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CARBON AND OXYGEN PRIMARY PRODUCTION IN BEDFORD BASIN, NOVA SCOTIA FROM MARCH TO JUNE 1985

by

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Abstract

Irwin, B., Caverhill, C., Anning, J., Mossman, D. and Platt, T. 1988. Carbon and oxygen primary production in Bedford Basin, Nova Scotia from March to June 1985. Can. Data. Rep. Fish. Aquat. Sci. No. 686: iv + 135 p.

During the period March 11 to June 17, 1985 a series of primary productivity experiments were conducted in Bedford Basin. In this report we make available the raw data and also the fitted light saturation parameters.

Resumé

Irwin, B., Caverhill, C., Anning, J., Mossman, D. and Platt, T. 1988. Carbon and oxygen primary production in Bedford Basin, Nova Scotia from March to June 1985. Can. Data. Rep. Fish. Aquat. Sci. No. 686: iv + 135 p.

Pendant la période du 11 Mars au 17 Juin, 1985, une serie d'expériences a été effectuée dans le bassin de Bedford. Dans ce rapport, nous présentons les données brutes sur ces expériences ainsi que les paramètres qui furent calculés afin de pour representer les courbes de production en fonction de la lumière.

CONTENTS

INTRODUCTION

This is the first in a series of data reports which will give the results of experiments designed to closely examine the relationship between carbon and oxygen estimates of phytoplankton primary production. In this present series both *in situ* and incubator experiments were done.

All samples were collected at a single station in Bedford Basin at 44°31.3'N 63°38.3'W (Fig. 1). Water depth at this location was 70 m. This particular site was chosen because there already exists a large body of biological, physical and chemical data on samples collected at this station (Cota and Harrison, 1983; Côté and Platt, 1984; Irwin and Platt, 1978a, 1978b; Irwin et al., 1975, 1983; Krauel, 1969; Platt and Irwin, 1971, 1972; Platt et al., 1973; Taguchi and Platt, 1978a, 1978b; Taguchi et al., 1975).

SAMPLING

All water samples were collected with 30 ℓ Niskin bottles. Sampling depths were 1, 5 and 10m. Water was carefully siphoned from the Niskin bottles into darkened plastic carboys from which sub samples were dispensed.

PRIMARY PRODUCTION

Primary productivity was measured using the ^{14}C method and the oxygen evolution method. The ^{14}C method was essentially as described in Strickland and Parsons (1972). For *in situ* studies, 50 µci of sodium bicarbonate ^{14}C was added to each of six light and four dark bottles from each depth. Light bottles were incubated *in situ* at their respective sampled depths. Dark bottles were incubated in a darkened temperature controlled tank. After six hours, three light and two dark bottles from each depth were filtered. The remainder were filtered after twenty four hours. All were filtered onto Whatman GF/F filters. Filters were then fumed over HCl before counting in a scintillation counter.

The amount of material in the Dissolved Organic Carbon (DOC) pool was estimated by counting aliquots of filtrate from light and dark bottles. Replicate five milliliter aliquots were acidified with 0.5 ml of 6N hydrochloric acid in 20 ml glass scintillation vials. Vials were agitated for one hour on a shaker in a fume hood and then the acid was neutralised with 0.5 ml of 6N sodium hydroxide. 10 ml

of a water compatible cocktail (BDH #RO46967) was added to each vial and then counted in the usual way.

Photosynthetic parameters were estimated from incubator experiments. 20 µci of sodium bicarbonate ^{14}C was added to each of 42 light and 2 dark bottles. Bottles were incubated for 3 hours in temperature controlled incubators illuminated with a 250 watt tungsten halogen lamp (Irwin et al. 1986).

The high precision Winkler technique of Williams and Jenkinson (1982) was used to measure oxygen. A total of 25 bottles were filled from each depth. Immediately after filling, five bottles were fixed and were used as T-0 conditions. Eight bottles were wrapped in aluminum foil and incubated in the darkened tank as dark bottles. The remaining 12 bottles were incubated *in situ* at their sampled depth. After six hours, 6 light and 4 dark bottles were fixed and the remainder fixed after 24 hours. All bottles were titrated within 24 hours after fixing.

Chlorophyll

Replicate 100 ml samples were filtered onto 25 mm Whatman GF/F filters. Chlorophyll was extracted for 24 hours with 85% acetone at 0°C in the dark. The fluorometric technique of Yentsch and Menzel (1963) as modified by Holm Hansen et al. (1965) was used to estimate chlorophyll concentration.

Organic Particulates

Samples for particulate organic carbon and particulate organic nitrogen were filtered onto 25 mm precombusted Whatman GF/F filters. Filters were analysed by combustion in a Perkin Elmer model 210 CHN analyser.

Nutrients

Samples for nitrate, silicate and inorganic phosphate were collected from all sampled depths. Vials were stored frozen at -20°C and later analysed on a Technicon II autoanalyser. Nitrate was measured using industrial method 158-71W, silicate with method 186-72W and inorganic phosphate with method 155-71W.

Samples for ammonia analysis were processed immediately after collection. The phenolhypochlorite method as described by Solorzano (1969) was used.

Light measurements

Total incident radiation was measured with an Eppley 40 Junction black and white pyranometer (Model 8-48) mounted on the roof of the Bedford Institute of Oceanography some 2.5 kilometers south of the sampling station. The output from the pyranometer was integrated hourly and logged on a Licor Li 550 printing integrator.

Extinction coefficients were calculated using submarine light measurements made with a Licor Li 192 SB underwater quantum sensor. Output was measured on a Licor Li 185 B meter. Measurements were made at 1 m intervals from the surface to 10 m.

Photosynthetically Active Radiation (P.A.R.) was measured at each bottle position in the incubators with a Biospherical Instruments model QSL 100, 4 π quantum meter.

Estimation of Photosynthetic Parameters

Measurements of specific production, P^B, and irradiance I were used to estimate parameters in the equation of Platt et al. (1981)

$$P^B = P_s (1 - e^{-\alpha I/P_s}) e^{-\beta I/P_s},$$

P_s (mg C mg Chl^{-1} h^{-1}) is the light saturated rate of photosynthesis in the absence of photoinhibition, α (mg C (mg Chl)$^{-1}$ h^{-1} w^{-1} m^{-2}) is the initial slope of the PI curve and β (mg C (mg Chl)$^{-1}$ h^{-1} w^{-1} m^{-2}) is a parameter that characterises photoinhibition. Complete details of the fitting routine are given in Irwin et al. (1982) and a discussion of the mathematical basis for this technique is given in Irwin et al. (1980).

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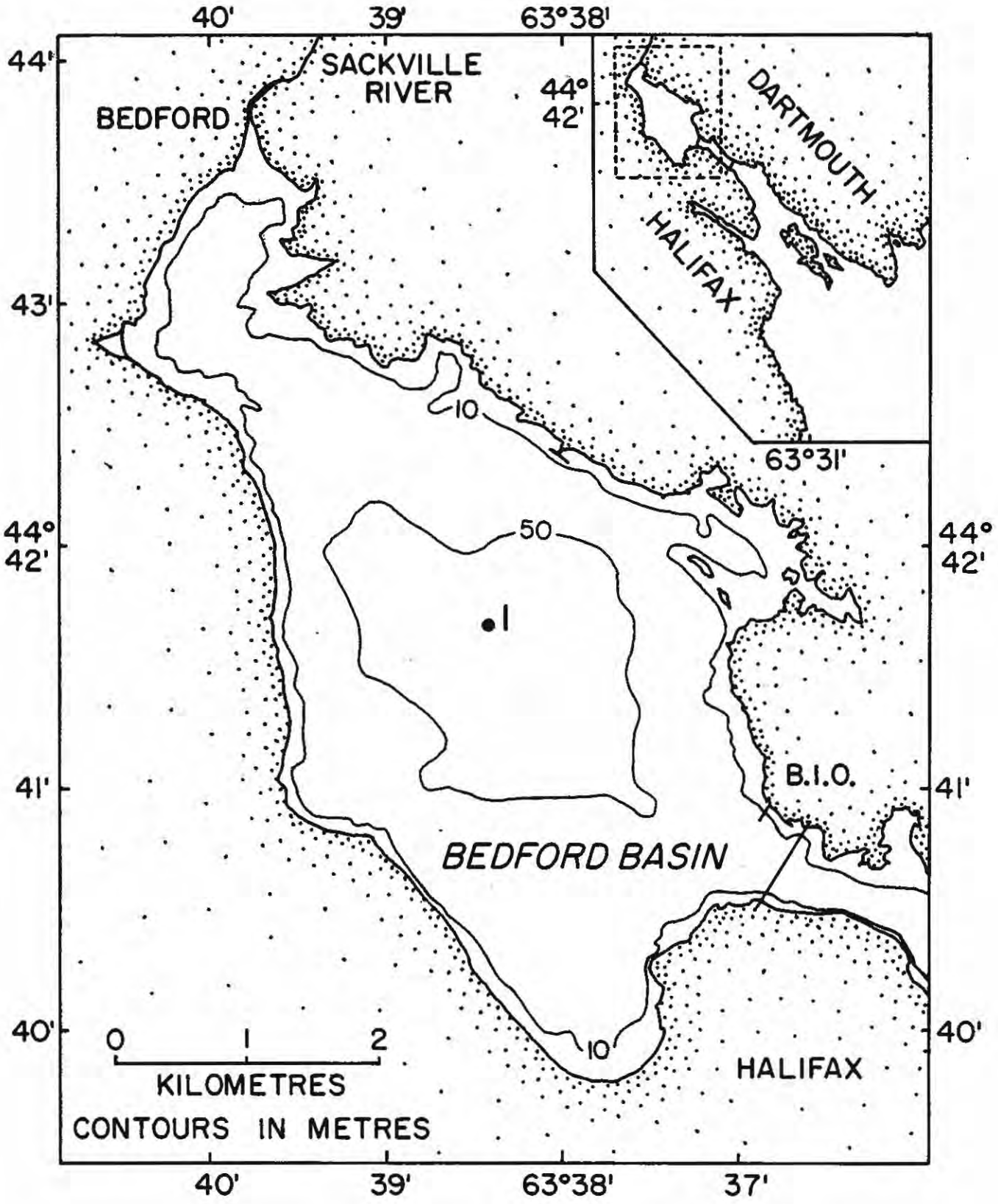
Location of Sampling Station in Bedford Basin, N.S.


40'
39'
63°38'
44'
SACKVILLE
RIVER
BEDFORD
44°
42'
DARTMOUTH
HALIFAX
43'
10
63°31'
44°
42'
50
1
44°
42'
B.I.O.
41'
41'
BEDFORD BASIN
40'
0
1
2
KILOMETRES
CONTOURS IN METRES
10
HALIFAX
40'
40'
39'
63°38'
37'

In Situ profiles

Units

Depth	=	meters
Temperature	=	°C
O_2	=	mg ℓ^{-1}
P_C	=	mg C m^{-3} h^{-1}
P_{DOC}	=	mg C m^{-3} h^{-1}
P_g	=	mg O_2 m^{-3} h^{-1}
P_n	=	mg O_2 m^{-3} h^{-1}
P_r	=	mg O_2 m^{-3} h^{-1}
Inorganic nutrients	=	mg at m^{-3}
Organic particulates	=	mg m^{-3}

$$PQ = \frac{P_g}{P_C} x \frac{12}{32}$$

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 11/03/85 JULIAN DAY 70

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	1.0	80.0	12.86	4.58	8.68	.78	.77	2.68	309	44	7.02
5	1.0	32.9	12.84	4.19	7.60	.82	.61	4.90	517	83	6.23
10	1.0	11.1	12.50	4.70	7.77	.92	.48	4.52	519	113	4.59
0-10			127.61	44.35	79.67	8.33	6.26	41.39	4551	788	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	2.35	-	-	14.98	12.53	2.45	2.39
5	10.60	-	-	36.90	25.90	10.91	1.31
10	1.18	-	-	6.70	4.60	2.12	2.13
0-10	57.70	-		227.74	165.64	61.75	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	1.07	-	-	5.19	-31.20	36.00	1.82
5	-	-	-	8.80	-28.40	37.20	-
10	.19	-	-	1.75	-33.60	35.60	-
0-10	-	-		59.55	-305.40	364.40	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 14/03/85 JULIAN DAY 73

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	1.5	59.4	11.58	3.24	7.21	.48	1.26	2.18	-	-	-
5	1.5	7.4	11.49	3.60	6.78	.57	.90	4.72	-	-	-
10	1.5	2.0	11.28	3.00	5.29	.55	.49	6.12	633	97	6.53
0-10			114.65	33.42	65.37	5.38	9.06	43.08	-	-	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	3.82	.25	6.0	14.29	8.57	5.72	1.40
5	1.06	.39	26.6	7.60	6.21	3.14	2.69
10	.30	.18	38.2	4.39	-.47	4.85	-
0-10	16.98	2.96		88.05	52.48	43.42	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	1.76	.06	3.4	7.91	6.72	1.22	1.68
5	.62	.09	13.2	5.64	4.70	.67	2.57
10	.14	.03	16.5	-	1.37	1.04	-
0-10	8.42	.66		-	44.74	9.28	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 18/03/85 JULIAN DAY 77

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	.0	68.4	11.42	3.03	6.68	.60	.55	13.75	745	114	6.54
5	.0	15.0	11.45	2.27	5.23	.49	.49	12.18	683	107	6.38
10	.5	3.3	11.53	2.14	4.89	.48	.46	13.64	722	112	6.45
0-10			114.61	24.66	55.80	5.21	5.01	130.16	7113	1103	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	12.27	1.27	9.4	63.13	51.80	11.08	1.93
5	2.42	1.17	32.5	18.70	7.00	11.68	2.89
10	.20	.08	26.9	-	-35.30	33.81	-
0-10	48.20	9.28		-	98.65	170.33	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	3.08	.36	10.4	21.91	23.40	-1.50	2.67
5	.81	.18	17.9	6.08	8.40	-1.40	2.81
10	.11	-	-	-	-1.90	2.50	-
0-10	13.16	-		-	103.25	-4.55	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 21/03/85 JULIAN DAY 80

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	.0	66.9	11.64	1.91	4.23	.55	.55	3.18	438	63	6.95
5	.0	13.4	11.62	2.07	4.23	.50	.76	4.55	502	77	6.52
10	.0	3.4	11.43	2.98	5.78	.45	.75	9.51	636	100	6.36
0-10			115.79	22.50	46.18	5.03	6.95	53.79	5163	785	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	6.80	.73	9.7	23.24	18.80	4.40	1.28
5	5.22	.95	15.4	14.64	11.61	3.10	1.05
10	1.28	1.04	44.7	7.91	6.10	1.80	2.31
0-10	47.09	9.07		155.38	123.90	31.65	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	1.65	.16	8.5	9.64	5.14	4.50	2.19
5	1.51	.22	12.6	6.24	4.81	1.43	1.55
10	.40	.12	23.5	2.68	-.72	3.40	2.51
0-10	12.75	1.77		63.70	35.27	28.44	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 25/03/85 JULIAN DAY 84

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	.5	78.0	11.61	2.14	6.82	.67	.65	1.24	218	28	7.79
5	.5	28.9	11.60	3.66	7.79	.59	.55	1.53	259	34	7.62
10	.5	8.4	11.30	3.61	4.65	.40	.62	3.69	387	59	6.56
0-10			115.28	31.92	67.14	5.67	5.98	19.83	2787	384	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	2.38	.08	3.3	9.76	1.67	8.10	1.54
5	1.88	.08	4.0	8.95	2.17	6.78	1.78
10	.74	.20	21.5	3.31	3.31	4.04	1.69
0-10	17.45	1.10		77.83	23.05	64.91	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	.96	.01	1.4	6.23	-1.46	7.69	2.42
5	.80	.04	4.3	6.09	-1.99	8.08	2.85
10	.33	.06	16.0	2.73	-3.19	5.92	-
0-10	7.31	.36		52.92	-21.31	74.23	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 28/03/85 JULIAN DAY 87

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	1.0	78.8	11.45	3.97	7.58	.62	.95	.76	207	26	7.96
5	1.0	30.4	11.39	3.97	7.71	.67	.99	2.69	298	43	6.93
10	1.0	9.2	11.19	4.25	7.88	.73	.74	4.11	427	64	6.67
0-10			113.58	40.40	77.13	6.70	9.16	24.66	3029	431	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	1.67	.10	5.5	6.70	7.28	-.58	1.50
5	1.25	.14	10.3	4.66	5.05	-.39	1.40
10	.65	.13	16.7	3.37	-1.80	5.16	1.94
0-10	12.26	1.26		49.50	40.07	9.41	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	.79	.03	4.1	3.78	1.65	2.13	1.80
5	.81	.07	8.1	2.82	.63	2.18	1.30
10	.11	.07	39.1	-	-2.69	4.80	-
0-10	6.29	.58		-	1.06	28.20	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 01/04/85 JULIAN DAY 91

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	1.0	75.3	11.39	2.44	4.84	.41	.72	1.11	218	29	7.52
5	1.0	24.3	11.26	3.36	6.21	.30	.80	2.46	363	56	6.48
10	1.0	8.3	11.09	4.26	7.87	.75	.76	3.58	498	81	6.15
0-10			112.57	33.09	62.14	4.46	7.66	23.35	3532	541	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	1.79	.12	6.5	6.61	2.93	5.85	1.39
5	1.40	.24	14.6	7.51	7.04	.47	2.00
10	.32	.07	17.9	3.04	-2.01	5.05	-
0-10	12.47	1.62		61.23	35.45	32.29	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	.81	.03	3.1	2.55	-2.29	4.84	1.18
5	.64	.06	9.1	2.93	-2.33	5.26	1.72
10	.19	.05	20.5	-	-6.15	6.95	-
0-10	5.79	.49		-	-32.73	55.57	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 03/04/85 JULIAN DAY 93

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	1.0	80.6	11.42	2.09	4.64	.54	.91	.90	206	28	7.36
5	1.0	34.1	11.47	3.97	8.78	.89	.88	1.18	254	38	6.77
10	1.0	11.6	11.24	3.97	8.19	.85	.92	3.19	494	84	5.88
0-10			113.98	34.06	73.91	7.75	8.99	15.99	2996	465	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	1.46	.06	4.0	5.26	2.07	3.19	1.35
5	1.14	.16	12.4	4.12	4.22	-.10	1.36
10	.69	.34	32.9	2.71	3.52	-.81	1.47
0-10	11.24	1.75		41.10	34.00	7.10	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	.57	.02	3.0	2.98	-6.53	7.13	1.97
5	.42	.03	6.5	-	-7.34	6.69	-
10	.17	.04	17.9	-	-8.63	7.52	-
0-10	4.03	.30		-	-74.20	70.30	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 09/04/85 JULIAN DAY 99

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	2.0	61.1	11.34	4.95	10.36	.12	1.27	2.52	399	60	6.66
5	2.0	11.2	11.22	3.66	9.62	.14	1.04	2.52	399	60	6.66
10	2.0	3.1	11.93	4.09	8.45	.37	.96	2.78	490	98	5.00
0-10			114.34	41.55	95.50	1.92	10.89	25.85	4217	695	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	5.48	.20	3.6	18.90	8.33	10.64	1.30
5	1.46	.10	6.6	6.54	1.90	4.64	1.68
10	.23	.04	14.3	-	-4.37	4.62	-
0-10	23.59	1.15		-	22.62	64.35	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	2.28	.11	4.6	10.99	.59	10.40	1.80
5	.90	.06	6.3	3.48	-2.78	6.27	1.45
10	.15	.02	14.0	-	-5.00	-5.05	-
0-10	11.27	.65		-	-23.24	46.79	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 11/04/85 JULIAN DAY 101

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	2.7	75.9	11.39	2.63	4.76	.35	.48	5.32	516	89	5.80
5	2.7	25.2	11.39	2.93	5.41	.15	.58	4.89	527	99	5.32
10	2.7	9.0	11.17	2.94	5.32	.55	.87	4.42	516	90	5.73
0-10			113.35	28.43	51.93	3.10	6.23	49.02	5209	937	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	13.55	.54	3.8	43.84	43.70	.14	1.21
5	8.03	.68	7.8	28.79	2.61	8.19	1.34
10	2.08	.30	12.5	8.94	-3.59	12.53	1.61
0-10	81.99	5.43		283.43	133.87	68.60	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	5.88	.26	4.3	28.37	25.73	2.64	1.81
5	3.30	.24	6.7	15.43	10.10	5.32	1.76
10	.84	.05	5.4	3.10	-.17	3.27	1.39
0-10	34.59	1.99		162.30	122.22	40.04	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 15/04/85 JULIAN DAY 105

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	3.0	76.5	11.51	1.81	2.23	.54	.65	3.20	311	51	6.10
5	3.0	26.2	11.49	3.07	4.90	.47	.62	5.24	428	76	5.63
10	3.5	7.3	11.21	3.98	7.36	.61	.86	4.69	468	90	5.20
0-10			114.26	29.20	47.14	5.26	6.89	44.91	4029	720	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	9.12	.32	3.4	32.47	23.46	9.01	1.34
5	6.49	.51	7.3	28.64	16.15	12.49	1.65
10	1.45	.20	12.1	4.63	1.88	2.77	1.20
0-10	60.19	3.76		237.87	147.76	90.16	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	2.83	.18	5.8	13.26	9.54	3.73	1.76
5	1.50	.16	9.5	7.97	1.80	6.18	1.99
10	.34	.04	10.4	1.61	-2.69	4.30	1.80
0-10	16.09	1.36		79.67	30.00	49.75	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 18/04/85 JULIAN DAY 108

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	1.5	63.1	11.23	3.02	5.34	.44	.88	3.00	367	60	6.12
5	1.5	10.0	11.28	1.51	2.60	.39	.88	3.11	344	66	5.21
10	1.5	4.2	11.18	2.70	3.44	.56	.90	2.94	341	64	5.33
0-10			112.40	22.61	36.32	4.48	8.85	30.35	3501	637	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	4.06	.22	5.2	14.21	3.15	11.08	1.31
5	6.08	.44	6.7	28.15	19.92	8.23	1.74
10	4.13	.52	11.1	25.30	10.78	14.50	2.30
0-10	49.87	3.94		232.56	126.04	106.53	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	2.14	.12	5.3	9.16	3.36	5.79	1.61
5	1.87	.12	6.1	8.99	4.10	4.23	1.80
10	.90	.10	9.9	4.25	-.05	4.30	1.76
0-10	17.09	1.15		78.56	28.41	47.16	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 22/04/85 JULIAN DAY 112

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	3.5	75.4	11.56	3.49	5.27	.19	1.12	3.03	356	57	6.25
5	3.0	6.4	11.57	3.26	4.92	.40	1.10	5.27	508	77	6.60
10	2.2	6.4	11.26	3.71	4.20	.40	1.10	3.63	380	51	7.45
0-10			114.90	34.42	48.45	3.37	11.06	41.88	4304	645	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	9.66	.28	2.8	49.00	31.59	17.42	1.90
5	15.07	.80	5.0	57.80	34.37	23.40	1.44
10	3.66	.35	8.8	21.80	5.62	16.22	2.23
0-10	105.95	5.32		461.60	263.49	198.11	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	4.24	-	-	14.09	13.28	.82	1.25
5	4.34	-	-	21.73	14.06	7.67	1.74
10	1.32	-	-	5.36	4.26	1.10	1.79
0-10	35.55	-		153.46	113.76	39.73	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 25/04/85 JULIAN DAY 115

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	2.5	74.8	11.43	2.98	5.13	.35	.46	2.91	260	39	6.67
5	2.5	23.4	11.37	2.57	3.60	.48	.49	3.30	307	46	6.67
10	2.5	5.7	11.23	2.55	3.39	.30	.54	3.30	307	46	6.67
0-10			113.53	26.88	40.07	3.96	4.94	31.83	2929	439	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	5.94	.23	3.8	24.50	14.41	10.12	1.55
5	8.21	.37	4.3	31.20	19.28	11.97	1.43
10	5.28	.46	8.0	22.20	8.76	13.51	1.58
0-10	67.97	3.51		269.40	151.89	118.00	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	4.39	.17	3.7	14.57	8.39	6.27	1.24
5	3.70	.25	6.2	12.83	6.78	6.05	1.30
10	1.42	.08	5.3	7.84	-.92	8.77	2.08
0-10	33.37	1.84		121.05	53.38	67.96	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 02/05/85 JULIAN DAY 122

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	4.0	67.6	12.19	.62	1.54	.23	.12	7.15	467	79	5.94
5	4.0	14.2	12.34	.14	.85	.27	.16	11.44	558	99	5.64
10	3.0	2.6	12.03	.32	.84	.31	.13	12.76	591	117	5.05
0-10			122.18	3.29	10.55	2.68	1.41	104.83	5389	975	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	21.32	.86	3.9	69.77	44.35	25.42	1.23
5	16.06	.92	5.4	75.25	32.08	43.17	1.76
10	3.37	.39	10.2	24.06	-10.03	34.08	2.68
0-10	144.66	7.70		608.09	252.34	355.73	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	7.63	.37	4.6	24.05	-	-	1.18
5	3.90	.25	5.9	12.31	-	-	1.18
10	.77	.07	8.2	5.62	-	-	2.59
0-10	42.37	2.41		141.60	-	-	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 06/05/85 JULIAN DAY 126

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	4.0	66.9	11.83	.00	.00	.13	.00	5.14	397	73	5.44
5	4.0	13.4	11.91	.03	.00	.07	.01	7.34	517	77	6.71
10	3.5	2.0	11.73	.08	.65	.41	.00	11.37	548	102	5.37
0-10			118.41	.34	1.63	1.73	.05	76.88	4887	820	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	16.06	1.00	5.8	44.90	45.60	-.70	1.05
5	12.82	.90	6.5	463.00	39.40	6.80	1.35
10	2.71	.24	8.2	14.80	-6.68	21.56	2.04
0-10	112.65	7.65		2255.20	297.40	82.40	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	4.36	.25	5.5	17.50	11.05	6.44	1.51
5	3.16	.25	7.2	12.40	4.88	7.49	1.47
10	.81	.07	8.1	4.37	-5.56	9.93	2.02
0-10	29.33	2.05		119.23	41.21	77.85	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 09/05/85 JULIAN DAY 129

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	3.5	66.9	11.93	.48	.91	.33	.00	6.46	711	123	5.78
5	3.5	13.5	11.82	.00	1.12	.29	.00	7.34	600	114	5.26
10	3.5	2.1	11.53	.00	1.91	.33	.14	6.08	446	85	5.25
0-10			117.81	1.44	12.55	3.12	.35	67.61	5948	1094	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	16.62	.92	5.2	55.60	40.06	15.59	1.26
5	15.77	1.56	9.0	55.50	40.57	14.98	1.32
10	2.76	.39	12.2	14.40	2.61	11.78	1.96
0-10	127.73	10.76		452.55	309.27	143.63	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	6.80	.48	6.5	24.14	9.80	14.34	1.33
5	4.11	.33	7.5	14.10	-.42	14.52	1.29
10	.80	.08	9.4	3.94	-10.10	14.04	1.85
0-10	40.90	3.13		145.72	2.26	143.46	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 13/05/85 JULIAN DAY 133

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	5.5	71.6	11.54	.00	.50	.18	.00	3.88	501	69	7.26
5	5.5	18.8	11.57	.00	.58	.35	.01	4.10	525	81	6.48
10	4.0	3.5	11.35	.05	.40	.44	.21	4.93	692	132	5.24
0-10			115.06	.13	5.11	3.22	.57	42.42	5595	901	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	11.48	.94	7.6	42.30	29.00	13.30	1.48
5	3.97	.46	10.4	17.50	3.80	13.80	1.66
10	.66	.06	8.4	3.18	-9.50	12.70	1.81
0-10	53.96	5.04		213.60	80.35	133.75	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	3.85	.44	11.5	10.31	2.87	7.44	1.14
5	.83	.11	11.4	3.42	-5.16	9.31	1.54
10	.16	.03	14.1	-	-9.00	8.47	-
0-10	15.69	1.89		-	-37.11	85.39	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 21/05/85 JULIAN DAY 141

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	9.5	68.4	10.59	.33	.97	.51	.00	3.91	497	98	5.07
5	8.0	15.0	10.87	.00	1.41	.40	.01	6.50	664	134	4.96
10	5.5	3.2	10.69	.00	1.83	.34	.44	6.48	618	117	5.28
0-10			107.41	.99	13.83	4.18	1.15	57.18	6024	1189	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	23.95	5.80	19.5	63.60	64.00	-.42	1.02
5	8.17	1.83	18.3	33.70	15.70	17.96	1.55
10	1.17	.34	22.5	27.60	-2.68	30.50	-
0-10	111.54	26.49		411.45	255.95	155.81	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	6.94	1.40	16.8	24.50	12.46	12.05	1.38
5	2.20	.36	14.0	9.97	-1.82	11.79	1.59
10	.31	.08	20.6	2.58	-6.35	9.11	-
0-10	31.50	6.02		124.82	13.32	111.98	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 27/05/85 JULIAN DAY 147

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	12.0	54.9	10.99	.00	.26	.36	.01	11.32	705	126	5.60
5	8.0	6.2	11.24	.09	.50	.47	.16	11.25	779	151	5.16
10	5.5	1.6	10.96	.47	.60	.59	.96	5.63	561	107	5.24
0-10			110.95	1.58	4.53	4.67	3.15	98.66	7023	1325	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	34.94	1.92	5.2	111.50	83.90	27.57	1.20
5	4.52	.62	12.0	46.80	12.10	34.89	-
10	.55	-	-	18.90	-4.46	23.36	-
0-10	126.54	-		592.35	295.00	298.12	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	.20	-	-	6.01	-10.71	16.72	-
5	1.57	-	-	11.60	-6.63	18.58	2.77
10	.20	-	-	6.01	-10.71	16.72	-
0-10	8.17	-		85.26	-88.74	175.57	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 03/06/85 JULIAN DAY 154

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	12.0	52.2	10.85	.00	.85	.38	.01	20.82	1314	204	6.44
5	10.0	3.3	11.03	.00	.53	.40	.03	20.44	1121	196	5.72
10	8.5	.3	10.74	.16	.85	.55	.00	16.96	1305	201	6.49
0-10			109.04	.40	7.06	4.32	.17	196.84	12249	1996	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	106.10	2.01	1.8	209.80	169.90	39.90	.74
5	19.39	1.59	7.6	59.90	21.50	38.40	1.20
10	1.68	.23	12.0	17.30	-19.10	36.50	-
0-10	409.76	13.76		942.20	558.70	383.75	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	22.77	1.46	6.0	84.73	62.90	21.80	1.40
5	4.33	.50	10.4	24.64	3.44	21.20	1.97
10	.38	.06	14.4	12.21	-6.57	18.77	-
0-10	88.75	6.78		395.60	187.76	207.73	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 10/06/85 JULIAN DAY 161

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	12.0	64.0	10.19	.06	1.24	.27	.00	3.61	649	118	5.50
5	9.0	10.7	10.76	.07	.86	.26	.03	4.54	624	114	5.47
10	7.5	18.0	10.45	.57	.68	.53	.02	5.90	621	110	5.65
0-10			105.12	1.92	9.29	3.31	.19	46.01	6307	1142	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	3.71	.01	.3	11.85	-17.10	28.90	1.20
5	.35	.06	1.7	10.35	-19.40	29.81	-
10	.05	.00	.0	8.25	-6.08	14.32	-
0-10	12.83	.30		102.75	-153.80	256.65	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	2.89	.24	7.5	15.76	2.26	13.50	2.04
5	.64	.07	10.2	8.90	-10.46	19.35	-
10	.02	.02	5.0	14.61	-.96	15.68	-
0-10	11.60	1.09		123.86	-42.69	166.78	

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 17/06/85 JULIAN DAY 168

DEPTH	TEMP	% LIGHT	O2	NO3	SIO3	PO4	NH3	CHL	POC	PON	C:N
1	11.0	67.5	10.32	.11	.65	.15	.00	10.69	993	132	7.52
5	9.0	14.0	10.25	.12	.81	.22	.00	11.19	910	122	7.46
10	6.5	2.3	10.28	.86	1.26	.56	.47	10.69	628	93	6.75
0-10			102.79	3.02	8.75	2.84	1.18	109.15	8644	1177	

6 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	12.95	.28	2.1	52.66	11.91	40.70	1.52
5	.96	.00	.0	12.36	-10.00	22.40	-
10	.05	.00	.0	8.80	-27.10	35.80	-
0-10	43.30	.84		235.60	-77.02	312.40	

24 HOUR INCUBATION

DEPTH	PC	PDOC	% DOC/TOT	PG	PN	PR	PQ
1	10.60	.38	3.4	46.07	25.28	20.79	1.63
5	1.11	.07	5.7	14.26	4.64	9.29	-
10	.11	.02	16.9	13.71	-4.60	18.33	-
0-10	37.07	1.51		236.66	85.22	150.00	

Light Saturation Data and Related Biomass and Inorganic Nutrient Measurements

Units

P = mg C m^{-3} h^{-1} (mg Chl)$^{-1}$

I = W m^{-2}

P_s = mg C mg Chl^{-1} h^{-1}

α = mg C (mg Chl)$^{-1}$ h^{-1} w^{-1} m^{-2}

β = mg C (mg Chl)$^{-1}$$h^{-1}$ w^{-1} m^{-2}

Organic particulates are in mg m^{-3} and inorganic nutrients in mg at m^{-3}. The 90% confidence interval for P_s, α and β are shown in the closed brackets below the estimates for each parameter.

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 12/03/85 DEPTH 1 M

I	P	I	P	I	P	I	P
805	1.82	407	1.78	399	1.52	327	1.92
295	1.78	255	1.87	223	1.99	223	2.11
204	1.82	162	1.83	159	1.97	138	2.08
124	1.92	108	1.78	90	1.93	81	1.66
76	1.68	66	1.77	56	1.38	44	.96
44	1.50	30	.66	30	.88	22	.57
21	.61	17	.37	11	.26	11	.25
9	.18	9	.14	6	.10	6	.12
6	.10	6	.09	3	.05	3	.05
2	.04						

PARAMETER VALUES

PS : 2.19 (2.04, 2.33)

ALPHA : .039 (.036, .042)

BETA : .0009 (.0004, .0013)

SAMPLE TEMP .5 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 2.51

CARBON : 332

NITROGEN : 80

NITRATE : 4.13

SILICATE : 8.57

PHOSPHATE : .71

AMMONIUM : .72

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 12/03/85 DEPTH 10 M

I	P	I	P	I	P	I	P
769	1.60	753	1.89	538	2.25	407	2.62
379	2.26	319	2.32	263	2.61	247	2.09
235	2.57	168	2.25	167	2.58	153	2.14
125	1.88	118	2.44	118	2.02	89	2.09
84	2.22	80	2.22	67	1.85	51	1.68
47	1.70	41	1.21	37	1.17	28	.99
28	.66	22	.54	20	.53	15	.27
14	.38	11	.29	10	.17	9	.15
7	.13	6	.09	5	.09	4	.06
4	.03	3	.06	3	.03	2	.03

PARAMETER VALUES

PS : 3.03 (2.79, 3.27)

ALPHA : .040 (.038, .043)

BETA : .0020 (.0014, .0027)

SAMPLE TEMP .5 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 5.25

CARBON : 555

NITROGEN : 78

NITRATE : 4.32

SILICATE : 8.02

PHOSPHATE : .71

AMMONIUM : .67

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 15/03/85 DEPTH 1 M

I	P	I	P	I	P	I	P
805	2.32	753	2.20	578	1.99	407	2.14
399	1.87	375	2.32	327	1.76	295	1.79
223	2.14	223	1.96	204	1.80	162	1.52
159	1.67	138	1.63	124	1.92	108	1.77
90	1.30	81	1.42	76	1.35	66	1.54
56	1.31	44	.73	44	1.02	30	.55
30	.65	22	.34	21	.40	17	.29
16	.23	11	.12	11	.17	9	.08
9	.11	6	.00	6	.05	6	.02

PARAMETER VALUES

PS : 2.07 (1.91, 2.24)

ALPHA : .027 (.024, .029)

BETA : .0000 (-.0003, .0003)

SAMPLE TEMP 1.0 C

INCUBATION TEMP 1.5 C

CHLOROPHYLL : 4.68

CARBON : 371

NITROGEN : 50

NITRATE : 4.43

SILICATE : 9.25

PHOSPHATE : .56

AMMONIUM : 1.01

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 15/03/85 DEPTH 10 M

I	P	I	P	I	P	I	P
769	1.79	753	2.26	538	1.93	419	1.80
407	2.26	379	2.21	319	2.01	263	2.26
247	2.07	168	2.30	167	2.37	153	1.95
125	2.07	118	2.32	118	2.05	89	1.73
84	1.75	80	1.84	67	1.59	51	1.46
47	1.07	41	1.25	37	.90	28	.71
28	.51	22	.35	20	.36	15	.30
14	.18	11	.12	10	.13	9	.07
7	.07	6	.04	5	.03	4	.01
4	.03	3	.01	3	.01		

PARAMETER VALUES

PS : 2.63 (2.40, 2.85)

ALPHA : .034 (.031, .037)

BETA : .0012 (.0006, .0017)

SAMPLE TEMP 1.0 C

INCUBATION TEMP 1.5 C

CHLOROPHYLL : 2.95

CARBON : 449

NITROGEN : 72

NITRATE : 2.70

SILICATE : 5.13

PHOSPHATE : .46

AMMONIUM : .89

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 19/03/85 DEPTH 1 M

I	P	I	P	I	P	I	P
837	3.11	789	2.72	534	2.81	530	3.35
462	3.40	415	2.84	391	2.80	319	3.20
315	3.21	299	3.13	231	3.53	223	3.09
215	3.38	183	2.75	151	3.85	132	3.44
120	2.72	112	3.99	99	2.76	90	3.08
78	3.77	63	3.02	52	1.88	45	1.74
36	2.12	33	1.62	26	1.57	24	.78
20	.68	19	.64	14	.42	14	.29
12	.28	9	.22	8	.12	6	.12
6	.07	5	.12	4	.04	3	.04
3	.00	2	.01				

PARAMETER VALUES

PS : 3.79 (3.48, 4.09)

ALPHA : .065 (.059, .072)

BETA : .0015 (.0007, .0023)

SAMPLE TEMP .0 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 3.85

CARBON : 445

NITROGEN : 68

NITRATE : 2.42

SILICATE : 5.40

PHOSPHATE : .46

AMMONIUM : .65

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 19/03/85 DEPTH 10 M

I	P	I	P	I	P	I	P
757	4.80	738	5.43	678	4.00	506	5.77
439	3.91	347	5.79	339	5.13	247	6.52
227	5.71	223	6.91	136	5.86	132	7.55
132	6.61	120	6.23	120	6.29	116	7.03
87	6.29	82	5.20	81	6.95	59	5.46
59	6.33	49	4.79	44	2.45	35	3.48
30	1.93	26	1.61	22	1.12	16	.62
14	1.10	13	.54	12	.44	9	.36
9	.22	7	.22	6	.12	5	.09
5	.06	4	.06	4	.06	3	.01
2	.00						

PARAMETER VALUES

PS : 8.57 (7.51, 9.62)	ALPHA : .122 (.110, .136)	BETA : .0082 (.0048, .0115)

SAMPLE TEMP	.0 C	INCUBATION TEMP	1.0 C
CHLOROPHYLL :	2.57	NITRATE :	2.40
CARBON :	429	SILICATE :	4.91
NITROGEN :	63	PHOSPHATE :	.55
		AMMONIUM :	.59

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 20/03/85 DEPTH 5 M

I	P	I	P	I	P	I	P
837	1.35	789	1.47	534	1.72	530	1.79
462	1.98	415	2.42	391	2.21	319	2.52
315	1.98	299	2.16	223	2.04	215	2.03
183	2.17	132	2.25	112	2.19	90	1.42
78	2.04	63	1.07	52	1.29	45	.91
36	1.11	33	.69	26	.64	24	.43
20	.31	19	.46	14	.35	14	.24
12	.21	9	.16	8	.13	6	.10
6	.09	5	.06	4	.05	3	.04
3	.03	2	.02				

PARAMETER VALUES

PS : 3.40 (2.96, 3.83)

ALPHA : .029 (.027, .031)

BETA : .0037 (.0024, .0050)

SAMPLE TEMP .0 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 2.62

CARBON : 324

NITROGEN : 48

NITRATE : 3.08

SILICATE : 5.56

PHOSPHATE : .56

AMMONIUM : .69

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 22/03/85 DEPTH 1 M

I	P	I	P	I	P	I	P
833	2.37	534	2.75	411	2.89	351	2.61
307	2.68	303	2.79	299	2.87	239	3.07
219	2.79	171	2.84	167	2.65	128	2.85
118	2.58	112	2.63	98	2.69	87	2.35
85	1.96	67	2.11	58	1.76	48	1.67
41	1.23	37	1.04	30	.72	26	.61
20	.43	19	.36	16	.26	13	.22
12	.15	10	.12	9	.08	7	.07
5	.06	5	.04	4	.02	3	.04
3	.02						

PARAMETER VALUES

PS : 3.59 (3.27, 3.91)	ALPHA : .040 (.038, .043)	BETA : .0020 (.0011, .0029)

SAMPLE TEMP	.0 C	INCUBATION TEMP	1.0 C
CHLOROPHYLL :	3.19	NITRATE :	1.84
CARBON :	396	SILICATE :	3.54
NITROGEN :	59	PHOSPHATE :	.40
		AMMONIUM :	.74

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 22/03/85 DEPTH 10 M

I	P	I	P	I	P	I	P
797	3.61	789	4.65	710	4.30	562	4.68
431	3.99	367	4.89	327	4.53	251	4.60
251	4.90	235	5.21	183	4.76	175	4.74
163	4.61	148	4.78	132	4.63	132	4.83
112	4.12	103	4.23	90	3.97	64	3.56
58	3.53	45	2.50	45	2.96	39	2.08
24	.94	24	1.48	20	.72	19	.73
14	.49	13	.46	10	.29	9	.22
8	.10	7	.11	6	.07	5	.10
4	.02	4	.03	3	.00	3	.02

PARAMETER VALUES

PS : 5.76 (5.38, 6.14) ALPHA : .074 (.069, .079) BETA : .0026 (.0017, .0035)

SAMPLE TEMP .0 C INCUBATION TEMP -.5 C

CHLOROPHYLL : 3.25
CARBON : 615
NITROGEN : 96

NITRATE : 2.47
SILICATE : 4.18
PHOSPHATE : .44
AMMONIUM : .63

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 26/03/85 DEPTH 1 M

I	P	I	P	I	P	I	P
833	4.05	825	5.32	454	5.27	447	5.49
299	4.94	239	5.23	171	5.77	167	5.74
128	5.58	118	5.24	112	5.14	98	5.35
87	5.33	85	5.23	67	5.06	58	5.24
48	3.92	41	4.21	37	3.90	30	2.34
26	2.59	19	1.74	13	1.22	12	.87
10	.73	9	.62	7	.51	5	.43
5	.41	4	.48	3	.33	3	.20
2	.10						

PARAMETER VALUES

PS : 6.15 (5.87, 6.44) ALPHA : .137 (.128, .146) BETA : .0021 (.0014, .0029)

SAMPLE TEMP	.5 C	INCUBATION TEMP	3.0 C
CHLOROPHYLL :	1.13	NITRATE :	3.59
CARBON :	226	SILICATE :	5.89
NITROGEN :	29	PHOSPHATE :	.50
		AMMONIUM :	1.00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 26/03/85 DEPTH 10 M

I	P	I	P	I	P	I	P
797	3.66	789	3.41	710	3.00	562	3.54
431	2.99	367	3.38	327	3.34	251	3.06
251	4.05	235	3.24	183	4.15	175	4.43
163	3.88	148	3.91	132	4.47	132	4.28
112	3.58	103	4.07	64	2.25	58	2.90
45	2.18	45	2.34	39	1.99	24	1.28
24	1.45	20	.60	19	.81	14	.60
13	.40	10	.29	9	.69	8	.22
7	.16	6	.10	5	.07	4	.14
4	.05	3	.02	3	.15	3	.07

PARAMETER VALUES

PS : 4.43 (4.10, 4.76)

ALPHA : .071 (.064, .078)

BETA : .0020 (.0011, .0028)

SAMPLE TEMP .5 C

INCUBATION TEMP 3.0 C

CHLOROPHYLL : 2.29

CARBON : 364

NITROGEN : 61

NITRATE : 3.55

SILICATE : 5.77

PHOSPHATE : .54

AMMONIUM : .74

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 29/03/85 DEPTH 1 M

I	P	I	P	I	P	I	P
785	3.35	734	3.08	566	3.57	439	2.97
383	3.54	379	3.17	299	3.78	283	3.08
195	2.43	187	3.31	163	2.36	140	2.78
140	2.45	124	2.46	112	2.43	89	2.07
83	1.84	78	2.66	67	2.26	53	1.76
46	1.74	39	1.45	35	1.37	29	1.28
26	.90	22	.91	18	.85	15	.65
11	.40	11	.38	8	.32	8	.27
6	.18	6	.18	5	.09	4	.14
3	.12	3	.06	2	.07		

PARAMETER VALUES

PS : 3.24 (3.00, 3.47)

ALPHA : .045 (.041, .048)

BETA : .0000 (-.0005, .0005)

SAMPLE TEMP 1.0 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 1.01

CARBON : 207

NITROGEN : 24

NITRATE : 4.18

SILICATE : 8.24

PHOSPHATE : .49

AMMONIUM : .89

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 29/03/85 DEPTH 10 M

I	P	I	P	I	P	I	P
837	2.99	817	2.57	538	3.19	450	2.56
367	3.98	335	3.53	331	2.96	227	3.62
227	2.96	215	3.90	195	3.10	167	2.81
128	3.06	120	3.91	116	3.26	100	3.38
94	2.63	88	3.10	81	2.54	58	2.27
48	2.45	45	1.96	45	1.46	35	1.57
31	.92	24	.92	23	.57	19	.68
17	.35	14	.41	11	.24	11	.26
8	.12	7	.15	6	.09	6	.11
5	.06	5	.09	3	.04	3	.03
3	.04						

PARAMETER VALUES

PS : 4.17 (3.77, 4.57)

ALPHA : .054 (.049, .058)

BETA : .0023 (.0012, .0033)

SAMPLE TEMP 1.0 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 2.45

CARBON : 459

NITROGEN : 72

NITRATE : 1.11

SILICATE : 2.59

PHOSPHATE : .38

AMMONIUM : .93

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 02/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
781	3.75	746	3.42	526	3.40	490	3.16
466	3.77	391	3.34	363	2.86	311	2.67
287	3.40	251	3.34	231	2.96	203	3.63
171	2.92	159	2.92	155	3.29	132	2.91
120	2.68	112	3.01	79	2.55	79	2.78
75	2.32	53	1.74	51	2.28	42	1.91
40	1.54	31	1.09	27	1.10	21	.65
19	.63	15	.47	15	.53	11	.41
11	.46	8	.19	8	.25	5	.15
5	.16	4	.13	4	.08	3	.08
3	.08	2	.09				

PARAMETER VALUES

PS : 3.35 (3.16, 3.53)

ALPHA : .053 (.049, .057)

BETA : .0000 (-.0004, .0004)

SAMPLE TEMP 1.0 C

INCUBATION TEMP .5 C

CHLOROPHYLL : 1.06

CARBON : 229

NITROGEN : 28

NITRATE : 2.42

SILICATE : 5.30

PHOSPHATE : .46

AMMONIUM : .80

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 02/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
837	2.00	813	2.53	630	2.29	454	2.85
419	2.57	259	2.44	247	2.16	195	2.42
183	2.40	171	2.49	136	2.47	128	2.14
124	2.19	100	2.44	89	1.86	86	1.77
70	1.92	60	1.18	57	1.37	46	.86
40	.89	30	.61	29	.71	22	.43
22	.40	15	.21	15	.27	11	.17
10	.19	8	.10	7	.12	6	.06
6	.07	4	.07	4	.04	3	.04
3	.04	2	.04				

PARAMETER VALUES

PS : 3.18 (2.85, 3.50)

ALPHA : .031 (.029, .033)

BETA : .0014 (.0007, .0020)

SAMPLE TEMP 1.0 C

INCUBATION TEMP .5 C

CHLOROPHYLL : 3.26

CARBON : 475

NITROGEN : 76

NITRATE : 2.79

SILICATE : 6.18

PHOSPHATE : .51

AMMONIUM : .88

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 04/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
829	3.01	805	3.12	518	3.41	494	3.06
486	3.59	303	3.14	299	3.69	271	3.07
207	3.20	207	2.65	179	2.40	136	2.49
120	2.05	104	2.01	89	2.73	81	2.54
68	2.18	62	1.85	50	1.59	41	1.68
35	1.28	29	.92	27	1.10	21	.73
20	.70	15	.53	14	.47	10	.21
9	.23	8	.20	7	.13	6	.05
6	.04						

PARAMETER VALUES

PS : 3.23 (2.98, 3.48)

ALPHA : .043 (.039, .046)

BETA : .0001 (-.0004, .0005)

SAMPLE TEMP 1.0 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL : 2.16

CARBON : 377

NITROGEN : 52

NITRATE : 4.01

SILICATE : 8.51

PHOSPHATE : .79

AMMONIUM : .97

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 04/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
845	1.28	718	.78	502	1.74	454	1.57
399	1.83	367	1.47	263	1.72	247	1.72
247	1.51	195	1.64	136	1.66	132	1.56
128	1.60	108	1.61	92	1.29	89	1.43
88	1.56	64	1.17	63	1.17	53	.98
45	.95	37	.77	31	.70	27	.55
22	.45	18	.37	16	.31	15	.24
10	.10	9	.10	8	.18	8	.08
5	.04	5	.02	3	.01		

PARAMETER VALUES

PS : 2.31 (2.09, 2.54)

ALPHA : .027 (.025, .028)

BETA : .0021 (.0014, .0028)

SAMPLE TEMP 1.0 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL	:	2.32	NITRATE	: 4.23
CARBON	:	400	SILICATE	: 8.07
NITROGEN	:	54	PHOSPHATE	: .82
			AMMONIUM	: 1.06

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 10/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
797	2.11	578	2.04	518	2.25	478	2.28
379	1.65	339	2.07	319	2.26	299	1.70
239	2.15	199	2.21	179	1.87	140	2.06
140	1.90	102	1.87	92	1.65	90	1.87
72	1.90	62	1.84	62	1.58	46	1.70
38	1.53	30	1.42	28	1.20	22	1.08
20	1.01	14	.84	12	.61	10	.63
10	.52	6	.37	6	.44	5	.19
4	.26	3	.12	3	.15	3	.05
3	.09	2	.04	2	.04	2	.01

PARAMETER VALUES

PS : 2.02 (1.95, 2.10) ALPHA : .068 (.063, .073) BETA : .0000 (-.0002, .0002)

SAMPLE TEMP 2.5 C INCUBATION TEMP 1.0 C

CHLOROPHYLL : 2.40
CARBON : 364
NITROGEN : 51

NITRATE : 5.12
SILICATE : 11.00
PHOSPHATE : .56
AMMONIUM : 1.27

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 10/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
757	.93	598	1.83	498	1.66	319	1.80
279	2.08	279	1.87	199	2.16	120	2.32
120	1.99	100	2.12	96	1.39	86	1.83
76	1.75	74	1.44	70	2.00	52	1.68
46	1.42	44	1.15	32	1.30	26	.88
20	.89	16	.68	14	.50	11	.35
10	.31	8	.27	7	.23	5	.19
5	.18	4	.14	3	.12	3	.08
3	.08	2	.04	2	.03	1	.02

PARAMETER VALUES

PS : 2.67 (2.42, 2.91)

ALPHA : .045 (.041, .048)

BETA : .0027 (.0019, .0035)

SAMPLE TEMP 2.5 C

INCUBATION TEMP 1.0 C

CHLOROPHYLL	:	3.78	NITRATE	: 3.18
CARBON	:	549	SILICATE	: 6.50
NITROGEN	:	100	PHOSPHATE	: .59
			AMMONIUM	: .96

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 12/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
857	2.57	857	2.40	658	1.97	578	2.33
558	2.35	518	1.75	439	2.73	339	2.27
339	2.19	279	2.62	199	2.35	159	2.61
159	2.02	140	2.21	100	1.48	86	2.03
80	2.49	68	1.48	66	1.95	60	1.11
46	1.25	40	.93	28	.94	24	.74
22	.52	18	.53	16	.38	14	.36
8	.23	7	.26	6	.10	4	.05
4	.07	4	.02	3	.03	3	.01
2	.04	2	.02				

PARAMETER VALUES

PS : 2.51 (2.28, 2.72)

ALPHA : .038 (.034, .042)

BETA : .0003 (-.0001, .0007)

SAMPLE TEMP 2.8 C

INCUBATION TEMP 2.5 C

CHLOROPHYLL : 4.09

CARBON : 467

NITROGEN : 70

NITRATE : 2.39

SILICATE : 5.11

PHOSPHATE : .28

AMMONIUM : .65

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 12/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
837	1.30	797	1.09	598	1.26	498	1.13
439	1.66	399	1.30	299	1.73	299	1.55
279	1.34	219	1.54	199	1.71	179	1.32
140	1.19	110	1.43	90	1.29	84	1.29
80	1.25	70	1.10	62	1.32	62	1.01
48	1.01	42	.98	36	.83	30	.63
24	.64	18	.46	16	.32	12	.33
10	.28	9	.21	8	.16	6	.16
5	.09	4	.08	3	.07	3	.06
3	.04	3	.03	2	.02	1	.01

PARAMETER VALUES

PS : 1.70 (1.60, 1.79)

ALPHA : .030 (.028, .032)

BETA : .0008 (.0005, .0010)

SAMPLE TEMP 2.8 C

INCUBATION TEMP 2.5 C

CHLOROPHYLL : 5.17

CARBON : 574

NITROGEN : 95

NITRATE : 1.86

SILICATE : 4.16

PHOSPHATE : .53

AMMONIUM : .75

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 16/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
757	3.02	718	2.72	538	3.01	518	3.24
439	3.21	399	2.68	379	3.18	299	3.03
299	2.65	279	3.26	259	3.14	199	2.76
199	2.88	140	2.44	140	2.59	120	2.56
100	2.40	96	2.24	92	2.15	74	1.92
66	2.19	52	1.56	48	.89	38	1.15
34	.82	28	.86	24	.69	20	.58
16	.49	14	.38	12	.32	10	.19
9	.16	8	.09	6	.08	6	.04
5	.05	4	.01	3	.02	3	.01

PARAMETER VALUES

PS : 3.40 (3.16, 3.65)	ALPHA : .037 (.035, .039)	BETA : .0007 (.0002, .0013)

SAMPLE TEMP 3.0 C

INCUBATION TEMP 2.5 C

CHLOROPHYLL	: 4.65	NITRATE	:	2.36
CARBON	: 374	SILICATE	:	5.31
NITROGEN	: 68	PHOSPHATE	:	.41
		AMMONIUM	:	.74

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 16/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
757	2.65	658	3.10	638	2.32	538	3.04
419	2.52	399	3.18	359	2.71	319	2.71
279	2.74	259	2.83	219	2.50	179	2.62
179	3.05	159	2.48	140	2.62	120	2.40
120	2.83	100	2.04	82	2.75	80	2.28
72	1.86	64	1.96	50	1.53	44	1.13
40	1.19	30	.92	26	.82	22	.53
20	.56	16	.29	14	.41	12	.25
10	.27	8	.16	8	.17	6	.08
6	.08	4	.04	4	.05	3	.03
3	.03	2	.01				

PARAMETER VALUES

PS : 3.11 (2.87, 3.35)

ALPHA : .042 (.039, .045)

BETA : .0007 (.0001, .0012)

SAMPLE TEMP 3.0 C

INCUBATION TEMP 2.5 C

CHLOROPHYLL : 4.46

CARBON : 474

NITROGEN : 91

NITRATE : 1.83

SILICATE : 3.63

PHOSPHATE : .38

AMMONIUM : 1.12

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 19/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
518	1.62	319	1.52	259	1.77	259	1.43
259	1.69	199	1.33	179	1.34	179	1.75
159	1.49	140	1.57	118	1.70	102	1.48
90	1.50	76	1.66	68	1.42	68	1.37
54	1.49	46	1.34	40	1.13	34	1.04
28	1.00	26	.76	22	.65	18	.53
14	.57	14	.37	10	.27	10	.21
7	.22	6	.13	5	.11	4	.10
3	.07	3	.09	3	.05	2	.03
2	.06	2	.04	1	.03		

PARAMETER VALUES

PS : 1.67 (1.56, 1.76)

ALPHA : .045 (.042, .049)

BETA : .0003 (-.0001, .0007)

SAMPLE TEMP 1.5 C

INCUBATION TEMP 2.0 C

CHLOROPHYLL : 2.65

CARBON : 265

NITROGEN : 32

NITRATE : 1.80

SILICATE : 3.25

PHOSPHATE : .32

AMMONIUM : .84

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 19/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
458	5.05	399	4.74	299	4.82	259	4.27
239	5.15	199	4.77	199	4.79	159	5.26
159	4.73	120	4.04	112	3.61	108	3.87
94	4.09	78	3.20	76	4.16	54	2.58
54	2.91	52	2.90	42	2.38	40	2.60
32	2.36	28	1.80	24	1.44	20	1.25
16	1.03	14	.86	12	.65	11	.52
9	.56	7	.38	7	.34	5	.22
5	.26	4	.15	3	.15	3	.09
3	.08	3	.05	2	.05	1	.03

PARAMETER VALUES

PS : 5.19 (4.77, 5.62)

ALPHA : .078 (.074, .082)

BETA : .0008 (-.0005, .0022)

SAMPLE TEMP 1.5 C

INCUBATION TEMP 2.0 C

CHLOROPHYLL : 2.85

CARBON : 313

NITROGEN : 51

NITRATE : 1.93

SILICATE : 3.42

PHOSPHATE : .37

AMMONIUM : .83

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 23/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
829	4.03	817	4.10	558	3.81	546	4.24
411	3.88	399	3.43	351	3.37	319	4.04
251	3.33	247	3.55	203	3.50	187	3.53
183	3.73	151	3.42	140	3.19	132	3.56
116	3.07	96	3.24	86	2.89	79	2.68
70	3.24	56	2.47	48	2.20	41	2.23
33	1.78	30	1.49	24	1.17	22	1.12
16	.78	16	.70	13	.56	11	.46
9	.30	9	.28	6	.20	6	.19
5	.12	4	.09	3	.02	3	.06

PARAMETER VALUES

PS : 3.79 (3.63, 3.95)

ALPHA : .064 (.061, .068)

BETA : .0000 (-.0003, .0003)

SAMPLE TEMP 2.3 C

INCUBATION TEMP 3.0 C

CHLOROPHYLL : 4.55

CARBON : 517

NITROGEN : 100

NITRATE : 1.55

SILICATE : 2.44

PHOSPHATE : .30

AMMONIUM : .26

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 23/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
817	1.99	518	2.92	447	2.74	399	2.95
379	2.90	355	2.86	283	2.93	259	3.01
191	3.02	175	3.00	175	3.16	140	3.28
136	2.74	124	2.82	98	2.81	92	2.94
89	2.77	69	2.61	61	2.30	51	2.15
51	1.61	36	1.71	33	1.45	27	1.16
22	1.03	20	.88	15	.80	14	.64
11	.43	11	.43	8	.29	8	.26
6	.16	6	.20	5	.12	5	.12
3	.09	3	.04	2	.03		

PARAMETER VALUES

PS : 3.82 (3.63, 4.00)

ALPHA : .058 (.055, .060)

BETA : .0028 (.0022, .0034)

SAMPLE TEMP 2.3 C

INCUBATION TEMP 3.0 C

CHLOROPHYLL	: 3.88	NITRATE	:	3.13
CARBON	: 406	SILICATE	:	4.79
NITROGEN	: 72	PHOSPHATE	:	.33
		AMMONIUM	:	.44

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 26/04/85 DEPTH 1 M

I	P	I	P	I	P	I	P
777	2.32	578	2.65	458	2.63	419	2.29
379	2.40	319	2.57	319	2.19	279	2.24
239	2.31	219	2.48	219	2.59	159	2.50
120	2.28	100	2.31	98	2.13	92	2.35
82	2.54	72	1.95	56	1.99	46	1.59
38	1.54	32	1.60	30	1.32	24	.70
22	.73	14	.55	12	.53	10	.39
9	.15	7	.21	6	.10	5	.14
4	.07	4	.06	3	.03	3	.04
2	.03						

PARAMETER VALUES

PS : 2.57 (2.44, 2.70)

ALPHA : .056 (.052, .060)

BETA : .0003 (-.0001, .0006)

SAMPLE TEMP 2.5 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL	:	3.51	NITRATE	:	3.10
CARBON	:	314	SILICATE	:	3.84
NITROGEN	:	53	PHOSPHATE	:	.58
			AMMONIUM	:	.47

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 26/04/85 DEPTH 10 M

I	P	I	P	I	P	I	P
757	2.50	698	2.31	538	2.34	399	2.73
399	2.49	339	2.63	259	2.09	259	2.30
179	2.13	179	2.37	159	2.26	140	2.31
140	1.91	140	1.87	100	1.89	90	1.49
88	2.02	76	1.53	68	1.16	52	1.28
46	.84	40	1.07	30	.49	28	.61
22	.41	20	.46	16	.30	16	.21
12	.13	10	.11	8	.09	8	.08
6	.02	5	.04	4	.03	3	.02
3	.00						

PARAMETER VALUES

PS : 2.82 (2.55, 3.10)

ALPHA : .027 (.026, .029)

BETA : .0007 (.0001, .0012)

SAMPLE TEMP 2.5 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL : 4.24

CARBON : 316

NITROGEN : 52

NITRATE : 3.22

SILICATE : 4.50

PHOSPHATE : .43

AMMONIUM : .47

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 03/05/85 DEPTH 1 M

I	P	I	P	I	P	I	P
542	1.96	431	1.96	415	1.91	387	1.80
327	1.87	303	1.86	283	1.63	243	2.00
195	1.74	187	1.64	159	1.87	140	2.01
132	1.85	98	2.02	86	1.91	83	1.62
63	1.55	52	1.39	47	1.14	37	1.37
35	.92	28	.84	24	.72	20	.60
18	.53	14	.42	13	.45	10	.32
9	.22	7	.14	7	.14	5	.08
5	.09	4	.08	4	.06	3	.04
2	.02						

PARAMETER VALUES

PS : 2.00	ALPHA : .042	BETA : .0003
(1.87, 2.14)	(.039, .045)	(-.0001, .0008)

SAMPLE TEMP	4.0 C	INCUBATION TEMP	4.0 C
CHLOROPHYLL :	10.77	NITRATE :	-
CARBON :	687	SILICATE :	.44
NITROGEN :	104	PHOSPHATE :	.14
		AMMONIUM :	.00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 03/05/85 DEPTH 10 M

I	P	I	P	I	P	I	P
610	1.92	447	1.68	367	1.51	299	1.46
271	1.60	271	1.59	215	1.45	215	1.69
179	1.69	155	1.88	151	1.33	128	1.38
88	1.49	85	1.48	80	1.45	67	1.79
61	1.72	49	1.24	45	1.07	35	1.18
31	.69	22	.66	20	.67	15	.45
15	.40	11	.36	11	.26	9	.20
7	.18	6	.13	5	.07	5	.09
4	.04	4	.06	3	.03	2	.03

PARAMETER VALUES

PS : 1.65 (1.53, 1.76)

ALPHA : .043 (.039, .048)

BETA : .0000 (-.0004, .0004)

SAMPLE TEMP 4.0 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL : 11.58

CARBON : 584

NITROGEN : 106

NITRATE : .53

SILICATE : .47

PHOSPHATE : .20

AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 07/05/85 DEPTH 1 M

I	P	I	P	I	P	I	P
869	2.73	825	2.72	566	3.01	538	2.43
415	2.57	379	2.45	339	2.56	303	2.80
283	2.44	239	2.84	215	3.04	203	2.84
151	2.91	151	2.72	148	2.83	110	2.67
104	2.64	102	2.99	76	2.72	75	2.42
71	2.46	58	2.22	53	2.38	40	1.60
39	1.82	28	1.30	28	1.48	20	.94
20	1.00	15	.70	14	.60	11	.44
11	.48	7	.31	7	.28	6	.20
6	.16	5	.14	4	.11	3	.04
3	.06	2	.02				

PARAMETER VALUES

PS : 2.97 (2.86, 3.08)

ALPHA : .067 (.063, .071)

BETA : .0005 (.0002, .0008)

SAMPLE TEMP 4.0 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL : 7.52

CARBON : 660

NITROGEN : 108

NITRATE : -

SILICATE : .34

PHOSPHATE : .34

AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 07/05/85 DEPTH 10 M

I	P	I	P	I	P	I	P
638	1.62	486	1.65	431	1.87	407	1.53
355	2.15	319	1.91	255	2.01	239	2.27
223	2.06	171	2.04	148	1.88	148	2.14
120	1.94	118	1.82	104	1.82	98	1.83
88	2.09	81	1.70	70	1.74	62	1.81
49	1.68	40	1.37	32	1.35	32	.99
24	1.00	20	.73	15	.48	14	.75
12	.56	11	.33	9	.33	7	.19
6	.21	6	.13	5	.15	4	.10
4	.09	3	.05				

PARAMETER VALUES

PS : 2.35 (2.23, 2.48)

ALPHA : .049 (.046, .053)

BETA : .0015 (.0010, .0019)

SAMPLE TEMP 4.0 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL	:	10.03	NITRATE	:	.24
CARBON	:	664	SILICATE	:	.51
NITROGEN	:	120	PHOSPHATE	:	.37
			AMMONIUM	:	.05

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 10/05/85 DEPTH 1 M

I	P	I	P	I	P	I	P
929	3.03	781	2.93	586	2.45	411	2.59
319	2.53	319	2.65	299	2.53	255	2.43
231	2.39	191	2.26	171	2.40	163	2.77
136	2.91	124	2.56	112	2.58	92	2.03
86	2.10	83	2.27	69	1.75	58	1.95
49	1.33	44	1.41	34	.88	33	1.23
25	.65	23	.64	16	.49	16	.41
12	.36	11	.34	8	.19	8	.26
6	.12	6	.12	5	.07	4	.08
4	.04	3	.05	2	.02		

PARAMETER VALUES

PS : 2.70 (2.56, 2.84)

ALPHA : .044 (.041, .047)

BETA : .0000 (-.0003, .0003)

SAMPLE TEMP 3.5 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL : 7.68

CARBON : 660

NITROGEN : 133

NITRATE : .17

SILICATE : .79

PHOSPHATE : .60

AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 10/05/85 DEPTH 10 M

I	P	I	P	I	P	I	P
849	2.16	678	2.03	466	2.11	391	2.32
355	2.35	295	2.49	263	2.38	243	2.70
171	2.36	167	2.32	155	2.80	148	2.13
114	2.20	112	2.73	98	1.99	91	2.15
87	2.48	72	2.08	67	2.26	51	1.32
47	1.61	31	1.61	22	.83	22	1.03
17	.96	15	.53	12	.42	11	.57
9	.42	8	.26	6	.31	5	.20
5	.17	4	.12	3	.10	3	.06
3	.09	2	.05				

PARAMETER VALUES

PS : 2.73 (2.59, 2.87)

ALPHA : .055 (.051, .059)

BETA : .0010 (.0006, .0014)

SAMPLE TEMP 3.5 C

INCUBATION TEMP 4.0 C

CHLOROPHYLL	:	7.34	NITRATE	: .24
CARBON	:	637	SILICATE	: .73
NITROGEN	:	123	PHOSPHATE	: .55
			AMMONIUM	: .01

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 14/05/85 DEPTH 1 M

I	P	I	P	I	P	I	P
885	3.98	829	3.91	570	4.20	566	4.76
447	3.81	447	3.92	439	3.73	323	3.79
295	3.88	263	4.62	243	3.77	219	4.61
187	4.35	179	4.43	159	4.10	87	3.57
85	2.96	72	3.30	65	2.92	53	2.96
47	2.37	41	2.31	34	1.37	31	1.16
22	.96	21	1.34	16	.71	15	.89
11	.39	11	.42	9	.34	8	.34
7	.22	5	.19	5	.12	4	.11
3	.07	3	.06	2	.04		

PARAMETER VALUES

PS : 4.53 (4.28, 4.78)

ALPHA : .068 (.063, .073)

BETA : .0008 (.0003, .0013)

SAMPLE TEMP 5.0 C

INCUBATION TEMP 6.5 C

CHLOROPHYLL : 3.99

CARBON : 546

NITROGEN : 99

NITRATE : .20

SILICATE : .79

PHOSPHATE : .42

AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 14/05/85 DEPTH 10 M

I	P	I	P	I	P	I	P
542	3.07	407	2.58	399	2.81	219	2.80
207	2.81	167	2.93	167	2.84	128	2.54
96	2.88	88	2.42	83	2.29	82	2.44
54	2.04	54	2.38	44	1.95	40	1.43
33	1.42	22	1.21	21	1.34	17	1.20
14	.82	14	.74	10	.54	9	.41
7	.32	6	.30	5	.20	4	.23
4	.16	4	.16	3	.11	2	.11
2	.04						

PARAMETER VALUES

PS : 2.85 (2.72, 2.99) ALPHA : .068 (.064, .072) BETA : .0000 (-.0004, .0004)

SAMPLE TEMP 4.0 C INCUBATION TEMP 6.5 C

CHLOROPHYLL : 3.59
CARBON : 623
NITROGEN : 124

NITRATE : 2.69
SILICATE : .84
PHOSPHATE : .37
AMMONIUM : .22

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 22/05/85 DEPTH 1 M

I	P	I	P	I	P	I	P
845	3.66	817	4.13	618	3.89	574	4.14
391	4.05	363	4.03	287	3.52	283	3.79
255	3.87	211	3.26	207	3.75	183	3.47
159	3.30	151	3.73	124	3.17	112	2.94
108	3.01	94	2.79	83	3.22	78	2.39
61	2.37	61	2.02	46	1.53	43	1.48
33	1.12	31	.99	25	.69	22	.82
18	.50	15	.59	12	.36	10	.28
8	.14	8	.16	7	.10	6	.09
5	.06	5	.05	4	.01	4	.03
2	.02						

PARAMETER VALUES

PS : 4.13 (3.90, 4.36)

ALPHA : .046 (.044, .049)

BETA : .0003 (-.0001, .0007)

SAMPLE TEMP 10.0 C

INCUBATION TEMP 9.0 C

CHLOROPHYLL	:	5.18	NITRATE	: -
CARBON	:	495	SILICATE	: 1.36
NITROGEN	:	69	PHOSPHATE	: .09
			AMMONIUM	: .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 22/05/85 DEPTH 10 M

I	P	I	P	I	P	I	P
857	3.62	777	3.04	606	3.15	574	4.10
478	3.77	415	4.11	411	3.81	367	4.01
279	3.90	271	3.80	263	3.90	191	3.67
191	3.31	179	3.75	136	3.48	136	3.17
116	3.70	92	3.20	86	2.91	81	2.96
59	2.37	47	1.90	45	3.35	37	2.59
34	1.93	28	1.31	23	1.39	22	.91
18	.88	16	.61	12	.64	10	.39
10	.40	8	.23	7	.21	5	.16
5	.18	4	.10	4	.11	3	.09
2	.08	2	.07				

PARAMETER VALUES

PS : 4.11 (3.86, 4.35)

ALPHA : .068 (.063, .073)

BETA : .0009 (.0003, .0014)

SAMPLE TEMP 6.0 C

INCUBATION TEMP 10.0 C

CHLOROPHYLL : 4.00

CARBON : 554

NITROGEN : 101

NITRATE : .38

SILICATE : 1.26

PHOSPHATE : .37

AMMONIUM : .41

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 28/05/85 DEPTH 1 M

I	P	I	P	I	P	I	P
837	4.00	586	5.48	578	5.35	419	4.65
343	4.76	319	4.16	223	5.09	207	4.60
187	4.10	163	4.62	136	4.36	120	3.87
112	3.07	98	2.86	92	3.57	82	3.33
68	2.99	47	2.07	42	1.75	34	1.24
30	1.54	24	.88	22	1.03	16	.62
16	.70	13	.41	12	.40	9	.21
8	.37	7	.15	6	.16	5	.10
4	.11	4	.06	3	.05	3	.04

PARAMETER VALUES

PS : 5.72 (5.13, 6.31) ALPHA : .053 (.050, .057) BETA : .0017 (.0005, .0029)

SAMPLE TEMP 10.5 C INCUBATION TEMP 9.0 C

CHLOROPHYLL : 14.13
CARBON : 730
NITROGEN : 136

NITRATE : -
SILICATE : .19
PHOSPHATE : .34
AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 28/05/85 DEPTH 10 M

I	P	I	P	I	P	I	P
777	3.26	666	4.14	630	2.83	558	3.80
447	3.33	359	3.63	335	3.44	331	3.71
263	3.55	227	3.50	203	4.00	167	3.31
167	3.62	140	3.99	128	2.85	120	3.15
112	3.33	84	3.20	82	2.08	79	2.50
66	2.10	63	2.13	42	1.86	42	1.91
31	1.88	25	1.25	24	.86	18	.83
16	.58	14	.59	13	.67	10	.39
10	.35	6	.21	6	.31	5	.13
5	.11	4	.08	4	.07	3	.05
3	.04	2	.03				

PARAMETER VALUES

PS : 4.05 (3.76, 4.35)

ALPHA : .055 (.051, .059)

BETA : .0010 (.0003, .0017)

SAMPLE TEMP 6.0 C

INCUBATION TEMP 9.0 C

CHLOROPHYLL	:	7.09	NITRATE	:	.32
CARBON	:	637	SILICATE	:	.61
NITROGEN	:	119	PHOSPHATE	:	.62
			AMMONIUM	:	.63

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 04/06/85 DEPTH 1 M

I	P	I	P	I	P	I	P
861	3.76	797	5.50	518	4.41	419	5.45
375	5.35	319	5.21	279	4.80	255	4.22
255	4.61	223	4.57	187	4.46	179	4.25
151	4.51	136	3.53	132	3.49	112	3.00
76	3.09	64	2.80	61	2.62	45	2.25
37	1.34	29	1.23	28	1.33	20	.73
19	.94	14	.54	14	.60	10	.28
10	.38	8	.18	7	.21	6	.09
5	.12	4	.07	4	.12	3	.01
3	.02	2	.00				

PARAMETER VALUES

PS : 5.78 (5.25, 6.30) ALPHA : .050 (.046, .053) BETA : .0016 (.0006, .0027)

SAMPLE TEMP 11.0 C INCUBATION TEMP 13.0 C

CHLOROPHYLL : 7.38
CARBON : 1066
NITROGEN : 102

NITRATE : .16
SILICATE : .22
PHOSPHATE : .36
AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 04/06/85 DEPTH 10 M

I	P	I	P	I	P	I	P
478	2.18	431	2.16	411	1.76	363	1.95
347	2.04	247	2.17	231	1.71	227	1.75
171	2.04	155	1.82	151	1.72	126	1.68
116	1.67	90	1.50	89	1.55	85	1.18
54	1.17	51	1.14	41	1.01	39	.80
29	.71	25	.55	20	.35	20	.51
15	.32	14	.23	12	.28	10	.14
9	.10	7	.07	6	.07	6	.06
4	.05	3	.01	3	.01	3	.02
2	.02						

PARAMETER VALUES

PS : 2.03 (1.82, 2.24)

ALPHA : .028 (.026, .030)

BETA : .0000 (-.0006, .0006)

SAMPLE TEMP 10.0 C

INCUBATION TEMP 13.0 C

CHLOROPHYLL	:	16.94	NITRATE	: .30
CARBON	:	1032	SILICATE	: .43
NITROGEN	:	144	PHOSPHATE	: .48
			AMMONIUM	: .05

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 11/06/85 DEPTH 1 M

I	P	I	P	I	P	I	P
825	7.01	757	7.32	510	7.22	510	7.24
439	8.00	411	6.45	399	6.26	311	6.27
287	7.17	251	6.17	215	6.37	179	5.79
155	5.19	136	5.60	132	4.79	116	4.26
112	4.63	92	3.85	81	3.43	73	3.65
53	3.20	48	2.86	38	2.20	33	1.94
30	1.44	25	1.35	18	.97	16	.88
13	.60	12	.61	9	.44	8	.42
7	.21	6	.21	5	.17	4	.11
3	.06	3	.09	3	.02	2	.01

PARAMETER VALUES

PS : 7.17 (6.73, 7.62)

ALPHA : .064 (.062, .068)

BETA : .0000 (-.0008, .0008)

SAMPLE TEMP 11.5 C

INCUBATION TEMP 13.0 C

CHLOROPHYLL : 3.82

CARBON : 597

NITROGEN : 114

NITRATE : .58

SILICATE : 2.44

PHOSPHATE : .34

AMMONIUM : .79

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 11/06/85 DEPTH 10 M

I	P	I	P	I	P	I	P
777	3.50	734	3.90	638	2.75	558	3.80
439	4.14	419	3.45	367	3.90	343	3.71
271	3.56	271	3.26	191	3.71	183	3.63
140	3.34	128	3.69	100	3.71	88	3.18
65	3.40	59	2.43	43	1.63	41	1.50
30	1.75	26	1.16	22	1.18	18	.78
16	.80	13	.57	12	.37	9	.27
8	.28	6	.18	6	.21	4	.11
4	.14	3	.06	3	.09	3	.04
2	.07	2	.05				

PARAMETER VALUES

PS : 4.07 (3.79, 4.35)

ALPHA : .064 (.059, .070)

BETA : .0009 (.0003, .0015)

SAMPLE TEMP 7.5 C

INCUBATION TEMP 13.0 C

CHLOROPHYLL	:	4.52	NITRATE	:	.81
CARBON	:	554	SILICATE	:	1.17
NITROGEN	:	101	PHOSPHATE	:	.51
			AMMONIUM	:	.81

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 18/06/85 DEPTH 1 M

I	P	I	P	I	P	I	P
518	3.54	371	3.21	359	3.42	355	3.36
307	3.25	275	3.32	251	3.55	199	3.47
187	3.51	167	3.18	163	3.73	140	3.16
120	3.53	112	2.99	96	2.87	79	2.44
72	2.08	59	2.74	54	1.78	45	1.47
36	1.25	30	1.05	24	.78	23	.86
16	.45	14	.43	11	.23	10	.25
8	.13	7	.12	5	.07	5	.07
4	.13	4	.03	3	.01	3	.01
2	.01	2	.01				

PARAMETER VALUES

PS : 4.55 (3.86, 5.25)

ALPHA : .048 (.045, .051)

BETA : .0032 (.0010, .0054)

SAMPLE TEMP 11.0 C

INCUBATION TEMP 11.5 C

CHLOROPHYLL : 16.22

CARBON : 918

NITROGEN : 140

NITRATE : .33

SILICATE : 2.33

PHOSPHATE : .22

AMMONIUM : .00

BEDFORD BASIN 1985

LAT 44 31.3' N LONG 63 38.3' W DATE 18/06/85 DEPTH 10 M

I	P	I	P	I	P	I	P
738	2.48	698	2.36	586	2.83	439	2.51
243	2.33	243	2.43	179	2.07	144	2.65
140	2.15	104	2.16	73	1.45	72	2.03
68	1.65	53	1.44	44	1.45	39	1.02
33	.94	20	.49	16	.49	13	.32
12	.33	10	.21	9	.20	7	.12
6	.13	4	.08	3	.05	3	.08
3	.04	3	.01	2	.03	2	.01

PARAMETER VALUES

PS : 2.58 (2.39, 2.77)

ALPHA : .038 (.035, .041)

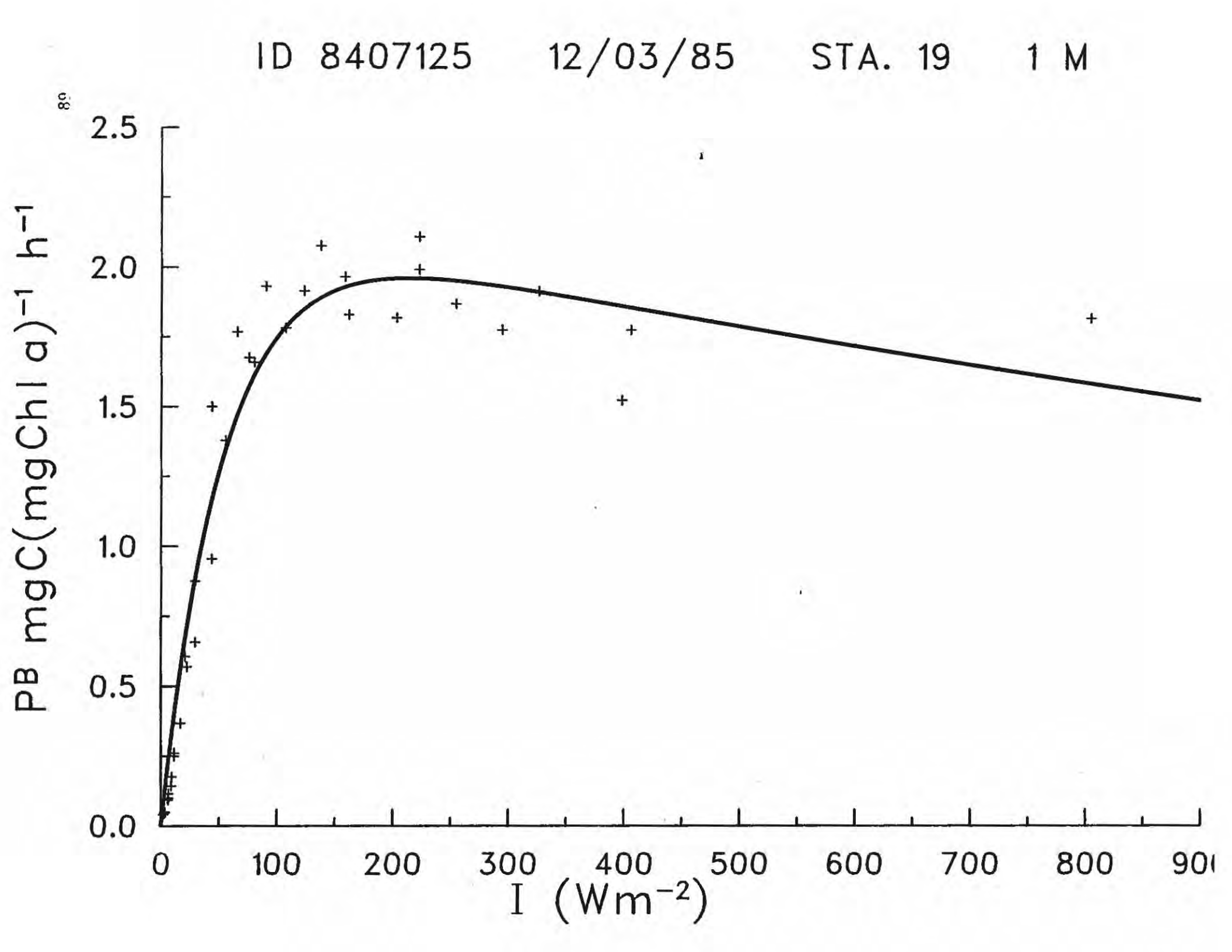
BETA : .0001 (-.0003, .0005)

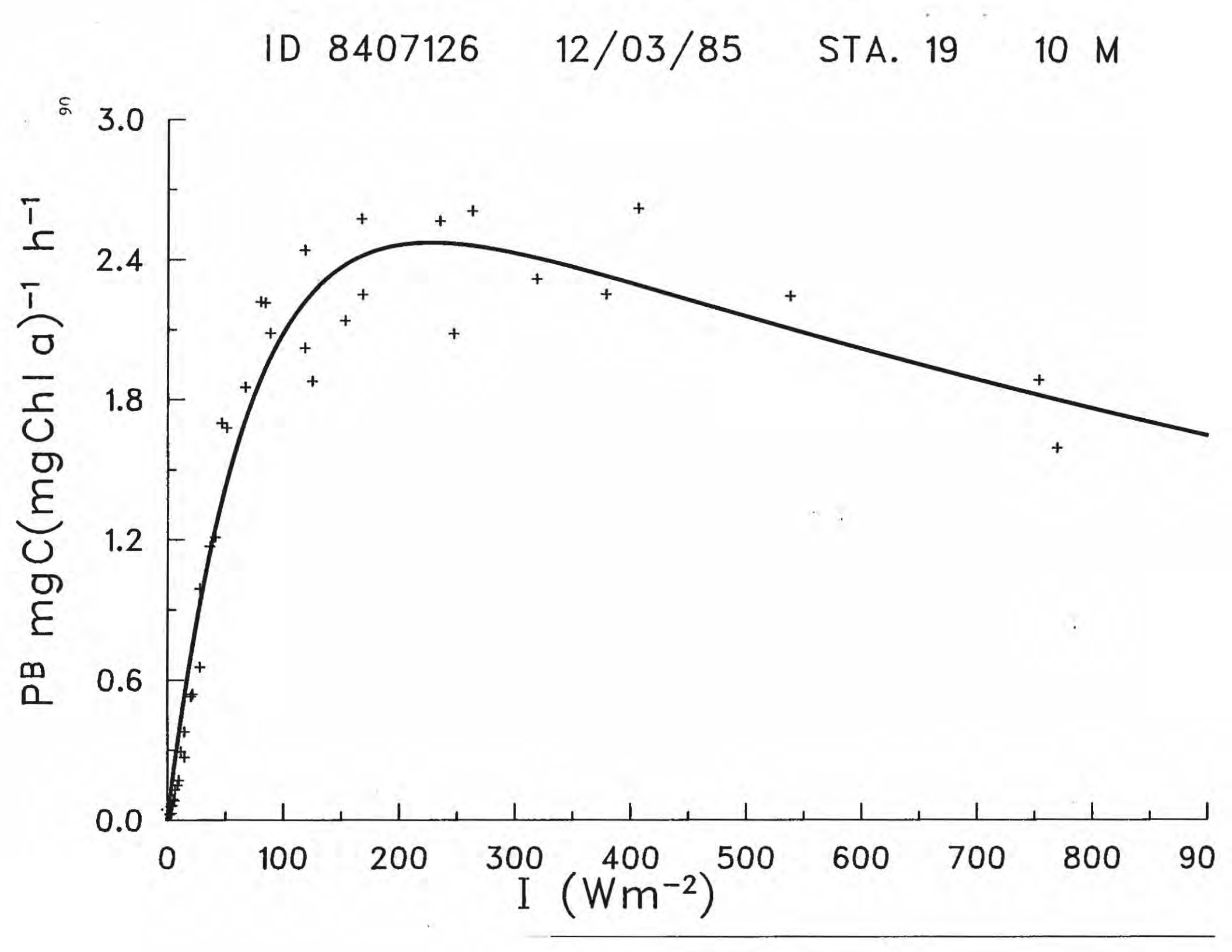
SAMPLE TEMP 6.0 C

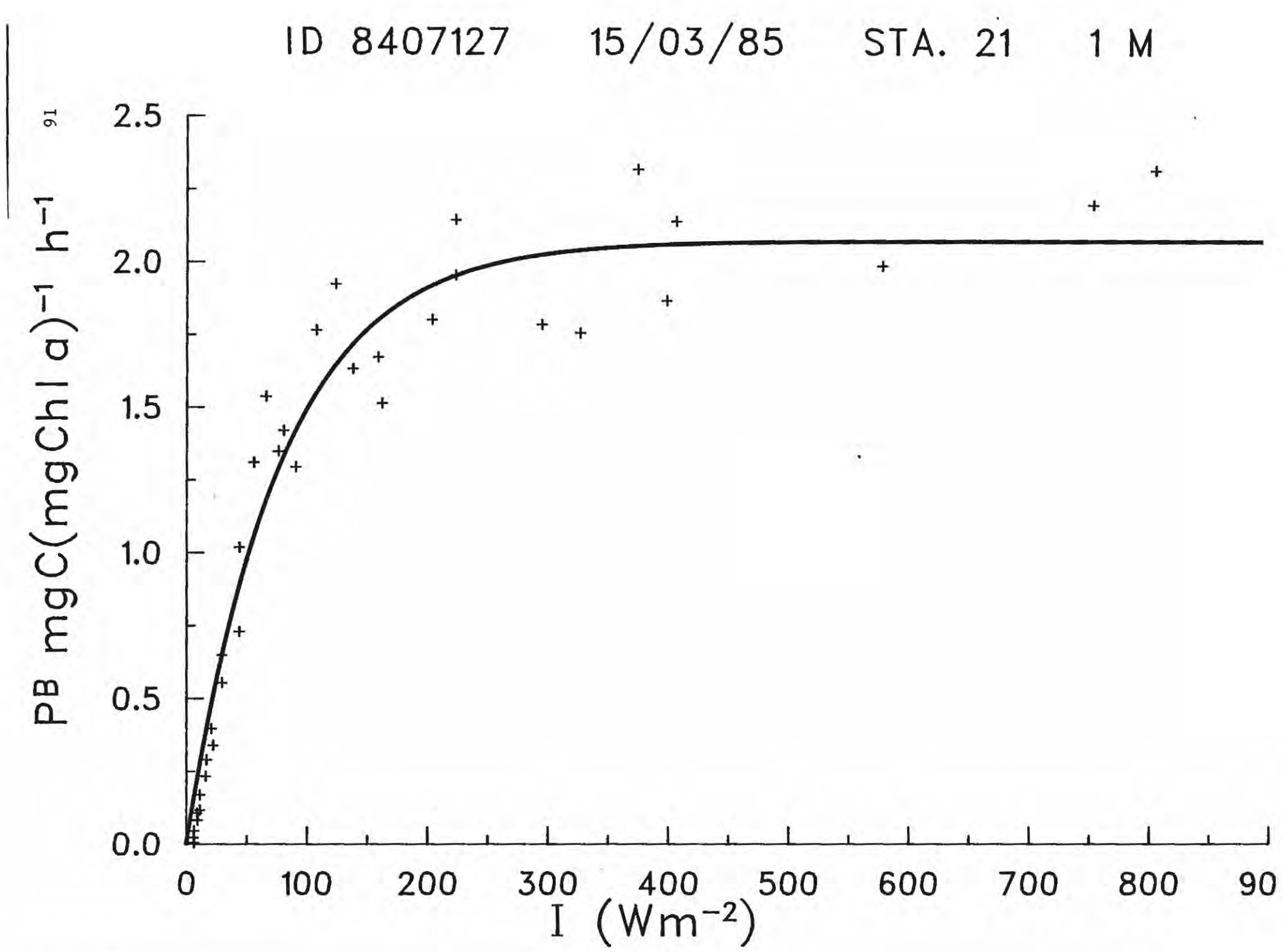
INCUBATION TEMP 11.5 C

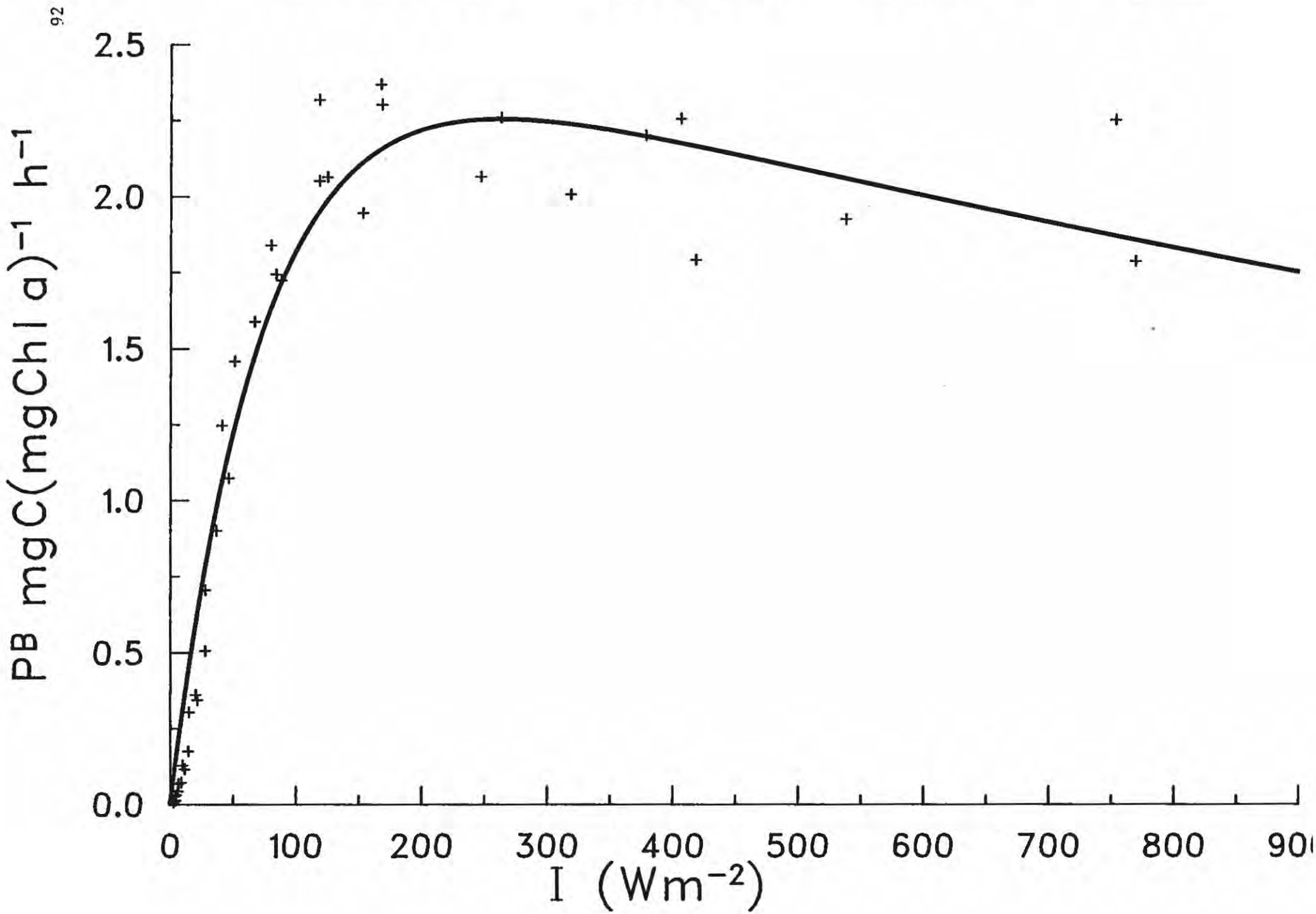
CHLOROPHYLL	:	11.39	NITRATE	: 1.29
CARBON	:	721	SILICATE	: 1.98
NITROGEN	:	126	PHOSPHATE	: .72
			AMMONIUM	: .61

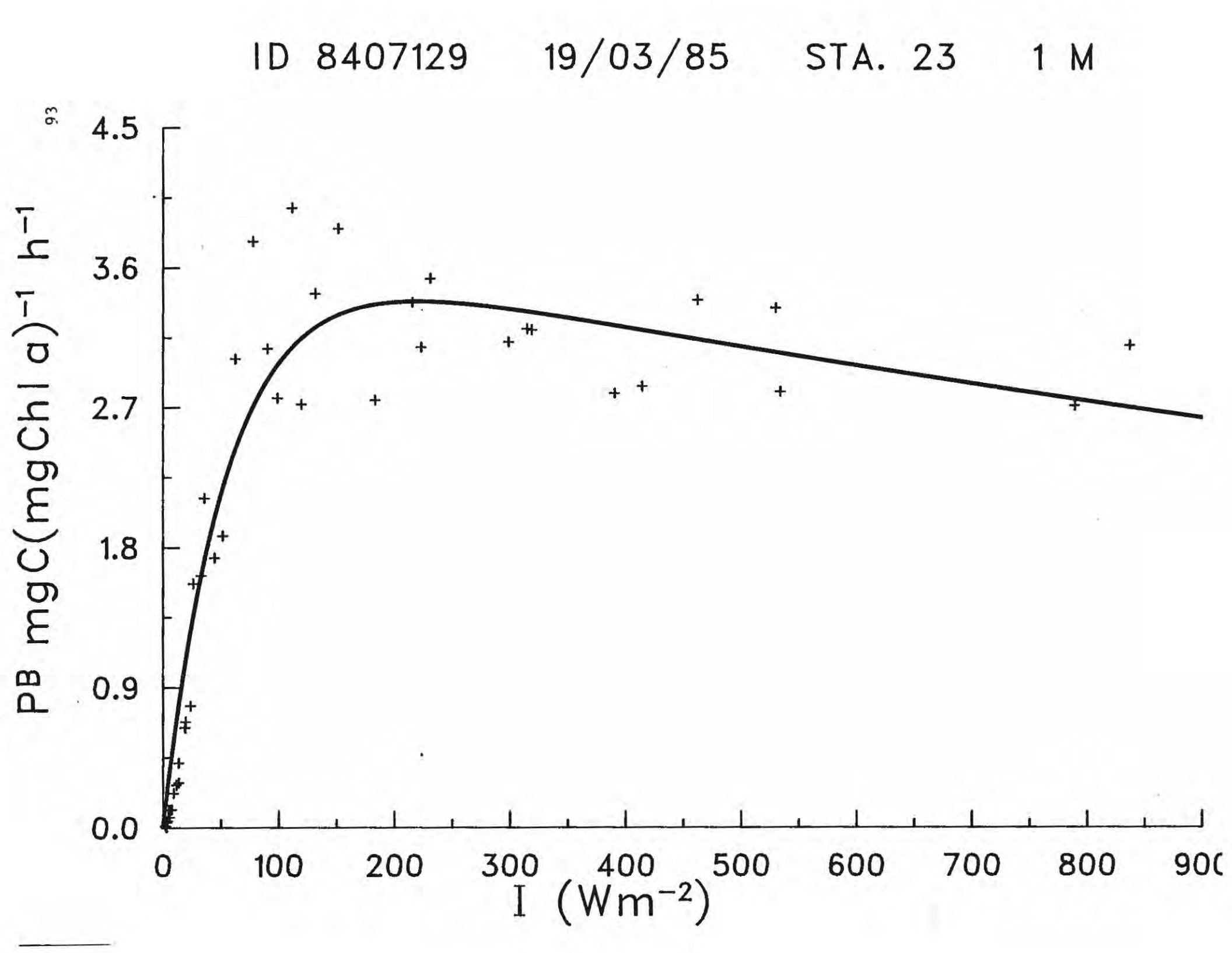
Solid line fits to carbon PI data

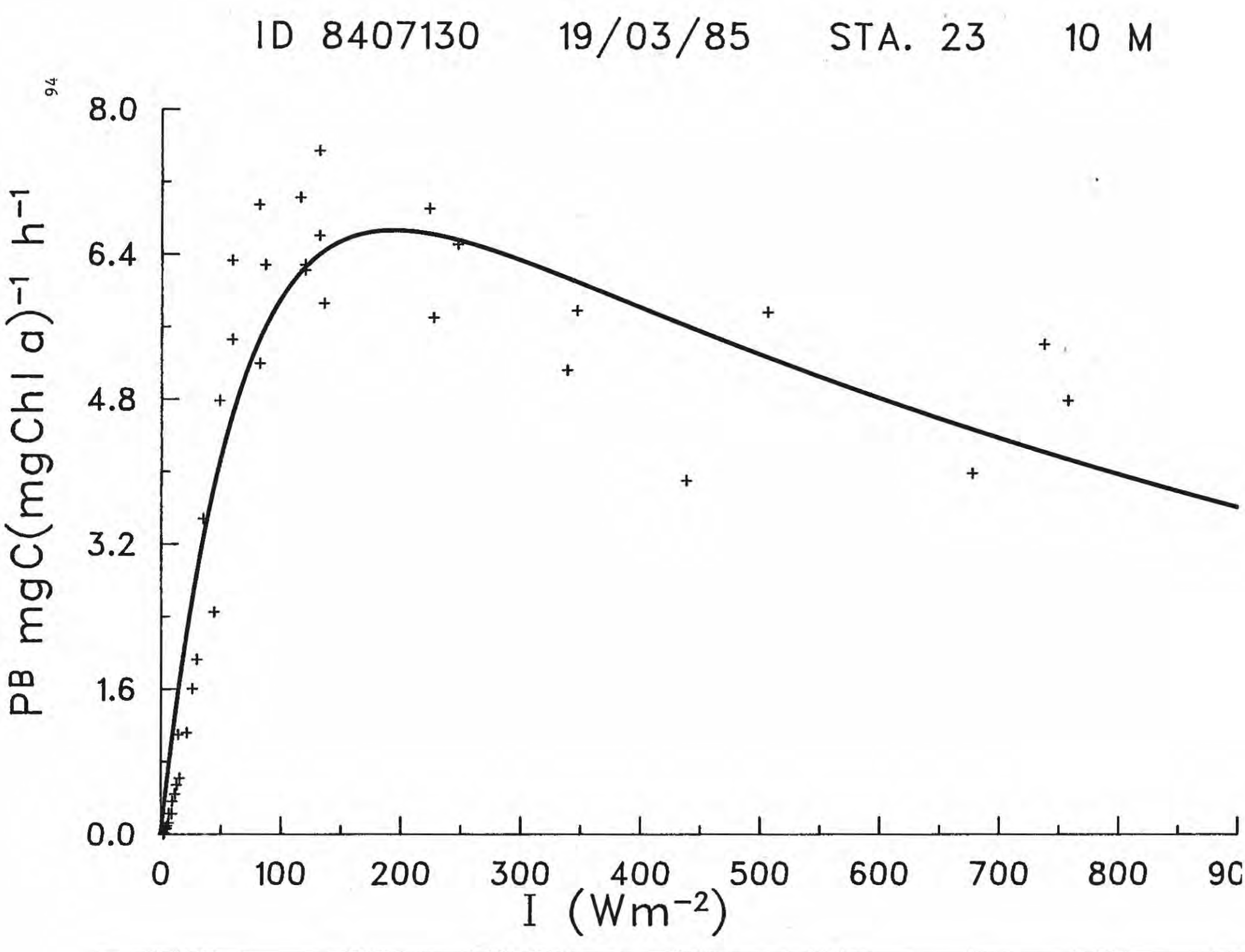

ID 8407125 12/03/85 STA. 19 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
700
800
I (Wm^{-2})

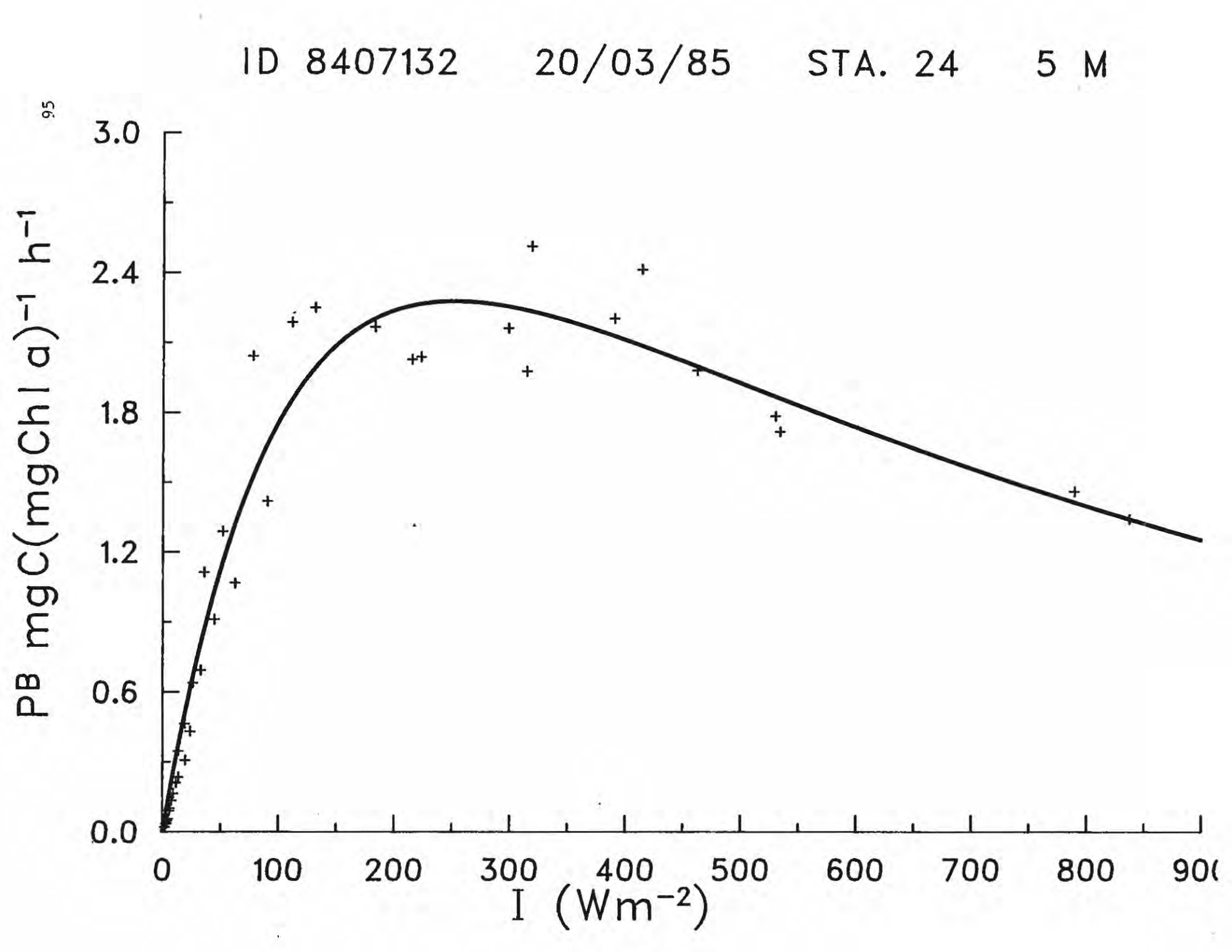

ID 8407126 12/03/85 STA. 19 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
90
I (Wm^{-2})

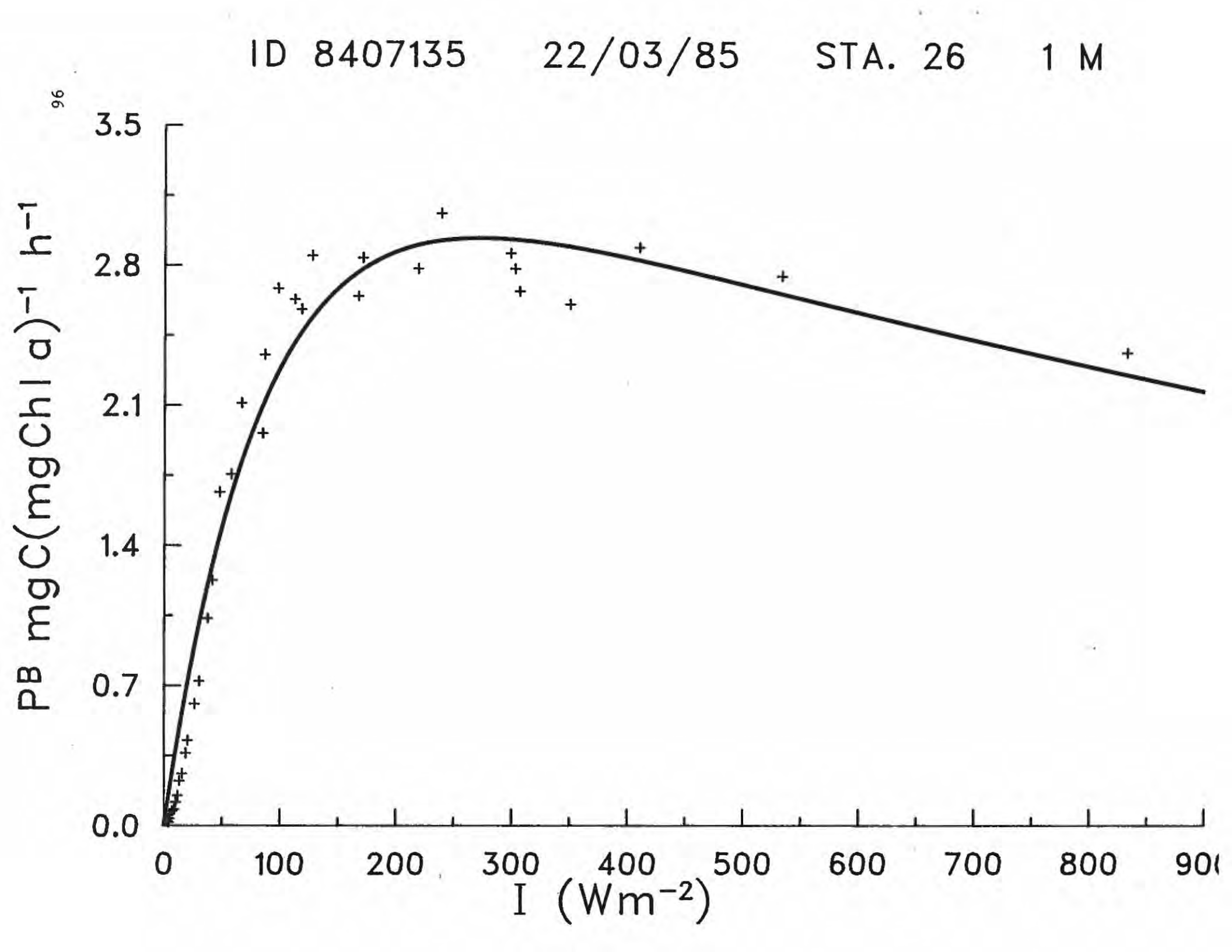

ID 8407127 15/03/85 STA. 21 1 M
91
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
700
800
90
I (Wm^{-2})

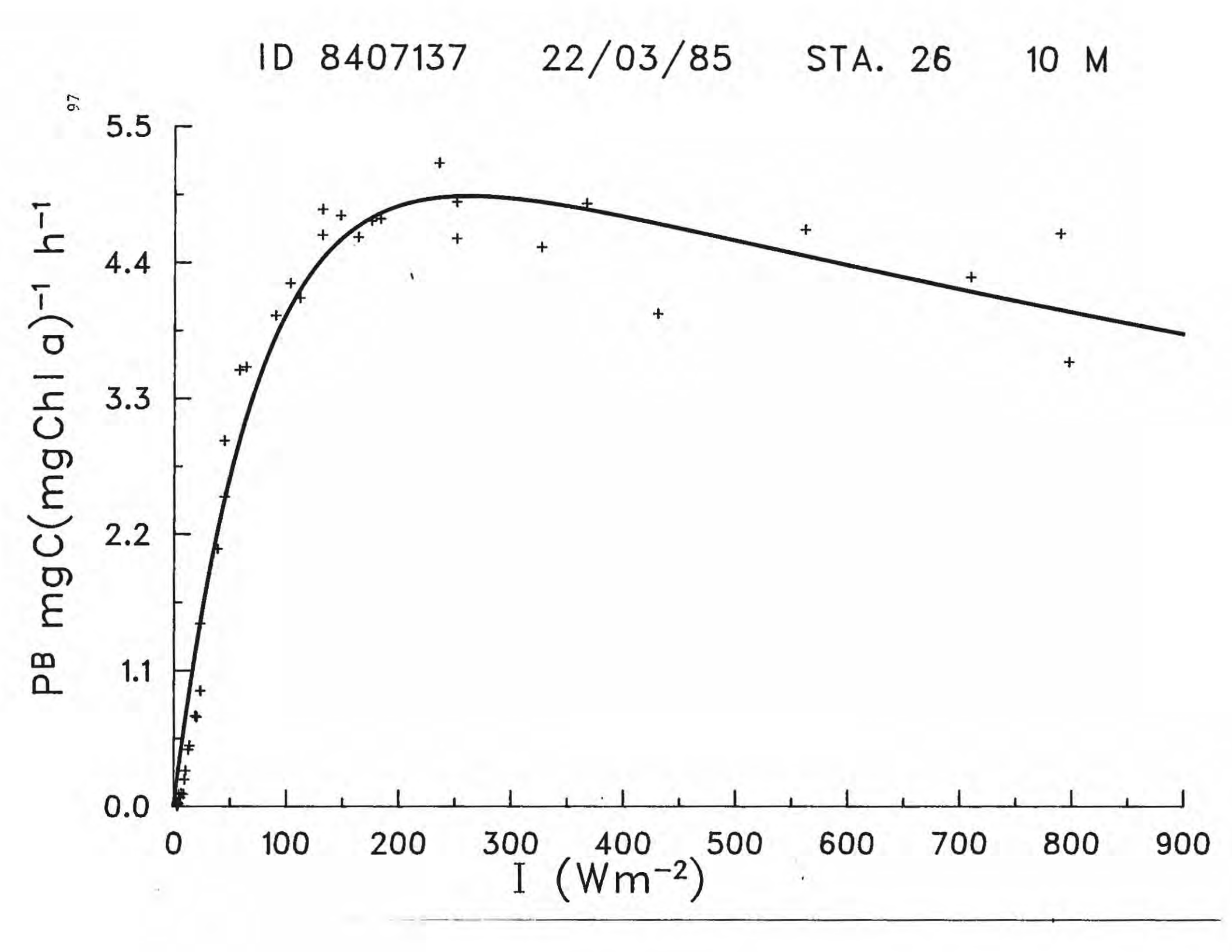

ID 8407128 15/03/85 STA. 21 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
700
800
I (Wm^{-2})

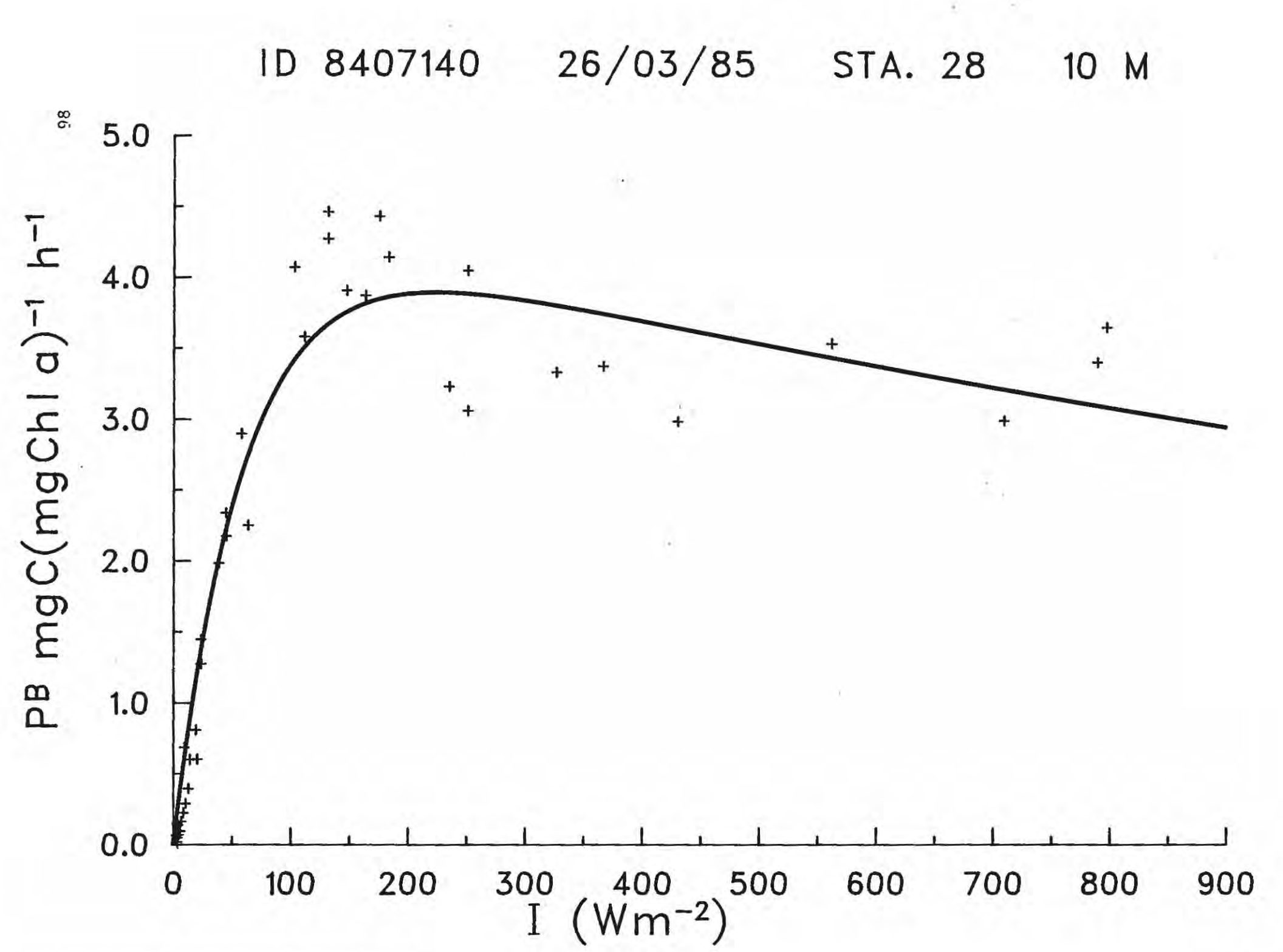

ID 8407129 19/03/85 STA. 23 1 M
93
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

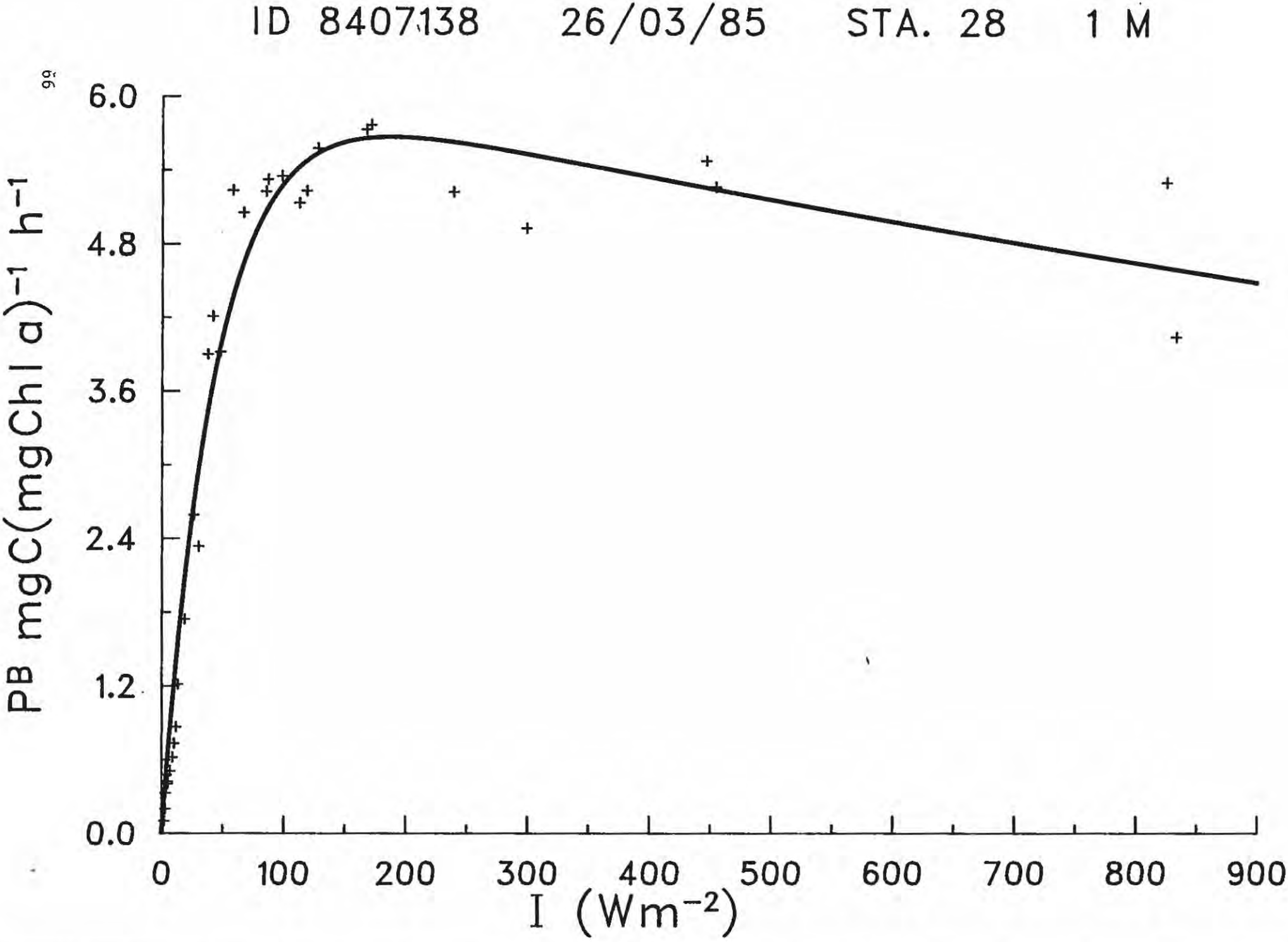

ID 8407130 19/03/85 STA. 23 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
8.0
6.4
4.8
3.2
1.6
0.0
0
100
200
300
400
500
600
700
800
I (Wm^{-2})

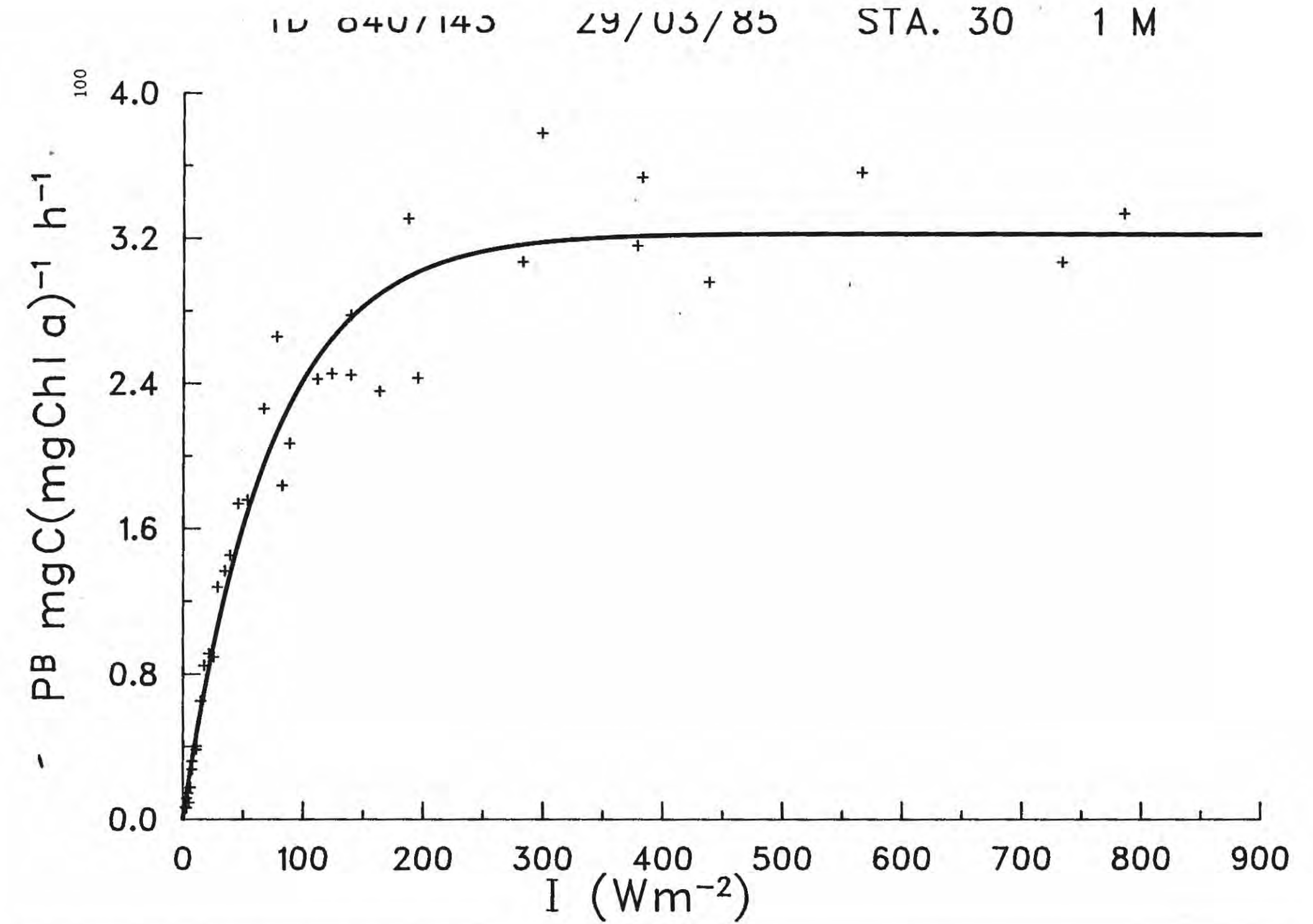

ID 8407132 20/03/85 STA. 24 5 M
95
3.0
2.4
1.8
1.2
0.6
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
I (Wm^{-2})

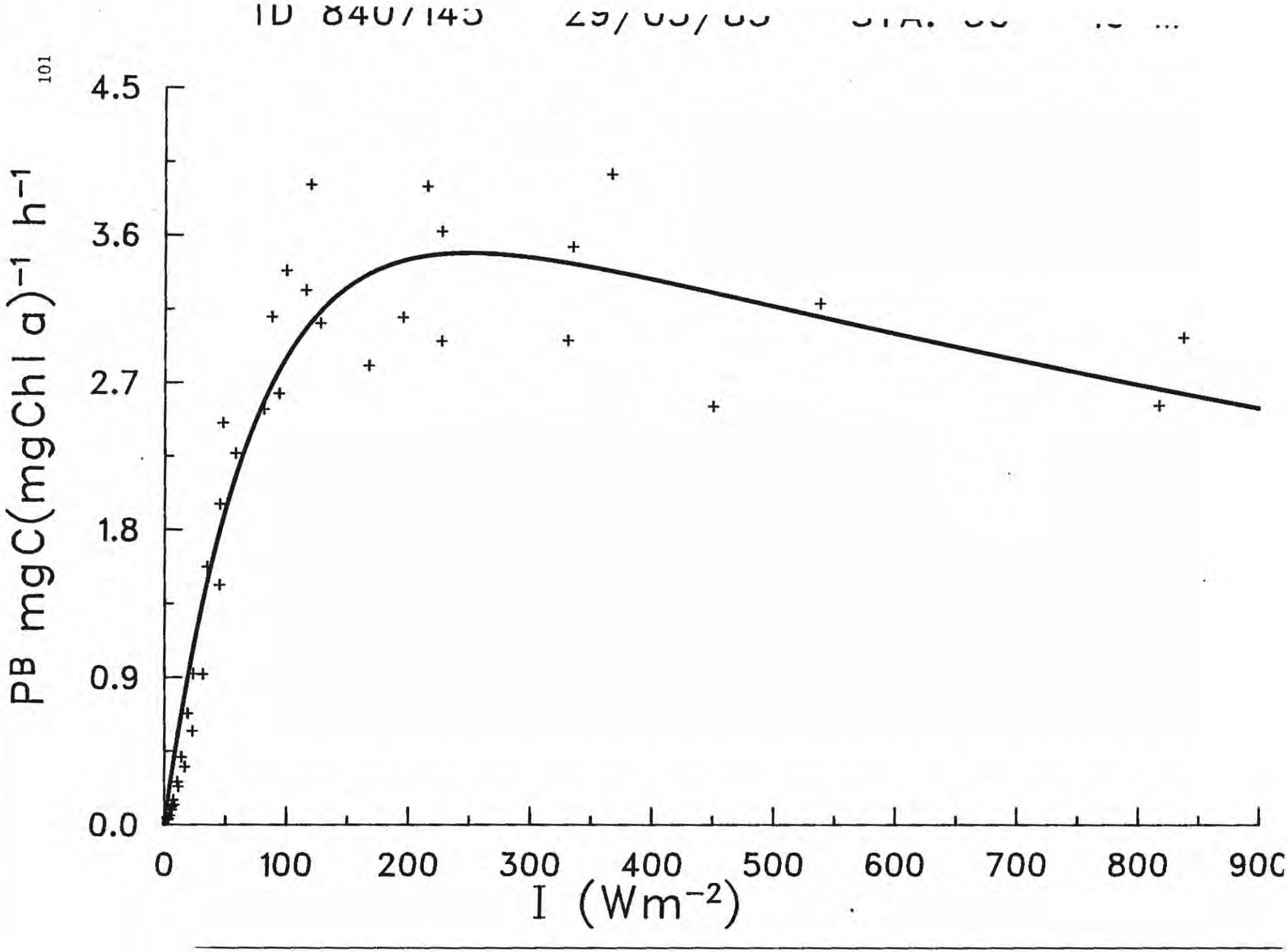

ID 8407135 22/03/85 STA. 26 1 M
P^{B} mgC(mgChl a)$^{-1}$ h^{-1}
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
700
800
I (Wm^{-2})

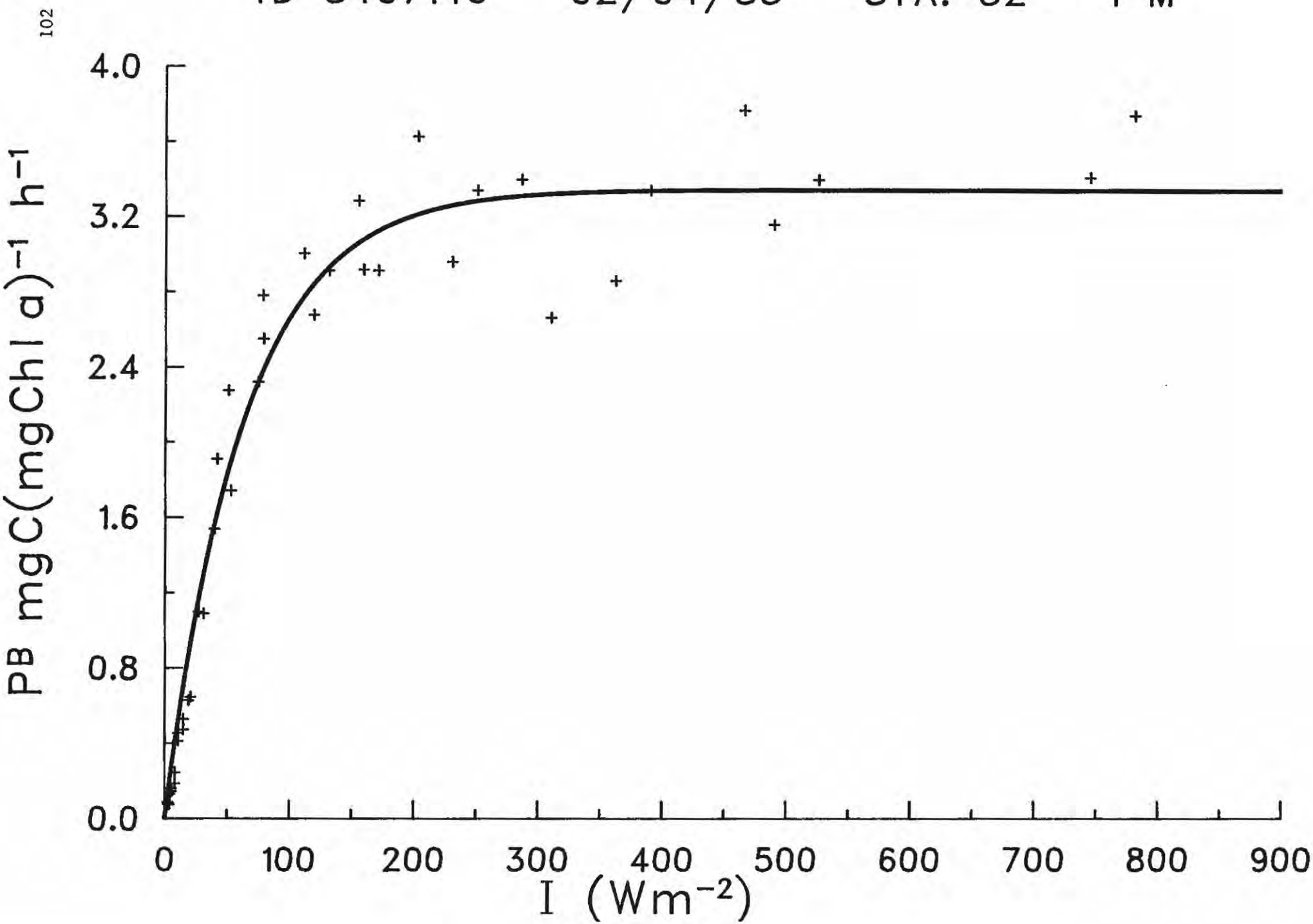

ID 8407137 22/03/85 STA. 26 10 M
97
5.5
4.4
3.3
2.2
1.1
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

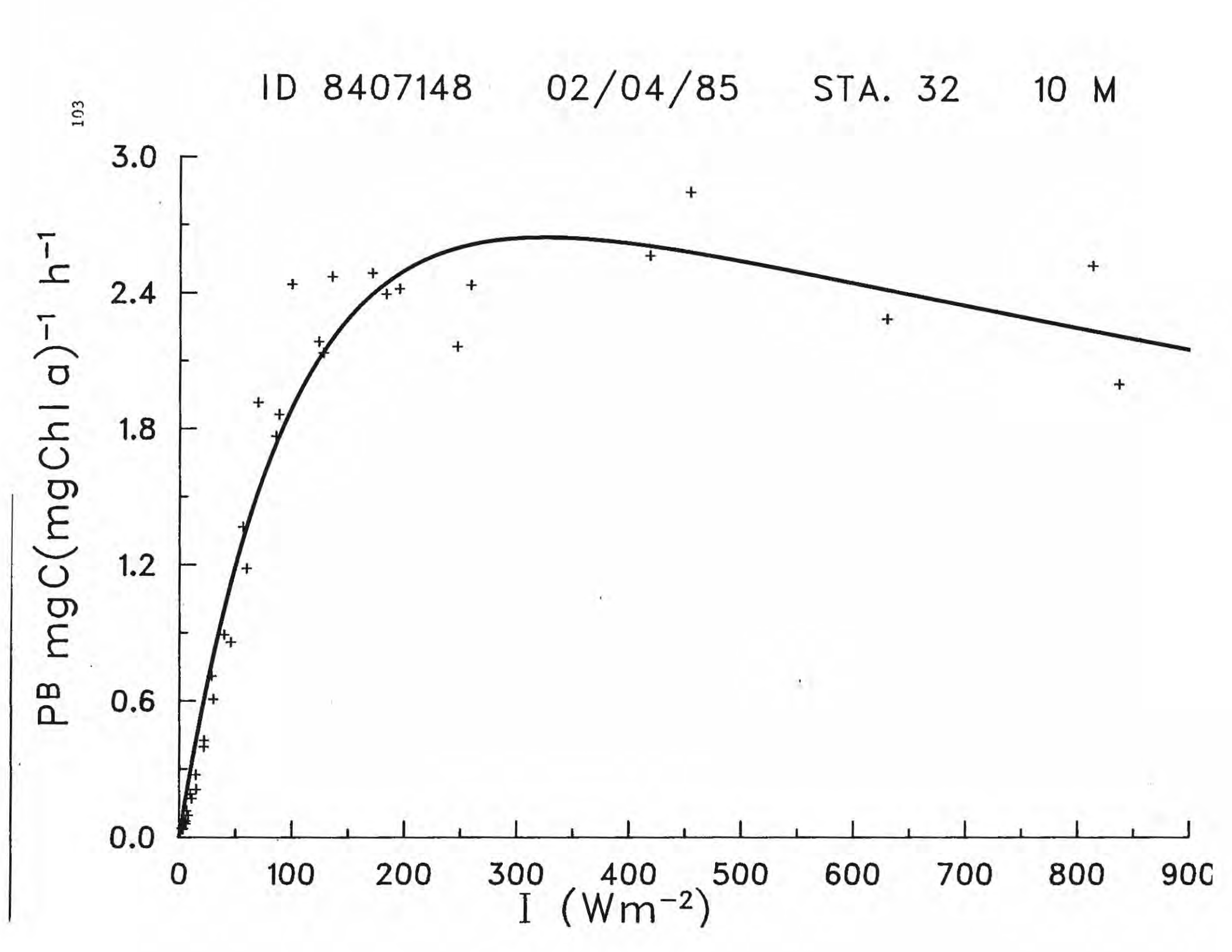

ID 8407140 26/03/85 STA. 28 10 M
98
PB mgC(mgChl a)$^{-1}$ h^{-1}
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

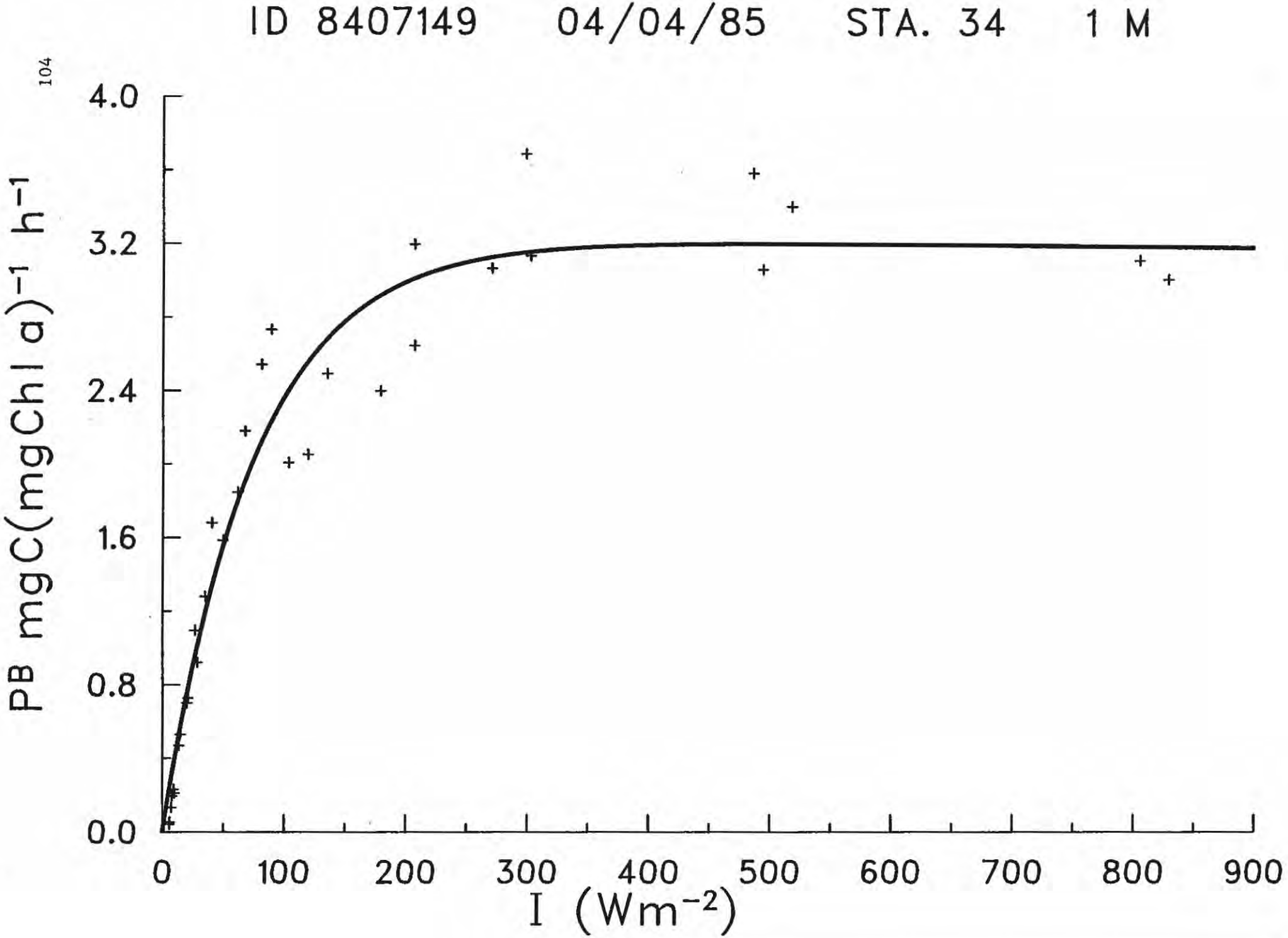

ID 8407138 26/03/85 STA. 28 1 M
99
6.0
4.8
3.6
2.4
1.2
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

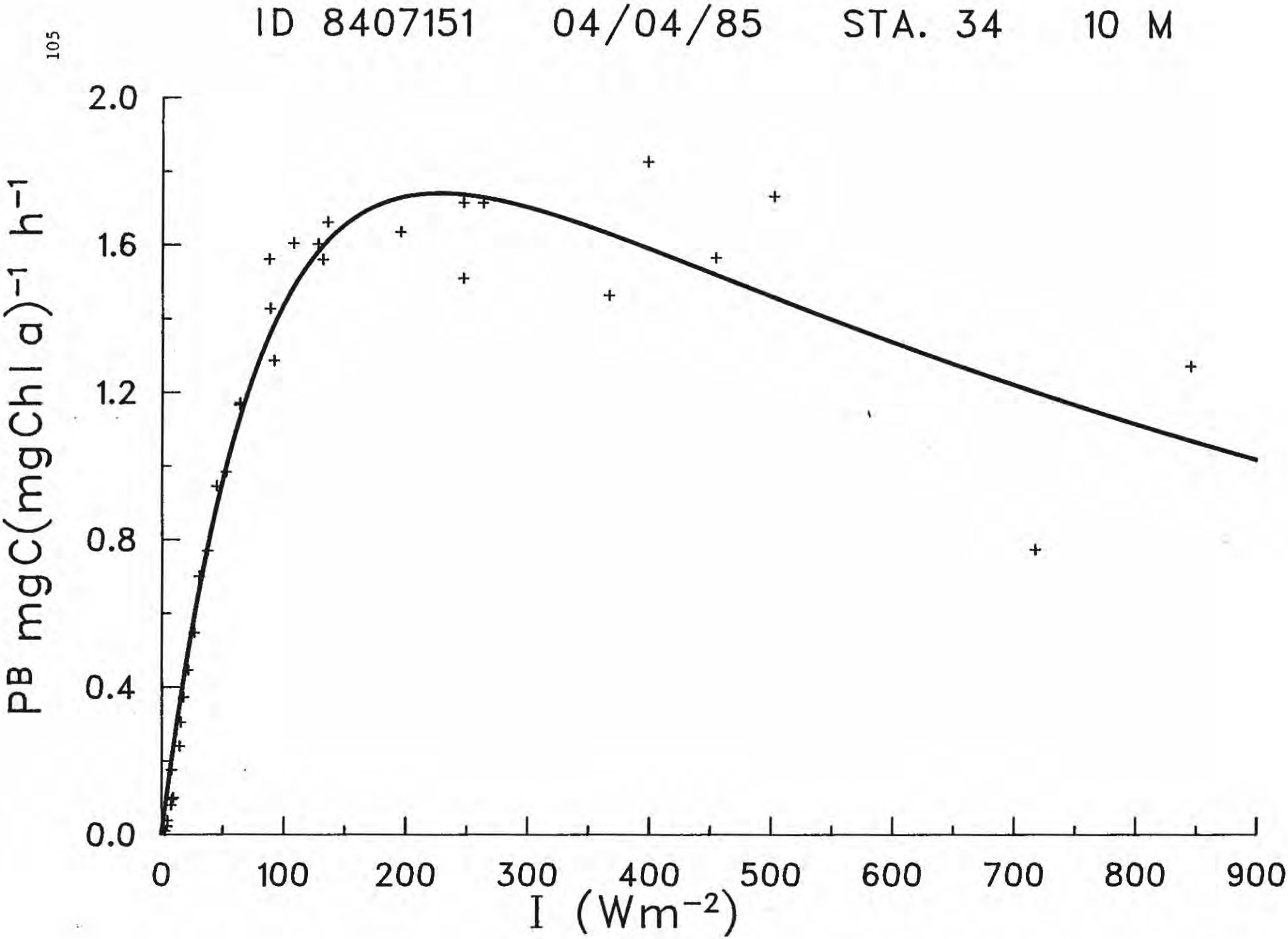

ID 840143 29/03/85 STA. 30 1 M
100
4.0
3.2
2.4
1.6
0.8
0.0
- PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

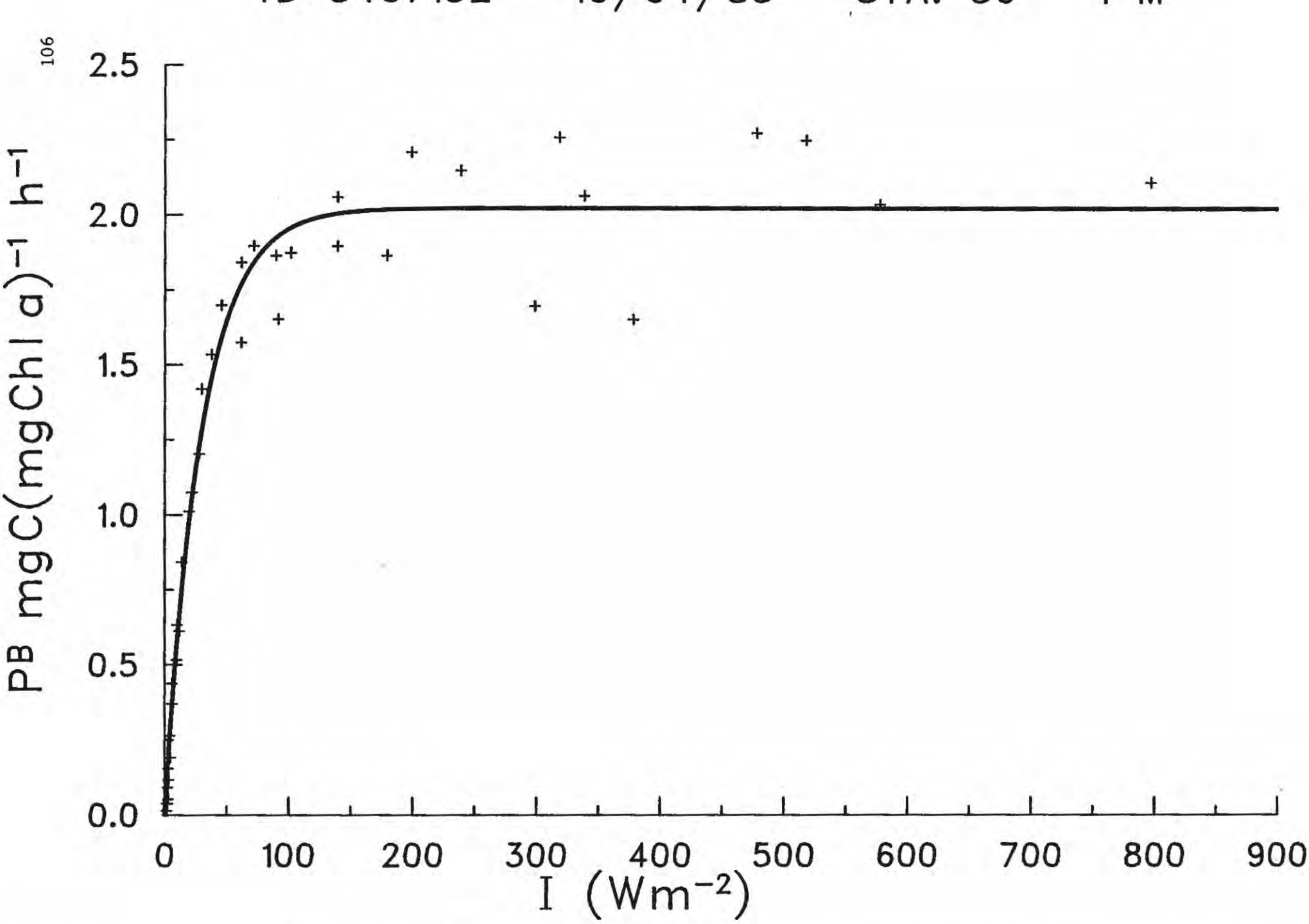

4.5
3.6
2.7
1.8
0.9
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

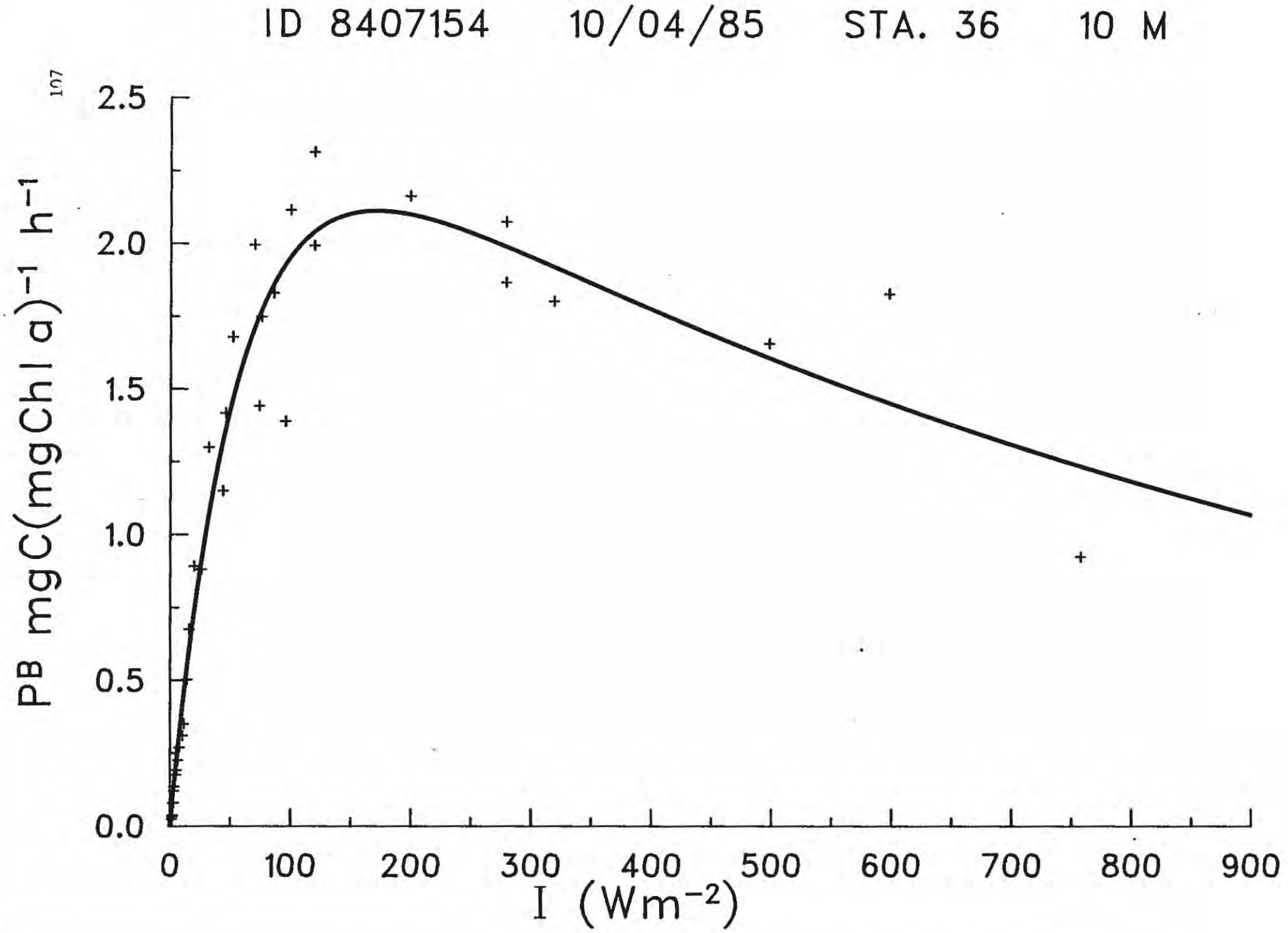

ID 8407146 02/04/85 STA. 32 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

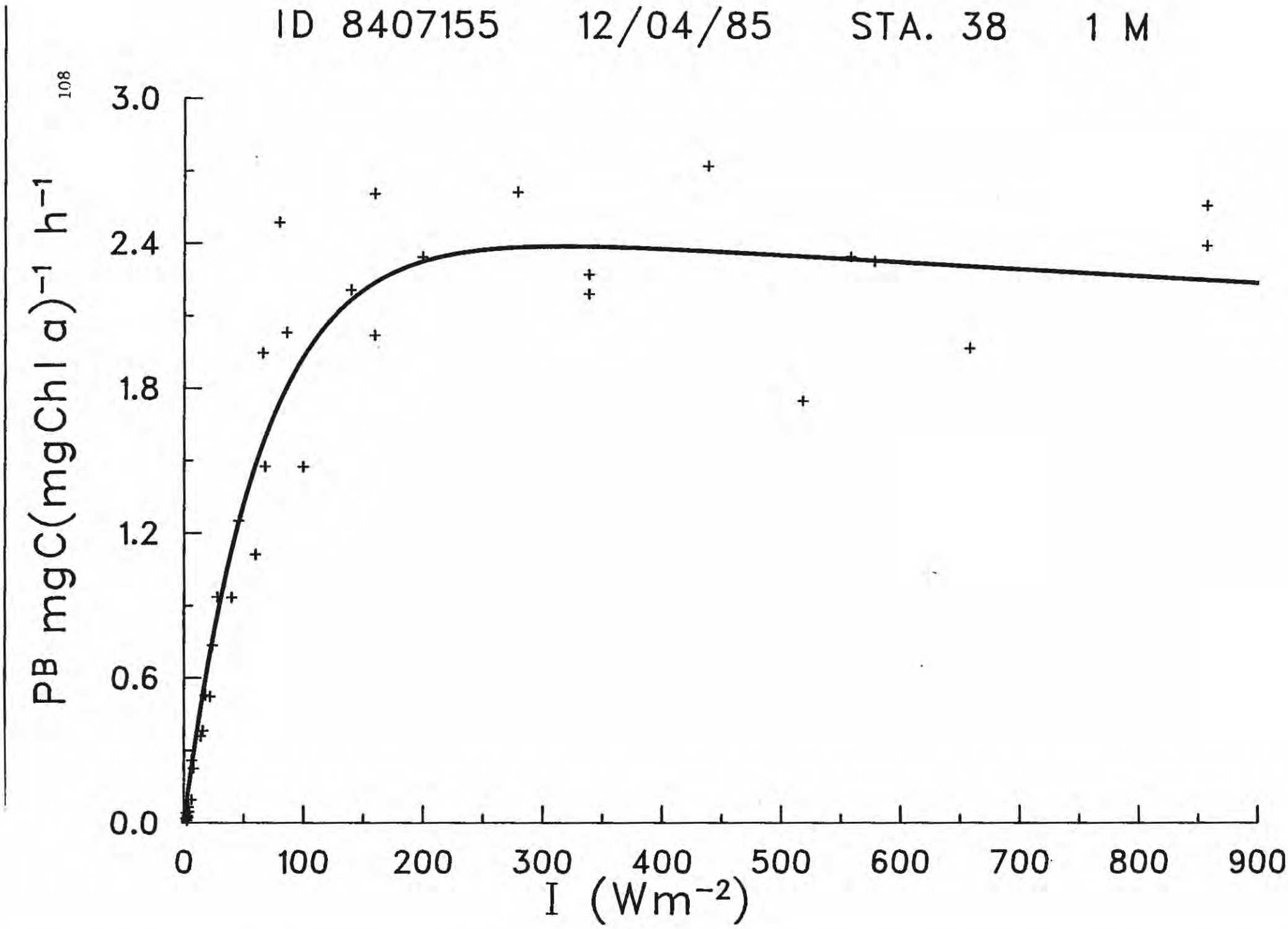

ID 8407148 02/04/85 STA. 32 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

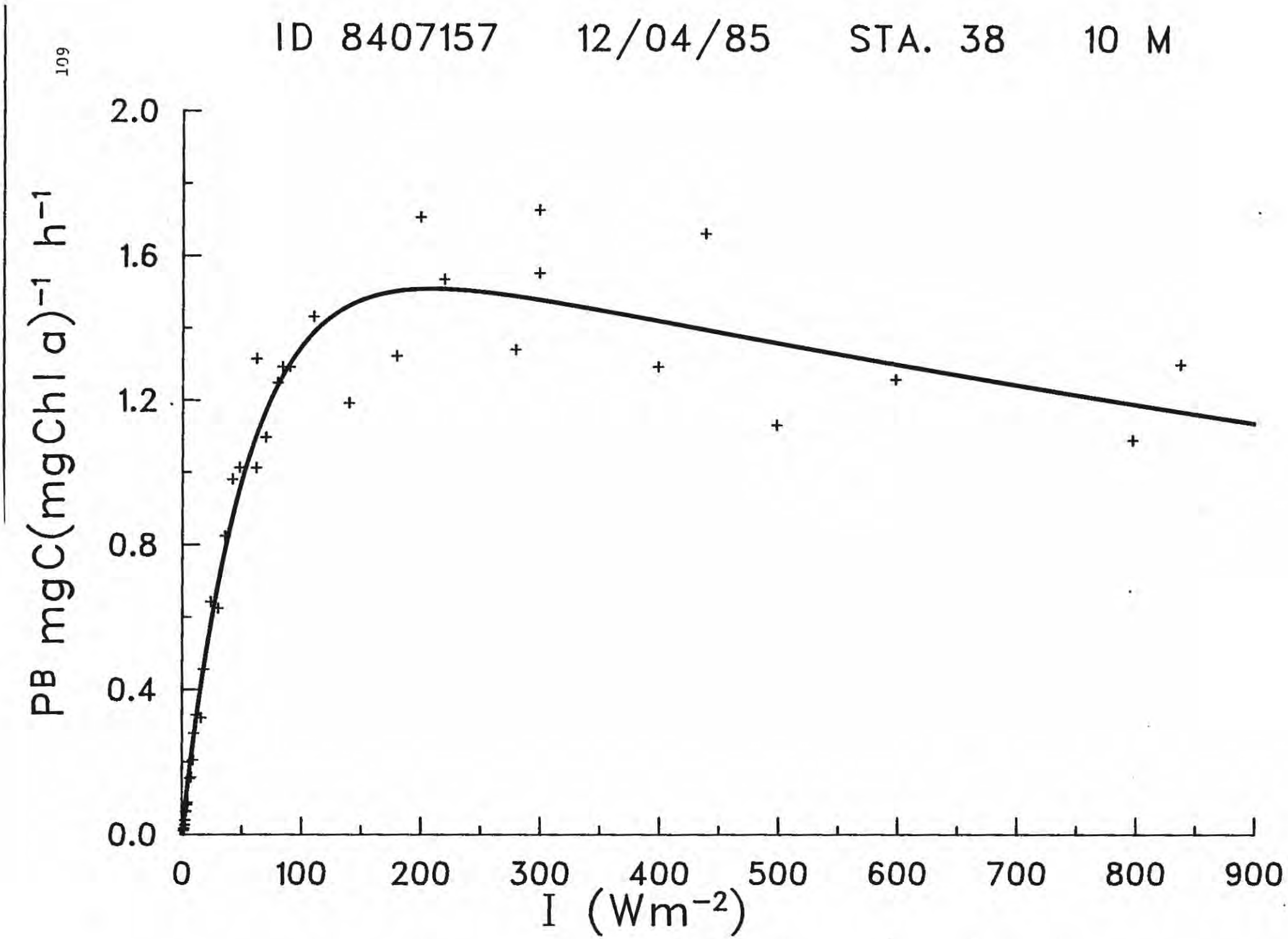

ID 8407149 04/04/85 STA. 34 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

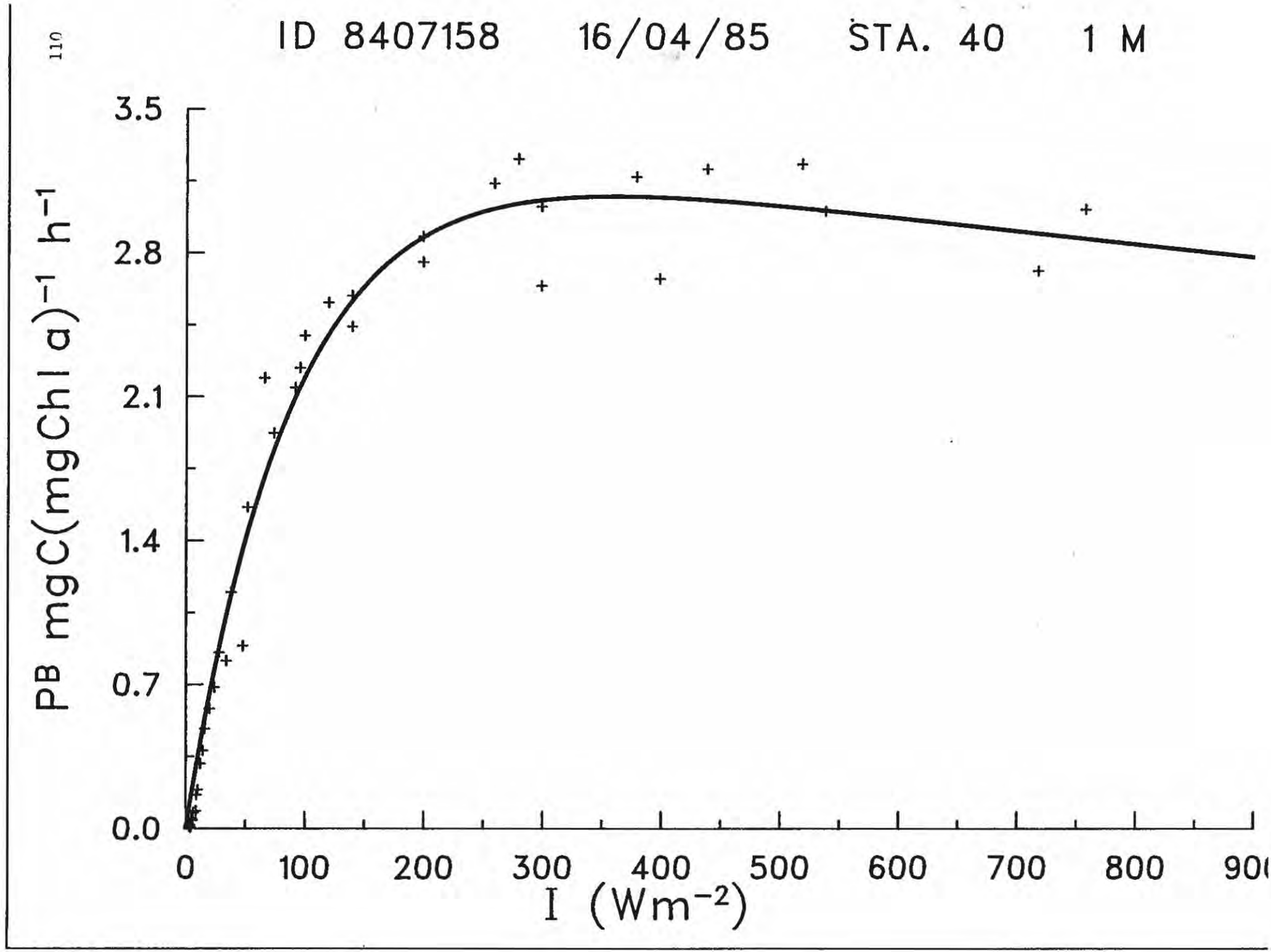

ID 8407151 04/04/85 STA. 34 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.0
1.6
1.2
0.8
0.4
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

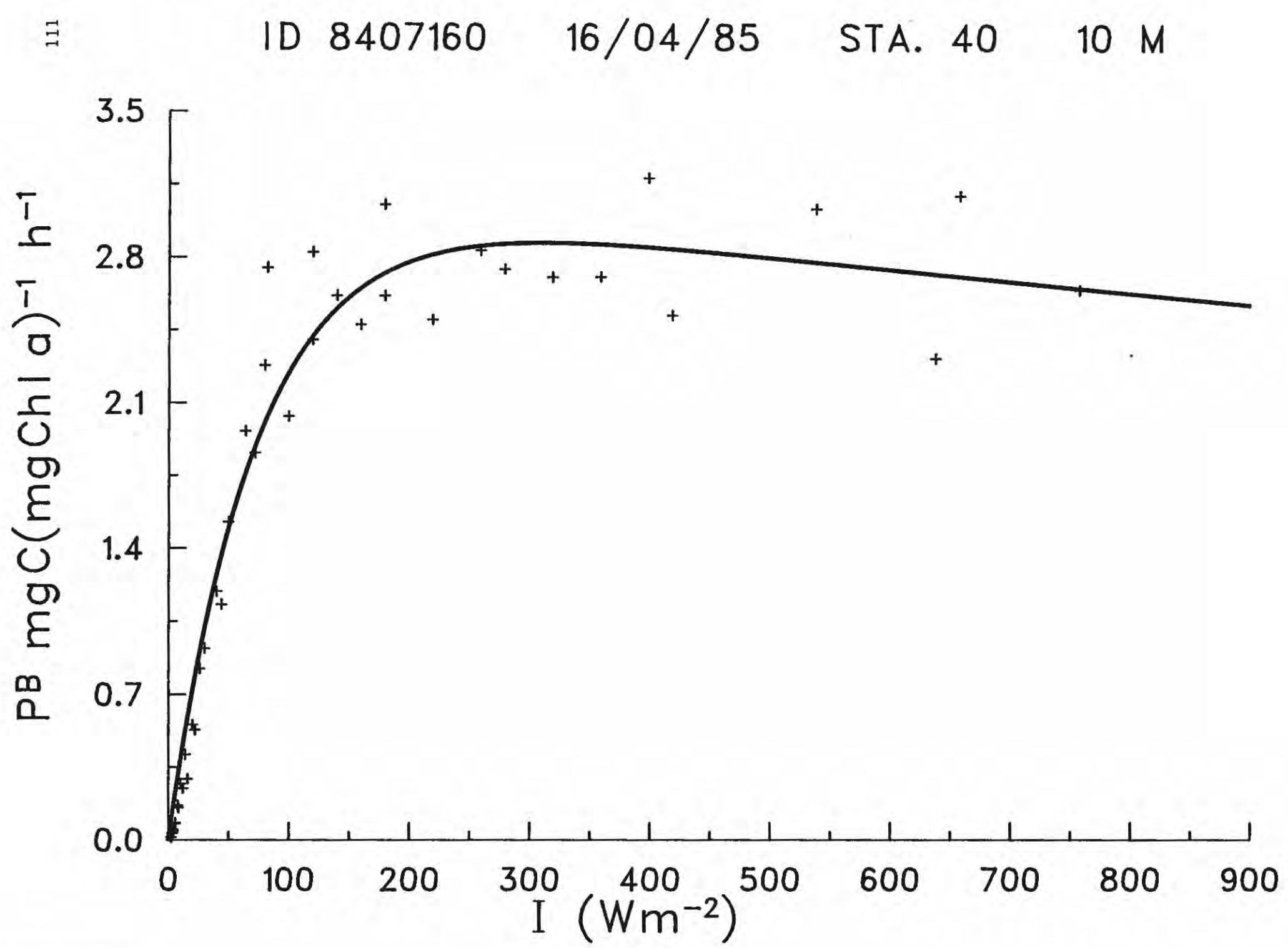

ID 8407152 10/04/85 STA. 36 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

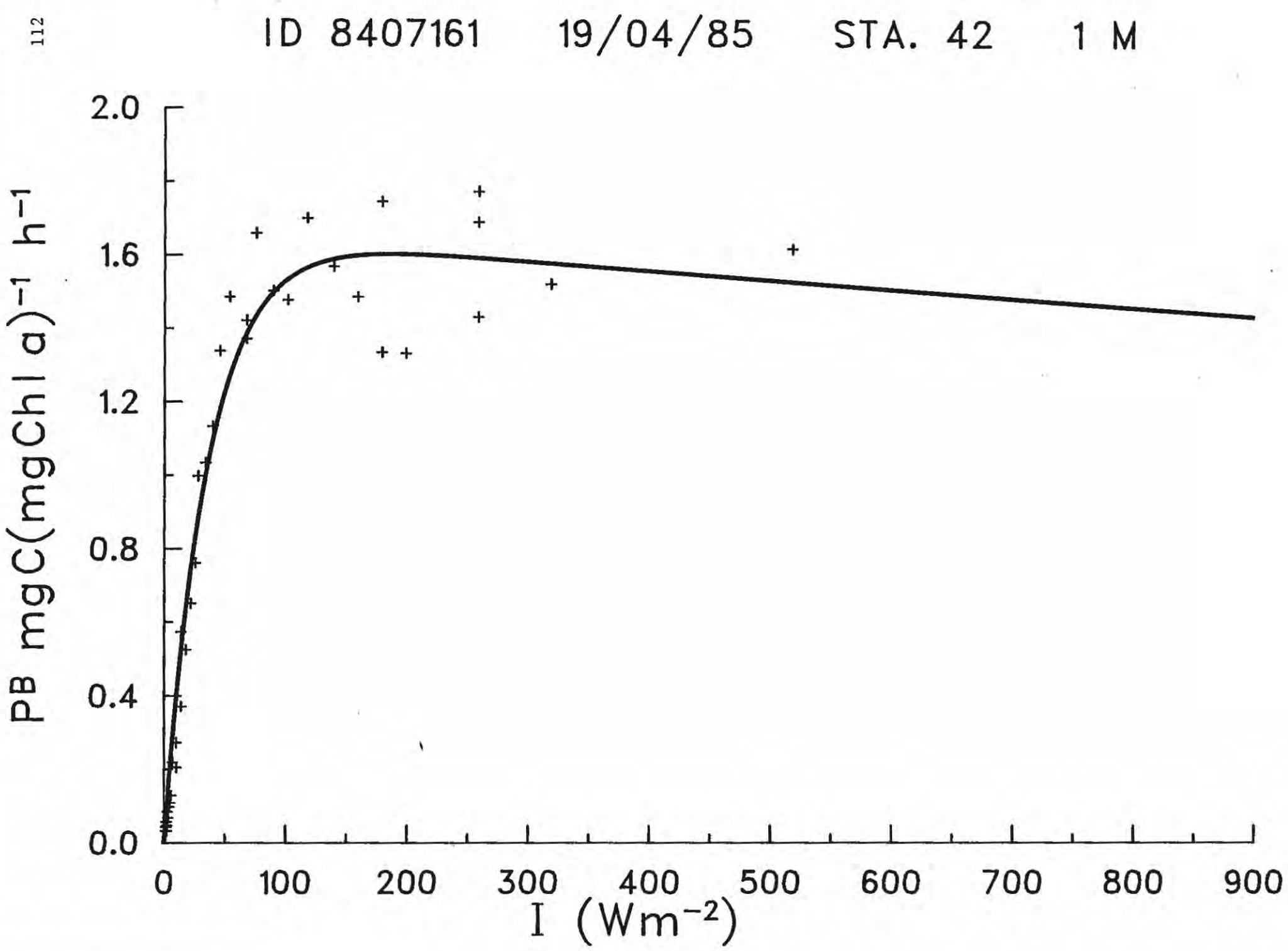

ID 8407154 10/04/85 STA. 36 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

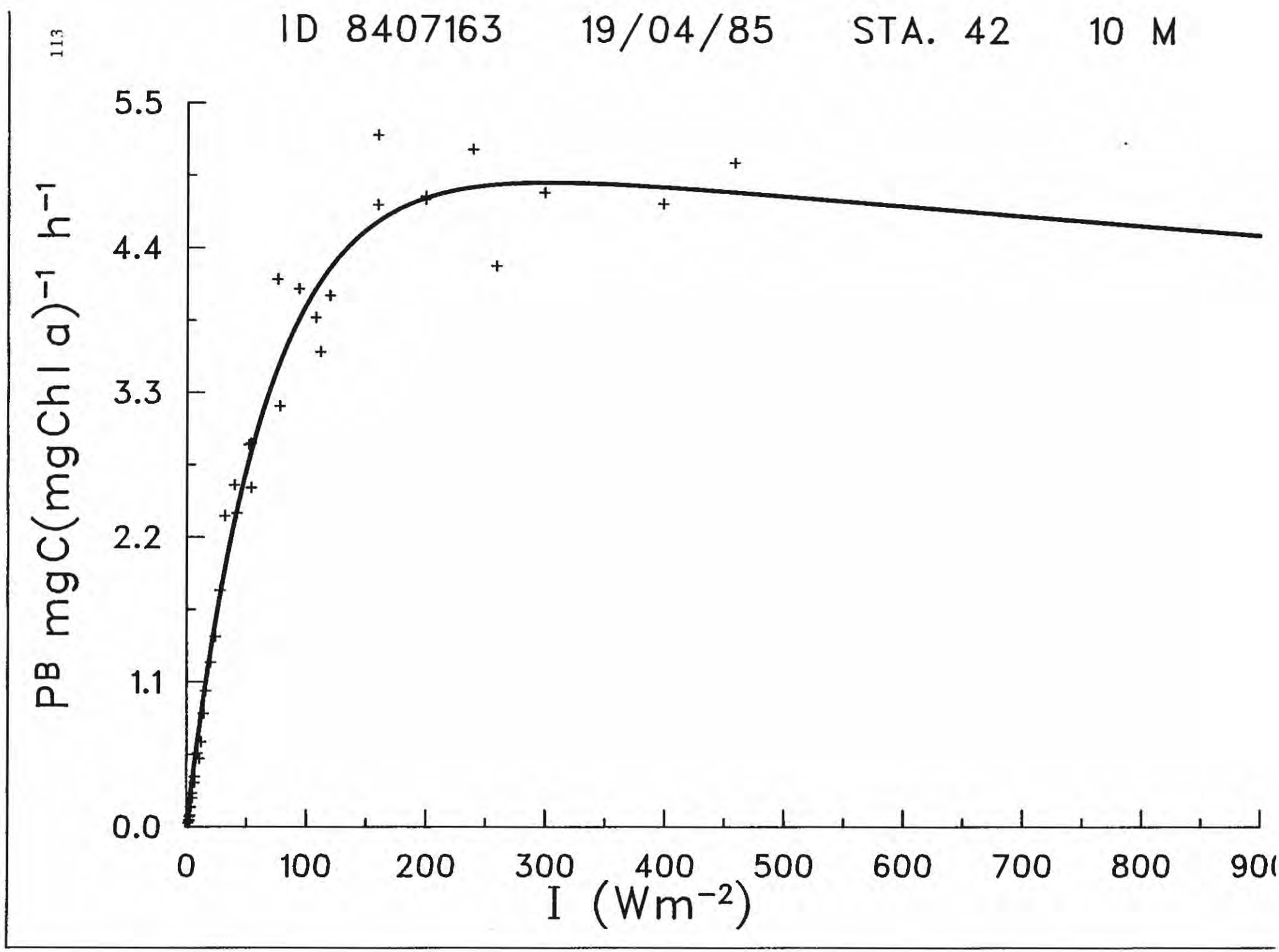

ID 8407155 12/04/85 STA. 38 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

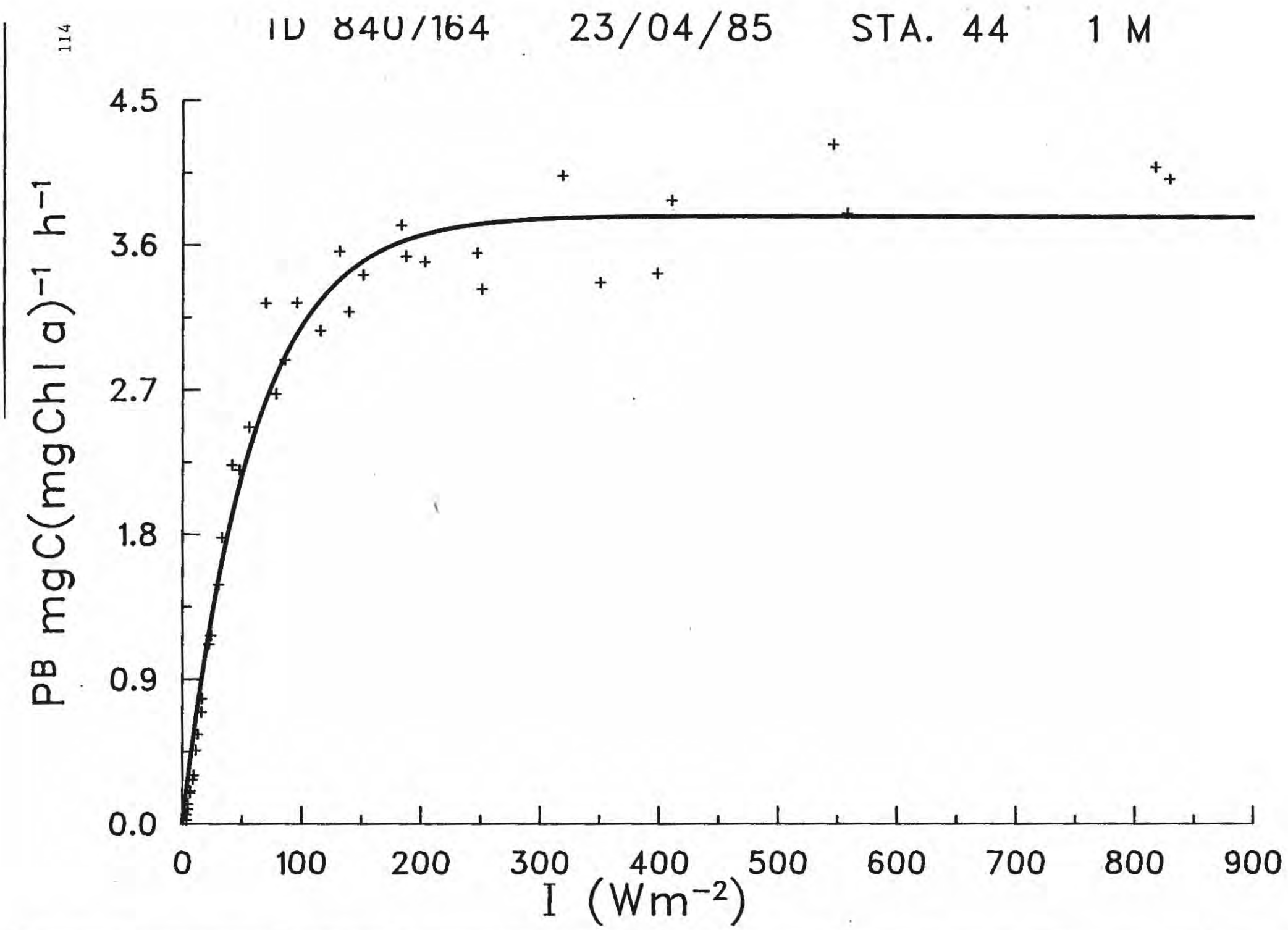

ID 8407157 12/04/85 STA. 38 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.0
1.6
1.2
0.8
0.4
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

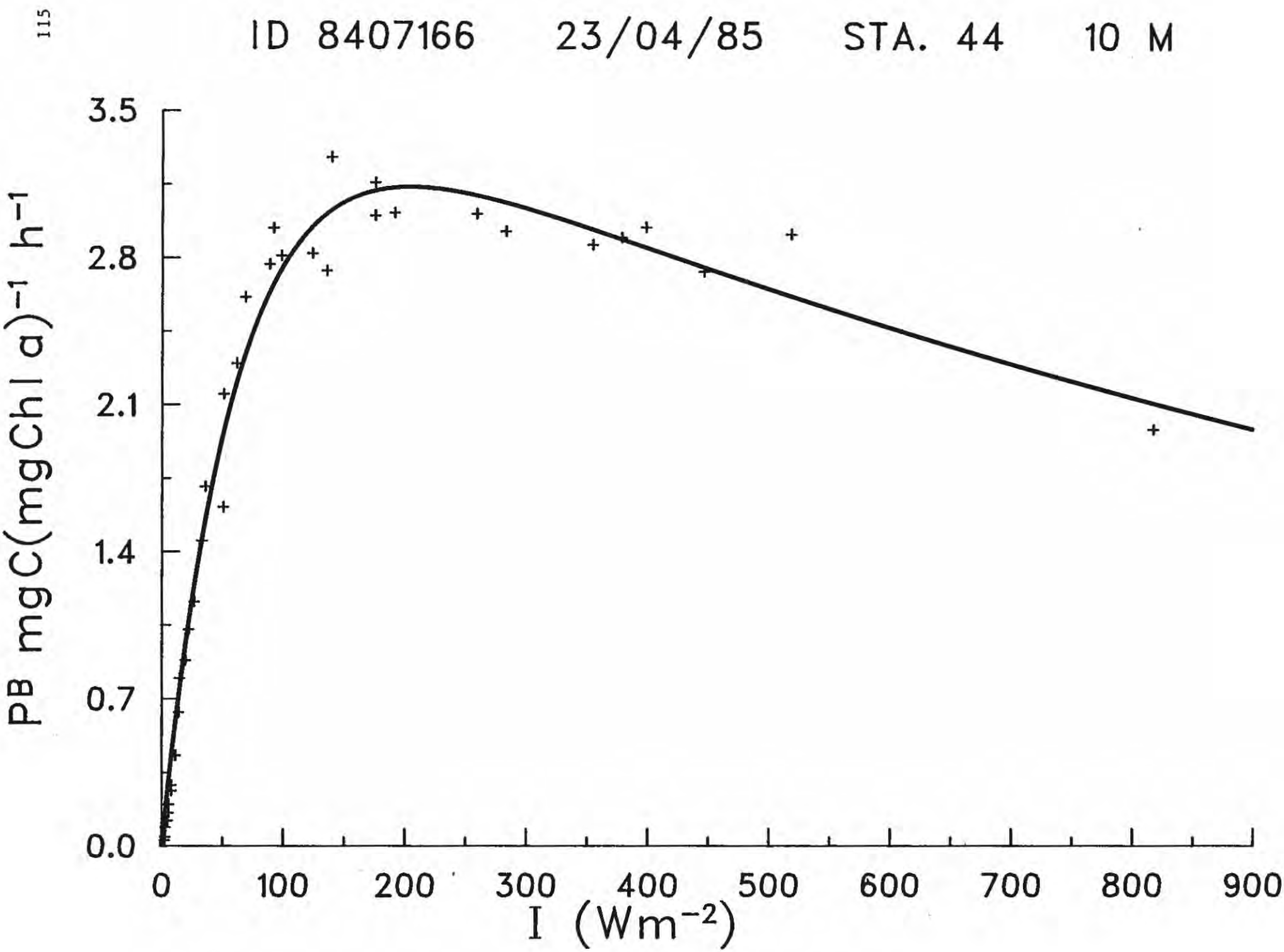

ID 8407158 16/04/85 STA. 40 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

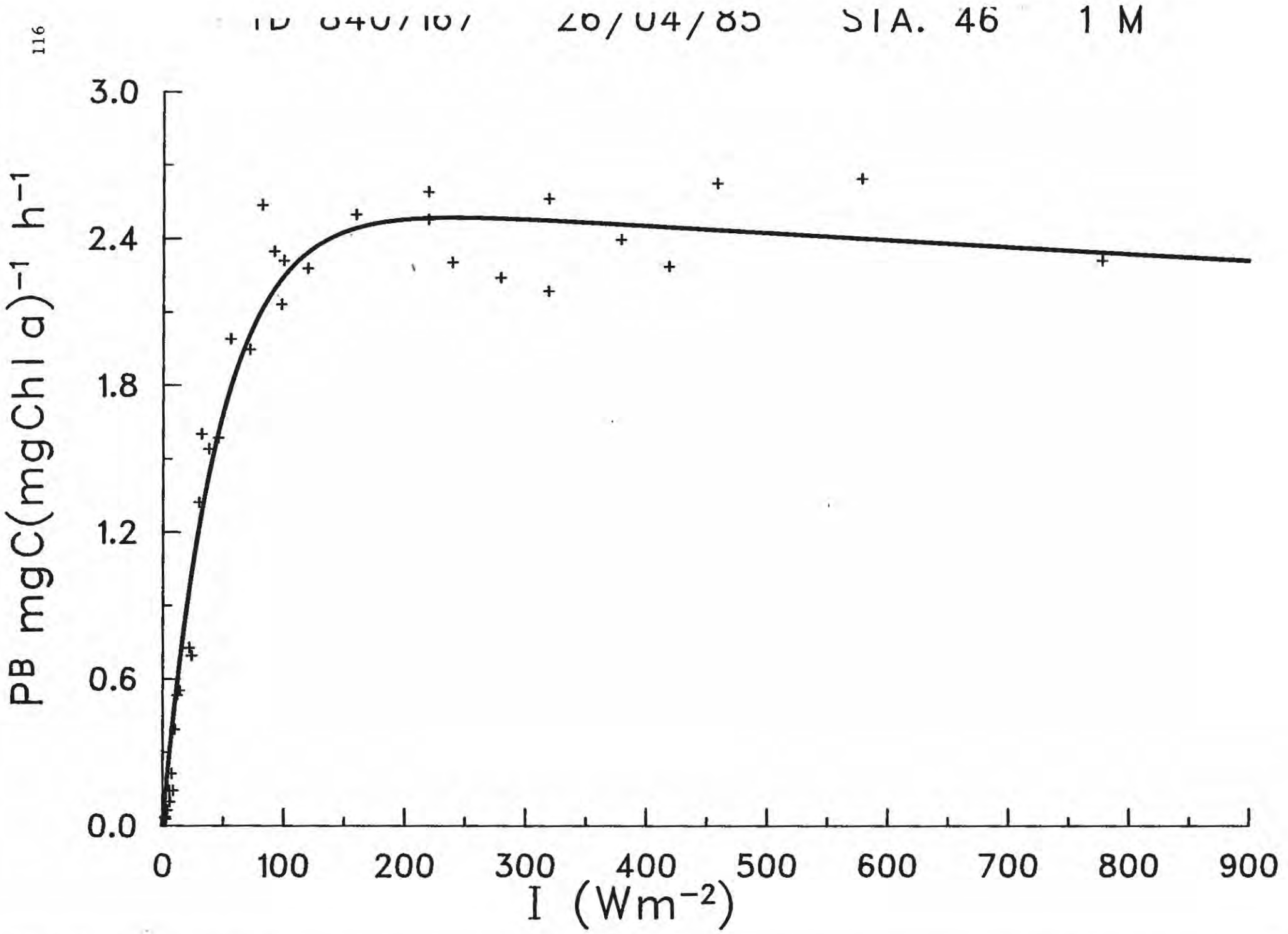

ID 8407160 16/04/85 STA. 40 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

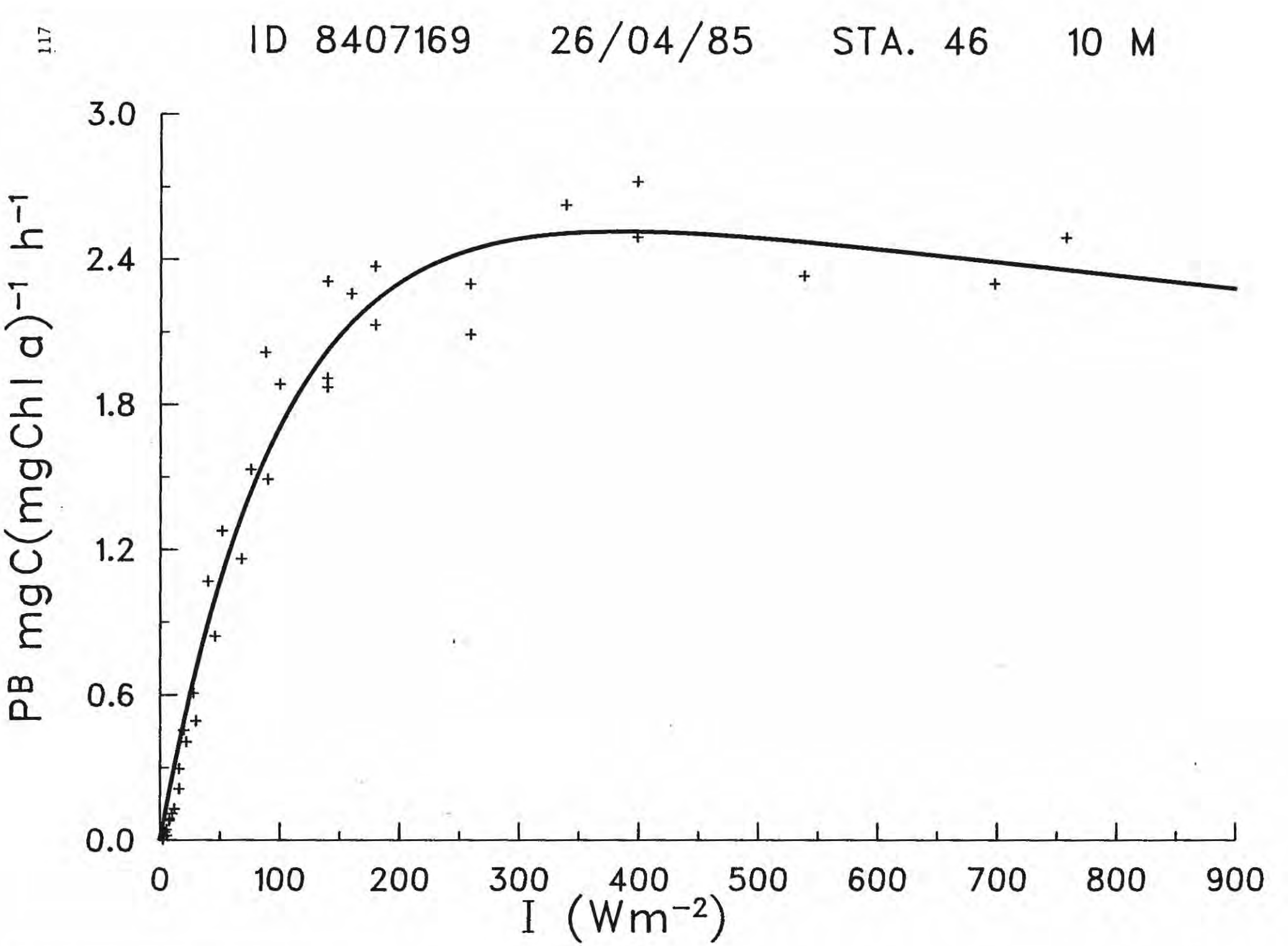

ID 8407161 19/04/85 STA. 42 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.0
1.6
1.2
0.8
0.4
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

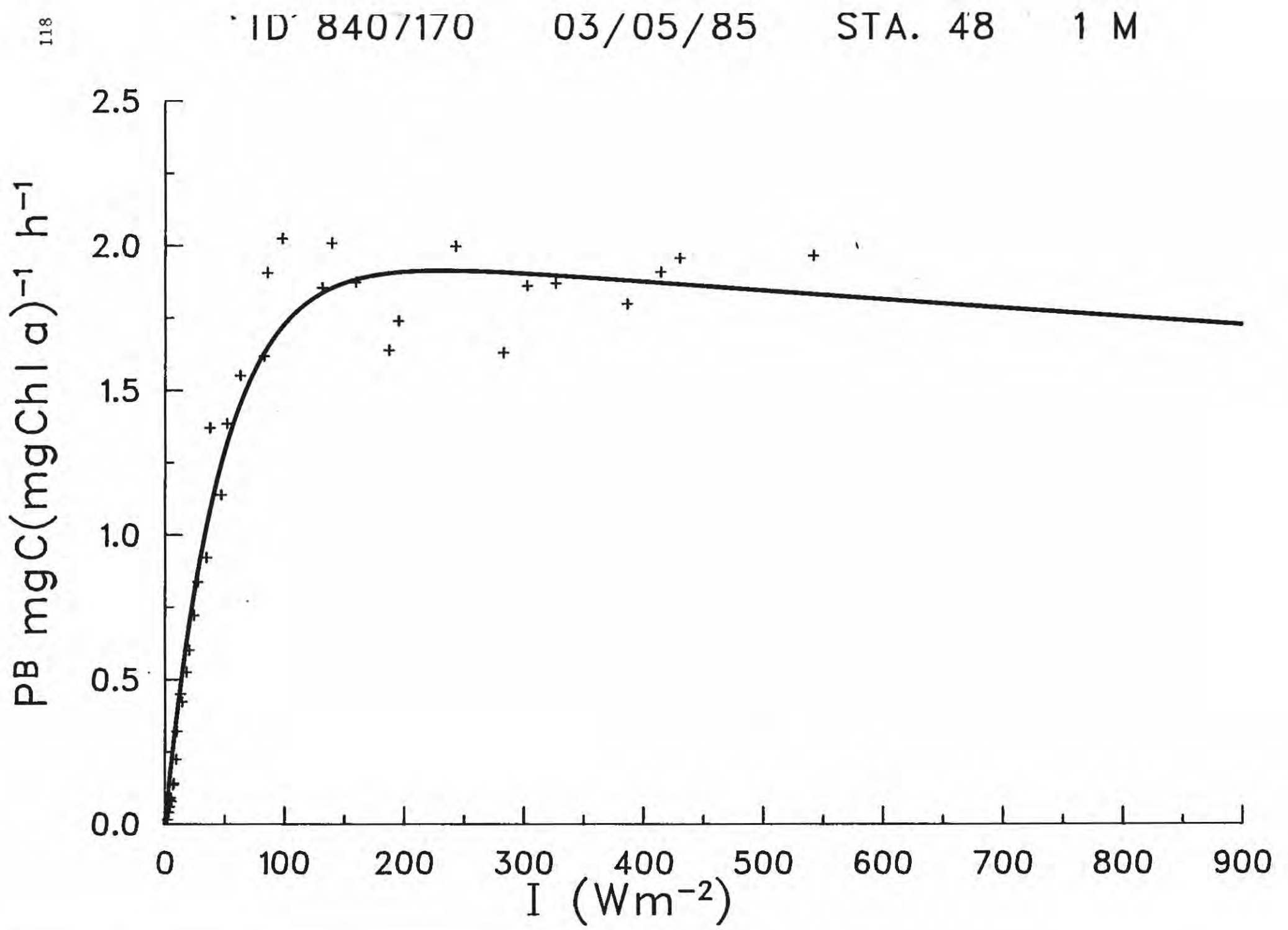

ID 8407163 19/04/85 STA. 42 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
5.5
4.4
3.3
2.2
1.1
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 840/164 23/04/85 STA. 44 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

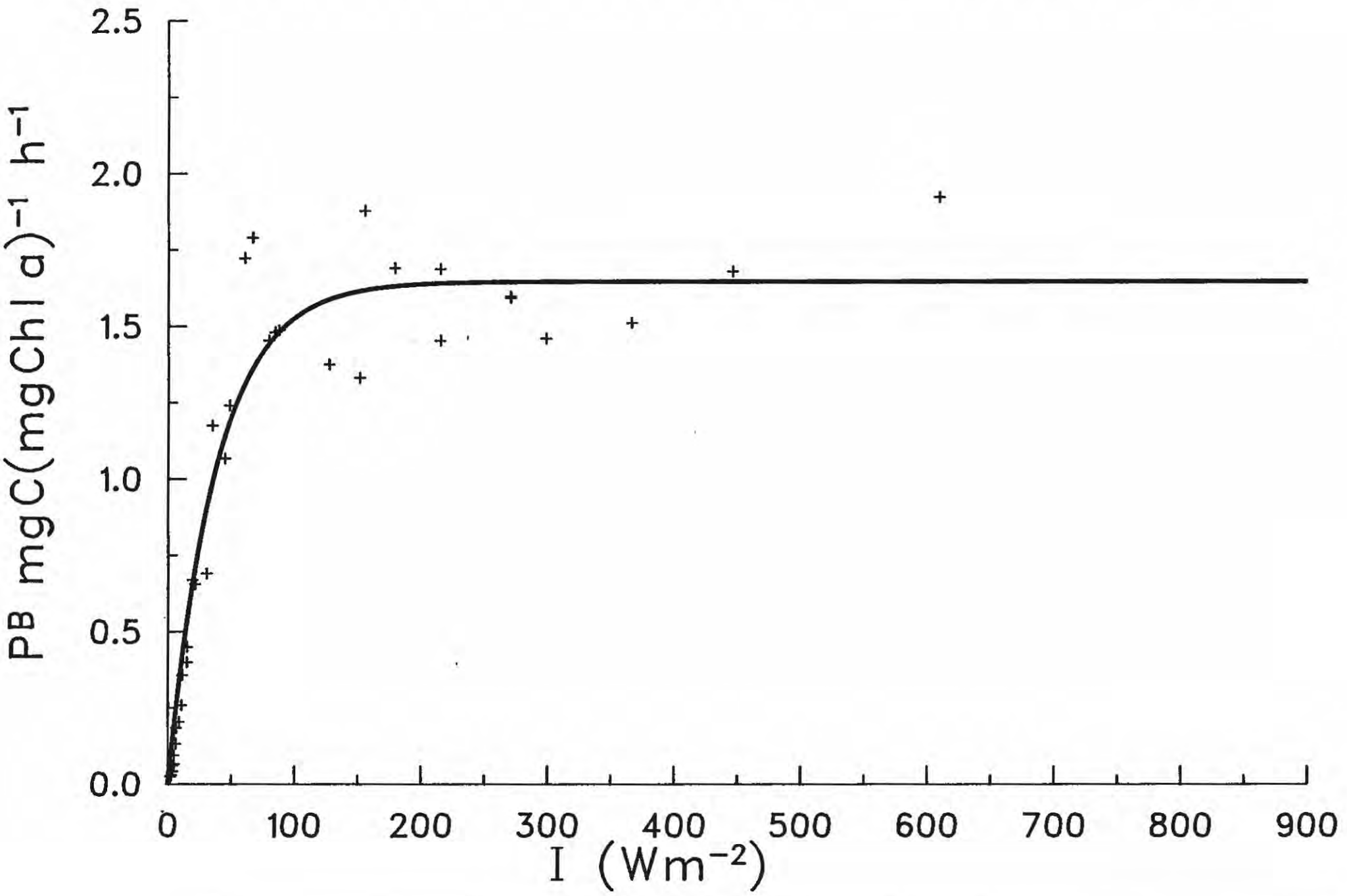

ID 8407166 23/04/85 STA. 44 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

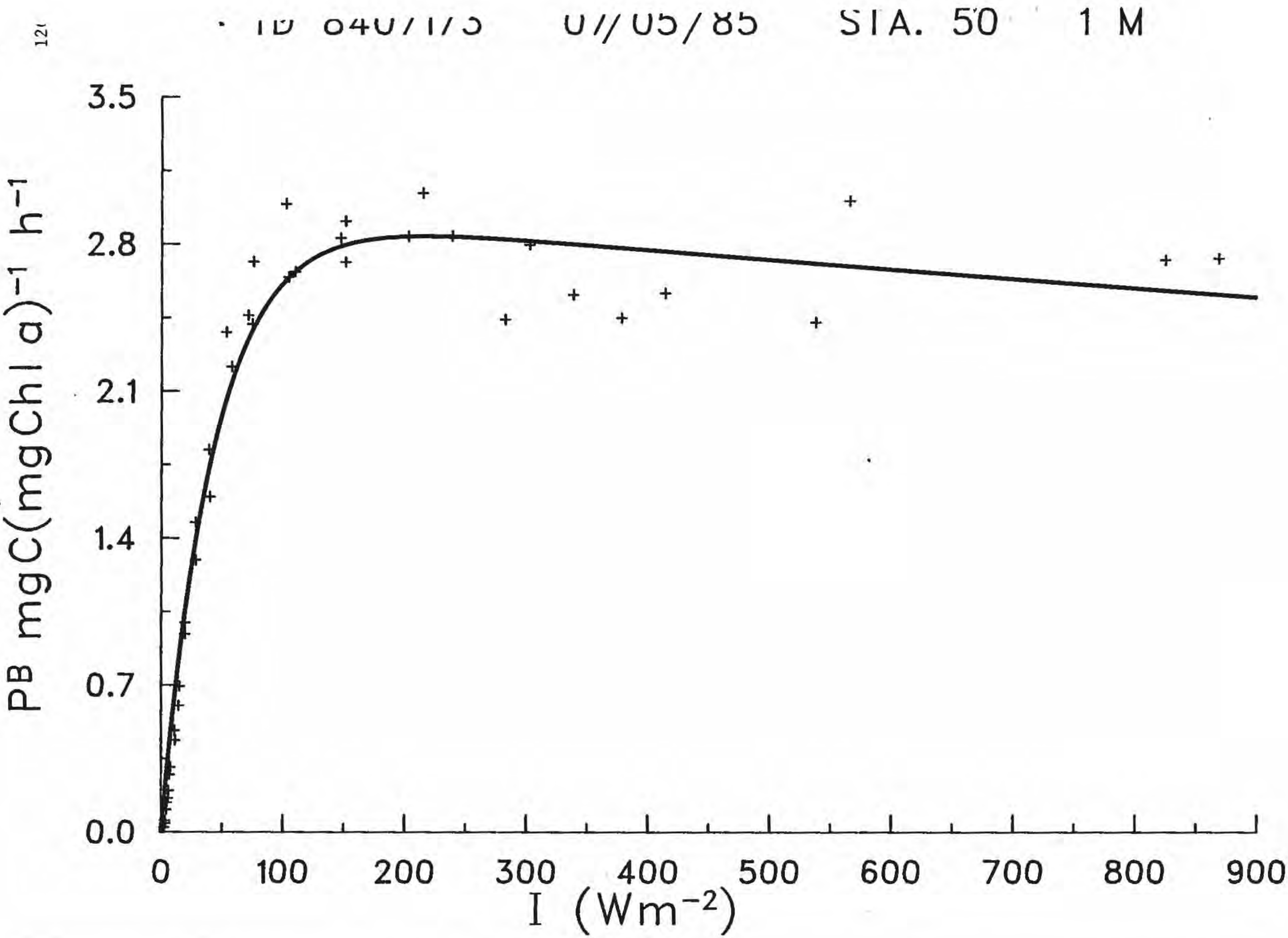

ID 840167 26/04/85 STA. 46 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 8407169 26/04/85 STA. 46 10 M
3.0
2.4
1.8
1.2
0.6
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

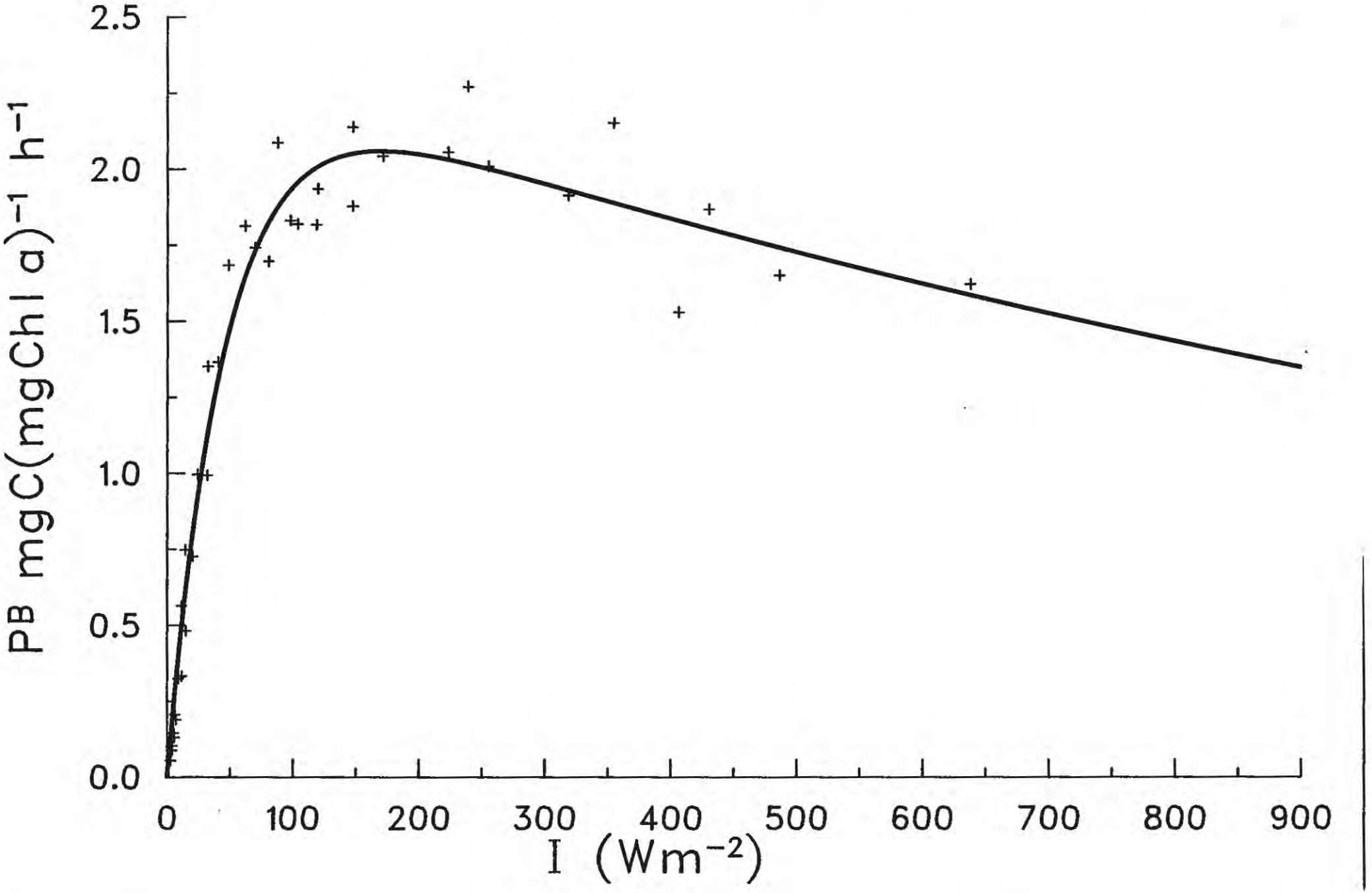

ID 840/170 03/05/85 STA. 48 1 M
2.5
2.0
1.5
1.0
0.5
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

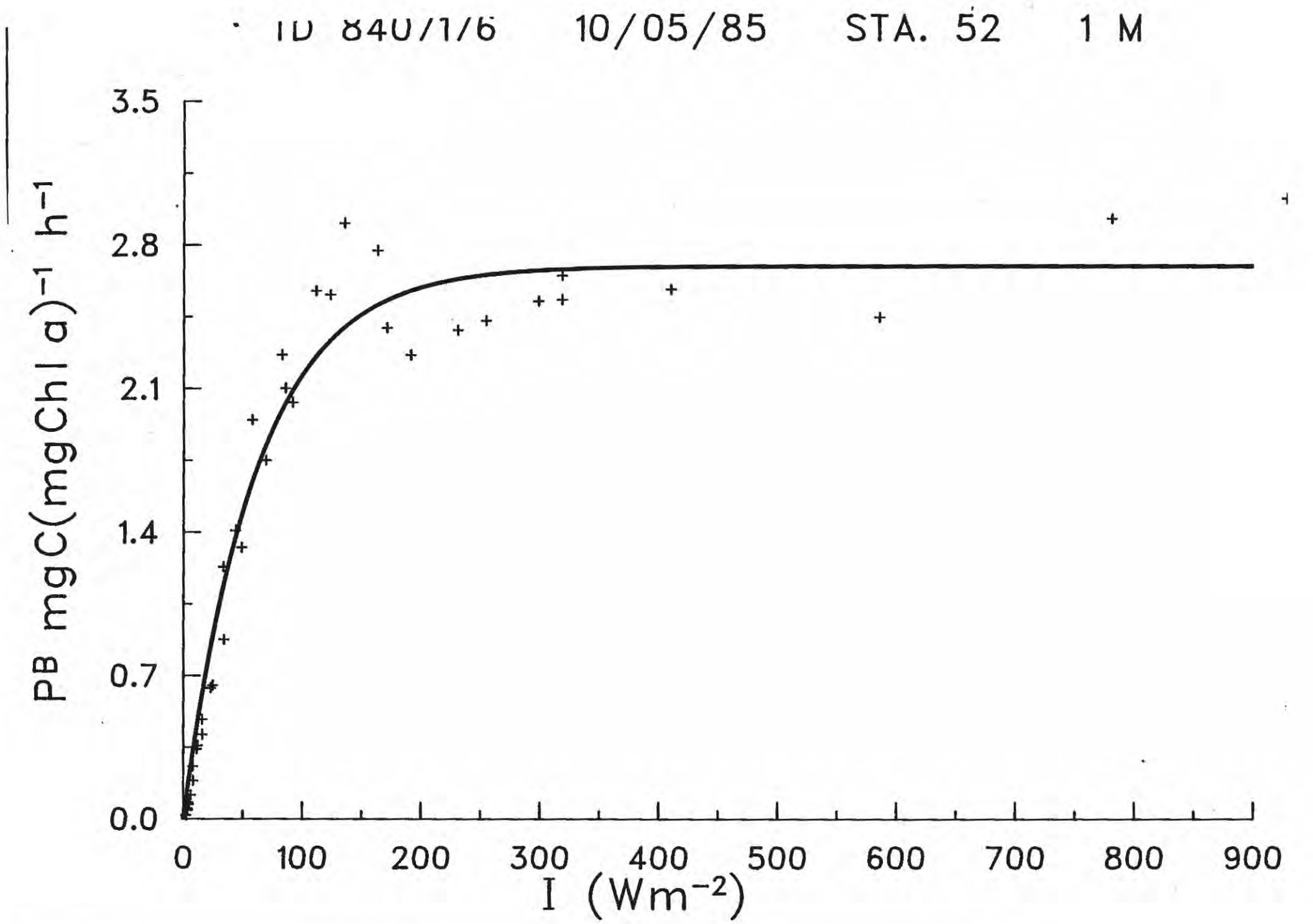
ID 840172 05/05/85 STA. 48 10 M

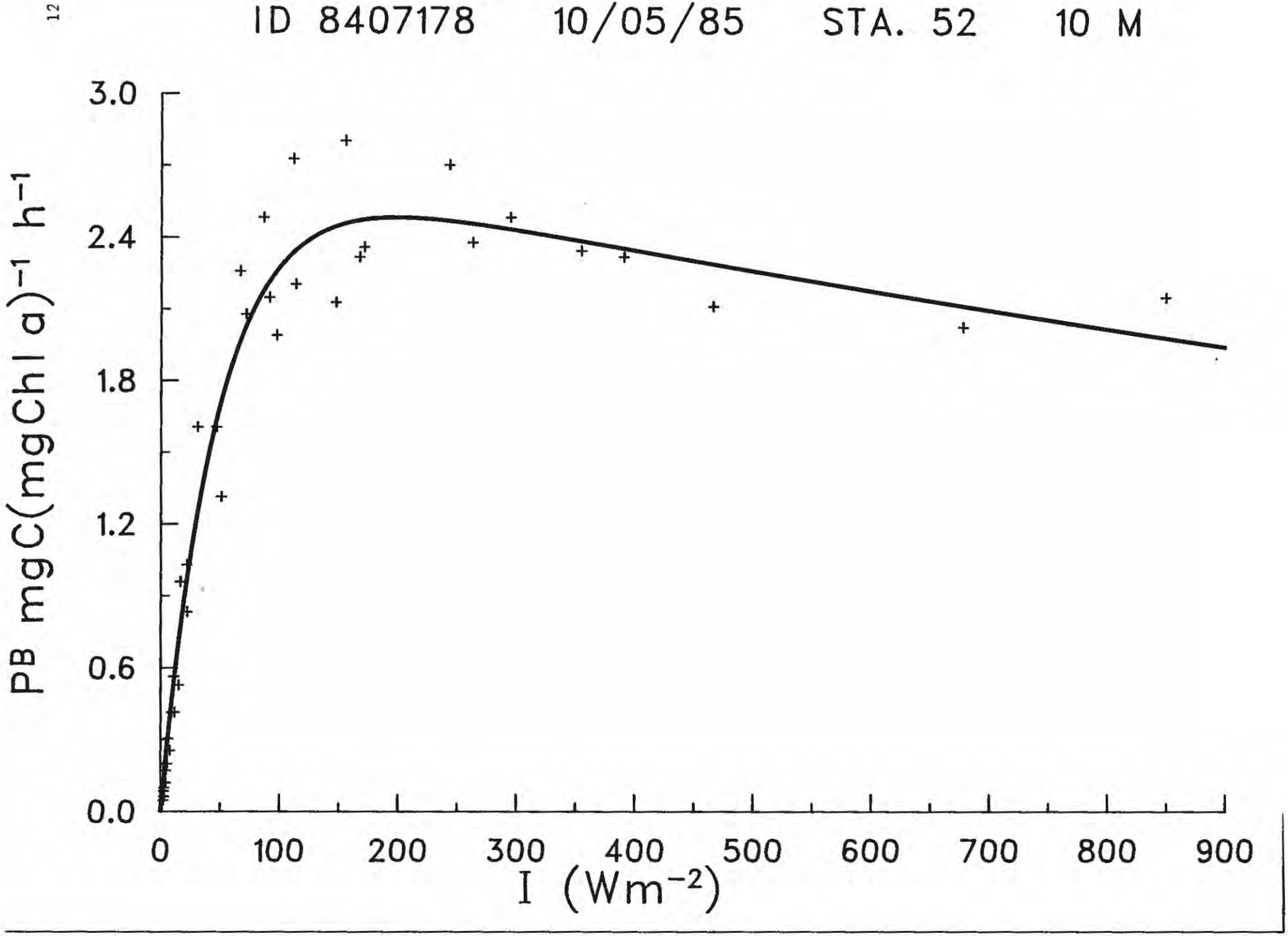


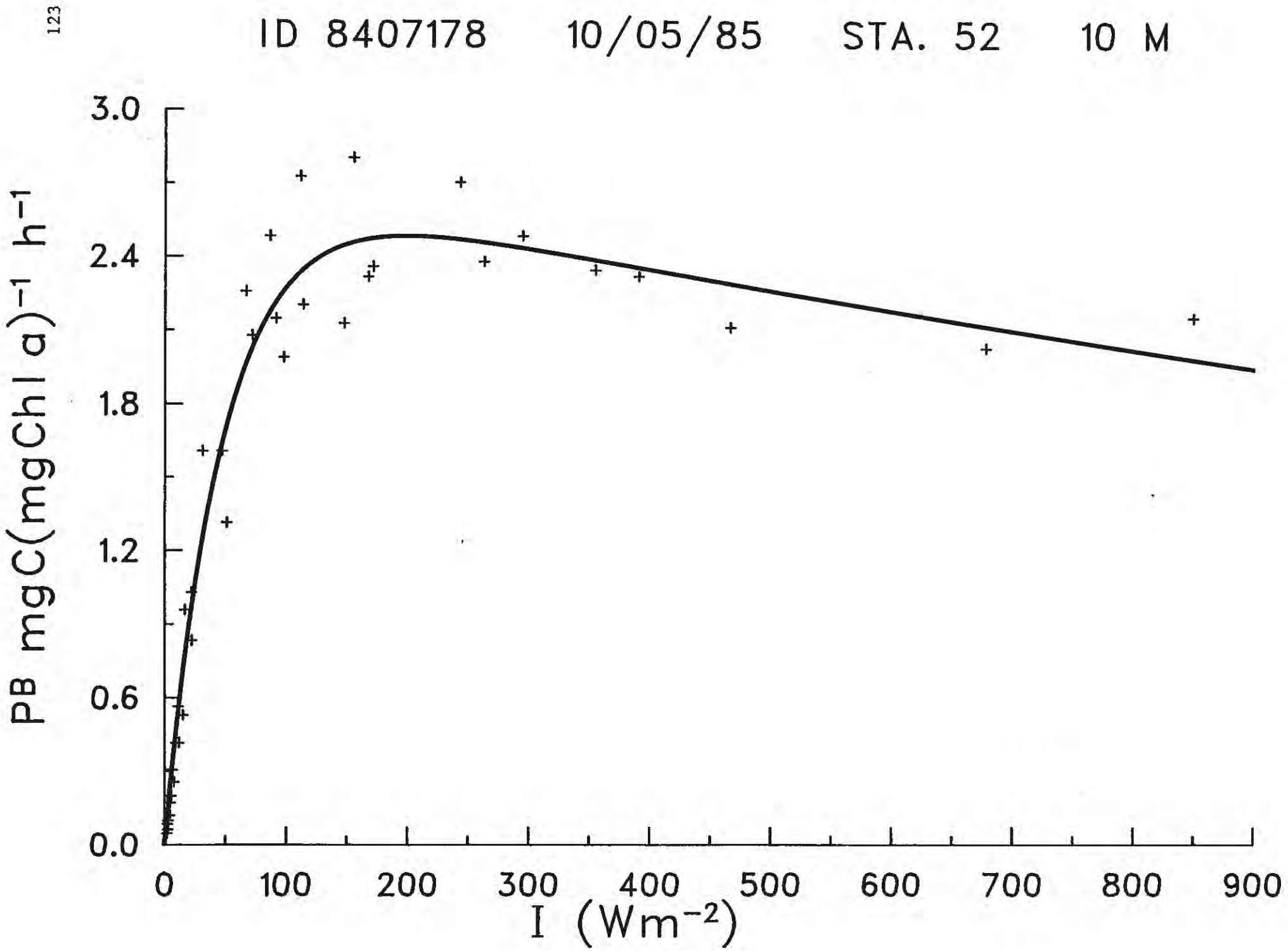

07/05/85
STA. 50
1 M
PB mgC(mgChl a)⁻¹ h⁻¹
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm⁻²)

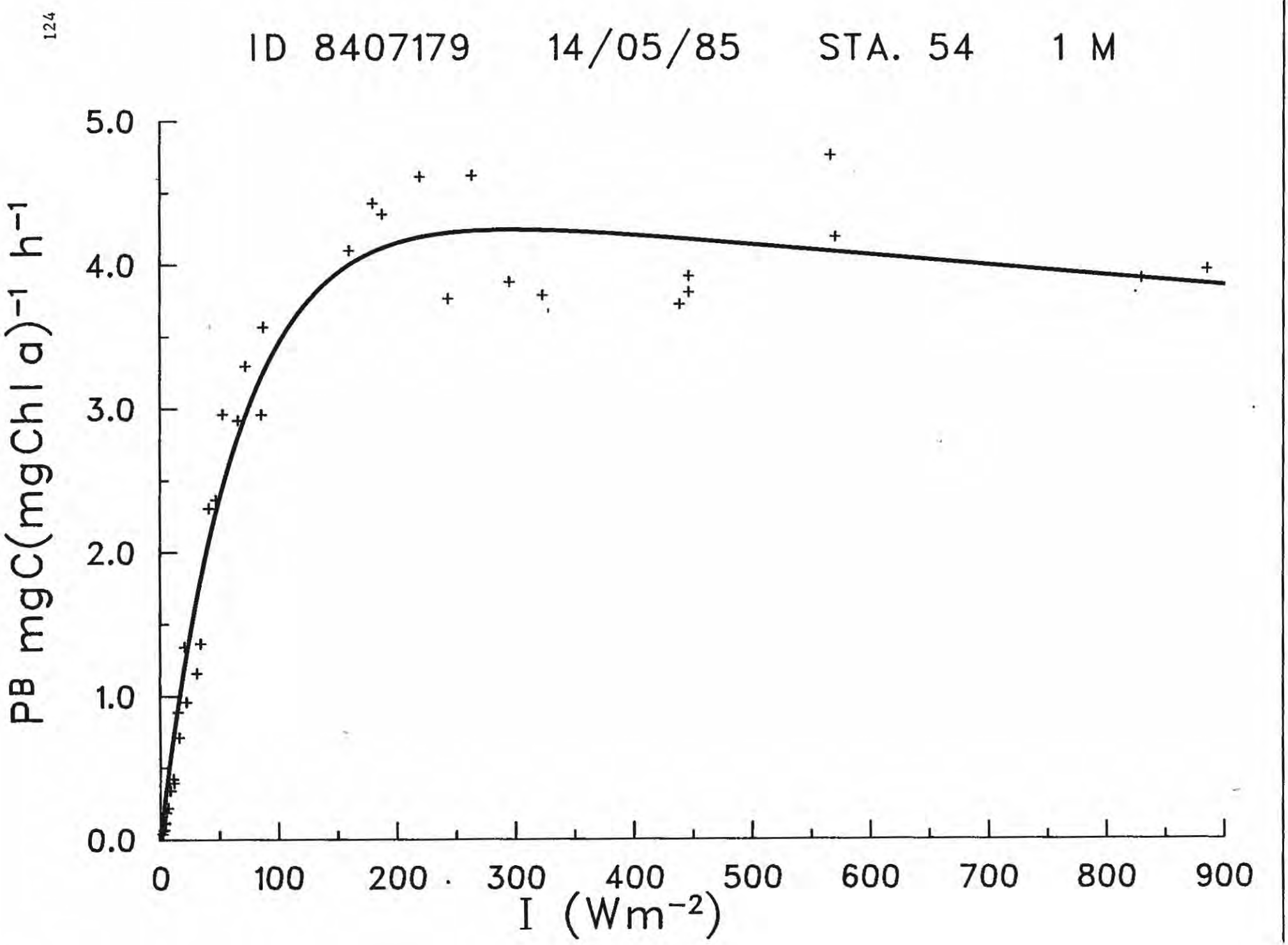
ID 840175 07/05/85 STA. 50 10 M

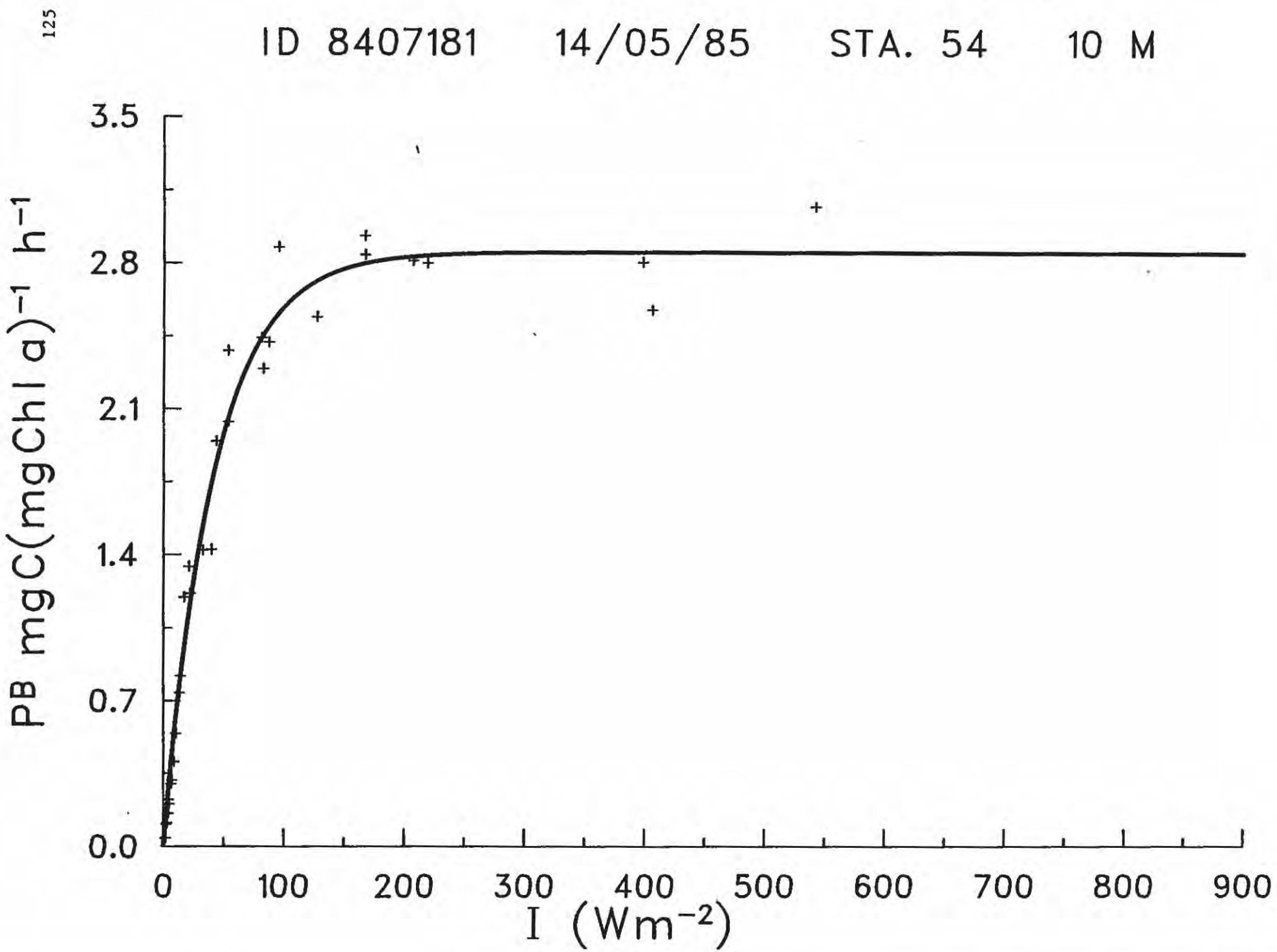


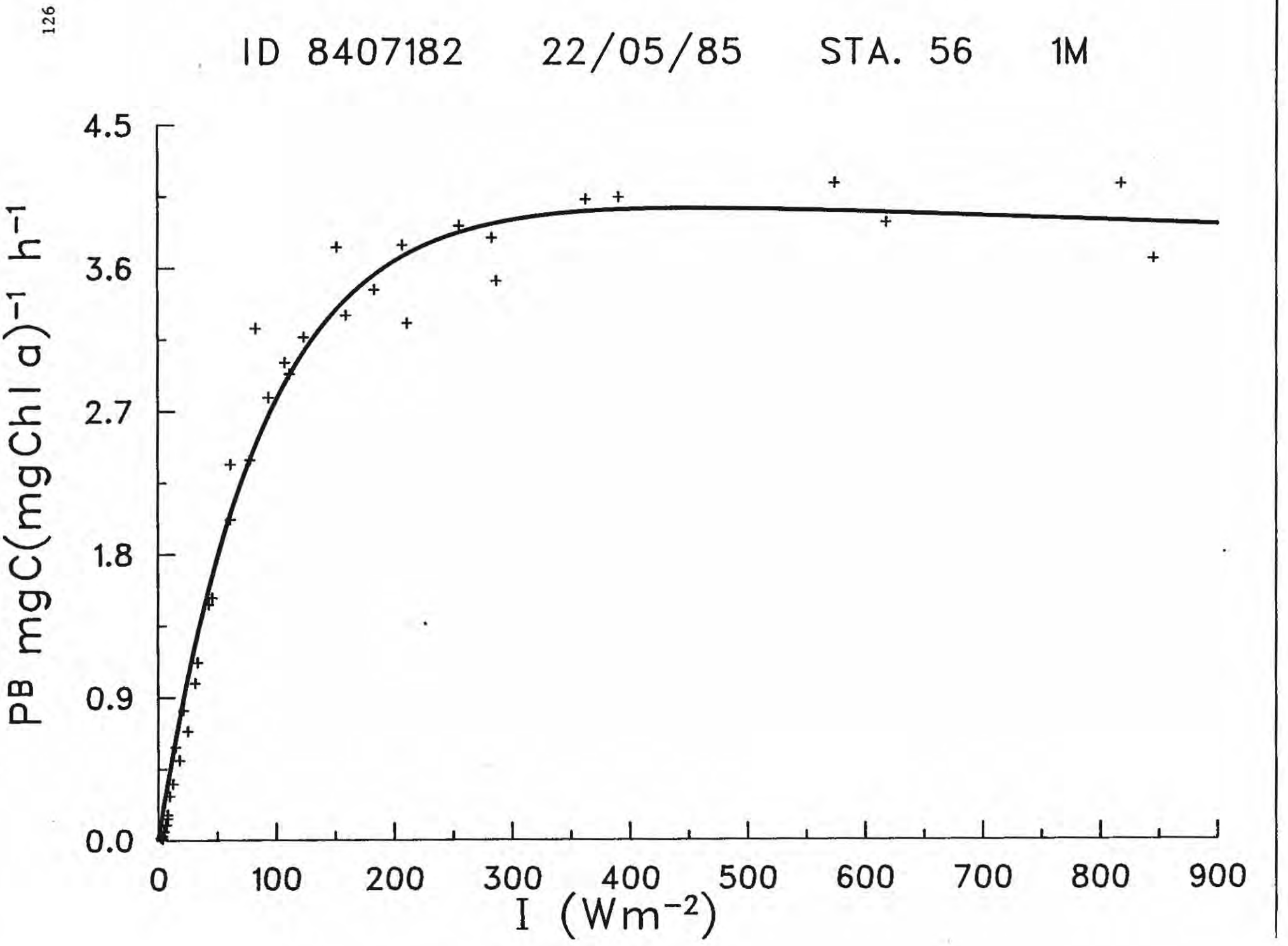

ID 840/1/6 10/05/85 STA. 52 1 M
3.5
2.8
2.1
1.4
0.7
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

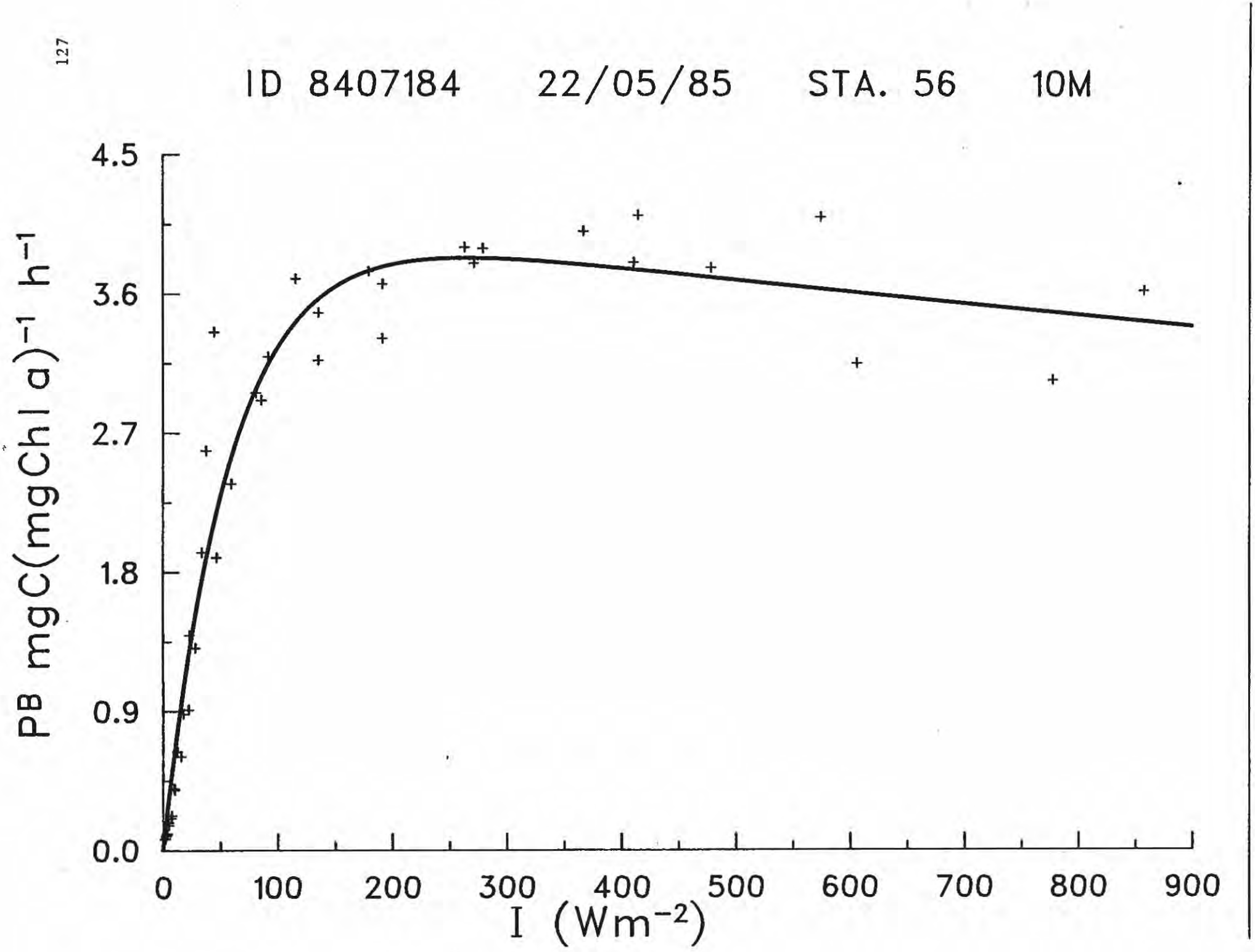

ID 8407178 10/05/85 STA. 52 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

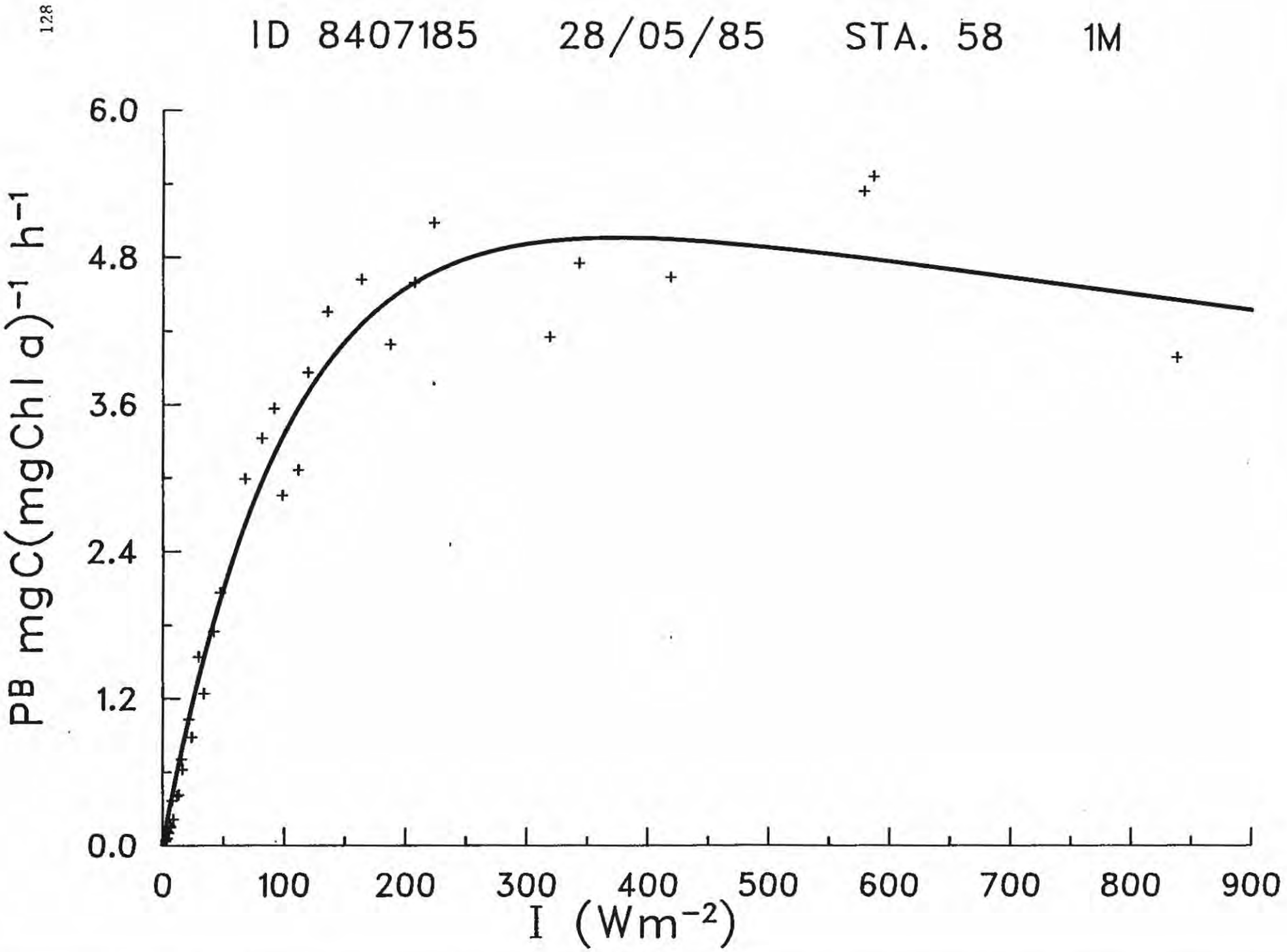

ID 8407178 10/05/85 STA. 52 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

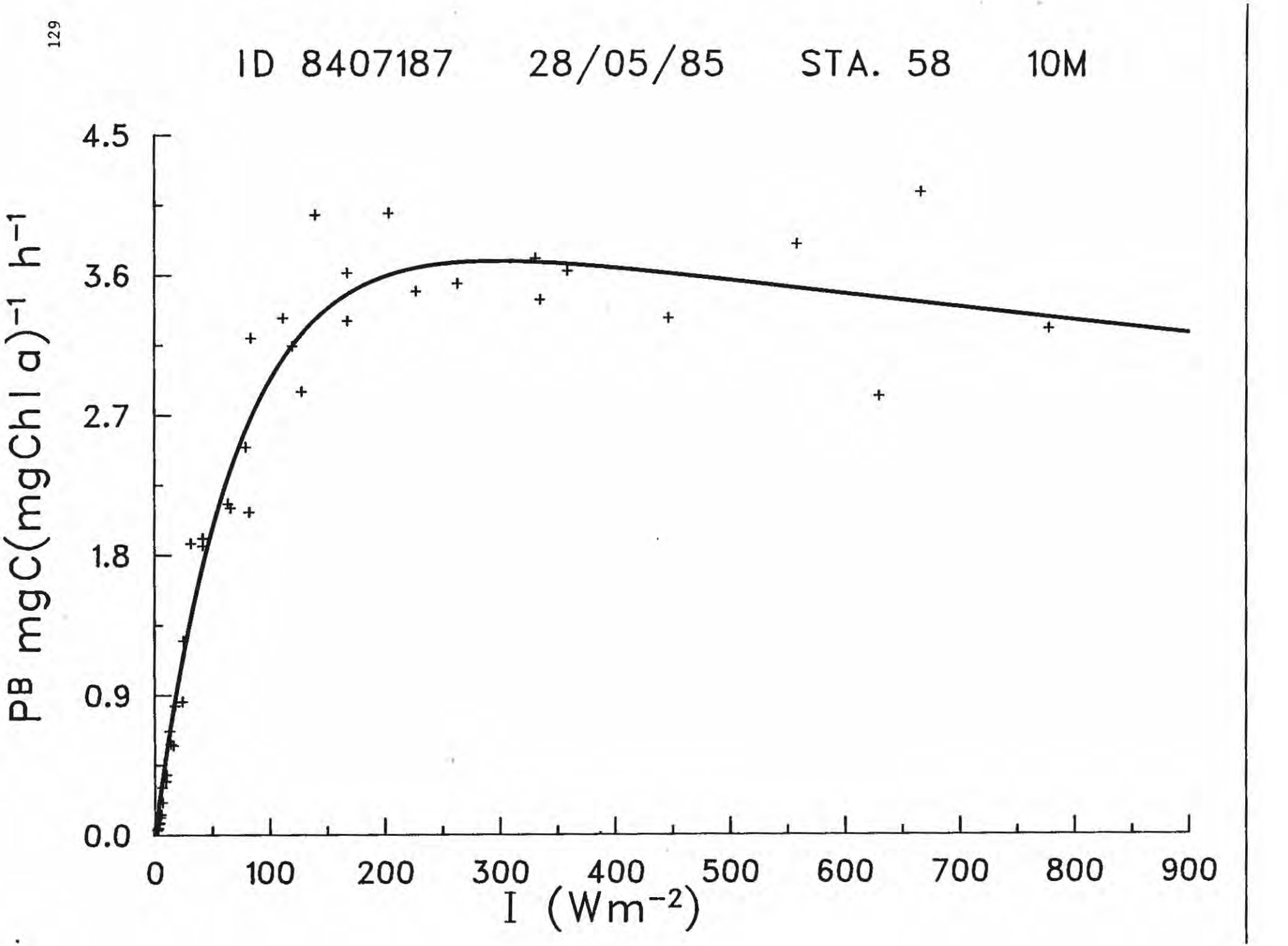

ID 8407179 14/05/85 STA. 54 1 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
5.0
4.0
3.0
2.0
1.0
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

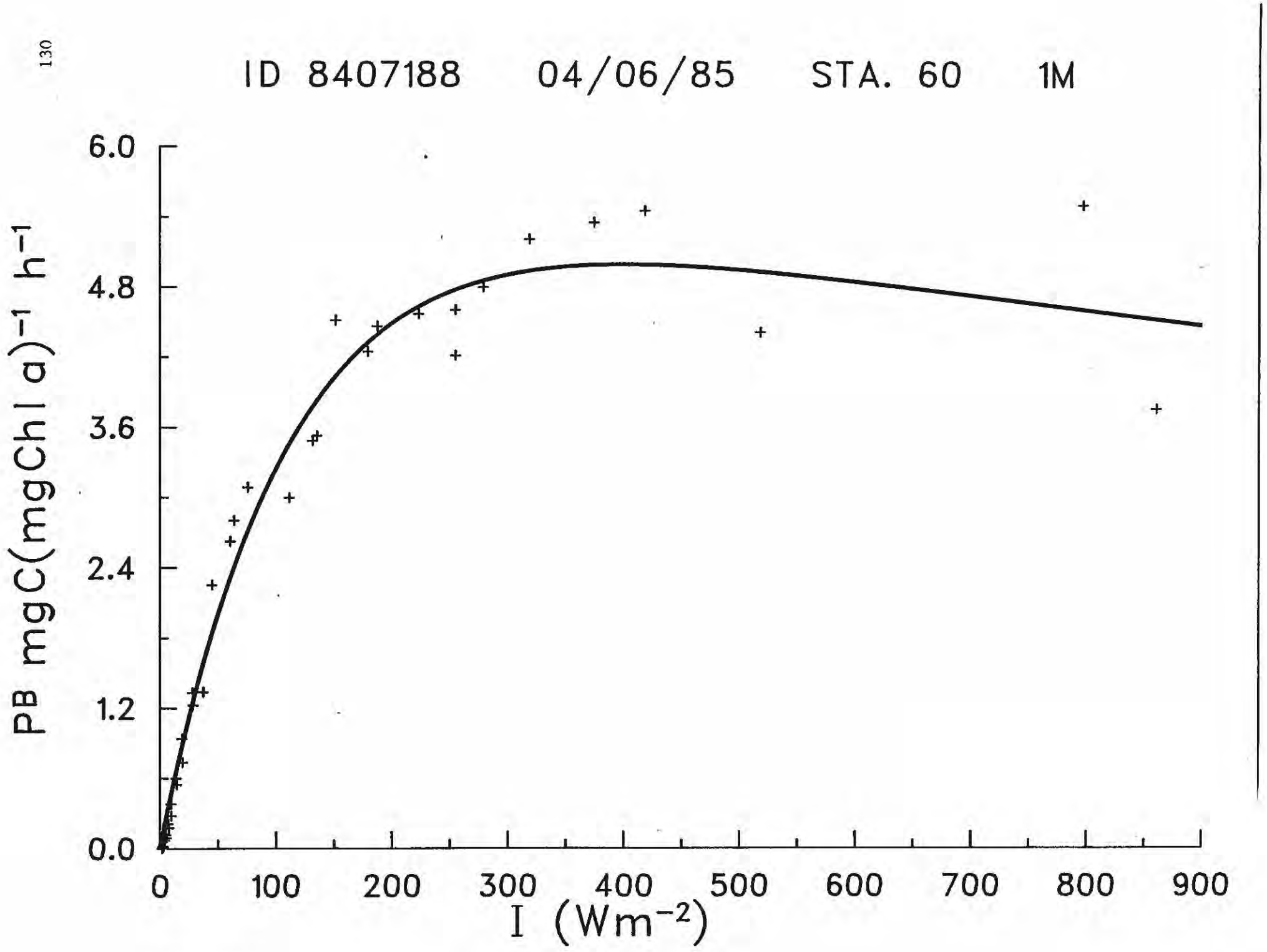

ID 8407181 14/05/85 STA. 54 10 M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.5
2.8
2.1
1.4
0.7
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

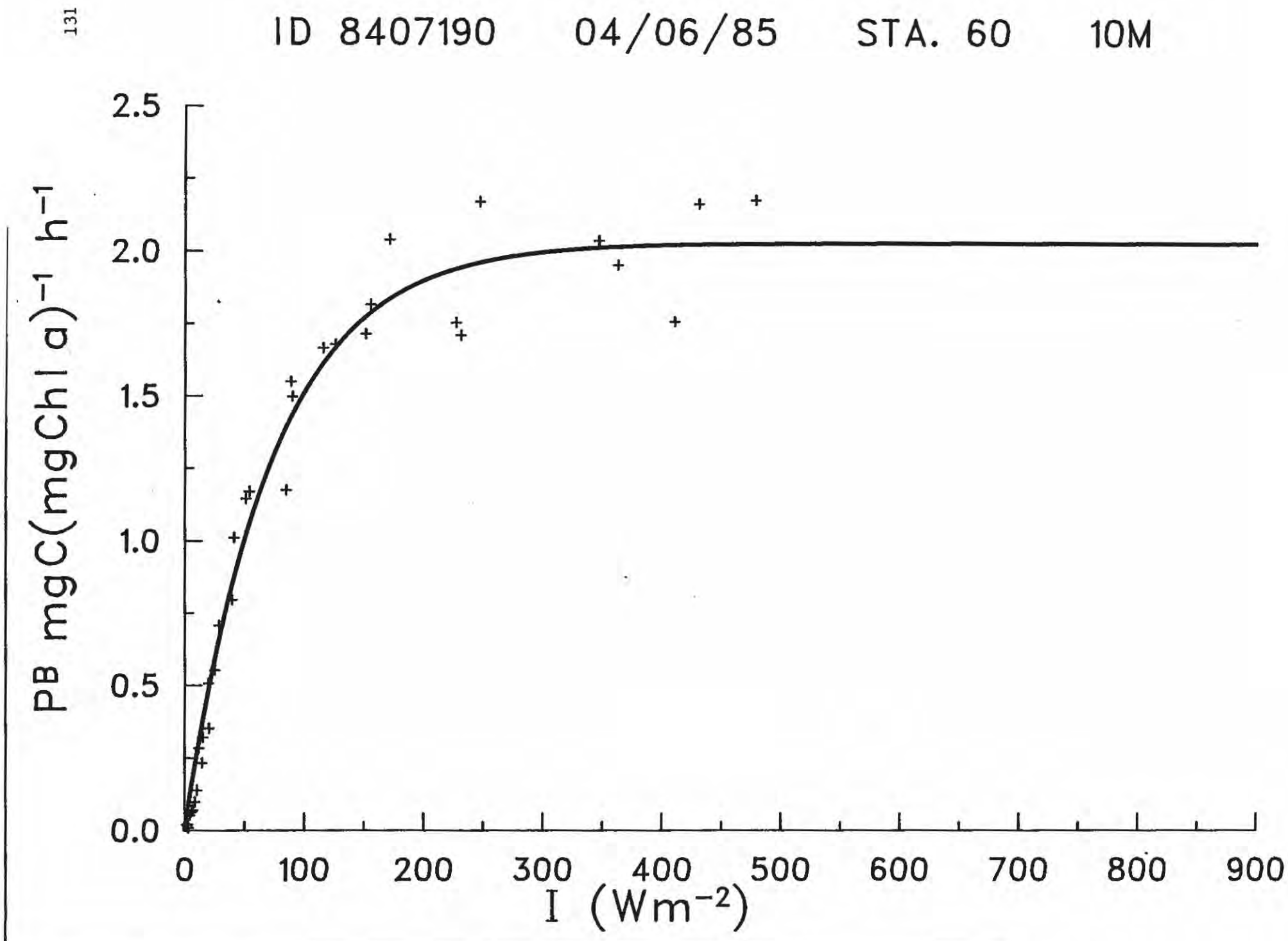

ID 8407182 22/05/85 STA. 56 1M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

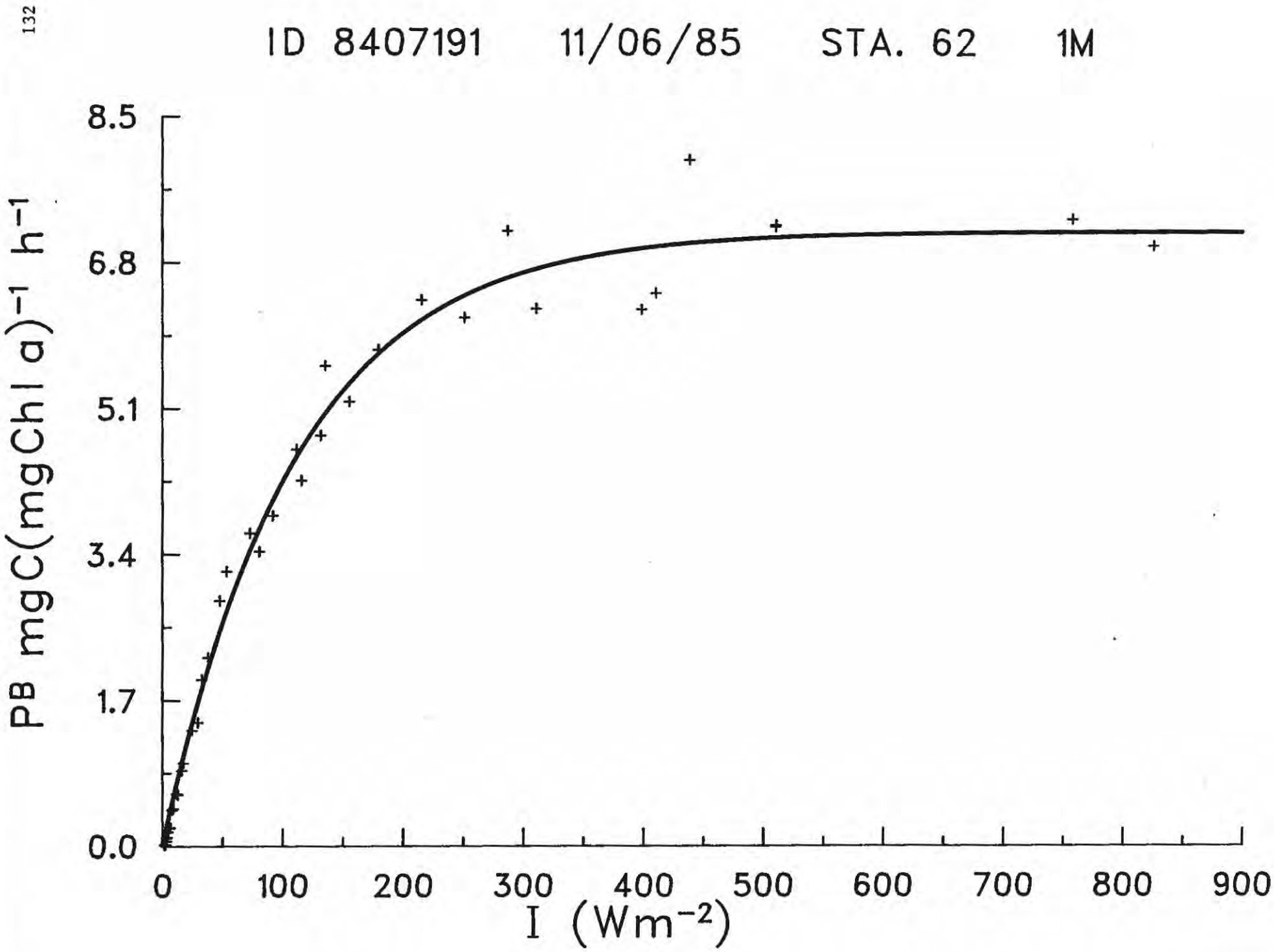

ID 8407184 22/05/85 STA. 56 10M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

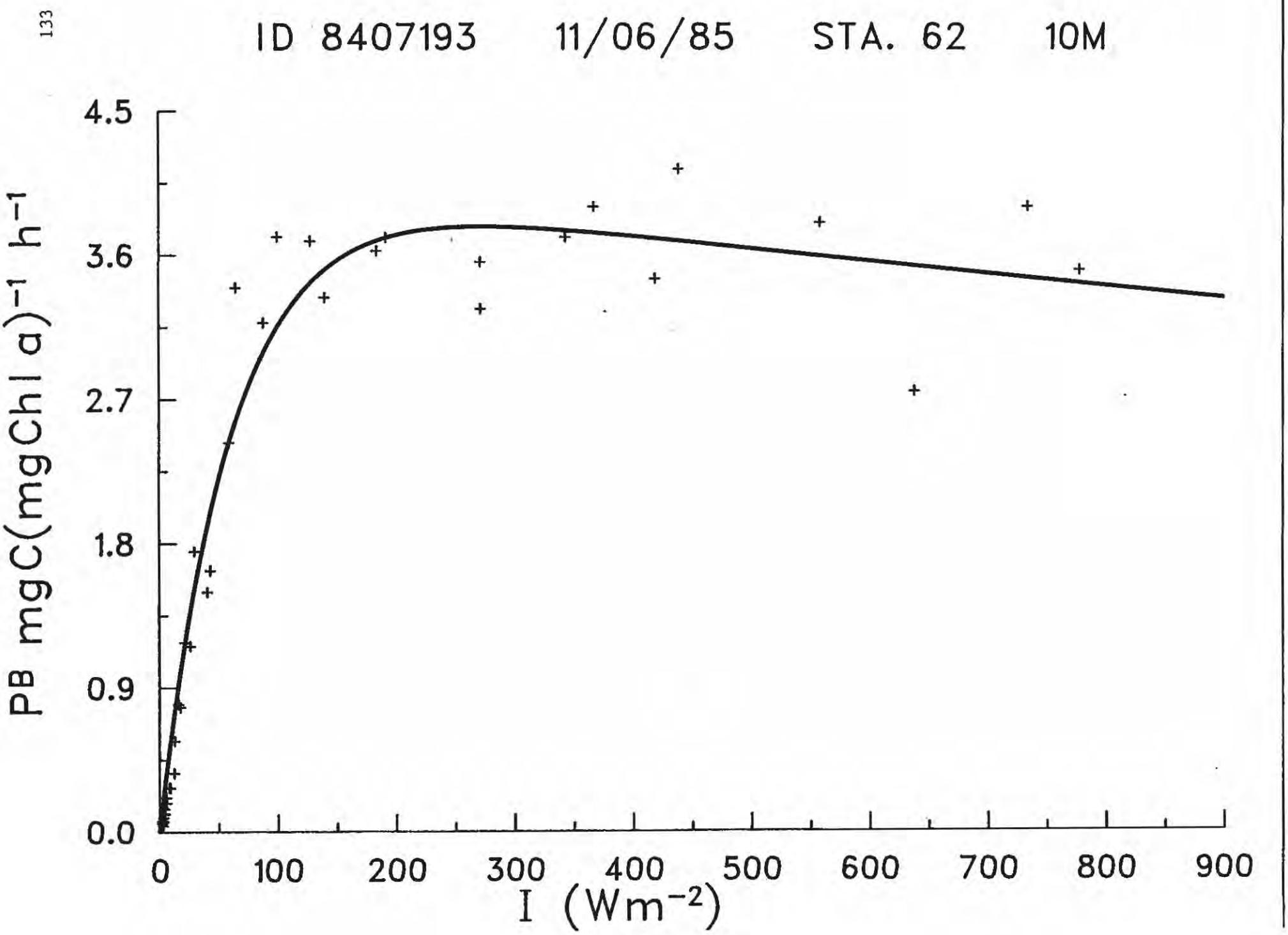

ID 8407185 28/05/85 STA. 58 1M
PB mgC(mgChl a)$^{-1}$ h^{-1}
6.0
4.8
3.6
2.4
1.2
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

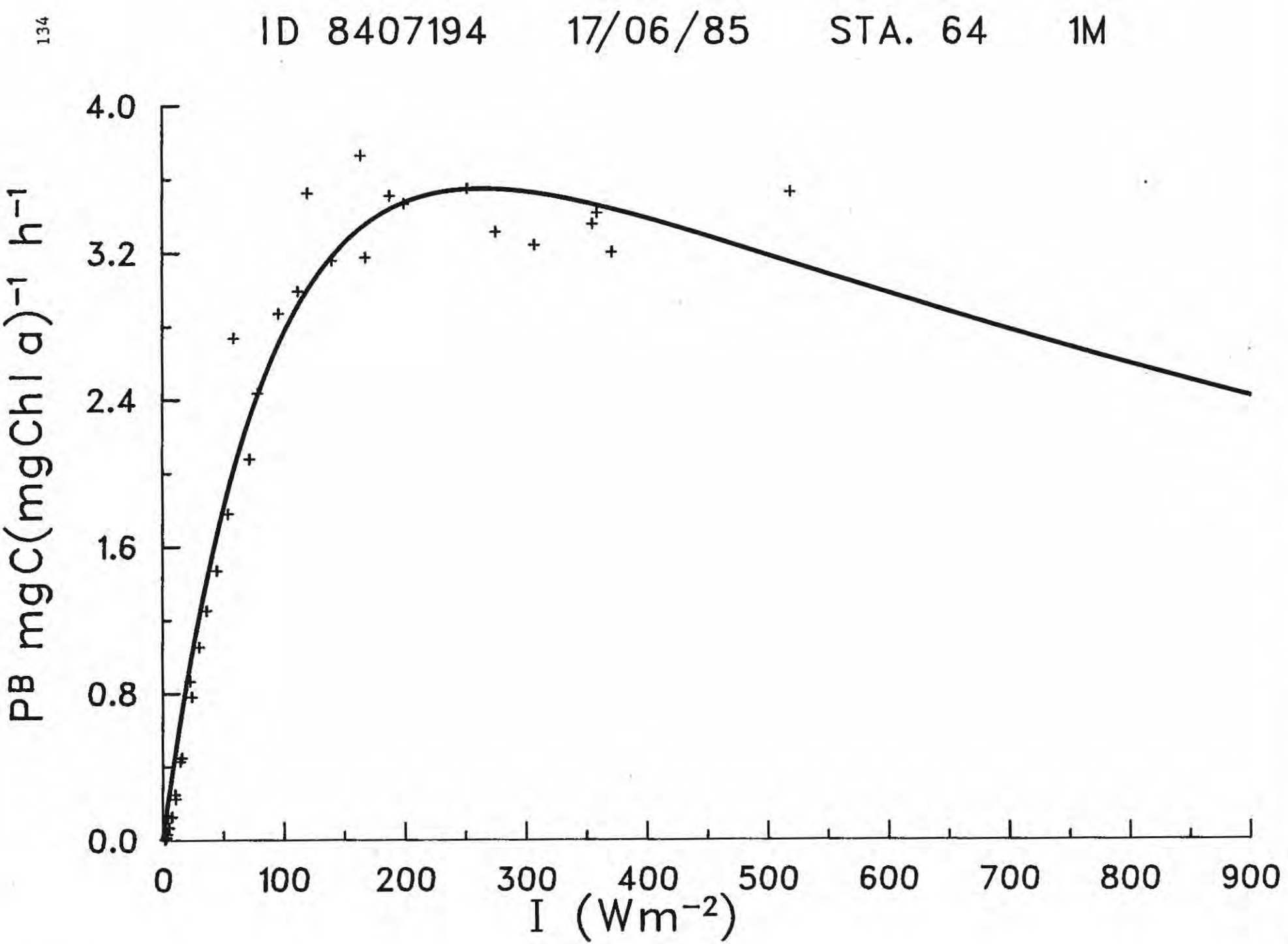

ID 8407187 28/05/85 STA. 58 10M
4.5
3.6
2.7
1.8
0.9
0.0
PB mgC(mgChl a)$^{-1}$ h^{-1}
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})

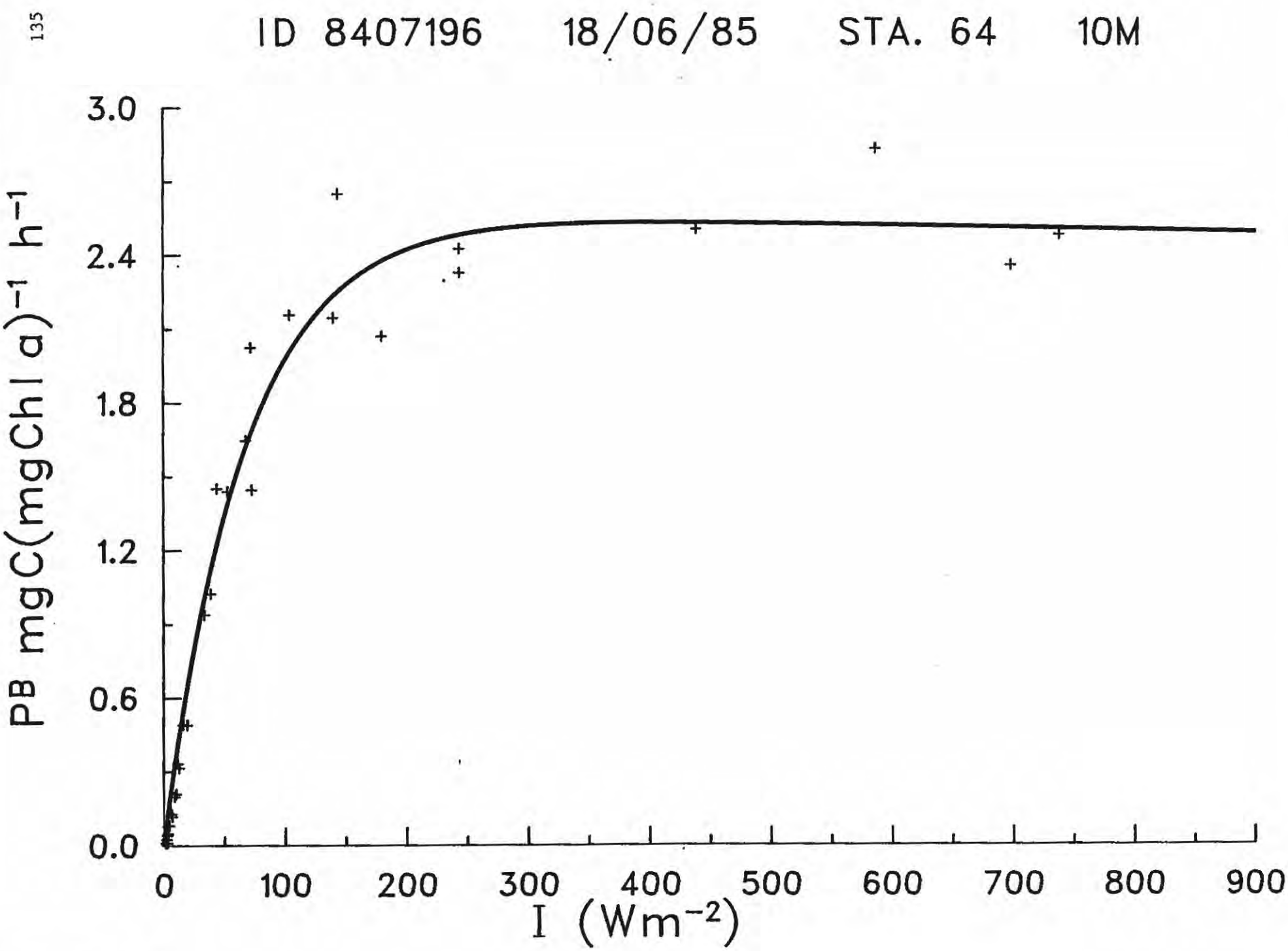

ID 8407188 04/06/85 STA. 60 1M
PB mgC(mgChl a)$^{-1}$ h^{-1}
6.0
4.8
3.6
2.4
1.2
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 8407190 04/06/85 STA. 60 10M
PB mgC(mgChl a)$^{-1}$ h^{-1}
2.5
2.0
1.5
1.0
0.5
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 8407191 11/06/85 STA. 62 1M
PB mgC(mgChl a)$^{-1}$ h^{-1}
8.5
6.8
5.1
3.4
1.7
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 8407193 11/06/85 STA. 62 10M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.5
3.6
2.7
1.8
0.9
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 8407194 17/06/85 STA. 64 1M
PB mgC(mgChl a)$^{-1}$ h^{-1}
4.0
3.2
2.4
1.6
0.8
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})


ID 8407196 18/06/85 STA. 64 10M
PB mgC(mgChl a)$^{-1}$ h^{-1}
3.0
2.4
1.8
1.2
0.6
0.0
0
100
200
300
400
500
600
700
800
900
I (Wm^{-2})