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
25	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
. OF DAYS ON BY HOUR																								
	99	87	87	86	81	58	56	87	91	89	86	88	90	87	90	92	90	90	91	91	90	87	89	86
13 GHZ FREQ. BAND ANDOVER																								
0	4.5	3.4	2.7	3.1	3.5	3.7	3.3	3.1	3.9	3.7	3.2	3.9	4.4	3.2	3.4	3.7	4.6	4.4	2.8	3.8	3.5	3.4	3.5	3.7
3	3.2	2.4	1.3	1.4	1.5	1.8	1.6	1.4	1.9	1.6	1.2	1.6	2.0	1.5	1.4	1.7	2.4	1.8	1.4	1.9	2.0	1.7	2.1	2.3
6	0.8	0.7	0.4	0.5	0.3	0.2	0.4	0.3	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.4	0.4	0.3	0.2	0.2	0.3	0.6	0.6	0.3
10	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1
15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
25	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1
. OF DAYS ON BY HOUR																								
	239	231	222	231	230	190	159	199	190	174	177	179	199	208	203	236	238	237	234	240	238	238	242	236

Table 1.1-3d DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

3d

FADE DEPTH(DB)	AVG. MINUTES OF FADE																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
13 GHZ FREQ. BAND DETROIT																								
> 0	0.7	0.3	0.1	0.2	0.3	0.1	0.1	0.3	0.2	0.4	0.1	0.1	0.2	0.2	0.4	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.5
> 3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.3
> 6	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 10	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	196	193	191	200	200	165	129	161	149	135	135	136	156	161	161	197	200	199	200	204	203	208	206	192
13 GHZ FREQ. BAND WALLOPS ISLAND																								
> 0	0.4	0.1	0.1	0.2	0.2	0.5	0.7	0.6	0.5	0.3	0.2	0.4	0.3	0.5	0.2	0.3	0.8	0.5	0.4	0.5	0.5	0.5	0.4	0.2
> 3	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.4	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.3	0.3	0.3	0.1	0.1
> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	231	225	217	226	221	186	154	210	209	201	196	203	214	218	204	227	232	228	223	228	225	222	229	225
13 GHZ FREQ. BAND MIAMI																								
> 0	0.8	0.4	0.2	0.2	0.2	0.1	0.4	0.2	0.3	0.5	0.2	0.5	0.7	0.6	0.3	0.3	0.5	0.2	0.4	1.4	0.7	0.5	0.7	0.8
> 3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.3	0.1	0.2	0.1	0.1	0.2	0.9	0.3	0.2	0.3	0.3
> 6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	115	98	97	106	94	71	70	102	100	96	89	95	105	104	103	107	117	97	77	90	78	73	112	121

Table 1.1-3e DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

DE DEPTH(DB) AVG. MINUTES OF FADE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
13 GHZ FREQ. BAND MISS. STATE UNIV																								
0	2.4	2.2	1.7	2.2	1.4	0.7	0.7	1.3	1.4	2.1	2.5	3.1	3.3	3.3	2.7	2.1	2.0	1.8	1.5	2.1	1.8	1.8	1.7	1.8
3	0.8	0.9	0.6	0.8	0.7	0.2	0.1	0.5	0.6	1.1	1.4	2.1	2.0	1.8	1.7	1.2	1.3	1.0	0.5	1.0	1.0	0.9	0.6	0.5
6	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.2	0.1	0.4	0.6	0.7	0.9	0.9	0.7	0.6	0.5	0.6	0.2	0.3	0.2	0.4	0.2	0.3
10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
OF DAYS ON BY HOUR	190	184	174	188	191	157	135	159	145	134	128	130	146	157	159	188	195	189	186	185	183	187	190	182
13 GHZ FREQ. BAND OHIO STATE UNIV																								
0	0.2	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.5	0.2	0.1	0.6	0.1	0.1	0.6	0.9	0.4	0.1	0.2	0.4	0.4	0.3	0.1	0.2
3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
6	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
10	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
15	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
20	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
25	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
OF DAYS ON BY HOUR	190	186	175	186	188	152	133	161	155	141	136	140	152	160	157	188	192	188	183	186	188	185	189	186
13 GHZ FREQ. BAND BOSTON-CAMBRIDGE																								
0	0.6	0.4	0.3	0.2	0.6	0.4	0.4	0.9	0.7	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.1	0.2
3	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.1	0.1
6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0
15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0
20	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0
25	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
OF DAYS ON BY HOUR	224	215	208	219	218	173	144	192	193	185	183	192	201	204	191	216	220	222	213	216	216	219	223	217

Figure 1.1-3

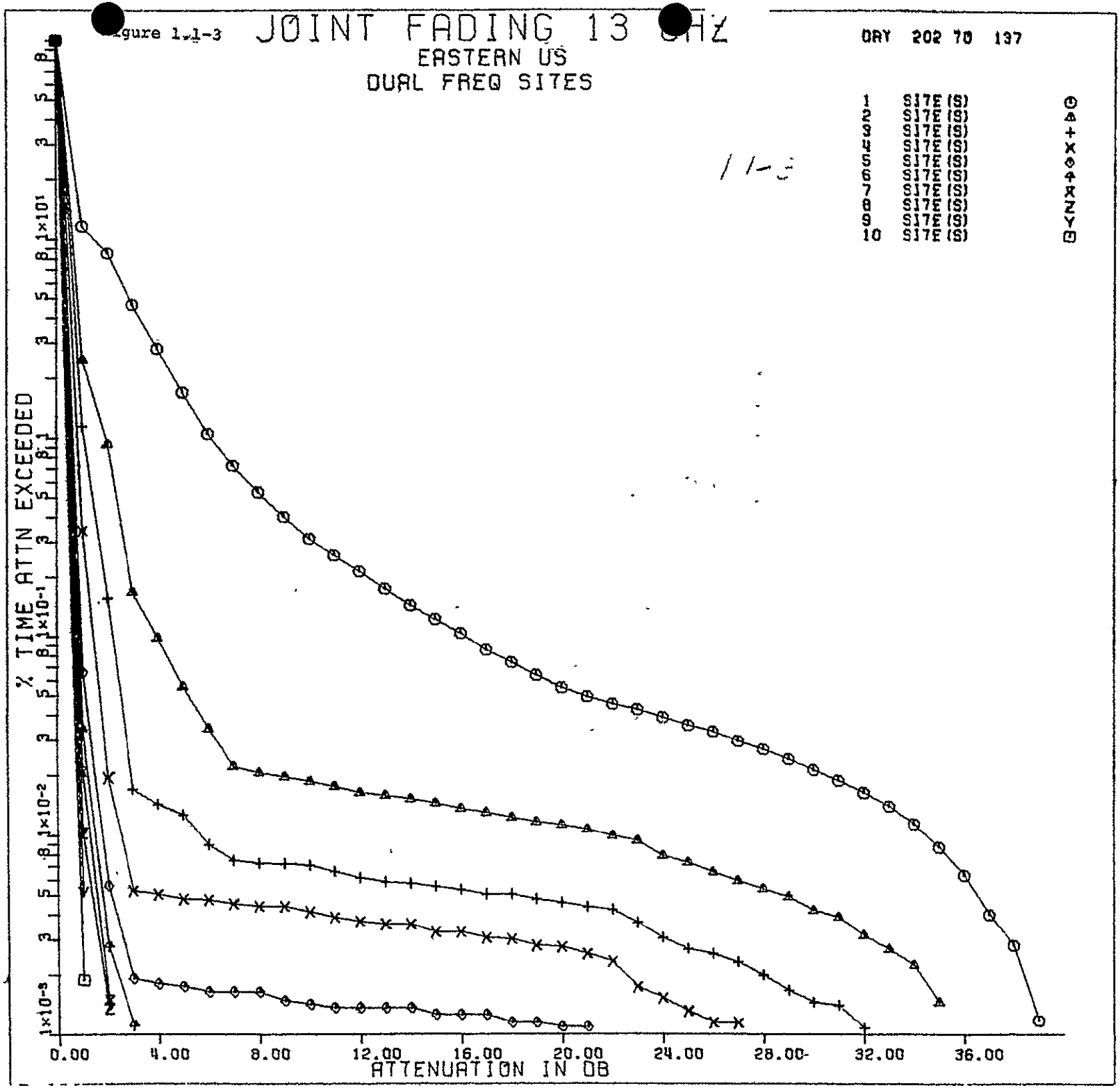

JOINT FADING 13 GHZ
EASTERN US
DUAL FREQ SITES
DAY 202 TO 137
1 S17E(S)
2 S17E(S)
3 S17E(S)
4 S17E(S)
5 S17E(S)
6 S17E(S)
7 S17E(S)
8 S17E(S)
9 S17E(S)
10 S17E(S)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10^0
1x10^1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Table 1.1-4

13 GHZ FREQ. BAND % TIME ATTENUATION EXCEEDED JOINTLY AT MORE THAN ONE SITE 1-4 0 202 TO 75 137

DB	# SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	11.64	2.45	1.14	0.34	0.07	0.03	0.02	0.01	0.01	0.00	0.0	0.0	0.0	0.0	0.0
2	8.49	0.93	0.16	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0
3	4.65	0.17	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0
4	2.80	0.10	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0
5	1.69	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0
6	1.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.73	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.54	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.40	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.31	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.26	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.21	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.17	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.14	0.02	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.12	0.01	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.10	0.01	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.09	0.01	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.06	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.05	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.05	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.04	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.04	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.04	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.03	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.03	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.03	0.01	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.01	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HRS ON	4605.	4680.	4661.	4631.	4601.	4544.	4388.	3916.	3078.	1469.	0.	0.	0.	0.	0.

13 GHZ FREQ. BAND Table 1.1-5a NUMBER OF JOINT FADES AT MORE THAN ONE SITE 1.1-52 0 202 TO 75 137

3. DB LEVEL

MINUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
> 100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	65	3	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	124	11	1	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	582	62	5	1	0	0	0	0	0	0	0	0	0	0	0
0.60 -	1.00	400	44	3	2	0	0	0	0	0	0	0	0	0	0	0
0.10 -	0.50	3860	467	105	50	26	18	6	4	3	3	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 10

1-45

13 GHZ FREQ. BAND | Table 1.1-5b NUMBER OF JOINT FADES AT MORE THAN ONE SITE 5b 0 202 TO 75 137

6. DB LEVEL NUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	48	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	311	13	2	1	0	0	0	0	0	0	0	0	0	0	0
.60 -	1.00	161	23	3	1	0	0	0	0	0	0	0	0	0	0	0
.10 -	0.50	1433	232	85	48	24	16	5	4	0	0	0	0	0	0	0

MBER OF SITES CONSIDERED = 10

13 GHZ FREQ. BAND | Table 1.1-5c NUMBER OF JOINT FADES AT MORE THAN ONE SITE 5C 0 202 TO 75 137

10. DB LEVEL

MINUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
> 100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	154	2	1	1	0	0	0	0	0	0	0	0	0	0	0
0.60 -	1.00	107	11	1	0	0	0	0	0	0	0	0	0	0	0	0
0.10 -	0.50	881	174	78	42	20	11	1	0	0	0	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 10

13 GHZ FREQ. BAND (Table 1.1-5d NUMBER OF JOINT FADES AT MORE THAN ONE SITE 5d 0 202 TO 75 137

15. DB LEVEL NUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.60 -	1.00	95	8	1	1	0	0	0	0	0	0	0	0	0	0	0
.10 -	0.50	594	157	69	39	19	10	1	0	0	0	0	0	0	0	0

MBER OF SITES CONSIDERED = 10

-/8

13 GHZ FREQ. BAND | Table 1.1-5e NUMBER OF JOINT PADES AT MORE THAN ONE SITE 5c 0 202 TD 75 137

20. DB LEVEL MINUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
> 100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.60 -	1.00	46	1	1	1	0	0	0	0	0	0	0	0	0	0	0
0.10 -	0.50	470	139	62	34	16	2	0	0	0	0	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 10

13 GHz FREQ. BAND Table 1.1-5f NUMBER OF JOINT FADES AT MORE THAN ONE SITE 5f 0 202 TO 75 137

25. DB LEVEL

INUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
).60 -	1.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
).10 -	0.50	368	91	34	12	2	0	0	0	0	0	0	0	0	0	0

JMBER OF SITES CONSIDERED = 10

5f

Figure 1.1-4a

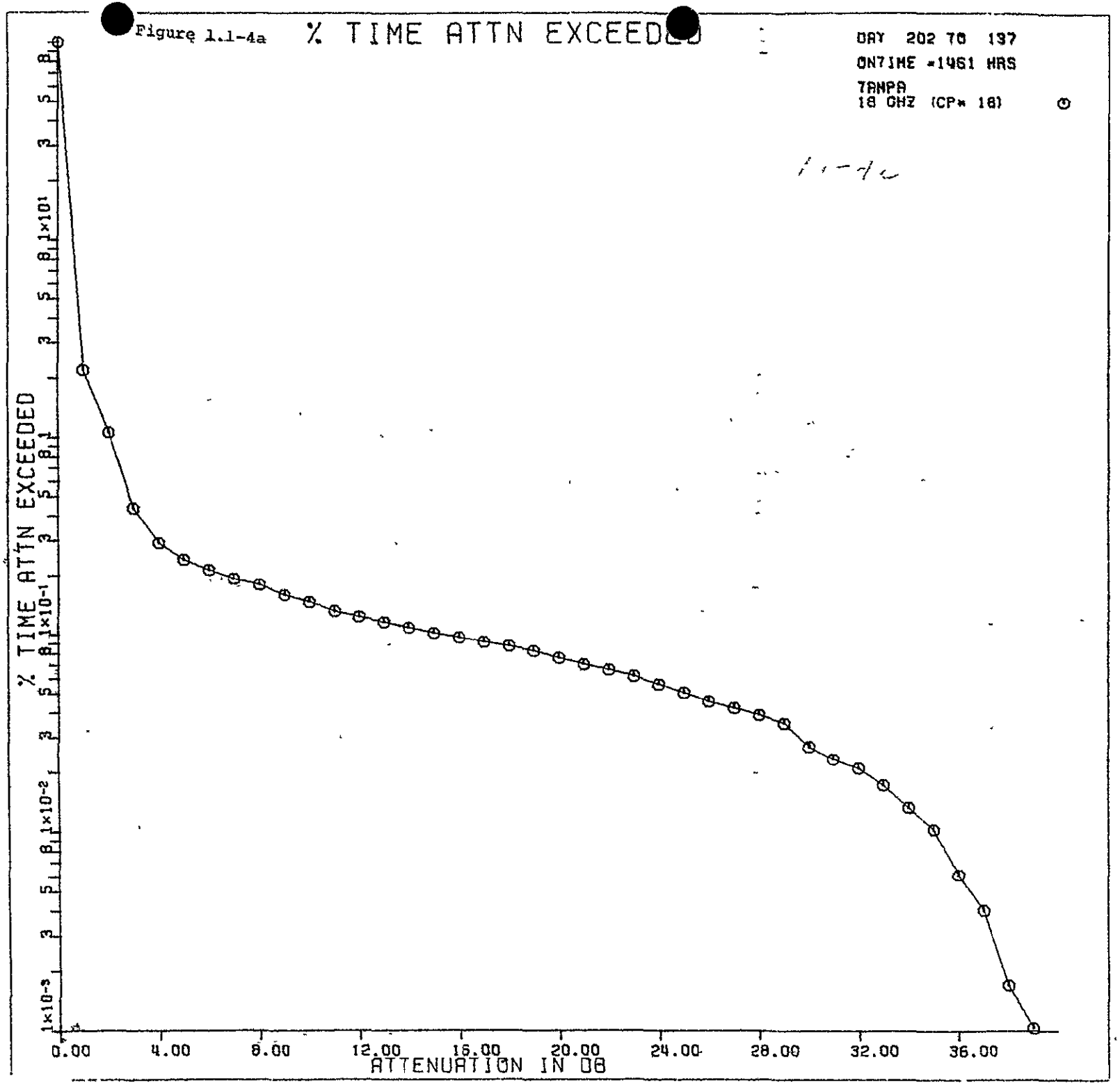

% TIME ATTN EXCEEDED
DAY 202 TO 197
ON TIME =1461 HRS
TAMPA
18 GHZ (CP= 18)
% TIME ATTN EXCEEDED
1×10-3
1×10-2
1×10-1
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4b

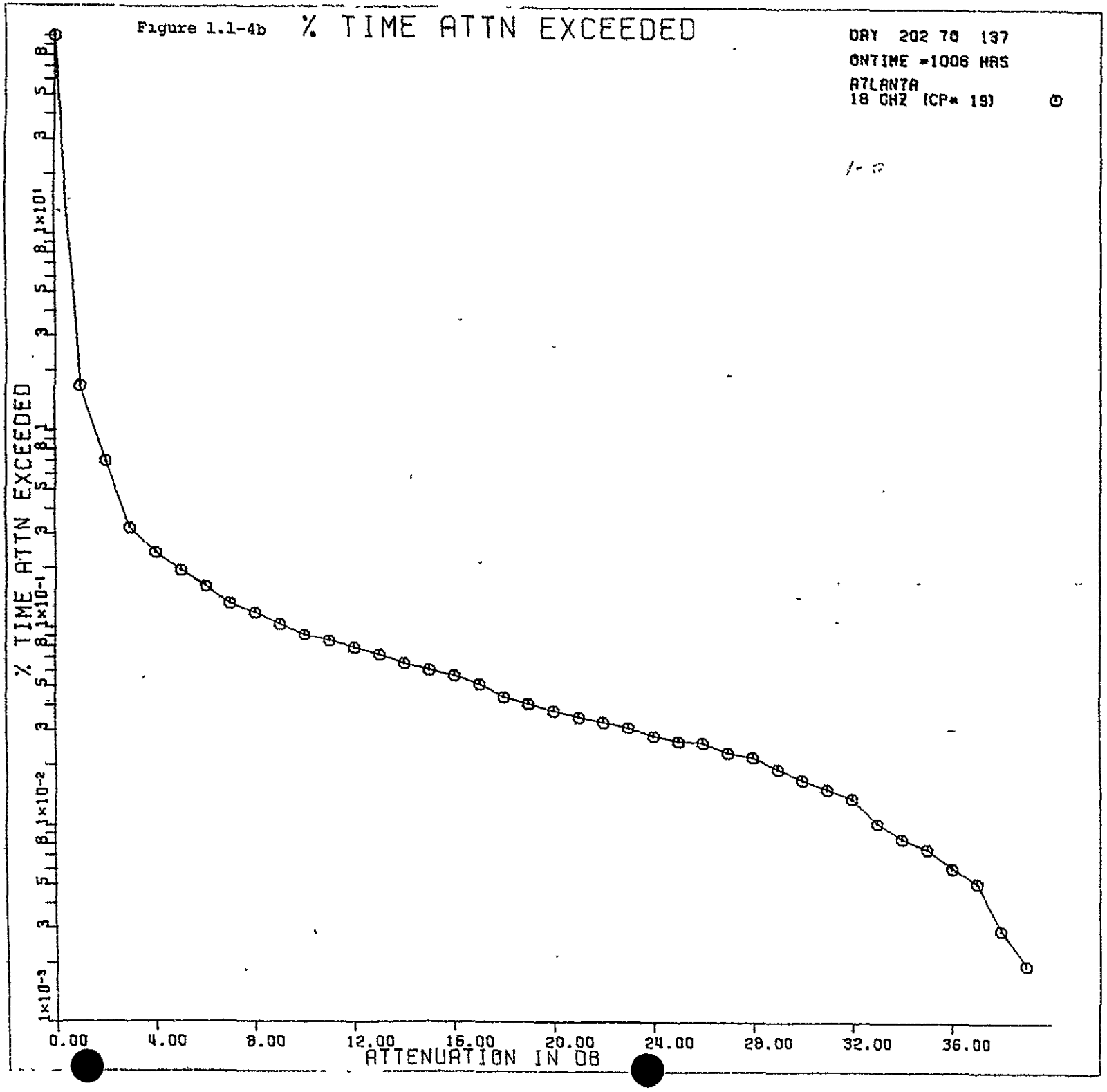

% TIME ATTN EXCEEDED
DAY 202 TO 137
ONTIME =1006 HRS
ATLANTA
18 GHZ (CP= 19)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4c

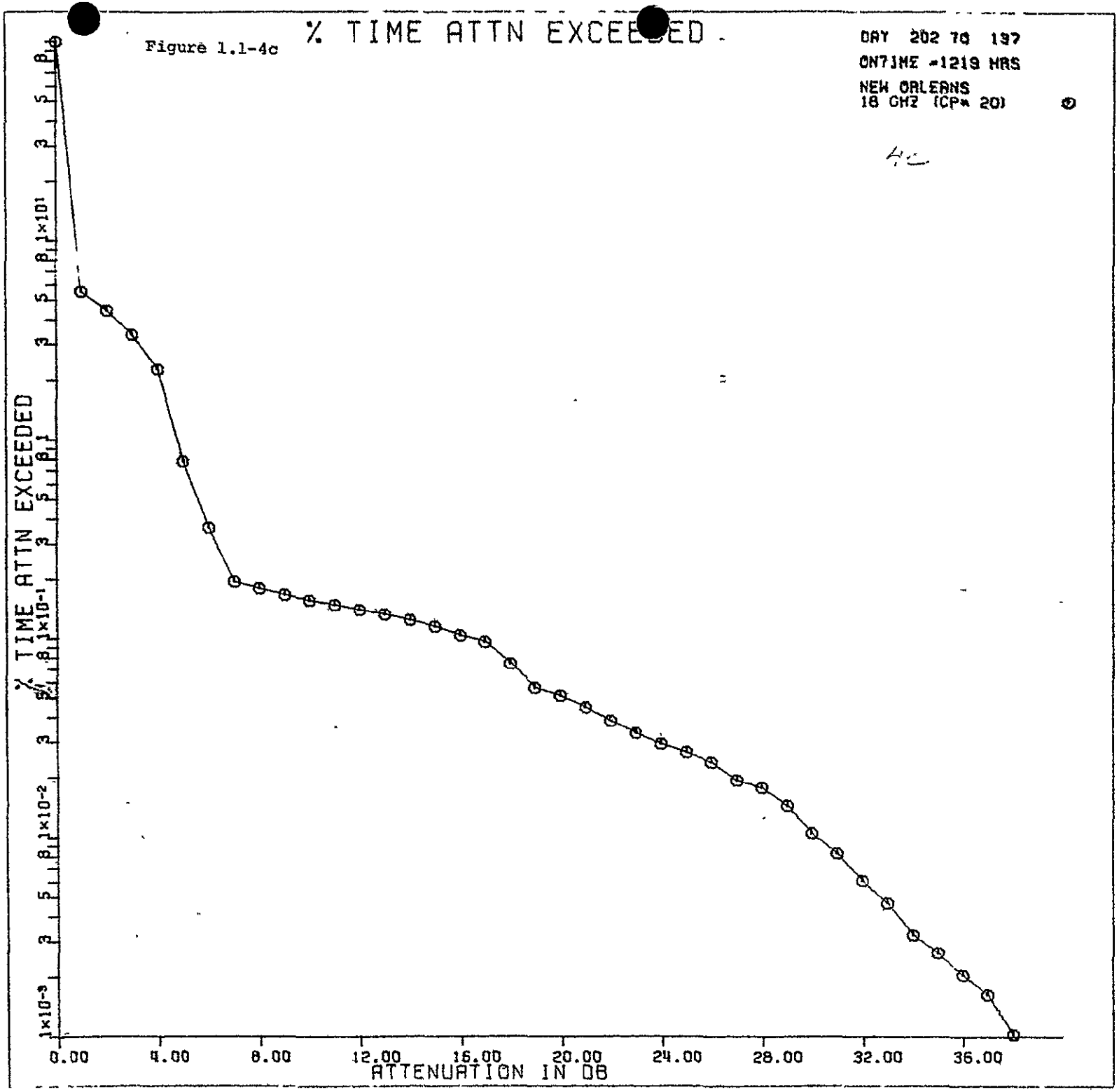

% TIME ATTN EXCEEDED
DAY 202 TO 197
ONTIME =1219 HRS
NEW ORLEANS
18 GHZ (CP= 20)
4c
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4d

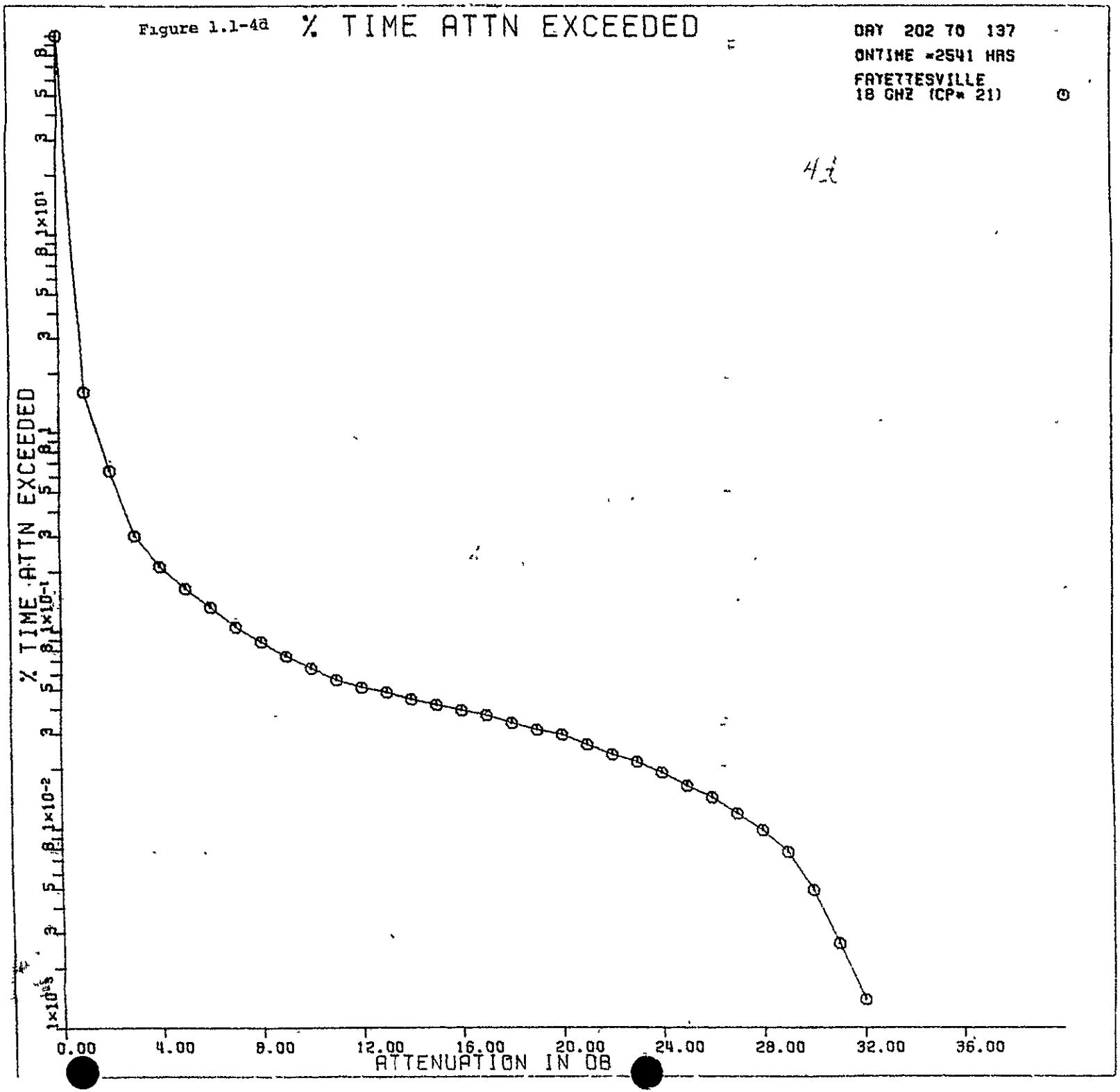

% TIME ATTN EXCEEDED
DAY 202 70 137
ONTIME =2541 HRS
FAYETTESVILLE
18 GHZ (CP= 21)
% TIME ATTN EXCEEDED
1x10^1
1x10^0
1x10^-1
1x10^-2
1x10^-3
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4e

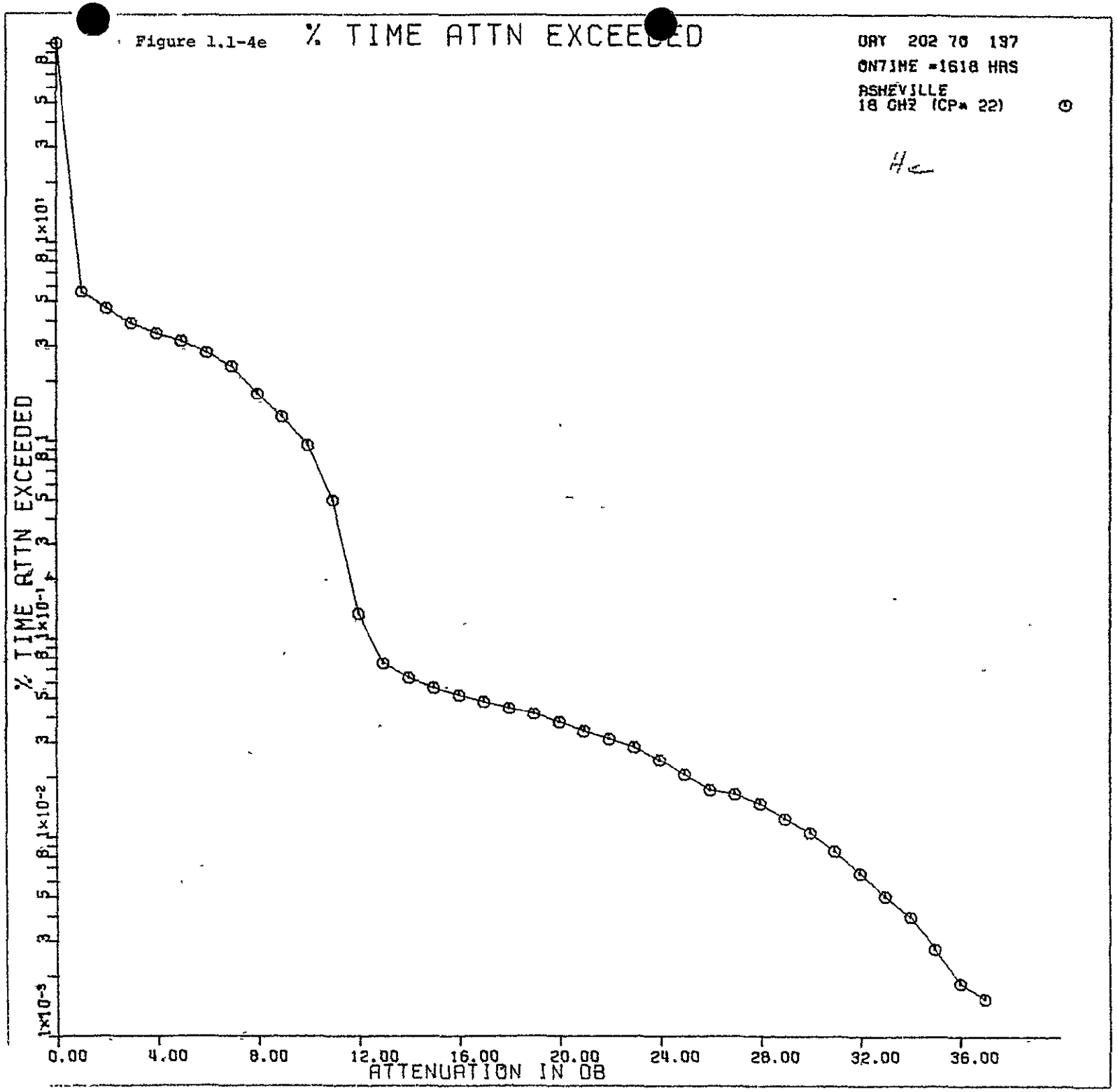

% TIME ATTN EXCEEDED
DAY 202 TO 197
ONTIME =1618 HRS
ASHEVILLE
18 GHz (CP= 22)
4c
% TIME ATTN EXCEEDED
1x10⁻³
1x10⁻²
1x10⁻¹
1x10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4f

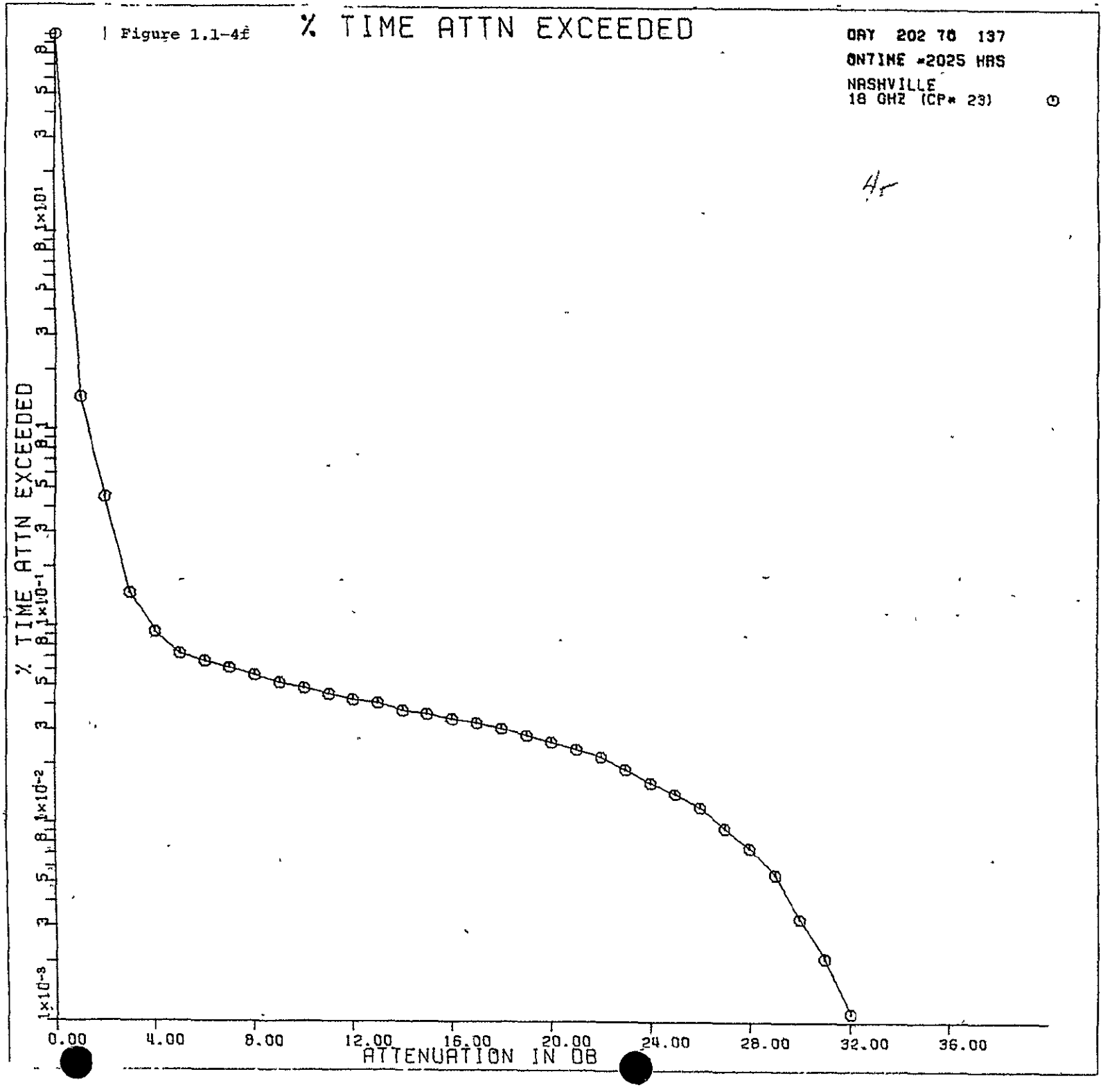

% TIME ATTN EXCEEDED
DAY 202 78 137
ONTIME =2025 HRS
NASHVILLE
18 GHZ (CP= 23)
4f
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10^0
1x10^1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4g

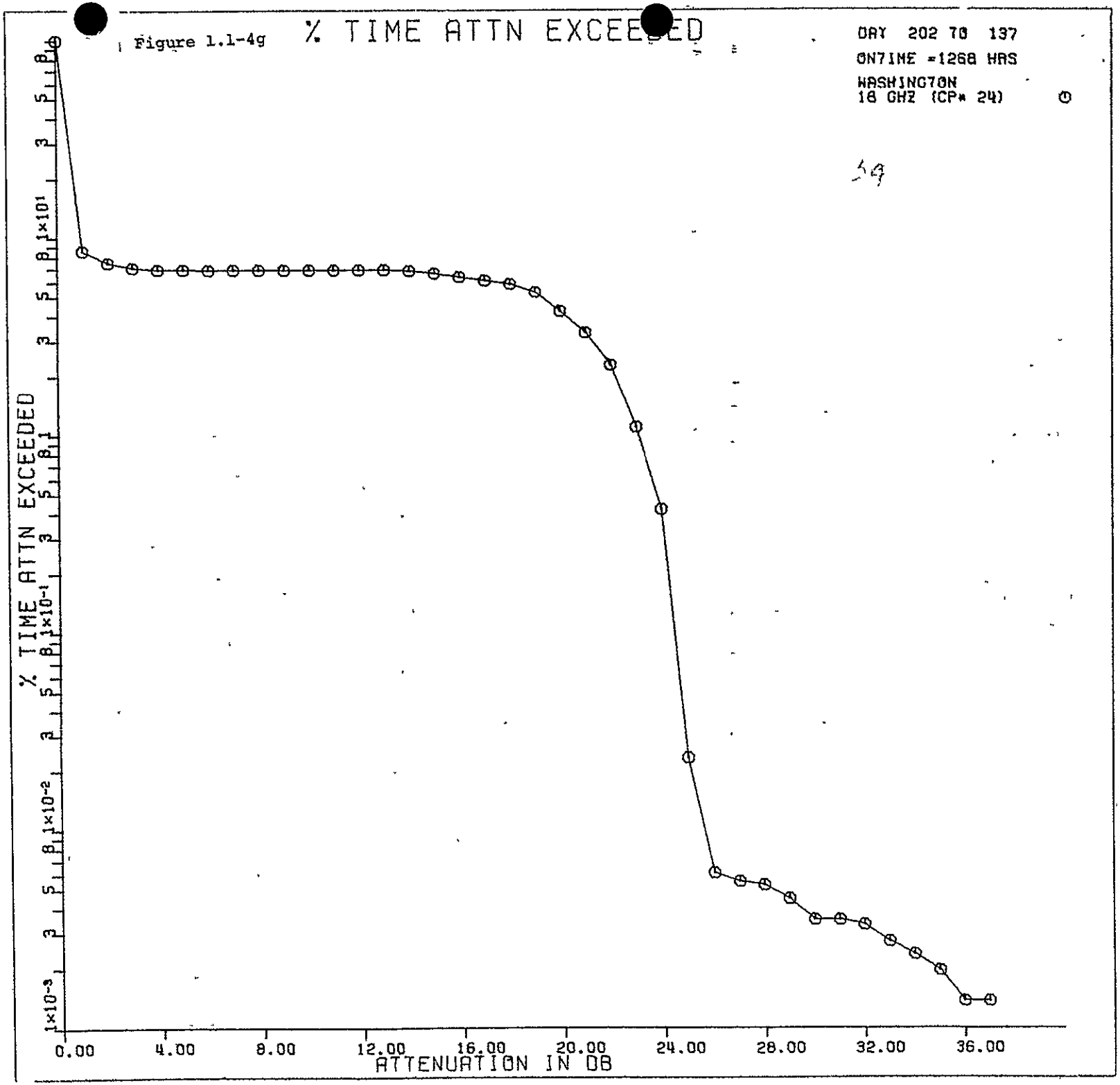

% TIME ATTN EXCEEDED
DAY 202 TO 137
ONTIME =1268 HRS
WASHINGTON
18 GHZ (CP= 24)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4h

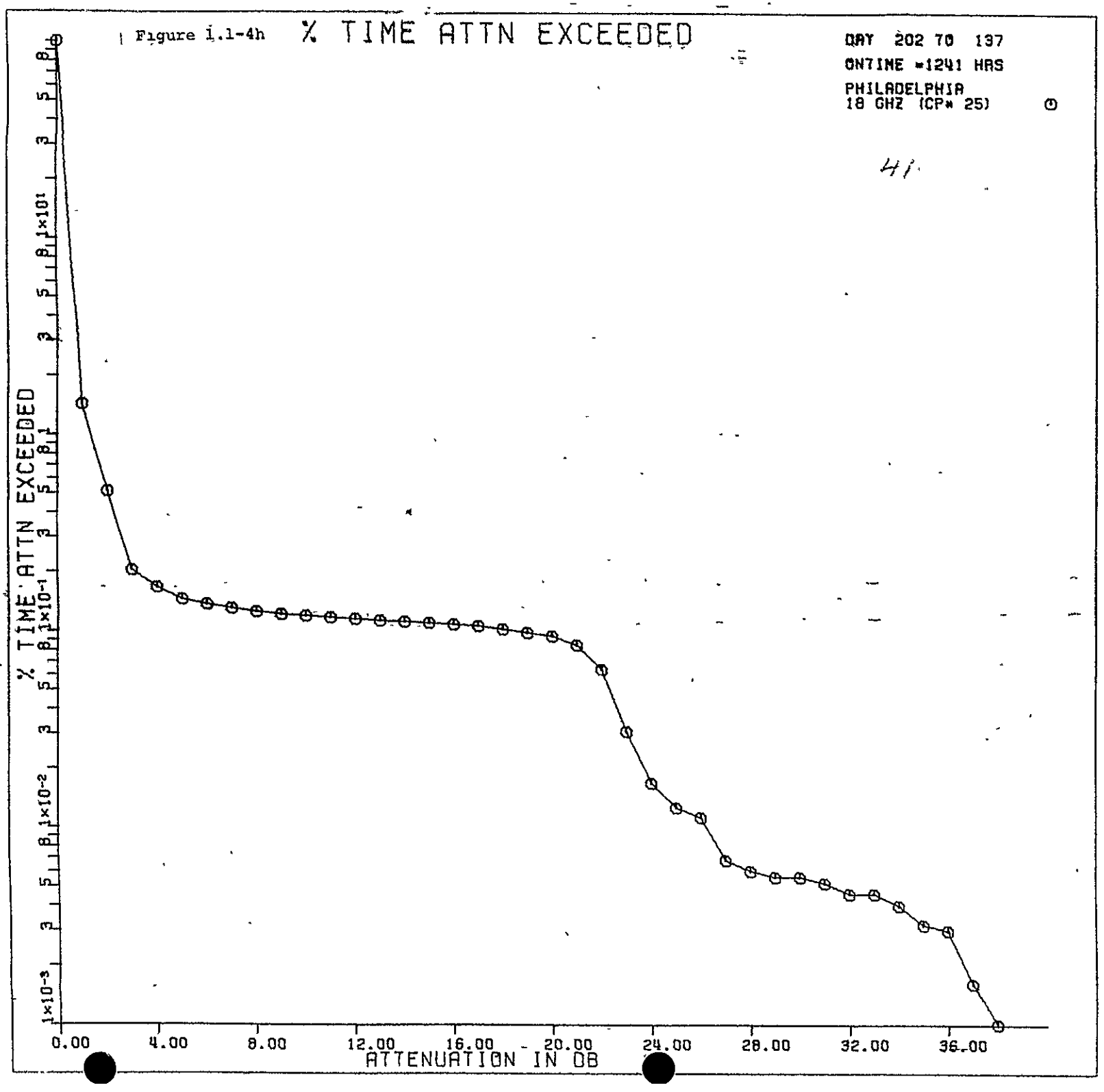
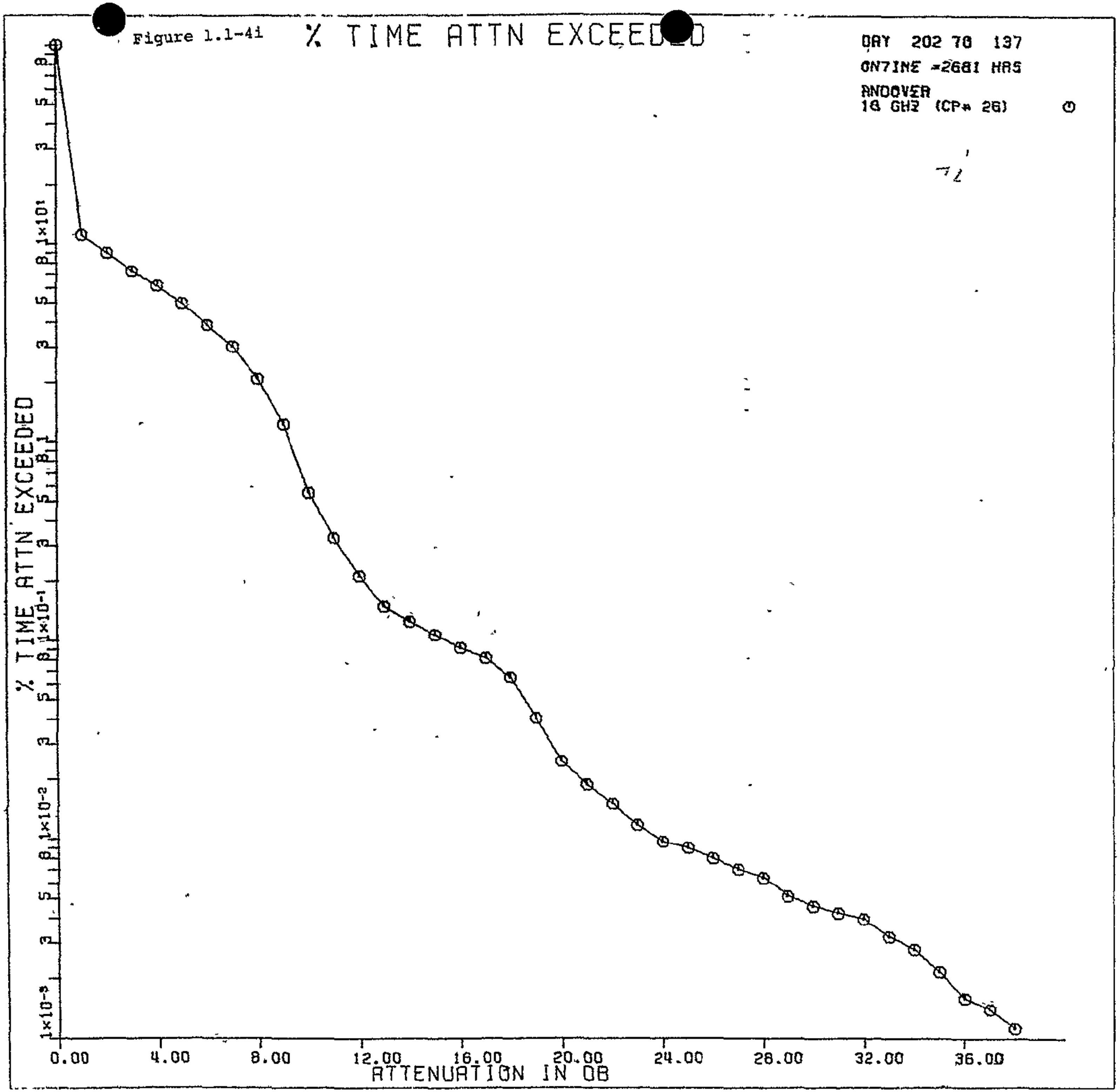

% TIME ATTN EXCEEDED
DAY 202 70 137
ONTIME =1241 HRS
PHILADELPHIA
18 GHZ (CP= 25)
41
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10
1x101
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4i



% TIME ATTN EXCEEDED
DAY 202 78 137
ONTIME =2681 HRS
ANDOVER
18 GHZ (CP= 26)
% TIME ATTN EXCEEDED
1×10¹
1×10⁻¹
1×10⁻²
1×10⁻³
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4j

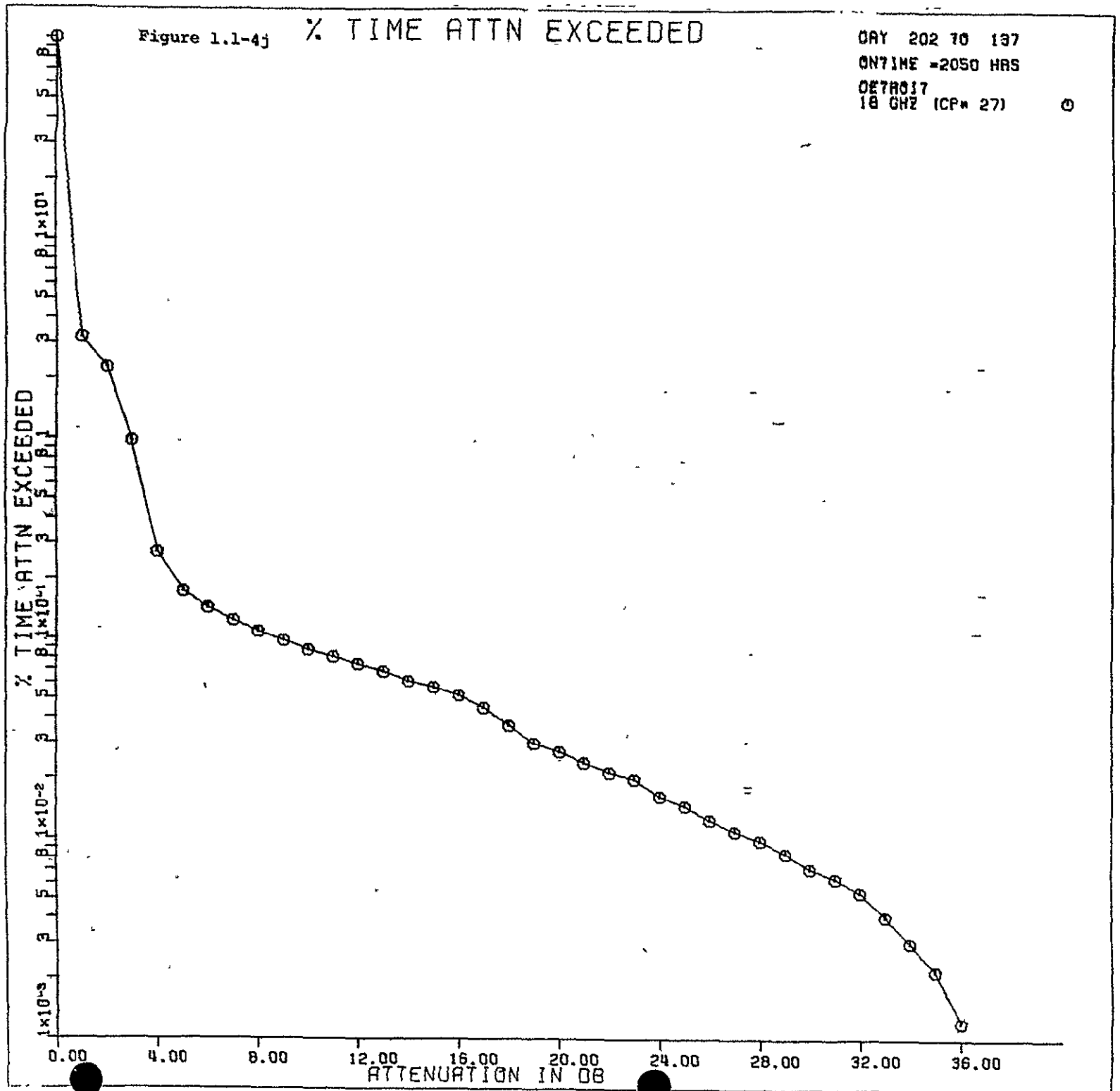

% TIME ATTN EXCEEDED
DAY 202 TO 197
ONTIME =2050 HRS
OE7A017
18 GHZ (CP= 27)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x101
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4k

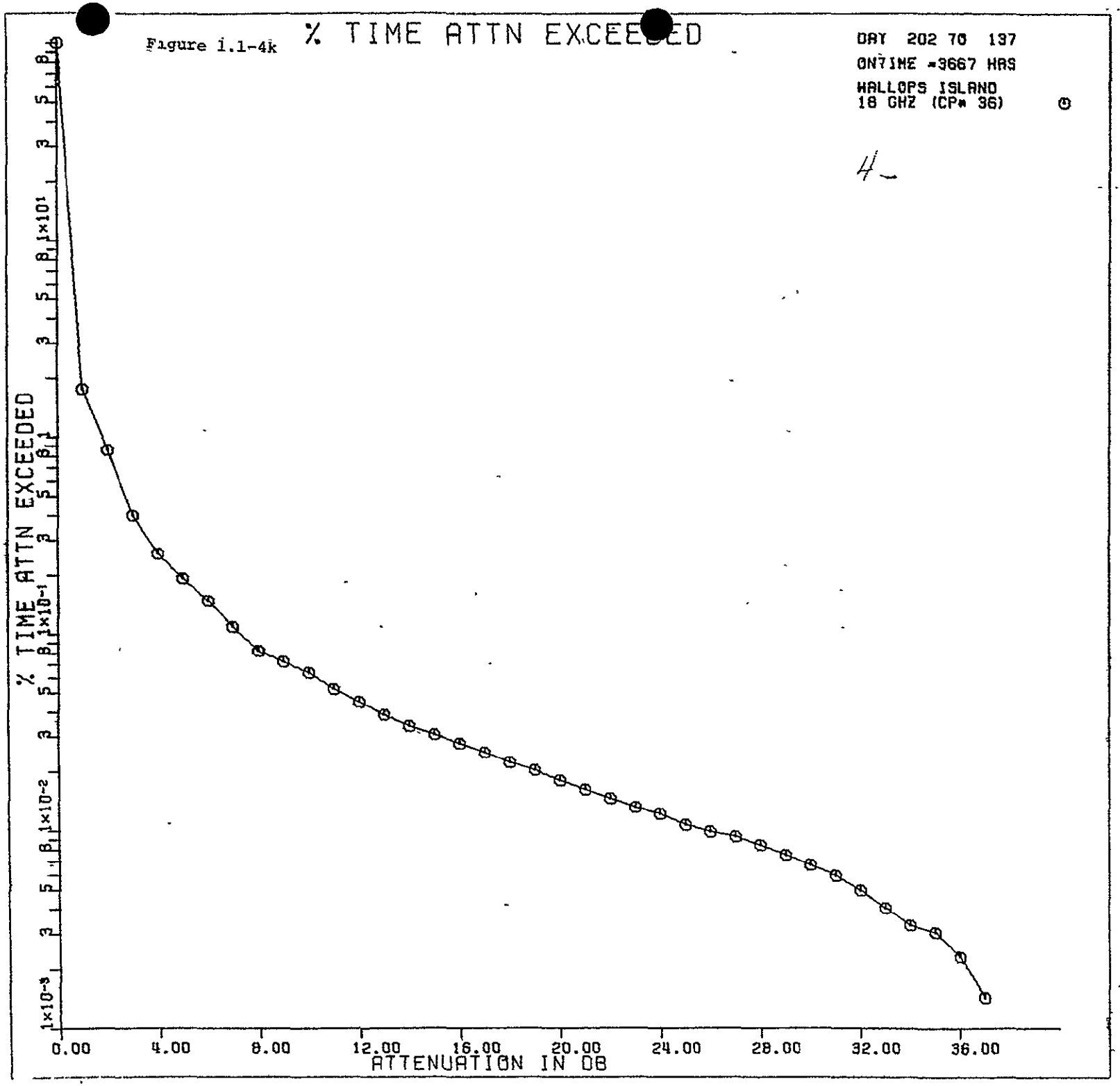

% TIME ATTN EXCEEDED
DAY 202 TO 137
ONTIME =3667 HRS
WALLOPS ISLAND
18 GHZ (CP= 36)
4
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-41

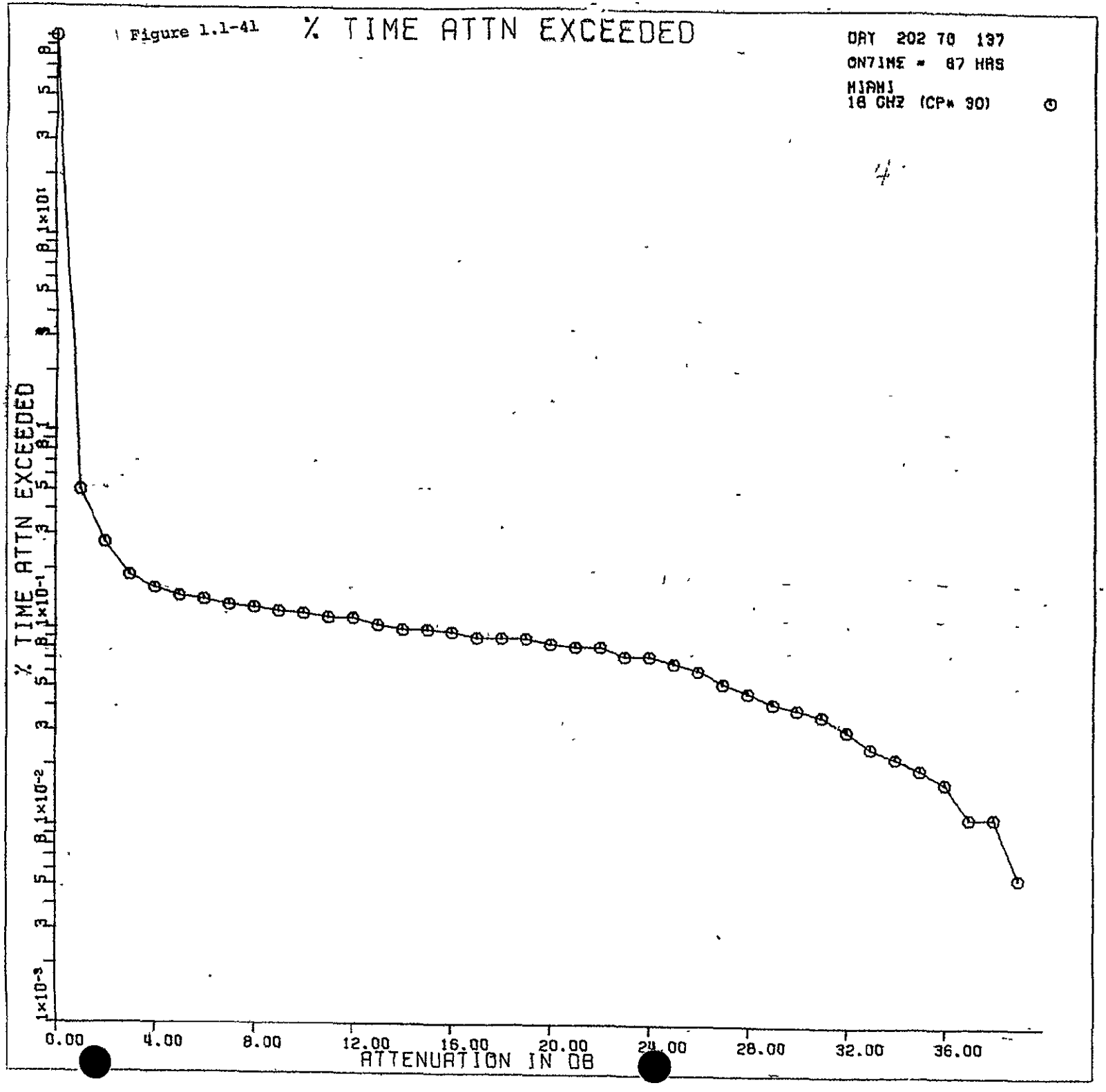

% TIME ATTN EXCEEDED
DAY 202 TO 137
ONTIME = 87 HRS
MIAMI
18 GHZ (CP= 90)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4m

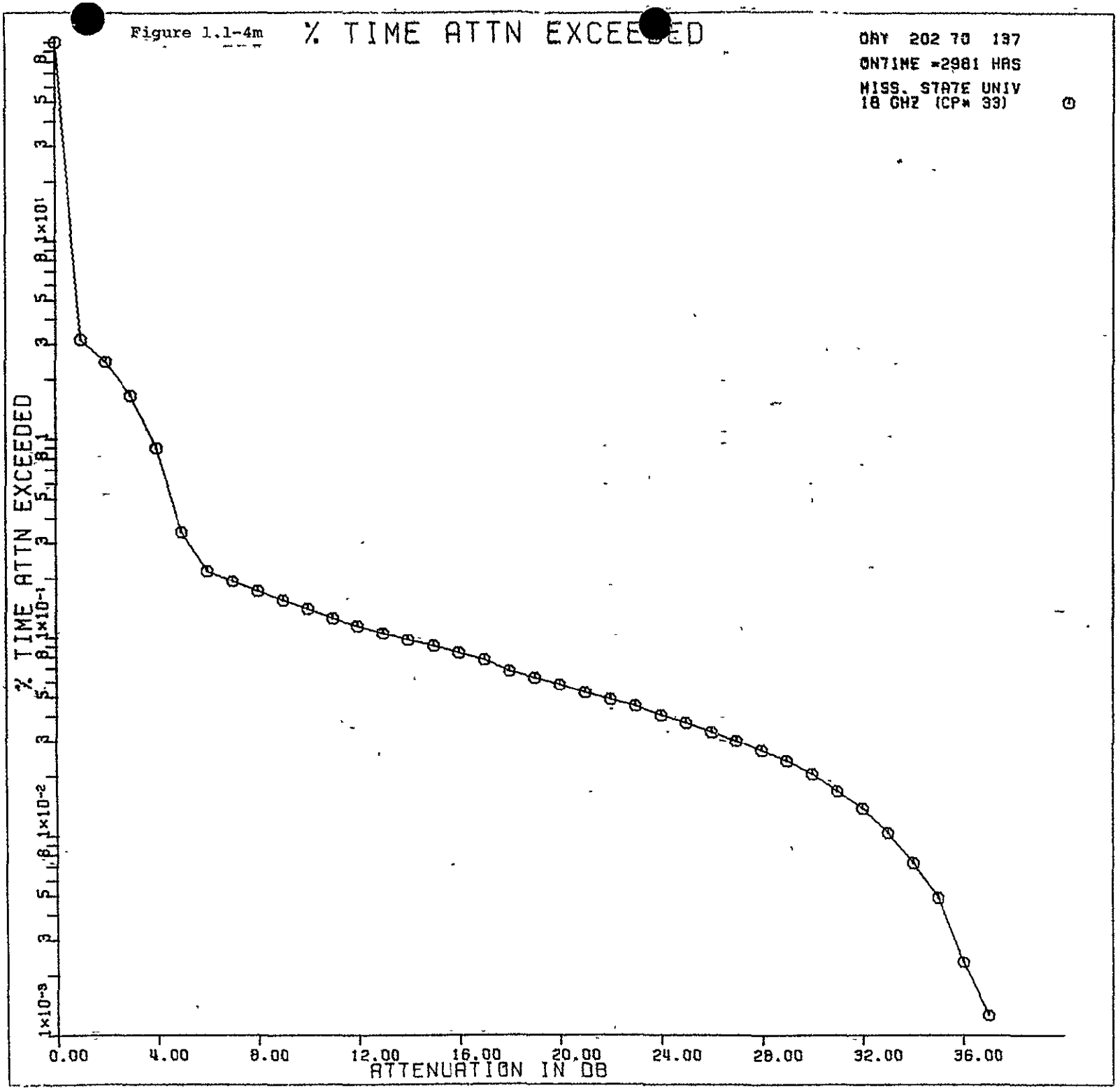

% TIME ATTN EXCEEDED
DAY 202 70 137
ONTIME =2981 HRS
MISS. STATE UNIV
18 GHZ (CP= 33)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10^0
1x10^1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4n

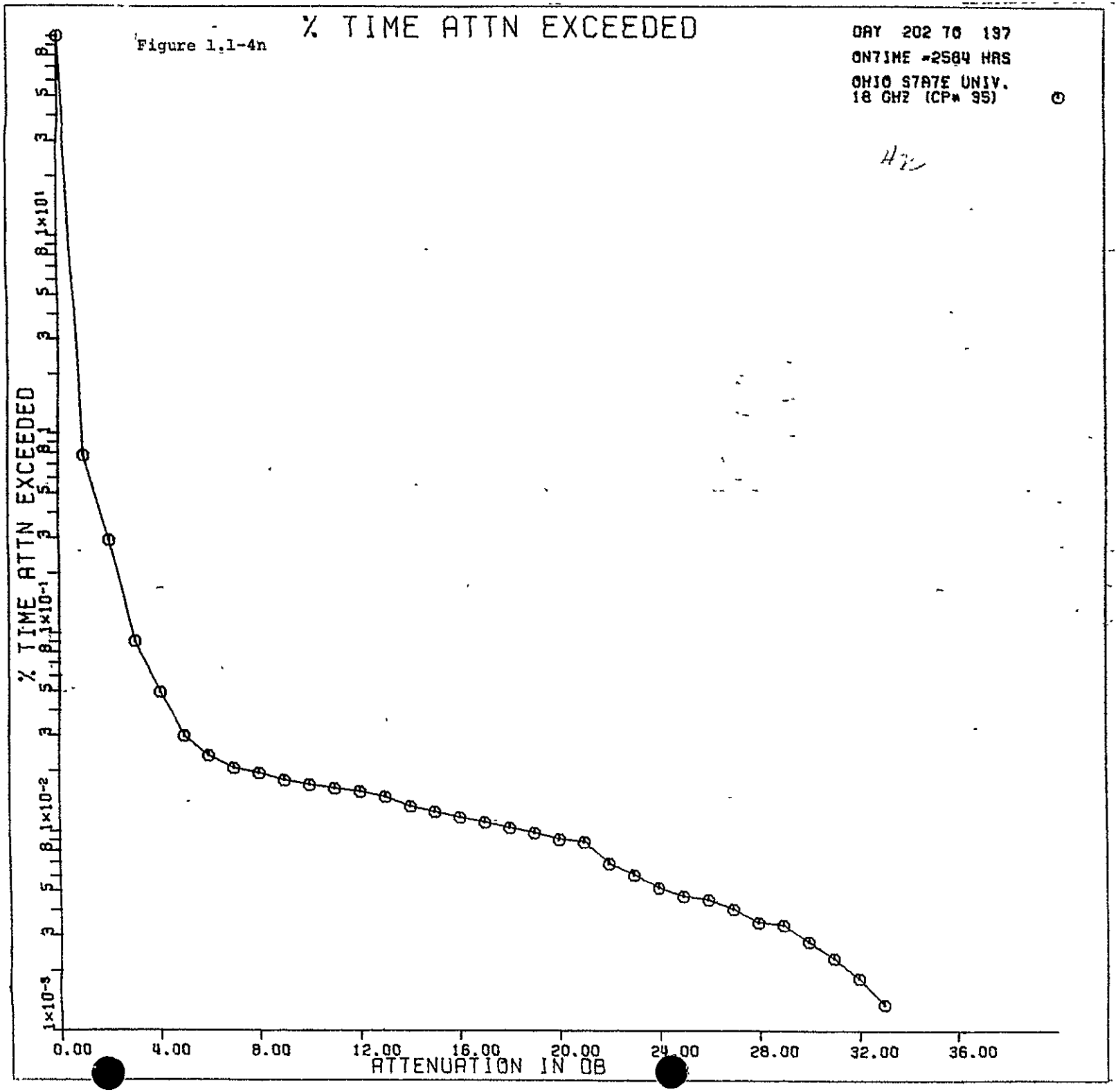
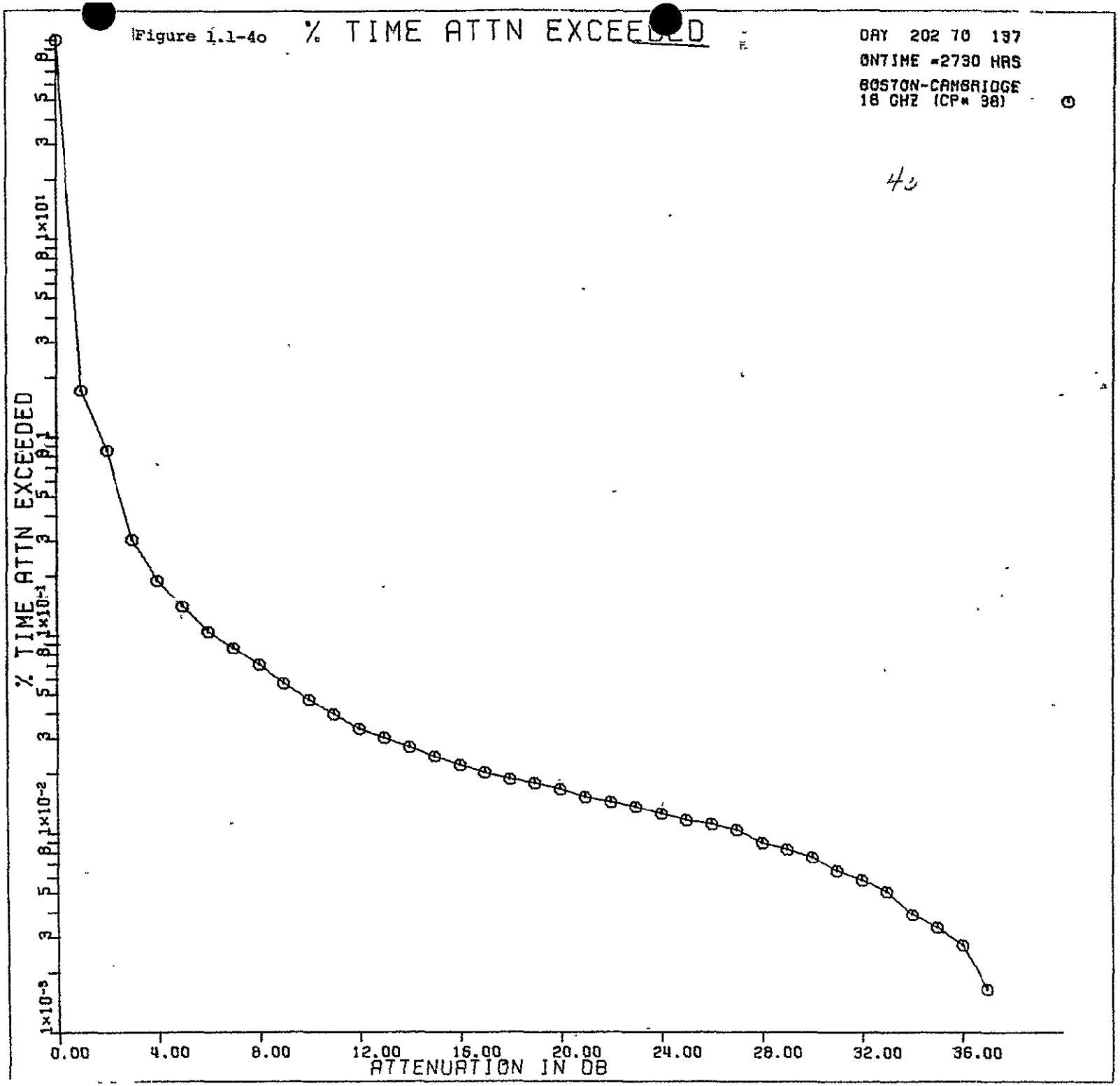

% TIME ATTN EXCEEDED
DAY 202 TO 197
ONTIME =2584 HRS
OHIO STATE UNIV.
18 GHZ (CP* 95)
% TIME ATTN EXCEEDED
1×10⁻³
1×10⁻²
1×10⁻¹
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-4o


% TIME ATTN EXCEEDED
DAY 202 70 137
ONTIME =2730 HRS
BOSTON-CAMBRIDGE
18 GHZ (CP= 38)
43
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

18 GHZ FREQ. BAND Table I.1-6 % TIME ATTENUATION EXCEEDED AT EACH SITE I-6 0 202 TO 75 137

DB	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
1	2.19	1.67	5.54	1.60	5.58	1.46	8.63	1.42	11.09	3.18	1.75	0.50	3.17	0.77	1.70
2	1.06	0.70	4.44	0.64	4.63	0.45	7.52	0.51	9.04	2.25	0.85	0.27	2.44	0.29	0.85
3	0.44	0.32	3.35	0.30	3.92	0.15	7.07	0.20	7.27	0.98	0.40	0.19	1.66	0.09	0.31
4	0.29	0.24	2.27	0.21	3.49	0.09	6.94	0.17	6.15	0.27	0.26	0.16	0.90	0.05	0.19
5	0.24	0.20	0.78	0.16	3.19	0.07	6.91	0.14	5.01	0.17	0.19	0.15	0.34	0.03	0.14
6	0.21	0.16	0.36	0.13	2.79	0.07	6.90	0.14	3.89	0.14	0.15	0.14	0.22	0.02	0.10
7	0.19	0.13	0.19	0.10	2.37	0.06	6.89	0.13	3.02	0.12	0.11	0.13	0.19	0.02	0.09
8	0.18	0.12	0.18	0.09	1.73	0.06	6.89	0.13	2.08	0.11	0.08	0.13	0.17	0.02	0.07
9	0.16	0.10	0.17	0.07	1.33	0.05	6.89	0.12	1.23	0.10	0.07	0.12	0.15	0.02	0.06
10	0.15	0.09	0.16	0.06	0.95	0.05	6.88	0.12	0.56	0.09	0.06	0.12	0.14	0.02	0.05
11	0.13	0.09	0.15	0.06	0.50	0.05	6.88	0.12	0.33	0.08	0.05	0.12	0.13	0.02	0.04
12	0.12	0.08	0.14	0.05	0.13	0.04	6.88	0.12	0.21	0.07	0.05	0.12	0.12	0.02	0.03
13	0.12	0.07	0.13	0.05	0.08	0.04	6.88	0.11	0.15	0.07	0.04	0.11	0.11	0.01	0.03
14	0.11	0.07	0.12	0.04	0.06	0.04	6.80	0.11	0.12	0.06	0.03	0.10	0.10	0.01	0.03
15	0.10	0.06	0.12	0.04	0.06	0.04	6.62	0.11	0.11	0.06	0.03	0.10	0.09	0.01	0.02
16	0.10	0.06	0.10	0.04	0.05	0.03	6.33	0.11	0.09	0.05	0.03	0.10	0.08	0.01	0.02
17	0.09	0.05	0.10	0.04	0.05	0.03	6.09	0.11	0.08	0.05	0.03	0.09	0.08	0.01	0.02
18	0.09	0.04	0.08	0.03	0.05	0.03	5.87	0.10	0.07	0.04	0.02	0.09	0.07	0.01	0.02
19	0.08	0.04	0.06	0.03	0.04	0.03	5.31	0.10	0.04	0.03	0.02	0.09	0.06	0.01	0.02
20	0.08	0.04	0.05	0.03	0.04	0.03	4.25	0.10	0.02	0.03	0.02	0.09	0.06	0.01	0.02
21	0.07	0.04	0.05	0.03	0.03	0.02	3.31	0.09	0.02	0.02	0.02	0.08	0.05	0.01	0.02
22	0.07	0.03	0.04	0.02	0.03	0.02	2.27	0.06	0.02	0.02	0.01	0.08	0.05	0.01	0.01
23	0.06	0.03	0.03	0.02	0.03	0.02	1.10	0.03	0.01	0.02	0.01	0.07	0.05	0.01	0.01
24	0.06	0.03	0.03	0.02	0.02	0.02	0.42	0.02	0.01	0.02	0.01	0.07	0.04	0.01	0.01
25	0.05	0.03	0.03	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.07	0.04	0.00	0.01
26	0.05	0.03	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.03	0.00	0.01
27	0.04	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.03	0.00	0.01
28	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.03	0.00	0.01
29	0.04	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.04	0.02	0.00	0.01
30	0.03	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.04	0.02	0.00	0.01
31	0.02	0.02	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.04	0.02	0.00	0.01
32	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.01	0.00	0.01
33	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.01
34	0.01	0.01	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00
35	0.01	0.01	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.0	0.00
36	0.01	0.01	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.0	0.00
37	0.00	0.01	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.0	0.00
38	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.0	0.00
39	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.0	0.00	0.01	0.00	0.0	0.00
40	0.00	0.00	0.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.0	0.00
HOURS ON	1461.	1006.	1219.	2541.	1618.	2025.	1268.	1241.	2681.	2050.	3667.	87.	2981.	2584.	2730.

18 GHZ FREQ. BAND Table 1.1-7a NUMBER OF FADES AT EACH SITE 1.1-72 0 202 TO 75 137

3. DB LEVEL

MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0
76 - 80	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
66 - 70	0	0	1	0	0	0	0	1	4	0	0	0	1	0	0
61 - 65	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0
46 - 50	0	0	1	0	0	0	0	0	5	0	1	0	3	0	0
41 - 45	0	0	1	0	1	0	0	0	3	0	0	0	0	0	1
36 - 40	0	0	0	0	0	0	0	0	6	0	0	0	3	0	0
31 - 35	0	0	0	0	0	0	0	0	5	0	1	0	1	0	1
26 - 30	0	0	1	0	1	0	0	0	12	1	1	0	2	0	0
21 - 25	2	0	1	1	2	0	0	0	7	3	3	0	1	0	4
16 - 20	1	0	1	1	2	0	1	0	13	4	2	0	8	0	0
11 - 15	2	2	3	3	7	1	1	0	9	8	8	0	10	0	6
6 - 10	9	8	11	14	4	3	4	5	26	6	15	0	23	5	13
1 - 5	64	28	53	79	71	39	15	9	156	103	63	0	225	22	44
0.60 - 1.00	42	28	55	56	54	36	24	10	156	76	58	5	161	12	26
0.10 - 0.50	288	133	340	274	259	229	147	73	1552	483	507	25	768	166	264

18 GHZ FREQ. BAND Table 1.1-7b NUMBER OF FADES AT EACH SITE 76 0 202 TO 75 137

6. DB LEVEL

MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0
26 - 30	0	0	1	0	0	0	0	0	3	1	0	0	0	0	0
21 - 25	0	0	1	0	0	0	0	0	2	0	0	0	1	0	1
16 - 20	2	0	1	1	0	0	0	0	4	2	2	0	0	0	1
11 - 15	0	0	1	0	0	0	0	0	3	1	3	0	2	0	2
6 - 10	4	4	2	3	5	0	0	2	6	4	5	0	9	0	5
1 - 5	36	18	15	45	21	17	3	4	22	17	27	0	79	4	19
0.60 - 1.00	26	17	25	40	21	25	2	0	8	10	17	4	60	8	5
0.10 - 0.50	169	89	153	178	91	167	47	39	75	89	184	18	252	112	91

18 GHZ FREQ. BAND Table 1.1-7c NUMBER OF FADES AT EACH SITE 0 202 TO 75 137

1c

10. DB LEVEL MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	2	0	0	0	0	0	1	1	0	0	1	0	0
11 - 15	1	0	0	0	0	0	0	0	2	3	1	0	0	0	0
6 - 10	0	1	2	0	1	0	0	0	3	1	2	0	4	0	2
1 - 5	27	10	10	19	16	8	0	3	11	15	17	0	57	2	18
0.60 - 1.00	24	16	21	44	16	23	1	0	5	5	12	3	59	5	3
0.10 - 0.50	166	78	144	169	87	156	36	33	60	82	167	17	246	99	89

18 GHZ FREQ. BAND Table 1.1-7d NUMBER OF FADES AT EACH SITE 7d 0 202 TO 75 137

15. DB LEVEL MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
11 - 15	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0
6 - 10	0	0	2	0	0	0	0	0	0	3	2	0	1	0	0
1 - 5	10	4	2	3	6	0	0	2	4	6	6	0	24	0	3
0.60 - 1.00	28	13	17	35	16	20	0	1	11	10	9	1	68	3	13
0.10 - 0.50	160	71	134	165	75	142	27	27	51	74	153	17	235	91	84

18 GHZ FREQ. BAND | Table 1.1-7e NUMBER OF FADES AT EACH SITE 9e 0 202 TO 75 137

20. DB LEVEL

MINUTES	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
6 - 10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1 - 5	1	0	3	1	4	0	0	1	4	3	2	0	8	0	0
0.60 - 1.00	23	10	10	13	6	7	0	1	5	13	6	0	47	1	12
0.10 - 0.50	150	60	110	164	77	134	18	22	50	68	133	17	229	77	74

18 GHZ FREQ. BAND | Table 1.1-7f NUMBER OF FADES AT EACH SITE 7f 0 202 TO 75 137

25. DB LEVEL

MINUTES		TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
> 100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
6 -	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	0	0	0	0	3	0	0	1	2	1	0	0	0	0	0
0.60 -	1.00	7	0	1	2	2	0	0	0	1	2	2	0	11	0	0
0.10 -	0.50	120	51	84	126	64	90	5	15	38	58	91	13	222	44	64

Figure 1.1-5a

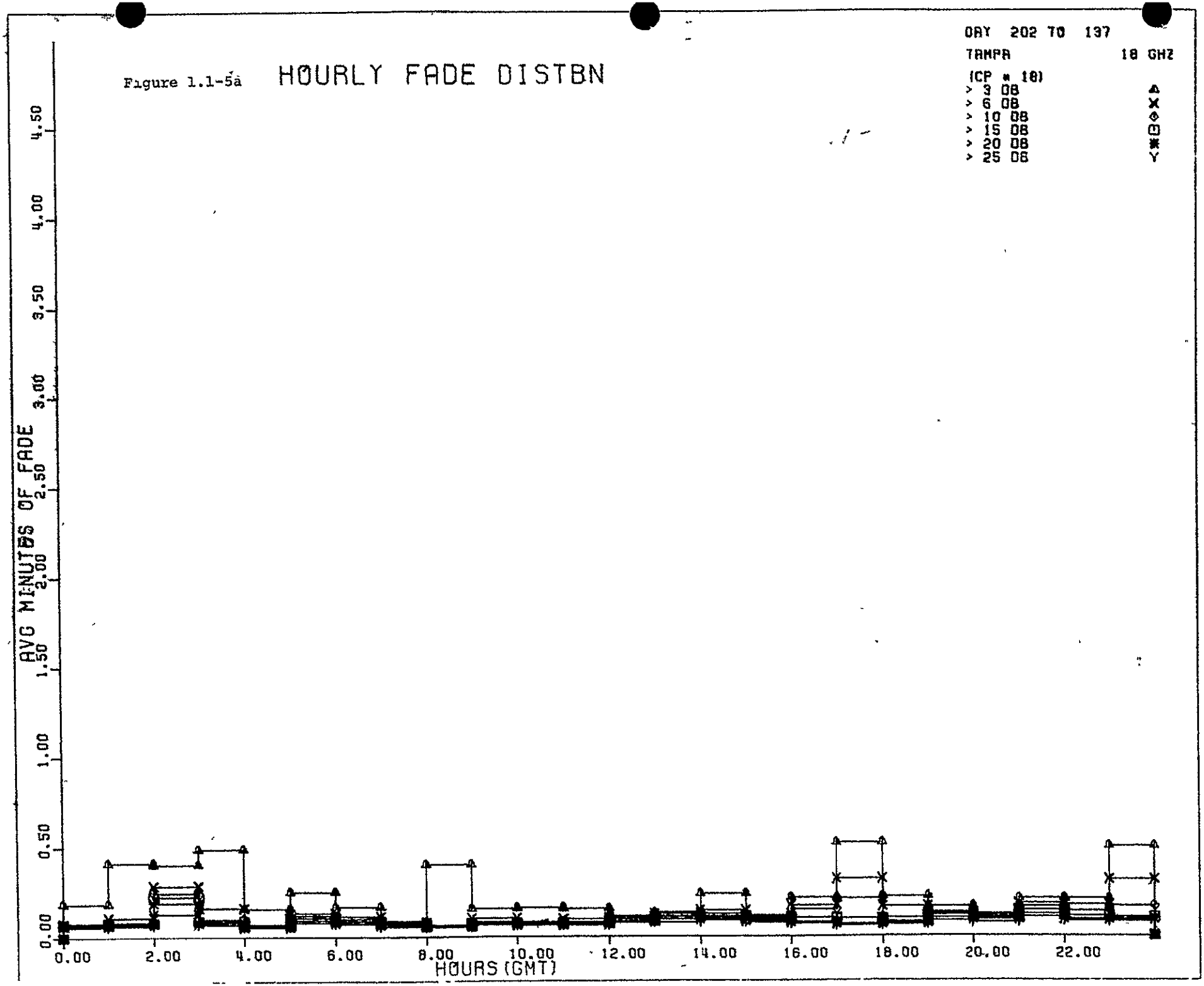

HOURLY FADE DISTBN
DAY 202 TO 137
TAMPA
18 GHz
(CP = 18)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-5b

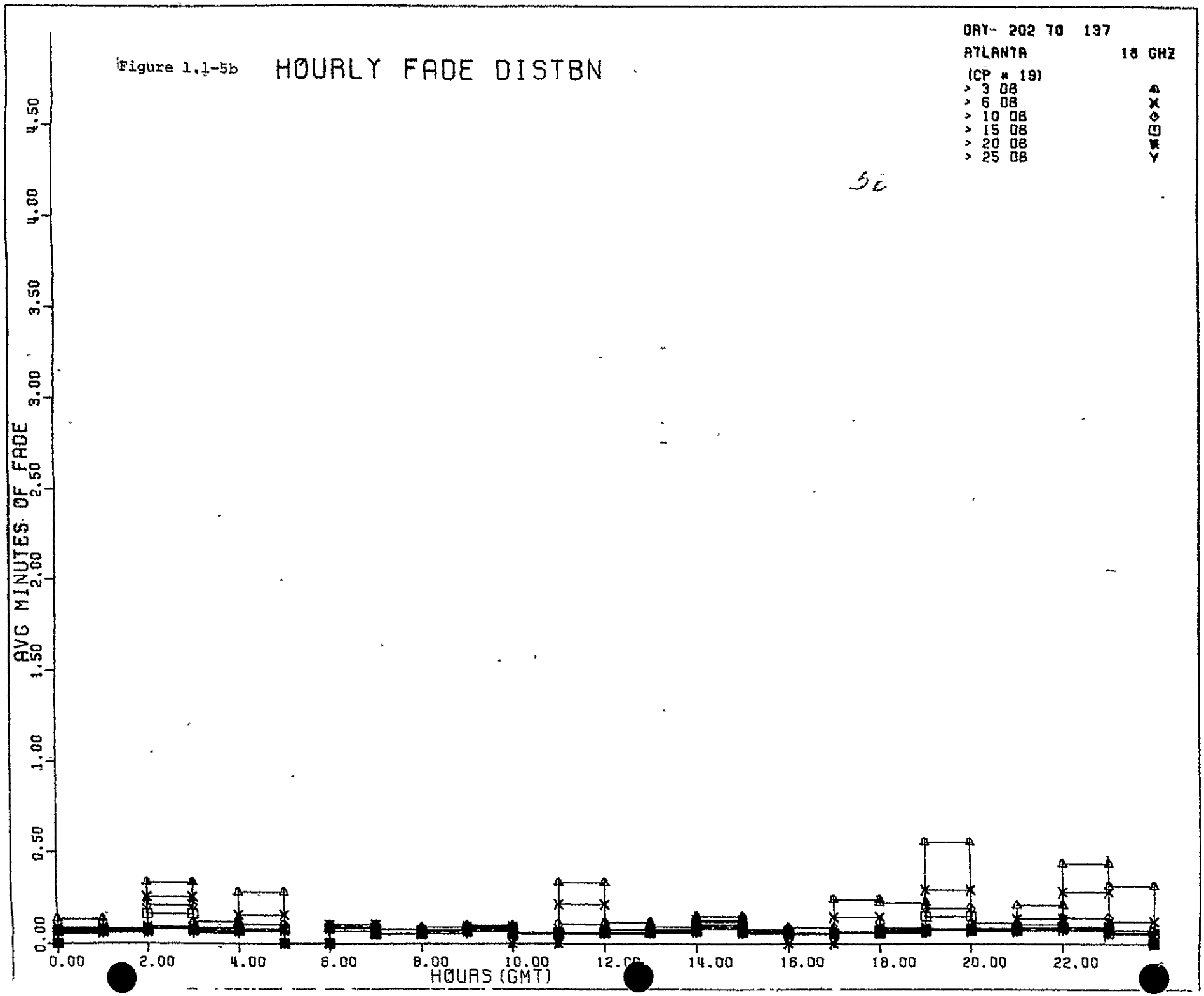

HOURLY FADE DISTBN
DAY= 202 70 197
ATLANTA 18 GHZ
(CP * 19)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
5c
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-5c

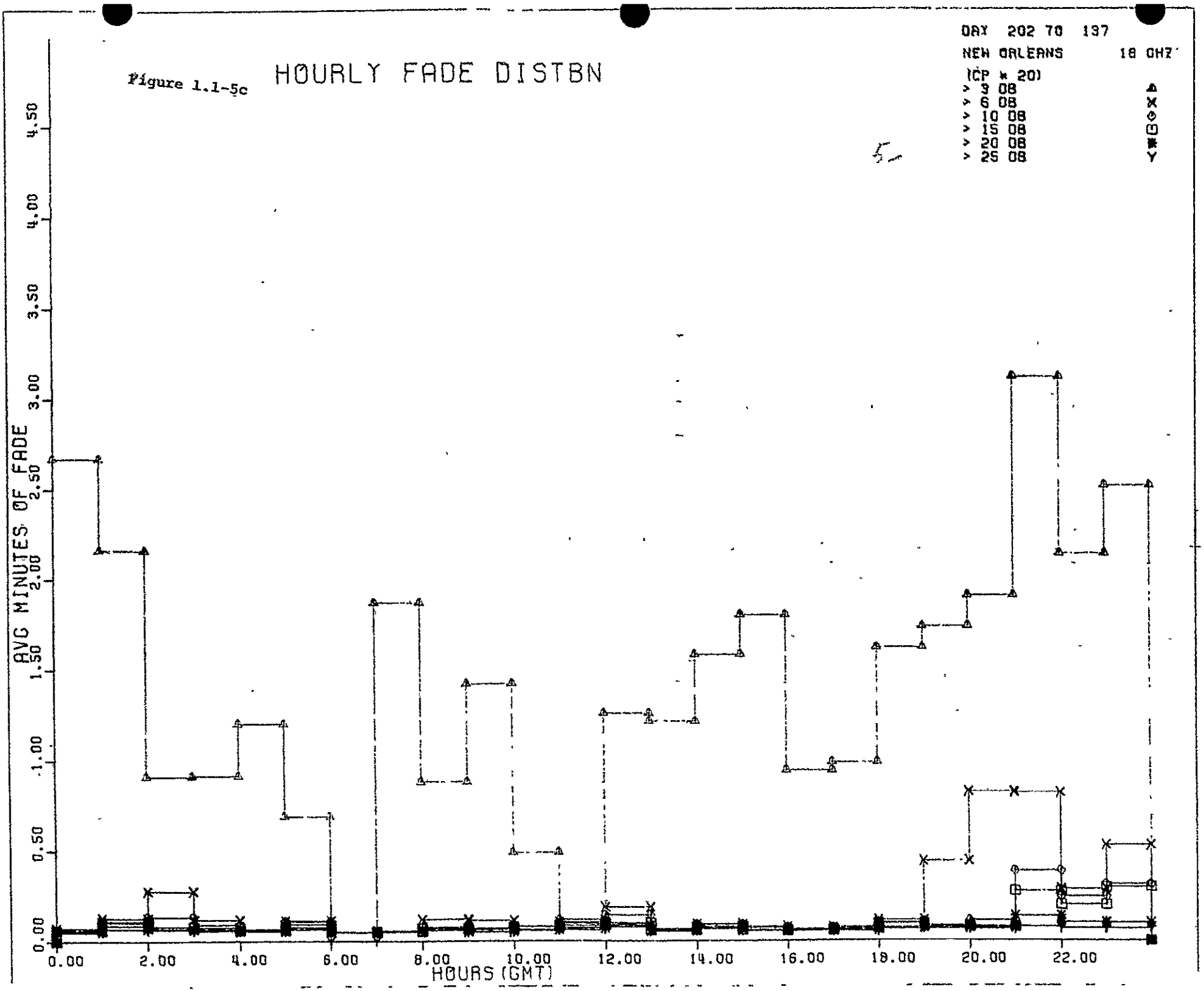

HOURLY FADE DISTBN
DAY 202 70 137
NEW ORLEANS 18 GHZ
(CP * 20)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-5d

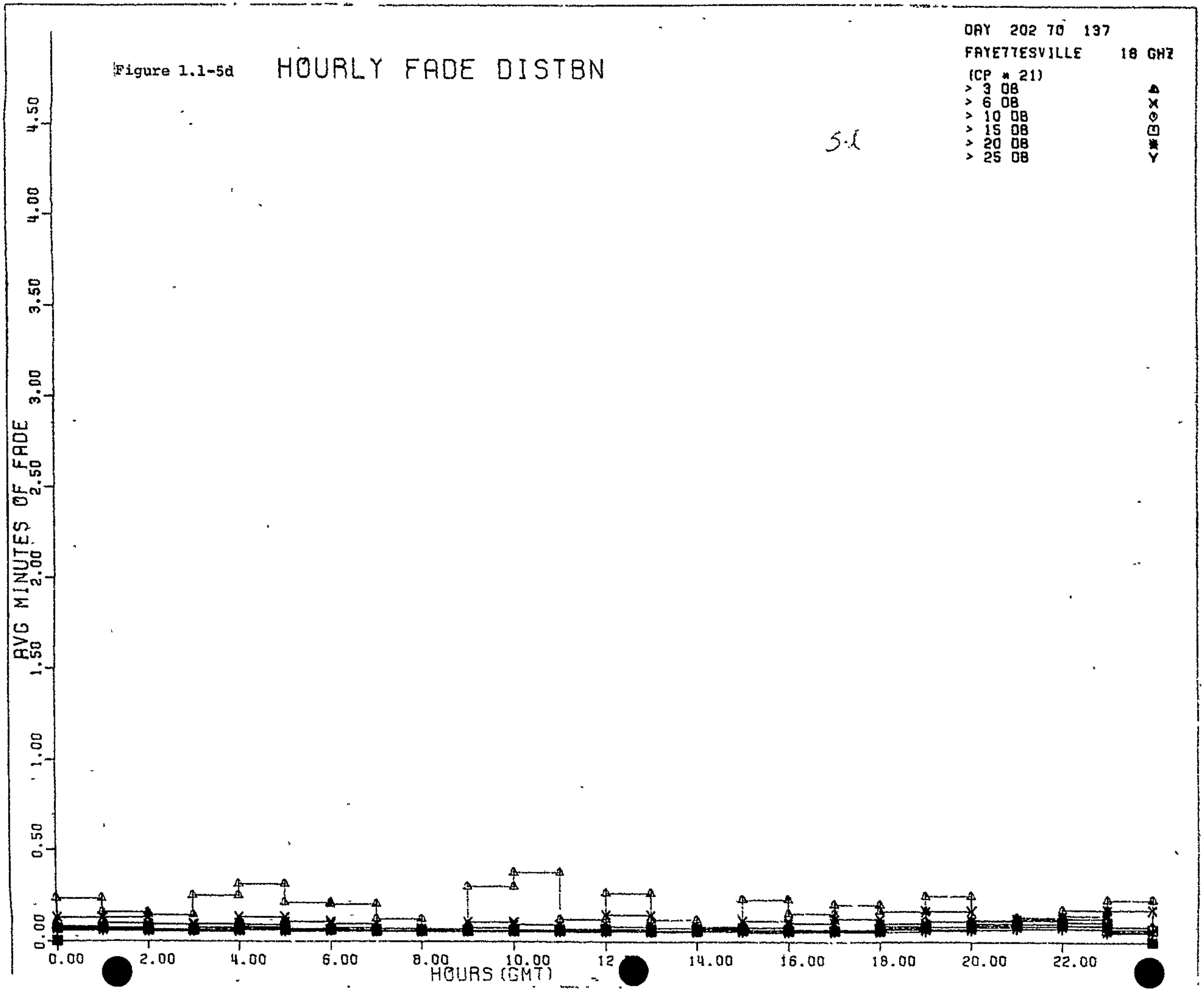

HOURLY FADE DISTBN
DAY 202 70 137
FAYETTESVILLE 18 GHZ
(CP # 21)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-5e

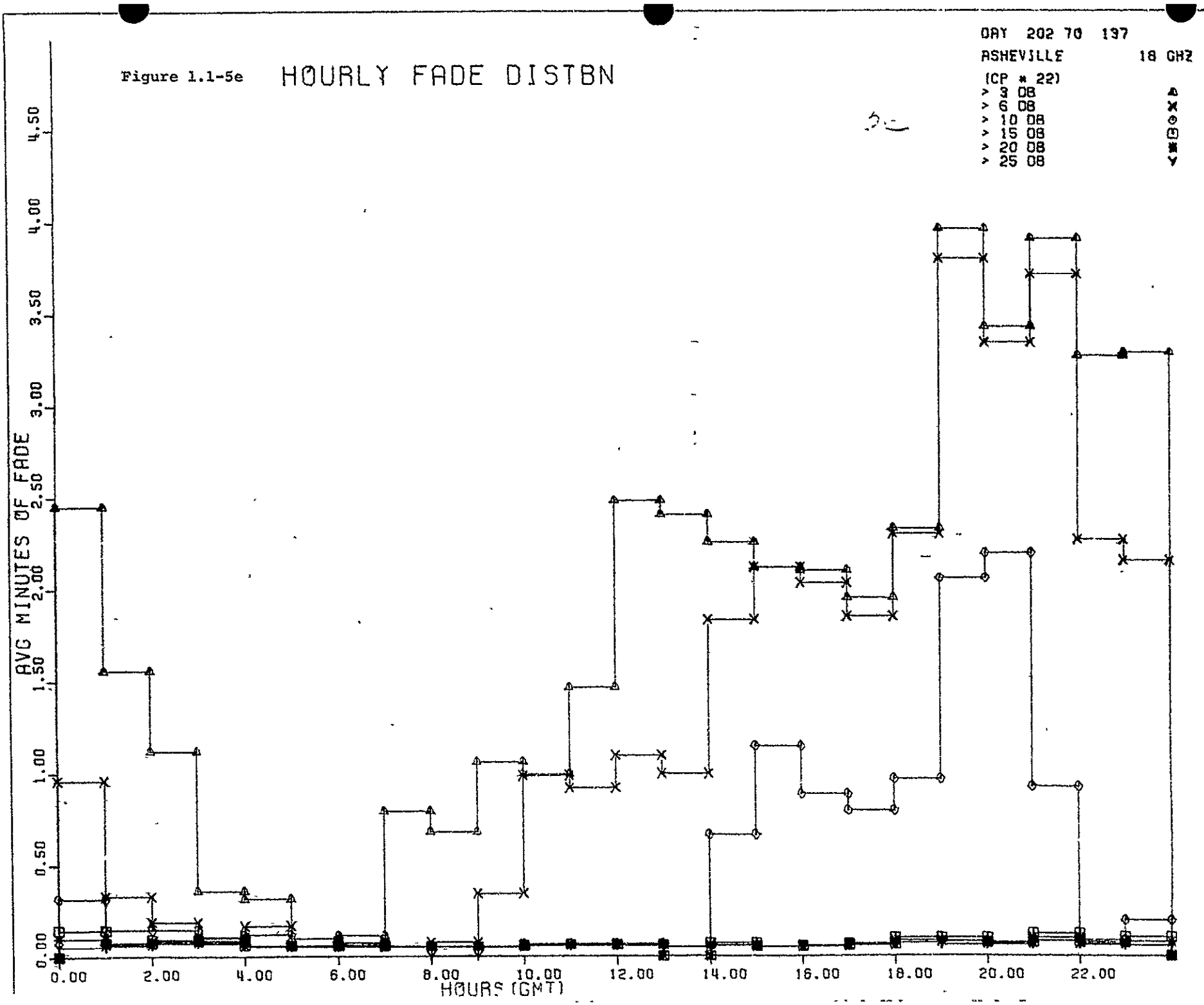

HOURLY FADE DISTBN
DAY 202 70 137
ASHEVILLE 18 GHZ
(CP = 22)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-5f

HOURLY FADE DISTBN

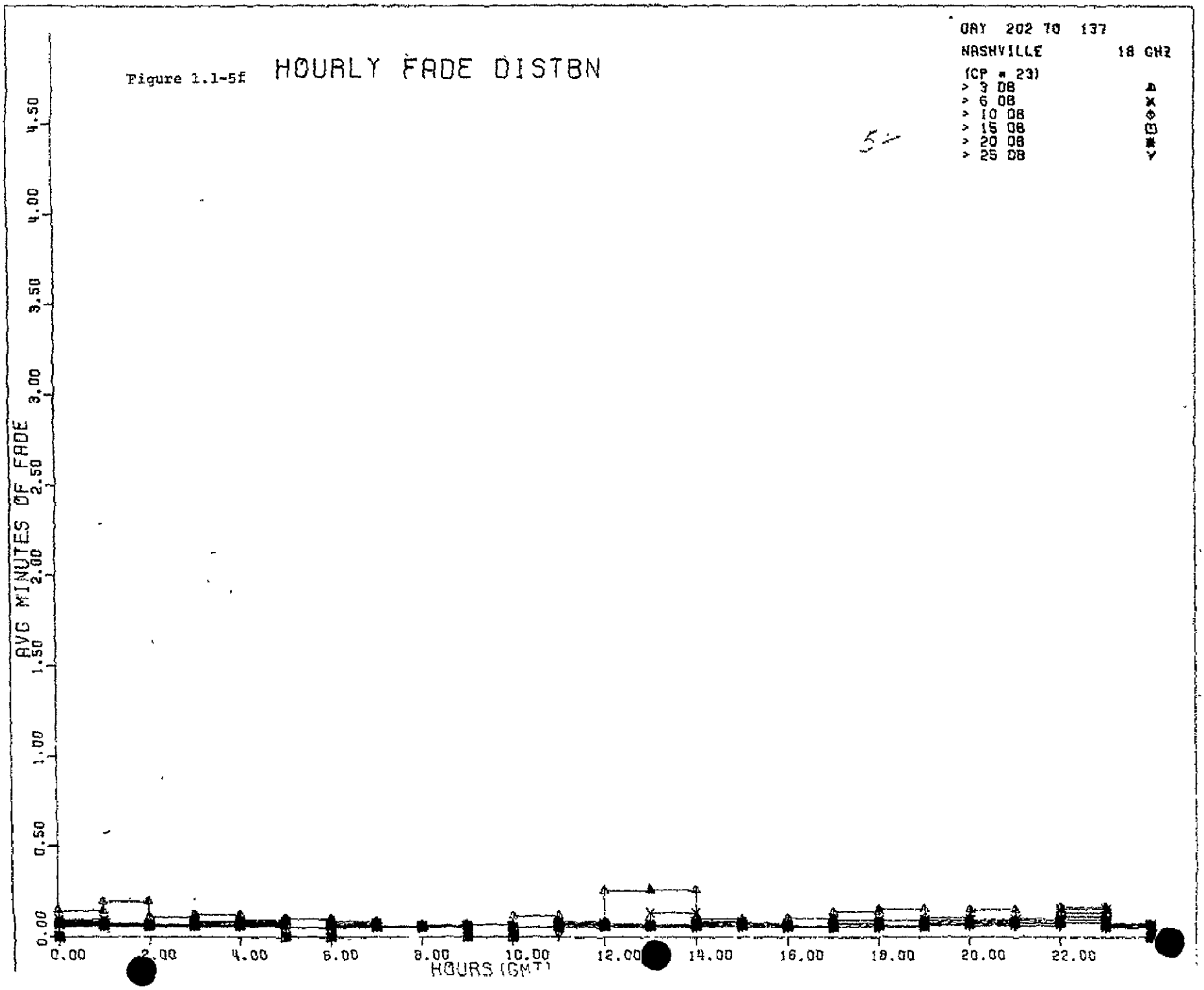


Figure 1.1-5g

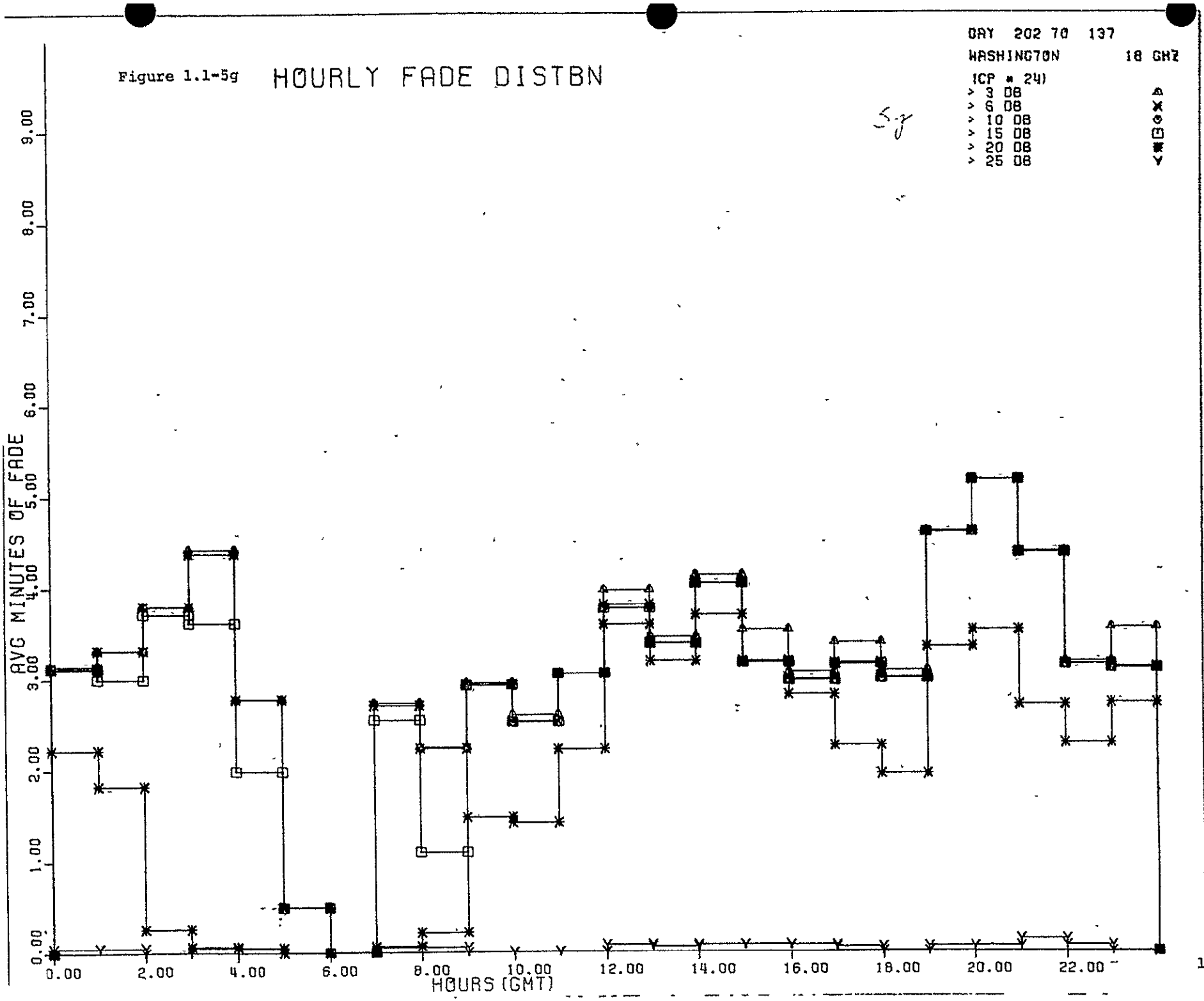

HOURLY FADE DISTBN
DAY 202 70 137
WASHINGTON 18 GHz
(CP = 24)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
AVG MINUTES OF FADE
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-5h HOURLY FADE DISTBN

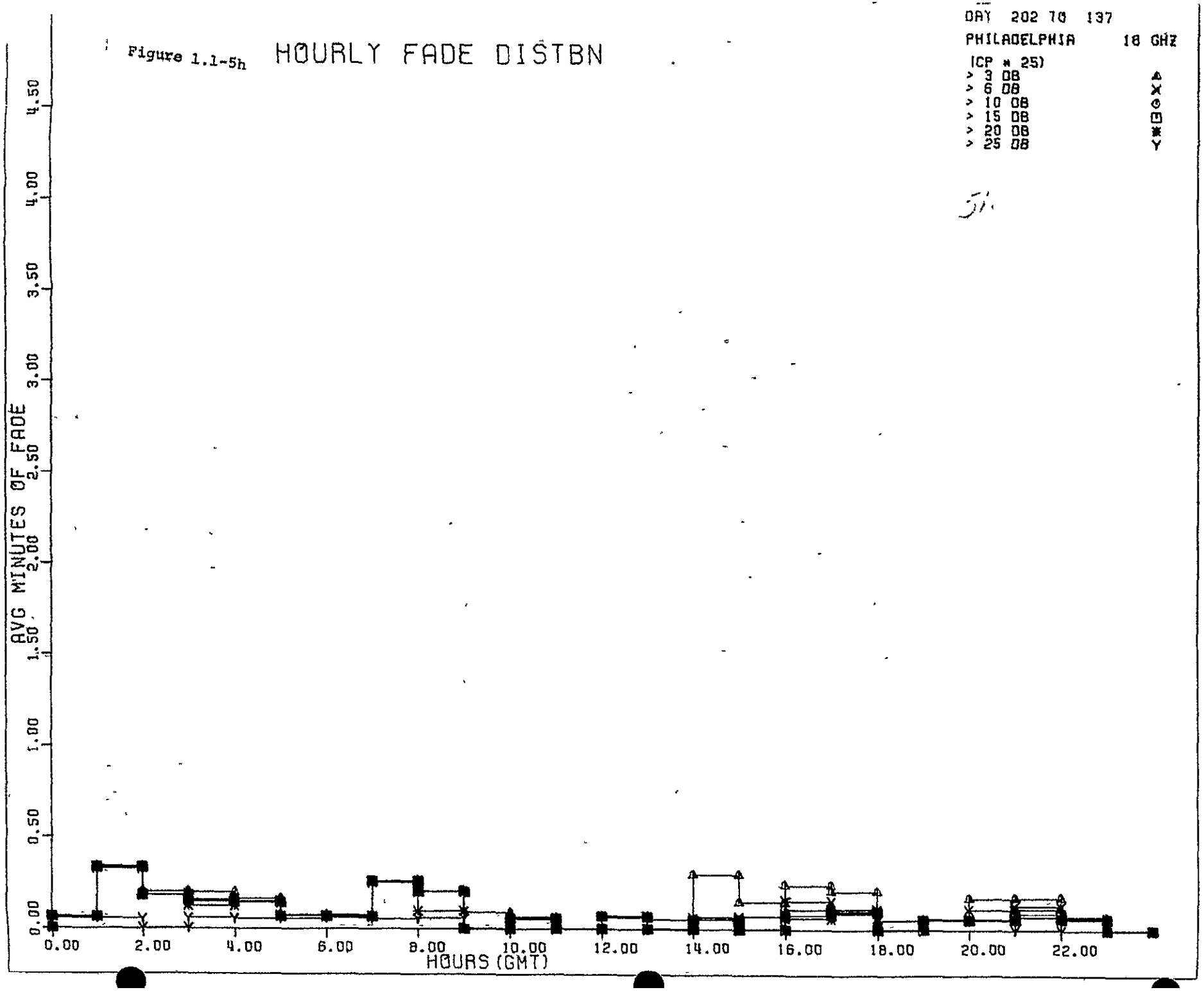
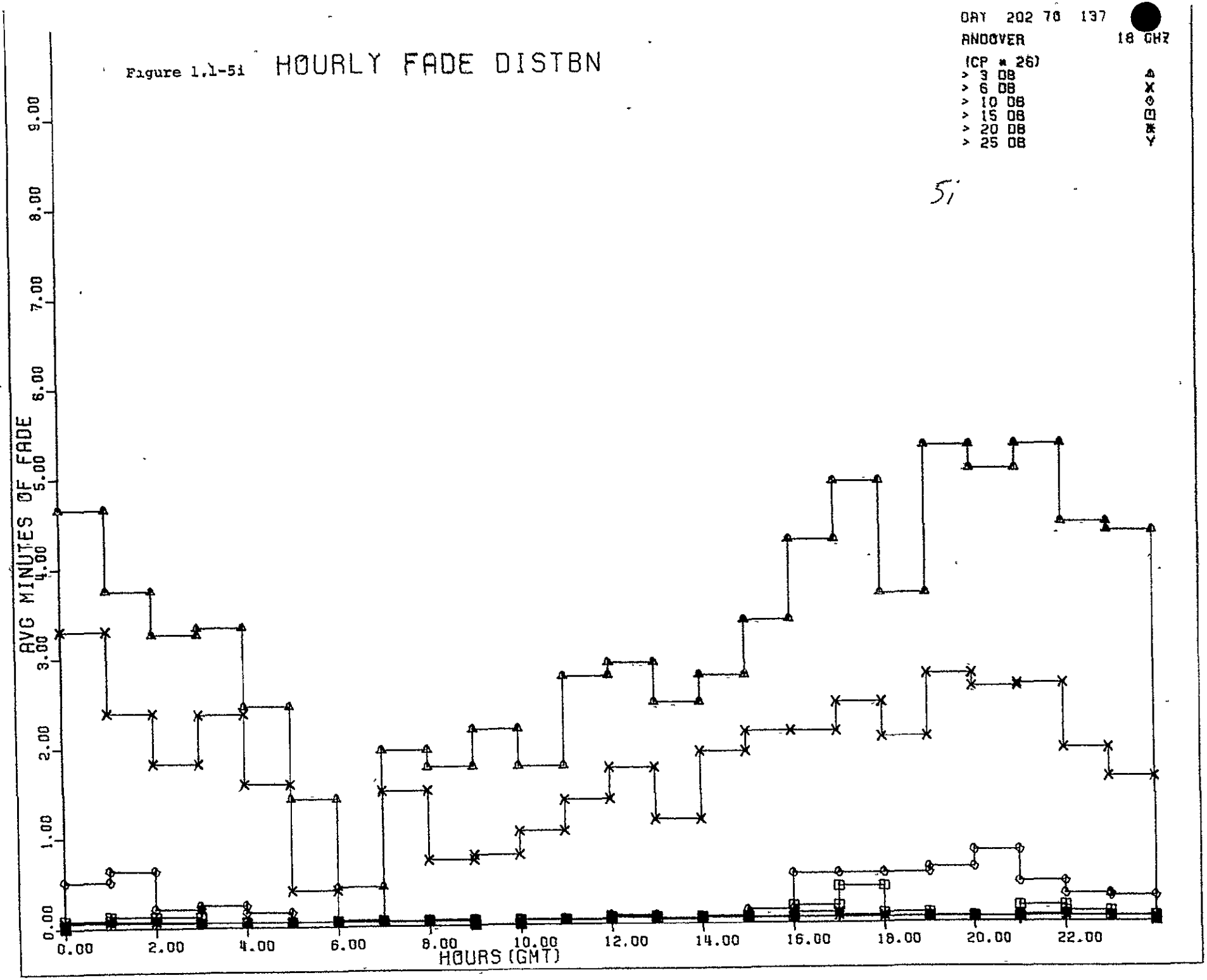


Figure 1.1-5i HOURLY FADE DISTBN



5'

Figure 1.1-5j

HOURLY FADE DISTBN

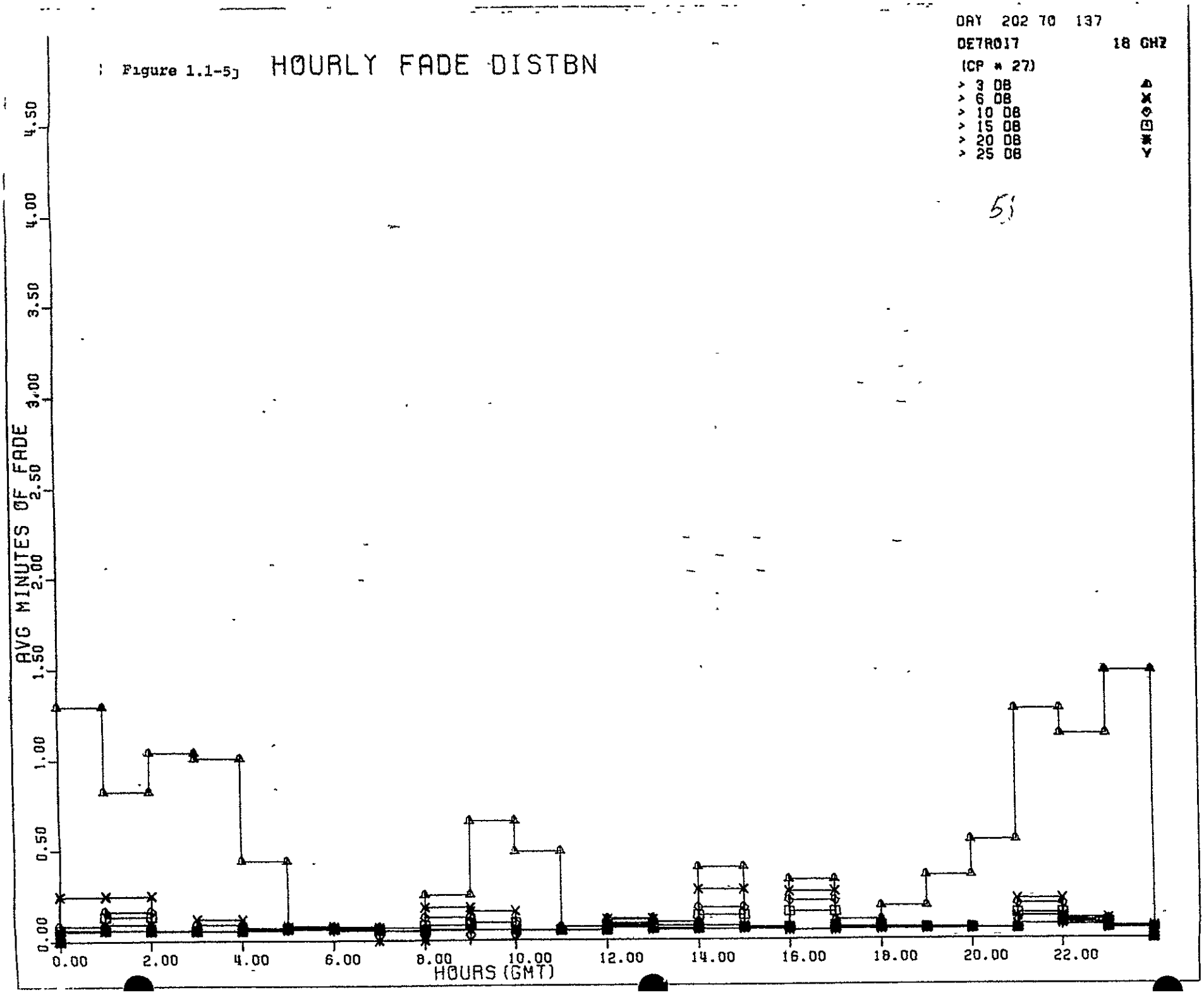


Figure 1.1-5k

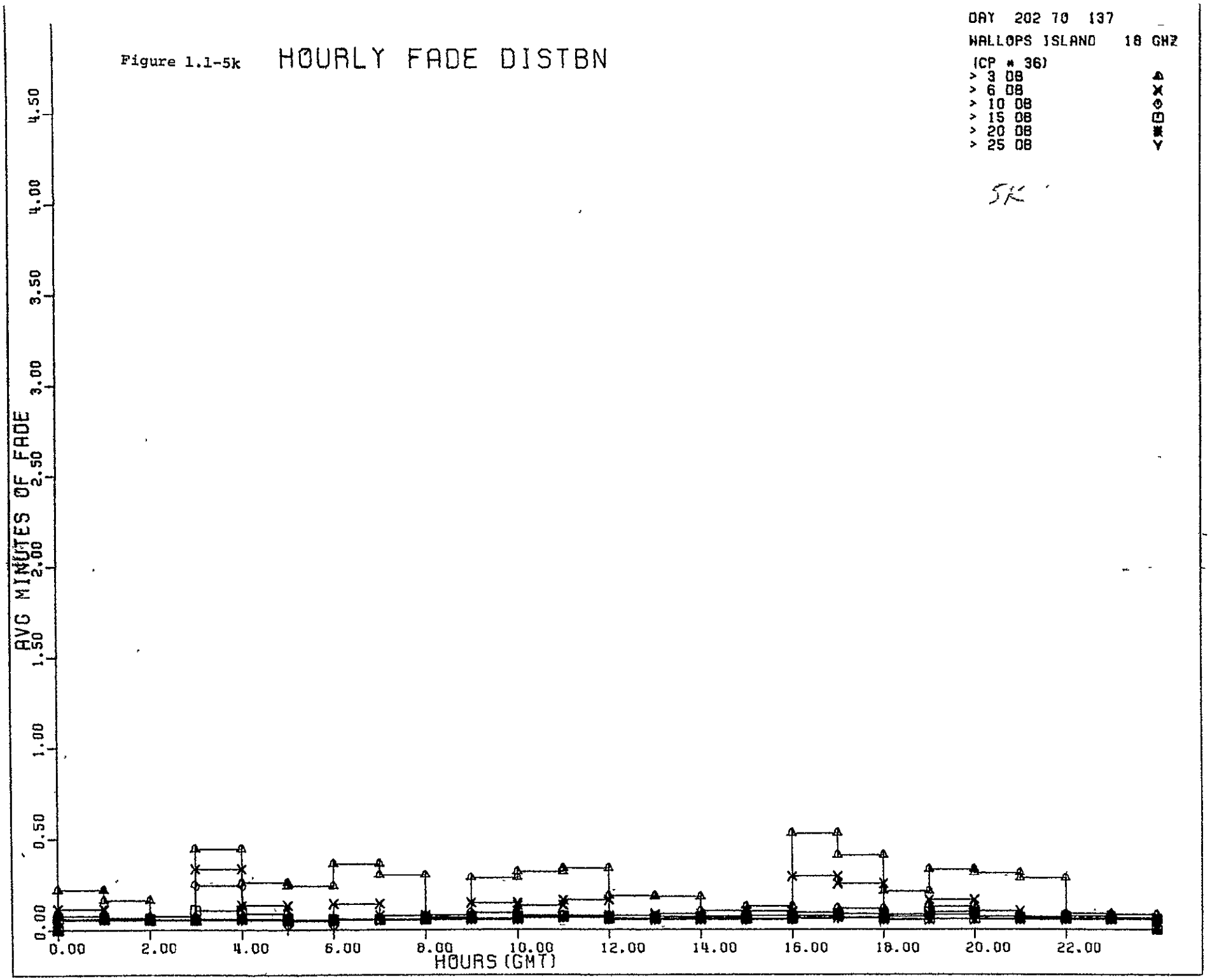

HOURLY FADE DISTBN
DAY 202 70 137
WALLOPS ISLAND 18 GHZ
(CP = 36)
> 3 DB
> 6 DB
> 10 DB
> 15 DB
> 20 DB
> 25 DB
5K
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-51 HOURLY FADE DISTBN

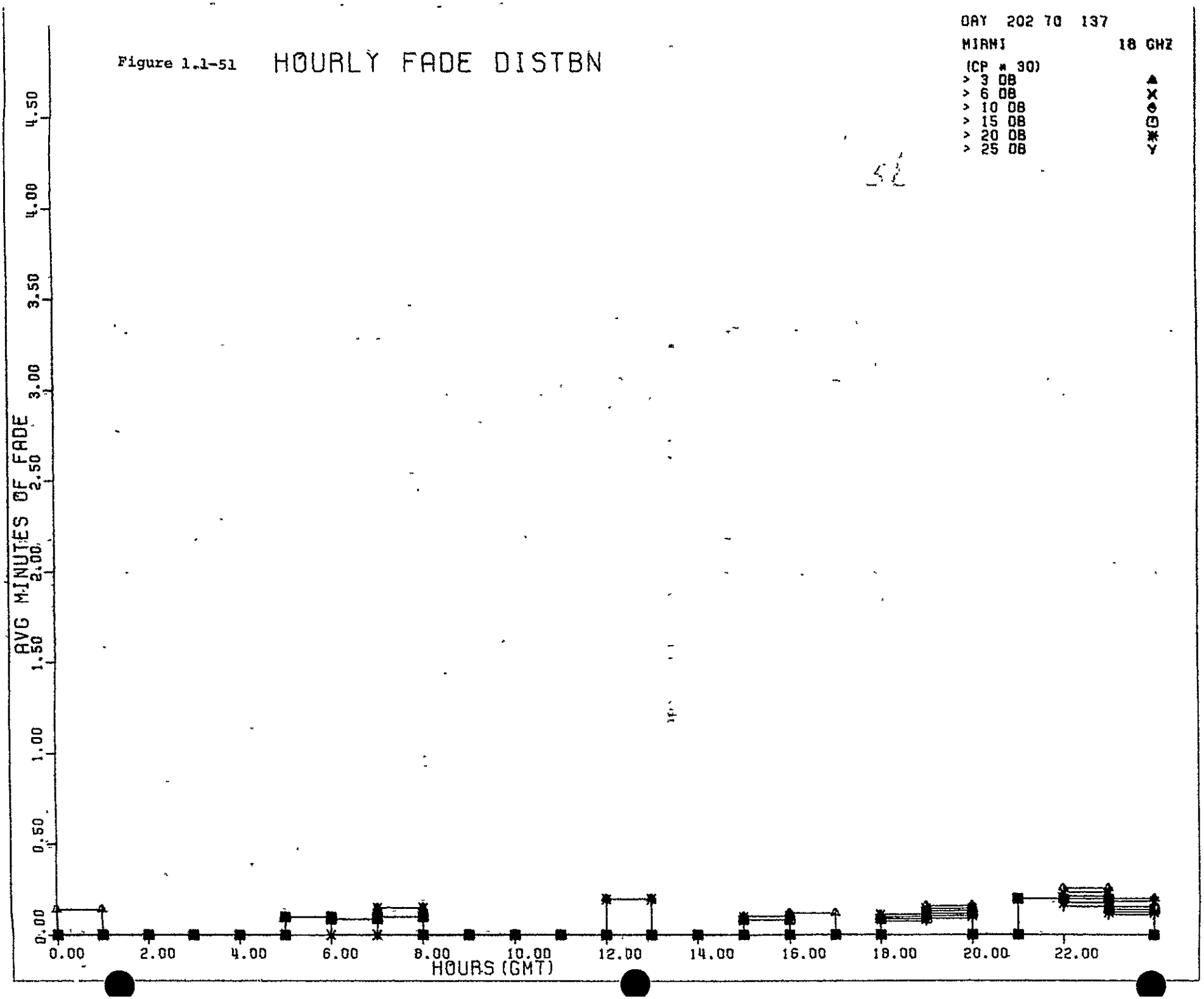


Figure 1.1-5m HOURLY FADE DISTBN

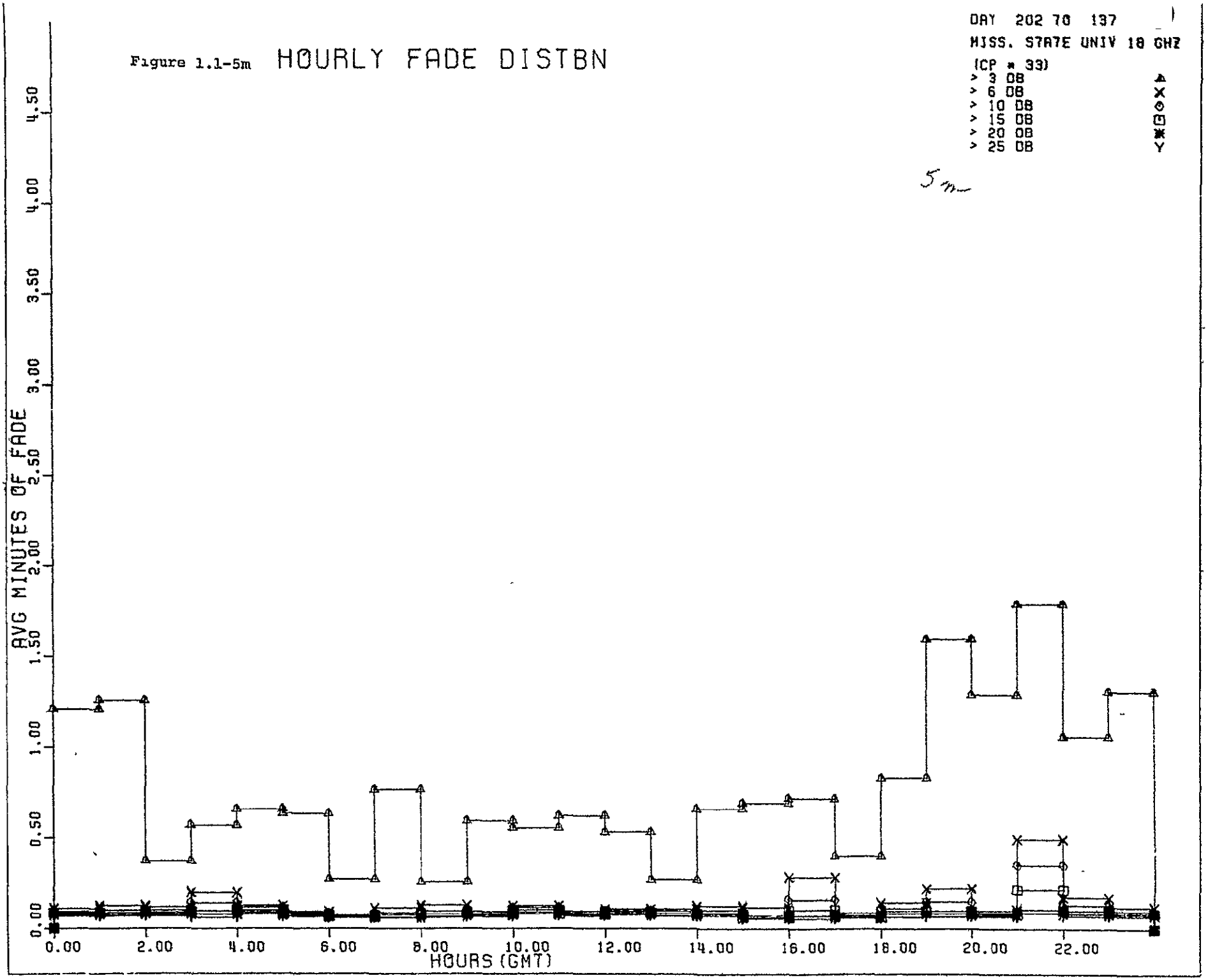


Figure 1.1-5n HOURLY FADE DISTBN

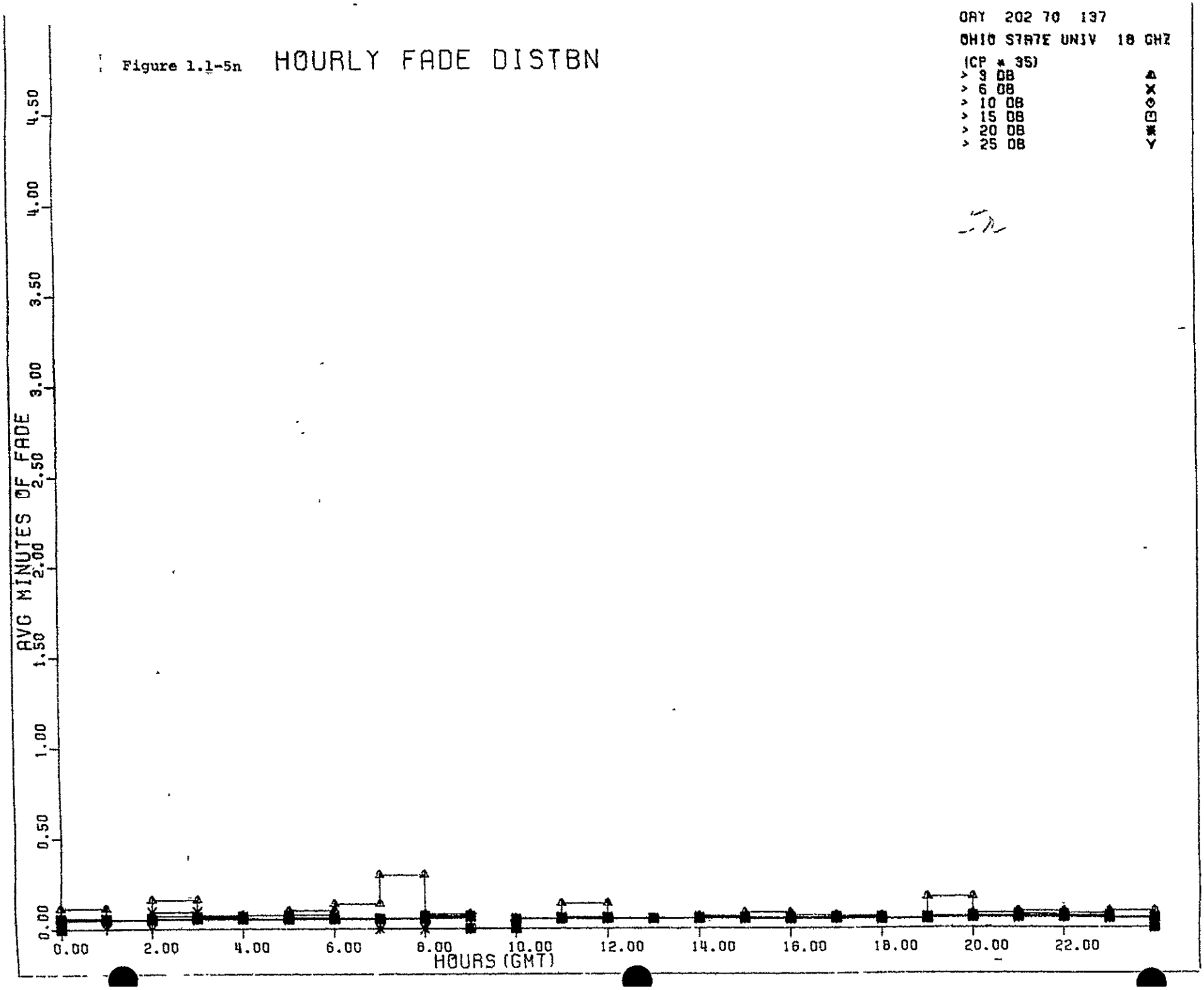
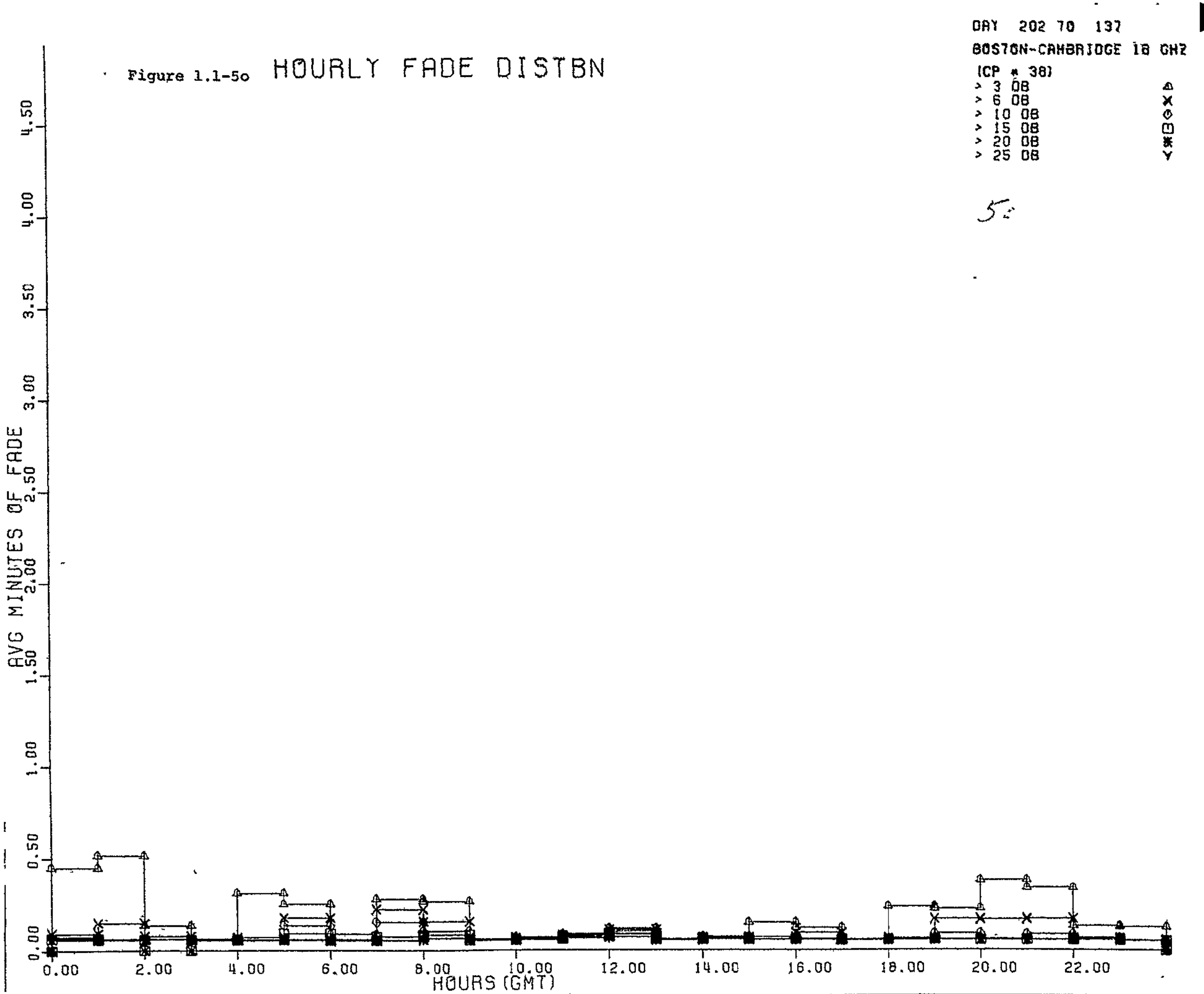


Figure 1.1-5o HOURLY FADE DISTBN



1-87

Table 1.1-8a DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

1.1-82

FADE DEPTH(DB)	AVG. MINUTES OF FADE																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
18 GHZ FREQ. BAND TAMPA																								
> 0	1.7	2.2	1.9	2.3	1.9	1.1	0.5	1.0	0.7	1.1	0.7	0.8	1.2	0.9	0.5	0.4	0.6	1.0	0.7	0.4	0.4	0.8	0.6	0.9
> 3	0.2	0.4	0.4	0.5	0.2	0.2	0.2	0.1	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.5	0.2	0.2	0.1	0.2	0.2	0.5
> 6	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.2	0.2	0.3
> 10	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2
> 15	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	94	82	84	85	78	72	63	88	84	72	66	67	78	76	84	95	104	93	80	87	81	76	99	95
18 GHZ FREQ. BAND ATLANTA																								
> 0	0.7	0.6	1.7	1.4	1.7	0.4	0.8	0.6	0.5	0.3	0.6	1.6	1.5	0.3	0.3	0.3	0.4	0.4	0.6	1.5	0.5	0.4	0.8	1.0
> 3	0.1	0.1	0.3	0.1	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.6	0.1	0.2	0.4	0.3
> 6	0.1	0.1	0.3	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.3	0.1
> 10	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	66	54	49	52	60	53	38	58	53	45	40	43	53	58	56	68	74	63	66	67	61	61	74	71
18 GHZ FREQ. BAND NEW ORLEANS																								
> 0	3.4	3.1	2.3	2.9	2.7	1.2	0.2	2.1	1.1	1.7	0.9	0.7	3.3	2.7	2.4	3.1	2.8	2.3	1.9	2.5	2.8	3.7	3.0	3.0
> 3	2.7	2.2	0.9	0.9	1.2	0.7	0.1	1.9	0.9	1.4	0.5	0.1	1.3	1.2	1.6	1.8	0.9	1.0	1.6	1.7	1.9	3.1	2.1	2.5
> 6	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.8	0.8	0.3	0.5
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.2	0.3
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	72	66	65	69	67	59	43	68	59	49	40	40	60	66	77	102	111	93	82	76	65	75	87	83

Table 1.1-8b DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

85

FADE DEPTH(DB)	AVG. MINUTES OF FADE																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
18 GHZ FREQ. BAND FAYETTESVILLE																								
> 0	1.0	0.9	1.9	2.0	1.4	0.8	1.1	0.8	0.5	0.9	0.8	0.7	1.0	0.5	0.3	0.6	0.4	0.6	0.5	0.6	0.6	0.3	0.4	0.6
> 3	0.2	0.2	0.1	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.4	0.1	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2
> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	165	155	139	146	150	134	111	135	118	103	94	93	108	120	124	163	170	148	135	143	129	129	164	171
18 GHZ FREQ. BAND ASHEVILLE																								
> 0	3.3	3.7	4.0	2.6	1.9	0.7	0.4	1.7	1.0	2.1	1.1	1.9	3.0	2.6	2.4	2.6	2.3	2.3	2.6	4.3	4.1	4.4	3.7	4.0
> 3	2.4	1.6	1.1	0.4	0.3	0.1	0.1	0.8	0.7	1.1	1.0	1.5	2.5	2.4	2.3	2.1	2.1	2.0	2.3	4.0	3.4	3.9	3.3	3.3
> 6	1.0	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.3	1.0	0.9	1.1	1.0	1.8	2.1	2.0	1.9	2.3	3.8	3.3	3.7	2.3	2.2
> 10	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	1.1	0.9	0.8	1.0	2.1	2.2	0.9	0.1	0.2
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	97	93	92	93	94	81	68	86	78	69	66	70	78	80	77	92	94	84	88	100	93	86	96	89
18 GHZ FREQ. BAND NASHVILLE																								
> 0	0.7	1.1	1.2	1.3	1.0	1.2	0.9	1.1	0.8	0.7	0.6	0.6	1.3	1.4	0.4	0.4	0.3	0.6	0.5	0.5	0.6	0.3	0.3	0.5
> 3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1
> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	129	117	106	112	121	108	93	105	98	81	67	67	80	89	97	120	127	118	113	117	118	118	130	129

Table 1.1-8c DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

8c

DE DEPTH(DB)	AVG. MINUTES OF FADE																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
18 GHZ FREQ. BAND WASHINGTON																								
> 0	3.4	3.4	4.8	5.8	3.5	1.3	1.6	4.4	3.1	4.1	4.0	4.2	5.4	4.6	5.0	4.4	4.0	3.8	3.5	4.8	5.4	4.6	3.6	4.2
> 3	3.1	3.3	3.8	4.4	2.8	0.5	0.0	2.7	2.2	3.0	2.6	3.1	4.0	3.5	4.1	3.5	3.1	3.4	3.1	4.6	5.2	4.4	3.2	3.6
> 6	3.1	3.3	3.8	4.4	2.8	0.5	0.0	2.7	2.2	2.9	2.5	3.1	3.8	3.4	4.0	3.2	3.0	3.2	3.0	4.6	5.2	4.4	3.2	3.1
> 10	3.1	3.3	3.8	4.4	2.8	0.5	0.0	2.7	2.2	2.9	2.5	3.1	3.8	3.4	4.0	3.2	3.0	3.2	3.0	4.6	5.2	4.4	3.2	3.1
> 15	3.1	3.0	3.7	3.6	2.0	0.5	0.0	2.6	1.1	2.9	2.5	3.1	3.8	3.4	4.0	3.2	3.0	3.2	3.0	4.6	5.2	4.4	3.1	3.1
> 20	2.2	1.8	0.3	0.1	0.1	0.0	0.0	0.1	0.2	1.5	1.4	2.2	3.6	3.2	3.7	3.2	2.8	2.3	2.0	3.3	3.5	2.7	2.3	2.7
> 25	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
). OF DAYS ON BY HOUR	79	78	60	63	71	59	39	54	50	41	42	40	53	56	58	85	88	89	85	85	82	90	95	88
18 GHZ FREQ. BAND PHILADELPHIA																								
> 0	0.7	0.9	1.4	1.9	1.2	0.8	0.6	0.9	0.8	0.7	0.3	0.2	1.0	0.9	0.8	1.1	0.8	0.5	0.1	0.3	0.7	0.3	0.2	0.3
> 3	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.0
> 6	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.3	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0
> 10	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.3	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
> 15	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.3	0.2	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
> 20	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0
> 25	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0
). OF DAYS ON BY HOUR	79	81	65	73	74	70	62	61	54	46	44	35	46	52	57	69	77	77	70	73	70	74	81	81
18 GHZ FREQ. BAND ANDOVER																								
> 0	5.7	5.0	5.3	5.9	4.8	3.9	2.9	4.5	3.2	3.7	2.9	3.8	4.1	3.9	4.6	5.6	7.5	7.0	5.6	7.1	6.4	6.9	5.9	5.8
> 3	4.7	3.8	3.3	3.3	2.5	1.4	0.4	2.0	1.8	2.2	1.8	2.8	2.9	2.5	2.8	3.4	4.3	4.9	3.7	5.3	5.0	5.3	4.4	4.3
> 6	3.3	2.4	1.8	2.4	1.6	0.4	0.1	1.5	0.7	0.8	1.0	1.4	1.7	1.2	1.9	2.1	2.1	2.5	2.1	2.8	2.6	2.7	1.9	1.6
> 10	0.5	0.6	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.6	0.6	0.6	0.8	0.4	0.3	0.3
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.2	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
). OF DAYS ON BY HOUR	161	150	128	133	136	113	91	114	108	97	102	97	116	133	135	177	177	174	170	175	176	172	172	165

Table 1.1-8d DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

FADE DEPTH(DB) AVG. MINUTES OF FADE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
18 GHZ FREQ. BAND DETROIT																								
> 0	1.7	1.9	2.7	2.3	2.6	1.0	0.2	1.3	0.7	1.4	1.5	1.5	1.2	1.3	1.4	1.6	1.1	0.9	1.4	2.0	2.3	2.3	1.9	1.9
> 3	1.3	0.8	1.0	1.0	0.4	0.1	0.1	0.1	0.3	0.7	0.5	0.1	0.1	0.1	0.4	0.1	0.3	0.1	0.2	0.4	0.5	1.3	1.1	1.5
> 6	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1
> 10	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	108	103	95	99	98	90	86	108	108	96	87	85	96	99	110	118	120	115	114	116	120	122	118	107
18 GHZ FREQ. BAND WALLOPS ISLAND																								
> 0	1.2	0.7	0.7	1.0	0.9	1.0	0.9	0.9	0.3	0.7	1.1	1.4	0.8	0.7	0.5	0.6	1.4	1.3	0.8	1.4	1.9	1.1	0.3	0.5
> 3	0.2	0.2	0.1	0.4	0.3	0.2	0.4	0.3	0.1	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.5	0.4	0.2	0.3	0.3	0.3	0.1	0.1
> 6	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.1
> 10	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NO. OF DAYS ON BY HOUR	204	198	188	200	200	171	141	171	162	149	145	151	167	176	174	208	214	207	200	209	209	205	211	206
18 GHZ FREQ. BAND MIAMI																								
> 0	0.9	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.0	0.2	0.7	0.0	0.1	0.3	0.0	0.2	0.2	0.8	0.2	0.3	0.2
> 3	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.0	0.2	0.3	0.2
> 6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.2
> 10	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.2
> 15	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1
> 20	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1
> 25	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.1
NO. OF DAYS ON BY HOUR	5	1	2	3	3	3	4	3	2	1	2	0	1	5	6	14	19	18	12	11	5	1	13	10

Table 1.1-8e DISTRIBUTION OF FADES OVER 24 HOUR PERIOD 0 202 TO 75 137

ADE DEPTH(DB)	AVG. MINUTES OF FADE																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
18 GHZ FREQ. BAND MISS. STATE UNIV																								
> 0	1.9	1.8	1.2	1.5	1.5	1.4	0.9	1.5	0.9	0.9	0.9	1.3	1.2	1.1	1.3	1.7	1.9	1.2	1.1	2.0	1.6	2.6	1.5	1.9
> 3	1.2	1.3	0.4	0.6	0.7	0.6	0.3	0.8	0.3	0.6	0.6	0.6	0.5	0.3	0.7	0.7	0.7	0.4	0.8	1.6	1.3	1.8	1.1	1.3
> 6	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.2	0.1	0.5	0.2	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.4	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0. OF DAYS ON BY HOUR	184	170	166	174	171	152	130	155	137	125	121	126	151	166	174	211	215	186	172	177	148	154	192	183
18 GHZ FREQ. BAND OHIO STATE UNIV																								
> 0	0.5	0.4	0.4	0.4	0.4	0.5	1.2	1.1	0.8	0.6	0.3	0.6	0.2	0.1	0.3	0.4	0.3	0.1	0.1	0.5	0.5	0.2	0.2	0.5
> 3	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0. OF DAYS ON BY HOUR	158	155	143	153	158	132	104	117	104	84	78	78	96	109	107	151	158	156	154	155	151	157	163	158
18 GHZ FREQ. BAND BOSTON-CAMBRIDGE																								
> 0	1.3	1.4	1.0	1.1	1.1	0.7	0.5	1.0	0.9	0.3	0.3	0.4	0.5	0.2	0.3	0.4	0.6	0.4	0.9	1.2	1.8	0.9	1.0	1.9
> 3	0.4	0.5	0.1	0.1	0.3	0.3	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.4	0.3	0.1	0.1
> 6	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1
> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 15	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 20	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
> 25	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0. OF DAYS ON BY HOUR	158	155	154	158	164	128	97	121	114	99	96	95	120	127	119	152	160	161	152	160	161	158	161	154

Figure 1.1-6

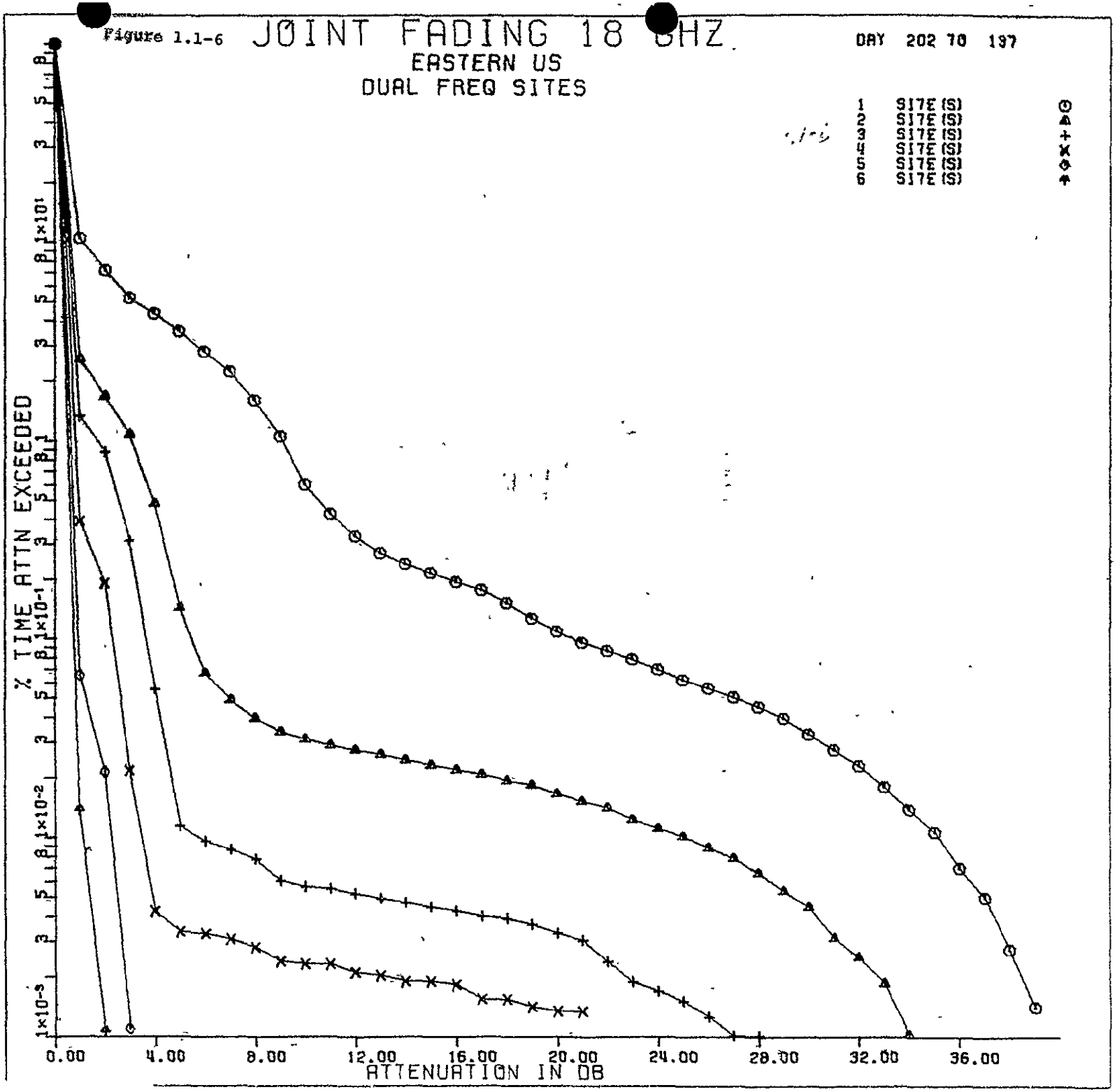

JOINT FADING 18 GHZ
EASTERN US
DUAL FREQ SITES
DAY 202 70 197
1 S17E (S)
2 S17E (S)
3 S17E (S)
4 S17E (S)
5 S17E (S)
6 S17E (S)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Table 1.1-9

18 GHZ FREQ. BAND % TIME ATTENUATION EXCEEDED JOINTLY AT MORE THAN ONE SITE 1.1-9 0 202 TO 75 137

DB	# SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	10.46	2.57	1.32	0.39	0.07	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	7.73	1.69	0.88	0.19	0.02	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	5.29	1.08	0.32	0.02	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	4.45	0.49	0.06	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	3.59	0.15	0.01	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	2.84	0.07	0.01	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	2.25	0.05	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	1.62	0.04	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	1.07	0.03	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.61	0.03	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.43	0.03	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.33	0.03	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.27	0.03	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.24	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.22	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.20	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.18	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.15	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.13	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.11	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.10	0.02	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.09	0.01	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.09	0.01	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.07	0.01	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.06	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.06	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.05	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.05	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.04	0.01	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.03	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.03	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.02	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.02	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.01	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.01	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.01	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	0.01	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
URS ON	4248.	4161.	3987.	3548.	2757.	1414.	0.	0.	0.	0.	0.	0.	0.	0.	0.

17

Table 1.1-10

```
&DTIME
DT=          5,IDAY=        202,LDAY=        137,LYEAR=     75
&END
&SITES
NS1=        10,NS2=          6
&END
```

1.1-12

STATION ON TIMES

TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
3374.	3173.	1676.	3961.	4451.	1251.	3666.	1761.	4317.	3504.	4303.	1805.	3339.	3426.	4112.

TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
1461.	1006.	1219.	2541.	1618.	2025.	1268.	1241.	2681.	2050.	3667.	87.	2981.	2584.	2730.

18 GHZ FREQ. BAND Table 1.1-11a NUMBER OF JOINT FADES AT MORE THAN ONE SITE 0 202 TO 75 137

1.1-11a

3. DB LEVEL

MINUTES		NUMBER OF SITES													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	14	3	0	1	0	0	0	0	0	0	0	0	0	0	0
11 -	15	12	5	2	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	24	7	6	1	0	0	0	0	0	0	0	0	0	0	0
1 -	5	113	36	20	4	0	0	0	0	0	0	0	0	0	0	0
0.60 -	1.00	46	36	14	5	0	0	0	0	0	0	0	0	0	0	0
0.10 -	0.50	178	188	91	33	8	4	0	0	0	0	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 6

18 GHZ FREQ. BAND Table 1.1-11b NUMBER OF JOINT FADES AT MORE THAN ONE SITE 0 202 TO 75 137

116

6. DB LEVEL MINUTES	NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - 10	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1 - 5	86	33	1	0	0	0	0	0	0	0	0	0	0	0	0
0.60 - 1.00	50	30	5	1	0	0	0	0	0	0	0	0	0	0	0
0.10 - 0.50	146	160	60	29	7	3	0	0	0	0	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 6

17

18 GHZ FREQ. BAND (Table 1.1-11c NUMBER OF JOINT FADES AT MORE THAN ONE SITE 0 202 TO 75 137

11c

10. DB LEVEL INUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	96	10	0	0	0	0	0	0	0	0	0	0	0	0	0
).60 -	1.00	44	25	1	0	0	0	0	0	0	0	0	0	0	0	0
).10 -	0.50	145	130	42	22	3	0	0	0	0	0	0	0	0	0	0

JMBER OF SITES CONSIDERED = 6

18 GHZ FREQ. BAND | Table 1.1-11d NUMBER OF JOINT FADES AT MORE THAN ONE SITE 11d 0 202 TO 75 137

15. DB LEVEL

MINUTES	NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - 10	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 - 5	80	7	0	0	0	0	0	0	0	0	0	0	0	0	0
0.60 - 1.00	45	12	0	0	0	0	0	0	0	0	0	0	0	0	0
0.10 - 0.50	146	115	34	17	1	0	0	0	0	0	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 6

57

18 GHZ FREQ. BAND Table 1.1-11e NUMBER OF JOINT FADES AT MORE THAN ONE SITE 11e 0 202 TO 75 137

20. DB LEVEL INUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	49	2	0	0	0	0	0	0	0	0	0	0	0	0	0
0.60 -	1.00	47	7	0	0	0	0	0	0	0	0	0	0	0	0	0
0.10 -	0.50	138	101	29	13	0	0	0	0	0	0	0	0	0	0	0

JMBER OF SITES CONSIDERED = 6

1-5

18 GHZ FREQ. BAND | Table 1.1-11f NUMBER OF JOINT FADES AT MORE THAN ONE SITE 11f 0 202 TO 75 137

25. DB LEVEL MINUTES		NUMBER OF SITES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
> 100		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96 -	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91 -	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86 -	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
81 -	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 -	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 -	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 -	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 -	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 -	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 -	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 -	50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 -	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 -	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 -	35	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
26 -	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 -	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 -	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 -	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 -	5	30	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0.60 -	1.00	30	3	0	0	0	0	0	0	0	0	0	0	0	0	0
0.10 -	0.50	107	63	11	3	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF SITES CONSIDERED = 6

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Table 1.1-12a NUMBER OF FADES AT TAMPA 1.1-12c 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	2	0	0	0	0	0
16 - 20	3	1	0	0	0	0	1	2	0	0	0	0
11 - 15	6	1	1	0	0	0	2	0	1	1	1	0
6 - 10	9	7	2	1	0	0	9	4	0	0	0	1
1 - 5	32	19	9	5	0	1	64	36	27	10	1	0
.60 - 1.00	39	23	26	19	6	0	42	26	24	28	23	7
.10 - .50	284	203	179	162	148	114	288	169	166	160	150	120
	ON TIME = 3374.						ON TIME = 1461.					

Table 1.1-12b NUMBER OF FADES AT ATLANTA 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	1	0	0	0	0	0	2	0	0	0	0	0
6 - 10	7	2	0	0	0	0	8	4	1	0	0	0
1 - 5	30	10	6	1	0	0	28	18	10	4	0	0
0.60 - 1.00	24	3	1	3	2	0	28	17	16	13	10	0
0.10 - 0.50	188	101	86	76	67	39	133	89	78	71	60	51
	ON TIME = 3173.						ON TIME = 1006.					

Table 1.1-12c NUMBER OF FADES AT NEW ORLEANS 12c 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	1	0	0	0	0
81 - 85	0	0	0	0	0	0	1	0	0	0	0	0
76 - 80	0	0	0	0	0	0	2	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	1	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	1	0	0	0	0	0
41 - 45	0	0	0	0	0	0	1	0	0	0	0	0
36 - 40	1	1	1	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	1	1	0	0	0	0
21 - 25	1	0	0	0	0	0	1	1	0	0	0	0
16 - 20	0	1	0	0	0	0	1	1	2	1	0	0
11 - 15	0	0	0	0	0	0	3	1	0	0	0	0
6 - 10	5	2	1	0	0	0	11	2	2	2	0	0
1 - 5	25	20	17	7	0	0	53	15	10	2	3	0
.60 - 1.00	31	23	15	19	17	3	55	25	21	17	10	1
.10 - 0.50	1216	508	322	143	102	94	340	153	144	134	110	84
	ON TIME = 1676.						ON TIME = 1219.					

Table 1.1-12d NUMBER OF FADES AT FAYETTESVILLE 12d 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	1	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	1	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	1	0	0	0	1	0	0	0	0	0
16 - 20	2	0	0	0	0	0	1	1	0	0	0	0
11 - 15	1	1	0	0	0	0	3	0	0	0	0	0
6 - 10	10	3	1	0	0	0	14	3	0	0	0	0
1 - 5	47	8	5	1	0	0	79	45	19	3	1	0
0.60 - 1.00	23	5	1	3	3	0	56	40	44	35	13	2
0.10 - 0.50	229	105	92	73	59	25	274	178	169	165	164	126
	ON TIME = 3961.						ON TIME = 2541.					

Table 1.1-12e NUMBER OF FADES AT ASHEVILLE 126 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	1	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	2	0	0	0	0	0	1	0	0	0	0	0
21 - 25	2	1	0	0	0	0	2	0	0	0	0	0
16 - 20	1	0	0	0	0	0	2	0	0	0	0	0
11 - 15	2	3	2	0	0	0	7	0	0	1	0	0
6 - 10	11	2	1	1	0	0	4	5	1	0	1	0
1 - 5	50	18	9	2	1	0	71	21	16	6	4	3
0.60 - 1.00	27	9	2	3	1	0	54	21	16	16	6	2
0.10 - 0.50	246	111	91	80	68	39	259	91	87	75	77	64
	ON TIME = 4451.						ON TIME = 1618.					

Table 1.1-12E NUMBER OF FADES AT NASHVILLE 12f 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	1	1	1	1	0	0	1	0	0	0	0	0
6 - 10	8	0	0	0	0	0	3	0	0	0	0	0
1 - 5	11	10	0	0	0	0	39	17	8	0	0	0
0.60 - 1.00	7	1	3	0	0	0	36	25	23	20	7	0
0.10 - 0.50	59	22	18	16	12	9	229	167	156	142	134	90
	ON TIME = 1251.						ON TIME = 2025.					

Table 1.1-12g NUMBER OF FADES AT WASHINGTON 127 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	1	0	0	0	0	0	0	0	0	0	0	0
31 - 35	1	0	0	0	0	0	0	0	0	0	0	0
26 - 30	1	1	0	0	0	0	0	0	0	0	0	0
21 - 25	2	0	0	0	0	0	0	0	0	0	0	0
16 - 20	1	1	0	0	0	0	1	0	0	0	0	0
11 - 15	2	1	2	0	0	0	1	0	0	0	0	1
6 - 10	10	2	0	1	0	0	4	0	0	0	0	0
1 - 5	60	10	5	2	1	0	15	3	0	0	0	0
0.60 - 1.00	44	3	2	2	1	0	24	2	1	0	0	0
0.10 - 0.50	490	45	41	28	27	17	147	47	36	27	18	5
	ON TIME = 3666.						ON TIME = 1268.					

Table 1.1-12h NUMBER OF FADES AT PHILADELPHIA 12h 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	1	1	1	1	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	1	0
56 - 60	1	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	5	0	0	0	0	0	0	0	0	0	0	0
11 - 15	8	1	0	0	0	0	0	0	0	0	0	0
6 - 10	8	6	0	0	0	0	5	2	0	0	0	0
1 - 5	33	8	5	1	0	0	9	4	3	2	1	1
0.60 - 1.00	26	1	3	0	0	0	10	0	0	1	1	0
0.10 - 0.50	332	15	16	13	8	4	73	39	33	27	22	15
	ON TIME = 1761.						ON TIME = 1241.					

Table 1.1-12i NUMBER OF FADES AT ANDOVER 121 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	1	1	0	0	0	0	2	2	0	0	0	0
91 - 95	5	1	0	0	0	0	1	0	0	0	0	0
86 - 90	1	0	0	0	0	0	0	2	0	1	0	0
81 - 85	1	0	0	0	0	0	0	0	0	0	0	0
76 - 80	1	0	0	0	0	0	0	0	1	0	0	0
71 - 75	1	0	0	0	0	0	2	0	0	0	0	0
66 - 70	3	0	0	1	0	0	4	1	0	0	0	0
61 - 65	5	1	0	0	0	0	2	0	1	0	0	0
56 - 60	4	0	0	0	0	0	2	1	0	0	0	0
51 - 55	3	0	0	0	0	0	1	1	0	0	0	0
46 - 50	5	1	0	0	0	0	5	1	0	0	0	0
41 - 45	8	0	0	0	0	0	3	0	0	0	0	0
36 - 40	9	1	0	0	0	0	6	1	0	0	0	0
31 - 35	9	2	2	0	0	0	5	2	0	0	0	0
26 - 30	9	3	0	0	0	0	12	3	0	1	0	0
21 - 25	9	2	0	0	0	0	7	2	0	0	0	0
16 - 20	18	4	0	0	0	0	13	4	1	1	0	0
11 - 15	27	5	1	0	0	0	9	3	2	0	1	0
6 - 10	33	6	3	1	0	0	26	6	3	0	0	0
1 - 5	165	20	9	5	3	1	156	22	11	4	4	2
0.60 - 1.00	141	5	4	5	5	3	156	8	5	11	5	1
0.10 - 0.50	1265	78	67	60	46	35	1552	75	60	51	50	38
	ON TIME = 4317.						ON TIME = 2681.					

Table 1.1-12j NUMBER OF FADES AT DETROIT (12j) 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	1	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	1	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	1	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	2	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	1	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	1	1	0	0	0	0
21 - 25	0	0	0	0	0	0	3	0	0	0	0	0
16 - 20	2	1	0	0	0	0	4	2	1	0	0	0
11 - 15	6	3	0	0	0	0	8	1	3	1	0	0
6 - 10	9	5	3	0	0	0	6	4	1	3	0	0
1 - 5	42	26	12	2	0	0	103	17	15	6	3	1
0.60 - 1.00	27	15	10	7	4	0	76	10	5	10	13	2
0.10 - 0.50	137	58	51	48	45	33	483	89	82	74	68	58
	ON TIME = 3504.						ON TIME = 2050.					

Table 1.1-12k NUMBER OF FADES AT WALLOPS ISLAND - 12K 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	1	0	0	0	0	0
56 - 60	0	0	0	0	0	0	1	0	0	0	0	0
51 - 55	1	0	0	0	0	0	0	0	0	0	0	0
46 - 50	1	0	0	0	0	0	1	1	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	1	0	0	0	0	0	0	1	0	0	0	0
31 - 35	0	0	0	0	0	0	1	0	0	0	0	0
26 - 30	1	1	0	0	0	0	1	0	1	0	0	0
21 - 25	0	1	0	0	0	0	3	0	0	0	0	0
16 - 20	2	1	0	0	0	0	2	2	0	0	0	0
11 - 15	2	1	0	0	0	0	8	3	1	0	0	0
6 - 10	4	3	3	0	0	0	15	5	2	2	0	0
1 - 5	50	12	7	1	0	0	63	27	17	6	2	0
.60 - 1.00	39	11	2	4	3	0	58	17	12	9	6	2
.10 - 0.50	216	74	62	51	43	24	507	184	167	153	133	91
	ON TIME = 4303.						ON TIME = 3667.					

Table 1.1-121 NUMBER OF FADES AT MIAMI 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	1	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	1	0	0	0	0	0	0	0	0	0	0	0
16 - 20	0	0	0	0	0	0	0	0	0	0	0	0
11 - 15	7	1	0	0	0	0	0	0	0	0	0	0
6 - 10	7	4	1	0	0	0	0	0	0	0	0	0
1 - 5	46	33	25	2	0	0	0	0	0	0	0	0
0.60 - 1.00	45	37	28	31	18	1	5	4	3	1	0	0
0.10 - 0.50	219	153	141	136	127	118	25	18	17	17	17	13
	ON TIME = 1805.						ON TIME = 87.					

Table 1.1-12m NUMBER OF FADES AT MISS. STATE UNIV 12m 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
00	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	1	0	0	0	0	1	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	1	0	0	0	0	0
61 - 65	3	0	0	0	0	0	0	0	0	0	0	0
56 - 60	2	0	0	0	0	0	0	0	0	0	0	0
51 - 55	1	1	0	0	0	0	1	0	0	0	0	0
46 - 50	1	1	0	0	0	0	3	0	0	0	0	0
41 - 45	2	1	0	0	0	0	0	0	0	0	0	0
36 - 40	1	0	0	0	0	0	3	0	0	0	0	0
31 - 35	3	1	0	0	0	0	1	1	0	0	0	0
26 - 30	4	2	0	0	0	0	2	0	0	0	0	0
21 - 25	4	2	1	0	0	0	1	1	0	0	0	0
16 - 20	9	5	0	0	0	0	8	0	1	0	0	0
11 - 15	16	3	1	0	0	0	10	2	0	0	0	0
6 - 10	55	8	4	1	0	0	23	9	4	1	0	0
1 - 5	344	78	18	6	2	2	225	79	57	24	8	0
60 - 1.00	247	43	12	11	11	2	161	60	59	68	47	11
10 - 0.50	1503	298	118	91	77	59	768	252	246	235	229	222
	ON TIME = 3339.						ON TIME = 2981.					

Table 1.1-12n NUMBER OF FADES AT OHIO STATE UNIV. 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
> 100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	0	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	0	0	0	0	0	0	0	0	0	0	0	0
26 - 30	0	0	0	0	0	0	0	0	0	0	0	0
21 - 25	0	0	0	0	0	0	0	0	0	0	0	0
16 - 20	1	0	0	0	0	0	0	0	0	0	0	0
11 - 15	2	1	0	0	0	0	0	0	0	0	0	0
6 - 10	3	0	1	0	0	0	5	0	0	0	0	0
1 - 5	24	6	3	2	0	0	22	4	2	0	0	0
0.60 - 1.00	13	6	5	2	0	0	12	8	5	3	1	0
0.10 - 0.50	119	29	25	25	24	15	166	112	99	91	77	44
	ON TIME = 3426.						ON TIME = 2584.					

Table 1.1-12o NUMBER OF FADES AT BOSTON-CAMBRIDGE 0 202 TO 75 137

MINUTES	13 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB	18 GHZ 3. DB	6. DB	10. DB	15. DB	20. DB	25. DB
100	0	0	0	0	0	0	0	0	0	0	0	0
96 - 100	0	0	0	0	0	0	0	0	0	0	0	0
91 - 95	0	0	0	0	0	0	0	0	0	0	0	0
86 - 90	0	0	0	0	0	0	0	0	0	0	0	0
81 - 85	0	0	0	0	0	0	0	0	0	0	0	0
76 - 80	0	0	0	0	0	0	0	0	0	0	0	0
71 - 75	0	0	0	0	0	0	0	0	0	0	0	0
66 - 70	0	0	0	0	0	0	0	0	0	0	0	0
61 - 65	0	0	0	0	0	0	0	0	0	0	0	0
56 - 60	0	0	0	0	0	0	0	0	0	0	0	0
51 - 55	0	0	0	0	0	0	0	0	0	0	0	0
46 - 50	0	0	0	0	0	0	0	0	0	0	0	0
41 - 45	0	0	0	0	0	0	1	0	0	0	0	0
36 - 40	0	0	0	0	0	0	0	0	0	0	0	0
31 - 35	2	0	0	0	0	0	1	0	0	0	0	0
26 - 30	1	0	0	0	0	0	0	0	0	0	0	0
21 - 25	1	0	0	0	0	0	4	1	0	0	0	0
16 - 20	3	0	0	0	0	0	0	1	0	0	0	0
11 - 15	6	4	0	0	0	0	6	2	0	0	0	0
6 - 10	9	7	1	0	0	0	13	5	2	0	0	0
1 - 5	30	7	7	1	0	0	44	19	18	3	0	0
.60 - 1.00	14	2	3	2	1	0	26	5	3	13	12	0
.10 - 0.50	164	35	31	27	25	20	264	91	89	84	74	64
	ON TIME = 4112.						ON TIME = 2730.					

Figure 1.1-7a

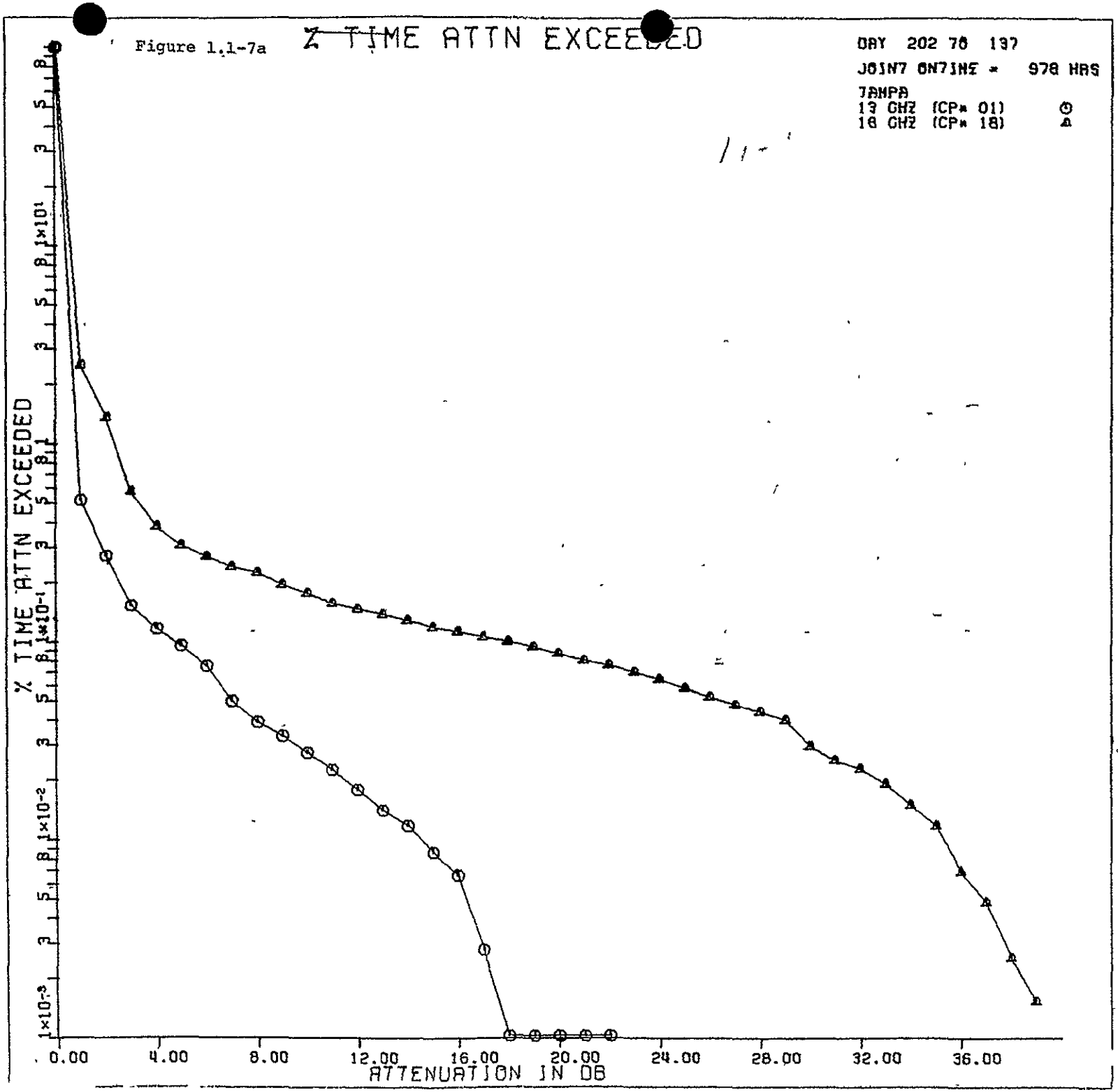

% TIME ATTN EXCEEDED
DAY 202 78 197
JOINT ONLINE = 978 HRS
TAMPA
13 GHZ (CP= 01)
18 GHZ (CP= 18)
% TIME ATTN EXCEEDED
1×10⁻³
1×10⁻²
1×10⁻¹
1×10⁰
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7b

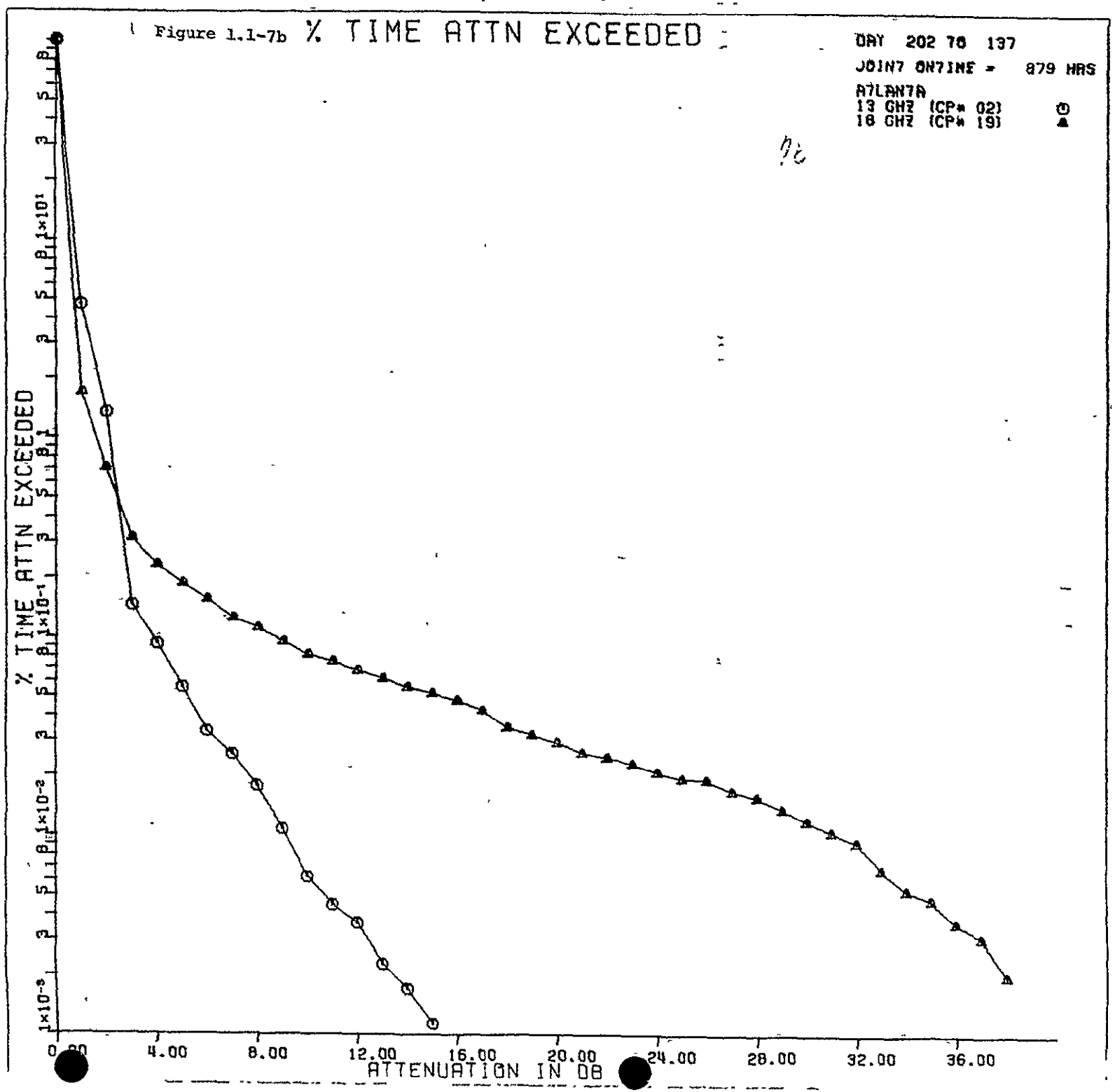

% TIME ATTN EXCEEDED
DAY 202 78 137
JOINT ONTIME = 879 HRS
ATLANTA
13 GHZ (CP# 02)
18 GHZ (CP# 19)
% TIME ATTN EXCEEDED
1×10⁻³
1×10⁻²
1×10⁻¹
1
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7c

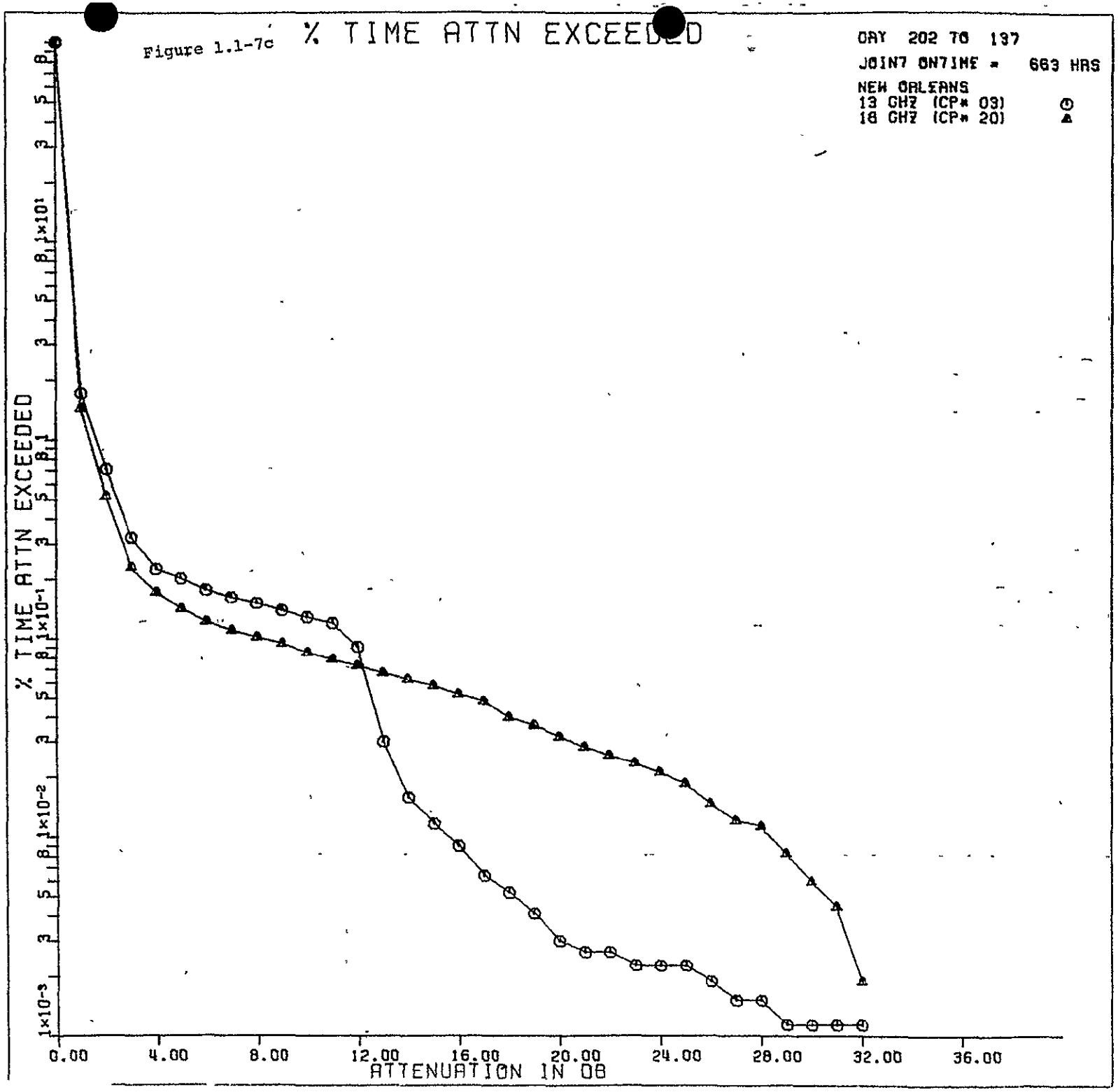

% TIME ATTN EXCEEDED
DAY 202 TO 137
JOINT ONTIME = 663 HRS
NEW ORLEANS
13 GHZ (CP# 03)
18 GHZ (CP# 20)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7d

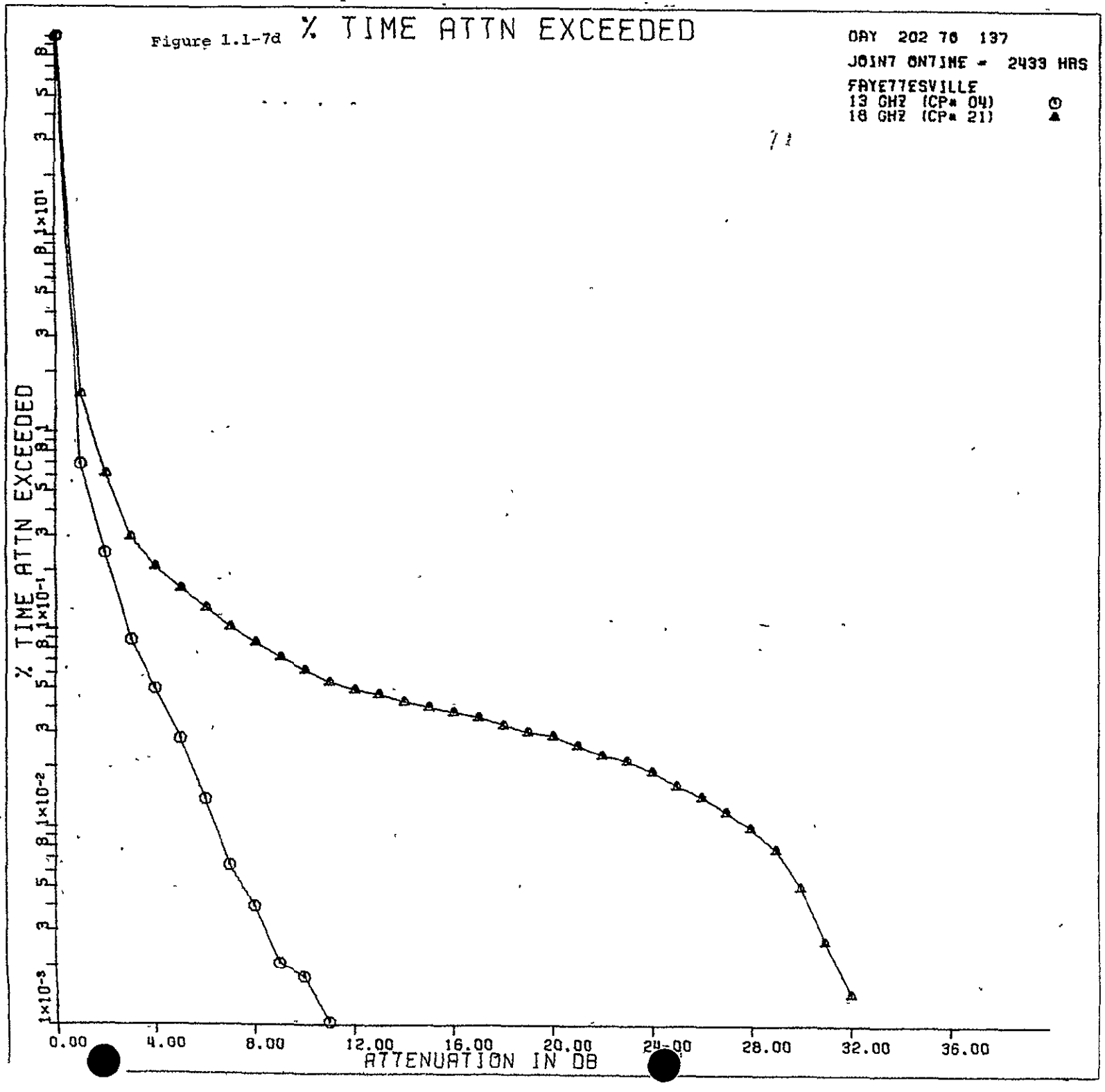

% TIME ATTN EXCEEDED
DAY 202 76 137
JOINT ONTIME = 2433 HRS
FAYETTESVILLE
13 GHZ (CP# 04)
18 GHZ (CP# 21)
% TIME ATTN EXCEEDED
1×10⁻³
1×10⁻²
1×10⁻¹
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7e

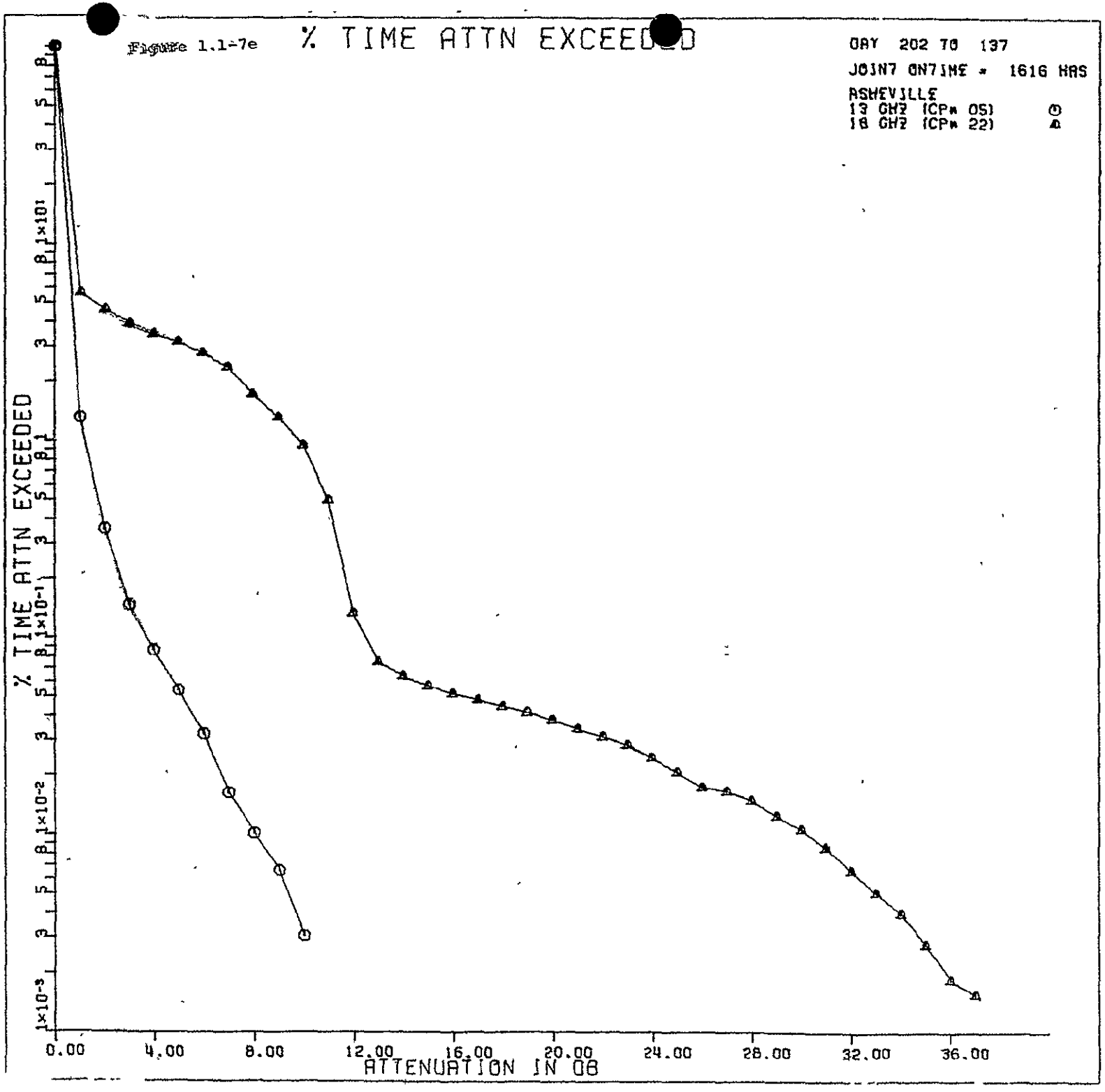

% TIME ATTN EXCEEDED
DAY 202 TO 137
JOIN7 ON7IME = 1616 HRS
ASHEVILLE
13 GHZ (CPM 05)
18 GHZ (CPM 22)
% TIME ATTN EXCEEDED
1×10-3
3
5
8
1×10-2
3
5
8
1×10-1
3
5
8
1
3
5
8
1×101
3
5
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7f

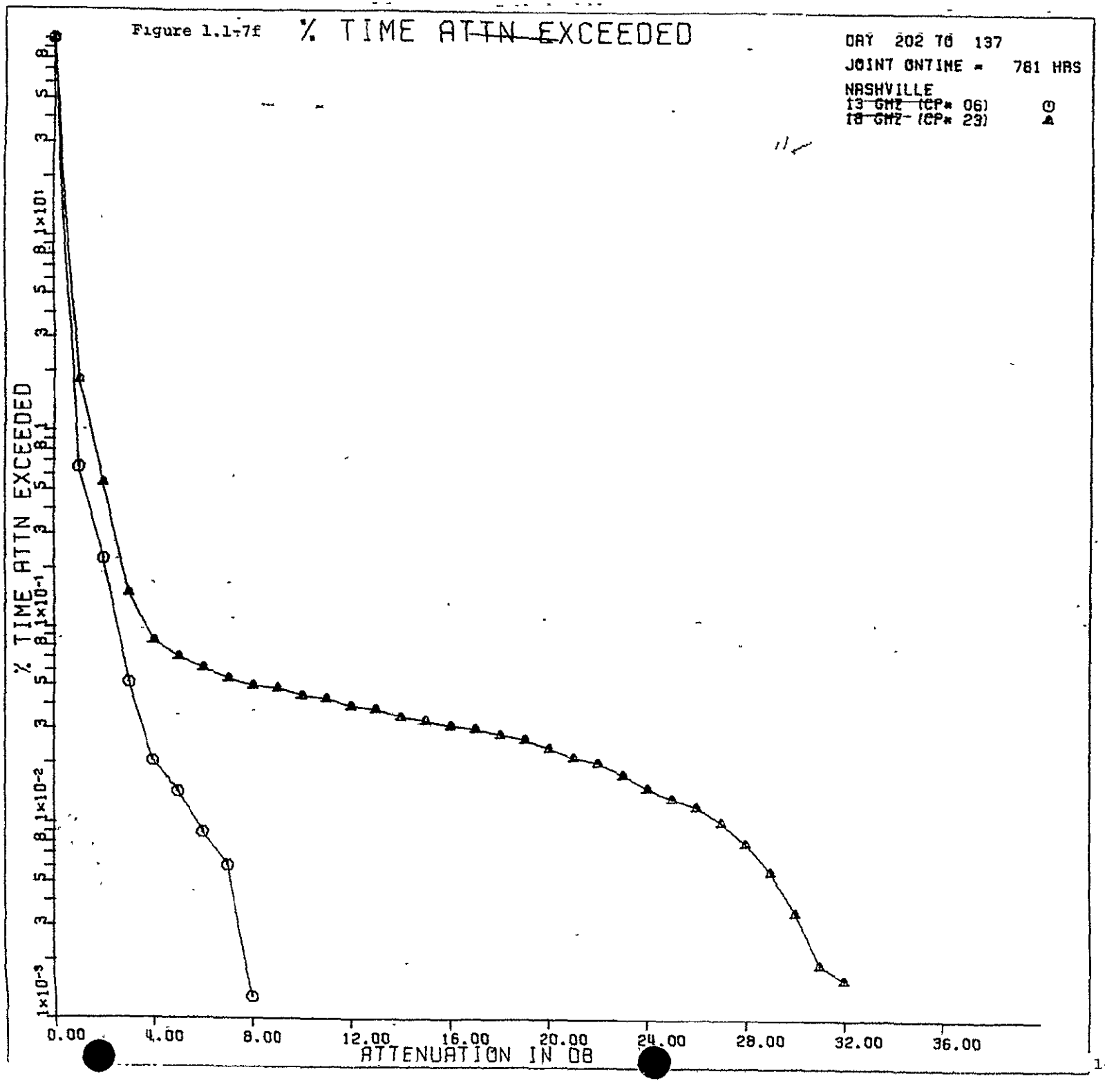

% TIME ATTN EXCEEDED
DAY 202 TO 137
JOINT ONTIME = 781 HRS
NASHVILLE
13 GHZ (CP* 06)
18 GHZ (CP* 23)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7g

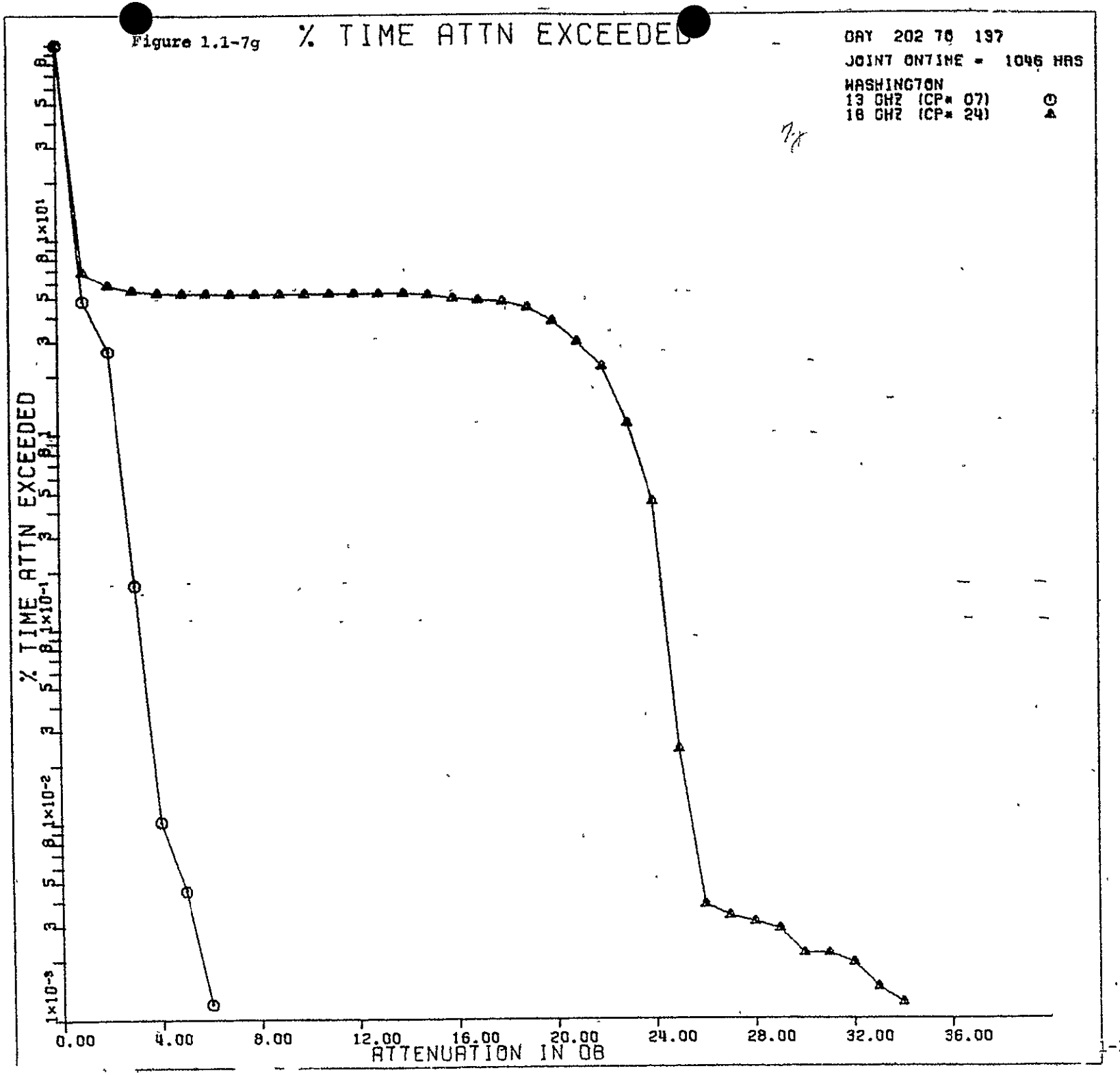

% TIME ATTN EXCEEDED
DAY 202 TO 197
JOINT ONTIME = 1046 HRS
WASHINGTON
13 GHZ (CP= 07)
18 GHZ (CP= 24)
% TIME ATTN EXCEEDED
1×10⁻³
1×10⁻²
1×10⁻¹
1×10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7h

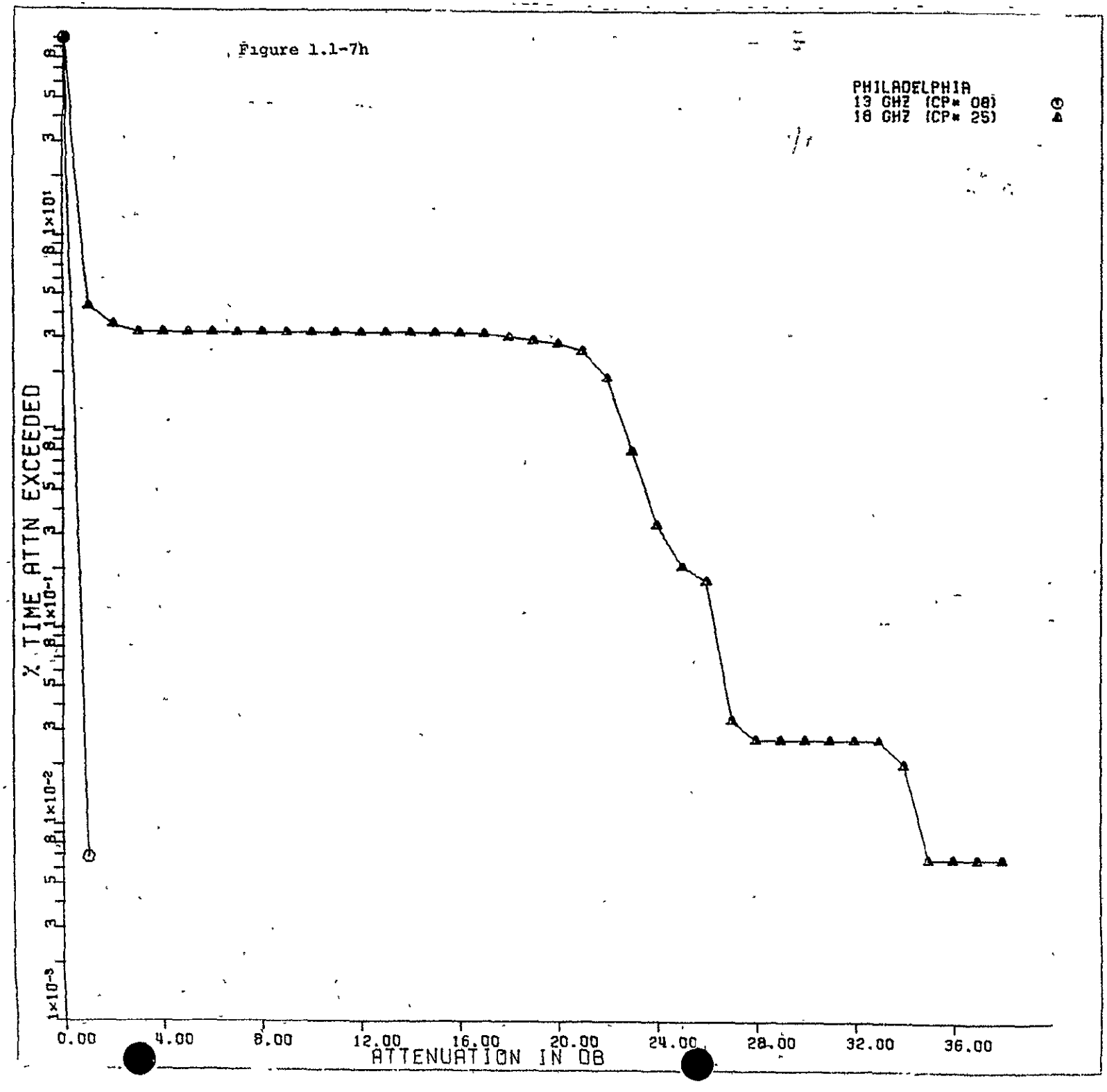

PHILADELPHIA
13 GHZ (CP* 08)
18 GHZ (CP* 25)
% TIME ATTN EXCEEDED
1x10^1
1x10^0
1x10^-1
1x10^-2
1x10^-3
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7₁

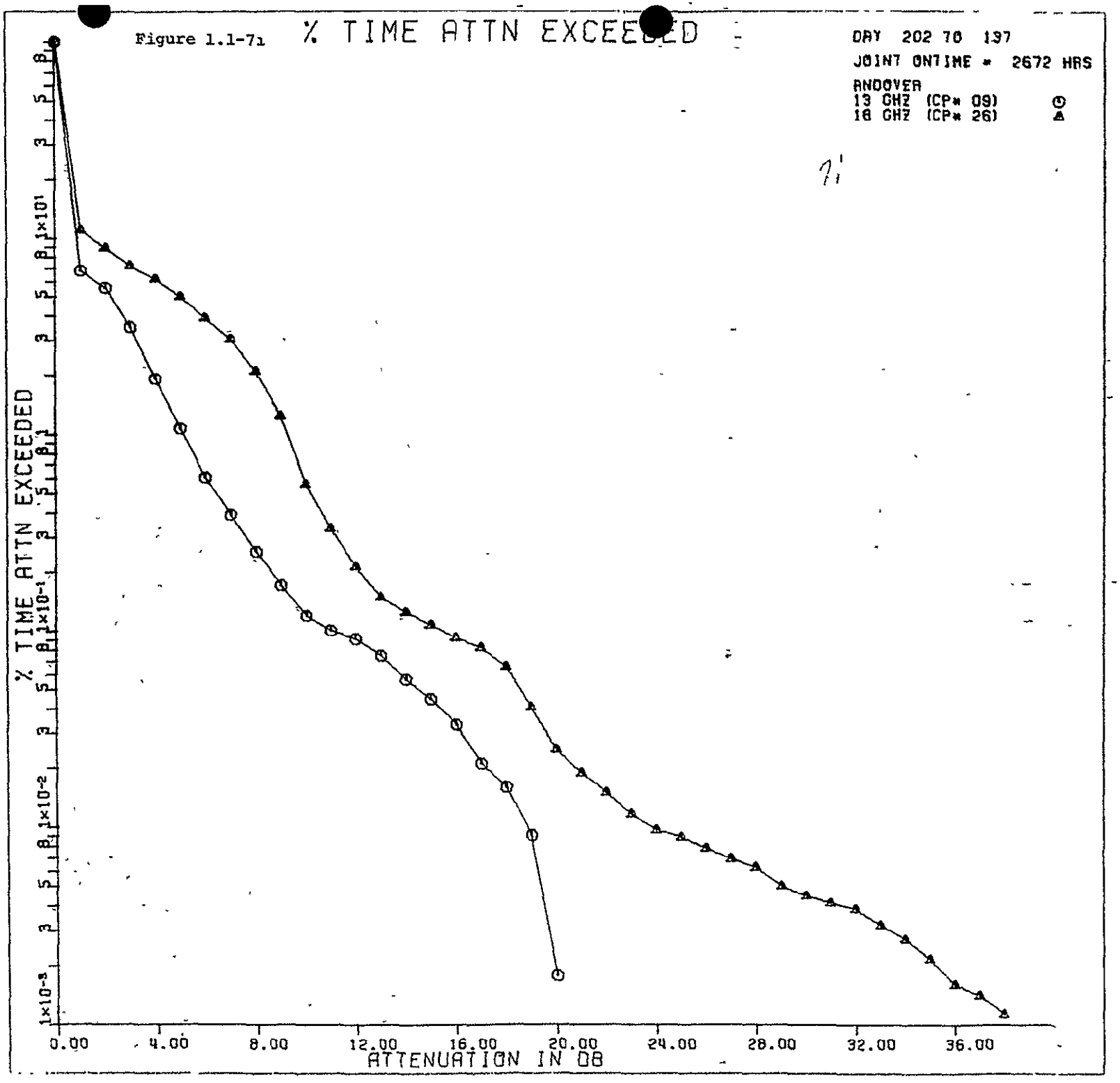

% TIME ATTN EXCEEDED
DAY 202 78 137
JOINT ONTIME = 2672 HRS
ANDOVER
13 GHZ (CP* 09)
18 GHZ (CP* 26)
% TIME ATTN EXCEEDED
1x10⁻³
1x10⁻²
1x10⁻¹
1x10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7

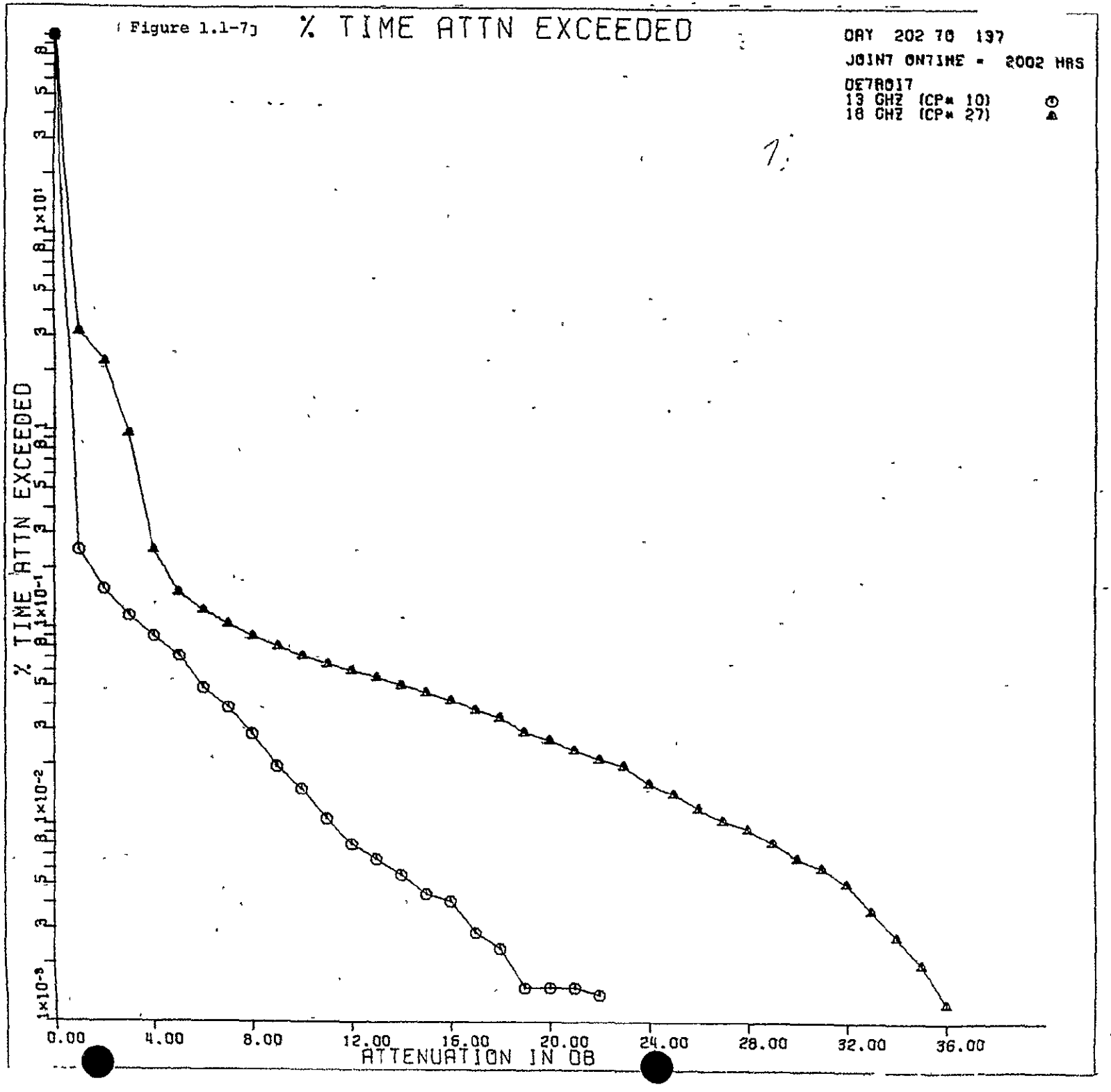

% TIME ATTN EXCEEDED
DAY 202 TO 197
JOINT ONTIME = 2002 HRS
DE7A017
13 GHZ (CP= 10)
18 GHZ (CP= 27)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7k

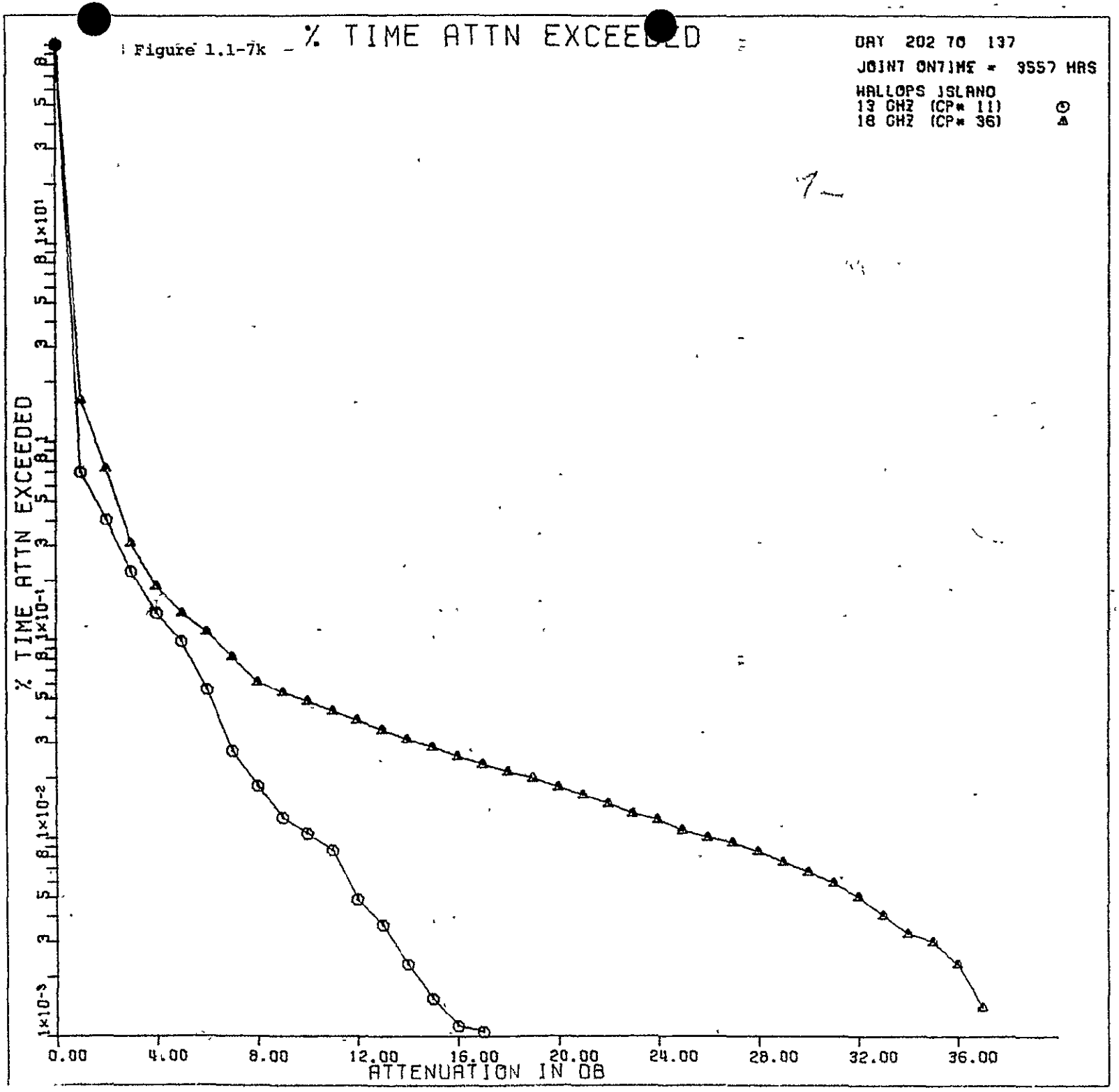

% TIME ATTN EXCEEDED
DAY 202 76 137
JOINT ONTIME = 9557 HRS
WALLOPS ISLAND
13 GHZ (CP= 11)
18 GHZ (CP= 36)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-71

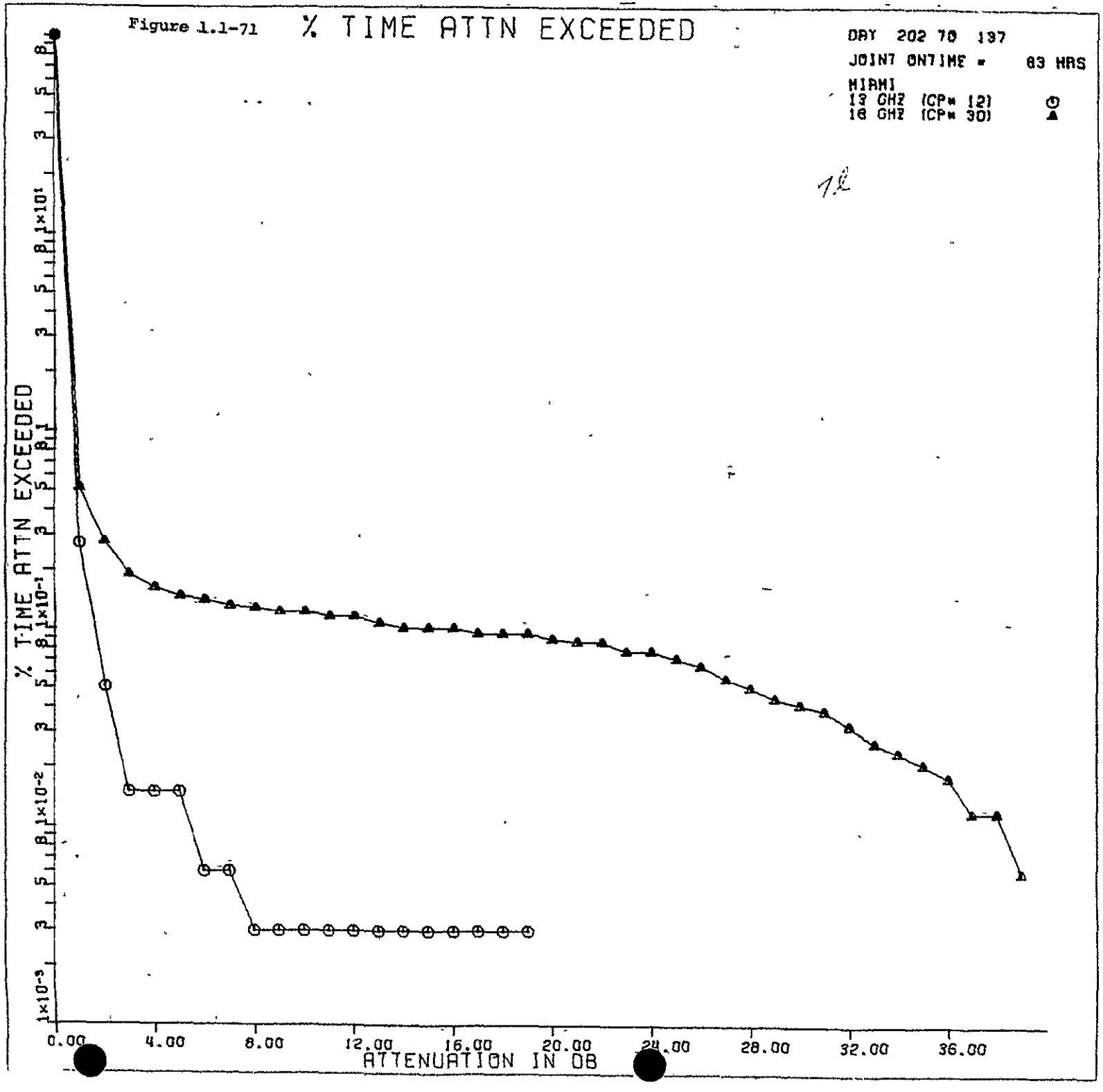

% TIME ATTN EXCEEDED
DAY 202 TO 197
JOINT ONTIME = 63 HRS
MIAMI
13 GHZ (CP= 12)
18 GHZ (CP= 30)
% TIME ATTN EXCEEDED
1×10⁻³
3
5
1×10⁻²
3
5
1×10⁻¹
3
5
1
3
5
1×10¹
3
5
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7m

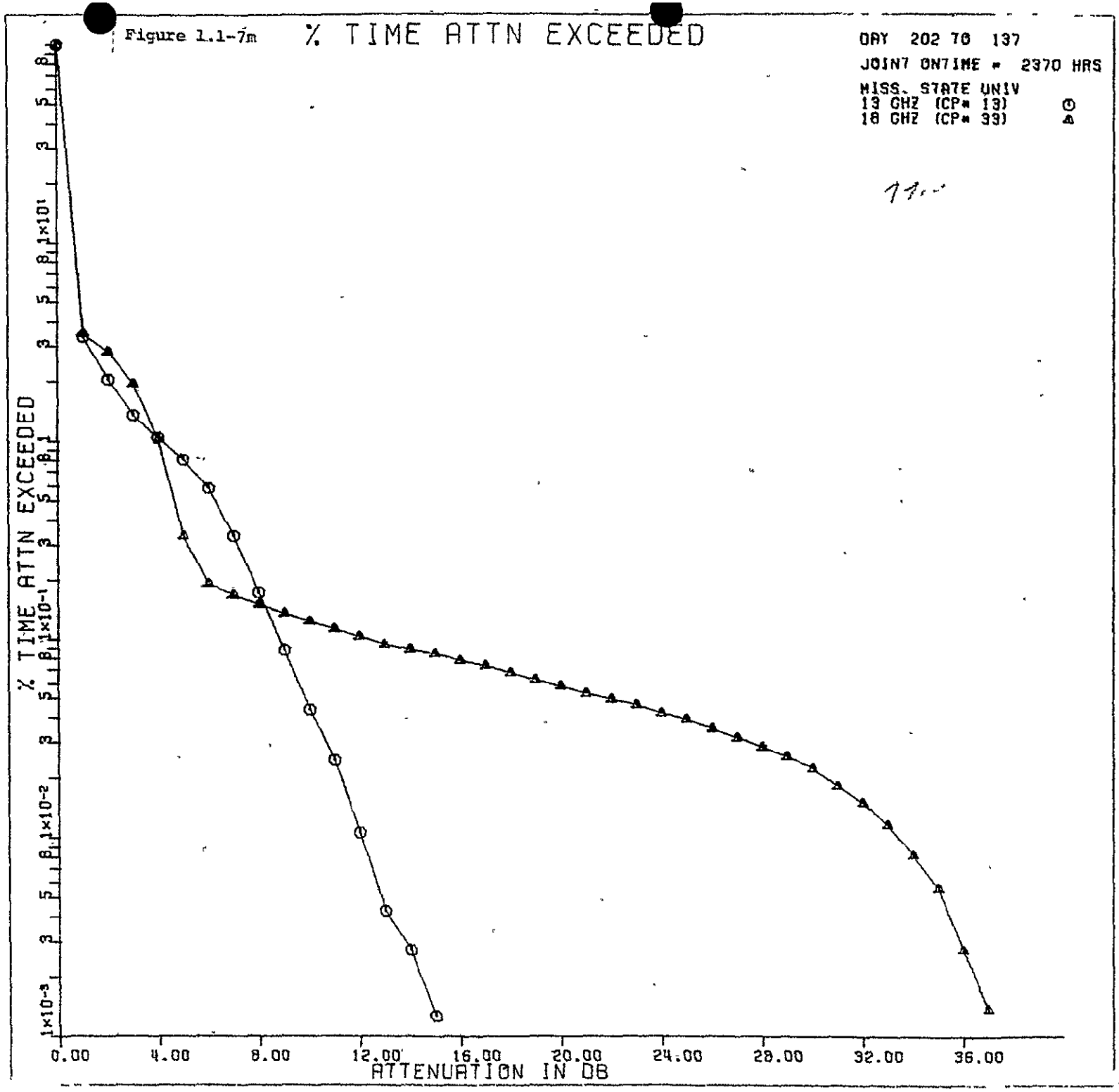

% TIME ATTN EXCEEDED
DAY 202 TO 137
JOIN7 ONTIME = 2370 HRS
MISS. STATE UNIV
13 GHZ (CP= 13)
18 GHZ (CP= 33)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10^1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7n

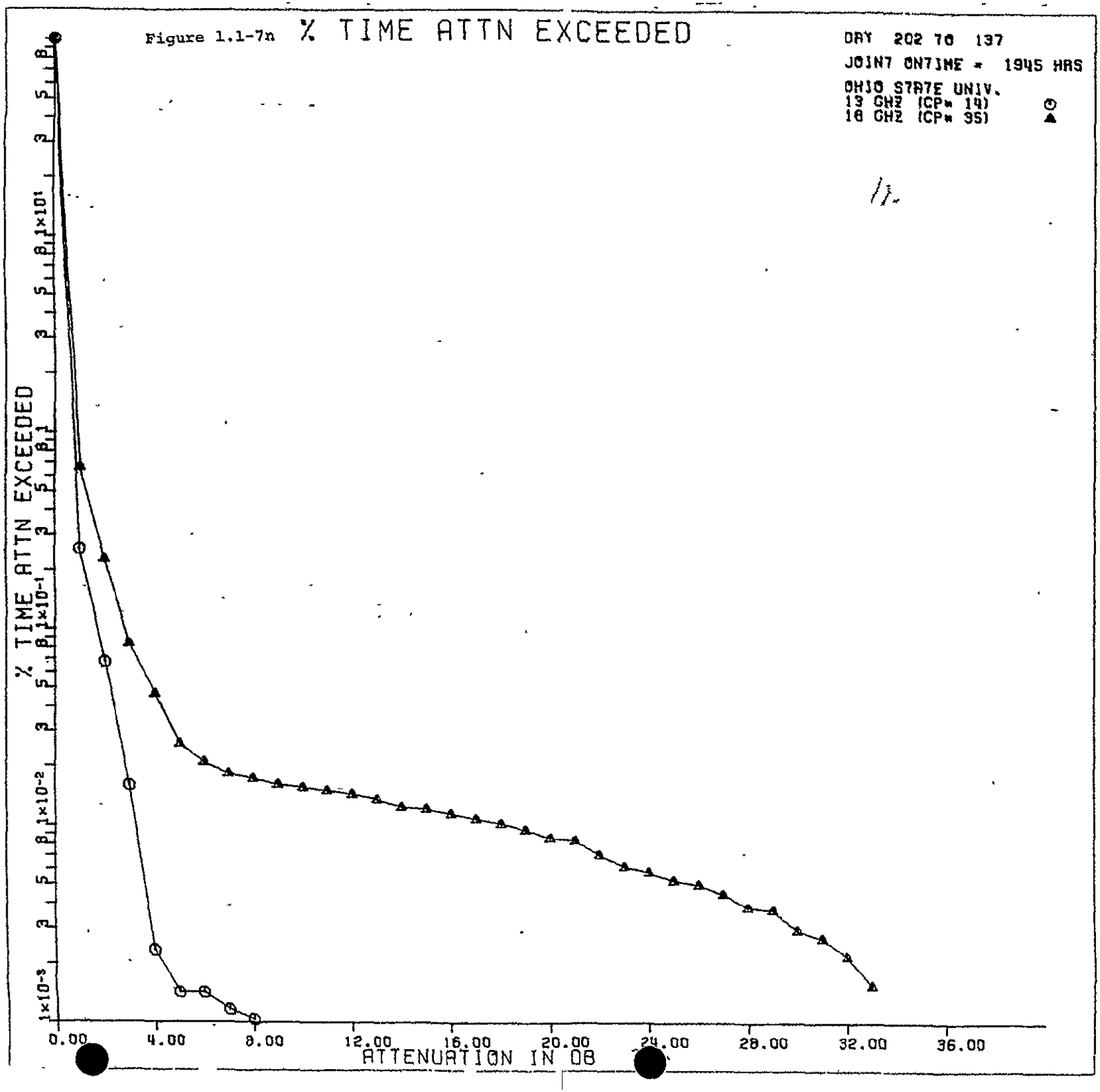
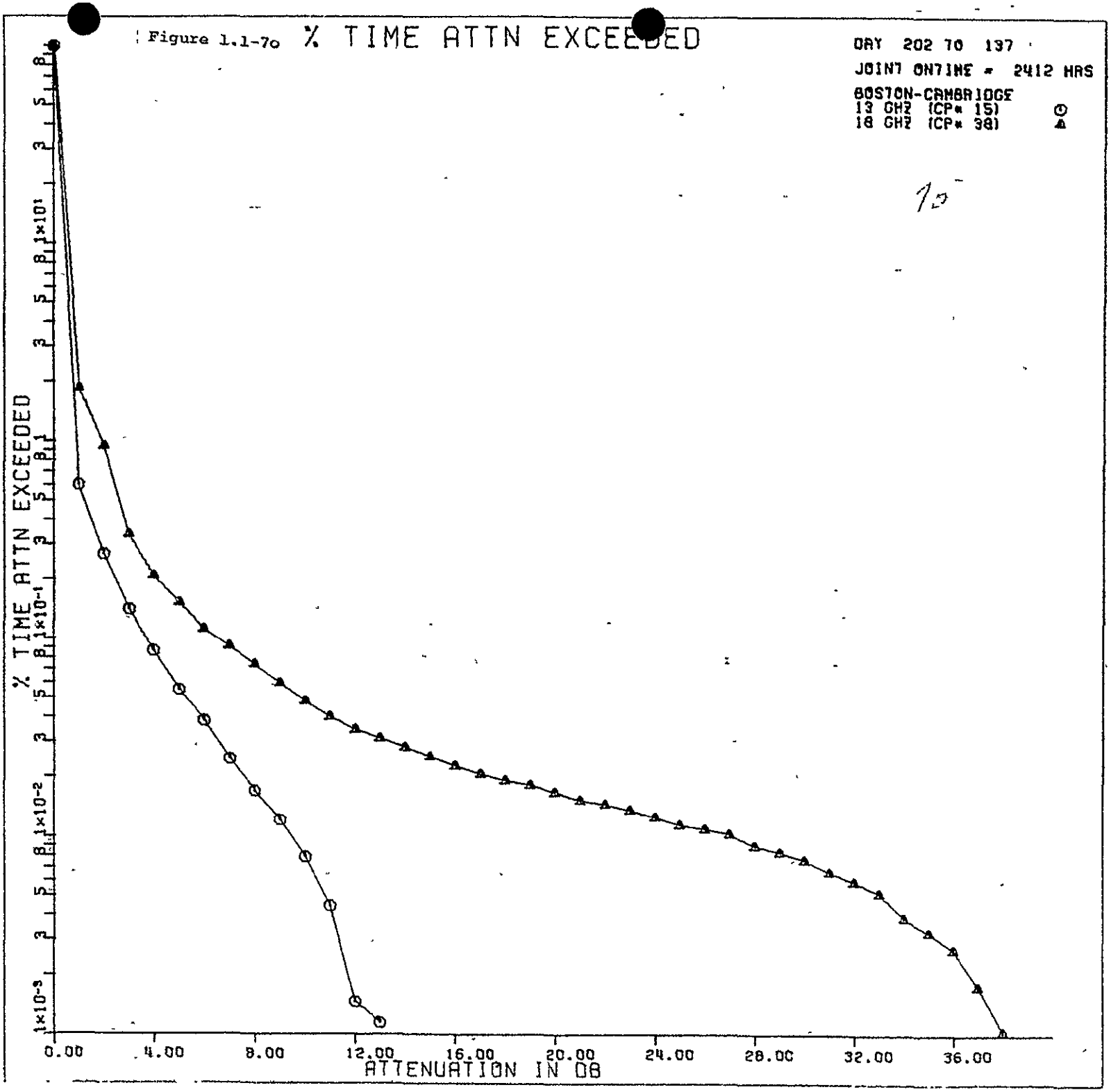

% TIME ATTN EXCEEDED
DAY 202 TO 137
JOINT ONTIME = 1945 HRS
OHIO STATE UNIV.
13 GHZ (CP= 14)
18 GHZ (CP= 95)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10¹
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

Figure 1.1-7o


% TIME ATTN EXCEEDED
DAY 202 TO 137
JOINT ONTIME = 2412 HRS
BOSTON-CAMBRIDGE
13 GHZ (CP= 15)
18 GHZ (CP= 38)
% TIME ATTN EXCEEDED
1x10-3
1x10-2
1x10-1
1x10+0
1x10+1
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00
ATTENUATION IN DB

13 GHZ FREQ. BAND | Table 1.1-13

% TIME ATTENUATION EXCEEDED
AT COINCIDENTLY OPERATING SITES 1.1-13

0 202 TO 75 137

DB	TMPA	ATL	N.OR.	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
1	0.52	4.70	1.70	0.69	1.30	0.65	4.84	0.01	6.79	0.25	0.70	0.27	3.36	0.25	0.60
2	0.27	1.34	0.71	0.24	0.36	0.22	2.68	0.0	5.56	0.16	0.41	0.05	2.04	0.07	0.27
3	0.15	0.14	0.32	0.09	0.15	0.05	0.17	0.0	3.50	0.11	0.22	0.01	1.35	0.02	0.14
4	0.12	0.09	0.23	0.05	0.09	0.02	0.01	0.0	1.92	0.09	0.14	0.01	1.04	0.00	0.09
5	0.10	0.06	0.20	0.03	0.05	0.01	0.00	0.0	1.07	0.07	0.10	0.01	0.81	0.00	0.06
6	0.08	0.03	0.18	0.01	0.03	0.01	0.00	0.0	0.60	0.05	0.06	0.01	0.58	0.00	0.04
7	0.05	0.03	0.16	0.01	0.02	0.01	0.00	0.0	0.39	0.04	0.03	0.01	0.34	0.00	0.02
8	0.04	0.02	0.15	0.00	0.01	0.00	0.00	0.0	0.25	0.03	0.02	0.00	0.17	0.00	0.02
9	0.03	0.01	0.14	0.00	0.01	0.00	0.00	0.0	0.17	0.02	0.01	0.00	0.09	0.00	0.01
10	0.03	0.01	0.13	0.00	0.00	0.00	0.00	0.0	0.12	0.02	0.01	0.00	0.04	0.00	0.01
11	0.02	0.00	0.12	0.00	0.00	0.00	0.00	0.0	0.10	0.01	0.01	0.00	0.02	0.00	0.00
12	0.02	0.00	0.09	0.00	0.00	0.00	0.00	0.0	0.09	0.01	0.00	0.00	0.01	0.00	0.00
13	0.01	0.00	0.03	0.00	0.00	0.0	0.00	0.0	0.08	0.01	0.00	0.00	0.00	0.00	0.00
14	0.01	0.00	0.02	0.00	0.00	0.0	0.00	0.0	0.06	0.01	0.00	0.00	0.00	0.00	0.00
15	0.01	0.00	0.01	0.00	0.00	0.0	0.00	0.0	0.04	0.00	0.00	0.00	0.00	0.00	0.00
16	0.01	0.00	0.01	0.00	0.00	0.0	0.0	0.0	0.03	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.01	0.00	0.0	0.0	0.0	0.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.01	0.00	0.0	0.0	0.0	0.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
21	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
22	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
23	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
24	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
25	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
26	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.00	0.00	0.00
27	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.00	0.00
28	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.00	0.00
29	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.00	0.00
30	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.00	0.00
31	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.00	0.00
32	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0	0.00	0.00
33	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.00	0.00
34	0.00	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.00	0.00
35	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.00	0.00
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
HOURS ON	978.	879.	663.	2433.	1616.	781.	1046.	37.	2672.	2002.	3557.	83.	2370.	1945.	2412.

18 GHZ FREQ. BAND | Table 1.1-14 % TIME ATTENUATION EXCEEDED AT COINCIDENTLY OPERATING SITES 1.1-14 0 202 TO 75 137

DR	TMPA	ATL	N.OR	FAYV	ASHV	NSHV	WASH	PHIL	ANDV	DETR	W.IS	MIAM	MSU	OSU	B-C
1	2.49	1.67	1.42	1.53	5.58	1.79	6.79	4.35	10.99	3.17	1.61	0.51	3.47	0.66	1.84
2	1.35	0.70	0.52	0.61	4.63	0.54	5.83	3.51	8.94	2.24	0.73	0.28	2.81	0.23	0.95
3	0.58	0.31	0.23	0.30	3.92	0.15	5.45	3.22	7.22	0.96	0.31	0.19	1.94	0.08	0.34
4	0.38	0.23	0.17	0.21	3.50	0.08	5.31	3.21	6.16	0.25	0.19	0.16	1.03	0.05	0.21
5	0.31	0.19	0.14	0.16	3.20	0.07	5.28	3.21	5.02	0.15	0.14	0.15	0.33	0.03	0.15
6	0.27	0.16	0.12	0.13	2.80	0.06	5.26	3.21	3.90	0.12	0.11	0.14	0.19	0.02	0.11
7	0.24	0.13	0.11	0.10	2.37	0.05	5.26	3.21	3.03	0.10	0.08	0.13	0.17	0.02	0.09
8	0.22	0.11	0.10	0.09	1.73	0.05	5.25	3.21	2.09	0.09	0.06	0.13	0.15	0.02	0.07
9	0.20	0.10	0.09	0.07	1.33	0.05	5.25	3.21	1.23	0.08	0.05	0.12	0.14	0.02	0.06
10	0.18	0.08	0.09	0.06	0.95	0.04	5.25	3.21	0.56	0.07	0.05	0.12	0.12	0.02	0.05
11	0.16	0.08	0.08	0.05	0.50	0.04	5.25	3.21	0.33	0.06	0.04	0.12	0.11	0.01	0.04
12	0.15	0.07	0.07	0.05	0.13	0.04	5.25	3.21	0.21	0.06	0.04	0.12	0.10	0.01	0.03
13	0.14	0.06	0.07	0.05	0.08	0.04	5.25	3.21	0.15	0.06	0.03	0.11	0.09	0.01	0.03
14	0.13	0.06	0.06	0.04	0.06	0.03	5.25	3.21	0.12	0.05	0.03	0.10	0.09	0.01	0.03
15	0.12	0.05	0.06	0.04	0.06	0.03	5.16	3.21	0.11	0.05	0.03	0.10	0.08	0.01	0.03
16	0.11	0.05	0.05	0.04	0.05	0.03	4.95	3.21	0.09	0.04	0.03	0.10	0.08	0.01	0.02
17	0.11	0.04	0.05	0.04	0.05	0.03	4.85	3.19	0.08	0.04	0.02	0.10	0.07	0.01	0.02
18	0.10	0.03	0.04	0.03	0.05	0.03	4.77	3.08	0.07	0.03	0.02	0.10	0.07	0.01	0.02
19	0.10	0.03	0.04	0.03	0.04	0.03	4.44	2.95	0.04	0.03	0.02	0.10	0.06	0.01	0.02
20	0.09	0.03	0.03	0.03	0.04	0.02	3.78	2.86	0.02	0.03	0.02	0.09	0.06	0.01	0.02
21	0.08	0.03	0.03	0.03	0.03	0.02	2.97	2.62	0.02	0.02	0.02	0.09	0.05	0.01	0.02
22	0.08	0.02	0.03	0.02	0.03	0.02	2.20	1.90	0.01	0.02	0.01	0.09	0.05	0.01	0.01
23	0.07	0.02	0.02	0.02	0.03	0.02	1.14	0.81	0.01	0.02	0.01	0.08	0.05	0.01	0.01
24	0.06	0.02	0.02	0.02	0.02	0.02	0.45	0.34	0.01	0.02	0.01	0.08	0.04	0.01	0.01
25	0.06	0.02	0.02	0.02	0.02	0.01	0.02	0.21	0.01	0.01	0.01	0.07	0.04	0.01	0.01
26	0.05	0.02	0.01	0.01	0.02	0.01	0.00	0.18	0.01	0.01	0.01	0.07	0.04	0.01	0.01
27	0.05	0.02	0.01	0.01	0.02	0.01	0.00	0.03	0.01	0.01	0.01	0.06	0.03	0.00	0.01
28	0.04	0.02	0.01	0.01	0.02	0.01	0.00	0.03	0.01	0.01	0.01	0.05	0.03	0.00	0.01
29	0.04	0.01	0.01	0.01	0.01	0.01	0.00	0.03	0.01	0.01	0.01	0.04	0.03	0.00	0.01
30	0.03	0.01	0.01	0.01	0.01	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.02	0.00	0.01
31	0.03	0.01	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01	0.01	0.04	0.02	0.00	0.01
32	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01	0.01	0.03	0.01	0.00	0.01
33	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.03	0.01	0.00	0.01
34	0.02	0.01	0.0	0.00	0.00	0.0	0.00	0.02	0.00	0.00	0.00	0.02	0.01	0.00	0.00
35	0.01	0.00	0.0	0.00	0.00	0.0	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.0	0.00
36	0.01	0.00	0.0	0.0	0.00	0.0	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.0	0.00
37	0.00	0.00	0.0	0.0	0.00	0.0	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.0	0.00
38	0.00	0.00	0.0	0.0	0.00	0.0	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.0	0.00
39	0.00	0.00	0.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.01	0.00	0.0	0.00
40	0.00	0.00	0.0	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.0	0.00
HOURS ON	978.	879.	663.	2433.	1616.	781.	1046.	37.	2672.	2002.	3557.	83.	2370.	1945.	2412.

Table 1.1-15a

13 GHZ FREQ. BAND — DISTRIBUTION OF JOINT FADES OVER 24 HOURS FOR AT LEAST X NUMBER OF SITES — 0 202 TO 75 137

1.1-15a

NO. OF SITES	DB	AVG MINUTES OF FADE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	> 0	4.3	3.2	1.8	1.9	1.9	2.2	2.1	2.3	2.4	1.9	1.3	2.2	2.6	1.9	1.9	2.2	3.3	2.6	2.1	3.2	3.0	2.9	2.7	3.4
1	> 3	1.1	1.0	0.6	0.6	0.5	0.4	0.6	0.5	0.2	0.3	0.1	0.3	0.4	0.4	0.4	0.6	0.7	0.6	0.6	0.8	0.5	1.1	0.9	0.9
1	> 6	0.3	0.3	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.4	0.2	0.3	0.2	0.3	0.2	0.4
1	> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.1	0.2	0.1	0.1	0.2	0.1
1	> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1	> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 0	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.2	0.1	0.3
2	> 3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 20	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
3	> 3	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
3	> 6	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
3	> 10	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
3	> 15	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
3	> 20	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
3	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
4	> 3	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
4	> 6	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 10	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 15	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 20	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
5	> 3	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
5	> 6	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
5	> 10	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
5	> 15	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
5	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
5	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1.1-15b

13 GHZ FREQ. BAND — DISTRIBUTION OF JOINT FADES OVER 24 HOURS FOR AT LEAST X NUMBER OF SITES — 0 202 TO 75 137

156

NO. OF SITES	DB	AVG MINUTES OF FADE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6	> 0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
6	> 3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
6	> 6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
6	> 10	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
6	> 15	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
7	> 3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
7	> 6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 10	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	> 3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
8	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1.1-15c

13 GHZ FREQ. BAND DISTRIBUTION OF JOINT FADES OVER 24 HOURS FOR AT LEAST X NUMBER OF SITES 0 202 TO 75 137

15c

NO. OF SITES	DB	AVG MINUTES OF FADE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
11	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX. NO. DAYS ON PER HOUR		243	237	224	234	234	196	164	215	212	201	202	210	216	222	207	236	238	237	234	240	238	238	242	236

115

Figure 1.1-8a HOURLY FADE DISTBN

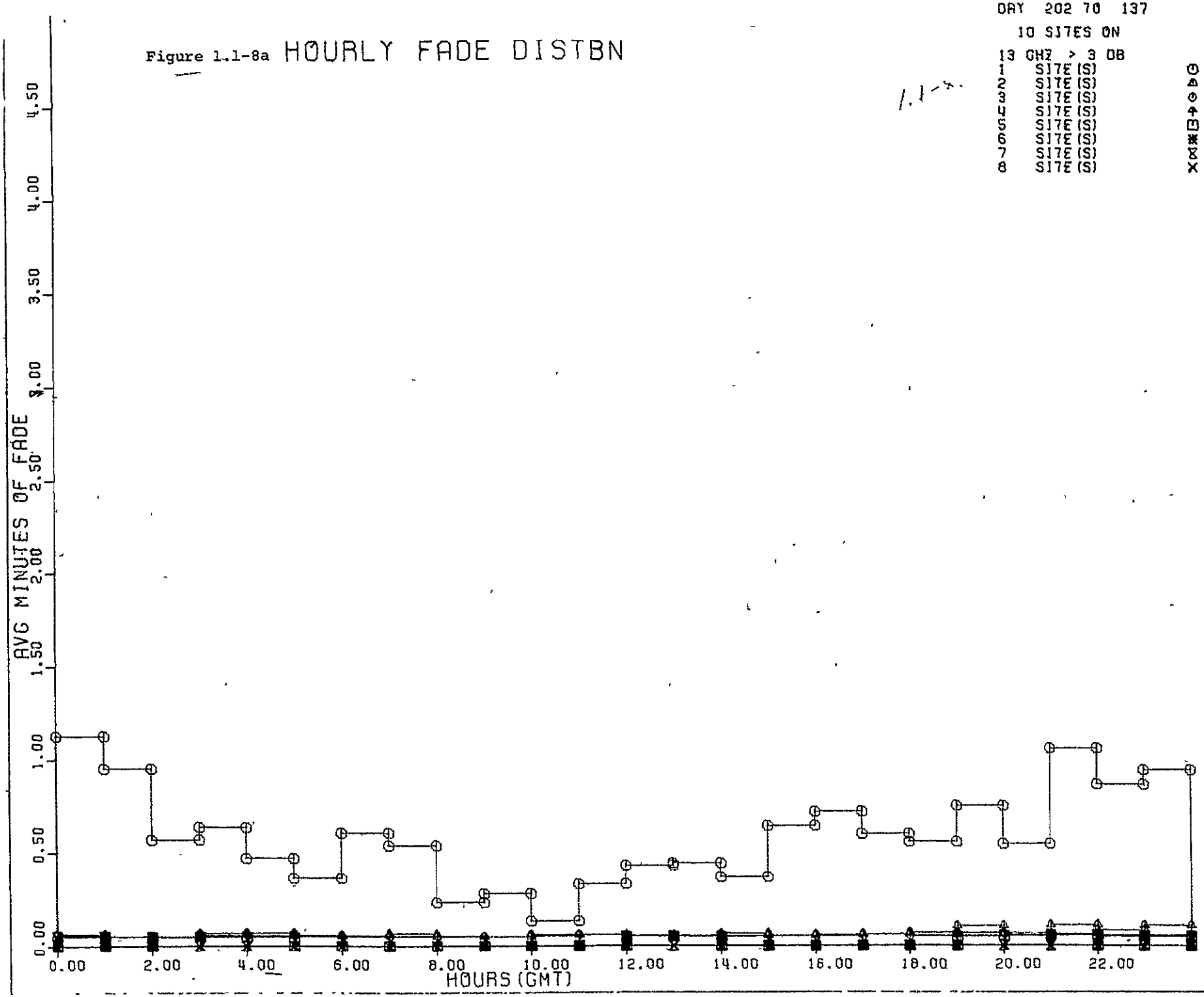


Figure 1.1-8b

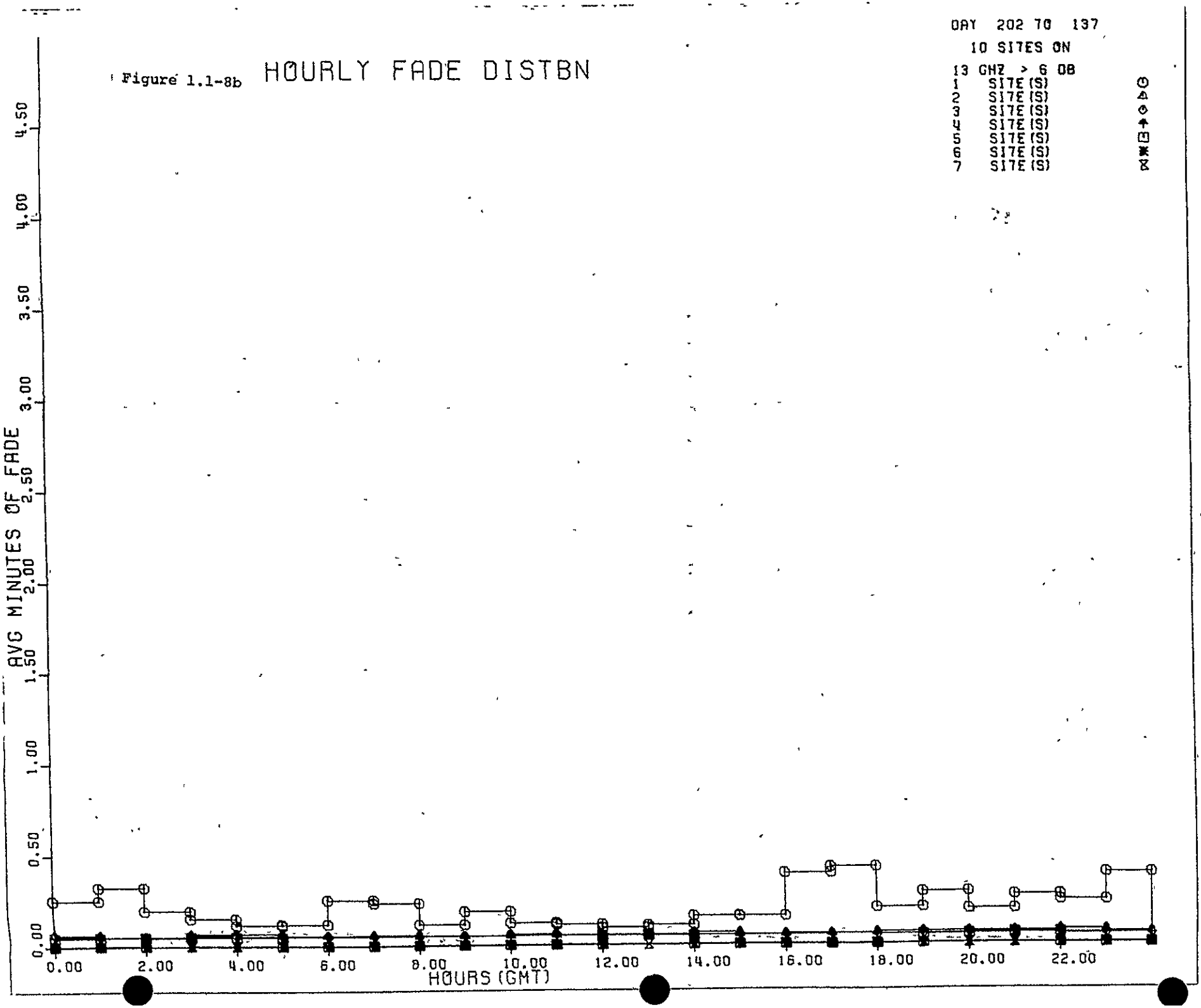

HOURLY FADE DISTBN
DAY 202 TO 137
10 SITES ON
13 GHZ > 6 DB
1 SITE(S)
2 SITE(S)
3 SITE(S)
4 SITE(S)
5 SITE(S)
6 SITE(S)
7 SITE(S)
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-8c HOURLY FADE DISTBN

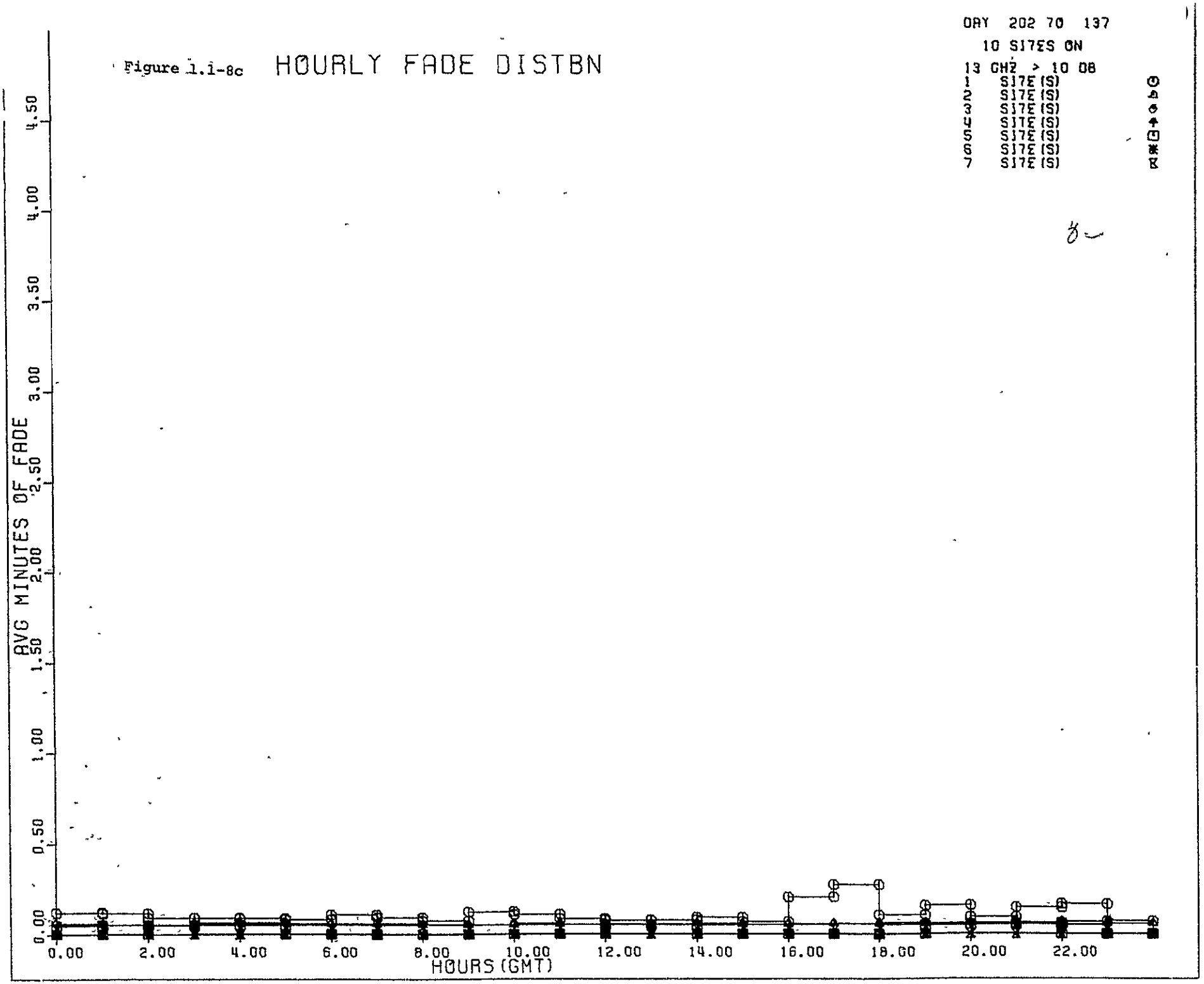


Figure 1.1-8d HOURLY FADE DISTBN

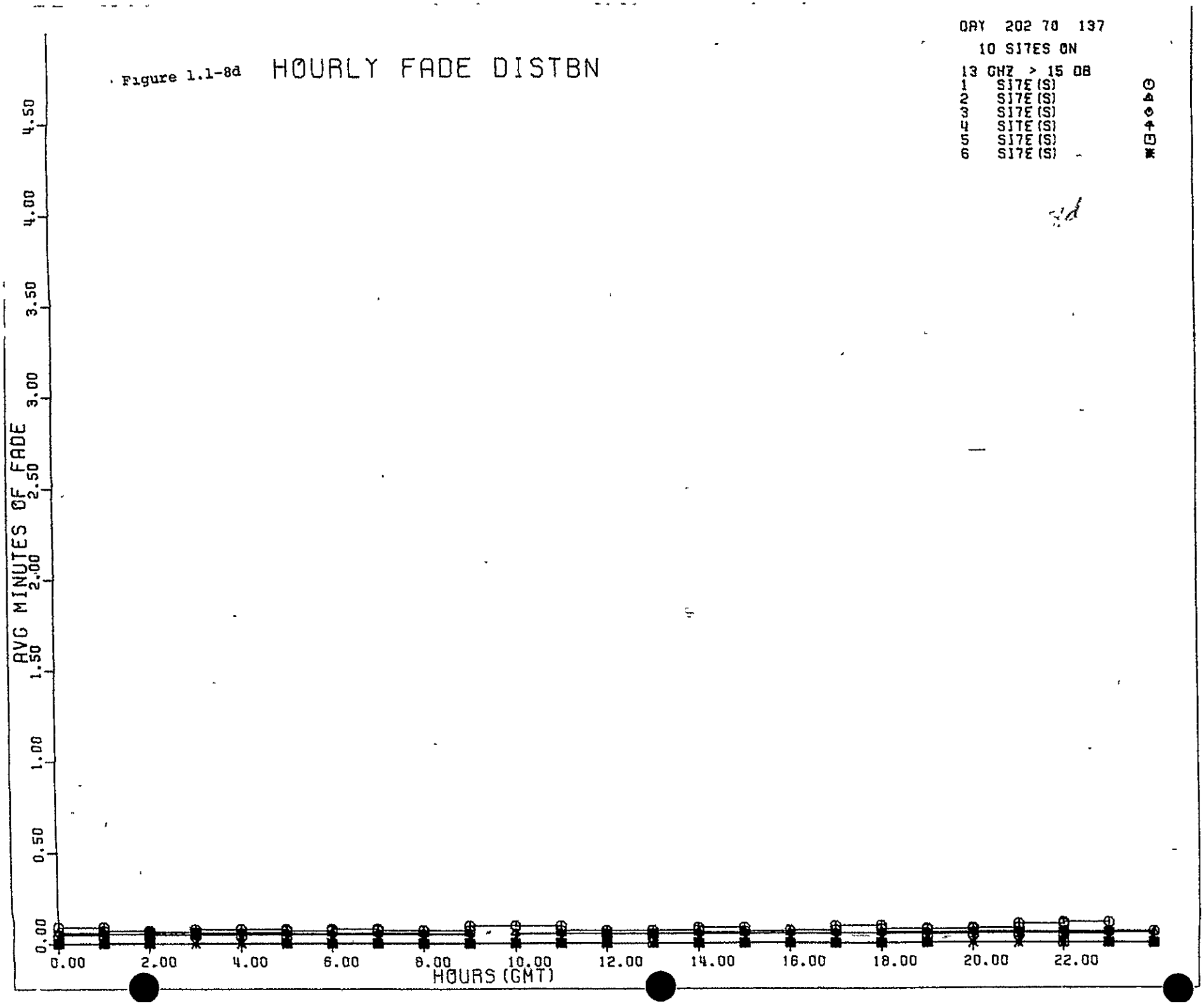


Figure 1.1-8e HOURLY FADE DISTBN

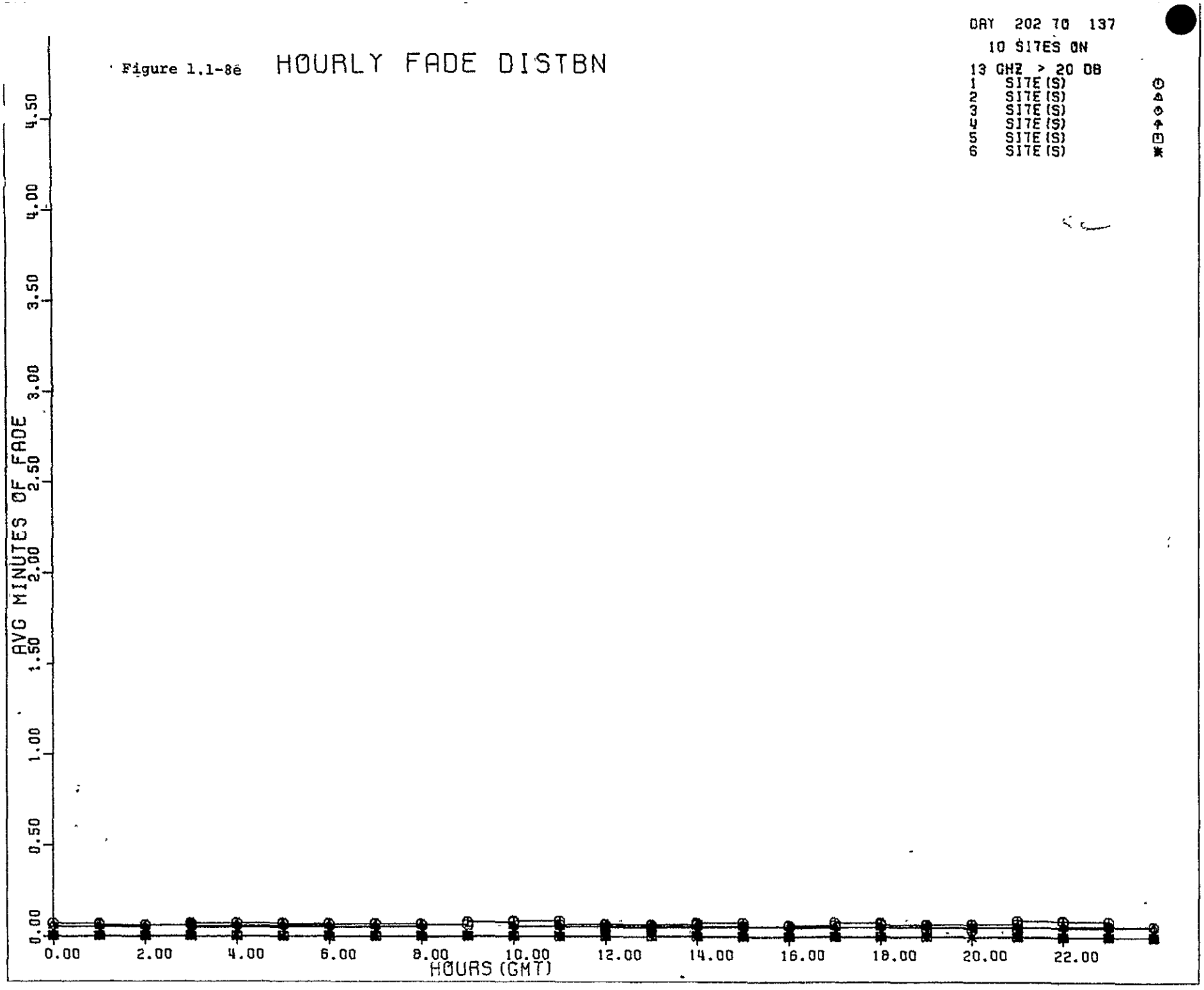


Table 1.1-16a

18 GHZ FREQ. BAND DISTRIBUTION OF JOINT FADES OVER 24 HOURS FOR AT LEAST X NUMBER OF SITES 0 202 TO 75 137

1.1-16a

NO. OF SITES	DB	AVG MINUTES OF FADE																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	> 0	3.6	3.1	2.6	3.1	2.3	1.5	0.9	1.9	1.4	2.1	1.7	1.9	2.4	2.2	2.5	3.2	4.5	4.2	3.5	5.0	4.6	4.9	3.7	3.6
1	> 3	2.5	1.9	1.5	2.1	1.4	0.5	0.7	1.1	0.7	0.8	0.9	1.0	1.4	1.0	1.7	1.9	2.3	2.3	1.9	2.8	2.4	2.8	1.9	1.5
1	> 6	0.5	0.6	0.3	0.5	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.6	0.6	0.6	0.8	0.8	0.8	0.4	0.3
1	> 10	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.4	0.2	0.2	0.1	0.4	0.2	0.1
1	> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
1	> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 0	1.0	0.9	0.6	0.6	0.6	0.2	0.1	0.6	0.4	0.5	0.4	0.5	0.4	0.2	0.6	0.6	0.3	0.5	0.7	1.3	1.0	1.2	0.9	1.1
2	> 3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 20	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 0	0.6	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8
3	> 3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3	> 6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3	> 10	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3	> 15	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3	> 20	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0
3	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
4	> 3	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
4	> 6	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 10	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0
4	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
4	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
5	> 3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
5	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0
5	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
5	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
5	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1.1-16b

18 GHZ FREQ. BAND DISTRIBUTION OF JOINT FADES OVER 24 HOURS FOR AT LEAST X NUMBER OF SITES 0 202 TO 75 137

16b

NO. OF SITES	DB	AVG MINUTES OF FADE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6	> 0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
6	> 3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
6	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1.1-16c

18 GHZ FREQ. BAND — DISTRIBUTION OF JOINT FADES OVER 24 HOURS FOR AT LEAST X NUMBER OF SITES — 0 202 TO 75 137

16c

# OF TFS	DB	AVG MINUTES OF FADE 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	> 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX. NO. DAYS ON PER HOUR		204	198	186	200	200	171	141	171	162	149	145	151	167	176	174	211	215	207	200	209	209	205	211	206

17f

Figure 1.1-9a

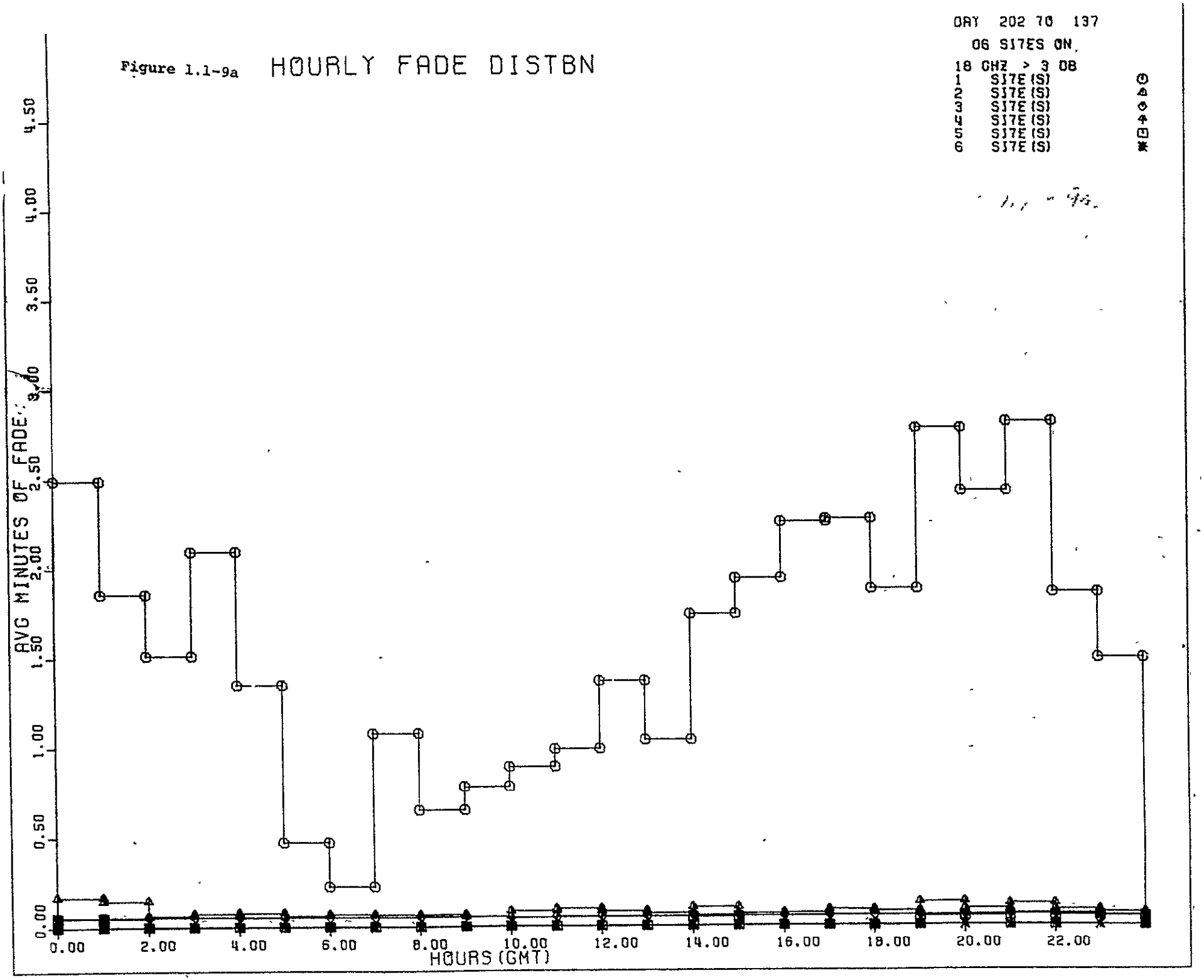
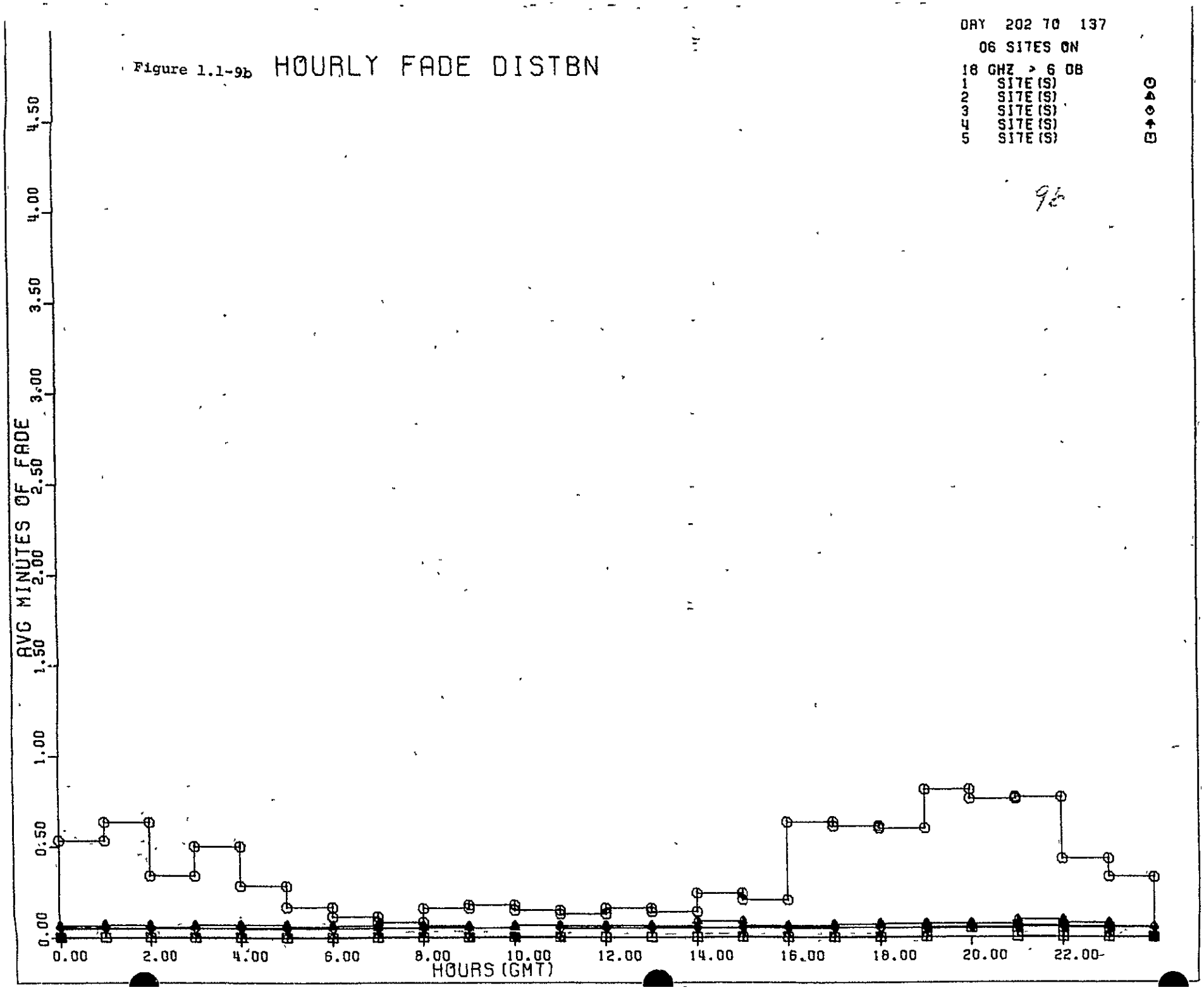

HOURLY FADE DISTBN
DAY 202 TO 137
06 SITES ON
18 GHZ > 3 DB
1 SITE(S)
2 SITE(S)
3 SITE(S)
4 SITE(S)
5 SITE(S)
6 SITE(S)
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-9b HOURLY FADE DISTBN



9b

Figure 1.1-9c

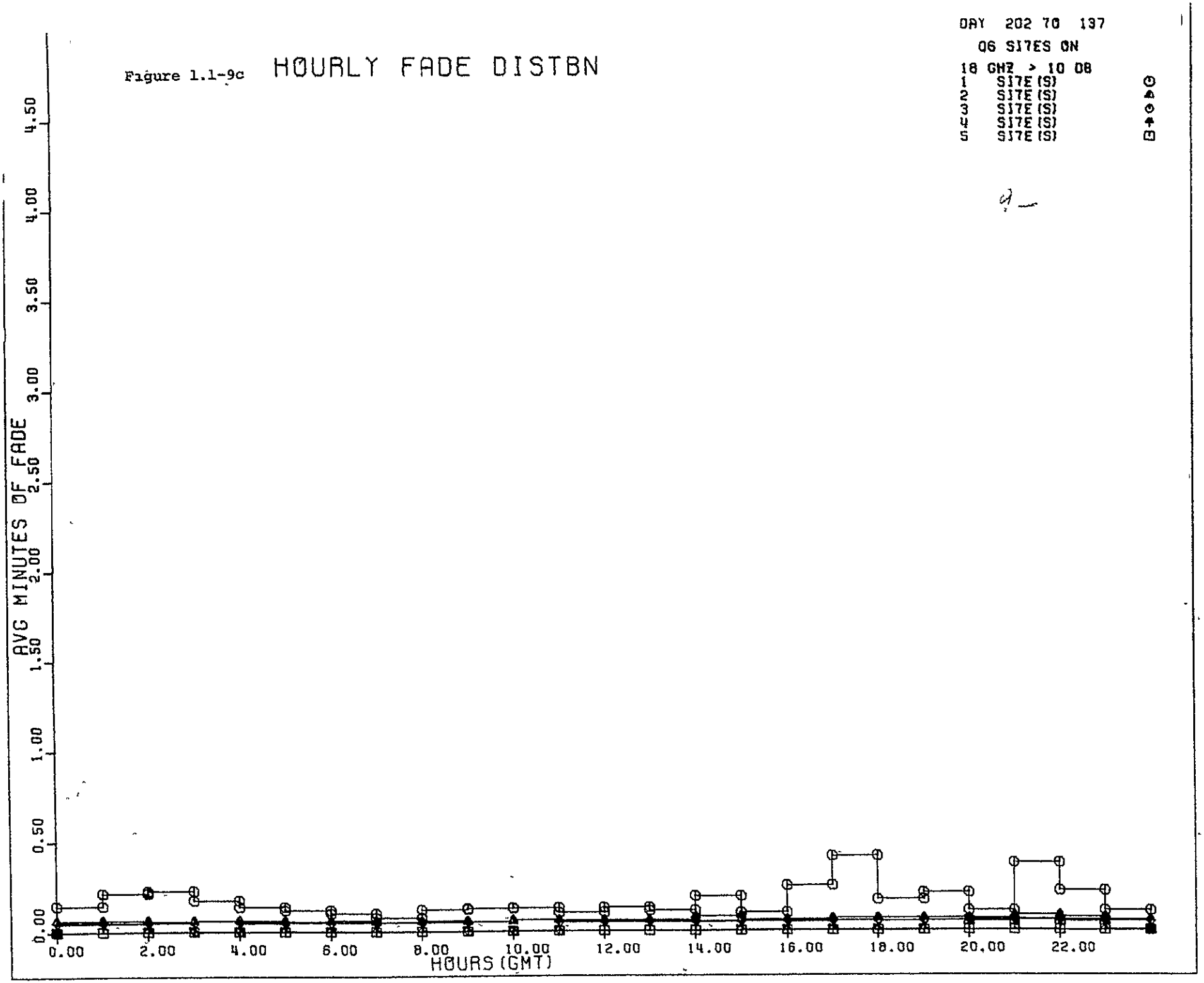

HOURLY FADE DISTBN
DAY 202 TO 137
06 SITES ON
18 GHZ > 10 DB
1 SITE(S)
2 SITE(S)
3 SITE(S)
4 SITE(S)
5 SITE(S)
AVG MINUTES OF FADE
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
22.00
HOURS (GMT)

Figure 1.1-9d

HOURLY FADE DISTBN

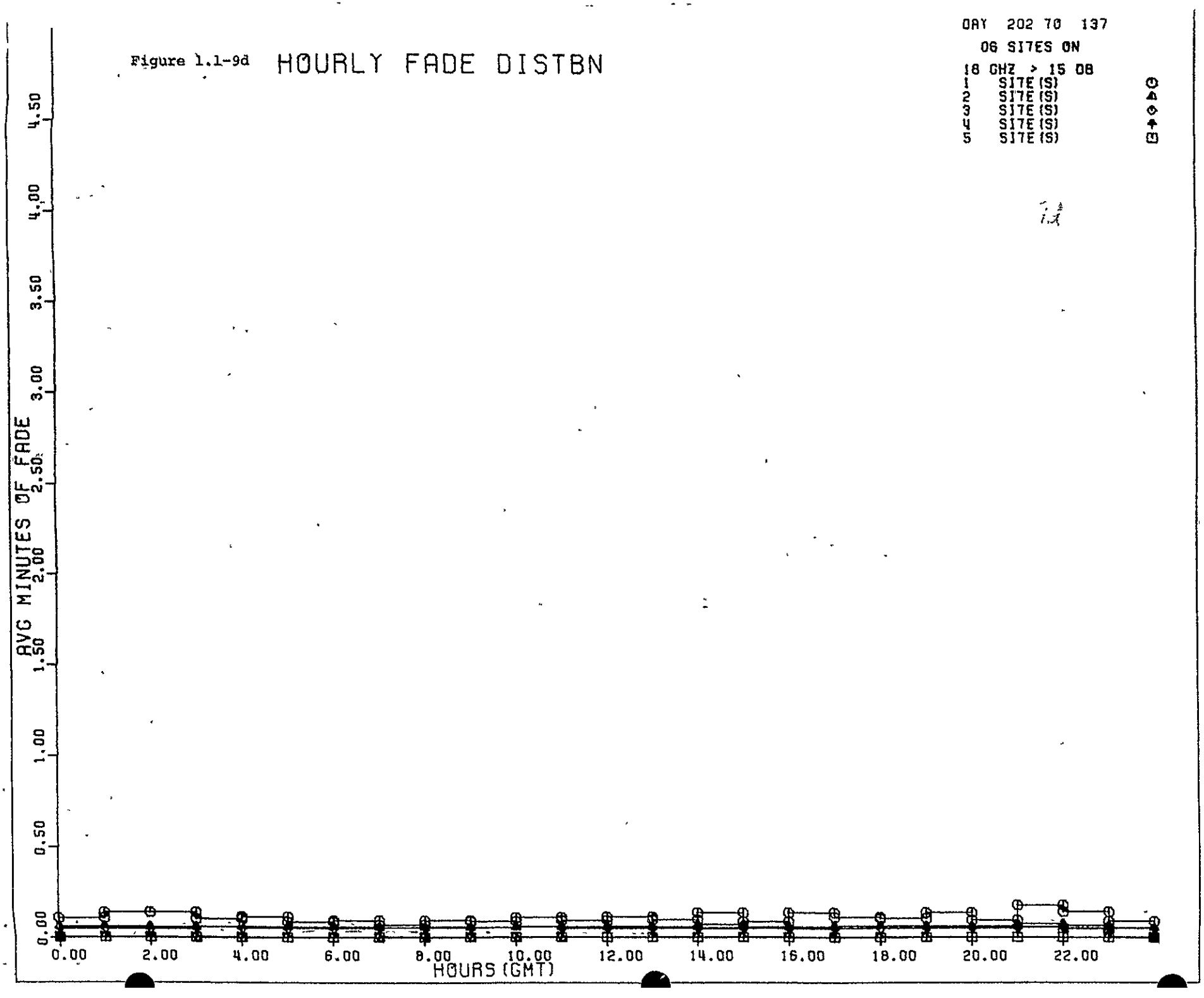


Figure 1.1-9e HOURLY FADE DISTBN

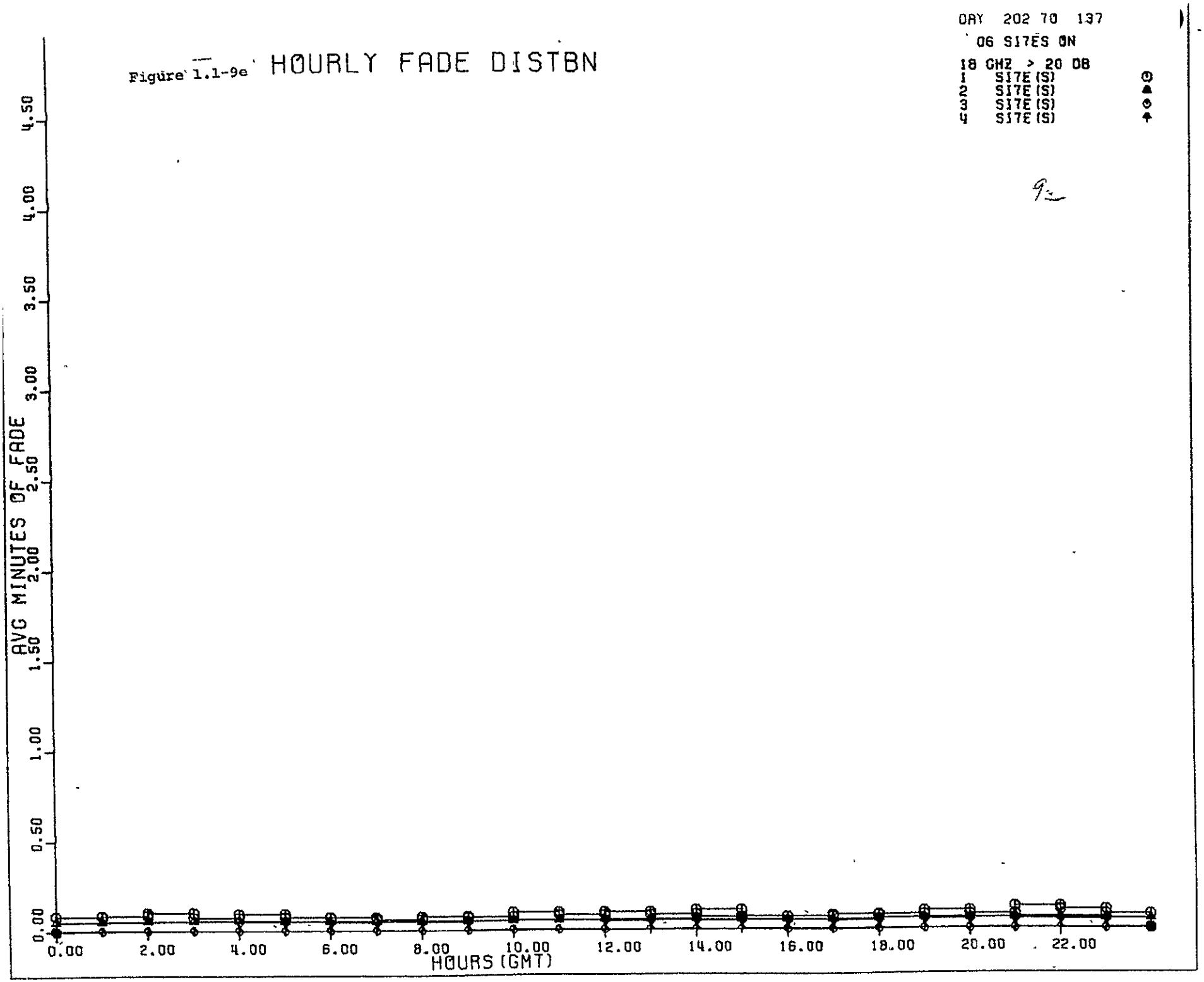
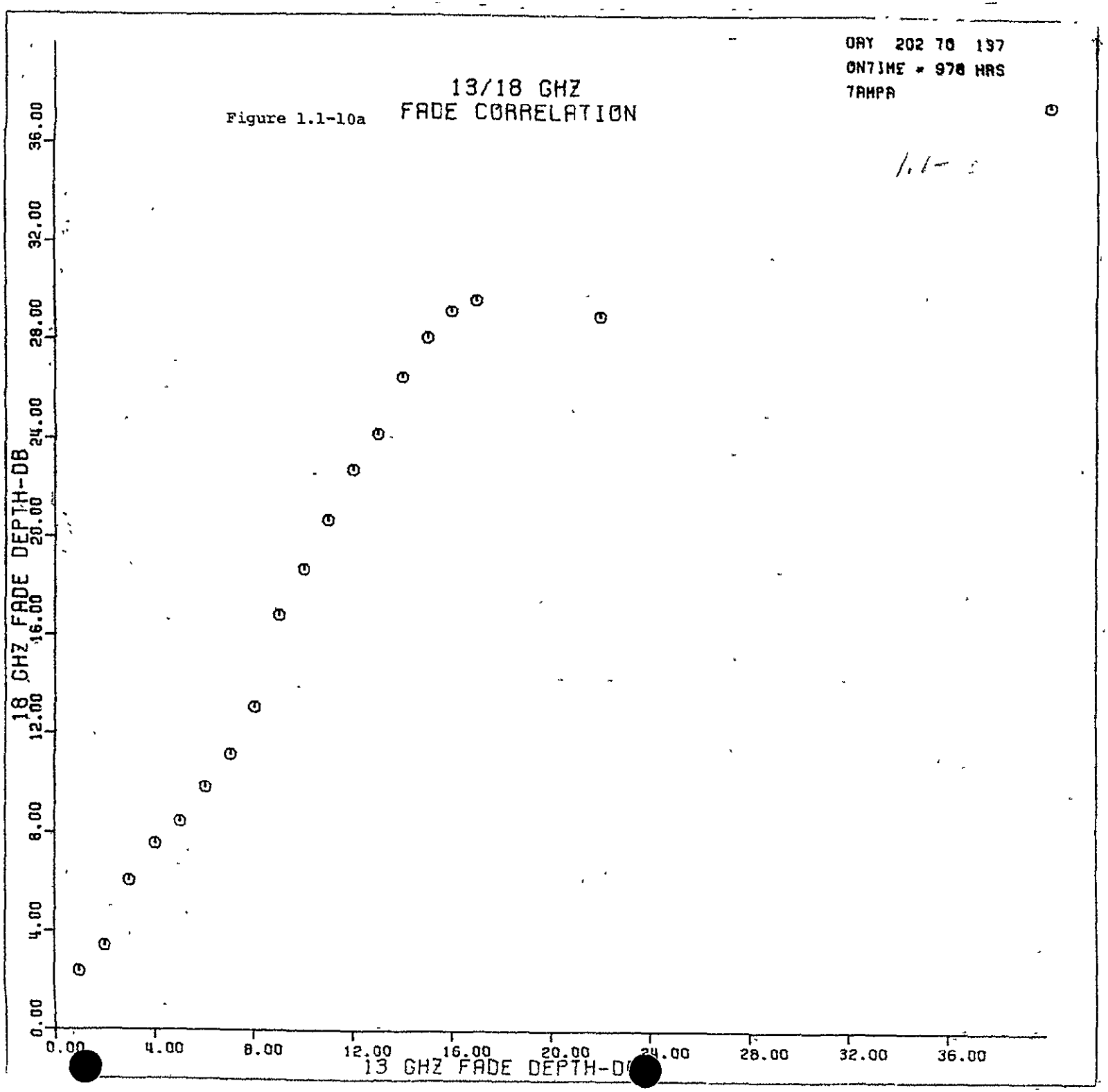


Figure 1.1-10a



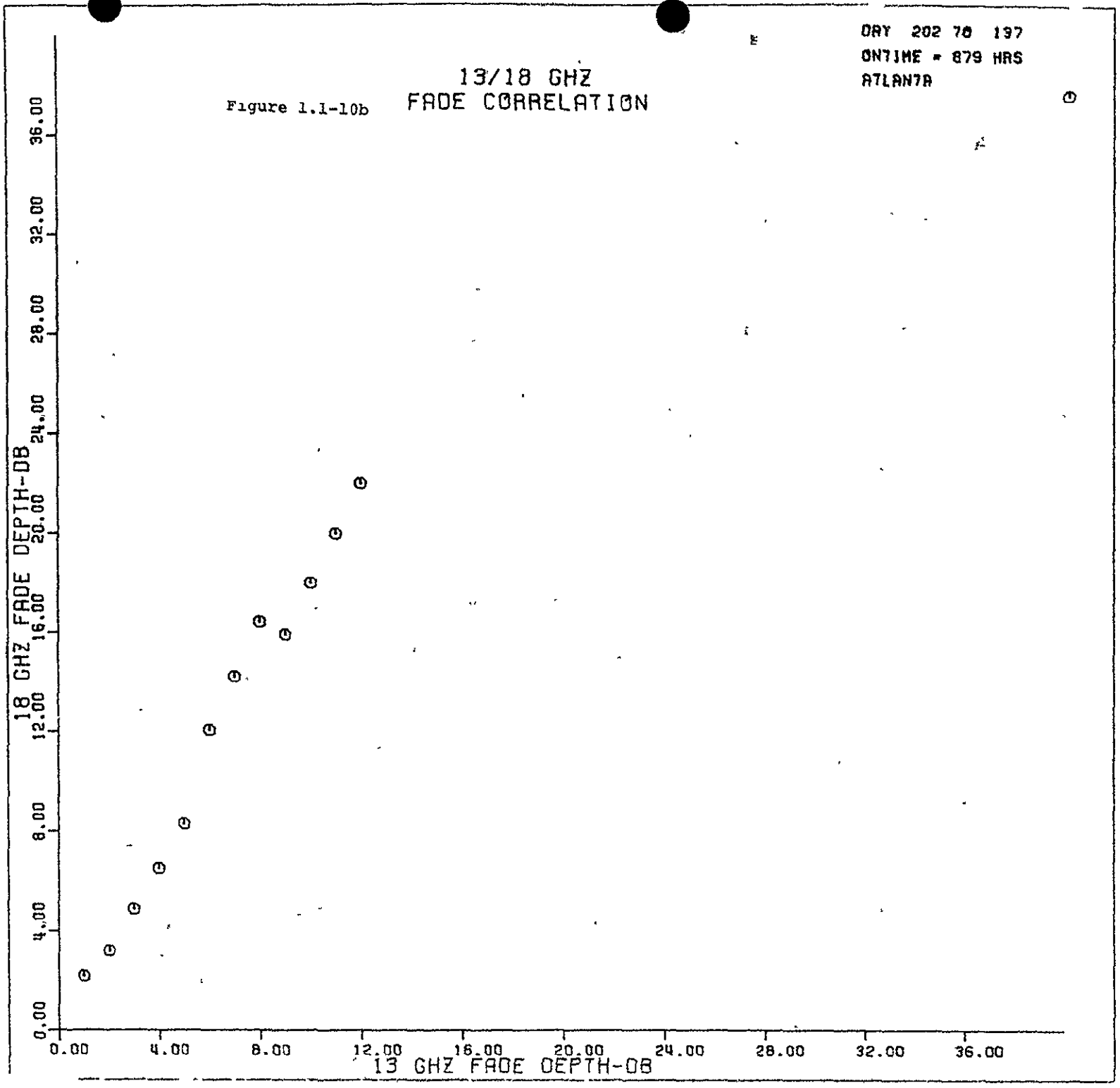


Figure 1.1-10b

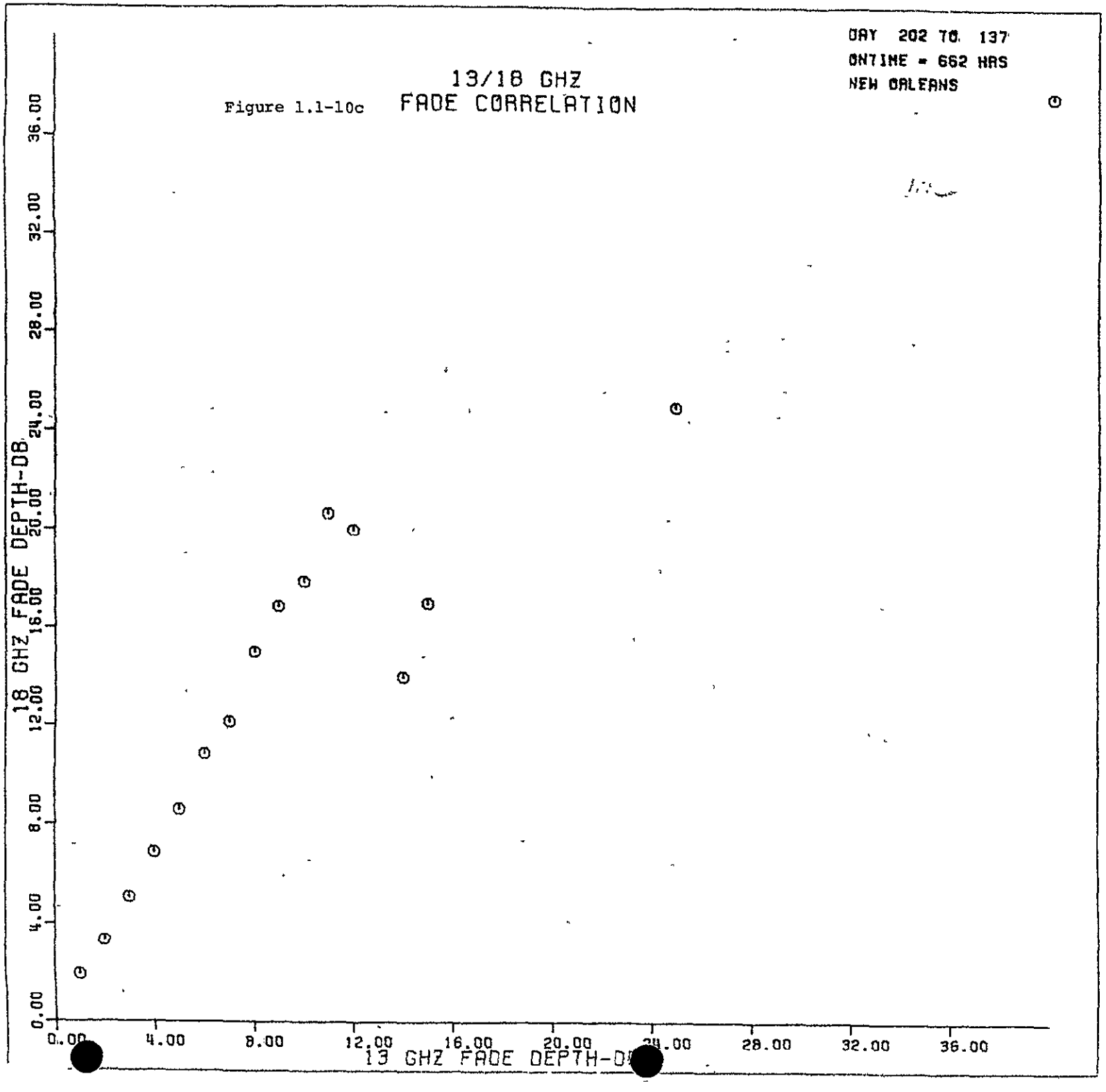


Figure 1.1-10c

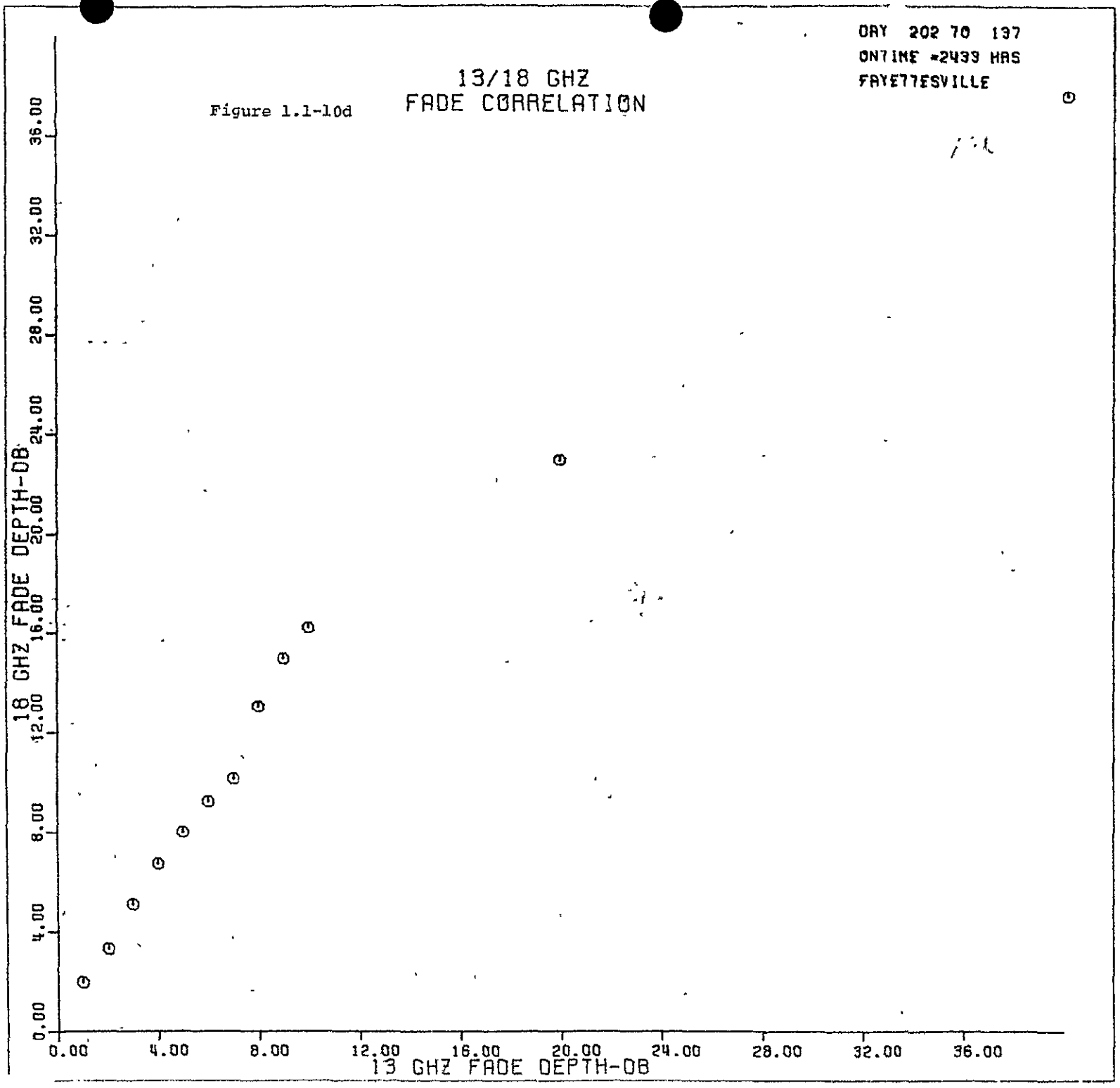


Figure 1.1-10d

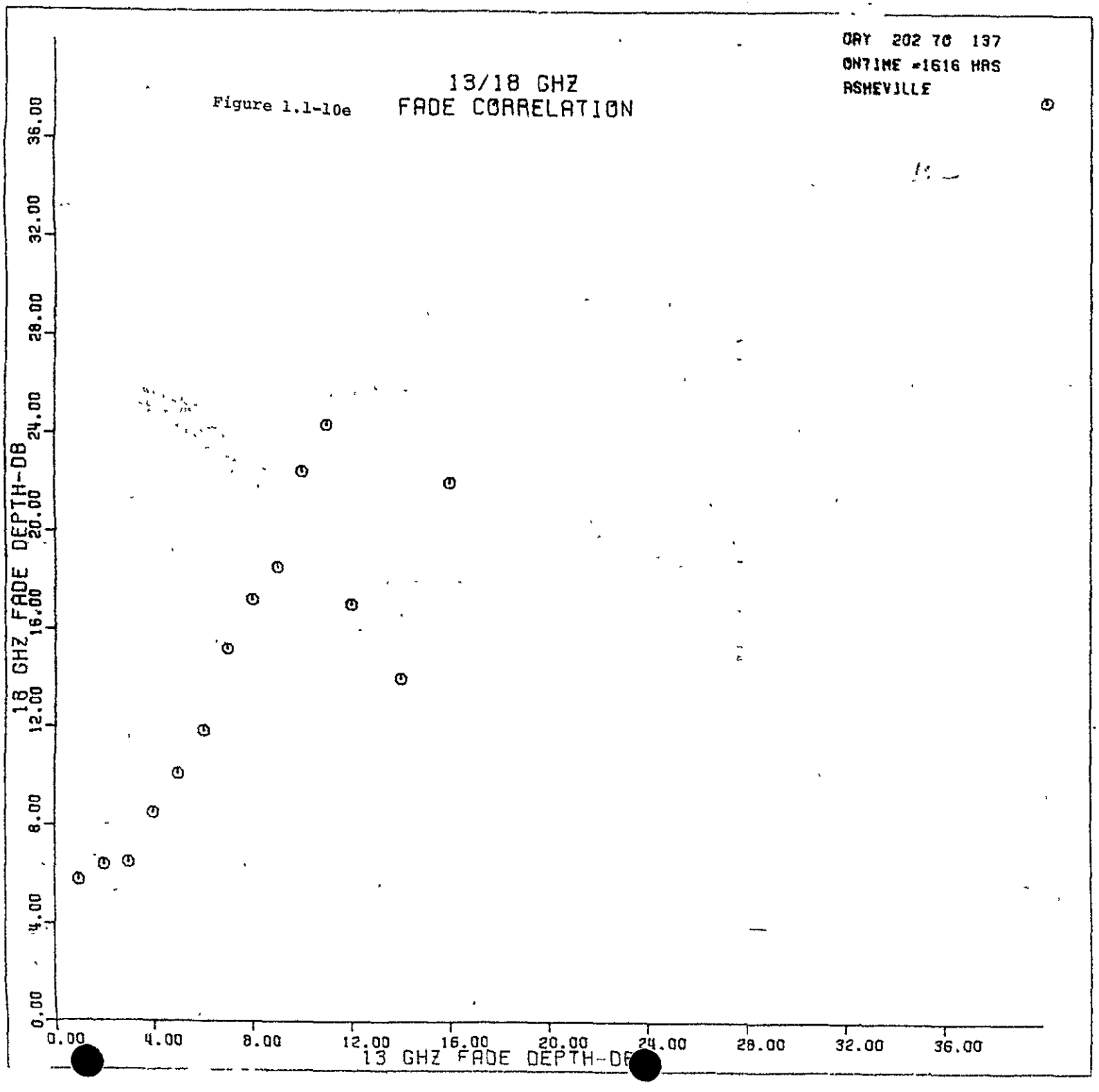


Figure 1.1-10e

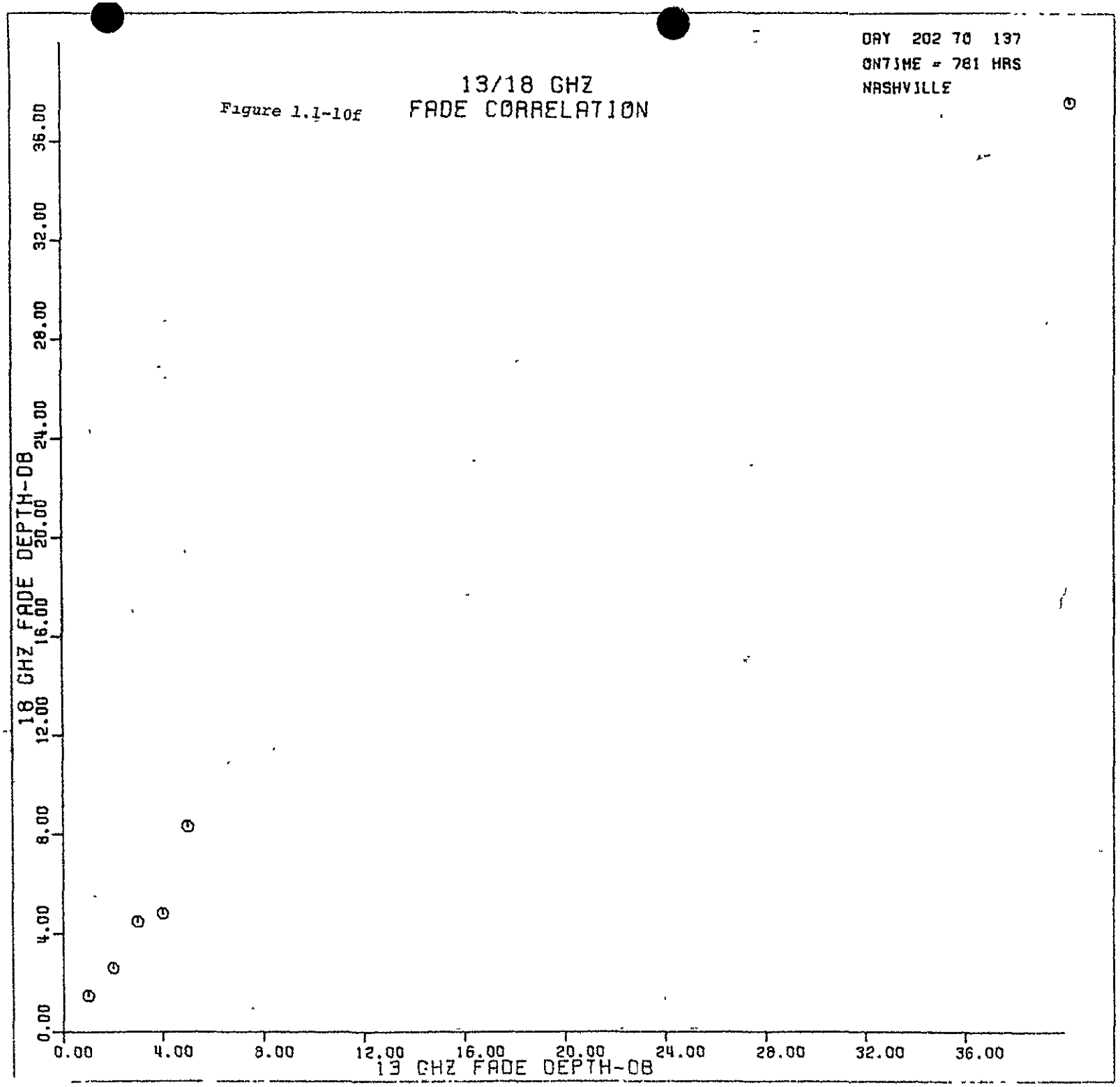


Figure 1.1-10f

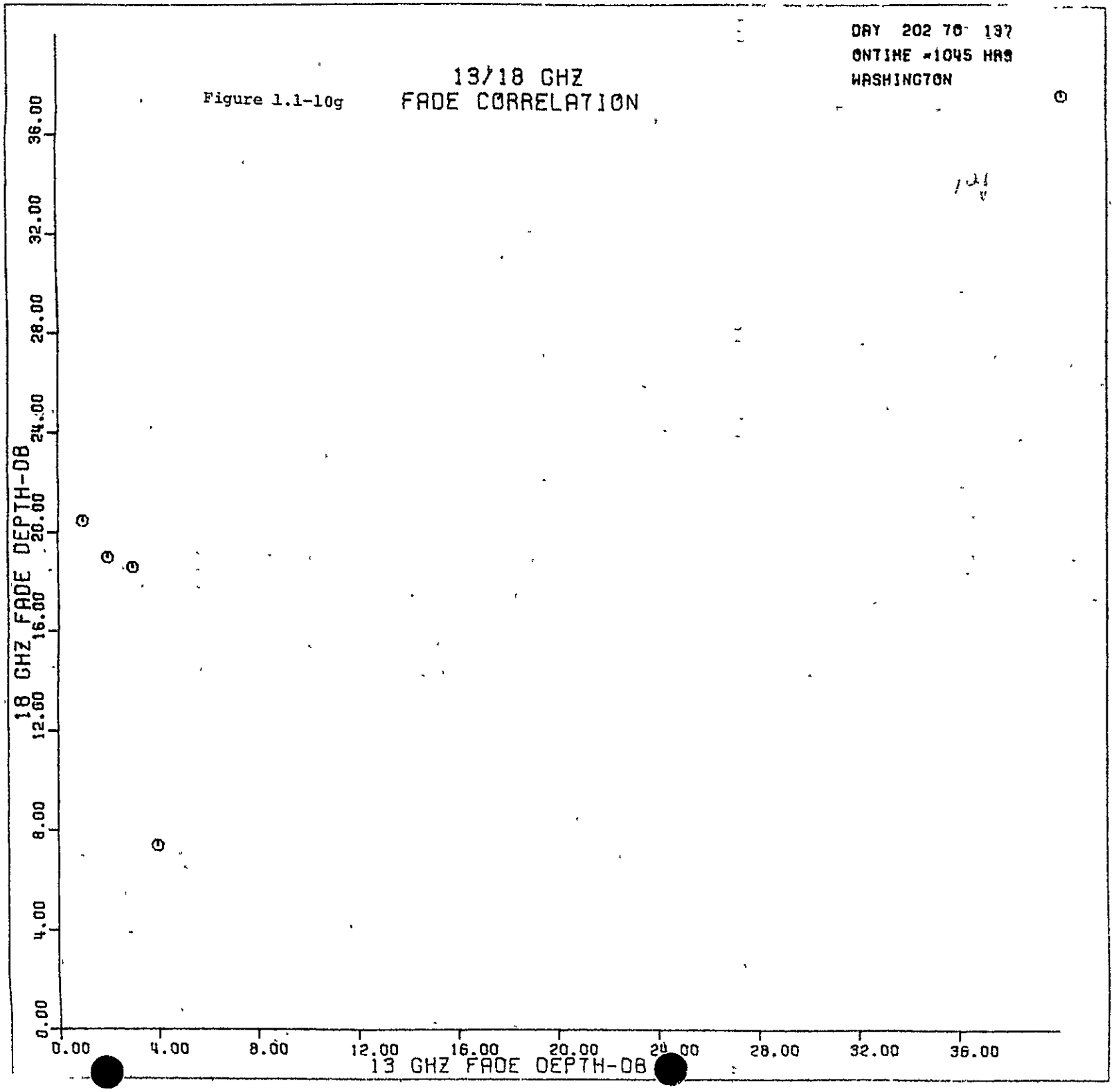


Figure 1.1-10g

Figure 1.1-10a

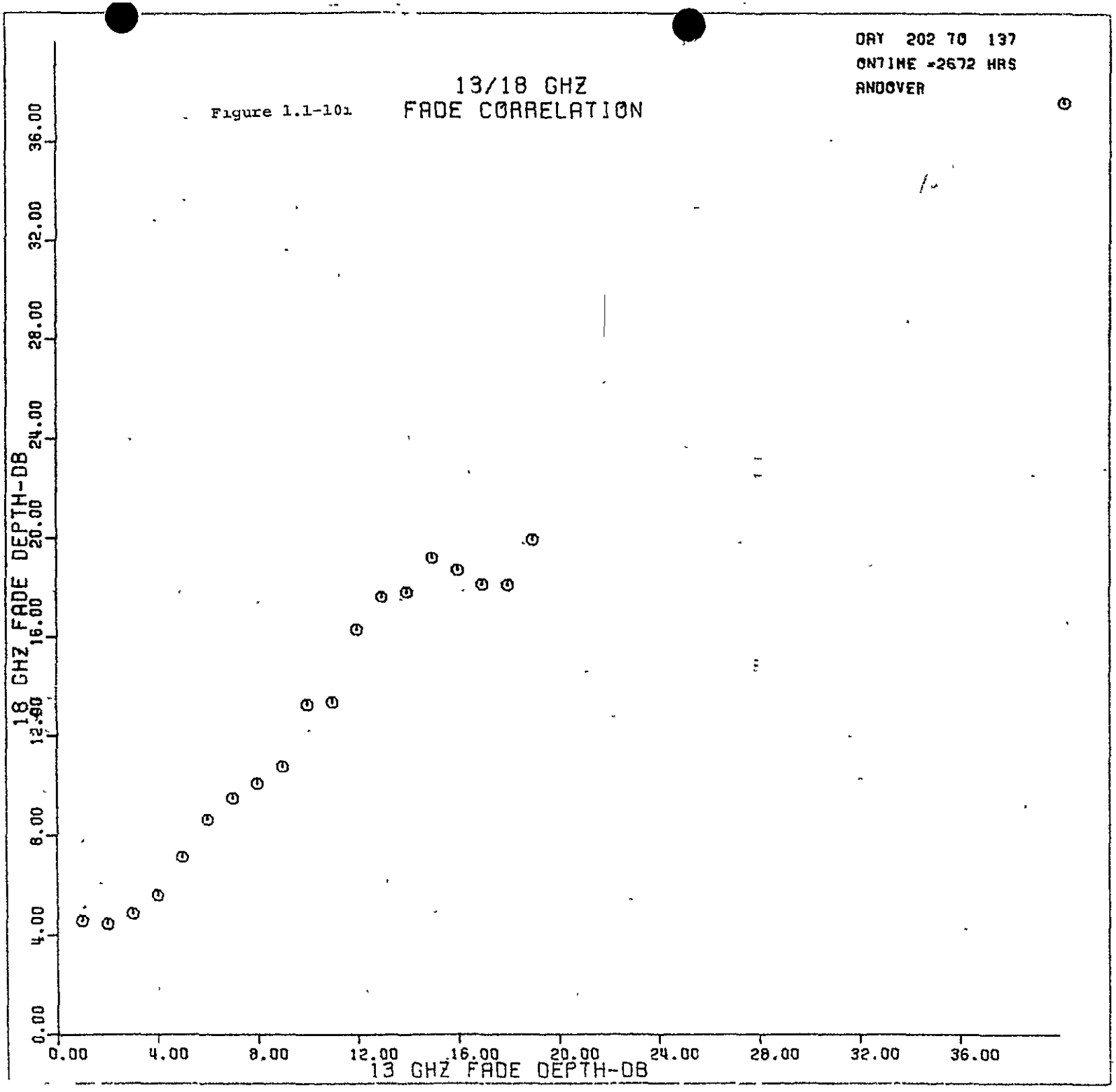


Figure 1.1-10j

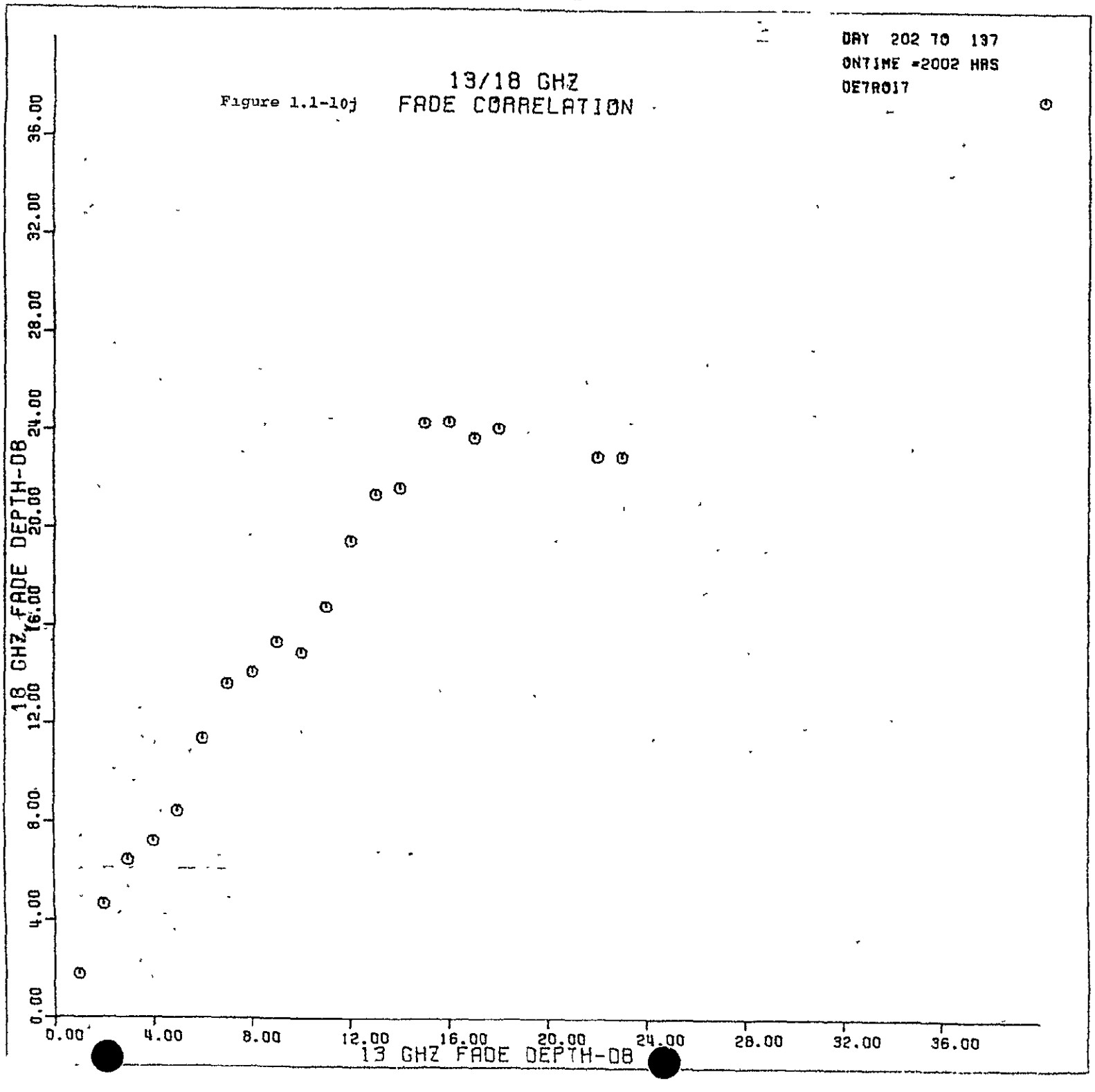


Figure 1.1-10k

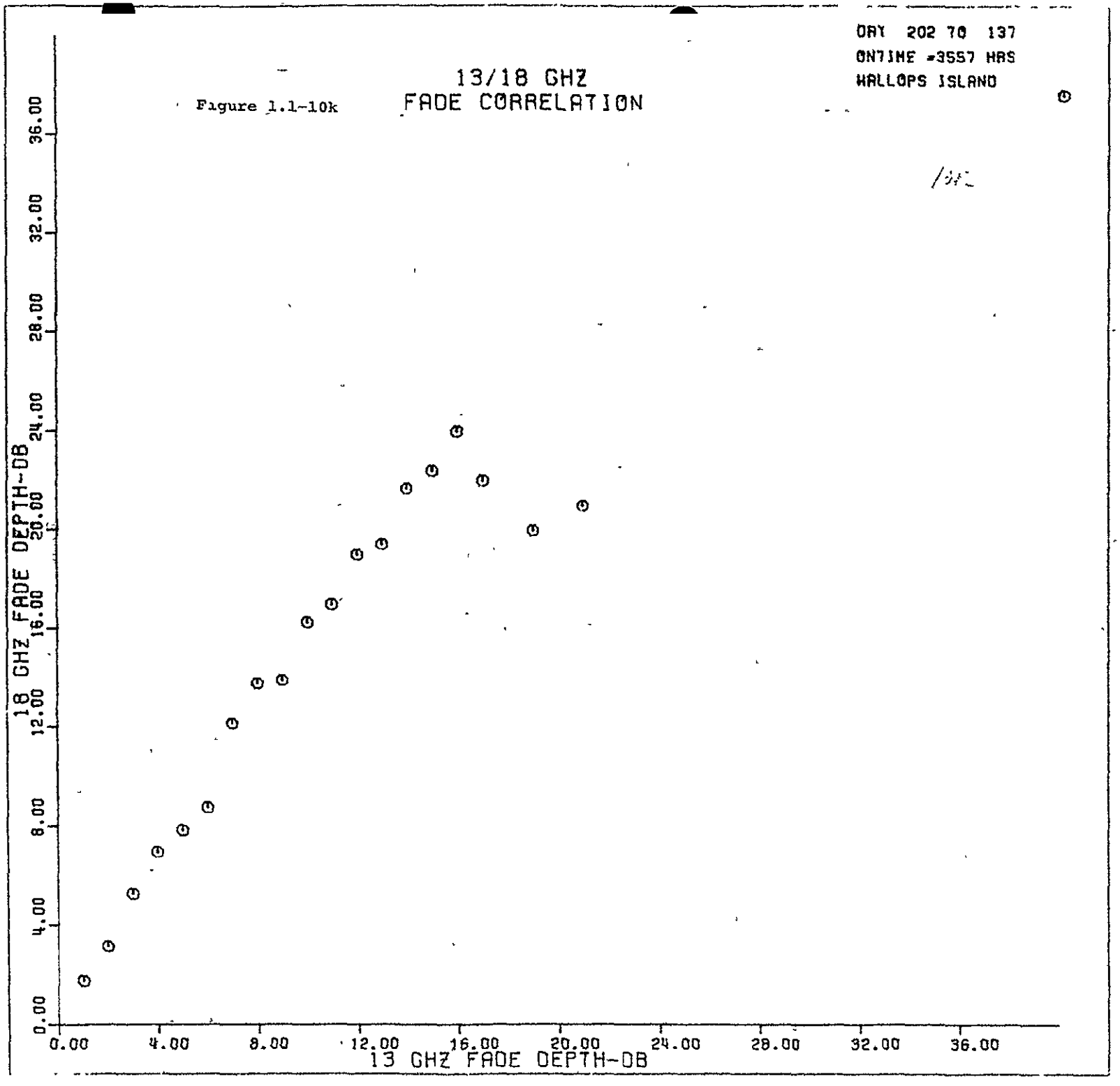
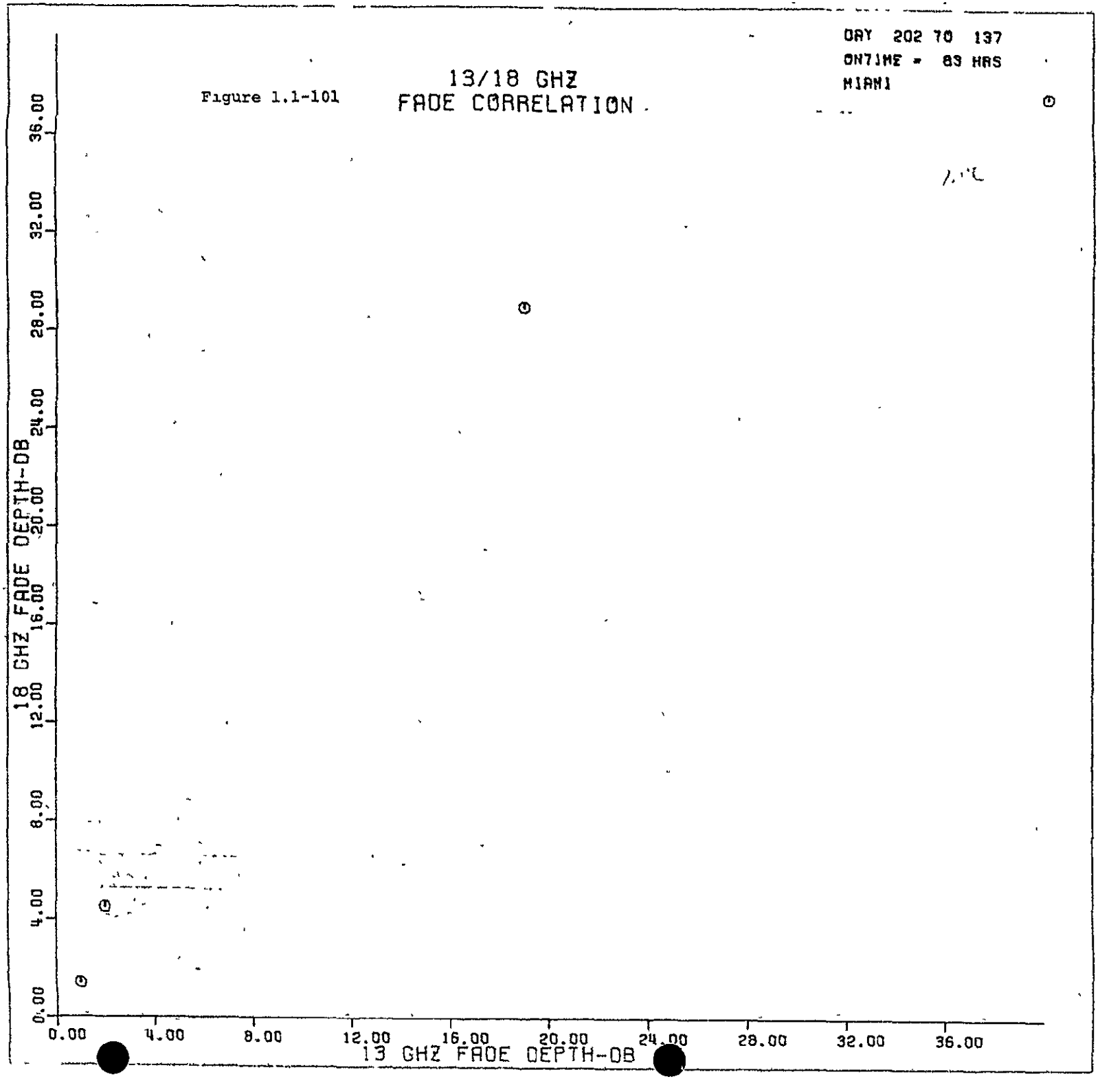


Figure 1.1-101



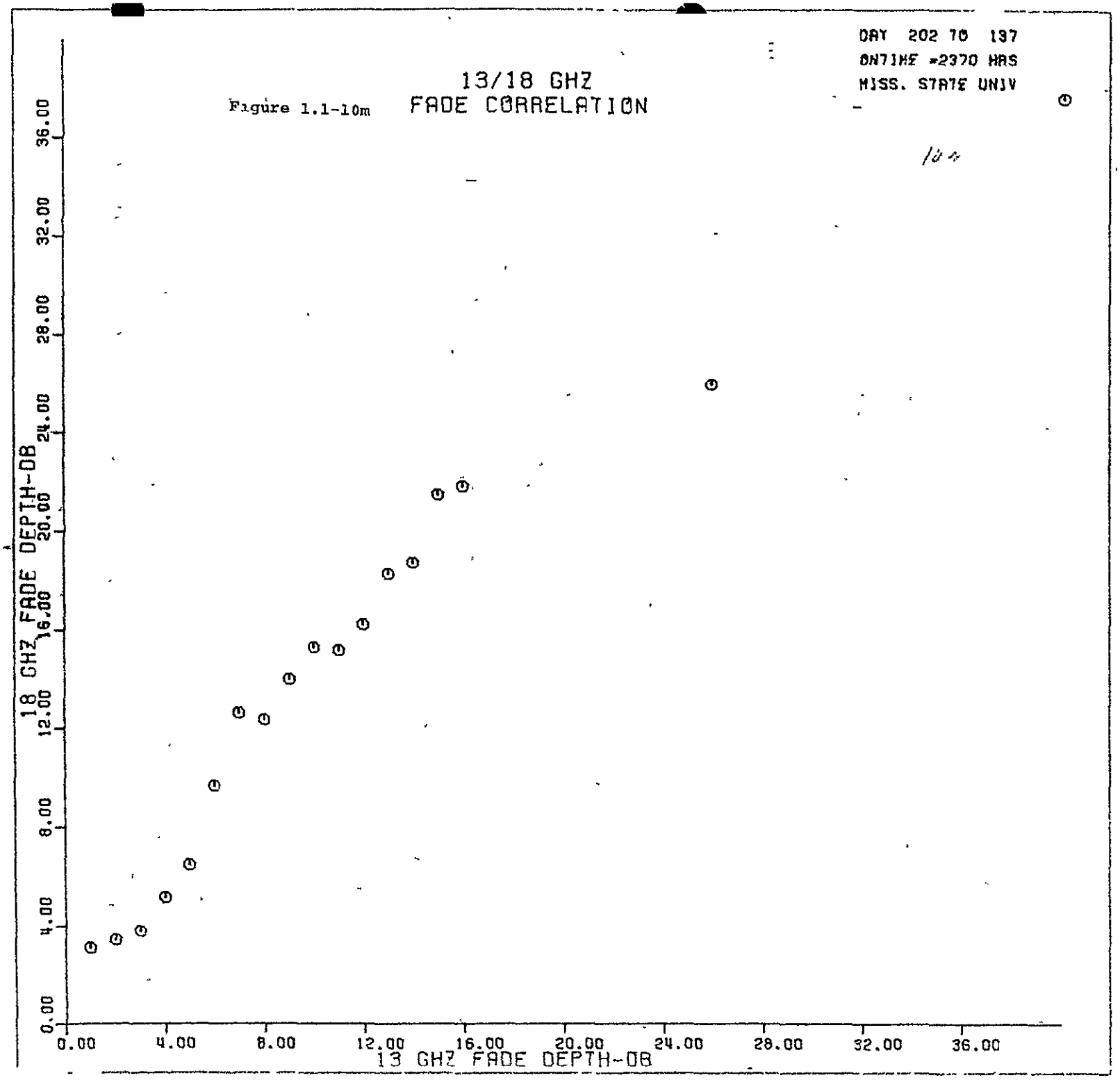


Figure 1.1-10m

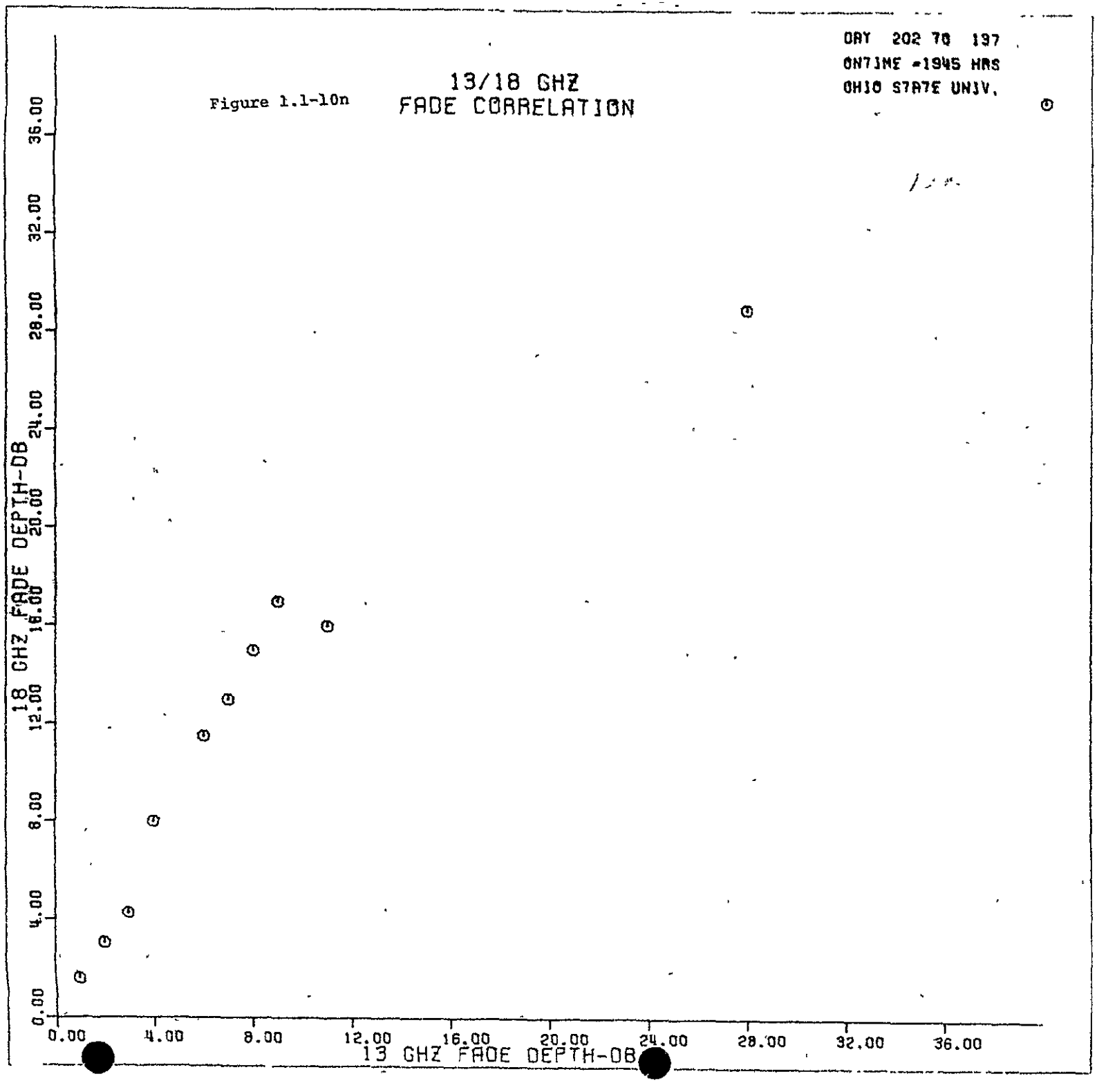


Figure 1.1-10n

Figure 1.1-10o

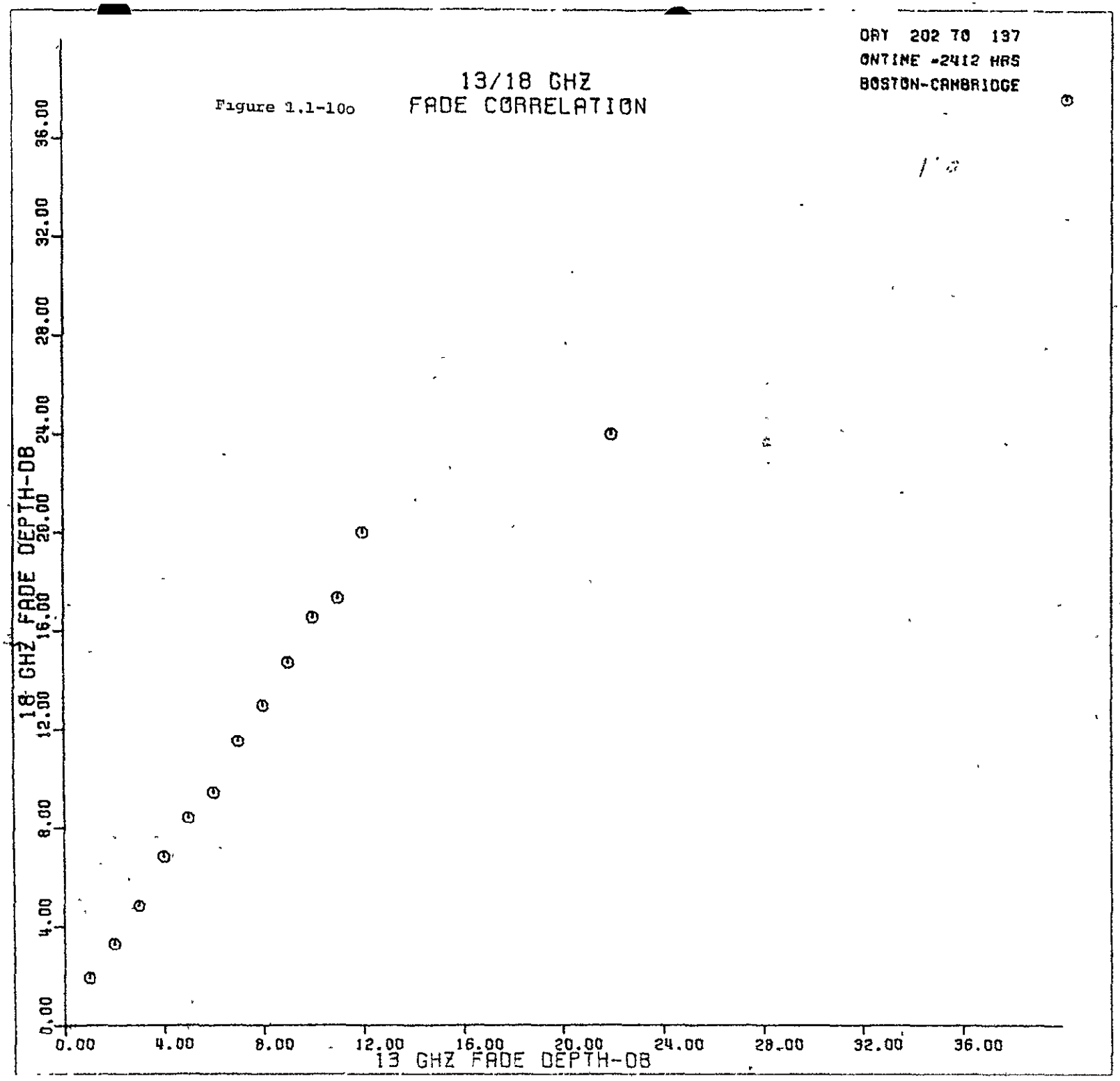


Table 1.1-17a CORRFLATION OF 13 GHZ & 18 GHZ ATTENUATION BY SITES 1.1-17a

	TMPA		ATL		N.OR		FAYV		ASHV	
13 GHZ DB	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.
1	2.379	2.695	2.175	3.307	1.950	1.835	1.951	1.648	5.780	3.344
2	3.402	1.450	3.198	2.353	3.325	1.404	3.317	1.489	6.399	2.963
3	6.095	2.282	4.876	1.527	5.075	1.007	5.123	1.194	6.500	2.469
4	7.535	1.696	6.524	1.979	6.909	0.996	6.762	1.035	8.505	2.616
5	8.456	1.448	8.312	2.217	8.618	1.189	8.030	1.253	10.072	2.529
6	9.844	1.758	12.074	2.210	10.867	0.957	9.239	1.156	11.848	2.409
7	11.186	2.295	14.222	1.950	12.154	1.561	10.167	1.067	15.175	4.341
8	13.091	2.087	16.417	1.470	15.000	1.673	13.056	1.268	17.174	4.350
9	16.818	3.601	15.923	2.615	16.857	1.125	15.000	0.0	18.522	3.752
10	18.722	0.731	18.000	1.000	17.889	2.131	16.250	1.479	22.429	2.195
11	20.706	1.177	20.000	0.0	20.667	0.943	0.0	0.0	24.333	0.472
12	22.769	0.891	22.000	0.0	20.000	1.000	0.0	0.0	17.000	0.0
13	24.222	0.629	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	26.500	1.258	0.0	0.0	14.000	0.0	0.0	0.0	14.000	0.0
15	28.125	1.166	0.0	0.0	17.000	0.0	0.0	0.0	0.0	0.0
16	29.200	0.542	0.0	0.0	0.0	0.0	0.0	0.0	22.000	0.0
17	29.667	0.472	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	23.000	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	29.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	25.000	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1.1-17b CORRELATION OF 13 GHZ & 18 GHZ ATTENUATION BY SITES

	NSHV		WASH		PHIL		ANDV		DETR	
13 GHZ DP	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.
1	1.486	0.775	20.460	4.828	21.000	0.0	4.561	2.738	1.783	1.347
2	2.619	1.222	18.990	3.932	0.0	0.0	4.437	2.316	4.644	3.794
3	4.500	1.316	18.571	4.712	0.0	0.0	4.866	1.672	6.453	3.895
4	4.818	0.716	7.400	0.490	0.0	0.0	5.626	1.865	7.214	3.210
5	8.333	1.374	0.0	0.0	0.0	0.0	7.158	1.984	8.442	2.923
6	0.0	0.0	0.0	0.0	0.0	0.0	8.652	1.994	11.393	3.747
7	0.0	0.0	0.0	0.0	0.0	0.0	9.518	2.312	13.635	4.494
8	0.0	0.0	0.0	0.0	0.0	0.0	10.092	2.124	14.105	3.621
9	0.0	0.0	0.0	0.0	0.0	0.0	10.800	2.208	15.353	3.788
10	0.0	0.0	0.0	0.0	0.0	0.0	13.276	3.133	14.920	2.058
11	0.0	0.0	0.0	0.0	0.0	0.0	13.385	1.944	16.810	2.593
12	0.0	0.0	0.0	0.0	0.0	0.0	16.316	2.083	19.500	0.500
13	0.0	0.0	0.0	0.0	0.0	0.0	17.636	1.192	21.375	1.111
14	0.0	0.0	0.0	0.0	0.0	0.0	17.835	1.354	21.667	2.495
15	0.0	0.0	0.0	0.0	0.0	0.0	19.247	2.636	24.333	0.472
16	0.0	0.0	0.0	0.0	0.0	0.0	18.740	1.780	24.400	0.917
17	0.0	0.0	0.0	0.0	0.0	0.0	18.151	0.563	23.750	0.829
18	0.0	0.0	0.0	0.0	0.0	0.0	18.148	0.398	24.143	0.833
19	0.0	0.0	0.0	0.0	0.0	0.0	19.976	1.689	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.000	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.000	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1.1-17c CORRELATION OF 13 GHZ & 18 GHZ ATTENUATION BY SITES

17c

	W.TS		MIAM		MSU		OSU		B-C	
3 GHZ DB	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.	MEAN	S. DEV.
1	1.751	1.234	1.378	0.538	3.105	1.728	1.603	1.155	1.924	0.988
2	3.139	1.314	4.500	3.819	3.427	1.291	3.057	0.778	3.298	1.209
3	5.270	2.095	0.0	0.0	3.776	1.316	4.260	0.934	4.833	1.016
4	6.963	2.045	0.0	0.0	5.147	2.021	8.000	0.756	6.849	1.212
5	7.856	2.392	0.0	0.0	6.487	2.797	0.0	0.0	8.415	1.250
6	8.788	2.358	0.0	0.0	9.685	3.120	11.500	0.500	9.425	1.240
7	12.154	2.082	0.0	0.0	12.636	4.375	13.000	0.0	11.526	1.244
8	13.778	2.299	0.0	0.0	12.359	2.006	15.000	0.0	12.970	1.359
9	13.900	2.119	0.0	0.0	14.000	2.676	17.000	0.0	14.727	1.321
10	16.263	1.996	0.0	0.0	15.306	3.072	0.0	0.0	16.538	1.500
11	16.980	2.104	0.0	0.0	15.172	2.640	16.000	3.000	17.333	1.247
12	19.000	2.412	0.0	0.0	16.214	3.468	0.0	0.0	20.000	0.0
13	19.438	2.806	0.0	0.0	18.273	1.814	0.0	0.0	0.0	0.0
14	21.700	1.952	0.0	0.0	18.750	3.003	0.0	0.0	0.0	0.0
15	22.400	2.728	0.0	0.0	21.500	1.500	0.0	0.0	0.0	0.0
16	24.000	0.0	0.0	0.0	21.833	1.067	0.0	0.0	0.0	0.0
17	22.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	20.000	0.0	29.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	21.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.000	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	26.000	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	29.000	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Figure 1.1-11

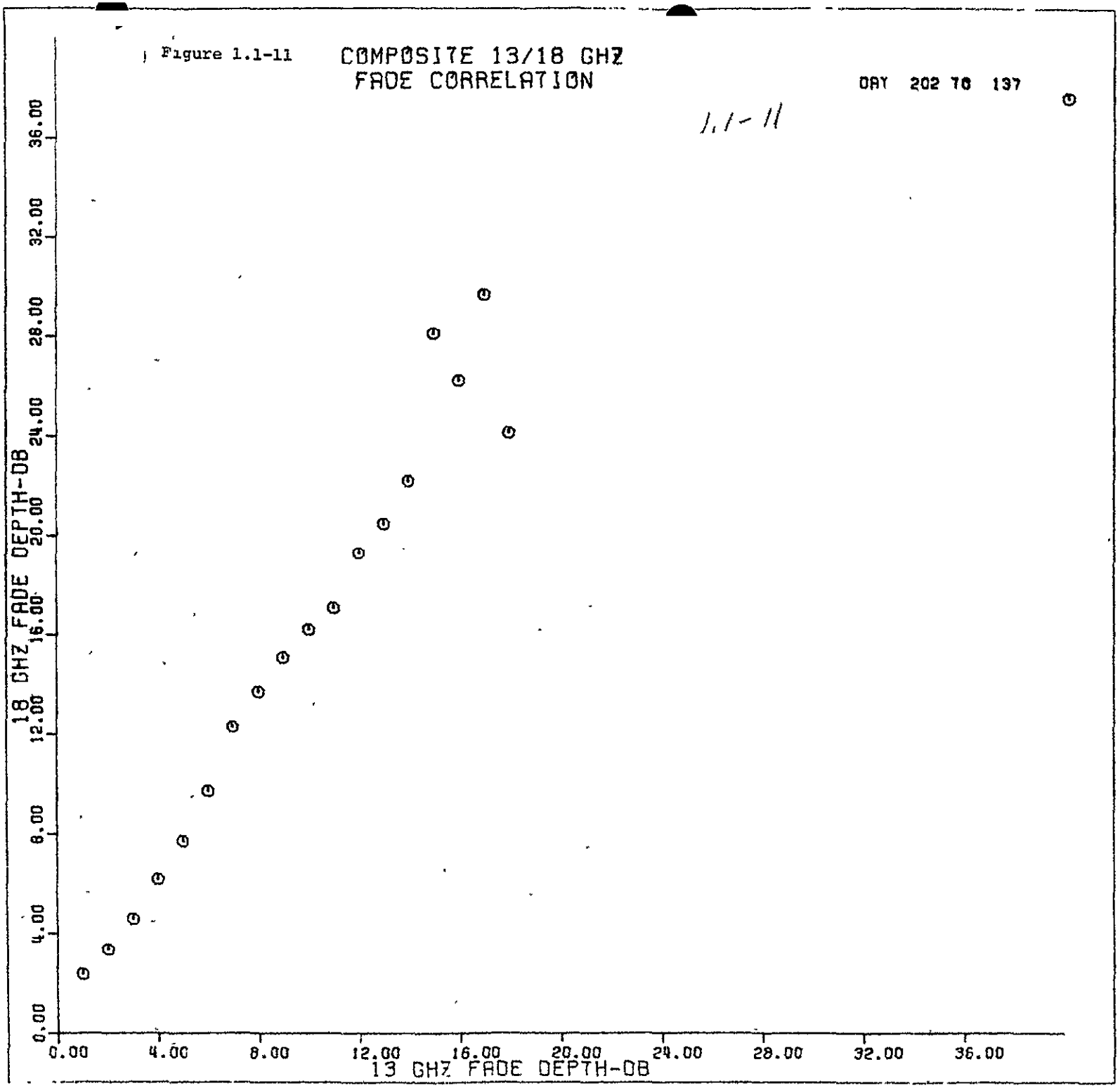

COMPOSITE 13/18 GHZ
FADE CORRELATION
DAY 202 TO 137
1.1-11
18 GHZ FADE DEPTH-DB
13 GHZ FADE DEPTH-DB
0.00
4.00
8.00
12.00
16.00
20.00
24.00
28.00
32.00
36.00

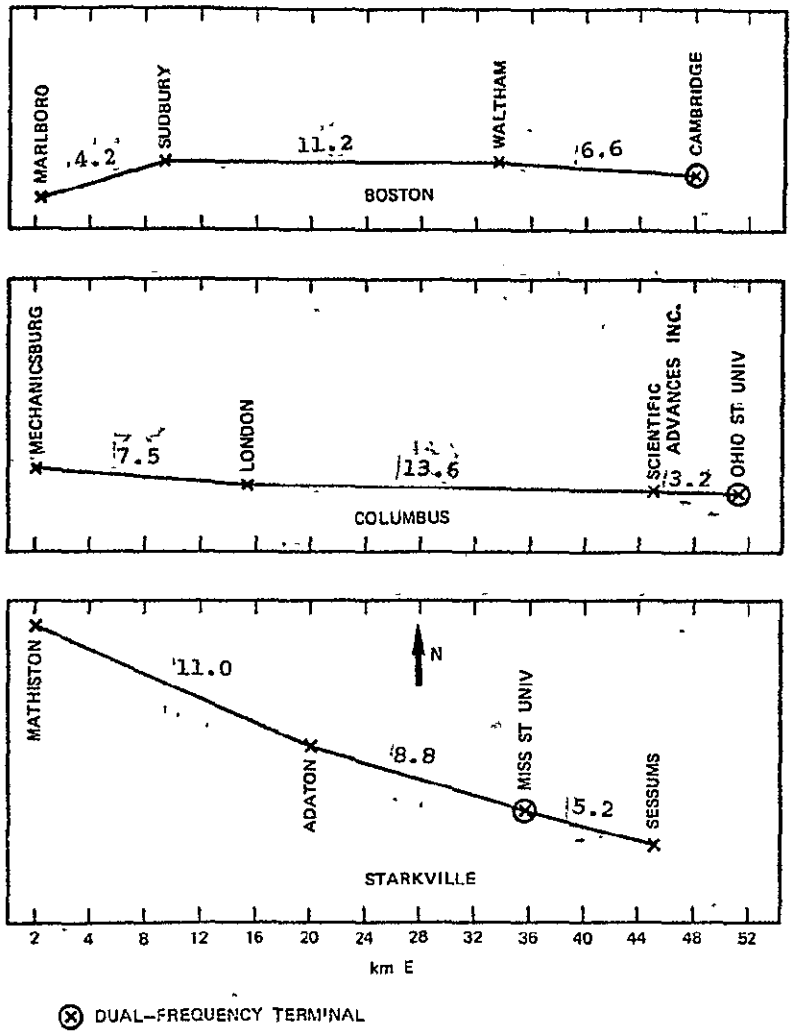
Table 1.1-18

COMPOSITE
IRELATION OF 13 & 18 GHZ ATTENUATION

B	MEAN	S. DEV.
1	2.350	1.757
2	3.336	1.497
3	4.562	1.319
4	6.189	2.109
5	7.713	2.439
6	9.721	2.481
7	12.300	3.200
8	13.709	2.654
9	15.086	2.905
10	16.217	2.602
11	17.082	2.654
12	19.304	3.413
13	20.477	2.935
14	22.209	3.708
15	28.125	1.166
16	26.226	3.118
17	29.667	0.472
18	24.143	0.833
19	0.0	0.0
20	0.0	0.0
21	0.0	0.0
22	0.0	0.0
23	0.0	0.0
24	0.0	0.0
25	0.0	0.0
26	0.0	0.0
27	0.0	0.0
28	0.0	0.0
29	0.0	0.0
30	0.0	0.0

IES NOT CONSIDERED ARE 5 7 8 9 12

Figure 1.1-12



Diversity Site Configurations

le 1.1-19

1.1-14

COMSAT
ATS-F PROPAGATION EXPERIMENT
VERSITY SITE ANALYSIS - ALL DATA PROCESSED
FOR STARKVILLE
CORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975

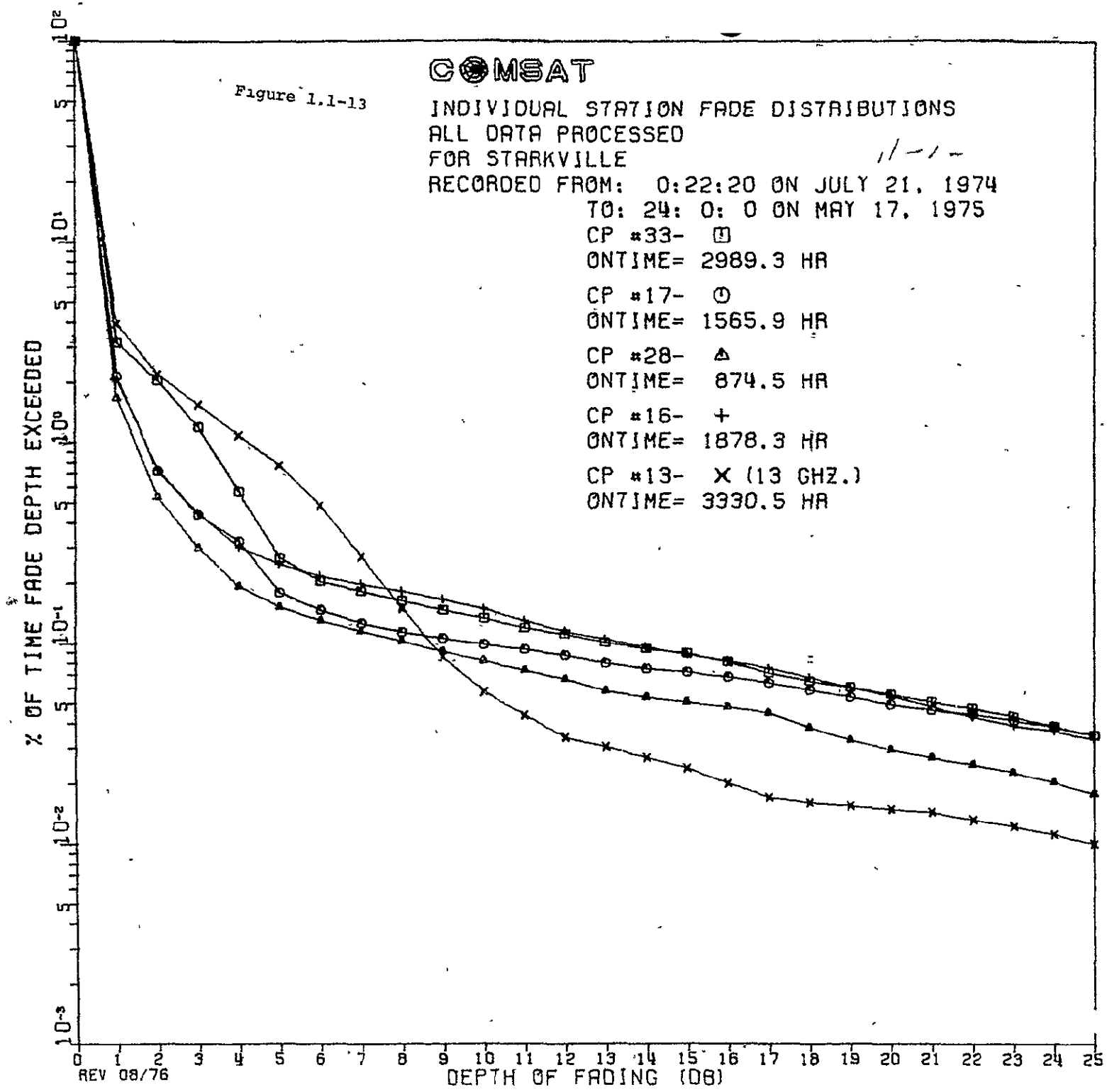
#	FREQUENCY (GHZ)	TOTAL GOOD DATA (HOURS)
3	18	2989.3
7	18	1565.9
8	18	874.5
6	18	1878.3
3	13	3330.5

PARATION (MILES)	PAIR (CP)	TOTAL GOOD DATA (HOURS)
5.2	33/17	1529.3
8.8	33/28	847.5
11.0	28/16	736.4
14.0	17/28	423.7
19.8	33/16	1848.2
25.0	17/16	945.7

Figure 1.1-13

COMSAT

INDIVIDUAL STATION FADE DISTRIBUTIONS
ALL DATA PROCESSED
FOR STARKVILLE
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
CP #33- □
ONTIME= 2989.3 HR
CP #17- ○
ONTIME= 1565.9 HR
CP #28- △
ONTIME= 874.5 HR
CP #16- +
ONTIME= 1878.3 HR
CP #13- × (13 GHZ.)
ONTIME= 3330.5 HR



REV 08/76

Table 1.1-20

S-F DIVERSITY ANALYSIS FOR STARKVILLE
L DATA PROCESSED
CORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
DIVIDUAL FADING DISTRIBUTIONS

1.1-20

	CP# 33 18 GHZ	CP# 17 18 GHZ	CP# 28 18 GHZ	CP# 16 18 GHZ	CP# 13 13 GHZ
0	100.00	100.00	100.00	100.00	100.00
1	3.1570	2.1564	1.6684	2.0791	3.9153
2	2.0454	0.7191	0.5326	0.7289	2.1901
3	1.1922	0.4354	0.2993	0.4440	1.5373
4	0.5720	0.3241	0.1930	0.3017	1.0868
5	0.2656	0.1785	0.1515	0.2468	0.7652
6	0.2038	0.1461	0.1298	0.2162	0.4848
7	0.1815	0.1261	0.1158	0.1975	0.2702
8	0.1636	0.1140	0.1029	0.1822	0.1492
9	0.1470	0.1065	.09177	0.1657	.08632
10	0.1333	.09946	.08234	0.1485	.05765
11	0.1193	.09403	.07376	0.1294	.04384
12	0.1115	.08781	.06633	0.1147	.03393
13	0.1009	.07967	.05803	0.1045	.03033
14	.09434	.07488	.05375	.09610	.02687
15	.08907	.07184	.05060	.08811	.02372
16	.08087	.06801	.04803	.08159	.01997
17	.07117	.06338	.04488	.07560	.01696
18	.06507	.05859	.03802	.06775	.01599
19	.06038	.05396	.03288	.06030	.01546
20	.05553	.04965	.02945	.05470	.01486
21	.05102	.04646	.02687	.04832	.01434
22	.04767	.04438	.02487	.04313	.01321
23	.04307	.04135	.02259	.03887	.01224
24	.03872	.03848	.02030	.03674	.01118
25	.03479	.03496	.01772	.03328	.00998

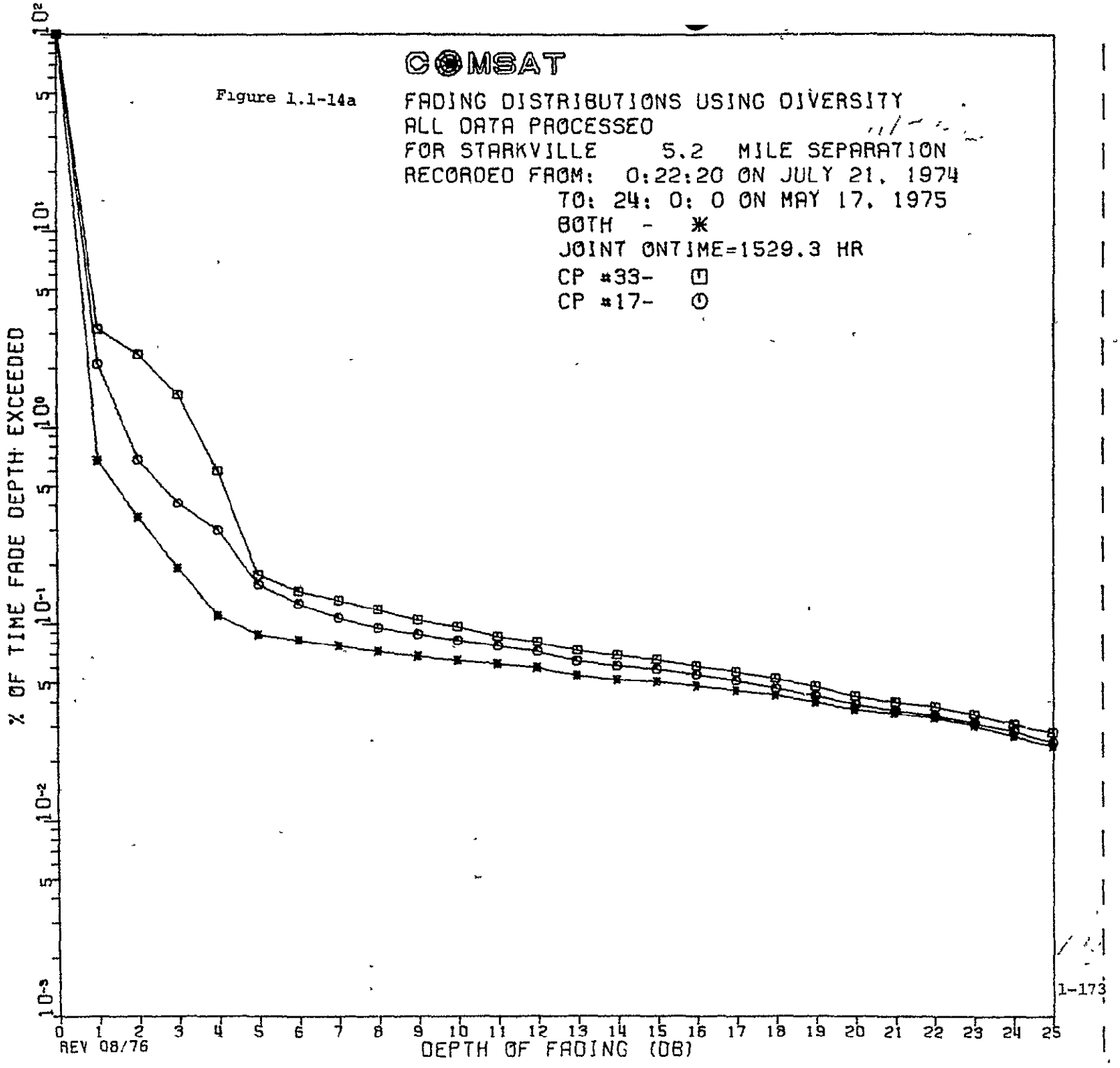
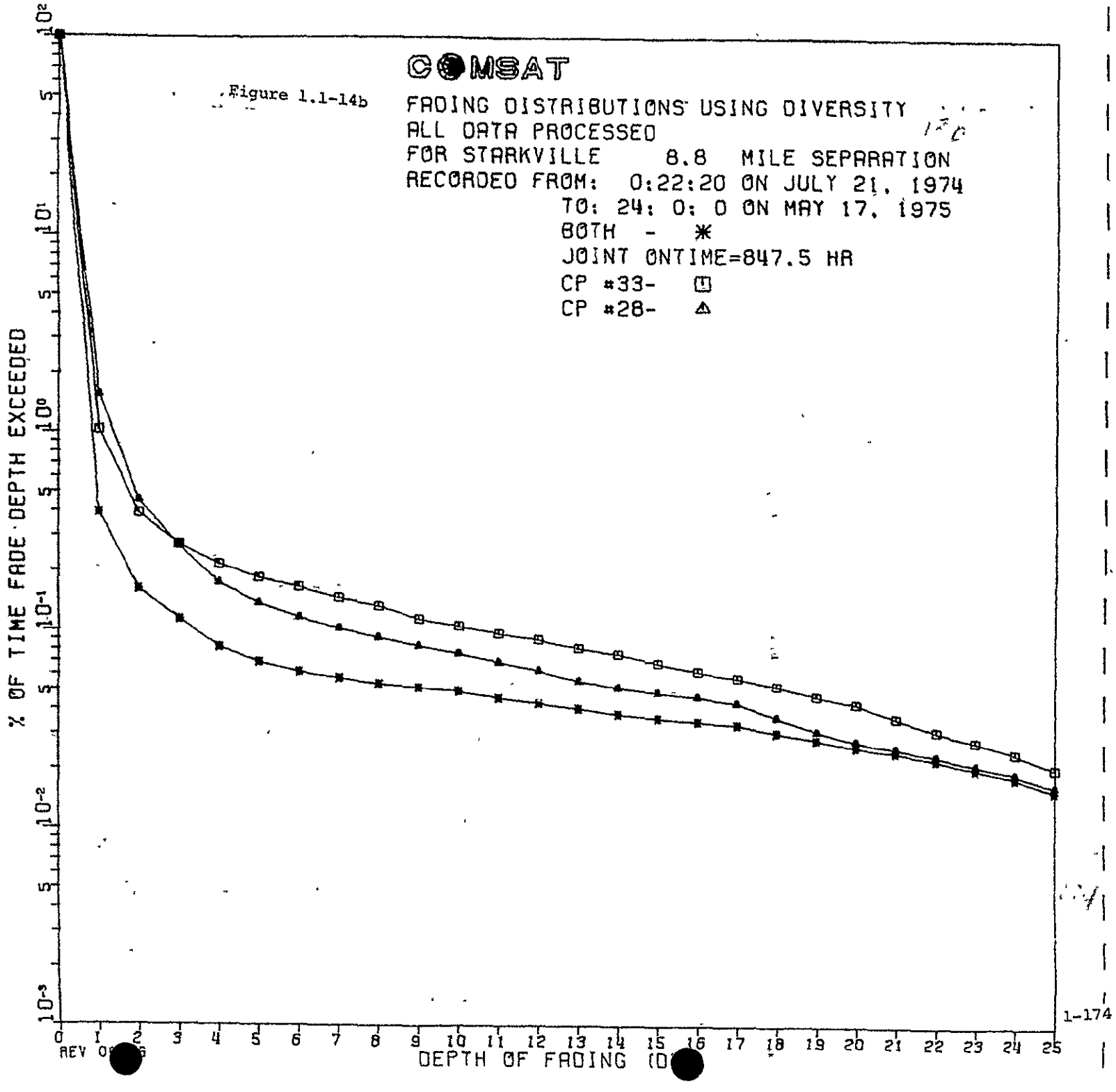


Figure 1.1-14a

Figure 1.1-14b



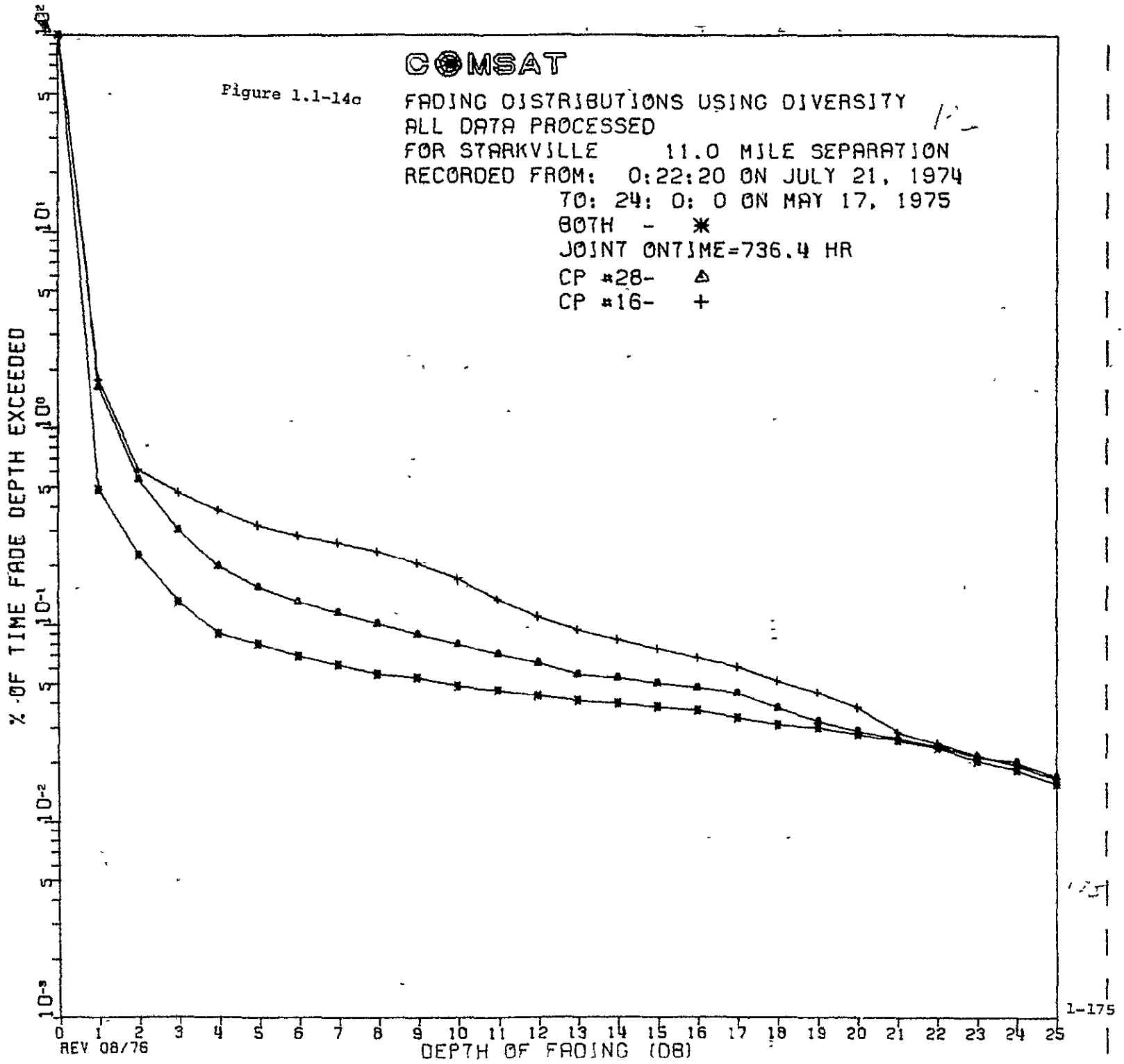
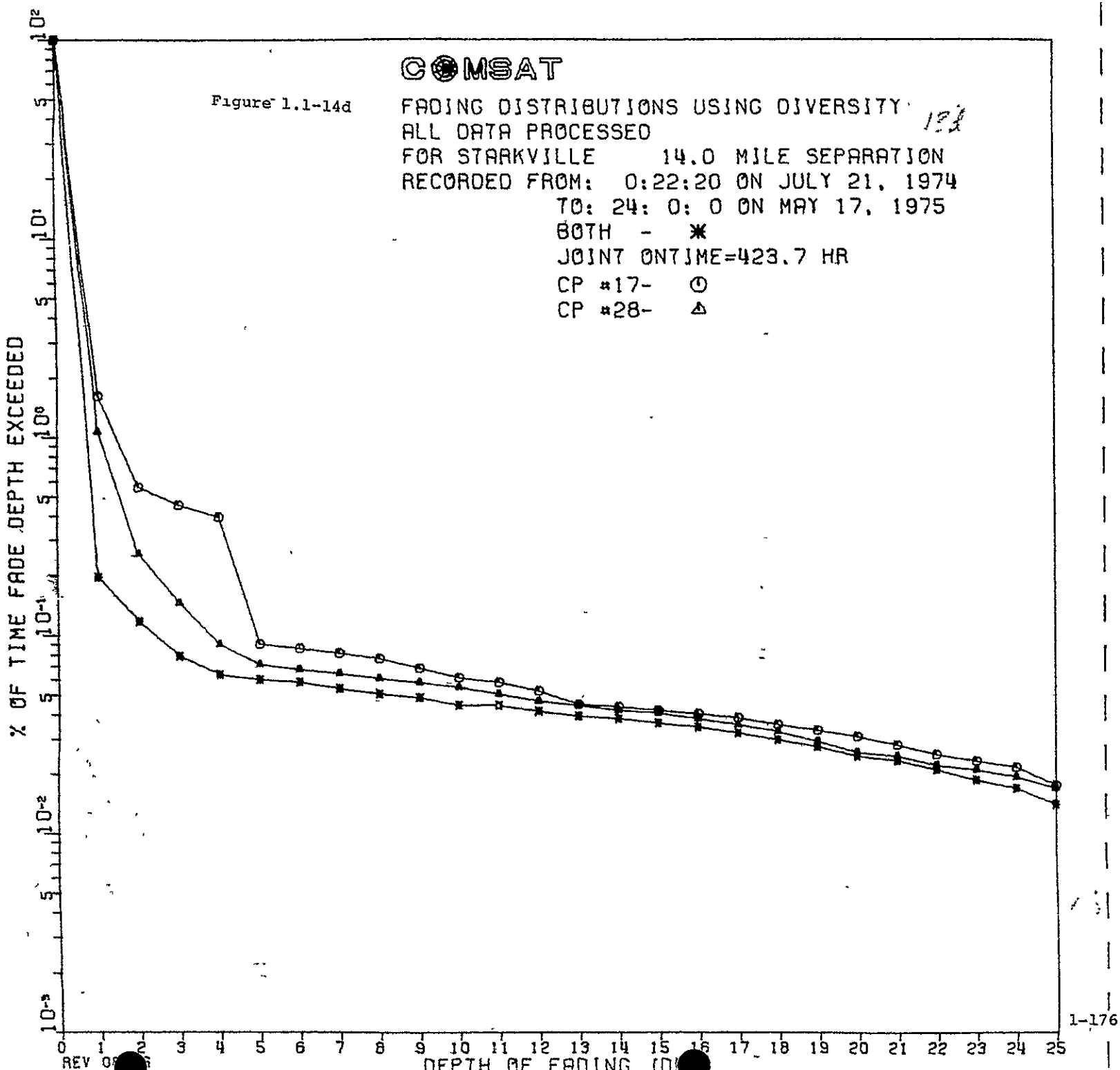


Figure 1.1-14c

Figure 1.1-14d



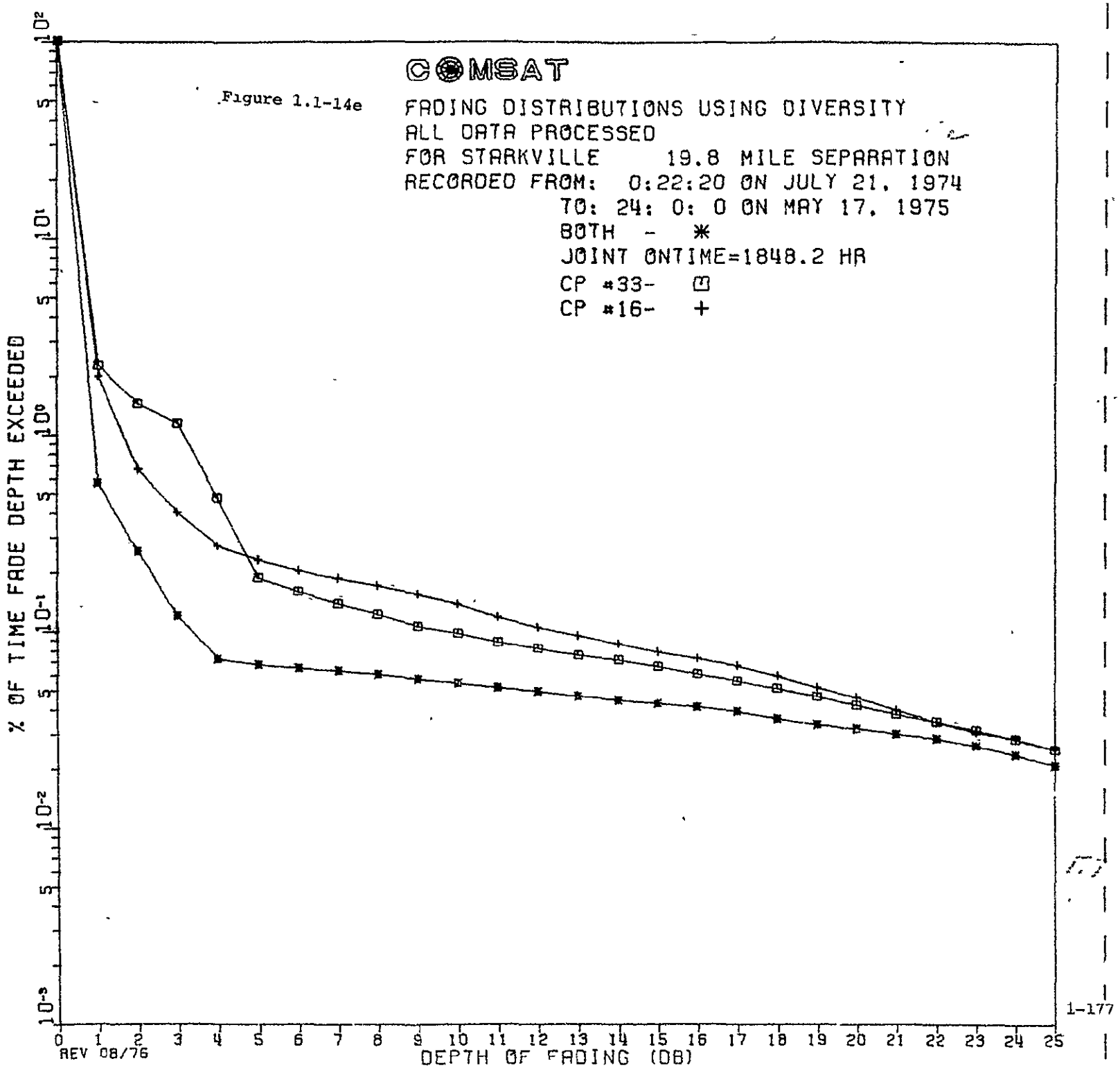


Figure 1.1-14e

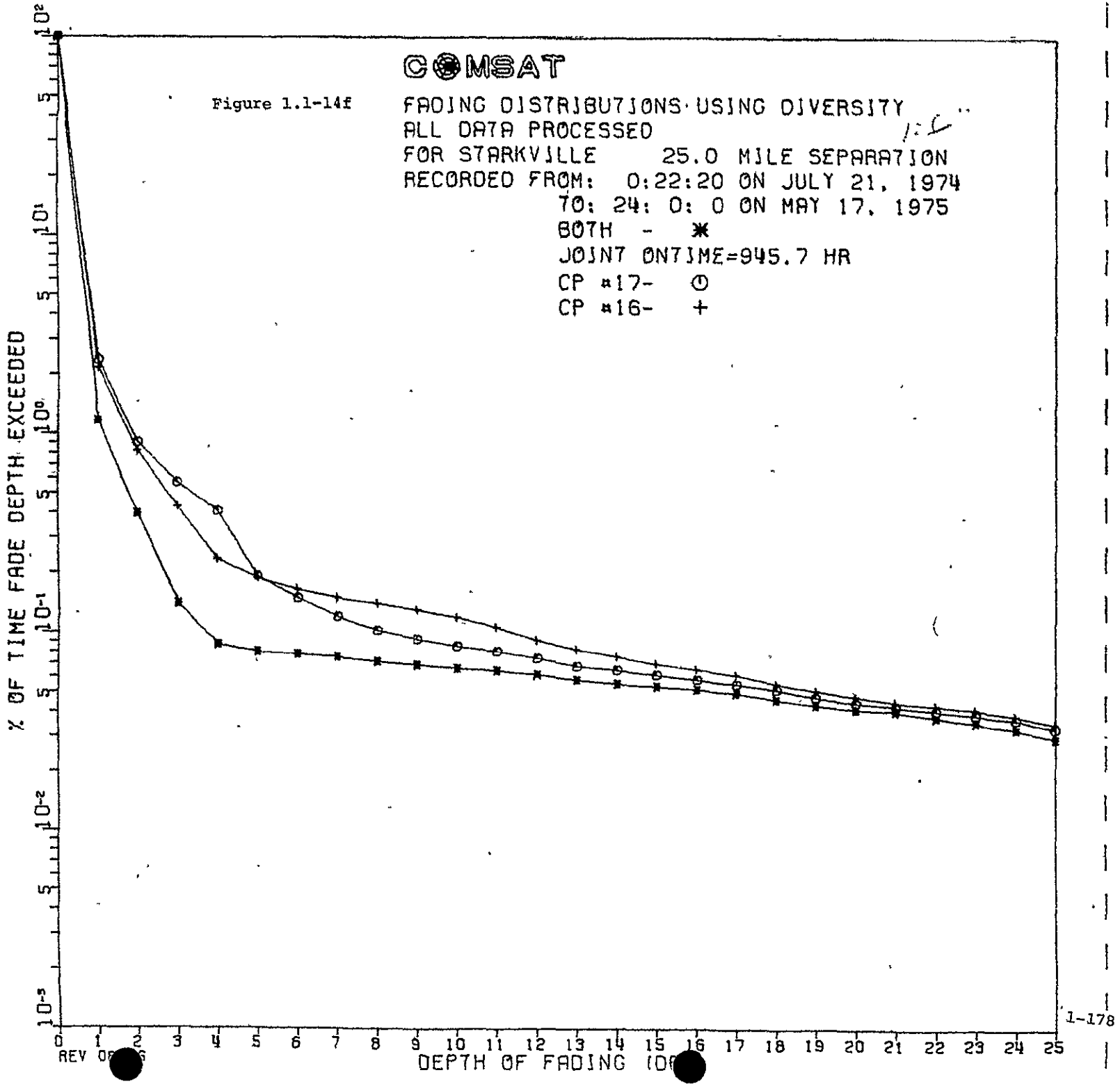


Figure 1.1-14f

Figure 1.1-15

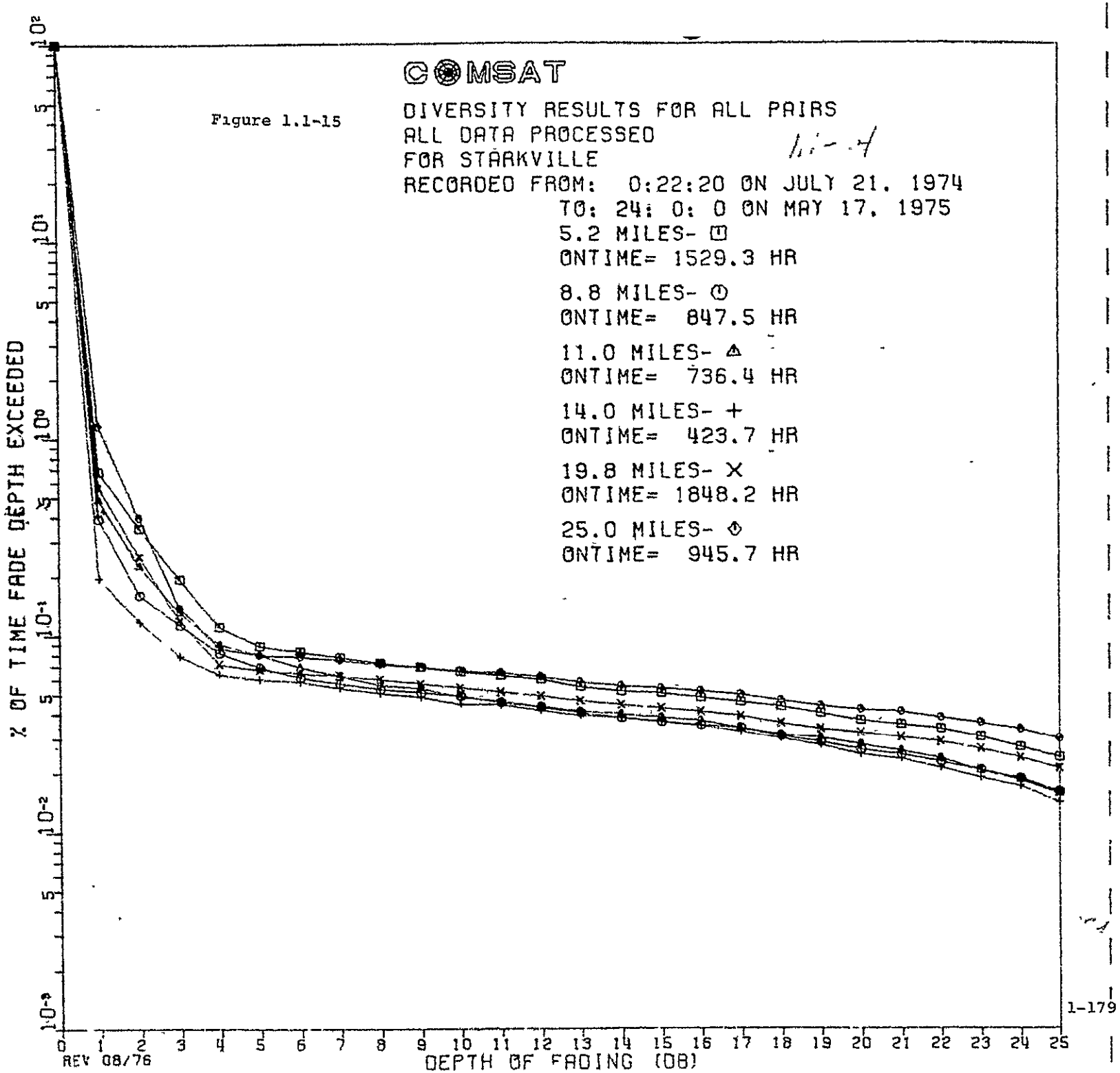

COMSAT
DIVERSITY RESULTS FOR ALL PAIRS
ALL DATA PROCESSED
FOR STARKVILLE
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
5.2 MILES- □
ONTIME= 1529.3 HR
8.8 MILES- ○
ONTIME= 847.5 HR
11.0 MILES- △
ONTIME= 736.4 HR
14.0 MILES- +
ONTIME= 423.7 HR
19.8 MILES- X
ONTIME= 1848.2 HR
25.0 MILES- ◇
ONTIME= 945.7 HR
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)
REV 08/76

Table 1.1-21

S-F DIVERSITY ANALYSIS FOR STARKVILLE
L DATA PROCESSED
CORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975

1.1-21

GHZ. FADING DISTRIBUTIONS USING
MPLE SWITCHED DIVERSITY OPERATION

	5.2 MILES	8.8 MILES	11.0 MILES	14.0 MILES	19.8 MILES	25.0 MILES
0	100.00	100.00	100.00	100.00	100.00	100.00
1	0.6832	0.3909	0.4875	0.1959	0.5653	1.1619
2	0.3510	0.1614	0.2268	0.1174	0.2540	0.3968
3	0.1940	0.1133	0.1314	.07907	0.1198	0.1385
4	0.1107	.08201	.09065	.06373	.07183	.08697
5	.08860	.06903	.08046	.06019	.06709	.08010
6	.08304	.06165	.06926	.05842	.06466	.07799
7	.07781	.05723	.06281	.05429	.06290	.07561
8	.07275	.05369	.05636	.05134	.06033	.07164
9	.06931	.05162	.05398	.04898	.05722	.06900
10	.06572	.04956	.04889	.04485	.05465	.06635
11	.06294	.04602	.04651	.04485	.05194	.06503
12	.06016	.04336	.04380	.04189	.04964	.06212
13	.05493	.04071	.04142	.03953	.04680	.05816
14	.05231	.03835	.04006	.03835	.04477	.05552
15	.05100	.03658	.03836	.03658	.04288	.05393
16	.04855	.03510	.03701	.03481	.04126	.05208
17	.04610	.03392	.03395	.03245	.03909	.05023
18	.04365	.03097	.03123	.03009	.03598	.04679
19	.04021	.02861	.03022	.02773	.03341	.04388
20	.03695	.02625	.02784	.02478	.03192	.04203
21	.03531	.02478	.02580	.02360	.03044	.04098
22	.03351	.02271	.02377	.02124	.02881	.03833
23	.03057	.02065	.02037	.01888	.02651	.03595
24	.02714	.01858	.01833	.01711	.02381	.03331
25	.02403	.01593	.01562	.01416	.02097	.02987

COMSAT : Figure 1.1-16

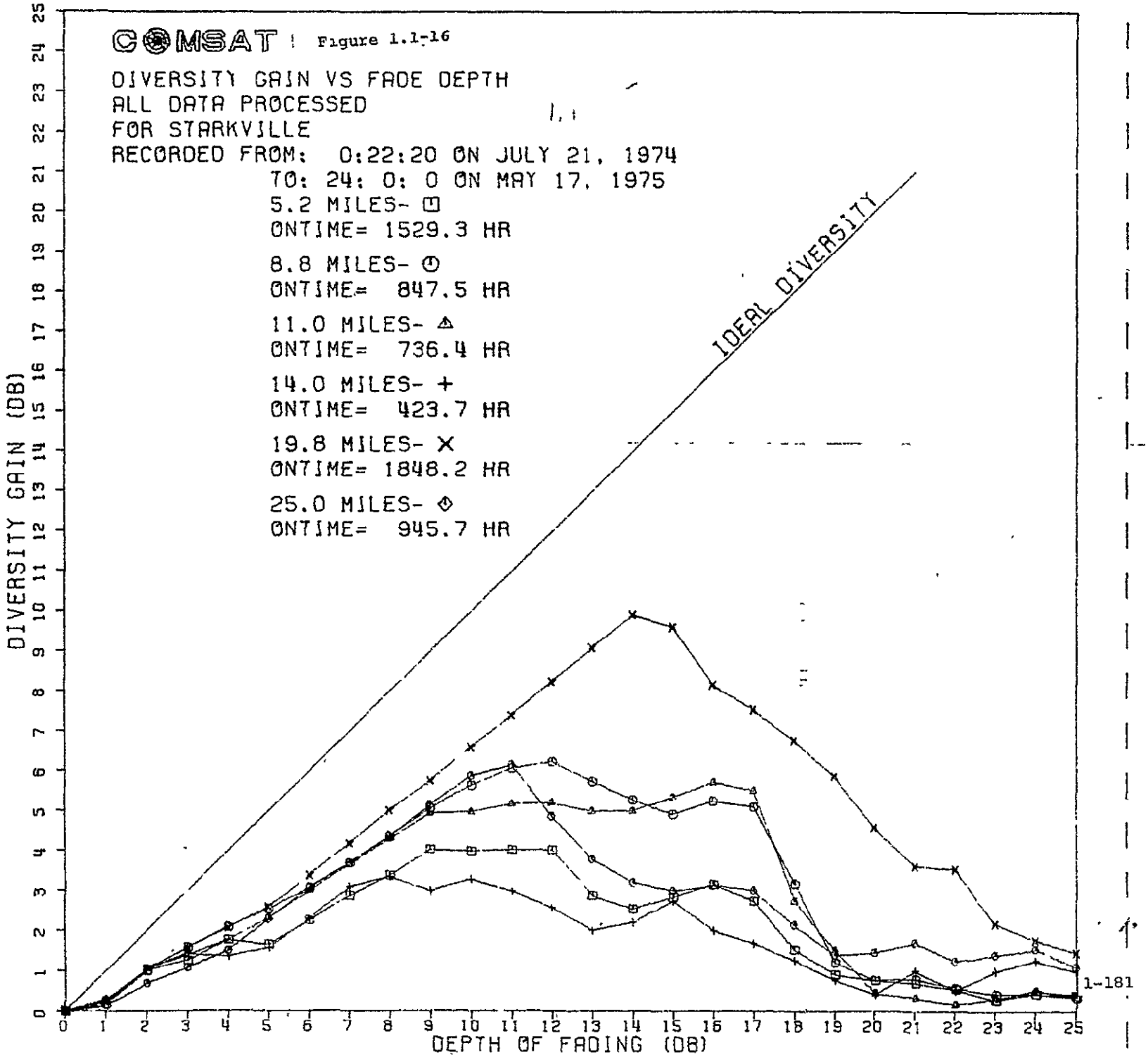


Table 1.1-22

S-F DIVERSITY ANALYSIS FOR STARKVILLE
L DATA PROCESSED
CORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
VERSITY GAIN VS. DEPTH OF FADING

1.1-22

	5.2 MILES	8.8 MILES	11.0 MILES	14.0 MILES	19.8 MILES	25.0 MILES
1	0.2	0.2	0.2	0.3	0.2	0.1
2	1.0	1.0	1.0	1.0	1.0	0.7
3	1.3	1.6	1.4	1.4	1.6	1.1
4	1.8	2.1	1.8	1.4	2.1	1.5
5	1.7	2.5	2.3	1.6	2.6	2.3
6	2.2	3.1	3.0	2.3	3.4	3.1
7	2.9	3.7	3.7	3.1	4.2	3.7
8	3.4	4.4	4.3	3.3	5.0	4.4
9	4.0	5.1	4.9	3.0	5.8	5.2
10	4.0	5.7	5.0	3.3	6.6	5.9
11	4.0	6.1	5.2	3.0	7.4	6.2
12	4.0	6.3	5.2	2.6	8.3	4.9
13	2.9	5.8	5.0	2.0	9.1	3.8
14	2.5	5.3	5.0	2.2	9.9	3.2
15	2.8	4.9	5.3	2.8	9.6	3.0
16	3.2	5.3	5.7	2.0	8.2	3.1
17	2.8	5.1	5.5	1.7	7.5	3.0
18	1.5	3.2	2.8	1.3	6.8	2.1
19	0.9	1.2	1.5	0.8	5.9	1.4
20	0.8	0.8	0.4	0.4	4.6	1.5
21	0.7	0.8	0.3	1.0	3.6	1.7
22	0.6	0.6	0.2	0.5	3.5	1.3
23	0.3	0.4	0.3	1.0	2.2	1.4
24	0.4	0.4	0.5	1.3	1.8	1.6
25	0.4	0.4	0.4	1.0	1.5	1.1

Table 1.1-23 COMSAT

1.1-23

ATS-F PROPAGATION EXPERIMENT
DIVERSITY SITE ANALYSIS - ALL DATA PROCESSED
FOR COLUMBUS
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975

CP #	FREQUENCY (GHZ)	TOTAL GOOD DATA (HOURS)
35	18	2590.6
32	18	2758.1
34	18	2698.8
31	18	2236.8
14	13	3432.1

SEPARATION (MILES)	PAIR (CP)	TOTAL GOOD DATA (HOURS)
3.2	35/32	1458.8
7.5	34/31	1326.8
13.6	32/34	2129.0
16.7	35/34	1574.3
21.1	32/31	1150.9
24.2	35/31	1995.3

193

Figure 1.1-17

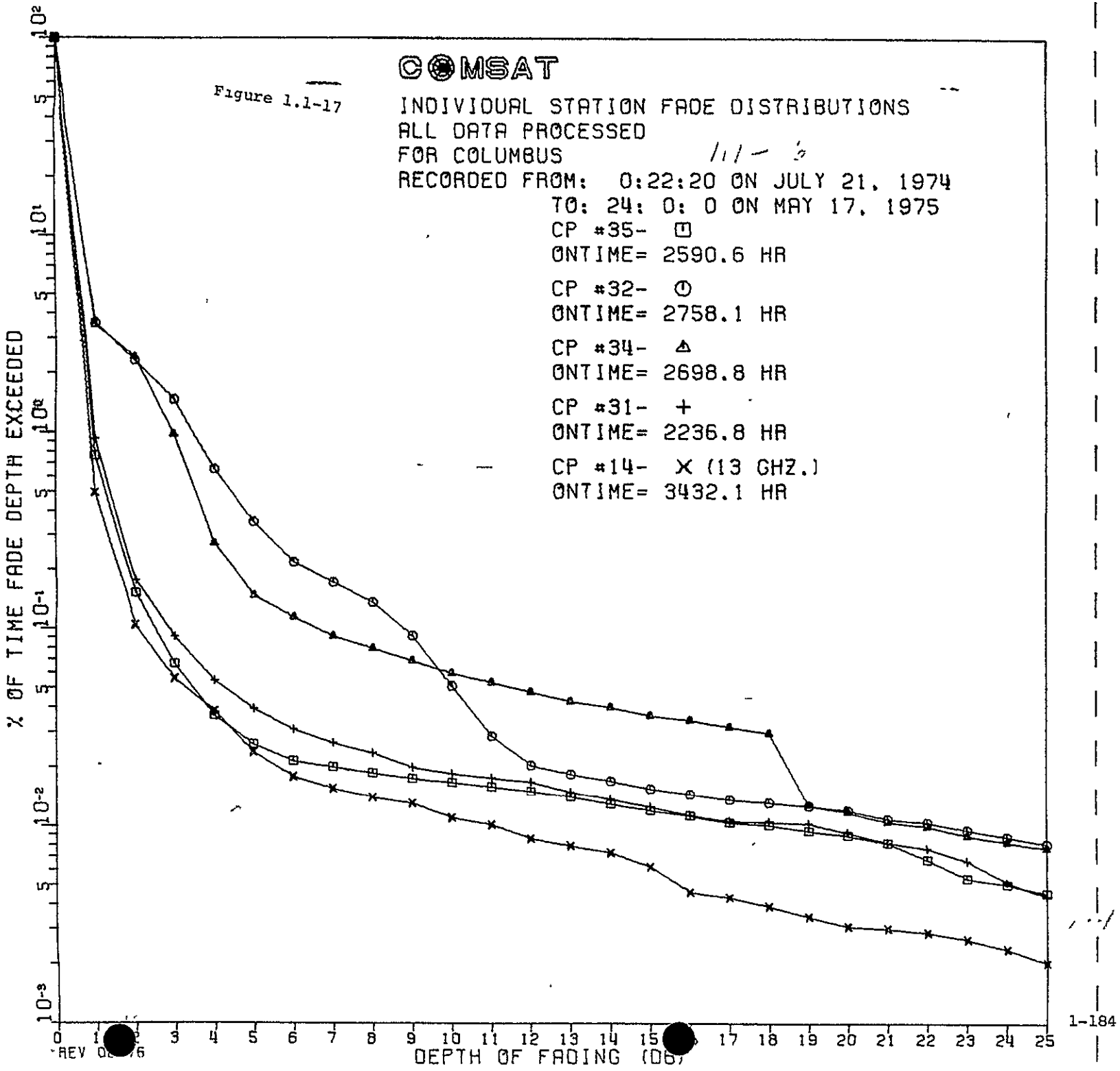

COMSAT
INDIVIDUAL STATION FADE DISTRIBUTIONS
ALL DATA PROCESSED
FOR COLUMBUS
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
CP #35- □
ONTIME= 2590.6 HR
CP #32- ○
ONTIME= 2758.1 HR
CP #34- △
ONTIME= 2698.8 HR
CP #31- +
ONTIME= 2236.8 HR
CP #14- X (13 GHZ.)
ONTIME= 3432.1 HR
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)

Table 1.1-24

ATS-F DIVERSITY ANALYSIS FOR COLUMBUS
ALL DATA PROCESSED
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0, ON MAY 17, 1975

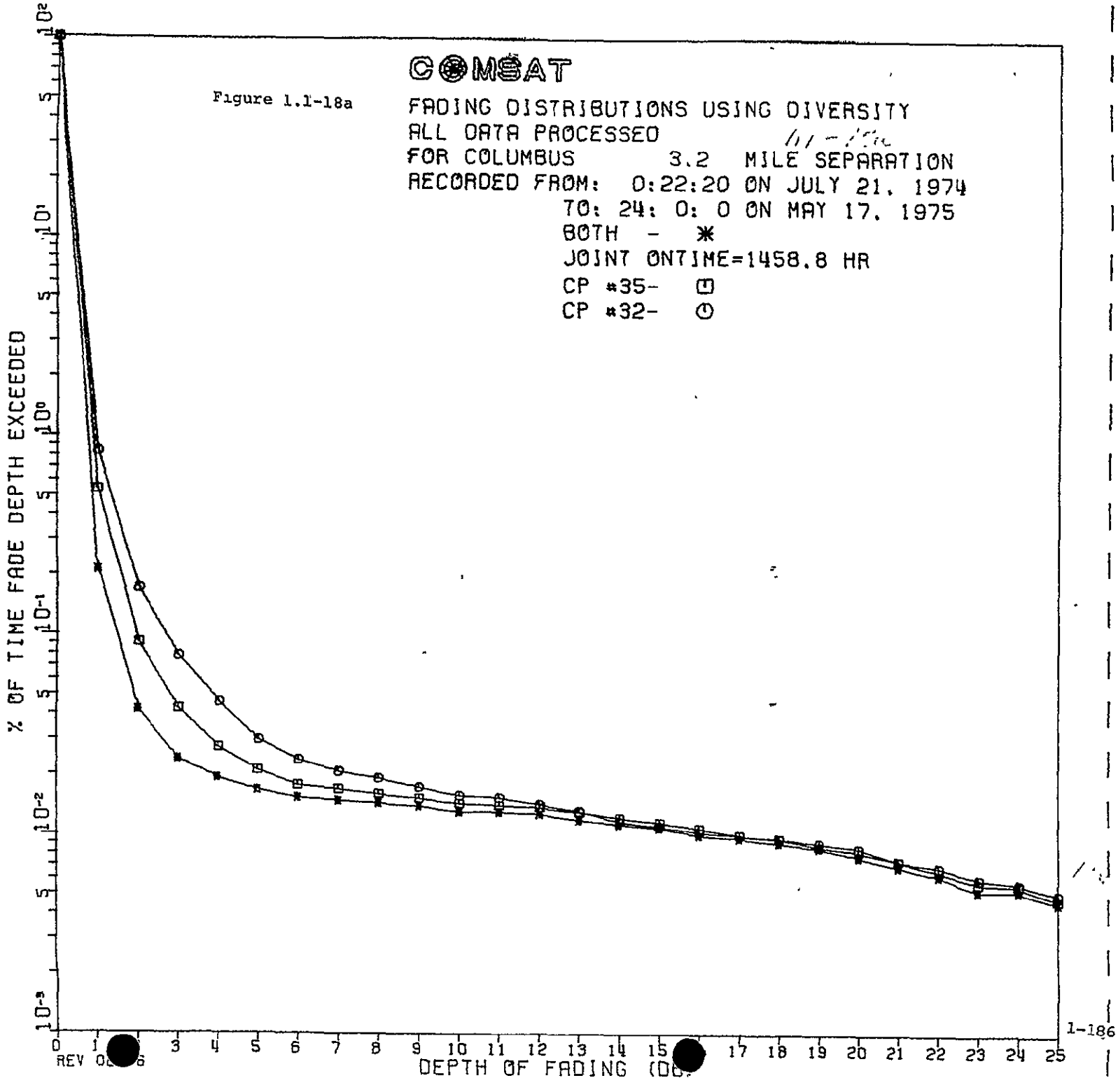
1.1-24

INDIVIDUAL FADING DISTRIBUTIONS

		CP# 35 18 GHZ	CP# 32 13 GHZ	CP# 34 10 GHZ	CP# 31 18 GHZ	CP# 14 13 GHZ
	0	100.00	100.00	100.00	100.00	100.00
	1	0.7686	3.5840	3.5044	0.9317	0.4977
	2	0.1527	2.3177	2.4116	0.1770	0.1045
	3	.06668	1.4717	0.9815	.09198	.05616
D	4	.03657	0.6568	0.2741	.05510	.03853
E	5	.02634	0.3534	0.1481	.03957	.02404
P	6	.02162	0.2198	0.1145	.03118	.01799
T	7	.02017	0.1736	.09226	.02682	.01566
H	8	.01882	0.1369	.08022	.02381	.01420
	9	.01766	.09327	.06938	.02023	.01326
O	10	.01689	.05185	.06040	.01878	.01122
F	11	.01602	.02901	.05391	.01777	.01027
	12	.01525	.02067	.04845	.01699	.00874
F	13	.01428	.01858	.04345	.01509	.00801
A	14	.01312	.01722	.04057	.01386	.00743
D	15	.01216	.01568	.03668	.01263	.00626
I	16	.01139	.01468	.03483	.01151	.00466
N	17	.01052	.01378	.03224	.01073	.00437
G	18	.01023	.01332	.03011	.01062	.00393
	19	.00955	.01278	.01288	.01039	.00350
D	20	.00907	.01224	.01195	.00939	.00313
B	21	.00830	.01106	.01065	.00838	.00306
	22	.00685	.01061	.01010	.00782	.00291
	23	.00550	.00970	.00908	.00671	.00270
	24	.00511	.00897	.00843	.00525	.00240
	25	.00463	.00825	.00787	.00447	.00204

1.5

Figure 1.1-18a



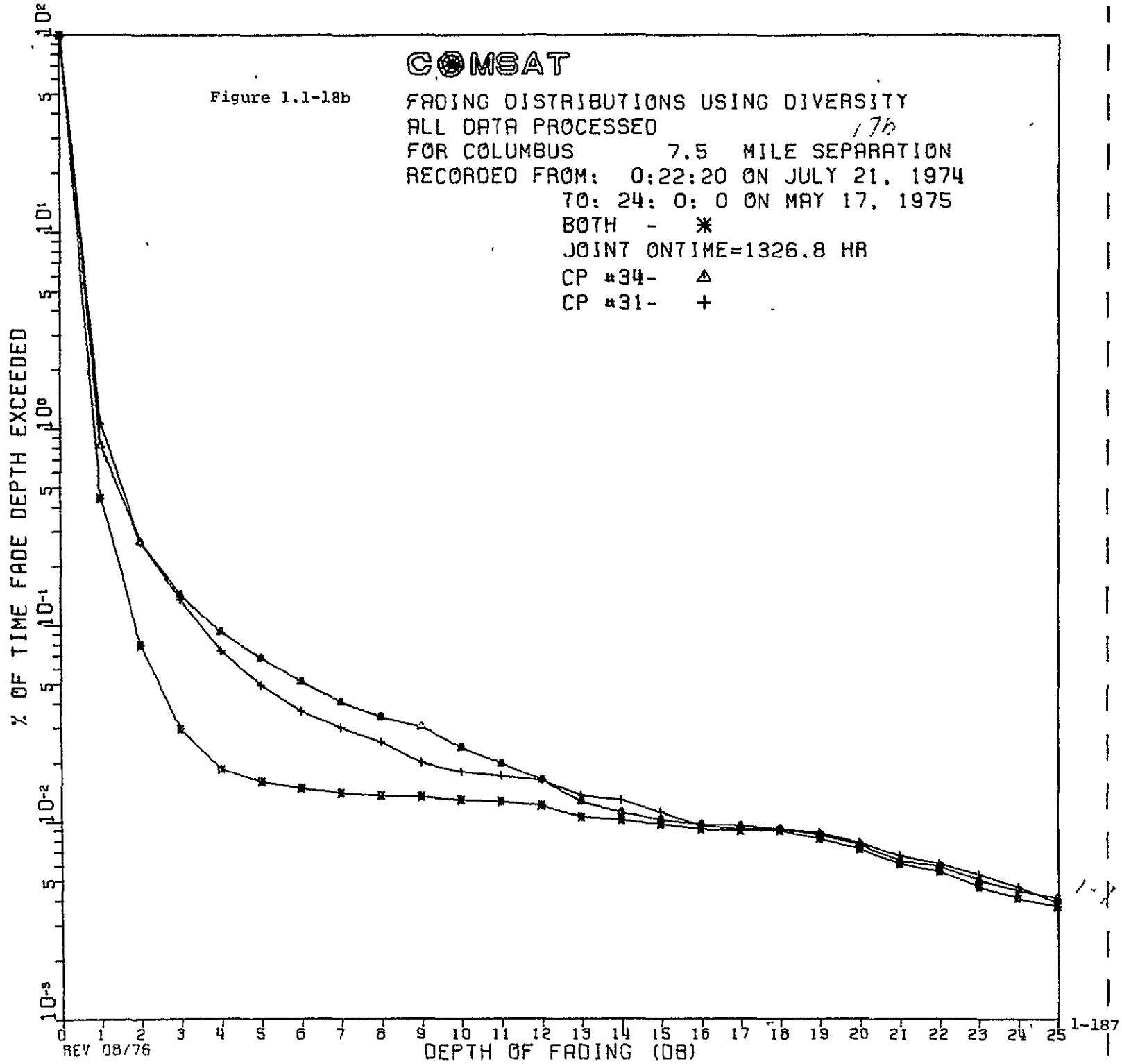


Figure 1.1-18b

1-187

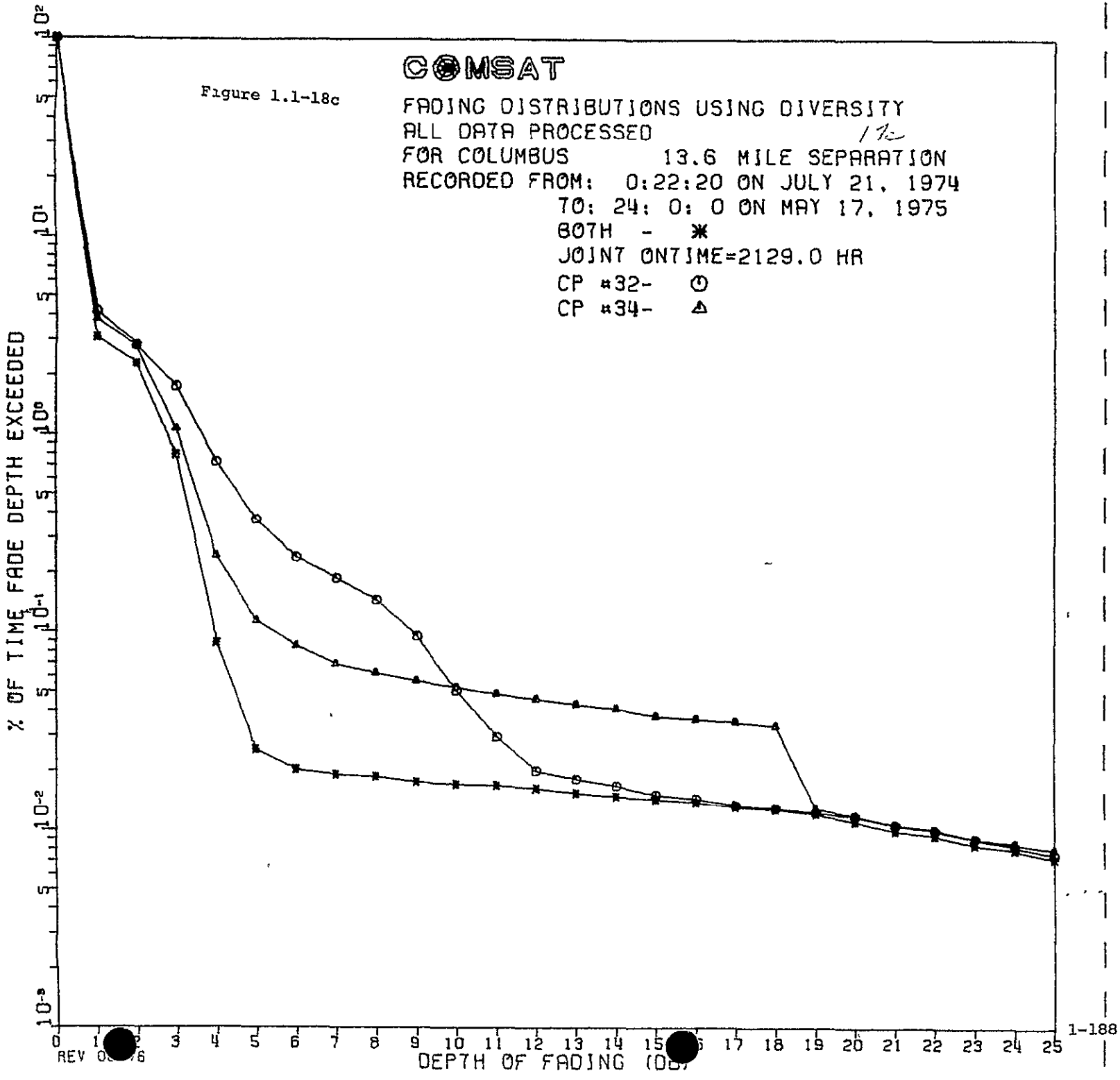
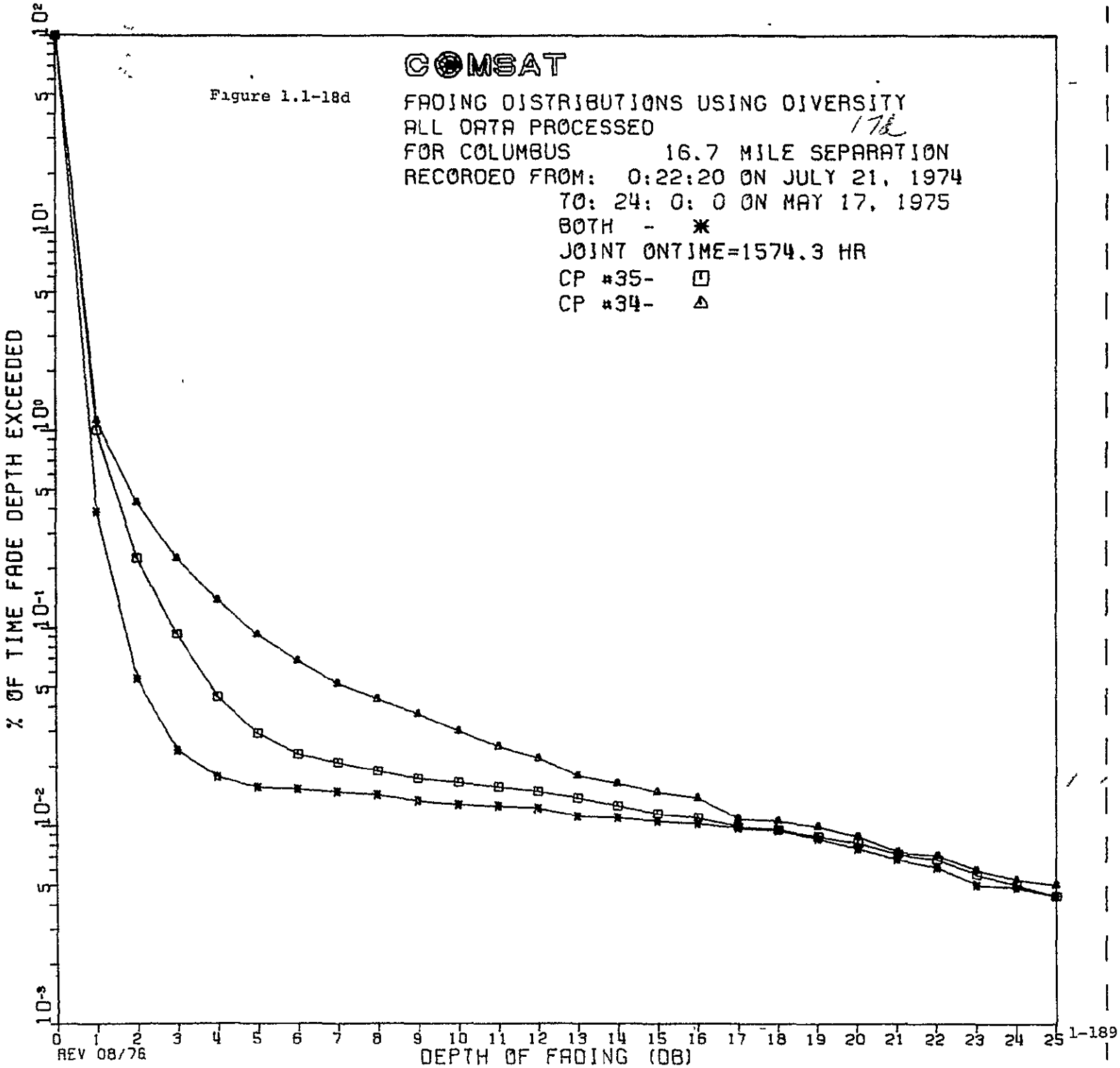


Figure 1.1-18c

Figure 1.1-18d



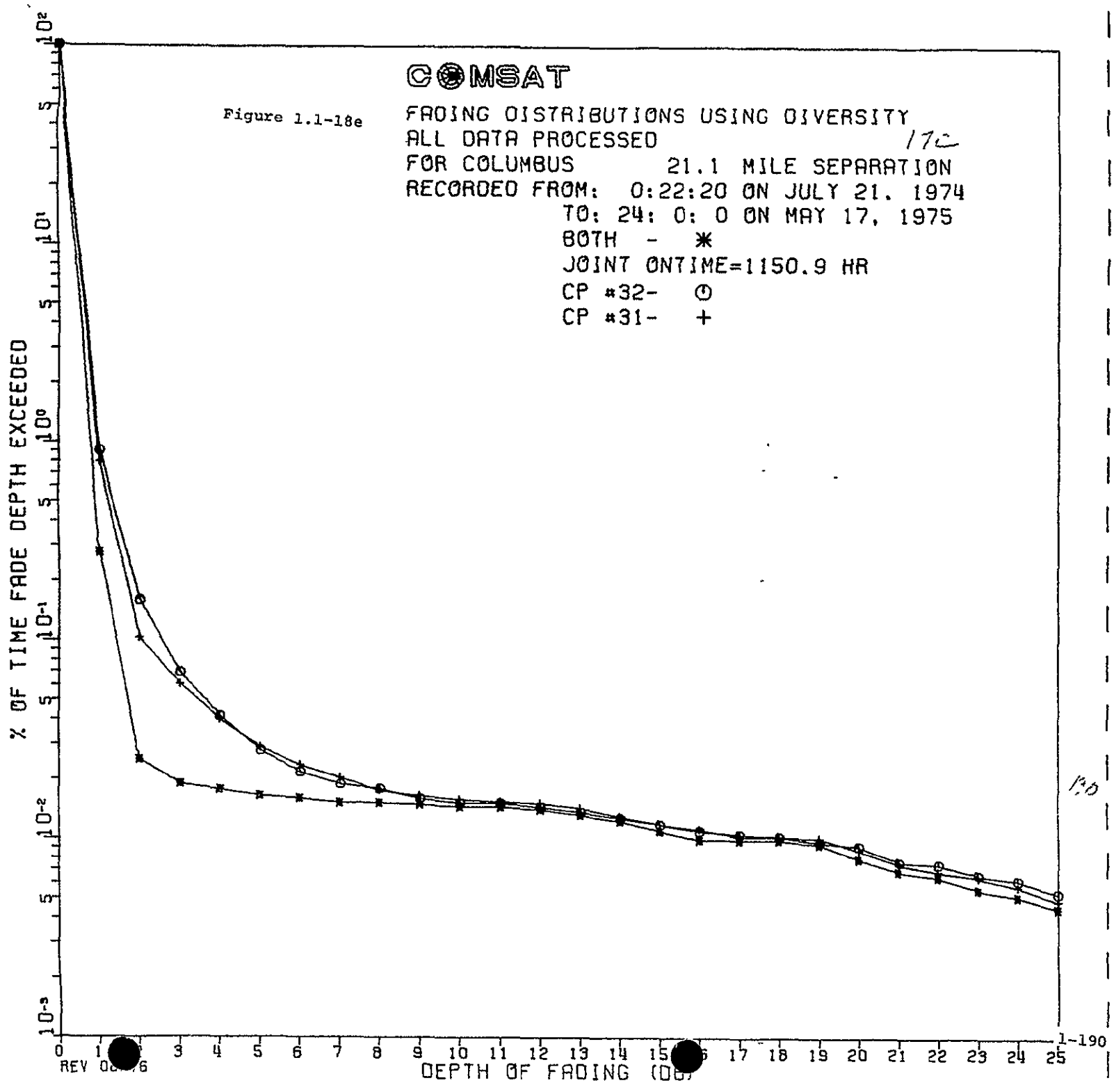
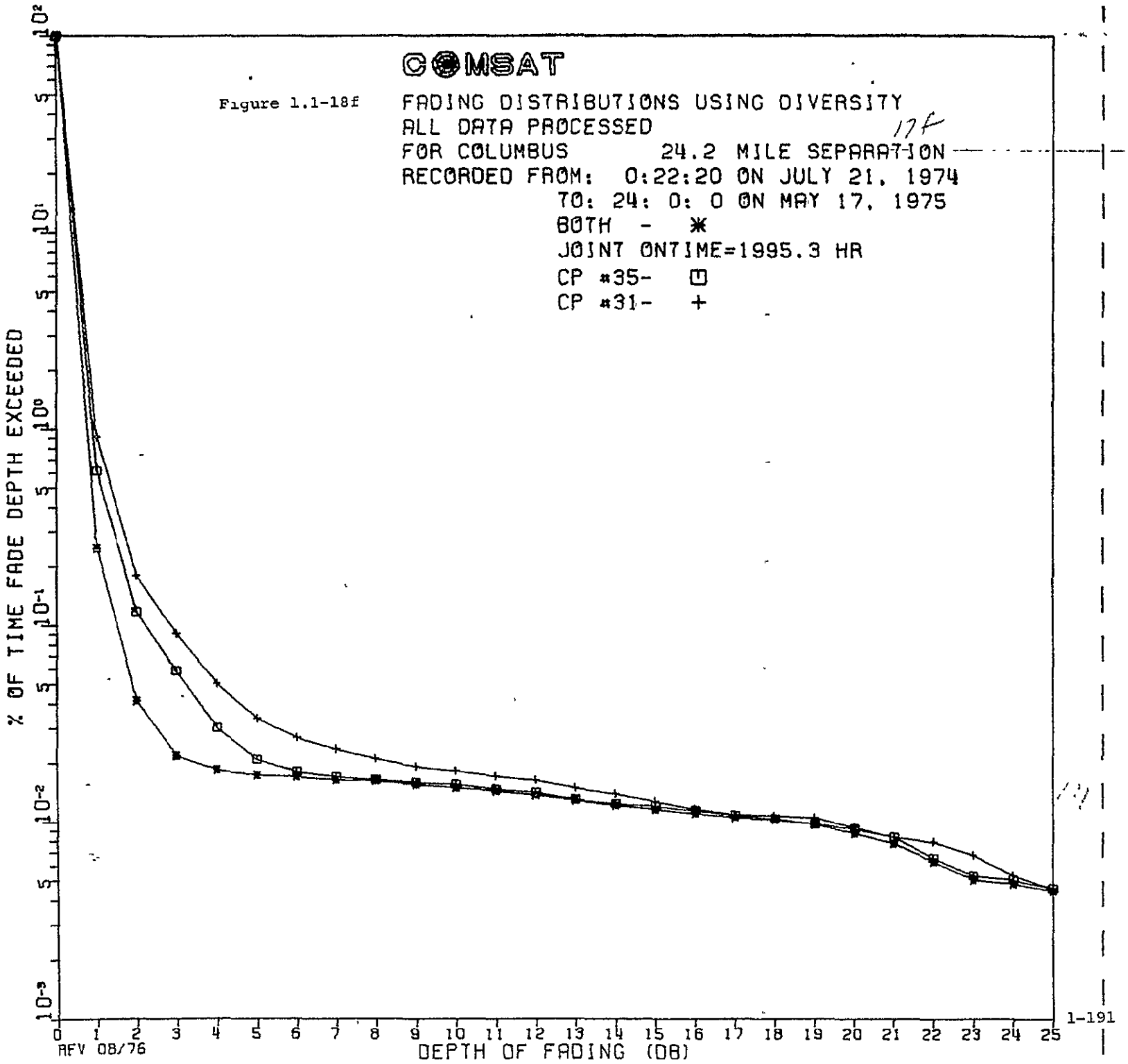


Figure 1.1-18e


COMSAT
Figure 1.1-18f
FADING DISTRIBUTIONS USING DIVERSITY
ALL DATA PROCESSED
FOR COLUMBUS 24.2 MILE SEPARATION
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
BOTH - *
JOINT ONTIME=1995.3 HR
CP #35- □
CP #31- +
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)
REV 08/76

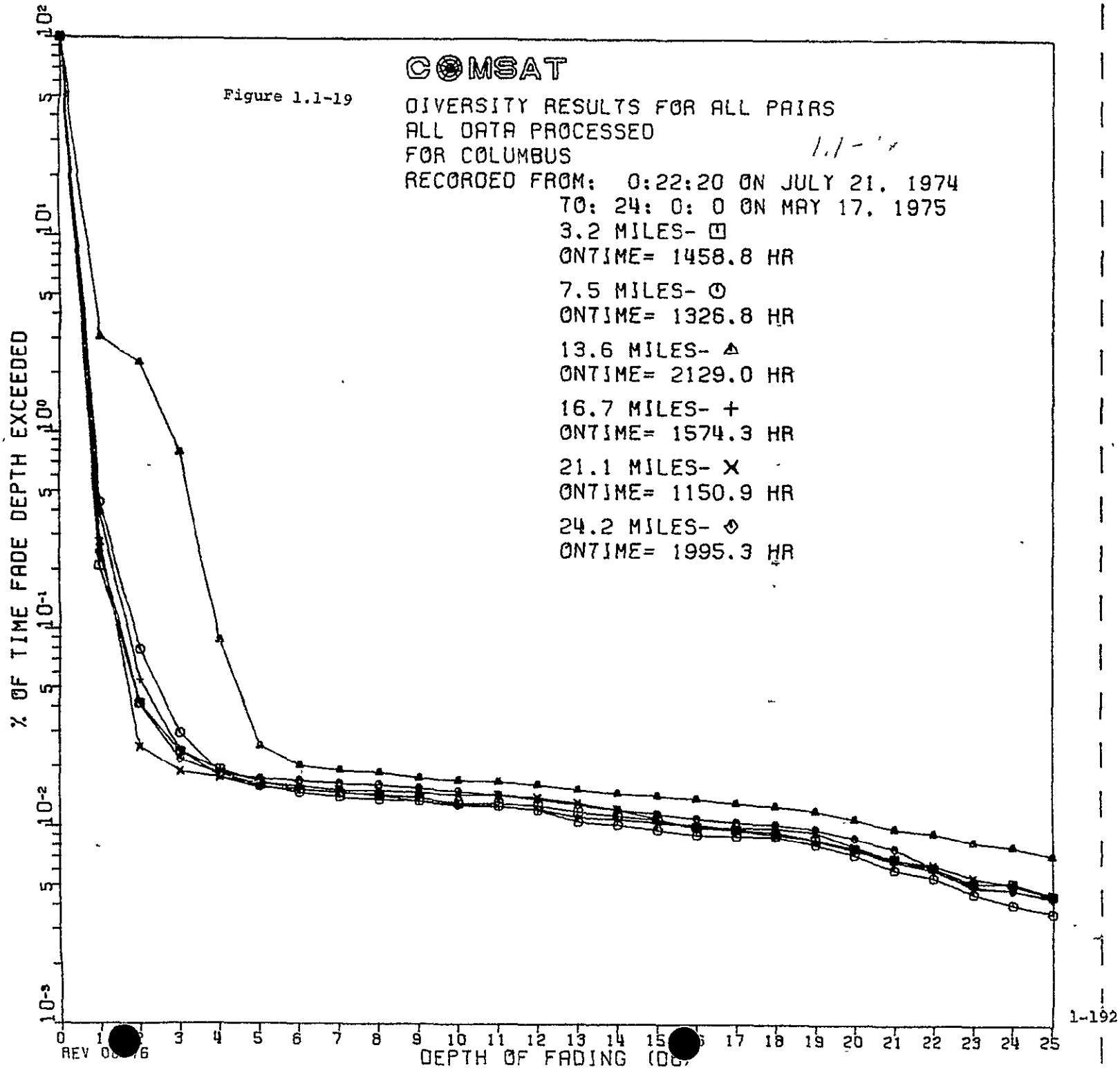

COMSAT
DIVERSITY RESULTS FOR ALL PAIRS
ALL DATA PROCESSED
FOR COLUMBUS
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
3.2 MILES- □
ONTIME= 1458.8 HR
7.5 MILES- ○
ONTIME= 1326.8 HR
13.6 MILES- △
ONTIME= 2129.0 HR
16.7 MILES- +
ONTIME= 1574.3 HR
21.1 MILES- X
ONTIME= 1150.9 HR
24.2 MILES- ◇
ONTIME= 1995.3 HR
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)

Figure 1.1-19

Table 1.1-25

ATS-F DIVERSITY ANALYSIS FOR COLUMBUS
ALL DATA PROCESSED
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
18 GHZ. FADING DISTRIBUTIONS USING
SIMPLE SWITCHED DIVERSITY OPERATION

1.1-25

		3.2 MILES	7.5 MILES	13.6 MILES	16.7 MILES	21.1 MILES	24.2 MILES
	0	100.00	100.00	100.00	100.00	100.00	100.00
	1	0.2101	0.4452	3.0799	0.3875	0.2763	0.2471
	2	.04199	.07933	2.2714	.05526	.02520	.04147
	3	.02399	.02977	0.7904	.02430	.01890	.02193
D	4	.01936	.01865	.08877	.01779	.01781	.01854
E	5	.01679	.01602	.02572	.01572	.01651	.01742
P	6	.01542	.01489	.02043	.01540	.01607	.01704
T	7	.01491	.01413	.01926	.01493	.01521	.01654
H	8	.01457	.01375	.01879	.01445	.01521	.01629
	9	.01405	.01357	.01773	.01350	.01499	.01566
O	10	.01320	.01300	.01714	.01286	.01455	.01516
F	11	.01320	.01281	.01703	.01270	.01455	.01453
	12	.01285	.01225	.01644	.01239	.01412	.01391
F	13	.01200	.01074	.01550	.01127	.01325	.01303
A	14	.01148	.01036	.01491	.01112	.01238	.01228
D	15	.01097	.00980	.01444	.01064	.01108	.01178
I	16	.01011	.00923	.01397	.01032	.00999	.01115
N	17	.00977	.00904	.01327	.00985	.00999	.01065
G	18	.00925	.00904	.01292	.00953	.00999	.01040
	19	.00874	.00829	.01221	.00873	.00956	.00990
D	20	.00788	.00735	.01116	.00778	.00804	.00890
B	21	.00703	.00622	.00998	.00683	.00695	.00789
	22	.00634	.00565	.00951	.00619	.00652	.00639
	23	.00531	.00471	.00857	.00508	.00565	.00514
	24	.00531	.00415	.00810	.00492	.00521	.00489
	25	.00463	.00377	.00728	.00445	.00456	.00451

113

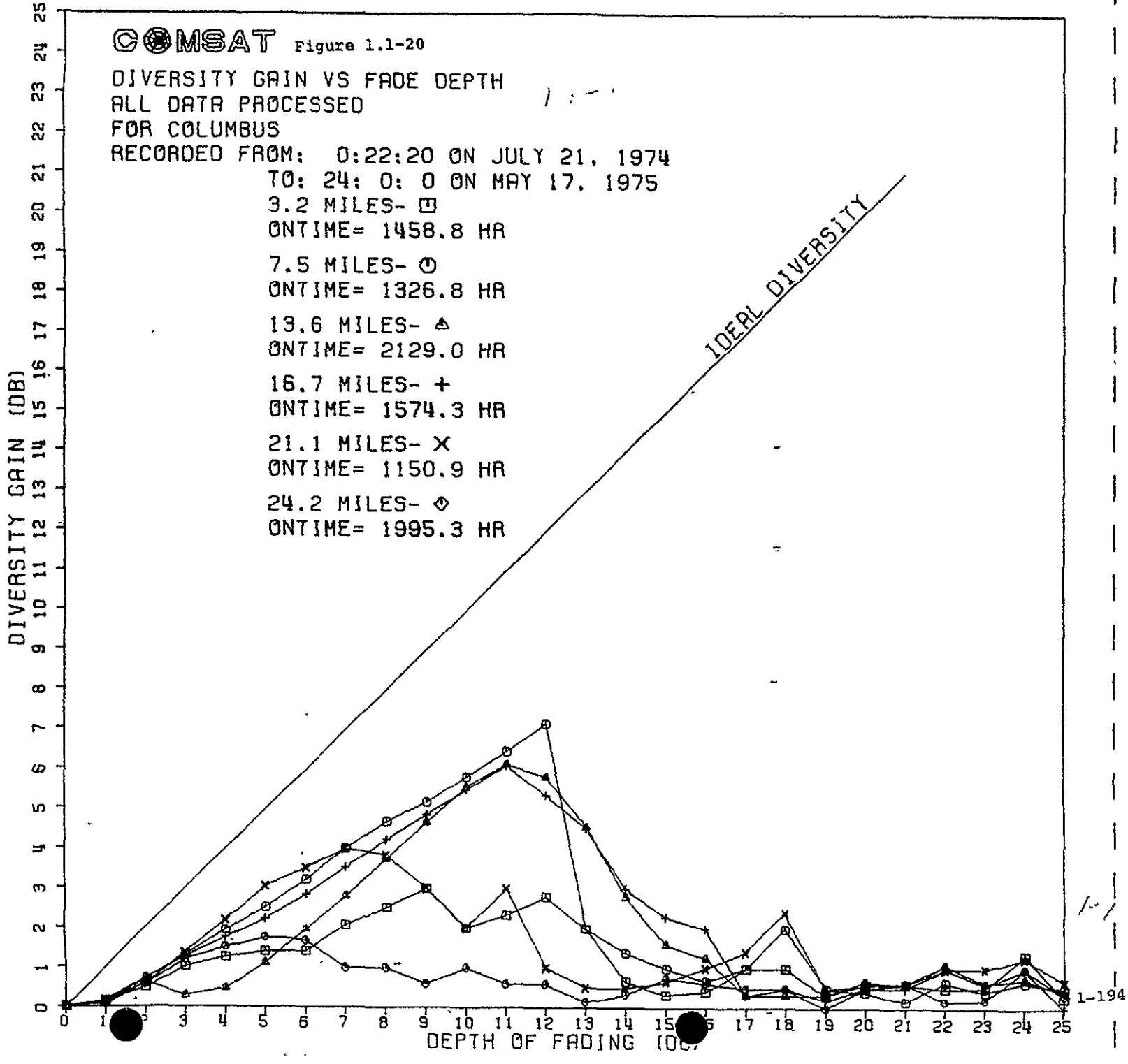

COMSAT Figure 1.1-20
DIVERSITY GAIN VS FADE DEPTH
ALL DATA PROCESSED
FOR COLUMBUS
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
3.2 MILES- □
ONTIME= 1458.8 HR
7.5 MILES- ○
ONTIME= 1326.8 HR
13.6 MILES- △
ONTIME= 2129.0 HR
16.7 MILES- +
ONTIME= 1574.3 HR
21.1 MILES- X
ONTIME= 1150.9 HR
24.2 MILES- ◇
ONTIME= 1995.3 HR
IDEAL DIVERSITY
DIVERSITY GAIN (DB)
DEPTH OF FADING (DB)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Table I.1-26

ATS-F DIVERSITY ANALYSIS FOR COLUMBUS
ALL DATA PROCESSED
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975

1.1-26

DIVERSITY GAIN VS. DEPTH OF FADING

		3.2 MILES	7.5 MILES	13.6 MILES	16.7 MILES	21.1 MILES	24.2 MILES
	1	0.2	0.1	0.1	0.2	0.2	0.2
	2	0.5	0.7	0.6	0.7	0.6	0.6
	3	1.0	1.3	0.3	1.3	1.4	1.2
	4	1.2	1.9	0.5	1.8	2.2	1.5
D	5	1.4	2.5	1.1	2.2	3.0	1.8
E	6	1.4	3.2	2.0	2.8	3.5	1.7
P	7	2.1	4.0	2.8	3.5	4.0	1.0
T	8	2.5	4.7	3.7	4.2	3.8	1.0
H	9	3.0	5.2	4.6	4.9	3.0	0.6
	10	2.0	5.8	5.6	5.5	2.0	1.0
O	11	2.3	6.4	6.1	6.1	3.0	0.6
F	12	2.8	7.2	5.8	5.3	1.0	0.6
	13	2.0	2.0	4.6	4.5	0.5	0.1
F	14	0.7	1.4	2.8	3.0	0.5	0.3
A	15	0.3	1.0	1.6	2.3	0.7	0.8
D	16	0.4	0.7	1.3	2.0	1.0	0.6
I	17	1.0	1.0	0.3	0.3	1.4	0.5
N	18	1.0	2.0	0.3	0.5	2.4	0.5
G	19	0.3	0.5	0.3	0.2	0.5	0.0
	20	0.6	0.4	0.7	0.5	0.6	0.5
D	21	0.6	0.2	0.6	0.5	0.6	0.6
B	22	0.5	0.7	1.1	1.0	1.0	0.2
	23	0.5	0.4	0.6	0.6	1.0	0.2
	24	1.4	0.7	0.8	1.0	1.3	1.0
	25	0.3	0.5	0.4	0.0	0.7	0.3

Table 1.1-27 COMSAT
ATS-F PROPAGATION EXPERIMENT
VERSITY SITE ANALYSIS - ALL DATA PROCESSED
FOR BOSTON
CORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975

1.1-27

#	FREQUENCY (GHZ)	TOTAL GOOD DATA (HOURS)
8	18	2729.5
9	18	3836.4
0	18	3851.6
7	18	3038.6
5	13	4104.7

PARATION (MILES)	PAIR (CP)	TOTAL GOOD DATA (HOURS)
4.2	39/37	2916.6
6.6	38/40	2659.2
11.2	39/40	3722.1
15.2	40/37	2927.7
17.8	38/39	2618.8
21.8	38/37	2253.2

Figure 1.1-21

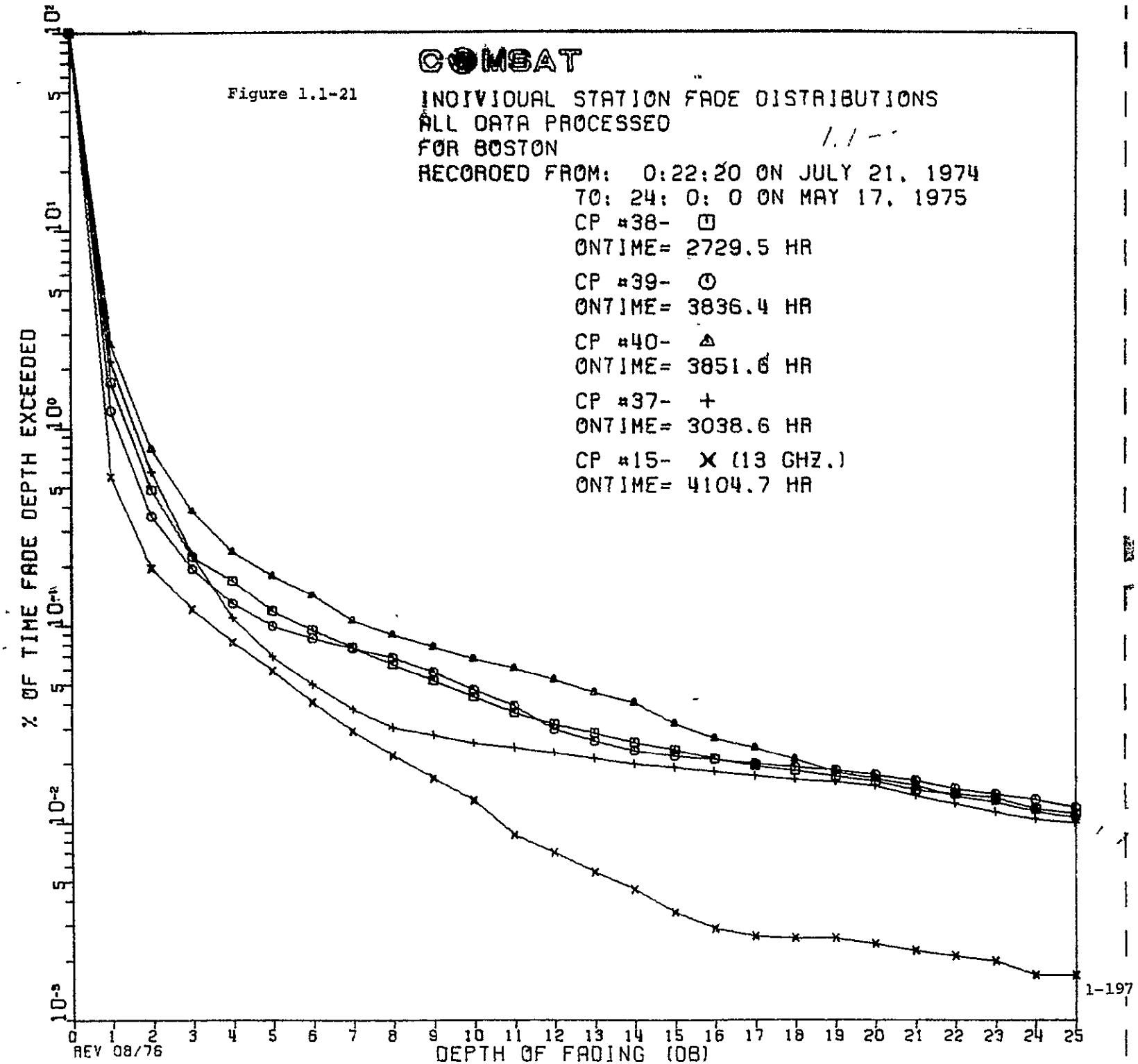
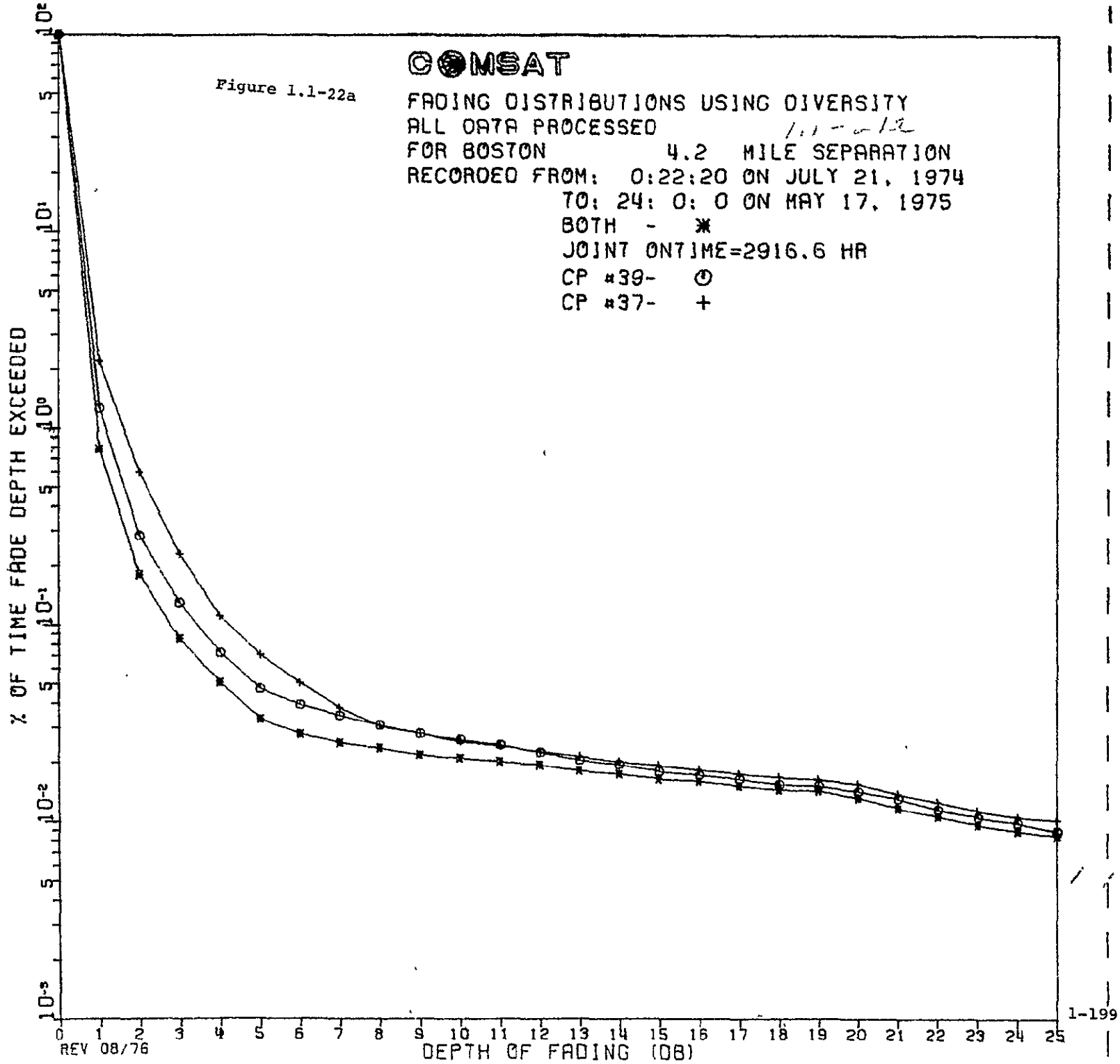

COMSAT
INDIVIDUAL STATION FADE DISTRIBUTIONS
ALL DATA PROCESSED
FOR BOSTON
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
CP #38- □
ONTIME= 2729.5 HR
CP #39- ○
ONTIME= 3836.4 HR
CP #40- △
ONTIME= 3851.6 HR
CP #37- +
ONTIME= 3038.6 HR
CP #15- X (13 GHZ.)
ONTIME= 4104.7 HR
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)
REV 08/76

Table 1.1-28
'S-F DIVERSITY ANALYSIS FOR BOSTON
.L DATA PROCESSED
:CORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
NDIVIDUAL FADING DISTRIBUTIONS

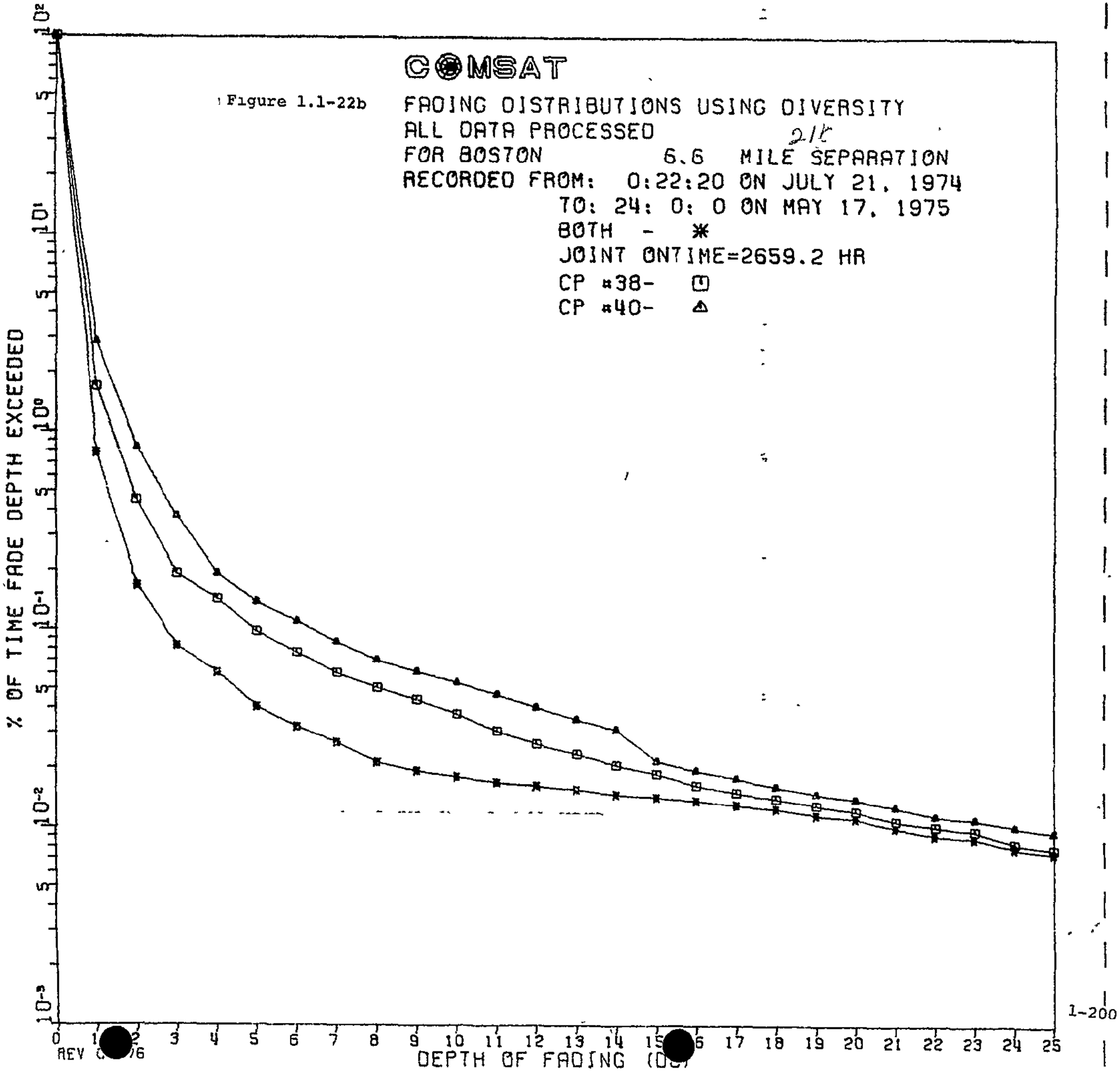
1.1-28

	CP# 38 18 GHZ	CP# 39 18 GHZ	CP# 40 18 GHZ	CP# 37 18 GHZ	CP# 15 13 GHZ
0	100.00	100.00	100.00	100.00	100.00
1	1.7055	1.2338	2.6403	2.1613	0.5644
2	0.4863	0.3574	0.7825	0.5993	0.1950
3	0.2221	0.1944	0.3811	0.2275	0.1211
4	0.1690	0.1294	0.2352	0.1095	.08247
5	0.1185	0.1002	0.1791	.06985	.05908
6	.09553	.08641	0.1426	.05052	.04087
7	.07822	.07728	0.1064	.03793	.02936
8	.06366	.06927	.09009	.03077	.02211
9	.05285	.05871	.07841	.02822	.01699
10	.04396	.04757	.06848	.02575	.01316
11	.03654	.03955	.06121	.02444	.00877
12	.03197	.03017	.05329	.02287	.00713
13	.02885	.02633	.04595	.02139	.00566
14	.02574	.02333	.04076	.01999	.00463
15	.02363	.02190	.03200	.01917	.00353
16	.02125	.02111	.02707	.01827	.00292
17	.01960	.02020	.02428	.01744	.00268
18	.01850	.01922	.02110	.01670	.00262
19	.01731	.01864	.01824	.01621	.00262
20	.01630	.01759	.01675	.01547	.00244
21	.01475	.01642	.01545	.01382	.00225
22	.01401	.01499	.01370	.01259	.00213
23	.01346	.01401	.01279	.01144	.00201
24	.01191	.01329	.01155	.01053	.00171
25	.01127	.01212	.01071	.01012	.00171

Figure 1.1-22a



REV 08/76


COMSAT
Figure 1.1-22b
FADING DISTRIBUTIONS USING DIVERSITY
ALL DATA PROCESSED
FOR BOSTON 6.6 MILE SEPARATION
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
BOTH - ✱
JOINT ONTIME=2659.2 HR
CP #38- ⊡
CP #40- △
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)
REV

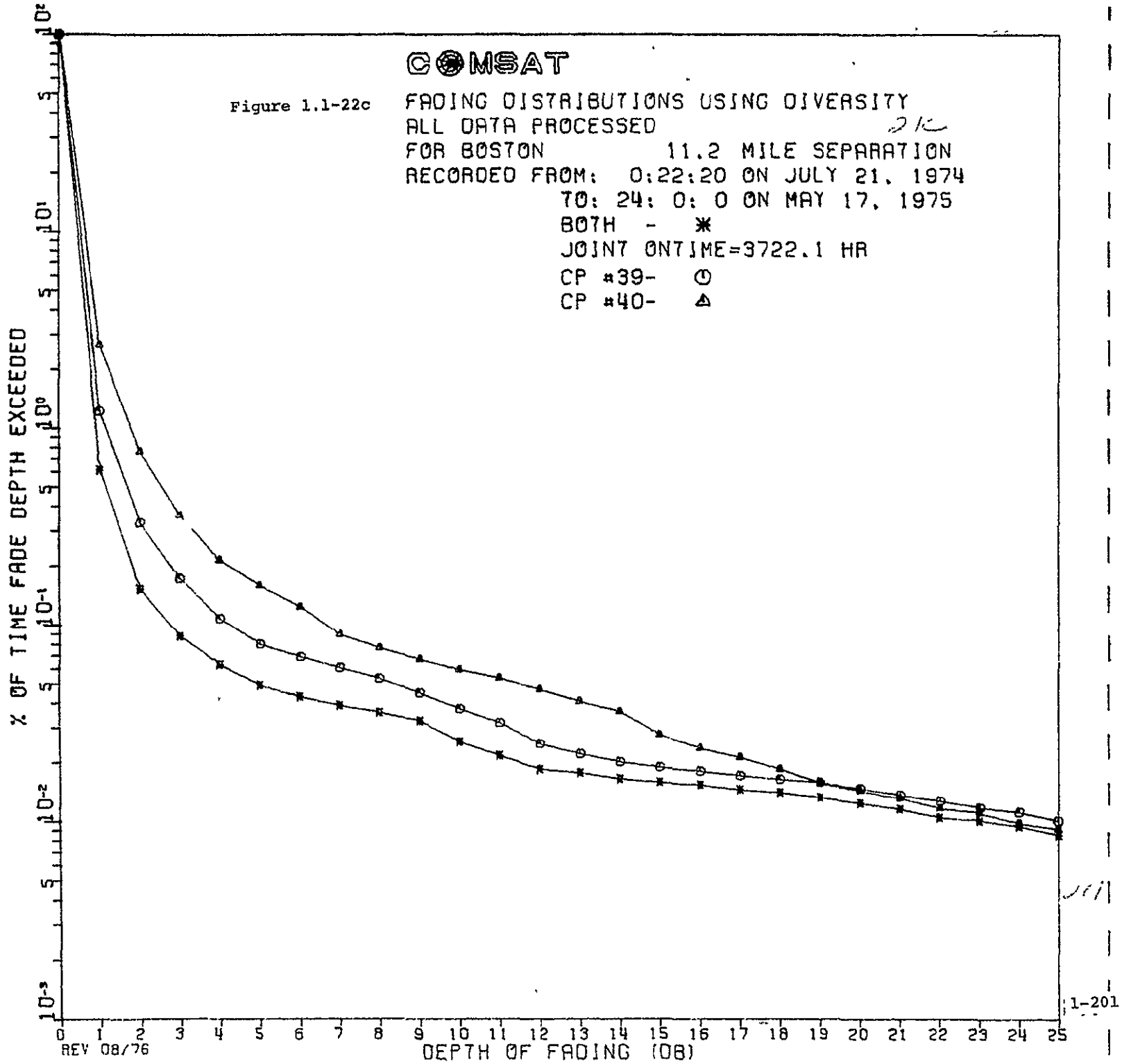
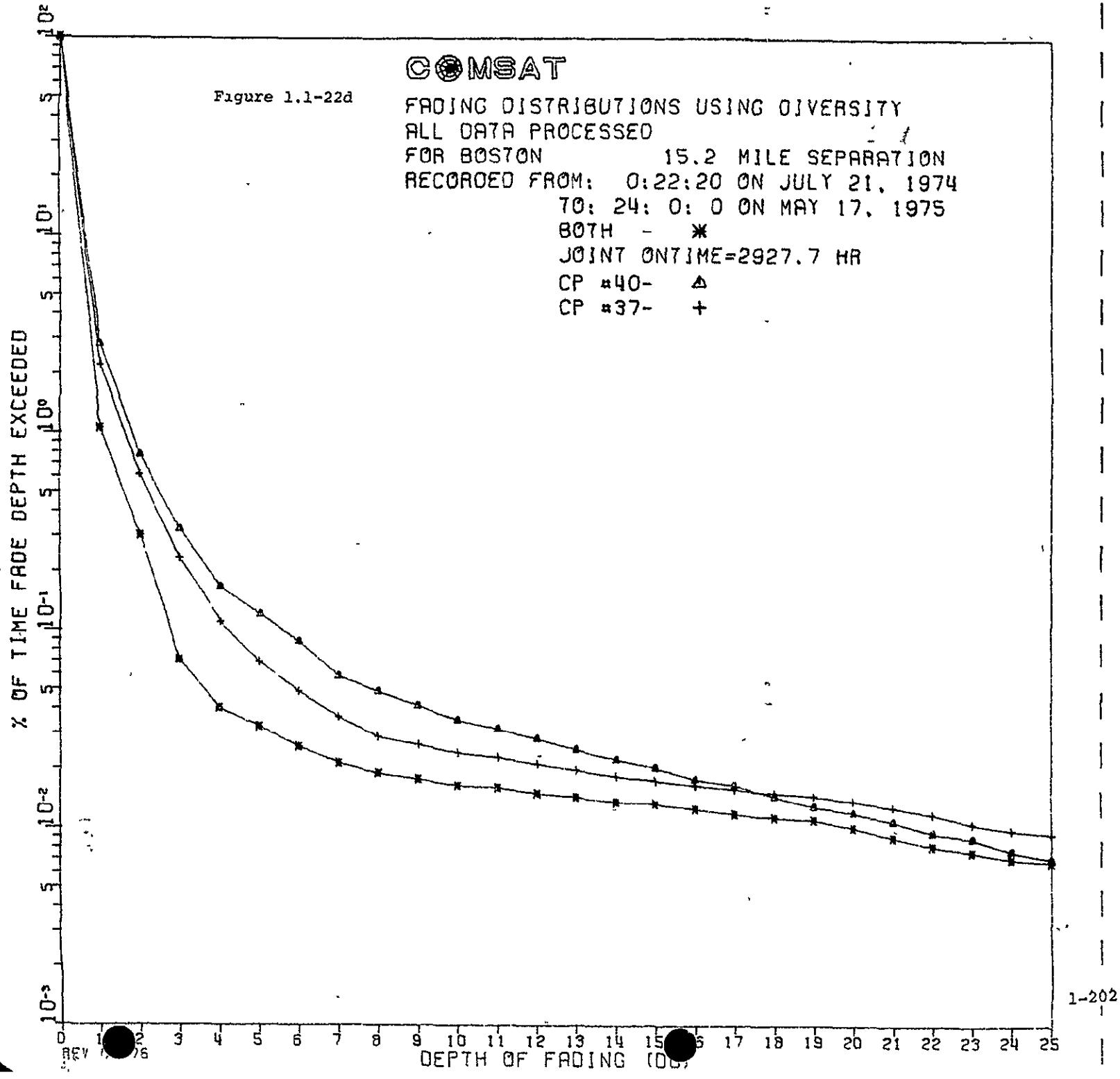

COMSAT
Figure 1.1-22c
FADING DISTRIBUTIONS USING DIVERSITY
ALL DATA PROCESSED
FOR BOSTON 11.2 MILE SEPARATION
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
BOTH - *
JOINT ONTIME=3722.1 HR
CP #39- ⏲
CP #40- △
% OF TIME FADE DEPTH EXCEEDED
DEPTH OF FADING (DB)
REV 08/76

Figure 1.1-22d



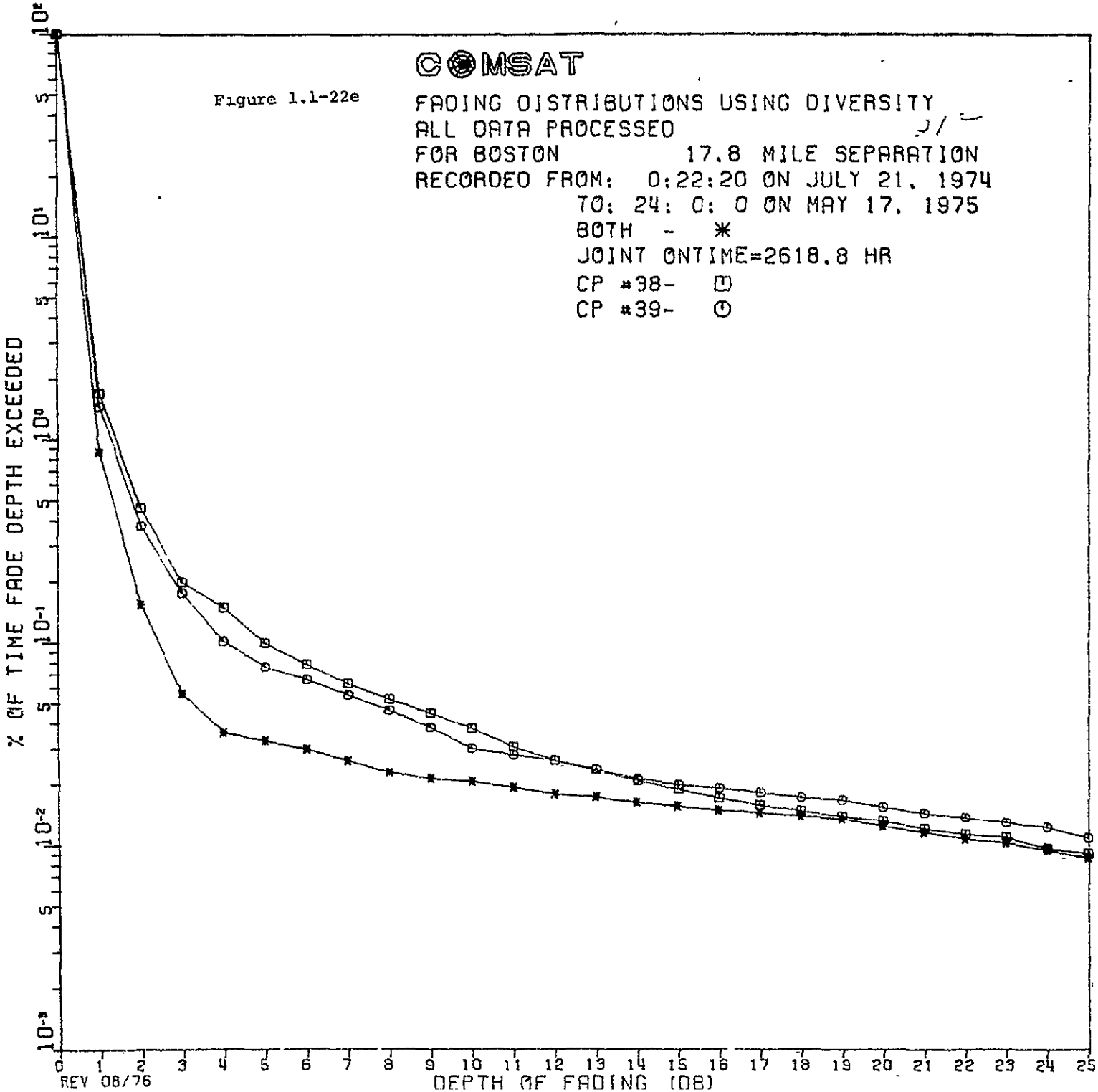


Figure 1.1-22e

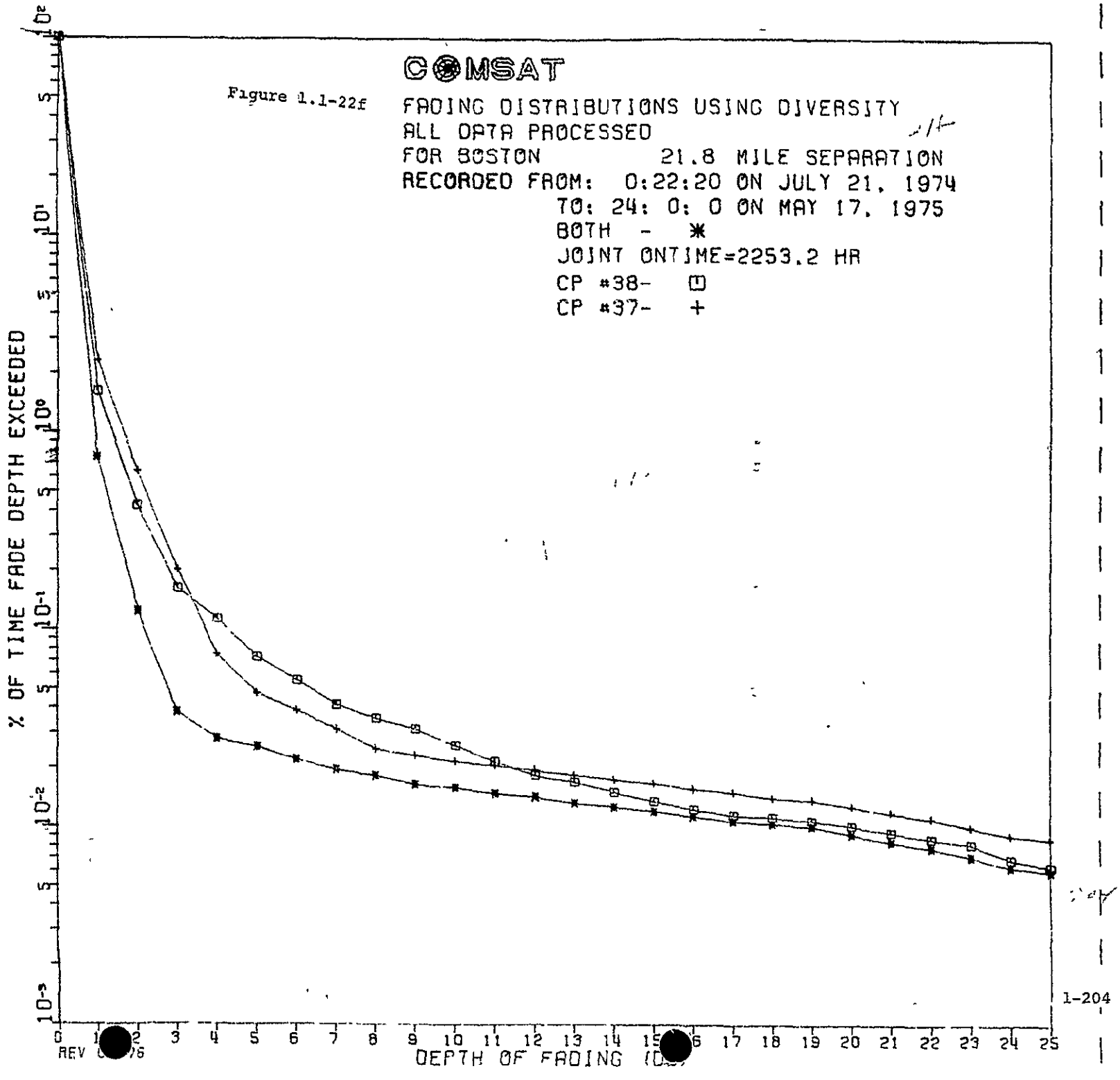


Figure 1.1-22f

1-204

Figure 1.1-23

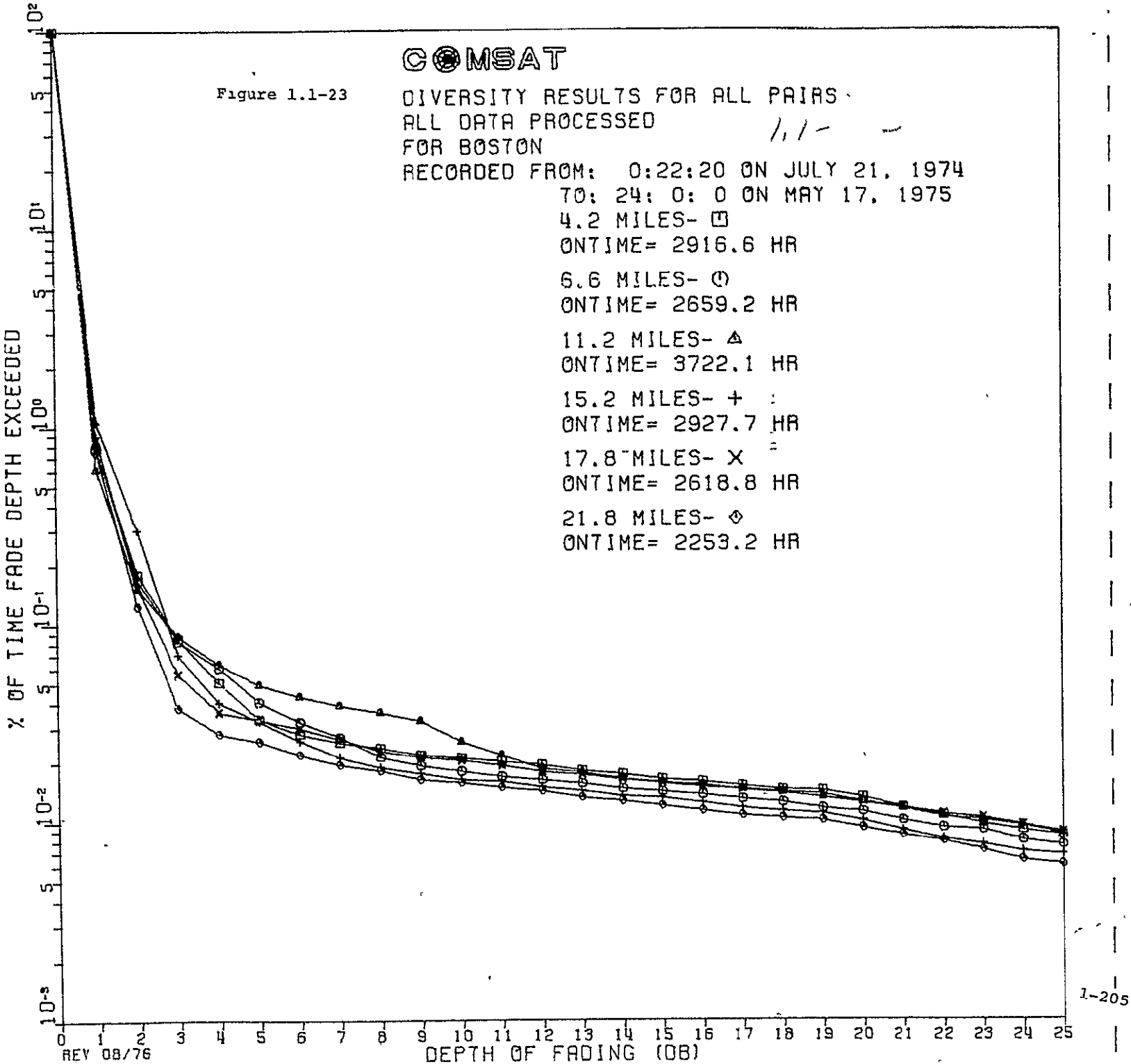

COMSAT
DIVERSITY RESULTS FOR ALL PAIRS
ALL DATA PROCESSED
FOR BOSTON
RECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
4.2 MILES- □
ONTIME= 2916.6 HR
6.6 MILES- ○
ONTIME= 2659.2 HR
11.2 MILES- △
ONTIME= 3722.1 HR
15.2 MILES- +
ONTIME= 2927.7 HR
17.8 MILES- X
ONTIME= 2618.8 HR
21.8 MILES- ◇
ONTIME= 2253.2 HR
% OF TIME FADE DEPTH EXCEEDED
10² 5 10¹ 5 10⁰ 5 10⁻¹ 5 10⁻² 5 10⁻³
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
DEPTH OF FADING (DB)
REV 08/76

Table 1.1-29

TS-F DIVERSITY ANALYSIS FOR BOSTON
LL DATA PROCESSED
ECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
8 GHZ. FADING DISTRIBUTIONS USING
IMPLE SWITCHED DIVERSITY OPERATION

1.1-29

	4.2 MILES	5.6 MILES	11.2 MILES	15.2 MILES	17.8 MILES	21.8 MILES
0	100.00	100.00	100.00	100.00	100.00	100.00
1	0.7787	0.7870	0.6078	1.0600	0.8677	0.7464
2	0.1797	0.1682	0.1523	0.3020	0.1552	0.1243
3	.08554	.08301	.08799	.07087	.05670	.03795
4	.05126	.06083	.06334	.04056	.03628	.02818
5	.03334	.04071	.04984	.03253	.03313	.02574
6	.02794	.03234	.04332	.02579	.02997	.02197
7	.02546	.02708	.03902	.02135	.02644	.01964
8	.02383	.02153	.03620	.01904	.02310	.01831
9	.02194	.01955	.03271	.01776	.02148	.01653
10	.02126	.01824	.02572	.01648	.02081	.01598
11	.02040	.01711	.02190	.01614	.01947	.01509
12	.01963	.01645	.01874	.01511	.01804	.01442
13	.01834	.01579	.01793	.01443	.01747	.01343
14	.01757	.01485	.01659	.01366	.01651	.01287
15	.01663	.01438	.01592	.01341	.01585	.01220
16	.01611	.01391	.01545	.01264	.01518	.01154
17	.01534	.01316	.01464	.01187	.01480	.01087
18	.01466	.01269	.01410	.01144	.01432	.01054
19	.01449	.01175	.01337	.01110	.01384	.01021
20	.01337	.01128	.01249	.01016	.01270	.00932
21	.01183	.01015	.01169	.00905	.01184	.00854
22	.01080	.00931	.01061	.00820	.01098	.00799
23	.00977	.00912	.01021	.00769	.01050	.00721
24	.00909	.00808	.00960	.00709	.00964	.00644
25	.00857	.00761	.00866	.00683	.00888	.00610

COMSAT Figure 1.1-24

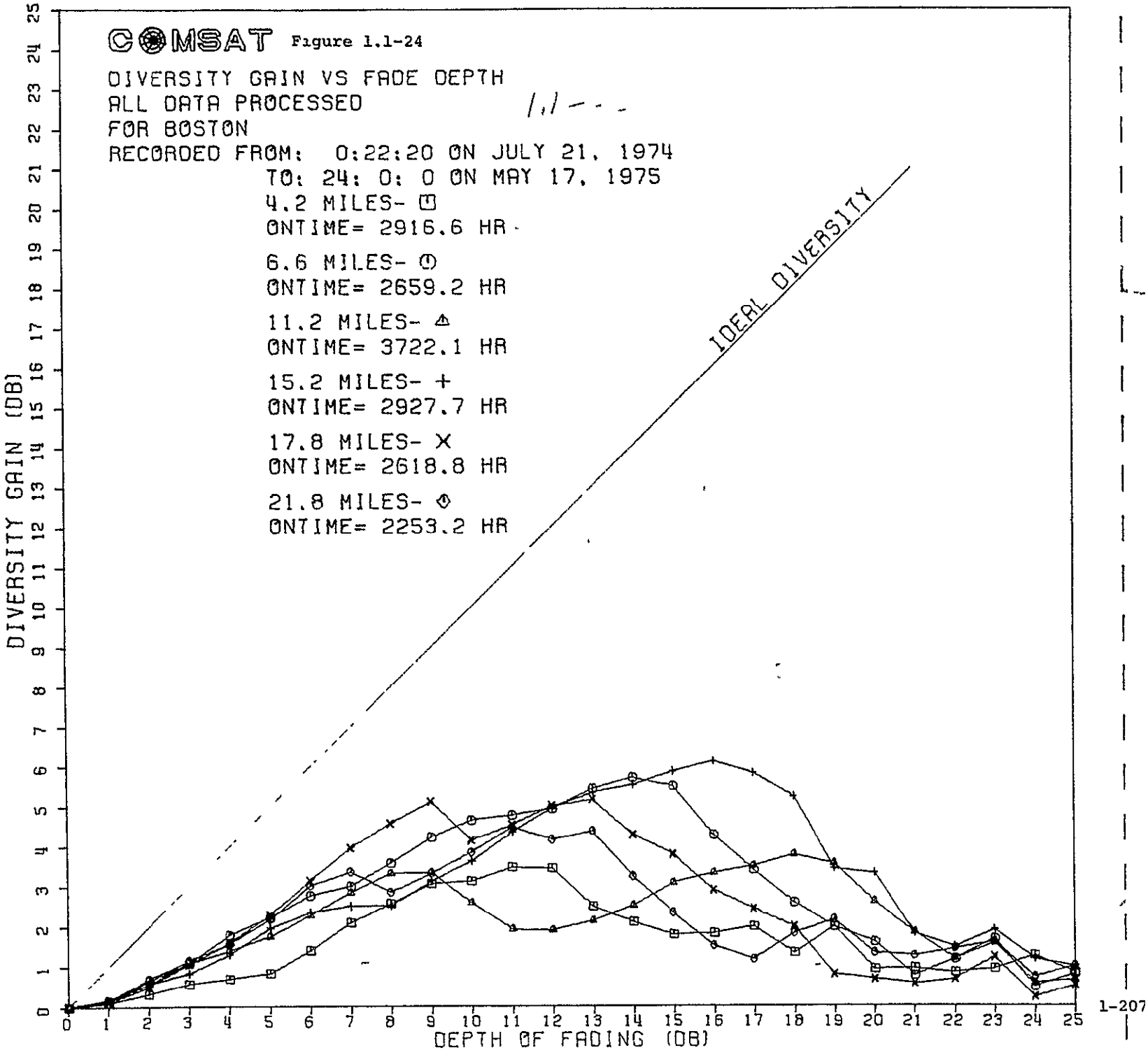


Table 1.1-30

TS-F DIVERSITY ANALYSIS FOR BOSTON
L DATA PROCESSED
ECORDED FROM: 0:22:20 ON JULY 21, 1974
TO: 24: 0: 0 ON MAY 17, 1975
IVERSITY GAIN VS. DEPTH OF FADING

1.1-30

	4.2 MILES	6.6 MILES	11.2 MILES	15.2 MILES	17.8 MILES	21.8 MILES
1	0.1	0.2	0.1	0.2	0.1	0.2
2	0.3	0.6	0.6	0.6	0.5	0.7
3	0.6	1.1	1.1	0.8	1.1	1.1
4	0.7	1.8	1.4	1.3	1.6	1.6
5	0.8	2.2	1.7	2.0	2.3	2.2
6	1.4	2.8	2.3	2.4	3.2	3.0
7	2.1	3.0	2.9	2.5	4.0	3.4
8	2.6	3.6	3.3	2.5	4.6	2.9
9	3.1	4.2	3.3	3.1	5.1	3.3
10	3.1	4.7	2.6	3.6	4.2	3.9
11	3.5	4.8	1.9	4.4	4.6	4.5
12	3.5	5.0	1.9	5.0	5.0	4.2
13	2.5	5.5	2.1	5.3	5.2	4.4
14	2.1	5.7	2.5	5.5	4.3	3.3
15	1.8	5.5	3.1	5.9	3.8	2.3
16	1.8	4.3	3.3	6.1	2.9	1.5
17	2.0	3.4	3.5	5.8	2.4	1.2
18	1.3	2.6	3.8	5.3	2.0	1.8
19	2.0	2.0	3.6	3.5	0.8	2.2
20	0.9	1.6	2.6	3.3	0.7	1.3
21	0.9	0.8	1.9	1.8	0.6	1.3
22	0.8	1.2	1.2	1.5	0.7	1.4
23	0.9	1.7	1.6	1.9	1.2	1.6
24	1.3	0.5	0.6	1.2	0.2	0.7
25	0.8	0.8	0.7	1.0	0.5	1.0

Table 1.1-31

ATSF PROPAGATION EXPERIMENT
TOTAL RAINFALL
FROM: MAY 19, 1974
TO: MAY 31, 1975

1.1-31

-------SITE--------	RAIN (MM)	----------HOURS OF DATA----------				
		TOTAL DATA	COINCIDENT CP#	COINCIDENT HOURS	COINCIDENT CP#	COINCIDENT HOURS
BOSTON #2	508.1	7115.0	15	3319.3	38	2088.7
COLUMBUS #3	651.8	7999.0	14	3096.6	35	2371.1
STARKVILLE #4	843.2	6366.2	13	2847.8	33	2657.3
MIAMI #5	63.0	4413.5	12	1493.9	30	70.4
ITHACA #6	98.5	1943.5	29	827.0		
DETROIT #7	117.1	1948.2	10	487.9	27	441.9
ANDOVER #8	0.0	0.0	9	0.0	26	0.0
PHILADELPHIA #9	12.4	453.7	8	92.2	25	0.0
WASHINGTON #10	391.8	3651.7	7	1851.7	24	786.9
NASHVILLE #11	619.0	4562.9	6	988.5	23	1583.7
ASHEVILLE #12	0.0	48.0	5	37.6	22	33.1
FAYETTESVILLE #13	761.0	5354.1	4	2389.6	21	1372.8
NEW ORLEANS #14	813.3	6026.7	3	1396.5	20	951.9
ATLANTA #15	289.7	641.5	2	0.0	19	0.0
TAMPA #16	352.4	6058.0	1	2598.6	18	1206.2
BOSTON #17	0.0	0.0	40	0.0		
BOSTON #18	750.3	7835.7	39	3488.1		
BOSTON #19	405.0	6219.5	37	2784.1		
WALLOPS ISLAND #20	326.8	5145.9	11	2846.1	36	2380.6
COLUMBUS #21	594.9	6667.3	34	2383.4		
COLUMBUS #22	508.8	7199.6	32	2385.1		
COLUMBUS #23	88.4	4289.5	31	2101.6		
STARKVILLE #24	423.3	2048.6	28	492.1		
STARKVILLE #25	482.2	3270.0	17	941.2		
STARKVILLE #26	636.3	3988.5	16	1210.0		

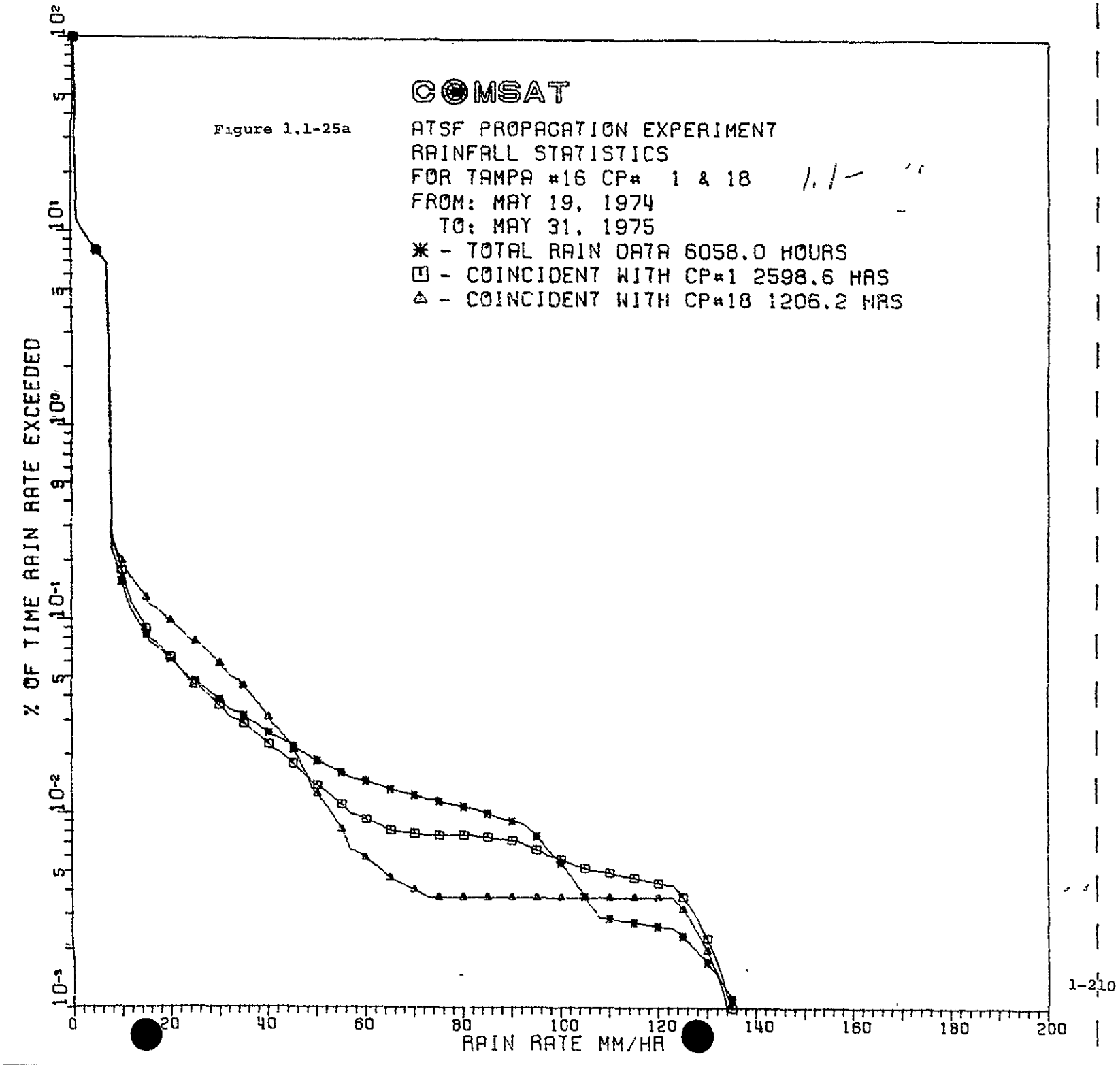


Figure 1.1-25a

Table 1.1-32a

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR TAMPA #16
FROM: MAY 19, 1974
TO: MAY 31, 1975

1.1-32.

RAIN RATE	TOTAL RAIN DATA TIME	COINCIDENT WITH CP# 1	COINCIDENT WITH CP#18
0	100.00	100.00	100.00
2	10.292	10.351	10.289
4	8.5922	8.6425	8.5990
6	7.3781	7.4217	7.3906
8	.23155	.27323	.24886
10	.15621	.17772	.19972
12	.11197	.12243	.16229
14	.09363	.10073	.14040
16	.07603	.07948	.11901
18	.06988	.07238	.10981
20	.06264	.06407	.09887
25	.04780	.04647	.07723
30	.03871	.03625	.05957
35	.03198	.02909	.04576
40	.02612	.02274	.03146
45	.02226	.01818	.02139
R 50	.01877	.01408	.01268
A 55	.01628	.01120	.00833
I 60	.01468	.00941	.00597
N 65	.01345	.00825	.00473
70	.01250	.00797	.00410
R 75	.01171	.00779	.00373
A 80	.01097	.00779	.00373
T 85	.01013	.00762	.00373
E 90	.00924	.00733	.00373
95	.00770	.00658	.00373
M 100	.00565	.00589	.00373
M 105	.00379	.00531	.00373
110	.00290	.00502	.00373
P 115	.00277	.00473	.00373
E 120	.00265	.00444	.00373
R 125	.00235	.00375	.00323
130	.00173	.00231	.00199
H 135	.00111	.00087	.00075
R 140	.00074	.00000	.00000
145	.00074	.00000	.00000
150	.00074	.00000	.00000
155	.00074	.00000	.00000
160	.00074	.00000	.00000
165	.00074	.00000	.00000
170	.00074	.00000	.00000
175	.00074	.00000	.00000
180	.00074	.00000	.00000
185	.00074	.00000	.00000
190	.00074	.00000	.00000
195	.00074	.00000	.00000
200	.00074	.00000	.00000

211

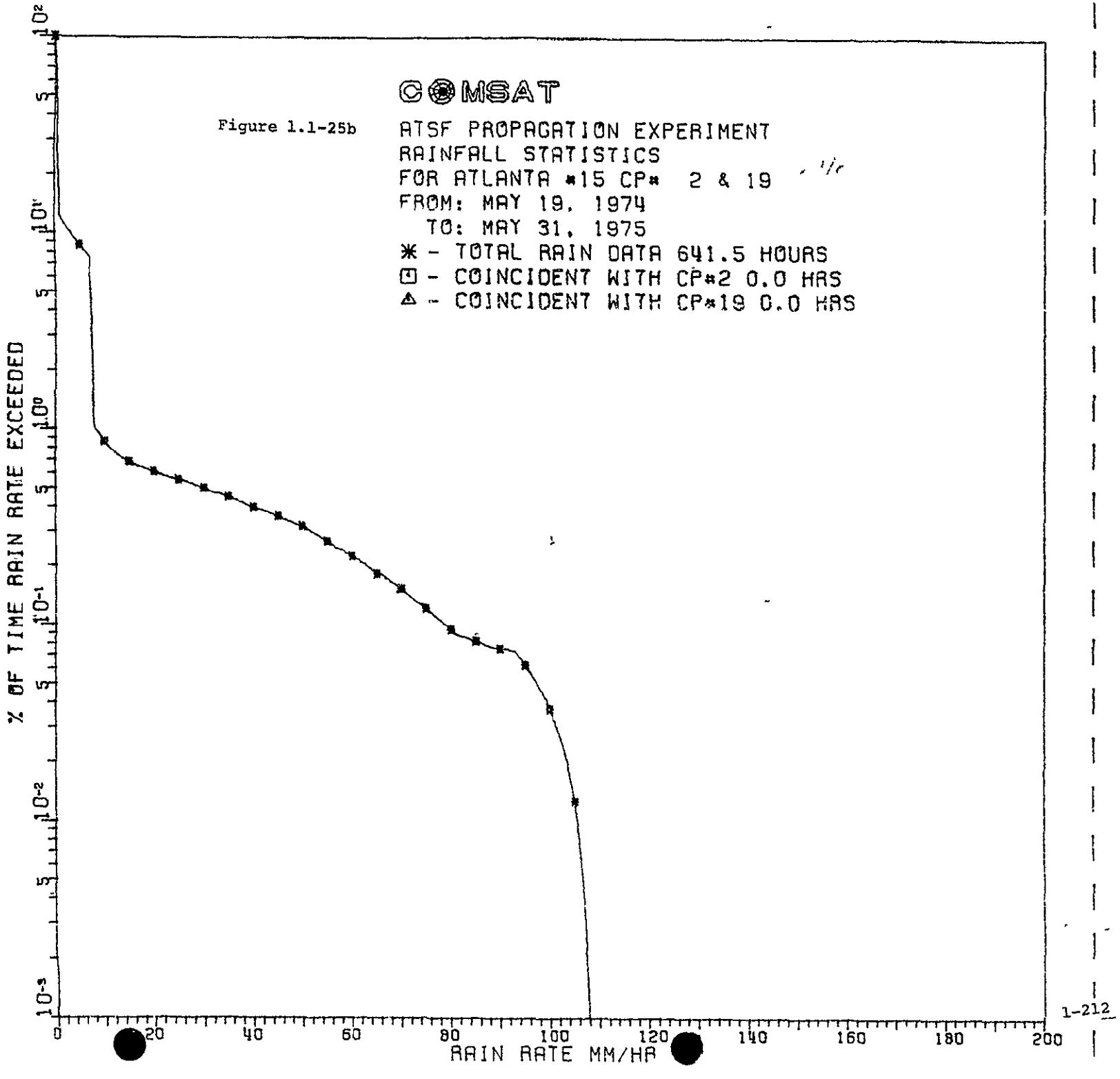


Figure 1.1-25b

Table 1.1-32b

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR ATLANTA #15
FROM: MAY 19, 1974
TO: MAY 31, 1975

32b

	TOTAL RAIN DATA TIME	COINCIDENT WITH CP# 2	COINCIDENT WITH CP#19
0	100.00	.00000	.00000
2	11.115	.00000	.00000
4	9.3840	.00000	.00000
6	8.1453	.00000	.00000
8	1.0303	.00000	.00000
10	.86404	.00000	.00000
12	.76659	.00000	.00000
14	.71178	.00000	.00000
16	.66217	.00000	.00000
18	.63921	.00000	.00000
20	.61209	.00000	.00000
25	.55656	.00000	.00000
30	.50362	.00000	.00000
35	.45547	.00000	.00000
40	.40247	.00000	.00000
45	.36218	.00000	.00000
R 50	.32279	.00000	.00000
A 55	.27052	.00000	.00000
I 60	.22702	.00000	.00000
N 65	.18454	.00000	.00000
70	.15363	.00000	.00000
R 75	.12300	.00000	.00000
A 80	.09546	.00000	.00000
T 85	.08364	.00000	.00000
E 90	.07686	.00000	.00000
95	.06342	.00000	.00000
M 100	.03788	.00000	.00000
M 105	.01281	.00000	.00000
110	.00000	.00000	.00000
P 115	.00000	.00000	.00000
E 120	.00000	.00000	.00000
R 125	.00000	.00000	.00000
130	.00000	.00000	.00000
H 135	.00000	.00000	.00000
R 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

213

Figure 1.1-25c

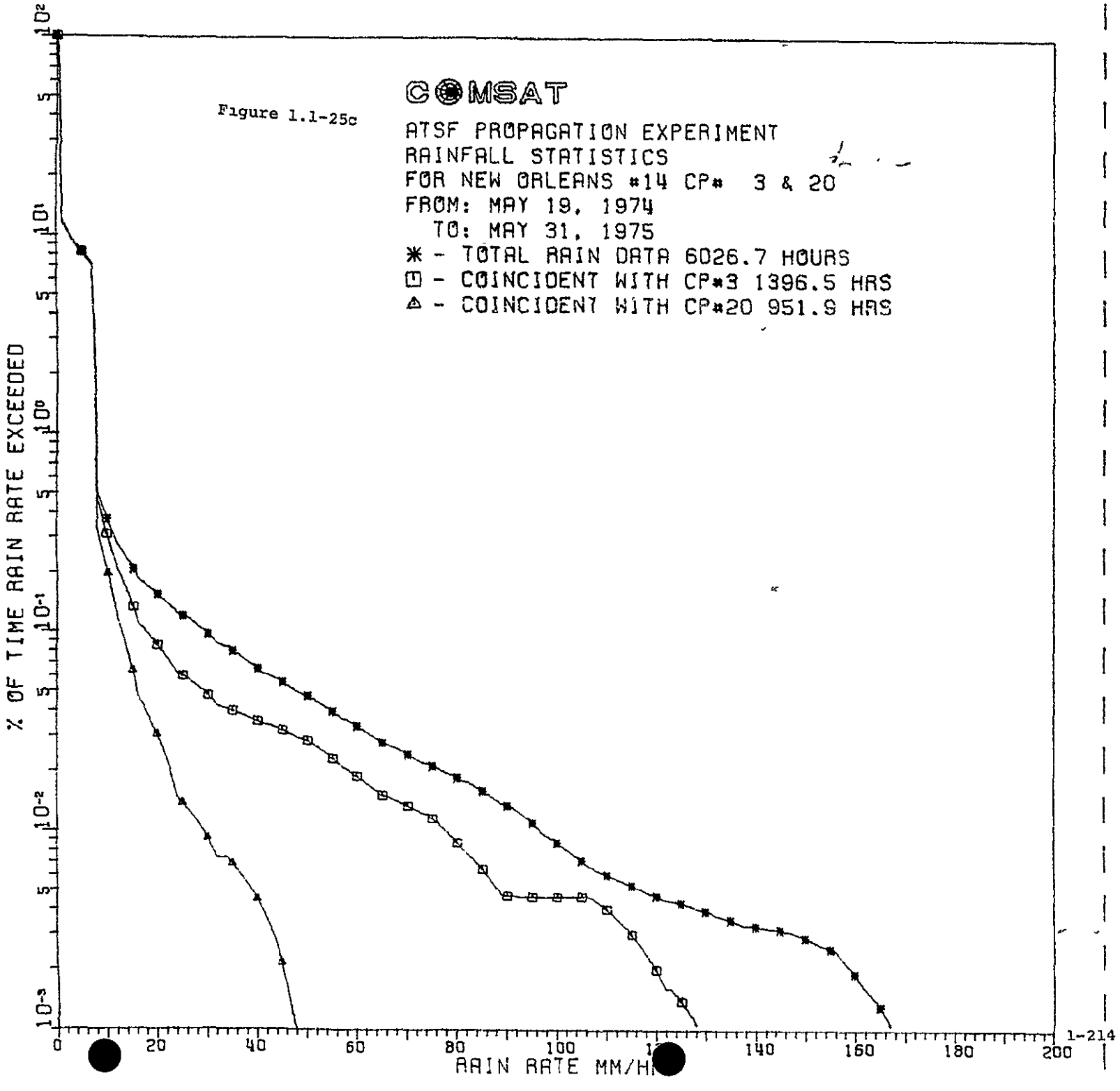


Table 1.1-32c

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR NEW ORLEANS #14
FROM: MAY 19, 1974
TO: MAY 31, 1975

32c

	TOTAL RAIN DATA TIME	COINCIDENT WITH CP# 3	COINCIDENT WITH CP#20
0	100.00	100.00	100.00
2	10.627	10.622	10.465
4	8.8932	8.8761	8.7335
6	7.6539	7.6278	7.4953
8	.50605	.47082	.33782
10	.37060	.31044	.19635
12	.27630	.20331	.11355
14	.22951	.15533	.07930
16	.18381	.10967	.04726
18	.16997	.09826	.03905
20	.15382	.08546	.03054
25	.11944	.05978	.01385
30	.09707	.04780	.00921
35	.08047	.04032	.00688
40	.06516	.03560	.00452
45	.05565	.03219	.00215
R 50	.04756	.02864	.00026
A 55	.03997	.02327	.00026
I 60	.03390	.01908	.00026
N 65	.02805	.01532	.00026
70	.02459	.01363	.00026
R 75	.02153	.01178	.00026
A 80	.01879	.00886	.00026
T 85	.01625	.00652	.00026
E 90	.01366	.00474	.00026
95	.01113	.00468	.00026
M 100	.00889	.00465	.00026
M 105	.00714	.00465	.00026
110	.00607	.00405	.00021
P 115	.00535	.00303	.00012
E 120	.00473	.00202	.00004
R 125	.00433	.00140	.00000
130	.00396	.00086	.00000
H 135	.00358	.00032	.00000
R 140	.00334	.00000	.00000
145	.00321	.00000	.00000
150	.00294	.00000	.00000
155	.00259	.00000	.00000
160	.00194	.00000	.00000
165	.00132	.00000	.00000
170	.00070	.00000	.00000
175	.00040	.00000	.00000
180	.00017	.00000	.00000
185	.00005	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

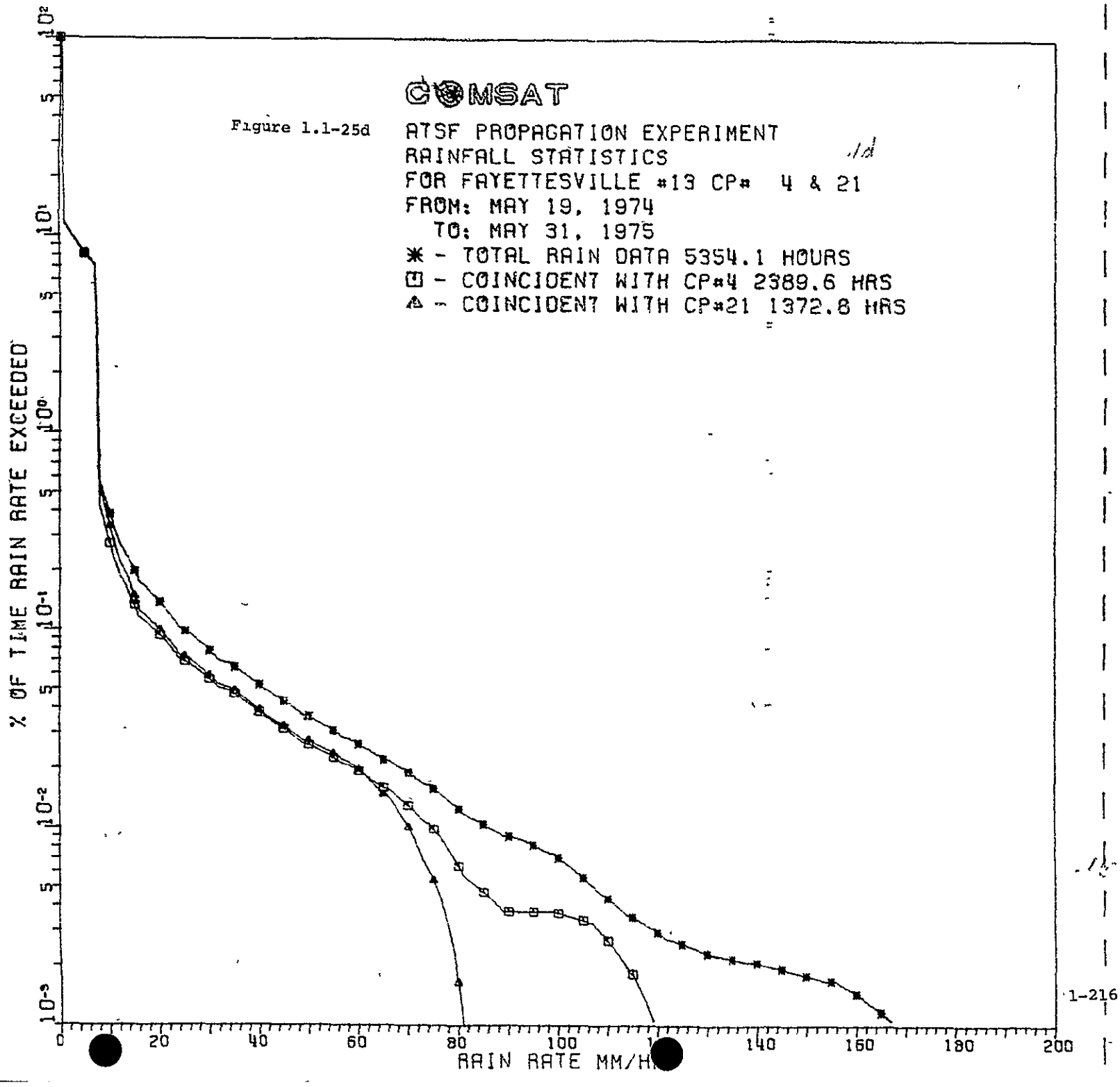


Figure 1.1-25d

Table 1.1-32d
ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR FAYETTESVILLE #13
FROM: MAY 19, 1974
TO: MAY 31, 1975

32d

RAIN	DATA TIME	TOTAL RAIN	COINCIDENT WITH CP# 4	COINCIDENT WITH CP#21
	0	100.00	100.00	100.00
	2	10.713	10.549	10.708
	4	8.9647	8.8153	8.9495
	6	7.7150	7.5763	7.6933
	8	.56259	.42327	.53413
	10	.38620	.27464	.33654
	12	.27418	.18762	.22142
	14	.22272	.15061	.17160
	16	.17340	.11561	.12430
	18	.15705	.10533	.11306
	20	.13810	.09350	.09985
	25	.09846	.06920	.07277
	30	.07839	.05654	.05901
	35	.06495	.04764	.04917
	40	.05264	.03854	.03934
	45	.04395	.03201	.03278
R	50	.03662	.02668	.02775
A	55	.03123	.02291	.02393
I	60	.02679	.01959	.01989
N	65	.02243	.01613	.01497
	70	.01918	.01312	.01016
R	75	.01595	.00992	.00546
A	80	.01260	.00647	.00164
T	85	.01058	.00477	.00044
E	90	.00911	.00377	.00000
	95	.00827	.00377	.00000
M	100	.00711	.00370	.00000
M	105	.00563	.00339	.00000
	110	.00440	.00270	.00000
P	115	.00353	.00182	.00000
E	120	.00297	.00088	.00000
R	125	.00261	.00031	.00000
	130	.00233	.00000	.00000
H	135	.00219	.00000	.00000
R	140	.00207	.00000	.00000
	145	.00193	.00000	.00000
	150	.00179	.00000	.00000
	155	.00168	.00000	.00000
	160	.00146	.00000	.00000
	165	.00118	.00000	.00000
	170	.00090	.00000	.00000
	175	.00084	.00000	.00000
	180	.00084	.00000	.00000
	185	.00056	.00000	.00000
	190	.00028	.00000	.00000
	195	.00000	.00000	.00000
	200	.00000	.00000	.00000

217

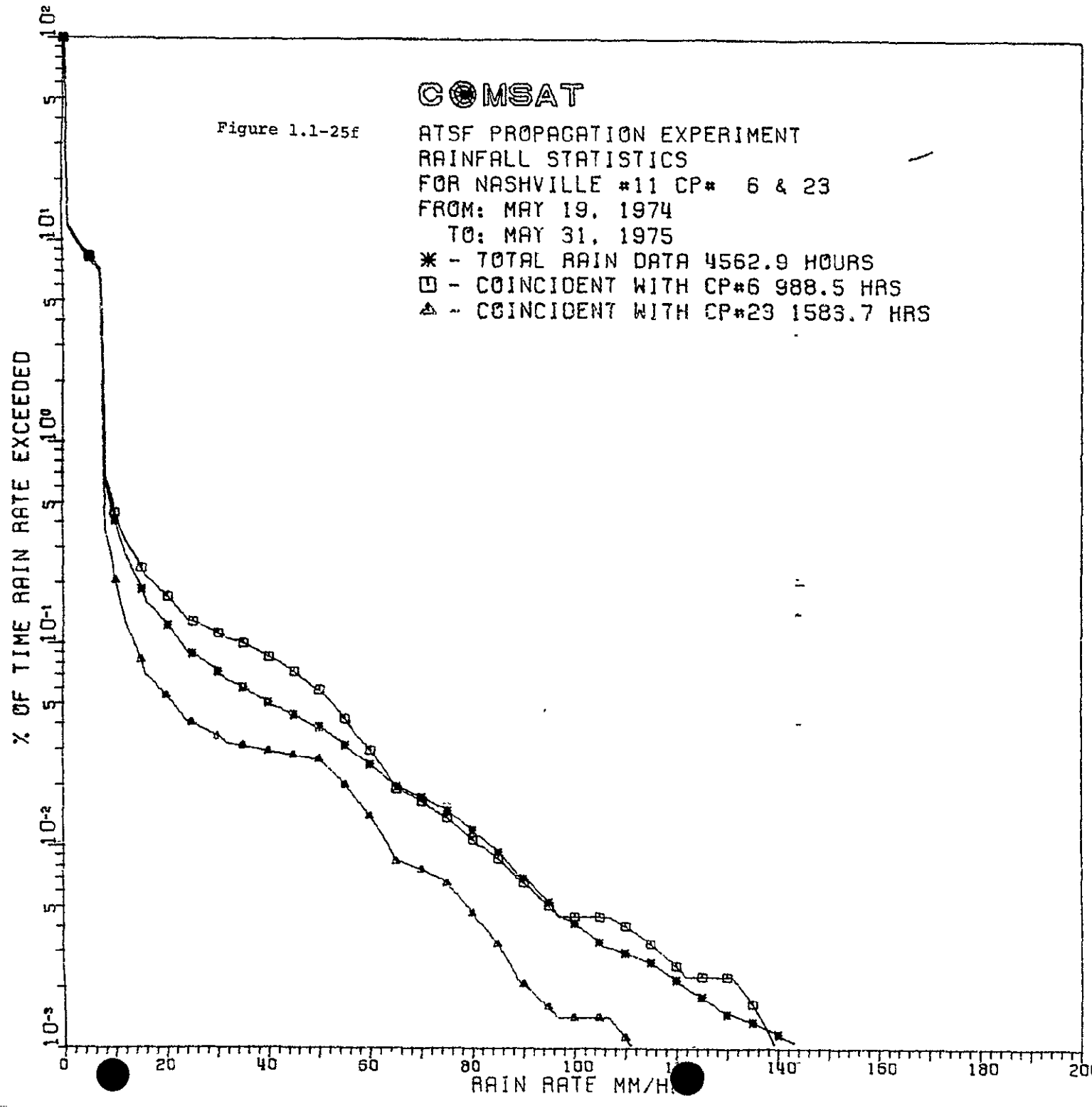


Figure 1.1-25f

Table 1.1-32f

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR NASHVILLE #11
FROM: MAY 19, 1974
TO: MAY 31, 1975

324

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP# 6	COINCIDENT WITH CP#23
	0	100.00	100.00	100.00
	2	10.836	10.850	10.494
	4	9.0651	9.0878	8.7604
	6	7.7988	7.8274	7.5215
	8	.63843	.67381	.36490
	10	.40671	.44937	.20500
	12	.27400	.32309	.12483
	14	.21447	.26610	.09701
	16	.15850	.21228	.06956
	18	.14267	.19271	.06302
	20	.12475	.17147	.05552
	25	.08958	.12974	.04073
	30	.07308	.11350	.03485
	35	.06144	.10121	.03145
	40	.05125	.08680	.02955
	45	.04458	.07314	.02822
R	50	.03896	.05963	.02690
A	55	.03172	.04294	.02027
I	60	.02558	.03004	.01421
N	65	.01982	.01942	.00852
	70	.01765	.01684	.00777
R	75	.01525	.01396	.00663
A	80	.01213	.01093	.00474
T	85	.00950	.00880	.00331
E	90	.00703	.00668	.00208
	95	.00536	.00516	.00161
M	100	.00421	.00455	.00142
M	105	.00339	.00455	.00142
	110	.00299	.00410	.00114
P	115	.00270	.00334	.00066
E	120	.00220	.00258	.00019
R	125	.00181	.00228	.00000
	130	.00148	.00228	.00000
H	135	.00135	.00167	.00000
R	140	.00118	.00091	.00000
	145	.00102	.00015	.00000
	150	.00079	.00000	.00000
	155	.00046	.00000	.00000
	160	.00013	.00000	.00000
	165	.00000	.00000	.00000
	170	.00000	.00000	.00000
	175	.00000	.00000	.00000
	180	.00000	.00000	.00000
	185	.00000	.00000	.00000
	190	.00000	.00000	.00000
	195	.00000	.00000	.00000
	200	.00000	.00000	.00000

Figure 1.1-25g

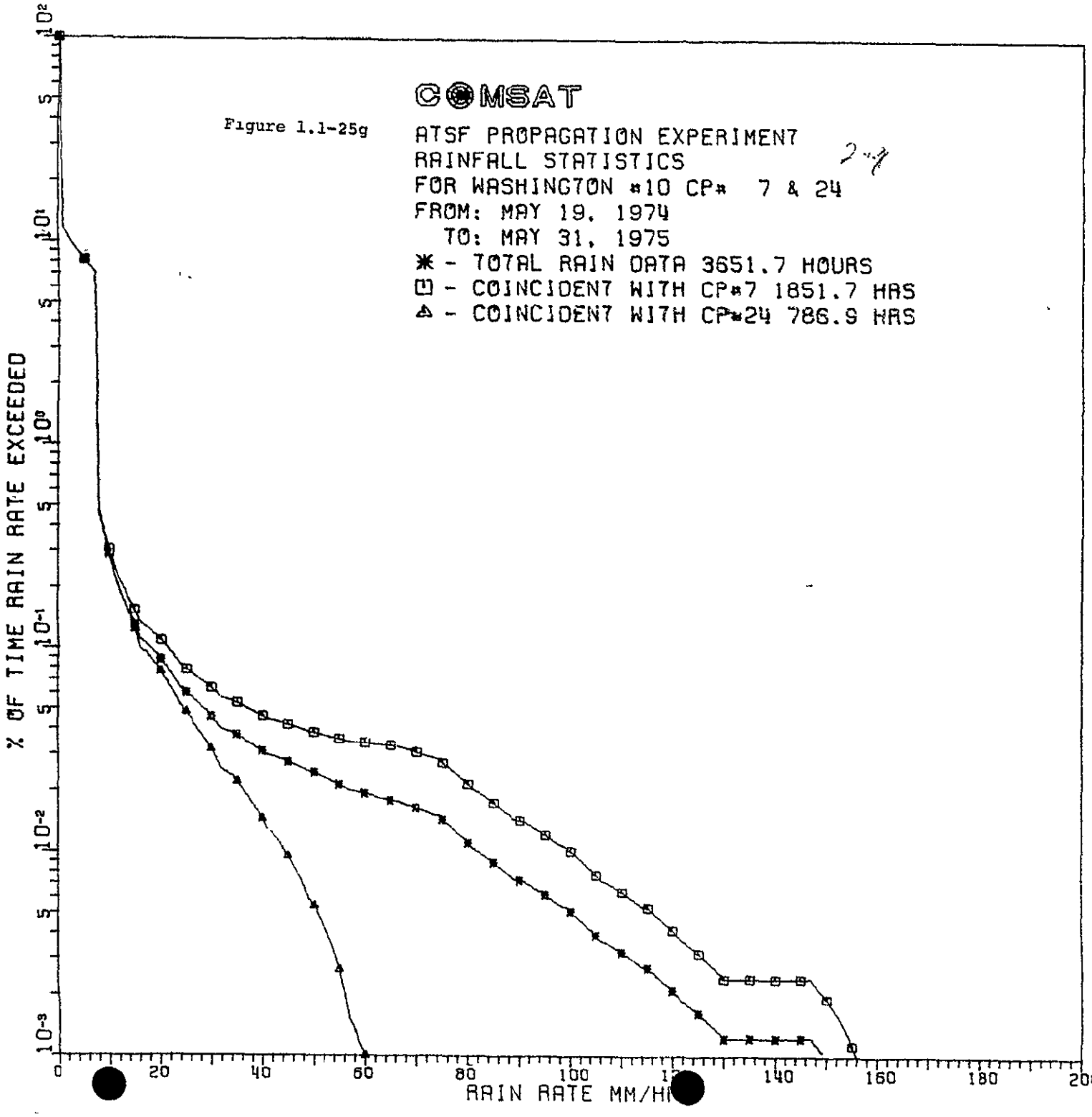


Table 1.1-32g

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR WASHINGTON #10
FROM: MAY 19, 1974
TO: MAY 31, 1975

32g

	TOTAL RAIN DATA TIME	COINCIDENT WITH CP# 7	COINCIDENT WITH CP#24
0	100.00	100.00	100.00
2	10.615	10.617	10.607
4	8.8687	8.8757	8.8605
6	7.6216	7.6316	7.6127
8	.46528	.47843	.45537
10	.29087	.30974	.29183
12	.19323	.21876	.19607
14	.15166	.17605	.14816
16	.11091	.13470	.10025
18	.10052	.12302	.08991
20	.08819	.10939	.07729
25	.06108	.07947	.04899
30	.04646	.06416	.03222
35	.03775	.05427	.02230
40	.03159	.04698	.01468
45	.02793	.04277	.00972
R 50	.02477	.03904	.00553
A 55	.02169	.03621	.00267
I 60	.01963	.03467	.00095
N 65	.01820	.03386	.00000
70	.01668	.03129	.00000
R 75	.01458	.02773	.00000
A 80	.01130	.02193	.00000
T 85	.00908	.01779	.00000
E 90	.00735	.01450	.00000
95	.00628	.01239	.00000
M 100	.00522	.01029	.00000
M 105	.00398	.00786	.00000
110	.00329	.00648	.00000
P 115	.00275	.00543	.00000
E 120	.00214	.00421	.00000
R 125	.00164	.00324	.00000
130	.00123	.00243	.00000
H 135	.00123	.00243	.00000
R 140	.00123	.00243	.00000
145	.00123	.00243	.00000
150	.00099	.00194	.00000
155	.00058	.00113	.00000
160	.00016	.00032	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

COMSAT

Figure 1.1-25h

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS
FOR PHILADELPHIA #9 CP# 8 & 25
FROM: MAY 19, 1974
TO: MAY 31, 1975
✱ - TOTAL RAIN DATA 453.7 HOURS
□ - COINCIDENT WITH CP#8 92.2 HRS
△ - COINCIDENT WITH CP#25 0.0 HRS

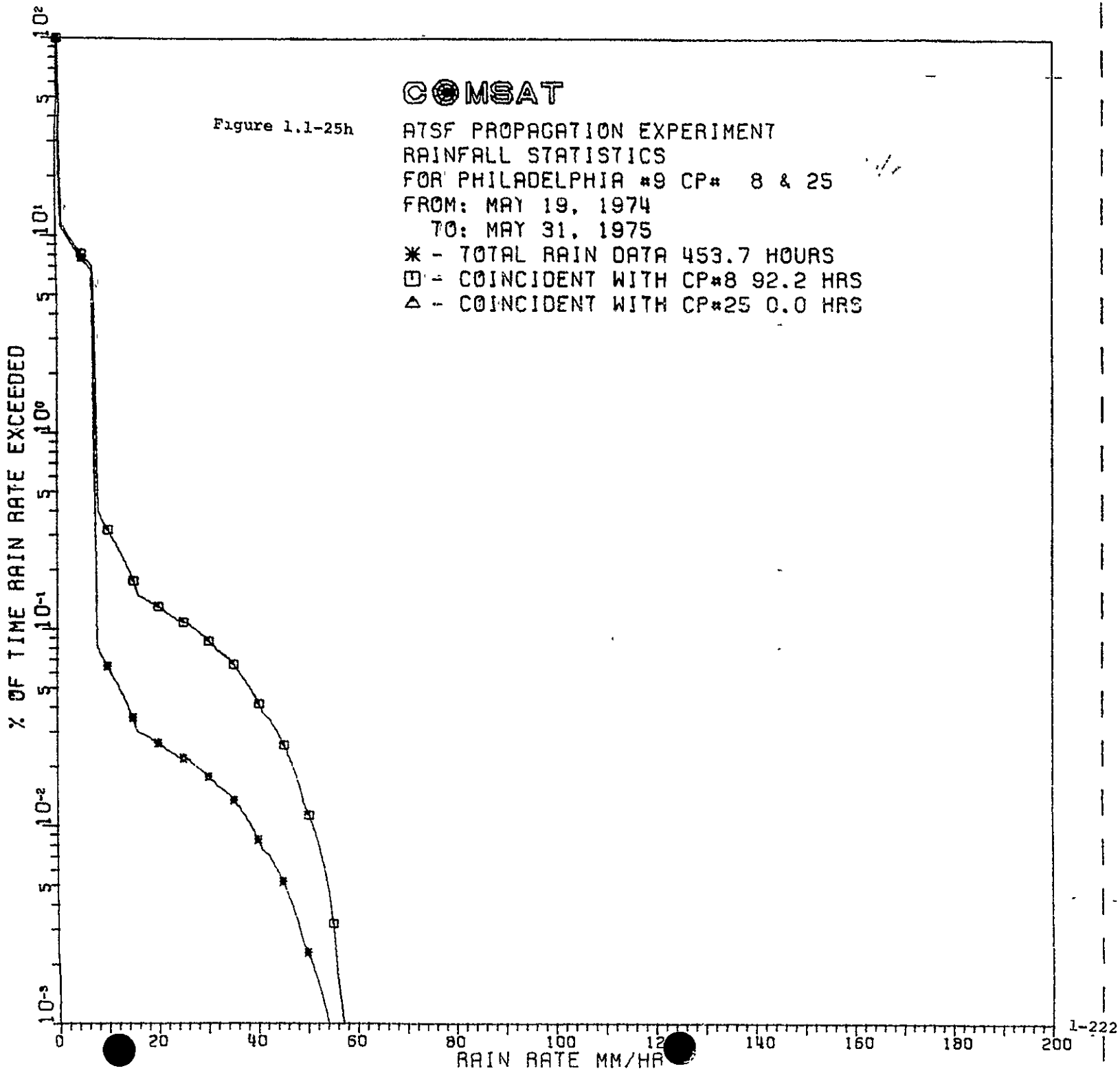


Table 1.1-32h

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR PHILADELPHIA #9
FROM: MAY 19, 1974
TO: MAY 31, 1975

32h

	TOTAL RAIN DATA TIME	COINCIDENT WITH CP# 8	COINCIDENT WITH CP#25
0	100.00	100.00	.00000
2	10.102	10.500	.00000
4	8.4238	8.7786	.00000
6	7.2254	7.5489	.00000
8	.08165	.40175	.00000
10	.06512	.32042	.00000
12	.05256	.25861	.00000
14	.04132	.20331	.00000
16	.03008	.14801	.00000
18	.02843	.13988	.00000
20	.02645	.13012	.00000
25	.02215	.10898	.00000
30	.01785	.08783	.00000
35	.01355	.06669	.00000
40	.00860	.04229	.00000
45	.00529	.02602	.00000
R 50	.00231	.01139	.00000
A 55	.00066	.00325	.00000
I 60	.00000	.00000	.00000
N 65	.00000	.00000	.00000
70	.00000	.00000	.00000
R 75	.00000	.00000	.00000
A 80	.00000	.00000	.00000
T 85	.00000	.00000	.00000
E 90	.00000	.00000	.00000
95	.00000	.00000	.00000
M 100	.00000	.00000	.00000
M 105	.00000	.00000	.00000
110	.00000	.00000	.00000
P 115	.00000	.00000	.00000
E 120	.00000	.00000	.00000
R 125	.00000	.00000	.00000
130	.00000	.00000	.00000
H 135	.00000	.00000	.00000
R 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

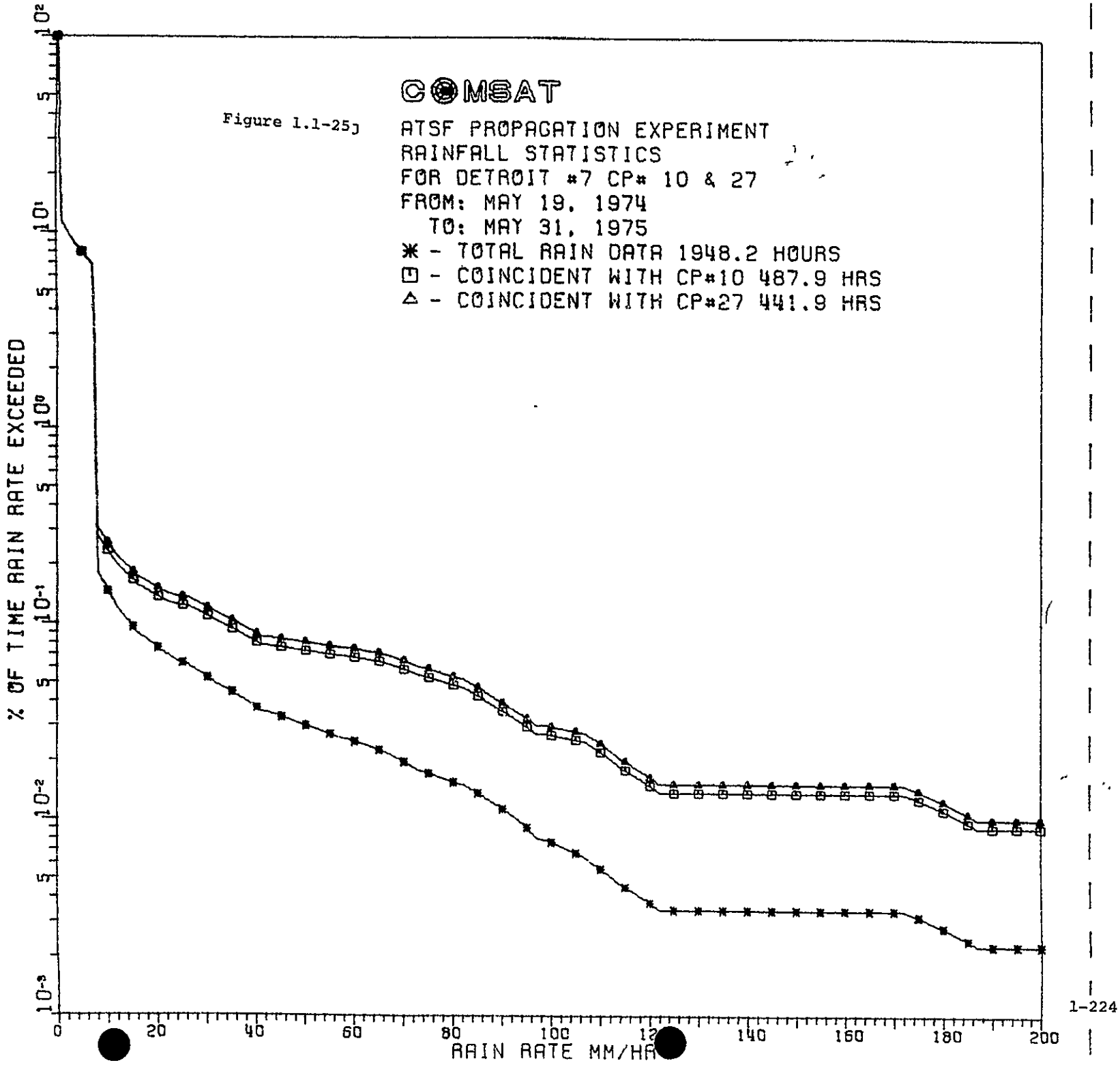

COMSAT
ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS
FOR DETROIT #7 CP# 10 & 27
FROM: MAY 19, 1974
TO: MAY 31, 1975
* - TOTAL RAIN DATA 1948.2 HOURS
□ - COINCIDENT WITH CP#10 487.9 HRS
△ - COINCIDENT WITH CP#27 441.9 HRS
% OF TIME RAIN RATE EXCEEDED
RAIN RATE MM/HR
0
20
40
60
80
100
140
160
180
200

Figure 1.1-25

Table 1.1-32j
ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR DETROIT #7
FROM: MAY 19, 1974
TO: MAY 31, 1975

32j)

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#10	COINCIDENT WITH CP#27
0	100.00	100.00	100.00
2	10.206	10.314	10.347
4	8.5238	8.6273	8.6580
6	7.3213	7.4225	7.4517
8	.17946	.28194	.31130
10	.14653	.23582	.26038
12	.11931	.19801	.21862
14	.10370	.17710	.19554
16	.08906	.15619	.17245
18	.08268	.14697	.16227
20	.07583	.13713	.15141
25	.06351	.12422	.13715
30	.05354	.11007	.12153
35	.04506	.09501	.10490
40	.03732	.08117	.08962
45	.03350	.07656	.08453
R 50	.03027	.07348	.08114
A 55	.02736	.07041	.07774
I 60	.02515	.06795	.07502
N 65	.02278	.06487	.07163
70	.01989	.05934	.06552
R 75	.01740	.05411	.05975
A 80	.01571	.04950	.05466
T 85	.01382	.04366	.04821
E 90	.01144	.03628	.04006
95	.00915	.03013	.03327
N 100	.00771	.02736	.03021
M 105	.00679	.02583	.02852
110	.00562	.02244	.02478
P 115	.00454	.01814	.02003
E 120	.00377	.01507	.01663
R 125	.00346	.01384	.01528
130	.00346	.01384	.01528
H 135	.00346	.01384	.01528
R 140	.00346	.01384	.01528
145	.00346	.01384	.01528
150	.00346	.01384	.01528
155	.00346	.01384	.01528
160	.00346	.01384	.01528
165	.00346	.01384	.01528
170	.00346	.01384	.01528
175	.00323	.01291	.01426
180	.00285	.01138	.01256
185	.00246	.00984	.01086
190	.00231	.00922	.01018
195	.00231	.00922	.01018
200	.00231	.00922	.01018

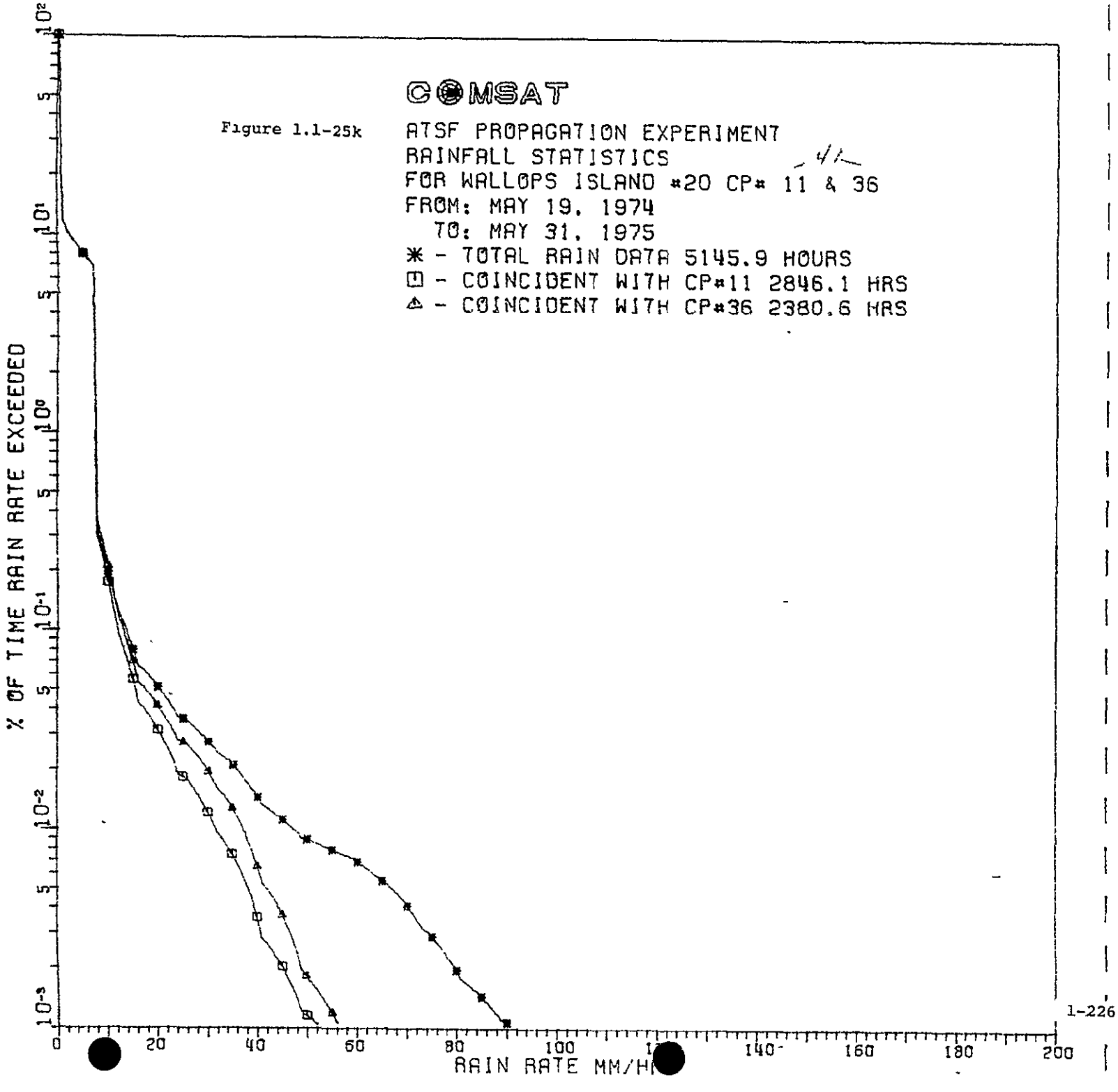


Figure 1.1-25k

Table 1.1-32k

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR WALLOPS ISLAND #20
FROM: MAY 19, 1974
TO: MAY 31, 1975

32K

RAIN		TOTAL RAIN DATA TIME	COINCIDENT WITH CP#11	COINCIDENT WITH CP#36
	0	100.00	100.00	100.00
	2	10.439	10.423	10.507
	4	8.7143	8.6956	8.7682
	6	7.4817	7.4620	7.5260
	8	.32767	.30596	.36729
	10	.19860	.17538	.21087
	12	.12313	.09727	.11746
	14	.09426	.06981	.08531
	16	.06675	.04367	.05475
	18	.05980	.03814	.04875
	20	.05200	.03187	.04193
	25	.03601	.01860	.02747
	30	.02776	.01239	.01960
	35	.02115	.00759	.01292
	40	.01474	.00364	.00662
	45	.01136	.00206	.00372
R	50	.00903	.00116	.00183
A	55	.00801	.00090	.00120
I	60	.00696	.00079	.00095
N	65	.00559	.00079	.00095
	70	.00415	.00079	.00095
R	75	.00289	.00074	.00088
A	80	.00196	.00047	.00057
T	85	.00146	.00021	.00025
E	90	.00108	.00000	.00000
	95	.00070	.00000	.00000
M	100	.00035	.00000	.00000
M	105	.00006	.00000	.00000
	110	.00000	.00000	.00000
P	115	.00000	.00000	.00000
E	120	.00000	.00000	.00000
R	125	.00000	.00000	.00000
	130	.00000	.00000	.00000
H	135	.00000	.00000	.00000
R	140	.00000	.00000	.00000
	145	.00000	.00000	.00000
	150	.00000	.00000	.00000
	155	.00000	.00000	.00000
	160	.00000	.00000	.00000
	165	.00000	.00000	.00000
	170	.00000	.00000	.00000
	175	.00000	.00000	.00000
	180	.00000	.00000	.00000
	185	.00000	.00000	.00000
	190	.00000	.00000	.00000
	195	.00000	.00000	.00000
	200	.00000	.00000	.00000

227

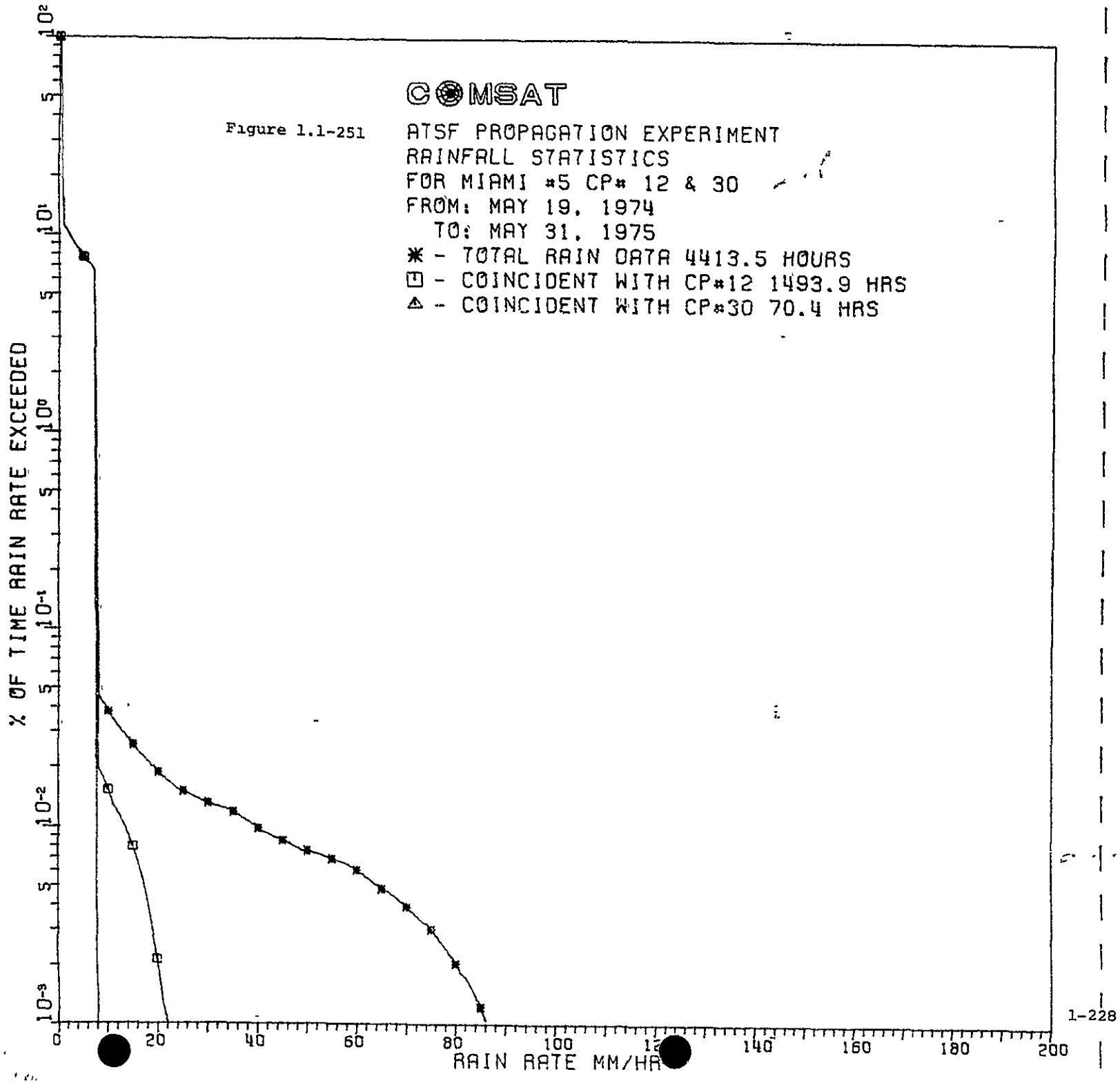


Figure 1.1-251

Table 1.1-321

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR MIAMI #5
FROM: MAY 19, 1974
TO: MAY 31, 1975

32L

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#12	COINCIDENT WITH CP#30
0	100.00	100.00	100.00
2	10.051	10.022	0.0000
4	8.3815	8.3549	8.3333
6	7.1884	7.1631	7.1429
8	.04598	.01978	.00000
10	.03812	.01533	.00000
12	.03172	.01165	.00000
14	.02751	.00917	.00000
16	.02387	.00689	.00000
18	.02125	.00422	.00000
20	.01887	.00214	.00000
25	.01511	.00000	.00000
30	.01322	.00000	.00000
35	.01200	.00000	.00000
40	.00996	.00000	.00000
45	.00860	.00000	.00000
R 50	.00765	.00000	.00000
A 55	.00697	.00000	.00000
I 60	.00608	.00000	.00000
N 65	.00489	.00000	.00000
70	.00398	.00000	.00000
R 75	.00306	.00000	.00000
A 80	.00204	.00000	.00000
T 85	.00122	.00000	.00000
E 90	.00048	.00000	.00000
95	.00014	.00000	.00000
M 100	.00000	.00000	.00000
M 105	.00000	.00000	.00000
110	.00000	.00000	.00000
P 115	.00000	.00000	.00000
E 120	.00000	.00000	.00000
R 125	.00000	.00000	.00000
130	.00000	.00000	.00000
H 135	.00000	.00000	.00000
R 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

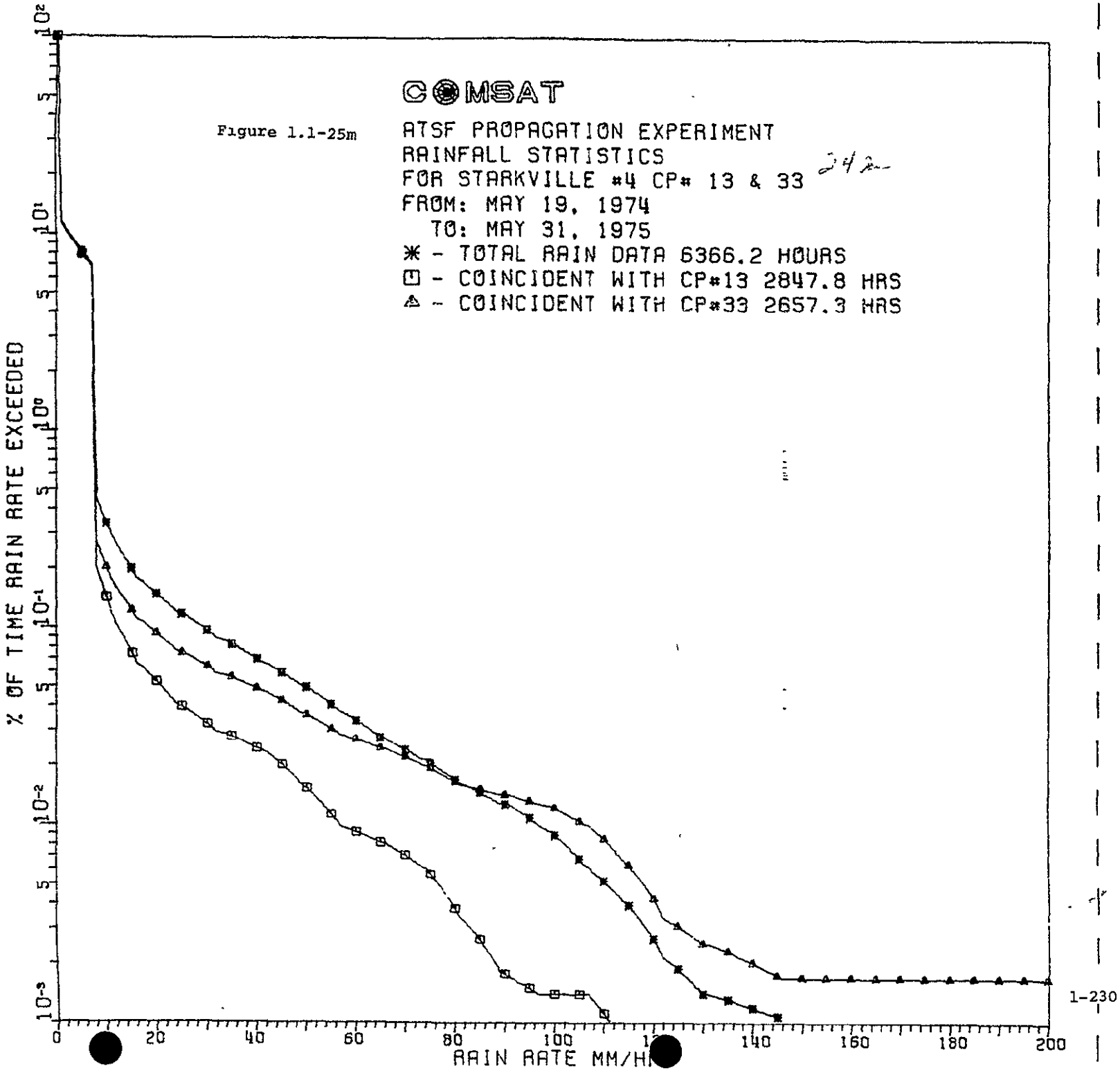


Figure 1.1-25m

Table 1.1-32m

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR STARKVILLE #4
FROM: MAY 19, 1974
TO: MAY 31, 1975

32 m

	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#13	COINCIDENT WITH CP#33
0	100.00	100.00	100.00
2	10.558	10.261	10.333
4	8.8351	8.5638	8.6323
6	7.6025	7.3517	7.4173
8	.45626	.20538	.27316
10	.34123	.14279	.20305
12	.26435	.10313	.15804
14	.22046	.08378	.13327
16	.17784	.06490	.11025
18	.16418	.05977	.10297
20	.14892	.05347	.09415
25	.11771	.03971	.07519
30	.09739	.03259	.06373
35	.08330	.02825	.05614
40	.06982	.02456	.04924
45	.05962	.02024	.04285
R 50	.05025	.01540	.03637
A 55	.04117	.01145	.03095
I 60	.03415	.00929	.02737
N 65	.02792	.00823	.02474
70	.02433	.00710	.02225
R 75	.02075	.00571	.01955
A 80	.01712	.00383	.01670
T 85	.01477	.00267	.01528
E 90	.01282	.00177	.01432
95	.01096	.00151	.01336
M 100	.00898	.00140	.01223
M 105	.00686	.00140	.01054
110	.00528	.00112	.00860
P 115	.00398	.00066	.00639
E 120	.00269	.00019	.00428
R 125	.00188	.00000	.00310
130	.00141	.00000	.00254
H 135	.00132	.00000	.00231
R 140	.00120	.00000	.00203
145	.00108	.00000	.00175
150	.00099	.00000	.00169
155	.00087	.00000	.00169
160	.00075	.00000	.00169
165	.00071	.00000	.00169
170	.00071	.00000	.00169
175	.00071	.00000	.00169
180	.00071	.00000	.00169
185	.00071	.00000	.00169
190	.00071	.00000	.00169
195	.00071	.00000	.00169
200	.00071	.00000	.00169

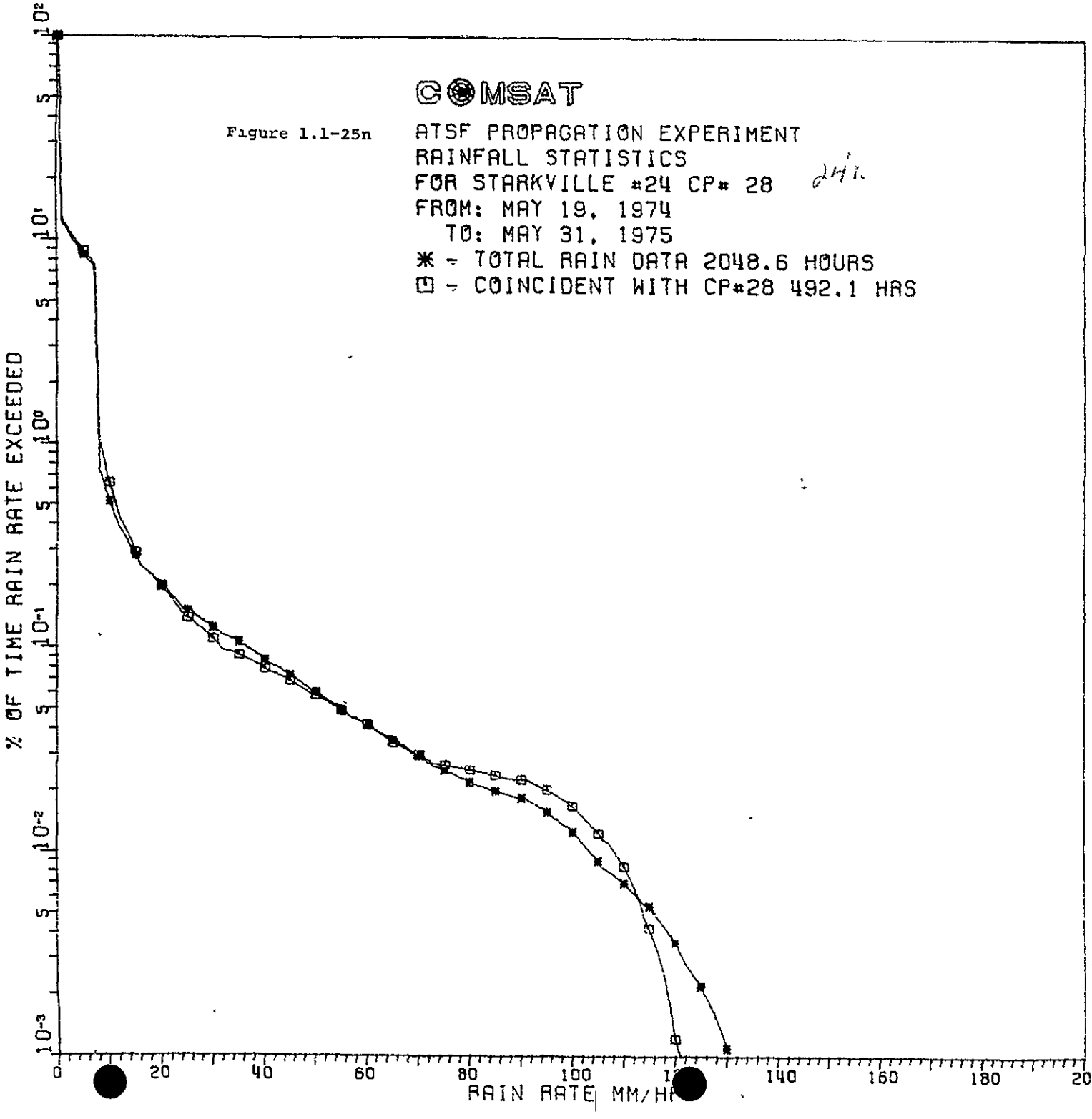


Figure 1.1-25n

Table 1.1-32n

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR STARKVILLE #24
FROM: MAY 19, 1974
TO: MAY 31, 1975

32n

	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#28
0	100.00	100.00
2	10.927	11.320
4	9.1591	9.4856
6	7.8963	8.1754
8	.74513	1.0055
10	.51680	.64117
12	.37540	.42159
14	.31296	.33564
16	.25118	.24969
18	.22842	.22676
20	.20280	.19926
25	.15025	.13969
30	.12594	.11074
35	.10705	.09289
40	.08801	.07985
45	.07395	.06925
R 50	.06077	.05882
A 55	.05016	.04968
I 60	.04247	.04237
N 65	.03551	.03475
70	.03009	.03017
R 75	.02548	.02713
A 80	.02219	.02560
T 85	.02021	.02408
E 90	.01860	.02286
95	.01582	.02042
M 100	.01274	.01707
M 105	.00908	.01250
110	.00703	.00853
P 115	.00542	.00427
E 120	.00359	.00122
R 125	.00220	.00000
130	.00110	.00000
H 135	.00110	.00000
R 140	.00110	.00000
145	.00110	.00000
150	.00110	.00000
155	.00110	.00000
160	.00110	.00000
165	.00110	.00000
170	.00110	.00000
175	.00088	.00000
180	.00051	.00000
185	.00015	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

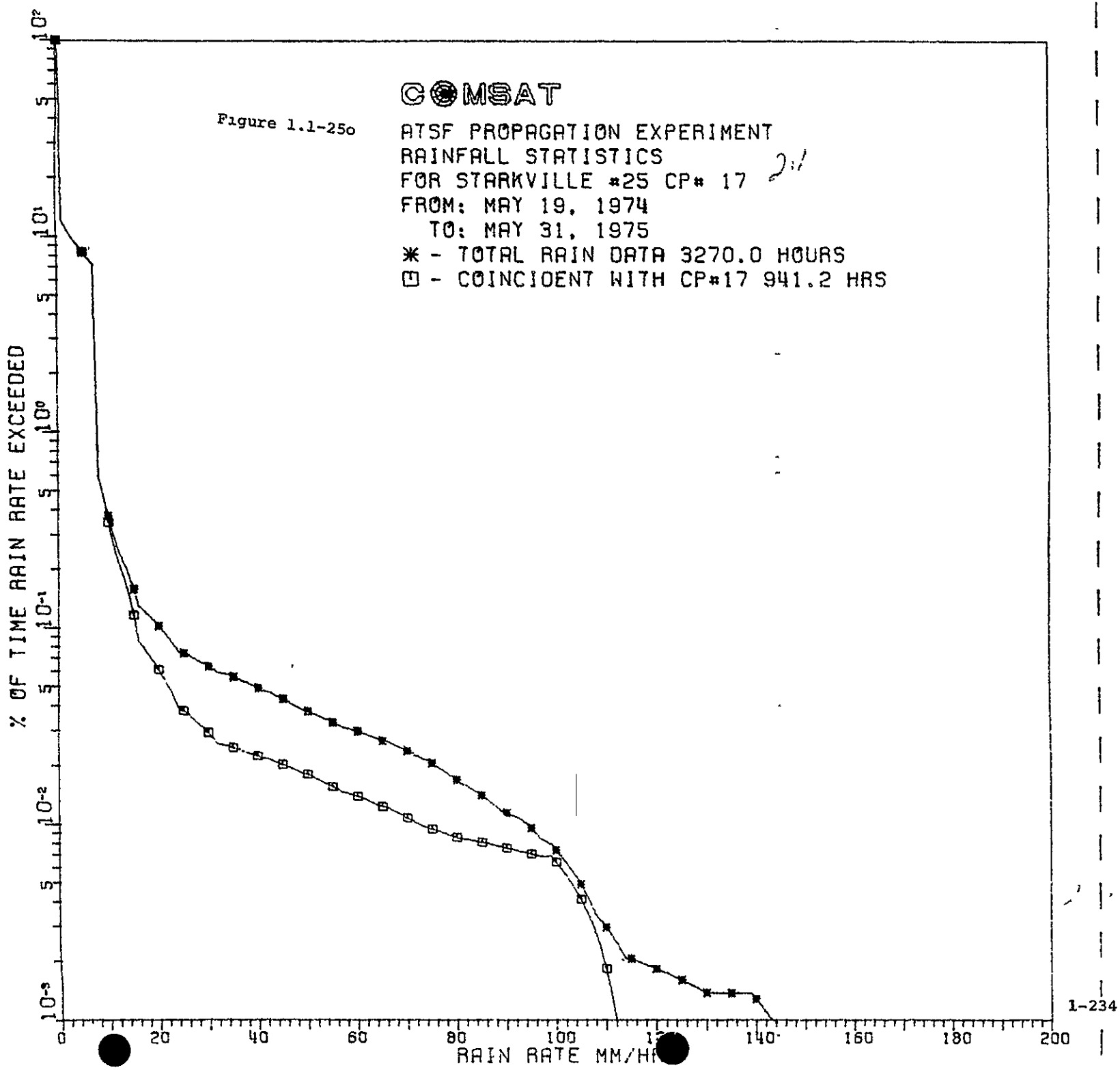


Figure 1.1-25o

Table 1.1-32o

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR STARKVILLE #25
FROM: MAY 19, 1974
TO: MAY 31, 1975

320

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#17
0	100.00	100.00
2	10.778	10.828
4	9.0102	9.0444
6	7.7467	7.7687
8	.58564	.59890
10	.37417	.34916
12	.24862	.21577
14	.18803	.14908
16	.13000	.08574
18	.11665	.07347
20	.10289	.06146
25	.07436	.03793
30	.06390	.02948
35	.05670	.02486
40	.04959	.02247
45	.04362	.02040
R 50	.03789	.01817
A 55	.03330	.01578
I 60	.02995	.01402
N 65	.02697	.01243
70	.02394	.01093
R 75	.02073	.00956
A 80	.01706	.00868
T 85	.01422	.00818
E 90	.01156	.00765
95	.00963	.00712
M 100	.00748	.00645
M 105	.00495	.00414
110	.00298	.00184
P 115	.00206	.00000
E 120	.00183	.00000
R 125	.00161	.00000
130	.00138	.00000
H 135	.00138	.00000
R 140	.00128	.00000
145	.00083	.00000
150	.00037	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

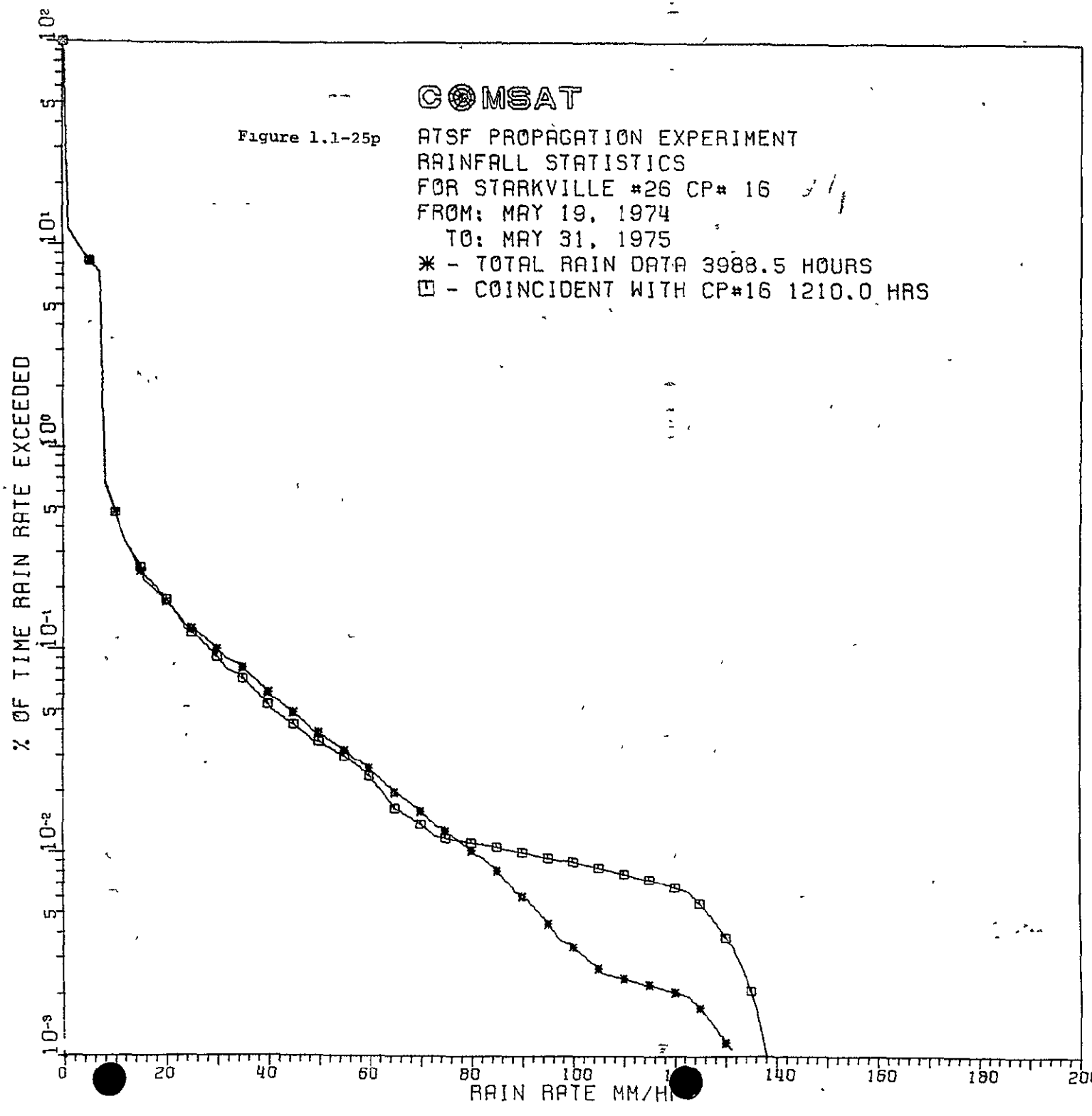


Figure 1.1-25p

Table 1.1-32p

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR STARKVILLE #26
FROM: MAY 19, 1974
TO: MAY 31, 1975

32P

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#16
0	100.00	100.00
2	10.849	10.808
4	9.0867	9.0568
6	7.8263	7.8045
8	.67310	.65501
10	.47619	.47634
12	.34094	.34512
14	.27698	.28498
16	.21490	.22732
18	.19535	.20363
20	.17309	.17631
25	.12705	.12149
30	.10136	.09289
35	.08199	.07297
40	.06234	.05438
45	.04961	.04335
R 50	.03936	.03578
A 55	.03225	.03021
I 60	.02626	.02406
N 65	.02009	.01676
70	.01622	.01393
R 75	.01291	.01190
A 80	.01033	.01128
T 85	.00821	.01078
E 90	.00614	.01017
95	.00453	.00955
M 100	.00346	.00917
M 105	.00271	.00855
110	.00241	.00793
P 115	.00226	.00744
E 120	.00207	.00682
R 125	.00173	.00570
130	.00117	.00384
H 135	.00064	.00211
R 140	.00023	.00074
145	.00004	.00012
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

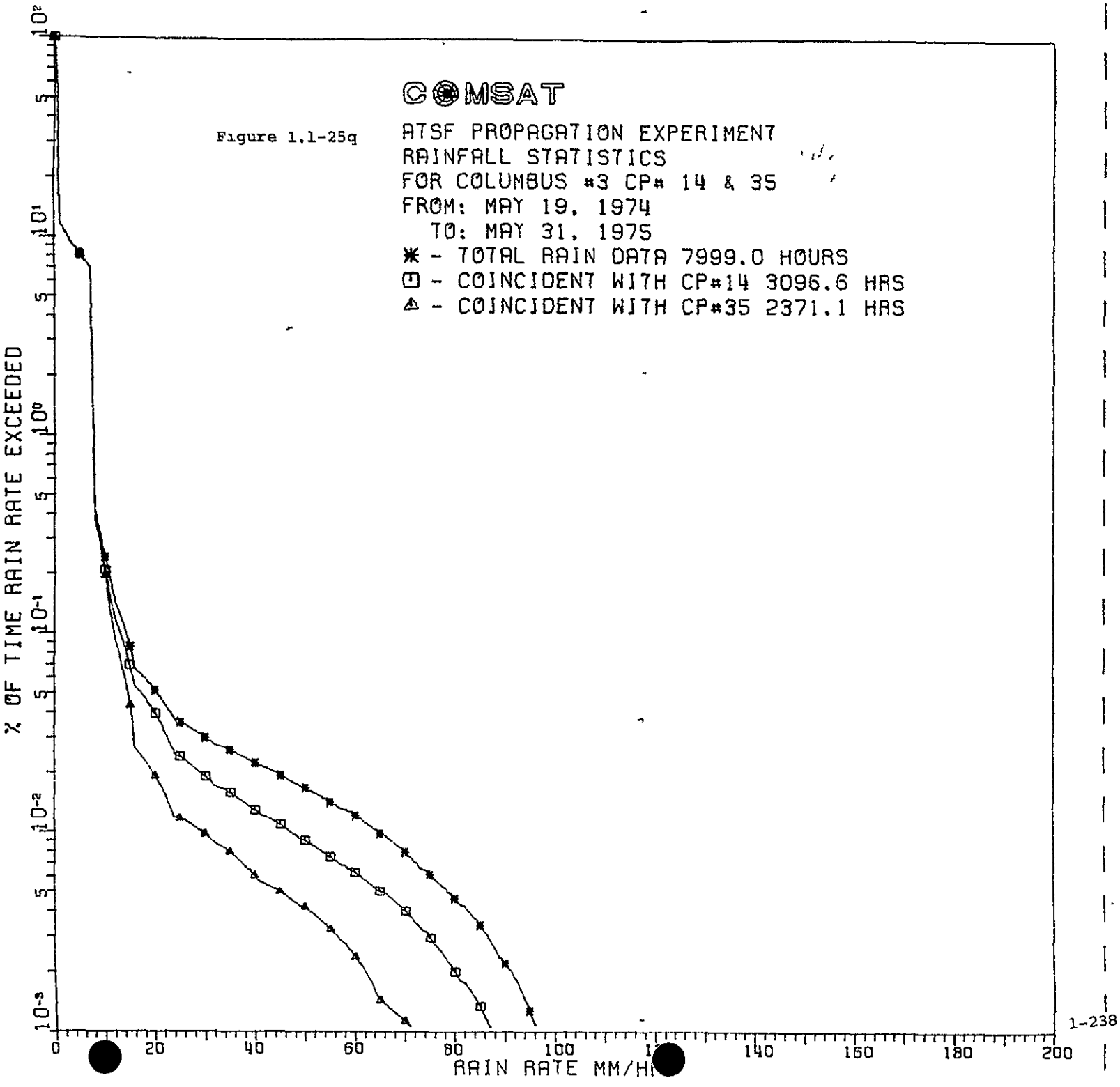


Figure 1.1-25q

Table 1.1-32q

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR COLUMBUS #3
FROM: MAY 19, 1974
TO: MAY 31, 1975

304

RAIN RATE	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#14	COINCIDENT WITH CP#35
0	100.00	100.00	100.00
2	10.581	10.544	10.601
4	8.8326	8.7989	8.8401
6	7.5834	7.5526	7.5827
8	.42282	.39249	.41554
10	.24284	.20921	.19658
12	.14473	.11888	.09485
14	.10507	.08614	.06052
16	.06676	.05409	.02644
18	.05969	.04725	.02296
20	.05197	.03977	.01929
25	.03589	.02406	.01177
30	.03028	.01912	.00981
35	.02614	.01592	.00803
40	.02250	.01301	.00614
45	.01953	.01096	.00506
RAIN 50	.01684	.00916	.00424
RAIN 55	.01430	.00760	.00329
RAIN 60	.01218	.00635	.00240
RAIN 65	.00996	.00513	.00146
70	.00802	.00407	.00114
RATE 75	.00624	.00300	.00089
RATE 80	.00471	.00203	.00057
RATE 85	.00347	.00136	.00025
RATE 90	.00223	.00068	.00000
95	.00129	.00019	.00000
MM 100	.00079	.00000	.00000
MM 105	.00060	.00000	.00000
110	.00056	.00000	.00000
PER 115	.00056	.00000	.00000
ER 120	.00038	.00000	.00000
RR 125	.00019	.00000	.00000
130	.00000	.00000	.00000
HR 135	.00000	.00000	.00000
RR 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

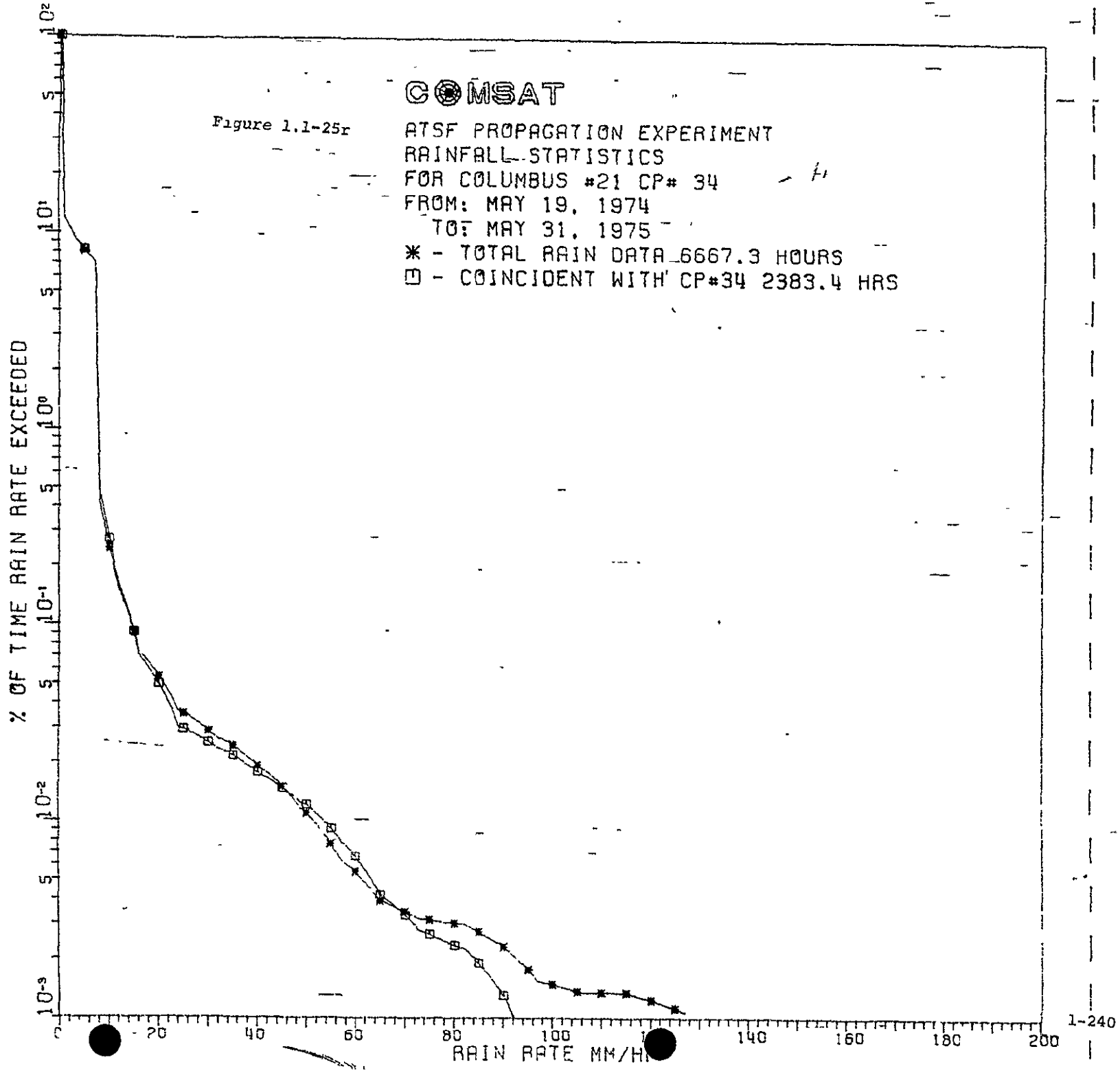


Figure 1.1-25r

Table 1.1-32r

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR COLUMBUS #21
FROM: MAY 19, 1974
TO: MAY 31, 1975

32r

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#34
	0	100.00	100.00
	2	10.561	10.650
	4	8.8178	8.8927
	6	7.5724	7.6369
	8	.41393	.47438
	10	.24543	.27359
	12	.15016	.15941
	14	.11114	.11440
	16	.07322	.07040
	18	.06423	.06052
	20	.05466	.05008
	25	.03563	.02987
	30	.02925	.02542
	35	.02441	.02188
	40	.01938	.01796
	45	.01519	.01498
R	50	.01116	.01231
A	55	.00780	.00931
I	60	.00558	.00674
N	65	.00398	.00426
	70	.00351	.00338
R	75	.00317	.00269
A	80	.00306	.00237
T	85	.00277	.00193
E	90	.00232	.00130
	95	.00178	.00056
M	100	.00148	.00017
M	105	.00137	.00003
	110	.00135	.00000
P	115	.00135	.00000
E	120	.00124	.00000
R	125	.00112	.00000
	130	.00101	.00000
H	135	.00083	.00000
R	140	.00061	.00000
	145	.00038	.00000
	150	.00027	.00000
	155	.00016	.00000
	160	.00004	.00000
	165	.00000	.00000
	170	.00000	.00000
	175	.00000	.00000
	180	.00000	.00000
	185	.00000	.00000
	190	.00000	.00000
	195	.00000	.00000
	200	.00000	.00000

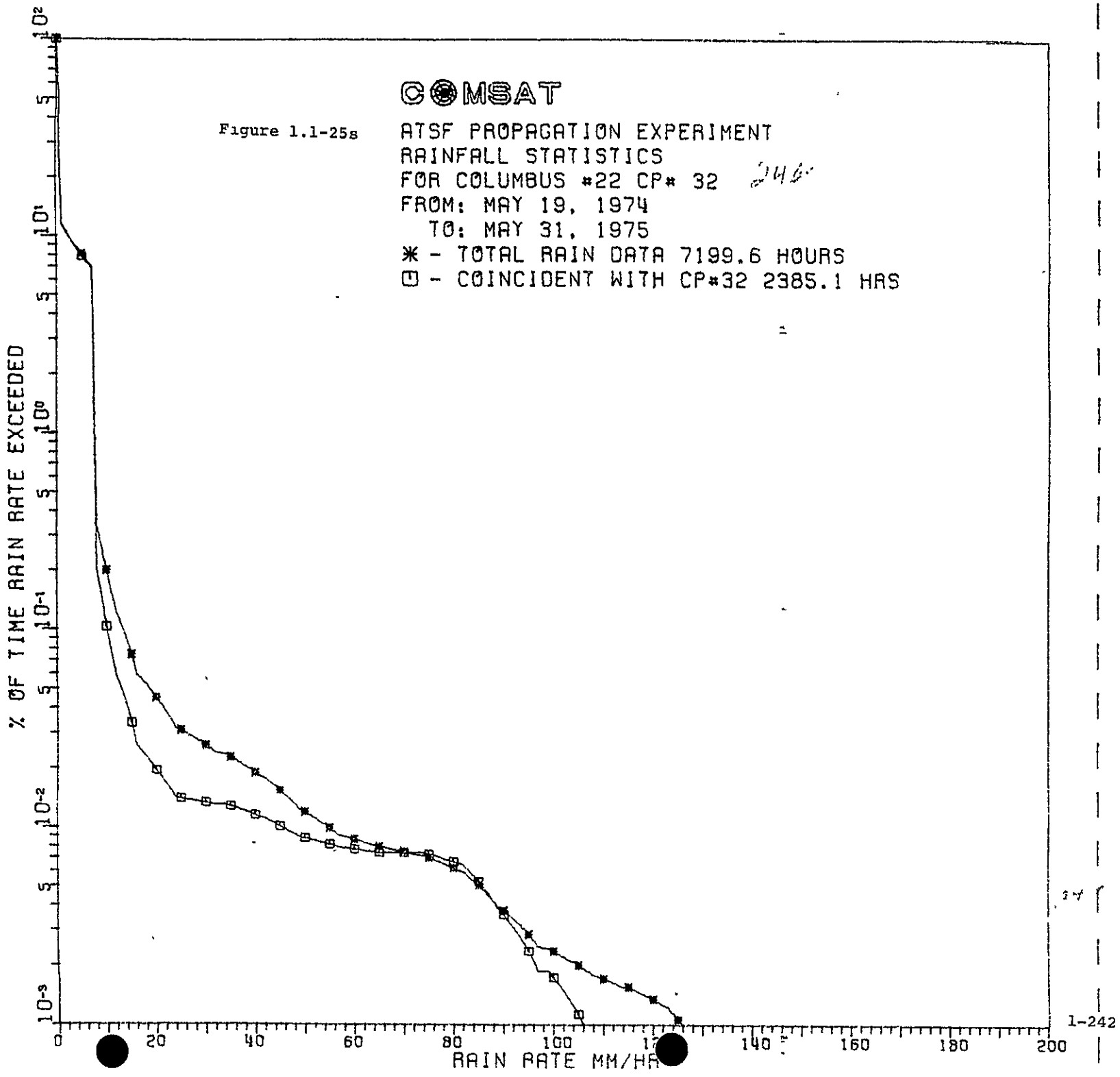


Figure 1.1-25s

Table 1.1-32s

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR COLUMBUS #22
FROM: MAY 19, 1974
TO: MAY 31, 1975

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#32
0	100.00	100.00
2	10.463	10.282
4	8.7328	8.5743
6	7.4966	7.3545
8	.34040	.20193
10	.20046	.10364
12	.12186	.05805
14	.09049	.04191
16	.05969	.02602
18	.05297	.02286
20	.04552	.01958
25	.03122	.01414
30	.02631	.01347
35	.02297	.01296
40	.01920	.01170
45	.01560	.01025
R 50	.01211	.00893
A 55	.01004	.00830
I 60	.00882	.00786
N 65	.00807	.00755
70	.00762	.00755
R 75	.00711	.00742
A 80	.00630	.00679
T 85	.00515	.00541
E 90	.00382	.00365
95	.00291	.00239
M 100	.00238	.00176
M 105	.00202	.00113
110	.00173	.00050
P 115	.00156	.00000
E 120	.00135	.00000
R 125	.00106	.00000
130	.00065	.00000
H 135	.00044	.00000
R 140	.00031	.00000
145	.00031	.00000
150	.00031	.00000
155	.00031	.00000
160	.00023	.00000
165	.00013	.00000
170	.00002	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

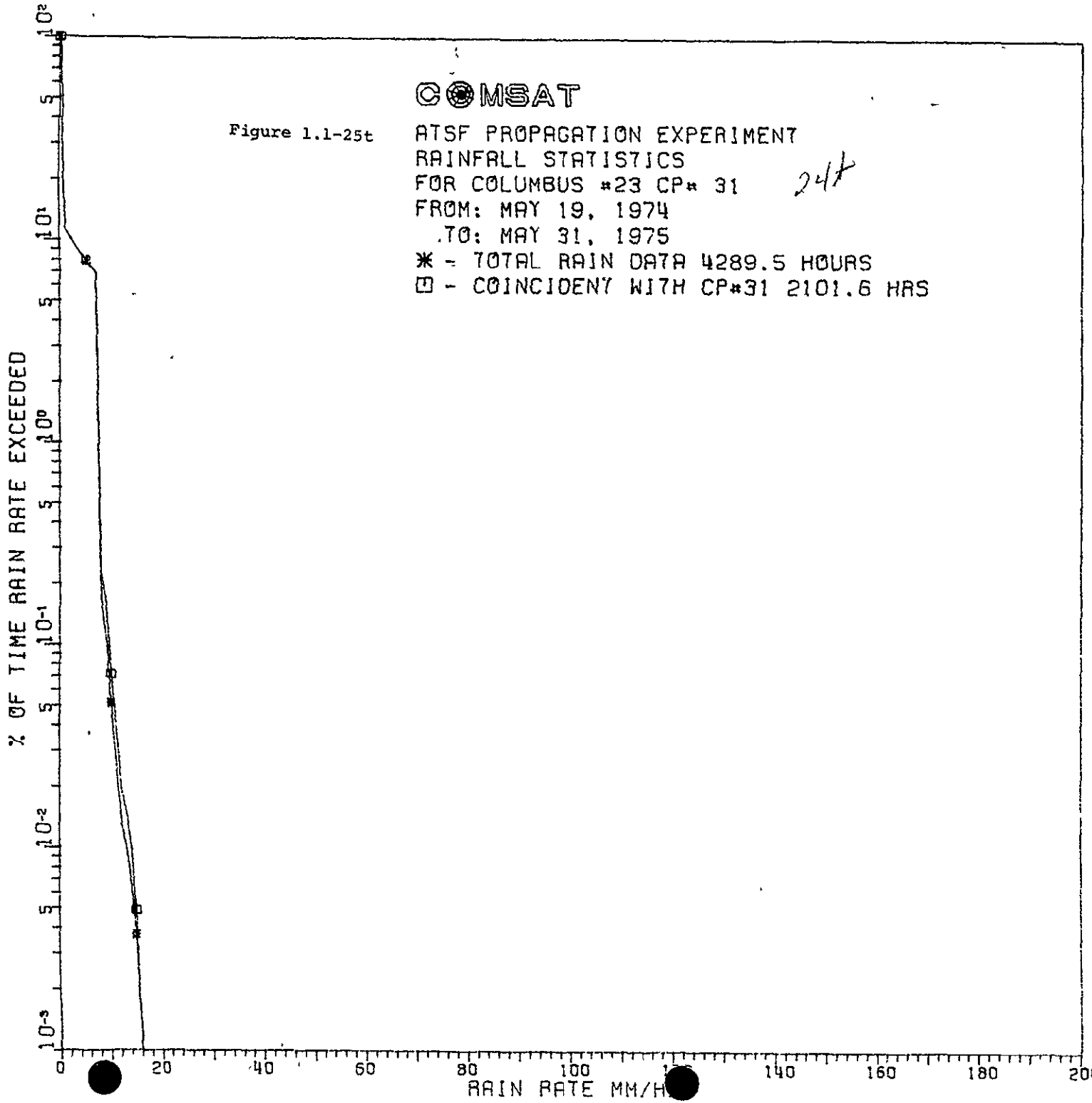


Figure 1.1-25t

Table 1.1-32t

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR COLUMBUS #23
FROM: MAY 19, 1974
TO: MAY 31, 1975

32t

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#31
0	100.00	100.00
2	10.247	10.352
4	8.5396	8.6269
6	7.3198	7.3944
8	.16527	.23482
10	.05179	.07147
12	.01315	.01964
14	.00685	.00982
16	.00056	.00000
18	.00042	.00000
20	.00028	.00000
25	.00000	.00000
30	.00000	.00000
35	.00000	.00000
40	.00000	.00000
45	.00000	.00000
R 50	.00000	.00000
A 55	.00000	.00000
I 60	.00000	.00000
N 65	.00000	.00000
70	.00000	.00000
R 75	.00000	.00000
A 80	.00000	.00000
T 85	.00000	.00000
E 90	.00000	.00000
95	.00000	.00000
M 100	.00000	.00000
M 105	.00000	.00000
110	.00000	.00000
P 115	.00000	.00000
E 120	.00000	.00000
R 125	.00000	.00000
130	.00000	.00000
H 135	.00000	.00000
R 140	.00000	.00000
145	.00000	.00000
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

24

Figure 1.1-25u

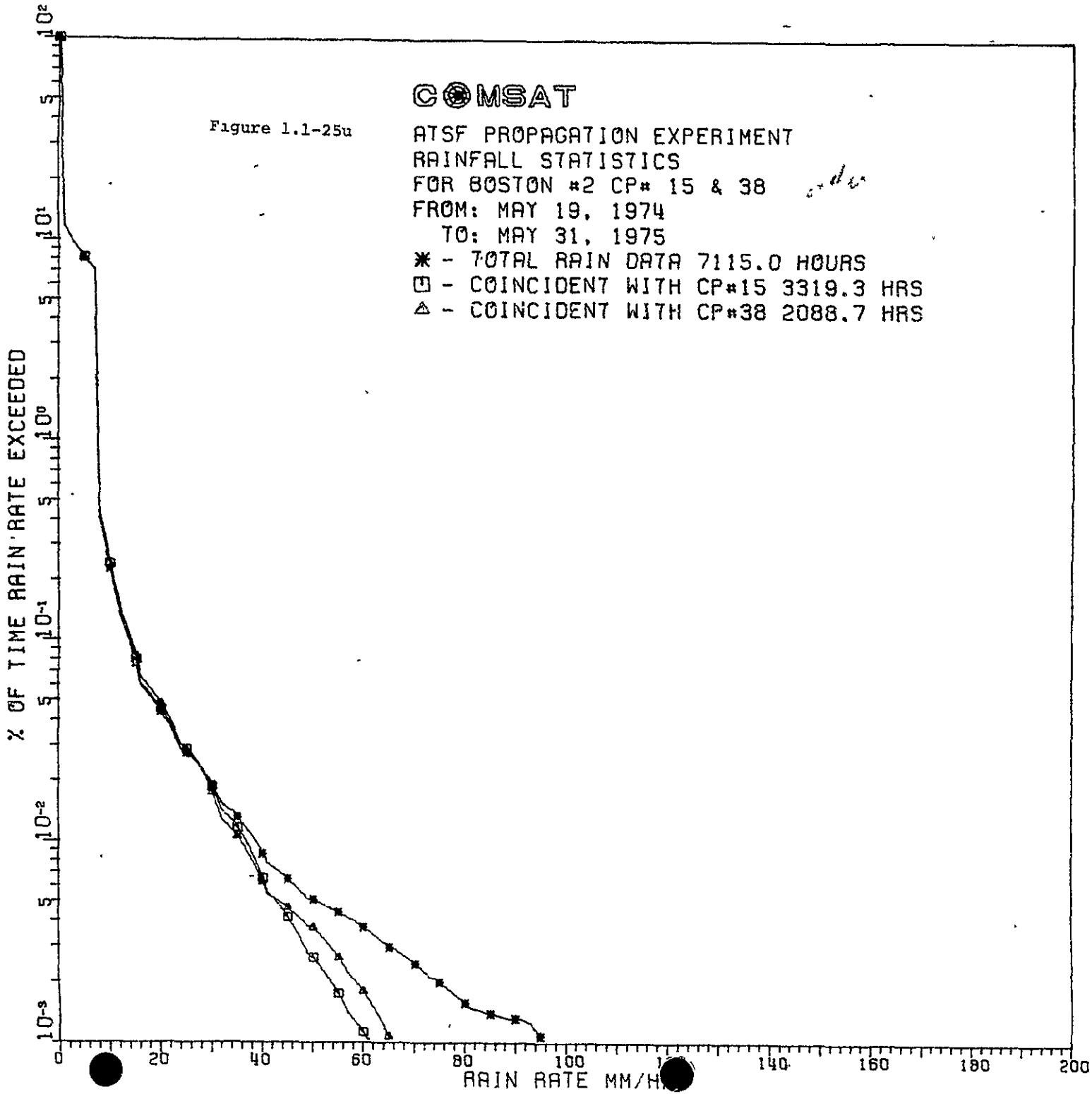


Table 1.1-32u

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR BOSTON #2
FROM: MAY 19, 1974
TO: MAY 31, 1975

32u

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#15	COINCIDENT WITH CP#38
0	100.00	100.00	100.00
2	10.567	10.606	10.611
4	8.8193	8.8525	8.8573
6	7.5705	7.5989	7.6043
8	.40947	.43578	.44199
10	.22968	.24123	.23848
12	.13049	.14052	.13702
14	.09484	.10064	.10119
16	.05980	.06113	.06557
18	.05244	.05369	.05788
20	.04437	.04563	.04855
25	.02766	.02893	.02880
30	.01915	.01878	.01767
35	.01332	.01182	.01063
40	.00873	.00660	.00632
45	.00652	.00420	.00467
RAIN RATE 50	.00514	.00267	.00373
55	.00443	.00176	.00266
60	.00374	.00113	.00180
65	.00298	.00068	.00108
70	.00248	.00050	.00079
75	.00199	.00027	.00043
80	.00157	.00005	.00007
85	.00140	.00000	.00000
90	.00132	.00000	.00000
95	.00108	.00000	.00000
MM 100	.00064	.00000	.00000
MM 105	.00020	.00000	.00000
110	.00000	.00000	.00000
PERCENT 115	.00000	.00000	.00000
120	.00000	.00000	.00000
125	.00000	.00000	.00000
130	.00000	.00000	.00000
HOURS 135	.00000	.00000	.00000
140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

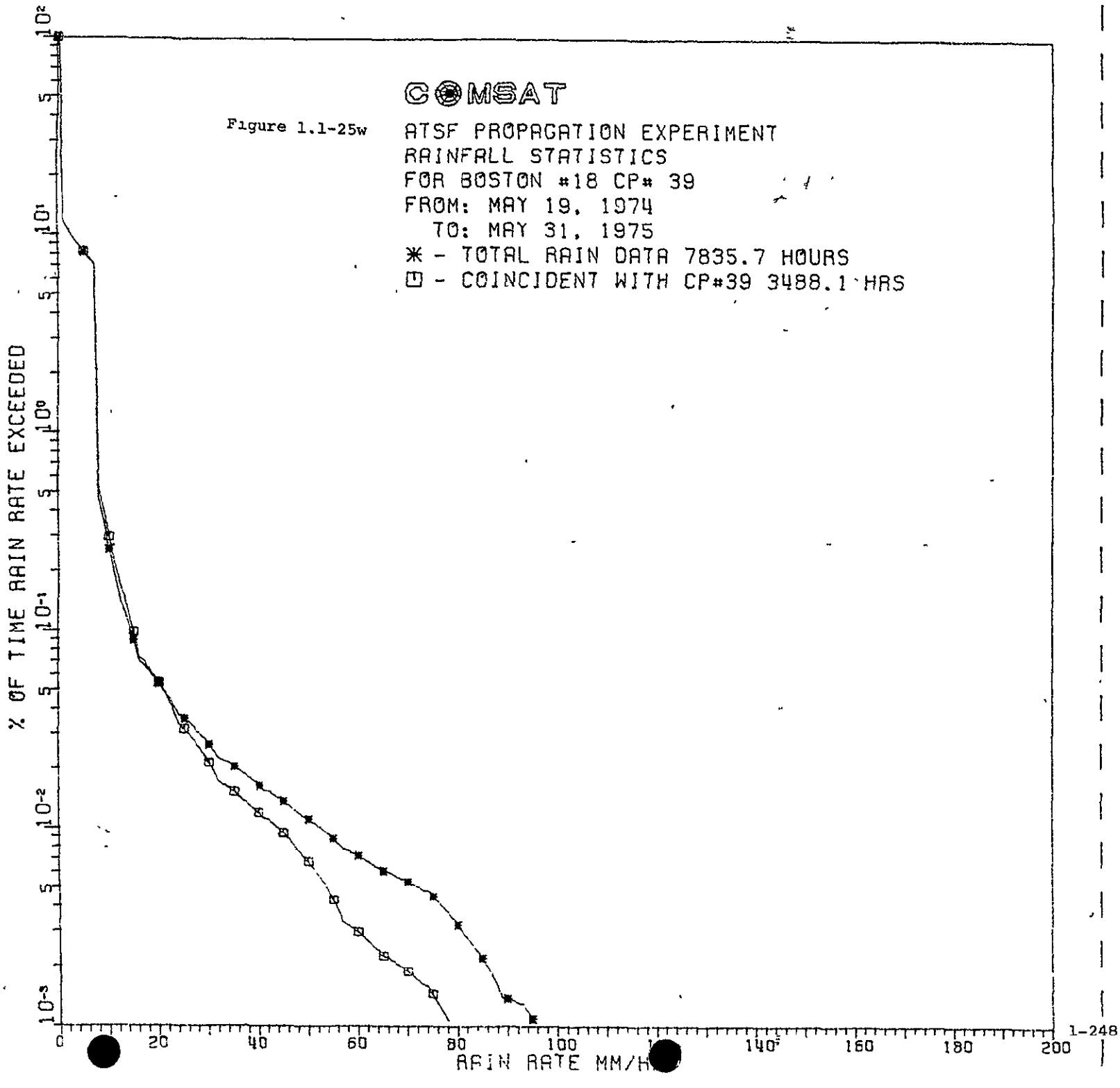


Figure 1.1-25w

Table 1.1-32w

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR BOSTON #18
FROM: MAY 19, 1974
TO: MAY 31, 1975

32w

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#39
0	100.00	100.00
2	10.646	10.748
4	8.8870	8.9736
6	7.6307	7.7060
8	.46747	.53889
10	.25783	.29870
12	.14823	.17453
14	.10930	.12428
16	.07115	.07472
18	.06361	.06562
20	.05471	.05493
25	.03597	.03194
30	.02665	.02154
35	.02058	.01529
40	.01643	.01201
45	.01369	.00948
R 50	.01116	.00679
A 55	.00884	.00436
I 60	.00728	.00300
N 65	.00610	.00228
70	.00538	.00189
R 75	.00455	.00146
A 80	.00326	.00082
T 85	.00221	.00034
E 90	.00138	.00000
95	.00109	.00000
M 100	.00064	.00000
M 105	.00024	.00000
110	.00000	.00000
P 115	.00000	.00000
E 120	.00000	.00000
R 125	.00000	.00000
130	.00000	.00000
H 135	.00000	.00000
R 140	.00000	.00000
145	.00000	.00000
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

241

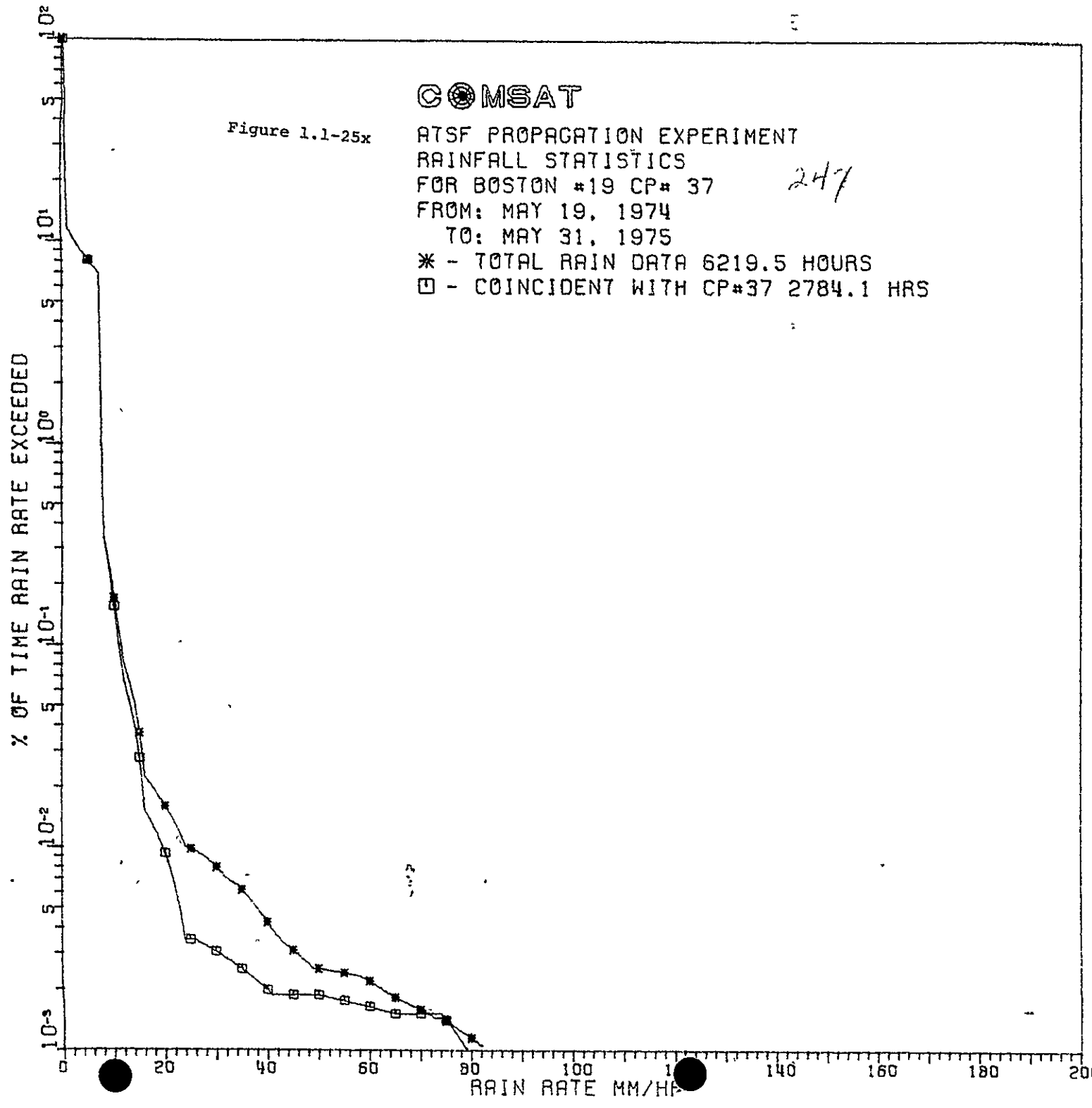


Figure 1.1-25x

247

1-250

Table 1.1-32x

ATSF PROPAGATION EXPERIMENT
RAINFALL STATISTICS FOR BOSTON #19
FROM: MAY 19, 1974
TO: MAY 31, 1975

327

RAIN	TOTAL RAIN DATA TIME	COINCIDENT WITH CP#37
0	100.00	100.00
2	10.506	10.489
4	8.7603	8.7451
6	7.5133	7.4994
8	.34983	.33620
10	.17042	.15565
12	.08125	.06598
14	.05152	.04039
16	.02238	.01528
18	.01927	.01234
20	.01604	.00939
25	.00984	.00350
30	.00798	.00307
35	.00620	.00253
40	.00427	.00199
45	.00311	.00189
R 50	.00253	.00189
A 55	.00241	.00177
I 60	.00219	.00165
N 65	.00183	.00153
70	.00159	.00153
R 75	.00140	.00142
A 80	.00116	.00092
T 85	.00092	.00041
E 90	.00072	.00000
95	.00072	.00000
M 100	.00068	.00000
M 105	.00043	.00000
110	.00019	.00000
P 115	.00000	.00000
E 120	.00000	.00000
R 125	.00000	.00000
130	.00000	.00000
H 135	.00000	.00000
R 140	.00000	.00000
145	.00000	.00000
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

2:1

Table 1.1-33

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS

1.1-26

SITE	CP#	HOURS OF DATA RECORDED	HOURS OF DATA EXTRAPOLATED	CP#	HOURS OF DATA RECORDED	HOURS OF DATA EXTRAPOLATED
BOSTON #2	15	4112.4	7908.1	38	2730.2	7756.5
COLUMBUS #3	14	3426.0	8328.4	35	2584.4	8212.3
STARKVILLE #4	13	3338.5	6856.9	33	2981.4	6690.4
MIAMI #5	12	1805.1	4724.7	30	86.7	4429.8
ITHACA #6	29	0.0	0.0			
DETROIT #7	10	3504.4	4964.7	27	2049.9	3556.2
ANDOVER #8	9	4317.3	4317.3	26	2681.2	2681.2
PHILADELPHIA #9	8	1761.2	2122.7	25	1241.3	1241.3
WASHINGTON #10	7	3666.3	5466.3	24	1267.9	4132.7
NASHVILLE #11	6	1250.9	4825.3	23	2024.5	5003.8
ASHEVILLE #12	5	4450.5	4460.8	22	1617.7	1632.7
FAYETTESVILLE #13	4	3960.6	6925.1	21	2540.6	6521.9
NEW ORLEANS #14	3	1675.9	6306.1	20	1218.7	6293.5
ATLANTA #15	2	3173.3	3173.3	19	1005.6	1005.6
TAMPA #16	1	3374.4	6833.7	18	1460.6	6312.4
BOSTON #17	40	3851.6	3851.6			
BOSTON #18	39	3836.4	8184.1			
BOSTON #19	37	3038.6	6474.0			
WALLOPS ISLAND #20	11	4302.7	6602.5	36	3667.3	6432.5
COLUMBUS #21	34	2698.8	6982.6			
COLUMBUS #22	32	2758.1	7572.5			
COLUMBUS #23	31	2236.8	4424.6			
STARKVILLE #24	28	874.5	2430.9			
STARKVILLE #25	17	1565.9	3894.7			
STARKVILLE #26	16	1878.3	4656.7			

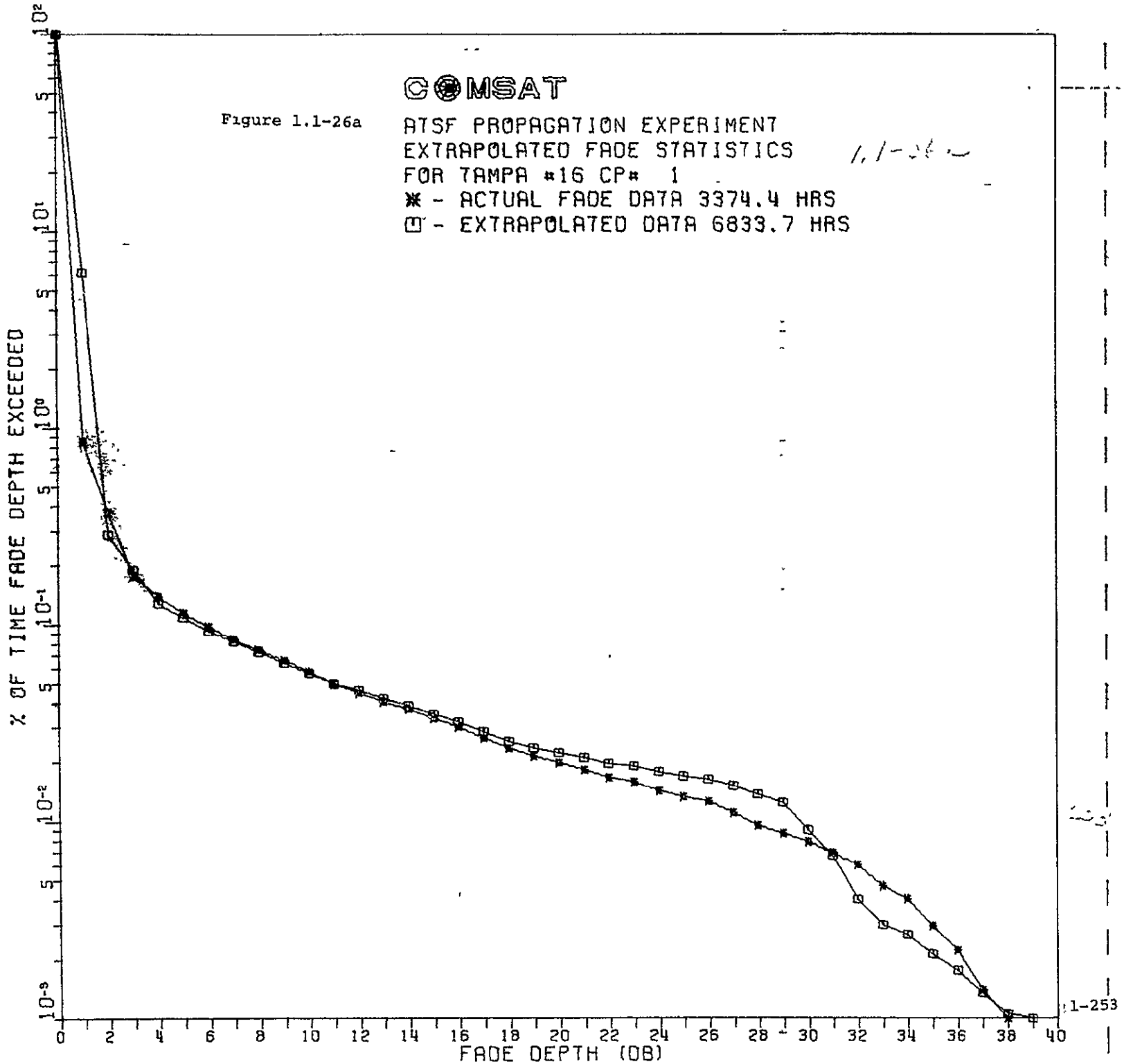


Figure 1.1-26a

1-253

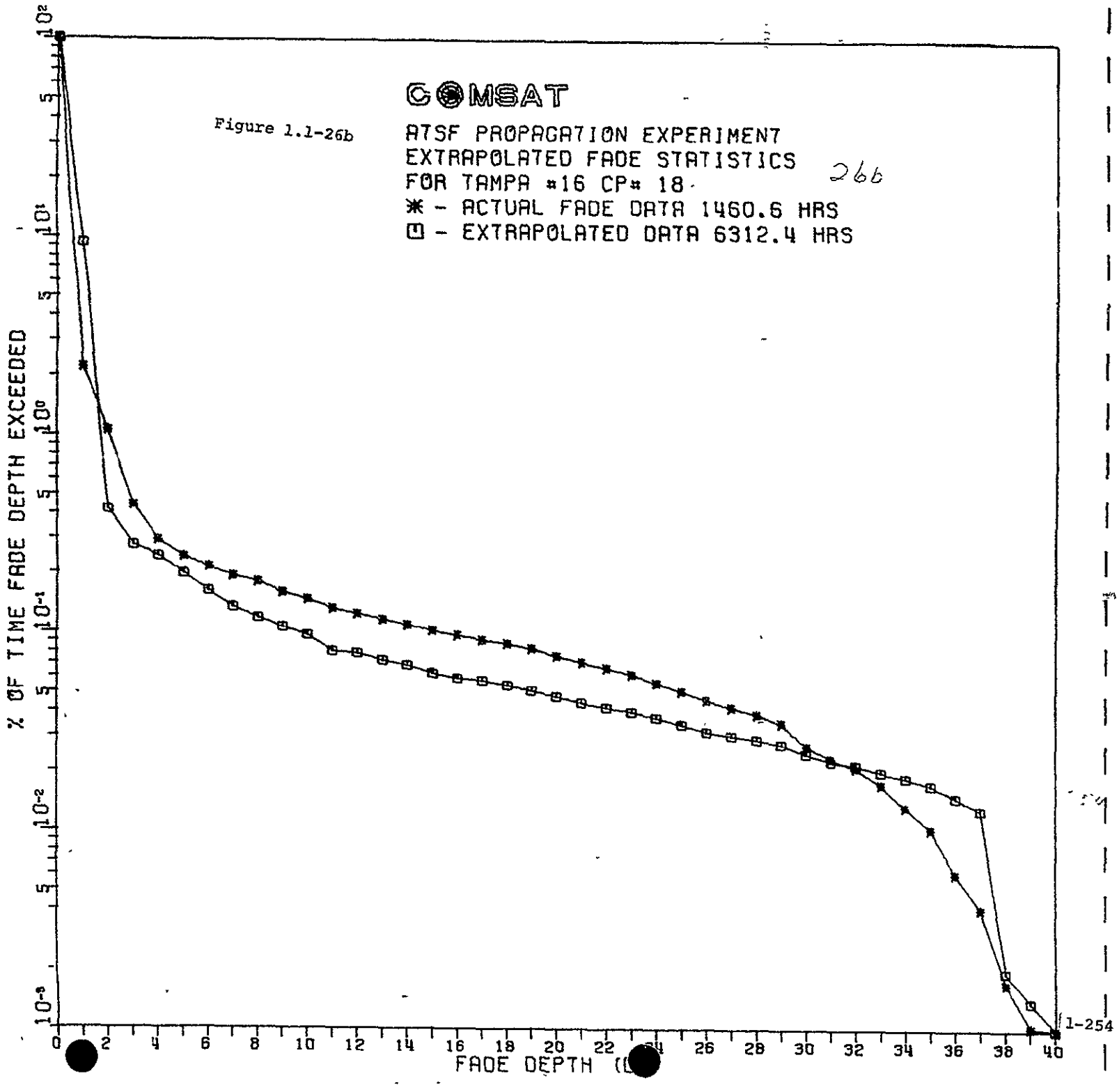


Figure 1.1-26b

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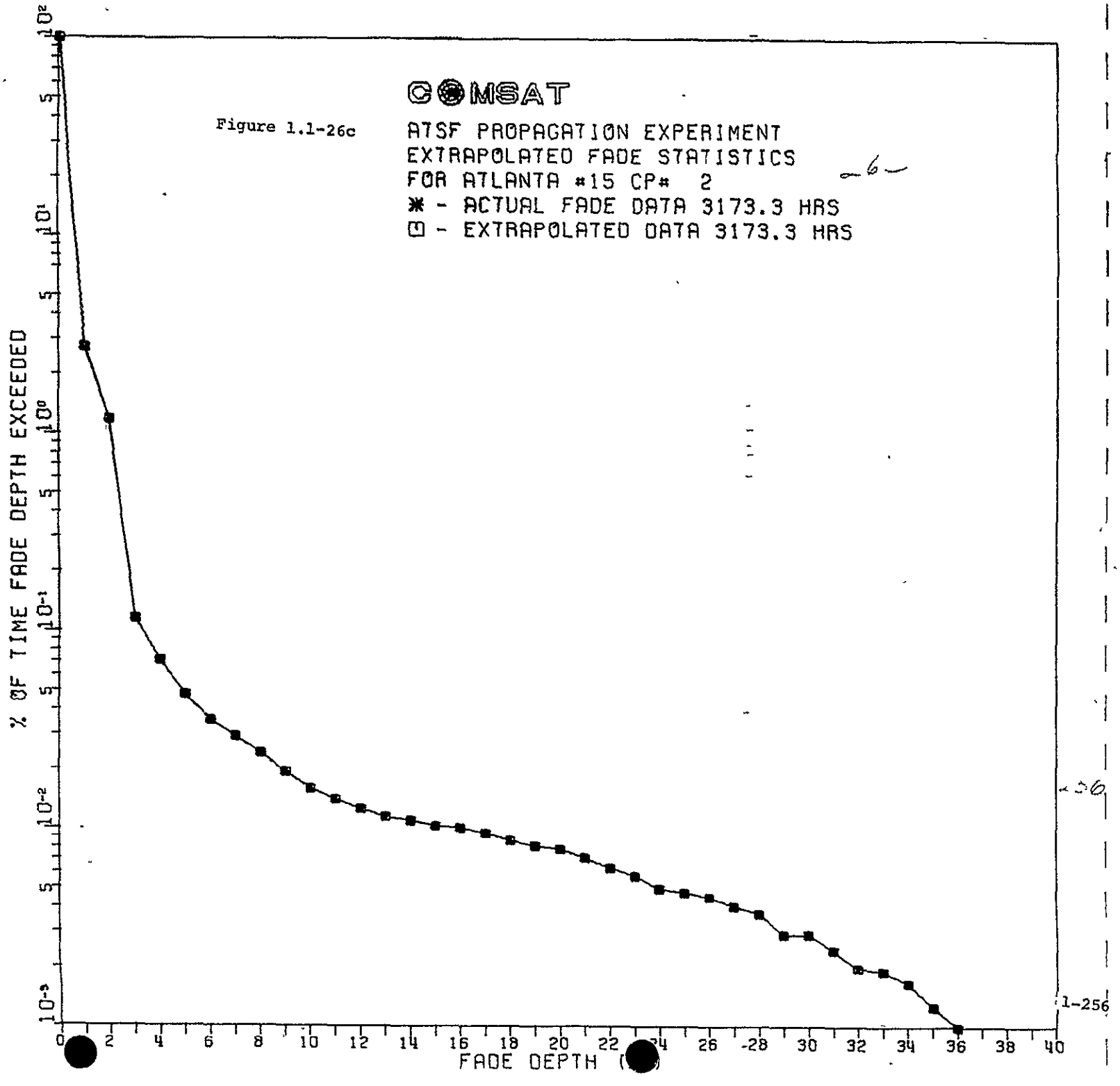
Table 1.1-34a

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR TAMPA #16

1.1-34a

	CP# 1		CP#18	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	.84942	6.1781	2.1869	9.2889
2	.37444	.28626	1.0574	.41934
3	.17559	.18807	.43886	.27621
4	.13862	.12834	.29286	.24249
5	.11461	.10929	.24168	.19717
6	.09787	.09302	.21430	.16134
7	.08394	.08238	.19256	.13441
8	.07401	.07259	.18040	.11819
9	.06586	.06369	.15969	.10652
10	.05757	.05652	.14686	.09701
11	.05023	.05000	.13248	.08088
D 12	.04519	.04652	.12461	.07905
E 13	.04067	.04245	.11656	.07305
P 14	.03734	.03897	.10937	.06896
T 15	.03356	.03526	.10287	.06261
H 16	.03015	.03218	.09773	.05909
17	.02660	.02875	.09294	.05798
D 18	.02356	.02558	.08883	.05470
F 19	.02149	.02376	.08370	.05118
20	.02000	.02236	.07719	.04827
—F 21	.01830	.02119	.07155	.04464
A 22	.01667	.01972	.06727	.04249
D 23	.01585	.01912	.06247	.04022
E 24	.01430	.01790	.05665	.03771
25	.01334	.01698	.05118	.03482
D 26	.01267	.01643	.04621	.03206
B 27	.01111	.01521	.04262	.03065
28	.00963	.01380	.03937	.02932
29	.00874	.01253	.03560	.02787
30	.00793	.00909	.02721	.02477
31	.00696	.00678	.02362	.02274
32	.00608	.00405	.02122	.02183
33	.00474	.00300	.01746	.02024
34	.00407	.00267	.01352	.01896
35	.00296	.00212	.01044	.01738
36	.00222	.00176	.00616	.01514
37	.00141	.00135	.00411	.01295
38	.00081	.00106	.00171	.00196
39	.00030	.00080	.00103	.00138
40	.00015	.00073	.00017	.00090

255


COMSAT
Figure 1.1-26c
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS
FOR ATLANTA #15 CP# 2
* - ACTUAL FADE DATA 3173.3 HRS
□ - EXTRAPOLATED DATA 3173.3 HRS
% OF TIME FADE DEPTH EXCEEDED
FADE DEPTH
1-256

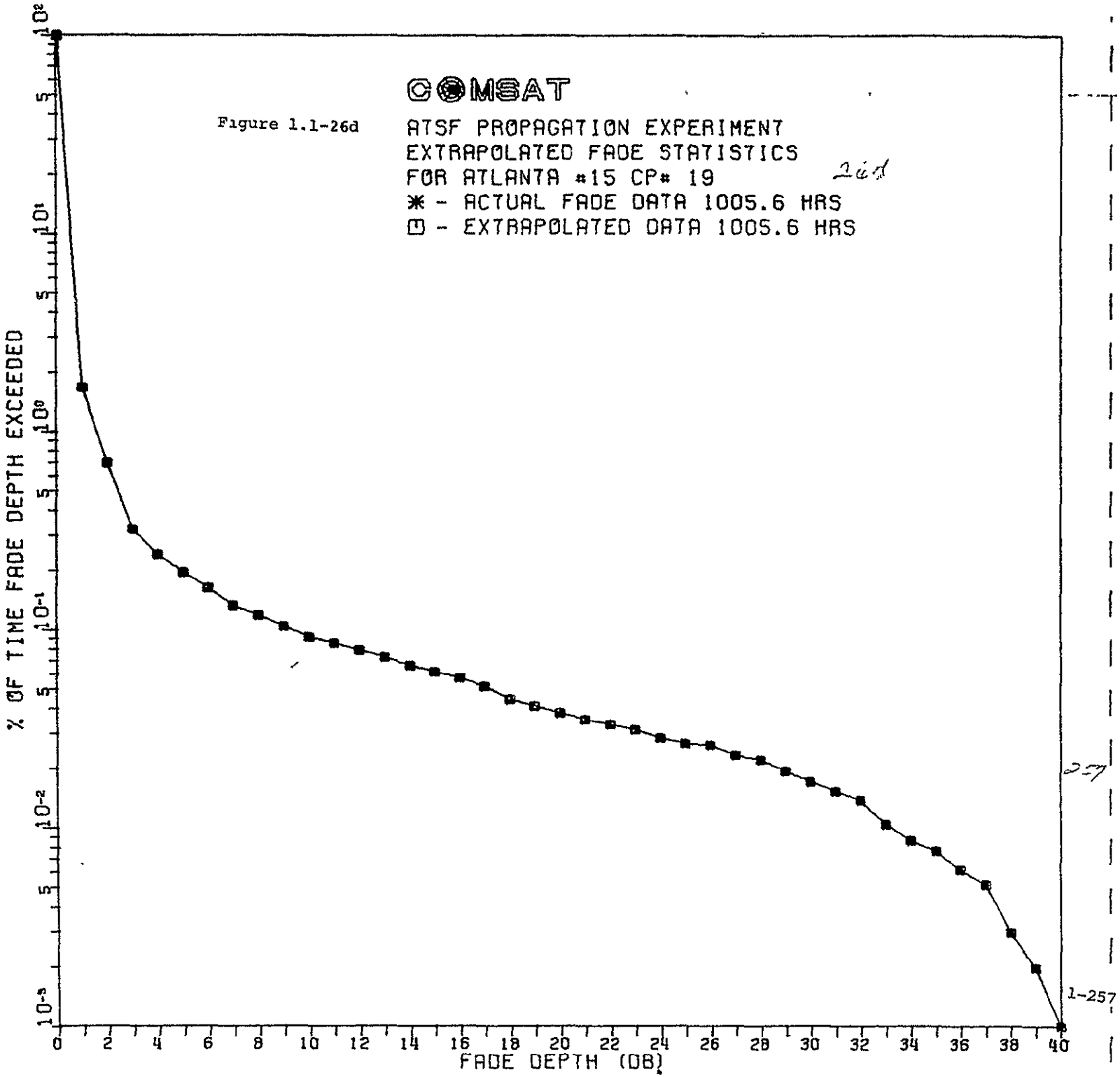


Figure 1.1-26d

1-257

Table 1.1-34b
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR ATLANTA #15

346

		CP# 2		CP#19	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	2.7247	2.7247	1.6664	1.6664
	2	1.1847	1.1847	.69534	.69534
	3	.11463	.11463	.32120	.32120
	4	.07098	.07098	.23941	.23941
	5	.04758	.04758	.19540	.19540
	6	.03529	.03529	.16184	.16184
	7	.02923	.02923	.13275	.13275
	8	.02419	.02419	.11908	.11908
	9	.01930	.01930	.10416	.10416
	10	.01584	.01584	.09198	.09198
	11	.01402	.01402	.08577	.08577
D	12	.01261	.01261	.07906	.07906
E	13	.01150	.01150	.07284	.07284
P	14	.01095	.01095	.06613	.06613
T	15	.01032	.01032	.06141	.06141
H	16	.01008	.01008	.05718	.05718
	17	.00945	.00945	.05196	.05196
O	18	.00867	.00867	.04475	.04475
F	19	.00811	.00811	.04127	.04127
	20	.00780	.00780	.03804	.03804
F	21	.00709	.00709	.03530	.03530
A	22	.00630	.00630	.03331	.03331
D	23	.00575	.00575	.03132	.03132
E	24	.00496	.00496	.02834	.02834
	25	.00473	.00473	.02660	.02660
D	26	.00449	.00449	.02610	.02610
B	27	.00402	.00402	.02337	.02337
	28	.00370	.00370	.02213	.02213
	29	.00291	.00291	.01939	.01939
	30	.00291	.00291	.01715	.01715
	31	.00244	.00244	.01541	.01541
	32	.00197	.00197	.01392	.01392
	33	.00189	.00189	.01044	.01044
	34	.00165	.00165	.00870	.00870
	35	.00126	.00126	.00771	.00771
	36	.00095	.00095	.00622	.00622
	37	.00047	.00047	.00522	.00522
	38	.00016	.00016	.00298	.00298
	39	.00000	.00000	.00199	.00199
	40	.00000	.00000	.00075	.00075

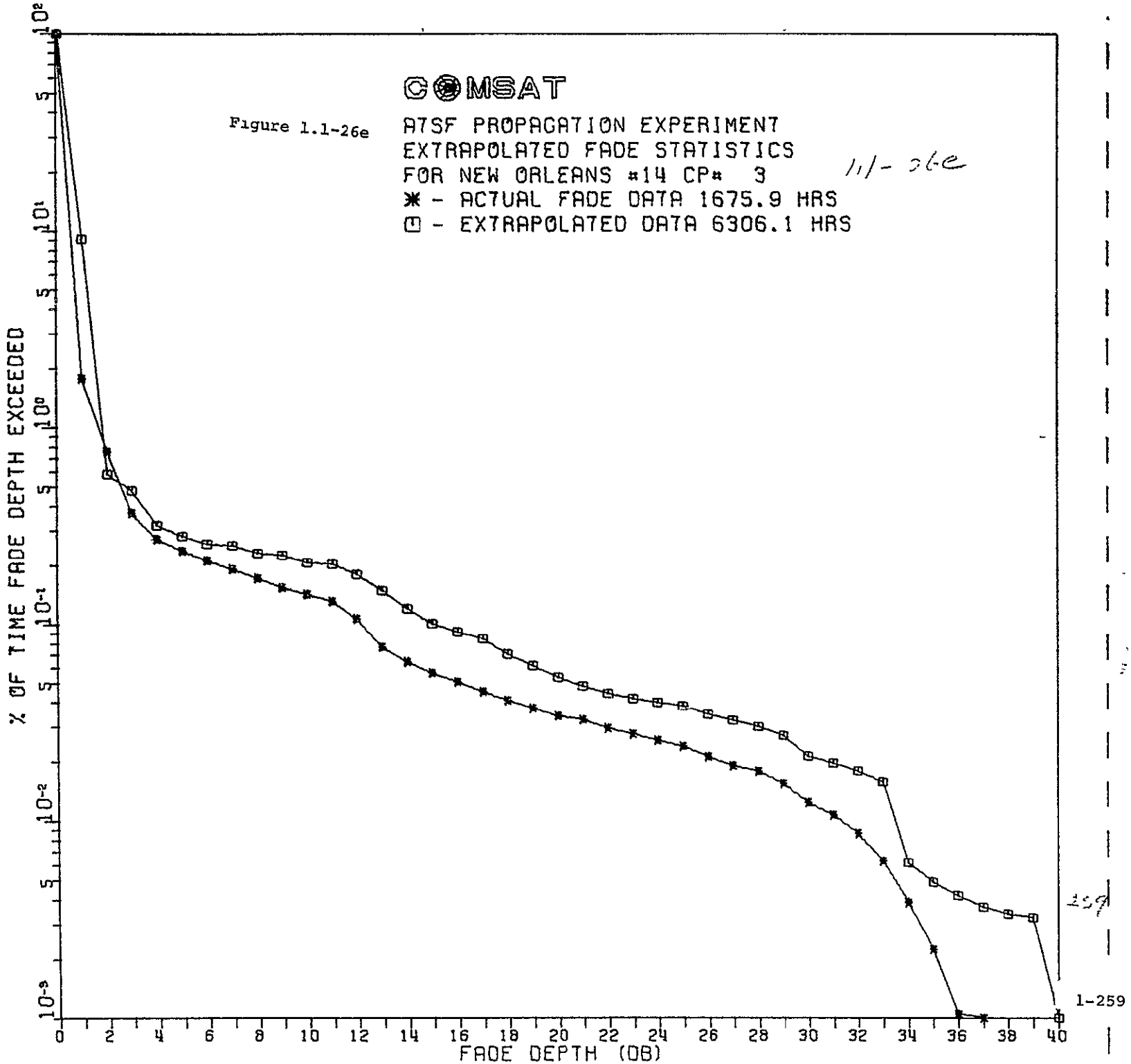


Figure 1.1-26e

1.1-26e

259

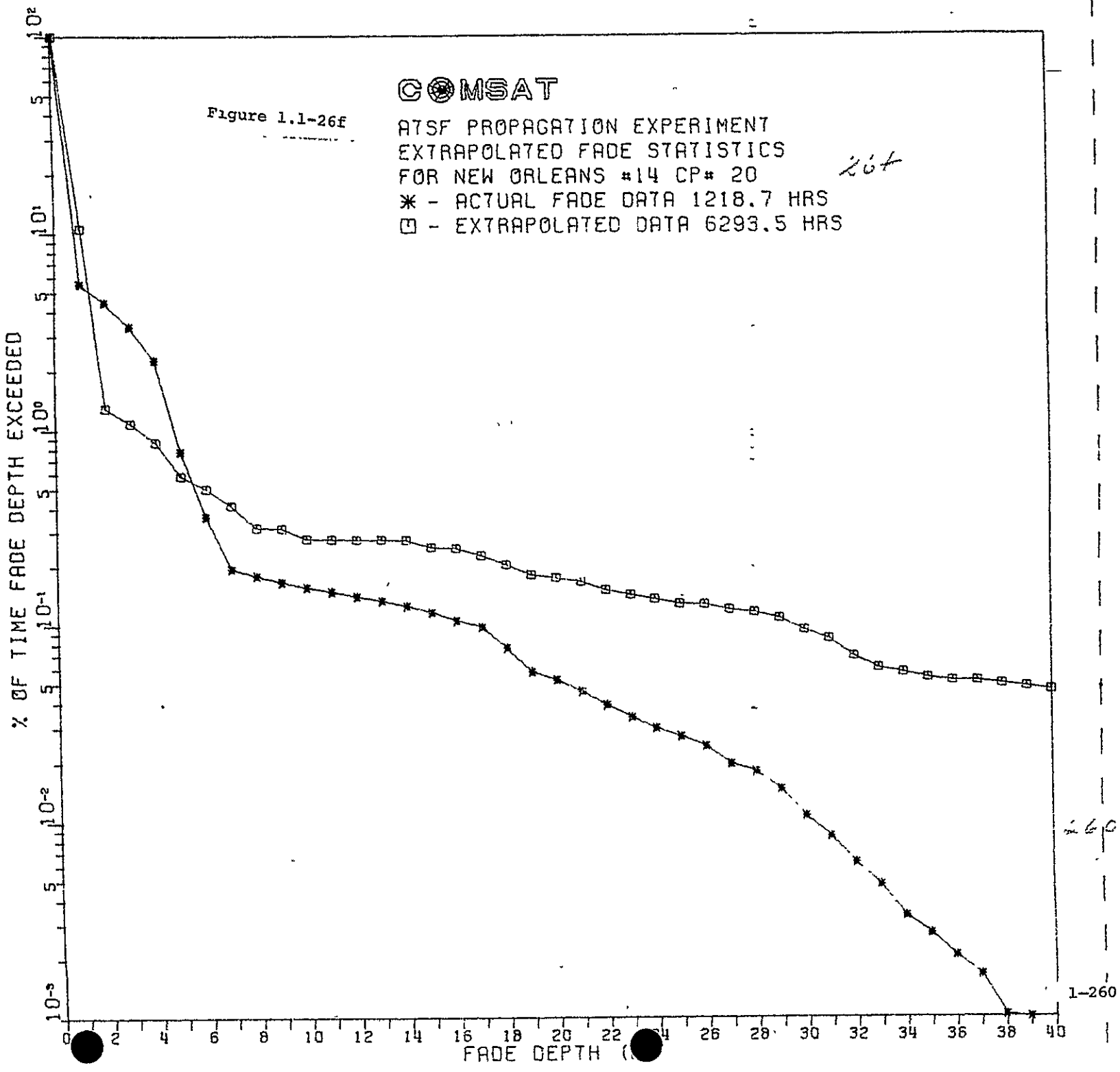


Figure 1.1-26f

264

260

Table 1.1-34c

ATSF PROPAGATION EXPERIMENT

EXTRAPOLATED FADE STATISTICS FOR NEW ORLEANS #14

34c

		CP# 3		CP#20	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	1.7792	9.1237	5.5394	10.599
	2	.75974	.58127	4.4401	1.2933
	3	.36935	.47752	3.3482	1.0819
	4	.27224	.32011	2.2683	.87276
	5	.23704	.28203	.77909	.58437
	6	.21108	.25777	.36411	.50401
	7	.19169	.25261	.19344	.41492
	8	.17140	.23049	.17846	.31590
	9	.15365	.22577	.16636	.31355
	10	.14201	.20595	.15611	.27764
	11	.13083	.20297	.14790	.27605
D	12	.10726	.17988	.13969	.27446
E	13	.07682	.14849	.13251	.27307
P	14	.06459	.12046	.12472	.27156
T	15	.05669	.10128	.11569	.24959
H	16	.05087	.09177	.10462	.24745
	17	.04550	.08460	.09703	.22657
D	18	.04102	.07073	.07569	.20303
F	19	.03729	.06158	.05723	.17995
	20	.03416	.05357	.05231	.17418
F	21	.03282	.04850	.04533	.16564
A	22	.02954	.04454	.03897	.15022
D	23	.02760	.04159	.03364	.14225
E	24	.02551	.03983	.02974	.13456
	25	.02387	.03818	.02687	.12707
D	26	.02118	.03475	.02400	.12652
B	27	.01909	.03229	.01949	.11871
	28	.01790	.03007	.01785	.11574
	29	.01551	.02713	.01456	.10783
	30	.01238	.02126	.01067	.09363
	31	.01074	.01964	.00841	.08446
	32	.00865	.01790	.00615	.06863
	33	.00627	.01575	.00472	.05977
	34	.00388	.00613	.00328	.05694
	35	.00224	.00489	.00267	.05348
	36	.00104	.00420	.00205	.05170
	37	.00030	.00367	.00164	.05162
	38	.00015	.00339	.00103	.04983
	39	.00000	.00326	.00041	.04804
	40	.00000	.00000	.00000	.04629

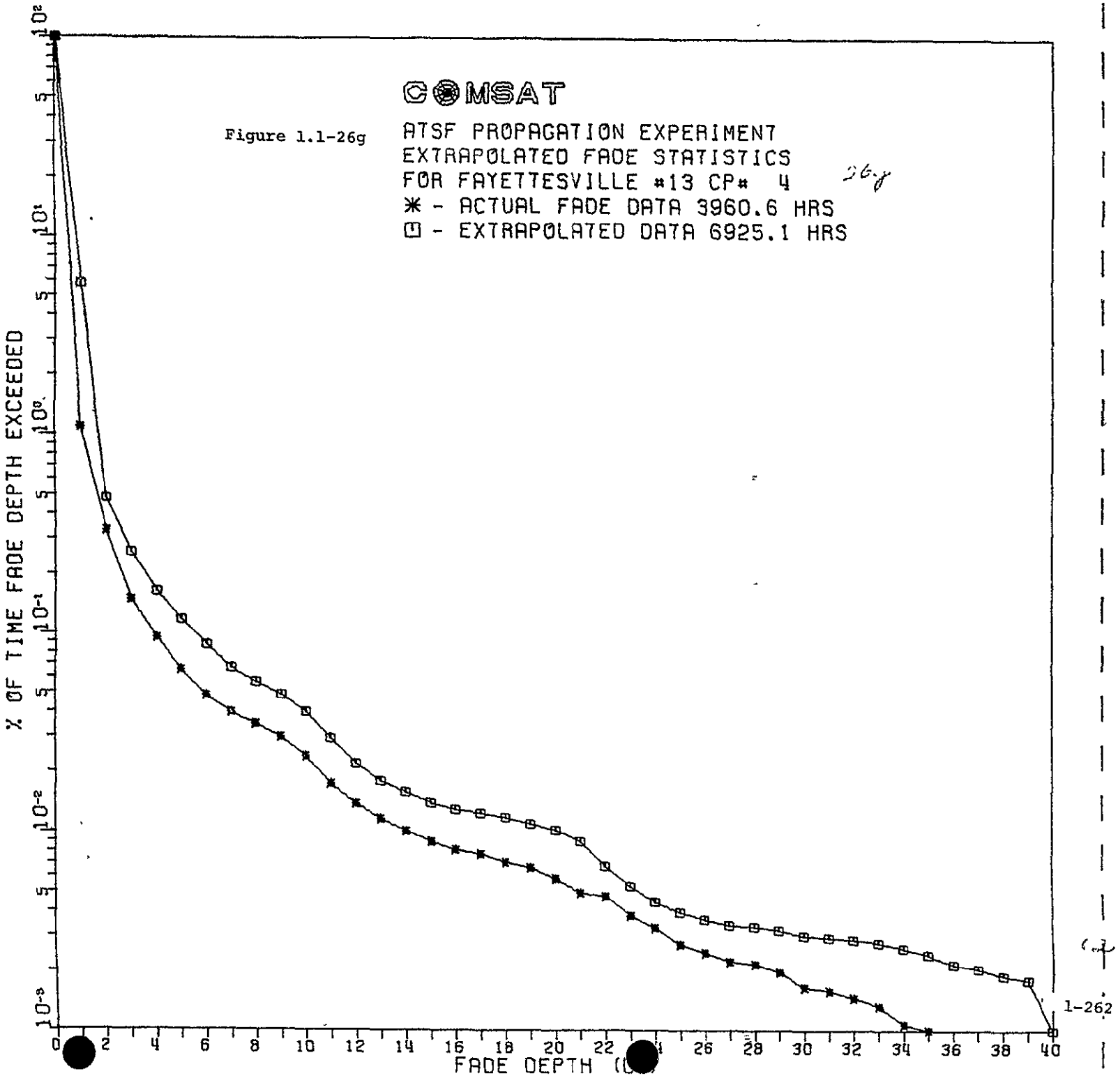


Figure 1.1-26g

26.g

1-262

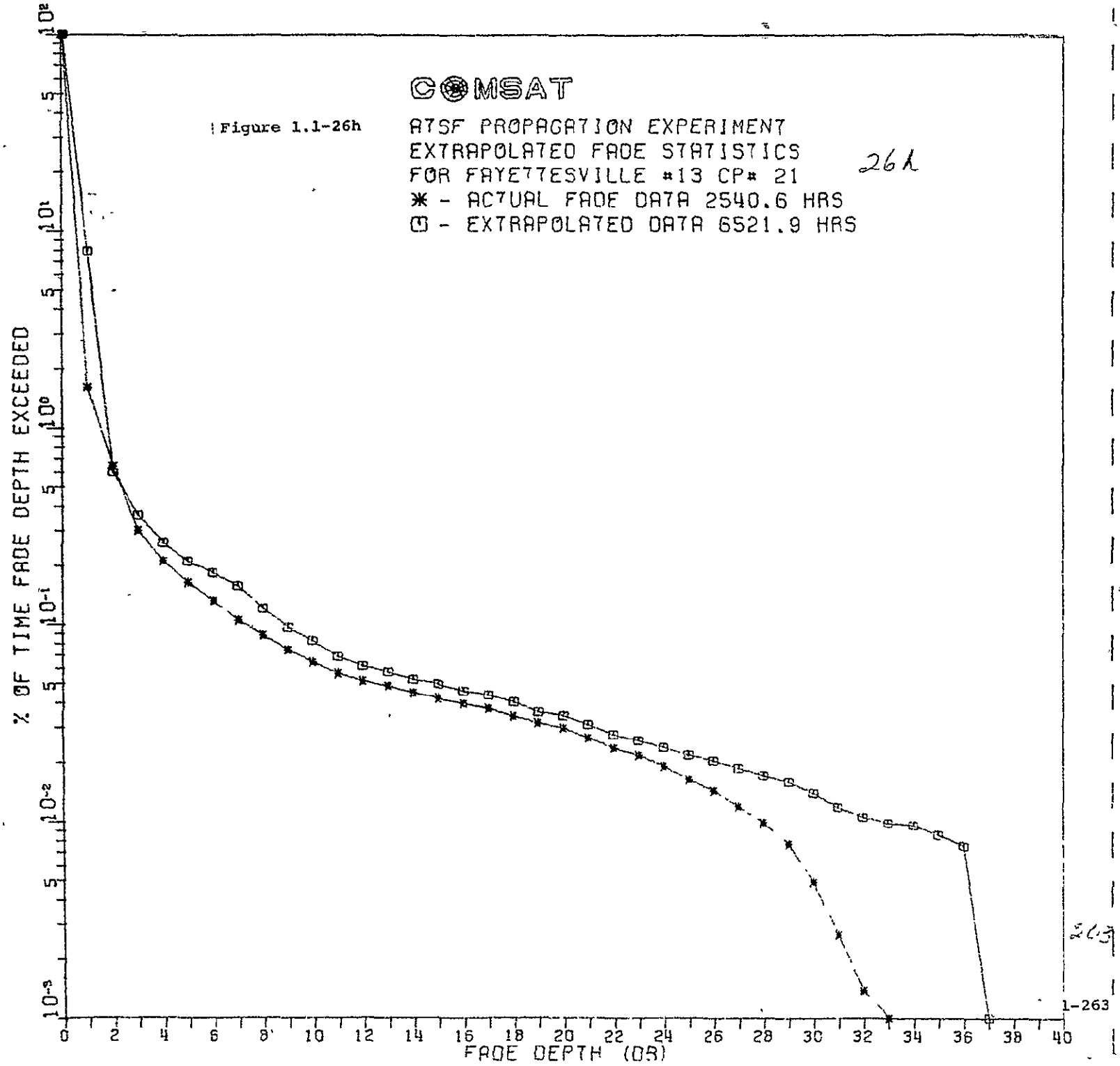


Figure 1.1-26h

26h

1-263

Table 1.1-34d

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR FAYETTESVILLE #13

34d

	CP# 4		CP#21	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	1.0877	5.7672	1.6050	7.8763
2	.32659	.47569	.63814	.59801
3	.14720	.25490	.30239	.36401
4	.09386	.16091	.21166	.26099
5	.06508	.11692	.16364	.21046
6	.04816	.08664	.13206	.18293
7	.03958	.06605	.10490	.15712
8	.03459	.05626	.08787	.12034
9	.02992	.04834	.07420	.09655
10	.02399	.03984	.06426	.08258
11	.01736	.02935	.05629	.06825
D 12	.01382	.02186	.05156	.06145
E 13	.01161	.01792	.04871	.05713
P 14	.01004	.01572	.04487	.05242
T 15	.00890	.01400	.04221	.04978
H 16	.00808	.01297	.03956	.04573
17	.00770	.01247	.03729	.04371
O 18	.00701	.01179	.03415	.04021
F 19	.00656	.01098	.03139	.03573
20	.00581	.01023	.02972	.03435
F 21	.00492	.00898	.02647	.03091
A 22	.00473	.00672	.02352	.02748
D 23	.00379	.00535	.02165	.02573
E 24	.00328	.00443	.01909	.02372
25	.00271	.00393	.01633	.02163
D 26	.00246	.00362	.01427	.02027
B 27	.00221	.00339	.01191	.01861
28	.00215	.00333	.00984	.01708
29	.00196	.00320	.00768	.01587
30	.00164	.00300	.00492	.01386
31	.00158	.00294	.00266	.01181
32	.00145	.00287	.00138	.01053
33	.00133	.00277	.00079	.00991
34	.00107	.00261	.00059	.00962
35	.00082	.00242	.00010	.00863
36	.00038	.00217	.00000	.00753
37	.00025	.00205	.00000	.00000
38	.00006	.00190	.00000	.00000
39	.00000	.00180	.00000	.00000
40	.00000	.00000	.00000	.00000

Table 1.1-34

264

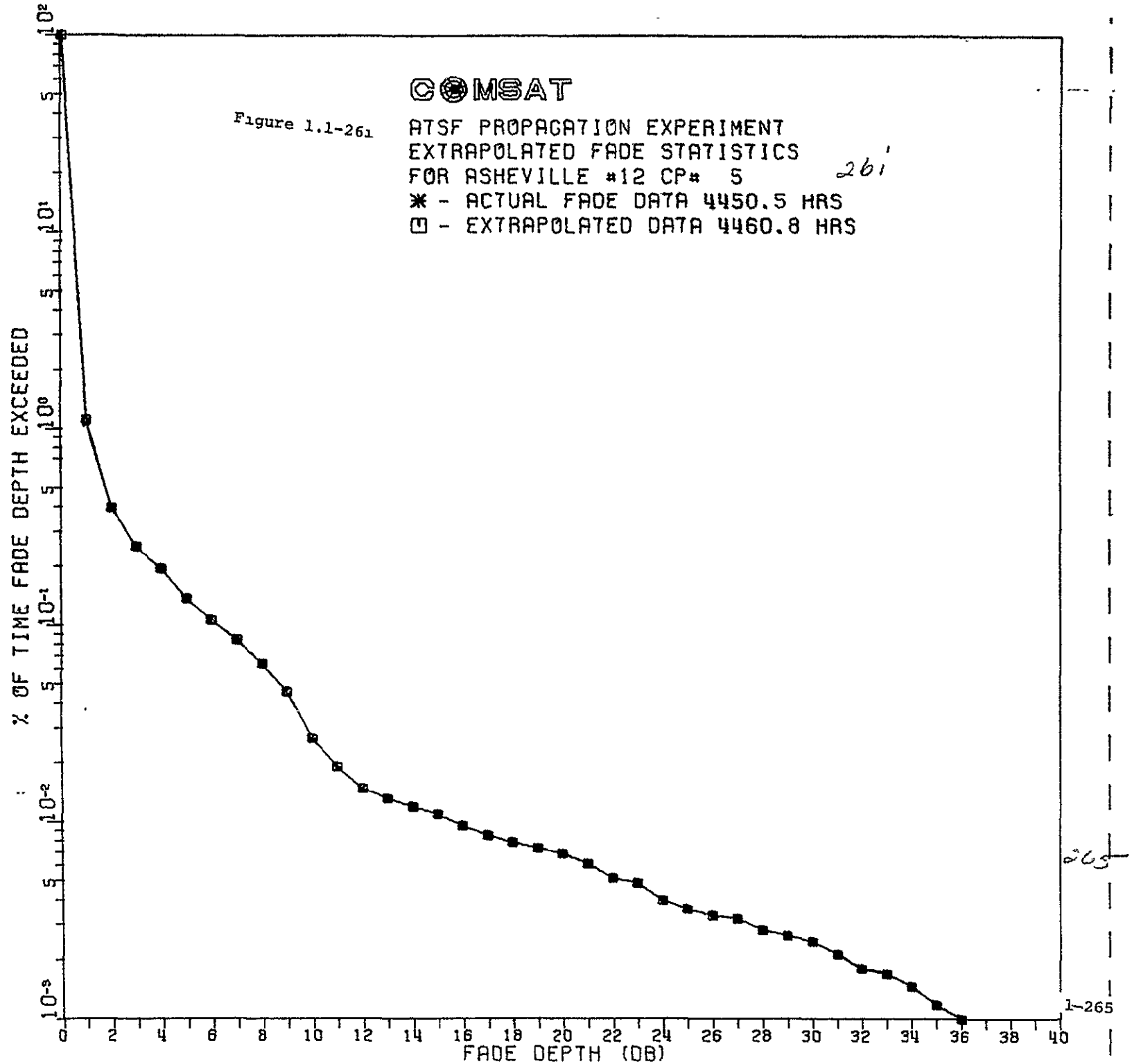


Figure 1.1-26₁

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1-265

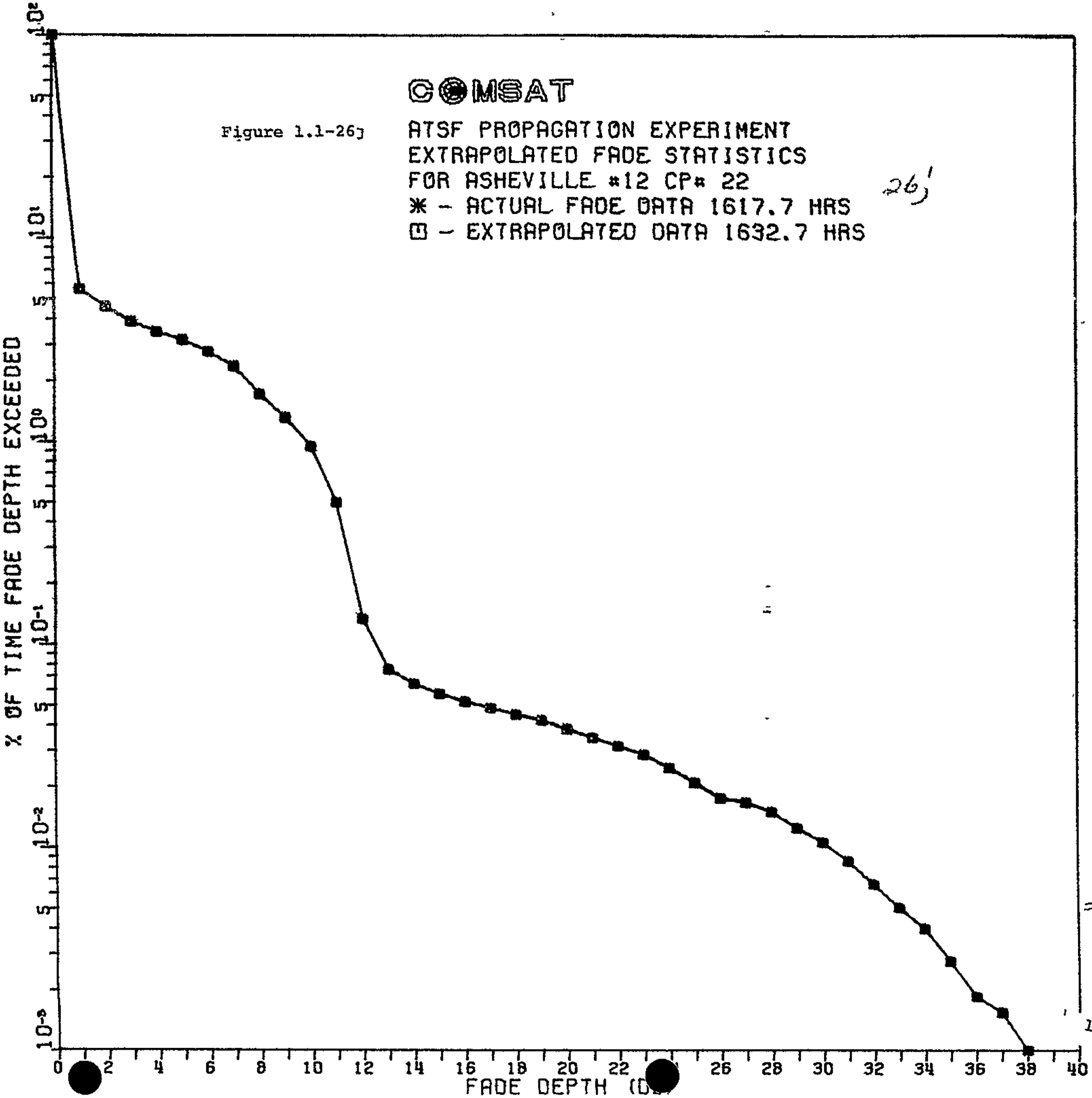


Figure 1.1-26j

Table 1.1-34e

ATSF PROPAGATION EXPERIMENT

EXTRAPOLATED FADE STATISTICS FOR ASHEVILLE #12

34e

		CP# 5		CP#22	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	1.0869	1.1101	5.5788	5.6293
	2	.39495	.39404	4.6304	4.5881
	3	.25210	.25152	3.9195	3.8837
	4	.19425	.19380	3.4939	3.4620
	5	.13684	.13652	3.1941	3.1649
	6	.10611	.10587	2.7925	2.7670
	7	.08448	.08429	2.3721	2.3505
	8	.06398	.06383	1.7280	1.7122
	9	.04584	.04573	1.3255	1.3134
	10	.02646	.02640	.95226	.94356
	11	.01904	.01900	.50240	.49781
D	12	.01472	.01468	.13445	.13322
E	13	.01314	.01311	.07588	.07518
P	14	.01191	.01188	.06429	.06370
T	15	.01090	.01087	.05733	.05681
H	16	.00955	.00953	.05239	.05191
	17	.00854	.00852	.04883	.04839
C	18	.00786	.00785	.04528	.04487
F	19	.00736	.00734	.04234	.04196
	20	.00691	.00689	.03848	.03813
F	21	.00612	.00611	.03477	.03445
A	22	.00517	.00516	.03168	.03139
D	23	.00489	.00488	.02874	.02848
E	24	.00399	.00398	.02473	.02450
	25	.00360	.00359	.02086	.02067
D	26	.00331	.00331	.01746	.01730
B	27	.00320	.00319	.01669	.01654
	28	.00281	.00280	.01499	.01485
	29	.00264	.00263	.01252	.01240
	30	.00247	.00247	.01066	.01057
	31	.00213	.00213	.00865	.00857
	32	.00180	.00179	.00665	.00658
	33	.00169	.00168	.00510	.00505
	34	.00146	.00146	.00402	.00398
	35	.00118	.00118	.00278	.00276
	36	.00084	.00084	.00185	.00184
	37	.00022	.00022	.00155	.00153
	38	.00011	.00011	.00093	.00092
	39	.00000	.00000	.00093	.00092
	40	.00000	.00000	.00031	.00031

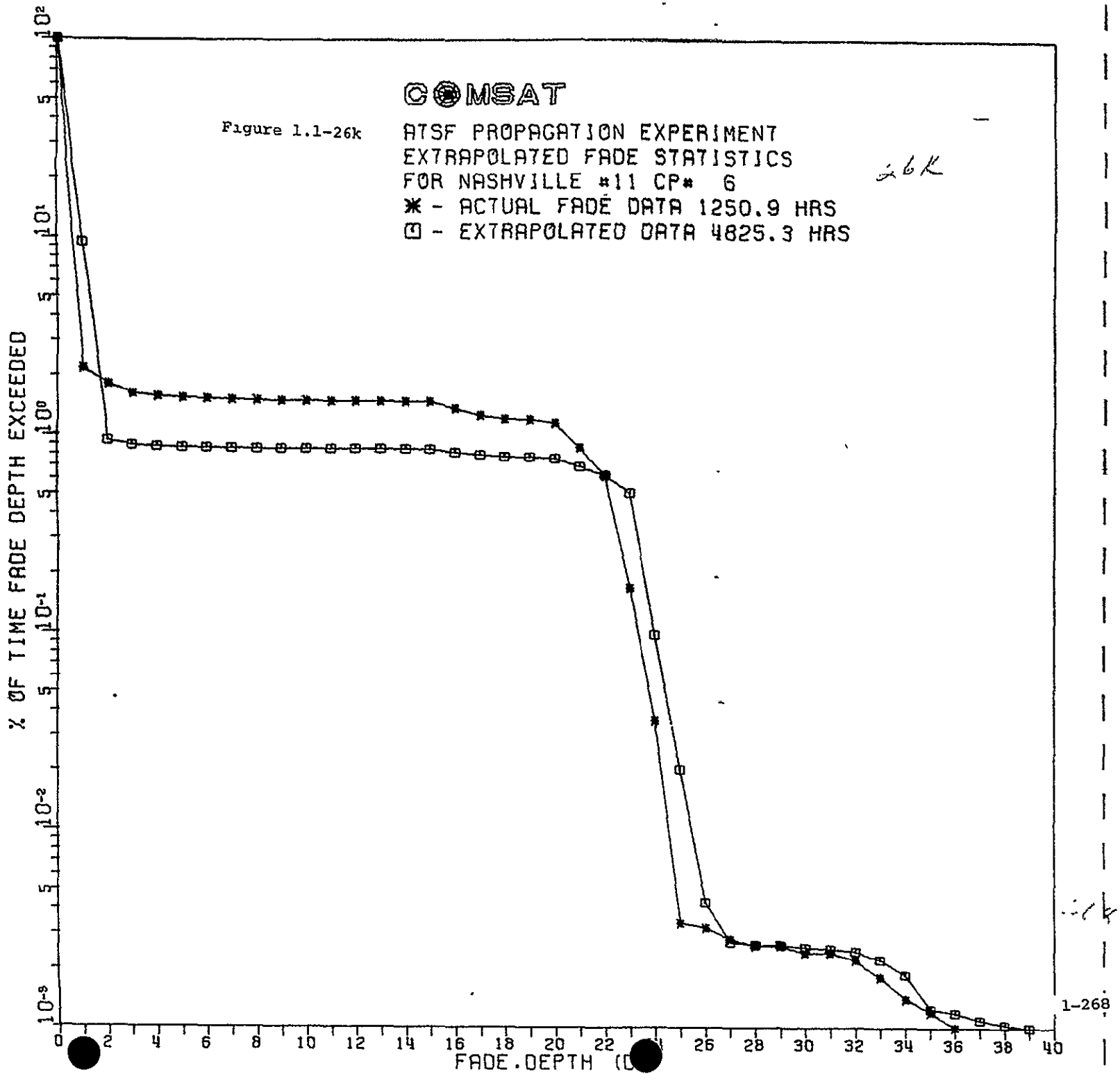


Figure 1.1-26k

1-268

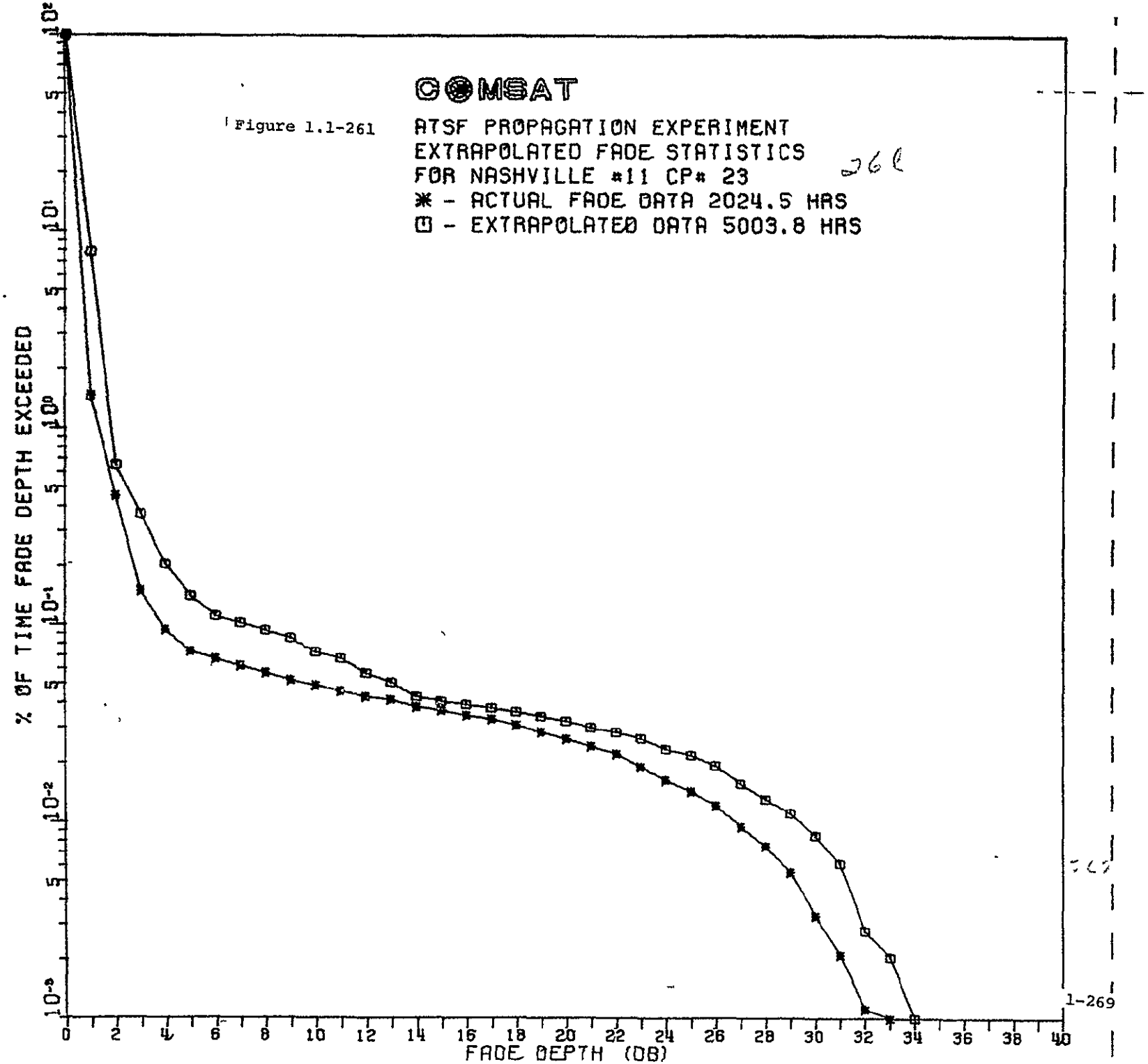


Figure 1.1-261

Table 1.1-34f
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR NASHVILLE #11

34f

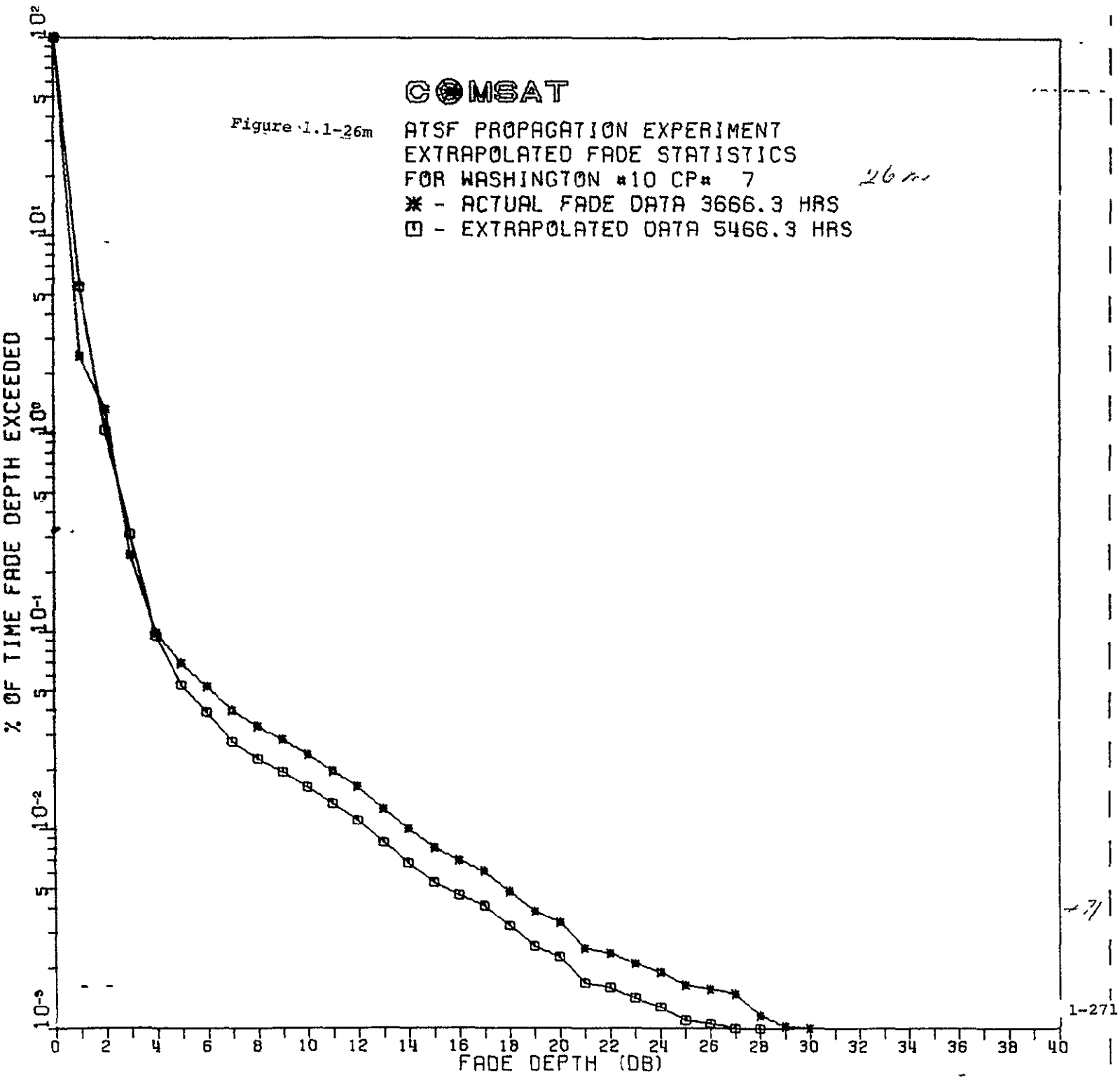
		CP# 6		CP#23	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	2.1756	9.4639	1.4635	7.8628
	2	1.7973	.93161	.45282	.64991
	3	1.6146	.88425	.14793	.36585
	4	1.5621	.87063	.09385	.20284
	5	1.5339	.86332	.07298	.13968
	6	1.5181	.85923	.06668	.11037
	7	1.5069	.85633	.06150	.10188
	8	1.4949	.85322	.05643	.09343
	9	1.4883	.85151	.05199	.08519
	10	1.4835	.85027	.04890	.07255
	11	1.4813	.84970	.04581	.06740
D	12	1.4801	.84939	.04297	.05651
E	13	1.4799	.84933	.04149	.05066
P	14	1.4799	.84933	.03803	.04279
T	15	1.4769	.84856	.03643	.04085
H	16	1.3642	.81934	.03445	.03915
	17	1.2625	.79296	.03285	.03760
D	18	1.2061	.77835	.03075	.03585
F	19	1.2001	.77680	.02840	.03400
	20	1.1522	.76437	.02618	.03221
F	21	.86517	.63997	.02396	.02990
A	22	.62514	.62774	.02198	.02841
D	23	.17108	.51003	.01889	.02647
E	24	.03597	.09839	.01618	.02330
	25	.00340	.02022	.01420	.02181
D	26	.00320	.00428	.01210	.01932
B	27	.00280	.00271	.00951	.01566
	28	.00260	.00263	.00753	.01306
	29	.00260	.00263	.00556	.01112
	30	.00240	.00255	.00333	.00854
	31	.00240	.00252	.00210	.00613
	32	.00220	.00244	.00111	.00279
	33	.00180	.00221	.00012	.00206
	34	.00140	.00185	.00000	.00000
	35	.00120	.00124	.00000	.00000
	36	.00100	.00119	.00000	.00000
	37	.00060	.00109	.00000	.00000
	38	.00040	.00104	.00000	.00000
	39	.00020	.00098	.00000	.00000
	40	.00000	.00093	.00000	.00000

270

COMSAT

Figure 1.1-26m ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS
FOR WASHINGTON #10 CP# 7
* - ACTUAL FADE DATA 3666.3 HRS
□ - EXTRAPOLATED DATA 5466.3 HRS

26m



1-271

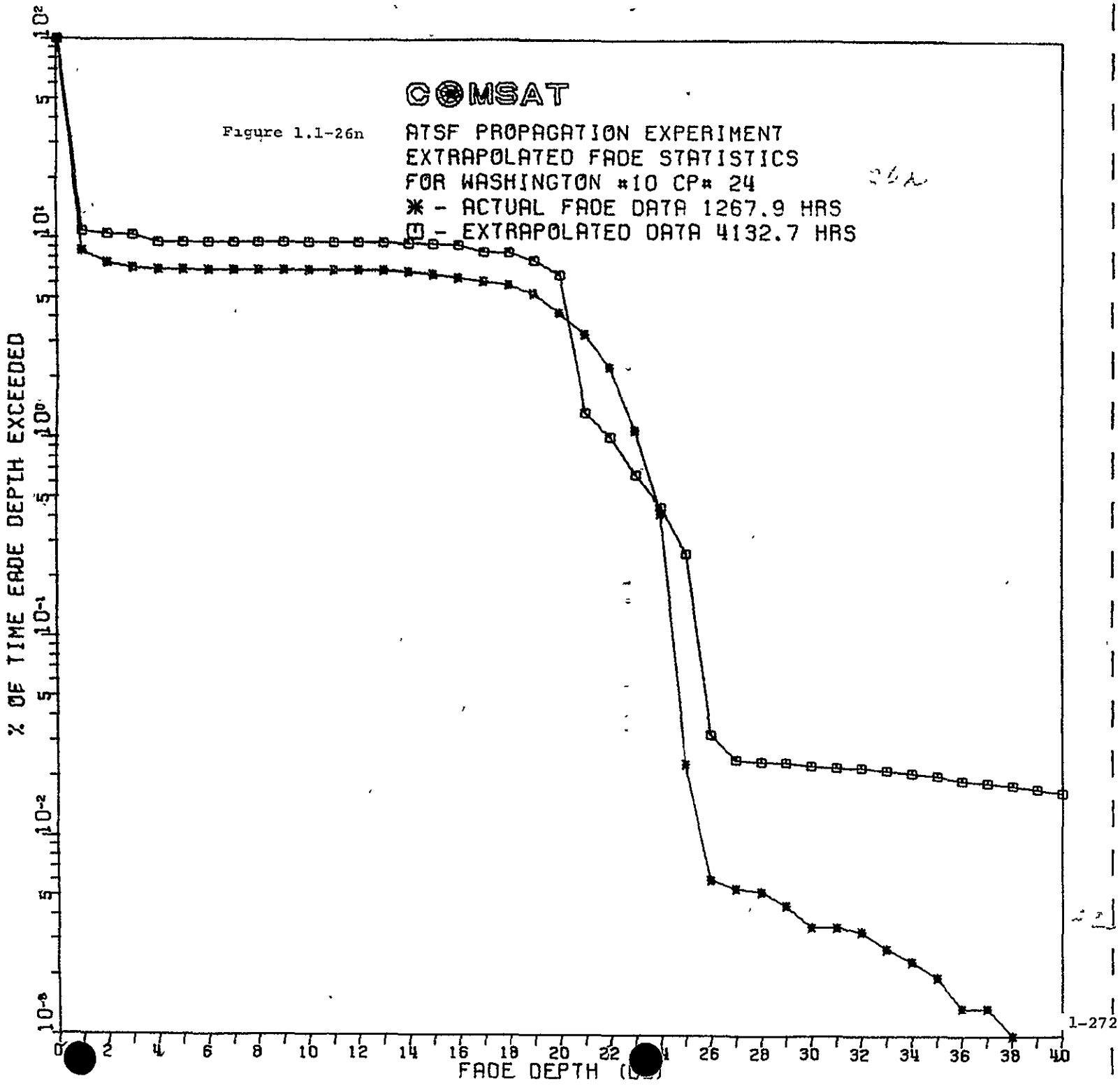


Figure 1.1-26n

Table 1.1-34g
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR WASHINGTON #10

34g

	CP# 7		CP #24	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	2.4676	5.5337	8.6261	10.813
2	1.3256	1.0379	7.5183	10.473
3	.24554	.31344	7.0678	10.335
4	.09969	.09532	6.9374	9.4880
5	.06928	.05363	6.9067	9.4785
6	.05278	.03919	6.8954	9.4751
7	.04003	.02781	6.8907	9.4736
8	.03328	.02282	6.8874	9.4726
9	.02857	.01959	6.8854	9.4720
10	.02400	.01640	6.8846	9.4718
11	.01998	.01361	6.8842	9.4716
D 12	.01657	.01123	6.8838	9.4715
E 13	.01282	.00865	6.8807	9.4706
P 14	.01016	.00683	6.8004	9.4459
T 15	.00811	.00544	6.6202	9.3906
H 16	.00702	.00471	6.3347	9.3031
17	.00621	.00416	6.0908	8.5681
O 18	.00491	.00329	5.8681	8.4998
F 19	.00389	.00261	5.3066	7.7774
20	.00341	.00229	4.2465	6.5878
F 21	.00252	.00169	3.3069	1.3390
A 22	.00239	.00160	2.2739	1.0220
D 23	.00211	.00142	1.1026	.66270
E 24	.00191	.00128	.42236	.45400
25	.00164	.00110	.02327	.26651
D 26	.00157	.00105	.00611	.03302
B 27	.00150	.00101	.00552	.02452
28	.00116	.00078	.00532	.02403
29	.00102	.00069	.00454	.02379
30	.00089	.00059	.00355	.02305
31	.00082	.00055	.00355	.02261
32	.00075	.00050	.00335	.02255
33	.00048	.00032	.00276	.02193
34	.00041	.00027	.00237	.02112
35	.00027	.00018	.00197	.02057
36	.00014	.00009	.00138	.01952
37	.00007	.00005	.00138	.01908
38	.00007	.00005	.00079	.01846
39	.00000	.00000	.00059	.01779
40	.00000	.00000	.00020	.01701

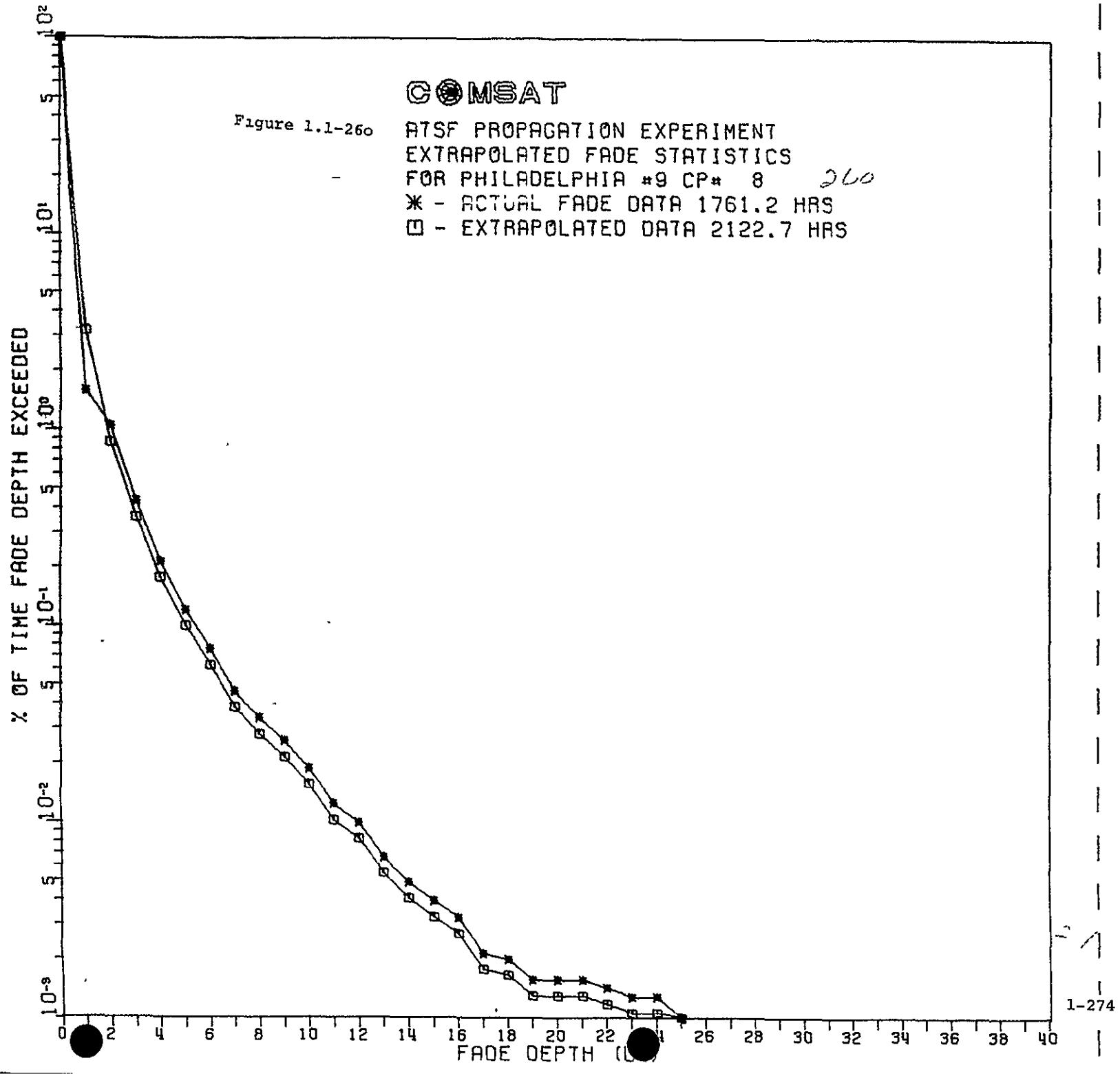


Figure 1.1-26o

260

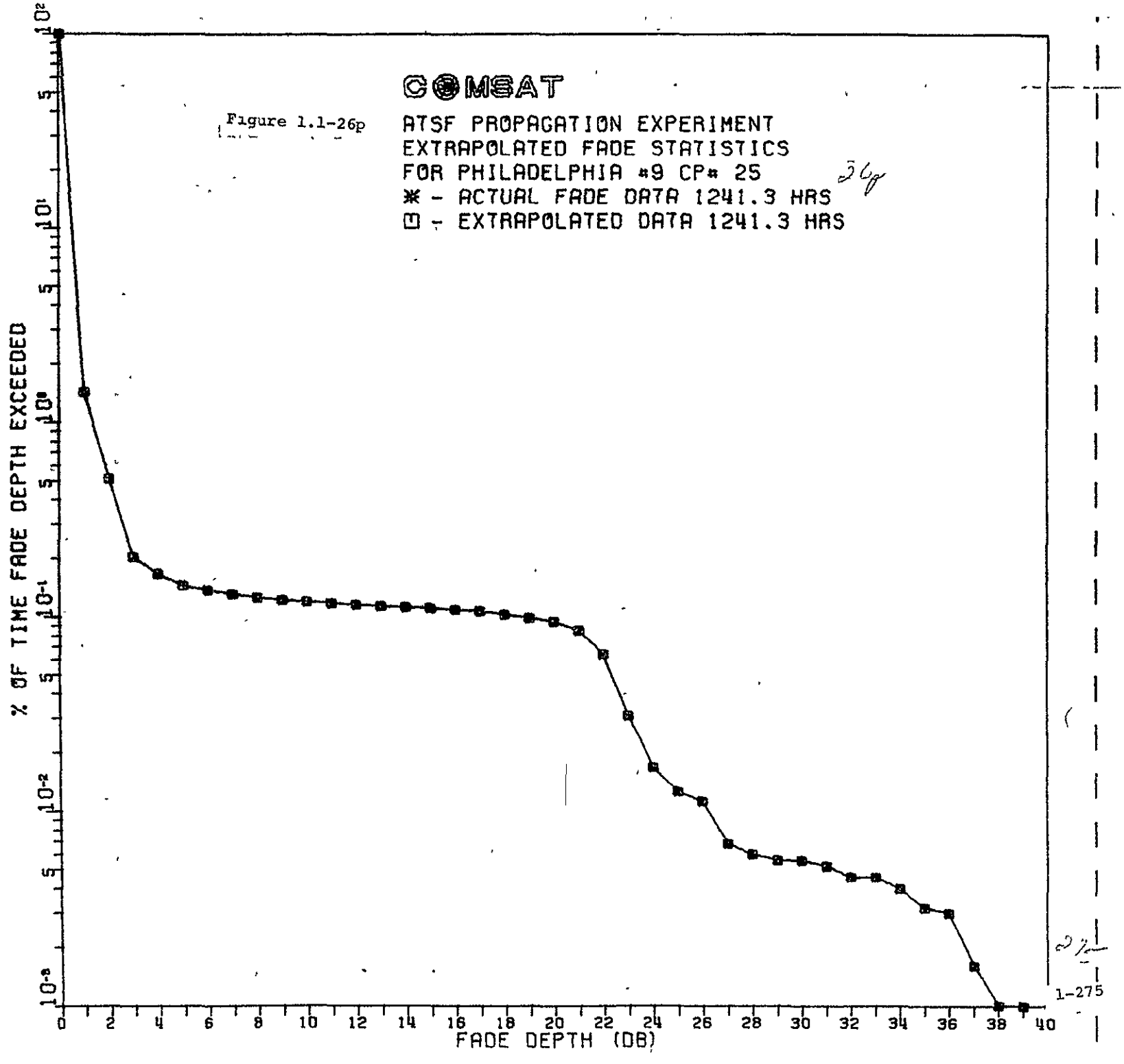


Figure 1.1-26p

Table 1.1-34h

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR PHILADELPHIA #9

3h

DB	CP# 8 RECORDED	CP# 8 EXTRAPOLATED	CP#25 RECORDED	CP#25 EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	1.5714	3.1962	1.4249	1.4249
2	1.0451	.86706	.51336	.51336
3	.43295	.35922	.20341	.20341
4	.21222	.17607	.16595	.16595
5	.11967	.09928	.14440	.14440
6	.07481	.06207	.13635	.13635
7	.04571	.03792	.13010	.13010
8	.03364	.02791	.12547	.12547
9	.02584	.02144	.12164	.12164
10	.01888	.01566	.11943	.11943
11	.01249	.01036	.11762	.11762
D 12	.01008	.00836	.11580	.11580
E 13	.00667	.00554	.11339	.11339
P 14	.00497	.00412	.11218	.11218
T 15	.00397	.00330	.11077	.11077
H 16	.00326	.00271	.10875	.10875
17	.00213	.00177	.10714	.10714
O 18	.00199	.00165	.10312	.10312
F 19	.00156	.00130	.09909	.09909
20	.00156	.00130	.09506	.09506
F 21	.00156	.00130	.08580	.08580
A 22	.00142	.00118	.06404	.06404
D 23	.00128	.00106	.03102	.03102
E 24	.00128	.00106	.01692	.01692
25	.00099	.00082	.01269	.01269
D 26	.00085	.00071	.01128	.01128
B 27	.00071	.00059	.00685	.00685
28	.00071	.00059	.00604	.00604
29	.00071	.00059	.00564	.00564
30	.00071	.00059	.00564	.00564
31	.00057	.00047	.00524	.00524
32	.00043	.00035	.00463	.00463
33	.00043	.00035	.00463	.00463
34	.00043	.00035	.00403	.00403
35	.00043	.00035	.00322	.00322
36	.00028	.00024	.00302	.00302
37	.00014	.00012	.00161	.00161
38	.00014	.00012	.00101	.00101
39	.00000	.00000	.00040	.00040
40	.00000	.00000	.00000	.00000

276

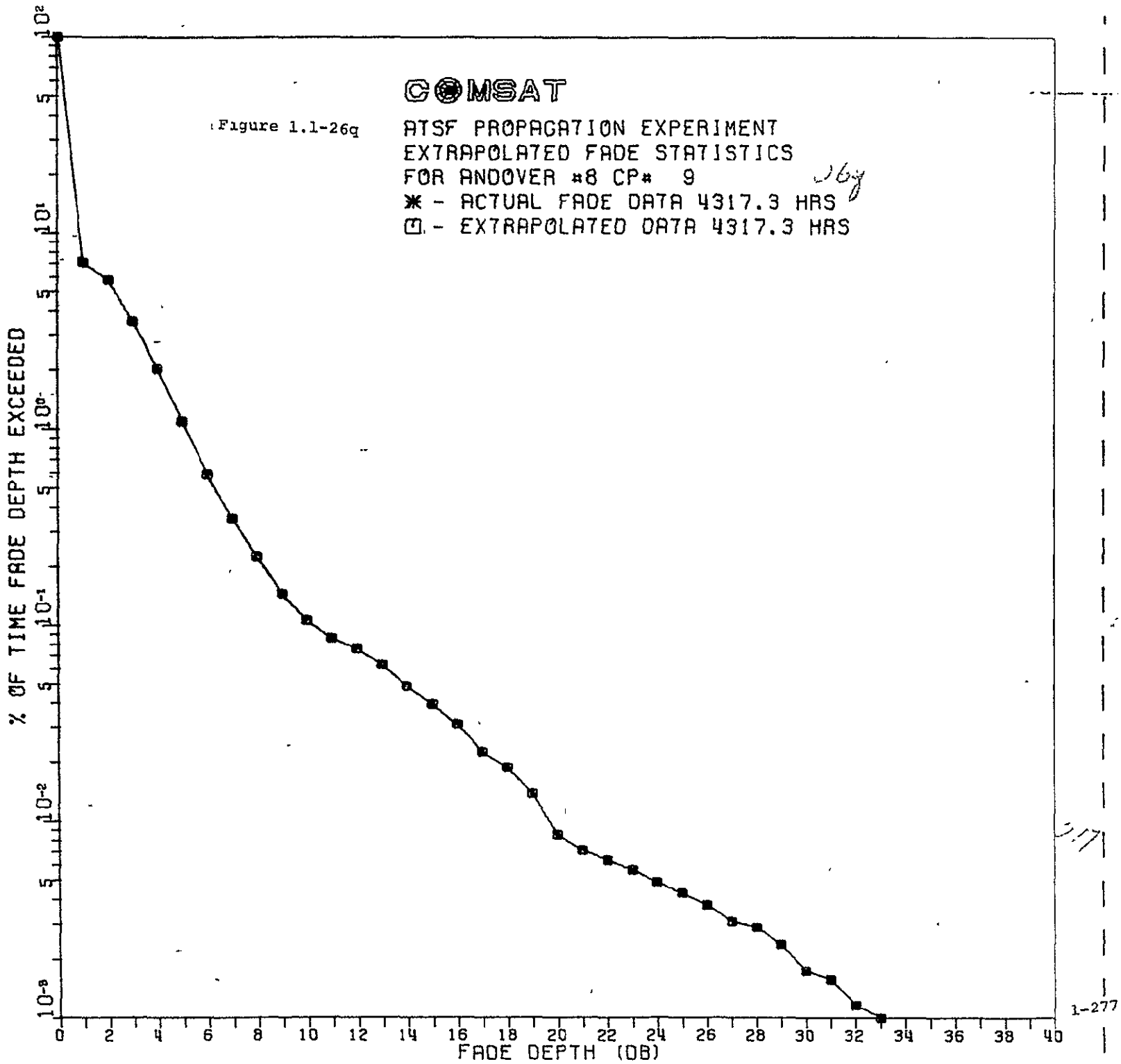


Figure 1.1-26q

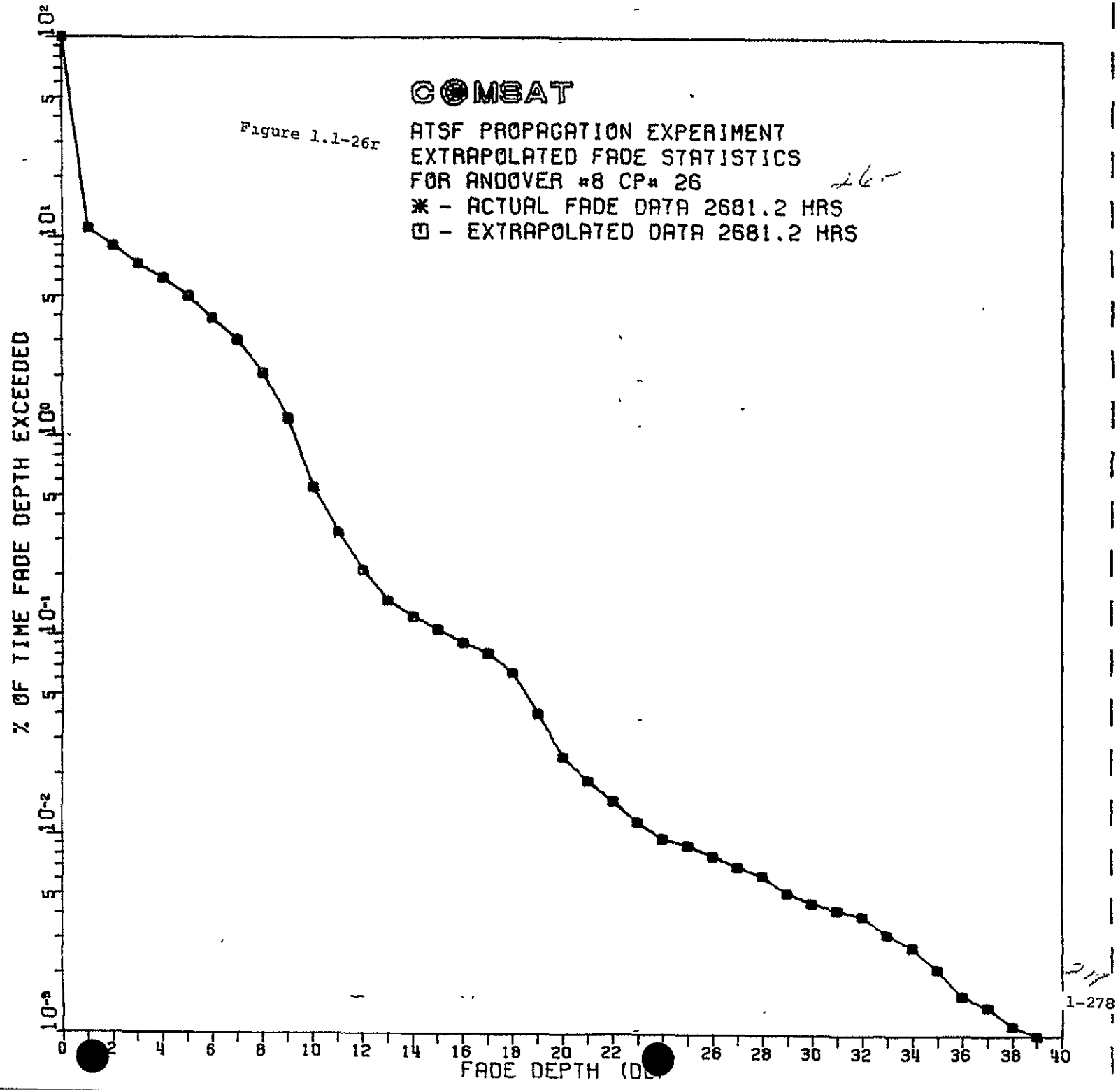


Figure 1.1-26r

Table 1.1-34i
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR ANDOVER #8

34.

	CP# 9		CP#26	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	7.0955	7.0955	11.091	11.091
2	5.7452	5.7452	9.0367	9.0367
3	3.5223	3.5223	7.2687	7.2687
4	2.0182	2.0182	6.1537	6.1537
5	1.0914	1.0914	5.0094	5.0094
6	.58839	.58839	3.8895	3.8895
7	.35213	.35213	3.0240	3.0240
8	.22480	.22480	2.0794	2.0794
9	.14569	.14569	1.2308	1.2308
10	.10684	.10684	.55731	.55731
11	.08651	.08651	.33204	.33204
D 12	.07661	.07661	.21259	.21259
E 13	.06341	.06341	.14844	.14844
P 14	.04922	.04922	.12448	.12448
T 15	.03984	.03984	.10714	.10714
H 16	.03150	.03150	.09231	.09231
17	.02282	.02282	.08205	.08205
O 18	.01894	.01894	.06574	.06574
F 19	.01396	.01396	.04093	.04093
20	.00863	.00863	.02490	.02490
F 21	.00718	.00718	.01893	.01893
A 22	.00637	.00637	.01511	.01511
D 23	.00567	.00567	.01184	.01184
E 24	.00492	.00492	.00979	.00979
25	.00434	.00434	.00904	.00904
D 26	.00376	.00376	.00802	.00802
B 27	.00313	.00313	.00709	.00709
28	.00290	.00290	.00643	.00643
29	.00237	.00237	.00522	.00522
30	.00174	.00174	.00466	.00466
31	.00156	.00156	.00429	.00429
32	.00116	.00116	.00401	.00401
33	.00075	.00075	.00326	.00326
34	.00046	.00046	.00280	.00280
35	.00023	.00023	.00214	.00214
36	.00017	.00017	.00159	.00159
37	.00000	.00000	.00140	.00140
38	.00000	.00000	.00112	.00112
39	.00000	.00000	.00056	.00056
40	.00000	.00000	.00009	.00009

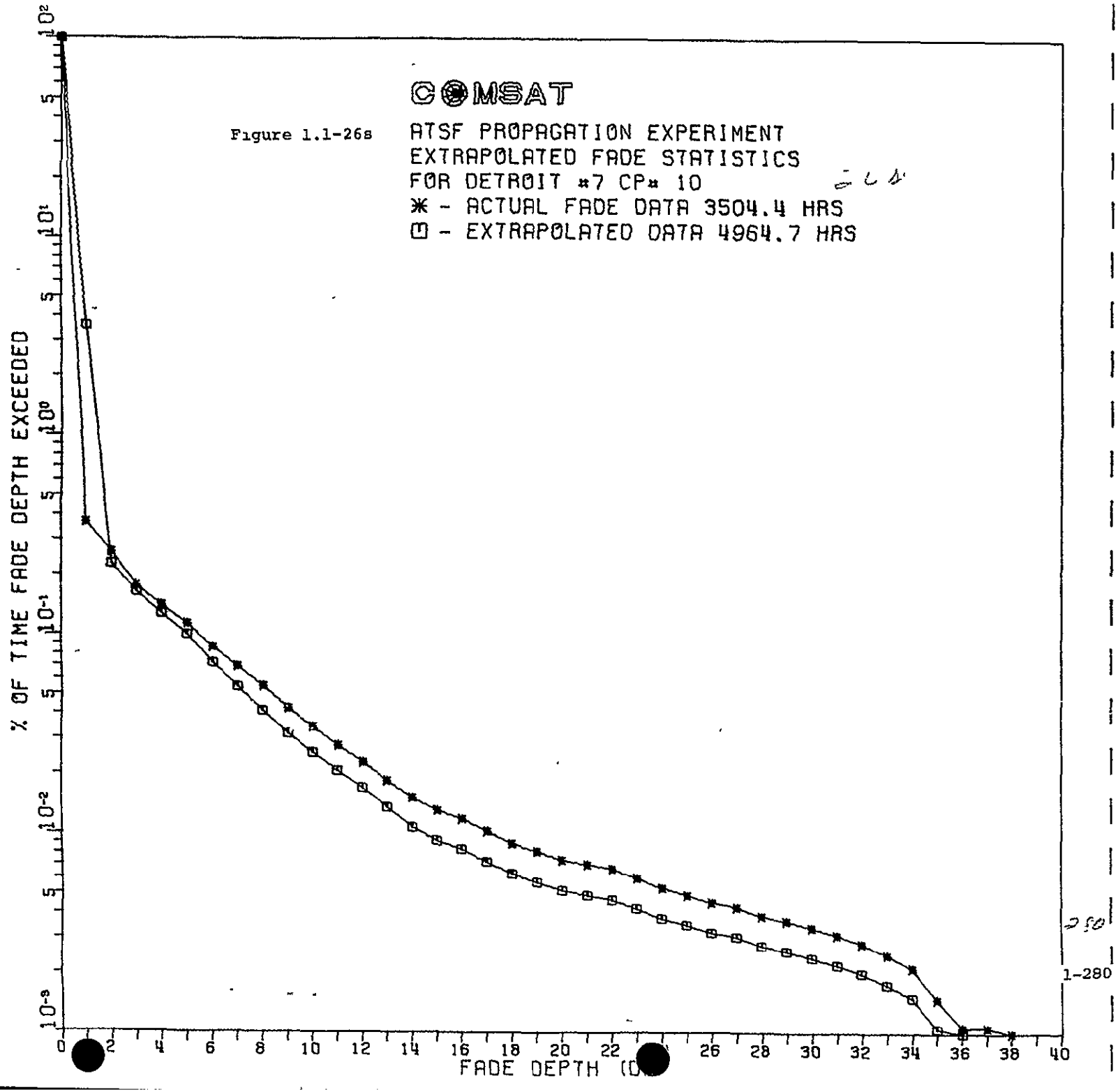


Figure 1.1-26s

1-280

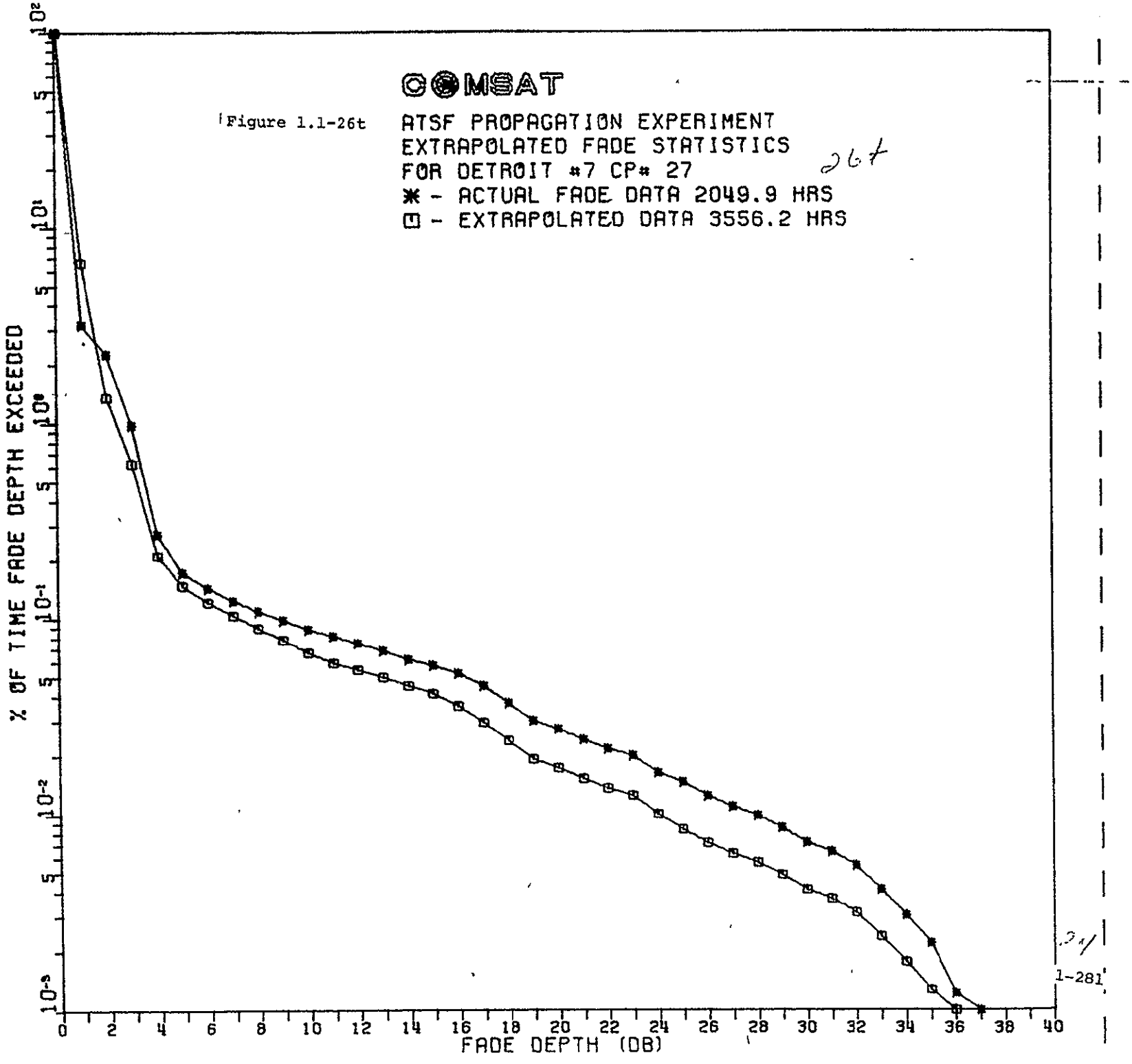


Figure 1.1-26t

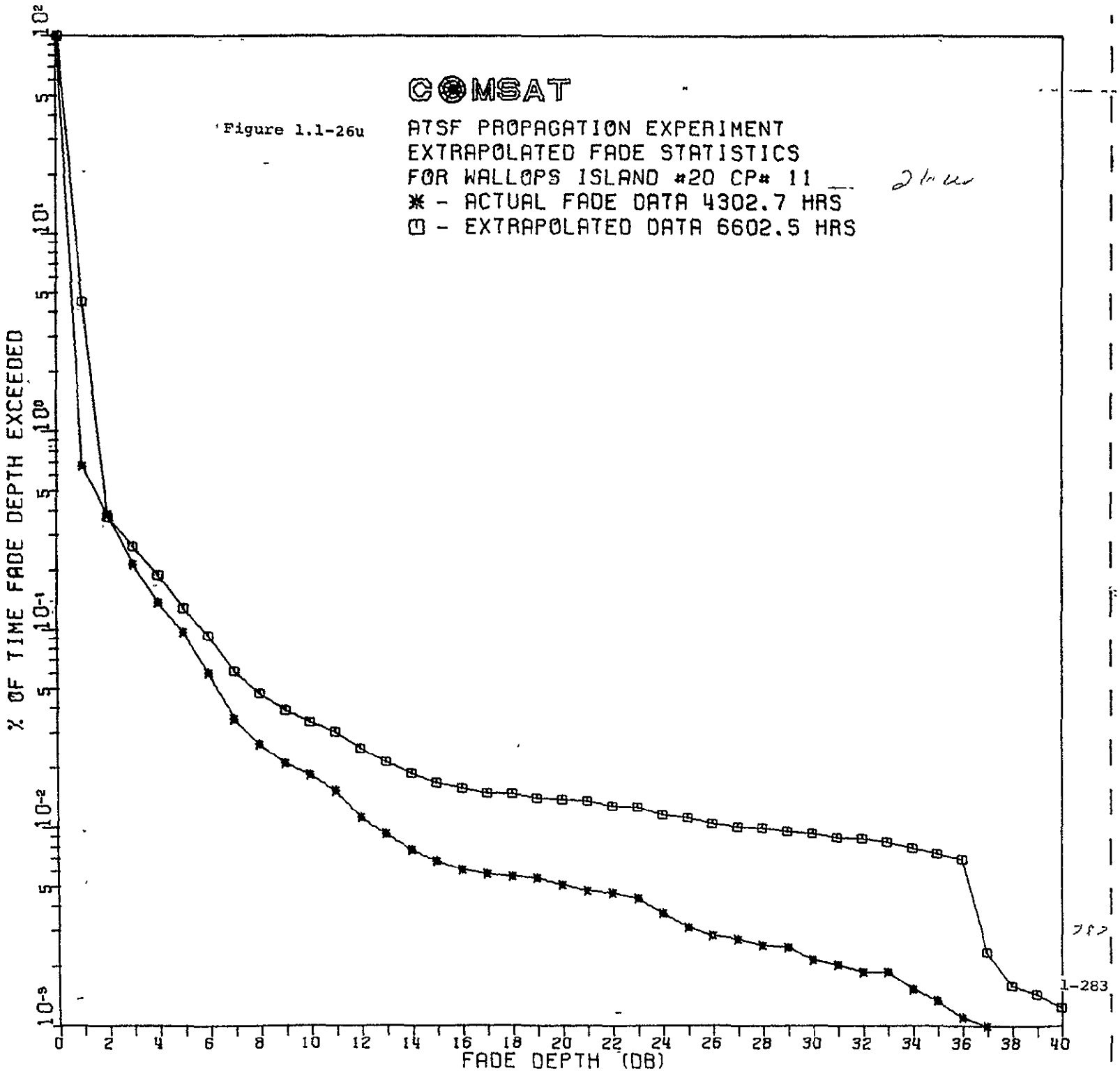
Table 1.1-34j

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR DETROIT #7

34'

		CP#10		CP#27	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	.36511	3.5789	3.1771	6.6117
	2	.25960	.22596	2.2466	1.3546
	3	.17713	.16376	.97603	.62224
	4	.14011	.12626	.27099	.21028
	5	.11307	.09941	.17184	.14697
	6	.08546	.07102	.14318	.12073
	7	.06827	.05402	.12281	.10331
	8	.05457	.04100	.10854	.08899
	9	.04209	.03143	.09744	.07779
	10	.03403	.02545	.08757	.06682
	11	.02761	.02066	.08061	.05929
D	12	.02276	.01699	.07439	.05454
E	13	.01855	.01364	.06842	.05015
P	14	.01527	.01086	.06183	.04542
T	15	.01320	.00932	.05744	.04154
H	16	.01198	.00846	.05256	.03586
	17	.01034	.00730	.04537	.02973
D	18	.00899	.00634	.03708	.02395
F	19	.00820	.00579	.03012	.01924
	20	.00742	.00524	.02732	.01733
F	21	.00706	.00499	.02415	.01533
A	22	.00671	.00473	.02159	.01368
D	23	.00606	.00428	.02000	.01253
E	24	.00542	.00383	.01634	.01007
	25	.00499	.00352	.01463	.00844
D	26	.00457	.00322	.01244	.00717
B	27	.00435	.00307	.01098	.00633
	28	.00392	.00277	.00988	.00569
	29	.00371	.00262	.00854	.00492
	30	.00342	.00242	.00720	.00415
	31	.00314	.00222	.00646	.00373
	32	.00285	.00201	.00549	.00316
	33	.00250	.00176	.00415	.00239
	34	.00214	.00151	.00305	.00176
	35	.00150	.00106	.00220	.00127
	36	.00107	.00076	.00122	.00070
	37	.00107	.00076	.00085	.00049
	38	.00086	.00060	.00012	.00007
	39	.00064	.00045	.00000	.00000
	40	.00021	.00015	.00000	.00000

Figure 1.1-26u



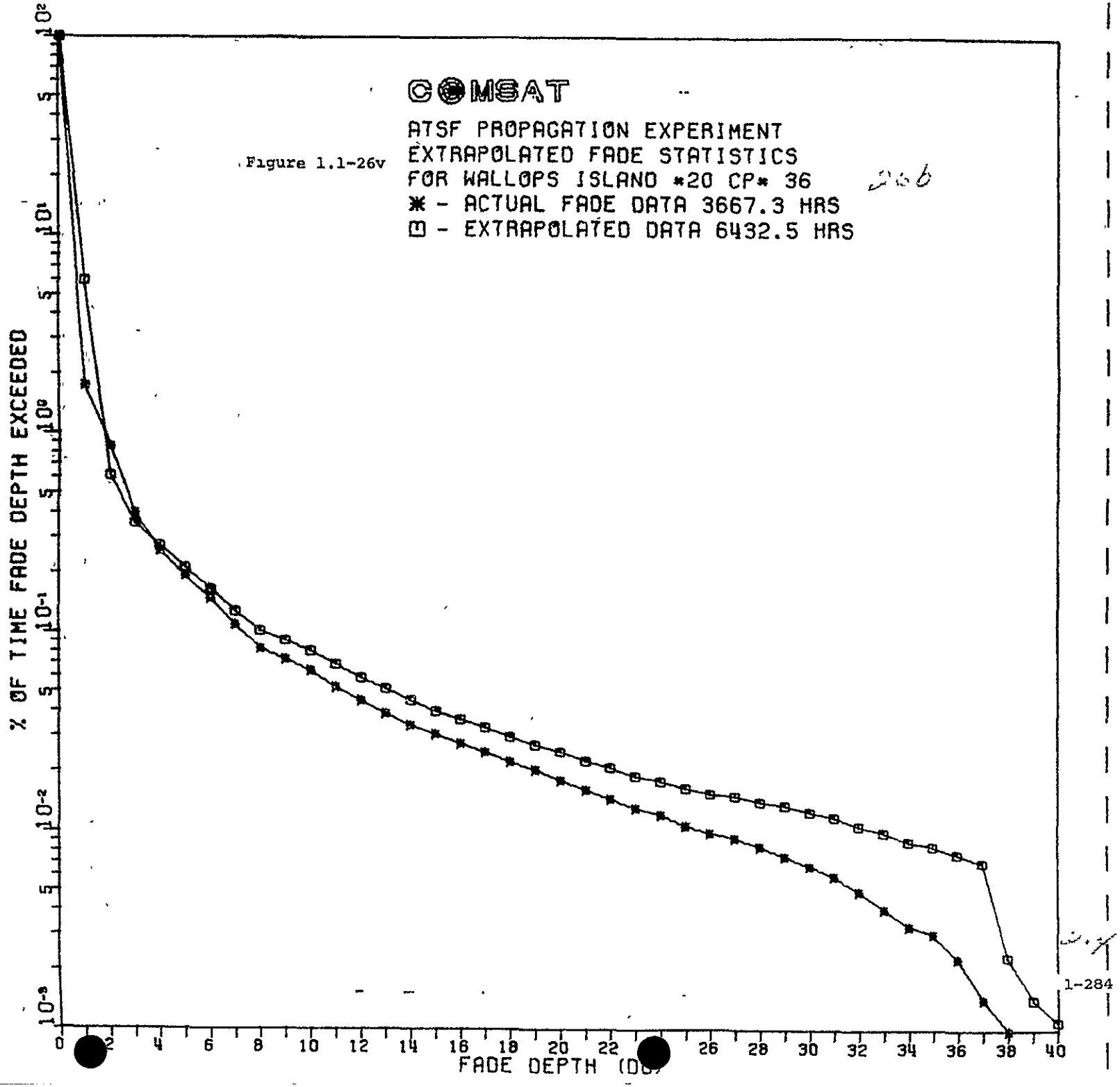


Figure 1.1-26v

Table 1.1-34k

ATSF PROPAGATION EXPERIMENT

EXTRAPOLATED FADE STATISTICS FOR WALLOPS ISLAND #20

34K-

		CP#11		CP#36	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	.67004	4.4801	1.7527	5.9529
	2	.38226	.37760	.85500	.61364
	3	.21335	.26253	.39975	.35410
	4	.13642	.18884	.25714	.27270
	5	.09668	.12719	.19204	.21151
	6	.05979	.09300	.14766	.16502
	7	.03509	.06116	.10873	.12739
	8	.02638	.04736	.08215	.10187
	9	.02109	.03896	.07240	.09045
	10	.01853	.03414	.06388	.08024
	11	.01551	.03060	.05290	.06864
D	12	.01133	.02534	.04533	.05899
E	13	.00941	.02161	.03920	.05215
P	14	.00779	.01895	.03429	.04563
T	15	.00686	.01702	.03102	.04028
H	16	.00616	.01591	.02788	.03675
	17	.00587	.01506	.02509	.03342
O	18	.00569	.01495	.02236	.03011
F	19	.00558	.01421	.02038	.02738
	20	.00517	.01395	.01807	.02526
F	21	.00482	.01372	.01622	.02260
A	22	.00471	.01299	.01466	.02106
D	23	.00442	.01280	.01316	.01908
E	24	.00372	.01168	.01220	.01798
	25	.00314	.01131	.01077	.01660
D	26	.00285	.01050	.00995	.01558
B	27	.00273	.01009	.00941	.01527
	28	.00256	.00997	.00852	.01420
	29	.00250	.00959	.00757	.01366
	30	.00215	.00937	.00675	.01263
	31	.00203	.00895	.00600	.01197
	32	.00186	.00884	.00504	.01087
	33	.00186	.00850	.00409	.01004
	34	.00151	.00793	.00334	.00906
	35	.00134	.00747	.00307	.00862
	36	.00110	.00698	.00232	.00791
	37	.00064	.00235	.00143	.00713
	38	.00041	.00159	.00068	.00238
	39	.00041	.00145	.00034	.00143
	40	.00023	.00124	.00014	.00110

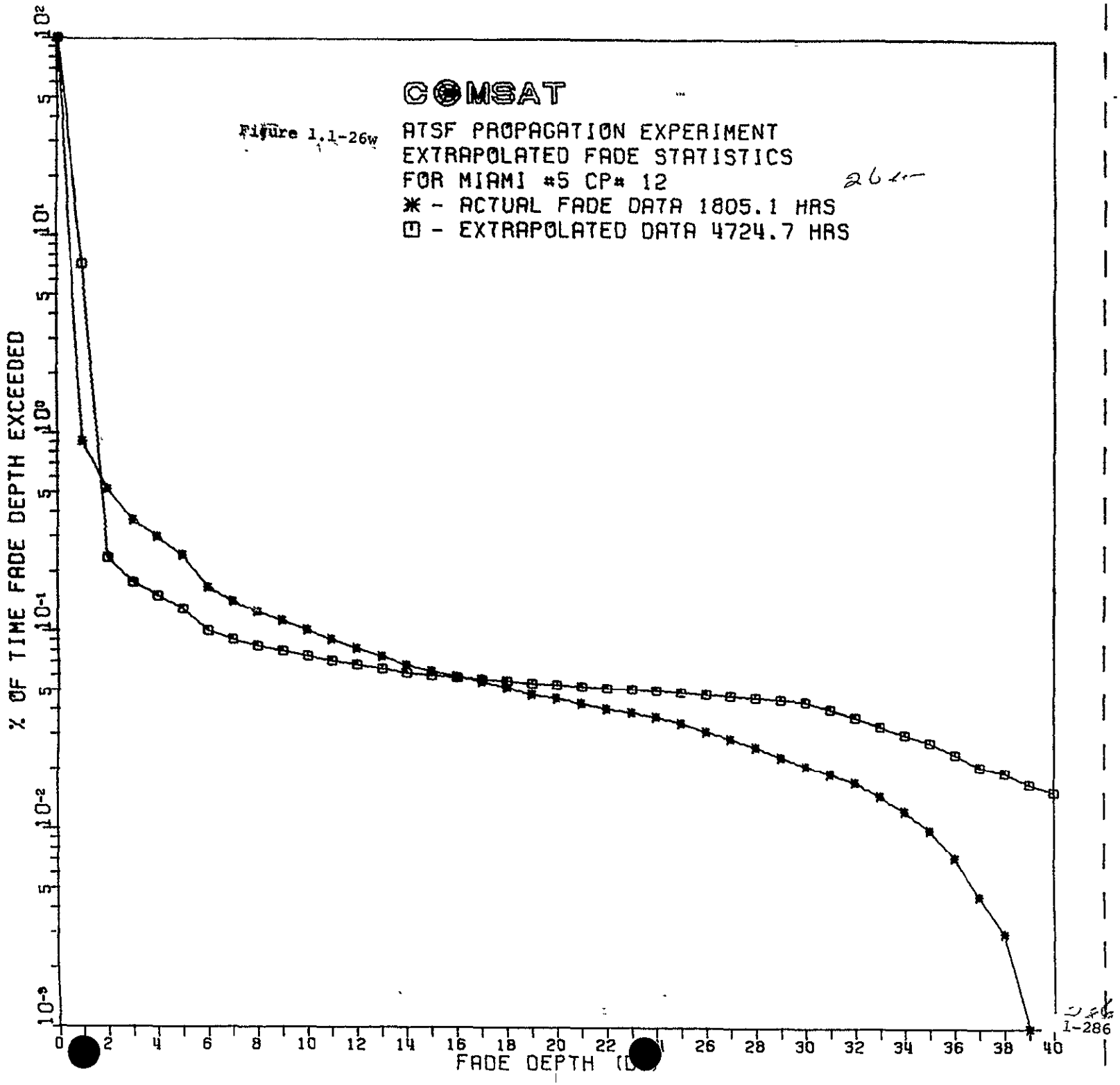

COMSAT
Figure 1.1-26w
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS
FOR MIAMI #5 CP# 12
* - ACTUAL FADE DATA 1805.1 HRS
□ - EXTRAPOLATED DATA 4724.7 HRS
% OF TIME FADE DEPTH EXCEEDED
FADE DEPTH (DB)
1-286

Figure 1.1-26x

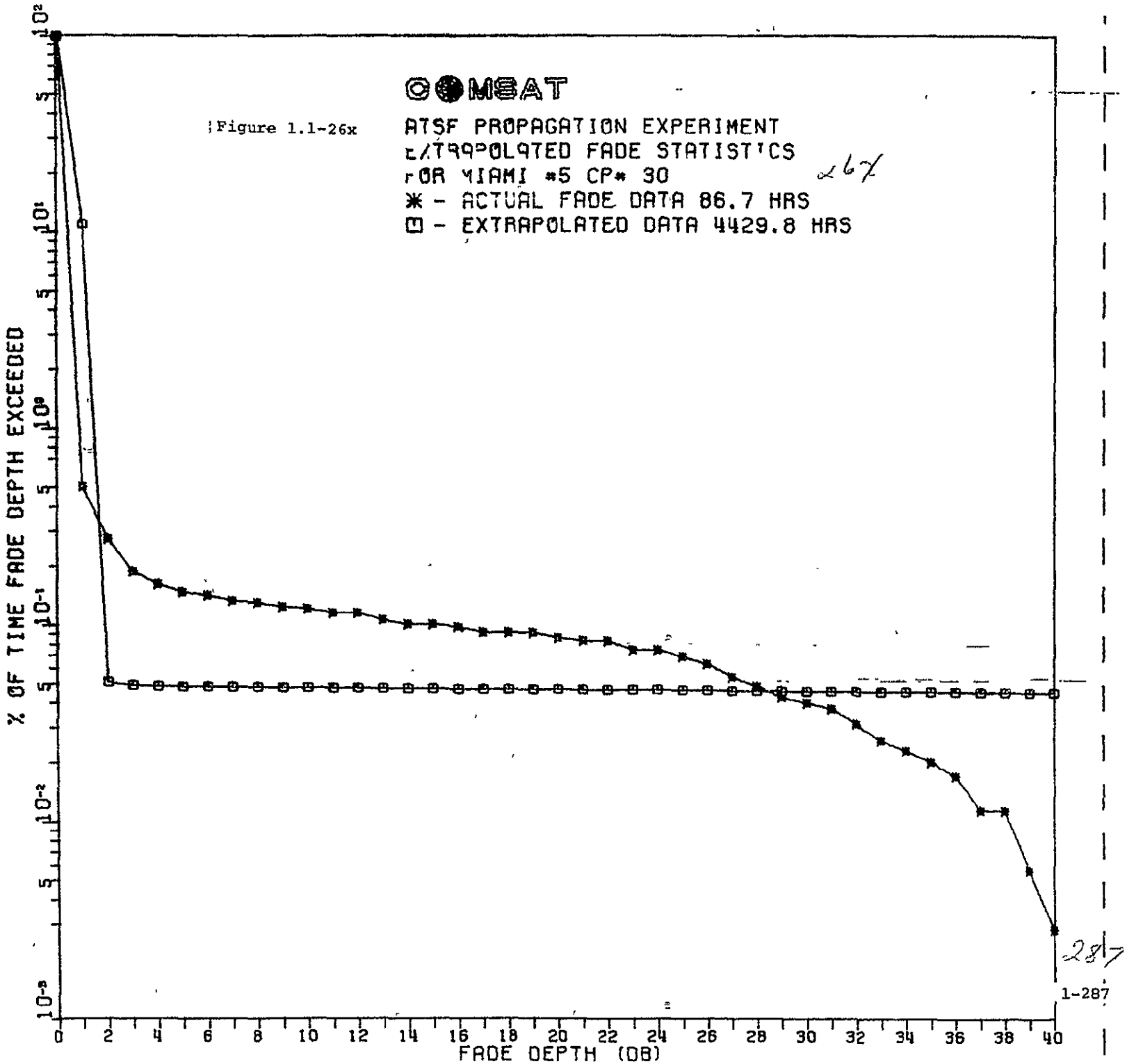


Table 1.1-341

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR MIAMI #5

341

	CP#12		CP#30	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	.91143	7.2566	.50451	10.956
2	.52060	.23559	.27388	.05117
3	.36618	.17659	.18739	.04947
4	.30012	.15136	.16144	.04897
5	.24278	.12945	.14703	.04868
6	.16661	.10035	.14126	.04857
7	.14210	.09098	.13261	.04840
8	.12589	.08479	.12973	.04835
9	.11357	.08008	.12397	.04823
10	.10179	.07558	.12108	.04818
11	.09154	.07167	.11532	.04806
D 12	.08282	.06833	.11532	.04806
E 13	.07534	.06548	.10667	.04789
P 14	.06855	.06288	.10090	.04778
T 15	.06385	.06109	.10090	.04778
H 16	.05983	.05955	.09802	.04772
17	.05651	.05828	.09225	.04761
O 18	.05263	.05680	.09225	.04761
F 19	.04847	.05521	.09225	.04761
20	.04626	.05437	.08649	.04750
F 21	.04376	.05341	.08360	.04744
A 22	.04086	.05230	.08360	.04744
D 23	.03906	.05161	.07496	.04727
E 24	.03739	.05098	.07496	.04727
25	.03462	.04992	.06919	.04716
D 26	.03144	.04870	.06342	.04705
B 27	.02908	.04780	.05478	.04688
28	.02631	.04675	.04901	.04677
29	.02327	.04558	.04324	.04665
30	.02119	.04479	.04036	.04660
31	.01925	.04107	.03748	.04654
32	.01745	.03743	.03171	.04643
33	.01496	.03367	.02595	.04631
34	.01260	.03077	.02306	.04626
35	.01011	.02807	.02018	.04620
36	.00734	.02436	.01730	.04614
37	.00471	.02118	.01153	.04603
38	.00305	.01968	.01153	.04603
39	.00097	.01732	.00577	.04592
40	.00042	.01579	.00288	.04586

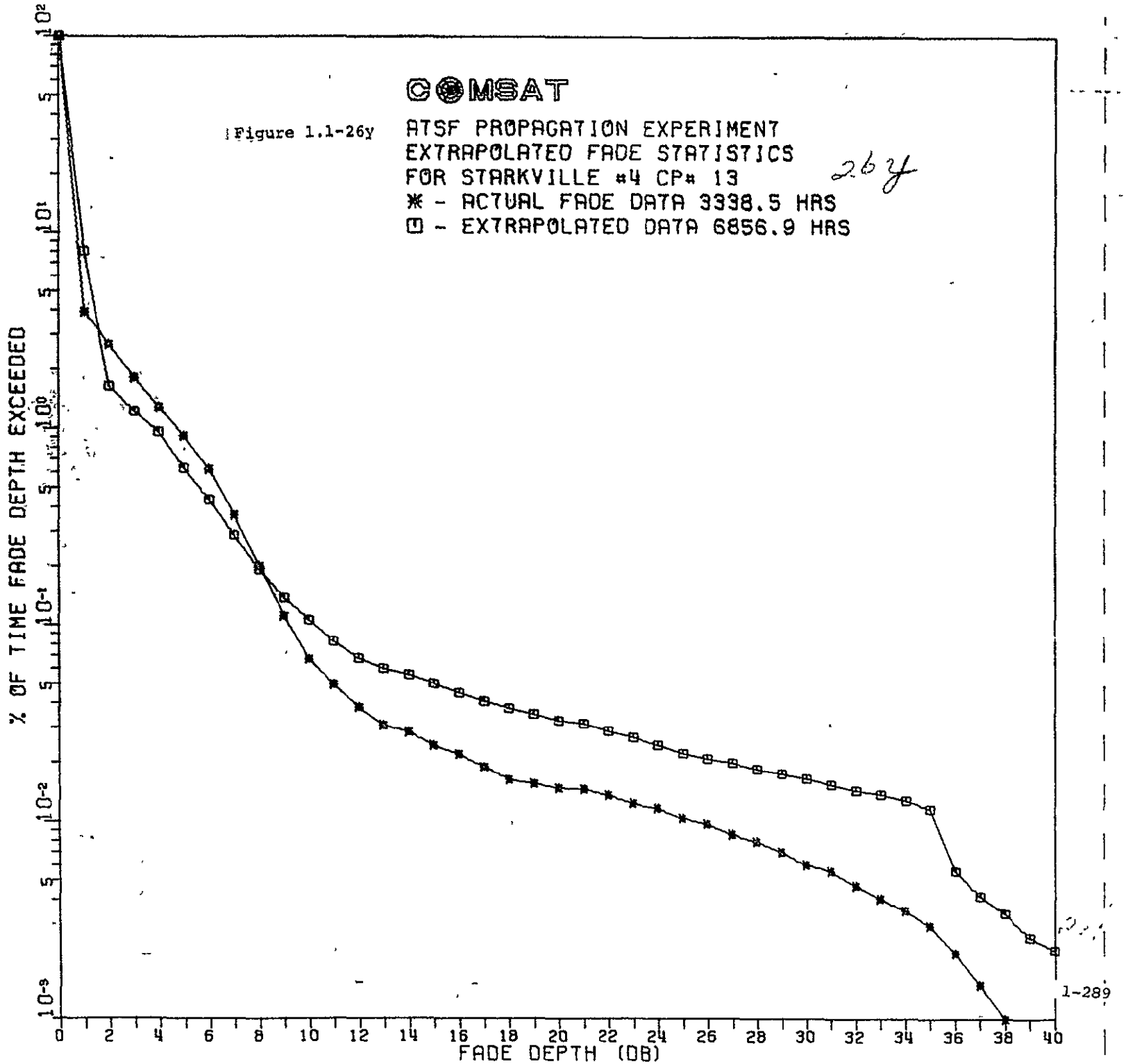
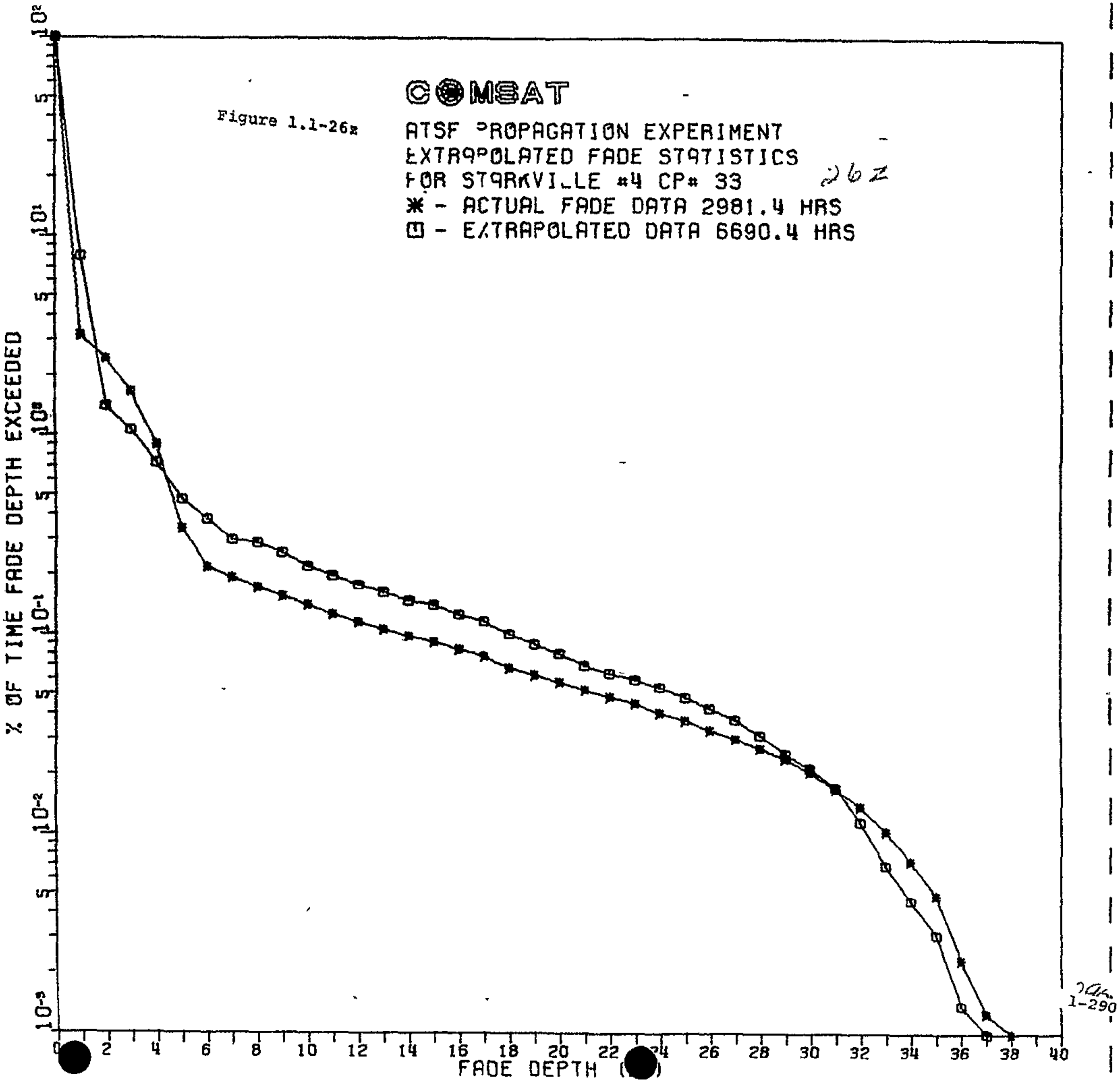


Figure 1.1-26y

26y

Figure 1.1-26z



1-290

Table 1.1-34m
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR STARKVILLE #4

34m

		CP#13		CP#33	
		RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
	0	100.00	100.00	100.00	100.00
	1	3.9040	8.0387	3.1652	7.9962
	2	2.6817	1.6440	2.4430	1.4144
	3	1.8105	1.2198	1.6625	1.0665
	4	1.2829	.96291	.90284	.72799
	5	.91502	.63138	.34010	.47722
	6	.62312	.43725	.21693	.38128
	7	.36581	.28881	.19294	.29781
	8	.20107	.19285	.17190	.28843
	9	.11158	.13808	.15471	.25771
	10	.06710	.10629	.14070	.21954
	11	.04980	.08326	.12569	.19724
D	12	.03819	.06858	.11555	.17692
E	13	.03100	.06052	.10616	.16263
P	14	.02891	.05646	.09827	.14811
T	15	.02464	.05090	.09199	.14018
H	16	.02232	.04569	.08469	.12691
	17	.01917	.04144	.07823	.11701
O	18	.01647	.03802	.06826	.10097
F	19	.01573	.03551	.06322	.08951
	20	.01498	.03300	.05811	.08084
F	21	.01475	.03182	.05308	.07053
A	22	.01378	.02921	.04897	.06441
D	23	.01251	.02700	.04553	.06000
E	24	.01191	.02480	.04075	.05500
	25	.01056	.02255	.03740	.04874
D	26	.00981	.02115	.03354	.04313
B	27	.00869	.02009	.03027	.03778
	28	.00801	.01873	.02700	.03170
	29	.00711	.01777	.02398	.02554
	30	.00614	.01678	.02071	.02167
	31	.00569	.01571	.01702	.01725
	32	.00479	.01461	.01392	.01168
	33	.00412	.01396	.01048	.00701
	34	.00359	.01305	.00738	.00466
	35	.00300	.01183	.00495	.00314
	36	.00217	.00571	.00235	.00138
	37	.00150	.00427	.00126	.00056
	38	.00097	.00350	.00067	.00030
	39	.00045	.00263	.00042	.00019
	40	.00007	.00225	.00017	.00007

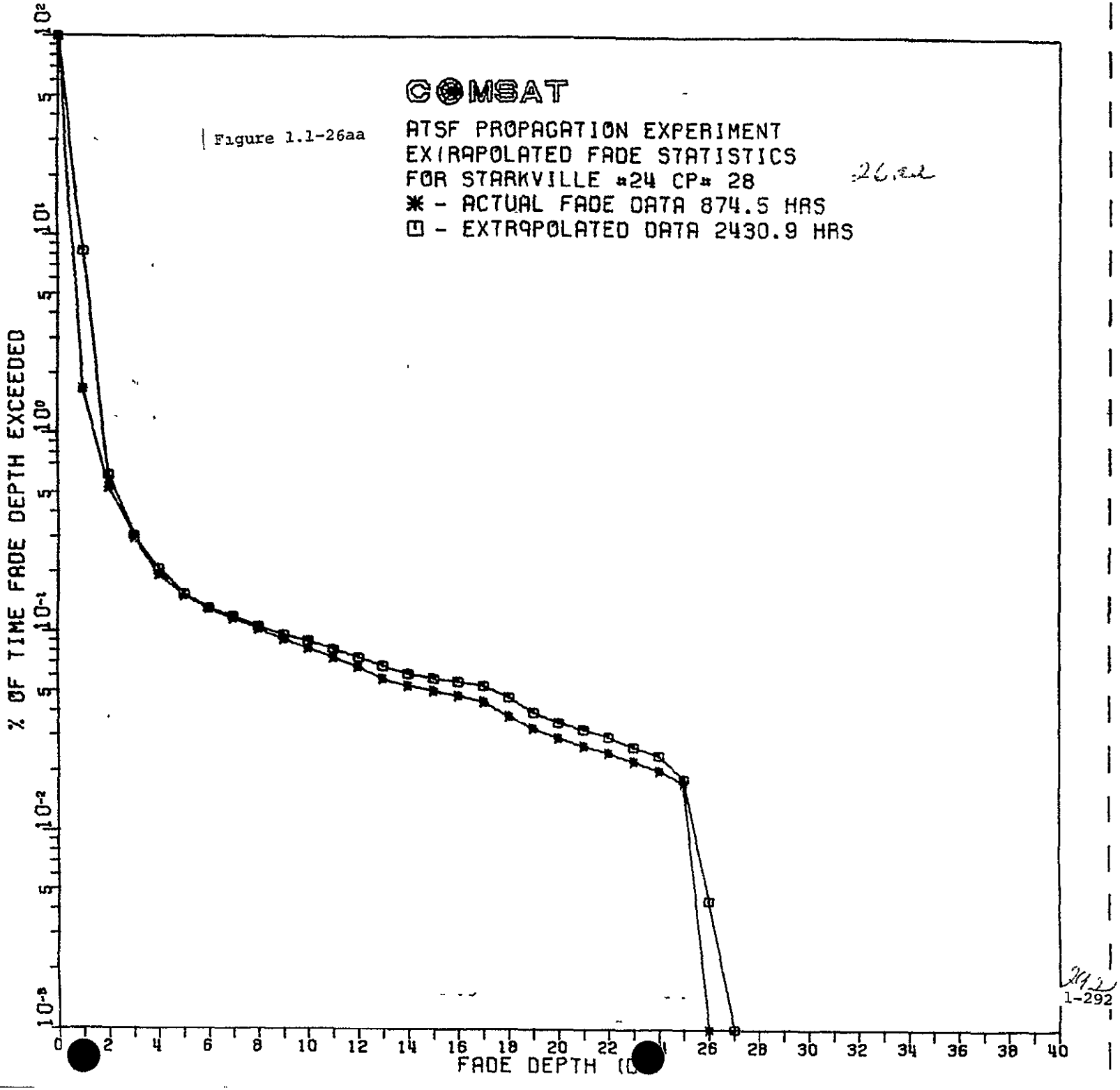


Figure 1.1-26aa

1-292

ATSF PROPAGATION EXPERIMENT Table 1.1-34n
EXTRAPOLATED FADE STATISTICS FOR STARKVILLE #24 34n

		---------CP#28---------	
		RECORDED	EXTRAPOLATED
	0	100.00	100.00
	1	1.6684	8.2619
	2	.53261	.61596
	3	.29932	.30347
	4	.19297	.20799
	5	.15152	.15284
	6	.12979	.13040
	7	.11578	.11907
	8	.10292	.10575
	9	.09177	.09638
	10	.08234	.09030
	11	.07376	.08185
D	12	.06633	.07416
E	13	.05803	.06718
P	14	.05375	.06163
T	15	.05060	.05850
H	16	.04803	.05658
	17	.04488	.05403
O	18	.03802	.04731
F	19	.03288	.03990
	20	.02945	.03521
F	21	.02687	.03256
A	22	.02487	.02980
D	23	.02259	.02657
E	24	.02030	.02415
	25	.01772	.01853
D	26	.00000	.00444
B	27	.00000	.00000
	28	.00000	.00000
	29	.00000	.00000
	30	.00000	.00000
	31	.00000	.00000
	32	.00000	.00000
	33	.00000	.00000
	34	.00000	.00000
	35	.00000	.00000
	36	.00000	.00000
	37	.00000	.00000
	38	.00000	.00000
	39	.00000	.00000
	40	.00000	.00000

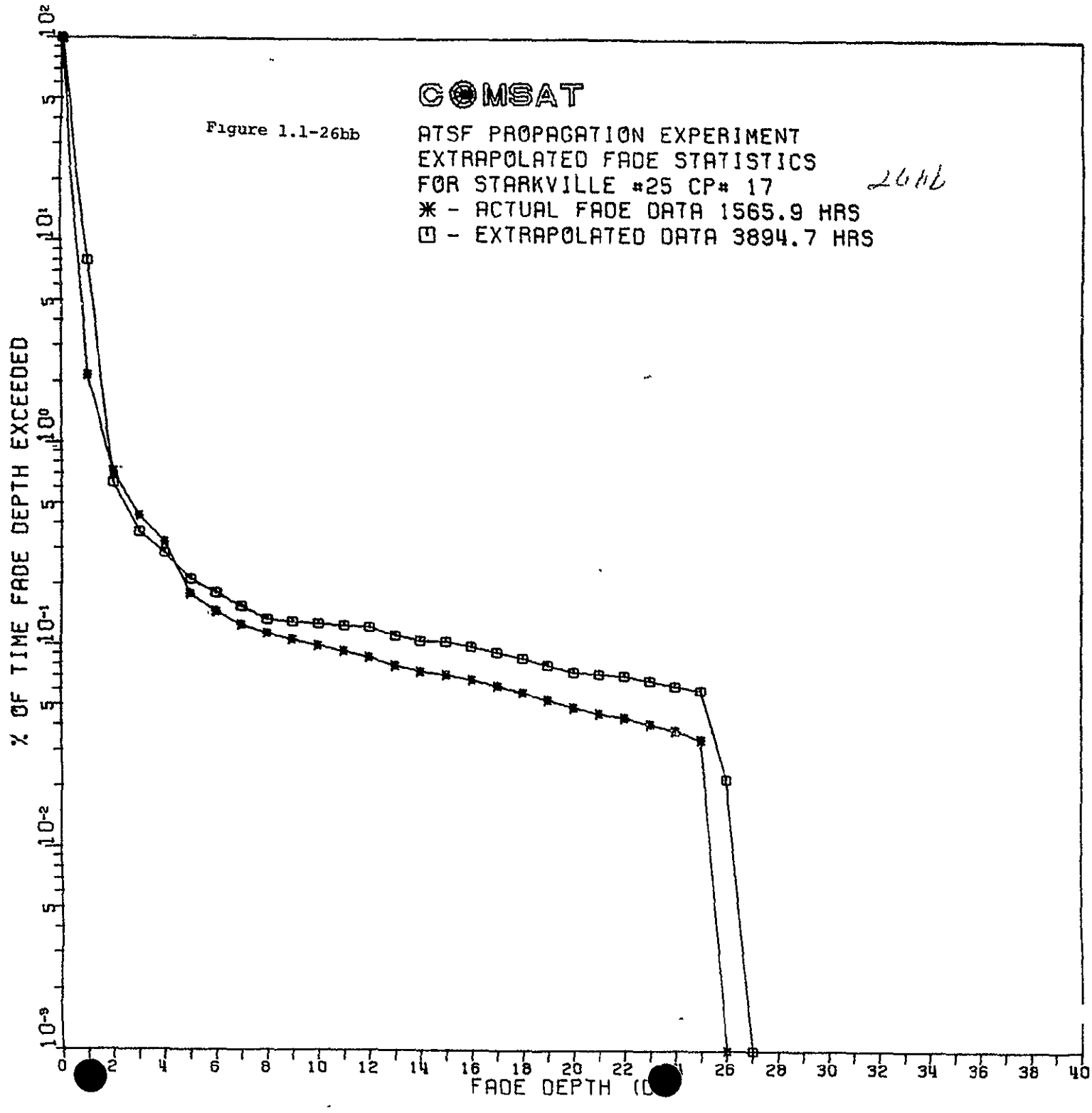


Figure 1.1-26bb

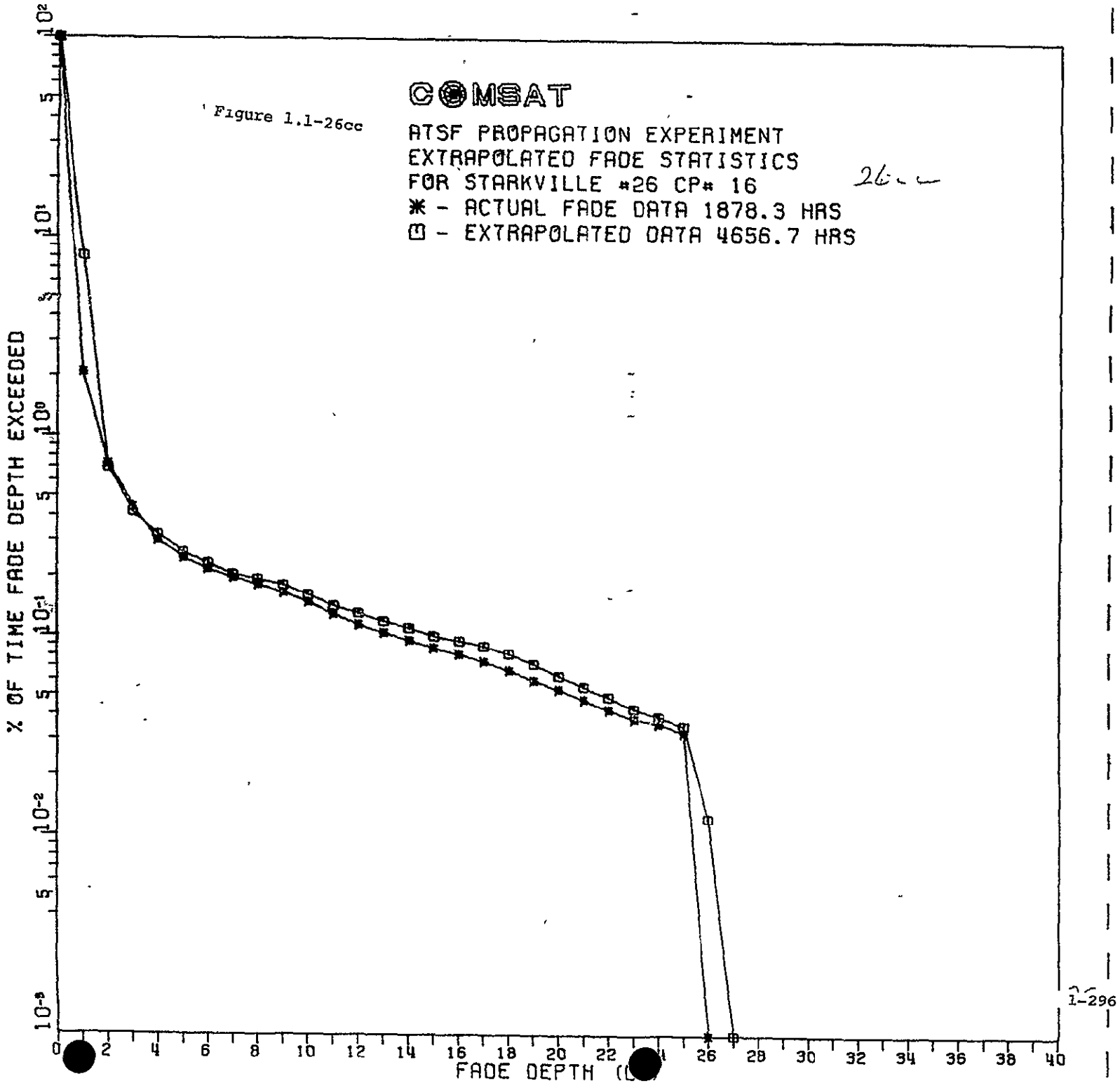
Table 1.1-34D

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR STARKVILLE #25

340

		CP#17	
		RECORDED	EXTRAPOLATED
	0	100.00	100.00
	1	2.1564	8.0013
	2	.71906	.63608
	3	.43536	.36213
	4	.32409	.28690
	5	.17849	.21089
	6	.14608	.18057
	7	.12612	.15584
	8	.11399	.13426
	9	.10649	.13124
	10	.09946	.12842
	11	.09403	.12623
D	12	.08781	.12373
E	13	.07967	.11222
P	14	.07488	.10596
T	15	.07184	.10474
H	16	.06801	.09888
	17	.06338	.09269
D	18	.05859	.08644
F	19	.05396	.08025
	20	.04965	.07419
F	21	.04646	.07291
A	22	.04438	.07111
D	23	.04135	.06742
E	24	.03848	.06338
	25	.03496	.06058
D	26	.00000	.02218
B	27	.00000	.00000
	28	.00000	.00000
	29	.00000	.00000
	30	.00000	.00000
	31	.00000	.00000
	32	.00000	.00000
	33	.00000	.00000
	34	.00000	.00000
	35	.00000	.00000
	36	.00000	.00000
	37	.00000	.00000
	38	.00000	.00000
	39	.00000	.00000
	40	.00000	.00000

Figure 1.1-26cc



26-c

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR STARKVILLE #26

34p

		CP#16	
		RECORDED	EXTRAPOLATED
	0	100.00	100.00
	1	2.0781	8.0246
	2	.72887	.70029
	3	.44403	.41579
	4	.30174	.32405
	5	.24677	.26271
	6	.21616	.23134
	7	.19752	.20467
	8	.18222	.19402
	9	.16571	.18125
	10	.14854	.16235
	11	.12938	.14291
D	12	.11473	.13115
E	13	.10449	.11939
P	14	.09610	.11104
T	15	.08811	.10142
H	16	.08159	.09559
	17	.07560	.09010
O	18	.06775	.08242
F	19	.06030	.07318
	20	.05470	.06373
F	21	.04832	.05635
A	22	.04313	.05018
D	23	.03887	.04379
E	24	.03674	.03982
	25	.03328	.03598
D	26	.00000	.01251
B	27	.00000	.00000
	28	.00000	.00000
	29	.00000	.00000
	30	.00000	.00000
	31	.00000	.00000
	32	.00000	.00000
	33	.00000	.00000
	34	.00000	.00000
	35	.00000	.00000
	36	.00000	.00000
	37	.00000	.00000
	38	.00000	.00000
	39	.00000	.00000
	40	.00000	.00000

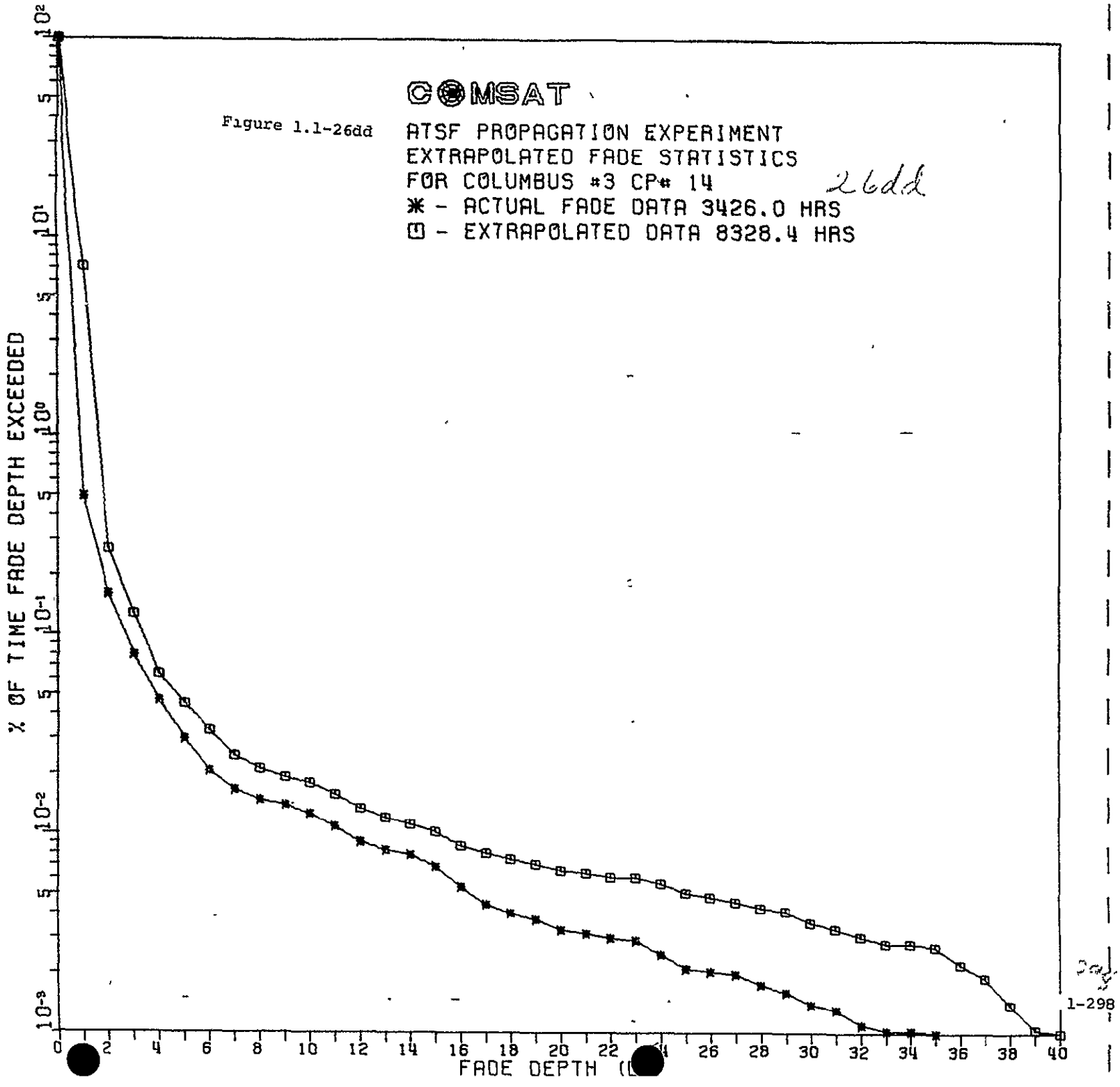


Figure 1.1-26dd

26dd

1-298

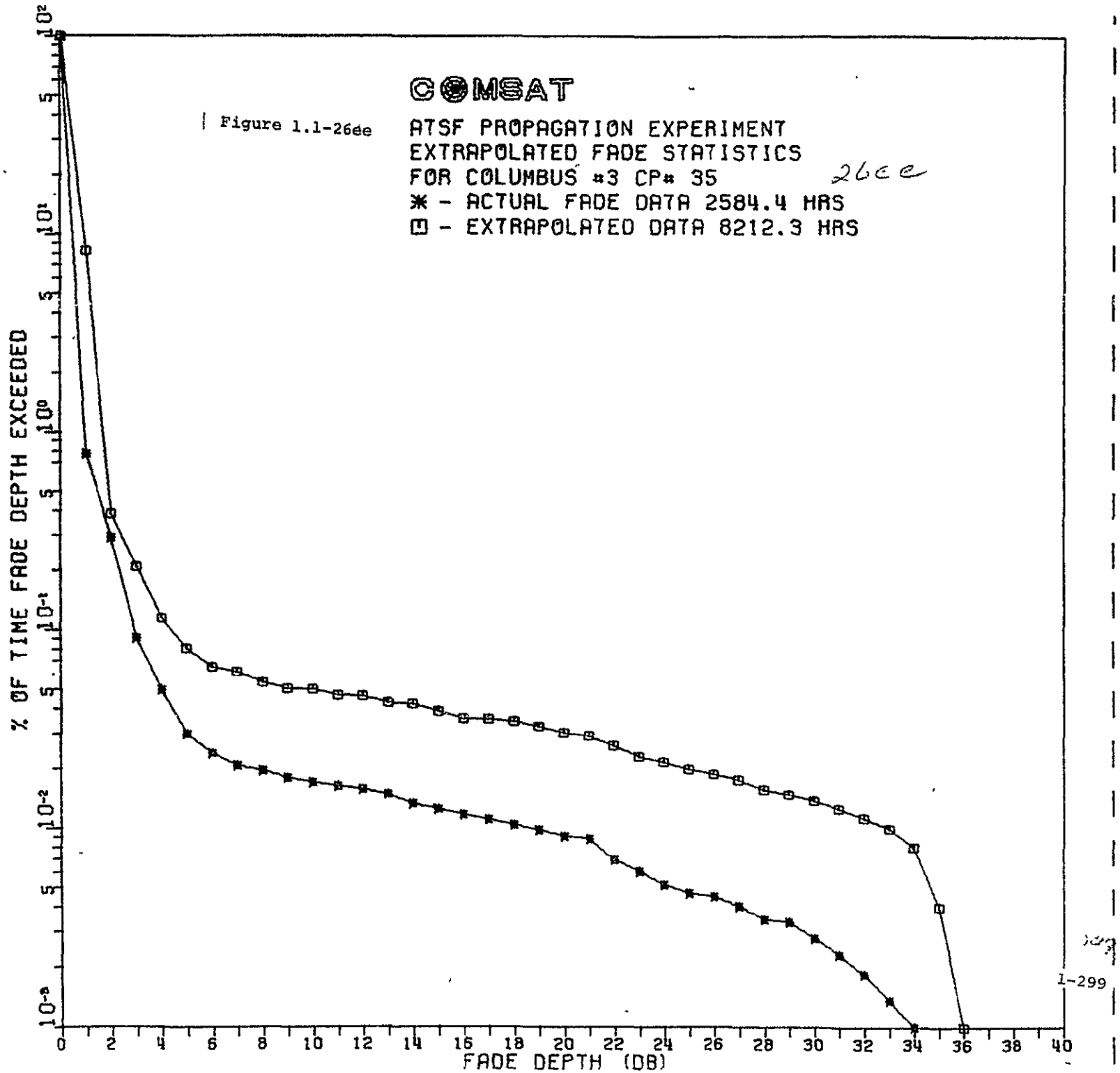


Figure 1.1-26ee

26ee

1-299

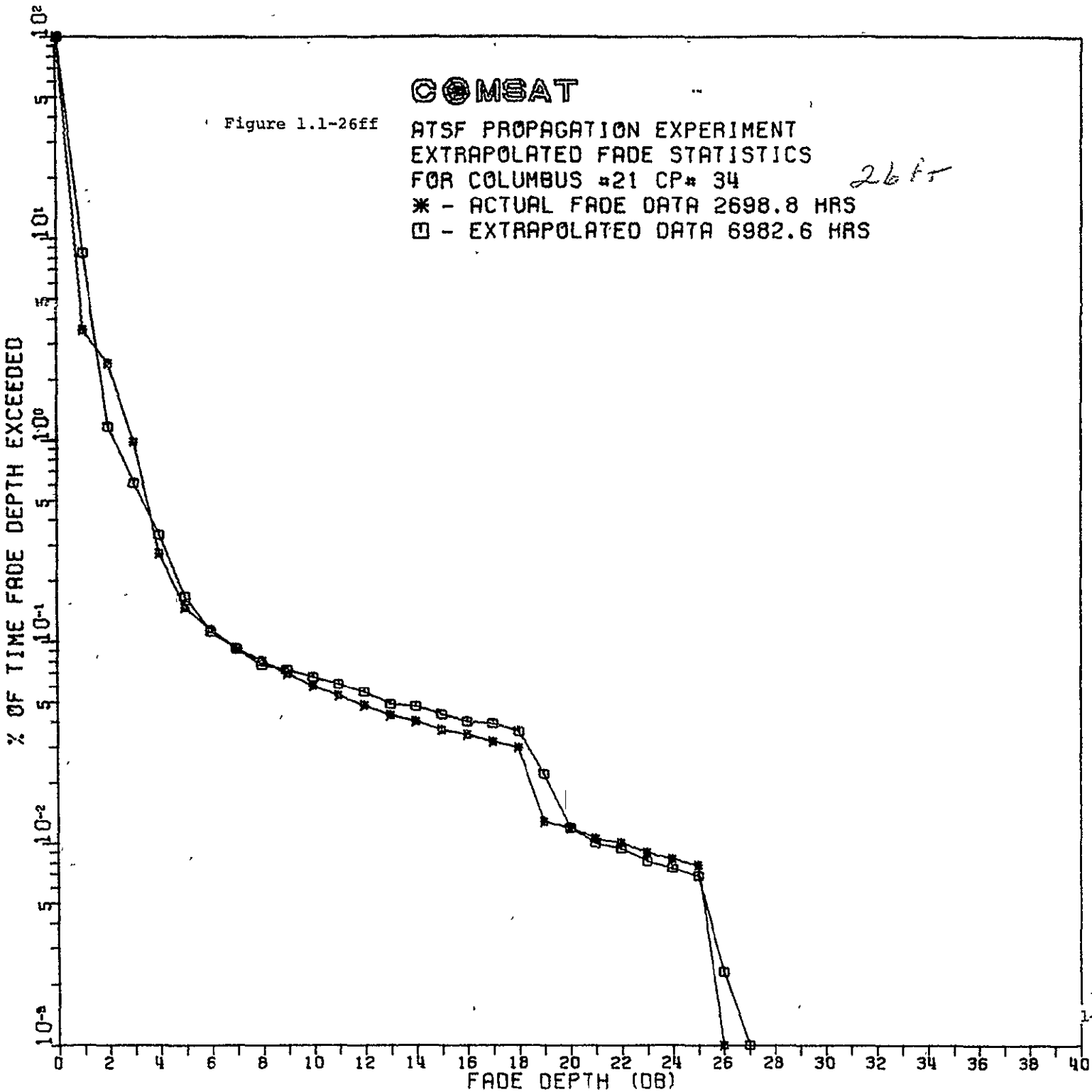
Table 1.1-34q

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR COLUMBUS #3

	CP#14		CP#35	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	.49606	7.1338	.77029	8.2849
2	.16068	.27062	.29204	.38376
3	.07895	.12728	.09054	.20827
4	.04641	.06310	.04953	.11446
5	.02970	.04506	.02979	.08045
6	.02058	.03275	.02380	.06488
7	.01664	.02456	.02060	.06126
8	.01474	.02117	.01954	.05439
9	.01386	.01912	.01799	.05071
10	.01262	.01798	.01712	.05043
11	.01087	.01575	.01644	.04703
D 12	.00912	.01343	.01586	.04684
E 13	.00832	.01209	.01499	.04339
P 14	.00788	.01124	.01345	.04291
T 15	.00686	.01029	.01258	.03946
H 16	.00547	.00876	.01180	.03604
17	.00445	.00802	.01112	.03582
D 18	.00401	.00752	.01045	.03485
F 19	.00372	.00708	.00987	.03288
20	.00328	.00658	.00919	.03060
F 21	.00314	.00639	.00890	.02946
A 22	.00299	.00611	.00696	.02637
D 23	.00292	.00608	.00609	.02324
E 24	.00248	.00568	.00522	.02179
25	.00212	.00508	.00474	.02011
D 26	.00204	.00483	.00455	.01899
B 27	.00197	.00458	.00406	.01778
28	.00175	.00427	.00348	.01583
29	.00161	.00412	.00339	.01492
30	.00139	.00361	.00281	.01386
31	.00131	.00337	.00232	.01266
32	.00109	.00307	.00184	.01137
33	.00102	.00284	.00135	.01009
34	.00102	.00284	.00077	.00812
35	.00080	.00275	.00000	.00405
36	.00058	.00224	.00000	.00000
37	.00036	.00192	.00000	.00000
38	.00022	.00141	.00000	.00000
39	.00007	.00105	.00000	.00000
40	.00000	.00086	.00000	.00000

349

Figure 1.1-26ff



26 ft

Table 1.1-34r

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR COLUMBUS #21

34r

	CP#34 RECORDED	CP#34 EXTRAPOLATED
0	100.00	100.00
1	3.5044	8.5125
2	2.4116	1.1654
3	.98146	.61265
4	.27411	.33926
5	.14812	.16684
6	.11450	.11133
7	.09226	.09214
8	.08022	.07689
9	.06938	.07270
10	.06040	.06693
11	.05391	.06151
D 12	.04845	.05661
E 13	.04345	.04922
P 14	.04057	.04811
T 15	.03668	.04395
H 16	.03483	.04057
17	.03224	.03956
D 18	.03011	.03608
F 19	.01288	.02225
20	.01195	.01206
F 21	.01065	.01013
A 22	.01010	.00948
D 23	.00908	.00822
E 24	.00843	.00753
25	.00787	.00688
D 26	.00000	.00232
B 27	.00000	.00000
28	.00000	.00000
29	.00000	.00000
30	.00000	.00000
31	.00000	.00000
32	.00000	.00000
33	.00000	.00000
34	.00000	.00000
35	.00000	.00000
36	.00000	.00000
37	.00000	.00000
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39	.00000	.00000
40	.00000	.00000

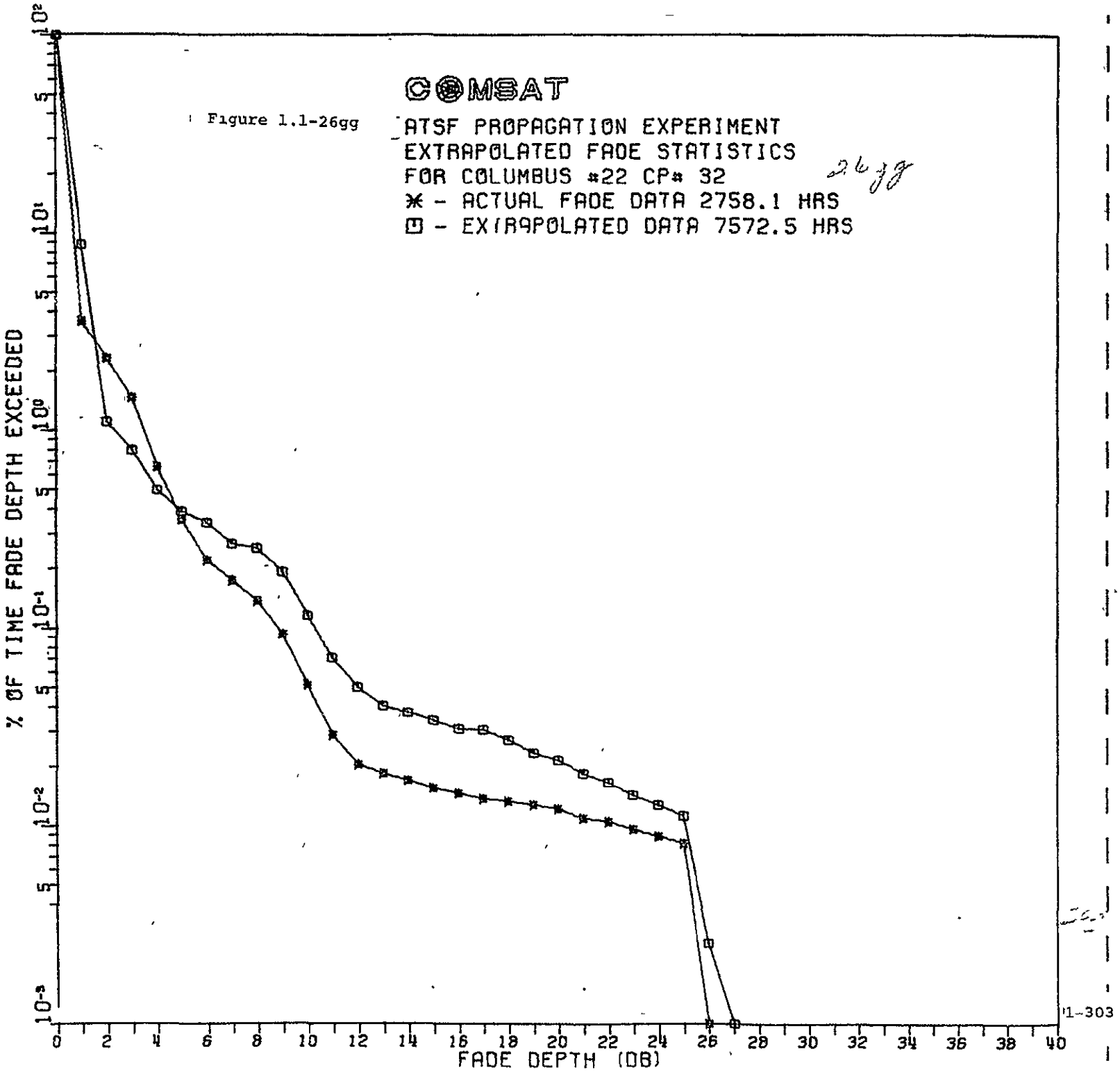

Figure 1.1-26gg

1-303

Table 1.1-34s

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR COLUMBUS #22

34N

	CP#32 RECORDED	CP#32 EXTRAPOLATED
0	100.00	100.00
1	3.5840	8.7529
2	2.3177	1.1042
3	1.4717	.79605
4	.65680	.49925
5	.35342	.38875
6	.21981	.34009
7	.17358	.26763
8	.13687	.25426
9	.09327	.19192
10	.05185	.11646
11	.02901	.07126
D 12	.02067	.05068
E 13	.01858	.04109
P 14	.01722	.03780
T 15	.01568	.03445
H 16	.01468	.03130
17	.01378	.03097
O 18	.01332	.02745
F 19	.01278	.02360
20	.01224	.02158
F 21	.01106	.01860
A 22	.01061	.01677
D 23	.00970	.01448
E 24	.00897	.01291
25	.00825	.01135
D 26	.00000	.00256
B 27	.00000	.00000
28	.00000	.00000
29	.00000	.00000
30	.00000	.00000
31	.00000	.00000
32	.00000	.00000
33	.00000	.00000
34	.00000	.00000
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36	.00000	.00000
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38	.00000	.00000
39	.00000	.00000
40	.00000	.00000

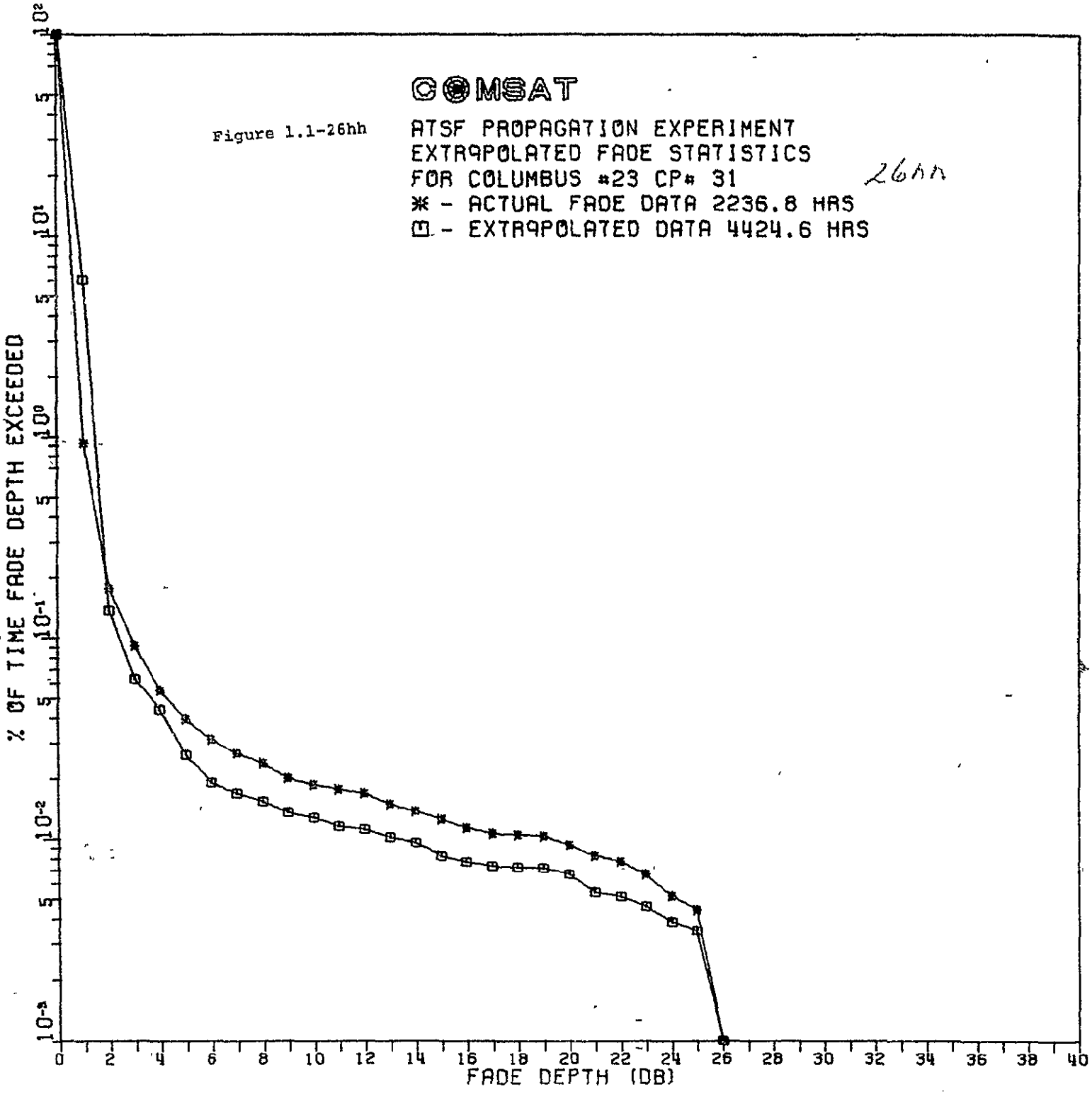


Figure 1.1-26hh

26hh

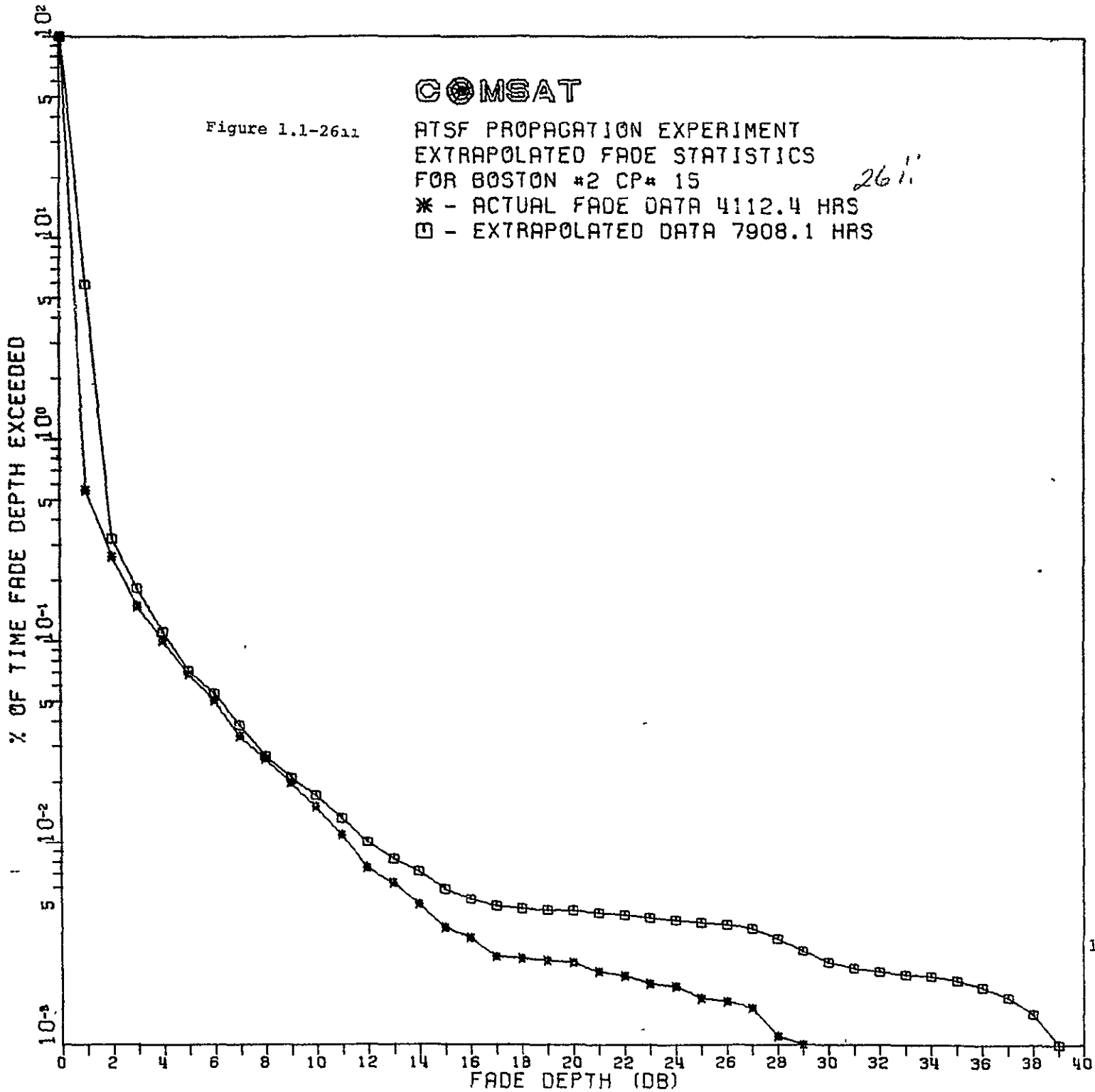
Table 1.1-34t

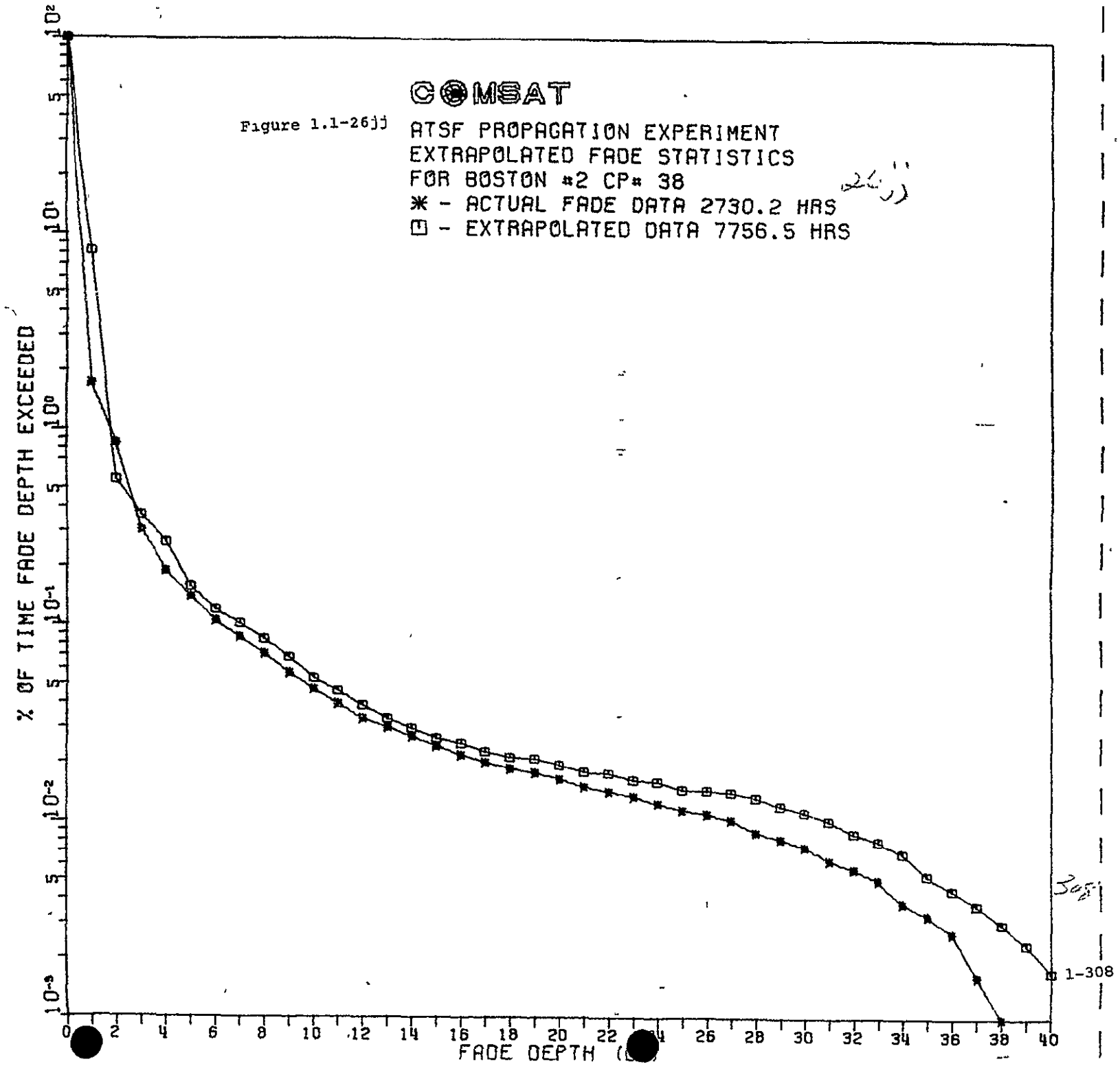
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR COLUMBUS #23

24t

DB	CP#31 RECORDED	CP#31 EXTRAPOLATED
0	100.00	100.00
1	.93170	6.0454
2	.17704	.13818
3	.09198	.06276
4	.05510	.04412
5	.03957	.02635
6	.03118	.01918
7	.02682	.01698
8	.02381	.01546
9	.02023	.01365
10	.01878	.01291
11	.01777	.01168
D 12	.01699	.01129
E 13	.01509	.01033
P 14	.01386	.00971
T 15	.01263	.00837
H 16	.01151	.00780
17	.01073	.00741
O 18	.01062	.00735
F 19	.01039	.00724
20	.00939	.00673
F 21	.00838	.00550
A 22	.00782	.00522
D 23	.00671	.00465
E 24	.00525	.00392
25	.00447	.00352
D 26	.00000	.00054
B 27	.00000	.00000
28	.00000	.00000
29	.00000	.00000
30	.00000	.00000
31	.00000	.00000
32	.00000	.00000
33	.00000	.00000
34	.00000	.00000
35	.00000	.00000
36	.00000	.00000
37	.00000	.00000
38	.00000	.00000
39	.00000	.00000
40	.00000	.00000

Figure 1.1-26ii




COMSAT
Figure 1.1-26jj
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS
FOR BOSTON #2 CP# 38
* - ACTUAL FADE DATA 2730.2 HRS
□ - EXTRAPOLATED DATA 7756.5 HRS
% OF TIME FADE DEPTH EXCEEDED
FADE DEPTH
1-308

ATSF PROPAGATION EXPERIMENT | Table 1.1-34u
EXTRAPOLATED FADE STATISTICS FOR BOSTON #2

34u

	CP#15		CP#38	
	RECORDED	EXTRAPOLATED	RECORDED	EXTRAPOLATED
0	100.00	100.00	100.00	100.00
1	.56335	5.9054	1.7046	8.1889
2	.26444	.32301	.85423	.55727
3	.14949	.18313	.30629	.36440
4	.10043	.11065	.18991	.26485
5	.06851	.07124	.14083	.15723
6	.05082	.05457	.10475	.11967
7	.03374	.03831	.08662	.10152
8	.02626	.02688	.07106	.08476
9	.02000	.02120	.05732	.06865
10	.01520	.01725	.04734	.05306
11	.01100	.01337	.03974	.04650
D 12	.00760	.01020	.03361	.03945
E 13	.00638	.00840	.03031	.03362
P 14	.00498	.00728	.02738	.03025
T 15	.00383	.00594	.02454	.02691
H 16	.00340	.00528	.02216	.02541
17	.00274	.00488	.02033	.02308
O 18	.00267	.00474	.01886	.02152
F 19	.00261	.00466	.01804	.02123
20	.00255	.00463	.01667	.01971
F 21	.00231	.00450	.01520	.01816
A 22	.00219	.00438	.01438	.01787
D 23	.00201	.00424	.01355	.01654
E 24	.00195	.00415	.01254	.01619
25	.00170	.00403	.01163	.01483
D 26	.00164	.00394	.01108	.01463
B 27	.00152	.00378	.01044	.01441
28	.00109	.00336	.00897	.01351
29	.00085	.00294	.00833	.01229
30	.00073	.00257	.00760	.01142
31	.00073	.00240	.00650	.01042
32	.00055	.00231	.00586	.00898
33	.00055	.00222	.00513	.00811
34	.00049	.00219	.00394	.00708
35	.00043	.00208	.00339	.00542
36	.00036	.00192	.00275	.00461
37	.00018	.00171	.00165	.00385
38	.00006	.00142	.00092	.00307
39	.00006	.00003	.00055	.00242
40	.00006	.00003	.00009	.00174

Figure 1.1-26kk

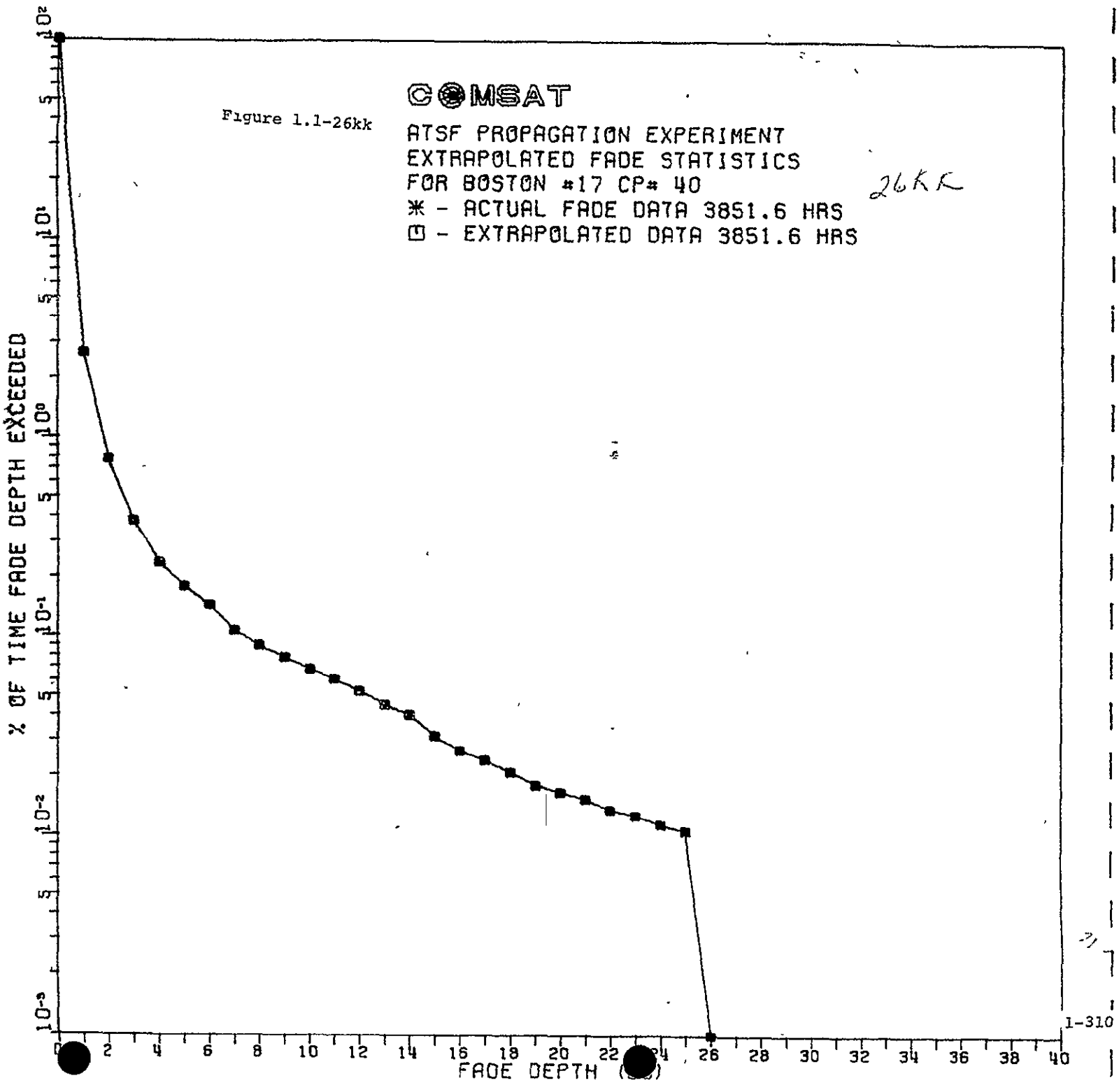


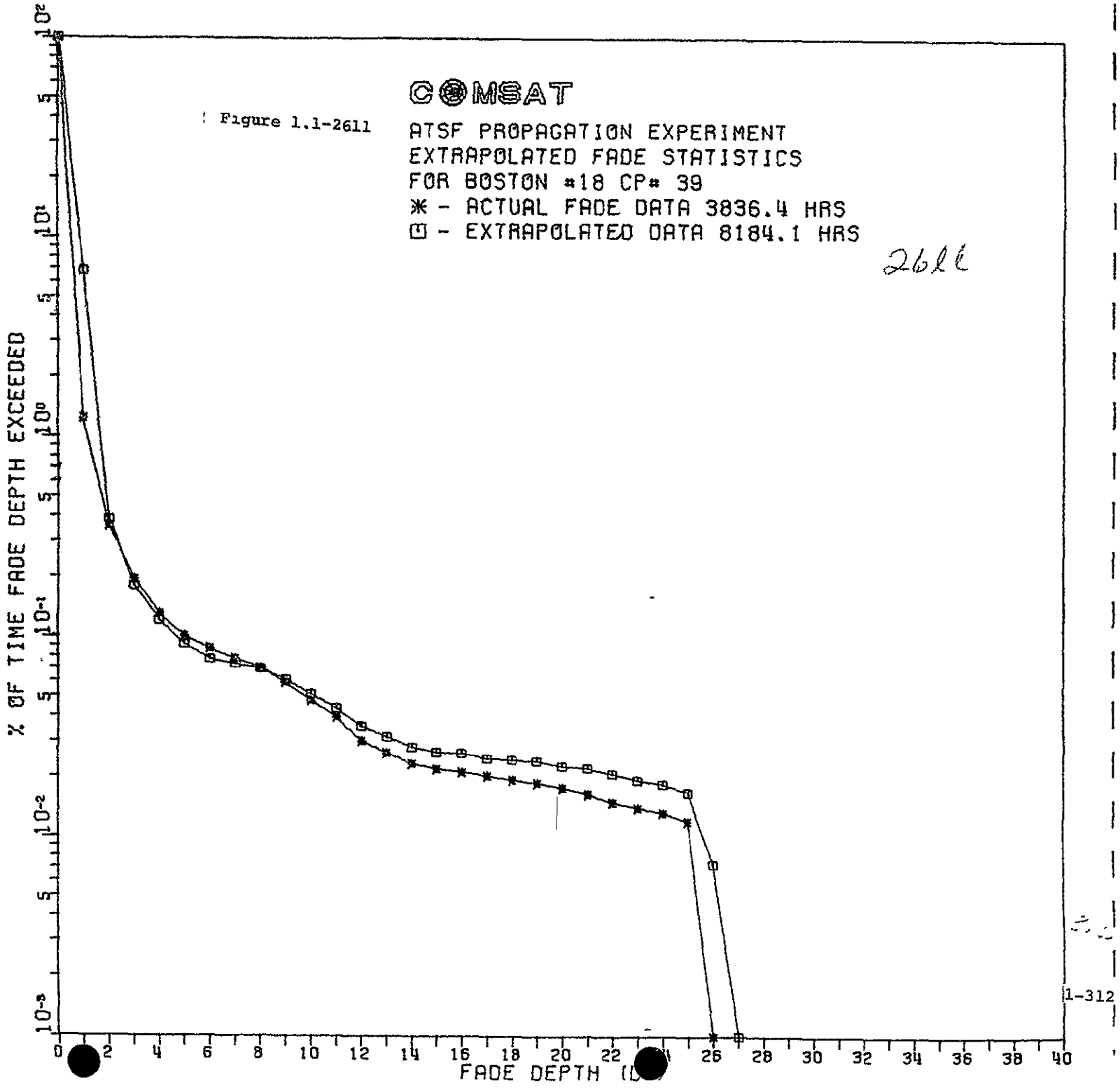
Table 1.1-34v

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR BOSTON #17

34v

	CP#40	
	RECORDED	EXTRAPOLATED
0	100.00	100.00
1	2.6403	2.6403
2	.78253	.78253
3	.38114	.38114
4	.23516	.23516
5	.17908	.17908
6	.14260	.14260
7	.10638	.10638
8	.09009	.09009
9	.07841	.07841
10	.06848	.06848
11	.06121	.06121
D 12	.05329	.05329
E 13	.04595	.04595
P 14	.04076	.04076
T 15	.03200	.03200
H 16	.02707	.02707
17	.02428	.02428
0 18	.02110	.02110
F 19	.01824	.01824
20	.01675	.01675
F 21	.01545	.01545
A 22	.01370	.01370
D 23	.01279	.01279
E 24	.01155	.01155
25	.01071	.01071
D 26	.00000	.00000
B 27	.00000	.00000
28	.00000	.00000
29	.00000	.00000
30	.00000	.00000
31	.00000	.00000
32	.00000	.00000
33	.00000	.00000
34	.00000	.00000
35	.00000	.00000
36	.00000	.00000
37	.00000	.00000
38	.00000	.00000
39	.00000	.00000
40	.00000	.00000

Figure 1.1-2611



2611

ATSF PROPAGATION EXPERIMENT | Table 1.1-34w
EXTRAPOLATED FADE STATISTICS FOR BOSTON #18

34w

		CP#39	
		RECORDED	EXTRAPOLATED
	0	100.00	100.00
	1	1.2338	6.8085
	2	.35736	.38541
	3	.19439	.17850
	4	.12935	.12017
	5	.10022	.09096
	6	.08641	.07578
	7	.07728	.07251
	8	.06927	.06875
	9	.05871	.06046
	10	.04757	.05127
	11	.03955	.04365
D	12	.03017	.03559
E	13	.02633	.03158
P	14	.02333	.02824
T	15	.02190	.02660
H	16	.02111	.02623
	17	.02020	.02484
D	18	.01922	.02438
F	19	.01864	.02410
	20	.01759	.02265
F	21	.01642	.02210
A	22	.01499	.02073
D	23	.01401	.01924
E	24	.01329	.01839
	25	.01212	.01681
D	26	.00000	.00732
B	27	.00000	.00000
	28	.00000	.00000
	29	.00000	.00000
	30	.00000	.00000
	31	.00000	.00000
	32	.00000	.00000
	33	.00000	.00000
	34	.00000	.00000
	35	.00000	.00000
	36	.00000	.00000
	37	.00000	.00000
	38	.00000	.00000
	39	.00000	.00000
	40	.00000	.00000

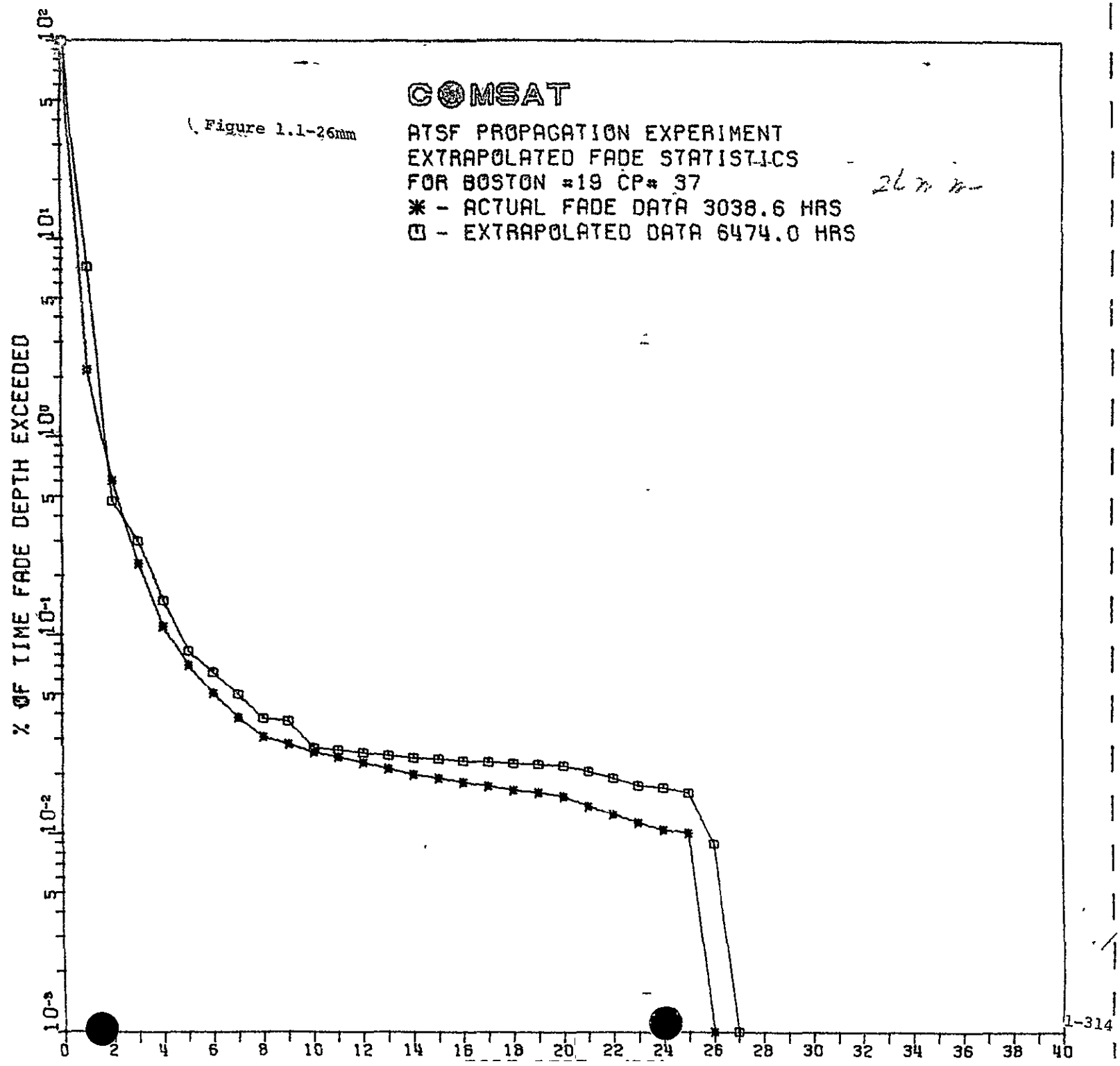


Figure 1.1-26mm

1-314

Table 1.1-34x

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED FADE STATISTICS FOR BOSTON #19

34x

		CP#37	
		RECORDED	EXTRAPOLATED
	0	100.00	100.00
	1	2.1613	7.2143
	2	.59929	.47277
	3	.22749	.29827
	4	.10951	.14818
	5	.06985	.08247
	6	.05052	.06443
	7	.03793	.04992
	8	.03077	.03797
	9	.02822	.03677
	10	.02575	.02702
	11	.02444	.02640
D	12	.02287	.02566
E	13	.02139	.02497
P	14	.01999	.02431
T	15	.01917	.02393
H	16	.01827	.02350
	17	.01744	.02312
O	18	.01670	.02277
F	19	.01621	.02254
	20	.01547	.02219
F	21	.01382	.02066
A	22	.01259	.01911
D	23	.01144	.01761
E	24	.01053	.01718
	25	.01012	.01612
D	26	.00000	.00896
B	27	.00000	.00000
	28	.00000	.00000
	29	.00000	.00000
	30	.00000	.00000
	31	.00000	.00000
	32	.00000	.00000
	33	.00000	.00000
	34	.00000	.00000
	35	.00000	.00000
	36	.00000	.00000
	37	.00000	.00000
	38	.00000	.00000
	39	.00000	.00000
	40	.00000	.00000

315

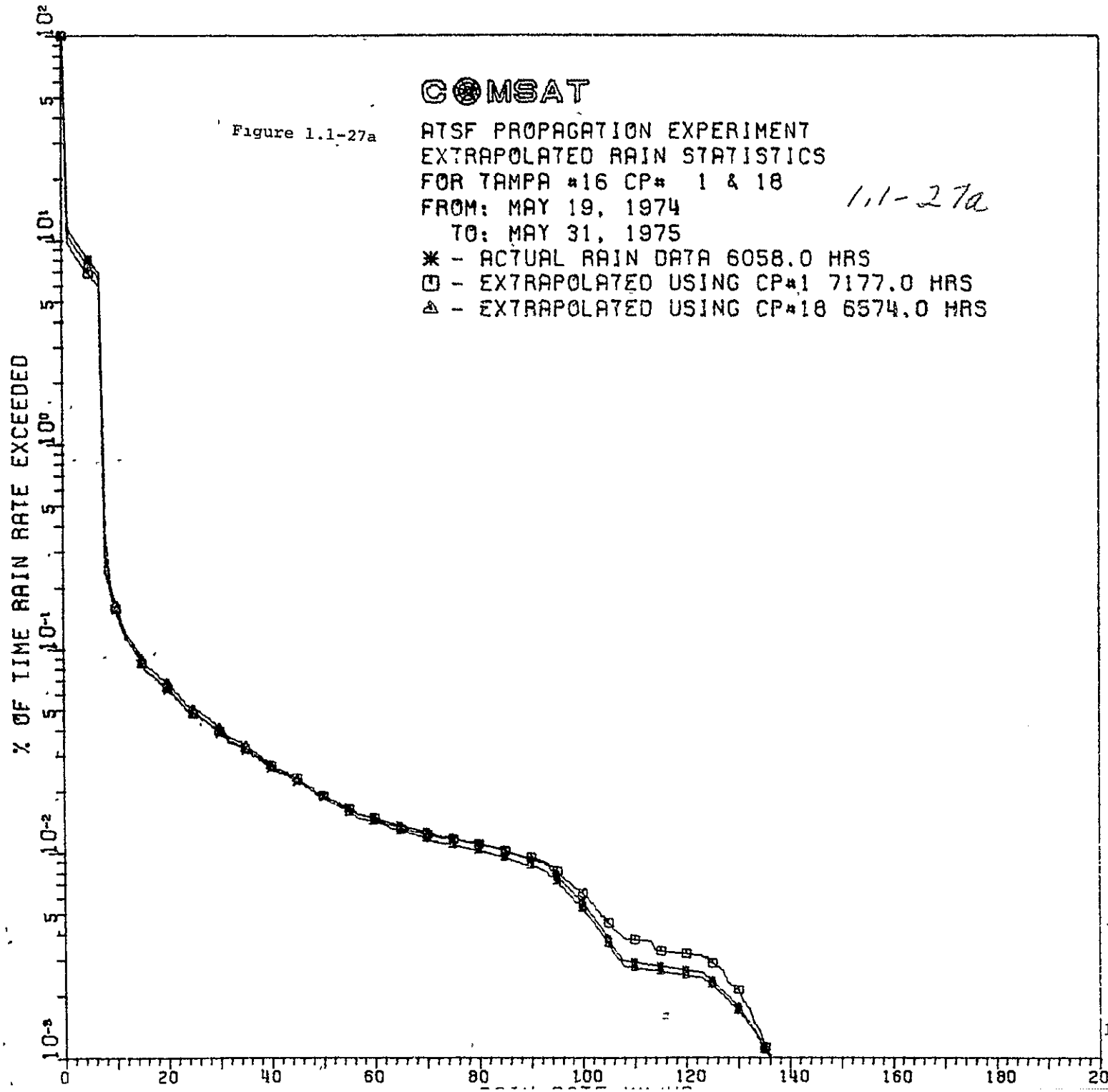
Table 1.1-35

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS
FROM: MAY 19, 1974
TO: MAY 31, 1975

1.1-35

SITE	HOURS OF DATA				
	ACTUAL DATA	EXTRAPOLATED CP#	EXTRAPOLATED HOURS	EXTRAPOLATED CP#	EXTRAPOLATED HOURS
BOSTON #2	7115.0	15	7961.2	38	7978.9
COLUMBUS #3	7999.0	14	8730.5	35	8554.0
STARKVILLE #4	6366.2	13	7186.4	33	6893.6
MIAMI #5	4413.5	12	4960.1	30	4429.7
ITHACA #6	1943.5	29	1943.5		
DETROIT #7	1948.2	10	4964.4	27	3556.1
ANDOVER #8	0.0	9	0.0	26	0.0
PHILADELPHIA #9	453.7	8	2122.7	25	453.7
WASHINGTON #10	3651.7	7	5667.1	24	4299.2
NASHVILLE #11	4562.9	6	5133.1	23	5269.3
ASHEVILLE #12	48.0	5	4460.8	22	1632.7
FAYETTESVILLE #13	5354.1	4	6938.2	21	6589.7
NEW ORLEANS #14	6026.7	3	6589.9	20	6293.5
ATLANTA #15	641.5	2	641.5	19	641.5
TAMPA #16	6058.0	1	7177.0	18	6574.0
BOSTON #17	0.0	40	0.0		
BOSTON #18	7835.7	39	8192.6		
BOSTON #19	6219.5	37	6482.5		
WALLOPS ISLAND #20	5145.9	11	6849.1	36	6691.4
COLUMBUS #21	6667.3	34	6982.6		
COLUMBUS #22	7199.6	32	7572.5		
COLUMBUS #23	4289.5	31	4424.6		
STARKVILLE #24	2048.6	28	2430.9		
STARKVILLE #25	3270.0	17	3895.0		
STARKVILLE #26	3988.5	16	4670.2		

Figure 1.1-27a



1.1-27a

1-317

ATSF PROPAGATION EXPERIMENT | Table 1.1-36a
EXTRAPOLATED RAIN STATISTICS FOR TAMPA #16
FROM: MAY 19, 1974
TO: MAY 31, 1975

1.1-36a

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 1	EXTRAPOLATED USING CP#18
	0	100.00	100.00	100.00
	2	10.292	8.7807	9.6436
	4	8.5922	7.3462	8.0775
	6	7.3781	6.3213	6.9586
	8	.23155	.28915	.37309
	10	.15621	.15631	.16281
	12	.11197	.11175	.11732
	14	.09363	.09429	.09936
	16	.07603	.07737	.08177
	18	.06988	.07096	.07481
	20	.06264	.06388	.06750
	25	.04780	.04787	.05051
	30	.03871	.03933	.04103
	35	.03198	.03253	.03350
	40	.02612	.02672	.02654
	45	.02226	.02314	.02272
R	50	.01877	.01888	.01852
A	55	.01628	.01628	.01557
I	60	.01468	.01469	.01410
N	65	.01345	.01306	.01269
	70	.01250	.01226	.01160
R	75	.01171	.01159	.01087
A	80	.01097	.01097	.01018
T	85	.01013	.01019	.00941
E	90	.00924	.00943	.00859
	95	.00770	.00814	.00717
M	100	.00565	.00626	.00528
M	105	.00379	.00452	.00357
	110	.00290	.00377	.00275
P	115	.00277	.00332	.00263
E	120	.00265	.00321	.00252
R	125	.00235	.00289	.00224
	130	.00173	.00212	.00167
H	135	.00111	.00111	.00106
R	140	.00074	.00063	.00068
	145	.00074	.00063	.00068
	150	.00074	.00063	.00068
	155	.00074	.00063	.00068
	160	.00074	.00063	.00068
	165	.00074	.00063	.00068
	170	.00074	.00063	.00068
	175	.00074	.00063	.00068
	180	.00074	.00063	.00068
	185	.00074	.00063	.00068
	190	.00074	.00063	.00068
	195	.00074	.00063	.00068
	200	.00074	.00063	.00068

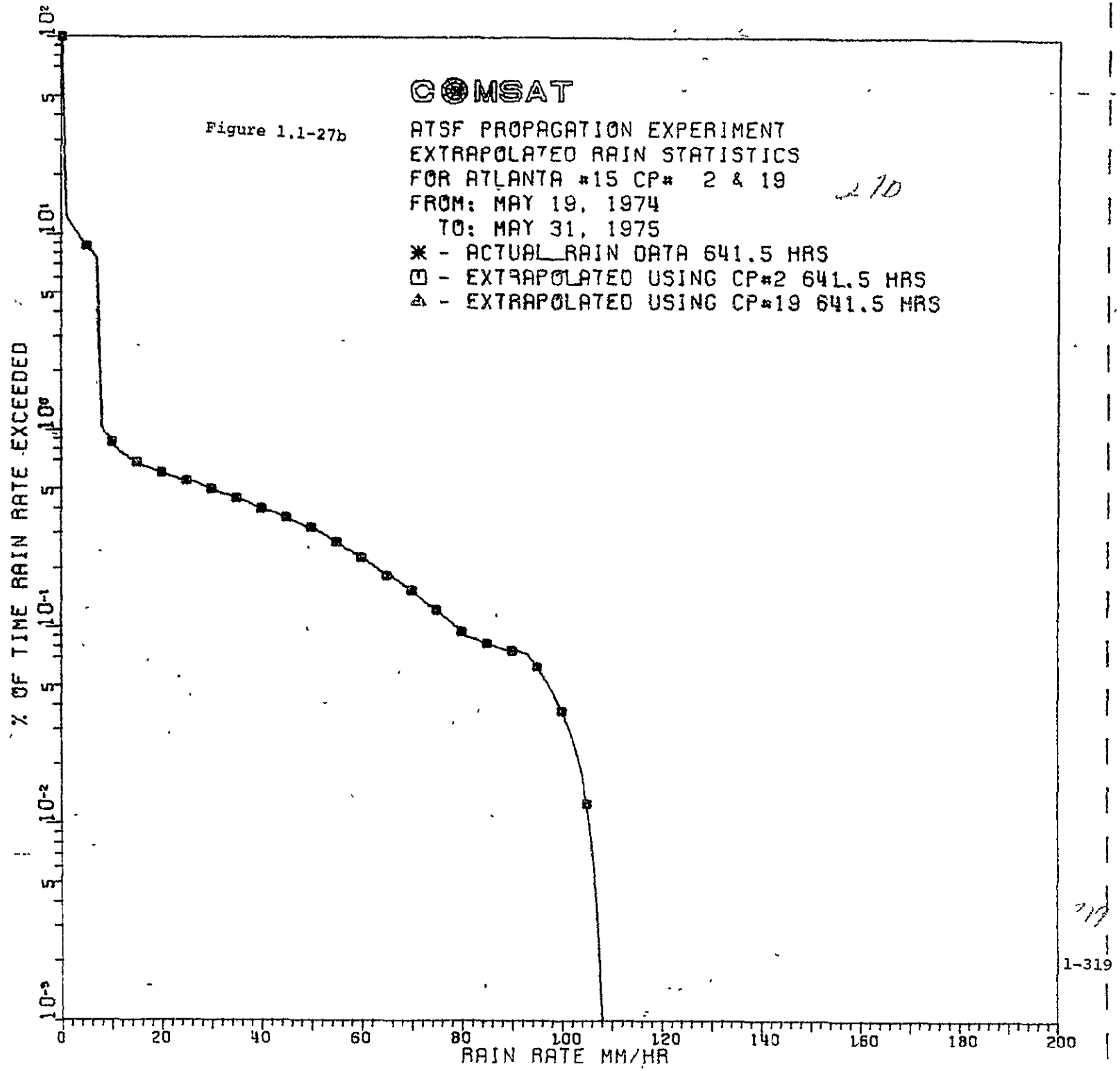


Figure 1.1-27b

Table 1.1-36b

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR ATLANTA #15
FROM: MAY 19, 1974
TO: MAY 31, 1975

36b

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 2	EXTRAPOLATED USING CP#19
	0	100.00	100.00	100.00
	2	11.115	11.115	11.115
	4	9.3840	9.3840	9.3840
	6	8.1453	8.1453	8.1453
	8	1.0303	1.0303	1.0303
	10	.86404	.86404	.86404
	12	.76659	.76659	.76659
	14	.71178	.71178	.71178
	16	.66217	.66217	.66217
	18	.63921	.63921	.63921
	20	.61209	.61209	.61209
	25	.55656	.55656	.55656
	30	.50362	.50362	.50362
	35	.45547	.45547	.45547
	40	.40247	.40247	.40247
	45	.36218	.36218	.36218
R	50	.32279	.32279	.32279
A	55	.27052	.27052	.27052
I	60	.22702	.22702	.22702
N	65	.18454	.18454	.18454
	70	.15363	.15363	.15363
R	75	.12300	.12300	.12300
A	80	.09546	.09546	.09546
T	85	.08364	.08364	.08364
E	90	.07686	.07686	.07686
	95	.06342	.06342	.06342
M	100	.03788	.03788	.03788
M	105	.01281	.01281	.01281
	110	.00000	.00000	.00000
P	115	.00000	.00000	.00000
E	120	.00000	.00000	.00000
R	125	.00000	.00000	.00000
	130	.00000	.00000	.00000
H	135	.00000	.00000	.00000
R	140	.00000	.00000	.00000
	145	.00000	.00000	.00000
	150	.00000	.00000	.00000
	155	.00000	.00000	.00000
	160	.00000	.00000	.00000
	165	.00000	.00000	.00000
	170	.00000	.00000	.00000
	175	.00000	.00000	.00000
	180	.00000	.00000	.00000
	185	.00000	.00000	.00000
	190	.00000	.00000	.00000
	195	.00000	.00000	.00000
	200	.00000	.00000	.00000

32

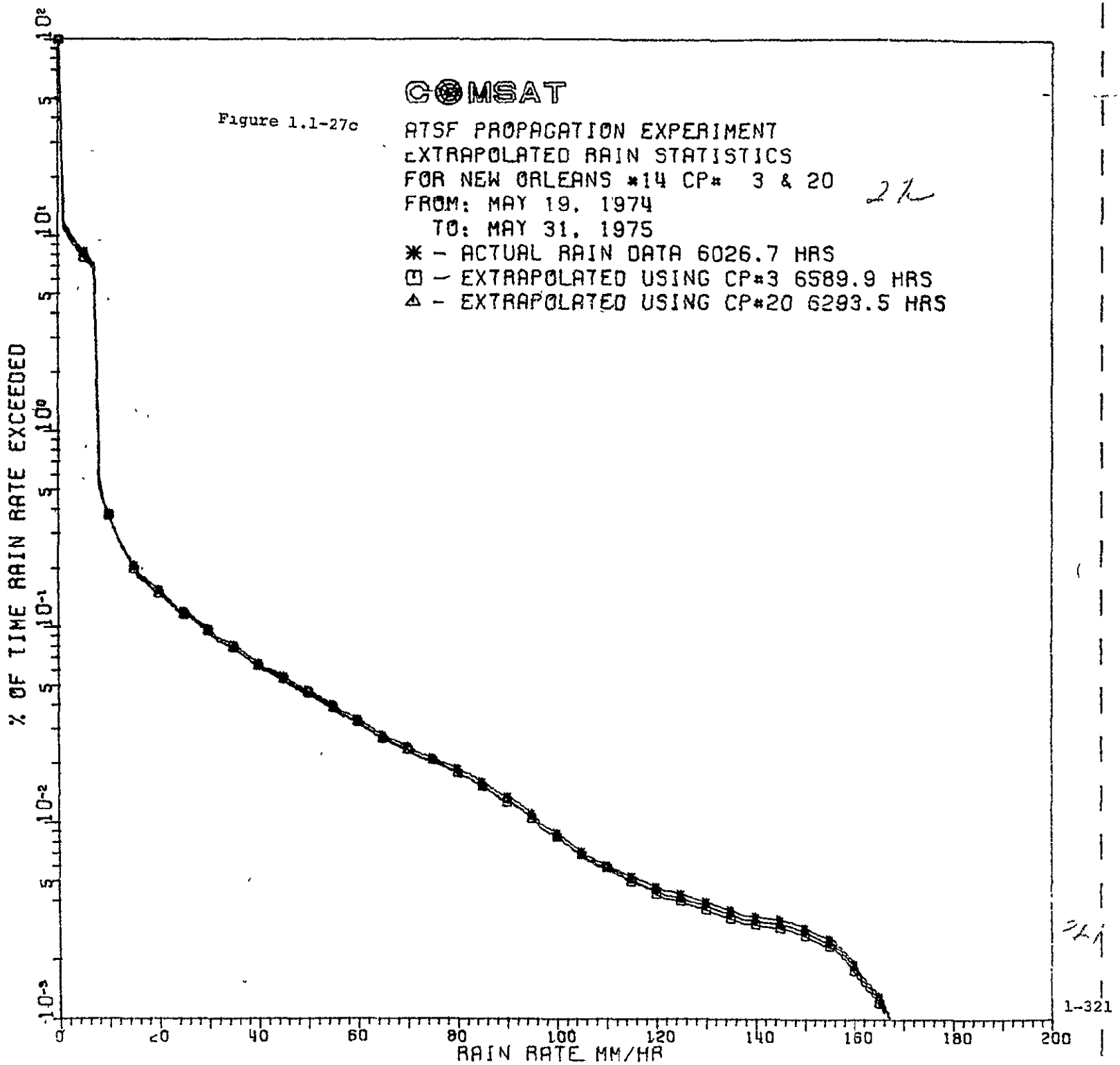


Figure 1.1-27c

ATSF PROPAGATION EXPERIMENT | Table 1.1-36c
EXTRAPOLATED RAIN STATISTICS FOR NEW ORLEANS #14
FROM: MAY 19, 1974
TO: MAY 31, 1975

36c

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 3	EXTRAPOLATED USING CP#20
	0 | 100.00	100.00	100.00
	2 | 10.627	9.8792	10.332
	4 | 8.8932	8.2935	8.6712
	6 | 7.6539	7.1601	7.4845
	8 | .50605	.62320	.53842
	10 | .37060	.37614	.36534
	12 | .27630	.27757	.27253
	14 | .22951	.22582	.22538
	16 | .18381	.17690	.18007
	18 | .16997	.16326	.16590
	20 | .15382	.14848	.15019
	25 | .11944	.11633	.11573
	30 | .09707	.09496	.09379
	35 | .08047	.07837	.07765
	40 | .06516	.06342	.06287
	45 | .05565	.05442	.05349
R	50 | .04756	.04661	.04555
A	55 | .03997	.03917	.03828
I	60 | .03390	.03286	.03246
N	65 | .02805	.02725	.02686
	70 | .02459	.02382	.02355
R	75 | .02153	.02102	.02062
A	80 | .01879	.01806	.01799
T	85 | .01625	.01547	.01556
E	90 | .01366	.01291	.01308
	95 | .01113	.01059	.01065
M	100 | .00889	.00854	.00851
M	105 | .00714	.00695	.00684
	110 | .00607	.00597	.00582
P	115 | .00535	.00508	.00512
E	120 | .00473	.00436	.00453
R	125 | .00433	.00400	.00415
	130 | .00396	.00362	.00379
H	135 | .00358	.00328	.00343
R	140 | .00334	.00305	.00319
	145 | .00321	.00294	.00307
	150 | .00294	.00269	.00281
	155 | .00259	.00237	.00248
	160 | .00194	.00178	.00186
	165 | .00132	.00121	.00126
	170 | .00070	.00064	.00067
	175 | .00040	.00036	.00038
	180 | .00017	.00016	.00017
	185 | .00005	.00005	.00005
	190 | .00000	.00000	.00000
	195 | .00000	.00000	.00000
	200 | .00000	.00000	.00000

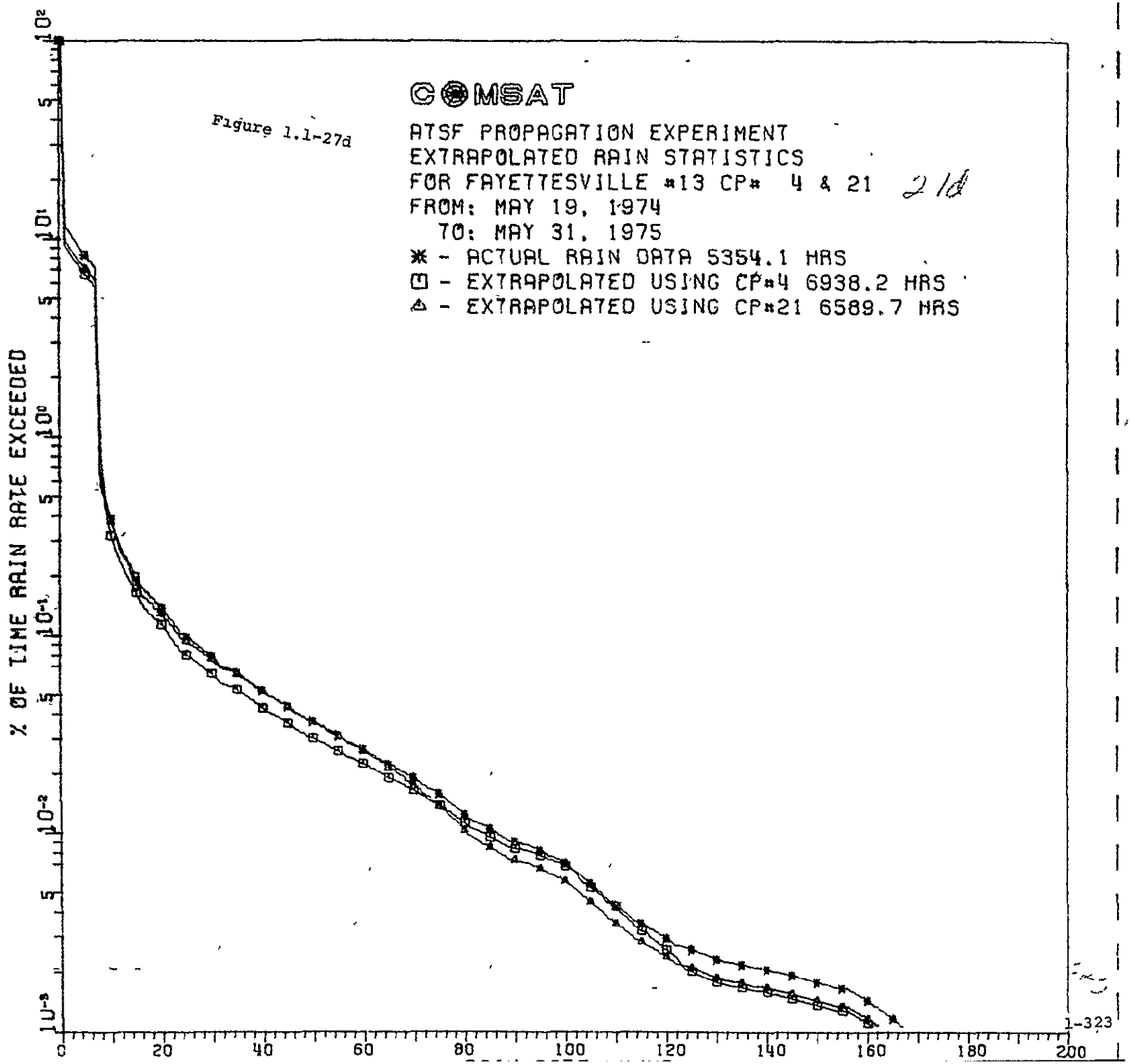


Figure 1.1-27d

1-323

ATSF PROPAGATION EXPERIMENT | Table 1.1-36d
EXTRAPOLATED RAIN STATISTICS FOR FAYETTESVILLE #13
FROM: MAY 19, 1974
TO: MAY 31, 1975

36d

RAIN	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 4	EXTRAPOLATED USING CP#21
0	100.00	100.00	100.00
2	10.713	8.4919	9.0453
4	8.9647	7.1427	7.6247
6	7.7150	6.1783	6.6093
8	.56259	.65884	.79798
10	.38620	.32055	.37407
12	.27418	.23410	.26321
14	.22272	.18408	.21032
16	.17348	.14609	.15947
18	.15705	.12811	.14612
20	.13810	.11349	.12856
25	.09846	.08037	.09411
30	.07839	.06413	.07652
35	.06495	.05329	.06370
40	.05264	.04311	.05237
45	.04395	.03608	.04372
R 50	.03662	.03042	.03662
A 55	.03123	.02626	.03099
I 60	.02679	.02284	.02640
N 65	.02243	.01925	.02168
70	.01918	.01668	.01760
R 75	.01595	.01407	.01387
A 80	.01260	.01141	.01046
T 85	.01058	.00968	.00860
E 90	.00911	.00851	.00740
95	.00827	.00786	.00672
M 100	.00711	.00696	.00577
M 105	.00563	.00539	.00457
110	.00440	.00433	.00357
P 115	.00353	.00326	.00287
E 120	.00297	.00262	.00241
R 125	.00261	.00205	.00212
130	.00233	.00179	.00189
H 135	.00219	.00169	.00178
R 140	.00207	.00160	.00168
145	.00193	.00149	.00157
150	.00179	.00138	.00146
155	.00168	.00130	.00137
160	.00146	.00112	.00118
165	.00118	.00091	.00096
170	.00090	.00069	.00073
175	.00084	.00065	.00068
180	.00084	.00065	.00068
185	.00056	.00043	.00046
190	.00028	.00022	.00023
195	.00000	.00000	.00000
200	.00000	.00000	.00000

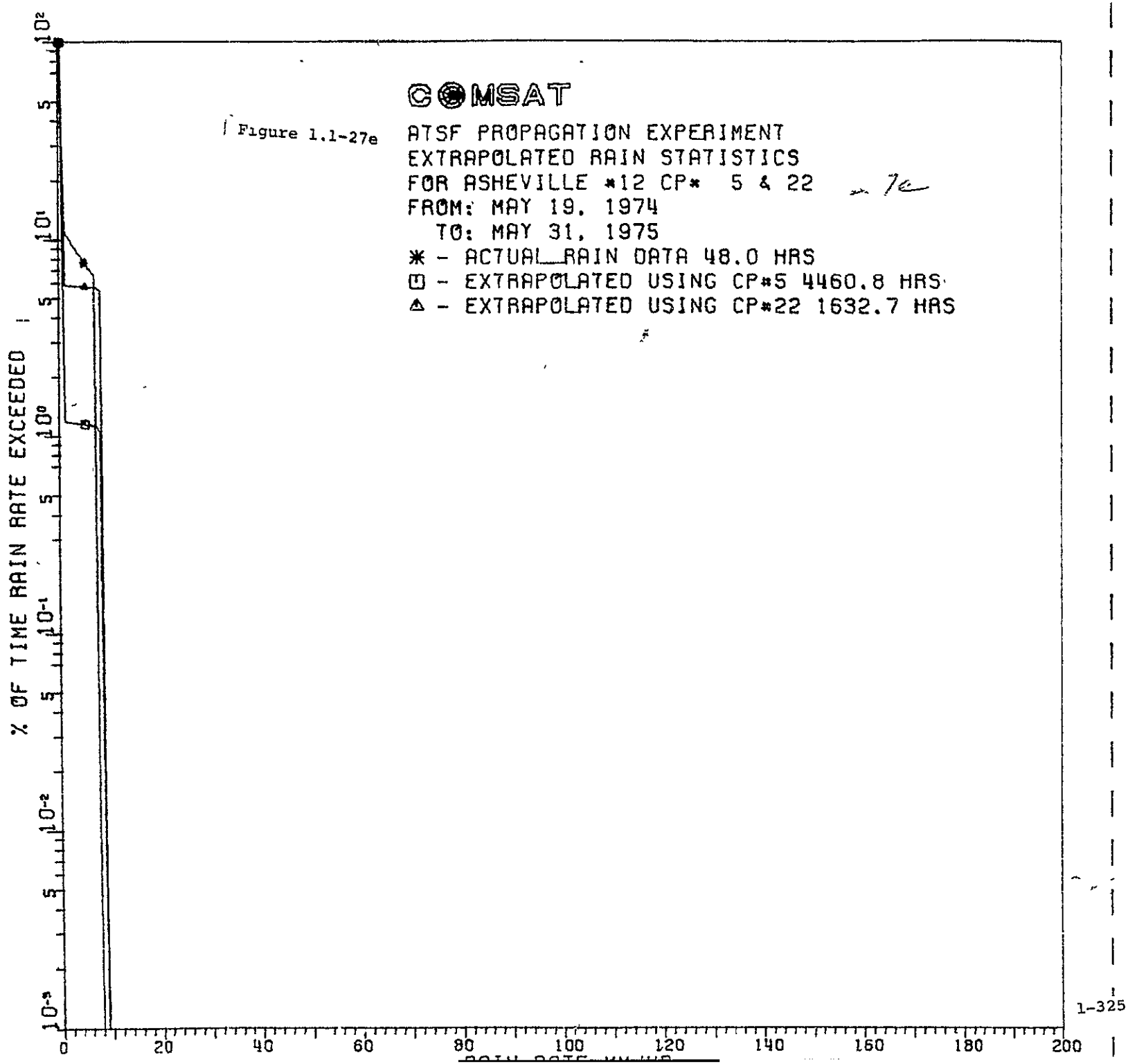


Figure 1.1-27e

Table 1.1-36e

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR ASHEVILLE #12
FROM: MAY 19, 1974
TO: MAY 31, 1975

36e

RAIN RATE	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 5	EXTRAPOLATED USING CP#22
0	100.00	100.00	100.00
2	0.0000	1.1801	5.8078
4	8.3333	1.1622	5.7589
6	7.1429	1.1494	5.7239
8	.00000	1.0726	5.5140
10	.00000	.00000	.00000
12	.00000	.00000	.00000
14	.00000	.00000	.00000
16	.00000	.00000	.00000
18	.00000	.00000	.00000
20	.00000	.00000	.00000
25	.00000	.00000	.00000
30	.00000	.00000	.00000
35	.00000	.00000	.00000
40	.00000	.00000	.00000
45	.00000	.00000	.00000
R 50	.00000	.00000	.00000
A 55	.00000	.00000	.00000
I 60	.00000	.00000	.00000
N 65	.00000	.00000	.00000
70	.00000	.00000	.00000
R 75	.00000	.00000	.00000
A 80	.00000	.00000	.00000
T 85	.00000	.00000	.00000
E 90	.00000	.00000	.00000
95	.00000	.00000	.00000
M 100	.00000	.00000	.00000
M 105	.00000	.00000	.00000
110	.00000	.00000	.00000
P 115	.00000	.00000	.00000
E 120	.00000	.00000	.00000
R 125	.00000	.00000	.00000
130	.00000	.00000	.00000
H 135	.00000	.00000	.00000
R 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

3 of 6

Figure 1.1-27f

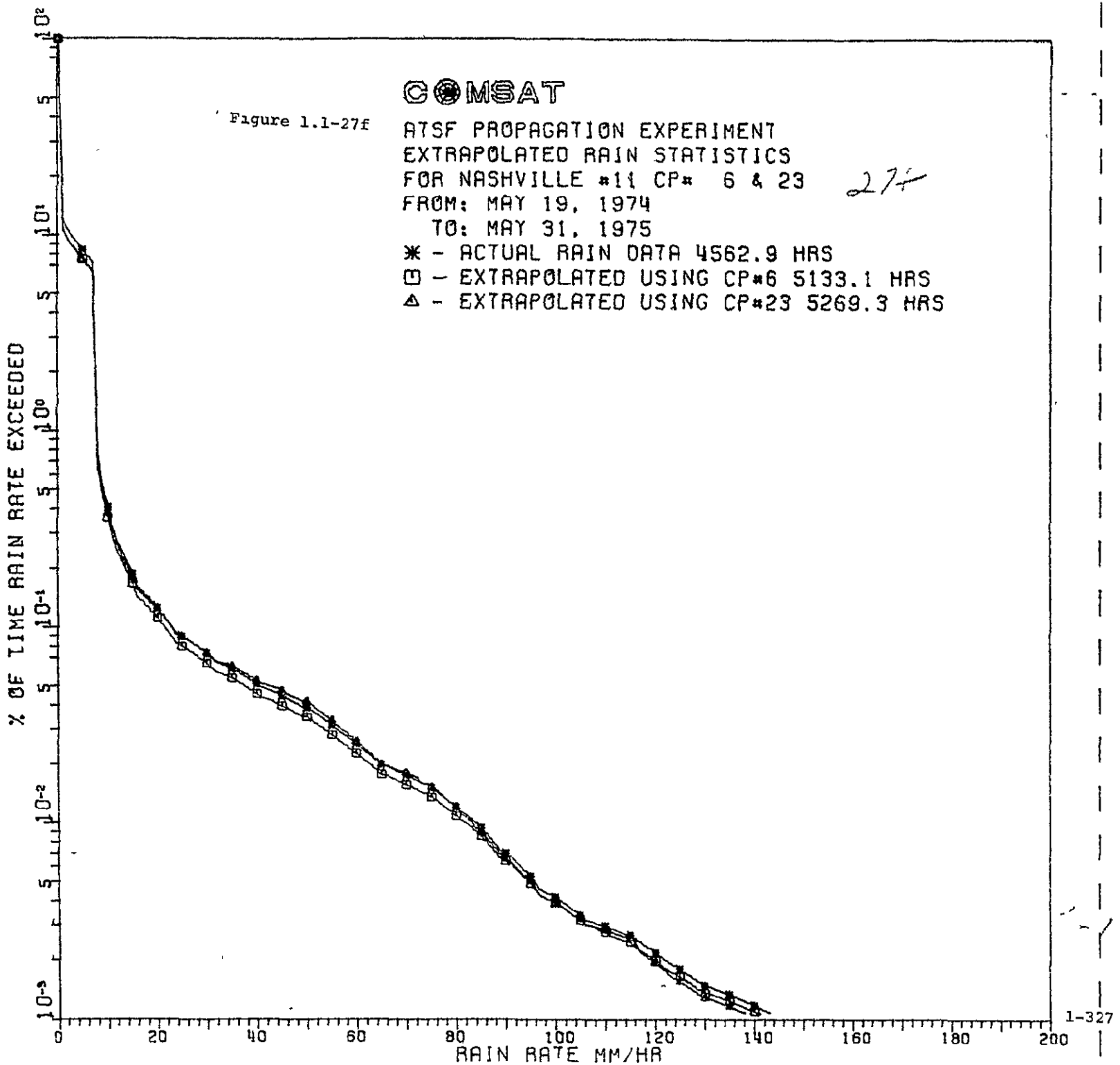


Table 1.1-36f

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR NASHVILLE #11
FROM: MAY 19, 1974
TO: MAY 31, 1975

36f

RAIN RATE	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 6	EXTRAPOLATED USING CP#23
0	100.00	100.00	100.00
2	10.836	9.7328	9.6004
4	9.0651	8.1585	8.0668
6	7.7988	7.0329	6.9703
8	.63843	.66785	.76973
10	.40671	.36178	.37796
12	.27400	.24381	.26304
14	.21447	.19084	.20304
16	.15858	.14116	.15464
18	.14267	.12702	.13840
20	.12475	.11109	.12288
25	.08958	.07983	.08853
30	.07308	.06516	.07367
35	.06144	.05481	.06303
40	.05125	.04575	.05354
45	.04458	.03982	.04747
R 50	.03896	.03482	.04185
A 55	.03172	.02839	.03340
I 60	.02558	.02293	.02618
N 65	.01982	.01782	.01996
70	.01765	.01589	.01809
R 75	.01525	.01375	.01539
A 80	.01213	.01098	.01226
T 85	.00950	.00864	.00894
E 90	.00703	.00645	.00652
95	.00536	.00496	.00507
M 100	.00421	.00394	.00393
M 105	.00339	.00320	.00322
110	.00299	.00281	.00288
P 115	.00270	.00249	.00262
E 120	.00220	.00201	.00195
R 125	.00181	.00166	.00157
130	.00148	.00136	.00128
H 135	.00135	.00125	.00117
R 140	.00118	.00110	.00102
145	.00102	.00091	.00088
150	.00079	.00070	.00068
155	.00046	.00041	.00040
160	.00013	.00012	.00011
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

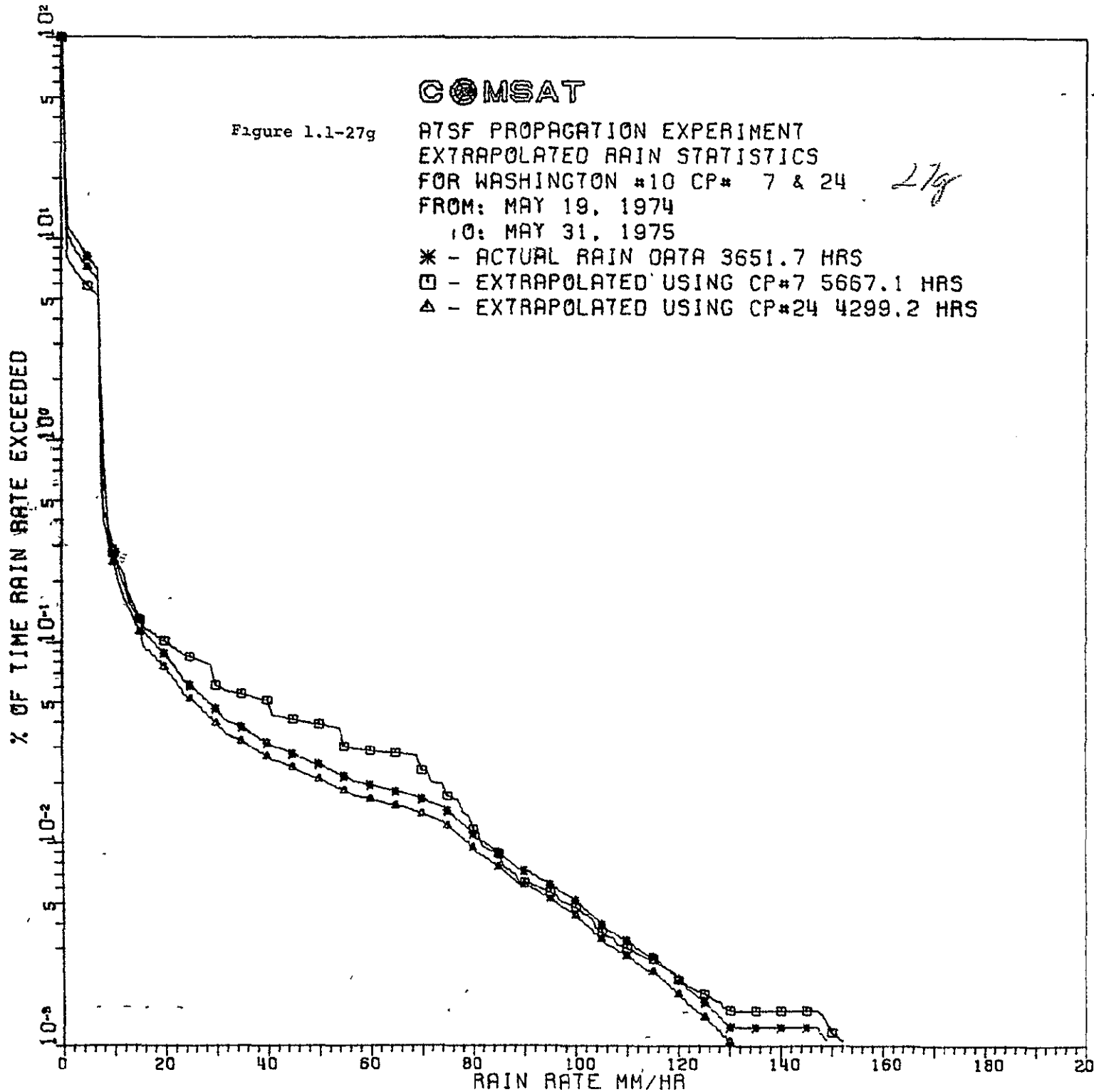

COMSAT
Figure 1.1-27g
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS
FOR WASHINGTON #10 CP# 7 & 24
FROM: MAY 19, 1974
TO: MAY 31, 1975
* - ACTUAL RAIN DATA 3651.7 HRS
□ - EXTRAPOLATED USING CP#7 5667.1 HRS
△ - EXTRAPOLATED USING CP#24 4299.2 HRS
% OF TIME RAIN RATE EXCEEDED
RAIN RATE MM/HR
0
20
40
60
80
100
120
140
160
180
200

Table 1.1-36g

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR WASHINGTON #10
FROM: MAY 19, 1974
TO: MAY 31, 1975

36g

RAIN RATE MM	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 7	EXTRAPOLATED USING CP#24
0	100.00	100.00	100.00
2	10.615	7.3919	9.3220
4	8.8687	6.2669	7.8071
6	7.6216	5.4632	6.7138
8	.46528	.85199	.39590
10	.29087	.27759	.24741
12	.19323	.21468	.16447
14	.15166	.14285	.12916
16	.11091	.11659	.09455
18	.10052	.10990	.08572
20	.08819	.10196	.07526
25	.06108	.08449	.05223
30	.04646	.06108	.03969
35	.03775	.05547	.03230
40	.03159	.05150	.02706
45	.02793	.04147	.02396
50	.02477	.03943	.02104
55	.02169	.03056	.01842
60	.01963	.02924	.01668
65	.01820	.02831	.01546
70	.01668	.02336	.01417
75	.01458	.01743	.01239
80	.01130	.01187	.00959
85	.00908	.00894	.00771
90	.00735	.00646	.00625
95	.00628	.00577	.00534
100	.00522	.00486	.00443
105	.00398	.00367	.00338
110	.00329	.00304	.00279
115	.00275	.00270	.00234
120	.00214	.00213	.00181
125	.00164	.00181	.00140
130	.00123	.00150	.00105
135	.00123	.00150	.00105
140	.00123	.00150	.00105
145	.00123	.00150	.00105
150	.00099	.00116	.00084
155	.00058	.00072	.00049
160	.00016	.00019	.00014
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

Figure 1.1-27h

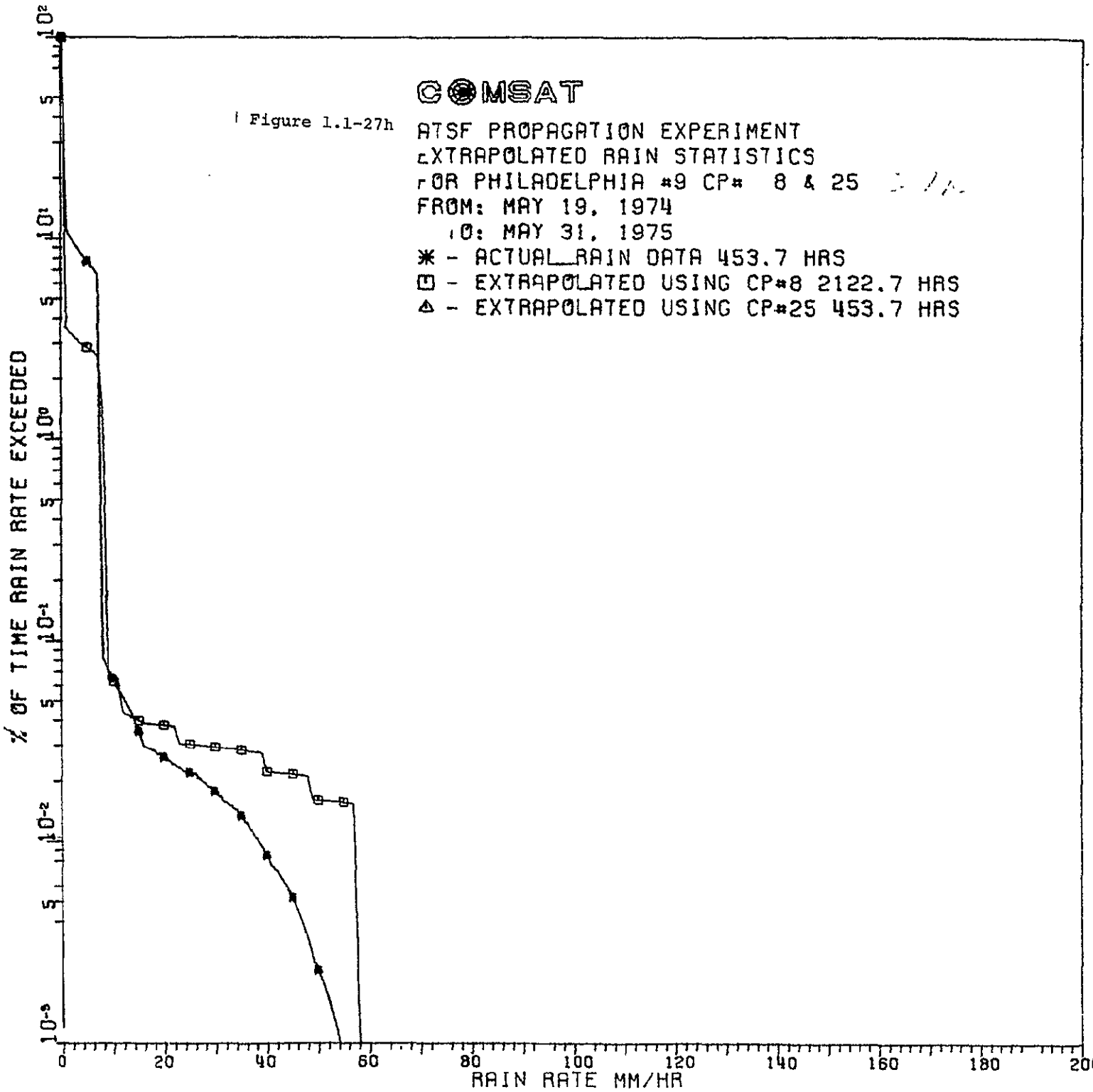


Table 1.1-36h

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR PHILADELPHIA #9
FROM: MAY 19, 1974
TO: MAY 31, 1975

RAIN RATE	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP# 8	EXTRAPOLATED USING CP#25
0	100.00	100.00	100.00
2	10.102	3.3802	10.102
4	8.4238	3.0215	8.4238
6	7.2254	2.7654	7.2254
8	.08165	1.2383	.08165
10	.06512	.06315	.06512
12	.05256	.04386	.05256
14	.04132	.04146	.04132
16	.03008	.03905	.03008
18	.02843	.03870	.02843
20	.02645	.03828	.02645
25	.02215	.03065	.02215
30	.01785	.02973	.01785
35	.01355	.02881	.01355
40	.00860	.02257	.00860
45	.00529	.02186	.00529
50	.00231	.01616	.00231
55	.00066	.01581	.00066
60	.00000	.00000	.00000
65	.00000	.00000	.00000
70	.00000	.00000	.00000
75	.00000	.00000	.00000
80	.00000	.00000	.00000
85	.00000	.00000	.00000
90	.00000	.00000	.00000
95	.00000	.00000	.00000
100	.00000	.00000	.00000
105	.00000	.00000	.00000
110	.00000	.00000	.00000
115	.00000	.00000	.00000
120	.00000	.00000	.00000
125	.00000	.00000	.00000
130	.00000	.00000	.00000
135	.00000	.00000	.00000
140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

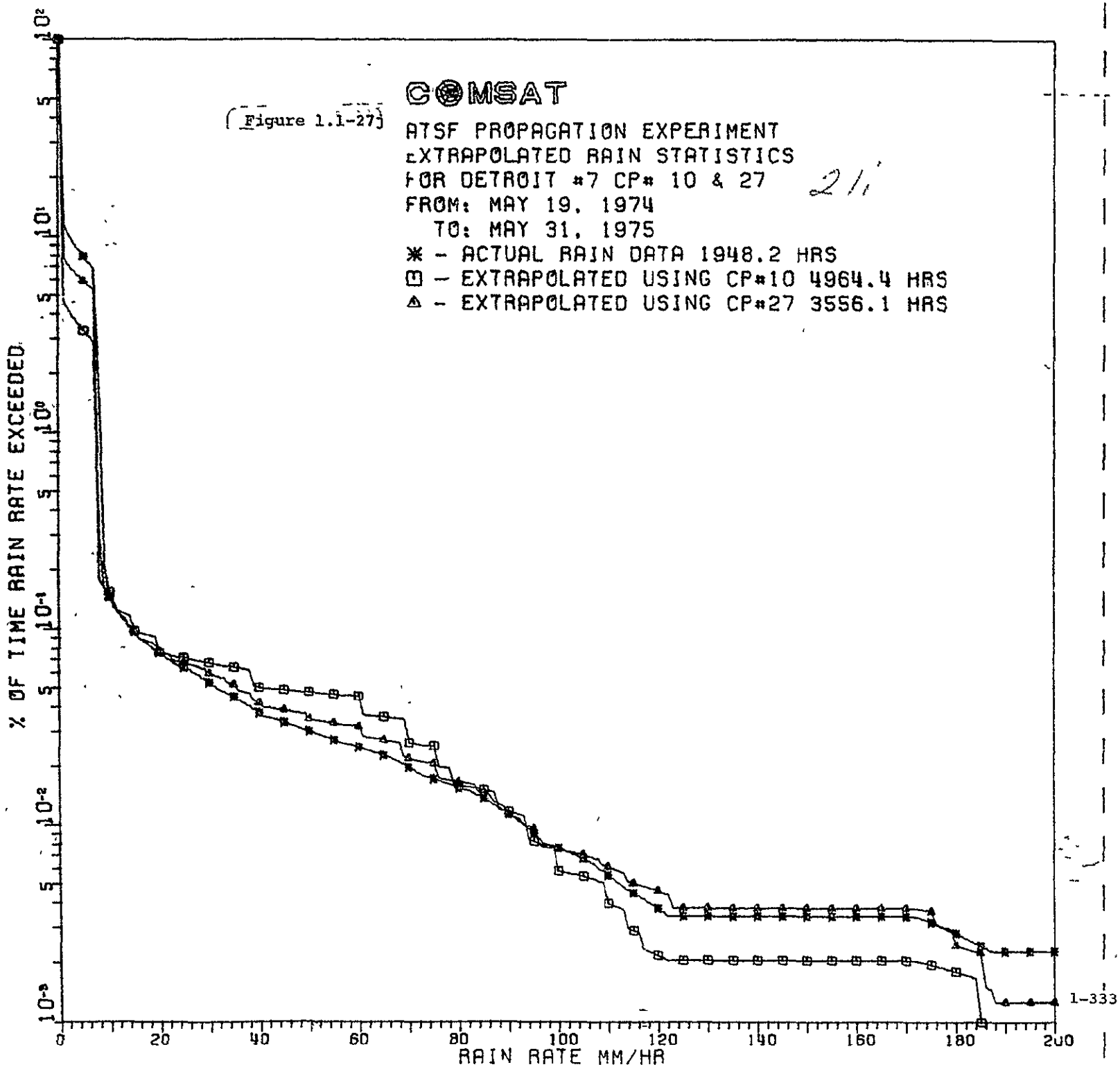


Figure 1.1-27

1-333

Table 1.1-36j
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR DETROIT #7
FROM: MAY 19, 1974
TO: MAY 31, 1975

36i

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#10	EXTRAPOLATED USING CP#27
	0	100.00	100.00	100.00
	2	10.206	4.2161	7.1784
	4	8.5238	3.5558	6.2566
	6	7.3213	3.0839	5.5979
	8	.17946	.28123	1.6853
	10	.14653	.15364	.14544
	12	.11931	.12261	.11893
	14	.10370	.11648	.10201
	16	.08906	.09538	.08928
	18	.08268	.09288	.08579
	20	.07583	.07599	.07733
	25	.06351	.07115	.06713
	30	.05354	.06724	.05935
	35	.04506	.06391	.05204
	40	.03732	.05055	.04224
	45	.03350	.04905	.03860
R	50	.03027	.04778	.03486
A	55	.02736	.04664	.03327
I	60	.02515	.04577	.03206
N	65	.02278	.03593	.02745
	70	.01989	.02664	.02215
R	75	.01740	.02566	.02078
A	80	.01571	.01609	.01683
T	85	.01382	.01534	.01481
E	90	.01144	.01179	.01133
	95	.00915	.00838	.00966
M	100	.00771	.00590	.00760
M	105	.00679	.00553	.00709
	110	.00562	.00402	.00617
P	115	.00454	.00294	.00509
E	120	.00377	.00219	.00467
R	125	.00346	.00206	.00380
	130	.00346	.00206	.00380
H	135	.00346	.00206	.00380
R	140	.00346	.00206	.00380
	145	.00346	.00206	.00380
	150	.00346	.00206	.00380
	155	.00346	.00206	.00380
	160	.00346	.00206	.00380
	165	.00346	.00206	.00380
	170	.00346	.00206	.00380
	175	.00323	.00197	.00367
	180	.00285	.00182	.00247
	185	.00246	.00097	.00226
	190	.00231	.00091	.00127
	195	.00231	.00091	.00127
	200	.00231	.00091	.00127

-334

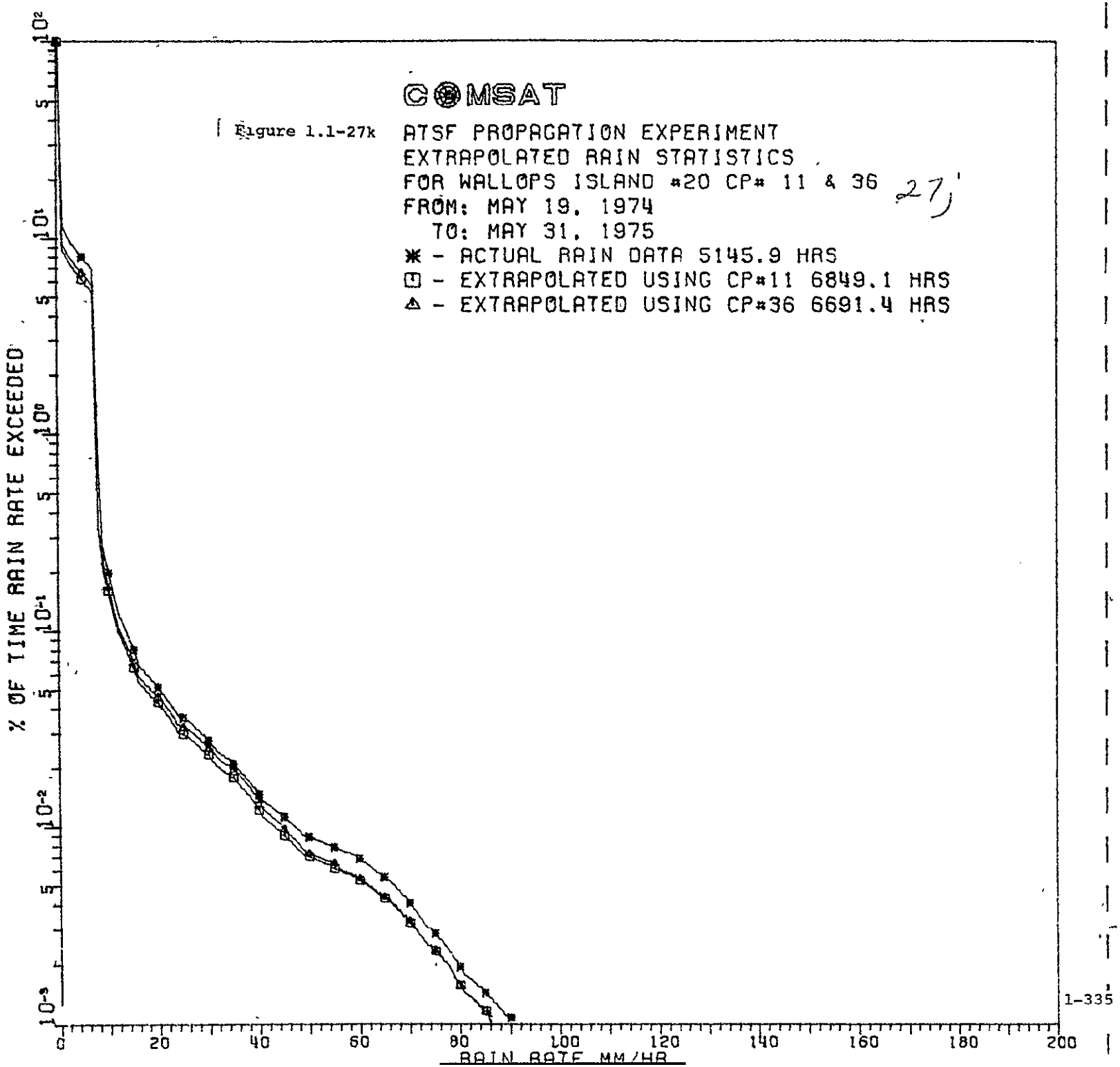


Figure 1.1-27k

27

ATSF PROPAGATION EXPERIMENT Table 1.1-36k
EXTRAPOLATED RAIN STATISTICS FOR WALLOPS ISLAND #20
FROM: MAY 19, 1974
TO: MAY 31, 1975

26)

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#11	EXTRAPOLATED USING CP#36
0	100.00	100.00	100.00
2	10.439	7.9439	8.4827
4	8.7143	6.6477	7.1560
6	7.4817	5.7217	6.2081
8	.32767	.34671	.70649
10	.19860	.16104	.16823
12	.12313	.09864	.10497
14	.09426	.07563	.08063
16	.06675	.05497	.05843
18	.05980	.04909	.05253
20	.05200	.04323	.04626
25	.03601	.02987	.03233
30	.02776	.02338	.02542
35	.02115	.01786	.01978
40	.01474	.01221	.01373
45	.01136	.00912	.00986
R 50	.00903	.00711	.00735
A 55	.00801	.00620	.00657
I 60	.00696	.00541	.00550
N 65	.00559	.00439	.00445
70	.00415	.00330	.00334
R 75	.00289	.00236	.00238
A 80	.00196	.00159	.00159
T 85	.00146	.00117	.00116
E 90	.00108	.00081	.00083
95	.00070	.00053	.00054
M 100	.00035	.00026	.00027
M 105	.00006	.00004	.00004
110	.00000	.00000	.00000
P 115	.00000	.00000	.00000
E 120	.00000	.00000	.00000
R 125	.00000	.00000	.00000
130	.00000	.00000	.00000
H 135	.00000	.00000	.00000
R 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

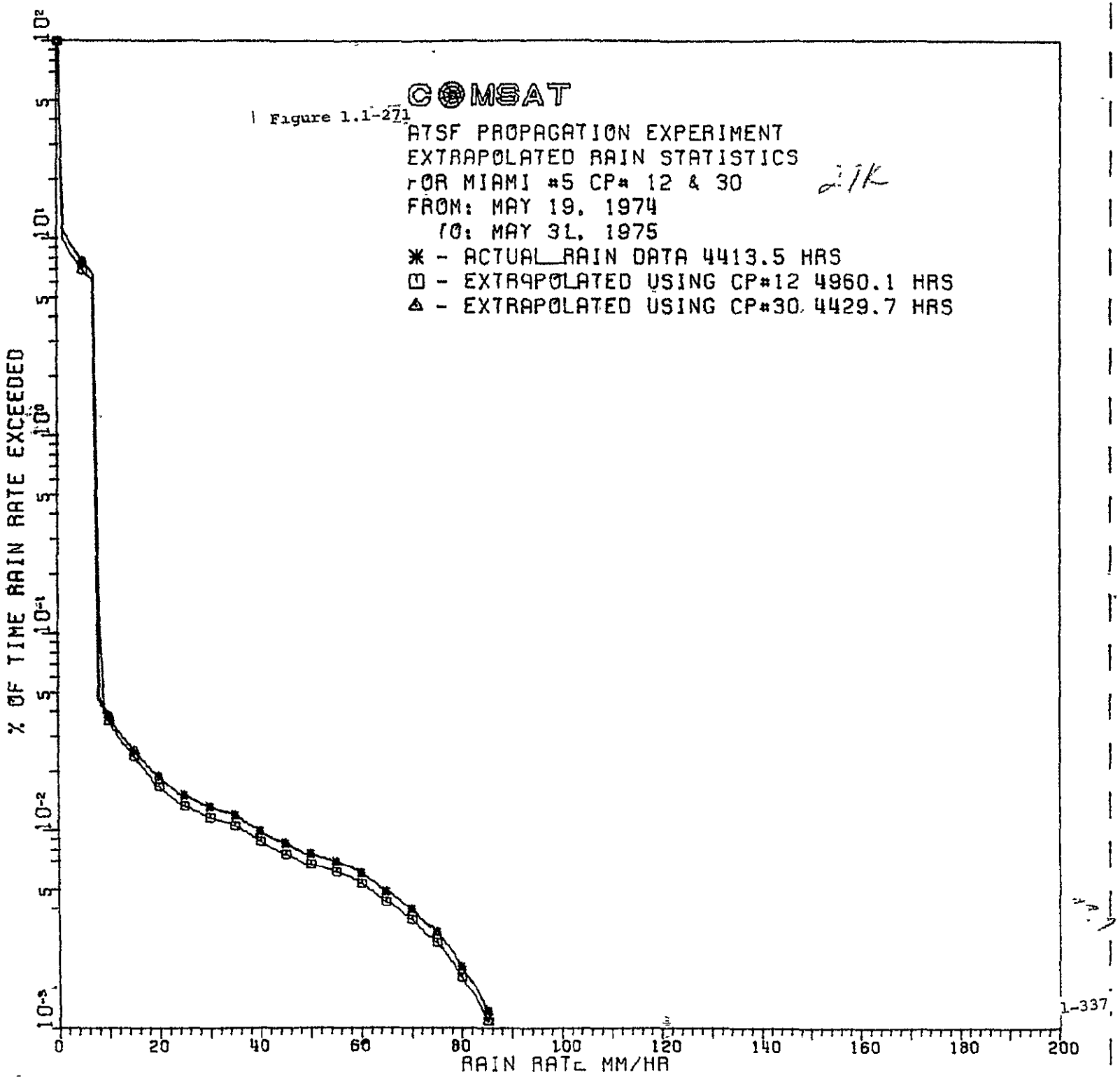

COMSAT
Figure 1.1-271
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS
FOR MIAMI #5 CP# 12 & 30
FROM: MAY 19, 1974
TO: MAY 31, 1975
* - ACTUAL RAIN DATA 4413.5 HRS
□ - EXTRAPOLATED USING CP#12 4960.1 HRS
△ - EXTRAPOLATED USING CP#30 4429.7 HRS
% OF TIME RAIN RATE EXCEEDED
RAIN RATE MM/HR
0
20
40
60
80
100
120
140
160
180
200

Table 1.1-361

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR MIAMI #5
FROM: MAY 19, 1974
TO: MAY 31, 1975

36K

RAIN	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#12	EXTRAPOLATED USING CP#30
0	100.00	100.00	100.00
2	10.051	9.0325	10.018
4	8.3815	7.5470	8.3550
6	7.1884	6.4853	7.1662
8	.04598	.12997	.04998
10	.03812	.03619	.03798
12	.03172	.02979	.03161
14	.02751	.02574	.02741
16	.02387	.02215	.02379
18	.02125	.01941	.02118
20	.01887	.01679	.01880
25	.01511	.01344	.01505
30	.01322	.01176	.01317
35	.01200	.01068	.01195
40	.00996	.00886	.00992
45	.00860	.00765	.00857
R 50	.00765	.00680	.00762
A 55	.00697	.00620	.00694
I 60	.00608	.00541	.00606
N 65	.00489	.00435	.00488
70	.00398	.00354	.00396
R 75	.00306	.00272	.00305
A 80	.00204	.00181	.00203
T 85	.00122	.00109	.00122
E 90	.00048	.00042	.00047
95	.00014	.00012	.00014
M 100	.00000	.00000	.00000
M 105	.00000	.00000	.00000
110	.00000	.00000	.00000
P 115	.00000	.00000	.00000
E 120	.00000	.00000	.00000
R 125	.00000	.00000	.00000
130	.00000	.00000	.00000
H 135	.00000	.00000	.00000
R 140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

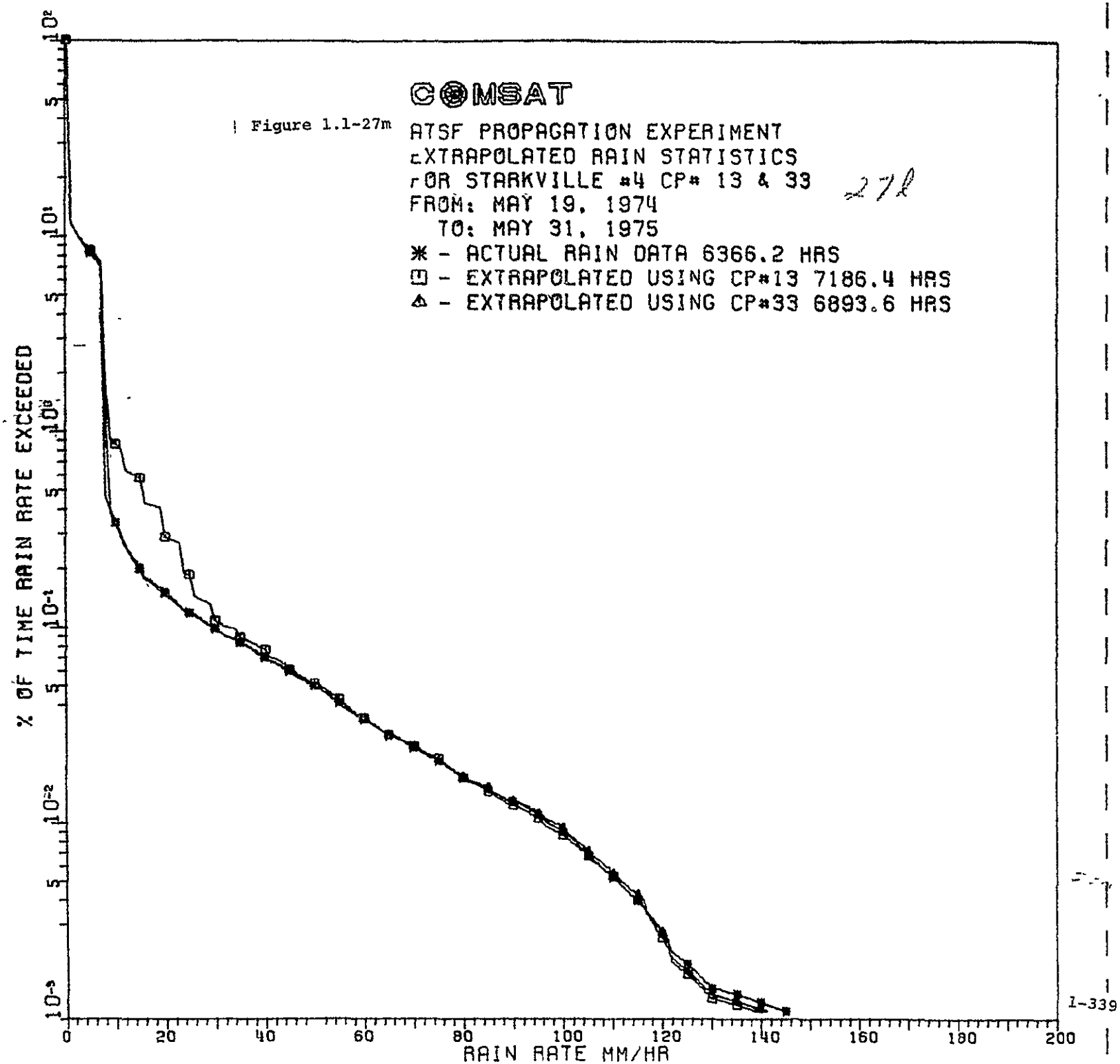


Figure 1.1-27m

27l

Table 1.1-36m

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR STARKVILLE #4.
FROM: MAY 19, 1974
TO: MAY 31, 1975

36L

RAIN RATE	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#13	EXTRAPOLATED USING CP#33
0	100.00	100.00	100.00
2	10.558	10.530	10.541
4	8.8351	9.0036	8.9499
6	7.6025	7.9118	7.8116
8	.45626	1.5811	1.2120
10	.34123	.85346	.33297
12	.26435	.63382	.25689
14	.22046	.59494	.21563
16	.17784	.42728	.17420
18	.16418	.41519	.16083
20	.14892	.28632	.14623
25	.11771	.18383	.11614
30	.09739	.10739	.09694
35	.08330	.08830	.08276
40	.06982	.07636	.06974
45	.05962	.06064	.05909
RAIN RATE 50	.05025	.05130	.04975
55	.04117	.04280	.04088
60	.03415	.03433	.03386
65	.02792	.02831	.02810
70	.02433	.02472	.02458
RATE 75	.02075	.02134	.02098
80	.01712	.01712	.01726
85	.01477	.01444	.01509
90	.01282	.01240	.01296
95	.01096	.01058	.01124
MM 100	.00898	.00861	.00941
MM 105	.00686	.00673	.00713
110	.00528	.00534	.00549
PER 115	.00398	.00401	.00429
ER 120	.00269	.00255	.00277
R 125	.00188	.00167	.00174
130	.00141	.00125	.00131
HR 135	.00132	.00117	.00122
R 140	.00120	.00106	.00111
145	.00108	.00096	.00100
150	.00099	.00088	.00091
155	.00087	.00077	.00081
160	.00075	.00067	.00070
165	.00071	.00063	.00065
170	.00071	.00063	.00065
175	.00071	.00063	.00065
180	.00071	.00063	.00065
185	.00071	.00063	.00065
190	.00071	.00063	.00065
195	.00071	.00063	.00065
200	.00071	.00063	.00065

340

Figure 1.1-27n

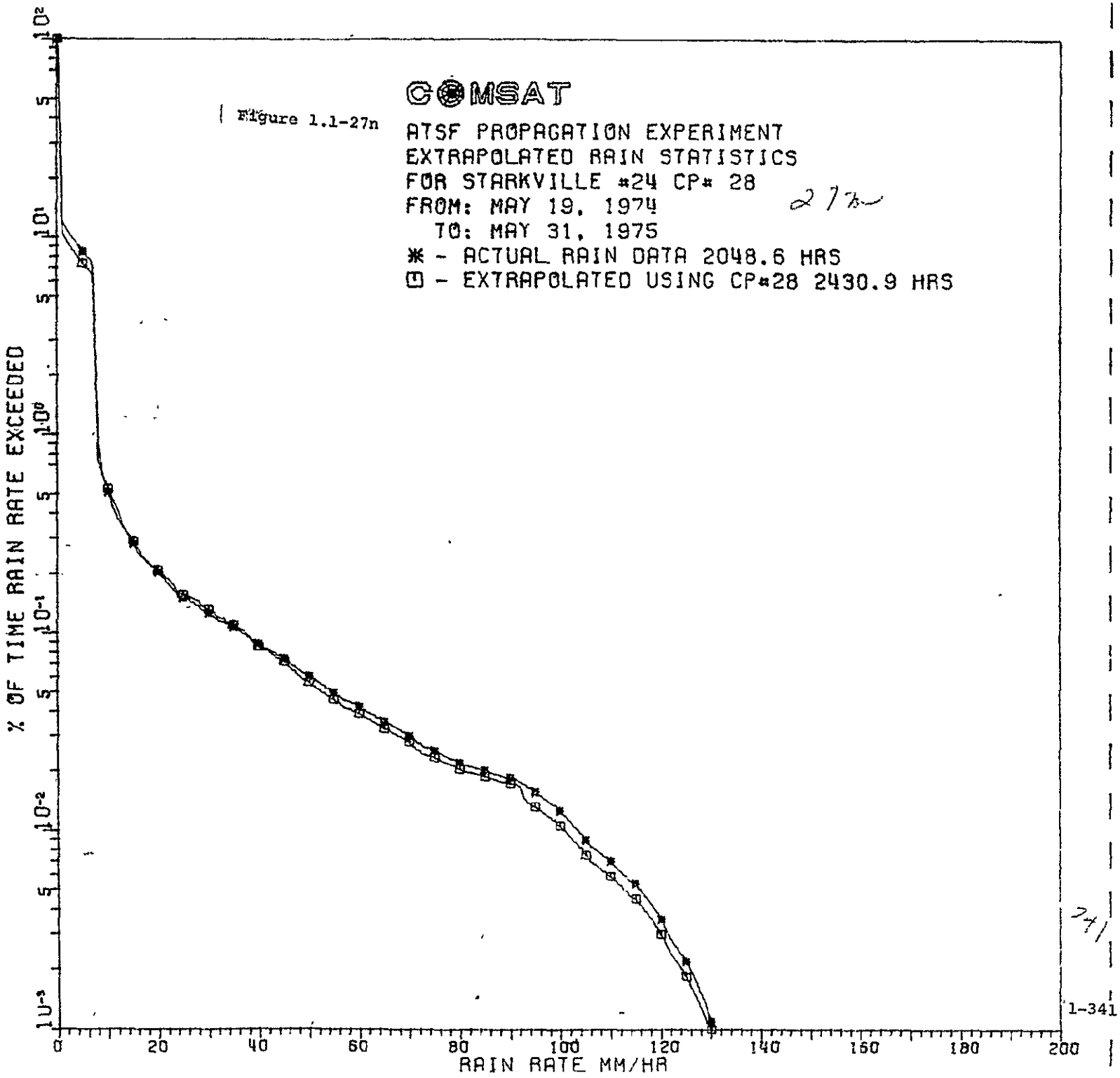


Table 1.1-36n

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR STARKVILLE #24
FROM: MAY 19, 1974
TO: MAY 31, 1975

36m

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#28
0	100.00	100.00
2	10.927	9.4849
4	9.1591	7.9954
6	7.8963	6.9313
8	.74513	.90479
10	.51680	.53538
12	.37540	.41622
14	.31296	.31660
16	.25118	.26454
18	.22842	.22880
20	.20280	.20721
25	.15025	.15603
30	.12594	.13184
35	.10705	.10934
40	.08801	.08548
45	.07395	.07209
R 50	.06077	.05667
A 55	.05016	.04618
I 60	.04247	.03918
N 65	.03551	.03281
70	.03009	.02814
R 75	.02548	.02353
A 80	.02219	.02055
T 85	.02021	.01888
E 90	.01860	.01752
95	.01582	.01333
M 100	.01274	.01074
M 105	.00908	.00765
110	.00703	.00592
P 115	.00542	.00457
E 120	.00359	.00302
R 125	.00220	.00185
130	.00110	.00093
H 135	.00110	.00093
R 140	.00110	.00093
145	.00110	.00093
150	.00110	.00093
155	.00110	.00093
160	.00110	.00093
165	.00110	.00093
170	.00110	.00093
175	.00088	.00074
180	.00051	.00043
185	.00015	.00012
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

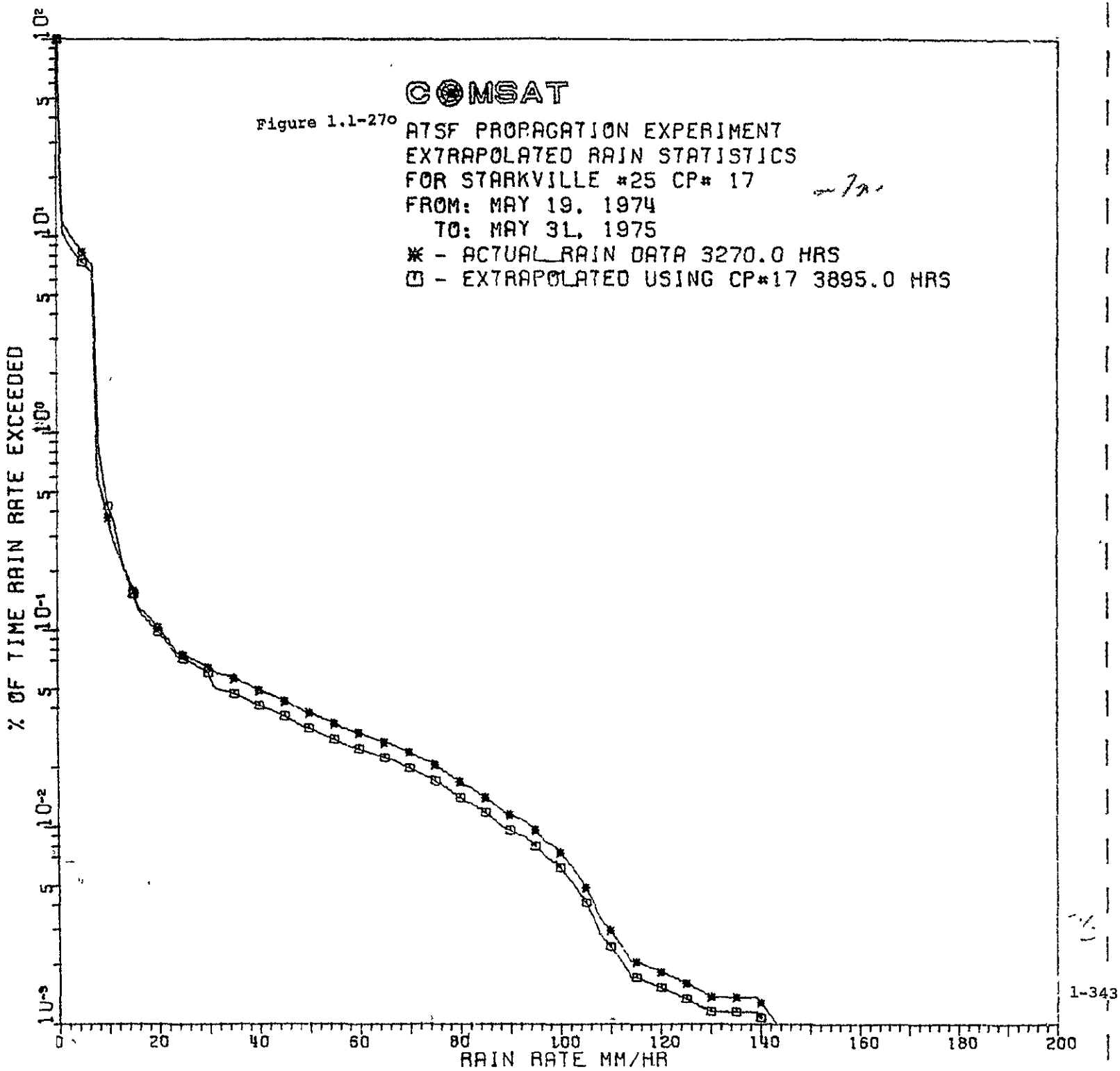


Figure 1.1-27o

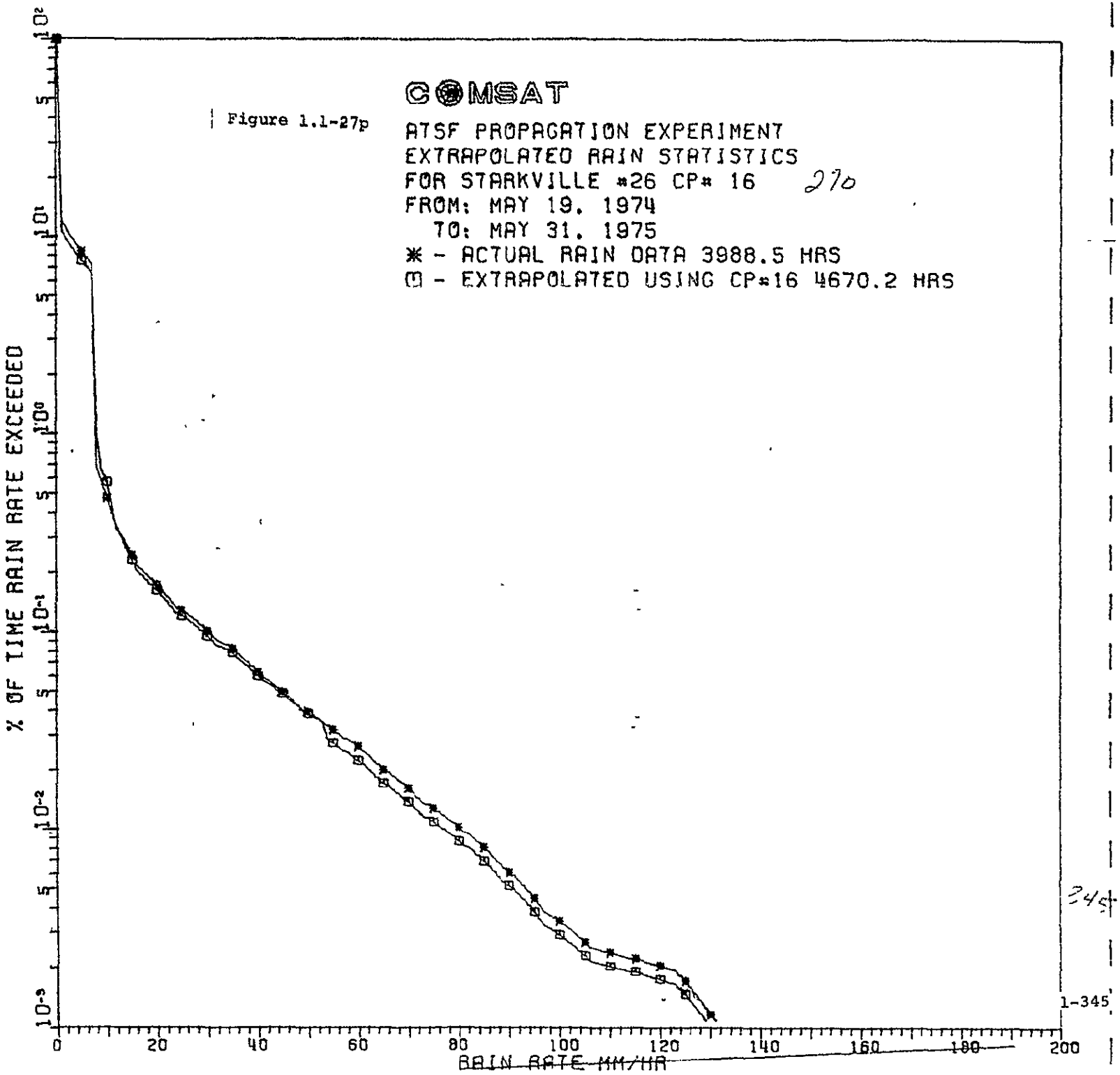
Table 1.1-360

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR STARKVILLE #25
FROM: MAY 19, 1974
TO: MAY 31, 1975

362

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#17
	0	100.00	100.00
	2	10.778	9.4655
	4	9.0102	7.9813
	6	7.7467	6.9206
	8	.58564	.90849
	10	.37417	.42852
	12	.24862	.28813
	14	.18803	.18090
	16	.13000	.12750
	18	.11665	.11167
	20	.10289	.09851
	25	.07436	.07122
	30	.06390	.06071
	35	.05670	.04760
	40	.04959	.04163
	45	.04362	.03662
R	50	.03789	.03181
A	55	.03330	.02796
I	60	.02995	.02515
N	65	.02697	.02264
	70	.02394	.02010
R	75	.02073	.01741
A	80	.01706	.01433
T	85	.01422	.01194
E	90	.01156	.00970
	95	.00963	.00809
M	100	.00748	.00628
M	105	.00495	.00416
	110	.00298	.00250
P	115	.00206	.00173
E	120	.00183	.00154
R	125	.00161	.00135
	130	.00138	.00116
H	135	.00138	.00116
R	140	.00128	.00108
	145	.00083	.00069
	150	.00037	.00031
	155	.00000	.00000
	160	.00000	.00000
	165	.00000	.00000
	170	.00000	.00000
	175	.00000	.00000
	180	.00000	.00000
	185	.00000	.00000
	190	.00000	.00000
	195	.00000	.00000
	200	.00000	.00000

Figure 1.1-27p



ATSF PROPAGATION EXPERIMENT — Table 1.1-36p
EXTRAPOLATED RAIN STATISTICS FOR STARKVILLE #26
FROM: MAY 19, 1974
TO: MAY 31, 1975

360

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#16
0	100.00	100.00
2	10.849	9.6690
4	9.0862	8.1639
6	7.8263	7.0878
8	.67310	.97874
10	.47619	.57091
12	.34094	.33122
14	.27698	.26347
16	.21490	.20318
18	.19535	.18333
20	.17309	.16324
25	.12705	.12007
30	.10136	.09577
35	.08199	.07837
40	.06234	.05993
45	.04961	.04869
R 50	.03936	.03864
A 55	.03225	.02755
I 60	.02626	.02242
N 65	.02009	.01716
70	.01622	.01385
R 75	.01291	.01103
A 80	.01033	.00882
T 85	.00821	.00701
E 90	.00614	.00524
95	.00453	.00387
H 100	.00346	.00295
N 105	.00271	.00231
110	.00241	.00206
P 115	.00226	.00193
E 120	.00207	.00177
R 125	.00173	.00148
130	.00117	.00100
H 135	.00064	.00055
R 140	.00023	.00019
145	.00004	.00003
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

3-16

Figure 1.1-27q

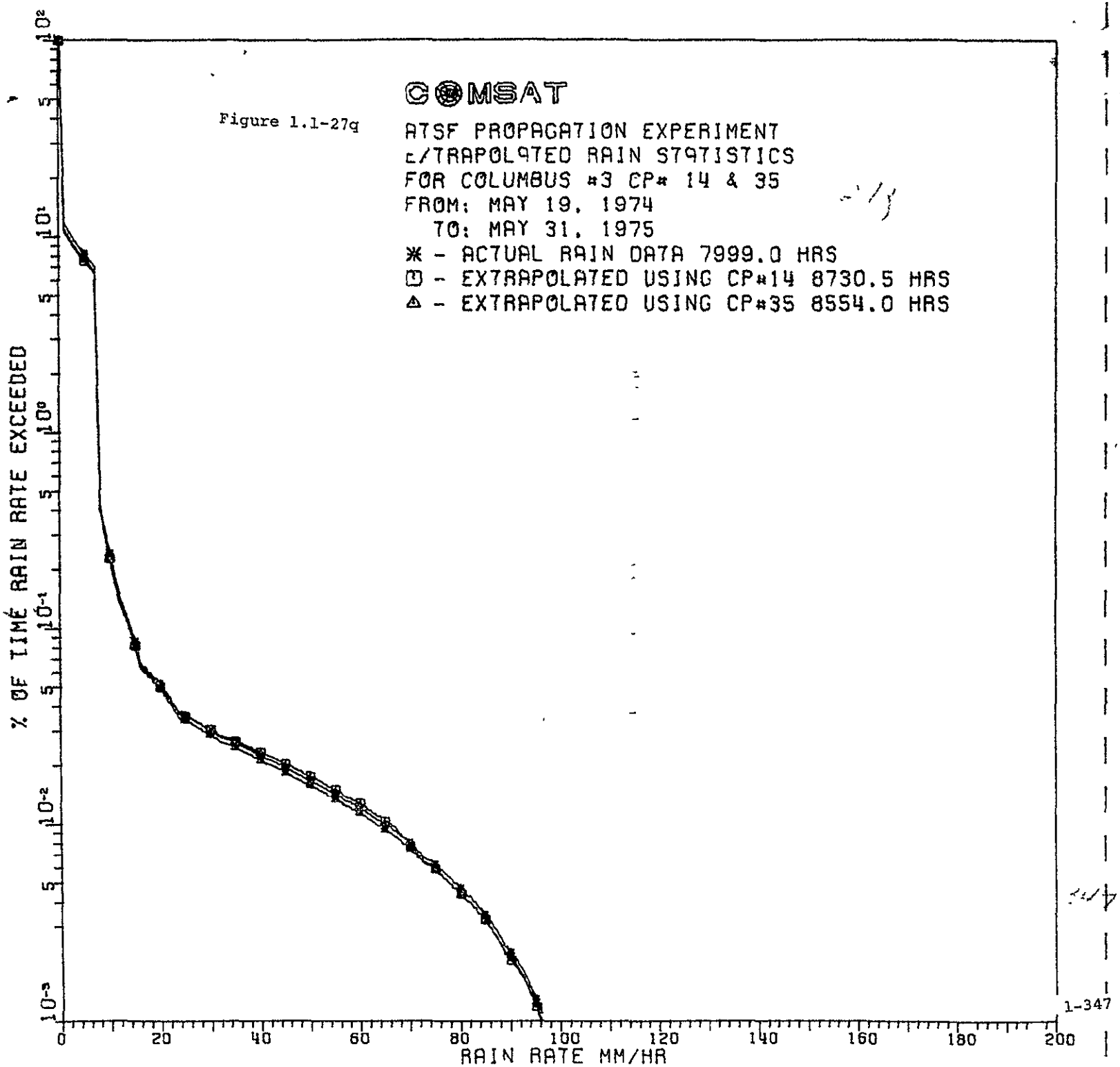


Table 1.1-36q

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR COLUMBUS #3
FROM: MAY 1ST, 1974
TO: MAY 31, 1975

36j

RAIN RATE	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#14	EXTRAPOLATED USING CP#35
0	100.00	100.00	100.00
2	10.581	9.7124	9.9281
4	8.8326	8.1103	8.2929
6	7.5834	6.9658	7.1247
8	.42282	.40514	.42870
10	.24284	.22925	.22910
12	.14473	.13661	.13736
14	.10507	.10028	.09966
16	.06676	.06455	.06328
18	.05969	.05807	.05652
20	.05197	.05070	.04924
25	.03589	.03574	.03400
30	.03028	.03060	.02863
35	.02614	.02665	.02471
40	.02250	.02330	.02124
45	.01953	.02047	.01844
50	.01684	.01772	.01592
55	.01430	.01513	.01349
60	.01218	.01285	.01145
65	.00996	.01036	.00937
70	.00802	.00781	.00750
75	.00624	.00595	.00584
80	.00471	.00443	.00441
85	.00347	.00327	.00325
90	.00223	.00204	.00208
95	.00129	.00118	.00121
100	.00079	.00072	.00074
105	.00060	.00055	.00056
110	.00056	.00052	.00053
115	.00056	.00052	.00053
120	.00038	.00034	.00035
125	.00019	.00017	.00018
130	.00000	.00000	.00000
135	.00000	.00000	.00000
140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

RAIN RATE

Figure 1.1-27r

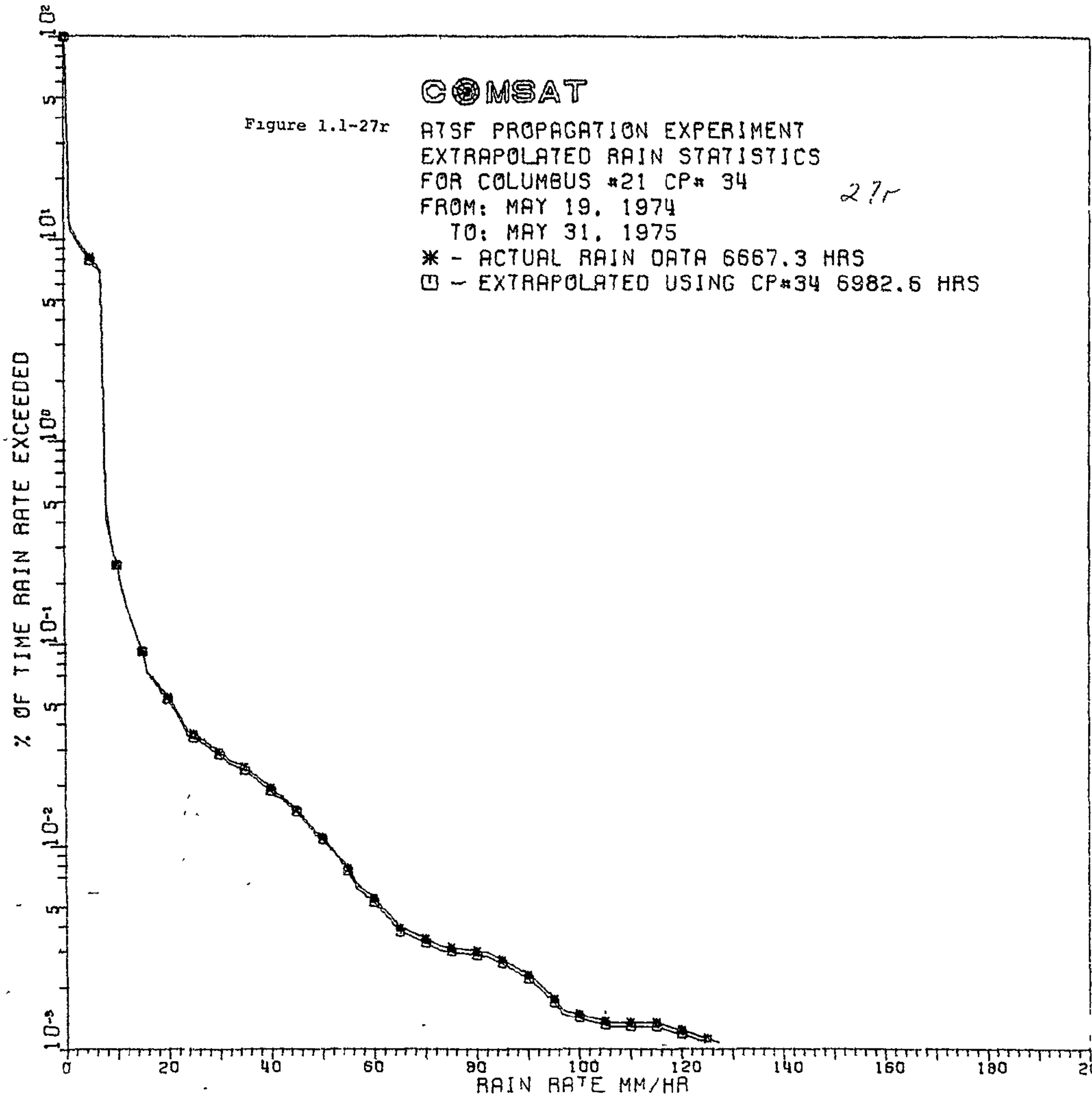


Table 1.1-36r

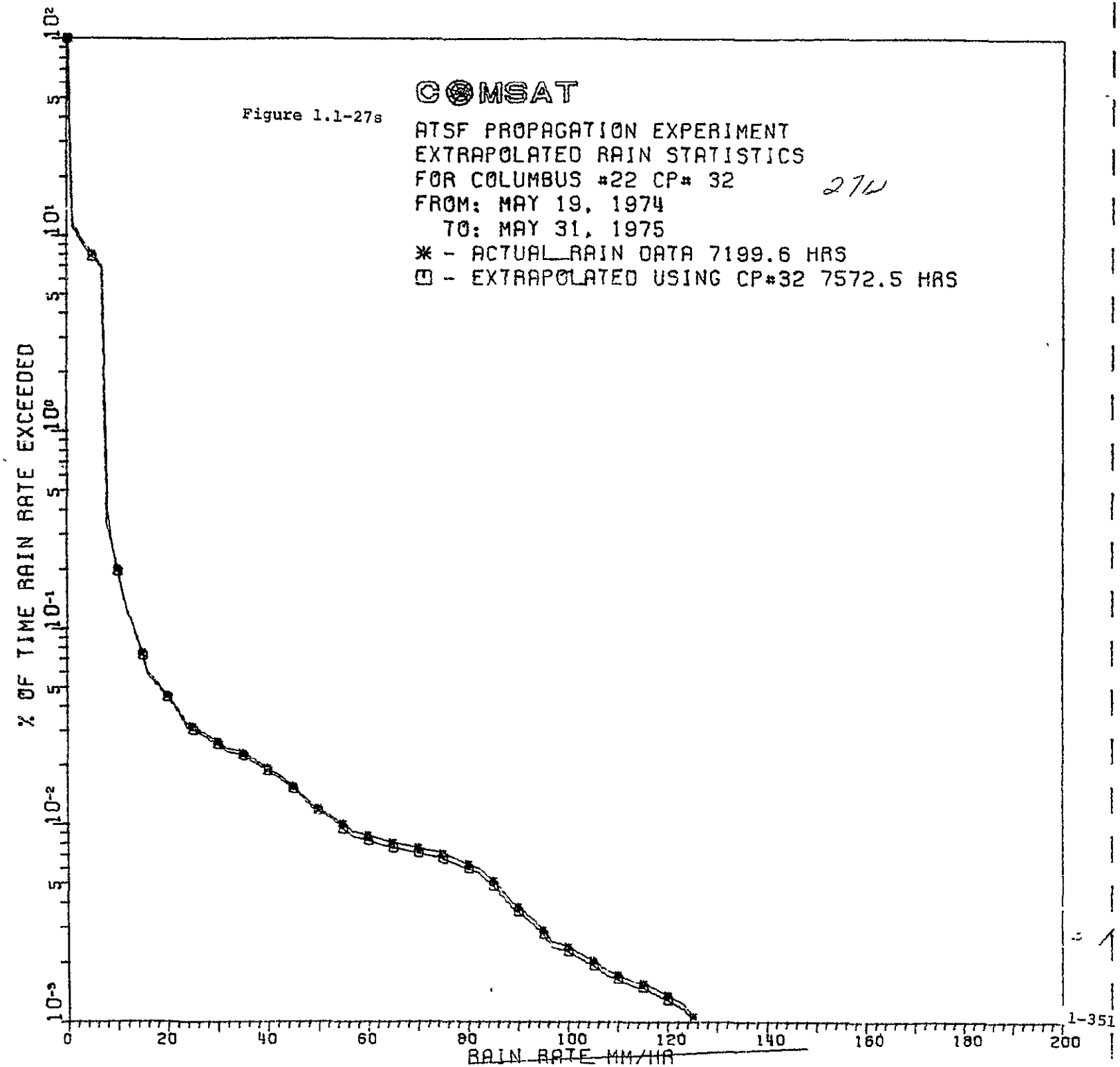
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR COLUMBUS #21
FROM: MAY 19, 1974
TO: MAY 31, 1975

36r

RAIN TIME	ACTUAL RAIN DATA	EXTRAPOLATED USING CP#34
0	100.00	100.00
2	10.561	10.174
4	8.8178	8.5099
6	7.5724	7.3207
8	.41393	.48560
10	.24543	.24552
12	.15016	.15086
14	.11114	.11139
16	.07322	.07188
18	.06423	.06233
20	.05466	.05294
25	.03563	.03427
30	.02925	.02818
35	.02441	.02355
40	.01938	.01875
45	.01519	.01476
50	.01116	.01087
55	.00780	.00759
60	.00558	.00532
65	.00398	.00380
70	.00351	.00335
75	.00317	.00303
80	.00306	.00292
85	.00277	.00264
90	.00232	.00221
95	.00178	.00170
100	.00148	.00142
105	.00137	.00131
110	.00135	.00129
115	.00135	.00129
120	.00124	.00118
125	.00112	.00107
130	.00101	.00097
135	.00083	.00079
140	.00061	.00058
145	.00038	.00037
150	.00027	.00026
155	.00016	.00015
160	.00004	.00004
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

RAIN RATE

Figure 1.1-27s

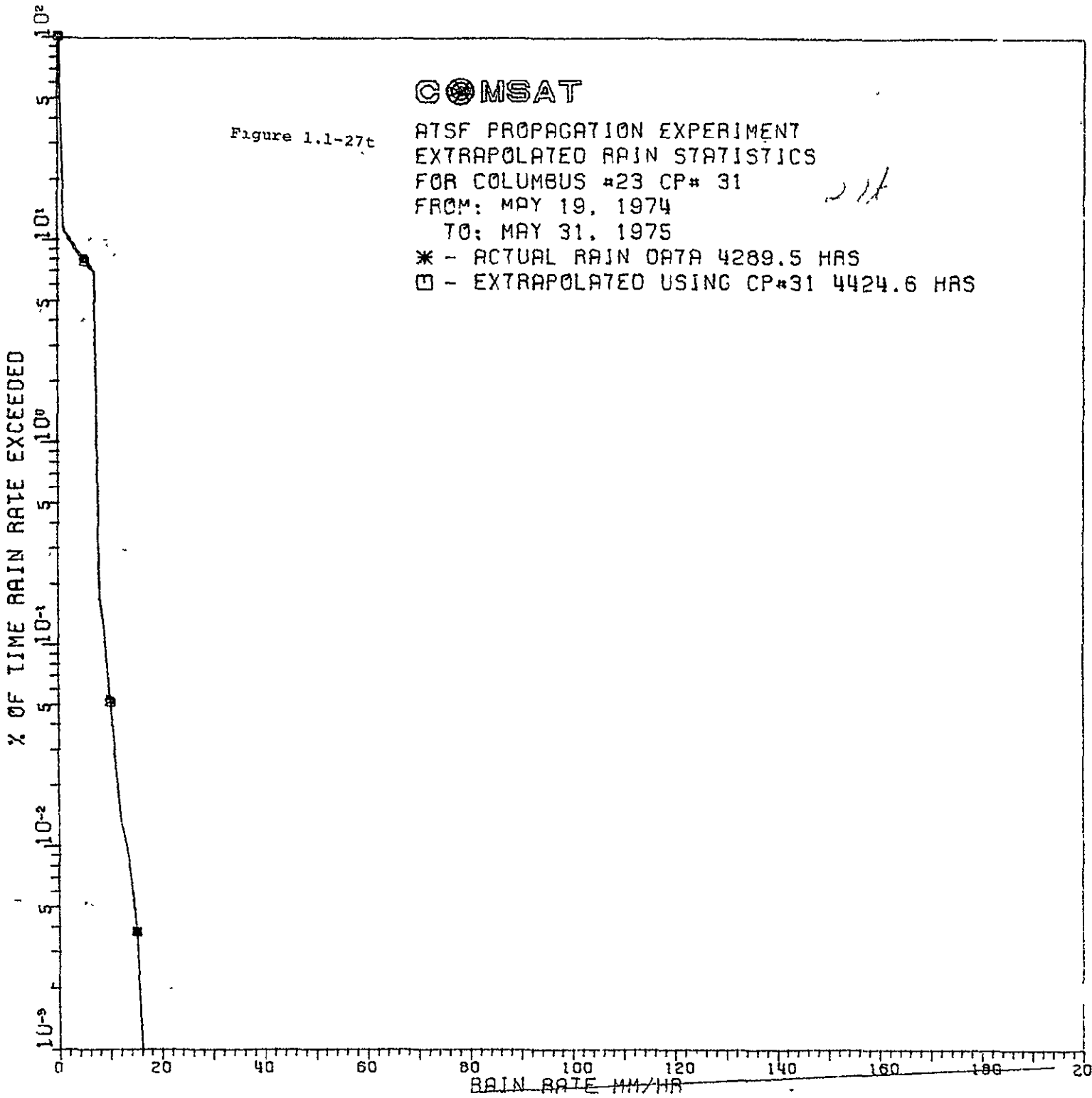


ATSF PROPAGATION EXPERIMENT Table 1.1-36s
EXTRAPOLATED RAIN STATISTICS FOR COLUMBUS #22
FROM: MAY 19, 1974
TO: MAY 31, 1975

364

	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#32
0	100.00	100.00
2	10.463	10.059
4	8.7328	8.4139
6	7.4966	7.2386
8	.34040	.40214
10	.20046	.19627
12	.12186	.11959
14	.09049	.08752
16	.05969	.05824
18	.05297	.05168
20	.04552	.04460
25	.03122	.03027
30	.02631	.02561
35	.02297	.02237
40	.01920	.01875
45	.01560	.01529
R 50	.01211	.01188
A 55	.01004	.00954
I 60	.00882	.00838
N 65	.00807	.00767
70	.00762	.00724
R 75	.00711	.00676
A 80	.00630	.00599
T 85	.00515	.00489
E 90	.00382	.00363
95	.00291	.00276
M 100	.00238	.00226
M 105	.00202	.00193
110	.00173	.00164
P 115	.00156	.00149
E 120	.00135	.00129
R 125	.00106	.00101
130	.00065	.00061
H 135	.00044	.00042
R 140	.00031	.00030
145	.00031	.00030
150	.00031	.00030
155	.00031	.00030
160	.00023	.00022
165	.00013	.00012
170	.00002	.00002
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

Figure 1.1-27t



ATSF PROPAGATION EXPERIMENT

Table 1.1-36t

EXTRAPOLATED RAIN STATISTICS FOR COLUMBUS #23

FROM: MAY 19, 1974

TO: MAY 31,.1975

36t

RAIN TIME	ACTUAL RAIN DATA	EXTRAPOLATED USING CP#31
0	100.00	100.00
2	19.247	9.9470
4	8.5396	8.2915
6	7.3198	7.1090
8	.16527	.17299
10	.05179	.05060
12	.01315	.01309
14	.00685	.00687
16	.00056	.00054
18	.00042	.00041
20	.00028	.00027
25	.00000	.00000
30	.00000	.00000
35	.00000	.00000
40	.00000	.00000
45	.00000	.00000
R 50	.00000	.00000
A 55	.00000	.00000
I 60	.00000	.00000
N 65	.00000	.00000
70	.00000	.00000
R 75	.00000	.00000
A 80	.00000	.00000
T 85	.00000	.00000
E 90	.00000	.00000
95	.00000	.00000
M 100	.00000	.00000
M 105	.00000	.00000
110	.00000	.00000
P 115	.00000	.00000
E 120	.00000	.00000
R 125	.00000	.00000
130	.00000	.00000
H 135	.00000	.00000
R 140	.00000	.00000
145	.00000	.00000
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

Figure 1.1-27u

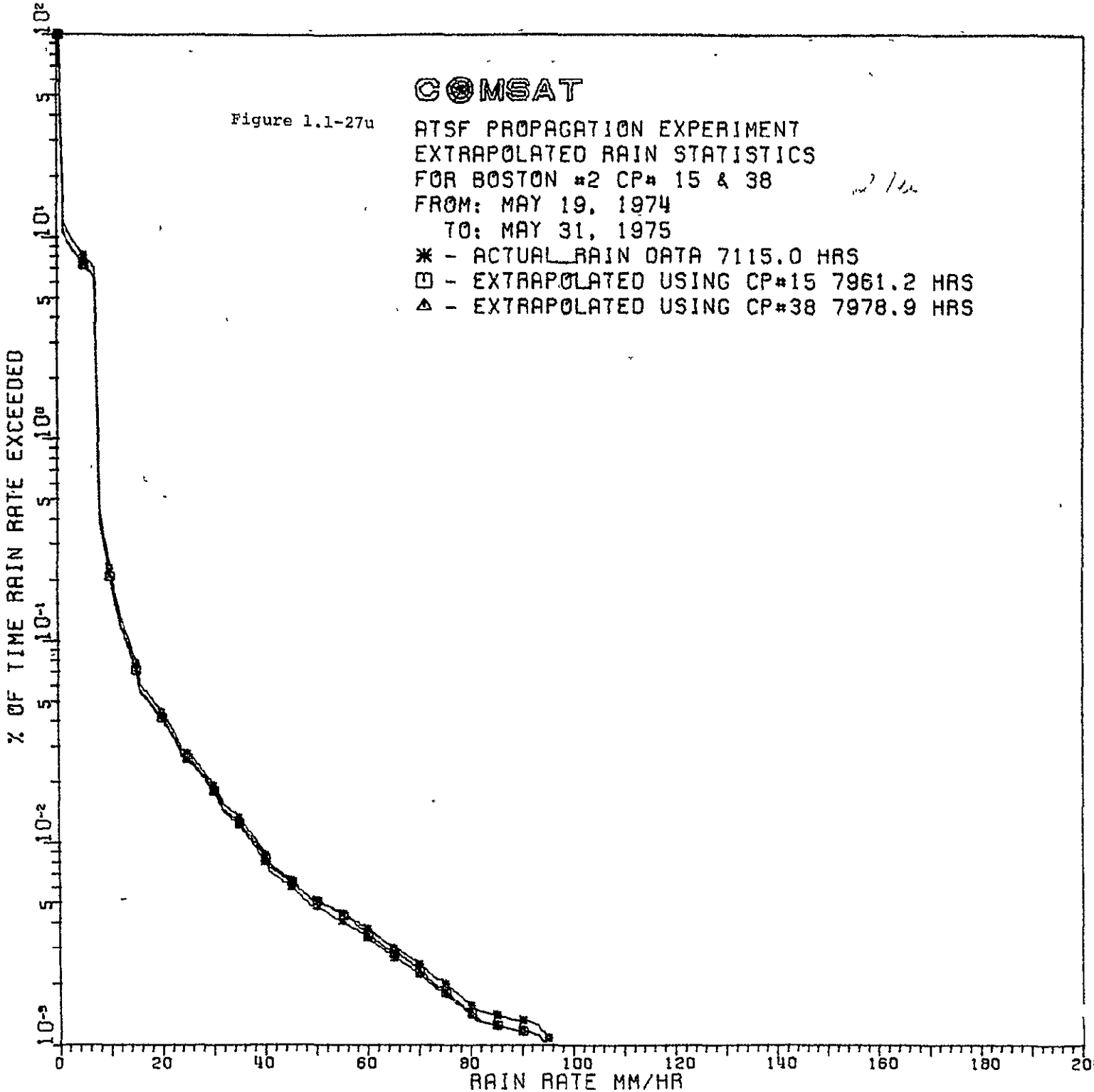


Table 1.1-36u

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR BOSTON #2
FROM: MAY 19, 1974
TO: MAY 31, 1975

36w

RAIN RATE	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#15	EXTRAPOLATED USING CP#38
0	100.00	100.00	100.00
2	10.567	9.4636	9.5118
4	8.8193	7.9020	7.9537
6	7.5705	6.7859	6.8401
8	.40947	.38602	.45446
10	.22968	.20863	.20678
12	.13049	.11967	.11771
14	.09484	.08746	.08583
16	.05980	.05583	.05455
18	.05244	.04894	.04795
20	.04437	.04172	.04072
25	.02766	.02644	.02570
30	.01915	.01818	.01776
35	.01332	.01256	.01222
40	.00873	.00843	.00803
45	.00652	.00642	.00603
50	.00514	.00513	.00478
55	.00443	.00437	.00404
60	.00374	.00350	.00337
65	.00298	.00282	.00266
70	.00248	.00231	.00221
75	.00199	.00181	.00177
80	.00157	.00143	.00140
85	.00140	.00125	.00125
90	.00132	.00118	.00117
95	.00108	.00097	.00092
100	.00064	.00058	.00057
105	.00020	.00018	.00018
110	.00000	.00000	.00000
115	.00000	.00000	.00000
120	.00000	.00000	.00000
125	.00000	.00000	.00000
130	.00000	.00000	.00000
135	.00000	.00000	.00000
140	.00000	.00000	.00000
145	.00000	.00000	.00000
150	.00000	.00000	.00000
155	.00000	.00000	.00000
160	.00000	.00000	.00000
165	.00000	.00000	.00000
170	.00000	.00000	.00000
175	.00000	.00000	.00000
180	.00000	.00000	.00000
185	.00000	.00000	.00000
190	.00000	.00000	.00000
195	.00000	.00000	.00000
200	.00000	.00000	.00000

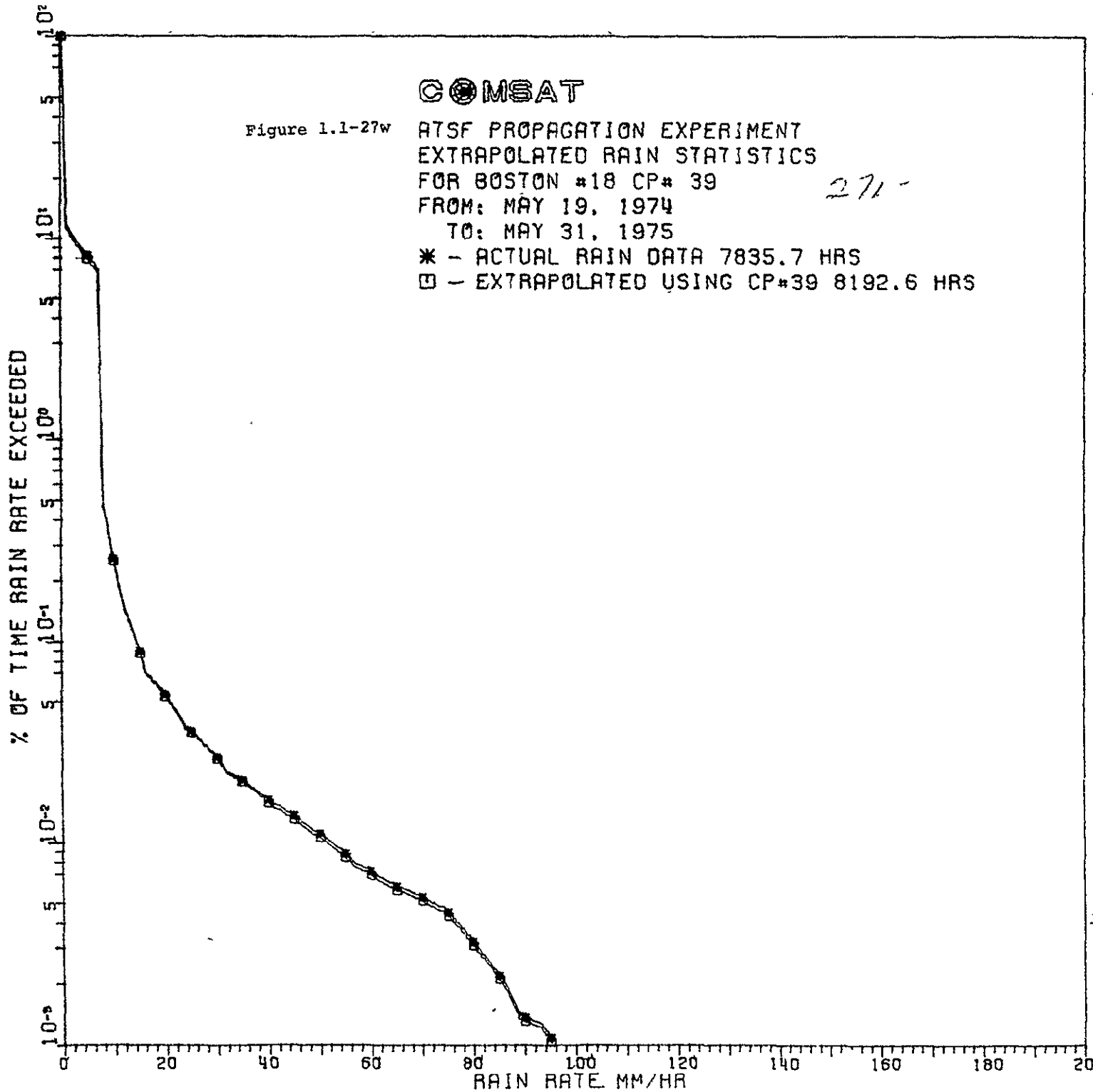

COMSAT
Figure 1.1-27w
ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS
FOR BOSTON #18 CP# 39
FROM: MAY 19, 1974
TO: MAY 31, 1975
* - ACTUAL RAIN DATA 7835.7 HRS
□ - EXTRAPOLATED USING CP#39 8192.6 HRS
% OF TIME RAIN RATE EXCEEDED
RAIN RATE MM/HR
0
20
40
60
80
100
120
140
160
180
200

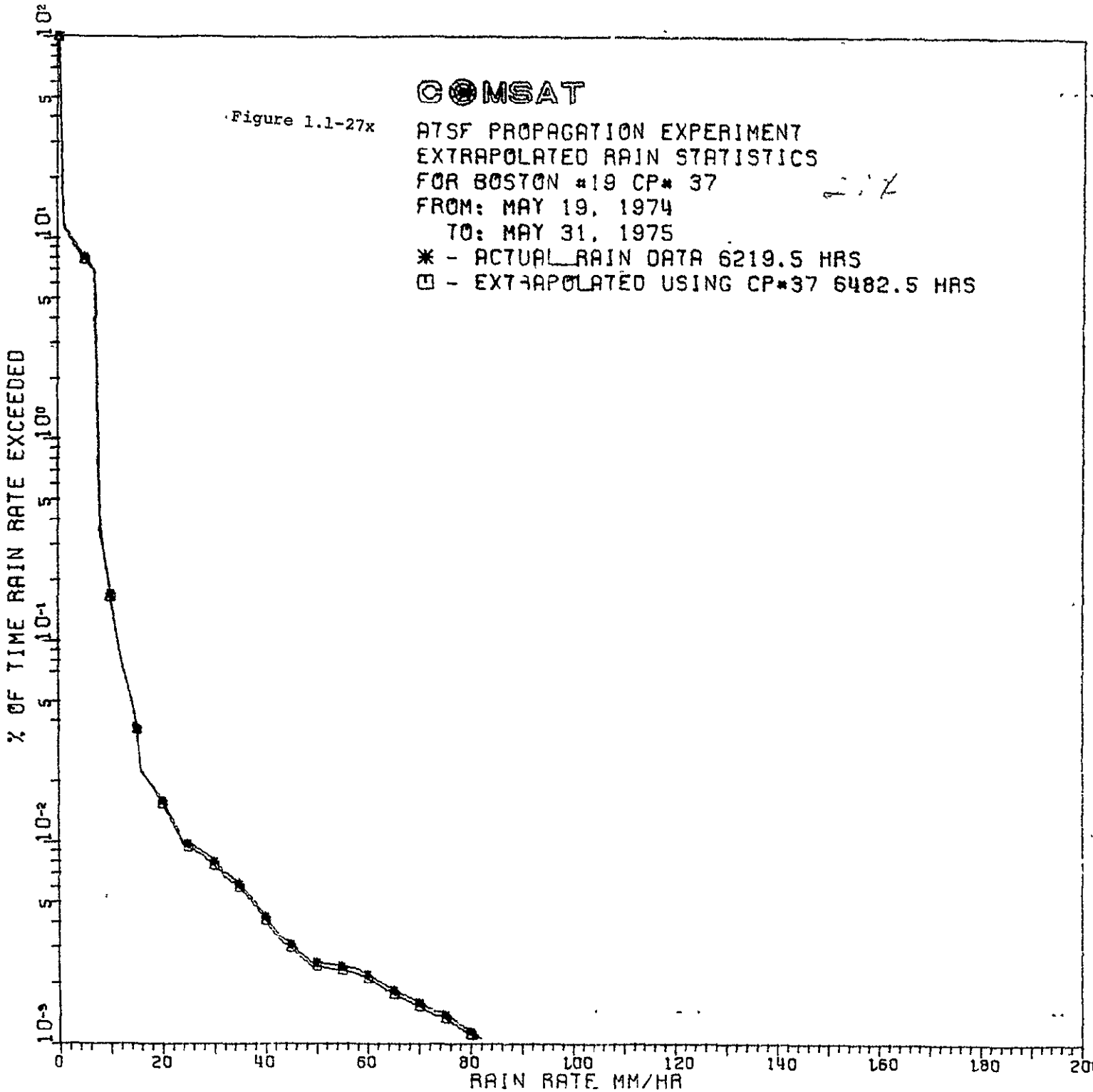
Table 1.1-36w

ATSF PROPAGATION EXPERIMENT
EXTRAPOLATED RAIN STATISTICS FOR BOSTON #18
FROM: MAY 19, 1974
TO: MAY 31,.1975

36w

RAIN	ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#39
0	100.00	100.00
2	10.646	10.221
4	8.8870	8.5390
6	7.6307	7.3374
8	.46747	.48614
10	.25783	.25121
12	.14823	.14388
14	.10930	.10607
16	.07115	.06943
18	.06361	.06200
20	.05471	.05339
25	.03597	.03526
30	.02665	.02619
35	.02058	.02014
40	.01643	.01572
45	.01369	.01309
R 50	.01116	.01067
A 55	.00884	.00846
I 60	.00728	.00697
N 65	.00610	.00583
70	.00538	.00514
R 75	.00455	.00436
A 80	.00326	.00311
T 85	.00221	.00212
E 90	.00138	.00132
95	.00109	.00104
M 100	.00064	.00061
M 105	.00024	.00023
110	.00000	.00000
P 115	.00000	.00000
E 120	.00000	.00000
R 125	.00000	.00000
130	.00000	.00000
H 135	.00000	.00000
R 140	.00000	.00000
145	.00000	.00000
150	.00000	.00000
155	.00000	.00000
160	.00000	.00000
165	.00000	.00000
170	.00000	.00000
175	.00000	.00000
180	.00000	.00000
185	.00000	.00000
190	.00000	.00000
195	.00000	.00000
200	.00000	.00000

Figure 1.1-27x



ATSF PROPAGAT)N EXPERIMENT Table 1.1-36x
EXTRAPOLATED RAIN STATISTICS FOR BOSTON #19
FROM: MAY 19, 1974
TO: MAY 31, 1975

367

		ACTUAL RAIN DATA TIME	EXTRAPOLATED USING CP#37
	0	100.00	100.00
	2	10.506	10.156
	4	8.7603	8.4812
	6	7.5133	7.2848
	8	.34983	.41192
	10	.17042	.16454
	12	.08125	.07900
	14	.05152	.05035
	16	.02238	.02228
	18	.01927	.01895
	20	.01604	.01539
	25	.00984	.00944
	30	.00798	.00766
	35	.00620	.00595
	40	.00427	.00410
	45	.00311	.00298
R	50	.00253	.00243
A	55	.00241	.00231
I	60	.00219	.00211
N	65	.00183	.00176
	70	.00159	.00153
R	75	.00140	.00134
A	80	.00116	.00111
T	85	.00092	.00088
E	90	.00072	.00069
	95	.00072	.00069
N	100	.00068	.00065
M	105	.00043	.00042
	110	.00019	.00019
P	115	.00000	.00000
E	120	.00000	.00000
R	125	.00000	.00000
	130	.00000	.00000
H	135	.00000	.00000
R	140	.00000	.00000
	145	.00000	.00000
	150	.00000	.00000
	155	.00000	.00000
	160	.00000	.00000
	165	.00000	.00000
	170	.00000	.00000
	175	.00000	.00000
	180	.00000	.00000
	185	.00000	.00000
	190	.00000	.00000
	195	.00000	.00000
	200	.00000	.00000