MASTER

MASTER

CLIMATOLOGY OF BROOKHAVEN NATIONAL LABORATORY 1974 THROUGH 1977

Constance M. Nagle

May 1978

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.

UNDER CONTRACT NO. EY-76-C-02-0016 WITH THE
UNITED STATES DEPARTMENT OF ENERGY

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

CLIMATOLOGY OF BROOKHAVEN NATIONAL LABORATORY 1974 THROUGH 1977

Constance M. Nagle

May 1978

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

BROOKHAVEN NATIONAL LABORATORY
UPTON, NEW YORK 11973

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy (DOE), nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

Printed in the United States of America
Available from
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
Price: Printed Copy \$4.50; Microfiche \$3.00

June 1978

370 copies

Abstract

The climatology of Brookhaven National Laboratory 1974-1977 is a supplement to BNL 50466, "Climatology of Brookhaven National Laboratory 1949-1973" which was prepared from data collected by the Brookhaven Meteorology Group formed in August 1948. This publication updates some meteorological summaries and includes analyses of humidity and solar radiation data not included in the original climatological report.

Results are presented in tabular form to facilitate usage. Data are given in the form of frequency distributions, percentage frequency distributions, extremes, ranges, and averages as being most adaptable for further research.

THIS PAGE
WAS INTENTIONALLY
LEFT BLANK

CONTENTS

	<u>PAGE</u>
Introduction	1
Section I - Climatological Summaries	
1974 Through 1977	5
Temperature	6
Precipitation	19
Hurricane Belle	21
Section II - Meteorological Extremes At	
BNL, 1949-1977	22
Section III - Addendum to "Climatology	
of BNL 1949-1973"	23
Dry bulb temperatures, 1960-1969	24
Relative Humidity, 1960-1969	26
Global Radiation, 1970-1977	27

LIST OF TABLES

	<u>PAGE</u>
1 Mean temperature °F	6
2 Mean daily maximum temperature °F	6
3 Absolute maximum temperature °F	7
4 Mean daily minimum temperature °F	7
5 Absolute minimum temperature °F	8
6 Total no. of days mean daily temperature 90° and above	8
7 Total no. of ice days (Max 32°F)	9
8 Total no. of frost days (Min. 32°F)	9
9 Total heating degree days	10
10 Total cooling degree days	10
11 Mean daily temperature range °F	11
12 Daily temperature readings °F, 1949-1977	12
13 Total monthly and annual precipitation (in)	18
14 No. of days with a trace or more of precip.	18
15 No. of days with a trace or more of snow	19
16 Total monthly and seasonal snowfall (in)	19
17 Meteorological Extremes at BNL, 1949-1977	21
18 Dry bulb temperatures °F, 1960-1969	23
19 Diurnal variation of average dry bulb temperature °F, 1960-1969	24
20 Relative humidity (%), 1960-1969	25
21 Average daily global radiation (Langleys/Hr.) 1970-1977	26
22 Average diurnal total global radiation, 1970-1977	27
23 Percentage frequency of daily total global radiation, 1970-1977	28
24 Average daily total global radiation (Langleys/min) 1970-1977	29

CLIMATOLOGY OF BROOKHAVEN NATIONAL LABORATORY 1974 THROUGH 1977

INTRODUCTION

Data in this publication are supplemental to BNL 50466 "Climatology of Brookhaven National Laboratory, 1949 through 1973."

Section I consists of monthly and annual climatological summaries of shelter temperature, heating and cooling degree days, precipitation, and snowfall for each year 1974 through 1977. A discussion of Hurricane Belle, August 1976, is also included in this section.

Section II consists of meteorological extremes recorded at BNL for the period 1949-1977. Snowfall data has been expanded to cover the period December 1947-April 1978, thereby including the heavy snowfall events of December 1947 and the winter of 1977-1978.

Section III is an addendum to "Climatology of BNL 1949-1973" and includes summaries of shelter temperature and relative humidity for the period 1960-1969. Also included are diurnal, monthly and annual summaries of solar radiation for the period 1970-1977. Radiation data have been recorded by a pyranometer and consists of total direct and diffuse (global) radiation.

Highlights of weather conditions during the period 1974 through the winter of 1977-1978 included record or near record breaking cold winters, hot summers, snowfalls, and the first hurricane to affect Long Island since September 1960.

January 1977 was the coldest January on record at Brookhaven National Laboratory with a mean temperature of 19.5°F . The long term average at BNL for January is 29°F . Consequently the total heating degree days for January 1977 was also a record 1414. The average total heating degree days for January at BNL is 1114.

The trend of cold winters continued into 1978 with the mean January temperature 26.1°F and a record breaking 22.2°F for February 1978.

During July 1977 there were six consecutive days with the maximum temperature greater than 90°F . Again in August of 1977 there were four more 90° or above maximum temperatures observed.

Record snowfalls were also observed during this period. A record daily snowfall of 19 inches was recorded in February 1978 surpassing the previous record snowfall of 15.3 inches for December 1947. The maximum snowfall for a single storm is now 23 inches recorded in February 1978. The 62.4 inch total seasonal snowfall recorded for 1977-78 is the third greatest seasonal snowfall recorded since the 1947-48 season.

Hurricane Belle affected the Long Island area on August 9 and 10, 1976 causing extensive tree damage which resulted in widespread power failures. This was the first major hurricane to affect Long Island since Hurricane Donna in September 1960.

**THIS PAGE
WAS INTENTIONALLY
LEFT BLANK**

SECTION I

CLIMATOLOGICAL SUMMARIES 1974 THROUGH 1977

Table 1

MEAN TEMPERATURE (°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	32.0	34.1	23.7	19.5
Feb	27.5	30.5	34.9	29.4
Mar	39.3	35.0	38.5	42.0
Apr	49.5	43.8	49.7	46.9
May	55.2	59.7	55.5	58.8
Jun	65.2	66.5	68.1	64.5
Jul	71.9	73.3	69.9	72.2
Aug	71.7	66.4	70.1	71.6
Sep	62.8	61.0	61.5	65.1
Oct	47.8	54.2	49.4	50.6
Nov	43.4	47.3	37.7	43.8
Dec	34.9	33.5	26.5	32.0
Annual	50.1	50.4	48.8	49.7

Table 2

MEAN DAILY MAXIMUM TEMPERATURE (°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	41.0	42.6	34.0	28.5
Feb	37.1	39.6	46.8	38.3
Mar	49.0	45.4	48.4	52.0
Apr	60.2	54.8	62.8	58.7
May	66.0	71.4	66.6	72.1
Jun	75.0	76.0	78.7	74.9
Jul	83.1	82.6	80.1	83.5
Aug	83.3	81.2	80.4	81.6
Sep	72.3	70.9	73.3	73.7
Oct	60.3	65.2	58.4	60.7
Nov	54.1	57.8	47.5	52.1
Dec	44.0	42.5	36.5	40.1
Annual	60.4	60.8	59.4	59.7

Table 3

ABSOLUTE MAXIMUM TEMPERATURE (°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	66.5	60.0	59.5	49.0
Feb	56.0	53.0	66.5	54.5
Mar	65.0	57.0	64.5	74.5
Apr	83.5	67.0	89.0	87.0
May	88.5	91.0	84.0	89.0
Jun	94.5	90.0	89.5	87.0
Jul	94.0	93.5	88.0	95.0
Aug	92.0	99.5	91.0	93.5
Sep	86.0	80.0	86.5	88.5
Oct	77.5	82.0	74.0	74.0
Nov	76.0	75.0	61.0	74.5
Dec	58.0	61.0	54.5	56.0
Annual	94.5	99.5	91.0	95.0

Table 4

MEAN DAILY MINIMUM TEMPERATURE (°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	23.0	25.8	13.2	10.0
Feb	17.8	21.4	22.5	20.3
Mar	29.7	24.8	28.7	32.0
Apr	38.7	32.9	36.6	33.6
May	44.4	48.3	44.4	45.4
Jun	55.7	57.0	57.5	54.1
Jul	60.8	64.0	59.7	61.0
Aug	59.8	60.9	59.7	61.7
Sep	53.4	50.9	49.7	56.4
Oct	35.8	43.4	40.4	40.4
Nov	32.4	37.7	27.8	35.4
Dec	25.7	23.4	16.5	23.9
Annual	39.8	40.9	38.0	39.5

Table 5

ABSOLUTE MINIMUM TEMPERATURE (°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	- 2.5	5.5	- 2.0	- 3.0
Feb	- 4.5	1.0	4.0	2.5
Mar	10.0	7.0	11.5	20.5
Apr	26.0	22.0	23.5	15.5
May	25.5	32.0	27.0	30.0
Jun	43.0	40.0	35.5	43.5
Jul	45.0	44.5	48.0	44.0
Aug	41.0	47.0	45.0	41.5
Sep	35.0	33.0	32.0	41.0
Oct	21.5	22.0	24.0	25.0
Nov	17.5	19.5	16.0	22.0
Dec	14.0	- 4.0	- 0.5	5.0
Annual	- 4.5	- 4.0	- 2.0	- 3.0

Table 6

TOTAL NO. OF DAYS MEAN DAILY TEMPERATURE 90°F AND ABOVE

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	0	0	0	0
Feb	0	0	0	0
Mar	0	0	0	0
Apr	0	0	0	0
May	0	1	0	0
Jun	1	2	0	0
Jul	8	1	0	6
Aug	1	3	1	4
Sep	0	0	0	0
Oct	0	0	0	0
Nov	0	0	0	0
Dec	0	0	0	0
Annual	10	7	1	10

Table 7

TOTAL NO. OF ICE DAYS (Max. $\leq 32^{\circ}\text{F}$)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	7	4	13	18
Feb	8	5	5	7
Mar	0	0	2	0
Apr	0	0	0	0
May	0	0	0	0
Jun	0	0	0	0
Jul	0	0	0	0
Aug	0	0	0	0
Sep	0	0	0	0
Oct	0	0	0	0
Nov	1	0	1	0
Dec	1	4	11	8
Annual	17	13	32	33

Table 8

TOTAL NO. OF FROST DAYS (Min. $\leq 32^{\circ}\text{F}$)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	27	22	30	31
Feb	28	21	20	23
Mar	19	22	21	20
Apr	9	17	12	11
May	3	0	4	1
Jun	0	0	0	0
Jul	0	0	0	0
Aug	0	0	0	0
Sep	0	0	0	0
Oct	12	2	10	6
Nov	17	10	22	14
Dec	26	24	29	24
Annual	141	118	148	130

Table 9

TOTAL HEATING DEGREE DAYS
(Base 65° F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	1014	958	1283	1414
Feb	1050	966	873	996
Mar	792	920	822	716
Apr	472	634	472	540
May	318	216	286	231
Jun	74	56	72	87
Jul	16	3	4	12
Aug	5	12	19	27
Sep	124	146	146	96
Oct	530	336	486	448
Nov	650	518	820	638
Dec	931	988	1192	1024
Annual	5976	5753	6475	6229

Table 10

TOTAL COOLING DEGREE DAYS
(Base 65°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan				
Feb				
Mar				
Apr	4	0	12	0
May	14	42	10	38
Jun	70	100	164	72
Jul	230	260	157	237
Aug	213	204	176	232
Sep	60	25	42	98
Oct	0	2	1	0
Nov	0	0	0	1
Dec				
Annual	591	633	562	678

Table 11

MEAN DAILY TEMPERATURE RANGE (°F)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	18	17	20	18
Feb	19	18	24	18
Mar	20	21	20	20
Apr	21	22	26	26
May	22	23	22	27
Jun	19	19	21	20
Jul	22	19	20	22
Aug	23	20	21	20
Sep	19	20	24	17
Oct	25	22	18	20
Nov	22	20	20	17
Dec	18	19	20	16
Annual	21	20	21	20

Table 12

Daily Temperature Readings ($^{\circ}\text{F}$), 1949-1977

Day	January					February				
	Maximum		Minimum		Mean	Maximum		Minimum		Mean
	Av	High	Av	Low		Av	High	Av	Low	
1	38.8	62.0	20.8	7.5	29.8	35.8	55.0	18.1	- 2.0	26.9
2	37.9	52.0	19.9	- 5.0	28.9	37.5	54.5	19.4	- 4.5	28.6
3	39.8	53.0	23.6	4.5	32.1	35.8	55.0	16.9	- 6.0	26.4
4	39.9	55.0	23.8	6.5	31.7	36.9	51.0	21.3	- 1.0	28.9
5	37.8	60.0	20.3	4.5	28.8	38.6	54.1	20.0	- 3.5	29.3
6	38.4	56.0	18.6	0.0	28.5	39.2	52.0	18.0	1.0	28.2
7	37.8	54.0	21.7	5.0	29.7	38.5	53.0	20.0	- 5.5	29.4
8	34.8	59.0	18.8	0.5	27.2	36.8	58.0	16.3	- 1.0	26.6
9	35.8	62.0	17.0	- 1.5	26.4	38.7	60.0	17.0	- 1.0	28.8
10	37.4	55.0	21.1	2.5	29.2	37.7	54.0	20.3	- 4.5	29.0
11	36.4	60.0	20.1	2.5	28.2	39.4	58.0	19.6	- 2.0	29.3
12	34.2	54.0	15.7	- 3.5	25.4	37.3	55.0	17.8	- 3.0	28.2
13	36.4	54.0	15.3	-10.0	25.9	38.0	61.0	19.9	-15.5	27.9
14	38.5	61.0	18.0	-12.0	28.4	39.6	55.0	19.8	- 0.5	29.7
15	37.8	56.0	20.1	-11.0	29.1	41.0	64.0	22.4	3.5	31.7
16	36.5	54.0	19.2	1.0	28.0	39.7	59.5	19.1	1.0	29.4
17	36.0	55.0	15.3	- 2.5	25.2	37.3	66.5	20.7	- 1.0	29.0
18	36.2	62.5	15.4	-10.5	26.2	39.1	54.0	23.1	3.0	31.1
19	37.4	62.0	18.0	- 5.0	28.1	42.9	56.0	24.1	- 4.0	33.5
20	38.3	56.0	20.3	2.5	29.5	39.7	58.0	22.0	5.0	30.9
21	39.5	53.5	20.2	-15.0	30.0	38.7	57.0	21.6	4.0	29.8
22	42.3	55.0	20.9	-23.0	31.6	40.6	60.0	22.1	6.0	30.8
23	41.5	56.0	21.3	- 8.5	31.5	39.5	50.0	22.3	6.0	30.7
24	37.5	66.0	22.6	0.0	30.1	41.7	60.5	21.6	0.0	31.7
25	39.8	56.5	23.9	- 1.5	31.9	44.4	66.5	26.0	9.0	35.2
26	40.6	60.0	23.3	1.0	31.4	42.4	57.0	23.2	1.5	32.8
27	39.7	66.5	22.7	3.5	31.2	42.9	64.0	23.0	0.0	33.0
28	35.8	51.5	18.2	- 3.0	27.3	43.2	64.0	24.5	4.0	33.8
29	35.8	58.0	19.1	- 2.0	27.4	-	-	-	-	-
30	36.8	55.5	19.2	- 6.0	28.1	-	-	-	-	-
31	34.6	55.0	14.2	- 9.0	24.4	-	-	-	-	-

Daily Temperature Readings (°F), 1949-1977

Day	<u>March</u>					<u>April</u>				
	Maximum		Minimum		Mean	Maximum		Minimum		Mean
	Av	High	Av	Low		Av	High	Av	Low	
1	42.2	60.0	26.5	8.0	33.9	52.3	70.5	28.3	8.0	40.3
2	42.5	62.0	25.5	2.5	34.0	54.4	76.0	32.8	12.0	43.6
3	42.2	62.5	25.5	10.0	34.0	53.8	78.5	33.8	14.0	43.8
4	42.9	62.0	25.6	2.0	34.3	51.9	68.0	32.2	9.5	42.1
5	45.3	63.0	29.0	10.0	37.1	54.3	66.0	32.0	16.0	43.1
6	43.8	57.5	26.2	12.0	35.2	52.8	67.5	31.6	17.5	42.1
7	43.8	65.0	26.6	9.0	35.0	52.9	71.0	33.4	16.0	43.1
8	43.3	57.0	25.4	10.0	34.0	52.7	78.5	32.8	23.5	42.8
9	43.3	60.0	23.9	9.5	33.4	53.8	75.5	30.8	19.0	42.3
10	44.6	65.5	25.9	5.0	35.2	55.3	79.0	32.0	15.5	43.6
11	45.0	71.0	26.6	8.5	35.5	54.3	64.0	31.2	18.0	42.6
12	45.9	68.5	27.4	16.5	36.5	56.4	87.0	30.8	19.5	43.6
13	45.5	60.0	28.8	18.0	37.0	54.3	83.0	32.5	16.0	43.4
14	45.8	72.0	28.7	15.0	37.2	58.2	76.0	33.8	19.0	45.6
15	45.6	58.0	27.7	12.5	36.9	59.0	83.0	34.7	20.0	46.9
16	46.9	67.0	27.6	12.0	37.5	59.4	78.0	35.8	18.0	47.6
17	45.1	61.0	26.8	8.5	35.8	60.7	89.0	34.8	20.5	47.7
18	43.0	63.0	24.9	1.0	33.9	62.6	87.5	36.4	20.5	49.5
19	45.1	62.0	26.3	- 7.5	35.6	61.6	80.0	36.6	23.0	49.1
20	45.7	66.5	26.0	- 2.0	36.8	59.9	85.5	36.0	20.5	47.9
21	47.1	64.0	26.7	5.5	36.8	61.1	86.5	35.5	22.0	48.3
22	45.9	58.0	27.5	11.0	36.5	62.4	79.0	39.8	22.0	51.1
23	49.9	66.0	29.2	11.5	39.5	63.3	83.5	38.8	25.0	51.0
24	50.6	63.0	28.2	17.5	39.4	57.5	79.0	38.0	24.0	47.6
25	49.6	70.0	29.0	14.5	39.3	60.3	84.0	37.8	26.0	49.1
26	49.3	69.0	29.8	8.0	39.8	60.2	79.0	38.8	24.0	49.6
27	49.0	66.0	29.0	9.0	38.9	58.4	77.0	39.0	25.0	48.9
28	51.6	73.0	29.5	12.0	40.4	60.0	81.5	40.3	21.5	50.2
29	51.4	68.0	30.8	17.0	40.6	61.8	83.5	39.9	24.5	50.8
30	50.4	74.5	31.8	20.0	41.1	62.5	80.5	36.6	25.0	49.6
31	49.6	69.5	30.3	18.0	40.0	-	-	-	-	-

Daily Temperature Readings (°F), 1949-1977

Day	<u>May</u>					<u>June</u>				
	Maximum		Minimum		Mean	Maximum		Minimum		Mean
	Av	High	Av	Low		Av	High	Av	Low	
1	62.7	82.0	37.4	24.5	49.9	73.7	89.0	51.3	31.0	62.5
2	61.9	83.0	40.6	25.0	51.2	74.5	89.0	52.3	34.0	63.5
3	62.7	73.0	41.0	25.0	51.8	73.9	83.0	49.7	33.0	62.0
4	65.2	89.0	38.5	28.0	51.8	75.2	85.0	48.8	35.0	61.9
5	63.6	88.0	38.8	25.0	51.2	75.2	88.0	52.0	34.5	63.2
6	66.1	84.0	39.2	28.0	52.7	76.7	91.0	52.4	37.5	64.6
7	64.8	82.0	39.0	29.5	51.8	75.5	88.5	53.1	39.0	64.3
8	63.3	85.5	41.8	24.0	52.7	76.3	89.0	51.3	36.0	63.6
9	65.9	86.0	43.9	29.0	54.9	76.6	91.0	53.9	35.0	65.4
10	67.0	91.0	43.8	29.0	55.4	75.0	94.5	53.4	36.0	64.2
11	66.4	86.0	44.2	28.5	55.3	75.2	94.5	53.4	40.0	64.3
12	67.9	82.5	44.6	31.5	56.3	75.6	89.0	52.3	35.0	64.0
13	68.0	87.0	42.6	26.0	55.1	75.0	93.0	54.0	36.5	64.5
14	66.6	77.0	42.9	28.0	54.7	73.1	97.0	53.5	38.0	63.3
15	68.2	84.0	44.7	29.0	56.5	74.7	93.5	53.6	38.0	63.9
16	68.2	87.0	45.7	30.5	56.9	76.4	95.0	54.6	36.5	65.6
17	69.5	88.5	45.5	29.0	57.4	75.9	94.5	54.2	38.0	64.8
18	67.0	89.0	47.0	30.0	57.2	77.1	90.5	52.7	33.5	65.0
19	67.9	86.0	46.7	32.5	57.3	76.1	90.0	54.4	30.0	65.2
20	68.9	86.5	47.7	32.0	58.4	77.2	92.0	55.6	34.0	65.4
21	70.2	85.5	46.8	28.0	58.7	76.9	93.0	58.2	42.0	67.8
22	70.3	84.5	46.6	33.0	58.4	76.7	88.0	57.6	46.0	67.0
23	71.7	91.0	46.5	33.0	59.1	77.6	90.0	55.9	42.0	66.7
24	69.4	91.0	47.2	25.0	57.9	79.0	90.5	59.4	49.5	69.2
25	67.8	82.0	46.3	25.0	56.9	79.5	92.0	59.4	48.0	69.5
26	69.1	93.0	45.2	31.0	57.2	79.8	98.0	58.4	44.0	66.9
27	69.6	88.0	45.8	29.0	57.7	79.7	92.0	57.8	40.0	68.8
28	71.6	89.0	45.7	33.0	58.7	78.1	93.0	56.2	45.0	66.6
29	70.4	93.5	46.9	31.0	57.8	79.5	94.5	57.8	44.5	68.6
30	70.5	84.5	48.5	30.5	59.5	81.4	94.0	60.9	46.0	71.0
31	73.9	88.5	49.0	31.0	61.6	-	-	-	-	-

Daily Temperature Readings (°F), 1949-1977

<u>July</u>						<u>August</u>					
Day	Maximum		Minimum		Mean	Maximum		Minimum		Mean	
	Av	High	Av	Low		Av	High	Av	Low		
1	82.7	95.0	60.4	40.0	71.6	82.8	94.0	61.4	46.0	72.1	
2	84.2	95.0	58.8	44.0	71.5	80.0	97.0	60.3	49.0	70.0	
3	82.0	99.0	60.4	39.5	71.0	80.2	96.0	59.8	42.0	70.1	
4	81.2	95.0	58.7	43.5	69.8	79.8	87.5	59.7	42.0	70.0	
5	79.5	98.0	57.2	43.5	68.3	80.2	96.0	59.5	45.0	69.9	
6	79.1	90.0	57.0	40.0	67.4	80.2	94.0	58.2	39.0	69.2	
7	80.2	90.5	57.0	42.0	68.6	80.9	91.0	60.0	43.0	70.5	
8	81.5	91.0	59.0	45.0	70.3	81.5	90.0	60.9	44.0	71.2	
9	81.2	94.0	59.6	44.0	70.2	81.1	96.0	61.6	44.0	71.3	
10	80.0	90.5	61.0	45.0	70.6	81.2	96.0	61.7	39.0	71.6	
11	80.2	91.5	60.0	45.0	70.1	80.8	99.0	60.9	41.0	70.8	
12	81.3	93.0	60.2	46.0	70.6	80.9	88.0	58.5	42.3	70.0	
13	80.0	94.0	61.2	46.0	70.8	79.7	88.0	58.8	43.0	69.2	
14	81.8	93.5	62.6	53.0	72.2	80.7	92.0	58.7	44.0	69.6	
15	81.1	90.0	61.6	51.0	71.4	80.9	88.0	58.9	43.0	70.1	
16	81.5	94.0	62.0	46.0	71.8	79.5	88.5	58.7	40.0	68.9	
17	83.0	95.5	61.4	45.0	72.2	79.1	86.5	59.9	46.0	69.2	
18	83.8	98.0	61.7	48.5	72.7	79.5	91.0	56.6	44.5	68.3	
19	83.1	97.0	64.2	51.5	73.3	79.6	90.0	56.3	42.0	67.9	
20	80.5	94.5	62.8	49.0	71.6	80.0	92.5	56.6	44.5	67.8	
21	81.5	95.0	60.9	43.0	71.2	79.6	93.0	55.7	41.5	67.8	
22	82.5	100.5	61.1	48.0	71.8	79.9	91.0	57.0	42.0	68.5	
23	82.2	95.0	61.1	48.0	71.6	78.3	88.0	54.8	39.0	66.7	
24	81.1	90.0	60.8	45.0	70.9	77.8	88.5	54.5	37.0	66.6	
25	80.5	91.0	59.9	46.0	70.2	78.4	90.0	55.3	38.5	66.6	
26	80.4	90.0	58.4	41.0	69.1	79.2	88.0	56.3	40.0	67.4	
27	81.3	93.0	61.6	47.5	71.5	80.9	89.5	59.6	46.0	70.3	
28	82.7	94.0	62.1	44.0	72.9	81.0	96.0	59.2	41.0	70.0	
29	82.3	94.0	62.9	49.0	72.6	81.9	96.0	59.8	40.0	71.1	
30	81.3	92.0	62.6	51.0	72.0	79.2	97.0	60.0	41.0	70.6	
31	82.8	92.0	61.3	45.5	72.1	79.7	99.0	60.2	37.0	70.6	

Daily Temperature Readings (°F), 1949-1977

Day	<u>September</u>					<u>October</u>				
	Maximum		Minimum		Mean	Maximum		Minimum		Mean
	Av	High	Av	Low		Av	High	Av	Low	
1	79.7	92.0	58.3	41.0	68.8	69.0	84.5	45.5	32.0	57.3
2	78.4	100.0	57.9	41.5	67.8	68.3	81.5	43.7	30.5	56.1
3	76.9	93.0	56.5	37.5	66.2	67.8	78.0	46.1	31.5	56.9
4	78.1	90.0	56.6	41.0	67.0	66.9	86.0	45.3	31.0	56.4
5	78.0	88.5	56.3	40.0	66.6	67.8	85.5	43.3	29.0	55.6
6	76.6	86.0	53.6	37.0	64.6	66.9	82.5	43.1	25.0	55.0
7	75.8	84.5	51.6	37.0	63.1	66.0	78.5	45.0	27.0	55.2
8	75.6	84.0	52.0	36.0	63.3	66.1	76.0	44.4	21.5	55.3
9	74.9	88.0	51.6	33.0	62.8	67.1	80.0	43.9	26.0	55.5
10	75.9	89.0	53.4	34.5	64.4	67.1	85.0	43.0	26.5	55.0
11	74.5	88.0	52.6	37.5	63.2	64.9	81.0	41.0	24.0	53.0
12	74.2	91.5	52.4	34.0	63.1	65.0	84.0	41.9	23.0	53.6
13	74.3	88.0	52.4	35.0	63.1	63.4	80.5	39.4	24.0	51.2
14	73.6	88.0	53.4	34.0	62.8	66.2	77.5	39.8	21.0	53.0
15	72.6	81.0	51.9	33.0	61.5	67.3	83.0	43.5	25.0	55.4
16	72.7	84.5	52.9	31.5	62.2	67.2	80.0	42.0	28.0	54.6
17	71.8	82.0	51.0	34.0	60.8	64.3	78.0	39.9	28.0	52.1
18	73.4	84.5	50.8	29.0	61.6	63.5	76.0	39.8	24.0	51.6
19	72.4	84.0	51.7	30.0	61.8	61.7	79.5	38.6	23.0	50.1
20	70.5	81.0	51.6	37.0	60.7	60.9	76.0	37.2	20.5	49.0
21	70.3	82.0	51.0	30.0	59.9	61.4	77.0	37.5	17.0	49.4
22	70.9	87.5	49.5	28.0	59.7	61.2	77.0	36.9	21.5	49.0
23	70.4	92.0	48.2	28.0	59.7	60.1	72.0	40.3	21.5	49.1
24	68.3	86.5	45.5	25.0	56.4	60.2	76.0	39.0	20.5	49.4
25	67.7	82.5	44.8	29.5	56.3	57.1	75.5	37.7	21.0	47.4
26	70.8	85.5	46.7	32.0	57.8	59.6	76.5	37.9	18.0	48.7
27	69.8	83.5	46.3	32.0	57.6	59.6	78.0	36.8	21.0	48.2
28	68.6	80.0	49.3	30.0	53.6	58.6	77.0	35.2	21.0	46.8
29	68.1	80.5	47.2	29.5	57.5	59.4	76.0	36.4	21.0	48.1
30	69.1	80.0	45.6	27.0	57.1	58.4	78.5	34.8	17.0	46.6
31	-	-	-	-	-	59.3	73.0	36.7	13.0	48.6

Daily Temperature Readings (°F), 1949-1977

Day	<u>November</u>					<u>December</u>				
	Maximum		Minimum		Mean	Maximum		Minimum		Mean
	Av	High	Av	Low		Av	High	Av	Low	
1	60.1	79.0	38.3	19.5	49.2	42.4	66.0	23.1	9.0	33.0
2	59.8	81.0	39.2	22.0	49.3	43.8	61.5	22.8	- 0.5	33.2
3	59.4	75.0	39.2	19.0	49.1	45.4	61.0	25.4	3.0	35.4
4	58.5	75.0	39.2	18.0	48.7	45.3	61.0	25.5	3.5	35.4
5	54.4	72.0	36.0	19.0	45.2	45.8	62.0	27.4	3.0	35.1
6	52.5	71.0	33.9	19.5	43.1	45.6	62.0	26.9	7.5	36.2
7	54.9	67.0	33.5	16.0	44.1	44.8	63.0	25.7	9.5	35.3
8	54.2	67.0	33.4	16.0	43.8	44.9	63.0	27.0	6.0	35.4
9	53.2	73.0	32.8	14.0	43.1	44.7	67.0	27.4	8.0	35.4
10	52.0	65.5	33.6	14.5	42.8	42.5	52.0	27.1	7.0	35.0
11	53.1	73.0	30.4	9.5	41.7	43.2	68.0	23.8	- 8.0	34.1
12	54.0	67.5	32.0	18.0	43.2	42.6	59.0	25.8	4.0	34.3
13	50.5	70.0	31.0	15.0	40.0	42.2	56.5	25.2	- 0.5	33.1
14	53.9	66.0	32.9	18.5	43.4	41.5	58.0	22.1	- 7.5	33.3
15	53.6	66.0	32.3	15.0	42.9	40.8	61.0	22.8	0.0	32.8
16	53.2	65.5	33.6	15.5	43.4	39.7	65.0	22.2	4.8	31.4
17	53.1	68.0	32.9	15.5	42.9	39.6	55.5	19.9	5.0	30.2
18	51.5	69.0	32.5	22.0	42.0	40.7	58.0	21.3	4.0	31.7
19	51.6	68.0	30.7	18.0	41.2	38.7	57.0	20.3	1.5	28.4
20	50.9	70.0	30.1	15.0	40.5	40.5	60.0	22.3	4.0	29.8
21	51.1	66.0	30.3	16.0	40.9	38.9	61.0	24.0	3.0	32.0
22	47.8	70.0	28.9	13.0	38.4	38.3	55.0	22.2	- 3.0	30.4
23	48.8	64.0	27.7	12.0	38.2	39.3	56.0	21.2	2.0	31.2
24	50.0	63.5	29.9	13.5	39.9	39.1	53.0	22.9	- 4.0	31.4
25	48.5	64.0	27.5	9.0	37.8	40.1	61.0	21.6	- 2.0	31.4
26	48.9	60.0	29.6	14.0	39.3	41.2	58.0	25.5	7.0	30.7
27	49.3	61.0	29.1	10.0	39.2	37.8	62.5	20.5	-13.0	29.3
28	49.9	62.0	31.0	13.5	40.5	38.9	54.0	18.7	-14.0	28.7
29	47.6	65.5	30.0	17.0	38.8	40.3	51.0	20.5	4.5	30.4
30	44.0	63.5	26.0	13.5	35.2	39.3	54.5	20.4	- 4.0	32.8
31	-	-	-	-	-	37.9	63.0	19.3	- 8.5	28.6

Table 13

TOTAL MONTHLY AND ANNUAL PRECIPITATION (in)

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	4.96	6.50	5.98	3.09
Feb	2.82	4.06	3.57	2.46
Mar	5.06	4.27	3.30	5.47
Apr	3.49	3.89	2.27	4.28
May	3.13	3.45	3.89	2.04
Jun	2.50	5.37	3.27	4.31
Jul	0.81	3.33	4.32	1.51
Aug	2.55	2.01	7.57	5.49
Sep	5.10	5.58	2.07	5.73
Oct	2.66	3.61	5.42	6.12
Nov	1.94	5.89	0.54	6.39
Dec	6.78	4.92	2.96	6.93
Annual	41.80	52.88	45.16	53.82

Table 14

NO. OF DAYS WITH A TRACE OR MORE OF PRECIPITATION

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Jan	15	17	18	10
Feb	20	11	11	14
Mar	14	16	14	11
Apr	15	11	12	13
May	16	11	15	10
Jun	14	15	11	13
Jul	9	9	19	11
Aug	13	12	11	15
Sep	12	14	12	14
Oct	10	13	17	14
Nov	10	11	9	18
Dec	19	17	12	17
Annual	167	157	161	160

Table 15

NO OF DAYS WITH A TRACE OR MORE OF SNOW

<u>Month</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Jan	7	5	9	10	7
Feb	12	5	3	7	6
Mar	3	5	3	3	5
Apr	3	0	0	0	2
May					
Jun					
Jul					
Aug					
Sep					
Oct					
Nov	2	2	5	4	
Dec	1	3	5	5	
Annual	28	20	25	29	

Table 16

TOTAL MONTHLY AND SEASONAL SNOWFALL (in)

<u>Month</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>	<u>1977-78</u>
Oct	0	0	0	0	0
Nov	0	0.40	T	T	0.50
Dec	0	T	6.75	9.10	0.60
Jan	9.75	3.25	10.85	11.25	22.50
Feb	19.75	11.25	6.50	6.45	25.70
Mar	5.00	2.25	7.00	2.70	13.10
Apr	3.50	0	0	0	T
Seasonal	38.00	17.15	31.10	29.50	62.40

HURRICANES AFFECTING BNL, 1974-1977

Hurricane Belle, 1976

Hurricane Belle which affected the Long Island area on August 9 and 10, 1976 was the first true hurricane to pass directly over Long Island since Hurricane Donna in September 1960. Belle passed west of Brookhaven Laboratory near the Jones Beach area.

Extensive tree damage accompanied Hurricane Belle causing widespread power failures on Long Island, S.E. New York State and Connecticut. There was also considerable crop damage reported in Suffolk County agricultural areas.

Winds accompanying Belle had a peak of 78 mph at 355 ft and 69 mph at the 37 ft levels of the Brookhaven Lab. meteorological tower. The lowest pressure (29.12 in) occurred at 0210 EDT on August 10th. Total rainfall between noon on August 9th and the morning of August 10th was 2.62 inches. However, rain had fallen since August 8th associated with a frontal system stalled along the east coast. This prolonged period of precipitation contributed to the damage caused by Belle and resulted in an overall total rainfall of 4.45 inches.

SECTION II

Table 17

METEOROLOGICAL EXTREMES AT BNL, 1949-1977

<u>Observation</u>	<u>Record</u>
Absolute Highest Temperature	100.5°F July 22, 1957
Absolute Lowest Temperature	-23.0°F January 22, 1961
Greatest Daily Temperature Range	52°
Least Daily Temperature Range	2°
Maximum Annual Degree Days (total)	6753 for 1967
Maximum Monthly Degree Days (total)	1414 January 1977
Maximum Annual Precipitation	59.60 inches for 1958
Minimum Annual Precipitation	34.35 inches for 1965
Maximum Monthly Precipitation	11.98 inches, August 1954
Minimum Monthly Precipitation	Trace for June 1949
Maximum Daily Precipitation	8.63 inches Sep. 11, 1954*
Maximum Total Rainfall, Single Storm	9.02 in. Hurr. Edna, Sep. 10-11, 1954*
Maximum Hourly Rainfall	2.10 in. Hurr. Edna, Sep. 11, 1954
Maximum Seasonal Snowfall	74.9 in. 1966-67
Maximum Monthly Snowfall	32.0 in. Feb. 1967
Maximum Daily Snowfall	19.0 in. Feb. 1978
Maximum Snowfall, Single Storm	23.0 in. Feb. 1978
Longest Period of Continuous Snow Cover	55 days (Dec 26, 1947-Feb. 18, 1948)
Absolute First Day of Snowfall	October 17
Absolute Last Day of Snowfall	April 27
Peak Wind Speed	125 miles/hr (estimated at 410') 0900 EST, Aug 31, 1954, during Hurr. Carol
Lowest Barometric Pressure	28.375 in., 1450 EST, Sep. 12, 1960, during Hurr. Donna

* Precipitation reading may be high since shielding became disarranged.
One-half mile WNW of official rain gage, 7.72 in. were recorded.

**THIS PAGE
WAS INTENTIONALLY
LEFT BLANK**

SECTION III

ADDENDUM TO "CLIMATOLOGY OF BNL 1949-1973"

Table 18

Dry Bulb Temperatures (°F), 1960-1969

(Percent of hours that the dry bulb temperature occurred within the interval shown.)

	1	6	11	16	21	26	31	36	41	46	51	56	61	66	71	76	81	86	91	96			
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to			
Month	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100			
Jan	1.7	3.5	7.1	9.8	13.9	17.6	17.5	16.0	8.6	3.3	0.7	0.2	0.1	<0.1									
Feb	1.8	2.9	5.1	7.8	13.0	18.8	24.8	14.3	7.3	2.7	1.1	0.3	0.1										
Mar	0.2	0.4	1.6	3.3	6.8	14.0	22.1	20.5	15.1	9.2	4.0	2.0	0.6	0.2	<0.1								
Apr			0.2	0.3	1.1	4.5	6.8	16.2	21.0	18.9	15.1	8.9	4.1	1.5	0.8	0.4	0.1						
May					0.1	0.6	2.2	3.9	9.1	13.6	18.4	19.7	14.7	9.8	4.4	2.3	0.9	0.2	0.1				
Jun							<0.1	0.3	1.5	3.5	7.5	15.9	21.1	22.0	14.3	8.6	3.6	1.5	0.2				
Jul							<0.1	0.2	1.1	3.9	6.9	13.6	25.0	23.1	16.1	7.3	1.9	0.8	0.1				
Aug							0.1	0.1	1.0	2.1	4.3	7.3	12.4	24.1	25.7	15.4	6.4	1.1					
Sep						0.1	1.0	1.9	3.7	5.9	9.2	17.1	18.8	19.8	12.8	7.1	2.1	0.5	<0.1				
Oct			0.1	0.2	0.8	2.8	5.1	7.6	10.0	13.2	16.7	17.8	15.0	6.6	2.8	1.1	0.2	0.1					
Nov			0.6	1.4	3.9	6.6	12.0	14.4	17.0	16.9	14.8	9.9	2.1	0.4<0.1									
Dec	0.9	1.7	4.3	8.2	12.4	18.3	20.8	15.0	8.6	6.8	2.2	0.6	0.2	<0.1									
Annual	0.4	0.7	1.6	2.6	4.3	6.9	9.3	9.2	8.5	8.0	8.1	8.8	8.6	9.2	7.1	4.3	1.8	0.5	0.1	<0.1			

Addendum to "Climatology of Brookhaven National Laboratory, 1949 Through 1973"

Table 19

Diurnal Variation of Average Dry Bulb Temperature ($^{\circ}\text{F}$), 1960-1969

Month	Hour of day																								Av
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Jan	24	23	23	23	23	23	22	23	25	28	30	31	32	32	33	32	30	28	27	26	25	25	25	24	26
Feb	25	24	24	23	23	23	23	24	27	27	31	33	34	34	34	34	33	30	29	28	27	26	26	25	28
Mar	30	29	29	28	28	28	28	31	34	36	38	40	40	41	41	41	40	38	36	35	33	32	31	30	40
Apr	40	39	38	37	37	37	40	45	48	50	52	52	54	54	54	53	52	50	47	45	44	43	42	41	46
May	48	47	46	45	45	46	52	55	58	60	62	62	63	63	63	62	61	59	57	54	53	51	50	49	55
Jun	59	58	57	57	57	59	63	67	69	71	73	73	74	74	73	72	71	69	67	64	62	61	60	59	65
Jul	63	62	62	61	61	63	68	71	73	75	76	77	78	78	77	76	75	73	72	69	67	66	64	64	70
Aug	62	61	61	60	60	61	65	69	72	74	76	77	77	77	77	76	75	73	70	68	66	64	64	63	69
Sep	57	56	56	55	55	54	58	63	66	69	70	71	71	71	71	70	68	65	62	60	59	58	57	57	62
Oct	44	44	43	42	42	42	43	49	54	57	58	60	61	60	60	59	56	53	51	49	47	46	46	45	50
Nov	39	38	38	37	37	37	37	40	44	47	48	49	50	50	49	48	46	44	43	41	40	40	39	39	42
Dec	27	27	26	26	25	25	25	25	28	32	34	34	35	35	35	34	32	30	30	28	28	27	27	26	29
Annual	43	42	42	41	41	42	44	47	50	52	54	55	56	56	56	55	53	51	49	47	46	45	44	44	48

Addendum to "Climatology of Brookhaven National Laboratory, 1949 Through 1973"

**THIS PAGE
WAS INTENTIONALLY
LEFT BLANK**

Table 21

AVERAGE DAILY GLOBAL RADIATION (Langleys/Hr.)

1970-1977

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Annual</u>
1	122.4	171.0	308.4	402.6	454.2	377.4	562.8	412.8	469.2	314.4	207.0	144.0	328.8
2	176.4	124.8	241.2	229.2	381.6	522.0	542.4	517.8	329.4	204.0	184.2	168.6	301.8
3	116.4	165.0	127.2	379.2	313.8	564.0	478.2	402.0	362.4	246.6	187.2	189.0	294.2
4	108.0	212.4	183.6	242.4	240.2	538.8	531.6	407.4	402.6	390.6	206.4	154.8	309.9
5	130.8	168.0	242.4	356.4	429.6	467.4	480.0	511.2	357.0	306.0	140.4	138.6	310.6
6	165.0	169.2	263.4	348.6	457.2	383.4	595.2	515.4	339.6	247.8	152.4	127.2	313.7
7	107.4	129.6	231.6	421.2	546.0	447.6	529.8	371.4	408.6	289.8	151.2	132.0	313.8
8	122.4	146.4	253.8	404.4	485.4	509.4	506.4	435.6	420.6	324.0	117.0	76.2	316.8
9	146.4	175.2	324.0	430.2	356.4	498.6	561.6	438.0	370.8	214.2	184.8	71.4	314.4
10	118.2	235.2	322.8	446.4	395.4	524.4	480.6	503.4	399.6	285.6	153.6	129.6	332.9
11	114.6	209.4	355.8	428.4	557.4	579.0	417.6	453.0	358.2	313.8	187.2	150.0	343.7
12	140.4	254.4	276.0	464.4	489.0	457.2	474.6	469.2	402.6	216.0	144.6	62.4	320.9
13	132.6	174.6	214.2	387.6	492.6	478.2	428.4	477.0	355.2	262.2	102.0	98.4	300.2
14	121.8	269.4	256.8	459.0	459.6	507.0	487.2	472.2	292.2	239.4	178.8	113.4	321.4
15	136.8	191.4	262.8	370.2	473.4	476.4	466.8	429.0	340.2	265.8	139.2	124.2	306.4
16	148.8	258.0	292.8	463.2	406.2	463.2	483.0	403.8	311.4	207.0	180.0	114.6	311.0
17	184.8	234.6	294.0	520.8	499.2	421.2	556.8	346.8	340.8	203.4	171.0	123.6	324.8
18	168.6	253.2	312.6	486.0	398.4	439.2	586.2	457.8	276.0	255.6	198.6	151.2	332.0
19	190.2	204.6	313.8	451.2	426.0	454.8	511.2	540.6	318.0	231.6	148.2	108.0	324.8
20	129.6	235.8	321.6	429.6	450.0	541.8	522.6	486.0	245.4	180.0	154.2	84.6	315.1
21	153.0	296.4	329.4	480.6	402.0	441.0	447.6	534.0	247.8	380.6	148.8	61.2	320.2
22	159.6	196.2	231.6	408.6	554.4	441.6	552.0	423.6	349.2	248.4	158.4	130.8	321.2
23	169.8	243.6	385.8	425.4	468.6	482.4	566.4	411.0	303.0	244.2	175.2	133.2	334.0
24	172.8	225.0	385.8	303.6	424.8	590.4	533.4	391.8	279.0	234.6	138.0	127.8	317.2
25	147.6	254.4	392.4	399.0	361.2	396.0	352.8	466.8	274.8	162.0	145.8	87.0	286.6
26	148.8	208.2	351.6	355.2	440.4	391.2	477.6	397.8	248.4	183.6	174.6	84.6	288.5
27	149.4	261.6	489.6	435.6	513.6	539.4	478.2	360.6	228.0	215.4	129.0	135.6	328.0
28	128.4	315.0	436.8	412.2	558.0	474.6	538.8	417.0	328.8	272.4	129.6	152.4	347.0
29	130.8	-	227.2	459.6	543.0	466.2	454.2	481.2	310.8	204.0	88.8	148.8	324.0
30	213.6	-	307.8	540.6	429.6	439.8	413.4	447.0	316.8	228.6	121.2	117.6	325.1
31	199.2	-	286.2	-	456.6	-	451.8	441.0	-	193.8	-	97.2	-
Avg.	146.9	213.7	299.1	411.4	450.5	477.1	499.0	446.2	332.9	244.7	156.6	120.6	316.6

Table 22

AVERAGE DIURNAL TOTAL GLOBAL RADIATION, 1970-1977
(Langleys/Hr.)

(E.S.T.)																		
Mo.	<u>01-04</u>	<u>05</u>	<u>06</u>	<u>07</u>	<u>08</u>	<u>09</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21-24</u>
Jan					1.8	8.4	15.6	22.2	25.2	25.2	22.2	15.6	8.4	1.8	<0.6			
Feb			<0.6	3.0	13.8	22.8	30.0	33.6	34.2	30.6	24.6	15.6	6.6	0.6	<0.6			
Mar		<0.6	3.0	6.6	22.8	31.8	37.8	42.0	41.4	38.4	30.6	21.6	11.4	3.0	<0.6			
Apr		2.4	10.8	22.8	34.8	44.4	50.4	52.8	51.6	46.2	39.0	29.4	18.0	6.6	0.6	<0.6		
May		0.6	5.4	15.6	27.6	37.8	46.2	52.2	54.0	54.0	49.8	42.0	31.8	20.4	9.6	2.4	<0.6	
Jun		0.6	6.0	15.6	25.8	36.6	45.6	53.4	56.4	55.2	51.6	45.6	35.4	24.6	12.6	4.2	0.6	
Jul		0.6	5.4	15.6	27.6	39.0	49.2	55.2	59.4	59.4	55.8	49.2	37.8	27.0	14.4	4.8	0.6	
Aug		<0.6	3.0	11.4	24.0	36.0	46.8	54.6	57.0	55.2	51.6	43.2	32.4	21.0	9.0	1.8	<0.6	
Sep		0.6	6.6	16.2	28.2	37.2	43.2	45.6	43.8	39.0	31.8	21.6	10.8	3.0	0.6			
Oct		<0.6	3.0	12.0	22.2	30.0	36.0	38.4	36.6	30.6	23.4	13.8	4.2	0.6				
Nov			0.6	4.8	13.2	20.4	25.2	27.0	26.4	21.6	15.0	6.6	1.2					
Dec				4.8	7.8	14.4	19.2	22.2	21.0	16.8	10.8	4.2	0.6					
Annual		<0.6	2.0	6.9	13.8	25.0	33.7	40.0	42.8	42.0	37.8	30.9	21.6	12.3	5.0	1.3	<0.6	

Table 23

PERCENTAGE FREQUENCY OF DAILY TOTAL GLOBAL RADIATION, 1970-1977

<u>Radiation</u> <u>Langleys/min</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Annual</u>
0 - 1.00	19.4	15.0	7.4	4.8	1.1	0.4	0	1.2	3.0	6.7	16.4	27.4	8.5
1.01 - 2.00	17.9	10.1	12.0	6.1	6.6	3.1	3.0	2.1	8.6	11.3	17.3	20.5	9.8
2.01 - 3.00	17.9	9.2	9.5	7.4	7.0	4.4	3.4	6.3	9.0	10.0	18.2	23.8	10.5
3.01 - 4.00	38.1	14.0	9.1	3.1	5.8	6.1	3.4	3.3	8.2	12.6	28.6	28.3	13.2
4.01 - 5.00	6.7	22.7	5.8	4.3	5.8	7.0	4.2	5.0	6.4	19.2	17.8		8.6
5.01 - 6.00		23.7	13.2	6.9	5.8	8.3	7.6	5.0	13.3	24.3	1.7		9.0
6.01 - 7.00		5.3	14.9	8.6	6.2	7.0	6.3	8.7	16.3	13.0			7.2
7.01 - 8.00			16.9	9.1	7.8	7.9	9.2	13.7	21.9	2.9			7.6
8.01 - 9.00			11.2	19.0	9.5	10.5	11.3	23.2	12.0				8.2
9.01 -10.00				25.0	12.3	9.6	16.8	25.7	1.3				7.7
10.01 -11.00				5.5	21.0	24.4	18.9	5.8					6.4
11.01 -12.00				0.1	11.1	10.9	15.1						3.2
12.01 -13.00						0.4	0.8						0.1

Langleys /Hr. = 60 x Langleys/min.

Data recorded by Pyranometer

Table 24

Average Daily Total Global Radiation (Langleys/min.)
(1970-77)

<u>Month</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Mean</u>	<u>S.D.</u>
Jan.	2.84	2.55	2.05	2.93	2.14	2.43	2.23	2.33	2.44	.29
Feb.	3.72	3.14	3.65	3.91	3.71	3.83	3.54	3.60	3.64	.22
Mar.	5.01	5.18	4.92	4.47	4.50	5.16	5.16	5.30	4.96	.30
Apr.	6.98	6.98	6.36	6.51	6.49	7.60	7.09	6.72	6.84	.38
May	7.11	6.62	7.78	6.44	7.67	7.86	7.42	8.86	7.47	.71
Jun.	7.39	8.90	6.98	7.40	7.65	9.62	8.56	8.11	8.08	.88
Jul.	7.55	8.06	8.29	8.24	8.76	8.51	8.26	9.06	8.34	.43
Aug.	7.58	8.09	7.73	7.47	7.80	6.58	7.71	6.63	7.45	.51
Sep.	5.63	5.06	5.20	6.45	5.83	5.20	5.89	5.08	5.54	.46
Oct.	3.74	3.87	4.81	4.65	4.74	4.01	3.81	3.72	4.17	.45
Nov.	2.16	2.37	2.30	3.09	3.14	2.87	3.33	2.14	2.68	.45
Dec.	2.03	2.02	1.53	2.20	2.12	1.94	2.13	2.03	2.00	.19
Ann.	5.15	5.24	5.13	5.31	5.38	5.47	5.43	5.30	5.30	.12

Langleys/Hr. = 60 x Langleys/min.
Data recorded by Pyranometer