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THE ESTABLISHMENT OF A CREDIBLE INSOLATION DATA BASE

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ABSTRACT

This project, entitled "Establishment of Credible Insolation Data Base", describes the graph of the solar radiation in Gainesville from January 1980 to July 1982 to satisfy the defined need of the data, the people proceed the collection data, to perform the average, standard deviation, maximum and minimum solar radiation curve. Also, the most important here is to provide the extraterrestrial on horizontal plane and the ratio of global insolation on a horizontal plane to extraterrestrial insolation on a horizontal plane. All calculations are based hourly and daily of each month, and the curves should be necessary for engineering calculations. A simple conclusion can be defined that there are more cloudy and rainy days in June than other months in Gainesville at latitude 29.65°N and the range of the ratio of global radiation to extraterrestrial radiation on horizontal plane (KT) is between 0.4 to 0.6

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INTRODUCTION

This report provides information and calculation on the use of solar radiation data in Gainesville which may be needed by planner and technical personnel which are concerned with solar energy.

Also this job is meant to get an idea how to establish a data base on similar data and information which is available in the developing countries.

A data base is a collection of stored operational data used by the application system of manufacturing, government department, institute, bank etc. And it means the collection of data necessary to satisfy the defined need of the data. This includes information about the format of the data as well as about the relationship among data items.

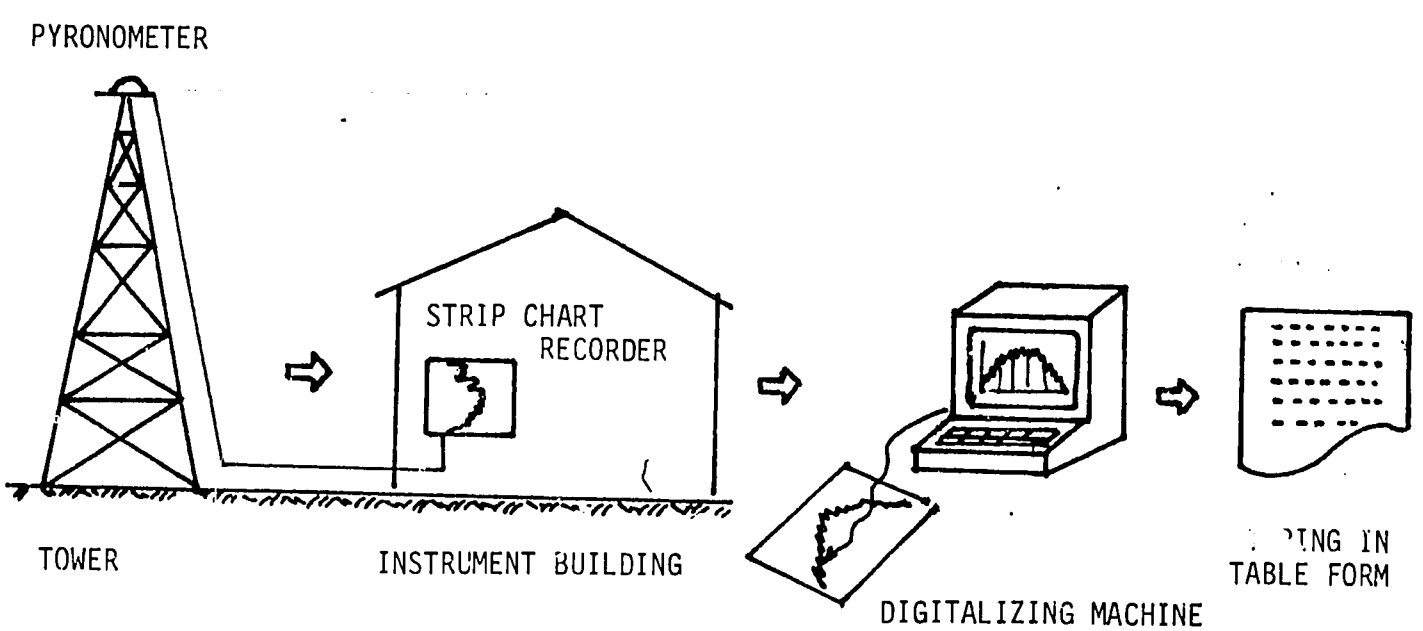
Due to the limitation of the time and not availability of the computer, the job only covers the data of the solar radiation which measured at the University of Florida from January 1980 to July 1982, and used the Calculator T1-55 of Texas Instrument Incorporated. The data base made by using Law of Physics, Astronomy, Statistics and common sense, as well as, using the raw data as the input.

However, particularly for the authors, this job is very useful for doing similar jobs in their home countries.

DATA ACQUISITION METHODOLOGY

The raw data as the input of the data base is solar radiation of Gainesville from January 1980 to July 1982 (Table 1), except the data of September 1980. The data was received from the Energy Research and Education Park (EREP), University of Florida. The Instrumentation used by EREP in its measurement are consisted of precision pyrometer, the analog recorder and the electronic integrator. Then the strip chart (Fig. 1) is proceeded in digital machine in the Mechanical Engineering Building and the raw digital data is typed in table form. The pyrometer calibrator is located in the horizontal plate on the about-40-feet-height tower (as the following figure) at the EREP in Gainesville FL, 32611 and its latitude is 29.65° Northern.

The data is recorded hourly and the hour is the solar time.



DATA ANALYSIS METHODOLOGY

The result presented here are based only on recorded value of the solar radiation in Gainesville. The aim of analysis is to provide a graph figure which will be easy for user.

In calculating average daily insolation, the average hourly values for each month are calculated first. This made all the hourly data available. The average insolation values were found by averaging the whole days of each month.

Unrecorded hourly data were neglected while the complete ones were used in caluculating the mean and standard deviation of the daily insolation. The mean and standard deviation of daily insolation have been calculated as follows:

The mean of data y for N data is:

$$\bar{y} = \frac{\sum_{i=1}^{N} y_i}{N} \text{ when } i = 1, 2, 3, \ldots\ldots\ldots, N \qquad (1)$$

The standard deviation of data y, using N-1 weighing is:

$$S.D. = \sqrt{VAR \times \frac{N}{N-1}} \text{ when } VAR = \frac{\sum y_i^2}{N} - \frac{(\sum Y_i)^2}{N^2} \qquad (2)$$

While the maximum and minimum figure has been chosen among the data. The results are in Table 3 and have been graphed in Figure 2.

The geometric relationships between a plane of any particular orientation relative to the earth at any time (whether that plane is fixed or moving relative to the earth) and the incoming beam solar radiation, that is, the position of the sun relative to that plane, can be described in terms of several angles. These angles and the relationships between them are as follows:

ϕ is latitude, that is, the angular location north or south of the equator, north positive $-90^{o} \leqslant \phi \leqslant 90^{o}$.

δ is declination, that is, the angular position of the sun at solar noon with respect to the plane of the equator, north positive $-23.45^{o} < \delta < 23.45^{o}$.

w is hour angle, that is, the angular displacement of the sun east or west of the local meridian due to rotation of the earth on its axis at 15^{0} per hour, morning negative, afternoon positive.

Declination, δ, can be found from this equation:

$$\delta = 23.45 \sin \left(360 \frac{284 + n}{365}\right) \qquad (3)$$

where n is the day of the year and n can be conveniently obtained with the help of the following table:

Month	n for ith Day of Month	for the Average Day of Month		
		Date	n, Day of Year	δ, Declination
January	i	17	17	-20.9
February	31 + i	16	47	-13.0
March	59 + i	16	75	- 2.4
April	90 + i	15	105	9.4
May	120 + i	15	135	18.8
June	151 + i	11	162	23.1
July	181 + i	17	198	21.2
August	212 + i	16	228	13.5
September	243 + i	15	258	2.2
October	273 + i	15	288	- 9.6
November	304 + i	14	318	-18.9
December	334 + i	10	344	-23.0

w_s is the sunset hour angle in degrees, so

$$\cos w_s = - \tan \phi \tan \delta \qquad (4)$$

The integrated daily extraterrestrial radiation on a horizontal surface, H_o in BTU/FT^2-DAY

$$H_o = \frac{24 \times 3600\ G_{sc}}{\pi} [1 + 0.033 \cos (\frac{360n}{365})]$$

$$\times [\cos \emptyset \cos \delta \sin w_s + \frac{2\pi w_s}{360} \sin \emptyset \sin \delta] \times 0.0113 \times 10^{-6} \qquad (5)$$

when G_{sc} is the solar constant

G_{sc} = 1353 watts per square meter.

It is also of interest to calculate the extraterrestrial radiation on a horizontal surface for an hour period, I_o. For a period is defined by hour angles w_1 and w_2 which define an hour (where w_2 is the larger):

$$I_o = \frac{12 \times 3600}{\pi} G_{sc} [1 + 0.033 \cos \frac{360n}{365}]$$

$$\times [\cos \emptyset \cos (\sin w_2 - \sin w_1) + \frac{2\pi(w_2 - w_1)}{360} \sin \emptyset \sin \delta]$$

$$\times 0.0311 \times 10^{-6} \qquad (6)$$

when G_{sc} = 1353 watts per square meter

and I_o in BTU/FT^2-HR

(The limits w_1 and w_2 may define a time other than an hour.)

For example, to calculate the daily extraterrestrial radiation on the horizontal plane by using programming of the calculator, T1-55 of Texas Instrument Inc., as the following circumstances on June 19th, at latitude 29.65^{o}N in Gainesville.

$n = 170$

$\emptyset = 29.65^0$

For equation (3)

$$\delta = 23.45 \sin (360 \frac{284 + n}{365})$$

For calculator instructions to calculate δ, use the following:

Press	Comment
[2nd] [CA] [2nd] [FIX] [4]	Clear the memory and set the decimal.
[2nd] [Lrn]	Enter learn mode
[(] [(]	((
[STO] [1]	Stored n
[+] [2] [8] [4] [)] [X]	+ 284) X
[3] [6] [0] [÷] [3] [6] [5] [)]	360 ÷ 365
[sin]	sin
[x] [2] [3] [•] [4] [5]	X 23.45
[=] [2nd] [R/S]	Stop to display result
[2nd] [Lrn]	Exit learn mode

to run this equation program

[2nd] [Rst]	Reset to step 00
[1] [7] [0] [2nd] [R/S]	Run program

And the calculator will display δ = 23.4324

By setting this calculationprogram, again but using different equation, so that

From equation (4), w_s = 104.2830 degrees

From equation (5), H_o = 3603.6123 BTU/FT^2-DAY

The result of the calculation of the daily extraterrestrial radiation on horizontal plane are in Table 2 and in Figure 4.

The frequency of occurance of period of various radiation levels, for example, of good and bad days, is also interesting and important to calculate KT. KT is the clearness index, which is the ratio of global insolation on horizontal plane, H to extraterrestrial insolation on horizontal plan, H_o in any same period of time.

$$KT = \frac{H}{H_o} \tag{7}$$

The result of the calculation of the average daily KT is

$$KT = \frac{\overline{H}}{\overline{H}_o} \tag{8}$$

is in Table 3 and in Figure 6.

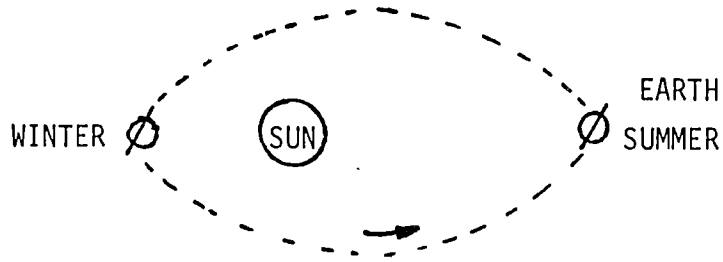
DISCUSSION

From the mean, standard deviation, maximum and minimum of the statistical distribution of daily insolation in Gainesville, (at latitude 29.65°N) have been calculated in Table 3, and graphed in Figure 2. The maximum hourly global radiation on a horizontal plane in Gainesville is at 11:00 solar time in May 1980. In general, the maximum curves are more than the mean plus standard deviation and less than the mean plus two standard deviations. While the minimum curves are less than the mean minus two standard deviations. It can be seen that some figures are not so smooth and should be approached to try a simple predication in an easy way.

For example, in Table 1.6, for June 1980, particularly at 6:00 solar time, as the maximum curve at that time can be predicted as the rewritten curve on cross-line in Figure 2.6 and also in Figure 3, presents the average hourly solar radiation on June 1980, 1981 and 1982, which also can be predicted as the rewritten curve on cross-line in the figure. Solar radiation curve in Gainesville in August 1981 in Figure 2.19 must have some mistake particularly at 10:00 solar time, as known the solar radiation at 11:00 should be higher than at 10:00 so the cross-line curve as a prediction should be more correct and credible. Figure 2.20 for September 1981 is also not so smooth, due to the limitation of the data (missing for 1980) so there is not enough data to predict, even the solar radiation at 11:00 looks like to be too high.

It is important to observe the extraterrestrial insolation on horizontal plane (ET), which have been calculated in Table 2 and graphed in Figure 4.1 for daily insolation from January to December. The highest ET in Gainesville at latitude 29.65°N is on June 19 and the lowest ET is on December 21. As known the highest ET should be on June 21. This can happen because the rotation of the earth around the sun is not exactly circular

for the northern hemisphere as the picture shown below.



More detail extraterrestrial insolation on horizontal plane is presented in Figure 4.2 to Figure 4.13 and all these curves are approximately straight lines, except the curve of June and December which also can be approximately represented into three or four straight lines.

For example, the curve for April in Figure 4.5. The straight line equation is:

$$ET = mx + b$$

$$\text{when slope} = m = \frac{64}{56} X \frac{5}{0.5} = 11.43$$

$$\text{at } x = 0 \text{ the intersect point} = b = 3025$$

As the equation for April curve is

$$ET = 11.43n + 3025$$

$$\text{when} \quad n = \text{date of the month}$$

$$\text{at } n = 19$$

$$ET = 11.43 \times 19 + 3025 \qquad BTU/FT^2\text{-DAY}$$

$$= 172 + 3025 \qquad "$$

$$= 3200 \qquad "$$

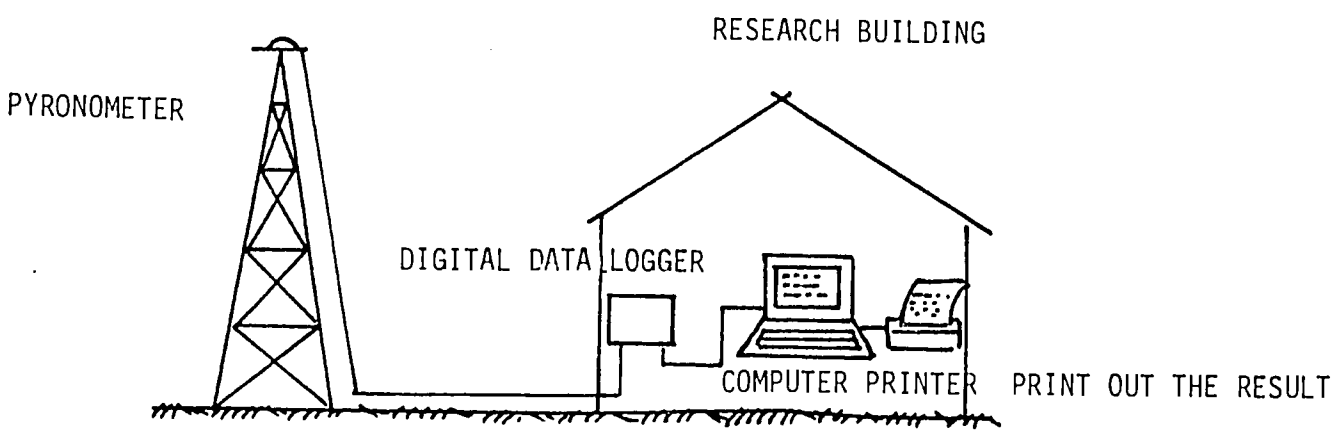
Check with Figure 4.5 at n = 19 ET = 3260 BTU/FT^2-DAY

It means that the error is only $\frac{3260 - 3200}{3260} \times 100\% = 1.8\%$ which is less than 2%.

It is also necessary to compare total daily average global radiation with extraterrestrial radiation on horizontal plane as shown in Figure 5.1 to Figure 5.4. This is demonstrated that in Gainesvilee the maximum global terrestrial radiation is in May but the maximum extaterrestrial radiation is in June while the maximum extraterrestrial and global radiation is in the same month for December. The reason for the difference between the maximum radiation in June and in May is that there are so many more cloudy and rainy days in June than in May.

Another interesting feature is clearness index, it is the ratio of global radiation to extraterrestrial radition on horizontal plane (KT) have been calculated in Table 3 and graphed in Figure 6.1 to Figure 6.4, which range is between 0.4 to 0.6 predicted that the graph of the KT must follow the dotted-line curve.

The last recommendation is that from the Data Acquisition Methodology. The steps for data collection can be improved and made shorter (eliminating mistakes and errors) by combining those steps done in one building as shown below.



The printouts of the computer are shown in Table 6.

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APPENDIX 1

TABLE 1

SOLAR RADIATION

MEASURED AT ENERGY RESEARCH AND EDUCATIONAL PARK

UNIVERSITY OF FLORIDA, GAINESVILLE

(Btu/Ft^2-Hr)

Table 1.1 January 1980
Table 1.2 February 1980
Table 1.3 March 1980
Table 1.4 April 1980
Table 1.5 May 1980
Table 1.6 June 1980
Table 1.7 July 1980
Table 1.8 August 1980
Table 1.9 October 1980
Table 1.10 November 1980
Table 1.11 December 1980
Table 1.12 January 1981
Table 1.13 February 1981
Table 1.14 March 1981
Table 1.15 April 1981
Table 1.16 May 1981
Table 1.17 June 1981
Table 1.18 July 1981
Table 1.19 August 1981
Table 1.20 September 1981
Table 1.21 October 1981
Table 1.22 November 1981
Table 1.23 December 1981
Table 1.24 January 1982
Table 1.25 February 1982
Table 1.26 March 1982
Table 1.27 April 1982
Table 1.28 May 1982
Table 1.29 June 1982
Table 1.30 July 1982

Solar Radiation in Btu/hr ft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.1 January 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
1/1/80			15.2	51.6	79.7	138.4	132.8	72.0	138.9	132.8	60.6	18.0			840.0
1/2/80			23.8	71.4	144.2	171.5	206.9	187.9	189.5	140.5	79.3	24.8			1239.8
1/3/80			25.0	94.3	151.9	167.9	196.1	182.0	173.9	135.1	74.4	20.3			1220.9
1/4/80			5.7	7.5	6.8	9.7	9.1	2.7	8.5	65.9	47.8	7.7			171.4
1/5/80			14.5	65.4	149.6	175.1	208.4	192.1	180.4	132.5	72.5	20.2			1210.7
1/6/80			24.8	79.3	147.9	177.8	212.3	194.6	187.2	143.7	81.3	26.0			1274.9
1/7/80			33.0	84.8	129.7	174.2	201.3	190.2	183.9	124.7	71.9	25.1			1218.8
1/8/80			12.7	44.6	86.5	168.4	137.8	122.2	120.4	73.1	50.2	16.8			832.7
1/9/80			5.3	10.9	58.4	82.2	140.4	135.0	74.0	75.9	46.1	12.6			640.8
1/10/80			7.2	18.4	30.1	54.6	84.5	45.8	58.1	50.2	35.1	7.7			391.7
1/11/80			9.6	28.0	80.9	156.7	124.2	84.2	45.3	55.1	36.3	13.3			633.6
1/12/80			1.4	15.3	29.7	31.2	23.1	38.0	35.7	34.2	6.7	2.3			217.6
1/13/80			6.2	21.7	37.0	31.4	37.1	52.4	35.2	11.0	1.8	1.6			235.4
1/14/80			1.0	19.3	60.7	54.7	59.6	69.9	39.6	39.0	28.6	10.1			382.5
1/15/80			12.3	54.0	157.1	173.4	218.9	199.4	187.7	137.4	71.5	18.5			1230.2
1/16/80			35.4	84.0	155.0	183.7	214.3	194.0	171.3	128.8	77.3	28.7			1272.5
1/17/80			29.4	82.7	103.0	131.5	110.1	114.8	132.2	92.1	29.4	18.7			843.9
1/18/80			12.4	26.4	56.9	95.9	122.6	142.4	131.4	76.3	41.7	10.3			716.3
1/19/80			22.9	82.4	155.9	184.0	211.4	199.5	166.6	141.9	84.0	25.1			1273.7
1/20/80			46.3	103.6	156.8	197.7	226.0	200.3	210.9						1141.6
1/21/80															
1/22/80					152.3	177.1	182.0	117.4	126.0	84.4	70.1	25.7			935.0
1/23/80			8.4	34.4	106.7	142.2	128.0	71.0	122.0	91.1	47.4	8.2			759.4
1/24/80			48.3	118.2	156.8	207.7	219.1	235.8	197.4	174.0	118.3	59.8			1535.4
1/25/80			19.3	76.1	63.8	104.4	62.4	101.9	51.0	39.2	36.7	12.9			567.7
1/26/80															
1/27/80				29.4	82.2	105.5	139.8	103.6	114.4	81.4	89.3	29.5			775.1
1/28/80				19.2	42.0	58.8	85.7	86.2	79.2	81.5	81.8	37.5			571.9
1/29/80			34.0	94.6	141.4	199.3	207.8	219.9	189.3	161.8	101.5	39.0			1388.9
1/30/80			33.9	104.7	146.6	201.7	212.6	220.7	189.5	158.1	95.2	32.4			1395.4
1/31/80			11.1	24.3	55.1	43.4	17.0	17.3	10.8	12.3	10.6	4.6			206.5
Average															

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.2 February 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
2/1/80			46.8	104.2	171.2	196.3	228.3	210.8	208.5	163.3	101.1	37.6			1470.3
2/2/80			31.2	61.7	127.6	175.3	225.5	214.6	213.6	212.6	55.9	22.8			1249.8
2/3/80			14.6	41.8	62.9	55.2	134.9	201.4	197.6	160.8	94.4	32.7			996.3
2/4/80		2.4	46.5	107.6	174.6	215.9	235.3	221.6	209.8	161.9	105.7	40.5	2.1		1523.9
2/5/80		1.8	45.2	101.0	173.5	202.4	234.0	213.4	200.4	157.5	106.6	37.6	1.7		1475.1
2/6/80			27.5	54.8	124.5	214.8	245.6	224.7	213.1	162.3	102.7	35.8			1405.8
2/7/80		4.3	2.2	45.7	101.8	180.0	200.0	235.5	215.9	207.8	159.4	104.9	43.0		1500.5
2/8/80			28.9	79.1	130.3	184.7	209.4	188.6	158.1	141.6	72.8	41.8			1235.3
2/9/80		2.4	15.5	83.2	128.1	190.0	190.9	219.2	193.9	183.2	119.9	75.5	11.9		1411.3
2/10/80			5.9	25.2	16.1	65.7	51.0	38.1	46.0	22.7	16.4	7.1			294.2
2/11/80			15.4	36.5	75.3	54.5	79.3	145.6	186.0	136.6	81.2	26.2			836.6
2/12/80			51.2	72.1	151.2	156.0	247.0	198.7	142.3	83.5	30.1	5.2			1137.3
2/13/80			14.1	30.1	59.1	56.3	85.5	67.7	101.4	71.5	41.0	13.8			540.5
2/14/80			11.2	20.7	57.1	40.3	68.6	58.0	71.5	55.6	24.4	15.5			422.9
2/15/80			15.4	69.9	90.3	121.5	227.8	213.5	207.6	148.6	112.1	45.4			1252.1
2/16/80			19.7	64.5	122.3	144.4	185.9	60.9	10.8	22.2	48.3	18.6			697.6
2/17/80			86.1	144.7	215.2	222.3	243.7	199.8	188.1	124.1	101.7	40.0			1565.7
2/18/80		3.1	26.1	100.0	134.2	167.6	128.4	206.4	158.4	79.5	46.5	20.6	2.4		1073.2
2/19/80		3.7	47.8	126.0	189.9	125.4	290.5	203.5	191.2	89.9	70.5	40.1	5.4		1383.9
2/20/80		5.0	26.3	41.6	86.8	115.6	167.7	214.4	236.1	175.3	118.6	60.8	10.9		1259.1
2/21/80															
2/22/80		10.5	57.4	111.0	191.1	223.3	216.5	227.4	189.6	153.0	107.1	49.6	4.7		1541.2
2/23/80		6.4	20.5	29.3	115.1	131.5	164.5	249.8	181.8	160.9	85.3	49.0	4.9		1199.0
2/24/80															
2/25/80		5.6	28.2	38.5	55.5	98.2	98.5	83.0	151.8	93.2	58.9	39.5	3.2		754.1
2/26/80		7.7	63.2	151.3	198.6	252.3	262.4	288.5	242.8	211.2	146.1	73.0	11.7		1908.8
2/27/80		11.6	75.7	130.2	170.0	193.5	221.4	210.6	176.0	163.8	116.3	46.9	8.0		1524.0
2/28/80		5.9	48.5	130.5	179.0	235.9	246.1	264.8	233.4	204.4	144.1	73.4	14.2		1780.2
2/29/80		6.9	36.2	121.5	171.2	246.2	232.9	191.0	146.0	82.0	99.2	65.7	33.1		1431.2
Average															

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.3 March 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
3/1/80			7.0	26.0	41.9	39.6	61.2	159.7	154.1	143.6	53.9	12.1			
3/2/80			3.3	21.4	19.9	23.3	12.8	18.8	28.9	47.4	27.4	7.2			
3/3/80		10.4	71.3	152.2	201.1	264.0	269.0	289.5	248.0	217.2	150.4	75.8	13.2		
3/4/80		23.7	87.2	153.0	190.0	257.6	252.1	283.1	237.5	209.8	142.9	72.6	13.1		
3/5/80		4.8	73.8	152.2	186.5	207.4	148.8	94.4	135.4	161.2	73.5	31.5	6.1		
3/6/80		5.4	35.6	125.2	178.7	251.1	240.1	289.5	227.5	163.5	138.9	63.8	9.9		
3/7/80		5.8	31.5	91.2	182.5	235.6	244.1	253.0	222.3	193.5	134.5	63.1	8.5		
3/8/80		12.0	60.8	121.1	146.4	228.2	240.8	248.5	180.0	148.8	116.6	65.9	14.5		
3/9/80			14.4	13.1	19.2	7.3	26.1	56.3	55.4	45.4	10.3	7.0			
3/10/80			5.0	6.8	44.6	62.6	47.9	33.7	7.1	19.3	26.7	24.2			
3/11/80		8.6	43.5	67.5	92.5	215.3	207.1	260.4	238.1	208.8	136.7	60.6	15.4		
3/12/80		13.2	40.3	75.1	117.7	166.5	146.7	166.1	147.4	154.2	63.0	57.6	7.3		
3/13/80			24.3	73.1	131.5	192.9	112.8	94.7	85.0	72.2	25.7	6.4			
3/14/80		14.4	71.2	142.7	205.0	248.5	253.2	286.8	236.7	228.4	148.2	72.2	12.7		
3/15/80		16.9	85.7	151.4	198.8	245.0	250.9	284.1	230.2	213.0	136.1	69.4	16.1		
3/16/80		14.6	64.4	135.8	171.4	218.1	243.9	268.2	191.1	182.9	140.0	69.0	10.0		
3/17/80		13.9	42.6	86.7	172.4	186.3	145.0	195.7	146.2	171.3	149.9	55.7	14.1		
3/18/80															
3/19/80		11.6	34.4	126.9	137.4	95.8	231.7	207.7	115.7	119.8	79.7	27.0	10.2		
3/20/80		23.0	75.8	117.1	170.0	183.6	206.2	200.6	237.0	171.3	46.5	24.2	6.8		
3/21/80		31.3	98.8	174.7	240.7	258.6	302.3	258.9	136.9	99.9	129.9	31.5	8.0		
3/22/80		29.5	98.5	171.1	240.1	275.6	319.3	299.8	291.5	231.5	186.1	99.1	24.1		
3/23/80		20.3	76.3	125.4	183.9	220.9	267.6	299.4	296.2	226.0	188.2	101.1	30.4		
3/24/80		11.6	55.9	136.6	199.9	272.4	237.9	248.2	138.2	160.5	71.2	52.2	16.5		
3/25/80		13.8	45.3	61.2	179.2	232.8	261.5	249.9	206.1	187.8	145.4	83.8	21.9		
3/26/80		20.2	67.1	112.5	222.8	235.6	258.0	233.6	253.5	206.6	132.1	80.3	23.2		
3/27/80		1.6	15.0	44.7	69.8	152.5	79.2	64.9	35.1	50.4	33.7	19.3	4.5		
3/28/80		12.0	43.3	98.1	156.6	264.6	266.5	211.3	166.8	157.8	148.2	51.2	4.1		
3/29/80		2.3	16.0	22.3	27.0	41.8	41.6	70.8	44.1	46.8	22.7	13.7	1.9		
3/30/80		1.2	1.5	2.9	56.7	111.9	103.2	155.4	207.1	143.1	75.2	15.3	10.9		
3/31/80		20.5	94.6	162.7	241.3	269.7	309.8	229.7	299.9	223.1	181.5	101.2	24.8		
Average															

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.4

April 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
4/1/80		9.8	62.8	113.2	123.0	66.4	60.1	88.3	195.5	178.8	92.7	69.1	16.4		1076.1
4/2/80		11.3	13.2	90.2	45.1	41.2	47.1	21.7	11.3	6.4	5.1	6.3	2.3		301.2
4/3/80		12.5	56.4	110.9	158.7	281.8	269.5	237.0	194.8	188.7	176.0	86.3	9.6		1782.2
4/4/80		14.2	26.7	56.1	121.2	113.9	77.4	95.5	37.2	31.1	6.5	1.7	1.2		582.7
4/5/80		35.1	109.2	187.8	254.3	277.9	320.9	301.5	299.6	235.9	187.9	107.5	38.6		2356.2
4/6/80		27.7	89.7	144.8	206.9	267.8	248.3	211.3	125.6	90.6	110.8	63.8	29.8		1617.1
4/7/80		5.7	25.6	71.9	68.2	107.2	55.2	49.1	65.6	50.3	77.8	48.4	7.4		631.9
4/8/80		30.4	90.7	84.3	203.9	320.0	285.8	257.3	272.4	165.0	97.8	43.3	11.8		1862.7
4/9/80		2.2	4.9	22.2	31.6	160.2	91.9	154.3	217.8	162.6	115.4	65.5	14.0		1042.6
4/10/80		28.8	97.1	179.5	254.3	287.1	328.1	302.0	303.9	231.2	191.7	111.5	37.9		2353.1
4/11/80		32.8	108.1	173.5	253.0	284.4	333.0	312.0	305.0	235.9	193.2	111.4	39.4		2381.7
4/12/80		22.8	88.4	155.9	206.0	260.9	278.7	275.5	269.6	180.1	152.7	70.2	15.0		1975.8
4/13/80[1]															
4/14/80		12.2	24.6	54.8	198.0	219.9	268.4	218.3	71.0	55.0	101.6	66.9	17.4		1308.1
4/15/80		37.3	110.9	187.8	258.7	237.0	307.8	251.6	267.6	199.9	184.1	112.1	41.5		2196.3
4/16/80		44.0	110.5	183.4	266.4	294.1	338.9	322.7	300.3	226.6	183.5	102.4	36.2		2409.0
4/17/80		45.7	116.3	187.1	263.7	286.2	310.2	295.0	299.5	222.9	176.9	104.5	36.4		2344.4
4/18/80		35.4	95.6	170.1	245.2	295.7	321.9	240.7	233.0	232.2	174.8	104.3	40.3		2189.2
4/19/80		23.5	66.8	150.9	246.1	208.5	65.8	29.8	124.9	154.6	72.7	45.4	13.7		1202.7
4/20/80		13.8	21.4	46.1	99.3	263.8	347.1	192.0	201.7	176.1	73.9	104.8	23.2		1563.2
4/21/80		43.5	111.3	176.6	253.7	278.3	322.5	299.6	287.2	230.6	167.2	104.8	40.3		2315.6
4/22/80		38.8	100.4	176.8	250.3	278.4	314.7	288.4	292.2	224.8	190.1	108.2	37.8		2250.9
4/23/80		22.9	75.6	173.0	243.3	263.1	298.3	264.4	217.2	180.9	143.5	65.1	22.1		1969.4
4/24/80		45.3	100.6	176.9	242.4	253.3	306.7	284.4	213.8	211.5	186.0	113.9	42.2		2177.0
4/25/80		40.3	110.1	182.5	151.1	290.9	265.1	291.9	224.0	234.0	181.3	113.6	49.1		2133.9
4/26/80		34.2	107.4	186.6	229.5	296.7	297.8	328.6	232.8	257.2	179.5	55.4	18.6		2224.3
4/27/80		23.6	29.9	100.4	117.5	144.2	166.9	212.5	227.6	186.3	153.4	109.2	36.6		1508.1
4/28/80		43.8	117.2	180.1	248.3	275.2	306.2	298.3	288.5	212.3	167.2	106.0	41.3		2284.4
4/29/80		43.1	105.6	184.4	264.8	205.6	267.3	289.7	285.1	225.2	187.1	117.4	52.4		2227.7
4/30/80		34.1	98.1	156.8	204.5	249.4	281.7	209.5	187.1	190.5	187.0	97.9	38.0		1934.6
Average		28.1	78.5	140.1	196.8	234.7	247.7	228.3	215.5	178.5	141.9	83.3	27.9		1800.0

[1] Instrumentation Failure

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.5 May 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
5/1/80		14.4	37.1	45.9	49.2	86.8	90.9	54.5	159.8	58.0	62.1	18.6	6.3		
5/2/80		42.2	109.0	185.7	248.1	309.5	303.1	269.4	261.2	165.4	148.8	59.4	27.3		
5/3/80		40.4	108.0	175.0	250.4	255.1	235.8	116.2	116.8	49.9	33.3	14.8	33.9		
5/4/80		32.1	94.6	160.7	236.5	291.0	272.1	252.1	216.2	236.7	211.8	112.0	38.3		
5/5/80		44.2	109.6	176.8	247.0	252.7	278.8	317.1	255.6	154.0	168.4	76.1	45.5		
5/6/80		38.5	104.6	166.9	240.9	257.5	324.5	270.9	273.1	187.1	152.9	90.6	51.2		
5/7/80		25.8	77.0	176.1	247.3	268.9	316.4	256.3	180.3	205.5	186.3	119.4	48.4		
5/8/80		30.1	11.9	10.5	9.1	4.3	6.8	77.2	163.1	231.0	112.6	77.7	40.8		
5/9/80		5.4	16.2	20.1	47.6	53.2	33.5	155.4	102.1	57.6	44.1	20.5	10.5		
5/10/80		37.7	102.1	176.1	236.8	302.7	366.0	330.9	254.5	190.5	137.7	118.5	55.5		
5/11/80		38.9	124.1	139.2	258.6	282.2	340.1	313.9	272.6	239.2	207.8	124.8	57.1		
5/12/80		53.8	123.6	190.0	270.3	267.6	335.4	278.1	296.7	223.3	184.8	120.7	46.8		
5/13/80		35.6	97.5	170.6	245.0	287.8	322.5	307.2	315.3	240.9	204.4	131.8	50.0		
5/14/80		37.5	119.2	190.8	267.3	261.0	279.9	282.5	172.5	238.5	145.8	67.0	42.9		
5/15/80		50.7	111.6	172.5	206.2	307.9	90.0	61.2	273.2	210.1	23.6	46.6	30.3		
5/16/80		8.2	25.4	48.7	59.4	82.5	215.3	273.3	243.2	144.2	58.1	9.7	2.0		
5/17/80		9.9	27.7	68.4	98.2	169.2	215.6	210.0	246.3	194.5	195.3	117.6	38.0		
5/18/80		44.7	124.3	203.3	250.9	287.5	312.5	312.7	300.8	95.7	167.4	106.6	40.7		
5/19/80	17.4	68.0	115.9	192.4	270.7	283.4	333.0	263.1	289.8	228.1	113.3	106.3	47.3	8.5	
5/20/80	11.6	48.9	97.3	147.3	277.4	275.2	299.0	262.2	272.7	99.9	167.3	118.0	63.3	17.4	
5/21/80															
5/22/80															
5/23/80															
5/24/80															
5/25/80															
5/26/80							Instrumentation Problems								
5/27/80															
5/28/80															
5/29/80															
5/30/80															
5/31/80															
Average	1.5	35.4	86.8	140.9	200.8	229.3	248.6	233.2	233.3	172.5	136.3	82.8	38.8	1.3	1841.4

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.6

June 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
6/1/80[1]															
6/2/80[1]															
6/3/80[1]															
6/4/80[1]															
6/5/80[1]															
6/6/80[1]															
6/7/80[1]															
6/8/80[1]															
6/9/80[1]															
6/10/80[1]															
6/11/80[1]															
6/12/80	12.1	58.1	121.2	163.4	222.5	272.1	213.2	246.2	252.0	206.2	201.8	121.5	57.4	12.6	2160.3
6/13/80	20.1	59.3	123.1	166.2	254.6	302.9	320.1	265.5	284.3	182.8	157.2	102.0	50.6	6.2	2294.9
6/14/80[1]															
6/15/80[1]															
6/16/80	6.0	45.0	107.3	168.8	235.6	281.3	323.3	287.1	218.1	163.0	101.5	122.7	70.0	20.5	2150.2
6/17/80	5.8	47.8	107.0	155.1	205.9	238.8	290.8	295.4	325.6	245.0	194.5	129.8	79.0	23.3	2343.8
6/18/80	8.9	39.4	110.9	156.9	198.5	60.4	334.3	261.3	300.8	148.4	49.7	107.6	67.1	13.8	1858.0
6/19/80	11.7	55.0	115.5	168.3	245.0	259.1	277.3	314.0	284.5	119.5	26.6	20.6	17.0	16.6	1930.7
6/20/80	8.0	16.1	54.9	197.0	175.6	319.7	177.9	193.3	119.1	76.9	90.7	99.0	31.0	11.7	1570.9
6/21/80		18.3	73.1	139.8	157.6	253.6	323.7	241.5	275.0	229.6	169.6	89.8	24.5		1996.1
6/22/80	8.6	40.0	159.5	183.2	61.6	81.0	95.2	56.7	196.1	192.1	140.0	86.2	27.0	6.3	1333.5
6/23/80	13.4	31.3	88.2	162.5	41.8	72.8	188.3	319.4	243.5	237.4	118.9	57.6	27.7	5.4	1608.2
6/24/80	11.4	59.4	138.1	165.2	242.8	195.4	303.0	248.1	94.1	84.2	103.3	99.0	37.9	13.0	1794.9
6/25/80	11.4	78.0	83.3	106.8	91.5	146.6	83.0	38.5	132.6	153.4	118.2	133.2	65.3	15.8	1257.6
6/26/80	19.9	34.1	81.5	82.8	83.6	56.2	16.9	10.0	5.2	19.0	59.9	15.2	9.4	5.0	498.7
6/27/80	26.3	215.1	152.0	217.8	196.5	357.1	193.2	244.0	220.8	239.2	154.3	104.8	40.9	6.8	2368.8
6/28/80	19.4	63.0	143.0	153.9	201.6	150.0	83.2	278.5	260.5	238.4	179.6	127.0	57.4	15.6	1971.1
6/29/80	17.0	69.5	33.2	140.3	197.9	281.4	249.0	260.9	216.3	215.7	136.1	108.9	37.5	10.2	1973.9
6/30/80	18.7	131.1	211.4	178.1	142.9	93.4[2]	43.9	10.8	12.1	69.5	41.9	32.0	41.5	9.4	1036.7
Average	12.9	62.4	112.0	159.1	173.8	201.2	206.8	210.0	202.3	165.9	120.2	91.5	43.6	11.3	1773.4

1 Instrumentation Failure
2 Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.7 July 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
7/1/80		45.6	120.6	186.7	239.4	271.5	324.6	306.6	308.9	245.9	214.6	149.4	72.5		2486.3
7/2/80	14.2	54.1	59.5	174.3	126.0	309.9	276.8	312.9	279.8	249.1	189.8	127.0	58.7	11.0	2243.1
7/3/80	22.6	57.2	202.0	209.9	259.9	179.0	225.2	236.8	233.2	175.8	132.4	62.0	15.2	4.0	2015.2
7/4/80	15.7	70.6	137.4	202.7	244.6	307.0	298.2	330.0	264.3	297.0	194.2	123.7	58.8	13.8	2558.0
7/5/80	8.1	69.4	136.4	201.9	257.1	301.9	316.9	326.2	196.8	210.2	182.7	126.8	61.6	14.0	2310.0
7/6/80	12.4	57.4	120.9	183.2	141.6	281.0	197.2	254.2	223.0	245.2	186.5	123.3	53.5	10.2	2089.6
7/7/80	8.1	54.0	107.9	167.5	232.1	282.6	297.0	303.6	271.8	234.6	129.8	33.4	9.4	6.8	2138.6
7/8/80	14.8	49.6	91.9	163.4	136.5	295.9	290.8	287.7	263.2	187.6	167.2	99.3	49.3	10.4	2107.6
7/9/80	9.6	57.9	131.9	181.8	205.3	241.3	209.1	236.7	244.2	269.9	190.6	124.2	53.9	10.6	2167.0
7/10/80	11.8	65.9	132.0	186.9	204.8	248.7	190.9	256.2	271.6	241.0	169.6	116.3	51.3	10.0	2157.0
7/11/80	15.1	67.3	103.8	122.7	131.7	223.0	213.7	251.0	210.1	186.7	131.5	88.6	34.1	6.7	1786.0
7/12/80		5.0	16.9	24.7	144.4	203.3	255.5	223.6	213.5	134.8	121.3	66.2	20.5		1429.7
7/13/80	5.4	10.0	59.9	126.4	196.2	281.9	223.1	279.3	275.4	194.1	133.5	84.7	44.1	8.1	1922.1
7/14/80		61.6	116.2	153.1	170.6	164.9	170.3	162.7	173.7	132.1	99.9	51.2	15.5		1471.8
7/15/80	11.5	54.2	106.8	147.2	189.8	270.0	238.6	218.8	238.1	188.0	97.8	90.6	50.8	10.8	1913.0
7/16/80	12.2	66.9	133.5	199.8	187.0	290.0	256.2	337.1	254.4	243.4	169.9	85.2	39.1	11.7	2286.4
7/17/80	15.0	75.3	134.3	203.3	243.4	225.7	310.8	278.3	274.9	242.3	169.9	105.2	36.9	6.9	2322.2
7/18/80	8.9	28.3	31.8	23.9	86.3	254.4	240.0	313.4	278.8	246.1	126.2	39.5	71.2	16.5	1765.3
7/19/80		55.7	140.6	230.1	249.6	317.3	245.1	238.6	259.7	257.0	176.7	96.0	57.7		2324.1
7/20/80		26.4	120.8	165.1	115.2	150.6	310.1	305.1	218.9	152.5	151.2	117.2	51.1		1884.2
7/21/80		61.8	118.5	194.4	220.1	282.9	292.8	268.8	277.4	230.9	186.7	114.1	56.2		2304.6
7/22/80		14.5	102.8	153.6	226.4	194.2	192.9	307.8	240.2	194.6	150.6	108.1	45.4		1931.1
7/23/80		36.3	84.9	172.9	125.8	242.9	156.9	108.4	230.0	213.4	195.2	130.7	51.5		1748.9
7/24/80		16.4	16.5	52.1	58.4	18.0	11.1	17.7	53.6	25.7	17.2	14.0	24.8		325.5
7/25/80		4.2	9.1	11.1	10.2	8.2	15.6	20.1	16.4	49.3	14.5	23.5	16.6		198.8
7/26/80		4.9	30.7	67.1	66.6	136.1	206.7	186.8	89.9	99.3	86.2	32.0	11.3		1017.6
7/27/80		17.0	57.3	121.5	137.2	25.4	208.4	234.4	171.3	125.2	61.4	11.1	4.2		1174.4
7/28/80		15.5	65.8	111.2	180.3	208.9	270.0	328.8	273.5	213.7	132.0	50.2	13.8		1863.7
7/29/80	1.2	25.2	154.4	215.3	118.9	177.9	73.3	106.7	114.8	173.9	140.6	102.6	33.1	1.7	1439.6
7/30/80	10.6	65.5	94.9	142.8	196.8	219.3	191.8	284.3	247.9	201.7	137.4	77.0	29.2	7.0	1906.2
7/31/80	4.0	70.0	160.5	189.0	270.6	210.2	276.5	220.9	261.2	173.0	152.2	88.1	39.4	2.1	2117.7
Average	6.5	44.0	100.0	151.1	173.3	220.1	225.4	243.3	223.6	194.6	139.0	85.8	39.7	5.2	1851.8

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.8

August 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
8/1/80	7.0	54.2	56.6	60.9	186.1	282.3	300.3	244.3	196.5	180.0	154.9	78.3	32.5	1.5	1835.4
8/2/80		60.8	121.2	138.8	68.1	99.3	181.1	305.8	277.5	241.8	185.6	115.9	57.3		1853.2
8/3/80		61.3	110.7	108.6	78.5	197.6	310.4	272.6	263.6	231.8	191.7	121.9	51.9		2000.6
8/4/80		29.9	87.6	147.6	233.1	254.3	226.2	280.3	271.8	259.2	183.4	126.6	64.2		2164.2
8/5/80		53.4	94.6	186.5	196.0	291.9	271.7	305.4	234.1	244.3	173.1	105.5	45.0		2201.5
8/6/80		30.5	110.6	186.1	203.1	231.7	279.4	265.9	261.2	206.2	205.3	125.1	59.4		2164.5
8/7/80		48.2	113.1	198.6	182.8	302.1	276.5	322.8	250.1	228.2	157.3	105.7	35.0		2220.4
8/8/80		57.3	82.3	198.9	223.1	299.7	294.0	321.8	279.0	231.3	149.8	105.1	40.1		2282.4
8/9/80		21.7	118.6	125.0	243.5	242.2	296.4	303.0	278.3	203.9	185.7	103.9	38.6		2160.8
8/10/80		53.5	49.3	67.7	148.3	262.8	193.2	283.1	272.5	205.9	183.5	98.1	39.5		1857.4
8/11/80		48.6	121.1	177.4	216.7	292.5	283.2	299.3	275.2	248.8	180.7	110.5	61.6		2315.6
8/12/80		48.3	115.3	173.3	241.9	230.3	275.2	274.3	167.4	94.2	52.7	28.5	28.2		1729.6
8/13/80		42.0	106.3	147.8	178.6	115.5	192.7	61.8	27.7	26.3	36.1	38.4	23.7		996.9
8/14/80		20.8	65.5	63.5	173.0	227.4	240.1	284.6	114.5	33.5	16.0	27.8	15.9		1282.6
8/15/80		52.1	112.7	154.7	182.1	230.2	293.2	279.8	280.8	102.1	167.6	96.3	52.1		2003.7
8/16/80		35.8	96.1	159.2	198.0	251.7	289.8	304.3	213.1	252.4	183.9	121.0	34.6		2139.9
8/17/80		42.0	106.6	174.2	214.3	274.5	233.1	245.0	218.5	199.6	139.1	88.9	26.6		1962.4
8/18/80		28.6	70.0	131.0	197.9	232.6	239.9	71.6	31.6	16.0	11.5	11.2	9.6		1051.5
8/19/80		25.3	97.7	170.1	197.9	254.8	243.0	247.7	180.1	147.0	146.2	75.8	31.4		1817.0
8/20/80		43.3	109.9	174.9	221.3	271.4	262.3	207.0	200.6	219.6	172.6	107.4	36.0		2026.3
8/21/80		30.6	92.5	158.6	201.4	251.9	237.4	257.5	187.0	150.0	19.2	30.3	19.1		1635.5
8/22/80		28.9	83.2	148.6	197.9	257.4	257.3	288.7	242.2	220.9	162.7	81.4	21.4		1990.6
8/23/80			17.6	19.3	89.6	158.7	278.0	277.7	198.1	76.0	34.4	4.0			1153.4
8/24/80		38.9	102.5	165.9	182.4	226.1	253.2	280.2	197.8	175.1	125.1	100.2	34.6		1882.0
8/25/80		36.8	101.3	168.8	212.9	276.7	213.4	175.5	126.9	125.5	60.5	82.3	25.6		1606.2
8/26/80		30.0	43.6	111.9	176.8	135.4	247.9	249.2	225.3	163.1	213.3	114.0	25.7		1736.2
8/27/80		39.1	100.2	150.7	203.7	188.0	262.4	319.7	187.2	52.5	56.3	113.0	21.6		1699.4
8/28/80		33.5	92.2	201.4	235.0	277.0	264.4	307.2	264.7	227.8	97.5	83.4	43.6		2127.7
8/29/80		16.5	64.1	130.5	155.8	258.0	246.3	249.8	224.4	201.9	155.5	97.6	67.4		1867.8
8/30/80															
8/31/80															
Average	0.2	38.3	85.3	135.5	175.6	221.7	240.1	244.7	198.3	160.2	122.6	80.6	33.6		1734.3

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.9 October 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
10/1/80			41.7	58.1	74.9	252.8	250.7	206.0	116.5	136.9	60.2	23.7			1221.5
10/2/80			43.8	120.3	124.1	100.1	95.0	170.1	250.4	165.9	62.3	22.2			1154.2
10/3/80			22.1	66.6	85.3	118.1	171.8	160.3	219.5	191.2	60.5	8.9			1104.3
10/4/80			63.2	137.8	212.9	208.9	288.0	266.6	267.3	200.8	160.1	76.8			1882.4
10/5/80			60.2	130.4	201.4	197.6	272.5	252.2	252.9	190.0	151.5	72.7			1781.4
10/6/80			58.8	127.1	195.9	226.5	269.2	244.6	247.3	192.0	147.1	65.1			1773.6
10/7/80			17.8	37.7	64.4	80.3	69.1	74.3	61.7	56.2	52.0	28.5			1734.2
10/8/80			61.0	120.5	200.2	225.7	270.4	253.1	249.9	188.2	149.0	66.2			1755.2
10/9/80			67.1	138.1	199.6	221.3	265.1	250.4	241.5	186.0	138.5	65.1			1682.1
10/10/80			64.7	133.3	191.5	222.0	261.8	239.3	232.1	175.4	126.0	[illegible]			1738.5
10/11/80			53.4	107.7	168.9	193.0	251.1	220.9	234.3	182.0	132.7	55.[illegible]			1463.9
10/12/80			61.6	128.6	200.2	225.4	258.7	254.1	221.4	163.2	109.6	59.3			1312.2
10/13/80			54.2	120.9	187.6	223.1	262.1	251.9	248.6	189.0	137.7	63.4			1271.4
10/14/80			56.0	103.3	165.4	192.0	268.8	247.7	237.8	181.4	139.3	56.7			1067.3
10/15/80			42.6	80.3	111.6	173.0	206.8	244.0	235.1	177.8	135.6	57.1			542.4
10/16/80			43.5	106.6	167.4	199.7	172.2	152.6	181.3	164.9	120.2	50.3			315.8
10/17/80			49.5	85.3	141.8	172.2	153.6	174.4	176.4	176.8	129.4	52.8			1616.3
10/18/80			37.1	89.1	102.7	122.1	175.6	186.8	195.7	170.4	129.4	62.5			234.9
10/19/80			56.2	80.2	86.6	190.7	241.7	229.2	220.2	133.6	56.9	34.3			595.6
10/20/80			33.9	89.4	111.5	186.9	206.4	187.9	110.6	71.7	50.7	18.3			1070.3
10/21/80			8.1	30.5	80.2	102.9	159.8	153.2	164.1	104.0	84.1	47.6			934.5
10/22/80			25.4	33.3	61.2	72.4	69.3	100.1	81.5	53.8	35.4	10.0			542.4
10/23/80			9.7	70.3	60.1	39.6	33.1	7.5	9.1	10.2	9.8	4.2			253.6
10/24/80			10.8	23.2	45.2	77.5	44.8	40.8	33.1	22.4	11.8	6.2			315.8
10/25/80			43.5	113.2	176.5	227.0	239.0	266.9	228.4	193.1	87.9	15.9			1591.4
10/26/80			52.2	123.1	159.0	211.6	231.0	261.2	213.6	190.2	120.0	54.4			1616.3
10/27/80			37.1	108.5	154.4	192.5	175.0	208.0	194.2	179.7	105.3	60.5			1415.2
10/28/80				11.1	44.7	22.3	28.9	31.4	44.8	35.4	16.3				234.9
10/29/80			6.1	27.0	65.6	182.1	201.6	222.7	193.0	190.6	91.3	20.9			1200.9
10/30/80			11.7	20.9	19.1	7.8	44.4	132.4	71.9	132.9	113.8	40.7			595.6
10/31/80			4.9	16.0	74.8	66.5	43.3	72.5	48.6	49.8	21.6	4.5			402.5
Average			38.6	85.1	126.9	159.1	183.2	185.9	176.9	143.7	95.0	40.7			1110.3

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.10

November 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
11/1/80			27.6	87.2	138.3	208.2	218.2	246.6	208.3	188.5	105.4	17.5			1445.8
11/2/80			23.3	80.6	145.3	198.6	211.9	242.2	214.5	189.7	133.7	68.4			1508.2
11/3/80			14.5	50.9	110.0	177.1	167.6	100.7	121.4	162.2	89.8	35.5			1029.7
11/4/80			19.4	69.3	76.9	93.9	86.2	83.1	116.6	142.8	76.2	15.2			779.6
11/5/80			24.8	85.4	148.0	203.2	217.3	240.7	208.6	189.3	125.9	36.7			1479.9
11/6/80			37.0	101.7	158.5	211.8	210.4	237.4	201.5	178.9	118.0	48.9			1504.1
11/7/80			45.5	106.9	163.4	210.0	216.4	241.9	191.1	166.3	95.2	37.3			1474.0
11/8/80			27.6	91.0	135.9	170.4	210.8	217.4	185.8	150.6	90.3	44.6			1324.4
11/9/80				26.3	95.7	119.7	141.0	169.4	75.1	30.7	17.3				675.2
11/10/80			18.4	52.9	87.2	186.2	149.8	97.5	101.6	81.9	43.6	14.5			833.6
11/11/80			15.1	38.1	70.3	102.8	101.2	92.6	109.4	72.2	59.6	20.1			681.4
11/12/80			28.0	97.2	154.9	183.7	213.1	204.0	196.6	144.7	87.0	17.6			1326.8
11/13/80			23.3	62.1	93.9	121.8	132.3	161.5	161.3	112.5	80.5	38.0			987.2
11/14/80			11.9	38.8	74.5	126.7	132.8	171.1	189.7	101.1	70.9	31.3			948.8
11/15/80			11.7	49.6	79.7	105.4	70.6	54.9	81.0	54.5	45.6	23.9			576.9
11/16/80			12.1	39.6	111.6	121.5	145.9	99.9	70.6	63.2	49.4	14.8			728.6
11/17/80			7.8	17.6	19.5	28.0	25.0	24.5	45.1	28.9	15.5	2.8			214.7
11/18/80		0.4	18.6	51.7	116.3	97.1	137.1	185.1	182.7	140.2	86.3	29.4	0.4		1045.3
11/19/80		0.1	12.4	73.9	149.0	182.4	173.4	173.4	100.3	60.4	32.2	11.6	0.1		969.2
11/20/80			6.2	24.8	49.5	59.2	63.2	52.8	44.0	41.4	14.0	7.9			363.0
11/21/80		0.3	31.5	87.6	143.7	177.8	205.3	193.8	176.6	144.8	85.3	25.2	0.1		1272.0
11/22/80		0.1	33.1	100.1	120.9	169.6	198.5	204.9	196.9	97.6	64.6	24.5	0.2		1211.1
11/23/80			11.6	43.0	90.6	140.4	208.3	146.2	111.3	71.3	51.6	11.9			886.3
11/24/80			8.0	9.8	21.3	26.7	27.5	29.4	31.0	17.7	11.3	4.0			186.8
11/25/80		0.1	10.4	40.7	89.9	78.4	174.6	203.1	176.5	129.4	69.1	18.5	0.3		991.1
11/26/80			12.2	33.3	55.7	92.4	189.6	120.5	87.8	80.0	50.1	15.1			736.6
11/27/80			10.4	14.0	58.3	67.9	94.2	47.9	66.2	40.6	23.4	7.8			430.6
11/28/80			5.3	29.3	83.7	77.1	109.8	63.2	156.3	144.0	75.9	5.2			749.9
11/29/80			20.0	93.2	159.5	194.7	210.2	202.0	171.7	125.2	63.5	11.0			1251.0
11/30/80			15.0	91.3	143.2	182.7	205.1	206.0	173.8	138.2	73.8	21.2			1250.3
Average		0.0	18.1	59.6	104.8	137.2	154.9	150.5	138.4	109.6	66.8	22.0	0.0		962.1

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.11 December 1980

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
12/01/80			25.9	92.5	128.4	174.7	200.9	194.1	133.2	134.8	114.3	73.1			1271.9
12/02/80			20.5	66.5	127.8	156.2	201.7	168.3	151.1	119.2	65.3	16.6			1093.3
12/03/80		0.1	29.8	72.2	126.8	160.7	197.1	200.4	176.0	136.7	82.5	25.2	0.1		1207.6
12/04/80		0.0	22.5	79.7	127.5	155.0	191.5	199.1	146.7	108.5	68.6	22.2	0.1		1121.5
12/05/80			20.7	81.8	120.3	171.4	194.3	131.6	172.4	142.0	45.3	14.9			1094.5
12/06/80			8.2	55.0	128.4	166.5	190.9	152.6	176.2	132.4	79.1	22.6			1111.9
12/07/80			22.5	71.0	134.9	172.6	192.5	186.8	163.0	134.7	80.6	23.4			1182.1
12/08/80			19.7	74.3	124.9	167.9	187.3	187.5	131.2	133.4	80.7	20.8			1127.8
12/09/80			16.7	51.7	117.3	155.0	184.3	189.7	150.3	119.5	60.6	20.3			1065.4
12/10/80			14.4	31.0	126.2	122.1	107.2	94.0	93.5	65.8	34.9	9.9			699.0
12/11/80			10.9	35.6	112.2	127.4	135.9	124.9	110.6	136.6	76.2	21.3			891.7
12/12/80			22.9	78.0	131.7	171.4	189.8	191.0	172.7	133.8	75.7	21.1			1188.0
12/13/80			19.4	71.6	129.4	169.2	190.8	186.1	179.8	136.6	82.2	22.2			1187.3
12/14/80			23.0	78.4	131.8	172.0	190.4	189.9	168.8	129.0	72.4	18.3			1174.0
12/15/80			10.3	63.0	117.3	168.6	175.5	192.2	160.6	125.9	72.3	18.0			1103.8
12/16/80			21.1	30.0	36.3	35.0	15.1	21.9	70.6	109.8	63.9	12.5			416.4
12/17/80			0.9	12.4	28.0	77.1	116.0	118.9	106.1	113.5	69.5	10.6			653.0
12/18/80			20.4	62.9	127.1	166.5	186.7	188.0	166.2	131.1	76.9	20.7			1146.4
12/19/80			16.6	67.0	127.5	156.8	182.5	186.1	168.2	124.9	72.2	18.6			1120.5
12/20/80			18.8	68.5	126.6	163.3	182.1	176.4	150.3	113.5	68.3	10.6			1078.4
12/21/80			6.6	17.6	35.9	57.2	74.7	74.5	54.9	52.6	25.1	6.3			405.3
12/22/80			4.3	24.5	30.7	51.4	88.8	66.7	53.5	41.0	20.2	7.3			388.4
12/23/80			7.6	17.7	48.5	52.9	59.3	87.1	141.3	115.9	61.4	10.6			602.1
12/24/80			9.4	38.4	99.9	165.2	154.0	171.9	95.6	63.1	24.1	9.8			831.4
12/25/80			7.3	51.0	135.9	175.1	192.6	189.7	167.1	114.5	52.7	15.2			1101.1
12/26/80			9.2	42.9	111.4	167.8	159.8	165.4	141.5	76.0	30.3	8.3			912.6
12/27/80			17.3	69.2	42.0	84.8	78.3	115.8	112.2	101.5	78.6	19.5			719.2
12/28/80			3.0	19.9	28.3	36.0	34.8	35.9	35.4	22.7	9.3	2.8			228.1
12/29/80			2.2	11.4	26.4	27.4	34.0	33.1	31.5	13.4	9.9	1.4			190.7
12/30/80			3.6	41.0	97.6	171.0	161.3	155.8	181.5	139.6	99.9	44.7			1096.0
12/31/80			28.1	88.6	130.3	174.6	197.3	194.0	174.2	131.8	78.0	20.7			1217.6
Average		0.0	15.0	53.7	100.6	134.6	149.9	147.4	133.4	108.2	62.3	24.6	0.0		923.5

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.12 — January 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
1/1/81			14.4	73.3	134.9	169.7	193.0	195.1	176.4	134.3	75.9	21.5			1188.5
1/2/81			21.5	79.3	139.3	177.6	200.4	203.8	181.3	140.6	84.6	24.7			1253.1
1/3/81			27.4	83.6	143.0	176.8	198.2	202.2	177.5	137.4	82.0	22.1			1250.2
1/4/81			14.4	62.5	118.9	164.1	191.6	188.7	168.3	129.2	76.3	21.3			1135.3
1/5/81			23.0	76.0	134.9	161.1	176.5	164.3	151.2	102.8	69.6	17.2			1076.6
1/6/81			15.2	49.5	84.3	114.8	192.4	169.5	139.3	94.2	46.3	10.6			916.1
1/7/81			2.9	40.6	75.6	68.0	87.7	79.6	35.4	99.0	55.5	5.2			549.5
1/8/81		0.1	30.1	66.7	145.5	180.2	204.5	202.9	183.9	146.0	85.8	23.8	0.1		1269.6
1/9/81			11.4	79.4	135.7	174.4	138.8	88.6	150.6	104.4	46.8	21.6			951.7
1/10/81		0.1	25.0	81.8	140.6	183.6	204.7	206.1	182.5	141.3	79.9	21.5	0.1		1267.2
1/11/81		0.1	24.3	80.5	137.2	178.6	201.9	203.4	180.9	144.9	87.0	25.9	0.1		1264.8
1/12/81		0.2	28.9	87.9	144.5	187.5	207.3	212.7	185.2	138.7	77.4	22.0	0.1		1292.4
1/13/81		0.1	28.7	88.5	146.7	184.8	203.8	208.3	188.0	139.6	88.7	27.4	0.1		1304.7
1/14/81		0.1	32.4	58.5	89.6	153.7	167.6	127.4	62.1	74.3	61.9	15.1	0.2		842.9
1/15/81			7.2	60.7	128.5	176.0	165.2	195.1	168.6	136.7	74.7	19.3			1132.0
1/16/81		0.3	17.2	56.4	96.6	166.3	183.3	157.6	118.9	106.0	63.9	25.9	0.5		992.9
1/17/81		0.3	31.9	92.4	154.6	192.9	216.2	216.7	190.2	147.6	88.3	27.1	0.3		1358.5
1/18/81		0.2	32.2	92.5	150.8	191.0	218.2	218.2	196.6	158.7	97.5	32.0	0.2		1388.1
1/19/81		0.2	26.1	85.5	148.7	184.5	207.4	205.6	188.9	145.5	98.5	33.9	0.1		1324.9
1/20/81			12.8	42.0	88.1	86.3	53.8	68.9	39.6	20.5	4.1	2.0			418.1
1/21/81		0.3	29.1	82.6	140.6	176.3	211.8	201.8	203.1	147.8	93.9	31.8	0.5		1319.6
1/22/81		0.4	18.1	48.5	90.7	147.5	193.0	191.6	165.8	131.2	70.5	32.4	0.9		1090.6
1/23/81		0.1	27.8	79.0	141.7	183.5	174.6	189.3	142.8	74.5	48.9	14.8	0.1		1077.1
1/24/81		0.3	28.7	89.7	144.2	185.8	210.9	214.1	197.9	152.8	93.6	30.6	0.4		1349.0
1/25/81		0.5	37.3	92.4	150.2	192.7	214.4	216.4	193.0	149.6	91.0	29.6	0.4		1367.5
1/26/81		1.0	40.4	93.4	155.7	189.8	210.0	202.6	181.9	141.4	93.1	30.3	1.0		1340.6
1/27/81		0.5	15.6	55.4	114.7	120.0	195.4	206.1	177.6	92.4	65.9	11.9	0.4		1055.9
1/28/81			14.2	70.1	138.8	168.4	135.3	113.5	130.2	74.5	23.9	14.5			883.4
1/29/81		0.4	31.1	95.1	156.8	190.9	221.7	227.4	205.7	161.8	102.4	37.4	0.9		1431.6
1/30/81		0.5	32.9	97.6	158.2	189.5	222.2	214.1	181.7	143.7	94.2	34.7	1.3		1370.6
1/31/81		0.7[1]	20.4[1]	44.9[1]	94.5[1]	135.7[1]	181.8	209.4	220.9	189.3	132.3	53.9	11.2		1295.0
Average		0.2	23.3	73.8	129.8	166.2	186.6	183.9	163.4	125.8	75.9	23.9	1.3		1153.5

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.13 February 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
2/1/81		2.1	31.8	50.2	108.1	129.8	183.6	201.9	191.2	145.8	85.2	24.5	0.6		1154.8
2/2/81			9.9	48.6	178.5	224.7	237.2	214.8	180.1	82.5	66.7	11.4			1254.4
2/3/81		1.7	41.9	112.2	171.7	214.7	233.3	239.4	218.7	173.2	111.9	48.8	1.9		1569.2
2/4/81			23.6	94.9	138.1	118.5	98.1[1]	140.8[1]	147.4[1]	108.1	36.9	10.3			916.7
2/5/81		0.2	26.1	89.7	151.2	196.8	222.7	224.7	194.3	144.9	88.4	26.8	0.1		1365.9
2/6/81		1.4	31.3	38.9	10.8	30.8	79.5	49.1	33.7	16.7	12.8	7.9	0.5		313.4
2/7/81		0.6	22.6	66.0	66.0	108.0	131.3	168.3	127.0	72.6	54.9	21.2	0.5		839.0
2/8/81			4.2	14.5	30.9	31.9	35.3	62.9	33.1	97.6	63.2	11.4			385.0
2/9/81		3.2	50.7	119.5	170.6	219.9	240.0	239.2	214.6	168.7	86.3	38.0	2.1		1552.6
2/10/81		1.4	34.9	98.7	151.6	159.2	156.6	151.8	91.1	74.7	38.9	10.6	0.9		970.5
2/11/81			2.4	4.5	23.3	24.0	73.8	136.4	196.2	158.8	85.0	18.0			722.2
2/12/81		4.4	56.6	107.5	137.1	215.8	250.1	246.1	225.1	137.4	92.3	40.6	1.5		1514.4
2/13/81		0.1	8.1	18.4	29.4	48.8	53.4	62.0	53.8	54.0	21.7	8.1	0.1		357.9
2/14/81		1.1	13.1	31.8	52.3	56.7	134.7	126.1	63.1	39.1	21.2	10.2	0.7		550.2
2/15/81		0.8	26.1	54.6	113.3	108.9	91.7	171.8	167.7	65.7	37.4	11.3	0.9		850.2
2/16/81		2.3	33.9	59.8	133.7	130.1	112.6	158.2	123.1	107.3	61.8	27.6	2.1		952.5
2/17/81		2.5	33.0	99.6	164.9	145.3	134.8	63.2	25.4	45.3	47.9	26.2	4.8		792.9
2/18/81															
2/19/81		8.5[1]	50.8[1]	109.4	181.1	223.1	234.2	216.5	149.8	153.6	113.0	45.1	3.2		1488.3
2/20/81		4.7	46.8	122.2	182.3	217.5	233.0	239.6	221.4	180.3	116.5	49.7	4.4		1618.4
2/21/81		6.8	62.7	133.5	195.6	241.4	262.0	262.9	235.8	191.3	128.7	55.3	4.6		1780.6
2/22/81		5.1	57.0	121.4	181.4	218.2	241.8	242.3	224.4	179.1	120.1	51.3	6.3		1648.4
2/23/81															
2/24/81		8.4[1]	63.4[1]	130.5	192.6	236.7	261.5	260.9	242.1	193.5	127.3	56.7	6.6		1780.2
2/25/81		7.8	66.8	136.2	196.2	242.4	266.9	265.1	244.3	197.1	118.9	63.7	4.3		1809.7
2/26/81		2.2	22.7	80.7	159.8	191.8	221.6	257.9	230.4	185.1	120.1	51.6	5.2		1529.1
2/27/81		8.1	58.7	123.2	182.5	223.1	237.3	242.4	214.4	167.7	101.6	42.4	5.7		1607.1
2/28/81		8.4	67.9	130.7	185.8	229.0	255.3	247.0	202.5	150.6	94.6	32.2	6.1		1610.1
Average		3.1	36.4	84.5	134.2	161.0	180.2	188.1	163.8	126.6	79.0	30.8	2.4		1189.8

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.14 March 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
3/01/81		7.1	49.9	121.6	163.1	161.5	145.8	153.4	157.2	113.1	70.5	43.3	8.2		1194.7
3/02/81		10.7	53.7	77.5	97.7	89.3	102.3	186.2	133.2	108.3	97.4	42.4	5.5		1004.2
3/03/81		9.9	69.8	141.5	180.0	249.6	248.2	131.4	192.7	140.6	120.1	43.7	11.2		1539.7
3/04/81		5.1	36.0	101.5	158.3	201.4	223.7	232.7	224.0	168.4	129.4	60.4	5.3		1546.2
3/05/81		7.5	86.6	153.9	197.7	246.8	271.2	267.0	248.1[1]	196.0[1]	132.5	60.8	7.8		1875.9
3/06/81		13.0	77.8	147.2	210.1	258.9	281.7	276.7	254.4	202.9	144.9	71.2	10.7		1949.5
3/07/81		8.3	14.7	37.4	43.9	92.1	182.3	159.4	107.1	60.5	34.1	16.2	4.2		760.2
3/08/81		6.0	53.9	140.1	207.8	217.8	259.8	274.9	166.4	122.8	103.2	51.0	8.0		1611.7
3/09/81		12.4	54.4	125.8	197.7	243.7	273.5	268.7	249.9	200.4	137.4	67.9	11.5		1843.3
3/10/81		8.2	68.6	138.9	205.8	251.2	279.1	278.3	251.6	179.0	119.5	72.0	16.0		1868.2
3/11/81		9.1	53.5	113.9	192.2	162.1	228.8	242.9	179.6	117.6	95.6	35.2	8.7		1439.2
3/12/81		14.8	80.1	152.0	194.5	250.6	282.7	285.7	256.6	209.0	140.8	60.5	14.9		1942.2
3/13/81		9.0	23.6	57.6	60.8	97.1	88.0	69.9	126.3	157.4	81.7	36.1	13.5		821.0
3/14/81		10.8	71.1	139.9	193.0	240.1	262.5	274.5	257.9	210.7	160.3	86.5	20.4		1927.7
3/15/81		19.1	73.9	145.6	221.5	264.6	281.4	268.3	245.1	209.0	141.3	46.9	9.5		1926.2
3/16/81		11.0	49.2	133.7	214.5	246.6	283.9	283.3	257.3	206.6	139.5	62.7	12.5		1900.8
3/17/81		22.7	73.2	147.5	222.7	266.9	278.5	271.9	262.8	207.1	117.0	53.4	11.6		1935.3
3/18/81		2.7	18.0	107.7	173.0	164.0	184.5	182.7	132.3	134.2	79.6	27.5	5.9		1212.1
3/19/81		18.3	26.4	8.8	92.7	252.8	284.3	289.2	263.5	212.2	151.5	80.6	16.4		1696.7
3/20/81		15.2[1]	100.4[1]	181.5[1]	241.2	283.4	294.1	290.1	257.1	210.4	144.7	69.9	10.0		2098.0
3/21/81		21.5	79.4	159.4	218.1	266.6	291.1	287.6	265.3	224.4	156.9	62.4	27.4		2060.1
3/22/81		7.2	6.7	3.8	13.3	19.4	12.9	28.9	40.1	99.0	59.3	32.5	9.1		332.2
3/23/81		5.0	11.3	23.8	30.4	104.0	63.7	186.0	123.4	33.2	37.0	27.6	2.2		647.8
3/24/81		22.6	92.9	159.9	187.8	224.2	234.5	150.4	129.5	157.7	102.4	71.3	17.4		1550.6
3/25/81															
3/26/81		19.0	78.7	149.0	203.8	253.6	286.7	231.2	271.4	222.1	144.2	66.9	17.2		1925.8
3/27/81		23.4	88.5	158.8	218.7	278.7	254.3	217.6	244.8	90.5	84.8	86.4	21.1		1768.6
3/28/81		20.6	81.6	153.9	203.8	267.5	255.1	250.3	221.3	140.5	63.6	74.0	16.4		1748.6
3/29/81		13.6	35.5	122.0	177.0	197.0	169.1	154.4	130.3	143.0	109.1	47.7	11.2		1309.9
3/30/81		4.2	29.2	55.1	69.5	131.1	145.8	10.5	0.5	18.2	31.3	14.5	6.6		516.5
3/31/81		4.9	28.5	69.3	121.3	95.8	157.2	210.4	154.7	156.4	130.2	62.6	7.2		1198.5
Average		12.1	55.8	114.3	163.7	202.6	219.6	213.8	193.5	155.0	108.7	54.5	11.6		1505.0

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.15 April 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
04/01/81		18.0	57.8	125.6	202.1	269.9	273.7	294.6	241.2	124.7	48.8	54.7	3.7		1714.8
04/02/81		24.7	111.4	192.5	256.8	295.0	308.5	306.4	274.8	219.4	156.8	86.5	20.1		2252.9
04/03/81	0.6	38.0	110.9	181.8	241.6	284.2	304.0	305.3	271.8	221.6	168.7	89.3	22.8	0.5	2241.1
04/04/81		28.1	97.4	179.0	263.9	258.9	273.1	302.2	171.4	175.1	139.4	82.7	18.5		1989.7
04/05/81															
04/06/81		37.7	114.7	118.3	257.9	300.7	322.9	320.8	288.9	234.5	167.0	94.3	24.6		2282.3
04/07/81	0.2	31.0	100.6	174.0	242.0	250.0	317.0	309.4	196.0	160.3	89.1	42.6	10.6	0.1	1922.9
04/08/81	0.2	15.5	72.5	177.0	189.0	183.8	193.6	158.7	173.4	121.2	96.6	54.4	13.4	0.1	1449.4
04/09/81		19.8	79.7	141.6	235.8	253.1	253.3	265.0	190.9	163.1	85.1	44.0	18.7		1750.1
04/10/81	1.3	34.2	104.9	173.7	238.6	217.0	220.9	171.3	191.8	160.8	85.7	80.2	26.8	1.0	1708.2
04/11/81		11.8	80.7	148.4	198.4	220.2	260.0	304.6	268.8	218.1	152.8	83.9	18.6		1966.3
04/12/81		11.9	55.4	148.6	211.0	251.7	285.9	305.5	265.2	232.4	163.5	93.1	19.4		2043.6
04/13/81															
04/14/81	1.4	38.8	104.3	172.3[1]	247.8	261.8	259.0[1]	262.0	277.7	236.5[1]	149.8	81.9	31.8	0.9	2126.0
04/15/81	0.3	22.6	75.9	145.4	218.7[1]	264.8	262.8[1]	261.4	255.1	213.2	163.2[1]	87.9	69.3	6.7	2047.1
04/16/81	1.0	19.0	74.8	104.1	81.3	83.7	152.5	114.1	123.5	230.4	159.4	86.2	29.0	1.0	1260.0
04/17/81															
04/18/81															
04/19/81															
04/20/81	1.7	40.2	90.9	137.4[1]	247.6	194.4	197.2[1]	219.5	177.1[1]	163.1	155.3	105.7	37.1	2.1	1769.3
04/21/81	1.5	28.7[1]	71.5	154.3	145.5[1]	140.8	188.3[1]	167.3	125.7	192.7[1]	114.5	63.0	27.7	2.2	1423.8
04/22/81															
04/23/81	1.3	23.8	52.2	107.5	166.4[1]	222.6	258.7[1]	200.5	169.4	221.4[1]	123.7	76.1	28.6	2.6	1654.9
04/24/81	2.0	28.8	70.2	61.2	68.3	170.5	192.3[1]	246.8	195.3[1]	173.0	134.4	86.9[1]	32.4	1.3	1463.4
04/25/81	2.3	30.0	59.8	79.3	138.2[1]	218.2[1]	174.8[1]	200.5[1]	261.7[1]	178.6	112.5	80.1	44.3	2.8	1583.2
04/26/81	1.1	13.3	61.9	139.5	153.9	215.2	218.7	210.4	194.7	187.4	125.3	79.8	58.0	1.0	1660.1
04/27/81	1.0	43.7	107.0	184.9	166.1	212.8	307.8	249.9	262.2	232.0	149.3	83.6	52.8	5.1	2058.2
04/28/81															
04/29/81	3.4[1]	39.9[1]	111.6[1]	176.2[1]	229.2[1]	268.8	295.0	185.7	190.7	186.2	145.4	114.5	30.1	2.1	1979.0
04/30/81	0.5[1]	18.3[1]	51.9[1]	101.1[1]	166.3	210.8	277.8	277.1	103.2	166.7	144.1	99.1	42.1	2.2	1661.2
Average	0.9	26.9	83.4	144.5	198.5	228.2	252.1	245.2	211.8	191.8	131.8	80.5	29.58	1.4	1826.4

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.16 — May 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
05/01/81															
05/02/81															
05/03/81															
05/04/81	6.6	49.0	123.1	187.6	244.3	289.5[1]	316.6[1]	317.8[1]	305.4	248.5	199.4	120.1	40.2	4.3	2452.5
05/05/81	7.4	36.0	112.4	191.0	167.2	176.0[1]	162.5[1]	217.1	241.8[1]	246.8	180.1	105.5	47.6	4.4	1895.9
05/06/81															
05/07/81															
05/08/81	0.9	7.8	24.0	45.7	86.4	148.1	175.3	254.0	259.8	227.1	96.0	48.2	12.7	0.6	1386.7
05/09/81	6.3	40.8	115.3	165.1	142.2	76.2	227.5	298.6	149.2	124.0	103.3	64.3	35.2	4.7	1552.7
05/10/81	6.2	48.2	115.6	167.1	231.0	265.5	242.7	266.3	158.6	211.8	156.0	106.7	44.4	5.7	2025.8
05/11/81	3.4	57.7	136.9	196.7	229.4	294.7	297.0	323.9	290.7	239.8	180.1	110.3	40.0	2.2	2403.0
05/12/81	8.5	57.5	137.9	206.1	266.3	302.7	312.5	319.4	297.4	249.5	192.5	126.0	52.3	6.4	2535.0
05/13/81	9.9	59.6	135.3	199.8	265.5	300.8	323.5	319.5	287.6	239.3	185.2	117.7	49.0	4.9	2497.6
05/14/81	6.7	58.6	125.7	190.4	247.7	249.3	272.0	261.7	228.3	196.8	101.9	102.1	35.3	5.3	2081.8
05/15/81	8.5	56.3	118.2	161.8	182.6	219.8	245.3	270.4	282.9	232.9	165.8	123.9	46.4	7.4	2122.0
05/16/81															
05/17/81	3.7	50.9	121.4	184.3	257.3	291.2	313.3	304.3	277.5	237.7	183.2	115.9	44.6	4.3	2389.6
05/18/81	6.7	46.8	106.5	167.0	224.0	266.6	289.0	266.6	211.3	180.9	168.4	96.6	41.9	6.3	2078.6
05/19/81	5.0	47.6	107.1	126.3	126.5	215.6	191.4	293.0	250.5	188.1	125.9	60.7	18.1	2.4	1758.2
05/20/81	0.8	63.8	143.8	217.9	269.1	219.6	249.9	236.6	221.6	171.7	124.9	77.1	17.3	0.6	2014.7
05/21/81	4.7	61.0	135.8	196.0	237.9	299.4	321.6	304.9	284.9	235.6	169.4	100.6	37.3	2.0	2391.1
05/22/81	10.5	69.2	138.5	204.6	259.5	305.0	322.0	329.1	306.2	259.7	200.8	132.7	62.7	12.1	2608.2
05/23/81	10.2	61.9	134.1	205.3	235.4	281.3	317.4	255.1	291.8	174.3	181.9	76.0	45.3	6.9	2276.7
05/24/81	2.5	50.0	96.2	157.7	213.0	264.4	311.1	220.1	163.7	227.6	188.0	92.9	64.2	11.2	2062.7
05/25/81															
05/26/81		9.3	36.4	120.5	191.2	155.8	174.5	143.8	181.9	116.3	72.9	63.5	25.9		1291.9 -26
05/27/81	4.8	69.3	144.1	205.8	229.5	249.6	239.0	203.7	226.5	167.2	138.2	93.8	43.2	2.8	2017.3 -27
05/28/81	2.6	31.2	72.8	154.2	198.8	246.6	290.3	300.4	288.2	228.3	161.3	108.8	50.6	9.0	2143.2
05/29/81	6.8	49.3	120.4	184.5	242.1	262.1	300.7	263.2	294.6	238.4	188.7	110.2	46.3	7.2	2314.4
05/30/81	10.8	53.6	115.6	183.9	233.7	284.2	309.3	302.0	284.2	205.8	165.1	103.0	44.6	8.2	2304.0
05/31/81	5.9	49.4	114.1	182.3	230.6	276.0	277.7	234.2	207.7	145.6	174.7	99.5	51.9	10.2	2059.9
Average	5.8	49.4	113.8	175.1	217.1	247.3	270.1	271.1	249.7	208.1	158.5	98.2	41.5	5.4	2034.6

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.17 — June 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
06/01/81	8.6	58.7	117.9	191.7	236.8	244.4	212.1	217.5	187.9	109.6	125.5	7.6	30.3	5.0	1753.6
06/02/81	15.0	65.2	127.4	191.2	231.6	260.0	312.0	318.5	278.5	239.1	117.1	29.4	7.6	6.6	2199.0
06/03/81	4.9	49.9	105.0	148.7	221.7	282.9	306.3	317.6	302.5	267.9	216.4	128.9	47.7	6.7	2407.0
06/04/81	4.5	43.7	100.3	141.3	242.4	253.4	317.8	312.8	302.5	260.4	213.7	80.7	47.7	10.1	2331.4
06/05/81	9.0	56.9	102.3	159.6	177.0	221.4	203.2	342.2	228.9	233.5	62.1	23.3	20.7	10.5	1850.7 -5
06/06/81	11.9	43.8	105.6	118.3	192.2	122.2	144.0	233.6	118.2	173.2	145.3	152.1	71.6	15.3	1647.1
06/07/81	13.2	72.9	117.9	168.9	229.3	281.9	211.8	307.5	245.0	212.9	166.1	126.2	53.3	13.7	2220.7
06/08/81	15.1	71.1	107.4	167.5	245.4	248.4	229.2	245.9	265.8	171.4	199.3	124.0	59.2	17.1	2166.7
06/09/81	13.9	58.8	105.1	164.9	149.8	127.6	287.1	320.9	236.7	158.3	195.5	112.5	74.7	15.1	2020.8
06/10/81	7.5	40.6	99.8	153.9	187.0	232.8	238.1	257.2	267.2	256.5	192.2	126.1	59.6	6.0	2124.3 -10
06/11/81	7.6	47.6	110.9	177.4	224.3	244.3	280.4	269.0	32.2	7.0	7.0	15.3	18.2	3.7	1444.8
06/12/81	14.7	67.8	101.2	113.9	126.6	133.0	237.6	228.1	263.2	57.4	4.7	10.2	18.4	10.2	1387.0
06/13/81															
06/14/81	15.7	63.0	119.7	183.7	240.9	279.6	303.1	300.6	284.4	237.9	183.6	118.5	48.9	10.8	2390.5
06/15/81	10.6	54.1	114.7	179.9	232.2	274.0	302.8	277.9	266.2	252.8	119.2	85.0	19.8	2.4	2191.5 -15
06/16/81	12.3	61.1	122.3	183.4	240.3	258.3	285.1	292.9	259.3	242.1	174.6	120.0	55.2	8.9	2315.9
06/17/81	9.7	50.4	114.7	171.9	224.1	264.0	277.2	239.1	259.9	122.8	8.6	2.4	0.2	1.2	1746.0
06/18/81	9.6	32.5	112.0	143.3	172.2	220.9	286.9	281.7	255.8	252.1	85.4	22.3	6.5	2.6	1883.8
06/19/81	0.3	15.4	48.3	116.6	176.5	137.9	227.4	205.3	177.8	236.1	154.8	36.1	22.4	0.5	1555.4
06/20/81	0.1	13.4	41.3	64.0	149.1	217.5	218.4	274.0	294.8	275.5	230.8	158.0	9.8	0.2	1946.9
06/21/81	11.7	60.8	114.7	182.4	208.6	273.8	211.1	101.5	28.2	78.2	147.1	115.1	60.0	15.7	1609.1
06/22/81	11.9	42.9	64.3	181.8	226.4	191.3	210.2	291.8	201.9	145.0	122.3	87.2	67.1	9.9	1854.0
06/23/81	1.6	7.4	40.8	200.3	148.4	157.9	271.2	188.8	69.2	49.1	95.8	71.0	20.9	3.9	1326.5
06/24/81	10.5	39.2	99.4	199.3	235.6	251.9	249.4	230.0	66.5	49.8	64.0	84.7	52.[illegible]	11.9	1644.5
06/25/81	1.3	22.3	79.8	149.3	211.8	261.9	286.1	256.8	249.9	178.6	200.6	118.5	66.0	2.4	2085.1
06/26/81	5.4	39.6	95.7	172.3	223.5	265.4	292.1	300.8	288.1	240.6	139.8	119.6	51.9	6.2	2291.0
06/27/81	13.2	53.9	116.2	154.4	248.2	246.8	275.0	280.1	291.2	151.4	102.3	101.6	34.2	7.7	2076.1
06/28/81	14.8	66.3	130.2	151.1	180.0	269.5	308.6	293.8	230.9	214.0	159.8	98.4	49.3	10.1	2176.9
06/29/81	17.9	71.2	141.6	203.3	247.5	278.7	279.0	324.2	272.5	167.3	140.6	128.3	62.0	11.8	2345.8
06/30/81	15.8	66.4	137.7	197.8	254.1	292.3	320.7	316.8	302.7	262.6	205.9	139.9	59.1	12.5	2584.3
Average	9.9	49.5	103.2	163.2	209.8	234.3	261.5	269.9	214.7	182.9	139.0	87.7	41.2	8.2	1986.7

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.18

July 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
7/1/81	8.7	49.0	79.0	135.9	232.3	249.5	275.1	249.0	211.0	80.8	118.3	93.8	48.8	3.7	1843.9
7/2/81	10.7	40.9	107.1	160.8	107.0	180.2	163.9	187.7	225.4	256.8	177.4	72.1	22.0	12.7	1724.7
7/3/81	9.7	57.7	106.5	127.4	167.1	262.0	310.4	269.6	209.6	123.9	68.1	78.4	25.2	5.3	1820.9
7/4/81	11.3	52.0	129.7	184.4	235.8	254.1	139.1	144.8	133.3	130.6	92.4	48.6	33.5	12.4	1602.0
7/5/81	18.4	50.5	113.7	145.2	199.8	209.2	244.1	155.4	303.8	103.5	146.2	121.0	56.5	13.7	1881.0
7/6/81	22.6	74.8	110.6	178.0	279.0	301.6	308.8	258.1	268.5	167.3	172.2	141.8	37.3	28.8	2527.4
7/7/81	9.7	61.6	118.3	188.1	240.4	282.4	308.8	293.2	181.7	143.6	102.6	1.9	6.1	1.4	1939.8
7/8/81	5.8	61.4	115.7	182.6	250.9	244.5	234.4	272.4	308.1	85.4	3.1	3.3	1.3	0.8	1769.7
7/9/81	10.8	61.5	113.2	173.4	233.1	282.5	291.9	214.5	226.1	126.9	115.9	86.8	56.9	9.6	2003.1
7/10/81	8.9	48.2	103.5	168.2	227.5	265.9	304.3	227.6	212.2	195.7	185.6	125.0	62.5	13.6	2148.7
7/11/81	7.9	47.7	113.6	179.7	237.2	232.7	288.9	243.8	209.6	230.1	182.7	131.6	53.1	9.9	2168.5
7/12/81	0.2	13.4	63.5	138.3	197.6	227.2	287.2	296.7	255.6	230.6	115.0	155.2	12.2	1.0	1993.7
7/13/81	10.3	52.1	111.7	174.5	218.2	267.3	285.9	228.7	190.0	121.0	11.8	21.4	6.1	0.7	1699.7
7/14/81	7.5	47.1	115.5	173.8	232.5	263.6	281.2	277.1	260.8	230.6	85.9	96.5	42.6	7.5	2122.2
7/15/81		49.9	107.5	175.6	248.8	276.6	285.2	274.3	172.3	183.8	160.4	103.9	59.4		2097.7
7/16/81		30.4	81.8	129.8	207.3	216.3	279.2	251.2	94.4	17.2	4.4	4.9	8.1		1325.0
7/17/81		33.7	92.7	157.7	221.4	229.7	178.1	69.8	10.8	4.5	6.5	6.0	4.1		1015.0
7/18/81		36.2	105.1	135.2	175.1	211.1	280.4	91.0	26.8	51.8	24.3	9.2	4.7		1576.1
7/19/81		24.8	65.2	135.5	145.3	103.1	185.6	199.4	293.6	229.7	135.1	45.8	13.0		1576.1
7/20/81		20.7	87.8	150.6	215.4	91.7	155.5	58.7	232.8	99.5	44.5	16.0	4.1		1117.3
7/21/81		24.2	68.6	152.5	230.1	247.8	278.9	213.2	215.2	75.4	59.4	48.6	35.5		1649.4
7/22/81		27.7	56.7	64.2	81.0	144.0	67.7	83.1	154.6	192.0	175.3	86.8	31.0		1164.1
7/23/81		35.6	67.7	138.4	193.4	217.7	235.3	302.1	283.3	260.7	160.4	72.9	25.0		1992.5
7/24/81		6.7	13.5	99.0	277.6	198.5	268.3	269.0	213.9	159.9	87.2	29.8	54.2		1677.6
7/25/81		62.2	120.1	199.4	250.1	297.6	293.9	311.0	259.9	240.3	169.0	115.1	58.4		2377.0
7/26/81															2112.0[3]
7/27/81		40.7	112.0	174.5	228.3	280.0	270.5	300.7	262.2	232.2	165.4	128.0	60.8		2325.3
7/28/81		69.9	123.0	189.2	242.7	305.8	295.1	300.8	269.4	193.4	169.9	122.2	55.0		2336.4
7/29/81		52.6	57.7	152.0	142.3	175.4	321.5	204.5	192.0	236.0	172.0	126.0	55.2		1887.2
7/30/81		0.0	20.1	27.8	87.4	54.9	61.9	14.9	30.3	196.6	171.6	94.7	107.0		867.2
7/31/81		31.0	71.8	151.1	164.8	19.1	216.1	215.5	77.6	153.8	132.1	90.1	34.9		1354.9
Average	4.6	40.9	88.8	146.5	199.0	212.6	238.6	112.2	192.4	153.3	110.2	73.5	34.7	3.9	1784.8

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.19

August 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
8/1/81		26.4	48.5	91.4	46.4	81.4	151.7	260.6	184.6	190.7	135.7	102.5	43.0		1362.9
8/2/81			24.1	168.2	229.0	196.8	241.8	179.2	199.8	150.0	107.2	47.2			1543.3
8/3/81		18.5	86.9	97.9	178.9	169.2	219.9	229.9	199.5	206.3	148.2	109.8	54.4		1719.4
8/4/81		7.2	45.6	167.1	157.2	294.2	238.7	145.1	107.9	154.7	113.9	92.7	30.2		1554.5
8/5/81		31.8	111.4	172.6	135.2	216.4	274.9	261.1	211.6	197.9	151.8	95.0	40.7		1900.4
8/6/81		45.1	106.4	81.3	36.6	206.3	217.7	228.5	176.6	177.1	149.2	103.8	47.3		1575.9
8/7/81		47.7	90.5	105.1	121.1	176.6	269.8	253.4	214.3	182.3	132.6	94.9	41.0		1729.3
8/8/81		47.3	63.5	77.0	124.6	204.0	163.1	207.9	189.0	207.4	144.2	103.9	38.9		1571.4
8/9/81		18.5	16.4	138.2	136.3	234.3	240.2	272.9	129.6	159.0	134.9	73.3	35.5		1589.1
8/10/81		21.5	71.7	153.9	210.3	259.3	245.8	175.2	201.4	207.2	146.2	99.2	39.2		1830.9
8/11/81			10.3	103.3	224.8	98.5	232.6	179.6	159.8	91.5	63.9	14.0			1178.3
8/12/81		44.9	81.9	74.7	132.8	164.1	213.7	261.1	238.2	227.4	158.9	90.9	20.1		1708.7
8/13/81		33.6	82.0	127.0	217.9	150.8	63.6	136.6	143.1	116.8	144.6	73.3	33.7		1323.0
8/14/81		34.0	43.2	102.2	145.4	193.1	188.8	244.2	237.5	145.1	68.1	38.8	20.2		1460.6
8/15/81		29.0	57.6	56.6	194.1	165.7	219.0	184.0	174.4	196.1	135.4	89.5	36.3		1537.7
8/16/81		38.7	89.5	133.9	199.1	241.6	241.5	253.5	219.6	198.7	135.3	94.4	32.9		1878.7
8/17/81		48.2	72.8	121.5	113.5	176.6	199.2	173.8	216.5	201.7	121.8	94.5	38.0		1578.1
8/18/81		31.0	69.6	111.8	189.2	208.2	94.0	172.0	169.8	193.4	149.5	91.8	31.6		1511.9
8/19/81		31.6	52.9	88.4	162.2	230.8	245.6	208.6	103.7	74.1	36.5	28.0	3.9		1266.3
8/20/81		26.4	31.5	77.8	75.0	64.1	18.7	66.3	109.8	111.3	55.4	24.6	8.7		669.6
8/21/81		12.6	30.3	32.5	63.2	64.3	89.9	102.6	84.5	65.6	41.6	23.4	7.4		617.9
8/22/81		11.1	31.7	86.3	163.3	138.7	115.6	140.4	127.7	105.5	54.7	40.4	13.7		1029.1
8/23/81		14.0	95.2	148.7	147.3	39.2	126.4	106.0	128.0	139.0	97.8	72.0	21.4		1135.0
8/24/81		11.4	34.6	111.8	171.0	195.5	211.9	135.3	86.9	91.5	54.1	24.8	7.8		1136.6
8/25/81		22.5	55.3	104.5	197.0	223.0	261.6	230.6	244.6	192.7	159.3	97.9	41.6		1830.6
8/26/81		11.6	56.5	112.8	143.7	173.3	235.5	198.4	226.1	164.9	174.9	63.9	19.9		1581.5
8/27/81		4.5	58.4	75.0	82.1	180.5	157.2	182.3	227.1	128.6	91.0	60.1	18.9		1265.7
8/28/81		12.4	25.8	20.8	9.9	9.8	19.0	13.4	18.3	27.5	11.6	7.4	11.7		187.6
8/29/81		18.5	33.5	64.1	191.0	136.3	49.7	92.9	177.4	110.7	115.7	58.7	19.7		1068.2
8/30/81			12.8	47.7	94.6	105.8	185.3	156.6	182.7	143.5	87.8	26.1			1042.9
8/31/81		21.8	27.4	45.8	170.7	137.5	175.9	173.7	183.7	94.6	62.7	22.8	16.8		1133.4
Average		23.3	55.4	100.0	144.0	165.7	180.9	178.6	170.1	150.1	109.2	66.4	25.0		1371.6

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.20 September 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
9/1/81		8.4	44.3	98.2	88.0	114.1	165.4	254.5	185.8	191.5	82.8	55.6	19.6		1308.2
9/2/81		32.8	82.4	146.3	166.4	210.6	216.6	257.7	215.9	193.1	127.8	77.0	23.6		1750.2
9/3/81		18.5	99.2	139.0	206.5	233.6	255.7	247.5	204.2	160.8	113.1	49.2	7.0		1734.3
9/4/81		22.7	46.3	41.1	77.9	220.2	212.9	227.1	226.8	184.1	133.8	80.8	28.6		1502.3
9/5/81		8.7	19.9	36.7	72.5	160.1	272.1	134.1	248.4	134.4	88.8	77.4	25.8		1278.9
9/6/81			32.6	87.7	146.0	182.6	116.2	118.4	73.2	48.9	29.3	15.9			850.8
9/7/81		26.8	56.4	71.0	98.9	150.5	130.8	195.6	137.8	108.0	111.6	74.9	21.5		1183.8
9/8/81		16.9	77.3	146.8	164.6	175.0	131.6	146.1	193.6	131.9	145.7	72.7	29.8		1432.0
9/9/81		32.8	71.0	101.2	164.5	189.6	203.8	221.7	215.7	138.7	115.7	46.3	6.9		1507.9
9/10/81			42.5	151.0	143.6	146.4	128.4	183.7	161.9	112.3	49.9	15.9			1135.6
9/11/81															
9/12/81															
9/13/81															
9/14/81															
9/15/81															
9/16/81			82.4	134.7	157.6	165.6	243.5	150.7	139.6	105.1	56.7	26.1			1262.0
9/17/81			27.2	96.4	60.8	82.0	119.3	246.3	147.6	95.7	103.1	61.2			1039.6
9/18/81			49.1	99.6	208.9	228.6	276.2	266.2	248.7	206.6	113.0	64.4			1761.3
9/19/81		14.8	58.2	139.1	216.9	249.1	311.1	275.6	270.2	203.0	109.7	54.2	14.8		1916.7
9/20/81		22.3	82.9	148.1	210.5	246.7	300.5	264.8	268.4	202.3	158.2	83.7	23.4		2011.8
9/21/81			26.7	40.1	45.4	54.7	73.9	147.9	65.5	81.8	64.7	66.5			669.2
9/22/81			63.3	99.4	191.2	232.0	275.2	230.7	231.2	127.4	145.1	83.4			1678.9
9/23/81		16.7	74.0	149.3	208.1	195.9	232.9	225.6	206.8	199.5	137.6	65.7	16.6		1728.7
9/24/81		18.3	65.2	114.6	135.4	187.0	180.8	220.5	250.0	158.3	114.3	47.7	11.6		1503.7
9/25/81		15.2	71.1	125.6	198.3	199.8	246.5	231.5	237.3	207.6	159.5	82.6	21.9		1796.9
9/26/81			57.6	84.5	154.4	193.9	200.8	132.4	83.7	75.3	21.7	10.3			1014.6
9/27/81			72.2	117.8	175.5	218.1	255.5	269.1	249.6	196.0	140.6	69.9			1764.3
9/28/81		12.6	55.7	117.0	192.9	189.7	260.2	205.3	211.5	180.3	162.5	64.4	12.7		1664.8
9/29/81		17.4	70.0	94.1	154.6	238.6	279.6	274.3	218.1	210.0	130.6	63.2	12.0		1762.5
9/30/81		16.8	68.6	112.9	151.0	221.2	244.7	260.6	269.9	199.8	158.9	84.4	20.7		1809.5
Average		10.1	49.9	89.7	126.3	156.2	177.8	179.6	165.4	128.4	92.5	49.8	9.9		1236.0

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.21

October 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
10/1/81			50.2	131.9	200.3	235.6	272.3	251.7	260.2	193.0	151.5	74.3			1821.0
10/2/81			63.7	138.8	192.3	223.8	273.0	251.2	248.2	166.5	126.4	65.0			1748.9
10/3/81			67.0	137.7	179.1	224.7	264.6	258.7	266.5	197.1	147.0	61.6			1804.0
10/4/81			56.2	100.5	114.0	161.0	244.2	189.9	195.9	178.2	134.3	68.2			1442.4
10/5/81			66.6	122.8	182.1	169.0	196.0	255.1	233.2	201.9	133.5	52.8			1613.0
10/6/81		16.0	80.2	148.2	184.1	254.8	264.1	245.8	222.9	193.3	117.2	47.2	8.2		1782.0
10/7/81		11.4	56.3	137.7	149.8	188.2	209.9	218.9	213.1	181.1	123.6	49.8	6.6		1546.4
10/8/81			19.7	54.5	59.8	83.8	34.9	125.9	163.6	141.5	94.1	19.3			797.1
10/9/81		8.7	26.6	70.5	77.9	103.4	160.0	204.8	192.0	121.0	48.0	28.1	13.8		1054.8
10/10/81		17.7	25.7	87.5	123.6	175.3	256.9	236.9	156.2	187.9	120.7	52.5	10.8		1451.7
10/11/81			17.7	57.5	85.2	70.2	74.8	54.3	19.2	16.9	29.5	16.6			441.9
10/12/81			71.2	115.0	163.1	213.1	230.2	247.3	245.0	192.3	154.8	76.9			1708.9
10/13/81			39.7	105.4	186.3	211.1	249.5	195.4	187.3	149.4	121.0	60.3			1505.4
10/14/81			53.9	78.5	157.1	95.2	141.5	176.1	222.1	130.0	126.8	62.6			1243.8
10/15/81			67.7	96.6	164.5	171.1	226.7	212.6	244.2	185.5	146.5	69.5			1584.9
10/16/81			60.4	125.7	188.2	213.9	251.2	240.5	233.2	176.4	154.8	52.8			1697.1
10/17/81			51.0	122.1	180.7	209.1	249.9	232.5	226.1	169.3	122.6	49.9			1613.2
10/18/81			47.0	82.7	118.8	206.7	208.8	146.2	201.8	175.9	99.3	32.6			1319.8
10/19/81			58.8	122.4	199.5	221.8	263.7	261.0	242.5	190.6	142.2	59.8			1762.3
10/20/81			45.3	104.1	125.9	176.0	264.3	246.4	232.9	185.2	137.1	62.6			1579.8 -20
10/21/81			70.6	103.6	132.7	151.6	210.9	204.9	235.7	171.2	115.9	46.3			1443.4
10/22/81			52.2	64.6	70.8	200.8	197.7	227.8	210.0	160.3	110.0	43.4			1337.6
10/23/81			25.0	73.2	97.4	143.4	174.8	153.9	206.4	178.8	106.6	40.5			1200.0
10/24/81			14.3	38.2	35.0	42.8	82.0	183.4	157.7	118.8	55.5	25.5			753.2
10/25/81			29.6	61.9	77.9	83.5	106.8	78.0	55.5	51.7	34.0	14.2			593.1
10/26/81			14.5	44.2	122.7	194.7	114.7	66.6	54.1	46.3	54.2	34.0			696.0
10/27/81			29.4	71.1	94.6	146.2	155.1	146.5	134.8	96.2	67.4	30.6			971.9
10/28/81			41.8	107.6	154.1	207.9	189.7	233.4	169.4	146.9	78.0	55.2			1383.0
10/29/81			42.3	61.5	77.6	137.0	185.4	166.4	172.3	103.5	74.0	43.7			1063.7
10/30/81			10.6	71.6	89.2	46.9	50.9	54.1	108.9	120.6	62.4	16.7			631.9
10/31/81			7.6	16.6	21.5	61.7	55.9	33.5	67.2	120.2	52.8	15.2			452.2
Average		1.7	44.0	92.1	129.2	160.4	189.0	187.1	186.4	149.9	104.6	46.1	1.3		1291.8

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.22 November 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
11/1/81			10.2	44.5	51.3	31.6	71.2	52.8	121.1	75.5	42.6	7.7			508.5
11/2/81			40.6	49.7	109.0	153.4	214.2	145.8	219.8	159.9	115.1	40.7			1248.2
11/3/81			11.7	39.8	65.2	106.3	170.4	193.9	178.6	156.2	108.0	37.7			1067.8
11/4/81			9.4	44.2	74.0	129.9	136.6	155.2	138.8	106.9	48.5	10.3			853.8
11/5/81			4.0	25.1	22.7	17.3	9.9	9.1	4.5	5.1	6.2	7.7			111.6
11/6/81			23.6	81.8	147.4	168.0	212.3	209.6	211.2	156.2	93.6	20.1			1323.8
11/7/81			19.3	82.9	133.2	196.6	213.8	234.9	205.9	190.8	127.0	60.1			1464.5
11/8/81			25.3	90.6	145.7	204.2	210.7	226.5	194.8	168.5	102.2	38.3			1406.8
11/9/81			27.9	53.8	61.0	106.9	109.6	135.6	142.8	106.5	53.4	24.6			820.8
11/10/81				6.0	9.6	19.4	22.0	31.0	26.4	37.1	42.9				194.4
11/11/81				22.6	30.1	56.6	53.9	75.9	71.0	65.3	37.1				412.5
11/12/81			31.0	87.5	153.5	189.3	227.1	205.8	210.5	159.7	114.6	43.0			1422.0
11/13/81			15.6	83.6	141.1	197.3	192.4	222.7	220.1	112.9	94.9	32.7			1313.3
11/14/81			32.5	95.3	151.4	184.8	230.4	205.8	205.4	154.3	114.6	37.7			1412.2
11/15/81			28.8	90.4	154.6	181.8	216.2	211.5	203.5	155.8	111.3	42.9			1396.8
11/16/81			16.3	70.3	104.8	147.5	196.4	202.6	169.2	106.3	78.1	30.5			1122.0
11/17/81			16.4	68.8	98.6	147.4	195.8	202.0	161.0	115.1	77.1	28.5			1110.7
11/18/81			18.1	78.7	131.9	171.3	213.3	203.1	202.4	146.8	98.6	53.8			1318.0
11/19/81			24.1	67.7	147.9	185.6	216.0	198.7	204.3	145.0	99.4	34.6			1323.3
11/20/81			18.6	66.4	77.5	141.3	198.9	210.0	173.6	146.9	86.2	31.7			1151.1
11/21/81			23.8	76.6	69.3	113.1	139.5	99.0	58.9	31.8	49.5	43.4			704.9
11/22/81			31.3	98.0	143.7	203.9	204.5	222.8	188.4	157.1	94.5	32.5			1376.7
11/23/81			25.3	82.8	144.1	176.3	212.4	199.8	197.2	145.0	101.3	34.5			1318.7
11/24/81			22.9	74.6	138.7	133.1	202.6	194.7	192.5	142.5	102.7	33.0			1237.3
11/25/81			25.2	81.6	145.1	149.0	168.9	171.9	152.7	62.5	40.0	29.5			1026.4
11/26/81			23.9	79.4	146.0	170.0	211.2	190.2	190.6	141.2	101.1	28.8			1282.4
11/27/81			15.4	55.8	118.3	158.1	194.0	195.0	190.9	146.4	103.1	34.8			1211.8
11/28/81			16.7	71.2	129.4	156.4	197.5	187.9	182.5	92.2	94.1	17.6			1145.5
11/29/81			8.4	13.4	56.8	120.2	123.1	147.7	139.6	118.2	60.4	25.9			813.7
11/30/81			16.7	43.4	72.6	133.8	181.4	179.3	175.4	133.1	88.9	24.1			1048.7
Average			19.4	64.2	105.8	141.7	171.5	170.7	164.5	121.4	82.8	29.6			1071.5

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.23 December 1981

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
12/1/81			16.5	47.3	94.4	123.5	178.8	170.9	171.6	122.0	65.8	22.3			1013.1
12/2/81			15.4	60.5	92.0	114.9	164.1	113.6	120.2	127.6	82.5	22.9			913.7
12/3/81			6.2	51.4	76.9	98.8	155.8	80.4	86.2	34.9	8.0	8.8			607.4
12/4/81			20.2	70.1	139.2	166.7	208.8	186.3	189.5	140.3	94.5	30.6			1246.2
12/5/81			18.5	74.8	138.1	166.0	186.0	155.4	114.3	104.9	90.1	27.3			1075.4
12/6/81			7.8[1]	52.6[1]	122.9[1]	159.3[1]	182.7[1]	146.0[1]	168.6[1]	126.7[1]	75.7[1]	21.6[1]			1063.9
12/7/81			31.0	88.3	120.9	135.9	150.6	189.3	151.3	114.2	43.3[1]	14.6[1]			1039.4
12/8/81			24.0	74.8	131.6	165.7	196.8	183.4	177.3	115.5	65.6	18.7			1153.4
12/9/81			23.6	81.5	143.5	160.3	205.0	189.6	188.0	134.7	89.6	26.4			1242.2
12/10/81			21.8	79.7	140.5	166.2	206.7	192.2	189.7	142.7	90.2	26.6			1256.3
12/11/81			27.2	87.8	143.7	171.5	204.7	144.7	102.7	63.4	79.3	11.4			1036.4
12/12/81				11.4	22.1	25.2	41.9	54.5	40.4	75.6	31.5				302.6
12/13/81				28.6	86.2	92.7	100.5	108.5	57.1	45.8	23.7				543.1
12/14/81			8.0	44.1	81.3	105.5	154.5	138.6	129.1	37.6	28.0	11.4			738.1
12/15/81			15.2	67.4	129.6	162.6	198.7	190.1	172.5	77.3	21.5	6.7			1041.6
12/16/81			20.2	77.8	138.9	166.0	203.0	188.8	184.3	131.2	84.8	18.8			1213.8
12/17/81			21.4	76.3	138.0	165.1	187.5	183.3	176.2	127.0	80.3	23.4			1178.5
12/18/81			19.7	74.6	127.3	70.3	109.1	34.0	42.1	35.6	10.0	6.9			530.6
12/19/81			22.4	81.3	130.0	171.8	189.8	206.2	170.7	144.5	64.7	28.5			1209.9
12/20/81			22.1	84.4	143.9	169.7	210.8	195.4	192.6	138.0	89.0	22.0			1267.9
12/21/81			19.7	77.3	133.4	157.8	207.0	189.0	161.0	81.1	43.8	20.6			1090.7
12/22/81			12.0	50.8	71.5	94.9	145.8	177.6	176.2	126.0	79.0	19.3			953.1
12/23/81			16.6	65.5	113.9	136.9	92.1	150.1	122.4	45.6	47.2	12.7			803.0
12/24/81			5.1	58.1	71.2	94.0	176.9	171.0	137.1	115.2	49.7	9.0			887.3
12/25/81			5.5	16.8	42.4	40.7	61.2	39.6	26.4	14.6	10.4	4.3			261.9
12/26/81				8.1	11.7	11.0	17.0	14.7	18.5	16.1	6.1				103.2
12/27/81				37.1	71.7	80.0	77.6	76.4	62.4	42.2	29.8				477.2
12/28/81			8.4	21.0	72.8	135.7	175.7	135.4	44.2	48.4	28.0	7.1			676.7
12/29/81				18.2	31.6	22.1	23.3	33.5	62.7	44.8	23.6				259.8
12/30/81				4.7	12.7	18.6	14.0	22.8	14.8	7.9	5.1				100.6
12/31/81				33.5	56.7	101.6	106.1	129.3	32.3	17.4	13.7				490.6
Average			13.2	55.0	97.8	117.8	146.2	135.2	118.8	83.8	50.1	13.6			831.5

1 - Reconstructed Data

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.24

January 1982

	Solar Time														
	0500 - 0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
1/1/82		11.6	20.4	52.4	82.9	83.4	67.0	128.1	76.7	29.5	4.6			556.6
1/2/82		9.0	30.1	99.5	83.9	113.1	90.3	85.4	53.2	34.9	5.9			605.3
1/3/82		20.1	56.3	91.2	108.6	158.4	169.3	193.7	84.9	56.2	21.6			960.3
1/4/82		13.0	40.9	63.7	79.7	24.8	10.2	6.4	6.2	7.9	4.7			257.5
1/5/82		29.0	98.3	161.1	187.5	210.0	202.1	190.7	133.9	86.1	21.0			1319.7
1/6/82		19.7	55.5	104.0	144.8	173.0	144.6	167.4	95.6	54.8	16.6			976.0
1/7/82		12.9	55.0	103.7	127.4	108.6	162.9	113.1	75.1	74.9	18.9			852.5
1/8/82		5.8	18.4	22.5	36.9	41.8	26.6	16.7	53.1	38.1	5.4			265.3
1/9/82		23.8	82.2	146.8	170.7	213.4	198.9	195.4	137.7	94.9	27.7			1291.5
1/10/82		21.8	73.9	141.5	144.2	138.5	188.3	182.0	121.9	91.2	18.5			1121.8
1/11/82		28.5	90.5	157.1	179.7	223.1	208.9	196.0	125.8	94.8	29.3			1333.7
1/12/82		7.4	30.2	89.2	121.0	150.6	192.0	142.0	145.1	88.3	24.7			990.5
1/13/82			31.7	30.9	54.1	129.8	84.5	50.6	19.3	10.1				411.0
1/14/82		17.2	57.6	84.8	146.7	176.7	37.7	7.9	30.0	38.3	5.6			602.5
1/15/82		27.6	77.8	141.3	169.7	216.0	197.6	192.4	138.5	90.7	27.8			1279.4
1/16/82		25.2	72.0	136.5	167.7	188.0	205.9	169.2	84.2	57.8	26.9			1133.4
1/17/82		29.5	89.3	150.3	176.8	212.9	203.1	194.4	142.4	88.8	29.0			1316.5
1/18/82		28.2	73.4	116.1	130.2	123.3	187.4	158.0	130.3	59.1	28.1			1034.1
1/19/82		26.0	83.8	138.5	178.6	188.9	202.8	172.9	144.3	81.8	30.8			1248.4
1/20/82		22.3	75.7	138.6	165.0	203.3	188.4	182.9	136.0	83.7	20.5			1216.4
1/21/82		25.3	83.9	70.6	195.6	214.0	181.6	191.0	136.0	65.9	20.2			1184.1
1/22/82		19.2	58.3	109.0	167.8	205.7	193.2	113.5	56.9	39.5	15.9			979.0
1/23/82		17.4	47.9	117.8	118.5	146.9	121.6	186.0	111.3	80.3	29.9			977.6
1/24/82		30.1	91.5	154.3	180.4	226.1	206.1	184.2	90.7	49.0	18.9			1231.3
1/25/82		32.2	72.6	154.5	180.9	227.6	209.1	212.1	151.1	107.2	35.5			1382.8
1/26/82		28.8	91.5	164.3	194.8	225.6	223.7	220.7	162.0	110.5	37.4			1459.3
1/27/82		31.8	91.0	152.2	179.8	218.2	216.5	215.4	156.8	106.2	37.0			1404.9
1/28/82		32.1	92.2	134.2	196.0	212.8	227.5	193.2	157.4	93.4	34.8			1373.6
1/29/82		29.7	76.2	139.9	173.7	217.8	210.8	207.9	150.1	99.8	33.5			1339.4
1/30/82		17.8	52.1	91.3	154.2	178.7	154.2	220.5	171.0	112.8	43.2			1195.8
1/31/82		30.4	73.7	133.2	191.5	150.5	240.4	161.6	114.4	68.8	41.7			1206.2
Average		21.7	65.9	115.8	148.0	171.0	166.2	156.5	109.4	70.8	23.1			1048.6

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.25 February 1982

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
2/1/82			34.2	65.2	138.8	178.9	187.2	175.8	190.3	151.4	62.7	17.0			1201.5
2/2/82			23.1	44.3	37.5	56.2	163.2	121.2	88.5	55.6	35.2	3.0			627.8
2/3/82			10.8	12.0	16.6	17.7	7.7	16.0	55.0	51.5	58.4	38.2			283.9
2/4/82			23.8	51.6	84.1	175.9	222.0	208.4	222.0	128.1	81.7	3.6			1201.2
2/5/82			15.7	96.9	135.7	102.3	120.3	131.9	100.9	48.7	32.5	9.4			794.8
2/6/82			21.4	81.0	40.8	57.2	81.7	47.0	79.9	59.3	31.1	16.8			516.2
2/7/82			35.1	95.5	124.1	93.4	93.2	79.2	65.0	56.9	34.0	14.9			691.3
2/8/82			21.8	77.0	147.9	184.4	232.2	202.0	199.5	72.6	43.5	14.5			1195.4
2/9/82			24.1	49.4	71.5	140.9	123.4	100.2	73.6	68.4	52.9	11.4			715.8
2/10/82			5.6	15.6	33.3	50.8	56.9	52.8	45.7	18.8	16.2	8.7			304.4
2/11/82			6.0	11.9	26.3	31.9	107.4	104.9	67.7	106.3	87.1	18.1			567.6
2/12/82		1	8.4[1]	38.1[1]	38.3	107.1	145.1	164.8	83.9	74.0	15.2	4.6			679.5
2/13/82		6.3	62.2	115.8	177.7	218.4	245.5	216.0	121.2	51.6	67.2	2.5	11.9		1296.3
2/14/82															
2/15/82			16.1	31.3	73.2	119.5	109.2	169.3	174.3	120.9	75.8	26.3			915.9
2/16/82			25.9	46.5	89.9	145.4	146.4	178.7	174.8	143.9	87.5	33.6			1072.6
2/17/82			24.8	42.1	112.6	188.8	241.0	165.8	190.3	141.0	96.9	34.1			1237.4
2/18/82			56.2	133.9	193.2	212.4	246.7	214.7	207.1	157.6	103.6	45.5			1570.9
2/19/82			26.7	83.9	184.5	210.7	248.0	210.5	205.3	154.3	104.7	40.6			1469.2
2/20/82		11.7	61.7	118.8	162.8	219.5	223.2	226.6	209.3	185.7	137.6	79.0	20.4		1656.3
2/21/82															
2/22/82			82.1	159.4	222.0	229.5	260.7	222.3	218.4	156.9	92.5	30.9			1674.7
2/23/82			65.3	114.9	195.9	217.3	257.2	231.8	224.8	179.6	118.0	53.1			1657.9
2/24/82															
2/25/82			54.6	76.6	174.8	200.8	252.0	237.8	227.1	185.7	124.1	51.6			1585.1
2/26/82			7.2	25.6	21.5	15.6	26.9	41.1	37.5	26.8	23.2	11.3			236.7
2/27/82			50.3	53.6	55.0	73.9	118.5	112.0	134.6	108.3	62.9	32.5			801.6
2/28/82			31.8	58.9	144.9	137.7	171.2	94.5	37.8	40.4	54.7	34.2			806.1
Average		0.7	28.4	60.7	96.5	120.6	146.0	133.0	122.7	90.9	60.7	22.8	1.2		884.3

[1] Instrumentation Problem

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.26

March 1982

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
3/1/82			17.4	47.6	93.8	129.4	229.8	115.3	122.2	86.9	73.5	28.6			949.5
3/2/82			79.0	138.7	197.6	236.9	275.0	244.7	237.0	163.8	122.5	45.6			1740.8
3/3/82			65.6	123.7	175.0	200.0	262.6	236.6	202.5	132.7	135.3	54.2			1588.2
3/4/82			61.9	113.6	174.9	197.3	182.3	191.6	170.8	136.5	124.2	47.5			1400.6
3/5/82			16.6	25.1	64.9	71.0	87.3	119.6	80.2	17.4	17.4	9.2			508.7
3/6/82			29.3	37.1	67.6	111.4	139.6	167.6	134.3	75.6	44.4	20.8			827.7
3/7/82			15.5	45.5	83.3	61.0	127.6	141.3	136.3	97.8	66.5	31.0			805.8
3/8/82		18.7	68.6	152.6	213.0	265.1	260.4	278.4	238.1	197.0	123.0	48.2	7.0		1870.1
3/9/82		15.5	65.1	139.3	192.0	248.4	258.9	269.7	215.3	188.4	114.9	57.1	10.0		1774.6
3/10/82		8.0	46.7	121.9	178.2	172.2	217.7	205.0	192.7	123.7	116.4	75.5	14.2		1472.2
3/11/82		13.1	65.3	127.3	184.5	213.0	228.8	195.7	175.5	199.0	102.7	48.0	9.7		1562.6
3/12/82			75.8	139.3	203.8	232.6	260.7	255.3	229.1	168.8	107.7	26.2			1699.3
3/13/82			81.7	137.1	193.1	232.8	267.8	213.7	193.1	162.2	144.6	68.7			1694.8
3/14/82		10.2	42.8	108.6	193.5	247.1	229.5	243.3	201.2	171.0	91.9	31.8	11.8		1582.7
3/15/82		20.9	75.8	149.9	204.8	184.6	137.0	141.8	172.6	155.5	110.4	62.4	8.4		1424.1
3/16/82		9.1	34.7	69.2	148.4	183.0	243.9	168.7	143.2	180.3	101.2	56.6	17.1		1355.4
3/17/82		11.3	45.2	111.4	196.7	248.7	253.1	261.6	225.0	191.3	119.0	67.6	13.2		1744.1
3/18/82			29.4	57.8	137.8	229.1	258.6	251.4	217.3	185.1	131.6	18.0			1516.1
3/19/82		7.1	24.2	55.5	128.7	232.5	243.1	260.4	203.3	105.1	113.5	72.1	17.4		1462.9
3/20/82		11.9	34.5	96.8	131.2	165.9	218.8	245.0	222.9	201.4	125.2	88.3	21.7		1563.6
3/21/82		13.8	39.7	67.3	85.5	149.3	218.3	167.6	145.6	157.4	105.4	63.9	16.2		1230.0
3/22/82			46.2	80.5	152.6	146.3	142.6	117.0	32.4	55.6	38.2	32.4			843.8
3/23/82			30.6	55.1	75.3	173.7	127.7	210.0	171.4	151.9	62.1	30.6			1088.4
3/24/82			9.3	16.9	35.8	68.3	48.9	57.2	44.7	17.0	16.0	5.8			319.9
3/25/82			46.1	57.3	148.6	218.0	178.0	229.7	253.4	174.0	88.5	41.1			1434.7
3/26/82		29.6	39.7	83.4	140.9	207.7	273.1	272.0	268.0	219.6	145.1	83.8	22.8		1785.7
3/27/82		32.2	78.1	98.1	124.5	173.7	152.9	147.1	111.4	115.7	72.0	49.0	13.1		1167.8
3/28/82			16.7	28.7	7.0	45.7	44.0	48.8	22.3	15.4	8.7	3.4			240.7
3/29/82			28.1	48.8	99.9	68.8	99.3	154.5	187.6	51.1	79.2	37.0			854.3
3/30/82		37.1	98.9	157.7	182.5	228.7	237.2	153.7	105.6	143.2	141.3	76.6	19.6		1582.1
3/31/82		20.4	83.6	141.7	175.7	155.5	200.1	165.2	184.6	188.3	131.8	66.0	24.7		1537.6
Average		8.4	48.1	91.4	141.6	177.3	196.9	191.3	169.0	136.4	96.1	46.7	7.3		1310.6

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.27 April 1982

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
4/1/82		20.3	47.4	153.8	143.3	164.2	184.6	142.1	296.5	216.8	171.8	102.1	36.5		1679.4
4/2/82		20.6	67.2	102.3	191.9	228.6	264.6	269.8	233.0	207.2	160.5	72.8	44.8		1863.3
4/3/82		9.7	39.2	36.4	57.4	141.5	118.1	118.5	135.3	173.6	151.1	87.5	29.3		1097.6
4/4/82		12.6	36.6	102.3	187.3	255.9	308.2	287.5	285.9	245.6	190.2	114.2	40.9		2067.2
4/5/82		7.4	8.3	43.0	94.8	236.8	259.7	256.3	270.8	218.8	197.2	90.2	44.3		1727.6
4/6/82		24.1	87.2	156.0	222.8	269.1	317.8	288.7	282.4	227.7	170.7	60.5	21.1		2128.1
4/7/82		22.5	81.8	152.2	215.4	254.1	306.7	280.6	278.7	222.0	182.7	108.3	45.3		2150.3
4/8/82		2.7	3.4	3.1	3.6	4.2	5.2	4.0	2.0	16.4	14.8	18.2	10.0		87.6
4/9/82		10.8	39.6	104.2	116.7	103.8	160.1	114.9	74.2	26.5	19.3	8.8	13.0		791.9
4/10/82			9.5	21.2	57.5	76.2	41.9	30.5	32.4	20.3	45.6	15.2			350.3
4/11/82		17.3	56.4	106.4	171.2	221.7	295.8	315.5	309.9	240.3	193.3	44.3	9.9		1982.0
4/12/82		23.8	86.6	157.1	226.2	258.5	303.5	302.0	305.9	249.3	206.9	123.8	50.9		2294.5
4/13/82		20.3	72.8	150.9	202.1	182.0	224.6	231.9	267.1	197.0	195.5	100.7	45.9		1890.8
4/14/82		23.1	77.6	140.1	153.7	171.3	265.0	240.0	287.7	208.5	167.4	87.8	31.2		1853.4
4/15/82		20.9	74.5	71.1	84.2	208.2	295.8	274.5	273.8	157.3	84.3	12.9	6.2		1563.7
4/16/82		6.1	18.5	141.9	206.0	223.5	238.3	277.0	286.6	224.3	166.9	30.2	26.8		1846.1
4/17/82		13.1	50.8	108.5	174.9	210.2	216.6	212.1	277.1	206.6	176.2	102.8	42.8		1791.7
4/18/82		20.9	58.2	126.5	183.9	170.7	270.1	256.8	236.4	235.4	155.0	45.4	11.9		1771.2
4/19/82		20.3	78.2	144.3	185.8	211.2	280.5	268.0	307.1	230.8	200.2	158.7	15.3		2100.4
4/20/82		29.5	85.1	154.2	179.1	210.4	245.1	259.5	241.9	230.6	151.6	32.4	20.7		1840.1
4/21/82		35.0	103.6	171.1	214.7	225.8	259.5	265.8	283.2	219.7	185.1	100.2	33.0		2096.7
4/22/82		32.7	73.4	184.7	223.2	287.3	286.7	306.2	245.6	178.3	158.5	87.6	41.7		2105.9
4/23/82		9.1	34.2	54.4	86.3	67.0	80.9	79.1	130.0	93.5	65.2	51.7	25.9		777.3
4/24/82		6.8	18.1	31.7	70.4	76.7	66.6	129.2	127.5	56.2	56.7	26.9	8.2		675.0
4/25/82			25.4	44.3	53.0	70.4	95.6	102.9	84.5	99.7	58.2	40.7			674.7
4/26/82		12.2	13.9	36.3	71.5	99.5	102.9	141.8	165.0	132.1	134.0	79.3	16.4		1004.9
4/27/82		37.6	114.1	182.4	177.2	247.3	227.0	320.2	265.9	223.0	176.9	111.0	41.7		2124.3
4/28/82		35.2	82.3	128.7	217.8	270.2	248.6	299.8	261.3	256.7	178.9	108.3	49.6		2137.4
4/29/82		20.4	77.9	98.0	182.0	156.1	262.6	258.4	282.2	210.1	174.2	98.7	40.9		1861.5
4/30/82		33.8	91.0	168.1	182.3	250.2	302.0	283.5	272.4	276.1	184.2	114.9	38.2		2196.7
Average		18.3	57.1	109.2	151.2	185.1	217.8	220.6	226.7	183.3	145.8	74.5	28.1		1617.7

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.28

May 1982

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
5/1/82		28.7	84.8	171.1	121.3	225.5	122.9	147.7	225.7	195.0	140.0	107.1	44.0		1613.8
5/2/82		36.4	35.9	85.5	58.2	168.6	284.0	290.1	284.1	267.0	195.0	123.0	55.8		1883.6
5/3/82		37.6	104.4	113.3	134.1	177.1	263.7	273.5	289.4	229.7	193.0	103.6	53.8		1972.8
5/4/82				171.2	246.0	267.9	308.5	282.7	276.9	172.8	154.4	112.8	51.6	6.0	2203.3
5/5/82	5.8	48.7	120.5	184.1	264.9	253.5	292.9	260.4	238.5	204.1	161.8	87.8	46.4	6.5	2175.9
5/6/82	19.5	74.4	134.2	185.9	215.0	234.1	318.0	228.8	222.4	192.3	159.7	70.1	43.8	16.1	2114.3
5/7/82	27.9	39.6	129.4	206.6	282.2	295.5	320.4	256.9	256.9	198.5	181.4	91.3	52.1	9.2	2347.9
5/8/82	1.1	6.7	22.5	124.6	137.1	209.6	241.6	270.2	240.5	237.4	159.6	117.0	53.7	8.9	1830.5
5/9/82	17.9	69.6	156.4	207.2	278.1	281.7	318.6	296.0	296.2	232.5	212.9	105.3	56.0	10.8	2539.2
5/10/82	5.6	51.2	106.1	165.2	227.6	271.2	330.4	295.7	305.6	234.8	190.1	114.8	49.6	8.5	2386.4
5/11/82	12.6	57.4	121.6	191.0	262.6	278.9	314.8	278.3	279.4	195.3	177.0	105.1	48.2	3.9	2326.1
5/12/82	23.6	81.0	148.8	87.7	234.2	263.5	305.3	259.5	315.9	239.2	189.6	112.5	43.2	10.4	2314.4
5/13/82	12.4	58.9	121.8	188.4	197.3	277.6	312.1	293.5	271.6	209.1	179.2	116.2	52.0	6.4	2296.5
5/14/82	11.0	55.9	126.5	189.7	261.8	288.4	317.4	301.3	303.6	235.6	192.5	119.0	46.1	6.2	2455.0
5/15/82	15.1	65.3	118.0	156.6	222.8	255.0	319.3	234.1	240.2	213.9	184.2	89.3	45.1	6.9	2165.8
5/16/82	22.7	60.0	89.9	132.9	206.2	234.4	271.1	217.6	288.1	231.2	191.0	124.8	63.9	19.6	2153.4
5/17/82	16.5	61.9	108.8	173.5	244.9	262.1	303.2	243.7	252.7	175.7	115.6	108.5	49.9	4.4	2121.4
5/18/82	17.0	65.2	132.3	196.8	261.0	268.6	310.2	270.6	213.8	134.5	108.0	49.8	34.5	5.8	2068.1
5/19/82	17.2	60.1	128.5	198.8	266.2	273.9	335.6	242.9	291.4	213.0	183.1	91.9	64.6	16.0	2383.2
5/20/82	15.0	65.4	132.7	201.0	255.8	282.3	325.6	197.1	266.4	205.2	166.2	109.4	49.5	10.1	2281.7
5/21/82	13.2	58.5	133.9	189.6	203.8	278.1	286.0	197.9	233.9	181.9	164.4	102.4	49.5	7.1	2100.2
5/22/82	16.1	73.6	137.1	167.6	265.2	177.8	265.0	145.2	112.1	128.3	115.8	107.2	62.8	19.6	1793.4
5/23/82	0.5	13.0	26.8	78.3	182.1	235.4	290.5	316.0	49.6	2.2	6.0	3.5	15.6	34.3	1253.8
5/24/82	5.6	39.1	108.4	181.0	253.7	191.1	237.0	273.0	299.8	204.0	154.1	25.3	9.5	2.9	1984.5
5/25/82	11.4	47.3	119.1	164.4	237.6	259.2	316.4	247.0	220.5	89.7	14.9	4.1	6.5	10.3	1748.4
5/26/82	14.5	42.8	107.0	122.3	177.0	240.9	214.1	66.9	19.3	14.8	103.5	132.3	45.5	10.4	1311.3
5/27/82	20.3	72.3	135.9	147.9	208.2	176.3	234.0	266.4	234.1	66.4	32.9	16.7	41.4	23.7	1676.5
5/28/82	3.3	18.3	51.4	106.0	205.1	233.2	280.3	240.8	193.0	250.3	188.8	114.1	64.8	15.5	1964.9
5/29/82	7.0	42.2	119.8	164.1	152.9	271.1	302.2	178.9	207.3	222.6	107.4	26.4	36.7	9.3	1847.9
5/30/82	10.9	51.8	59.9	49.7	48.4	148.3	62.3	33.9	24.6	50.8	19.6	18.0	5.4	0.0	583.6
5/31/82	6.0	24.2	72.1	61.4	132.2	204.3	241.3	134.4	81.0	32.1	130.0	86.2	37.4	9.9	1252.5
Average	11.4	49.7	106.8	153.7	207.9	241.5	278.9	233.6	226.9	176.1	144.2	87.0	45.5	9.6	1972.6

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.29 June 1982

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
6/1/82	5.3	14.5	19.7	91.0	188.9	281.9	290.9	271.5	279.0	195.0	181.2	114.9	50.9	10.7	1995.4
6/2/82	4.3	33.7	79.3	113.8	232.0	264.5	320.9	298.0	293.4	244.7	202.2	109.6	21.1	5.7	2223.2
6/3/82	28.6	63.9	71.4	157.2	211.3	194.3	266.0	80.8	83.6	142.2	108.6	68.4	45.9	23.2	1545.4
6/4/82	14.6	36.8	122.6	158.9	176.9	239.2	314.0	225.3	149.2	146.6	102.5	83.2	55.5	10.7	1836.0
6/5/82	13.5	34.6	111.8	118.4	209.3	248.0	298.5	289.6	301.3	225.1	185.4	124.6	56.4	9.4	2225.9
6/6/82	14.5	56.7	130.3	180.6	255.8	273.6	308.8	298.5	262.6	210.7	175.5	110.0	56.7	9.9	2344.2
6/7/82	8.9	59.5	142.7	194.3	259.2	279.1	311.7	287.5	277.6	229.1	173.7	111.8	51.3	10.8	2590.5
6/8/82	15.5	61.1	122.7	187.3	251.7	278.8	308.9	285.1	275.2	225.0	171.9	108.9	50.4	8.2	2350.7
6/9/82	12.3	43.0	98.8	163.9	226.3	245.6	271.0	265.5	270.3	203.2	164.8	86.4	50.9	9.8	2111.8
6/10/82	24.2	77.3	129.0	166.5	232.3	256.0	309.6	275.6	281.8	218.5	184.6	127.8	69.5	21.8	2374.5
6/11/82	10.2	45.9	76.6	160.5	229.3	282.6	259.3	272.8	266.4	219.9	162.8	93.7	12.8	3.3	2096.1
6/12/82	1.1	3.3	12.0	54.2	181.2	164.0	134.8	101.0	220.7	183.9	162.0	102.7	29.2	11.2	1361.3
6/13/82	13.4	58.4	142.5	184.8	262.3	212.9	266.5	265.8	297.4	201.6	169.4	102.2	49.9	8.2	2235.2
6/14/82	15.6	52.3	129.6	157.4	243.6	252.3	304.1	300.8	265.8	181.5	171.5	123.2	56.5	10.2	2264.4
6/15/82	17.5	62.5	133.1	186.3	249.4	255.8	197.1	228.7	297.1	153.9	134.1	88.0	42.8	11.2	2057.5
6/16/82	17.4	62.3	121.4	197.9	258.1	250.0	311.9	302.9	303.8	175.8	163.7	86.6	27.5	5.1	2284.4
6/17/82		31.2	60.1	58.7	49.4	73.2	64.1	49.9	35.9	37.7	28.3	17.5	11.2		517.2
6/18/82		6.4	67.5	215.3	142.7	199.4	127.2	169.4	84.9	158.7	116.8	43.9	14.4		1346.6
6/19/82	17.7	58.8	131.0	148.2	267.4	258.0	242.8	247.8	260.1	206.2	124.3	112.7	42.7	9.6	2127.3
6/20/82	19.4	57.5	119.7	171.6	246.3	253.1	323.3	290.7	274.8	190.7	201.9	120.5	58.2	8.5	2336.2
6/21/82	27.3	84.0	122.1	185.2	266.0	183.5	323.9	219.8	97.1	166.4	98.8	105.7	33.4	15.1	1928.3
6/22/82		2.0	2.1	4.1	12.1	60.1	10.2	16.9	15.6	5.2	15.8	15.0	5.0		164.1
6/23/82		7.7	29.0	26.5	24.3	17.6	147.5	335.8	274.7	129.6	54.8	45.6	25.7		1122.8
6/24/82		19.7	84.0	50.6	17.0	229.3	333.6	166.6	107.6	257.4	239.3	162.3	87.1		1754.5
6/25/82	11.0	36.7	94.3	178.5	253.0	272.2	271.0	242.4	264.4	127.6	37.8	82.0	36.1	5.8	1912.8
6/26/82	18.4	70.8	111.7	148.2	19.6	29.1	222.5	178.6	17.5	64.5	57.0	28.1	14.6	2.6	983.2
6/27/82	17.1	60.9	125.6	169.9	231.9	265.4	262.2	231.1	283.6	197.8	186.3	89.7	33.0	7.7	2162.2
6/28/82	9.5	48.7	129.0	192.5	230.6	163.8	312.7	261.3	251.5	249.7	209.0	129.3	69.4	11.2	2268.2
6/29/82	11.9	54.0	126.8	172.3	199.9	259.9	328.4	292.5	294.9	220.0	181.9	124.8	34.8	6.9	2309.0
6/30/82	19.1	59.7	126.5	180.5	228.3	203.2	264.5	160.4	21.5	18.8	57.8	60.2	37.1	9.6	1447.2
Average	12.3	45.5	99.1	145.8	195.2	214.9	256.9	230.4	223.7	172.9	140.8	92.6	41.0	8.2	1875.9

Solar Radiation in Btu/hrft^2
Measured at the University of Florida
Energy Research and Education Park
Gainesville, FL 32611

TABLE 1.30 July 1982

	Solar Time														
	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
7/1/82	15.8	58.1	127.6	188.1	231.8	266.8	287.6	260.5	263.1	186.2	152.3	112.3	54.7	10.5	2215.4
7/2/82	13.8	49.9	113.3	170.7	198.0	211.7	222.6	153.1	229.5	140.8	100.5	68.1	31.2	8.8	1712.0
7/3/82	14.5	61.5	126.8	190.5	251.5	277.6	320.7	290.8	230.0	198.3	185.8	116.9	49.7	8.0	2322.6
7/4/82	11.2	49.3	107.7	171.8	203.7	263.5	279.6	279.0	291.1	232.3	77.6	33.8	13.5	3.3	2017.4
7/5/82	3.0	12.3	52.9	112.4	217.2	222.6	295.5	271.4	303.0	190.3	173.0	170.8	131.0	12.4	2167.8
7/6/82	11.1	53.7	115.2	176.7	249.3	183.6	180.2	252.1	301.2	152.3	58.9	55.6	17.3	3.1	1810.3
7/7/82	13.9	46.3	80.9	175.7	240.5	194.0	260.6	234.7	184.9	40.0	27.5	23.2	17.7	6.5	1546.4
7/8/82	18.8	62.9	126.6	158.2	291.2	219.7	192.6	299.1	271.3	65.5	49.6	47.1	33.0	9.5	1845.1
7/9/82	16.6	69.4	121.7	179.9	232.2	189.3	271.4	157.0	10.8	3.7	11.1	28.6	23.2	8.1	1323.0
7/10/82	13.8	60.3	122.8	187.5	251.7	279.4	257.9	266.2	141.0	16.6	9.3	16.9	13.7	3.2	1640.3
7/11/82	7.6	40.9	104.9	167.8	245.4	280.6	272.9	211.7	207.6	101.2	22.4	18.3	7.4	1.6	1690.3
7/12/82		53.5	112.7	194.4	230.9	266.9	282.7	257.7	145.1	114.8	137.6	60.4	21.3		1878.0

TABLE 2

Daily extraterrestrial (ET) radiation on horizontal plane (in Btu/Ft^2-Day).

Table 2. Daily Extraterrestrial (ET) radiation on horizontal plane (BTU/FT^2—Day).

DATE	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1767.24	2050.26	2504.44	3034.70	3382.32	3576.36	3591.38	3446.08	3127.58	2666.24	2136.12	1808.86
5	1786.98	2106.38	2577.52	3091.74	3421.12	3586.88	3582.42	3414.72	3075.92	2595.1	2081.18	1784.14
10	1819.30	2175.94	2670.22	3155.98	3463.24	3596.30	3568.3	3367.8	3006.92	2504.64	2016.38	1761.42*
11						3598.56*						
14						3601.78					1963.84*	
15	1859.96	2251.36	2759.38	3216.1*	3498.42*	3602.46	3549.12	3314.30	2932.3*	2414.74*	1956.38	1747.32
16		2266.1*	2776.84*			3602.98		3303.88*				
17	1877.8*					3603.34	3538.96*					1744.02
18						3603.55						
19						3603.61						
20	1907.82	2338.32	2844.08	3270.4	3527.62	3603.50	3524.48	3261.74	2852.72	2324.72	1902.16	1742.14
21	1918.46	2356.24	2861.22	3280.36	3532.34	3603.24	3520.26	3252.08	2836.52	2306.88	1892.54	1742.14
23						3602.28						1743.86
25	1962.92	2430.84	2926.66	3318.47	3552.62	3601.22	3495.78	3209.78	2774.3	2237.02	1856.08	1746.38
28		2485.84										
30				3372.52		3595.36			2684.02		1815.52	
31	2036.88		3019.82		3574.22		3454.82	3141.52		2149.84		1762.86

*Means the average day for the month.

TABLE 3

Average, standard deviation, maximum, minimum. Extraterrestrial (ET) in BTU/FT^2-Day and ratio of global insolation on a horizontal plane to extraterrestrial insolation on a horizontal plane (KT).

Table 3.1	:	January-April 1980
Table 3.2	:	May-August 1980
Table 3.3	:	October-December 1980
Table 3.4	:	January-April 1981
Table 3.5	:	May-August 1981
Table 3.6	:	September-December 1981
Table 3.7	:	January-April 1982
Table 3.8	:	May-July 1982

Table 3.1 January-April 1980.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
JANUARY	Average			17.21	55.4	100.8	131.0	142.42	130.8	122.1	95.5	58.8	19.9			866.32
	S.D.			13.9	33.9	49.4	60.1	70.7	68.4	63.5	46.9	29.4	12.7			411.58
	MAX			48.3	118.2	157.8	207.7	226.0	235.8	210.9	174.0	118.3	59.8			1535.4
	MIN			0.0	7.5	6.8	9.7	9.1	2.7	8.5	11.0	1.8	0.0			171.4
(17th)	E.T.	-	-	59.16	140.54	207.01	253.96	278.23	278.23	253.96	207.01	140.54	59.16	-	-	1877.8
	K.T.															0.46
FEBRUARY	Average	-	2.8	33.6	78.6	128.6	157.9	189.6	187.1	173	134.4	87.6	41.5	5.8		1217.4
	S.D.		3.5	21.2	40.2	52.6	64.3	66.1	66.4	57.1	55.3	37.8	23.2	10.4		402.8
	MAX		11.60	75.7	151.3	215.2	252.30	290.5	288.5	242.8	211.2	159.4	104.9	43.0		1908.8
	MIN		0.0	2.2	20.7	16.1	40.3	51.0	38.1	10.8	22.2	16.4	7.1	0.0		294.2
(16th)	E.T.	-	-	93.54	177.74	246.50	295.08	320.19	320.19	295.08	246.50	177.74	93.54	-	-	2266.1
	K.T.															0.54
MARCH	Average	-	11.40	49.5	98.4	147.5	188.8	192.9	200.4	173.3	153.5	103.8	50.5	10.9	-	1381.0
	S.D.		9.0	30.3	53.6	69.6	83.1	92.25	87.9	82.9	63.5	54.9	29.9	8.2	-	605.8
	MAX		31.0	98.8	174.7	241.3	275.6	319.3	299.8	299.9	231.5	188.2	101.2	30.4	-	2266.2
	MIN		0.0	1.5	2.9	19.2	7.3	12.8	18.8	7.1	19.3	10.3	6.4	0.0	-	210.4
(16th)	E.T.	-	40.06	135.04	220.22	289.80	338.95	364.35	364.35	338.95	289.80	220.22	135.04	40.06	-	2776.84
	K.T.															0.50
APRIL	Average	-	28.1	78.5	140.1	196.8	234.7	247.7	228.3	215.5	178.5	141.9	83.3	27.9		1800.0
	S.D.		13.2	38.5	52.1	71.7	74.4	100.5	90.6	85.1	67.5	55.2	32.4	14.4		606.38
	MAX		45.7	117.2	187.8	266.4	320.0	347.1	328.6	305.0	257.2	193.2	117.4	52.4		2409.0
	MIN		2.2	4.9	22.2	31.6	41.2	47.1	21.7	11.3	6.4	5.1	1.7	1.2		301.2
(15th)	E.T.	-	82.15	174.51	257.19	324.71	372.42	397.07	397.07	372.42	324.71	257.19	174.51	82.15	-	3216.1
	K.T.															0.56

Table 3.2. May-August 1980.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
MAY	Average	1.5	35.4	86.8	140.9	200.8	229.3	248.6	233.2	233.3	172.5	136.3	82.8	38.8	1.3	1841.40
	S.D.	4.56	16.1	39.3	63.1	90.2	94.5	108.04	89.6	62.7	66.5	61.5	41.6	16.6	4.2	607.8
	MAX	17.4	68.0	124.3	203.3	277.4	309.5	366.0	330.9	315.3	240.9	211.8	131.8	63.3	17.4	2398.5
	MIN	0.0	5.4	11.9	10.5	9.1	4.3	6.8	54.5	116.8	49.9	23.6	9.7	2.0	8.5	565.9
(15th)	E.T.	22.04	112.25	199.42	277.60	341.46	386.56	409.88	409.88	386.56	341.46	277.60	199.42	112.25	22.04	3498.42
	K.T.															0.53
JUNE	Average	12.9	62.4	112.0	159.1	173.8	201.2	206.8	210.0	202.3	165.9	120.2	91.5	43.6	11.3	1773.4
	S.D.	6.6	47.3	42.5	31.0	67.17	100.9	107.9	108.0	97.0	70.36	53.8	37.8	20.0	6.0	506.2
	MAX	26.3	215.1	211.4	217.8	254.6	357.1	334.3	319.4	325.6	245.0	201.8	133.2	79.0	23.3	2368.8
	MIN	0.0	16.1	33.2	82.8	41.8	56.2	16.9	10.0	5.2	19.0	26.6	15.2	9.4	0	498.7
(11th)	E.T.	37.59	124.48	208.44	283.73	345.23	388.68	411.13	411.13	388.68	345.23	283.73	208.44	124.48	37.59	3598.56
	K.T.															0.49
JULY	Average	6.5	44.00	100.0	151.1	173.3	220.1	225.4	243.3	223.6	194.6	139.0	85.8	39.7	5.2	1851.8
	S.D.	6.7	23.5	46.8	59.5	66.3	83.5	79.1	84.0	69.6	62.1	48.9	38.2	19.2	5.4	858.2
	MAX	22.6	75.3	202.0	230.1	259.9	309.9	324.6	337.1	308.9	269.9	195.2	149.4	71.2	16.5	2486.3
	MIN	0.0	4.2	9.1	11.1	10.2	8.2	11.1	17.7	16.9	25.7	14.5	14.0	4.2	0.0	198
(17th)	E.T.	30.58	118.56	203.57	279.81	342.08	386.07	408.81	408.81	386.07	342.08	279.81	203.57	118.56	30.58	3538.96
	K.T.															0.52
AUGUST	Average	0.2	38.3	91.1	144.8	187.8	237	256.6	261.6	211.9	172.2	131.1	86.1	35.9	-	1854.0
	S.D.	1.3	14.4	25.8	45	44.4	53.2	33.5	63.4	67.7	74.6	64.7	35.8	16.7		356.6
	MAX	7.0	61.3	121.2	201.4	293.5	302.1	310.4	322.8	280.8	259.2	213.3	121.0	64.2		2220.4
	MIN	0.0	0.0	17.6	19.3	68.1	99.3	18.11	61.8	27.7	16.0	11.5	4.0	0.0	-	996.9
(16th)	E.T.	2.8	94.76	184.21	264.43	329.95	376.24	400.17	400.17	376.24	329.95	264.43	184.21	94.76	2.8	3303.88
	K.T.															0.56

Table 3.3. October-December 1980.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
SEPTEMBER	Average															
	S.D.															
	MAX															
	MIN															
(15th)	E.T.	-	56.45	149.73	233.38	301.70	349.97	374.92	374.92	349.97	301.70	233.38	149.73	56.45	-	2932.3
	K.T.															
OCTOBER	Average	-	0	38.6	85.1	126.9	159.1	183.2	185.9	176.9	143.7	95.0	40.7		-	1110.3
	S.D.		0	21.0	41.7	59.0	70.1	86.6	76.4	79.0	60.0	46.6	23.9			556.9
	MAX		0	59.2	138.1	212.9	226.5	288.0	266.9	250.4	200.8	160.1	76.8			1882.4
	MIN		0	0.0	11.1	19.1	7.8	28.9	7.5	9.1	10.2	9.8	0.0			234.9
(15th)	E.T.	-	12.60	106.23	190.21	258.79	307.25	332.29	332.29	307.25	258.79	190.21	106.23	12.6	-	2414.74
	K.T.															0.46
NOVEMBER	Average	-	0.0	18.1	59.6	104.8	137.2	154.9	150.5	138.4	109.6	66.8	22.0	0		962.1
	S.D.		0.0	10.3	29.7	41.3	56.3	59.6	71.6	57.6	53.0	32.9	15.4	0		383.9
	MAX		0.4	45.5	106.9	159.5	211.8	218.2	246.6	214.5	189.7	133.7	68.4	0.4		1508.2
	MIN		0	0	9.8	21.3	26.7	25.0	24.5	31.0	17.7	15.5	0	0		214.7
(14th)	E.T.	-	-	67.61	149.34	216.09	263.25	287.63	287.63	263.25	216.09	149.34	67.61	-	-	1963.84
	K.T.															0.49
DECEMBER	Average			15.0	53.7	100.6	134.6	149.9	147.4	133.4	108.2	62.3	18.3			923.5
	S.D.			8.2	24.3	40.7	51.4	58.1	55.1	45.3	36.1	25.6	13.0			319.9
	MAX			23.2	7.8	141.3	186	208	202.5	178.7	144.3	87.9	31.3			1271.9
	MIN			6.8	29.4	59.9	83.2	91.8	92.3	88.1	71.9	36.7	5.3			190.7
(10th)	E.T.	-	-	49.51	129.63	195.07	241.30	265.20	265.20	241.30	195.07	129.63	49.51	-	-	1761.42
	K.T.															0.52

Table 3.4. January-April 1981.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
JANUARY	Average		0.2	23.3	73.8	129.8	166.2	186.6	183.9	163.4	125.8	75.9	23.9	0.6		1153.5
	S.D.		0.2	9.1	17.4	24.8	31.1	37.8	43.1	45.2	34.1	24.7	10.23	1.99		241.03
	MAX		0.5	40.4	97.6	158.2	192.7	222.2	227.4	220.9	189.3	132.3	53.9	11.2		1388.1
	MIN		0	2.9	40.6	75.6	68.0	53.8	68.9	39.6	20.5	4.7	2.0	0		418.1
(17th)	E.T.	-	-	59.16	140.54	207.01	253.96	278.23	278.23	253.96	207.01	140.54	59.16	-	-	1877.8
	K.T.															0.61
FEBRUARY	Average	-	3.1	36.4	84.5	134.2	161.0	180.2	188.1	163.8	126.6	79.0	30.8	2.4		1189.8
	S.D.		3.1	20.3	41.1	60.4	74.5	75.4	70.3	72.1	55.1	36.3	18.0	2.3		480
	MAX		8.4	67.9	136.2	196.2	242.4	266.9	265.1	244.3	197.1	128.7	63.7	6.6		1809.7
	MIN		0	2.4	4.5	10.8	24.0	35.3	49.1	25.4	16.7	12.8	7.9	0.0		313.4
(16th)	E.T.	-	-	93.54	177.74	246.50	295.08	320.19	320.19	295.08	246.50	177.74	93.54	-	-	2266.1
	K.T.															0.53
MARCH	Average		12.1	55.6	114.3	163.7	202.6	220.2	213.8	193.5	155.0	108.7	54.5	11.6		1505.0
	S.D.		6.3	27.0	49.3	64.8	72.6	77.2	78.2	72.9	56.9	37.8	19.5	5.6		497.2
	MAX		23.4	100.4	181.5	241.2	283.4	283.9	290.1	263.5	224.4	160.3	26.5	21.1		2098.0
	MIN		2.7	6.7	3.8	13.3	19.4	12.9	10.5	0.5	18.2	31.3	14.5	2.2		332.2
(16th)	E.T.	-	40.06	135.04	220.22	289.80	338.95	364.35	364.35	338.95	289.80	220.22	135.04	40.06	-	2776.84
	K.T.															0.54
APRIL	Average	0.9	26.9	83.4	144.5	198.5	228.2	252.1	245.2	211.8	191.8	131.8	80.5	29.58	1.4	1826.4
	S.D.	0.9	9.9	21.7	35.9	55.0	51.0	50.0	59.4	55.2	34.9	32.4	18.1	15.5	1.7	287.3
	MAX	3.4	43.7	111.6	192.5	263.9	295.0	308.5	306.4	288.9	236.5	168.7	114.5	69.3	5.1	2252.9
	MIN	0	11.8	51.9	61.2	68.3	83.7	152.5	114.1	103.2	121.2	48.8	42.6	3.7	0	1260.0
(15th)	E.T.	-	82.15	174.51	257.19	324.71	372.42	397.07	397.07	372.42	324.71	257.19	174.51	82.15	-	3216.1
	K.T.															0.57

Table 3.5. May-August 1981.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
MAY	Average	5.8	49.4	113.8	175.1	217.1	247.5	270.1	271.1	249.7	208.1	158.5	98.2	41.5	5.4	2111
	S.D.	3.2	16.0	30.5	36.8	46.9	58.1	52.1	45.6	49.7	41.0	36.0	22.5	12.8	3.3	345.9
	MAX	10.8	69.3	144.1	206.1	269.1	305.0	323.5	319.5	306.2	259.7	200.8	132.7	62.7	12.1	2608.2
	MIN	0.0	7.8	24.0	45.7	86.4	76.2	162.5	143.8	149.2	116.3	72.9	48.2	12.7	0	1291.9
(15th)	E.T.	22.04	112.25	199.42	277.60	341.46	386.56	409.88	409.88	386.56	341.46	277.60	199.42	112.25	22.04	3498.42
	K.T.															0.60
JUNE	Average	9.9	49.5	103.2	163.2	209.8	234.3	261.5	269.9	225.1	182.9	139.0	87.7	41.2	8.2	1985.4
	S.D.	5.0	17.9	25.8	31.3	35.9	51.2	44.0	51.1	82.8	77.8	64.6	48.1	22.2	4.9	338.3
	MAX	17.9	72.9	130.2	200.3	254.1	282.9	317.8	324.2	302.7	275.5	216.4	158.0	71.6	17.1	2584.3
	MIN	0.1	7.4	41.3	64.0	148.4	122.2	144.0	101.5	28.2	7.0	4.7	2.4	0.2	0.2	1326.5
(11th)	E.T.	37.59	124.48	208.44	283.43	345.23	388.68	411.13	411.13	388.68	345.23	283.73	208.44	124.48	37.59	3598.56
	K.T.															0.55
JULY	Average	4.7	42.1	91.8	151.4	205.6	219.7	246.6	215.9	199.5	158.5	113.8	75.9	35.8	4.0	1786.1
	S.D.	6.2	18.3	29.7	36.9	51.3	72.9	70.1	81.8	81.7	71.7	61.3	47.6	25.0	6.7	415.1
	MAX	22.6	74.8	129.7	199.4	279.0	305.8	321.5	302.1	303.8	260.7	185.6	155.2	107.0	28.8	2527.4
	MIN	0.0	6.7	20.1	27.8	81.0	19.1	61.9	14.9	10.8	4.5	4.4	1.9	1.3	0.0	867.2
(17th)	E.T.	30.58	118.56	203.57	279.81	342.08	386.07	408.81	408.81	386.07	342.08	279.81	203.57	118.56	30.58	3538.96
	K.T.															0.51
AUGUST	Average	-	23.3	55.4	100.0	144.0	165.7	181.5	178.6	170.1	150.1	109.2	66.4	25.0		1371.6
	S.D.		14.7	28.3	39.5	57.3	66.5	74.5	63.1	54.3	50.7	44.1	38.8	15.5		394.3
	MAX		47.7	111.4	172.6	217.9	294.2	269.8	260.6	244.6	227.4	159.3	109.8	54.4		1900.4
	MIN		0	10.3	20.8	9.9	9.8	18.7	13.4	18.3	27.5	11.6	7.9	0		617.9
(16th)	E.T.	2.18	94.76	184.21	264.43	329.95	376.24	400.17	400.17	376.24	329.95	264.43	184.21	94.76	2.18	3303.88
	K.T.															0.42

Table 3.6. September-December 1981.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
SEPTEMBER	Average		12.1	59.8	107.7	151.6	187.4	213.4	215.5	198.5	154.1	111.0	59.7	11.9		1482.7
	S.D.		10.8	20	34.4	50.9	49.3	65.8	50.5	60.5	49.1	40.6	22.2	10.7		352.8
	MAX		32.8	99.2	149.3	216.9	249.1	311.1	275.6	270.2	210.0	162.5	84.4	29.8		2011.8
	MIN		0	19.9	36.7	45.4	54.7	73.9	118.4	68.5	48.9	21.7	10.3	0		669.2
(15th)	E.T.	-	56.45	149.73	233.38	301.70	349.97	374.92	374.92	349.97	301.70	233.38	149.73	56.45	-	2932.3
	K.T.															0.51
OCTOBER	Average	-	1.7	44.0	92.1	129.2	162.1	189.0	187.1	186.4	149.9	104.6	46.1	1.3		1291.8
	S.D.		4.8	20.6	33.8	51.2	60.7	73.4	68.7	65.6	47.8	38.2	18.6	3.5		431.3
	MAX		17.7	80.2	148.2	200.3	254.8	273.0	261.0	266.5	201.9	154.8	74.3	13.8		1821.0
	MIN		0	7.6	16.6	21.5	42.8	34.9	33.5	19.2	16.9	29.5	14.2	0		441.9
(15th)	E.T.	-	12.60	106.23	190.21	258.79	307.25	332.29	332.29	307.25	258.79	190.21	106.23	12.60	-	2414.74
	K.T.															0.54
NOVEMBER	Average	-	-	19.4	64.2	105.8	141.7	171.5	170.7	164.4	121.3	82.9	29.5			1071.6
	S.D.			9.6	25.0	44.7	52.5	61.4	59.8	56.5	45.2	30.1	14.3			367.1
	MAX			40.6	98.0	154.6	204.2	230.4	234.9	220.1	190.8	127.0	53.8			1464.5
	MIN			6.0	0.0	9.6	17.3	9.9	9.1	4.5	5.1	6.2	0.0			111.6
(14th)	E.T.	-	-	67.61	149.34	216.09	263.25	287.63	287.63	263.25	216.09	149.34	67.61	-	-	1963.84
	K.T.															0.55
DECEMBER	Average			13.2	55.0	97.8	117.8	146.2	135.2	118.8	83.8	50.1	13.6	-	-	831.5
	S.D.			9.6	26.2	42.8	52.3	63.6	60.7	61.9	46.5	31.0	10.3			369.2
	MAX			31.0	88.3	143.9	171.8	210.8	206.2	192.6	144.5	94.5	30.6			1267.9
	MIN			0.0	4.7	11.7	11.0	14.0	14.7	14.8	7.9	5.1	0.0			100.6
(10th)	E.T.	-	-	49.51	129.63	195.07	241.30	265.20	265.20	241.30	195.07	129.63	49.51	-	-	1761.42
	K.T.															0.47

Table 3.7. January-April 1982.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
JANUARY	Average	-	-	21.7	65.9	115.8	148.0	171.0	166.2	156.5	109.4	70.8	23.1			1048.6
	S.D.			8.7	23.1	38.6	43.6	54.7	62.8	62.5	45.0	29.2	11.7			339.8
	MAX			32.2	90.3	161.2	196.0	227.6	240.4	220.7	171.0	112.8	43.2			1459.3
	MIN			0	18.4	22.5	36.9	24.8	10.2	6.4	6.2	7.9	0			257.5
(17th)	E.T.	-	-	59.16	140.54	207.01	253.96	278.23	278.23	253.96	207.01	140.54	59.16	-	-	1877.8
	K.T.															0.56
FEBRUARY	Average		0.7	31.8	68.0	108.1	135.5	163.5	149.0	129.7	101.8	68.0	25.4	1.3		990.4
	S.D.		2.6	21.3	39.6	64.5	70.9	77.3	68.1	73.7	53.5	34.8	19.1	4.6		457.2
	MAX		11.7	82.1	159.4	222.0	229.5	260.7	237.8	227.1	185.7	137.6	79.0	20.4		1674.7
	MIN		0	5.6	12.0	16.6	15.6	7.7	16.0	37.8	16.8	15.2	2.5	-		236.7
(16th)	E.T.	-	-	93.54	177.74	246.50	295.08	320.19	320.19	295.08	246.50	177.74	93.54	-	-	2266.1
	K.T.															0.44
MARCH	Average		8.4	48.1	91.4	141.7	177.3	196.9	191.3	169.0	136.4	96.1	46.7	7.3		1310.6
	S.D.		10.8	24.4	43.3	55.3	63.8	68.2	62.6	63.8	58.8	39.0	23.0	7.5		441.6
	MAX		37.1	90.9	157.7	213.0	265.1	275.0	270.4	268.0	219.6	145.1	88.3	24.7		1870.1
	MIN		0	9.3	16.9	7.0	45.7	44.0	48.8	22.3	15.4	8.7	3.4	0		240.7
(16th)	E.T.	-	40.06	135.04	220.22	289.80	338.95	364.35	364.35	338.95	289.80	220.22	135.04	40.06	-	2776.84
	K.T.															0.47
APRIL	Average		18.3	57.1	109.2	151.2	185.1	217.8	220.6	225.1	183.4	145.8	74.5	28.1	-	1617.7
	S.D.		10.6	31.0	53.6	64.0	74.4	90.3	89.8	87.2	74.1	57.6	39.4	15.8		618.2
	MAX		37.6	114.12	184.7	226.2	287.3	317.8	320.2	309.9	276.1	206.9	158.7	50.9		229.4
	MIN		0	3.4	3.1	3.6	4.2	5.2	4.0	2.0	16.4	14.8	8.8	0		87.6
(15th)	E.T.	-	82.15	174.51	257.19	324.71	372.42	397.07	397.07	372.42	324.71	257.19	174.51	82.15	-	3216.1
	K.T.															0.50

Table 3.8. May-July 1982.

		0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	Total
MAY	Average	11.3	50.2	106.5	153.7	207.9	241.5	278.9	233.6	226.9	176.1	144.2	87.0	44.5	9.6	1972.6
	S.D.	7.9	18.9	35.7	43.3	61.9	40.9	59.6	81.9	83.2	79.9	57.4	39.2	15.8	7.5	426.4
	MAX	27.9	81.0	156.4	207.2	278.1	295.5	335.6	316.0	315.9	267.0	212.9	132.3	64.8	34.3	2539.2
	MIN	0	6.7	22.4	49.7	40.4	148.3	62.3	33.9	24.6	2.2	6.0	3.5	5.4	0	583.6
(15th)	E.T.	22.04	112.25	199.42	297.60	341.46	386.56	409.88	409.88	386.56	341.46	277.60	199.42	112.25	22.04	3498.42
	K.T.															0.56
JUNE	Average	12.3	45.5	99.1	145.8	195.2	214.9	256.9	230.4	213.7	172.9	140.8	92.6	41.0	8.2	1875.9
	S.D.	8.2	22.4	40.4	55.6	83.0	76.0	82.4	80.9	101.4	66.3	58.8	34.7	19.5	5.7	579.6
	MAX	28.2	84.0	142.7	215.3	267.4	282.6	333.6	335.8	303.8	257.4	239.3	162.3	87.1	23.2	2590.5
	MIN	0	2.0	2.1	4.1	12.1	17.6	10.2	16.9	15.6	5.2	15.8	15.0	5.0	0	164.1
(11th)	E.T.	37.59	124.48	208.44	283.43	345.23	388.68	411.13	411.13	388.68	345.23	283.43	208.44	124.48	37.59	3598.56
	K.T.															0.52
JULY	Average	11.7	51.5	100.7	172.8	232.0	238.0	258.3	244.4	214.9	120.2	83.8	62.7	34.5	6.3	1847.3
	S.D.	5.6	14.7	37.9	21.7	24.7	38.1	43.2	47.8	85.2	76.0	64.6	47.7	33.6	3.9	293.92
	MAX	18.8	69.8	127.6	194.4	291.2	280.6	320.7	239.1	303.0	198.3	185.8	170.8	131.0	12.4	2322.6
	MIN	0	12.3	52.9	112.4	198.0	183.6	180.2	153.1	10.8	3.7	9.3	16.9	7.4	0	1323.0
(17th)	E.T.	30.58	118.56	203.57	279.81	342.08	386.07	408.81	408.81	386.07	342.08	279.81	203.57	118.56	30.58	3538.96
	K.T.															0.52
AUGUST	Average															
	S.D.															
	MAX															
	MIN															
	E.T.															
	K.T.															

TABLE 4

Total average the solar radiation for June 1980, 1981 and 1982 (in Btu/Ft^2-Hr)

Table 4. Total average of the solar radiation for June 1980, 1981 and 1982 (in BTU/FT^{2}HR)

(BTU/FT^2-HR)	SOLAR TIME													
	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
AVERAGE	11.5	50.8	103.6	155.4	196.0	219.2	247.5	240.9	215.5	175.1	135.5	90.5	41.7	8.9
STANDARD DEVIATION	6.8	28.9	35.9	42.7	65.5	74.5	79.5	81.1	92.8	71.1	60.2	40.7	20.4	5.6
MAXIMUM	28.6	215.7	211.4	217.8	267.4	282.9	333.6	335.8	325.6	275.5	239	162.3	87.1	23.3
MINIMUM	0.0	2.0	2.1	4.1	12.1	17.6	10.2	10.0	5.2	7	4.7	2.4	0.2	0.0

TABLE 5

Summary of the daily average, extraterrestrial (ET) and ratio of global insolation on horizontal plane to extraterrestrial insolation on horizontal plane (KT). From 1980 to 1982.

Table 5.1 : ET 1980 to 1982
Table 5.2 : KT 1980 to 1982

Table 5.1. Summary of the daily average and daily extraterrestrial on horizontal plane (ET).

From 1980 to 1982 (BTU/FT^2-DAY)

Daily Average	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1980	866.32	1217.4	138[illegible].0	1800.0	1841.4	1773.4	1851.8	1854.0		1110.3	962.1	932.5
1981	1153.5	1189.8	1505.0	1826.4	2111.0	1985.4	1786.1	1371.6	1482.7	1291.8	1071.6	831.5
1982	1048.6	990.4	1310.6	1617.7	1972.6	1875.9	1847.3					
TOTAL DAILY AVERAGE	1022.81	1132.53	1398.87	1748.63	1975.0	1878.23	1828.4	1612.8	1482.7	1201.05	1016.85	877.5
ET	1877.8	2266.1	2776.84	3216.1	3498.42	3598.56	3538.96	3303.88	2932.3	2414.74	1963.84	1761.42

Table 5.2. Summary of the daily average ratio of global insolation on horizontal plane to extraterrestrial insolation on horizontal plane (ET). From 1980-1982.

Daily Average	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1980	0.46	0.54	0.50	0.56	0.53	0.49	0.52	0.56		0.46	0.49	0.52
1981	0.61	0.53	0.54	0.57	0.60	0.55	0.51	0.42	0.51	0.54	0.55	0.47
1982	0.56	0.44	0.47	0.50	0.56	0.52	0.52					
TOTAL DAILY AVERAGE	0.54	0.50	0.50	0.54	0.56	0.52	0.52	0.49	0.51	0.50	0.52	0.50

TABLE 6

Solar radiation measured at the Energy Research and Education Park, University of Florida, Gainesville, on January 1981.
(in Btu/Ft^2-Hr)

Table 6.1 : Printout January 1981
Table 6.2 : Data Input January 1981

RUN RAD2

JANUARY 1981

SOLAR RADIATION
MEASURED IN BTU/SQ-FT-HR
AT THE UNIVERSITY OF FLORIDA
ENERGY RESEARCH & EDUCATION PARK
GAINESVILLE, FLORIDA 32611

TABLE 6.1

SOLAR TIME

DATE	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	TOTAL
1	0.0	0.0	14.4	73.3	134.9	169.7	193.0	195.1	176.4	134.3	75.9	21.5	0.0	0.0	1188.5
2	0.0	0.0	21.5	79.3	139.3	177.6	200.4	203.8	181.3	140.6	84.6	24.7	0.0	0.0	1253.1
3	0.0	0.0	27.4	83.6	143.0	176.8	198.2	202.2	177.5	137.4	82.0	22.1	0.0	0.0	1250.2
4	0.0	0.0	14.4	62.5	118.9	164.1	191.6	188.7	168.3	129.2	76.3	21.3	0.0	0.0	1135.3
5	0.0	0.0	23.0	76.0	134.9	161.1	176.5	164.3	151.2	102.8	69.6	17.2	0.0	0.0	1076.6
6	0.0	0.0	15.2	49.5	84.3	114.8	192.4	169.5	139.3	94.2	46.3	10.6	0.0	0.0	916.1
7	0.0	0.0	2.9	40.6	75.6	68.0	87.7	79.6	35.4	99.0	55.5	5.2	0.0	0.0	549.5
8	0.0	0.1	30.1	66.7	145.5	180.2	204.5	202.9	183.9	146.0	85.5	23.8	0.1	0.0	1269.3
9	0.0	0.0	11.4	79.4	135.7	174.4	138.8	88.6	150.6	104.4	46.8	21.6	0.0	0.0	951.7
10	0.0	0.1	25.0	81.8	140.6	183.6	204.7	206.1	182.5	141.3	79.9	21.5	0.1	0.0	1267.2
11	0.0	0.1	24.3	80.5	137.2	178.6	201.9	203.4	180.9	144.9	87.0	25.9	0.1	0.0	1264.8
12	0.0	0.2	28.9	87.9	144.5	187.5	207.3	212.7	185.2	138.7	77.4	22.0	0.1	0.0	1292.4
13	0.0	0.1	28.7	88.5	146.7	184.8	203.8	208.3	188.0	139.6	88.7	27.4	0.1	0.0	1304.7
14	0.0	0.1	32.4	58.5	89.6	153.7	167.6	127.4	62.1	74.3	61.9	15.1	0.2	0.0	842.9
15	0.0	0.0	7.2	60.7	128.5	176.0	165.2	195.1	168.6	136.7	74.7	19.3	0.0	0.0	1132.0
16	0.0	0.3	17.2	56.4	96.6	166.3	183.3	157.6	118.9	106.0	63.9	25.9	0.5	0.0	992.9
17	0.0	0.3	31.9	92.4	154.6	192.9	216.2	216.7	190.2	147.6	88.3	27.1	0.3	0.0	1358.5
18	0.0	0.2	32.2	92.5	150.8	191.0	218.2	218.2	196.6	159.7	97.5	32.0	0.2	0.0	1388.1
19	0.0	0.2	26.1	85.5	148.7	184.5	207.4	205.6	188.9	145.5	98.5	33.9	0.1	0.0	1324.9
20	0.0	0.0	12.8	42.0	88.1	86.3	53.8	63.9	39.6	20.5	4.1	2.0	0.0	0.0	418.1
21	0.0	0.3	29.1	82.6	140.6	176.3	211.8	201.8	203.1	147.8	93.9	31.8	0.5	0.0	1319.6
22	0.0	0.4	18.1	48.5	90.7	147.5	193.0	191.6	165.8	131.2	70.5	32.4	0.9	0.0	1090.6
23	0.0	0.1	27.8	79.0	141.7	183.5	174.6	189.3	142.8	74.5	48.9	14.8	0.1	0.0	1077.1
24	0.0	0.3	28.7	89.7	144.2	185.8	210.9	214.1	197.9	152.8	93.6	30.6	0.4	0.0	1349.0
25	0.0	0.5	37.3	92.4	150.2	192.7	214.4	216.4	193.0	149.6	91.0	29.6	0.4	0.0	1367.5
26	0.0	1.0	40.4	93.4	155.7	189.8	210.0	202.6	181.9	141.4	93.1	30.3	1.0	0.0	1340.6
27	0.0	0.5	15.6	55.4	114.7	120.0	195.4	206.1	177.6	92.4	65.9	11.9	0.4	0.0	1055.9
28	0.0	0.0	14.2	70.1	138.8	168.4	135.3	113.5	130.2	74.5	23.9	14.5	0.0	0.0	883.4
29	0.0	0.4	31.1	95.1	156.8	190.9	221.7	227.4	205.7	161.8	102.4	37.4	0.9	0.0	1431.6
30	0.0	0.5	32.9	97.6	158.2	189.5	222.2	214.1	181.7	143.7	94.2	34.7	1.3	0.0	1370.6
31	0.0	0.7	20.4	44.9	94.5	135.7	181.8	209.4	220.9	189.3	132.3	53.9	11.2	0.0	1295.0
AVG	0.0	0.2	23.3	73.8	129.8	166.2	186.6	183.9	163.4	125.8	75.9	23.9	0.6	0.0	1153.5

STOP

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TYPE FTN2.DAT
1 1
31

TABLE 6.2 SOLAR RADIATION AT THE ENERGY RESEARCH AND EDUCATION PARK, UNIVERSITY OF FLORIDA, GAINESVILL
ON JANUARY 1981 (In BTU/FT^2-Hr.)

JANUARY 1981 SOLAR RADIATION IN BTU/SQ FT-HR

0.0	0.0	14.4	73.3	134.9	169.7	193.0	195.1	176.4	134.3	75.9	21.5	0.0	0.0
0.0	0.0	21.5	79.3	139.3	177.6	200.4	203.8	181.3	140.6	84.6	24.7	0.0	0.0
0.0	0.0	27.4	83.6	143.0	176.8	198.2	202.2	177.5	137.4	82.0	22.1	0.0	0.0
0.0	0.0	14.4	62.5	118.9	164.1	191.6	188.7	168.3	129.2	76.3	21.3	0.0	0.0
0.0	0.0	23.0	76.0	134.9	161.1	176.5	164.3	151.2	102.8	69.6	17.2	0.0	0.0
0.0	0.0	15.2	49.5	84.3	114.8	192.4	169.5	139.3	94.2	46.3	10.6	0.0	0.0
0.0	0.0	2.9	40.6	75.6	68.0	87.7	79.6	35.4	99.0	55.5	5.2	0.0	0.0
0.0	0.1	30.1	66.7	145.5	180.2	204.5	202.9	183.9	146.0	85.5	23.8	0.1	0.0
0.0	0.0	11.4	79.4	135.7	174.4	138.8	88.6	150.6	104.4	46.8	21.6	0.0	0.0
0.0	0.1	25.0	81.8	140.6	183.6	204.7	206.1	182.5	141.3	79.9	21.5	0.1	0.0
0.0	0.1	24.3	80.5	137.2	178.6	201.9	203.4	180.9	144.9	87.0	25.9	0.1	0.0
0.0	0.2	28.9	87.9	144.5	187.5	207.3	212.7	185.2	138.7	77.4	22.0	0.1	0.0
0.0	0.1	28.7	88.5	146.7	184.8	203.8	208.3	188.0	139.6	88.7	27.4	0.1	0.0
0.0	0.1	32.4	58.5	89.6	153.7	167.6	127.4	62.1	74.3	61.9	15.1	0.2	0.0
0.0	0.0	7.2	60.7	128.5	176.0	165.2	195.1	168.6	136.7	74.7	19.3	0.0	0.0
0.0	0.3	17.2	56.4	96.6	166.3	183.3	157.6	118.9	106.0	63.9	25.9	0.5	0.0
0.0	0.3	31.9	92.4	154.6	192.9	216.2	216.7	190.2	147.6	88.3	27.1	0.3	0.0
0.0	0.2	32.2	92.5	150.8	191.0	218.2	218.2	196.6	158.7	97.5	32.0	0.2	0.0
0.0	0.2	26.1	85.5	148.7	184.5	207.4	205.6	188.9	145.5	98.5	33.9	0.1	0.0
0.0	0.0	12.8	42.0	88.1	86.3	53.8	68.9	39.6	20.5	4.1	2.0	0.0	0.0
0.0	0.3	29.1	82.6	140.6	176.3	211.8	201.8	203.1	147.8	93.9	31.8	0.5	0.0
0.0	0.4	18.1	48.5	90.7	147.5	193.0	191.6	165.8	131.2	70.5	32.4	0.9	0.0
0.0	0.1	27.8	79.0	141.7	183.5	174.6	189.3	142.8	74.5	48.9	14.8	0.1	0.0
0.0	0.3	28.7	89.7	144.2	185.8	210.9	214.1	197.9	152.8	93.6	30.6	0.4	0.0
0.0	0.5	37.3	92.4	150.2	192.7	214.4	216.4	193.0	149.6	91.0	29.6	0.4	0.0
0.0	1.0	40.4	93.4	155.7	189.8	210.0	202.6	181.9	141.4	93.1	30.3	1.0	0.0
0.0	0.5	15.6	55.4	114.7	120.0	195.4	206.1	177.6	92.4	65.9	11.9	0.4	0.0
0.0	0.0	14.2	70.1	138.8	168.4	135.3	113.5	130.2	74.5	23.9	14.5	0.0	0.0
0.0	0.4	31.1	95.1	156.8	190.9	221.7	227.4	205.7	161.8	102.4	37.4	0.9	0.0
0.0	0.5	32.9	97.6	158.2	189.5	222.2	214.1	181.7	143.7	94.2	34.7	1.3	0.0
0.0	0.7	20.4	44.9	94.5	135.7	181.8	209.4	220.9	189.3	132.3	53.9	11.2	0.0

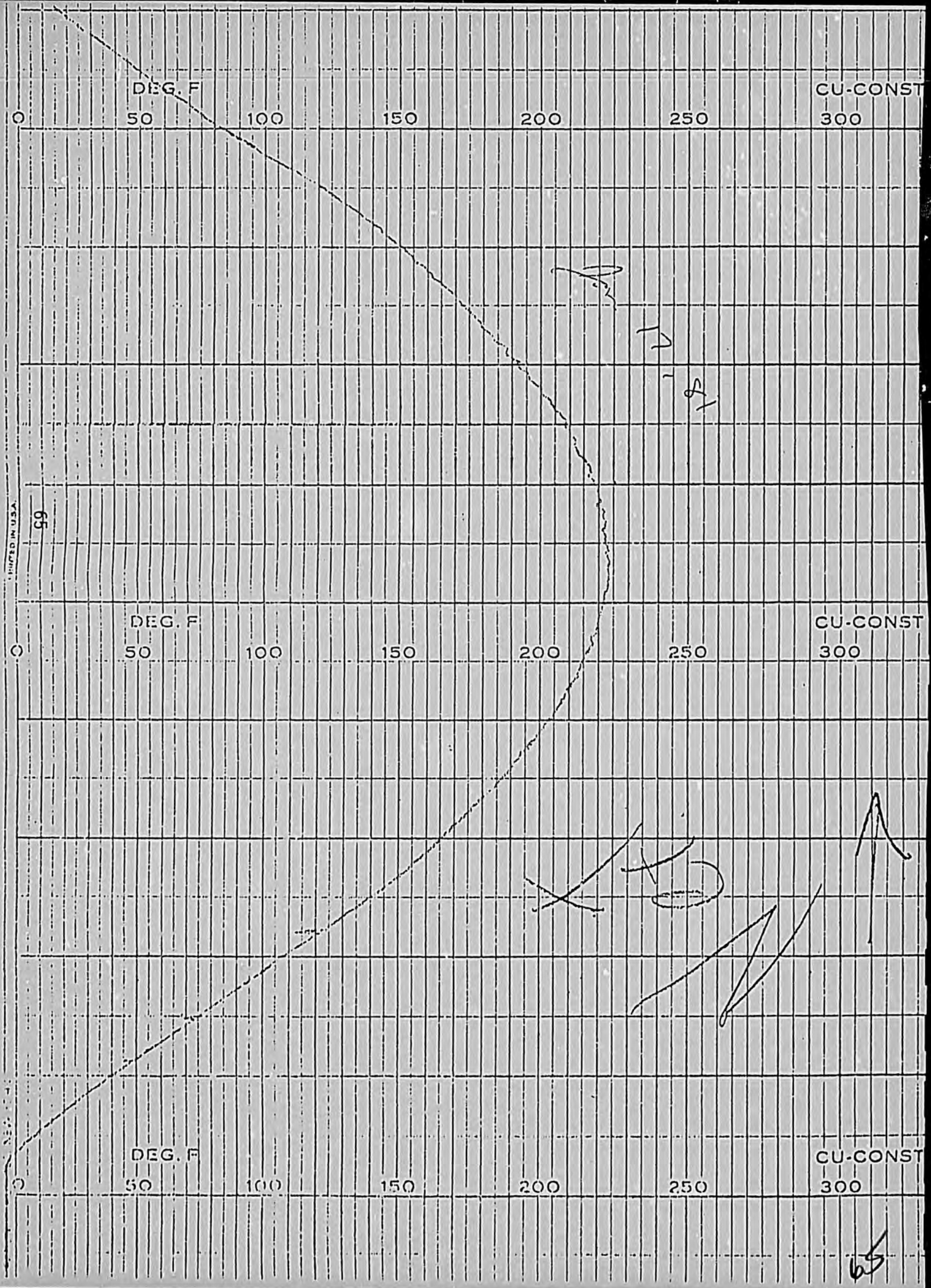
APPENDIX 2

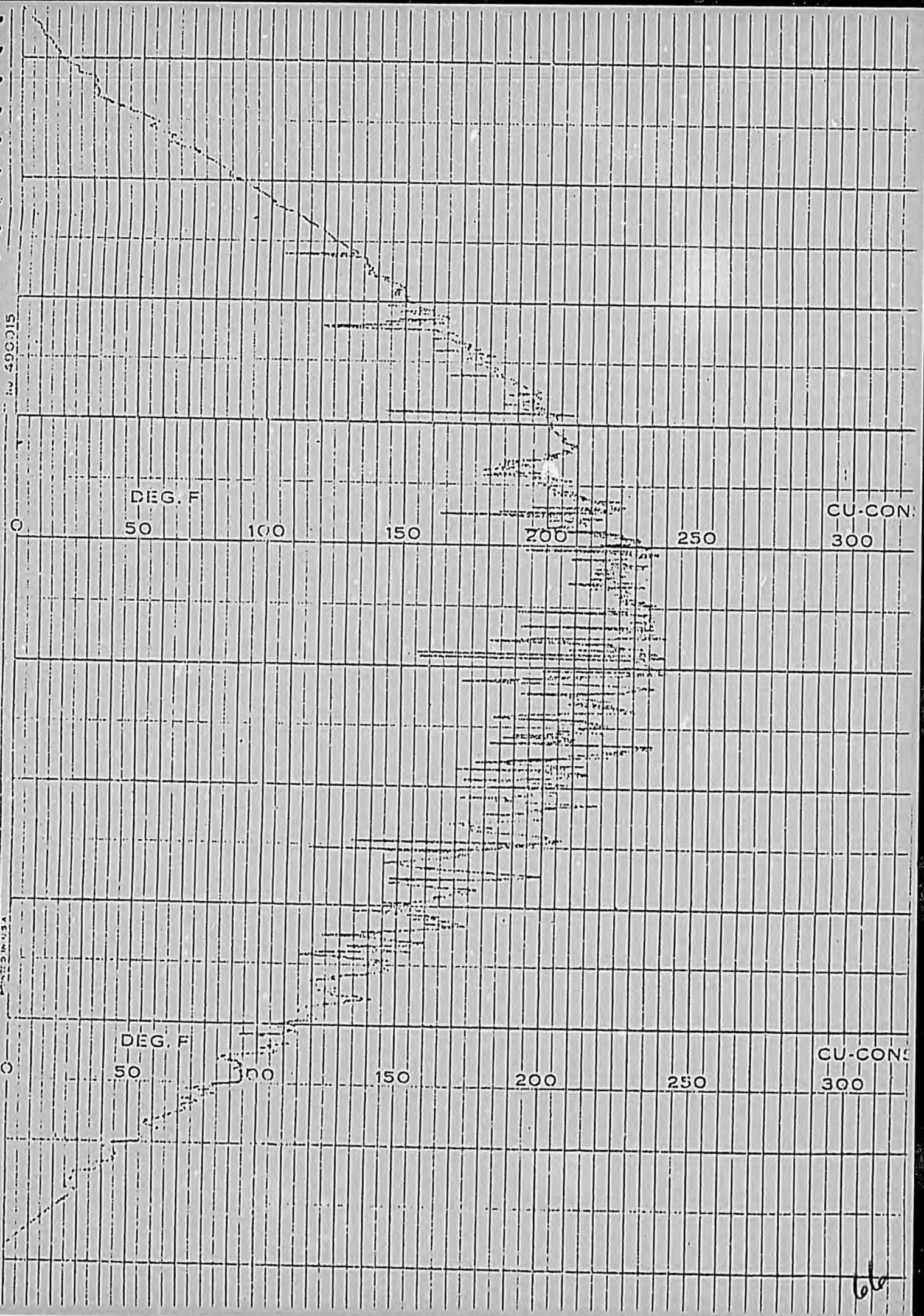
FIGURE 1

The strip chart of hourly global insolation on horizontal plane in Gainesville
(1" : 1 hour; 1" : 50 Btu/Ft^2)

Fig 1.1 : January 17, 1981

Fig 1.2 : January 30, 1981


DEG. F
CU-CONST
0
50
100
150
200
250
300
DEG. F
CU-CONST
0
50
100
150
200
250
300
DEG. F
CU-CONST
0
50
100
150
200
250
300


DEG. F
0
50
100
150
200
250
300
CU-CON
DEG. F
0
50
100
150
200
250
300
CU-CONS

6b

FIGURE 2

Average, standard deviation, maximum and minimum of hourly global insolation on a horizontal plane (Btu/Ft^2-Hr)

Fig 2.1	:	January 1980
Fig 2.2	:	February 1980
Fig 2.3	:	March 1980
Fig 2.4	:	April 1980
Fib 2.5	:	May 1980
Fib 2.6	:	June 1980
Fig 2.7	:	July 1980
Fig 2.8	:	August 1980
Fig 2.9	:	October 1980
Fig 2.10	:	November 1980
Fig 2.11	:	December 1980
Fig 2.12	:	January 1981
Fig 2.13	:	February 1981
Fig 2.14	:	March 1981
Fig 2.15	:	April 1981
Fig 2.16	:	May 1981
Fig 2.17	:	June 1981
Fig 2.18	:	July 1981
Fig 2.19	:	August 1981
Fig 2.20	:	September 1981
Fig 2.21	:	October 1981
Fig 2.22	:	November 1981
Fig 2.23	:	December 1981
Fig 2.24	:	January 1982
Fig 2.25	:	February 1982
Fig 2.26	:	March 1982
Fig 2.27	:	April 1982
Fig 2.28	:	May 1982
Fig 2.29	:	June 1982

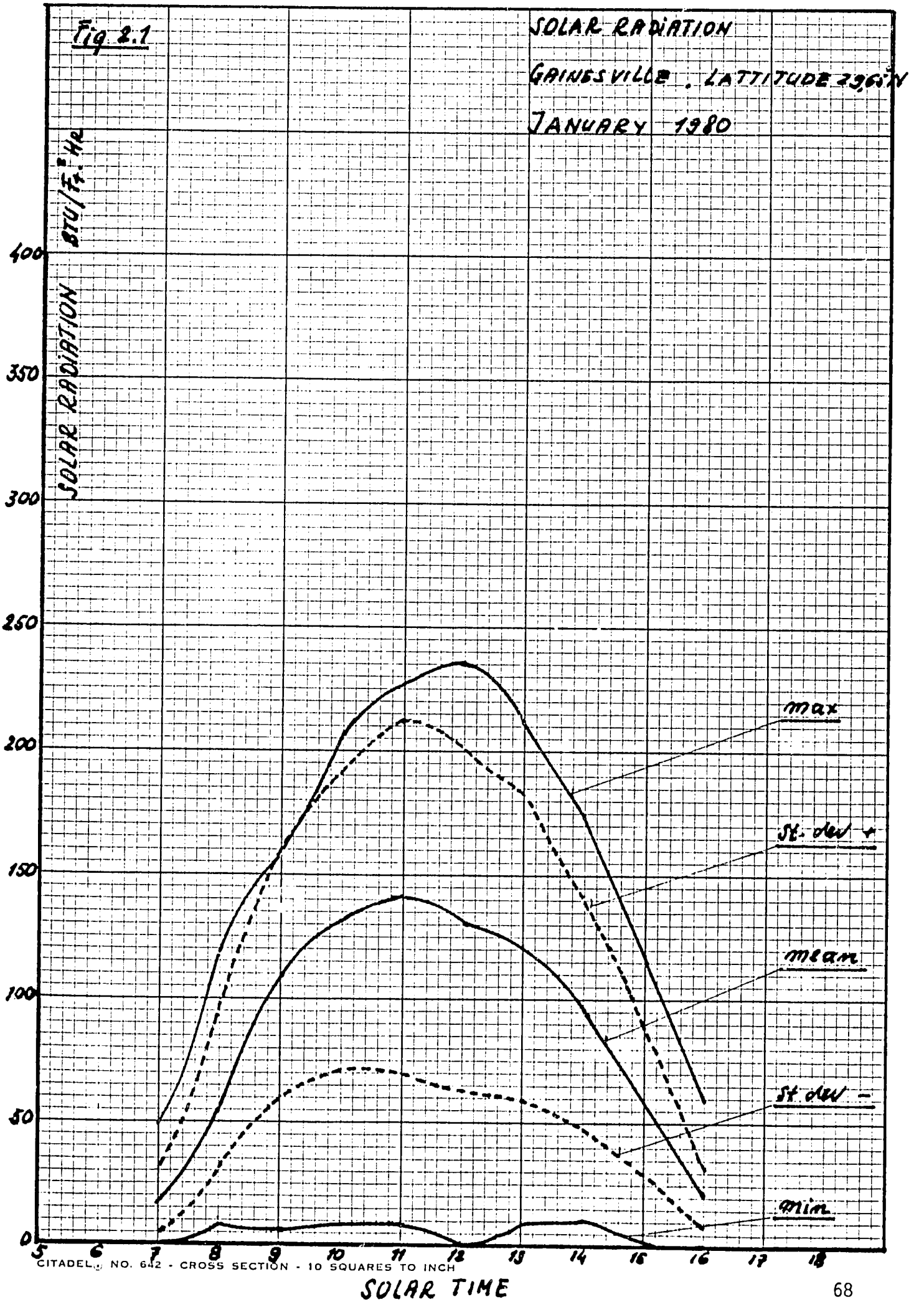


Fig 2.1
SOLAR RADIATION
GAINESVILLE . LATTITUDE 29.6°N
JANUARY 1980
SOLAR RADIATION BTU/Ft.²Hr
400
350
300
250
200
150
100
50
0
max
St. dev +
mean
St. dev −
min
5
6
7
8
9
10
11
12
13
14
15
16
17
18
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

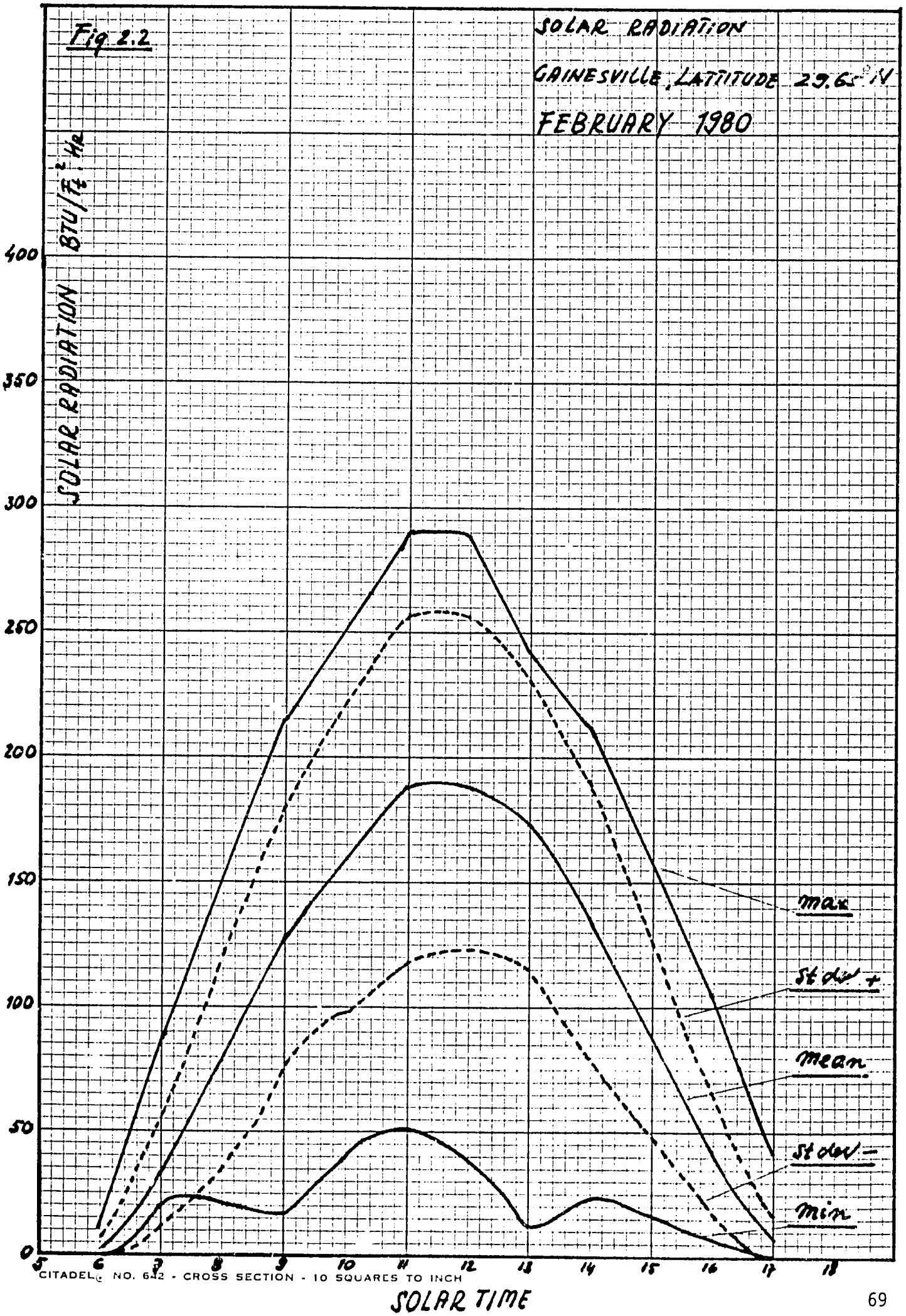


Fig 2.2
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65° N
FEBRUARY 1980
SOLAR RADIATION BTU/ft² · Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
max
St dev +
mean
St dev −
min
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

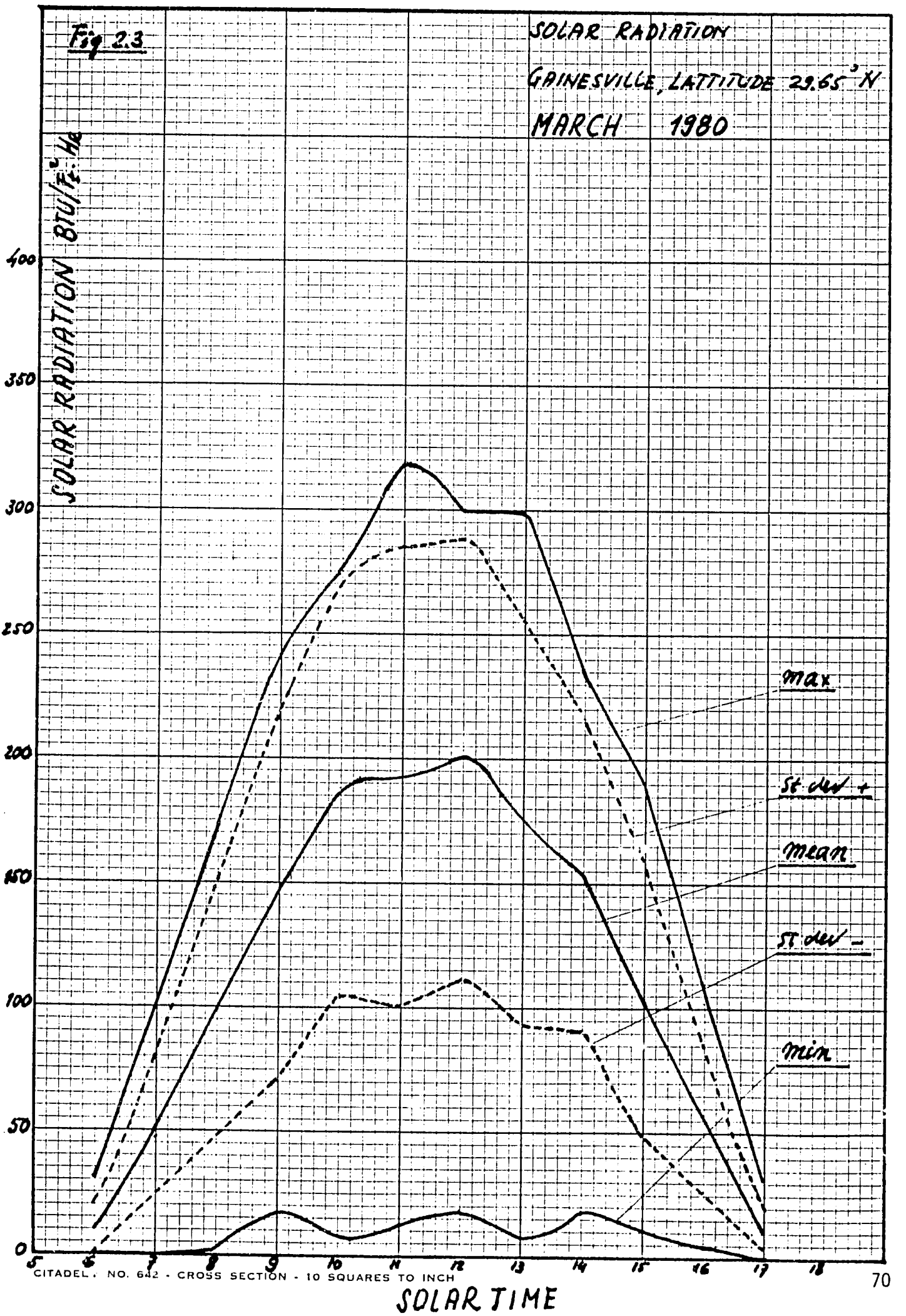
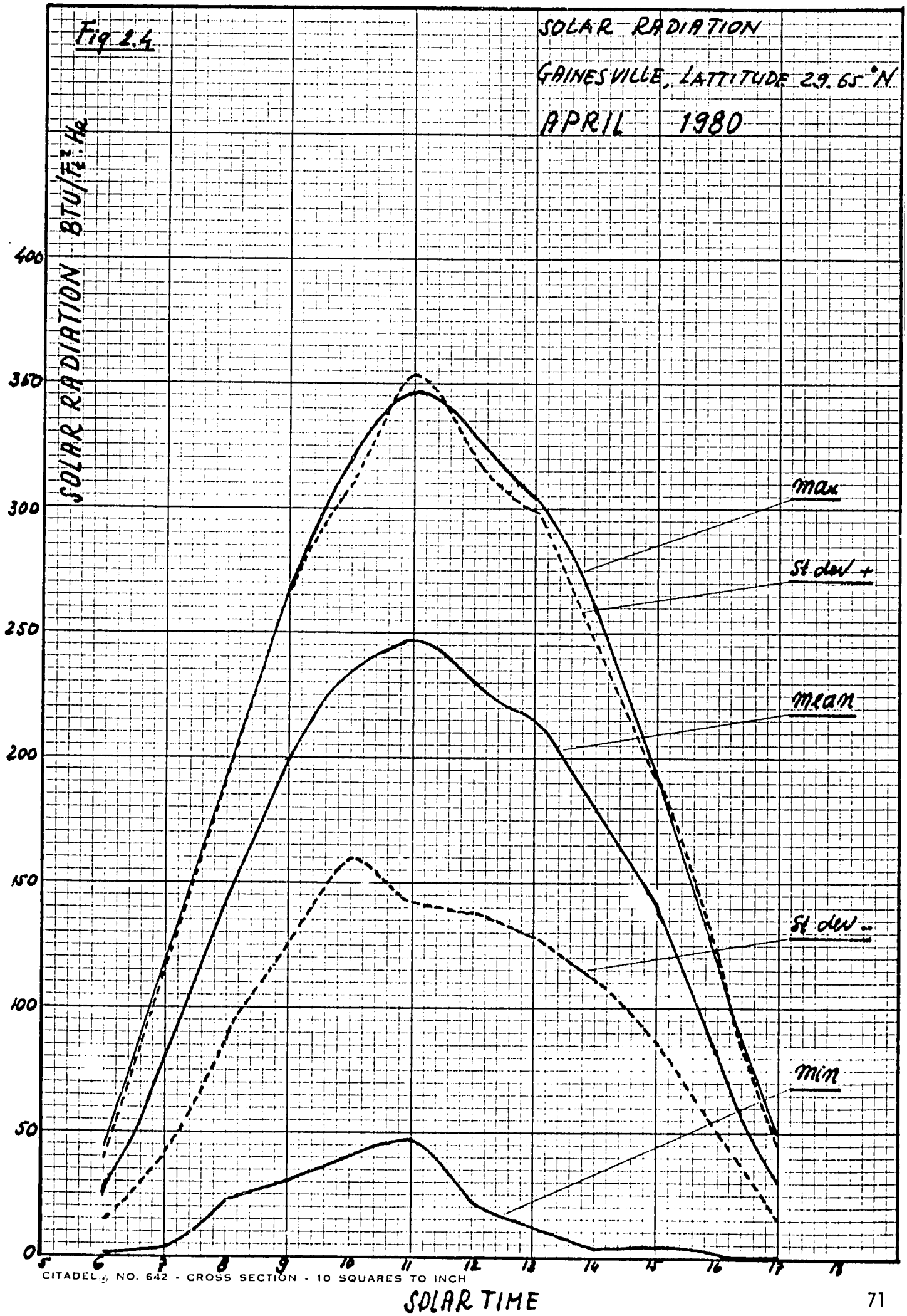


Fig 2.3
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65° N
MARCH 1980
SOLAR RADIATION BTU/ft² Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
max
St dev +
mean
St dev −
min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME



CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

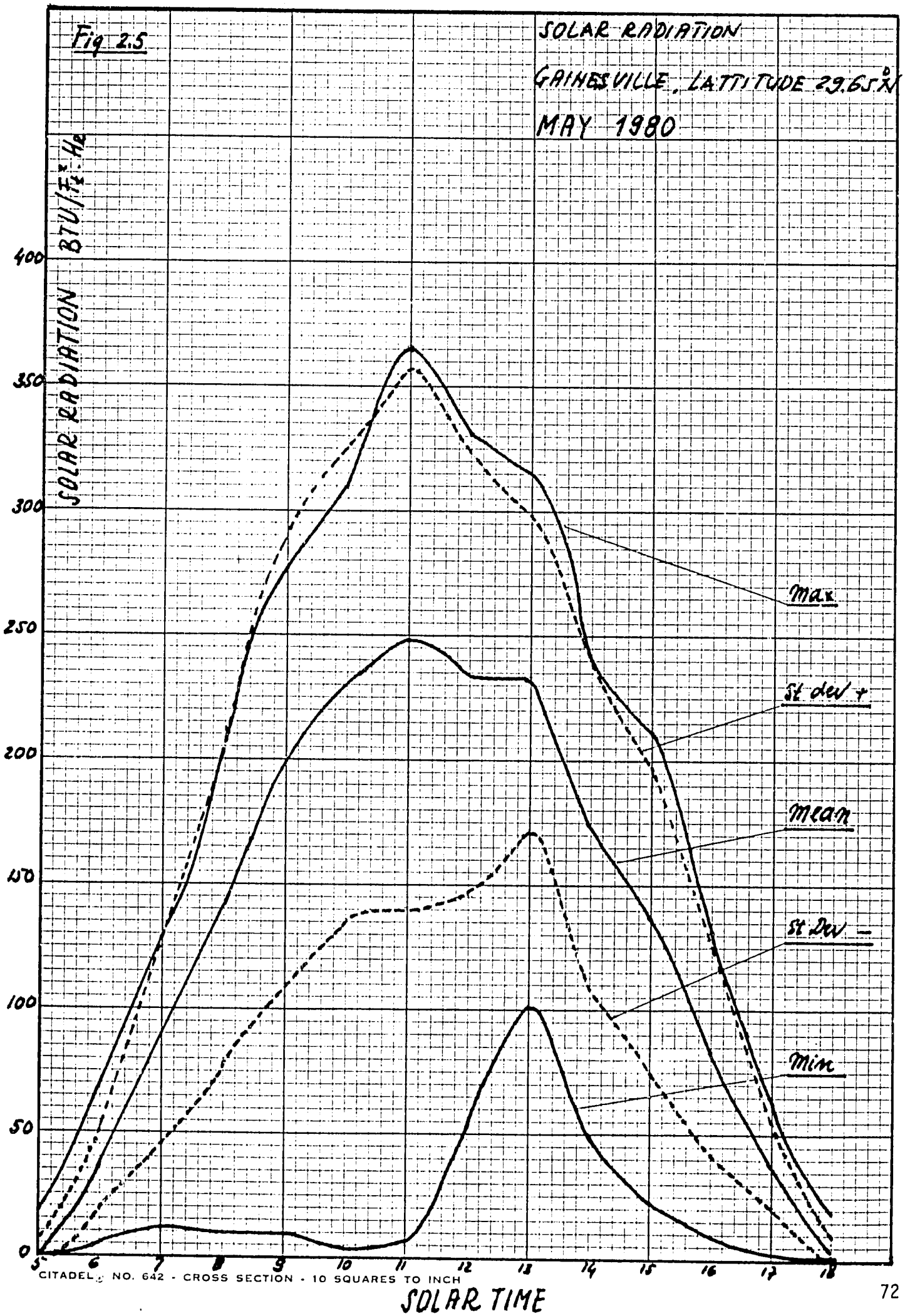


Fig 2.5
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65°N
MAY 1980
SOLAR RADIATION BTU/ft²·Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St dev +
Mean
St Dev −
Min
SOLAR TIME
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

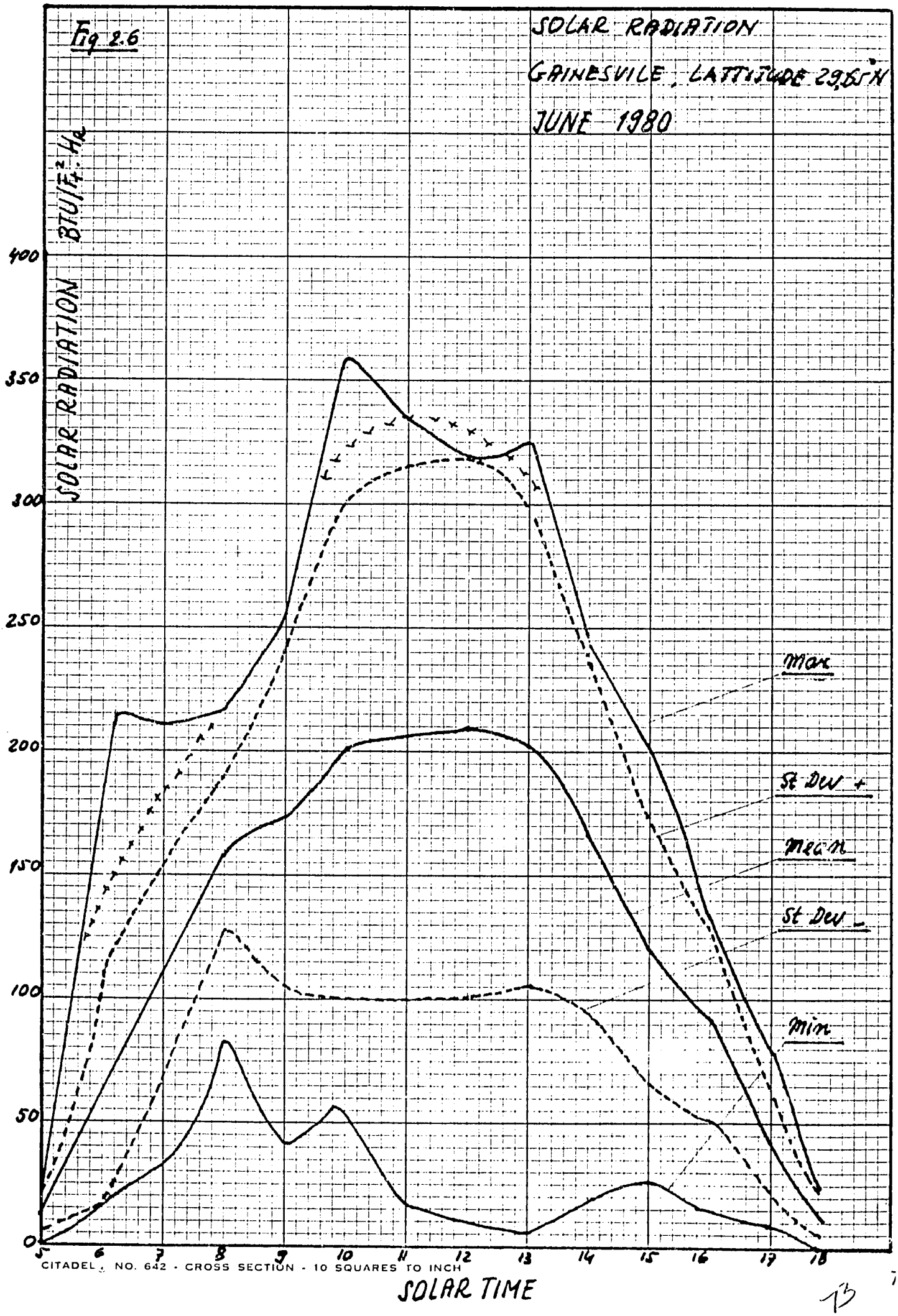


Fig 2.6
SOLAR RADIATION
GAINESVILE, LATTITUDE 29.65°N
JUNE 1980
SOLAR RADIATION BTU/FT.² Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St Dev +
Mean
St Dev -
Min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

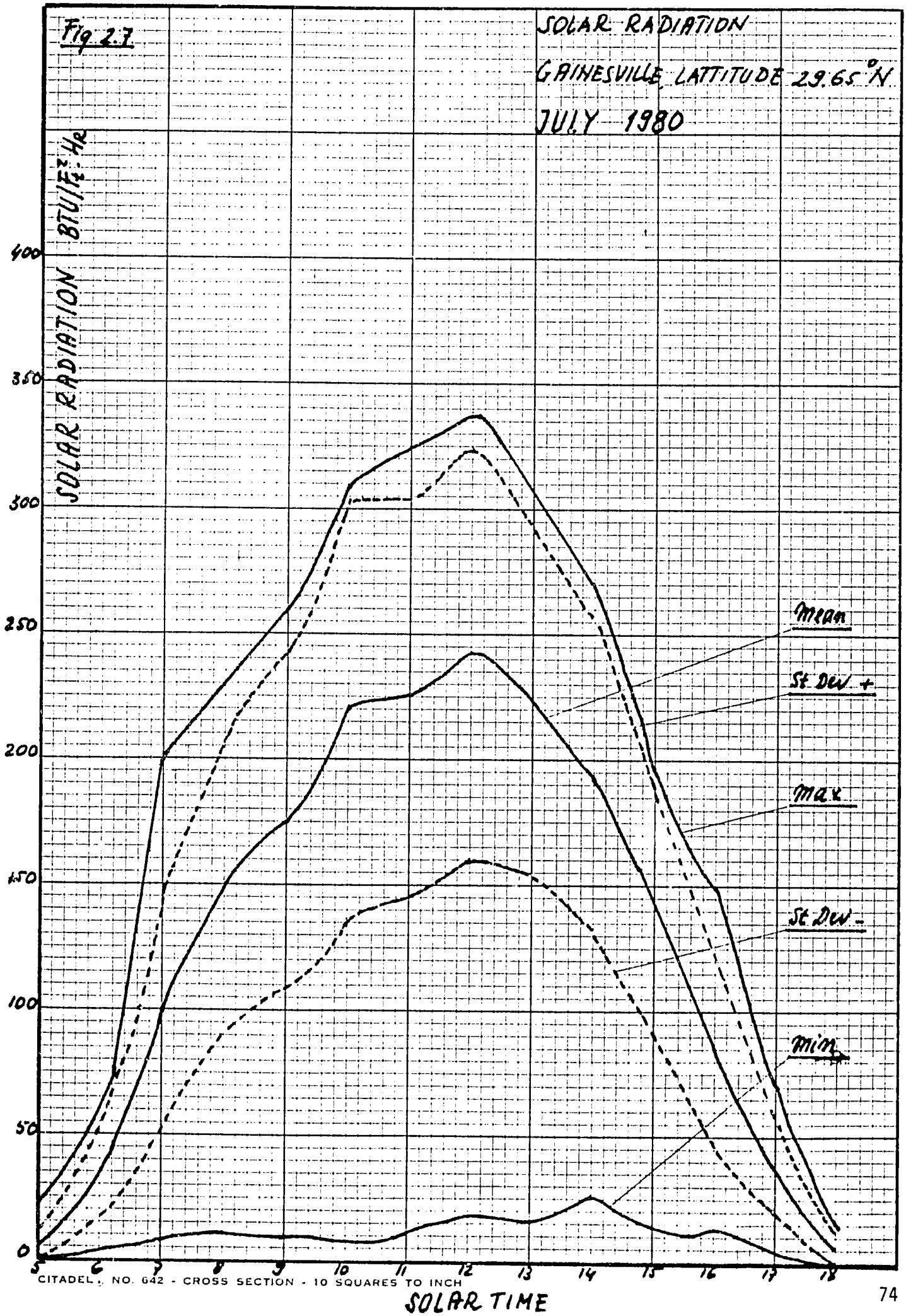


Fig 2.7
SOLAR RADIATION
GAINESVILLE LATTITUDE 29.65°N
JULY 1980
SOLAR RADIATION BTU/ft²-Hr
400
350
300
250
200
150
100
50
0
Mean
St. Dev +
Max
St. Dev -
Min
5
6
7
8
9
10
11
12
13
14
15
16
17
18
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

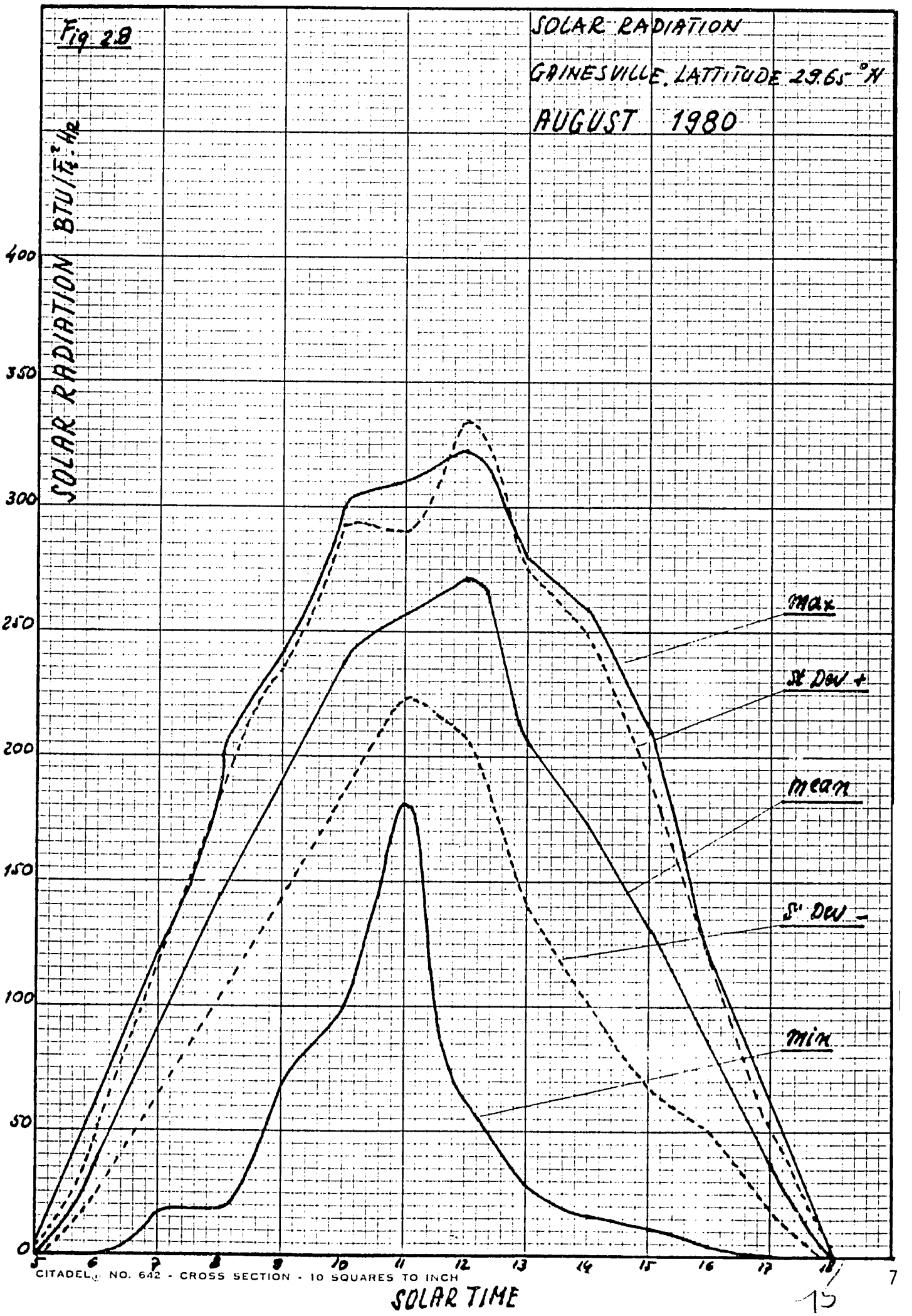


Fig 2B
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65° N
AUGUST 1980
SOLAR RADIATION BTU/ft²-Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St Dev +
Mean
St Dev −
Min
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

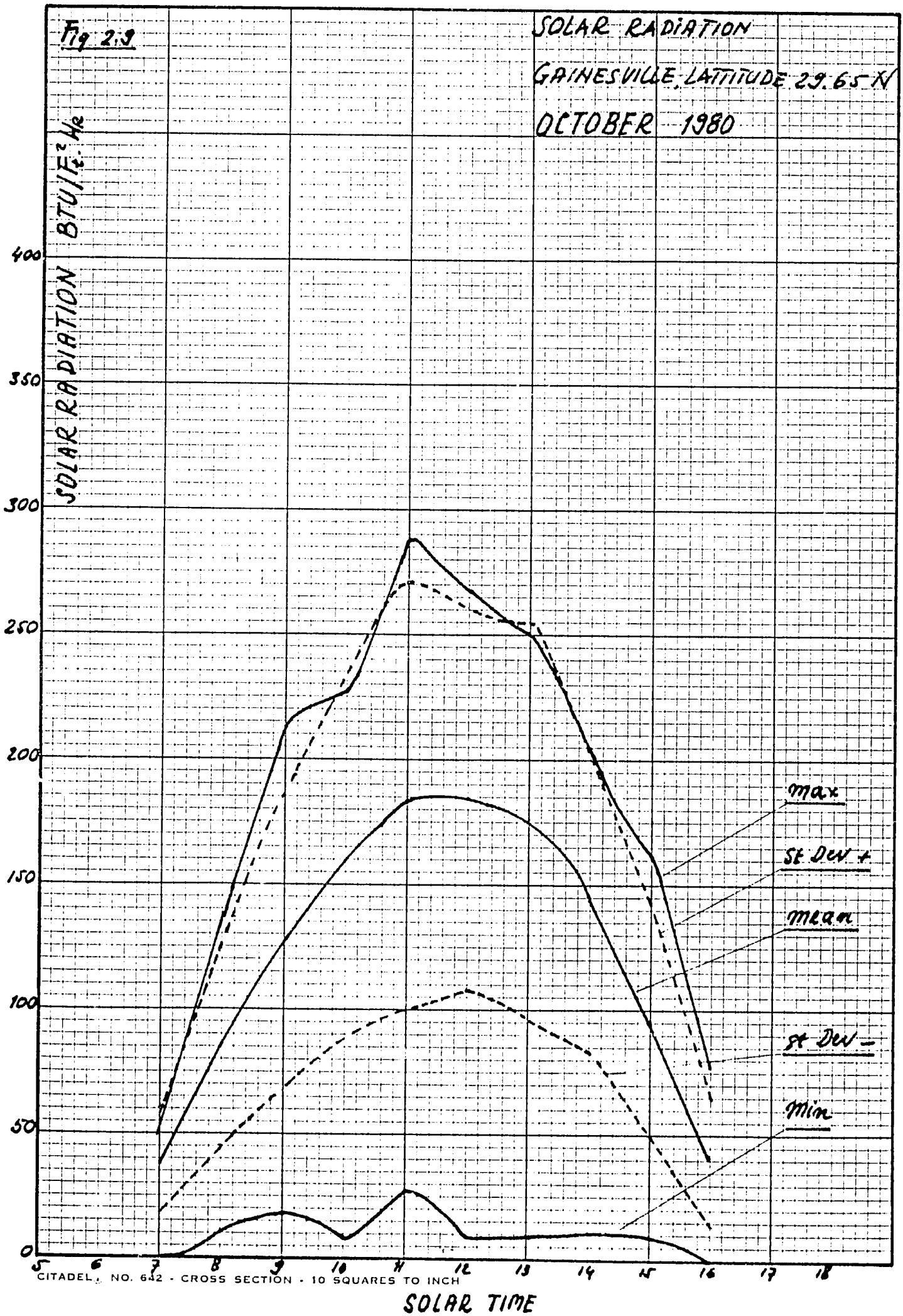


Fig 2.9
SOLAR RADIATION
GAINESVILLE LATITUDE 29.65 N
OCTOBER 1980
SOLAR RADIATION BTU/FT² HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
max
St Dev +
mean
St Dev −
min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

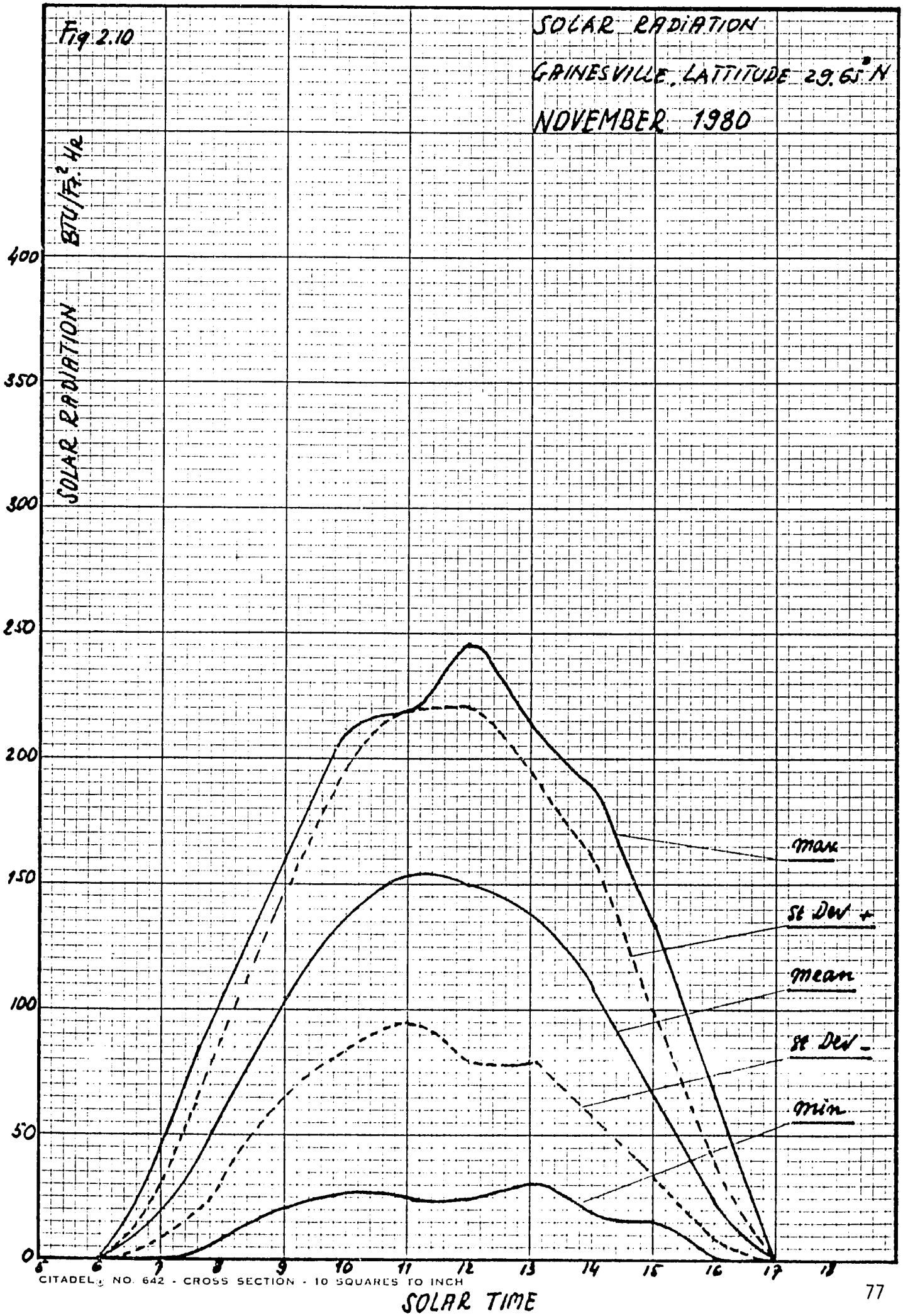


Fig 2.10
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65° N
NOVEMBER 1980
SOLAR RADIATION BTU/FT.² HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
max
St Dev +
mean
St Dev -
min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

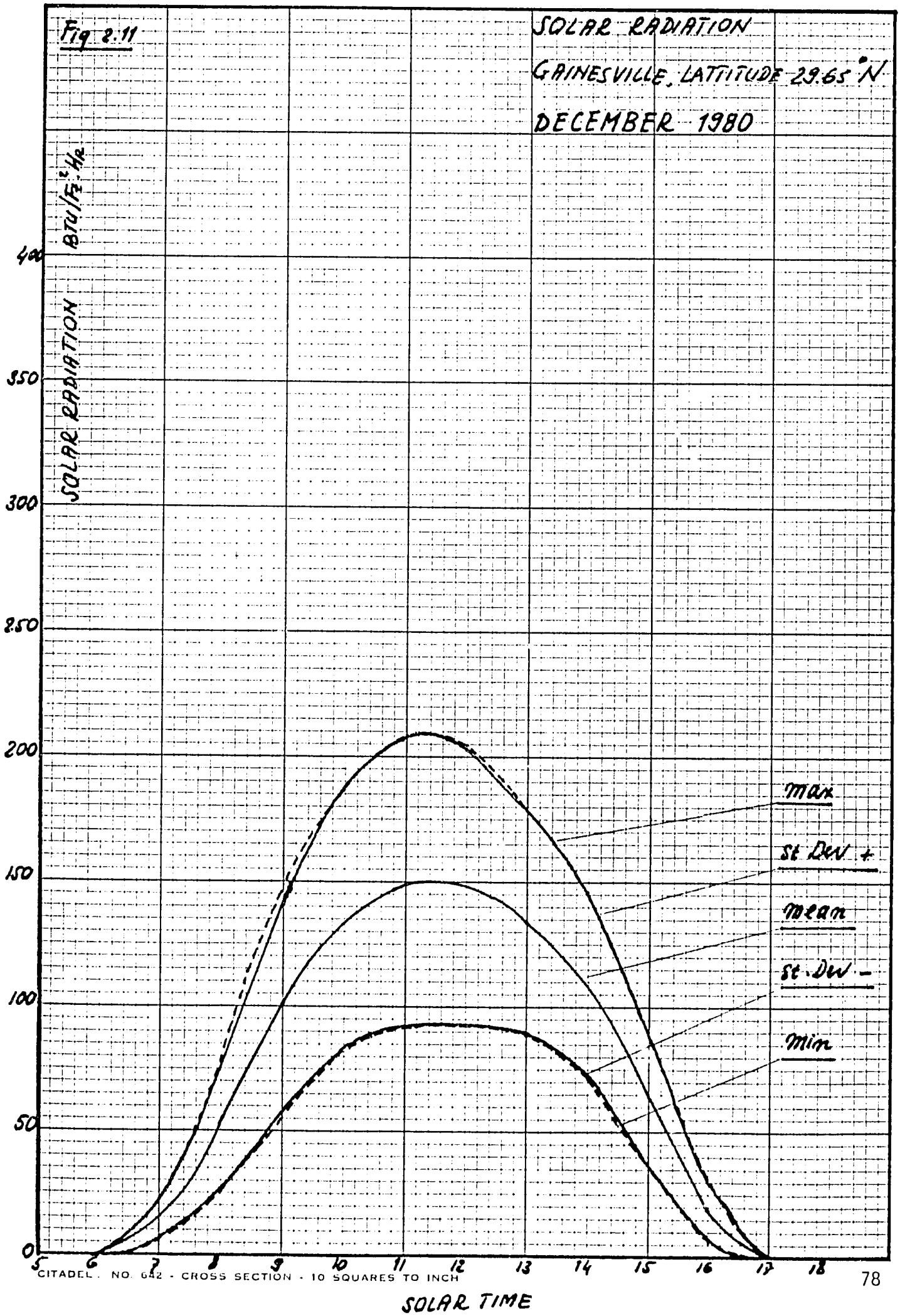


Fig 2.11
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65° N
DECEMBER 1980
SOLAR RADIATION BTU/FT²·HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
max
St Dev +
mean
St. Dev −
min
SOLAR TIME
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

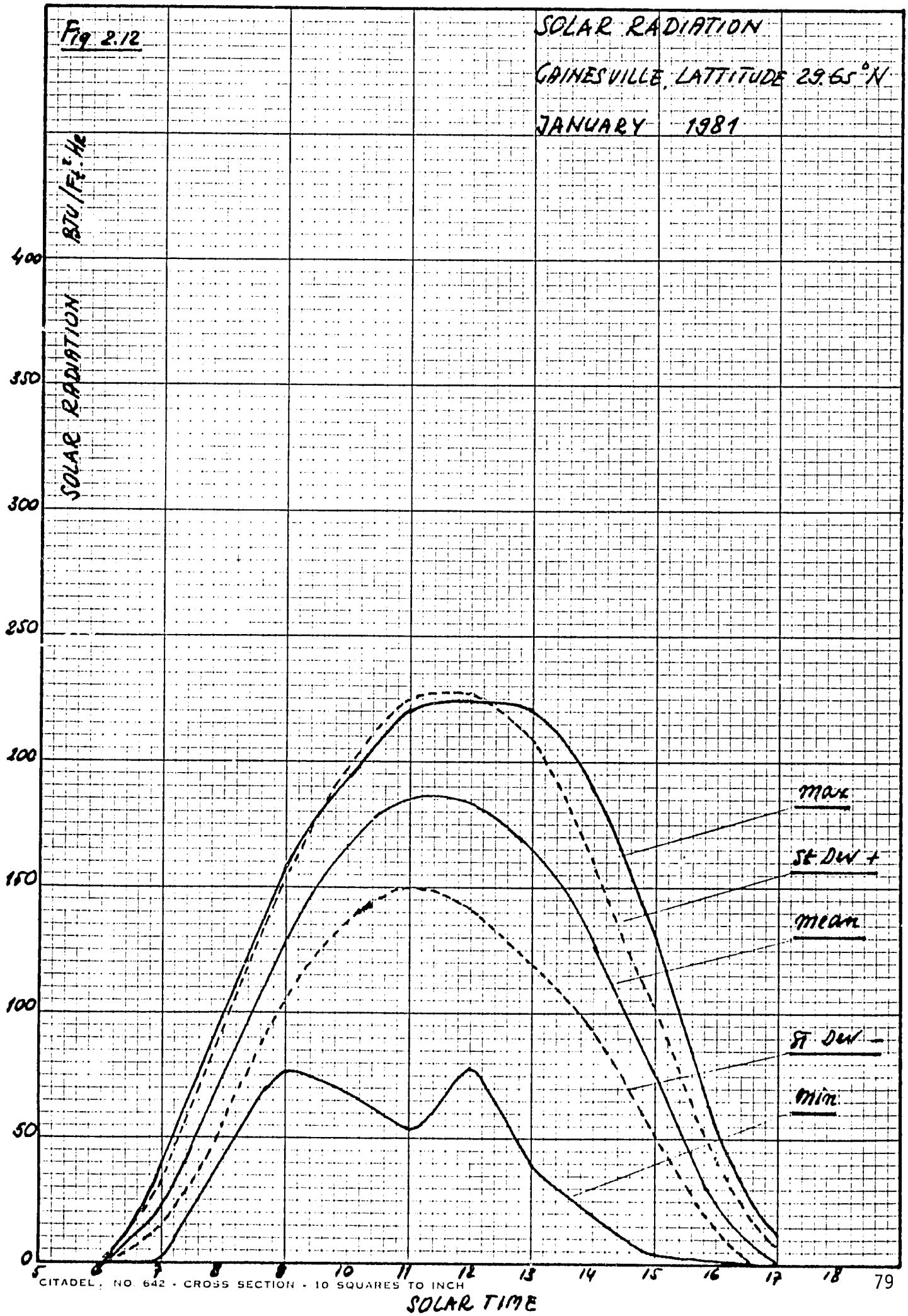


Fig 2.12
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65°N
JANUARY 1981
SOLAR RADIATION BTU/Ft²·Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
SOLAR TIME
max
St. Dev +
mean
St. Dev −
min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

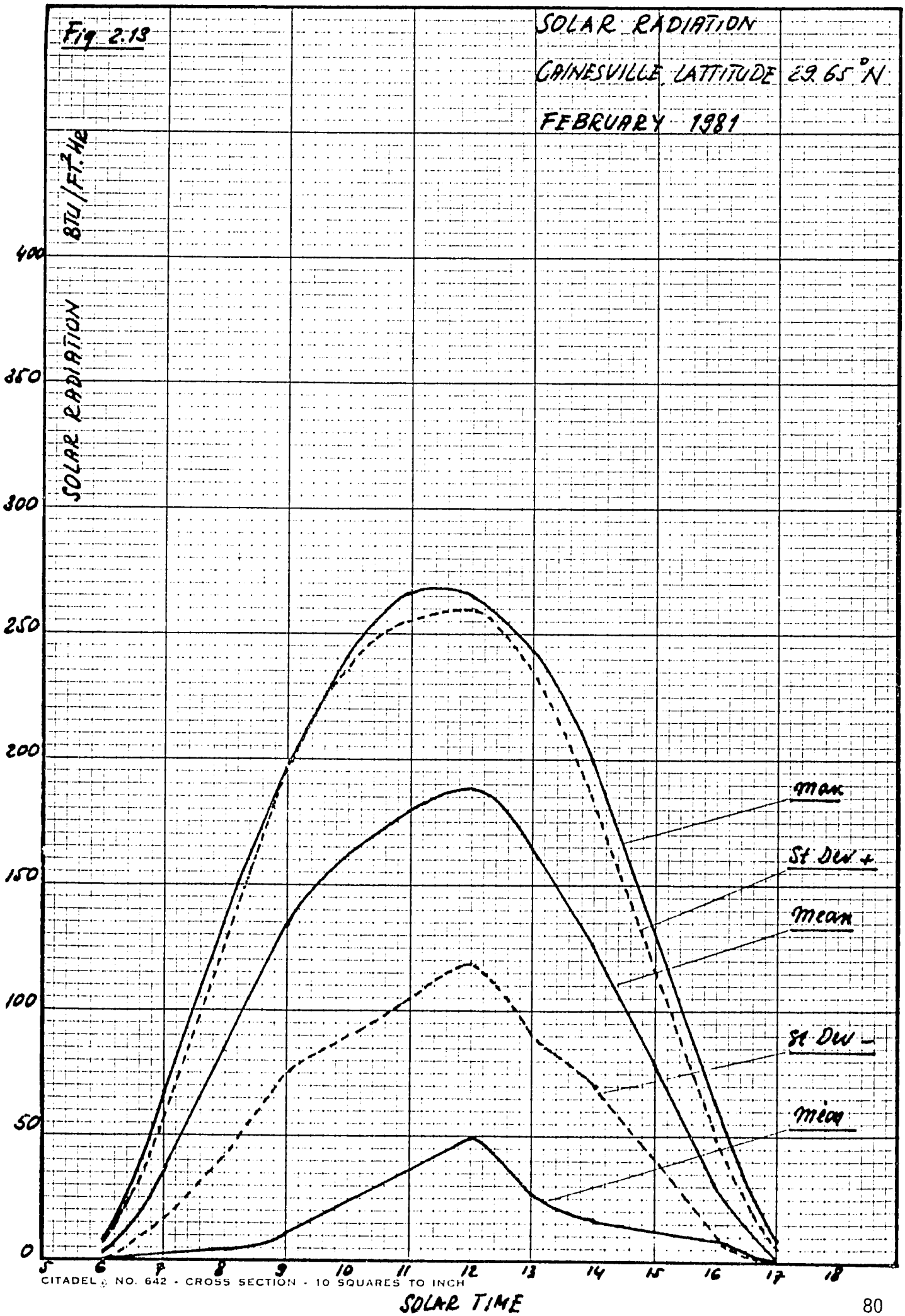


Fig 2.13
SOLAR RADIATION
GAINESVILLE LATITUDE 29.65°N
FEBRUARY 1981
SOLAR RADIATION BTU/FT.²HR
400
350
300
250
200
150
100
50
0
max
St Dev +
mean
St Dev −
min
5
6
7
8
9
10
11
12
13
14
15
16
17
18
SOLAR TIME
CITADEL NO. 642 · CROSS SECTION · 10 SQUARES TO INCH

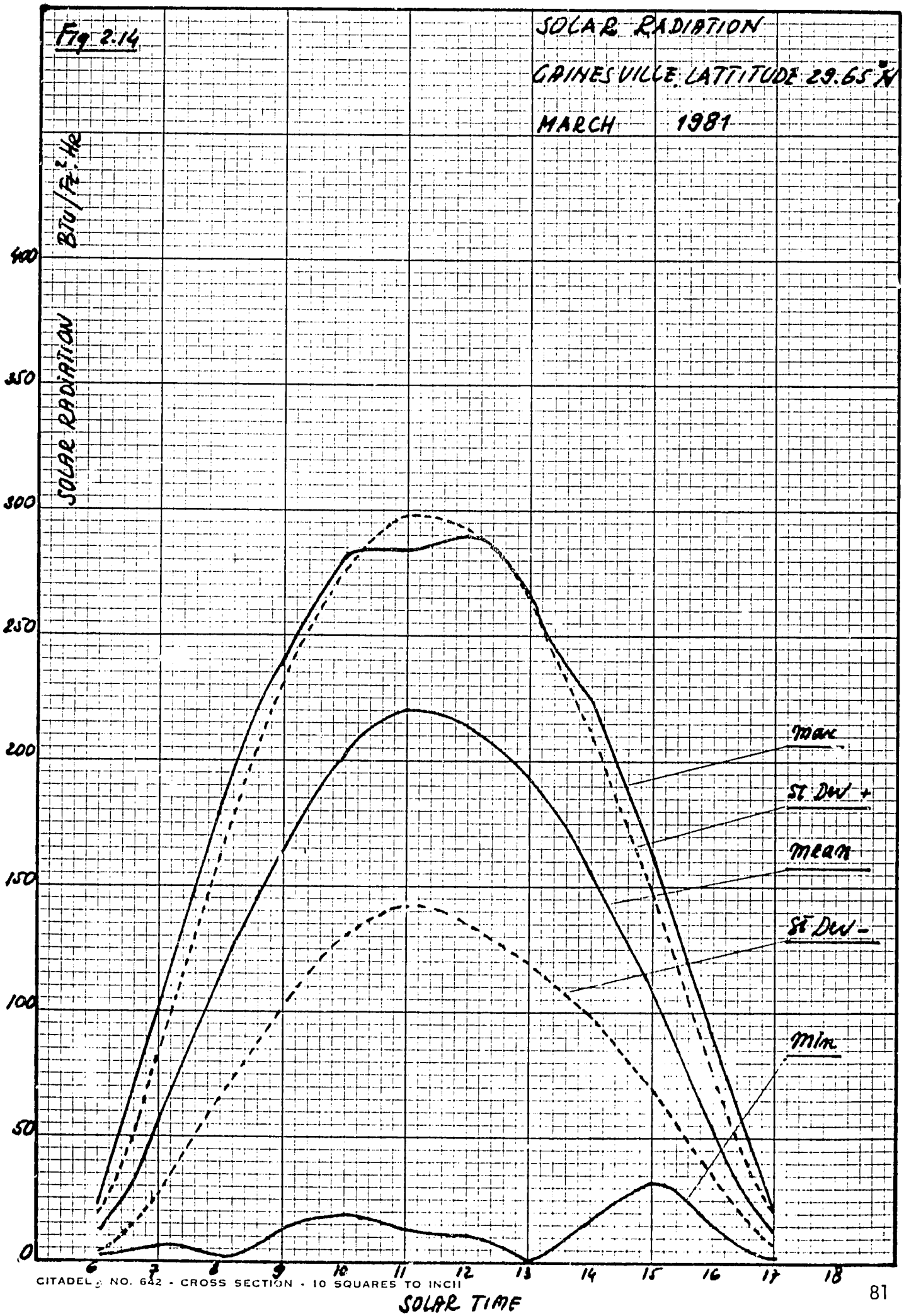


Fig 2:14
SOLAR RADIATION
GAINESVILLE LATITUDE 29.65° N
MARCH 1981
SOLAR RADIATION BTU/Ft.² Hr
400
350
300
250
200
150
100
50
0
6
7
8
9
10
11
12
13
14
15
16
17
18
SOLAR TIME
Max
St Dev +
Mean
St Dev -
Min
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

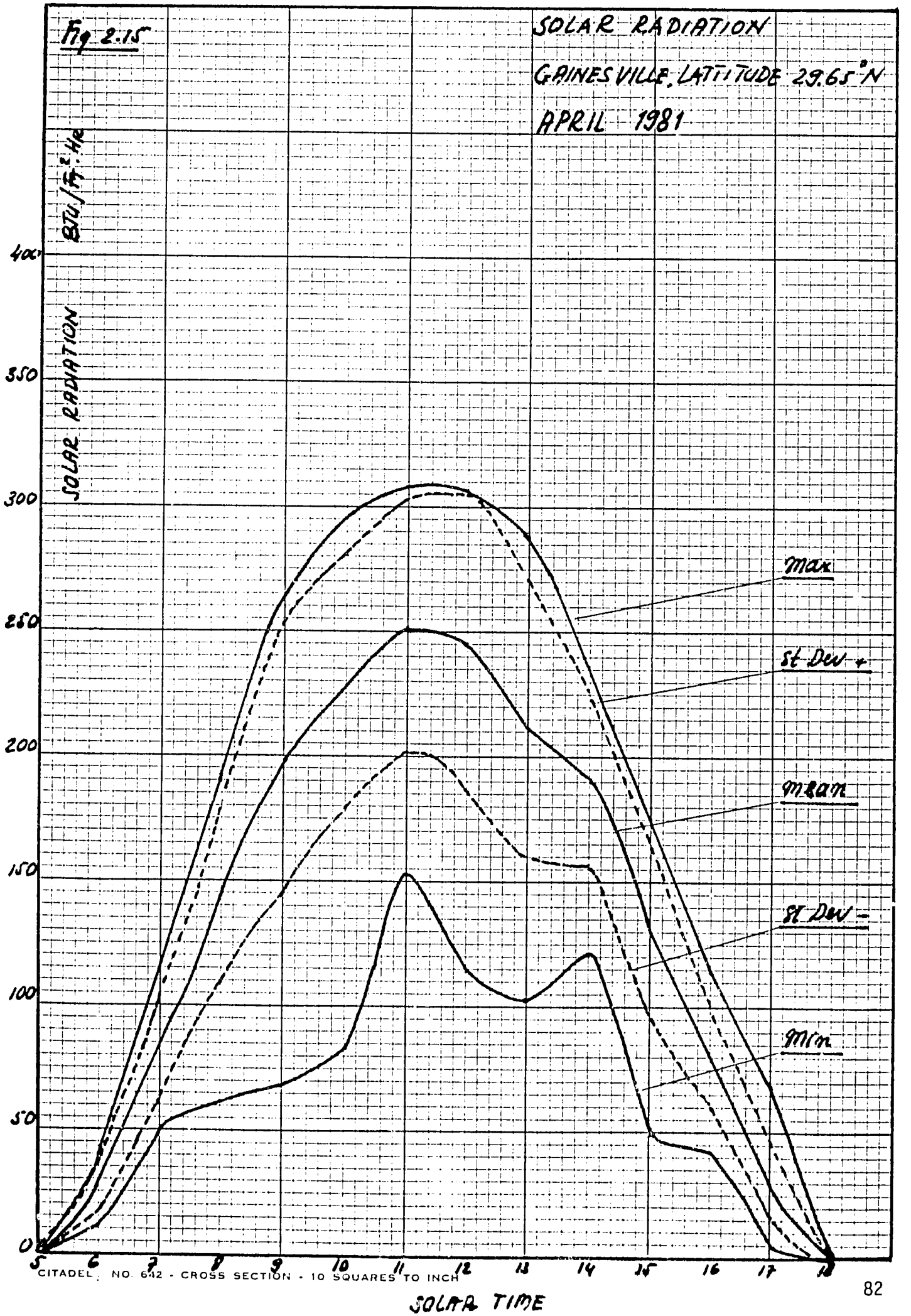


Fig 2.15
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
APRIL 1981
SOLAR RADIATION BTU/FT.²HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St Dev +
mean
St Dev -
Min
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

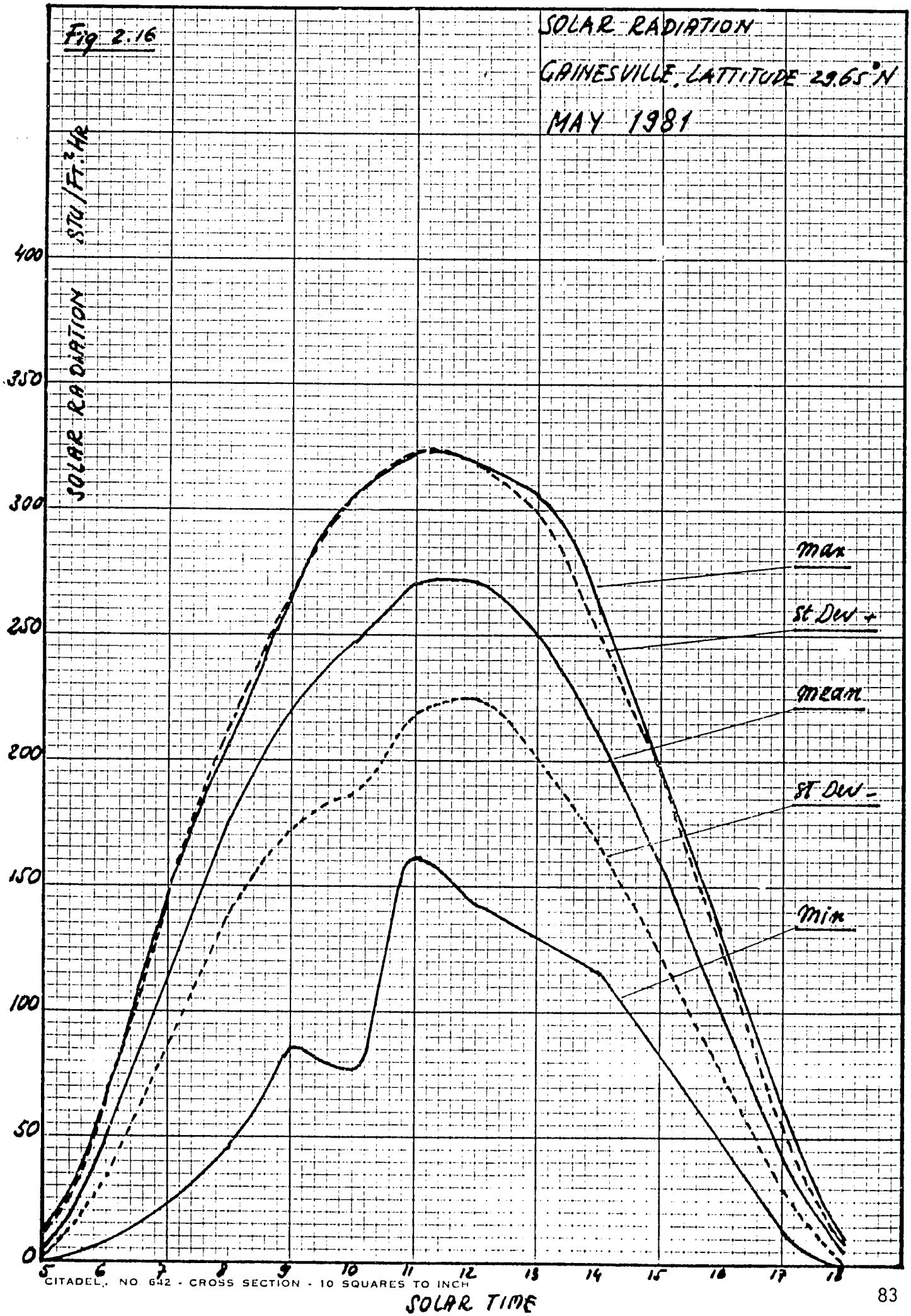


Fig 2.16
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65°N
MAY 1981
SOLAR RADIATION BTU/FT.²HR
400
350
300
250
200
150
100
50
0
max
St Dev +
mean
St Dev -
min
5
6
7
8
9
10
11
12
13
14
15
16
17
18
CITADEL, NO 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

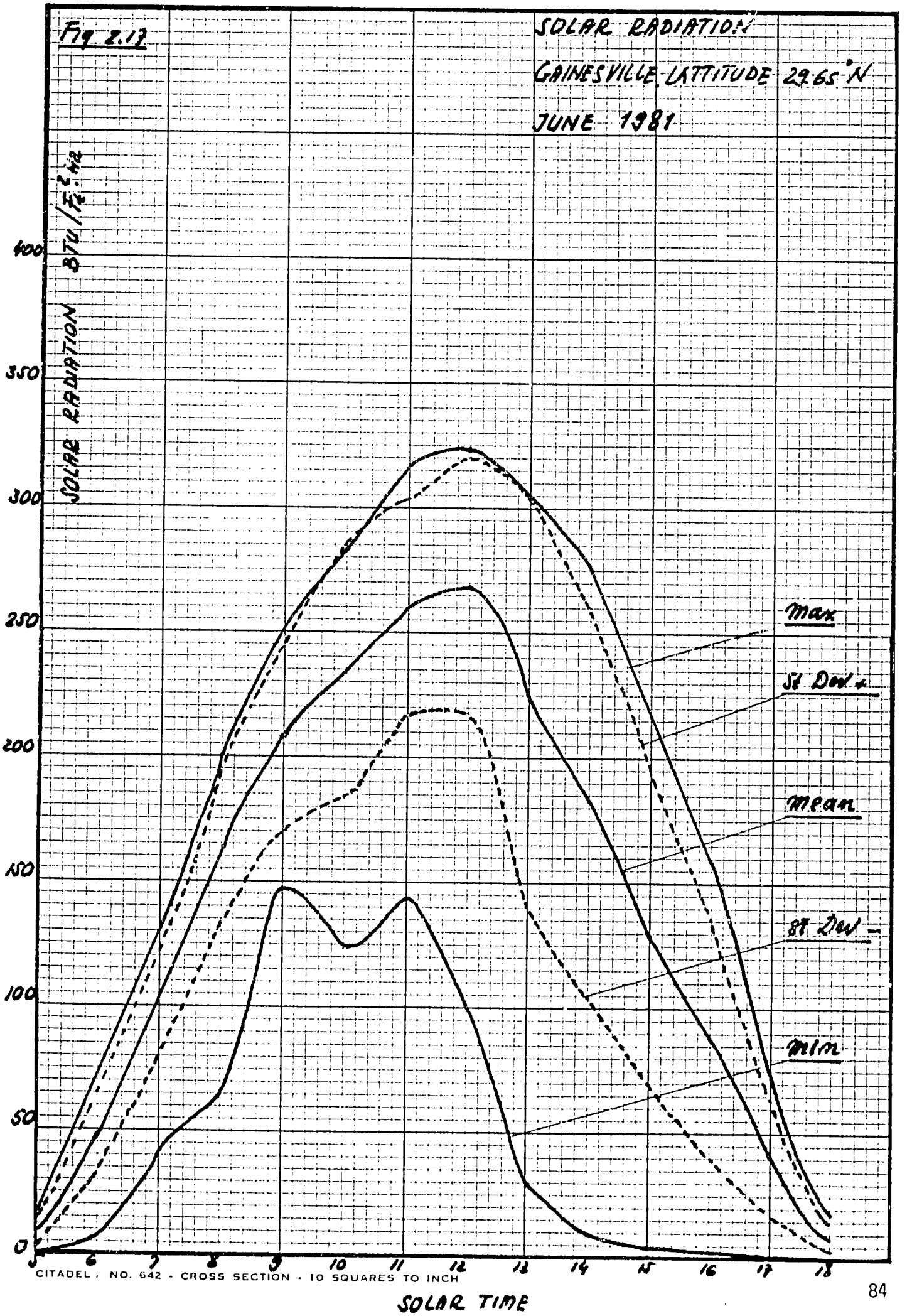


Fig 2.12
SOLAR RADIATION
GAINESVILLE LATTITUDE 29.65°N
JUNE 1981
SOLAR RADIATION BTU/ft²·hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
max
St Dev +
mean
St Dev −
min
CITADEL, NO. 642 · CROSS SECTION · 10 SQUARES TO INCH
SOLAR TIME

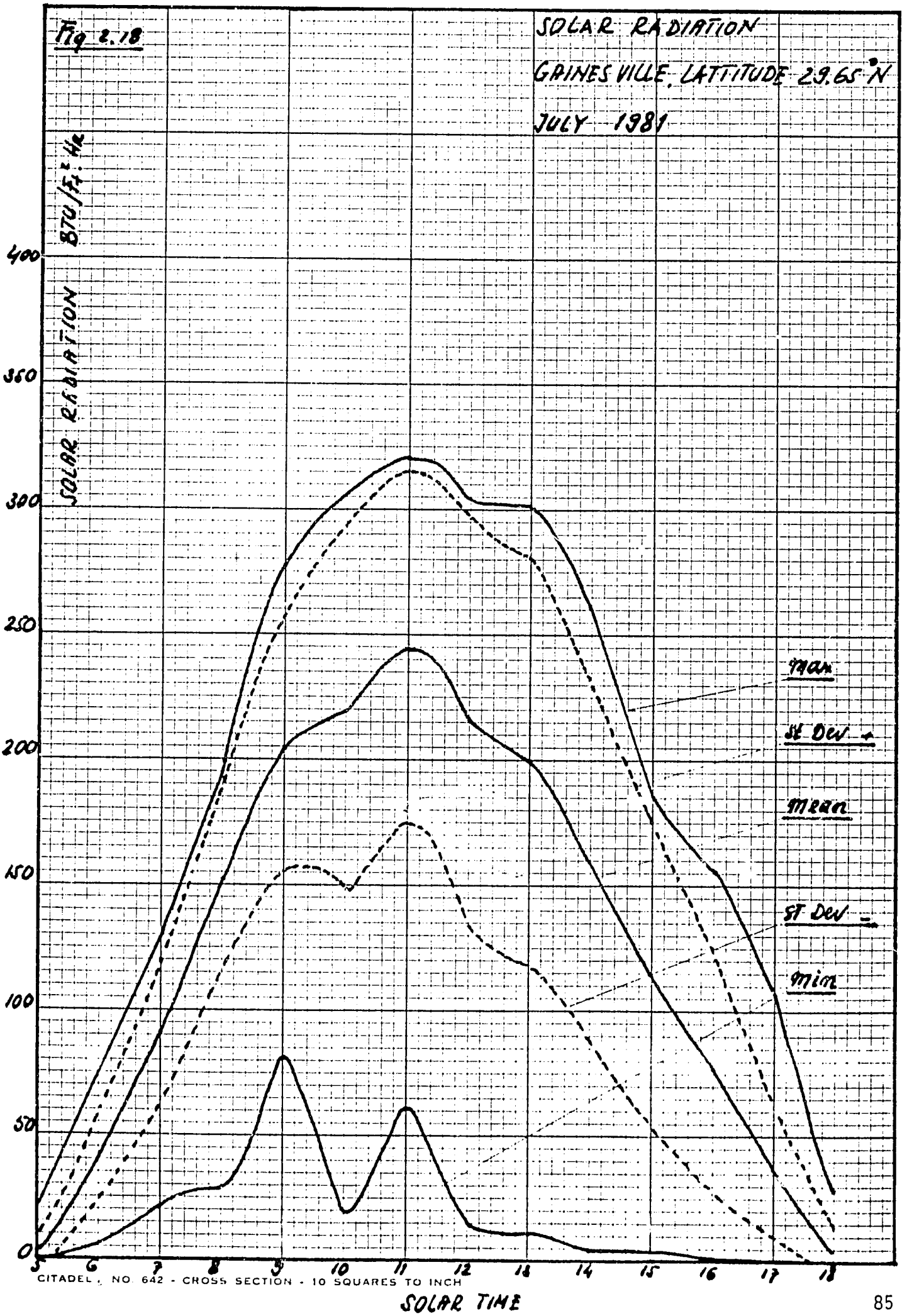


Fig 2.18
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65°N
JULY 1981
SOLAR RADIATION BTU/Ft² Hr
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St Dev +
Mean
St Dev −
Min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

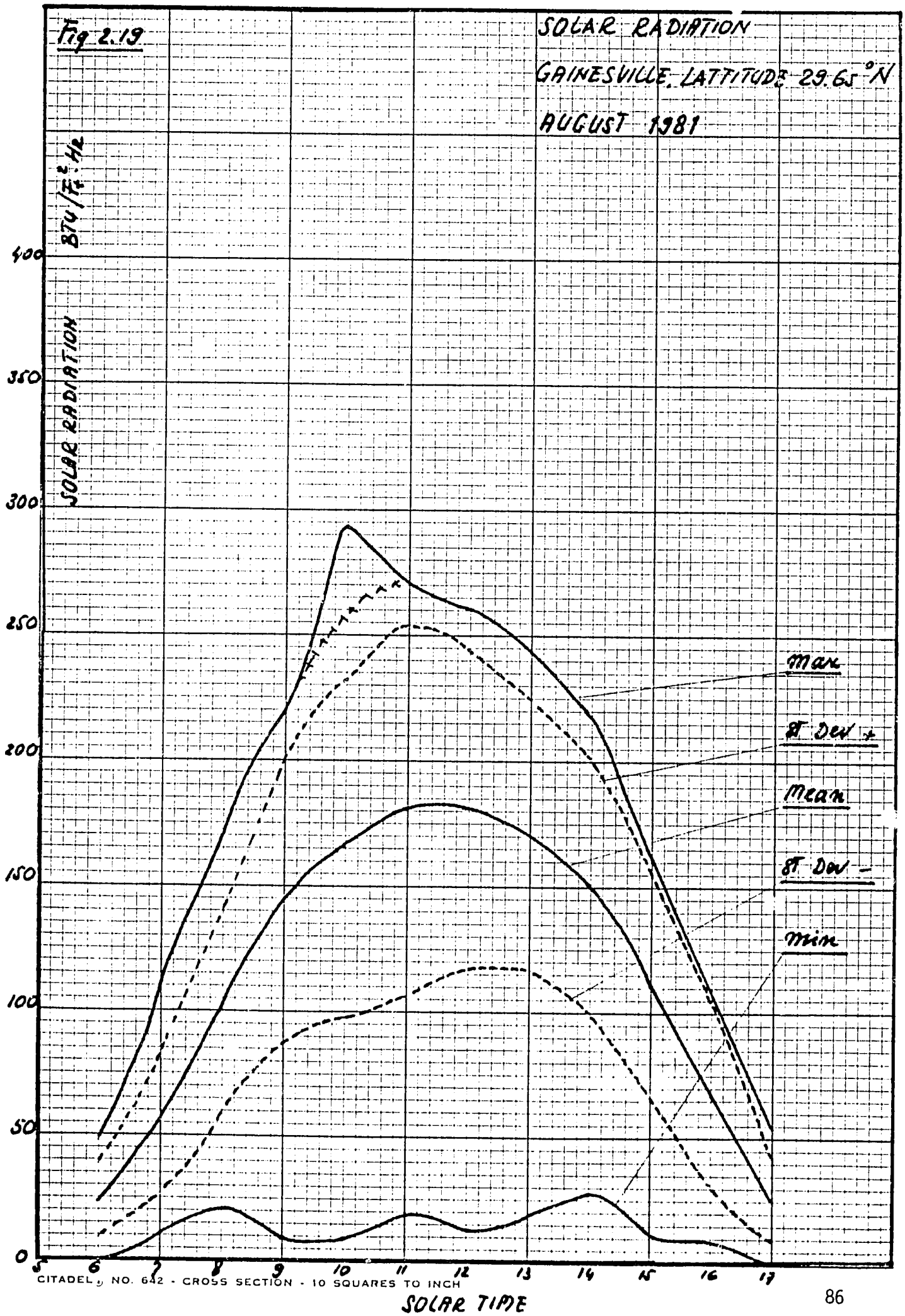


Fig 2.19
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65°N
AUGUST 1981
SOLAR RADIATION BTU/Ft²·Hr
400
350
300
250
200
150
100
50
0
Max
St Dev +
Mean
St Dev −
Min
5
6
7
8
9
10
11
12
13
14
15
16
17
SOLAR TIME
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

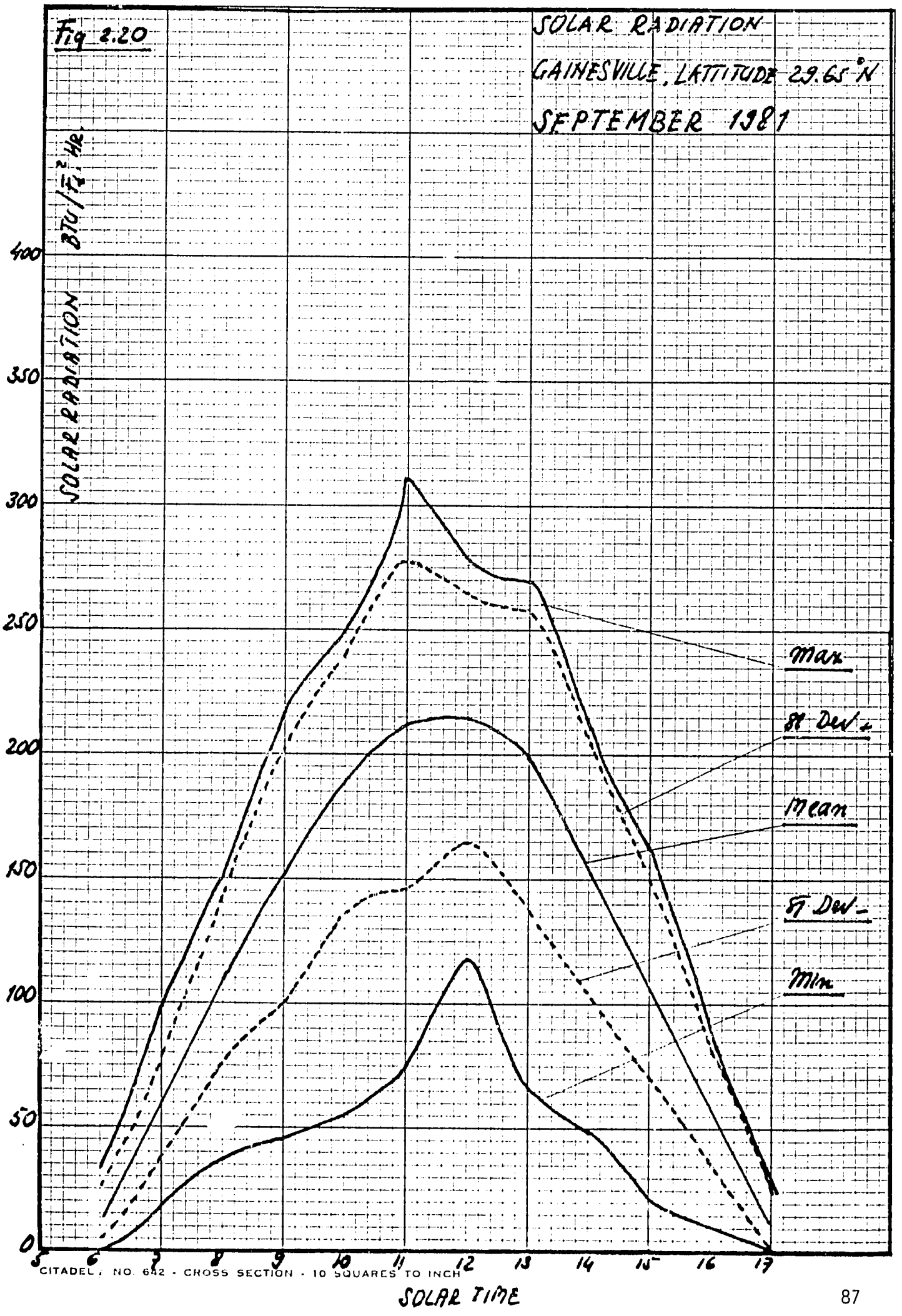


Fig 2.20
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
SEPTEMBER 1981
SOLAR RADIATION BTU/FT.²/HR.
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
SOLAR TIME
Max
St Dev +
Mean
St Dev -
Min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

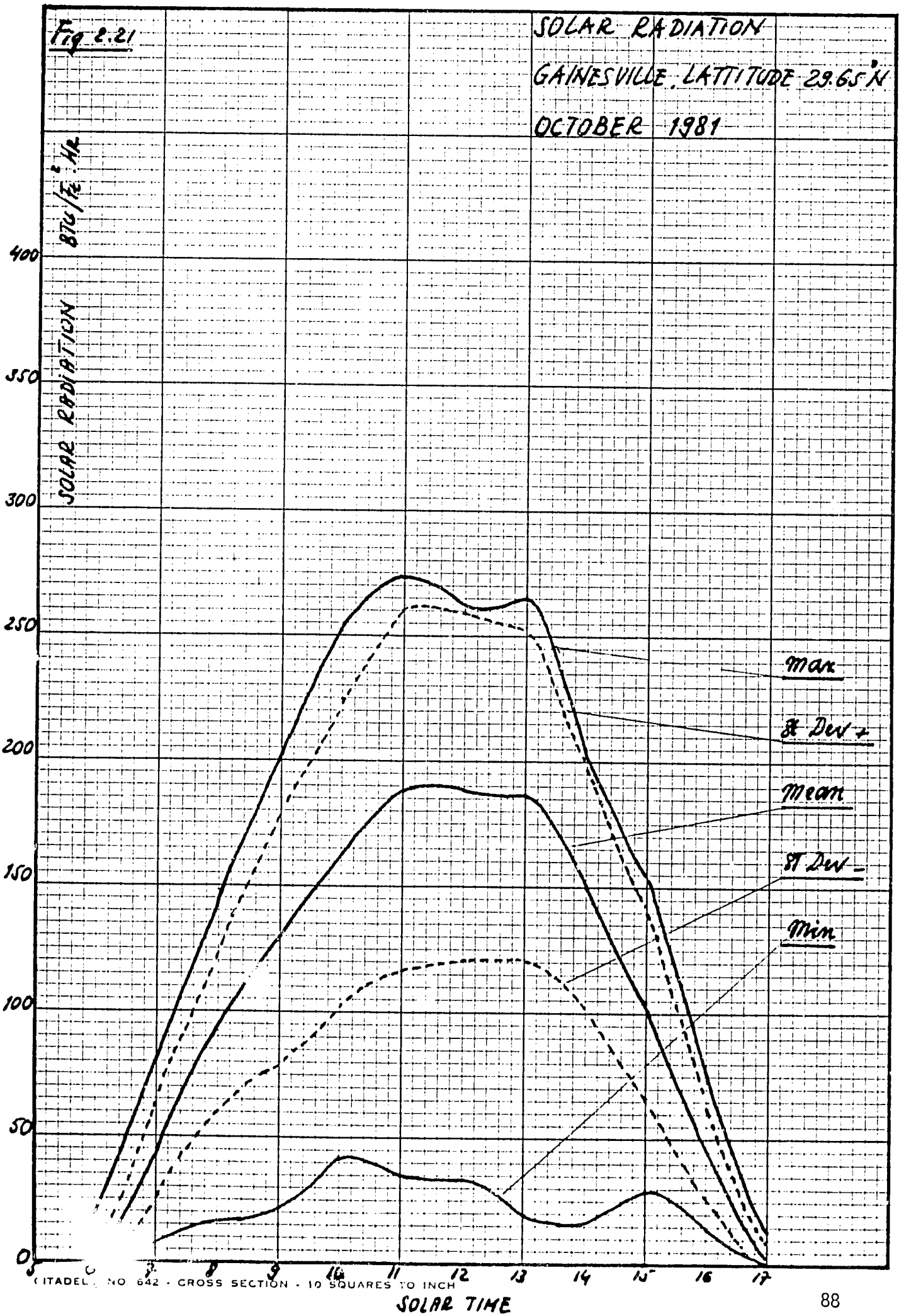


Fig 2.21
SOLAR RADIATION
GAINESVILLE. LATTITUDE 29.65°N
OCTOBER 1981
SOLAR RADIATION BTU/ft²·HR
400
350
300
250
200
150
100
50
0
Max
St Dev +
Mean
St Dev −
Min
8
9
10
11
12
13
14
15
16
17
SOLAR TIME
CITADEL NO 642 - CROSS SECTION - 10 SQUARES TO INCH

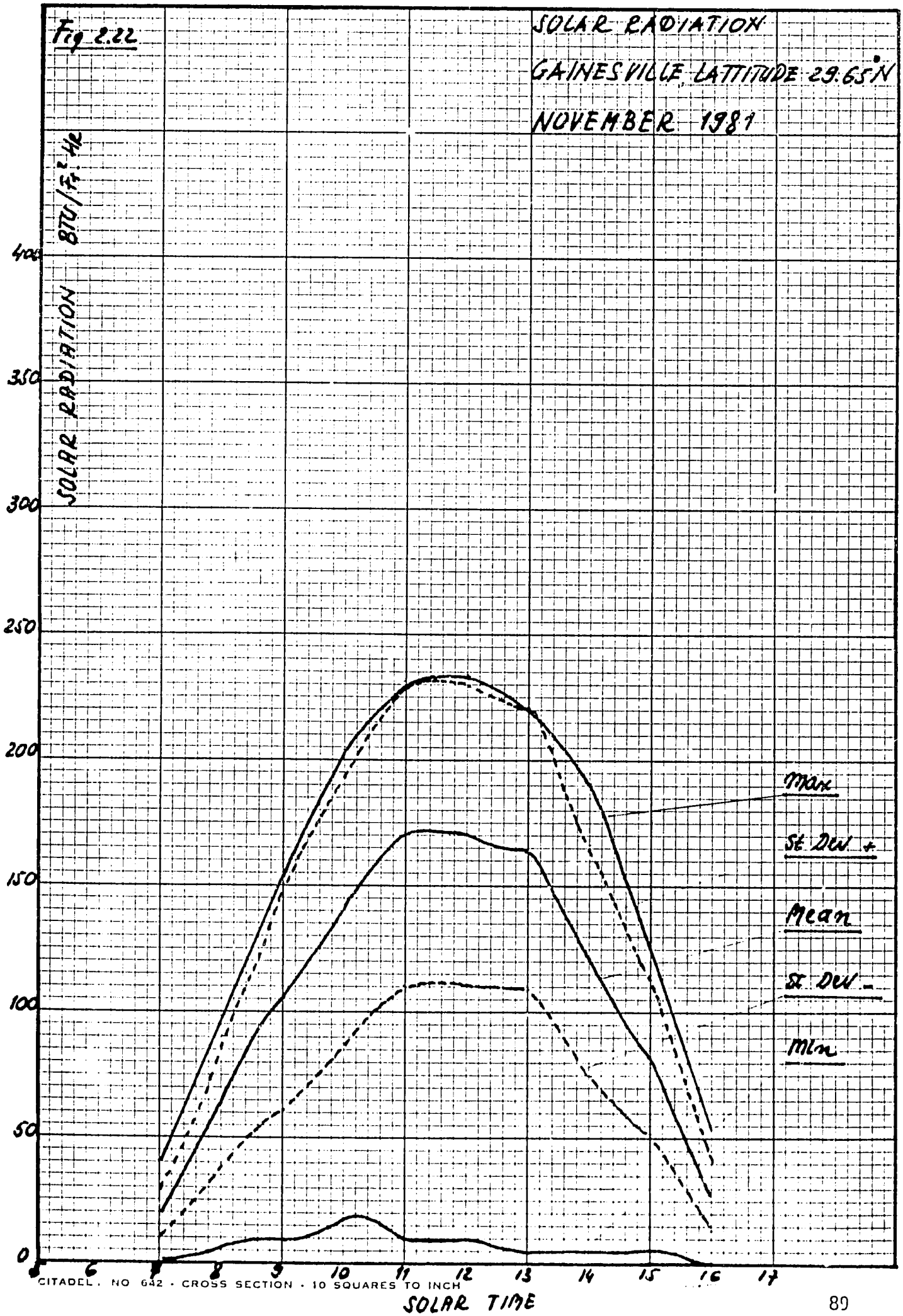


Fig 2.22
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
NOVEMBER 1981
SOLAR RADIATION BTU/ft²·Hr
400
350
300
250
200
150
100
50
0
Max
St. Dev +
Mean
St. Dev -
Min
5
6
7
8
9
10
11
12
13
14
15
16
17
SOLAR TIME
CITADEL . NO 642 · CROSS SECTION · 10 SQUARES TO INCH

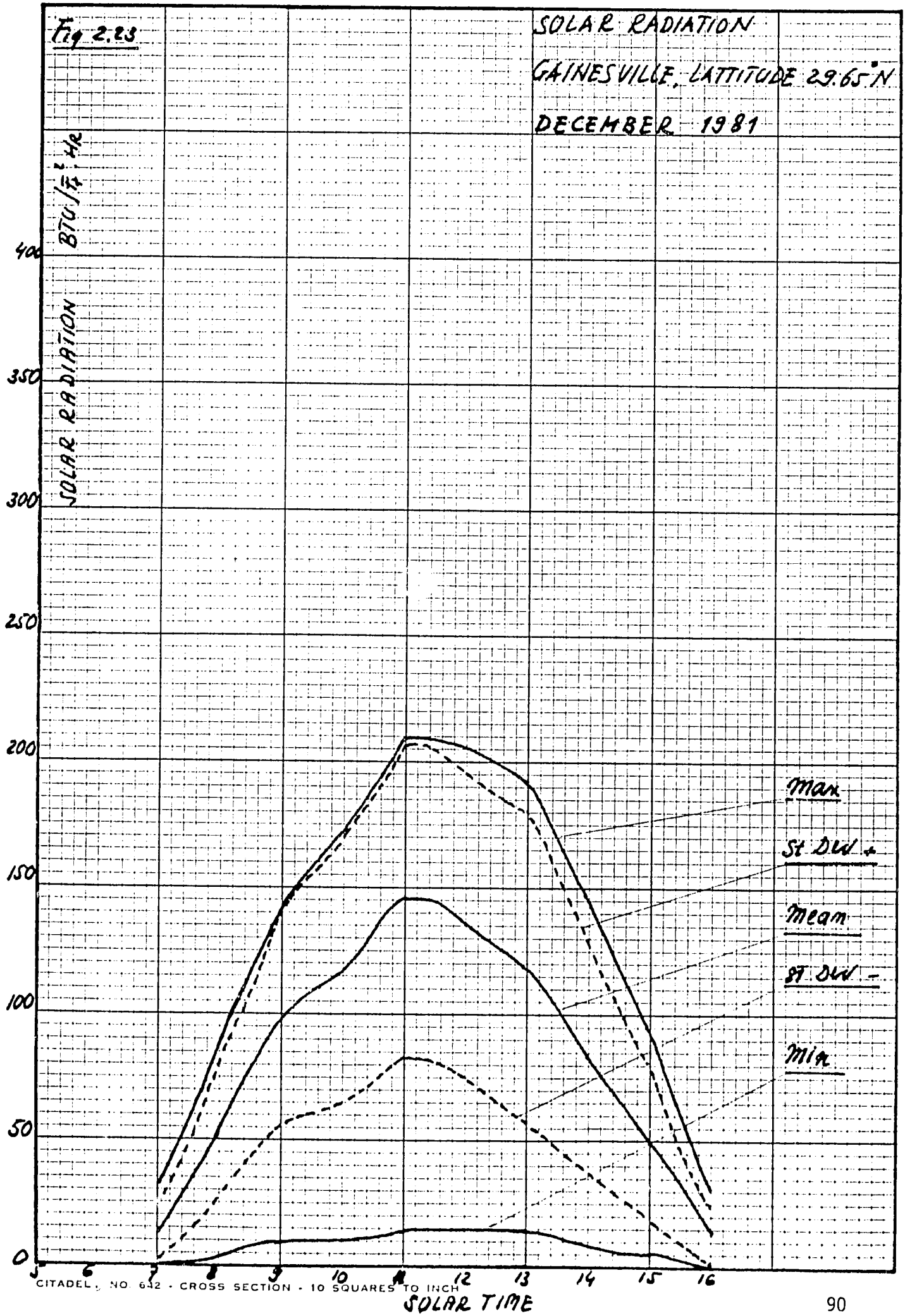


Fig 2.23
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
DECEMBER 1981
SOLAR RADIATION BTU/FT² HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
SOLAR TIME
Max
St Dev +
Mean
St Dev -
Min
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

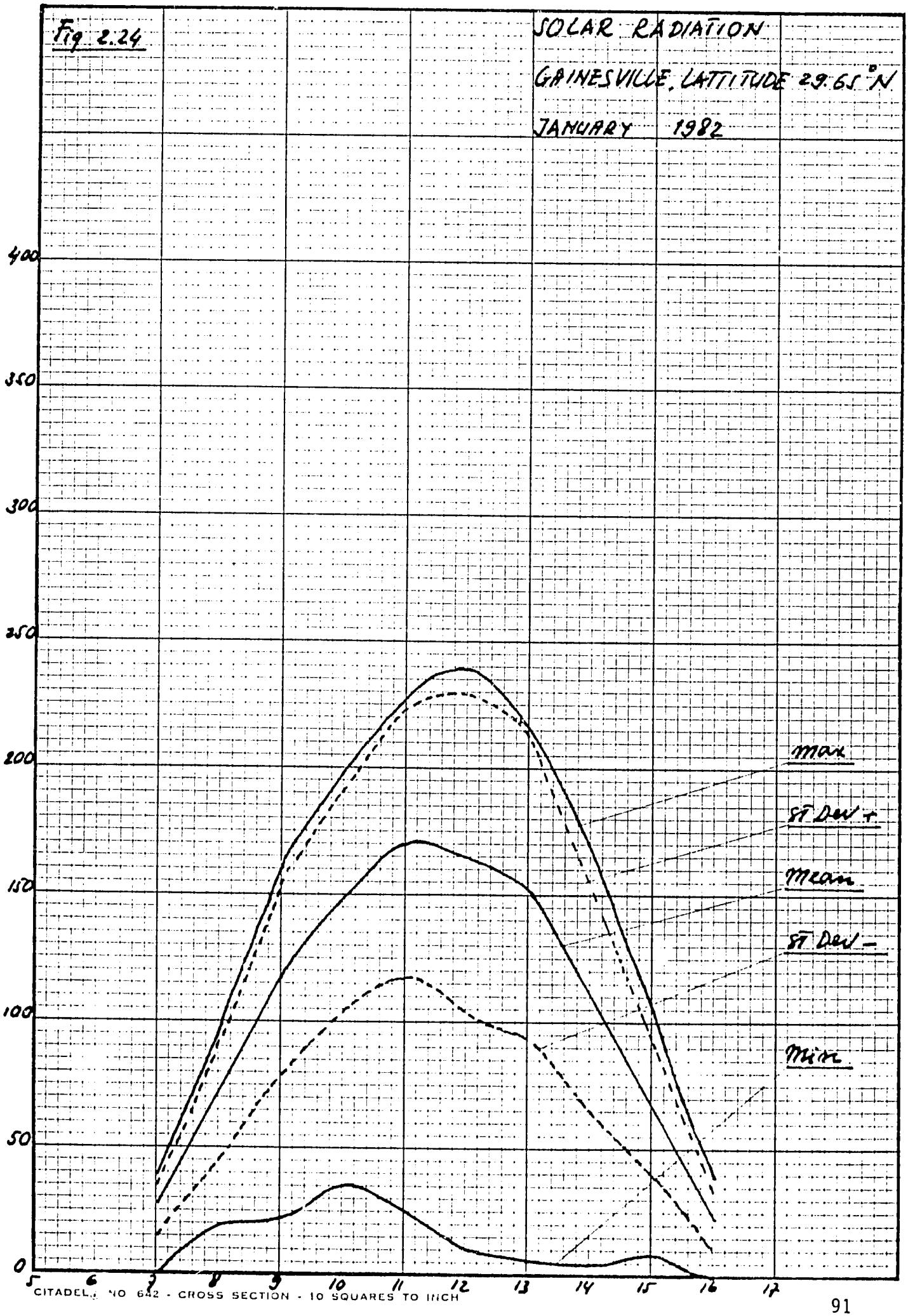


Fig 2.24
SOLAR RADIATION
GAINESVILLE, LATTITUDE 29.65°N
JANUARY 1982
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
max
St Dev +
mean
St Dev −
min
CITADEL NO 642 - CROSS SECTION - 10 SQUARES TO INCH

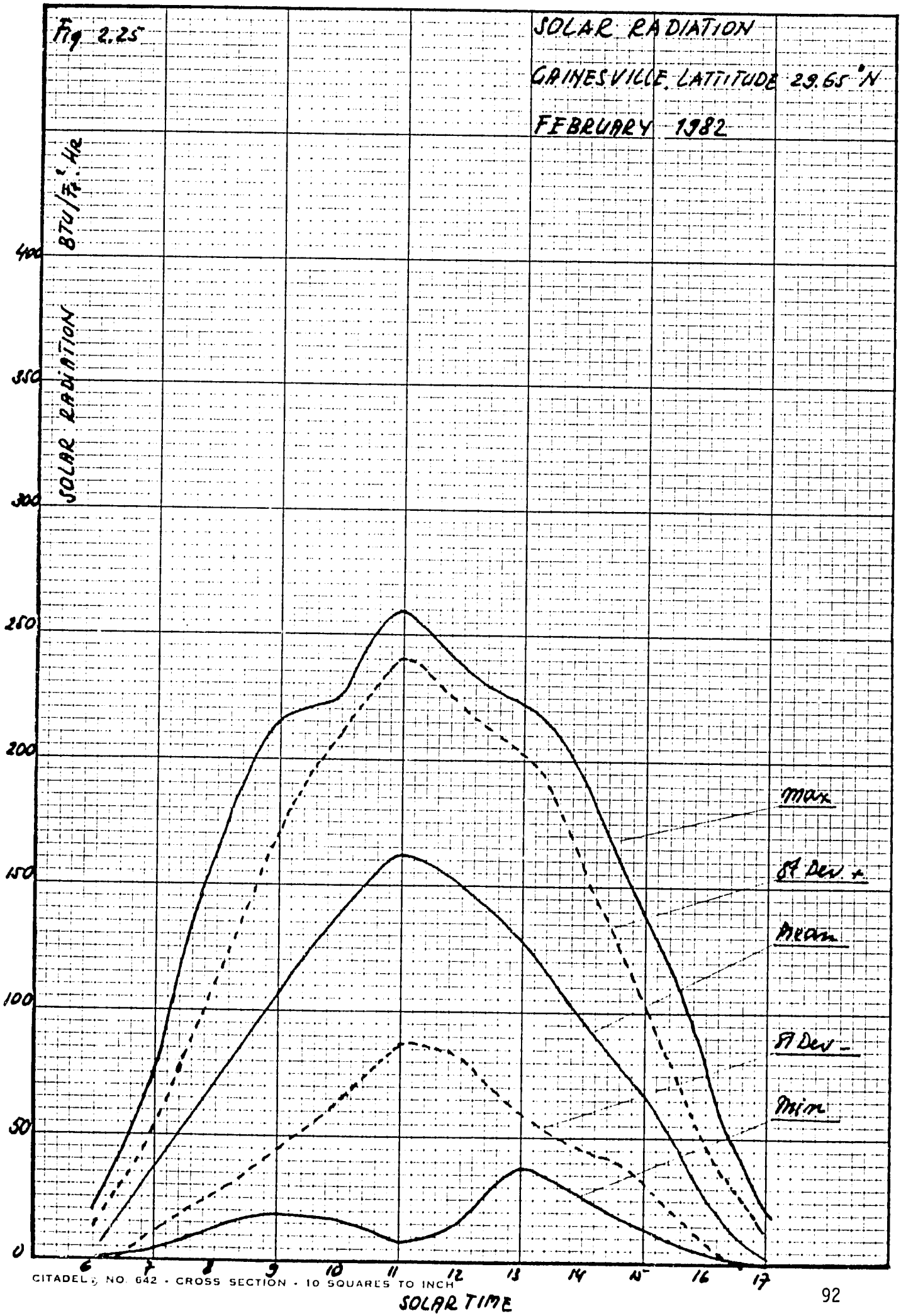


Fig 2.25
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
FEBRUARY 1982
SOLAR RADIATION BTU/FT.² HR
400
350
300
250
200
150
100
50
0
6
7
8
9
10
11
12
13
14
15
16
17
SOLAR TIME
max
σ Dev +
Mean
σ Dev −
min
CITADEL, NO. 642 · CROSS SECTION · 10 SQUARES TO INCH

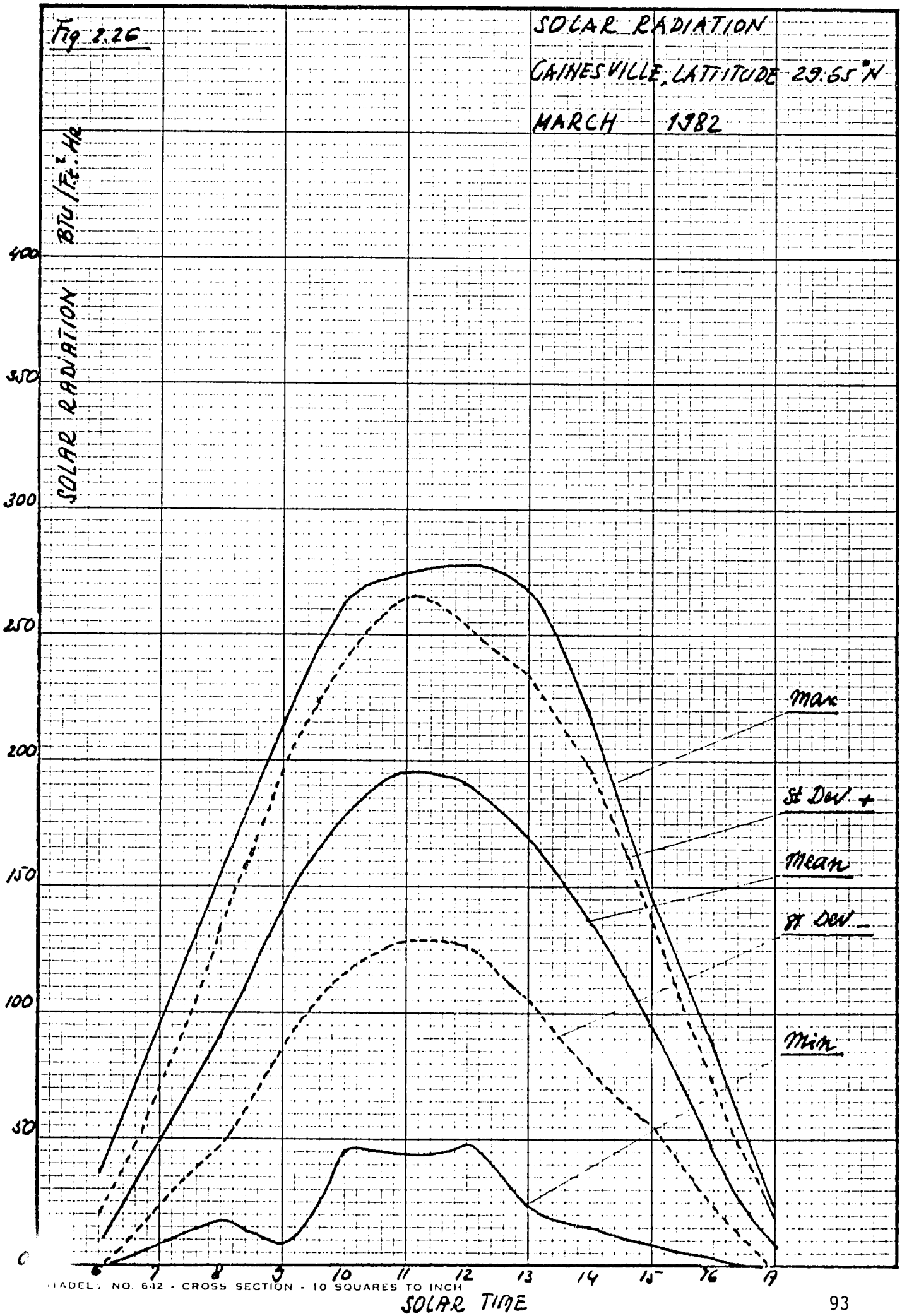


Fig 2.26
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
MARCH 1982
SOLAR RADIATION BTU/Ft².Hr
400
350
300
250
200
150
100
50
0
Max
St Dev +
Mean
St Dev −
Min
6
7
8
9
10
11
12
13
14
15
16
17
SOLAR TIME
MADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

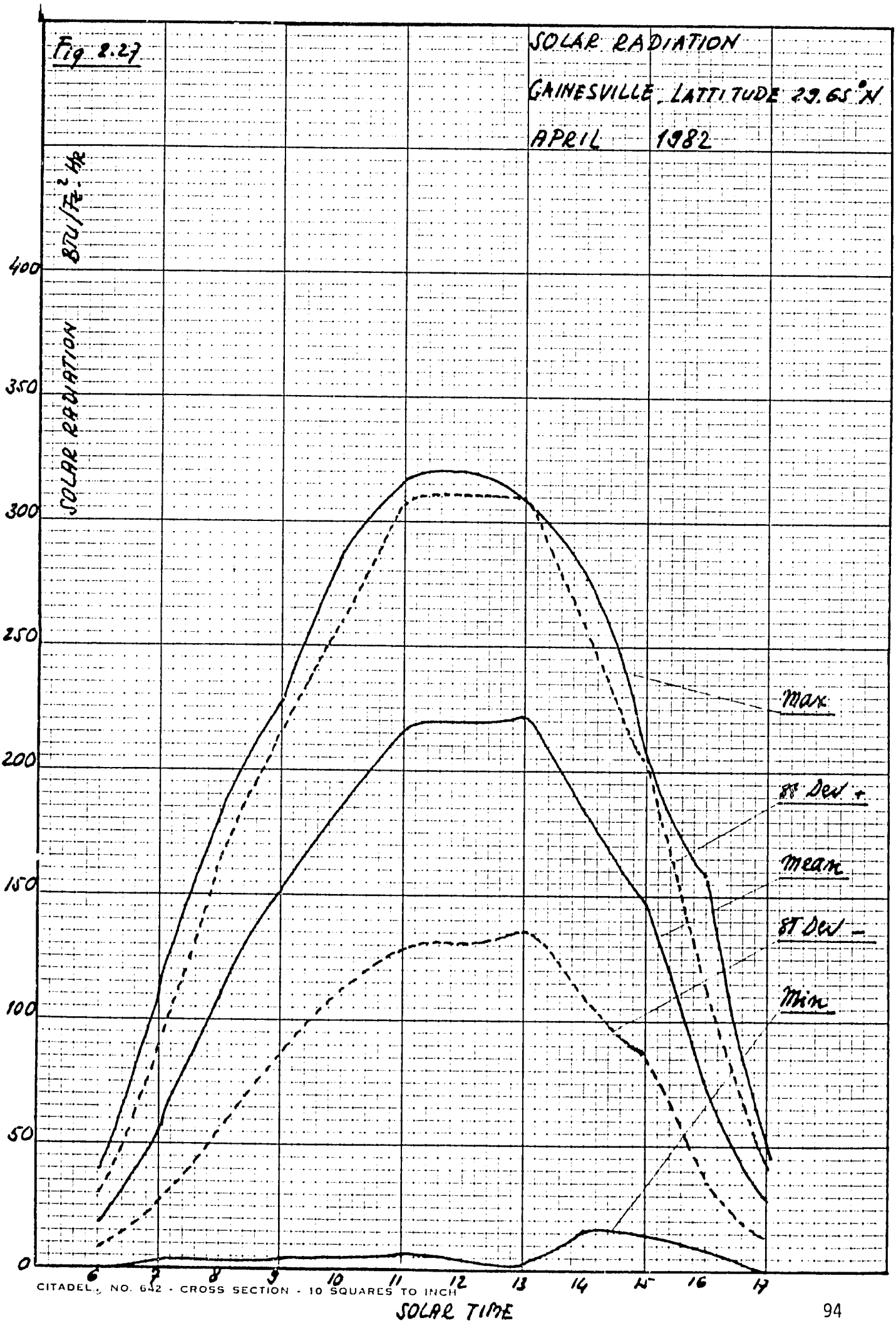


Fig 2.27
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
APRIL 1982
BTU/FT.² HR
SOLAR RADIATION
400
350
300
250
200
150
100
50
0
Max
St Dev +
Mean
St Dev −
Min
6
7
8
9
10
11
12
13
14
15
16
17
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

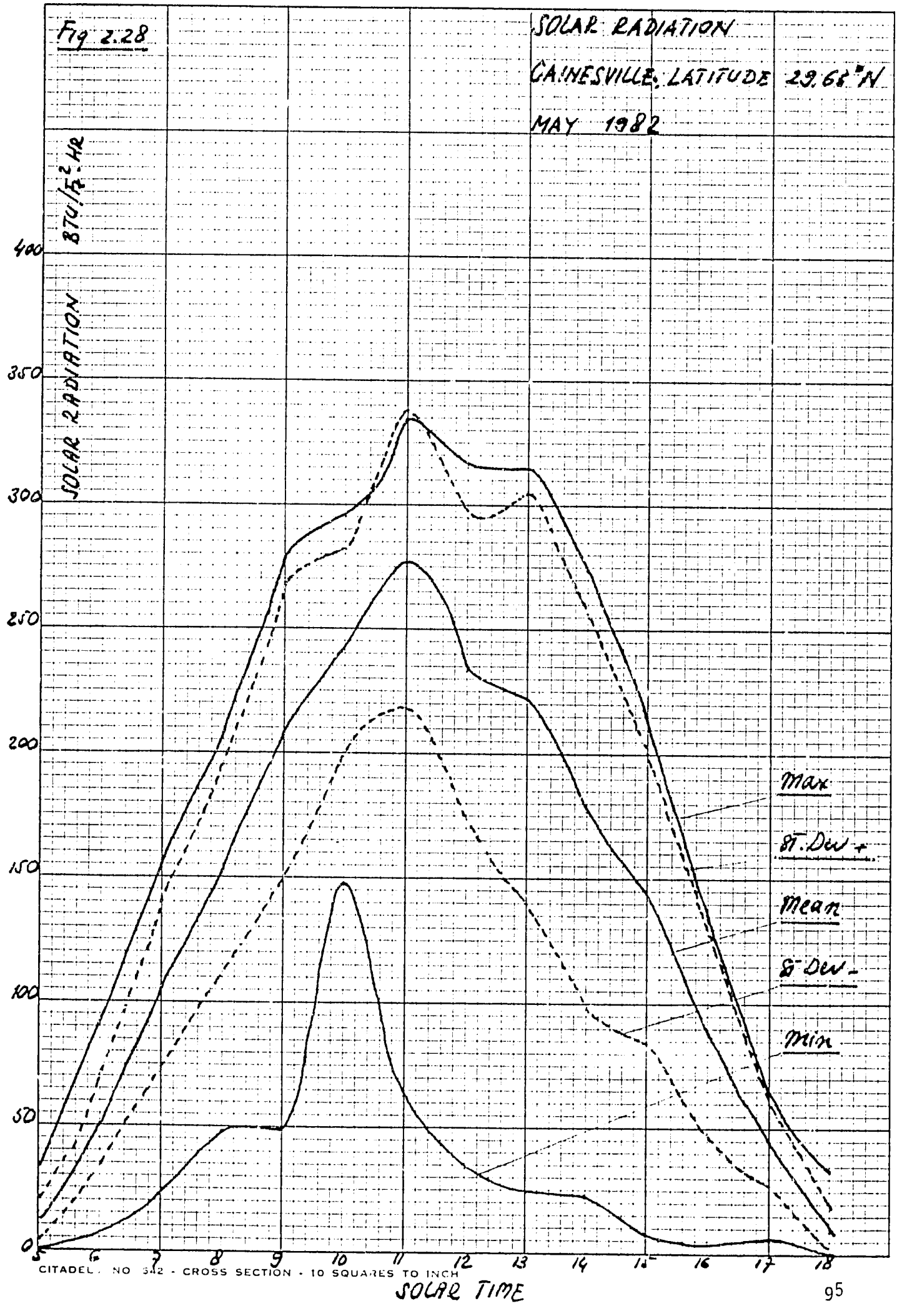


Fig 2.28
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.68°N
MAY 1982
BTU/FT².HR
SOLAR RADIATION
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St. Dev +
Mean
St. Dev -
Min
CITADEL NO 342 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

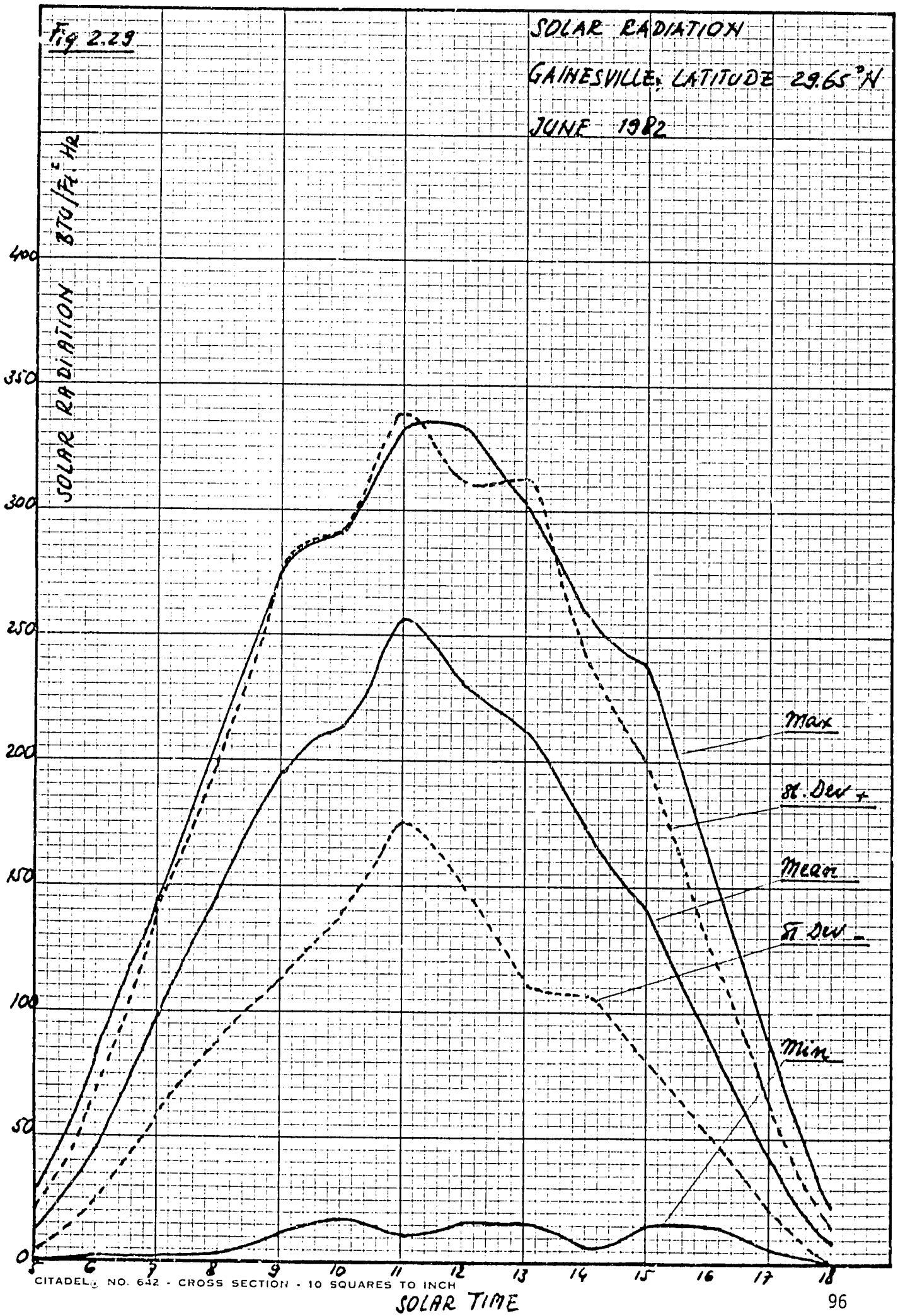


Fig 2.29
SOLAR RADIATION
GAINESVILLE, LATITUDE 29.65°N
JUNE 1982
SOLAR RADIATION BTU/FT² HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Max
St. Dev +
Mean
St Dev -
Min
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH
SOLAR TIME

FIGURE 3

The whole figure of total average, standard deviation, maximum and minimum of hourly global insolation on a horizontal plane for June 1980, 1981 and 1982 (Btu/Ft^2-Hr)

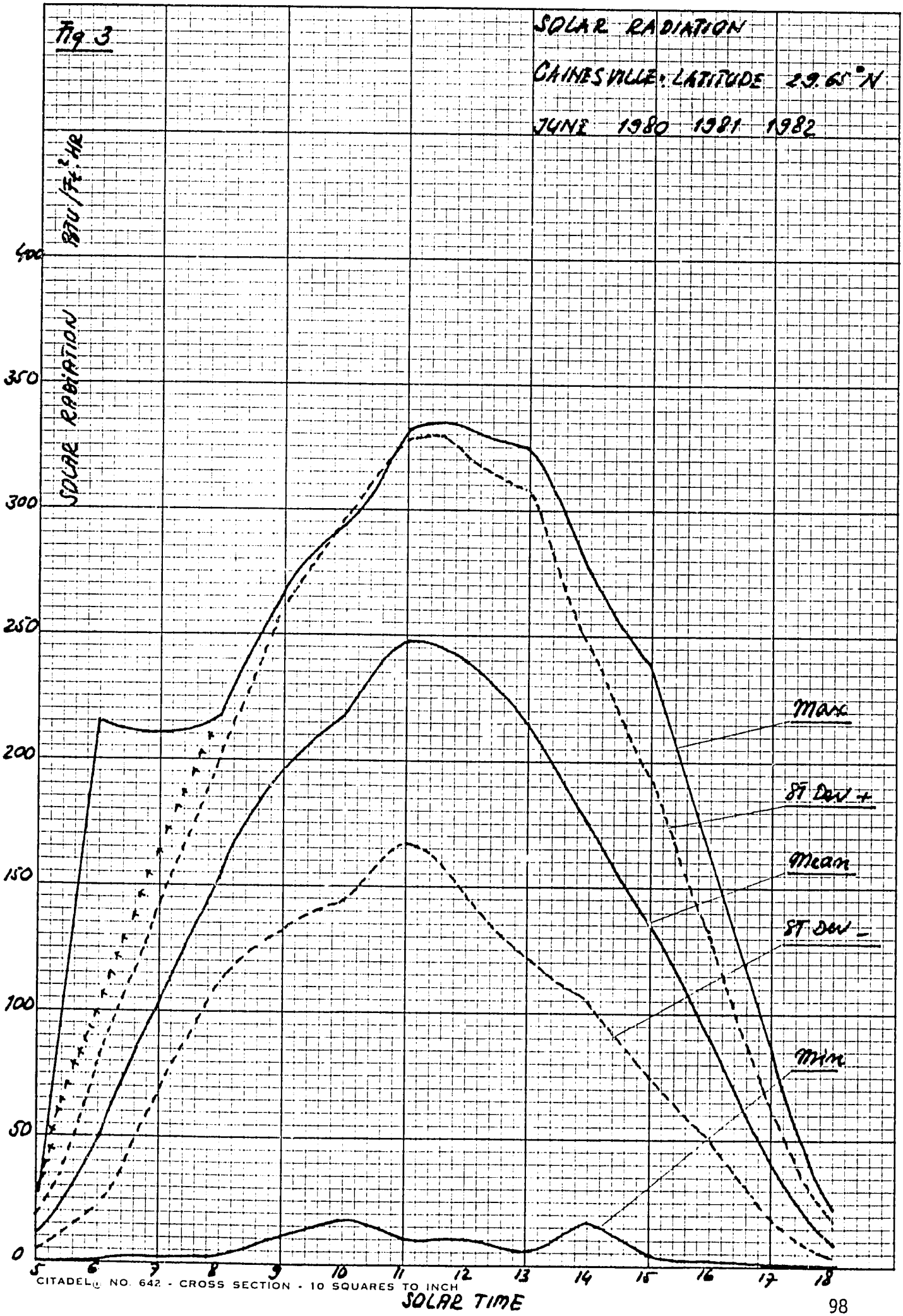


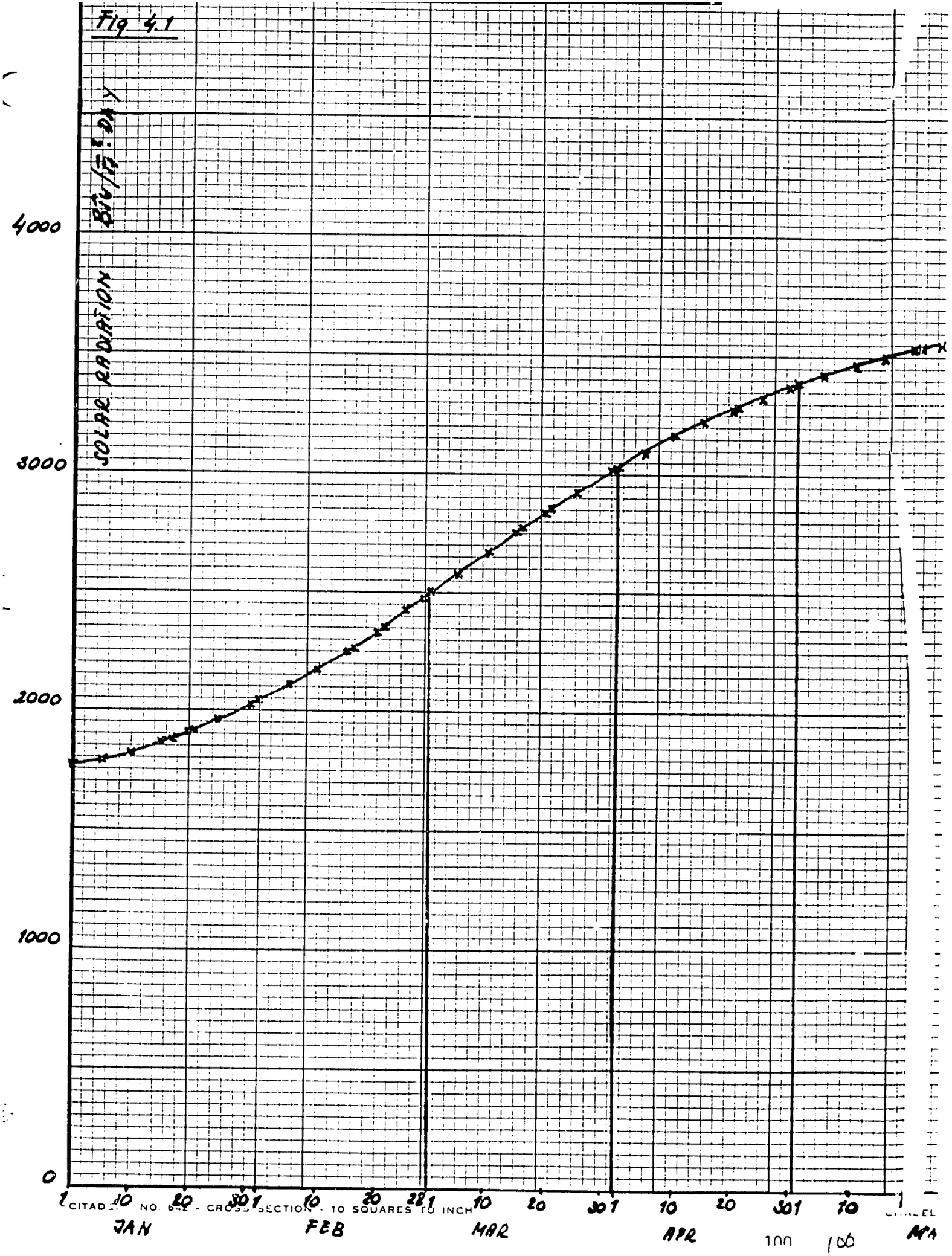
Fig 3
SOLAR RADIATION
GAINESVILLE: LATITUDE 29.65°N
JUNE 1980 1981 1982
SOLAR RADIATION BTU/FT²·HR
400
350
300
250
200
150
100
50
0
5
6
7
8
9
10
11
12
13
14
15
16
17
18
SOLAR TIME
Max
ST Dev +
Mean
ST Dev −
Min
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

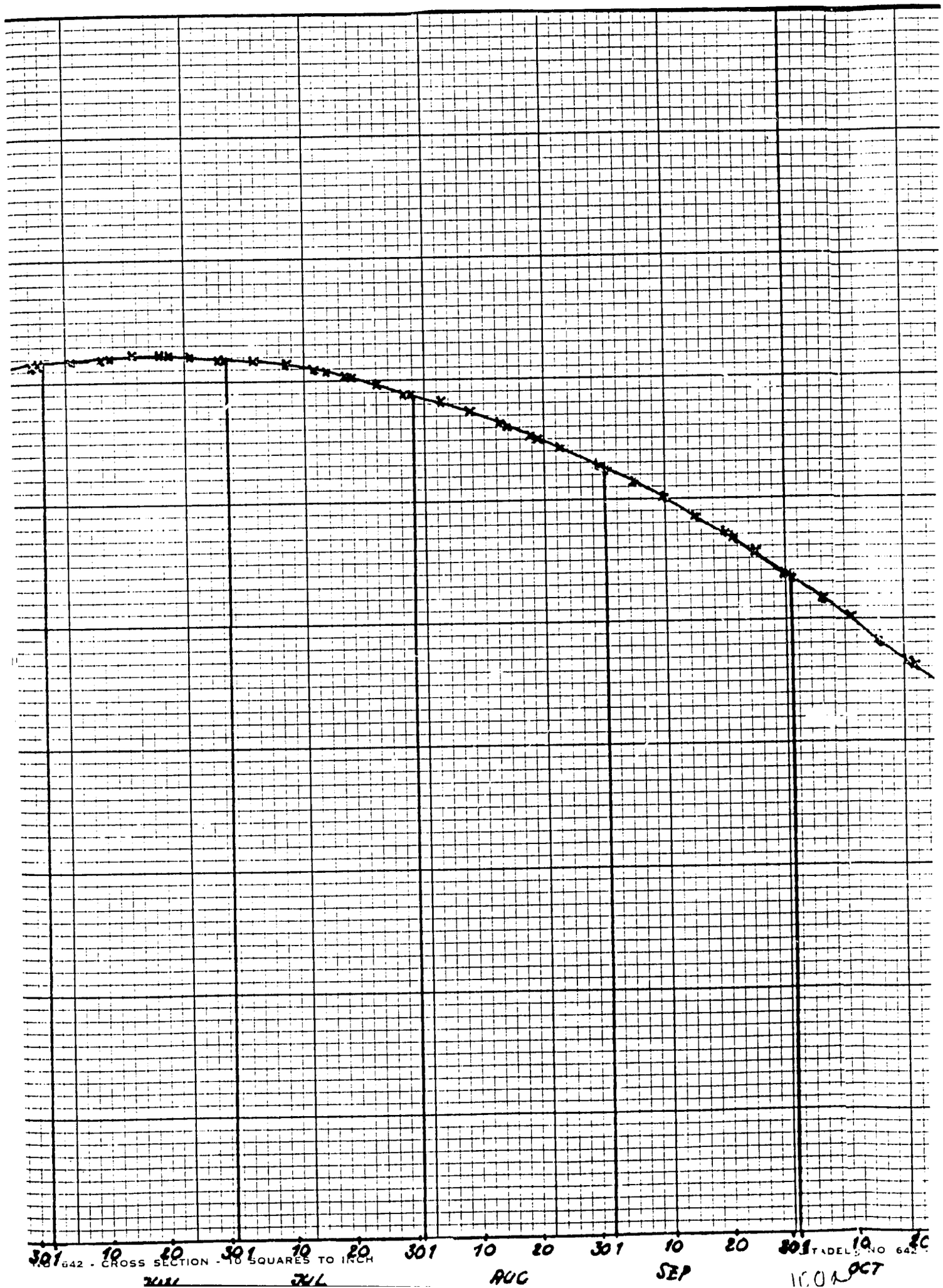
FIGURE 4

Daily extraterrestrial radiation on horizontal plane from January to December (Btu/Ft^2- DAY).

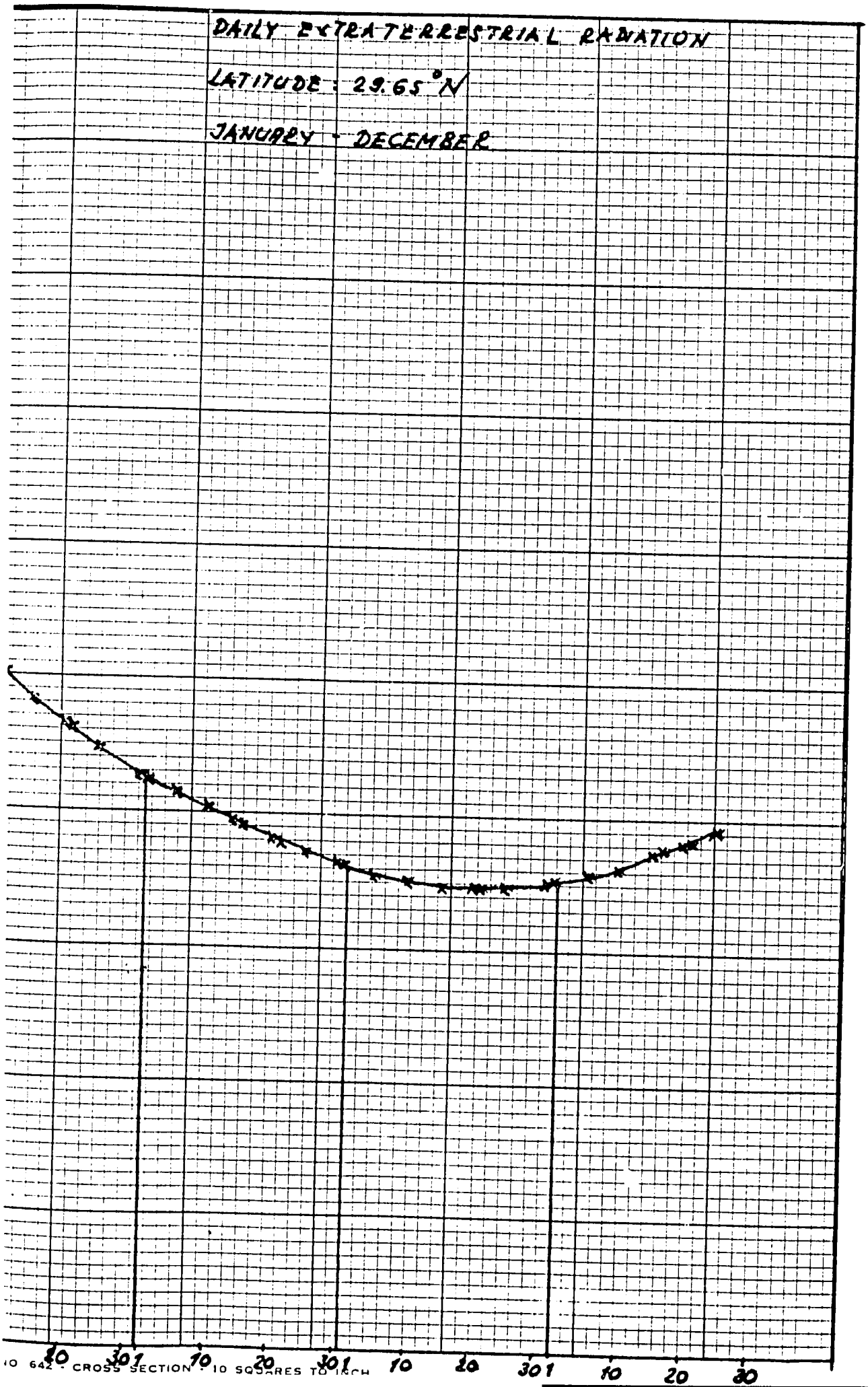
Fig 4.1	January - December
Fig 4.2	January
Fig 4.3	February
Fig 4.4	March
Fig 4.5	April
Fig 4.6	May
Fig 4.7	June
Fig 4.8	July
Fig 4.9	August
Fig 4.10	September
Fig 4.11	October
Fig 4.12	November
Fig 4.13	December

Fig 4.1


SOLAR RADIATION
BTU/ft².DAY
4000
3000
2000
1000
0
1
10
20
30
1
10
20
28
1
10
20
30
1
10
20
30
1
10
JAN
FEB
MAR
APR
100
100
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH



642 - CROSS SECTION - 10 SQUARES TO INCH
TADELS NO 642


DAILY EXTRATERRESTRIAL RADIATION
LATITUDE: 29.65°N
JANUARY - DECEMBER
10
30 1
10
20
30 1
10
20
30 1
10
20
30
10 642 - CROSS SECTION - 10 SQUARES TO INCH

100b

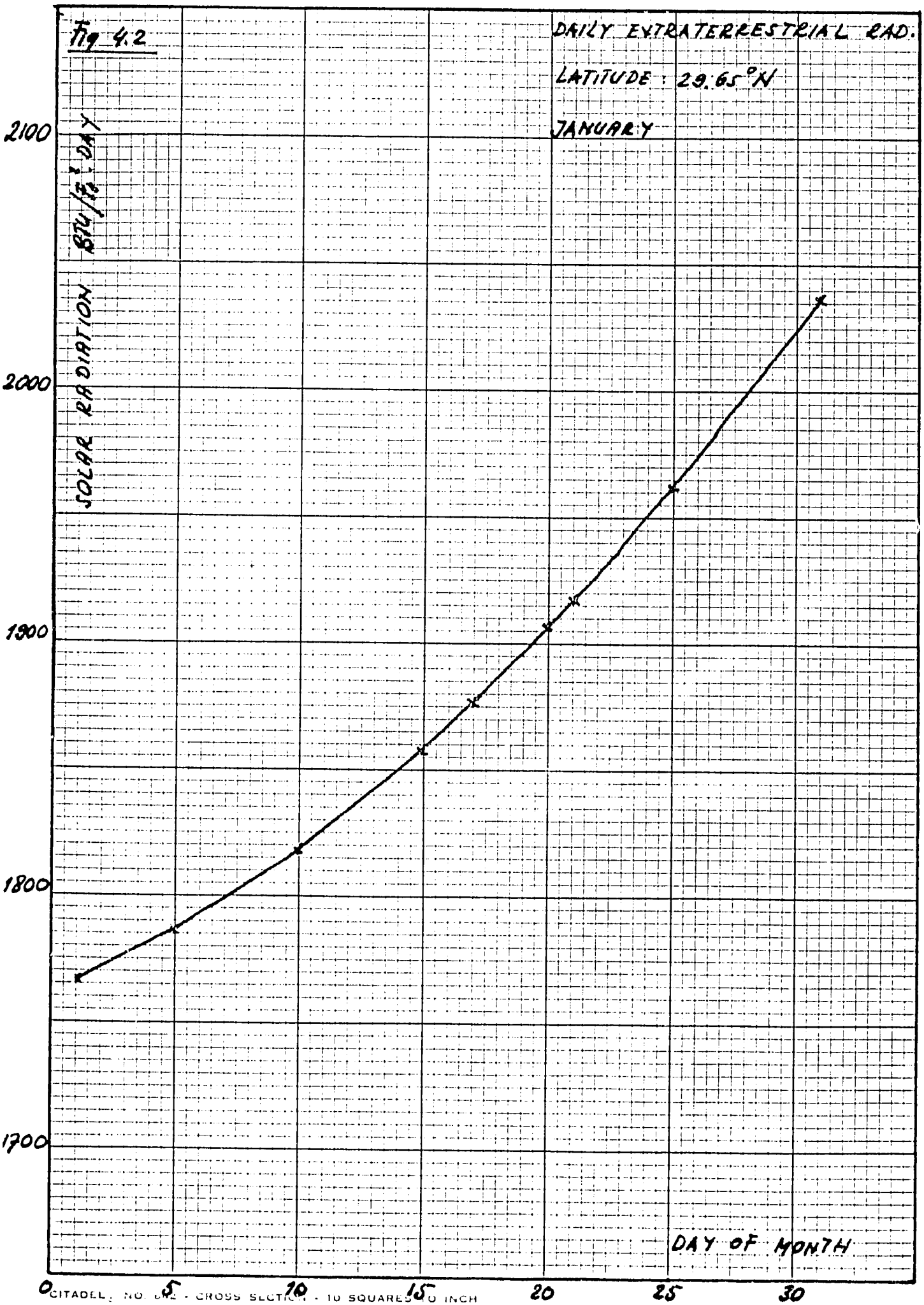


Fig 4.2
DAILY EXTRATERRESTRIAL RAD.
LATITUDE : 29.65°N
JANUARY
SOLAR RADIATION BTU/FT².DAY
2100
2000
1900
1800
1700
DAY OF MONTH
0
5
10
15
20
25
30

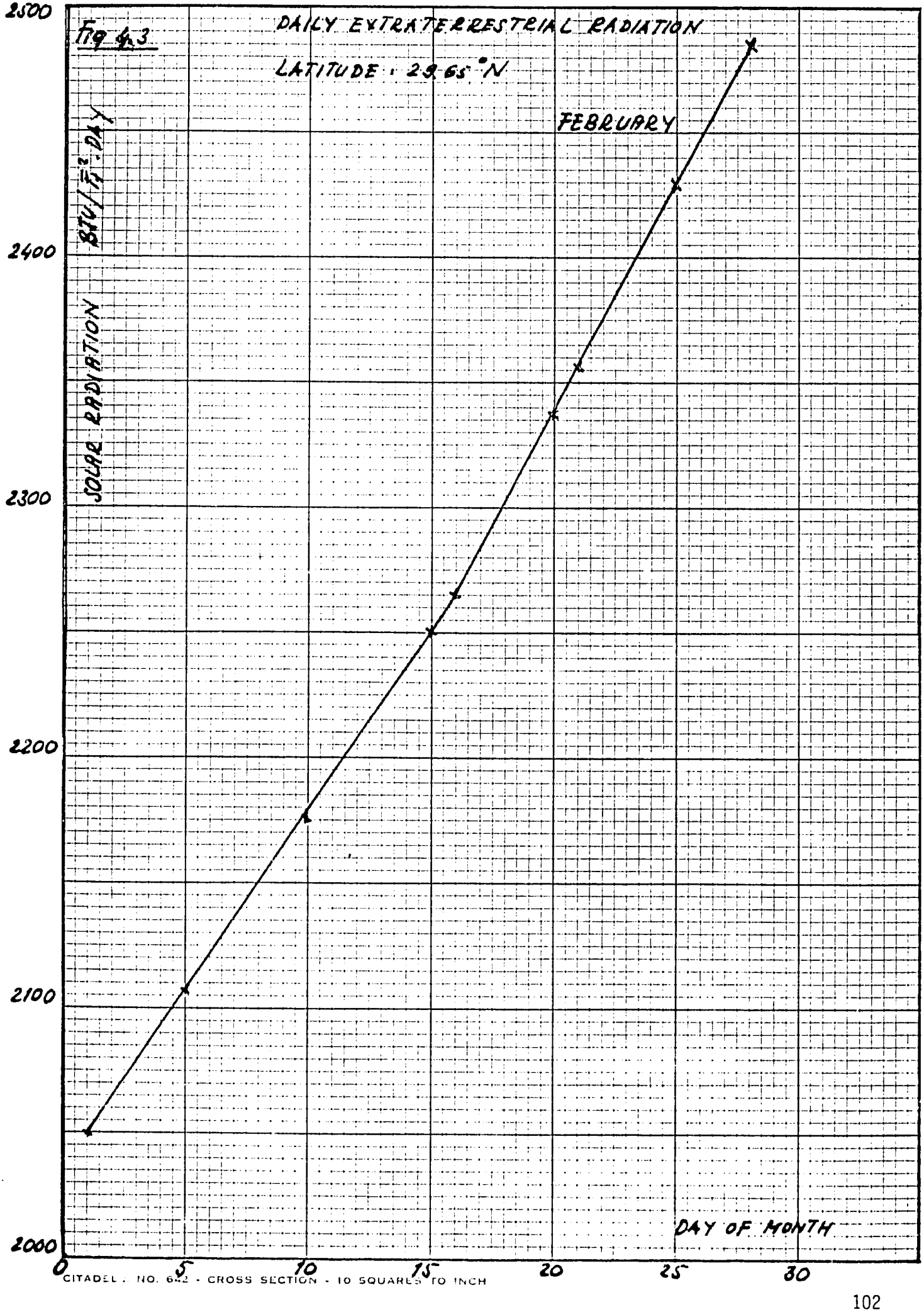


Fig 4.3
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE : 29.65° N
FEBRUARY
SOLAR RADIATION BTU/FT².DAY
2500
2400
2300
2200
2100
2000
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL . NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

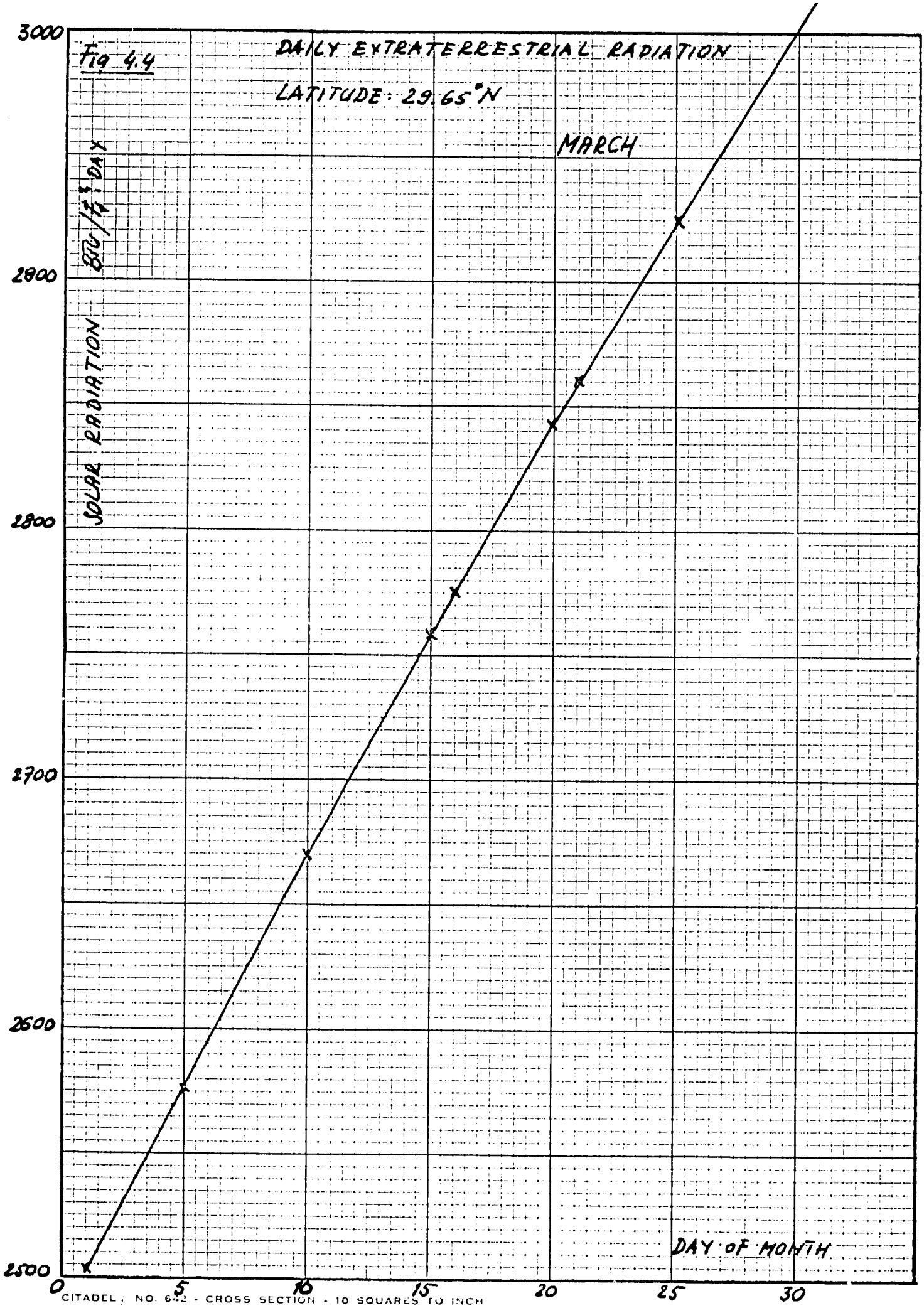


Fig 4.4
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE: 29.65°N
MARCH
SOLAR RADIATION BTU/FT² DAY
3000
2900
2800
2700
2600
2500
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

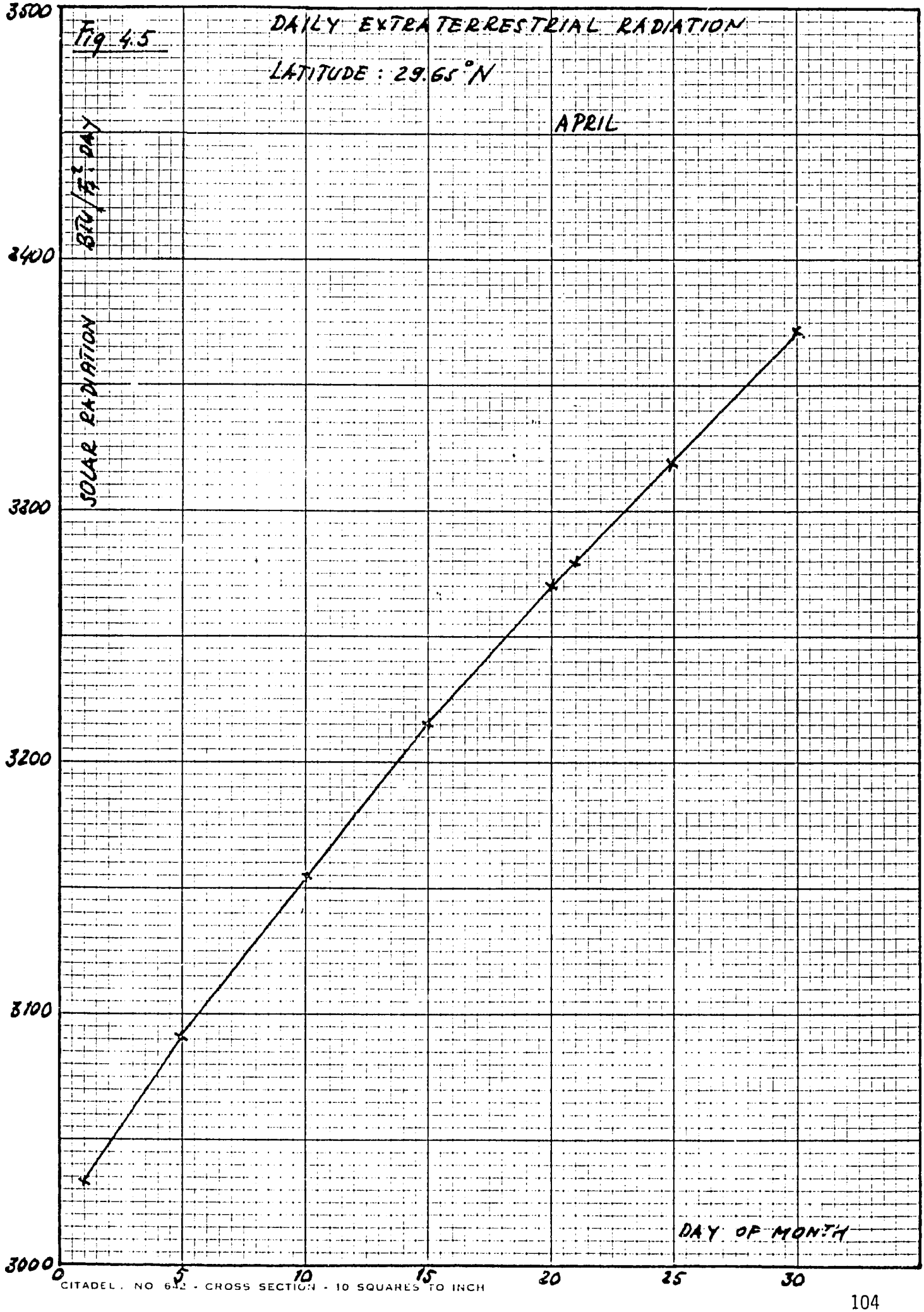


Fig 4.5
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE : 29.65 °N
APRIL
SOLAR RADIATION BTU/FT² DAY
3500
3400
3300
3200
3100
3000
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL . NO 642 - CROSS SECTION - 10 SQUARES TO INCH

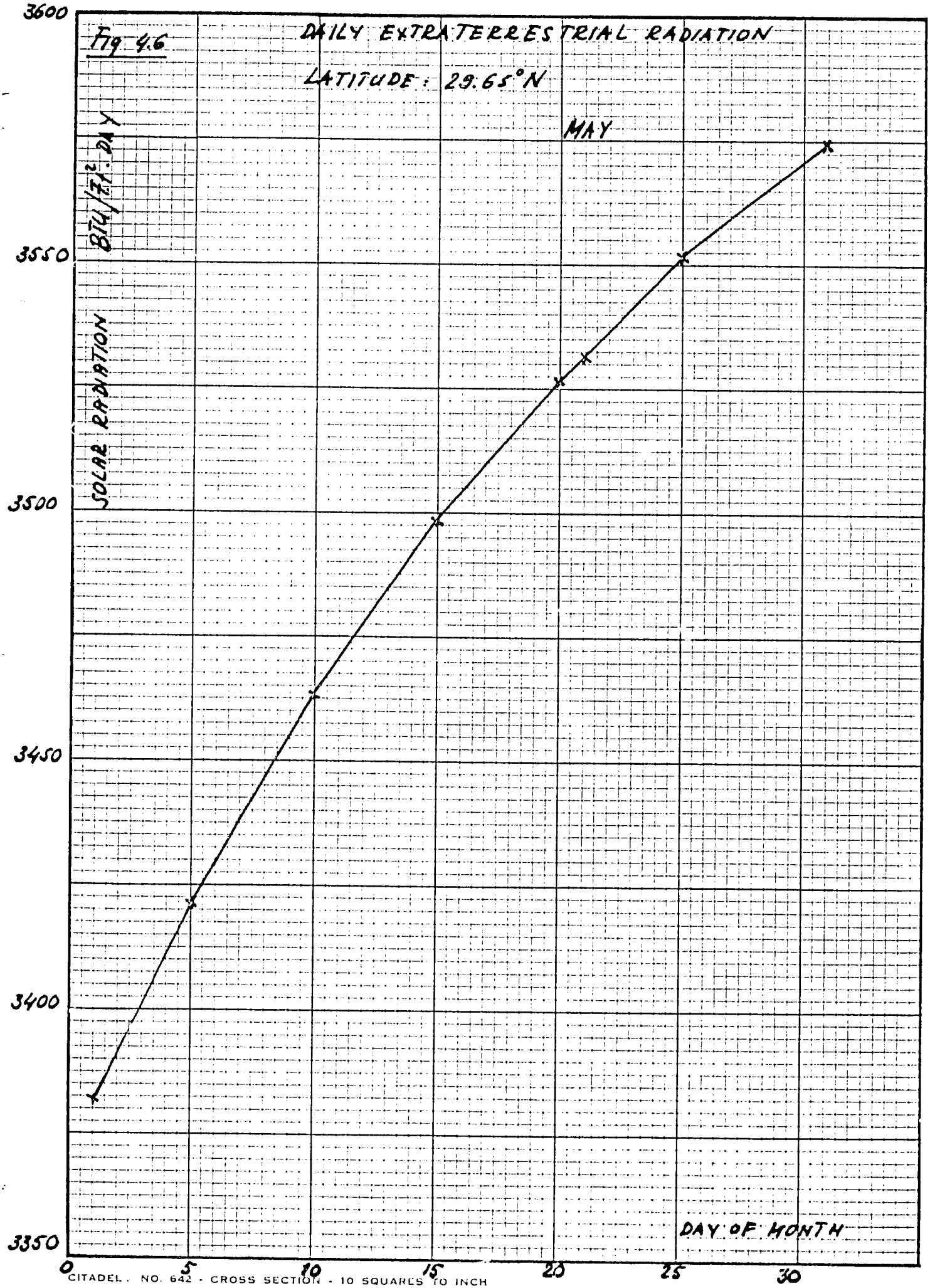


Fig 4.6
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE: 29.65°N
MAY
SOLAR RADIATION BTU/FT.² DAY
3600
3550
3500
3450
3400
3350
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL. NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

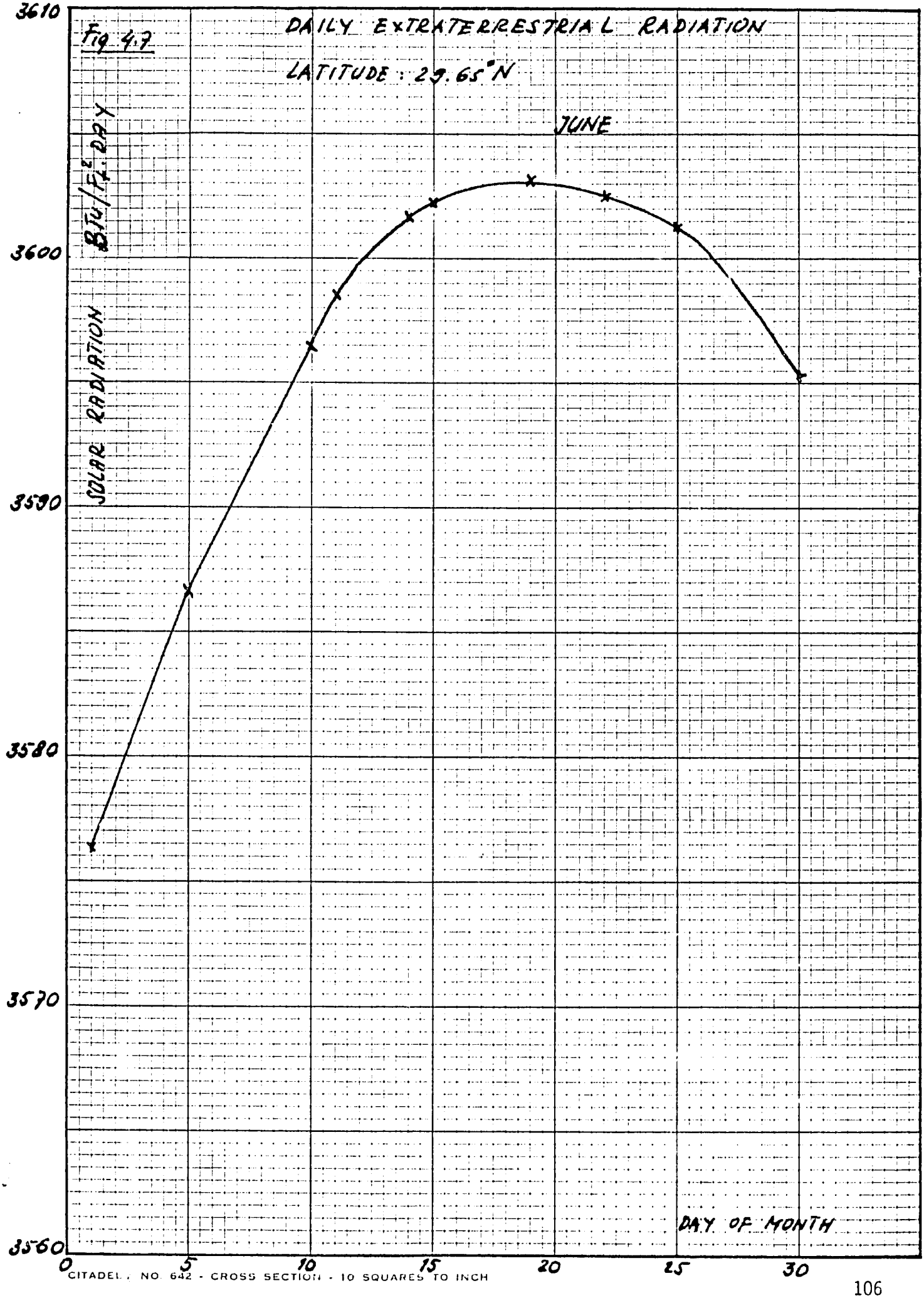


Fig 4.7
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE : 29.65°N
JUNE
SOLAR RADIATION BTU/FT.² DAY
3610
3600
3590
3580
3570
3560
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

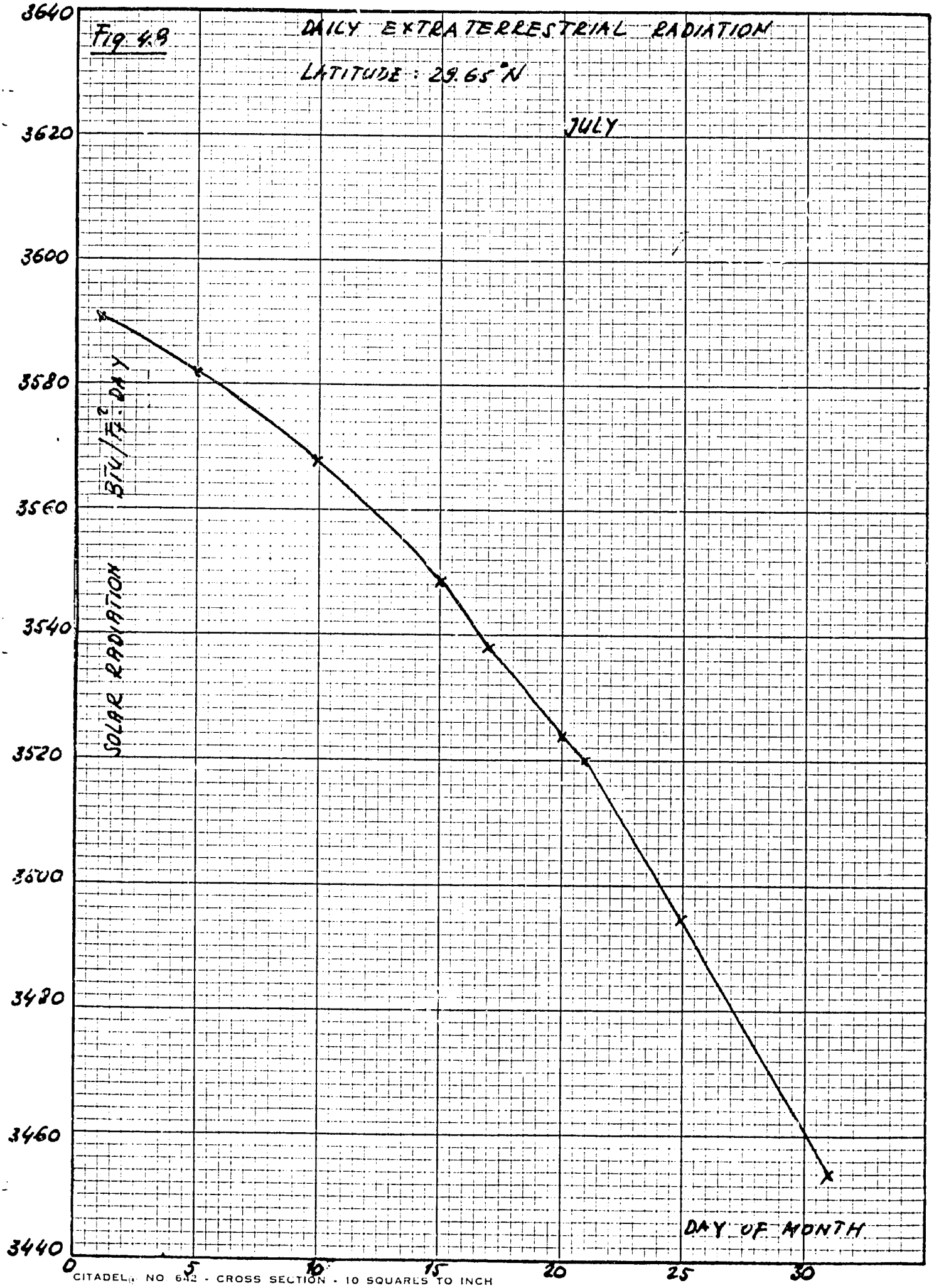


Fig. 4.9
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE : 29.65°N
JULY
SOLAR RADIATION BTU/FT² - DAY
DAY OF MONTH
3640
3620
3600
3580
3560
3540
3520
3500
3480
3460
3440
0
5
10
15
20
25
30
CITADEL NO 642 - CROSS SECTION - 10 SQUARES TO INCH

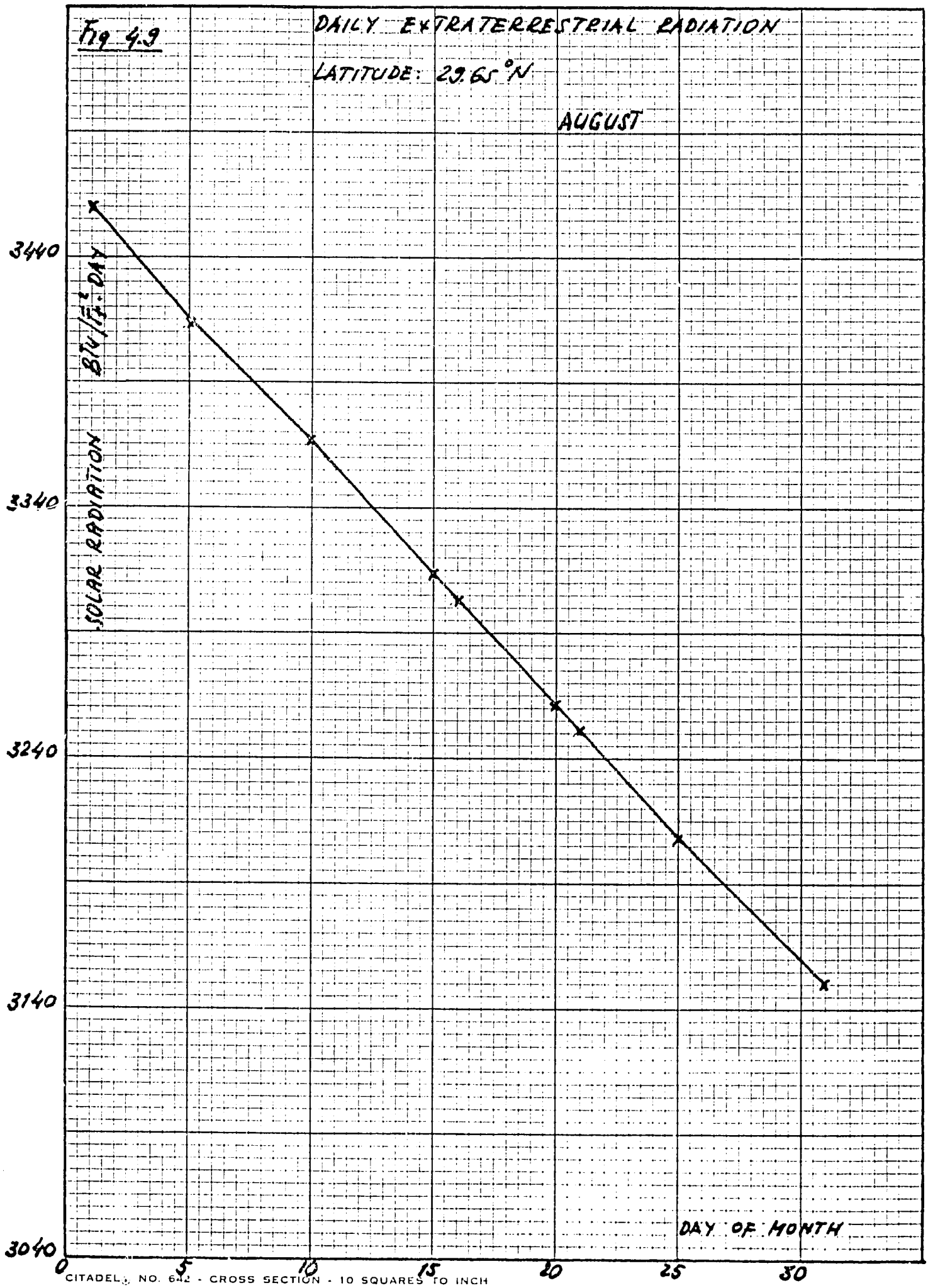


Fig 4.9
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE: 29.65 °N
AUGUST
SOLAR RADIATION BTU/FT.² DAY
3440
3340
3240
3140
3040
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL, NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

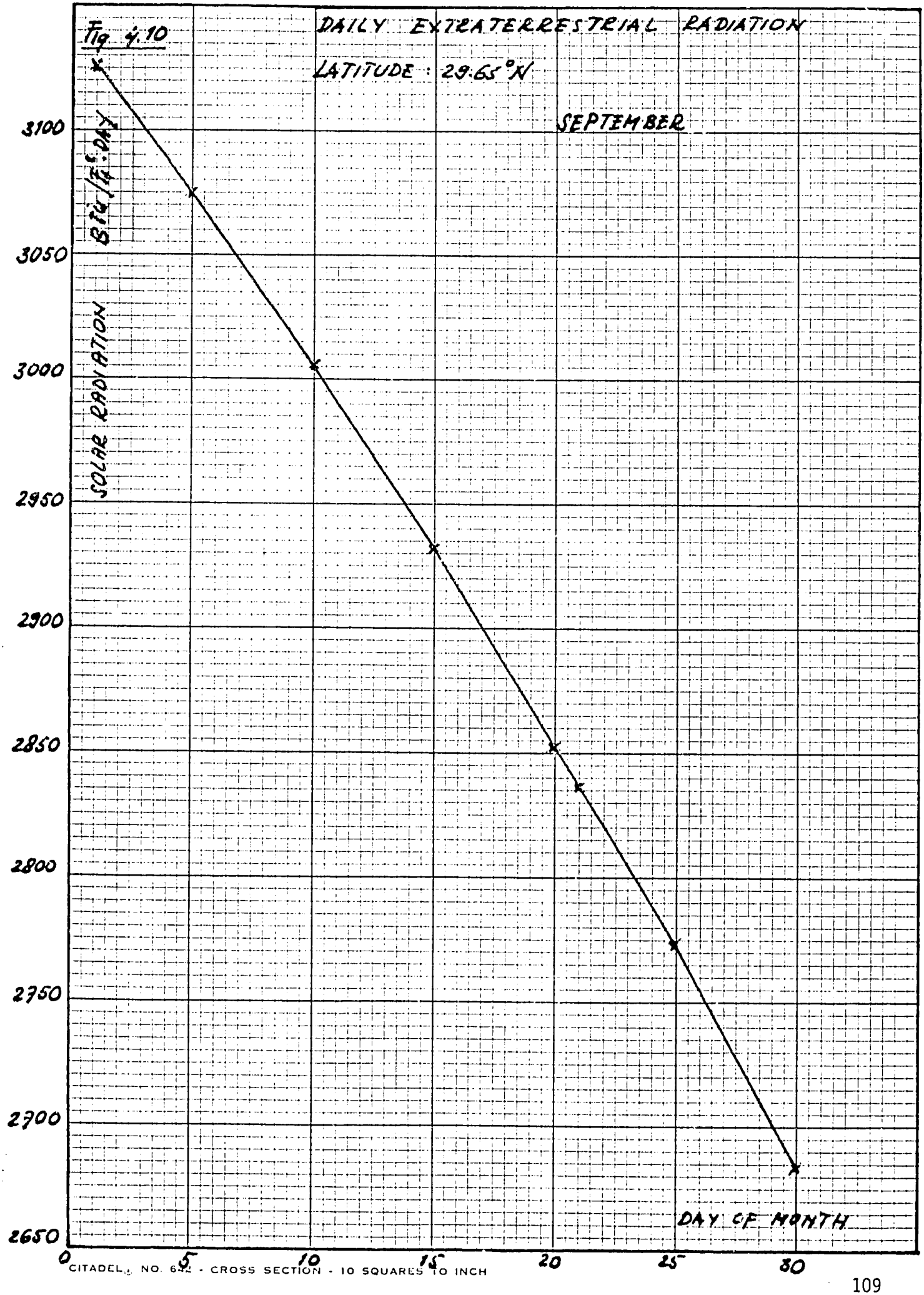


Fig. 4.10
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE : 29.65°N
SEPTEMBER
SOLAR RADIATION BTU/FT²·DAY
3100
3050
3000
2950
2900
2850
2800
2750
2700
2650
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

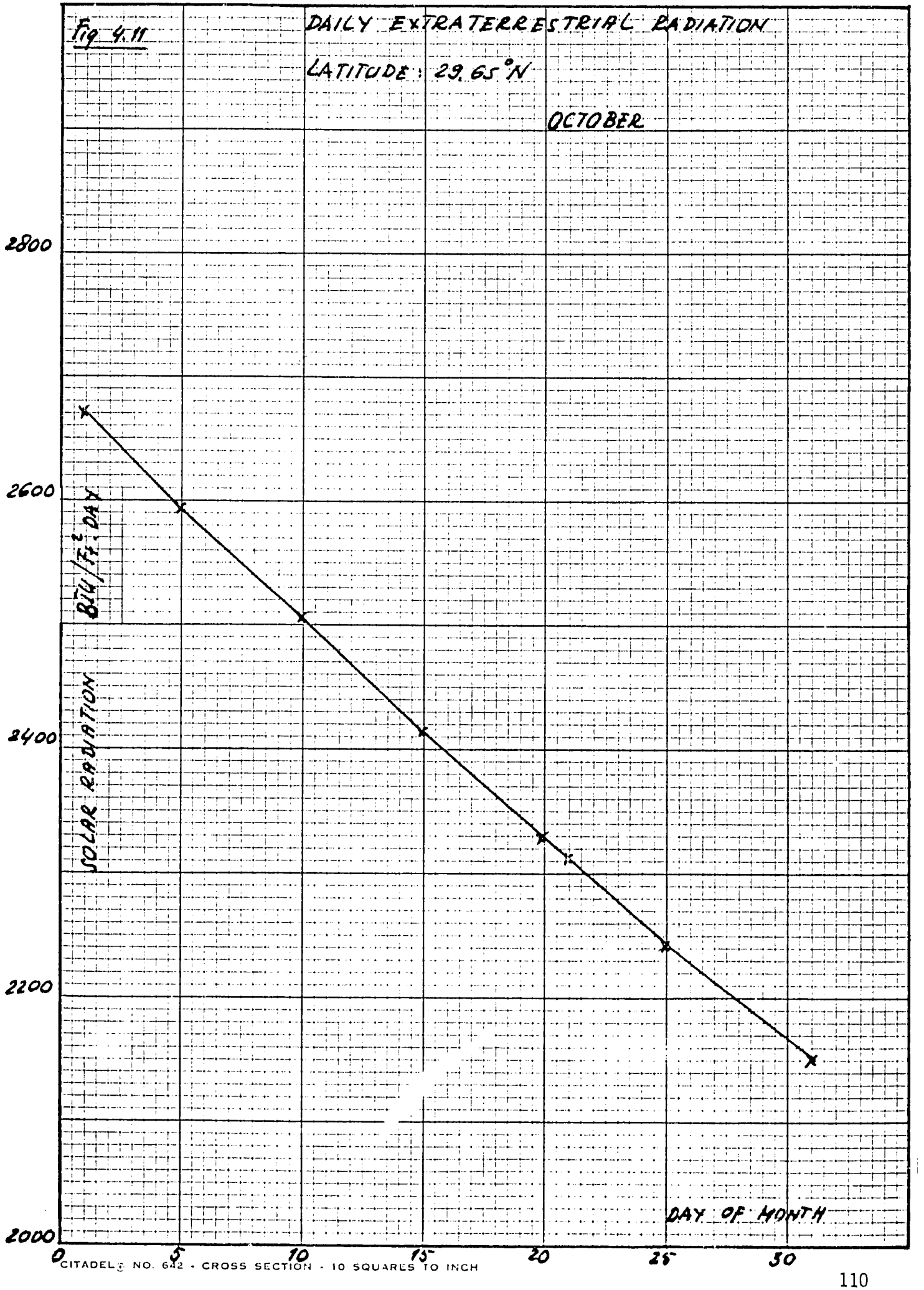


Fig 4.11
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE: 29.65°N
OCTOBER
2800
2600
2400
2200
2000
SOLAR RADIATION BTU/FT² DAY
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

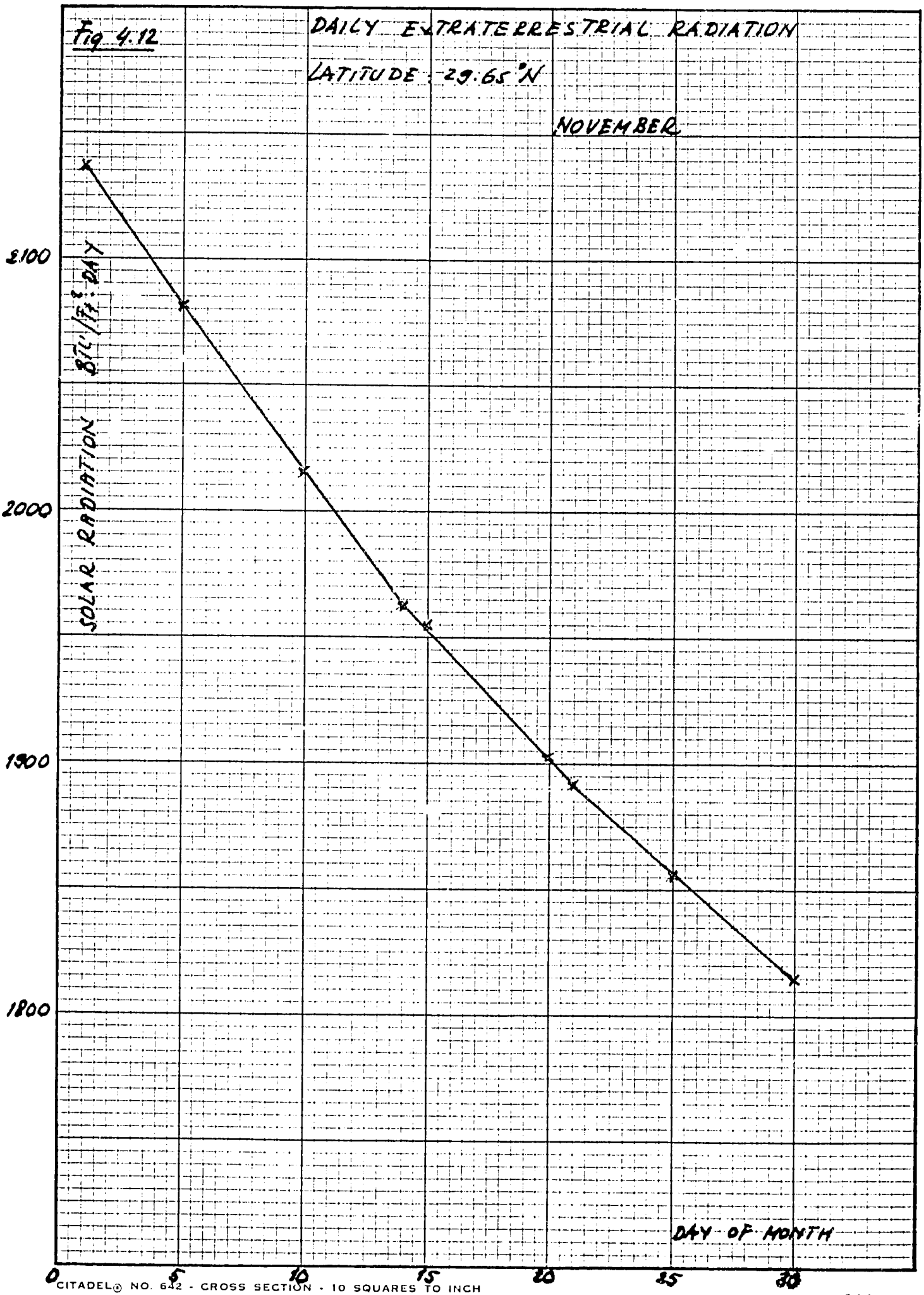


Fig 4.12
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE: 29.65°N
NOVEMBER
SOLAR RADIATION BTU/FT² DAY
2100
2000
1900
1800
DAY OF MONTH
0
5
10
15
20
25
30
CITADEL® NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

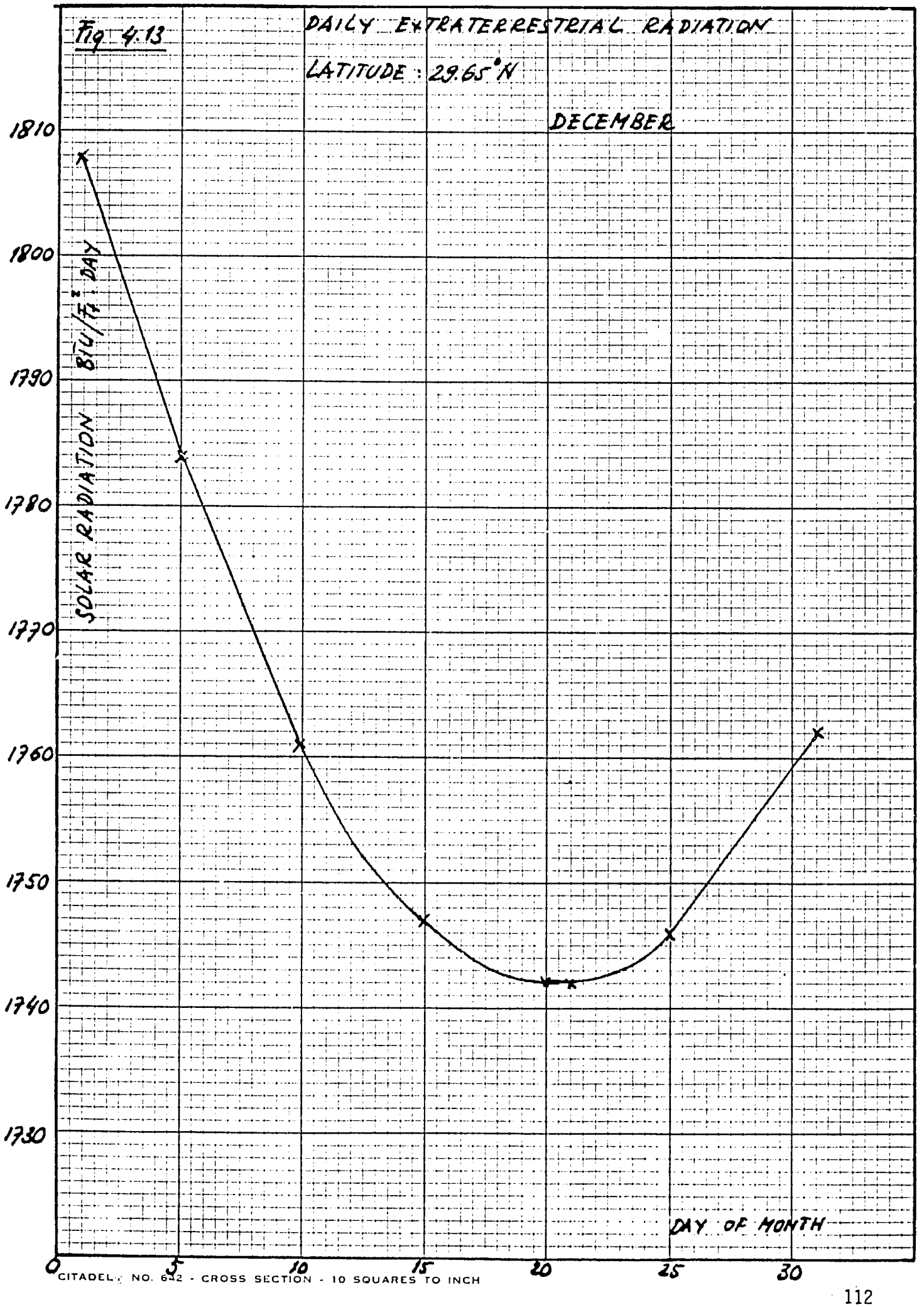


Fig 4.13
DAILY EXTRATERRESTRIAL RADIATION
LATITUDE : 29.65° N
DECEMBER
SOLAR RADIATION BTU/FT² : DAY
1810
1800
1790
1780
1770
1760
1750
1740
1730
0
5
10
15
20
25
30
DAY OF MONTH
CITADEL NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

FIGURE 5

Total daily average global and extraterrestrial radiation on horizontal plane on average day of each month (in Btu/Ft^2-DAY).

Fig. 5.1 : 1980 - 1982

Fig. 5.2 : 1980

Fig. 5.3 : 1981

Fig. 5.4 : 1982

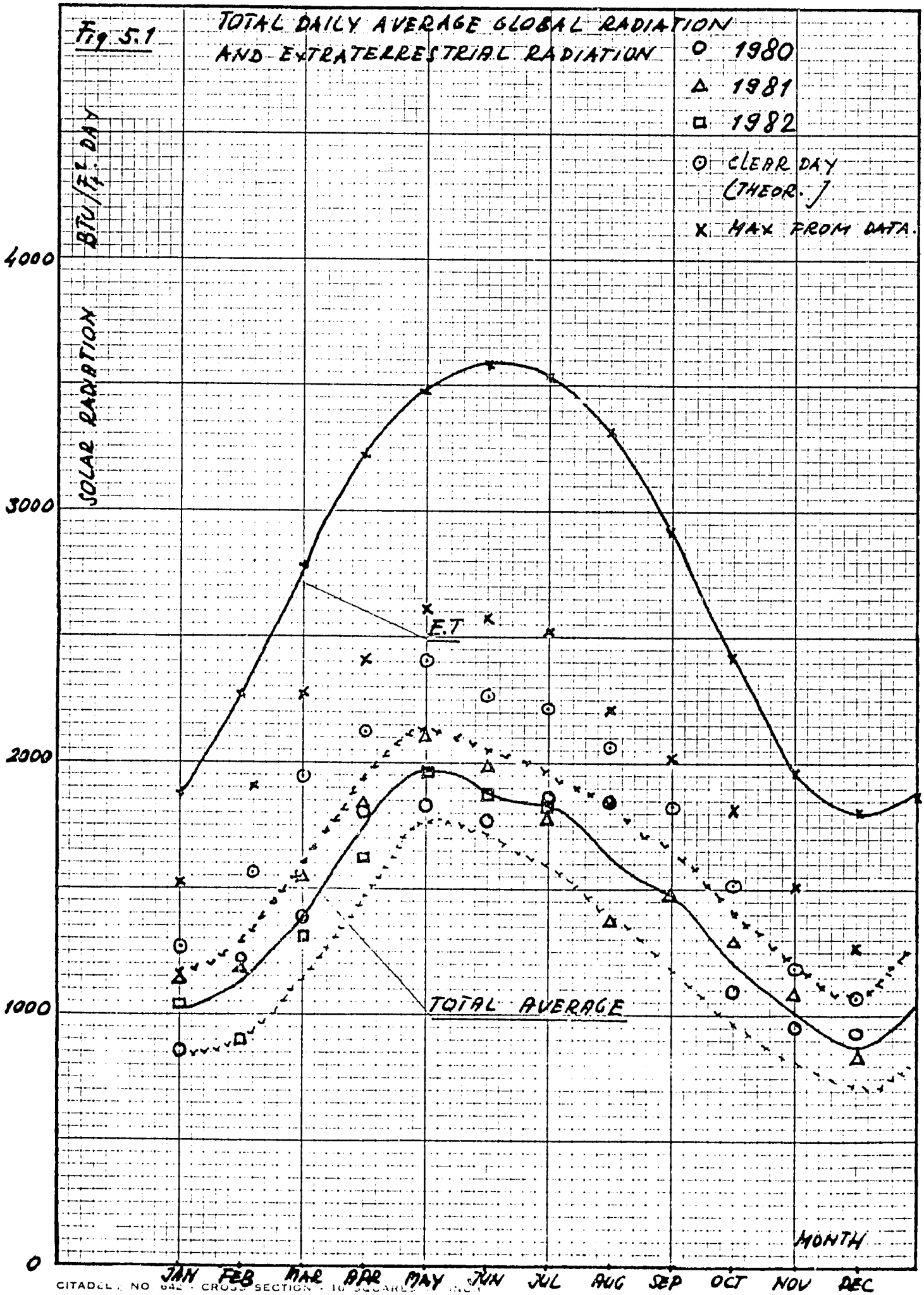
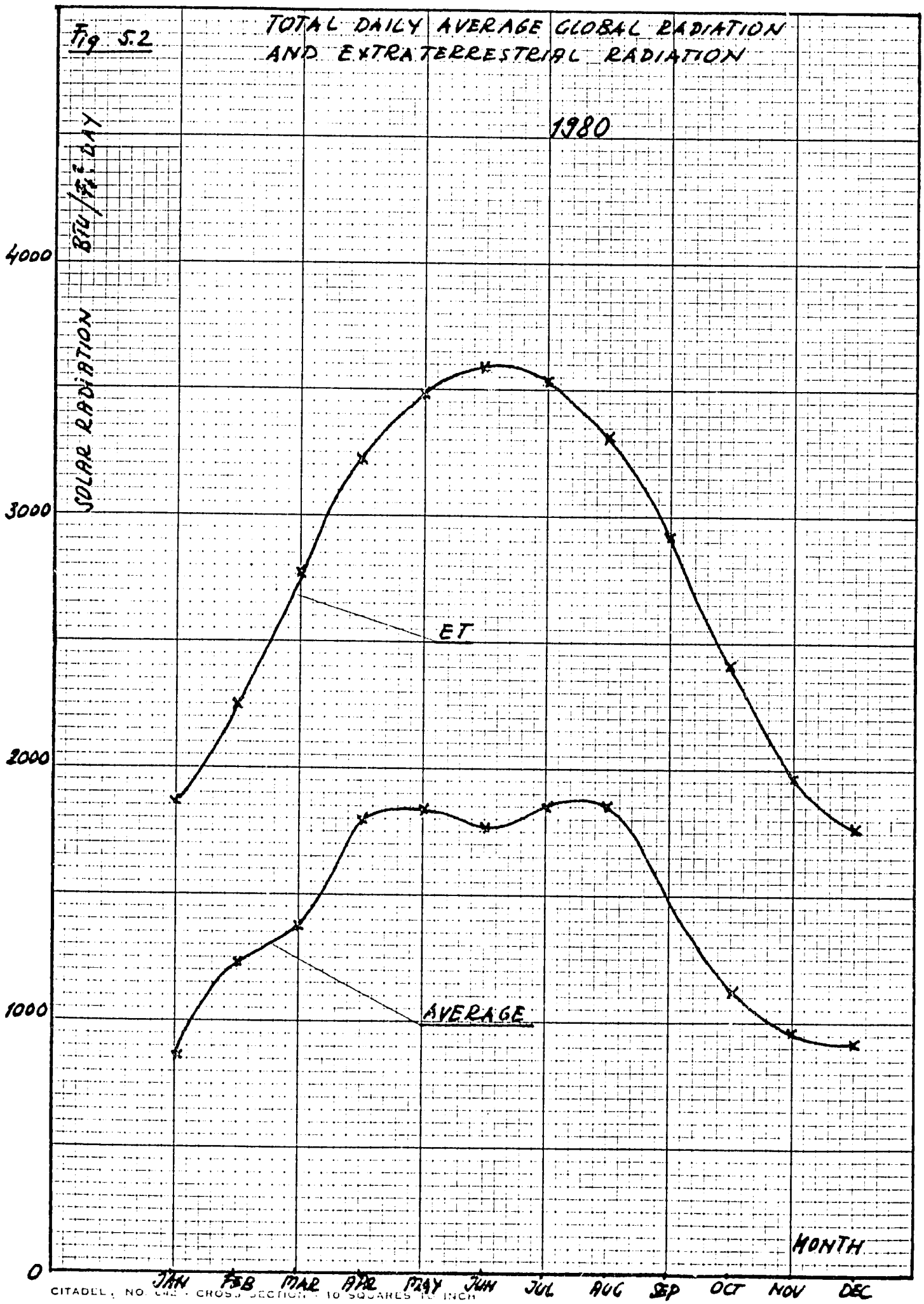


Fig. 5.1
TOTAL DAILY AVERAGE GLOBAL RADIATION
AND EXTRATERRESTRIAL RADIATION
1980
1981
1982
CLEAR DAY (THEOR.)
MAX FROM DATA.
SOLAR RADIATION BTU/FT² DAY
4000
3000
2000
1000
0
E.T
TOTAL AVERAGE
MONTH
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC



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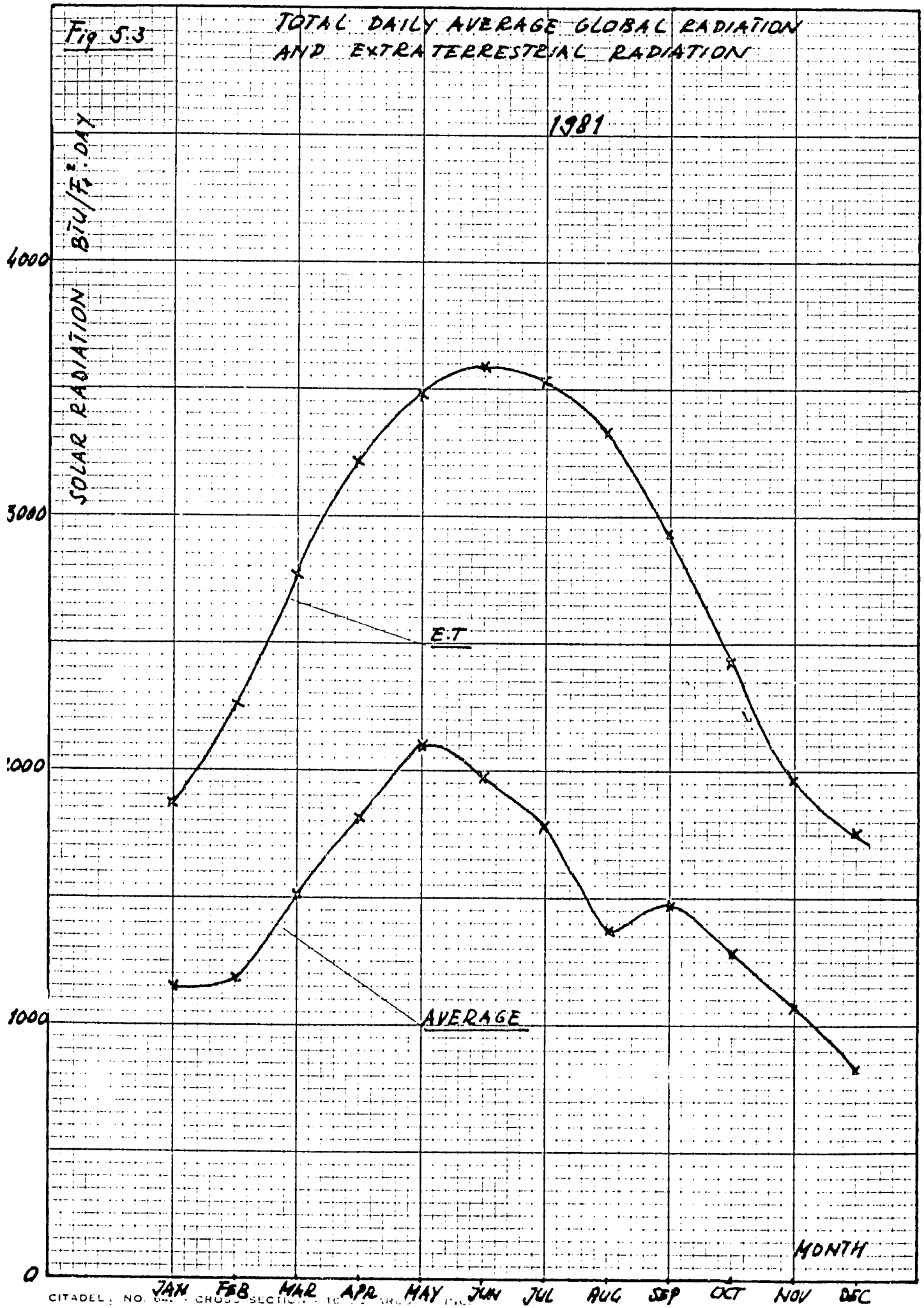
Fig 5.3
TOTAL DAILY AVERAGE GLOBAL RADIATION
AND EXTRATERRESTRIAL RADIATION
1981
SOLAR RADIATION BTU/FT² DAY
4000
3000
1000
0
E.T
AVERAGE
MONTH
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

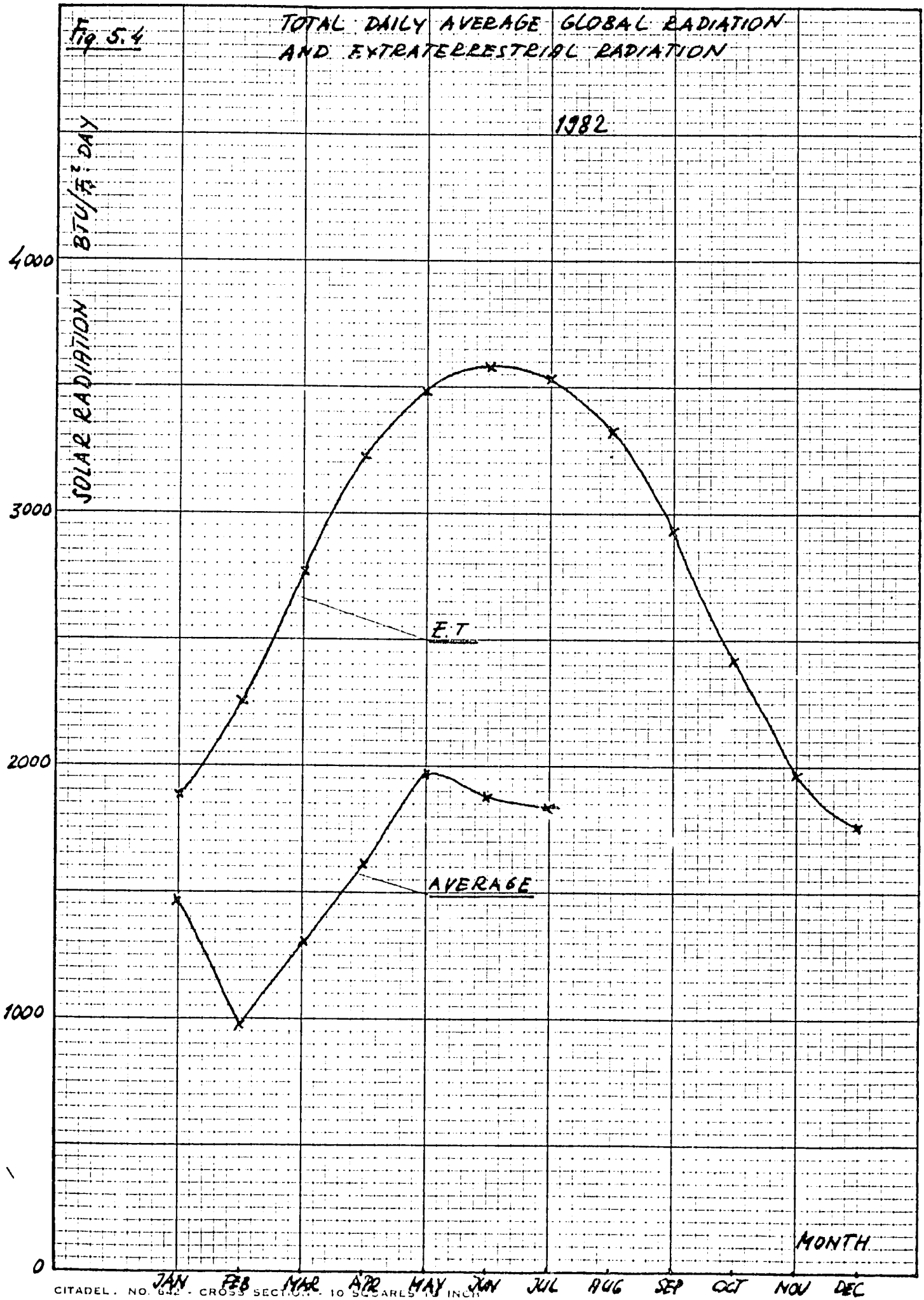
Fig. 5.4
TOTAL DAILY AVERAGE GLOBAL RADIATION
AND EXTRATERRESTRIAL RADIATION
1982
SOLAR RADIATION BTU/FT² DAY
4000
3000
2000
1000
0
E.T
AVERAGE
MONTH
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
CITADEL . NO. 642 . CROSS SECTION . 10 SQUARES 1/2 INCH

FIGURE 6

Total daily of the ratio of global insolation on a horizontal plane to extraterrestrial insolation on a horizontal plane (KT)

Fig 6.1	:	1980 - 1982
Fig 6.2	:	1980
Fig 6.3	:	1981
Fig 6.4	:	1982

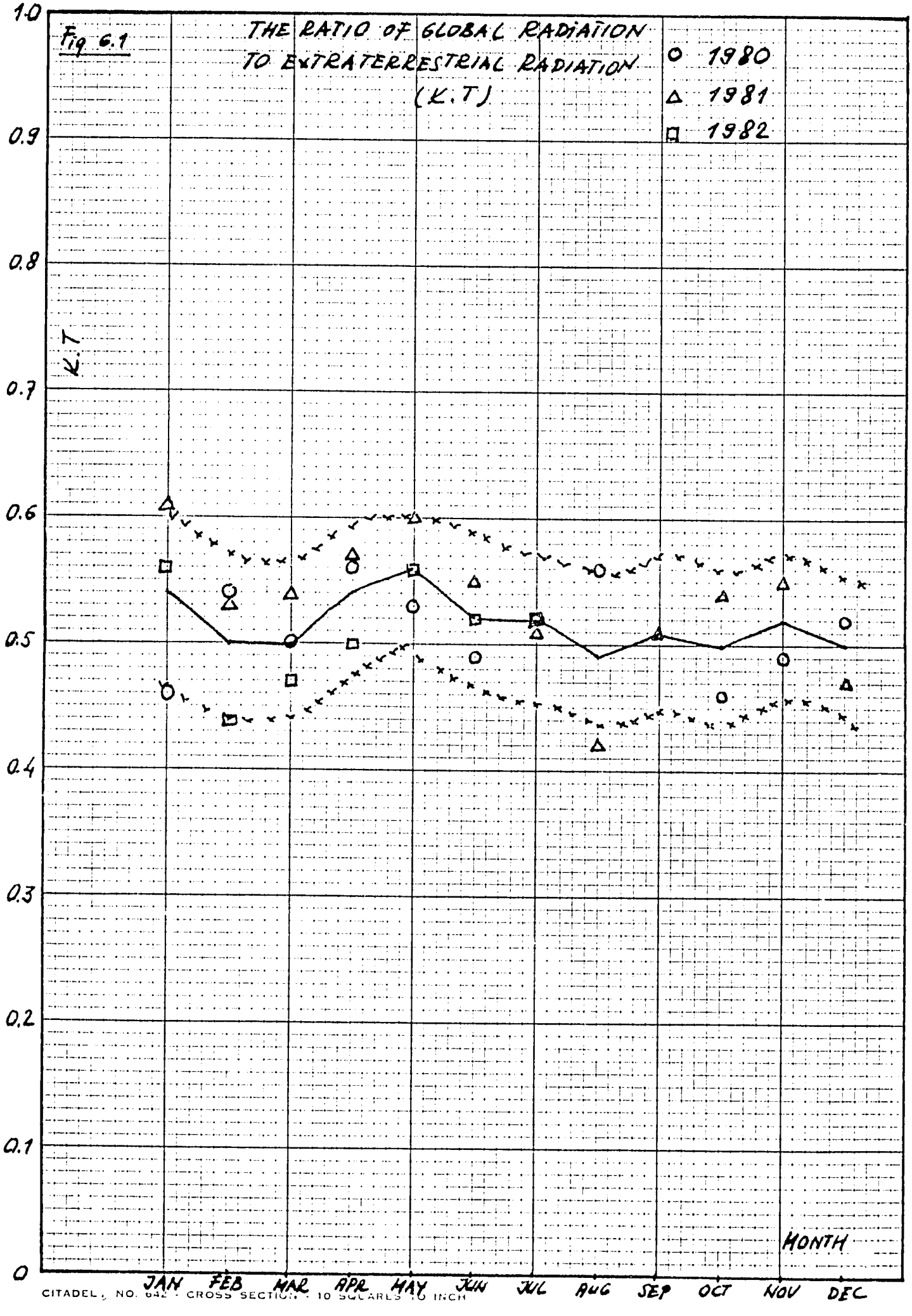
Fig 6.1
THE RATIO OF GLOBAL RADIATION
TO EXTRATERRESTRIAL RADIATION
(K.T)
1980
1981
1982
K.T
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
MONTH
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
CITADEL, NO. 642 · CROSS SECTION · 10 SQUARES TO INCH

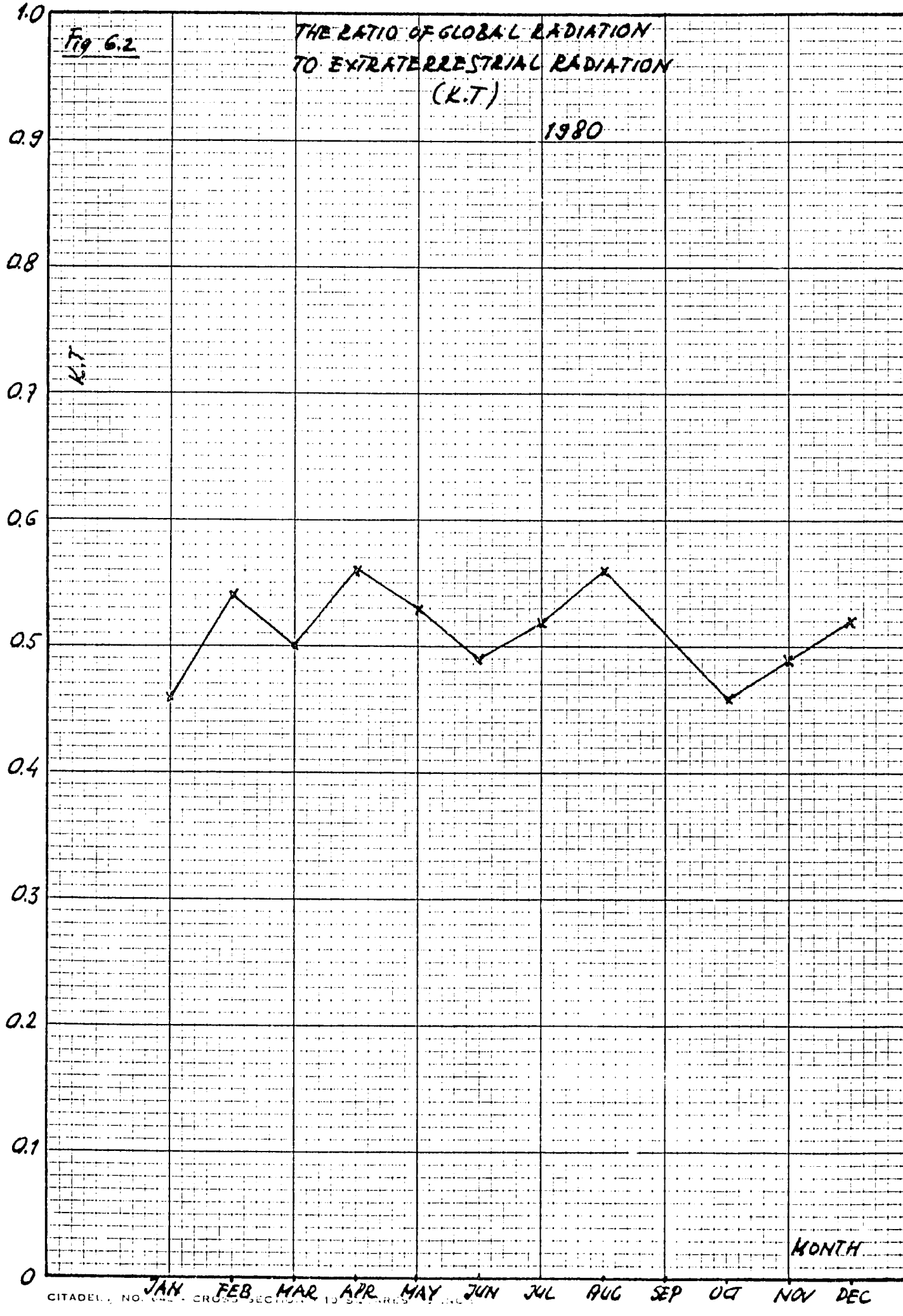
Fig 6.2
THE RATIO OF GLOBAL RADIATION
TO EXTRATERRESTRIAL RADIATION
(K.T)
1980
K.T
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
MONTH

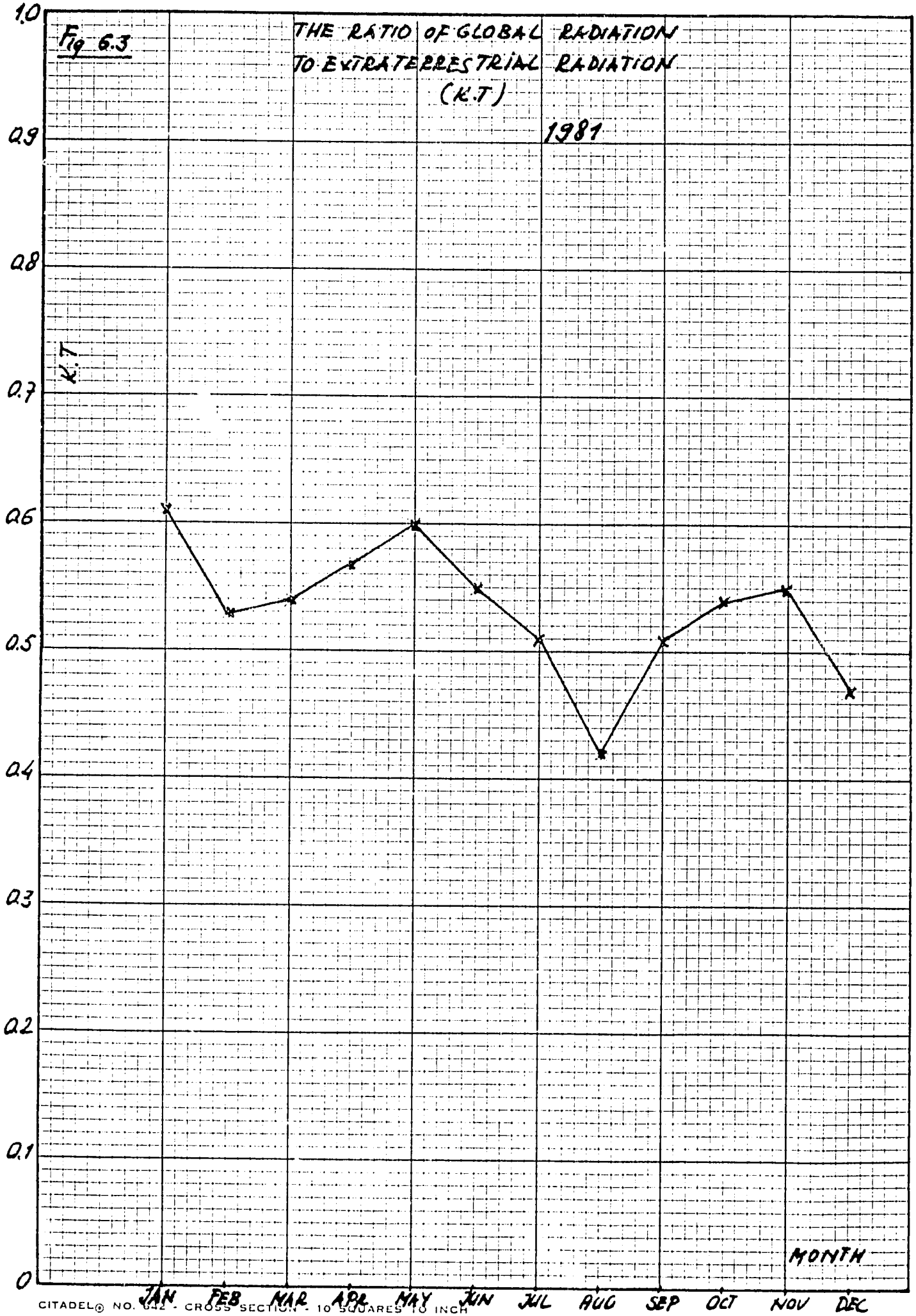
Fig 6.3
THE RATIO OF GLOBAL RADIATION
TO EXTRATERRESTRIAL RADIATION
(K.T)
1981
K.T
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
MONTH
CITADEL® NO. 642 - CROSS SECTION - 10 SQUARES TO INCH

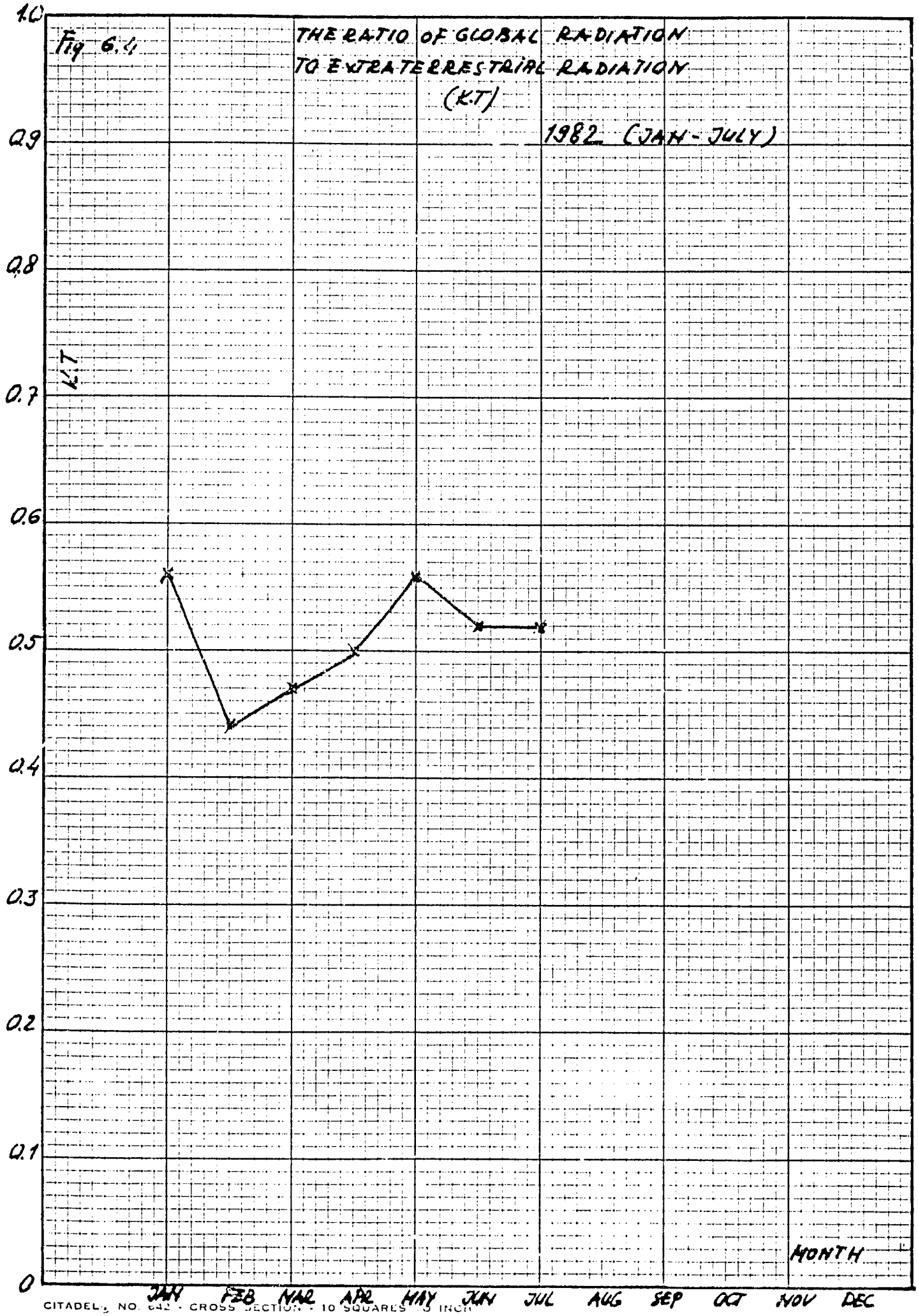
Fig 6.4
THE RATIO OF GLOBAL RADIATION
TO EXTRATERRESTRIAL RADIATION
(K.T)
1982 (JAN - JULY)
K.T
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
MONTH
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
CITADEL, NO. 642 · CROSS SECTION · 10 SQUARES TO INCH