Appendix A
ETo Calculations

Technical Appendix A

ETo Calculations

References:

Document A:	Freeman-1993, MOMEAN41: Monthly Weather Data for CIMIS Station #41
Document B:	Freeman-1993, MOMEAN68: Monthly Weather Data for CIMIS Station #68
Document C:	Freeman-1993, MOMEAN87: Monthly Weather Data for CIMIS Station #87
Document D:	Styles-1993, ETIIDSTB: Monthly Summary of Evaporation Pan Data from IID Meteorological Records
Document E:	Pruitt-1993, Documentation for ETo Computer Program
Document F:	Pruitt-1993, FAO-Pan Evaporation Case and Upwind Fetch Conditions
Document G:	IID Water Control-1987:1992, Monthly Meteorological Observations
Document H:	Styles-1993, EPANMELO: Meloland Pan Evaporation Data and Monthly Summary
Document I:	Styles-1993, MUL: Mulberry Pan Evaporation Data and Monthly Summary
Document J:	Freeman-1993, Summary of IID Wind Direction Frequencies
Document K:	Mousel-1993, Photographs of weather stations at Holtville, Brawley, Calipatria, Imperial, Seeley, and El Centro.
Document L:	Pruitt-1993, Sketches of CIMIS/IID Weather Stations
Document M:	Sidhu-1993, Cropping Patterns of Fields that Might Impact Nearby CIMIS/IID Stations
Document N:	Freeman-1993, IIDKP: Summary of Monthly Kp Values for Meloland, Imperial, Brawley, El Centro, Mulberry, and Calipatria
Document O:	Burt-1993, CBALF693: Examination of Various Data to See How CIMIS Computations Track
Document P:	Pruitt-1977, Regional Crop Water Use, Imperial Valley (Review only)
Document Q:	Robinson-1991, Results of Research on Alfalfa Project, Annual Report (Review only)
Document R:	Pruitt and Doorenbos-1977, International Round Table Conference on Evapotranspiration (Review only)
Document S:	IID-1976, Imperial Valley Pan Evaporation: Summary of 1975 Measurements (Review only)
Document T:	Pruitt et al.-1987, Reference Evapotranspiration (ETo) for California (Review only)
Document U:	Brown and Ley-1992, Siting Agricultural Weather Stations (Review only)
Document V:	Snyder et al.1987- Determining Daily Reference Evapotranspiration (ETo) (Review only)
Document W:	Fernandes-1993, Crop Evapotranspiration
Document X:	Freeman-1993, Summary Table of ETo Values Generated from Pruitt Computer Program

1. Daily weather data from CIMIS stations 41, 68, and 87 was down loaded and transferred to spreadsheets for analysis. The data was summarized by month in Document A, Document B, and Document C. The following information is listed monthly for all three stations:

ETo
Precipitation
Solar radiation
Vapor pressure
Maximum temperature
Minimum temperature
Average temperature
Maximum relative humidity
Minimum relative humidity
Average relative humidity
Dew point
Wind speed
Daily wind
Soil Temperature

2. Document A contains CIMIS information for the time period 1987-92. Document B lists CIMIS information for the time period 1988-1992. Document C contains CIMIS information for the time period 1990-92.

3. The data for the month of May 1992 in Document B was modified to account for an initial lack of measurements. The original daily data for the time period May 22-31 was set equal to whatever the data was for May 21. This modification affected the graphs comparing CIMIS ETo to Penman-Monteith ETo.

4. The pan evaporation data listed in Document D comes from the reported monthly evaporation in Document G. Note: all values are in inches.

5. Document H contains a monthly summary of raw pan evaporation data from the Imperial Valley Ag Center.

6. Document I contains the Mulberry pan evaporation readings at the sprinkler irrigated station from 7/18/88 to 5/03/93. This data was summarized monthly for 1989-1992. The monthly data was modified by Mr. Bill Pruitt after reviewing complete records and filling in estimates for the periods that were missing.

7. Document J summarizes a frequency analysis of the wind direction at CIMIS stations 41, 68, and 87. Data for the three stations was down loaded from the CIMIS network. The initial files listed data for wind direction in degrees on an hourly basis. The data for each station was analyzed to determine the number of occurrences by month for each 15 degree segment of a circle. 1991 data was analyzed for station 41 (Mulberry) and station 68 (Seeley). Station 87 (Meloland) data was analyzed for 1991 and 1992 to determine if the wind directions were consistent from year to year.

8. Document F contains Mr. Bill Pruitt's estimates of FAO-Pan case and upwind fetch conditions. Document F includes information for Mulberry CIMIS station, Calipatria IID station, Seeley CIMIS station, El Centro IID station, Meloland CIMIS station, Imperial IID station, Brawley USDA station, and Brawley AgMet station. Mr. Bill Pruitt used Document J to estimate the predominate monthly wind direction at each site. Mr. Bill Pruitt estimated the upwind fetch after visiting each site.

9. Document L contains Mr. Bill Pruitt's sketches of the pan locations and surrounding area at Mulberry CIMIS station, Calipatria IID station, Seeley CIMIS station, El Centro IID station, Meloland CIMIS station, Imperial IID station, Brawley USDA station, and Brawley AgMet station.

10. Document K contains photographs of the stations and surrounding area at Holtville, Brawley, Calipatria, Imperial, Seeley, and El Centro.

11. Document M contains the cropping patterns of fields that might impact nearby weather stations. The cropping patterns were compared to the fetch and case estimates in Document F.

12. The CIMIS weather data from Document A (Mulberry), Document B (Seeley), and Document (Meloland) was entered into Mr. Bill Pruitt's program for calculating ETo from eleven equations (ETd-EQ5.WK1). The procedure for which data to enter into the program is explained in Document E. Seven sites were chosen for comparison of CIMIS ETo, Penman-Monteith ETo, and FAO-Pan ETo. The seven sites used the data from the three CIMIS stations as follows:

SITE	CIMIS Weather Station Data Used
Meloland	Meloland
Imperial	Meloland
Brawley	Meloland
Seeley	Seeley
El Centro	Seeley
Mulberry	Mulberry
Calipatria	Mulberry

13. The elevation for each of the seven sites was determined from USGS 1:100,000 scale topographic maps.

14. The pan evaporation data from Document H was entered into the program for the Meloland site. The case and fetch data from Document F for the Meloland CIMIS station was used for the Meloland site.

15. The Imperial pan evaporation data from Document D was entered into the program for the Imperial site. The case and fetch data from Document F for the Imperial IID headquarters station was used for the Imperial site.

16. The Brawley pan evaporation data from Document D was entered into the program for the Brawley site. The case and fetch data from Document F for the Brawley IID No.4 station was used for the Brawley site.

17. No pan evaporation data was available for the Seeley site.

18. The El Centro pan evaporation data from Document D was entered into the program for the El Centro site. The case and fetch data from Document F for the El Centro No. 8 station was used for the El Centro site.

19. The pan evaporation data for the Mulberry weather station from Document I was used for the Mulberry site. The case and fetch estimates from Document F for the Mulberry CIMIS station was used for the Mulberry site.

20. The Calipatria pan evaporation data from Document D was entered into the program for the Calipatria site. The case and fetch data from Document F for the Calipatria IID station was used for the Calipatria site.

21. Mr. Bill Pruitt's program was used to calculate Penman-Monteith ETo for all sites.

22. Mr. Bill Pruitt's program was used to calculate FAO-Pan ETo for the Meloland, Imperial, Brawley, El Centro, Mulberry, and Caliptria sites.

23. The ETo data for all three methods (CIMIS, Penman-Monteith, and FAO-Pan) was plotted on a monthly and annual basis for all applicable sites.

24. Document N lists the Kp values generated by Mr. Bill Pruitt's program. The data is listed for Meloland, Imperial, Brawley, El Centro, Mulberry, and Calipatria.

25. The following table summarizes the final ETo values used in the IID Water Balance:

Year	Imperial Valley ETo
1987	79.8
1988	79.2
1989	80.5
1990	75.5
1991	69.9
1992	68.4

Imperial Irrigation District
Imperial Valley ETo Values

All values are Inches/Year

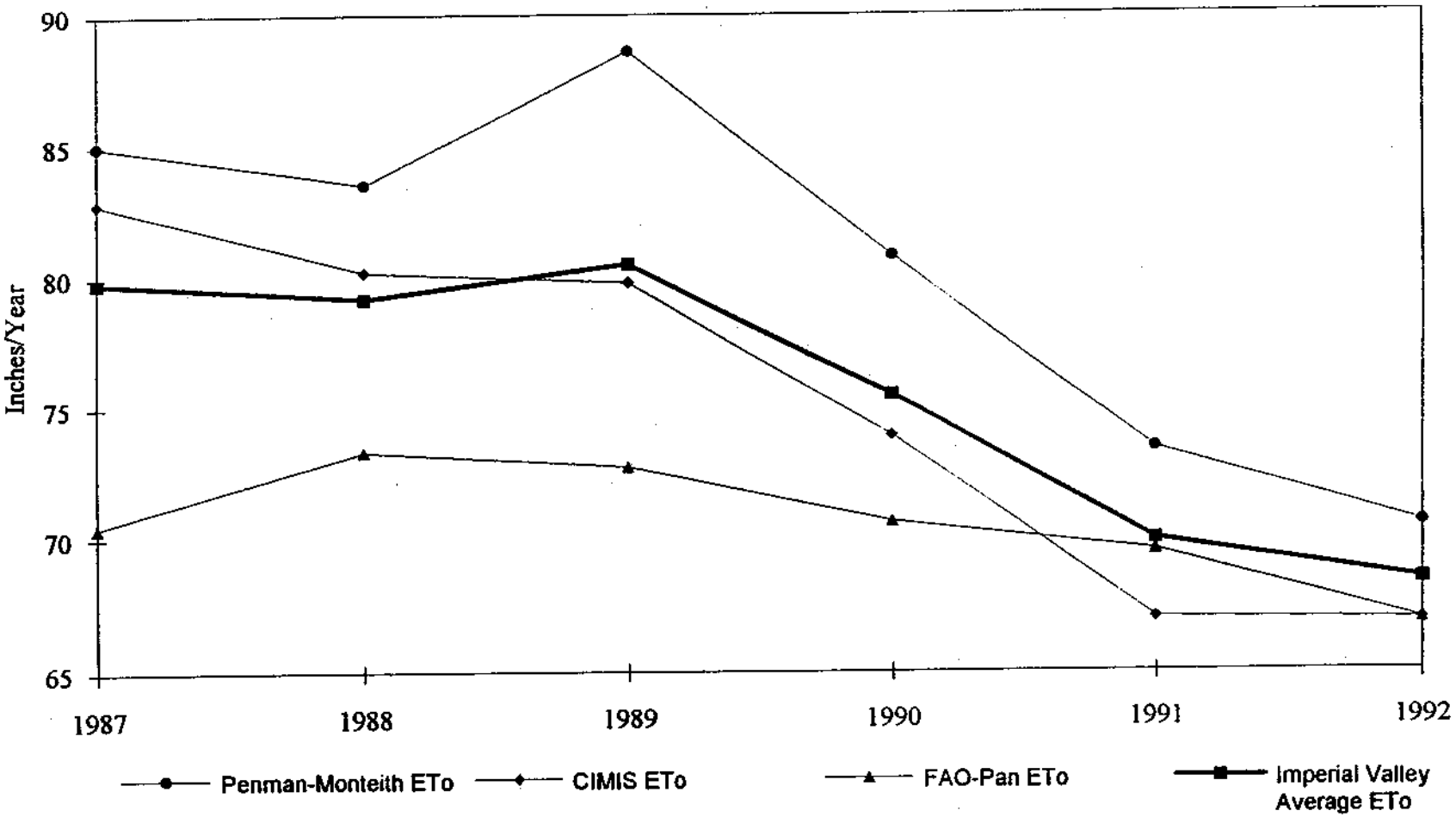
IIDETO.XLS

		1987				1988				1989			
		CIMIS ETo	P-M ETo	FAO-Pan ET_o	Average	CIMIS ETo	P-M ETo	FAO-Pan ET	Average	CIMIS ETo	P-M ETo	FAO-Pan ET_o	Average
IID	Brawley	82.8	85.1	74.2	80.7	77.7	78.8	78.2	78.2	75.1	87.2	76.9	79.7
	Calipatria	82.8	85.1	68.8	78.9	77.7	79.9	72.0	76.5	75.1	87.2	72.9	78.4
	El Centro	80.8	79.2	67.4	75.8	82.6	87.2	70.8	80.2	84.5	89.9	66.6	80.3
	Imperial	82.8	85.0	71.1	79.7	77.7	79.8	72.0	76.5	75.1	87.2	71.6	78.0
CIMIS	Meloland												
	Mulberry	82.8	85.0		83.9	77.7	79.8		78.8	75.1	87.2	75.7	79.3
	Seeley					82.6	87.2		84.9	84.5	89.9		87.2
	Average	82.8	85.0	70.4		80.2	83.5	73.3		79.8	88.6	72.7	
			1987 Valley Average =		79.8		1988 Valley Average =		79.2		1989 Valley Average =		80.5

		1990				1991				1992			
		CIMIS ETo	P-M ETo	FAO-Pan ET_o	Average	CIMIS ETo	P-M ETo	FAO-Pan ET_o	Average	CIMIS ETo	P-M ETo	FAO-Pan ET_o	Average
IID	Brawley	72.6	83.7	77.5	77.9	63.9	72.7	77.4	71.3	66.9	75.1	71.7	71.2
	Calipatria	72.1	74.7	71.3	72.7	67.8	72.6	68.9	69.8	65.8	66.6	69.5	67.3
	El Centro	77.1	82.6	64.8	74.8	69.4	74.9	64.2	69.5	67.9	69.7	63.8	67.1
	Imperial	72.6	83.6	67.2	74.5	63.9	72.7	69.5	68.7	66.9	75.4	65.3	69.2
CIMIS	Meloland	72.6	83.6	75.5	77.2	63.9	72.7	77.2	71.3	66.9	75.1	69.5	70.5
	Mulberry	72.1	74.7	67.2	71.3	67.8	72.6	59.6	66.6	65.8	66.6	61.3	64.6
	Seeley	77.1	82.6		79.9	69.4	74.9		72.2	67.9	70.0		68.9
	Average	73.9	80.3	70.6		67.0	73.4	69.5		66.9	70.5	66.9	
			1990 Valley Average =		75.5		1991 Valley Average =		69.9		1992 Valley Average =		68.4

IIDETO.XLS
6/10/93

Imperial Valley ETo 1987-1992



CIMIS MEL OLAND/IND BRAWLEY FAN

LAT DEG = 33 [ETo-EQS WK1], a Program for calculating ETo or ET from eleven equations (rev 4 Jan, 1992 by W O Pruitt)

LAT RAD = 0.575959 Includes latest Eqs. for FAO-24 methods e.g. to obtain "C" in (CIMIS) (App 2, ASCE Manual 70, or Allen and Pruitt, 1991)

HEIGHT, M 1 AVAILABLE DATA: Ra,Rs,Tmn,Tmx,RHmn,RHmx, U2,UD/UN(use value of 2.0 if no data available).

ELEV (M) -30 P,MB= 1016

EA=6.108*EXP(17.17*Tm/(Tm+237.3))

D=(EA/TKm)*((6790.5/T

GAMMA= 24*W/(622*L)

PENMAN-MONTEITH (MONTEITH, 1981) ET of frequently-clipped grass,<15cm, or alfalfa from 3cm tall to mat ht.), Jensen etal, Jn Pres)

Anem.Ht,Z= 200 d= 0.00 cm ra*ln=(LN((Zw-d)/Zom))*(LN((Zp-d)/Zoh))*0.41^2

TARH.HLZ 150 Zom= 1.49 cm ra*un= 198.9261

Crop HLHc 12 Zoh= 0.15 cm

LAI(hc>15c 2.88

Crop rc= 69.44 ED=EA*RHM/100

CROP NO 1

(FOR GRASS ASS (1)

(ALFALFA: (2)

UN=0700-1900 WIND/1900-0700 WIND Note use UN = 2.0 if no data available

Note First Row of data are from Davis, California

Second row is from Brawley, Calif, 1972 data (from Lehlert, et al.)

DATE OR MONT	DAY OF YEAR	GRAD MM/DAY	RS LY/DAY	n/N	MAXIMUM TEMPT DEG F	MAXIMUM TEMPT DEG C	MINIMUM TEMPT DEG F	MINIMUM TEMPT DEG C	RHmx %	RHmn %	WIND RUN AT Hr Zw Miles/Dy	WIND RUN AT Hr Zw Km/Dy	U2 DAY NIGHT	U2 Km/Dey	U2 m/s	Tm DEG C	TKm DEG K	EA MB	RHm	ED MB	GAMMA G	DELTA D	W D/(D+G)
01/25/65	206	16.5	689	0.93	91.9	33.3	57.0	13.9	100.0	32.0	49.7	80.0	0.78	80.0	0.93	23.6	296.7	29.10	66.0	19.21	0.671	1.751	0.723
4/22/71	112	15.3	431	0.91	77.0	25.0	48.0	8.9	58.0	23.0	70.4	113.7	1.18	113.7	1.32	14.9	290.1	19.31	40.5	7.82	0.661	1.223	0.647
1/1/87-12/1989 MULBERRY CIMIS STATION #41																							
1/1/990-12/1992 MELOLAND CIMIS STATION #87																							
Jan-87	15	8.1	297	0.75	69.3	20.7	34.9	1.6	76.5	27.3	107.9	173.7	1.60	173.7	2.01	13.2	286.3	13.27	51.9	6.89	0.665	0.880	0.570
Feb-87	45	10.0	378	0.79	73.5	23.1	41.4	5.2	78.3	26.1	137.5	221.4	1.50	221.4	2.56	14.1	287.3	16.13	52.3	8.44	0.665	1.045	0.611
Mar-87	75	12.6	500	0.88	77.5	25.3	42	6.1	82.7	28.3	145.3	233.9	1.18	233.9	2.71	15.7	288.9	17.69	51.7	9.22	0.666	1.141	0.631
Apr-87	106	14.9	627	0.94	81.4	33.0	52.3	11.3	72.7	12.3	124.3	200.1	1.10	200.1	2.32	22.1	295.3	26.46	43.0	12.00	0.670	1.622	0.708
May-87	136	16.5	671	0.99	93.6	34.2	58.6	14.8	66.0	12	153.7	247.5	1.20	247.5	2.86	24.5	297.7	30.74	39.4	12.11	0.672	1.857	0.732
Jun-87	166	17.2	713	0.92	105.3	40.7	66.2	19.0	50.6	8	134.2	219.3	1.20	219.3	2.54	29.9	303.0	42.09	29.3	12.33	0.675	2.414	0.781
Jul-87	197	16.8	701	0.93	105.6	40.8	69.0	21.0	56	14.7	139.8	225.1	1.20	225.1	2.60	30.9	304.0	44.64	35.4	15.78	0.676	2.541	0.790
Aug-87	228	15.5	605	0.83	101.5	38.6	67	19.4	68.5	21.1	149	239.9	1.20	239.9	2.78	28.0	302.2	40.12	44.0	17.97	0.675	2.316	0.774
Sep-87	259	13.3	517	0.81	100.6	38.1	60.6	15.9	64.5	15.3	123.9	199.5	1.30	199.5	2.31	27.8	300.2	35.45	39.9	14.22	0.674	2.050	0.756
Oct-87	289	11.0	360	0.62	81.9	27.7	56.6	13.8	82.3	33.4	95.8	154.2	1.50	154.2	1.78	21.3	294.4	25.23	58.0	14.63	0.670	1.347	0.698
Nov-87	320	8.7	313	0.73	74.6	23.7	43.4	6.3	88.3	34.3	82.5	132.8	1.80	132.8	1.54	15.0	288.2	17.05	61.3	10.45	0.668	1.097	0.622
Dec-87	350	7.5	283	0.63	58.7	14.8	31.1	0.1	88	38.3	92.6	149.1	1.80	149.1	1.72	7.4	280.4	10.53	63.2	6.52	0.661	0.706	0.516
Jan-88	15	8.1	293	0.74	69.3	20.7	35.5	2.9	93.4	30.3	106.2	171.0	1.60	171.0	1.98	11.3	284.5	12.42	61.9	8.30	0.664	0.889	0.573
Feb-88	45	10.0	393	0.84	76.1	24.5	40.2	4.4	93.7	28.2	108.4	174.5	1.50	174.5	2.02	14.5	287.7	16.54	59.0	9.75	0.666	1.068	0.614
Mar-88	75	12.6	461	0.75	74.4	23.6	39.5	3.9	82.1	18.6	112.8	181.6	1.10	181.6	2.10	13.8	286.9	15.73	49.9	7.84	0.665	1.022	0.604
Apr-88	106	14.9	544	0.75	74.7	23.7	48.2	9.0	89.2	23	126	202.9	1.18	202.9	2.35	16.6	289.5	18.61	56.1	10.44	0.667	1.184	0.640
May-88	136	16.5	573	0.69	84.1	28.9	49.2	9.6	70.4	10.5	167.2	270.0	1.20	270.0	3.12	19.3	292.4	22.32	40.4	9.01	0.669	1.389	0.675
Jun-88	166	17.2	701	0.89	101.3	38.5	62.7	17.1	67.6	14	136.2	219.3	1.20	219.3	2.54	27.8	301.0	37.43	40.9	15.31	0.674	2.180	0.764
Jul-88	197	16.8	661	0.85	106.5	41.4	73.9	23.3	72.9	25.2	144.8	233.0	1.20	233.0	2.73	32.7	305.5	48.43	49.1	23.76	0.677	2.728	0.801
Aug-88	228	15.5	624	0.88	103.1	40.6	73.1	22.8	77.3	24.6	124.3	200.1	1.20	200.1	2.32	31.8	304.9	44.88	51.0	23.88	0.673	2.651	0.797
Sep-88	259	13.5	431	0.59	78.6	25.9	50.8	10.4	51.2	10.7	91	146.5	1.50	146.5	1.70	18.3	291.3	20.66	53.0	6.87	0.668	1.309	0.662
Oct-88	289	11.0	421	0.81	96	35.6	61.2	16.2	84.4	20.9	180.9	144.2	1.50	144.1	1.90	25.9	299.0	33.39	53.7	17.91	0.673	1.974	0.746
Nov-88	320	8.7	310	0.72	75.9	24.4	42.8	6.0	83.7	22.5	110.3	177.6	1.80	177.6	2.05	15.2	288.4	17.27	53.1	9.13	0.666	1.109	0.625
Dec-88	350	7.5	291	0.83	70.3	21.3	34.9	1.6	88.1	31.9	118.7	178.2	1.80	178.2	2.06	11.4	284.6	13.51	55.0	7.44	0.669	0.837	0.555
Jan-89	15	8.1	285	0.70	46.8	19.3	33.6	0.9	89.3	35.1	98.3	157.9	1.60	157.9	1.83	10.1	283.3	12.31	57.4	7.10	0.669	0.837	0.535
Feb-89	45	10.0	391	0.85	75	23.9	39.2	4.0	80.9	31.5	122.5	197.2	1.30	197.2	2.28	13.9	287.1	15.93	57.7	9.19	0.665	1.033	0.608
Mar-89	75	12.6	429	0.66	71.2	21.8	38.4	3.6	68.3	20.1	91	146.5	1.10	146.5	1.70	12.7	285.8	14.65	44.2	6.46	0.664	0.960	0.595
Apr-89	106	14.9	491	0.95	92.4	33.6	53.1	11.7	60.2	19.6	120.4	193.8	1.10	193.8	2.24	22.6	295.8	27.48	49.9	13.72	0.671	1.666	0.719
May-89	136	16.5	693	0.94	95.5	35.2	57	13.9	67.3	12.3	161.1	259.4	1.20	259.4	3.00	24.5	297.7	30.60	40.0	12.82	0.672	1.840	0.732
Jun-89	166	17.2	713	0.92	104.8	40.4	62.8	17.1	64.7	8.1	146.3	235.5	1.20	235.5	2.73	28.8	301.9	39.54	36.6	14.39	0.673	2.267	0.772
Jul-89	197	16.8	636	0.83	105	40.6	71.3	21.9	70.4	18.6	141.1	227.2	1.20	227.2	2.63	31.3	304.6	45.57	41.0	18.48	0.674	2.586	0.793
Aug-89	228	15.5	624	0.88	104.4	40.2	70.4	21.3	73.6	23.7	128.8	207.4	1.20	207.4	2.40	30.8	303.9	44.36	48.7	21.58	0.676	2.527	0.789
Sep-89	259	13.5	543	0.88	102.7	39.3	65.3	18.5	64.9	13.1	127.5	205.3	1.50	205.3	2.38	28.9	302.0	39.80	39.1	15.54	0.675	2.309	0.775
Oct-89	289	11.0	420	0.81	91.3	32.9	54.8	12.7	79	19.8	113.5	182.7	1.50	182.7	2.11	21.6	296.8	27.76	44.5	12.34	0.671	1.681	0.715
Nov-89	320	8.7	334	0.81	81.1	27.3	43	6.1	84.4	22.4	103.4	166.5	1.80	166.5	1.93	16.7	289.9	19.00	53.4	10.15	0.667	1.206	0.644
Dec-89	350	7.5	274	0.75	63.4	17.4	27.3	-2.5	82.2	26.3	90.5	145.7	1.80	145.7	1.69	7.5	280.4	10.35	54.3	5.61	0.661	0.707	0.517
Jan-90	15	8.1	306.90	0.80	70.71	21.5	37.48	3.0	78.45	30.68	94.10	151.5	1.60	151.5	1.75	12.3	285.4	14.28	54.4	7.79	0.664	0.939	0.586
Feb-90	45	10.0	164.36	0.75	73.32	23.0	38.66	3.7	71.71	25.21	114.18	183.8	1.30	183.9	2.13	13.3	286.5	15.30	48.5	7.41	0.665	0.997	0.600
Mar-90	75	12.6	494.10	0.84	81.45	27.5	46.94	8.1	72.66	21.58	137.58	221.5	1.10	221.5	2.56	17.9	291.0	20.49	46.8	9.59	0.668	1.289	0.659
Apr-90	106	14.9	595.90	0.67	87.73	31.0	55.70	13.2	73.07	22.72	143.80	231.5	1.10	231.5	2.68	22.1	295.2	26.54	47.9	12.72	0.670	1.616	0.707
May-90	136	16.5	639.39	0.87	89.26	31.8	55.48	13.0	54.94	12.81	193.42	295.3	1.20	295.3	3.42	22.4	295.6	27.14	33.9	9.19	0.673	1.647	0.711
Jun-90	166	17.2	693.90	0.88	103.17	39.5	67.00	19.4	59.20	11.47	124.67	200.7	1.20	200.7	2.32	29.5	302.6	41.18	35.3	14.55	0.675	2.369	0.779
Jul-90	197	16.8	632.39	0.79	106.35	41.3	73.42	23.0	71.42	20.18	138.97	223.7	1.20	223.7	2.59	32.2	305.3	47.97	45.0	21.98	0.677	2.705	0.800
Aug-90	228	15.5	622.29	0.87	105.03	39.5	72.32	22.4	71.06	24.42	117.23	188.7	1.20	188.7	2.18	30.9	304.1	44.75	48.7	21.61	0.674	2.546	0.790
Sep-90	259	13.5	202.97	0.77	99.91	37.7	67.40	19.3	71.43	28.67	112.40	181.0	1.30	181.0	2.09	28.3	301.9	39.37	49.1	19.31	0.675	2.276	0.772
Oct-90	289	11.0	437.16	0.86	91.26	32.9	57.48	14.2	74.48	21.94	91.29	147.0	1.50	147.0	1.70	23.3	296.7	29.02	48.2	13.99	0.671	1.747	0.722
Nov-90	320	8.7	323.67	0.78	76.87	24.9	45.90	7.7	72.37	26.80	112.37	180.9	1.80	180.9	2.09	16.3	289.5	18.56	49.8	9.34	0.667	1.182	0.659
Dec-90	350	7.5	264.77	0.71	64.87	18.3	34.52	1.4	76.77	29.87	97.30	156.5	1.80	156.5	1.81	8.8	283.0	12.14	53.3	6.47	0.663	0.814	0.551
Jan-91	15	8.1	239.87	0.68	67.74	19.9	39.00	3.8	90.06	38.71	81.03	130.5	1.60	130.5	1.53	11.9	285.0	13.91	64.4	8.95	0.664	0.917	0.580
Feb-91	45	10.0	320.21	0.77	79.04	26.1	44.82	7.1	88.93	34.39	94.11	151.5	1.50	151.5	1.75	16.6	289.8	18.92	61.7	11.67	0.667	1.202	0.643
Mar-91	75	12.6	461.55	0.75	71.61	22.0	44.10	6.7	88.74	37.65	154.72	251.7	1.10	251.7	2.91	14.4	287.5	16.37	63.2	10.34	0.663	1.058	0.614
Apr-91	106	14.9	624.82	0.93	83.77	28.8	50.23	10.1	81.30	35.97	128.20	206.4	1.10	206.4	2.39	19.4	292.6	22.59	50.6	13.24	0.669	1.403	0.677
May-91	136	16.5	687.90	0.99	89.39	31.9	54.35	12.4	78.74	38.46	171.23	275.7	1.20	275.7	3.19	22.2	295.3	26.68	59.2	15.80	0.670	1.623	0.709
Jun-91	166	17.2	632.33	0.76	96.03	36.0	62.47	16.9	58.93	28.30	136.67	220.0	1.20	220.0	2.55	26.3	299.6	34.56	58.6	20.26	0.673	2.034	0.751
Jul-91	197	16.8	647.06	0.82	101.19	39.6	68.87	20.5	79.58	33.10	117.42	189.0	1.20	189.0	2.19	30.6	303.2	42.47	56.3	23.93	0.674	2.433	0.783
Aug-91	228	15.5	598.00	0.82	104.45	40.3	73.10	22.8	68.74	27.68	117.34	188.6	1.20	188.6	2.18	31.5	304.7	46.33	48.2	22.33	0.677	2.624	0.795
Sep-91	259	13.5	504.43	0.78	100.50	38.1	67.87	19.9	76.10	30.20	97.47	157.2	1.30	157.2	1.82	29.0	302.2	40.03	53.2	21.28	0.675	2.311	0.774
Oct-91	289	11.0	419.58	0.80	90.06	32.3	61.48	16.4	75.03	26.90	112.00	180.3	1.50	180.3	2.09	24.3	297.5	30.41	51.6	15.50	0.672	1.820	0.730
Nov-91	320	8.7	323.40	0.74	77.63	25.4	46.23	7.9	79.73	31.43	99.00	160.7	1.80	160.7	1.86	16.6	289.8	18.95	55.6	10.52	0.667	1.202	0.643
Dec-91	350	7.5	212.29	0.67	64.44	18.2	41.32	5.2	78.97	45.13	79.45	127.9	1.80	127.9	1.48	12.7	284.8	15.72	62.0	8.51	0.664	0.906	0.577
Jan-92	15	8.1	290.39	0.73	67.80	19.9	37.90	3.3	80.45	36.58	88.19	142.0	1.40	142.0	1.64	11.6	284.8	13.67	58.3	8.00	0.664	0.903	0.576
Feb-92	45	10.0	363.72	0.74	72.52	22.1	47.17	8.4	78.51	43.24	94.21	158.1	1.50	158.1	1.83	15.7	288.9	17.89	60.9	10.69	0.666	1.144	0.632
Mar-92	75	12.6	469.19	0.77	75.10	23.9	48.68	9.3	71.87	35.71	107.65	173.3	1.10	173.3	2.01	16.6	289.8	18.90	53.8	10.36	0.667	1.200	0.643
Apr-92	106	14.9	590.87	0.86	89.13	31.7	54.97	12.8	69.13	13.53	92.40	148.8	1.10	148.8	1.72	22.3	295.4	26.94	31.3	8.41	0.671	1.672	0.709
May-92	136	16.5	636.97	0.82	94.35	34.6	61.77	16.3	70.38	28.06	108.65	174.9	1.20	174.9	2.02	25.6	298.8	32.81	48.1	15.71	0.671	1.944	0.743
Jun-92	166	17.2	699.87	0.89	101.07	38.4	65.70	18.7	51.27	22.13	134.00	215.7	1.20	215.7	2.50	28.5	301.7	39.02	34.8	14.36	0.675	2.260	0.770
Jul-92	197	16.8	646.61	0.82	105.39	40.8	71.16	21.8	56.52	26.63	126.34	203.1	1.20	203.1	2.35	31.3	304.4	45.60	41.6	18.95	0.676	2.588	0.793
Aug-92	228	15.5	579.65	0.78	104.03	40.1	77.58	25.3	67.10	32.90	123.55	198.8	1.20	198.8	2.12	33.2	306.4	50.94	50.0	25.47	0.678	2.849	0.808
Sep-92	259	13.5	514.07	1.00	104.67	40.4	71.73	22.1	73.50	31.30	102.37	164.8	1.30	164.8	1.90	31.2	304.4	45.48	52.4	23.64	0.676	2.549	0.792
Oct-92	289	11.0	399.90	0.74	92.53	33.6	60.61	15.9	81.68	40.76	99.45	160.1	1.50	160.1	1.85	24.0	297.5	31.32	61.2	19.15	0.672	1.842	0.735
Nov-92	320	8.7	329.63	0.80	75.40	24.1	44.23	6.8	87.17	34.63	94.13	151.6	1.80	151.6	1.75	15.5	288.6	17.57	62.9	11.05	0.664	1.226	0.628
Dec-92	350	7.5	232.61	0.54	63.58	17.5	38.29	3.5	76.94	42.19	91.06	146.6	1.80	146.6	1.70	10.3	283.3	12.76	59.6	7.57	0.663	0.847	0.561

RNr=10*RS/L*0.75 (1.884*10^-9*TKm^4)*(34. 044*ED^ 3)*(1+ Sh/N)

Ud=URu*U2/(4) 3*(URu+1))

m)-3 02904)

RSO=9(1- 37RED/9)/(Rd* Thro)

3 054*(EXP(17 27*Tkmn/(Tkmn+237 31)))*(1-0 01 *RHmun)+1 054*(EXP(17 27*Tkmn/(Tkmn+237 31)))*(1-0 01 *RHmn)

rw=(w*m)^-m/(km/day)* 011574(m sec^-1/m day^-1)

GAMMA* = GAMMA (1 + rs/rw)

*s'= 0 0041 RHmun - n/N 1 41 n/N - 1 41

N=(24/@PI)*ARCCOS*(TAN(PHI)*TAN(4093*SIN(2*@PI*(284+J)/365)))

*C'(using limiting values as Col AH in AX) = 0 892 0741*Udi- 00219*Udi*RHmi*Rsi+ 000402*RHmi*Rsi+ 000196*URi+

*C'mul4 +0 000019*Udi*URi*RHmi*Rsi+ 0000023-6*Udi^2*RHmi*Rsi- 0000086*URi^2*Udi*RHmi-1 92*1

%1'= 0 908-0 00483*RHmun+0 3949*n/N+0 0768*(@LN(Udi+1))^2-0 0038*RHmun*n/N-0 00443*RHmun*Udi+0 281*(@LN(Udi+1))*(@LN(n/N+1)-0 00975*(@LN(Udi+1))^(@LN(RHmun+

%2'=1 0454- 001188RHm- 04495*Udi- 0002*RHm*Udi- 315*10^-4*RHm^2- 0011026*Udi^2

(Rs)(IF 017RS<=0 0,1 0, IF 017RS=12,12,OTHERWISE,= 017RS

(RHmn)(IF RHmn<=10,10, IF RHmn>=90,90, OTHERWISE,=RHmn

(Udi)(IF Udi>10 0 m/s,(Udi)<=10 0

URlam: @IF(URr<=) 0,URlam=1 0,@IF(URr>=4,URlam=4,otherwise URlam=URr

RNd MJ/M^2/DT	Ud m/s	(EA-ED)2 MB	(EA-ED)4 MB	RHO kg/m^3	rs sec/m	GAM* MB/DgK	daylight hrs, N	Bl-Cr p Bl(mm/ yr>10)	FAO Bl-Cr %1'	FAO Bl-Cr %1"	FAO RAD %2'	Latitude for FAO-PEN, RAD, & Bl-Cr (FAO RAD & Bl-Cr use (Udi) (Rs)	(RHmn) limit	(Udi) limit	(UR) limit	CPEN "C" limit	SCSDC kc=1 0 mm/day	FAOBC mm/day	FAORAD mm/day	P-T mm/day	J-H ETo mm/day	FAOPEN mm/day	FAOCPEN mm/day	CALIF FAOCPEN mm/day
673	0 81	9 89	17 37	1 185	214 8	0 89	13 78	0.313	-2 20	1 46	0 87	11 71	90 0	0 81	1 00	1 10	5 79	4 50	7 06	6 13	7 17	6 20	6 85	5 88
525	1 49	11 49	14 59	1 217	153 2	0 97	13 05	0 396	-2 22	1 60	1 01	10 73	58 0	1 49	1 30	1 00	3 63	5 36	4 74	4 28	5 23	5 73	5 72	4 59
1 50	2 47	6 38	9 49	1 242	96 9	1 13	10 05	0 229	-2 05	1 51	0 99	5 05	76 5	2 47	1 60	0 93	1 78	2 54	2 56	1 68	1 91	2 89	2 69	2 44
2 48	3 07	7 69	11 37	1 229	77 4	1 36	10 79	0 246	-2 09	1 59	1 01	6 43	78 5	3 07	1 50	0 95	2 44	3 63	3 46	1 91	2 79	4 11	3 92	3 50
3 93	2 84	8 61	13 58	1 222	73 3	1 30	11 79	0 269	-2 20	1 71	1 00	8 44	82 7	2 84	1 30	1 00	3 00	4 87	5 18	3 13	4 00	5 35	5 36	4 70
5 37	2 41	14 66	21 53	1 194	85 9	1 21	12 86	0 294	-2 30	1 83	1 03	10 66	77 7	2 41	1 30	1 03	4 97	7 54	7 43	4 78	6 24	7 27	7 50	6 39
6 00	3 12	18 63	26 40	1 186	69 5	1 34	13 79	0 313	-2 25	1 85	1 07	11 41	66 8	3 12	1 20	1 00	6 07	9 00	8 65	5 34	7 18	9 07	9 03	7 33
6 34	2 77	19 76	40 68	1 163	70 4	1 27	14 17	0 323	-2 29	1 90	1 10	12 00	50 4	2 77	1 20	0 95	8 23	13 13	10 13	6 24	8 86	10 56	10 02	8 24
6 45	2 84	28 86	38 25	1 158	76 4	1 29	13 96	0 319	-2 27	1 93	1 08	11 92	54 0	2 84	1 20	0 97	8 52	10 72	9 86	6 42	8 94	10 42	10 07	8 27
5 43	3 03	22 13	30 57	1 164	73 6	1 33	13 19	0 301	-2 35	1 68	1 04	10 25	65 5	3 03	1 20	0 99	7 37	8 71	7 99	5 30	7 33	8 95	8 83	7 38
4 34	2 61	21 43	31 43	1 174	86 2	1 22	12 16	0 278	-2 15	1 70	1 05	8 79	64 5	2 61	1 30	0 96	6 14	7 52	6 70	4 13	5 95	7 50	7 24	6 18
3 93	2 14	10 62	13 86	1 198	121 4	1 09	11 13	0 254	-1 89	1 32	0 95	6 12	82 5	2 14	1 50	0 98	4 08	4 10	2 77	2 38	3 48	4 25	4 18	3 72
1 94	1 98	6 65	10 13	1 224	129 4	1 02	10 24	0 234	-1 99	1 38	0 93	5 31	88 1	1 98	1 00	0 99	2 48	2 84	2 78	1 52	2 40	2 77	2 75	2 30
1 24	2 22	3 81	5 57	1 259	195 3	1 06	9 63	0 224	-1 83	1 27	0 93	4 13	88 0	2 22	1 60	0 95	1 22	1 43	1 67	0 83	1 27	1 49	1 79	1 65
1 60	2 44	5 12	8 73	1 241	100 5	1 12	10 05	0 229	-2 03	1 46	0 94	4 99	90 0	2 44	1 60	0 97	1 93	2 45	2 38	1 16	1 90	2 52	2 43	2 22
2 64	3 42	6 79	13 70	1 226	98 5	1 13	10 79	0 246	-2 14	1 59	0 95	6 68	90 0	3 42	1 50	1 01	2 32	3 65	3 63	2 05	2 95	3 56	3 60	3 23
3 60	3 20	7 89	12 59	1 231	94 6	1 15	11 39	0 260	-2 08	1 57	1 00	7 84	81 1	3 20	1 10	1 00	2 59	4 05	4 42	2 73	3 33	4 55	4 54	4 03
4 80	2 46	8 17	11 92	1 218	84 7	1 21	12 84	0 294	-2 06	1 55	0 97	9 25	69 2	2 46	1 10	1 03	3 43	5 05	5 44	3 87	4 40	5 48	5 73	5 00
5 16	3 41	13 31	19 47	1 207	62 7	1 40	13 73	0 313	-2 05	1 70	1 06	9 74	70 4	3 41	1 20	0 93	4 45	7 02	6 77	4 39	5 17	7 40	7 61	6 47
6 57	2 37	22 12	32 57	1 170	78 4	1 27	14 17	0 323	-2 24	1 80	1 05	11 92	67 8	2 37	1 20	1 01	7 46	9 93	9 29	6 32	8 25	9 32	9 64	7 96
6 69	3 02	24 44	33 56	1 149	73 7	1 33	13 96	0 319	-2 15	1 84	1 02	11 24	72 9	3 02	1 20	1 02	9 10	9 96	8 91	6 76	8 74	9 86	10 04	8 25
6 17	2 53	22 99	31 89	1 153	83 9	1 22	13 19	0 301	-2 30	1 66	1 00	10 61	77 3	2 53	1 20	1 03	9 37	9 05	8 15	6 19	8 13	8 71	9 00	7 50
3 47	1 92	13 98	17 34	1 212	117 3	1 06	12 16	0 278	-1 96	1 49	0 96	7 33	55 2	1 92	1 30	0 93	3 67	4 87	4 64	2 90	3 74	5 45	5 08	4 47
3 40	2 28	15 48	24 18	1 176	104 8	1 12	11 13	0 254	-2 13	1 61	0 98	7 16	84 4	2 28	1 50	1 02	5 30	6 04	4 92	3 19	4 69	5 34	5 44	4 76
3 03	2 66	8 10	17 60	1 224	96 8	1 14	10 24	0 234	-2 03	1 54	0 98	5 27	85 7	2 66	1 80	0 96	2 31	3 41	2 97	1 44	2 19	3 42	3 30	2 97
1 28	2 63	4 08	10 29	1 241	96 4	1 14	9 83	0 224	-2 14	1 64	0 98	4 95	88 1	2 63	1 80	0 96	1 79	2 78	2 49	0 92	1 90	2 68	2 58	2 35
1 53	2 23	5 27	8 74	1 247	108 8	1 09	10 05	0 229	-2 00	1 47	0 96	4 85	89 7	2 23	1 60	0 97	1 62	2 31	2 28	1 07	1 74	2 48	2 40	2 19
2 61	2 74	6 34	10 91	1 229	87 1	1 20	10 79	0 246	-2 12	1 56	0 97	6 72	83 9	2 74	1 50	0 99	2 41	3 44	3 66	2 00	2 69	3 31	3 66	3 28
3 34	1 78	8 19	11 68	1 226	117 3	1 06	11 79	0 269	-1 99	1 45	0 93	7 23	68 3	1 78	1 10	0 97	2 38	3 46	4 05	2 49	2 96	4 21	4 07	3 43
5 55	2 35	13 77	22 22	1 191	88 7	1 20	12 86	0 294	-2 28	1 75	1 00	10 76	80 2	2 35	1 20	1 04	3 12	7 23	7 37	4 90	4 60	7 09	7 40	6 31
6 18	3 27	18 48	27 40	1 184	66 3	1 38	13 73	0 313	-2 29	1 90	1 07	11 78	67 5	3 27	1 20	1 00	4 08	9 25	9 96	5 70	7 43	9 32	9 93	7 74
6 54	2 97	25 15	38 14	1 167	73 0	1 32	14 13	0 323	-2 29	1 91	1 08	12 00	64 7	2 97	1 20	1 00	7 81	10 94	9 80	6 38	8 61	10 36	10 24	8 39
6 33	2 87	26 88	37 47	1 155	75 7	1 30	13 96	0 319	-2 26	1 78	1 06	11 35	70 4	2 87	1 20	1 02	8 66	10 60	9 04	6 30	8 44	9 93	10 05	8 24
6 03	2 63	22 78	31 63	1 156	92 9	1 24	13 19	0 301	-2 18	1 64	1 03	10 41	73 6	2 62	1 20	1 02	8 00	8 94	8 18	5 99	7 94	8 75	8 91	7 44
4 57	2 69	14 26	34 53	1 166	80 7	1 23	12 16	0 278	-2 23	1 79	1 06	9 23	64 9	2 69	1 30	0 93	6 74	6 98	7 26	4 45	6 58	8 07	7 83	6 64
3 06	2 54	13 42	23 06	1 191	94 1	1 17	11 13	0 254	-2 15	1 68	1 07	7 36	73 8	2 54	1 50	0 93	4 47	5 00	4 96	2 76	4 27	5 55	5 38	4 72
1 93	2 48	8 84	14 79	1 217	105 2	1 12	10 24	0 234	-2 13	1 61	0 99	5 68	84 4	2 48	1 80	0 96	2 90	3 82	3 30	1 57	2 74	3 51	3 45	3 10
1 23	2 17	4 73	7 80	1 259	118 0	1 01	9 83	0 224	-2 05	1 49	0 97	4 46	82 2	2 17	1 80	0 93	1 22	1 82	2 04	0 79	1 44	2 15	2 05	1 89
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2 36	2 53	7 88	11 60	1 233	93 5	1 16	10 79	0 246	-2 05	1 53	1 01	6 19	71 7	2 55	1 50	0 96	2 29	3 32	3 44	1 79	2 59	3 43	3 62	3 25
2 82	2 69	10 90	15 90	1 212	73 6	1 27	11 79	0 269	-2 16	1 66	1 02	9 40	72 0	2 69	1 10	0 97	3 49	5 14	5 37	3 17	4 24	5 75	5 37	4 87
5 21	2 81	13 82	19 23	1 194	74 2	1 30	12 86	0 294	-2 18	1 67	1 02	10 11	73 1	2 81	1 10	1 00	4 95	6 90	7 02	4 64	5 91	7 33	7 31	6 24
5 70	3 75	17 94	23 89	1 184	58 2	1 37	13 73	0 313	-2 22	1 86	1 11	11 23	54 9	3 75	1 20	0 98	5 40	8 55	8 57	5 11	6 62	9 60	8 95	7 47
6 41	2 53	26 83	36 63	1 164	65 6	1 32	14 17	0 323	-2 34	1 80	1 07	11 80	59 2	2 53	1 20	0 98	8 09	10 37	9 52	6 28	8 34	9 78	9 63	7 96
6 32	2 82	26 00	35 56	1 150	76 8	1 29	13 96	0 319	-2 11	1 64	1 05	10 75	71 4	2 82	1 20	1 01	9 05	9 85	8 58	6 57	8 12	9 61	9 70	8 00
6 03	2 38	22 94	30 28	1 155	91 1	1 19	13 19	0 301	-2 17	1 61	1 01	10 58	71 1	2 38	1 20	1 02	8 06	8 64	8 11	6 00	7 95	8 51	8 64	7 24
4 57	2 27	20 06	27 22	1 165	95 0	1 17	12 16	0 278	-2 07	1 52	1 00	8 35	71 4	2 27	1 30	0 99	6 48	6 94	6 33	4 44	6 06	7 00	6 93	5 94
3 26	2 04	15 03	21 41	1 187	116 9	1 07	11 13	0 254	-2 12	1 62	1 00	7 43	74 5	2 04	1 50	1 00	4 66	5 61	5 06	3 97	4 55	5 14	5 11	4 50
2 85	2 69	9 32	12 97	1 219	93 0	1 15	10 24	0 234	-2 07	1 55	1 01	5 54	72 8	2 69	1 80	0 94	2 73	3 59	3 27	1 49	2 43	3 73	3 50	3 15
1 22	2 33	5 47	8 34	1 248	109 7	1 08	9 83	0 224	-1 99	1 43	0 98	4 50	76 8	2 33	1 80	0 93	1 55	2 08	2 14	0 85	1 59	2 43	2 26	2 07
1 61	3 86	4 95	7 30	1 258	131 7	1 01	10 05	0 229	-1 92	1 30	0 91	4 76	90 0	3 86	1 60	0 98	1 89	2 32	2 21	1 18	1 86	2 23	2 18	1 99
2 43	2 10	7 25	11 67	1 217	113 4	1 08	10 79	0 246	-2 03	1 42	0 93	4 29	88 9	2 10	1 50	1 01	2 95	3 49	3 47	2 13	3 02	3 43	3 47	3 12
3 78	3 05	6 02	8 80	1 227	68 3	1 36	11 79	0 269	-2 00	1 43	0 95	7 85	88 7	3 05	1 10	1 00	2 72	3 69	4 26	2 93	3 44	4 53	4 52	4 00
3 53	2 50	9 34	13 60	1 204	83 1	1 23	12 66	0 294	-2 19	1 56	0 96	10 62	81 3	2 50	1 10	1 04	4 22	5 61	6 60	4 72	5 68	6 24	6 50	5 61
6 50	3 46	10 88	15 94	1 192	49 3	1 42	13 73	0 313	-2 17	1 58	0 98	12 69	79 7	3 48	1 20	1 06	5 33	6 90	7 82	5 79	6 85	7 82	8 16	6 88
6 37	2 78	14 30	20 38	1 173	78 1	1 27	14 17	0 323	-2 00	1 42	0 97	10 75	78 9	2 78	1 20	1 04	6 96	7 29	7 58	6 03	7 17	7 86	8 15	6 87
6 41	3 39	18 54	26 55	1 158	90 9	1 19	13 96	0 319	-2 08	1 49	0 97	11 00	79 6	2 39	1 20	1 05	8 37	8 34	8 03	6 52	8 07	8 32	8 74	7 31
5 85	2 38	23 99	31 37	1 153	91 1	1 19	13 19	0 301	-2 11	1 55	1 01	10 17	68 7	2 38	1 20	1 00	8 19	8 45	7 85	5 86	7 75	8 48	8 49	7 11
4 70	2 06	18 76	25 97	1 163	109 3	1 10	12 16	0 278	-2 06	1 43	0 97	8 58	76 1	2 06	1 30	1 01	6 78	6 68	6 17	4 58	6 13	6 58	6 67	5 74
3 26	2 50	14 91	19 96	1 184	95 3	1 16	11 13	0 254	-2 10	1 55	1 00	7 13	75 0	2 50	1 50	0 98	4 87	5 53	4 90	3 00	4 47	5 42	5 30	4 45
1 57	2 02	5 67	8 15	1 240	121 0	1 04	10 05	0 229	-1 98	1 36	0 95	4 94	89 5	2 02	1 60	0 95	1 85	2 23	2 39	1 16	1 91	2 47	2 36	2 13
2 54	2 20	7 00	9 19	1 221	108 7	1 09	10 79	0 246	-1 97	1 32	0 94	6 18	78 3	2 20	1 50	0 97	3 74	3 04	3 36	2 04	2 87	3 42	3 33	3 00
3 76	2 10	8 73	11 20	1 217	99 2	1 13	11 79	0 269	-2 03	1 41	0 97	7 98	71 9	2 10	1 10	0 99	3 20	3 96	4 69	3 05	3 83	4 72	4 62	4 08
4 78	1 80	10 43	24 01	1 195	115 5	1 07	12 86	0 294	-2 21	1 68	1 06	10 54	49 1	1 80	1 10	0 95	5 01	6 87	7 25	6 27	5 90	7 00	6 67	5 72
6 03	2 21	17 09	23 19	1 178	98 3	1 15	13 73	0 313	-2 12	1 55	1 00	10 83	70 1	2 21	1 20	1 02	6 44	7 57	7 78	5 62	7 04	7 73	7 88	6 66
6 46	2 73	24 66	31 51	1 167	79 7	1 26	14 17	0 323	-2 21	1 69	1 07	11 59	53 3	2 73	1 20	0 95	7 73	9 44	9 50	6 21	8 40	9 81	9 33	7 74
6 73	2 56	26 62	33 86	1 153	84 6	1 23	13 96	0 319	-2 11	1 57	1 04	10 99	56 5	2 56	1 20	0 96	8 68	9 16	8 80	6 23	8 32	9 46	9 14	7 61
5 83	2 31	25 47	33 58	1 141	94 0	1 18	13 19	0 301	-2 04	1 46	1 00	9 84	67 1	2 31	1 20	0 99	8 94	8 32	7 61	5 96	7 81	8 47	8 41	7 03
4 52	2 15	21 46	29 36	1 133	104 4	1 13	12 16	0 278	-2 28	1 63	0 99	8 34	73 3	2 15	1 30	1 01	7 51	7 93	6 50	4 51	6 41	6 79	6 83	5 87
3 36	2 22	12 31	17 08	1 180	107 3	1 11	11 13	0 254	-1 97	1 34	0 94	6 78	81 7	2 22	1 50	1 00	4 99	4 69	4 37	3 11	4 30	4 72	4 71	4 13
2 02	2 26	6 52	9 85	1 222	113 4	1 07	10 24	0 234	-2 04	1 41	0 93	5 60	87 2	2 26	1 80	0 99	2 56	2 58	2 97	1 40	2 57	2 93	2 90	2 62
1 25	2 18	5 14	6 70	1 245	117 2	1 06	9 83	0 224	-1 79	1 10	0 94	3 95	76 8	2 18	1 80	0 92	1 65	1 49	1 80	0 88	1 45	2 26	2 01	1 86

d*Rlimit (cont'd)
^-8*(UU*U4)*2*Rlimit^2*Rd -0.0000161*Rlimit*Rs^2
))^2*@LN(pr/d+1)

ETo= D/(D+O*)(Rn+G)+ O/(D+O*)(.37741)(RHO)(Ea-Ed)/(P ra)

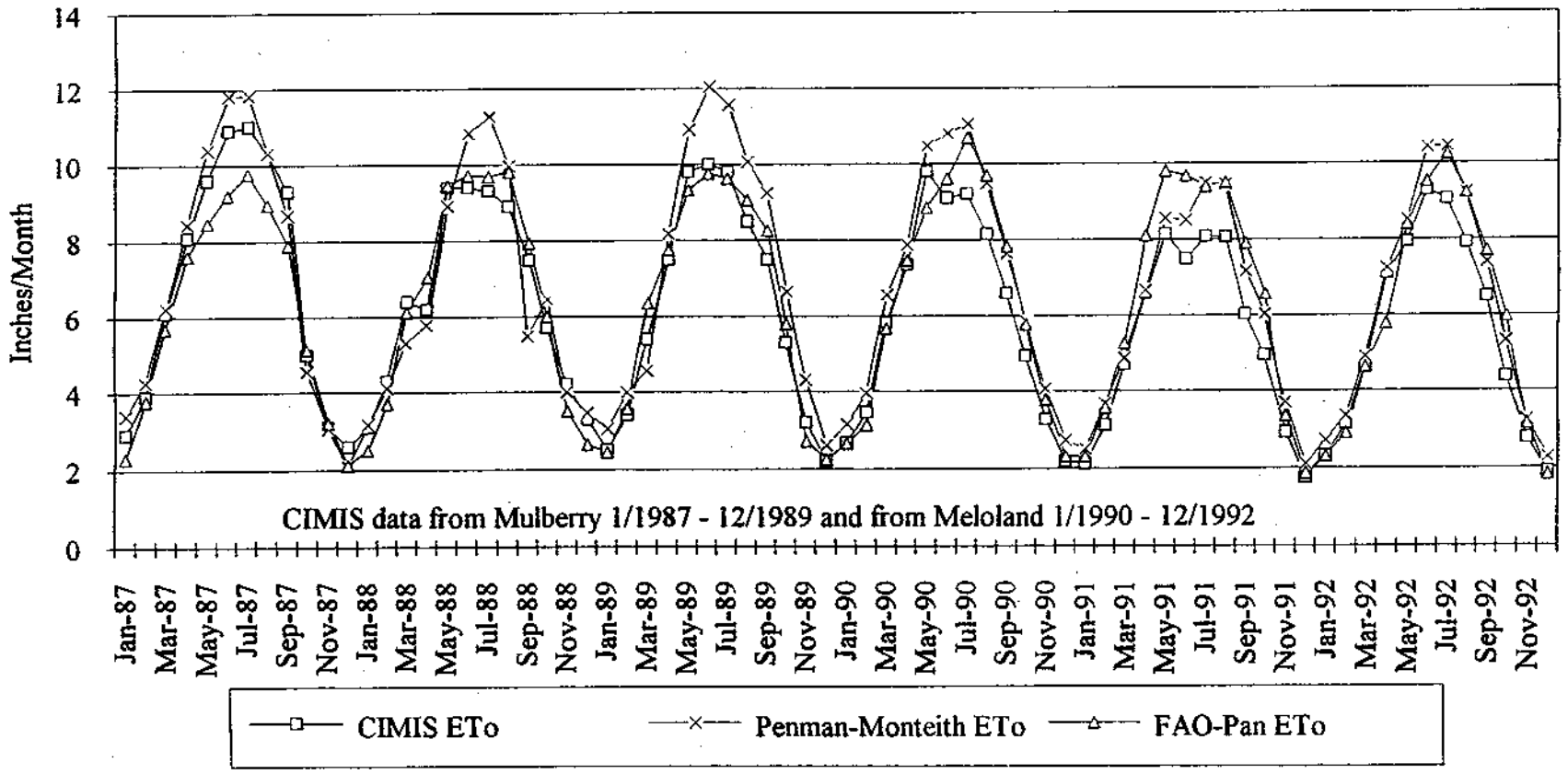
Note: For fetch, limit to 1 to 1000m

WAPEN mm/day	ETo(P-M) Grass mm/day	SAMANI mm/day	Ines A Pan, Ep In/Mo	mm/Day	FAO CAR A(mt), (1) B(ary), (2)	UPWIND FETCH, meters	Limits for Kp Calc 3-m wind	RHmax	(FAO-24 Calc Kp) (CASE A)	(CASE B)	ETo FAO Pan mm/day	ETo FAO-Pan In/Mo	SUM Rs (Ly/day)*12	Rs Equiv X In/Yr	Class A Pan Evap In/Yr	ETo FAO-PAN In/Yr	Kp Monthly	Kp Annual	ETo(ASCE P-M) In/Mo	In/Yr	ETo (FAO-CPEN) mm/Mo	In/Mo	In/Yr	ETo(CIMIS In/DAY
5.93	5.75	6.92	9.30	7.69	1	10	84.0	66.0	0.76	999.00	3.88	7.175322												
5.19	4.81	4.91	7.68	6.50	2	10	113.7	40.3	999.00	0.63	4.11													
2.34	2.78	2.36	3.97	3.25	2	120	173.7	31.9	999.00	0.58	1.89	2.31					0.382		3.40			3.26		
3.36	3.47	3.10	5.85	5.40	2	80	221.4	52.3	999.00	0.58	3.11	3.80					0.638		4.26			4.32		
4.51	5.31	4.73	8.57	7.02	1	6	233.9	51.7	0.64	999.00	4.66	5.69					0.664		6.33			6.54		
4.56	7.16	6.38	11.35	9.41	1	3	200.1	43.0	0.45	999.00	4.24	7.62					0.672		8.46			8.86		
7.44	8.51	7.08	13.47	11.20	1	6	243.5	39.4	0.42	999.00	6.96	8.49					0.621		10.39			11.03		
8.95	10.00	8.79	15.07	12.76	1	6	219.3	30.0	0.59	999.00	7.15	9.32					0.612		11.81			11.84		
8.88	9.49	8.37	15.93	13.05	1	6	223.1	35.4	0.61	999.00	8.00	9.77					0.619		11.82			12.10		
7.60	8.44	7.31	13.96	11.44	1	6	239.9	44.8	0.64	999.00	7.34	8.96					0.642		10.30			10.73		
6.32	7.33	6.56	11.97	10.13	1	8	199.5	39.9	0.64	999.00	6.47	7.90					0.640		8.48			8.55		
3.68	3.72	3.53	7.32	6.00	1	5	134.2	38.8	0.70	999.00	4.20	5.12					0.700		4.54			3.10		
2.39	2.60	2.73	4.93	4.19	2	105	132.8	61.3	999.00	0.67	2.64	3.22					0.651		3.03			3.26		
1.53	1.31	1.67	3.39	2.78	2	95	149.1	63.2	999.00	0.63	1.73	2.14	5931.00	323.4	116.10	74.23	0.631	0.659	2.09	85.03		2.19	88.03	
2.09	2.59	2.35	4.08	3.34	2	120	173.0	61.9	999.00	0.61	2.95	2.56					0.614		3.17			2.97		
3.04	3.60	3.32	5.48	4.97	2	80	174.5	39.0	999.00	0.61	3.04	3.71					0.677		4.32			4.13		
3.90	4.34	4.01	9.05	7.42	1	6	181.4	49.9	0.68	999.00	5.01	6.12					0.676		5.38			5.55		
4.80	4.89	4.49	10.03	8.49	1	5	202.9	56.1	0.68	999.00	5.73	7.04					0.702		5.78			6.76		
6.49	7.20	6.59	15.34	12.37	1	6	270.0	40.4	0.62	999.00	7.73	9.44					0.623		8.91			9.28		
8.22	9.57	8.38	14.81	12.54	1	6	219.3	40.9	0.64	999.00	7.97	9.73					0.657		10.83			11.39		
8.54	9.24	8.24	14.8	12.13	1	4	239.6	49.1	0.65	999.00	7.94	9.69					0.655		11.27			12.25		
7.44	8.17	7.44	14.59	11.95	1	6	200.1	51.0	0.67	999.00	8.05	9.82					0.673		9.97			10.59		
4.65	4.65	4.39	12.23	10.35	1	8	146.5	31.0	0.63	999.00	6.52	7.95					0.650		5.49			4.01		
4.60	5.29	4.86	4.73	7.37	1	5	144.3	53.7	0.69	999.00	4.92	6.00					0.686		6.46			6.64		
2.81	3.39	2.83	5.79	4.90	2	105	137.6	53.1	999.00	0.59	2.88	3.51					0.607		4.01			3.89		
2.15	2.04	2.24	4.45	3.45	2	95	178.2	53.9	999.00	0.59	2.37	2.65	5703.00	116.7	119.40	78.20	0.595	0.653	3.47	78.76		3.15	82.99	
2.06	3.49	2.23	4.05	3.32	2	120	157.9	57.4	999.00	0.60	2.01	2.45					0.605		3.04			2.95		
3.12	3.62	3.26	5.94	5.29	2	80	197.2	57.7	999.00	0.60	3.23	3.57					0.600		3.99			4.04		
3.64	3.73	3.37	9.48	7.77	1	6	146.5	44.1	0.67	999.00	5.21	6.36					0.678		4.56			4.96		
6.22	6.97	6.48	11.65	9.66	1	5	193.8	49.9	0.63	999.00	6.57	7.76					0.666		8.18			8.73		
7.88	8.95	7.43	15.05	12.33	1	6	258.4	40.0	0.62	999.00	7.64	9.32					0.619		10.92			11.39		
8.73	10.20	8.90	15.88	13.45	1	6	235.3	36.4	0.61	999.00	8.23	9.75					0.614		12.05			12.09		
8.10	9.47	8.18	13.21	12.46	1	6	227.2	41.0	0.63	999.00	7.89	9.63					0.633		11.56			12.24		
7.62	8.25	7.53	13.63	11.17	1	6	205.4	48.7	0.66	999.00	7.42	9.05					0.664		10.07			10.88		
6.79	7.82	6.61	13.04	11.04	1	6	205.3	39.1	0.65	999.00	7.00	8.26					0.634		9.24			9.25		
4.63	5.45	4.63	8.98	7.28	1	5	182.7	44.5	0.65	999.00	4.75	5.80					0.653		6.65			6.57		
2.91	3.85	3.18	4.6	3.89	2	105	164.5	53.4	999.00	0.59	2.31	2.72					0.592		4.32			4.08		
1.76	2.13	1.95	3.7	3.09	2	95	145.7	54.3	999.00	0.60	1.83	2.24	5999.00	122.8	121.11	76.91	0.604	0.633	2.62	87.18		2.50	89.66	
2.27	2.58	2.45	4.45	3.65	2	120	151.5	54.6	999.00	0.60	2.18	2.66					0.598		3.15			3.19		
3.17	3.59	3.34	5.44	4.99	2	80	203.8	48.3	999.00	0.58	3.66	3.14					0.576		3.93			3.99		
4.62	5.34	4.53	8.48	7.11	1	6	221.5	46.8	0.65	999.00	4.63	5.68					0.654		6.35			6.79		
6.25	6.68	5.76	11.54	9.73	1	5	231.5	47.9	0.65	999.00	6.33	7.48					0.649		7.88			8.63		
7.88	8.59	6.61	15.17	12.43	1	6	295.3	33.9	0.58	999.00	7.24	8.86					0.594		10.48			10.92		
8.44	9.15	8.38	15.48	13.31	1	6	200.7	35.3	0.62	999.00	8.14	9.62					0.621		10.80			11.37		
8.29	9.06	8.26	16.44	13.47	1	6	223.7	45.8	0.65	999.00	8.76	10.69					0.650		11.95			11.83		
7.48	7.78	7.38	14.44	11.83	1	6	188.7	48.7	0.67	999.00	7.93	9.68					0.671		9.49			10.55		
6.05	6.47	6.16	11.63	9.83	1	6	181.0	49.1	0.67	999.00	6.64	7.84					0.674		7.65			8.38		
4.43	4.79	4.53	8.51	6.97	1	5	147.0	48.2	0.68	999.00	4.72	5.76					0.677		5.84			6.24		
2.04	3.45	2.83	6.55	5.53	2	105	180.9	49.8	999.00	0.58	2.19	2.77					0.574		4.07			4.54		
1.98	2.23	1.96	3.86	3.16	2	95	156.3	53.3	999.00	0.60	1.89	2.31	5899.39	120.8	122.19	77.47	0.597	0.634	2.72	83.65		2.76	88.60	
1.91	2.05	2.21	3.42	2.97	2	120	130.5	64.4	999.00	0.64	1.69	2.31					0.638		3.50			2.65		
3.00	3.33	3.45	5.68	5.15	2	80	151.5	61.7	999.00	0.63	3.24	3.53					0.625		3.67			3.91		
3.87	3.98	3.44	7.67	6.38	1	6	231.7	63.2	0.68	999.00	4.31	5.29					0.686		4.86			5.31		
5.54	5.64	5.51	11.86	10.04	1	5	206.4	58.6	0.68	999.00	6.88	8.12					0.685		6.60			7.48		
6.94	7.02	6.69	14.65	12.00	1	6	275.7	58.2	0.67	999.00	8.03	9.81					0.669		8.57			9.96		
6.97	7.21	7.65	14.1	11.94	1	6	220.0	58.6	0.69	999.00	8.19	9.68					0.686		9.52			9.62		
7.45	7.77	8.07	12.59	11.14	1	6	189.0	58.3	0.69	999.00	7.69	9.39					0.691		9.48			10.64		
7.43	7.74	7.34	14.22	11.65	1	6	186.6	48.2	0.67	999.00	7.88	9.31					0.669		9.45			10.27		
5.82	6.07	6.19	11.41	9.66	1	4	157.2	53.2	0.69	999.00	6.70	7.91					0.693		7.17			7.87		
4.60	4.94	4.25	9.76	8.00	1	5	180.3	51.0	0.67	999.00	5.39	6.53					0.674		6.03			6.47		
2.80	3.13	2.68	5.39	4.71	2	105	168.7	55.6	999.00	0.60	2.84	3.36					0.601		3.69			3.82		
1.73	1.72	1.83	2.95	2.42	2	95	127.9	62.0	999.00	0.64	1.54	1.88	5759.51	117.9	115.10	77.37	0.636	0.672	2.10	72.69		2.34	80.92	
1.08	1.23	1.24	3.36	3.08	2	120	142.0	58.5	999.00	0.61	1.89	2.33					0.615		2.72			2.81		
2.95	2.94	2.93	4.98	4.08	2	80	158.1	60.9	999.00	0.62	2.55	2.95					0.584		3.35			3.86		
4.18	4.01	3.82	6.72	5.31	1	6	173.3	51.0	0.69	999.00	3.80	4.63					0.690		4.90			5.64		
6.08	6.14	5.98	9.71	7.96	1	5	144.8	33.3	0.62	999.00	4.99	5.76					0.595		7.25			7.83		
6.84	6.97	7.03	12.49	10.23	1	6	174.9	42.1	0.67	999.00	6.89	8.41					0.673		8.51			9.59		
8.42	8.62	8.13	13.82	12.96	1	6	215.7	36.8	0.62	999.00	8.06	9.52					0.602		10.42			11.02		
8.20	8.56	8.27	15.94	13.06	1	6	203.3	41.6	0.64	999.00	8.40	10.25					0.643		10.45			11.36		
7.45	7.56	7.23	13.68	13.23	1	6	182.8	50.0	0.68	999.00	7.58	9.25					0.674		9.23			10.26		
5.94	6.27	6.51	11.38	9.47	1	6	164.8	52.4	0.69	999.00	6.52	7.73					0.647		7.41			8.04		
4.14	4.16	4.33	8.46	6.92	1	3	140.1	61.2	0.71	999.00	4.88	5.94					0.706		5.32			5.35		
2.48	2.75	2.39	3.2	4.24	2	105	151.6	42.9	999.00	0.65	2.67	3.34					0.607		3.23			3.42		
1.81	1.87	1.83	2.97	2.43	2	95	144.6	39.8	999.00	0.63	1.51	1.84	5751.22	117.3	111.27	71.73	0.621	0.643	2.28	75.07		2.43	81.89	

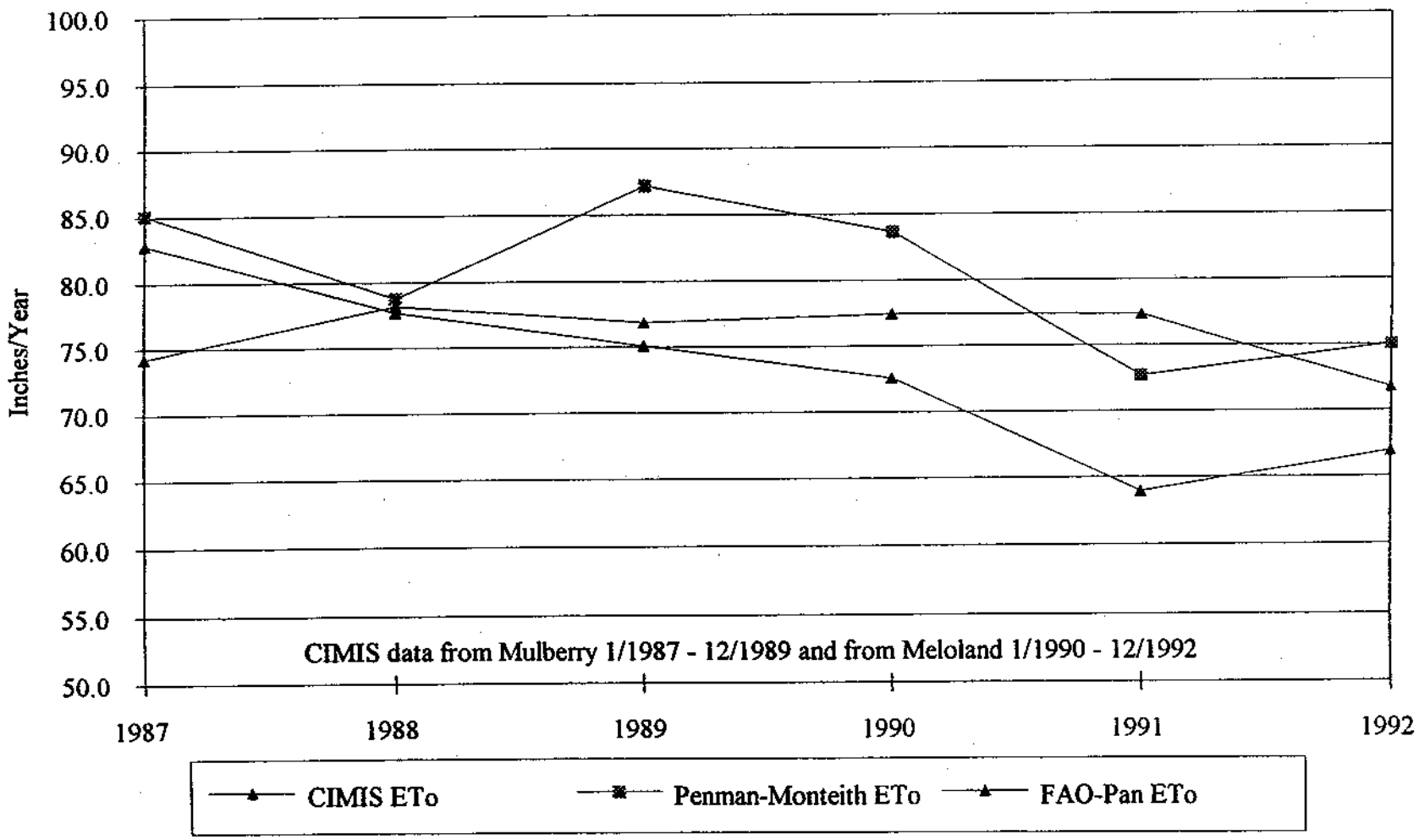
MULBERRY 1/1987-12/1989
MELOLAND 1/90-12/92

ETo (AVG) In/Mo	ETo (AVG) In/Yr	ETo (FAO-RAD) In/Mo	ETo (FAO-RAD) In/Yr	ETo(AV) 1 CD-ER IMPER. V STA In/Yr 83.46	(RN)e In/Mo	(RNe) ACCUM INCHES	(RNe) ANNUAL INCHES	U2 MPO/2
29		3.12			1.83	1.83		53.95
39		4.03			2.73	4.56		68.75
43		4.92			4.80	9.36		72.45
83		8.78			6.34	15.70		62.35
94		10.55			7.32	23.02		76.85
109		13.96			7.49	30.51		68.1
11		12.04			7.87	38.38		69.9
103		9.75			6.87	45.25		74.5
93		7.93			5.12	50.38		61.95
5		4.60			3.58	53.96		47.9
31		3.26			2.29	56.24		45.25
24	82.60	2.04	84.38		1.54	57.78	57.78	46.3
31		2.90			1.96	2.96		53.6
43		4.14			3.01	4.97		54.2
64		5.40			4.40	9.37		56.4
62		6.43			5.67	15.04		63
94		8.27			4.50	22.34		82.85
94		10.98			7.76	29.00		68.1
93		10.08			8.17	37.26		74.4
69		9.94			7.53	44.79		62.15
75		5.71			4.10	48.90		45.3
57		4.01			4.13	53.04		50.95
42		3.50			2.16	55.21		55.15
33	77.70	3.04	77.20		1.36	56.77	56.77	55.35
23		2.78			1.86	1.86		49.05
34		4.04			2.88	4.74		61.25
56		4.94			4.08	8.82		45.3
35		8.70			6.53	15.37		60.2
88		10.94			7.54	22.92		80.55
10		11.58			7.75	30.66		73.15
98		11.03			7.70	38.37		70.55
85		9.98			7.36	45.73		64.4
75		8.58			5.39	51.12		63.75
53		6.05			3.74	54.85		56.75
32		3.90			2.28	57.14		51.7
22	75.10	2.49	83.01		1.49	58.63	58.63	43.25
27		3.25			1.91	1.77		47.04839
35		3.82			2.61	4.38		57.08929
58		6.55			4.67	9.04		48.79032
74		8.29			6.15	15.20		71.9
98		10.46			6.96	22.16		91.70968
91		11.25			7.57	29.73		42.33333
92		10.48			7.72	37.44		49.48387
82		9.50			7.36	44.80		58.6129
66		7.47			5.39	50.19		54.2
49		6.17			3.98	54.17		45.64516
33		3.87			2.18	56.35		36.38333
22	72.55	2.61	84.11		1.49	57.84	53.95	48.54839
23		2.69			1.96	1.41		48.51613
33		3.82			2.90	4.31		47.05357
47		5.20			4.42	9.12		78.16129
66		7.79			6.53	15.68		64.5
81		9.55			7.93	23.58		85.6129
75		8.66			7.52	31.10		48.33333
81		9.80			8.03	39.10		54.70968
81		8.58			7.14	46.31		50.58065
60		7.29			5.55	51.86		48.83333
50		5.98			3.98	55.84		56
29		3.46			2.28	58.11		49.9
37	63.93	3.98	76.23		1.53	59.65	55.63	39.72581
23		2.92			1.91	1.91		44.09677
31		3.84			2.93	4.83		49.38345
47		5.72			4.59	9.42		53.82258
73		8.56			5.63	15.07		46.2
79		9.49			7.33	22.40		54.32258
93		11.23			7.63	30.03		67
91		10.35			7.63	37.66		43.08065
79		9.31			7.14	44.80		56.77419
63		7.67			5.34	50.14		53.13333
44		5.33			4.10	54.24		49.72581
28		3.50			2.39	56.63		47.04667
39	66.94	2.19	80.51		1.53	58.16	57.35	45.53226

BRAWLEY MONTHLY EVAPOTRANSPIRATION



BRAWLEY ANNUAL EVAPOTRANSPIRATION



CIMIS MULBERRY/CALIPATRIA PAN

LAT.DEG = 33 (ET=EQ3.WK1). a Program for calculating ETo or ET from eleven equations (rev.4 Jan, 1992 by W.O.Pruitt)

LAT.RAD = 0.57595865 Inclusion latent flux, for PAD-24 methods e.g. to obtain "C" in (CPEN).(App.E.ASCE Manual 70, or Allen and Pruitt, 1991)

NEMS.32 = 1 AVAILABLE DATA: Ra,Rs,Tmx,Tmin,RHmax,RHmin, U2,U(DAY/NIGHT) use value of 2.0 if no data available).

ELEV.(M) = -58 P.MB = 1019

EA = 6.108*EXP(17.27*Tmin/(Tmin+237.3))

D=(EA/TKm)*(6790.5

GAMMA = .34*P*(.622+L)

PENMAN-MONTEITH (MONTEITH, 1981). ET of frequently-clipped grass, < 15cm; or alfalfa from 3cm tall to max. ht.), Jensen etal, Jn Pruitt)

FOR WARMEST MONTH: 8/1992 MULBERRY CIMIS STATION #41

Mean Tmx =	40.63	J-H EA2 =	70.24	J-H CT =	0.021
Mean Tmin =	23.63	J-H EA1	32.04	J-H TX =	-8.442
		EA2-EA1	43.36		

Anem.Ht.Tw = 200

TARH Ht.Zq = 150

Crop Ht.Hc = 12

d = 8.00 cm

Zom = 1.48 mm

Zov = 0.15 cm

L.Ai(Hc > 15cm 2.84

Crop m = 69.44

ur*uz = (LN(Zw-d)/Zom))*(LN((Zq-d)/Zov))*0.41^-2

m*m = 194.5261

ED = EA*(0.0-0.100

CROP NO. = 1

(FOR GRA ASS: (4)

(ALFALFA. (2)

UR=0700-1900 WIND(1)/0-0700 WIND. Note: use UR = 2.0 if no data available.

Note: First Row of data are from Davis, California.

Second row is from Beverley, Calif., 1971 data (from Lohkamp, et al.)

DATE OR MONTH	DAY OF YEAR	(Ra)o MJ/M2/DAY	EI LY/DAY	n/N	MAXIMUM TEMPT. DEG F	DEG C	MINIMUM TEMPT. DEG F	DEG C	RHmax %	RHmin %	WIND RUN AT Hi Zw. Miles/Dy	Km/Day	UR DAY/ NIGHT	U2 Km/Day	U2 m/s	Tm DEG C	TKm DEG K	EA MB	RHm	ED MB	GAMMA O	DELTA D	W D/(D+G)
07/2/945	206	16.5	689	0.93	91.9	33.3	57.0	13.9	100.0	32.8	49.7	80.0	0.78	80.0	0.93	23.6	296.7	29.10	66.0	19.21	0.673	1.751	0.722
07/27/71	232	15.9	631	0.91	77.0	25.0	48.0	8.9	58.0	23.0	70.6	113.7	1.30	113.7	1.32	16.9	290.1	19.31	40.5	7.82	0.669	1.229	0.647
8/1987-12/1992 MULBERRY CIMIS STATION #41																							
Jan-87	15	8.1	298.85	0.75	69.32	20.7	34.94	1.6	76.45	37.29	107.90	173.8	1.08	173.8	2.01	11.2	284.3	13.29	52.9	6.89	0.663	0.861	0.570
Feb-87	45	10.0	378.00	0.79	73.64	23.0	41.43	5.2	76.34	38.16	137.34	221.4	1.50	221.4	2.56	14.1	287.3	16.13	52.3	8.44	0.667	1.045	0.610
Mar-87	75	12.6	500.32	0.84	77.52	25.3	43.00	6.1	82.00	30.68	149.36	233.9	1.10	233.9	2.71	15.7	288.9	17.84	51.7	9.22	0.668	1.343	0.631
Apr-87	106	14.9	626.87	0.94	90.37	32.4	52.30	11.3	77.70	12.55	134.27	200.1	1.16	200.1	2.31	22.1	295.3	26.65	43.0	12.08	0.672	1.623	0.707
May-87	136	16.5	670.94	0.89	93.61	34.2	54.88	14.2	60.00	12.01	159.68	247.4	1.30	247.4	2.86	24.3	297.3	30.76	39.4	12.12	0.674	2.037	0.732
Jun-87	166	17.2	713.23	0.92	105.35	40.7	66.17	19.0	50.65	8.00	139.20	219.5	1.20	219.5	2.54	29.9	303.0	42.00	29.3	12.34	0.677	2.414	0.781
Jul-87	197	16.6	700.90	0.91	105.35	40.8	69.37	21.0	56.81	14.70	139.77	223.0	1.20	223.0	2.60	30.9	304.0	44.39	33.4	15.70	0.678	2.516	0.799
Aug-87	228	15.5	663.36	0.83	103.48	38.6	67.00	19.4	66.00	21.10	149.00	239.9	1.20	239.9	2.78	29.0	302.2	40.11	44.8	17.90	0.676	2.315	0.734
Sep-87	259	13.3	516.37	0.81	100.40	38.1	60.68	15.9	64.47	15.27	123.87	199.4	1.20	199.4	2.31	27.8	300.3	35.63	39.9	14.21	0.675	2.096	0.758
Oct-87	289	11.0	360.33	0.82	81.90	27.7	58.61	14.8	82.52	32.42	95.73	154.2	1.30	154.2	1.78	21.3	294.4	29.36	58.0	14.64	0.671	1.547	0.697
Nov-87	320	8.7	312.40	0.73	74.63	23.7	43.37	6.3	88.15	36.33	82.47	132.8	1.80	132.8	1.54	15.0	288.2	17.05	61.3	10.46	0.667	1.097	0.622
Dec-87	350	7.5	242.74	0.61	58.74	14.9	32.13	0.1	88.65	38.36	92.61	149.1	1.85	149.1	1.73	7.5	280.6	10.34	63.1	6.53	0.663	0.706	0.514
Jan-88	15	8.1	293.06	0.74	69.26	20.7	33.48	1.9	95.35	38.38	186.19	271.0	1.60	271.0	1.96	11.5	284.1	13.43	61.8	8.29	0.665	0.880	0.572
Feb-88	45	10.0	399.34	0.84	76.60	24.6	40.21	4.6	91.90	26.24	108.58	174.5	1.50	174.5	2.02	14.7	287.8	16.73	59.0	9.05	0.667	1.078	0.618
Mar-88	75	13.0	461.00	0.92	74.39	23.5	39.06	3.9	81.06	18.65	112.84	181.7	1.30	181.7	2.10	13.7	286.9	15.71	49.9	7.83	0.667	1.020	0.605
Apr-88	106	14.9	544.03	0.75	84.73	29.3	48.17	9.0	69.37	13.08	126.08	202.9	1.60	202.9	2.35	19.1	292.3	22.68	56.1	12.49	0.670	1.368	0.673
May-88	136	16.5	571.42	0.69	84.25	29.0	49.33	9.6	70.43	30.29	167.71	270.0	0.28	270.0	3.12	19.3	292.4	22.34	40.6	9.91	0.670	1.360	0.675
Jun-88	166	17.2	701.08	0.89	101.47	38.6	62.30	17.1	67.83	14.00	136.33	219.3	1.20	219.3	2.54	27.4	301.0	37.41	40.9	15.31	0.676	2.179	0.763
Jul-88	197	16.6	660.55	0.84	106.55	41.4	73.90	23.3	72.98	23.19	148.77	239.3	1.20	239.3	2.77	32.3	305.5	48.49	49.6	23.78	0.679	2.720	0.801
Aug-88	228	15.3	624.39	0.88	102.13	40.0	73.19	22.9	77.36	24.34	134.28	216.1	1.30	216.1	2.50	31.0	304.9	46.39	50.9	23.68	0.678	2.652	0.798
Sep-88	259	13.5	490.71	0.39	78.57	25.9	38.77	3.4	53.17	10.73	90.97	146.5	1.30	146.5	1.69	16.1	291.3	20.43	33.0	6.86	0.669	1.207	0.661
Oct-88	289	11.0	420.64	0.81	96.03	35.6	61.36	16.2	86.15	30.94	106.30	164.1	1.50	164.1	1.90	25.9	299.8	33.39	33.6	17.91	0.674	1.994	0.745
Nov-88	320	9.7	330.13	0.72	75.90	24.4	42.63	6.0	83.67	22.67	110.27	177.3	1.00	177.3	2.05	15.2	288.4	17.28	59.1	9.17	0.667	1.110	0.624
Dec-88	350	7.5	290.97	0.63	70.32	21.3	34.94	1.6	88.00	21.90	110.71	178.2	1.80	178.2	2.06	11.5	284.6	13.55	55.0	7.44	0.665	0.895	0.574
Jan-89	15	8.1	294.90	0.70	66.04	19.4	31.45	0.3	69.74	25.01	98.10	157.9	1.60	157.9	1.83	10.1	283.3	12.39	57.4	7.11	0.664	0.826	0.535
Feb-89	45	10.0	394.64	0.85	73.04	23.9	39.10	4.0	63.66	31.46	123.56	197.3	1.50	197.3	2.28	13.9	287.1	15.93	57.7	9.19	0.667	1.033	0.608
Mar-89	75	12.6	429.35	0.64	78.39	25.8	38.42	3.6	68.00	20.13	90.97	146.5	1.10	146.5	1.69	12.3	285.0	14.68	44.1	6.47	0.666	0.960	0.591
Apr-89	106	14.9	532.47	0.95	82.40	28.0	38.15	11.7	80.23	19.60	120.57	193.2	1.19	193.2	2.24	23.4	295.0	27.50	49.9	13.73	0.672	1.647	0.713
May-89	136	16.5	692.71	0.94	95.29	35.2	57.05	13.9	67.48	12.46	161.13	259.4	1.20	259.4	3.00	24.3	297.3	30.82	40.0	12.32	0.674	2.040	0.752
Jun-89	166	17.2	712.70	0.92	104.02	40.3	63.88	17.1	64.79	8.23	146.27	235.5	1.20	235.5	2.72	28.9	302.0	39.38	36.4	14.42	0.676	2.209	0.772
Jul-89	197	16.6	658.23	0.84	104.97	40.5	71.45	21.9	70.42	11.50	141.06	227.1	1.20	227.1	2.63	31.2	304.4	45.51	41.9	18.66	0.678	2.584	0.792
Aug-89	228	15.3	624.42	0.88	104.61	40.2	70.39	21.1	73.54	23.74	128.64	207.4	1.20	207.4	2.40	30.4	303.9	44.36	48.7	21.39	0.678	2.527	0.789
Sep-89	259	13.5	542.70	0.67	102.72	39.3	65.27	18.5	64.55	13.23	127.30	205.3	1.30	205.3	2.38	28.9	302.0	39.80	39.6	15.55	0.676	2.300	0.773
Oct-89	289	11.0	420.42	0.81	91.29	33.0	54.84	12.7	73.03	13.87	113.48	182.7	1.50	182.7	2.11	22.8	296.0	27.36	46.3	13.34	0.672	1.681	0.714
Nov-89	320	9.7	330.39	0.81	81.07	27.3	42.03	6.1	84.43	22.43	103.37	166.4	1.80	166.4	1.93	14.7	289.9	19.00	53.4	10.15	0.668	1.206	0.643
Dec-89	350	7.5	273.94	0.75	63.39	17.4	27.33	-2.3	82.23	26.24	90.44	145.7	1.80	145.7	1.69	7.5	280.6	10.33	54.2	5.62	0.663	0.707	0.516
Jan-90	15	8.1	245.58	0.53	60.65	15.9	29.88	-1.6	63.00	37.33	99.29	159.9	1.60	159.9	1.85	7.3	280.3	10.15	60.3	6.11	0.662	0.694	0.512
Feb-90	45	10.0	362.14	0.72	73.08	22.8	36.84	2.3	84.18	34.90	123.79	197.7	1.20	197.7	2.29	12.2	285.3	14.30	55.6	8.08	0.666	0.953	0.589
Mar-90	75	12.6	490.19	0.80	81.26	27.4	44.44	7.1	85.16	35.13	132.03	212.6	1.10	212.6	2.46	17.2	290.4	19.68	55.1	10.85	0.669	1.244	0.650
Apr-90	106	14.9	488.68	0.83	72.17	22.3	45.73	6.5	72.70	24.03	100.77	167.3	1.30	167.3	1.93	14.4	287.6	16.42	48.4	7.94	0.667	1.061	0.464
May-90	136	16.5	660.08	0.87	92.19	33.4	53.33	13.0	70.15	15.19	162.42	261.3	1.20	261.3	3.03	23.2	296.4	28.45	42.0	12.17	0.673	1.717	0.712
Jun-90	166	17.2	672.00	0.84	100.05	37.8	62.13	16.7	68.27	14.07	117.07	188.3	1.20	188.3	2.18	27.9	301.4	36.22	41.2	14.91	0.675	2.119	0.758
Jul-90	197	16.6	578.87	0.60	105.45	40.8	74.06	23.4	73.00	23.05	144.10	232.0	1.20	232.0	2.68	32.1	305.3	47.78	44.0	22.94	0.678	2.695	0.799
Aug-90	228	15.5	424.22	0.60	91.35	33.0	62.90	17.2	62.50	27.71	105.35	169.6	1.20	169.6	1.96	25.3	298.2	31.01	45.1	14.36	0.670	1.892	0.737
Sep-90	259	13.3	337.93	0.86	99.67	37.4	66.67	20.4	72.30	28.68	122.33	180.7	1.30	180.7	2.09	29.4	302.1	40.91	50.3	20.29	0.676	2.310	0.774
Oct-90	289	11.0	439.16	0.86	93.13	33.8	51.45	13.0	72.00	23.00	93.32	150.4	1.30	150.4	1.76	22.5	296.1	27.99	47.3	13.29	0.672	1.699	0.716
Nov-90	320	8.7	243.70	0.47	79.03	25.0	34.33	1.3	50.91	30.37	87.23	140.5	1.80	140.5	1.63	8.3	281.3	10.84	33.7	3.65	0.663	0.797	0.526
Dec-90	350	7.5	261.90	0.09	66.58	19.2	34.19	1.2	42.00	19.52	107.16	172.5	1.80	172.5	2.00	10.2	283.4	12.66	40.3	3.00	0.664	0.832	0.556
Jan-91	15	8.1	209.35	0.38	56.48	13.7	32.39	0.1	43.71	31.03	75.61	121.7	1.60	121.7	1.41	4.9	280.1	9.96	47.4	4.72	0.662	0.685	0.508
Feb-91	45	10.0	354.00	0.72	78.39	23.8	42.86	6.0	78.25	42.50	101.14	162.8	1.20	162.8	1.88	13.8	288.1	18.03	60.4	10.91	0.668	1.154	0.633
Mar-91	75	12.6	449.74	0.72	71.68	22.0	43.39	6.3	78.42	34.00	143.19	231.0	1.10	231.0	2.70	14.2	287.3	16.18	56.2	9.42	0.667	1.047	0.611
Apr-91	106	14.9	598.93	0.83	80.58	26.9	46.37	8.0	75.00	28.83	135.53	218.2	1.10	218.2	2.52	17.5	290.6	19.95	53.1	10.40	0.669	1.259	0.653
May-91	136	16.5	698.55	0.95	88.19	31.8	53.29	11.8	74.83	24.84	145.48	234.2	1.25	234.2	2.71	21.8	295.0	26.12	50.6	12.22	0.672	1.599	0.705
Jun-91	166	17.2	773.73	0.64	83.47	28.6	53.07	12.1	59.47	22.33	164.03	264.0	1.30	264.0	2.34	20.6	293.3	23.92	41.0	9.81	0.671	1.476	0.687
Jul-91	197	16.6	634.79	0.81	102.33	39.1	69.66	20.9	69.00	27.03	121.66	195.9	1.20	195.9	2.27	30.0	303.2	42.43	44.5	20.56	0.677	2.431	0.782
Aug-91	228	15.5	611.23	0.83	104.16	40.1	73.30	23.0	62.32	23.42	121.74	196.0	1.30	196.0	2.27	31.5	304.7	46.33	43.9	20.32	0.678	2.624	0.799
Sep-91	259	13.3	494.47	0.75	99.67	37.6	70.43	21.4	71.83	31.30	113.40	182.6	1.30	182.6	2.11	29.3	302.6	41.16	51.7	21.27	0.677	2.368	0.778
Oct-91	289	11.0	399.66	0.74	95.55	34.3	60.26	15.7	71.35	25.77	128.65	206.2	1.30	206.2	2.25	24.9	298.1	31.57	48.8	15.39	0.674	1.808	0.736
Nov-91	320	8.7	254.83	0.50	67.27	19.6	39.90	4.4	53.70	23.97	104.90	168.8	1.80	168.8	1.95	12.0	285.2	14.02	56.3	5.37	0.663	0.923	0.581
Dec-91	350	7.5	222.35	0.51	66.40	19.2	41.58	5.3	84.23	43.66	86.32	139.3	1.80	139.3	1.61	12.2	285.4	14.23	64.0	9.11	0.666	0.937	0.585
Jan-92	15	8.1	271.90	0.65	68.61	20.3	37.52	3.1	86.48	35.35	91.43	147.2	1.60	147.2	1.70	11.7	284.9	13.73	62.0	8.39	0.665	0.908	0.577
Feb-92	45	10.0	379.84	0.66	74.05	23.4	45.60	7.6	89.34	44.61	105.72	170.2	1.50	170.2	1.97	13.5	288.4	17.39	63.0	11.78	0.668	1.327	0.628
Mar-92	75	12.6	425.83	0.66	78.23	21.2	43.77	6.5	94.24	45.13	91.32	147.3	1.10	147.3	1.70	13.9	287.8	15.87	69.7	11.06	0.667	1.030	0.607
Apr-92	106	14.9	493.03	0.63	74.30	23.3	44.63	7.6	83.47	29.63	76.47	123.1	1.10	123.1	1.42	15.3	288.4	17.34	56.2	9.74	0.666	1.113	0.623
May-92	136	16.5	633.45	0.82	81.61	34.2	48.23	16.3	76.90	31.97	109.61	176.5	1.20	176.5	2.04	25.2	298.4	32.12	55.4	17.90	0.674	1.908	0.739
Jun-92	166	17.2	624.67	0.73	93.30	34.8	59.77	15.4	65.30	29.57	118.67	191.1	1.30	191.1	2.21	24.7	297.9	31.14	47.4	14.77	0.674	1.857	0.734
Jul-92	197	16.6	632.58	0.79	103.77	39.9	73.84	23.3	63.52	32.77	134.31	216.9	1.30	216.9	2.51	31.4	304.7	46.37	47.4	22.08	0.678	2.626	0.795
Aug-92	228	15.5	584.23	0.79	105.13	40.6	78.23	25.6	60.13	35.13	144.98	233.3	1.30	233.3	2.70	35.9	306.3	50.66	51.1	26.41	0.679	2.835	0.807
Sep-92	259	13.5	509.38	1.00	79.70	28.5	54.43	12.5	48.30	21.55	82.87	133.4	1.30	133.4	1.54	19.3	292.6	22.64	35.8	7.93	0.670	1.406	0.677
Oct-92	289	11.0	388.65	0.71	94.97	35.3	60.48	15.0	70.98	31.82	106.12	170.9	1.30	170.9	1.98	24.6	297.7	30.85	53.6	15.00	0.674	1.844	0.732
Nov-92	320	8.7	307.47	0.73	73.20	24.0	41.71	5.4	71.07	25.57	105.59	169.9	1.80	169.9	1.97	14.7	287.9	16.73	48.7	8.55	0.667	1.078	0.618
Dec-92	350	7.5	234.74	0.57	62.07	17.3	35.97	2.3	86.00	48.30	96.77	155.8	1.80	155.8	1.80	9.7	282.8	12.02	67.2	6.68	0.664	0.906	0.548

RHo = 46*RH/(*0.75-(3.984*100^-4*TKm^4)/(*.34-.064*ED^.5)/(1.3 + .9u/N)

UH = UHo*1124/(43.2*(URo + 1))

/TX(n)-5.0180)

"n" = .0043*RHmax-u/N-1.41

"bi" = 0.906-0.00443*RHmin + 0.7949*u/N + 0.0764*(@LN(UH + 1))^2-0.0004*RHmin*u/N-0.00643*RHmin*UH + 0.2811*@LN(UH + 1)*@LN(u/N + 1)-0.00975*@LN(UH

"C"(using limiting values in Col. AH in AJ) = 0.452+.0741*UH + .00219*UH*Ru + .000402*RHmin^2

"C" cont'd + 0.0000394*UH*(RHmax^2ed + .0000234*UH^2*(RHmin)^2ed-.0000086*UH)^2*UH*R

"n1" = 1.0654-.0012822m + .04495*UH-.0002*RHmin*UH-.315*10^-4*RHm^2-.0010206*UH^2

(Ro): IF .017RS < -3.0,3.0, IF .017RS > 12,12,OTHERWISE, = .017RS

(RHmin): IF RHmin < -30,30, IF RHmin > +90,90, OTHERWISE, = RHmin

"ni" = 0.8043 RHmin - u/N -1.4 u/N - 1.42 (UH): IF UH > 10.0 m/s,(UH)=10.0

N = (24/@PI)*ARCCOS(-TAN(PHI)*TAN(.409*SIN(2*@PI*234 + JY/365))) URRm: @IF(URr < = 1.0,URRm = 1.0,@IF(URr > = 4,URRm = 4,otherwise URRm = URr

RHo MJ/M2/DY	UH MJ/%	(EA-ED)2 MJ	(EA-ED)4 MJ	RHO kg/m^3	cv mm/m	GAM* MJ/C/kg	daylight hrs, N	Bl-Cr p kN/mm2 p=1 kN	FAO Bl-Cr "ni"	FAO Bl-Cr "bi"	FAO RAD "bi"	Limits for FAO-PEN, RAD, & Bl-Cr (FAO RAD & Bl-Cr (Rq	(Bl-Cr mm (Bl-Cr mm	(UH) limit	(UH) limit	OPEN "C" limit	SCSBC Ro = 1.0 mm/day	FAOBC mm/day	FAORA mm/day	F-T mm/day	J-H ETo mm/day	FAOPEN mm/day	FAOCPE mm/day	CALIP. FAOCPEN mm/day
6.73	0.41	9.99	37.37	1.100	204.4	0.89	13.78	0.311	-2.20	1.46	0.67	11.71	90.0	0.81	1.00	1.10	5.79	6.50	7.05	4.33	6.99	6.20	6.85	5.60
5.25	0.69	11.49	44.59	1.228	151.2	0.90	13.05	0.296	-2.22	1.68	1.01	10.31	56.0	1.49	1.30	1.00	3.63	5.36	4.74	4.38	5.08	5.74	5.33	4.99
1.30	2.48	6.39	9.70	1.245	98.8	1.13	10.09	0.229	-1.94	1.51	0.99	5.04	76.3	2.46	1.40	0.93	1.79	2.34	2.35	1.06	1.85	2.99	3.69	2.45
2.48	2.08	7.09	11.35	1.232	77.6	1.26	10.79	0.246	-2.09	1.59	1.01	6.43	78.3	3.08	1.30	0.95	1.44	3.63	3.05	1.91	2.71	4.31	5.92	3.50
3.94	2.44	8.42	13.60	1.223	73.5	1.38	11.79	0.269	-2.20	1.73	1.00	8.04	82.7	3.84	1.40	1.00	3.00	4.83	3.18	3.13	3.89	5.33	5.36	4.70
5.34	2.43	14.65	23.52	1.197	85.9	1.52	12.88	0.294	-2.30	1.83	1.02	10.66	77.7	4.49	1.50	1.00	4.97	7.54	5.42	4.78	6.07	7.27	7.50	6.39
6.00	3.12	18.42	26.46	1.187	40.2	1.55	13.73	0.315	-2.23	1.85	1.07	11.40	66.3	5.12	1.30	1.00	6.07	9.00	6.66	5.55	7.08	9.04	9.04	7.53
8.34	3.77	29.73	48.70	1.166	38.4	1.28	14.17	0.323	-2.29	1.90	1.30	12.00	50.6	2.77	1.20	0.95	8.23	11.33	10.32	6.24	8.65	10.37	10.03	8.34
6.45	2.84	28.41	38.18	1.161	76.4	1.29	13.96	0.319	-2.27	1.82	1.06	11.92	56.8	2.84	1.20	0.97	8.51	10.71	9.85	6.43	8.73	10.42	10.08	8.27
5.65	3.03	22.14	30.56	1.167	71.6	1.33	12.19	0.301	-2.15	1.68	1.04	10.26	68.5	3.02	1.28	0.99	7.36	8.71	7.99	5.49	7.46	8.96	8.83	7.38
4.33	2.41	21.40	31.44	1.176	86.2	1.22	12.14	0.273	-2.15	1.69	1.00	8.70	64.5	2.61	1.30	0.96	6.84	7.51	6.69	4.13	5.00	7.52	7.26	6.19
2.93	2.14	12.42	17.85	1.199	111.3	1.09	11.13	0.254	-1.99	1.52	0.95	6.15	82.5	2.16	1.50	0.98	6.08	4.13	3.77	2.58	3.39	6.23	6.19	5.73
1.84	1.58	6.59	10.35	1.227	129.3	1.03	10.14	0.234	-1.99	1.38	0.93	5.31	86.1	1.96	1.40	0.99	3.48	2.88	2.37	1.33	2.32	3.77	3.36	2.56
1.26	1.22	3.42	5.58	1.262	113.3	1.06	9.13	0.224	-1.85	1.27	0.93	4.19	88.0	2.23	1.28	0.95	1.22	1.44	1.63	0.82	1.22	3.39	3.79	1.45
1.40	1.44	5.12	8.73	1.244	100.5	1.12	10.05	0.229	-1.92	1.46	0.94	4.98	90.0	2.44	1.60	0.97	1.61	2.45	2.33	1.15	1.84	2.52	2.44	2.22
2.44	2.42	8.00	12.90	1.229	98.5	1.14	10.79	0.244	-2.14	1.59	0.95	6.60	90.0	2.42	2.50	1.02	2.55	3.68	3.64	2.06	2.88	3.37	3.42	3.23
3.60	2.20	7.84	12.37	1.224	94.6	1.16	11.79	0.260	-2.00	1.57	1.00	7.84	88.1	2.26	1.10	1.00	2.59	4.04	4.42	2.73	3.24	4.55	4.54	4.03
4.88	2.46	9.73	16.31	1.200	84.3	1.22	12.88	0.294	-2.08	1.55	0.97	9.25	80.2	2.46	1.10	1.00	4.34	5.63	5.75	4.14	4.73	5.09	4.15	5.34
5.16	3.41	13.32	19.09	1.210	63.7	1.40	13.73	0.313	-2.05	1.71	1.08	9.75	70.4	3.41	1.20	0.97	4.45	7.09	6.77	4.39	5.08	7.01	7.62	6.48
6.57	3.77	22.98	33.34	1.173	74.4	1.27	14.17	0.323	-2.24	1.80	1.05	11.92	67.6	3.77	1.20	1.01	7.45	9.93	9.29	6.32	8.05	9.52	9.65	7.97
6.69	3.02	24.70	33.61	1.152	71.8	1.34	13.96	0.319	-2.15	1.64	1.02	11.23	72.9	3.02	1.30	1.02	9.30	9.90	8.90	6.75	8.53	9.87	10.04	9.25
6.17	2.53	23.02	34.93	1.154	65.9	1.35	13.19	0.301	-2.18	1.64	1.00	10.41	77.3	2.53	1.20	1.03	8.37	9.05	8.15	6.19	7.93	8.73	9.01	7.51
3.47	1.92	13.97	17.72	1.215	117.4	1.07	12.16	0.278	-1.95	1.49	1.00	7.32	55.2	1.92	1.30	0.93	3.67	4.88	4.13	2.89	3.63	5.44	5.08	4.47
3.40	2.28	15.48	24.20	1.179	104.4	1.12	11.13	0.254	-2.13	1.60	0.98	7.15	84.0	2.28	1.50	1.02	3.30	6.04	6.92	3.25	4.37	5.36	5.44	4.36
1.83	2.64	8.11	12.68	1.227	96.0	1.15	10.24	0.234	-2.03	1.54	0.99	5.17	69.7	2.64	1.80	0.98	2.34	3.41	2.97	1.64	2.32	3.63	3.30	3.97
1.28	2.65	4.09	10.38	1.244	50.4	1.34	9.03	0.224	-2.34	1.84	0.90	4.99	88.1	2.65	1.80	0.96	1.79	2.76	3.49	0.92	1.64	2.44	2.39	2.35
1.53	2.33	5.28	8.75	1.330	108.4	1.09	10.85	0.239	-2.00	1.47	0.98	4.04	89.7	2.23	1.00	0.97	1.43	2.31	2.21	1.07	1.68	2.44	2.40	2.19
2.63	2.74	6.75	10.63	1.232	87.1	1.20	10.79	0.244	-2.12	1.56	0.97	6.71	83.8	2.74	1.50	0.99	2.41	3.46	3.66	2.06	2.80	3.71	3.66	3.23
3.35	1.70	8.19	11.67	1.239	117.4	1.06	11.79	0.269	-1.99	1.45	1.01	7.30	68.1	1.70	1.10	0.93	2.36	3.47	4.03	2.49	3.07	4.21	4.07	3.63
3.55	2.35	13.77	22.22	1.194	88.7	1.23	12.66	0.294	-2.28	1.75	1.00	10.76	80.2	2.35	1.10	1.04	5.12	7.23	7.36	4.94	4.22	7.09	7.40	6.31
6.18	3.38	18.49	27.43	1.197	66.3	1.38	13.73	0.315	-2.29	1.90	1.07	11.76	67.5	3.20	1.20	1.00	6.66	9.23	8.95	5.70	7.24	9.35	9.34	7.73
6.56	2.97	23.16	36.17	1.169	73.0	1.32	14.17	0.323	-2.29	1.91	1.08	12.00	64.7	2.97	1.20	1.00	7.82	10.54	9.80	6.32	8.49	10.26	10.25	8.39
6.32	2.67	24.85	37.64	1.158	71.7	1.30	13.96	0.319	-2.28	1.78	1.08	11.16	70.4	2.67	1.20	1.01	8.85	10.00	9.04	6.30	8.23	9.95	10.04	8.24
6.85	2.62	22.77	31.82	1.158	83.9	1.25	13.19	0.301	-2.19	1.66	1.01	10.63	73.6	2.62	1.20	1.02	8.01	8.94	8.18	5.99	7.76	8.75	8.92	7.43
4.37	2.09	24.24	34.54	1.168	93.7	1.24	12.16	0.278	-2.23	1.70	1.06	9.23	64.9	2.69	1.30	0.97	4.34	6.38	7.25	4.43	6.42	8.07	7.84	6.64
3.06	2.34	15.42	23.06	1.194	94.1	1.17	11.13	0.254	-2.15	1.46	1.03	7.15	73.0	2.34	1.30	0.97	4.47	5.08	4.94	2.76	4.18	3.59	3.39	4.72
1.95	2.46	8.85	14.77	1.220	103.3	1.12	10.24	0.234	-2.12	1.61	0.99	5.63	84.4	2.40	1.00	0.94	2.80	3.81	3.29	1.57	2.64	3.51	3.45	3.10
1.22	2.17	4.74	7.80	1.262	118.4	1.05	9.03	0.224	-2.05	1.49	0.97	4.64	92.2	2.17	1.10	0.95	1.22	1.93	2.04	0.79	1.38	2.13	2.01	1.88
1.48	2.28	4.05	6.21	1.263	107.5	1.09	10.05	0.229	-1.76	1.22	0.94	4.14	83.8	2.28	1.00	0.95	1.21	1.41	1.70	0.95	1.23	2.12	1.97	1.80
2.43	2.75	6.44	10.69	1.229	86.9	1.20	10.79	0.246	-2.01	1.52	0.98	6.16	84.2	2.75	1.50	0.97	2.15	3.14	3.38	1.80	2.41	3.56	3.46	3.12
3.92	2.38	8.83	14.39	1.217	88.9	1.24	11.79	0.269	-2.13	1.60	0.98	6.59	85.2	2.38	1.10	1.01	3.35	4.79	5.01	3.22	3.99	5.16	5.21	4.58
4.29	2.83	8.48	11.36	1.231	102.9	1.12	12.66	0.294	-1.95	1.40	1.06	4.32	72.7	2.83	1.50	0.99	2.97	4.13	4.80	3.32	2.52	3.00	4.95	4.36
3.96	3.38	16.28	24.00	1.192	85.7	1.38	13.73	0.315	-2.21	1.80	1.04	11.22	70.4	3.30	1.30	1.00	5.61	8.41	6.26	5.39	6.02	4.75	6.78	5.34
4.32	2.38	13.31	21.17	1.175	91.2	1.19	14.17	0.323	-2.19	1.71	1.04	11.42	68.3	2.38	1.20	1.02	7.23	9.27	8.72	6.04	7.00	8.00	8.94	7.46
5.95	2.93	24.84	33.50	1.153	74.1	1.31	13.96	0.319	-1.99	1.52	1.08	9.84	73.0	2.93	1.20	1.00	9.06	9.10	7.76	5.93	7.43	9.20	9.18	7.63
4.12	2.34	17.45	21.82	1.140	105.9	1.14	13.19	0.301	-1.71	1.22	1.02	7.23	62.6	2.14	1.30	0.94	6.02	5.50	5.38	3.83	4.51	6.37	6.00	5.21
4.08	2.34	19.83	26.45	1.144	95.1	1.17	12.38	0.278	-2.13	1.57	1.00	9.14	72.3	2.34	1.30	1.00	6.77	7.22	6.73	4.76	6.34	7.16	7.20	6.14
3.25	2.09	14.69	21.36	1.192	114.2	1.08	11.13	0.254	-2.18	1.61	1.01	7.47	72.0	2.09	1.50	0.99	4.51	5.48	5.06	2.92	4.37	5.14	5.07	4.46
1.86	2.09	7.39	8.79	1.280	122.3	1.04	10.24	0.234	-1.81	1.36	1.06	4.18	80.0	2.09	1.80	0.87	1.37	1.92	2.93	0.97	1.29	2.98	2.59	2.36
1.09	2.17	7.38	10.25	1.250	99.6	1.13	9.03	0.224	-2.01	1.54	1.02	4.45	62.0	2.17	1.80	0.88	1.60	2.42	2.30	0.74	1.53	3.01	2.66	2.42
1.32	1.73	5.26	6.53	1.265	141.2	0.99	10.05	0.229	-1.66	1.13	0.99	3.56	63.7	1.73	1.60	0.86	1.18	1.26	1.49	0.84	1.02	2.21	1.97	1.81
2.53	2.16	7.16	10.35	1.223	105.5	1.11	10.79	0.246	-1.94	1.51	0.94	6.05	78.5	2.26	1.50	0.97	2.79	3.05	3.31	2.02	2.73	3.46	3.35	3.02
1.63	2.03	6.76	9.25	1.231	73.5	1.30	11.79	0.269	-1.97	1.39	0.97	7.05	78.4	2.03	1.30	0.97	2.66	3.53	4.23	2.41	3.23	4.60	4.45	3.95
3.18	2.45	9.23	13.96	1.217	74.0	1.26	12.66	0.294	-2.18	1.60	1.00	10.16	75.4	2.45	1.30	1.01	3.70	5.43	6.33	4.24	4.92	6.22	6.29	5.45
6.38	2.96	12.98	18.95	1.197	73.4	1.31	13.73	0.315	-2.24	1.70	1.01	11.00	74.4	2.96	1.30	1.03	5.21	7.45	8.17	5.65	6.60	7.54	8.20	6.92
5.35	2.39	14.11	18.82	1.203	93.1	1.17	14.17	0.323	-1.91	1.45	1.04	9.75	59.5	2.35	1.30	0.97	4.91	6.26	6.47	4.62	5.24	7.05	6.83	5.65
6.46	2.47	21.84	29.23	1.163	67.5	1.21	13.96	0.319	-2.13	1.57	1.00	13.13	69.9	2.47	1.30	1.02	8.17	8.83	8.49	6.37	7.93	8.06	9.00	7.51
5.82	2.47	20.09	32.92	1.156	87.3	1.22	13.19	0.301	-2.15	1.68	1.03	10.39	62.3	2.47	1.20	0.96	6.39	8.79	8.22	5.82	7.34	8.09	8.71	7.29
4.98	2.39	19.89	25.77	1.164	94.1	1.18	12.38	0.278	-2.03	1.46	0.99	8.41	71.8	2.39	1.30	0.99	6.04	6.74	6.16	4.52	5.94	6.96	6.87	5.90
6.12	3.70	36.24	22.51	1.184	81.5	1.20	11.13	0.254	-2.04	1.53	1.02	8.79	72.4	2.70	1.30	0.95	5.04	5.57	4.78	2.89	4.23	5.70	5.43	4.36
3.51	2.31	8.64	10.72	1.242	101.9	1.12	10.24	0.234	-1.81	1.36	1.04	4.53	55.7	2.31	1.30	0.86	1.99	2.46	2.36	2.11	1.65	3.51	3.02	2.72
1.29	2.07	5.14	6.99	1.239	123.4	1.04	9.13	0.224	-1.74	1.16	0.92	3.78	60.2	2.07	1.40	0.93	1.96	1.79	1.73	0.95	1.46	2.11	1.99	1.82
1.56	2.10	5.37	8.23	1.242	116.3	1.06	10.05	0.229	-1.92	1.31	0.95	4.63	86.6	2.10	1.40	0.96	1.47	2.18	2.19	1.13	1.74	2.41	2.31	2.11
2.32	2.36	9.32	8.30	1.226	101.0	1.13	10.79	0.246	-1.86	1.26	0.91	5.77	80.3	2.36	1.30	0.99	2.38	2.86	2.96	1.99	2.57	3.16	3.11	2.81
3.62	1.79	4.98	7.20	1.231	116.3	1.06	11.79	0.269	-1.87	1.21	0.88	7.34	80.8	1.79	1.18	1.02	2.62	2.88	3.53	2.77	3.02	3.46	3.54	3.13
4.42	1.48	7.00	11.08	1.214	139.8	1.00	12.66	0.294	-1.94	1.32	0.94	8.56	82.9	1.48	1.10	1.04	3.17	3.94	4.64	3.46	3.70	4.46	4.64	4.11
6.14	2.23	14.31	20.27	1.182	93.4	1.15	13.73	0.315	-2.09	1.49	0.97	10.88	78.9	2.23	1.30	1.08	6.31	7.93	7.41	5.72	6.78	7.15	7.68	6.52
6.00	2.61	16.37	21.81	1.183	90.8	1.19	14.17	0.323	-2.05	1.47	1.01	10.45	68.5	2.61	1.30	1.00	6.34	7.27	7.42	5.54	6.58	7.82	7.79	6.61
6.34	2.74	24.38	29.97	1.153	79.2	1.27	13.96	0.319	-2.08	1.49	1.02	10.73	62.5	2.74	1.20	0.98	6.75	8.73	8.43	6.35	6.81	9.30	9.11	7.56
5.96	2.95	24.25	29.84	1.147	75.7	1.32	13.19	0.301	-2.05	1.46	1.01	9.93	68.1	2.95	1.20	0.99	6.90	8.39	7.36	6.06	7.60	9.03	8.89	7.42
5.83	3.75	16.71	17.33	1.209	128.8	1.03	12.16	0.278	-2.33	1.71	1.05	6.42	48.5	1.75	1.30	0.94	4.80	5.78	4.30	3.57	3.44	6.34	5.88	5.45
3.10	2.37	13.02	20.07	1.185	108.6	1.14	11.13	0.254	-1.98	1.42	0.99	6.61	70.9	2.37	1.20	0.98	4.96	5.86	6.38	2.86	4.06	5.21	4.94	4.39
1.76	2.53	8.38	12.37	1.229	104.2	1.13	10.24	0.234	-2.01	1.49	1.01	5.23	71.9	2.53	1.20	0.95	2.43	3.14	2.96	1.37	2.26	3.46	3.24	2.92
1.30	2.32	3.94	5.33	1.231	104.5	1.08	9.03	0.224	-1.79	1.14	0.96	3.99	66.1	2.32	1.00	0.94	1.52	1.49	1.00	0.98	1.35	1.94	1.82	1.67

1+.000196*U8*U4*RHmd (cont'd)
Mmd=2.92*10^-6*U30*U4^2*RHmd -0.0000161*RHmd*Ra^2
+11*(@LN(RHmin+19)^2*@LN(Qn/N+1)

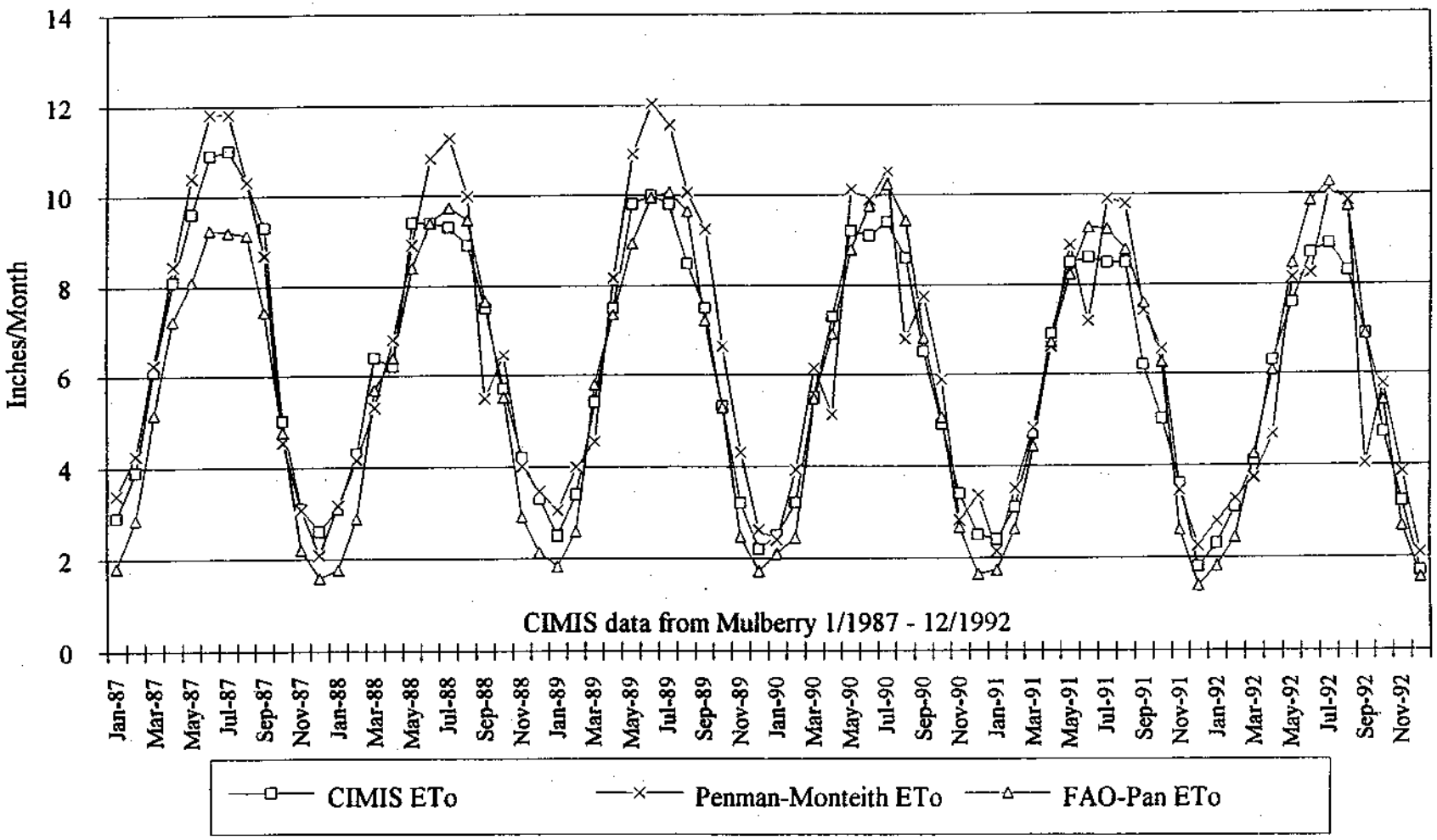
ETo= D4/D+G*(Ra+Gw + G4/D+G*(3.3741xRHO(Ra-Ea)/(P-ea)

Note: For Inch, limit to 1 in 1000ft

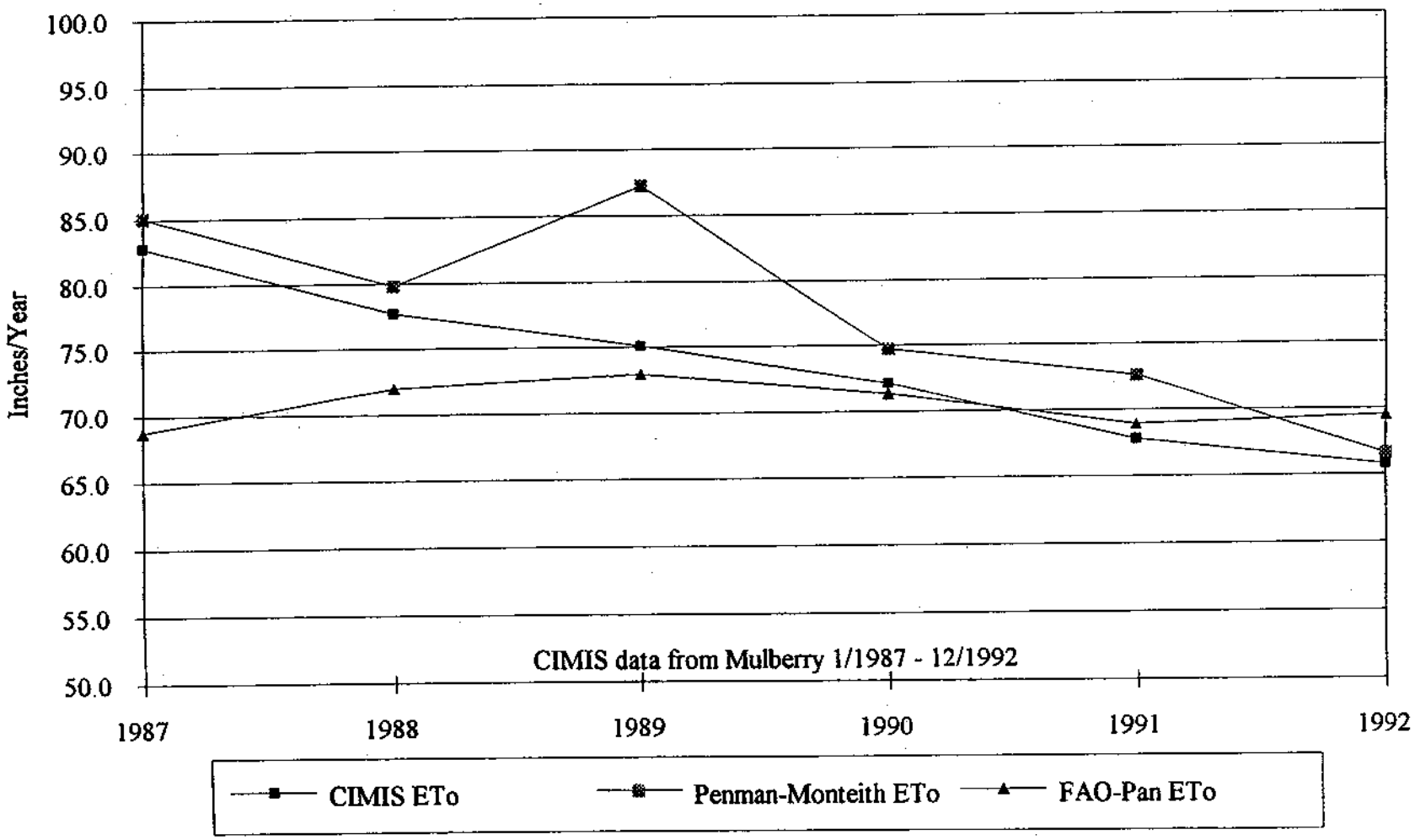
'48PEN mm/day	ETo(P-M) Gmm mm/day	SAMAAN mm/day	Class A Pan, Kp in/day	mm/Day	FAO CASE A(mm), (1) B(day), (2)		UPWIND FETCH, meters	Limits for Kp Calc. 2-m wind	RHmean	(FAO-24 Calc. Kp) (CASE A)	(CASE B)	ETo FAO-Pan mm/day	ETo FAO-Pan in/day	SUM Ra (Ly/day)*12	Ra Equiv. E in/Yr	Class A Pan Evap in/Yr	ETo FAO-PAN in/Yr	Kp Monthly	Kp Annual	ET(ASCE P-M) in/day	in/Yr	ETo (FAO-CPEN) mm/day	in/day	in/Yr	ETo (CIMIS) M in/DAY
5.93	5.75	6.92	7.39	7.89		1	10	84.0	66.0	0.74	999.00	5.88	7.17373225												
5.19	4.81	4.91	7.68	8.50		2	10	112.7	40.5	999.00	0.68	4.11													
2.34	2.79	2.36	3.04	2.49		1	30	173.8	31.9	999.00	0.60	1.50	1.83					0.601		1.40			2.29		
3.36	3.07	3.10	4.54	4.13		2	130	221.4	52.3	999.00	0.57	3.34	2.86					0.825		4.26			4.32		
4.51	3.31	4.25	6.80	5.64		1	100	234.9	31.7	0.75	999.00	4.22	5.15					0.748		6.34			6.20		
6.30	3.86	6.87	9.4	7.94		1	300	200.1	42.0	0.74	999.00	5.92	7.23					0.769		8.46			8.06		
7.69	5.31	7.00	11.46	9.41		1	150	247.4	39.4	0.71	999.00	6.45	8.11					0.706		10.39			11.01		
8.95	10.06	8.80	12.05	11.03		1	200	219.3	30.0	0.69	999.00	7.50	9.34					0.709		13.82			11.83		
8.87	9.66	8.36	13.31	10.91		1	100	223.6	22.4	0.69	999.00	7.54	9.30					0.692		15.02			12.30		
9.06	8.43	7.31	12.53	10.27		1	200	239.9	44.8	0.73	999.00	7.49	9.15					0.730		10.91			10.78		
6.32	7.36	6.56	9.87	8.36		1	200	159.4	39.9	0.73	999.00	6.09	7.43					0.753		8.69			8.15		
3.68	3.72	3.55	6	4.92		1	250	154.2	38.8	0.79	999.00	3.90	4.76					0.794		4.54			5.13		
2.19	2.08	2.74	3.75	3.79		2	30	133.8	61.3	999.00	0.66	1.61	2.23					0.680		3.07			3.28		
1.57	1.71	1.46	2.47	2.02		2	50	149.1	63.4	999.00	0.64	1.34	1.39	3930.324931	121.4	95.83	66.78	0.645	0.718	2.09	83.08		2.69		88.68
2.09	2.39	2.35	2.81	2.30		2	50	171.0	61.4	999.00	0.62	1.46	1.78					0.635		3.17			2.97		
3.85	2.64	3.36	4.31	3.93		2	120	174.2	59.8	999.00	0.60	2.36	2.68					0.648		4.16			4.13		
3.90	4.34	4.05	7.47	6.12		1	100	181.7	49.9	0.76	999.00	4.66	5.69					0.761		5.29			5.94		
5.16	5.76	5.71	8.03	6.88		1	300	202.9	56.3	0.73	999.00	5.24	6.39					0.796		6.30			7.27		
6.30	7.31	6.19	11.98	9.02		1	150	270.0	40.4	0.70	999.00	6.09	8.01					0.702		8.92			9.30		
8.23	9.17	8.38	12.54	10.62		1	200	219.5	40.9	0.73	999.00	7.70	9.40					0.750		10.83			11.39		
6.54	9.14	8.23	13.35	10.94		1	100	239.3	49.0	0.73	999.00	7.90	9.73					0.729		11.28			11.26		
7.63	8.14	7.44	12.48	10.23		1	200	208.1	50.9	0.76	999.00	7.76	9.48					0.729		9.98			11.00		
4.88	4.64	4.99	10.26	8.69		1	200	146.5	33.8	0.72	999.00	6.18	7.84					0.746		5.49			6.00		
4.60	5.30	4.06	7.05	5.78		1	250	164.1	33.6	0.78	999.00	6.51	5.33					0.781		6.46			6.64		
2.81	3.39	2.89	4.58	3.88		2	30	177.5	33.1	999.00	0.62	2.39	2.92					0.637		4.01			3.90		
2.14	2.04	2.24	3.52	2.88		2	50	178.2	35.0	999.00	0.61	1.74	2.14	5702.309344	116.7	96.39	76.99	0.609	0.732	3.47	79.83		3.16		82.36
2.04	2.50	2.23	2.95	2.42		2	50	187.0	37.4	999.00	0.62	1.51	1.84					0.624		3.05			2.93		
3.13	2.62	3.24	4.38	3.97		2	120	197.3	37.7	999.00	0.59	2.39	2.79					0.592		5.99			4.06		
3.64	3.73	3.77	7.66	6.26		1	100	144.5	64.3	0.76	999.00	4.53	5.30					0.757		4.54			4.97		
6.22	4.93	6.47	8.68	6.20		1	300	195.8	49.9	0.76	999.00	6.23	7.33					0.739		8.18			8.76		
7.49	8.95	7.41	12.7	10.41		1	150	259.4	40.0	0.70	999.00	7.33	8.94					0.704		10.92			11.39		
8.74	10.28	8.90	14.1	11.94		1	200	235.5	36.4	0.71	999.00	8.42	9.95					0.706		12.05			12.00		
8.38	9.48	8.17	14.2	11.63		1	100	227.1	41.0	0.71	999.00	8.28	10.00					0.730		11.56			12.25		
7.42	8.26	7.59	12.84	10.52		1	200	207.6	48.7	0.73	999.00	7.98	9.65					0.731		10.08			10.89		
6.79	7.83	6.61	9.88	8.45		1	200	205.3	39.1	0.72	999.00	6.12	7.23					0.724		9.23			9.26		
4.45	3.45	4.62	7.05	5.76		1	250	182.7	44.5	0.75	999.00	4.33	5.26					0.753		6.43			6.58		
2.91	3.63	2.67	3.90	3.37		2	30	186.4	33.6	999.00	0.62	2.09	2.47					0.623		4.31			4.08		
1.76	2.13	1.93	2.8	2.25		2	30	145.7	34.2	999.00	0.62	1.42	1.78	5998.47484	122.8	102.31	72.92	0.618	0.713	2.62	87.22		2.50		89.72
1.36	1.97	1.93	3.32	2.72		2	30	139.9	64.3	999.00	0.63	1.72	2.10					0.632		3.40			2.40		
3.97	3.56	3.16	4.18	3.79		2	120	197.7	55.6	999.00	0.59	2.22	2.65					0.585		3.95			3.82		
4.41	5.03	4.57	7.17	5.87		1	100	233.6	58.1	0.76	999.00	4.49	5.45					0.784		6.14			6.36		
4.37	4.21	4.39	8.05	7.66		1	300	147.1	48.4	0.76	999.00	5.83	6.91					0.764		5.21			5.84		
7.41	8.90	7.04	12.38	10.13		1	150	261.5	42.8	0.71	999.00	7.21	8.80					0.712		10.15			10.71		
7.79	8.37	8.10	13.25	11.22		1	200	188.5	41.2	0.74	999.00	8.28	9.76					0.736		9.89			10.56		
7.40	8.43	8.05	14.05	11.31		1	100	232.6	48.8	0.73	999.00	8.39	10.20					0.729		10.53			11.20		
5.48	5.57	6.08	12.5	10.24		1	200	169.4	45.1	0.75	999.00	7.73	9.43					0.754		6.79			7.12		
6.25	6.56	6.03	8.91	7.54		1	200	180.7	38.5	0.76	999.00	5.77	6.83					0.765		7.75			6.30		
4.41	4.82	4.59	8.55	5.37		1	250	150.6	47.5	0.77	999.00	4.14	5.01					0.771		5.66			6.19		
2.43	2.79	1.82	4.68	3.97		2	30	140.3	33.7	999.00	0.57	2.34	2.66					0.568		2.82			3.04		
2.53	2.76	2.06	2.92	2.39		2	30	172.5	40.8	999.00	0.57	1.36	1.48	5605.63533	110.7	90.95	71.34	0.567	0.721	3.36	74.73		3.25		79.22
2.21	1.76	1.70	2.87	2.35		2	30	131.7	47.4	999.00	0.61	1.42	1.74					0.606		2.15			2.41		
2.97	3.19	3.44	4.29	3.89		2	130	162.1	60.4	999.00	0.61	2.38	2.63					0.612		3.52			3.83		
3.91	3.93	3.67	5.8	4.75		1	180	233.1	58.2	0.76	999.00	5.63	4.45					0.765		4.65			5.49		
5.40	3.60	5.26	8.89	7.53		1	200	218.3	52.1	0.76	999.00	5.60	6.72					0.756		6.63			7.43		
8.93	7.28	8.72	11.1	9.09		1	150	234.2	50.6	0.74	999.00	6.71	8.24					0.742		8.89			10.01		
6.13	6.09	6.52	12.58	10.65		1	200	164.6	43.0	0.74	999.00	7.83	9.27					0.737		7.19			8.04		
7.80	8.13	7.87	12.46	10.21		1	100	195.9	48.3	0.76	999.00	7.38	9.35					0.742		8.91			10.99		
7.38	8.22	7.27	11.84	9.70		1	300	190.0	43.9	0.74	999.00	7.20	8.78					0.742		9.39			10.64		
6.04	6.29	5.92	8.82	8.40		1	200	182.4	51.7	0.75	999.00	6.66	7.61					0.763		7.43			8.22		
4.76	5.38	4.65	8.25	6.98		1	250	154.2	43.6	0.74	999.00	5.53	6.26					0.759		6.56			6.63		
2.81	2.93	3.32	4.54	3.84		2	30	168.9	38.3	999.00	0.57	2.20	2.60					0.573		3.46			3.57		
1.79	1.85	1.93	2.15	1.76		2	30	198.3	44.0	999.00	0.65	1.35	1.40	5523.415828	113.1	94.69	66.94	0.651	0.728	2.26	72.80		2.43		79.52
2.43	2.28	2.18	2.84	2.34		2	30	147.3	41.8	999.00	0.64	1.50	1.83					0.679		2.78			3.02		
2.74	2.83	3.04	4.14	3.39		2	120	176.2	63.6	999.00	0.63	2.14	2.64					0.599		3.28			3.53		
3.34	3.06	3.53	5.21	6.23		1	180	147.5	89.3	0.81	999.00	3.68	4.34					0.815		3.79			4.32		
4.07	3.93	4.60	7.86	6.44		1	200	183.1	56.2	0.80	999.00	5.15	6.09					0.771		4.67			5.48		
6.58	6.64	6.93	10.08	9.00		1	150	136.3	55.4	0.77	999.00	6.96	8.49					0.775		8.16			9.37		
6.88	7.00	7.25	13.51	11.07		1	200	191.1	47.6	0.75	999.00	8.34	9.85					0.739		8.26			9.21		
8.08	8.28	7.79	14.02	11.49		1	100	216.9	47.6	0.73	999.00	8.42	10.28					0.733		10.11			11.12		
7.79	8.07	7.03	12.98	10.62		1	200	203.3	32.1	0.75	999.00	7.98	9.74					0.751		9.83			10.83		
3.30	3.41	4.34	8.88	7.94		1	300	133.4	36.6	0.79	999.00	5.83	6.89					0.713		4.43			4.36		
4.45	4.75	4.48	8.88	5.73		1	250	170.9	51.4	0.77	999.00	4.45	5.41					0.771		5.70			6.06		
2.44	2.26	2.80	4.57	3.74		2	30	160.9	48.7	999.00	0.61	2.27	2.68					0.586		3.85			3.83		
2.41	1.72	1.49	2.38	1.96		2	30	155.8	67.2	999.00	0.66	1.28	1.57	5328.859436	109.1	95.21	69.49	0.656	0.730	2.30	66.59		2.22		73.43

Rainy In/Mo	In/Yr	ETo (FAO-RAD) In/Mo	In/Yr	ETo(A.V.) 3 CIMIS In/PER. V. STA. In/Yr 33.46	(RN)o In/Mo	(RNo) ACCUM. INCHES	(RNo) ANNUA INCHES	U2 MPH/2
2.9		3.12			1.83	1.83		55.96774
3.9		4.43			2.73	4.56		60.70796
6.1		6.32			4.80	9.37		72.62903
6.3		8.77			6.34	15.70		82.33333
9.6		10.55			7.32	23.03		76.83871
10.9		11.96			2.49	30.51		66.1
11		12.03			7.67	38.18		69.8871
10.5		9.73			4.88	45.26		74.51613
9.5		7.90			3.12	50.38		61.93333
5		6.66			3.58	53.96		47.6071
3.1		3.27			2.29	56.25		41.23333
2.6	42.80	2.04	84.32		1.54	57.79	57.79	46.30645
3.1		2.80			1.96	1.96		53.09677
4.3		4.16			3.02	4.98		54.19966
6.4		5.39			4.40	9.37		58.41935
8.2		6.79			5.77	15.14		69
9.6		8.23			6.30	21.44		83.83486
9.4		10.97			7.36	29.80		68.21667
9.3		10.86			8.16	37.96		74.3871
8.9		9.95			7.50	44.98		62.12903
7.5		8.70			4.10	49.08		45.48333
5.3		6.08			4.14	53.15		50.97581
4.2		3.50			2.38	55.53		55.13333
3.3	77.70	3.04	77.52		1.96	56.87	36.37	55.35484
2.8		2.76			1.86	1.86		49.04839
3.4		4.05			2.88	4.74		61.25
3.4		4.54			4.08	8.82		43.48387
7.5		8.69			6.55	15.37		60.48333
9.8		10.93			7.54	22.91		80.56452
10		11.57			7.75	30.66		73.13333
9.8		11.03			7.72	38.37		78.53226
8.5		9.99			7.36	45.73		64.41935
7.5		8.38			5.39	51.12		63.75
5.3		6.06			3.74	54.86		56.74194
3.2		3.09			2.36	57.34		51.68333
2.2	33.10	2.49	84.95		1.49	58.83	38.83	48.24194
2.5		2.87			1.77	1.77		49.64516
3.2		3.39			2.48	4.45		42.30286
5.3		6.11			4.79	9.24		46.03667
7.3		5.46			5.07	14.31		51.68333
9.2		10.08			7.37	21.68		51.20968
9.1		10.28			7.46	29.14		54.33333
9.4		9.47			7.22	36.36		72.04839
8.4		4.23			5.03	41.38		52.67742
6.3		7.96			3.77	45.15		56.11667
4.9		6.17			3.94	50.99		66.75806
3.4		2.40			1.72	52.71		63.61333
2.3	72.10	2.00	72.87		1.33	54.04	33.95	53.58065
2.4		1.82			1.41	1.41		37.80645
3.1		3.05			2.29	4.40		50.57345
4.7		3.16			4.45	8.85		72.59677
6.3		7.47			6.09	14.94		67.76667
8.5		9.07			7.78	22.72		72.74194
8.6		7.88			6.29	29.02		57.31667
8.5		10.37			7.88	36.90		60.83871
8.3		10.03			7.16	44.06		60.83087
5.2		7.30			5.43	49.43		56.3
5		3.84			3.81	53.24		60.32258
3.6		2.79			1.79	55.03		52.43
1.8	67.80	2.11	74.39		1.56	56.42	35.61	41.23806
2.3		2.66			1.90	1.90		43.72581
3.1		3.41			2.87	4.77		52.86207
4.1		4.33			4.41	9.19		43.33806
6.3		5.48			5.22	14.41		54.23333
7.6		9.06			7.38	21.91		54.80645
8.7		9.00			7.08	28.99		59.33333
8.9		10.29			7.76	36.75		67.35486
8.5		9.47			7.27	44.03		72.45161
6.9		5.12			2.17	46.17		41.43333
4.7		3.50			3.70	49.86		53.88452
3.2		3.38			2.88	52.86		52.96667
1.7	65.80	2.05	60.93		1.58	53.63	37.33	48.3871

CALIPATRIA MONTHLY EVAPOTRANSPIRATION



CALIPATRIA ANNUAL EVAPOTRANSPIRATION



CIMIS SELLEY/ID EL CENTRO FAN

LATDEG = 33 (ET4-EQO WK1), a Program for calculating ET= or ET Rom alfalfa equations (rev 4 Jan. 1992 by W O Pruitt)

LATRAD = 0.575958653 Includes latent Esp for FAO-24 methods e.g. to obtain "C" in (CPED) (App KASCK Manual 70, or Allen and Pruitt, 1991)

IDEAM1,52 = 3 AVAILABLE DATA: Ea,Rs,Tmx,Tmn,RHmx,RHmn, U2,D/N/N(use value of 2.0 if no data available)

ELEV (A) = -10 P.Mb= 1014

FOR WARMEST MONTH 7/1988 SELLEY CIMIS STATION #68

Mean Tmx = 40.66 J-B EA2= 76.38 J-N CT= 0.022

Mean Tmn = 22.78 J-B EA1 27.72 J-B TD= -9.295

EA2-EA1= 48.66

PENMAN-MONTEITH (MONTEITH, 1981) ET of frequently-clipped grass, <12cm, or alfalfa from less tall to max. ht.), Jensen etal. (in Pruitt)

Assume Rb,Zom= 200 zh= 0.03 cm. zo*zom=LN((Zo+d)/Zom))*LN((Zp-d)/Zom))*0.41^2

TARE Rb,Zpm 250 Zom= 1.48 cm. zo*zom 198.9261

Crop Rb,Rcw= 72 Zo= 0.15 cm.

LAI(for>15cm) 2.00 ED=EA*9.MM/100

CROP NO = 1 Crop zo= 49.44

(FOR GRASS) ASS (1) UR=0700-1900 WIND/1500 0700 WIND Note: use UR = 2.0 if no data available

(ALFALFA. (2)

Note: Test Rmax of data are from Davis, California

Second year is from Brawley, Calif. 1971 data (from LeMert, et al.)

DATE OR MONTH	DAY OF YEAR	GLAT= MMDAY	RS LTDAY	n/N	MAXIMUM TEMPT DEG F	DEG C	MINIMUM TEMPT DEG F	DEG C	RHmx %	RHmn %	WIND RUN AT Rb Zm Mi/mn/Dy	Km/Day	UR DAY/ NIGHT	U2 Km/Day	U2 m/s	Tm c DEG C	TKm DEG K	EA MB	RHm	ED MB	GAMMA G	DELTA D	W D/(D+G)
07/2/365	206	16.5	438	0.93	91.9	33.3	57.0	13.9	100.0	32.0	49.7	80.0	0.78	80.0	0.93	23.6	296.7	29.10	66.0	19.21	0.670	1.751	0.723
4/22/71	112	13.3	671	0.91	77.0	25.0	48.0	8.9	58.0	31.0	79.4	113.7	1.30	113.7	1.32	16.9	290.1	19.31	40.5	7.82	0.646	1.223	0.648
1/1987-5/1987 MULBERRY CIMIS STATION #45																							
1/1987-12/1992 SELLEY CIMIS STATION #68																							
Jan-87	15	8.3	296.65	0.73	69.3	20.7	34.9	1.4	76.5	37.1	107.9	173.7	1.60	173.7	2.01	11.2	284.3	13.27	51.9	4.89	0.662	0.880	0.573
Feb-87	45	10.0	378.08	0.79	73.5	23.1	41.4	5.1	78.5	34.1	137.5	221.4	1.50	221.4	2.56	14.1	287.3	16.15	52.3	6.44	0.664	1.045	0.611
Mar-87	75	12.5	508.32	0.88	77.5	25.3	43	6.1	82.7	30.7	145.3	233.9	1.30	233.9	2.71	15.7	288.9	17.83	51.3	5.22	0.665	1.341	0.632
Apr-87	106	14.9	626.83	0.94	81.4	27.0	52.3	11.3	77.7	32.3	124.3	200.1	1.10	200.1	2.32	22.1	295.3	26.66	45.0	12.00	0.669	1.622	0.708
May-87	136	16.5	670.94	0.89	91.6	34.2	58.4	14.8	66.0	12	153.3	247.5	1.20	247.5	2.86	24.5	297.7	30.74	38.4	12.11	0.670	1.837	0.733
Jun-87	166	17.2	687.75	0.93	99.79	37.7	63.34	18.4	53.33	8.64	135.21	217.7	1.20	217.7	2.52	28.0	301.2	37.88	31.9	11.73	0.673	2.205	0.766
Jul-87	197	16.8	680.58	0.88	100.19	37.9	67.23	19.6	54.66	18.55	147.23	237.0	1.20	237.0	2.74	28.7	301.8	39.41	34.3	14.31	0.673	2.281	0.772
Aug-87	228	15.5	607.55	0.84	104.81	40.4	72.94	22.7	64.81	19.16	123.45	198.8	1.20	198.8	2.30	31.6	304.8	46.43	43.0	19.97	0.675	2.631	0.796
Sep-87	259	13.5	542.23	0.47	71.37	21.9	47.23	8.5	57.37	15.07	85.30	137.3	1.30	137.3	1.59	15.2	288.3	17.24	36.2	6.24	0.666	1.107	0.625
Oct-87	289	11.0	360.11	0.62	87.29	30.7	59.26	15.1	74.16	31.13	82.42	132.7	1.50	132.7	1.54	22.9	296.5	27.97	52.6	14.73	0.669	1.692	0.716
Nov-87	320	8.7	286.27	0.62	66.32	19.1	48.13	4.5	81.77	31.67	83.07	133.7	1.00	133.7	1.55	11.8	285.0	13.85	56.4	7.83	0.662	0.914	0.580
Dec-87	350	7.3	261.77	0.68	62.63	17.0	35.48	1.9	84.52	33.26	100.98	162.5	1.00	162.5	1.88	9.5	282.4	11.84	59.3	7.10	0.661	0.797	0.547
Jan-88	15	8.3	257.61	0.59	60.52	15.8	32.42	0.1	75.42	22.07	93.65	150.8	1.60	150.8	1.74	8.0	281.2	10.75	48.3	5.29	0.660	0.731	0.526
Feb-88	45	10.0	411.32	0.91	74.97	25.0	42.24	5.7	77.93	21.17	108.14	174.1	1.50	174.1	2.01	13.2	288.5	17.42	48.5	6.03	0.665	1.118	0.627
Mar-88	75	12.6	543.04	0.90	82.55	28.1	45.94	7.7	60.10	18.26	125.48	202.0	1.30	202.0	2.34	17.5	291.1	20.53	38.3	7.84	0.666	1.251	0.660
Apr-88	106	14.9	597.80	0.83	84.80	29.3	51.07	10.6	71.73	19.87	151.38	243.6	1.50	243.6	2.82	20.0	293.1	23.33	43.8	10.48	0.668	1.443	0.684
May-88	136	16.5	724.58	1.00	93.84	34.4	57.16	13.9	53.77	12.84	177.94	286.5	1.20	286.5	3.31	24.1	297.3	30.10	32.3	9.73	0.670	1.804	0.729
Jun-88	166	17.2	719.63	0.95	101.00	38.3	63.03	18.4	53.50	15.90	158.43	255.1	1.20	255.1	2.95	28.5	301.3	38.56	34.7	12.58	0.673	2.257	0.766
Jul-88	197	16.8	654.32	0.93	105.19	40.7	73.05	22.8	77.48	25.29	120.87	194.6	1.20	194.6	2.25	31.7	304.9	46.80	51.4	24.05	0.675	2.647	0.797
Aug-88	228	15.5	622.87	0.87	103.87	39.9	72.28	22.4	69.45	25.77	111.93	180.3	1.20	180.3	2.09	31.1	304.2	45.30	47.6	21.57	0.675	2.573	0.792
Sep-88	259	13.5	552.60	0.90	96.07	35.7	63.50	16.9	52.03	13.73	96.07	154.7	1.30	154.7	1.79	26.6	300.0	35.20	33.3	11.74	0.672	2.071	0.755
Oct-88	289	11.0	433.65	0.84	85.52	35.3	68.39	15.8	68.77	18.18	87.32	140.9	1.30	140.9	1.63	25.5	298.7	32.69	44.0	14.38	0.671	1.958	0.743
Nov-88	320	8.7	332.97	0.83	74.37	24.6	44.60	7.6	55.20	20.67	133.07	215.5	1.20	215.5	2.49	15.8	289.8	17.98	37.6	6.77	0.663	1.149	0.633
Dec-88	350	7.3	305.19	0.89	74.45	23.4	37.52	3.1	58.97	19.71	121.68	195.6	1.00	195.6	2.27	12.2	285.4	14.33	39.0	5.67	0.663	0.935	0.585
Jan-89	15	8.1	292.94	0.76	66.10	18.9	33.34	1.0	73.81	24.58	103.26	166.2	1.60	166.2	1.92	10.0	283.1	12.24	49.2	4.02	0.661	0.826	0.554
Feb-89	45	10.0	403.29	0.88	75.07	23.9	43.73	5.4	67.89	25.93	150.68	242.6	1.50	242.6	2.83	14.7	287.8	16.69	48.9	7.83	0.664	1.076	0.628
Mar-89	75	12.6	489.55	0.83	83.06	27.3	47.81	8.8	64.48	22.33	157.03	252.8	1.30	252.8	2.93	18.0	291.2	20.66	44.4	9.18	0.664	1.298	0.662
Apr-89	106	14.9	627.51	0.94	91.37	33.0	53.37	12.9	63.35	19.73	132.47	245.5	1.50	245.5	2.84	22.5	294.1	27.97	42.5	13.90	0.669	1.693	0.716
May-89	136	16.5	695.42	0.94	94.32	34.6	60.38	15.6	55.26	14.13	191.55	308.4	1.20	308.4	3.53	25.1	298.3	31.90	34.7	11.47	0.671	1.897	0.739
Jun-89	166	17.2	712.87	0.92	105.57	39.8	64.47	18.0	52.28	9.87	162.13	261.0	1.20	261.0	3.02	28.9	302.2	39.82	31.0	12.36	0.673	2.301	0.774
Jul-89	197	14.8	634.35	0.79	104.23	40.1	69.65	20.9	70.55	14.26	133.03	180.4	1.20	180.4	2.09	30.5	303.7	43.71	42.4	18.53	0.674	2.495	0.787
Aug-89	228	15.5	598.42	0.82	103.45	39.7	71.45	21.9	61.81	17.10	128.30	207.5	1.20	207.5	2.40	30.8	304.0	44.43	39.5	17.53	0.675	2.530	0.790
Sep-89	259	13.5	528.93	0.84	97.17	36.2	63.87	17.7	51.43	19.38	156.15	218.2	1.30	218.2	2.54	27.0	300.1	35.55	35.5	12.41	0.672	2.085	0.756
Oct-89	289	11.0	428.71	0.83	89.33	32.0	54.14	13.4	61.48	21.35	110.90	178.6	1.50	178.6	2.07	22.7	295.8	27.37	41.9	11.56	0.669	1.670	0.714
Nov-89	320	8.7	333.47	0.83	83.90	27.7	48.93	5.0	64.30	23.90	83.03	130.3	1.00	130.3	1.51	16.3	289.5	18.58	46.1	8.57	0.665	1.183	0.640
Dec-89	350	7.3	271.97	0.73	75.36	24.0	34.60	1.3	81.25	12.16	67.16	108.1	1.00	108.1	1.25	12.7	285.8	14.73	16.0	2.47	0.663	0.564	0.593
Jan-90	15	8.1	304.34	0.78	63.10	18.4	32.81	0.4	63.04	25.64	102.87	165.6	1.60	165.6	1.92	9.4	282.6	11.81	49.2	3.83	0.661	0.794	0.546
Feb-90	45	10.0	377.93	0.79	74.46	23.6	37.64	5.1	67.18	24.38	125.34	202.1	1.50	202.1	2.34	13.4	286.5	15.94	45.8	7.02	0.663	0.999	0.601
Mar-90	75	12.6	491.90	0.83	81.45	27.5	46.23	7.9	70.06	25.06	147.45	237.4	1.50	237.4	2.75	17.7	290.8	20.24	48.6	8.70	0.664	1.273	0.657
Apr-90	106	14.9	665.57	0.89	87.48	30.8	54.67	12.6	70.07	23.43	166.33	271.0	1.50	271.0	3.14	21.7	294.8	25.93	47.8	12.28	0.669	1.584	0.703
May-90	136	16.5	690.90	0.93	91.84	33.2	58.32	14.6	67.00	24.15	229.32	369.5	1.20	369.5	4.28	23.5	297.1	29.72	36.6	9.69	0.670	1.793	0.727
Jun-90	166	17.2	697.63	0.71	90.87	32.7	57.33	14.0	48.43	12.08	124.07	199.7	1.20	199.7	2.31	23.3	296.5	28.66	30.2	8.66	0.670	1.728	0.721
Jul-90	197	16.8	650.43	0.76	98.35	36.9	69.42	20.8	45.26	20.58	127.55	205.4	1.20	205.4	2.38	28.8	302.0	39.65	42.9	17.02	0.673	2.292	0.775
Aug-90	228	15.5	617.34	0.86	102.06	38.9	71.97	22.2	49.84	30.42	120.32	193.7	1.20	193.7	2.24	30.6	303.7	43.62	50.1	21.97	0.674	2.500	0.788
Sep-90	259	13.5	497.77	0.76	99.41	37.5	70.07	21.1	66.83	30.40	116.23	190.4	1.30	190.4	2.20	29.3	302.5	40.77	48.4	19.12	0.674	2.348	0.777
Oct-90	289	11.0	438.66	0.86	90.73	32.4	57.10	13.9	56.39	20.58	96.19	154.9	1.50	154.9	1.79	23.3	296.4	28.77	38.5	11.00	0.670	1.723	0.720
Nov-90	320	8.7	328.43	0.79	77.80	25.4	45.43	7.3	56.43	22.36	112.67	181.4	1.00	181.4	2.10	16.5	289.6	18.72	38.0	7.25	0.665	1.190	0.661
Dec-90	350	7.3	260.32	0.49	61.35	18.4	31.35	-0.4	69.52	34.43	89.68	140.5	1.00	140.5	1.65	8.0	281.2	10.75	38.2	5.60	0.660	0.733	0.526
Jan-91	15	8.1	271.97	0.63	63.81	17.7	36.03	2.2	86.26	43.30	62.90	101.3	1.60	101.3	1.17	10.0	283.3	12.24	64.7	7.93	0.661	0.829	0.554
Feb-91	45	10.0	373.67	0.78	78.64	25.9	44.32	6.8	80.86	34.32	90.57	145.8	1.50	145.8	1.69	16.4	289.3	18.63	58.6	10.91	0.665	1.185	0.643
Mar-91	75	12.6	493.32	0.83	71.94	22.2	44.52	7.0	82.94	34.35	174.94	281.6	1.30	281.6	3.26	14.6	287.7	16.59	58.6	9.73	0.664	1.071	0.637
Apr-91	106	14.9	640.08	0.93	83.97	28.9	50.53	10.3	68.90	27.63	164.17	264.3	1.50	264.3	3.06	19.6	292.7	22.79	48.3	13.00	0.667	1.454	0.679
May-91	136	16.5	698.16	0.95	89.63	32.0	53.42	14.1	63.71	24.77	208.43	335.6	1.20	335.4	3.88	23.1	296.2	28.22	45.2	12.77	0.670	1.703	0.718
Jun-91	166	17.2	672.68	0.84	95.87	35.5	63.43	17.5	63.10	25.33	156.96	252.6	1.20	252.8	2.81	26.5	299.6	34.56	43.7	15.11	0.672	2.034	0.752
Jul-91	197	16.8	633.48	0.79	102.19	38.0	70.35	21.3	71.31	25.16	101.34	163.6	1.20	163.8	1.90	30.2	303.3	42.86	48.4	20.73	0.674	2.458	0.784
Aug-91	228	15.5	557.16	0.73	99.34	37.6	69.84	21.0	71.16	30.73	106.42	171.3	1.20	171.3	1.98	29.3	302.5	40.82	51.8	20.00	0.674	2.351	0.777
Sep-91	259	13.5	509.70	0.79	99.36	37.4	69.26	20.7	74.63	32.63	82.10	132.2	1.30	132.2	1.53	29.0	302.2	40.12	54.7	21.92	0.673	2.316	0.775
Oct-91	289	11.0	432.94	0.85	93.45	34.2	60.81	16.0	65.19	27.45	110.74	178.3	1.50	178.3	2.06	25.1	298.3	31.91	46.4	14.81	0.671	1.898	0.739
Nov-91	320	8.7	289.00	0.64	73.87	22.8	42.93	6.1	63.37	24.37	97.48	156.8	1.00	156.8	1.81	14.4	287.6	16.45	45.0	7.40	0.664	1.063	0.616
Dec-91	350	7.3	237.51	0.49	67.23	19.6	42.32	5.7	80.65	46.29	77.35	124.5	1.00	124.5	1.44	12.7	285.8	14.64	65.5	10.73	0.663	0.959	0.591
Jan-92	15	8.1	279.52	0.60	68.73	20.4	38.90	3.6	91.53	44.42	83.97	132.0	1.60	132.0	1.53	12.1	285.3	14.15	68.6	9.62	0.663	0.935	0.584
Feb-92	45	10.0	357.21	0.72	73.58	23.2	44.31	7.9	78.24	37.52	99.07	159.5	1.50	159.5	1.85	15.3	288.7	17.64	57.9	10.31	0.665	1.139	0.630
Mar-92	75	12.6	466.19	0.76	73.48	24.3	48.34	9.7	76.74	31.19	135.16	195.1	1.30	195.1	2.26	14.7	289.9	19.05	54.8	10.28	0.665	1.209	0.645
Apr-92	106	14.9	597.33	0.87	88.39	31.3	55.47	13.1	67.70	34.33	109.07	175.6	1.50	175.6	2.03	22.2	295.4	26.80	46.0	12.35	0.669	1.629	0.709
May-92	136	16.5	651.71	0.85	92.16	33.4	61.48	16.4	74.52	28.97	113.94	183.4	1.20	183.4	2.12	24.9	298.1	31.49	51.7	16.29	0.671	1.876	0.737
Jun-92	166	17.2	597.63	0.69	85.53	29.7	57.27	14.4	59.13	25.43	182.80	294.3	1.20	294.3	3.41	21.9	295.9	26.26	42.3	11.50	0.669	1.602	0.705
Jul-92	197	16.8	643.03	0.81	100.32	38.0	70.94	21.6	64.35	28.96	139.32	224.3	1.20	224.3	2.60	28.8	303.0	41.93	46.6	18.35	0.674	2.406	0.781
Aug-92	228	15.5	524.32	0.66	93.53	34.4	70.93	21.6	71.71	32.32	106.53	171.5	1.20	171.5	1.98	29.0	302.1	40.02	53.0	20.42	0.673	2.311	0.774
Sep-92	259	13.5	519.60	0.92	100.43	38.1	66.43	19.1	64.37	30.63	66.13	106.5	1.30	106.5	1.23	29.1	302.3	40.38	42.0	16.96	0.673	2.329	0.776
Oct-92	289	11.0	430.26	0.81	91.19	32.9	59.35	15.2	60.74	23.58	60.52	97.4	1.50	97.4	1.13	24.0	297.3	29.91	41.2	12.31	0.670	1.793	0.728
Nov-92	320	8.7	304.43	0.85	75.23	24.0	45.13	6.2	68.00	14.97	54.07	87.0	1.00	87.0	1.01	15.1	288.3	17.16	38.5	4.61	0.664	1.103	0.624
Dec-92	350	7.3	246.58	0.63	63.52	17.5	37.37	3.4	80.55	35.06	56.84	91.5	1.00	91.5	1.06	10.2	283.4	12.48	56.3	7.40	0.663	0.834	0.558

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"C"(using leaving values in Col AR to AX)= 0.992 - 0.0781*U4e+ 0.0219*U4*U4e+ 0.000602*U4emul*U4e+ 0.0019
"C"emul4    +0.000019*U4*U4*U4emul*U4e+ 0.00000234*U4*U4*2*U4emul*U4 - 0.0000086*U4*2*U4*U4emul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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EIN= MMBTU/T	U4 MJ/T	(EA-ED)2 MJ/T	(EA-ED)4 MJ/T	RED kgha^2	rs sec/m	GAM* MJ/MJ/gK	stoichiglat kcc, M	Zn-Cr p 30(mul. p/s M)	FAO Zn-Cr %1*	FAO Zn-Cr %1*	FAO RAD %2*	Lines for FAO-PEM, RAD, & Zn-Cr (FAO RAD & Zn-Cr use (U4)) (Ha)	(Hmm) limit	(U4) limit	(U4) limit	CPEN "C" limit	SCSBC (kc=1.0) mm/day	FAOBC mm/day	FAORA mm/day	P-T mm/day	T-M ET= mm/day	FAOPEN mm/day	FAOCPE mm/day	CALIP FAOCPEN mm/day
6.73	0.61	3.09	17.37	1.182	214.0	0.09	13.78	0.215	-2.20	1.46	0.87	11.71	90.0	0.81	1.00	3.10	5.79	6.50	7.96	6.13	7.23	6.20	6.93	5.88
5.25	1.49	11.49	34.59	1.234	151.2	0.97	13.05	0.298	-2.22	1.60	1.01	10.73	58.0	3.49	1.30	3.00	3.43	3.36	4.75	4.28	5.37	5.73	5.72	4.99
1.50	2.47	6.38	9.49	1.239	98.9	3.13	10.85	0.229	-2.04	1.51	0.99	5.04	76.5	2.47	1.60	0.93	1.78	2.54	2.36	1.08	1.37	2.88	2.69	2.44
2.48	3.07	7.68	13.37	1.226	77.6	1.26	10.79	0.246	-2.09	1.59	1.01	6.43	78.3	3.07	1.50	0.95	2.40	3.65	3.44	1.92	2.88	4.11	3.92	3.50
3.04	2.84	8.61	13.58	1.219	73.5	1.29	11.79	0.269	-2.28	1.71	1.00	8.04	82.7	2.84	1.30	1.00	2.00	4.87	5.18	3.33	4.12	5.35	5.36	4.70
5.36	2.43	14.44	23.53	1.191	65.9	1.21	12.86	0.294	-2.38	1.83	1.02	10.66	97.7	2.43	1.30	1.00	4.07	7.34	7.43	4.79	6.40	7.27	7.30	6.38
6.80	3.12	18.63	26.48	1.182	69.5	1.39	13.73	0.313	-2.25	1.85	1.07	13.43	66.0	3.12	1.20	1.00	6.07	9.00	8.65	5.54	7.36	9.07	9.03	7.32
6.15	2.75	26.34	34.65	1.168	79.0	1.26	14.37	0.333	-2.24	1.84	1.08	16.69	53.3	2.75	1.20	0.96	7.51	10.28	9.50	5.93	8.53	9.94	9.52	7.88
4.22	2.99	25.31	32.04	1.164	72.5	1.32	13.96	0.319	-2.22	1.75	1.08	15.57	59.1	2.99	1.20	0.95	7.68	9.71	8.95	6.05	8.40	10.01	9.53	7.89
5.76	2.52	25.49	35.12	1.151	86.5	1.22	13.39	0.302	-2.17	1.63	1.04	16.33	66.8	2.51	1.20	0.99	8.71	9.23	8.22	5.78	8.04	8.93	8.90	7.43
3.22	1.86	30.99	13.58	1.223	124.9	1.03	12.36	0.278	-1.81	1.31	1.04	6.30	57.4	1.86	1.30	0.95	2.98	3.77	3.95	2.54	3.03	4.66	4.53	3.85
2.91	1.84	33.25	17.45	1.187	129.5	1.03	11.13	0.254	-1.90	1.32	0.97	6.23	74.2	1.84	1.50	0.97	4.53	4.36	3.96	2.42	3.77	4.44	4.32	3.84
3.25	2.99	4.09	8.39	1.234	128.5	1.02	10.24	0.234	-1.90	1.31	0.96	4.87	81.0	1.99	1.00	0.94	1.02	2.32	2.40	1.28	1.96	2.43	2.52	2.30
1.27	2.43	4.76	6.03	1.247	105.8	1.00	9.83	0.224	-1.95	1.37	0.95	4.45	84.5	2.42	1.00	0.95	1.58	1.98	2.01	0.88	1.60	2.22	2.19	1.92
3.40	2.15	5.47	7.71	1.254	114.0	1.06	10.02	0.229	-2.00	1.39	1.00	4.98	75.4	2.15	1.60	0.92	1.33	1.87	2.00	0.92	1.45	2.49	2.30	2.10
2.59	2.42	6.79	13.48	1.221	94.7	1.13	10.79	0.246	-2.05	1.38	1.00	7.00	77.9	2.43	1.50	0.99	2.67	4.12	4.10	2.05	3.29	4.05	3.97	3.54
5.91	2.45	12.49	18.00	1.210	85.1	1.21	11.79	0.269	-2.32	1.82	1.06	9.27	46.1	2.45	1.10	0.95	3.50	5.69	6.13	3.37	4.81	6.12	5.81	5.08
5.04	2.95	12.64	38.17	1.202	70.6	1.32	12.86	0.294	-2.37	1.78	1.04	9.99	71.7	2.95	1.30	0.99	4.36	8.48	6.79	4.34	5.50	7.15	7.07	6.06
6.14	3.62	20.38	27.87	1.189	60.0	1.43	13.73	0.313	-2.36	2.01	1.12	13.00	53.8	3.62	1.20	0.84	5.95	9.74	9.72	5.66	7.87	10.25	9.66	7.98
6.53	3.22	25.18	33.22	1.166	47.4	1.57	14.37	0.323	-2.27	1.84	1.08	12.00	53.5	3.22	1.20	0.73	7.63	10.23	9.99	6.33	8.39	10.60	10.07	8.27
4.66	2.44	22.75	31.66	1.148	88.5	1.21	13.96	0.319	-2.13	1.59	1.08	11.12	77.5	2.46	1.20	1.04	8.85	9.98	8.52	4.69	8.71	8.98	9.31	7.77
6.01	2.28	23.73	31.40	1.132	95.3	1.17	13.19	0.301	-2.17	1.61	1.01	10.59	69.5	2.28	1.20	1.01	8.14	8.69	8.36	6.00	8.18	8.49	8.59	7.21
4.35	2.05	23.56	31.10	1.179	113.3	1.09	12.36	0.278	-2.25	1.74	1.06	9.39	52.8	2.03	1.30	0.95	6.00	7.64	7.23	4.14	6.48	7.25	6.31	5.93
3.21	1.96	18.31	25.88	1.177	122.0	1.05	11.13	0.254	-2.17	1.63	1.01	7.39	68.2	1.96	1.50	0.99	5.20	6.09	5.23	3.00	4.88	5.45	5.33	4.68
1.65	3.21	11.21	14.64	1.220	79.7	1.24	10.24	0.234	-2.13	1.68	1.08	5.66	55.2	3.21	1.80	0.87	2.63	3.93	3.98	1.73	2.71	4.55	3.96	3.54
1.08	2.92	8.56	11.73	1.235	87.7	1.19	9.83	0.229	-2.22	1.74	1.06	5.19	46.0	2.92	1.80	0.88	1.81	3.15	3.93	0.80	2.13	3.47	3.07	2.77
1.46	2.33	6.22	9.11	1.245	103.4	1.11	10.05	0.229	-2.04	1.51	1.00	4.98	73.8	2.37	1.60	0.93	1.60	2.33	2.47	1.02	1.63	2.80	2.60	2.34
2.30	2.73	8.88	12.44	1.224	70.8	1.32	10.79	0.246	-2.18	1.69	1.06	6.86	67.9	3.37	1.50	0.92	2.54	4.00	4.12	1.95	3.14	4.67	4.31	3.83
3.36	3.63	13.49	15.95	1.209	68.8	1.35	11.79	0.260	-2.34	1.66	1.05	8.32	66.3	3.07	1.30	0.94	3.33	5.22	5.46	3.13	4.34	6.20	5.80	5.06
3.34	2.98	16.67	22.34	1.188	70.8	1.32	12.86	0.294	-2.27	1.78	1.05	10.67	65.3	2.96	1.10	0.98	5.23	7.32	7.75	4.82	4.56	8.07	7.88	6.68
6.06	3.80	20.83	27.43	1.180	55.7	1.51	13.73	0.313	-2.29	1.93	1.12	11.83	75.3	3.89	1.20	0.94	6.28	9.59	9.43	5.44	7.73	10.48	9.65	8.11
6.97	3.30	27.46	37.76	1.164	45.8	1.78	14.37	0.323	-2.28	1.92	1.11	12.00	52.2	3.30	1.20	0.94	7.86	11.00	10.33	6.33	8.84	10.99	10.36	8.41
6.13	2.28	25.17	33.47	1.155	95.3	1.17	13.96	0.319	-2.14	1.67	1.03	10.82	70.5	2.28	1.20	1.02	6.37	9.43	8.46	6.30	8.22	8.90	9.07	7.55
5.53	2.62	26.90	35.30	1.155	82.8	1.24	13.19	0.301	-2.14	1.68	1.06	10.17	43.8	2.62	1.20	0.97	8.02	9.16	8.28	5.50	7.79	9.06	8.81	7.36
4.28	2.87	22.94	29.34	1.172	78.4	1.27	12.36	0.278	-2.17	1.78	1.08	8.99	33.8	2.87	1.30	0.92	6.12	7.46	7.04	4.08	6.22	6.06	7.38	6.29
3.04	2.48	16.02	21.52	1.189	86.3	1.15	11.13	0.254	-2.15	1.64	1.09	7.29	42.5	2.48	1.50	0.94	4.44	5.57	5.21	2.74	4.45	5.62	5.39	4.62
1.82	1.94	10.02	15.53	1.217	131.7	1.02	10.24	0.234	-2.13	1.56	1.08	5.74	68.3	1.94	1.80	0.95	2.73	3.57	3.39	1.47	2.81	3.41	3.25	2.93
0.70	1.61	12.25	15.76	1.235	159.0	0.95	9.83	0.224	-2.11	1.59	1.10	4.66	30.0	1.61	1.80	0.85	1.99	2.88	2.73	0.57	1.94	3.22	2.75	2.48
1.43	2.34	5.98	8.48	1.248	103.8	1.10	10.05	0.229	-2.07	1.56	1.00	5.17	68.0	2.34	1.60	0.92	1.52	2.21	2.33	1.01	1.85	2.75	2.53	2.30
2.38	2.81	8.32	12.27	1.230	83.0	1.20	10.79	0.246	-2.10	1.59	1.03	6.42	67.2	3.03	1.50	0.93	2.30	3.51	3.69	1.60	2.78	4.14	3.83	3.43
3.83	2.88	10.53	13.29	1.210	72.4	1.30	11.79	0.269	-2.34	1.63	1.02	8.36	70.0	2.88	1.10	0.96	3.45	4.98	5.39	3.17	4.31	5.81	5.56	4.86
5.26	3.29	13.53	18.72	1.193	67.4	1.40	12.86	0.294	-2.19	1.70	1.04	10.29	70.1	3.29	1.10	0.98	4.84	6.82	7.21	4.66	6.09	7.79	7.57	6.44
5.82	4.47	20.63	26.28	1.185	46.3	1.67	13.73	0.313	-2.28	1.87	1.15	13.75	47.0	4.47	1.20	0.88	5.88	9.53	8.55	5.37	7.43	11.41	10.98	8.28
5.42	2.52	20.00	25.88	1.180	86.0	1.21	14.37	0.323	-2.06	1.43	1.09	10.32	48.4	2.52	1.20	0.99	5.87	7.90	7.86	4.52	6.43	8.43	7.83	6.64
5.82	2.59	22.63	28.99	1.167	83.7	1.23	13.96	0.319	-2.06	1.58	1.04	10.38	63.1	2.59	1.20	0.99	7.72	8.18	8.04	5.72	7.55	8.77	8.66	7.36
6.01	2.45	21.85	28.26	1.154	88.7	1.30	13.19	0.301	-2.14	1.56	1.00	10.50	69.0	2.45	1.20	1.03	7.93	8.28	7.98	5.96	7.99	8.41	8.48	7.12
4.53	2.49	20.95	26.55	1.139	90.3	1.19	12.36	0.278	-2.04	1.48	1.01	8.44	66.0	2.49	1.20	0.97	6.88	6.84	6.36	4.45	6.29	7.20	6.98	5.98
3.82	2.15	17.58	22.02	1.157	111.0	1.09	11.13	0.254	-2.18	1.64	1.04	7.46	56.4	2.15	1.50	0.94	4.66	5.08	5.31	2.74	4.64	5.56	5.21	4.58
1.68	2.70	11.42	14.82	1.217	94.0	1.15	10.24	0.234	-2.10	1.68	1.06	5.38	54.6	2.70	1.80	0.89	2.73	3.76	3.58	1.36	2.74	4.18	3.71	3.33
1.33	2.39	5.35	7.01	1.254	107.1	1.09	9.83	0.224	-1.95	1.37	0.99	4.43	69.3	2.39	1.80	0.91	1.30	1.70	2.00	0.79	1.46	2.25	2.13	1.95
1.56	1.44	4.32	6.24	1.244	169.7	0.95	10.05	0.229	-1.87	1.21	0.89	4.62	86.1	1.44	1.60	0.98	1.60	1.64	1.96	1.09	1.78	1.92	1.87	1.72
2.59	2.03	7.71	11.60	1.215	137.9	1.06	10.79	0.246	-2.03	1.46	0.95	6.34	80.9	2.03	1.50	0.99	2.88	3.38	3.54	2.08	3.11	3.50	3.46	3.11
3.91	3.42	6.86	9.63	1.223	41.0	1.42	11.79	0.269	-2.10	1.55	0.98	8.21	82.9	3.42	1.10	0.98	2.76	4.11	4.77	3.04	3.81	5.12	5.02	4.42
5.44	3.30	13.79	14.33	1.202	65.8	1.38	12.86	0.294	-2.36	1.73	1.02	10.86	68.9	3.30	1.10	0.99	4.26	6.44	7.33	4.46	6.00	7.41	7.31	6.24
6.30	4.24	15.45	20.36	1.187	51.2	1.58	13.73	0.313	-2.34	1.79	1.08	11.87	43.7	4.24	1.20	0.97	5.60	8.23	8.87	5.70	7.33	9.65	9.35	7.75
6.38	2.97	17.45	25.34	1.179	70.8	1.33	14.37	0.323	-2.14	1.64	1.05	11.49	42.1	3.07	1.20	0.98	6.96	8.43	8.77	6.00	7.84	8.26	9.08	7.56
4.30	2.07	12.97	29.34	1.156	104.9	1.11	13.96	0.319	-2.10	1.53	1.00	10.00	71.7	2.07	1.20	1.03	8.23	8.64	8.15	6.23	8.14	8.33	8.56	7.28
5.44	2.16	20.91	26.07	1.139	108.3	1.34	13.19	0.301	-2.01	1.43	0.99	9.47	71.2	2.16	1.20	1.06	7.47	7.30	6.98	5.33	6.98	7.50	7.53	6.41
4.78	1.73	18.19	24.42	1.160	130.0	1.01	12.36	0.278	-2.06	1.43	0.96	8.66	76.6	1.73	1.30	1.03	6.79	6.45	6.12	4.67	6.36	6.27	6.43	5.55
3.26	2.48	17.10	22.67	1.178	96.4	1.15	11.13	0.254	-2.14	1.58	1.02	7.36	65.2	2.48	1.50	0.95	5.08	5.75	5.25	3.03	4.84	5.76	5.49	4.81
1.67	2.33	9.05	11.94	1.225	169.4	1.06	10.24	0.234	-1.93	1.41	1.02	4.91	63.6	2.33	1.80	0.93	2.37	2.94	2.79	1.29	2.25	3.48	3.12	2.82
1.33	1.85	4.47	6.32	1.231	128.6	1.00	9.83	0.224	-1.69	1.08	0.88	3.76	90.0	1.85	1.80	0.92	1.98	1.63	1.62	0.99	1.55	1.89	1.80	1.45
1.65	1.48	4.53	7.01	1.234	130.2	1.02	10.05	0.229	-1.90	1.34	0.89	4.75	90.0	1.48	1.60	0.91	1.84	2.01	2.17	1.21	1.54	2.14	2.09	1.81
2.49	2.22	7.43	10.82	1.219	107.8	1.09	10.79	0.246	-1.97	1.34	0.92	6.07	78.2	2.22	1.50	0.97	2.71	3.15	3.33	1.98	2.88	3.30	3.29	3.05
3.75	2.37	8.73	11.73	1.214	88.1	1.18	11.79	0.269	-2.04	1.47	0.98	5.83	76.7	2.37	1.10	0.98	3.23	4.21	4.73	3.05	3.94	4.90	4.82	4.25
5.18	2.15	14.47	19.73	1.193	97.9	1.14	12.86	0.294	-2.18	1.61	1.01	10.15	67.7	2.13	1.10	1.08	5.03	6.48	6.98	4.63	6.11	6.81	6.30	5.85
6.18	2.32	15.20	20.66	1.178	85.7	1.37	13.73	0.313	-2.14	1.56	0.99	11.08	74.5	2.32	1.20	1.03	6.28	7.61	7.77	5.73	7.23	7.61	7.88	6.67
5.53	3.72	15.16	18.86	1.193	58.4	1.46	14.37	0.323	-1.99	1.33	1.00	10.16	39.1	3.72	1.20	0.93	5.48	7.14	7.41	4.95	6.95	8.09	8.09	6.82
6.29	2.83	22.38	28.10	1.158	76.6	1.28	13.96	0.319	-2.09	1.56	1.03	10.93	64.4	2.83	1.20	0.99	8.09	8.75	8.45	6.20	8.16	9.20	9.08	7.56
5.18	2.17	19.21	24.21	1.140	108.2	1.14	13.19	0.301	-1.93	1.38	0.98	8.91	71.7	2.17	1.20	1.00	7.33	6.85	6.49	5.05	6.52	7.19	7.13	6.13
4.51	1.39	23.42	33.24	1.161	161.4	0.96	12.36	0.278	-2.14	1.91	1.01	8.03	64.4	1.39	1.30	1.00	6.82	7.10	6.59	4.41	6.48	6.43	6.43	5.75
3.45	1.33	17.66	22.98	1.183	176.4	0.92	11.13	0.254	-2.13	1.52	1.01	7.14	68.7	1.33	1.50	0.97	4.80	5.27	4.94	3.78	4.56	4.76	4.62	4.09
1.67	1.50	16.56	24.50	1.223	197.4	0.90	10.24	0.234	-2.16	1.38	1.02	5.69	62.8	1.50	1.80	0.94	2.49	3.42	3.31	1.31	2.65	3.05	2.92	2.44
1.26	1.34	3.08	7.32	1.245	147.8	0.93	9.83	0.224	-1.68	1.21	0.92	4.19	83.5	1.36	1.80	0.97	1.41	1.72	1.86	0.89	1.56	1.86	1.80	1.66
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4*UR2*U4*Rkm((cos^4)
1-2.92*10^-8*UR2*U4*2*Rkm(^2*R -0.0000161*Rkm*Ra^2
M(Rkm+1)*2*@(M/(M+1)

ET= Dr(D+G*)(Ra+G)n + Gr(D+G*)(STM1)(RBO)(Ka-Ed/4)/2 m)

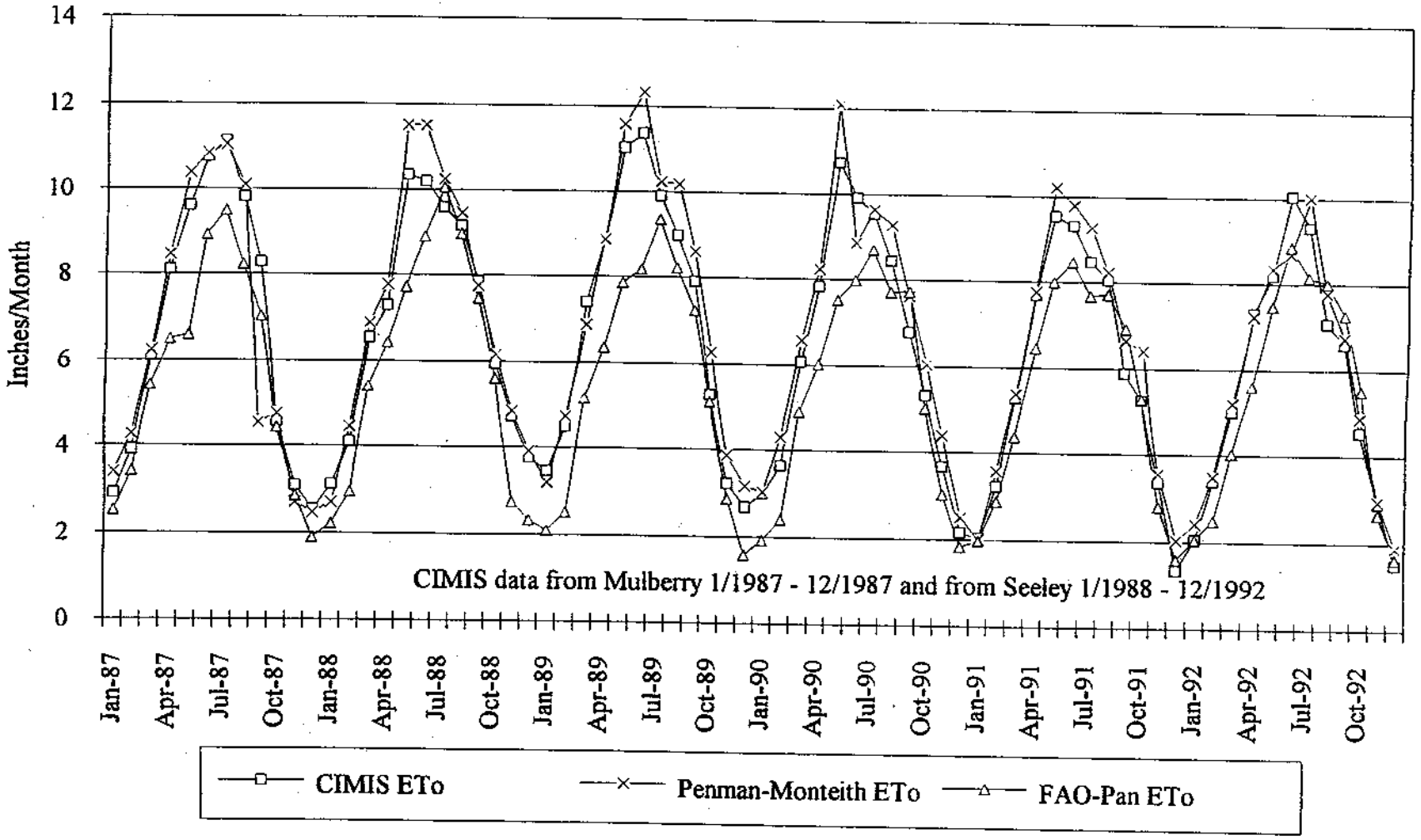
Note: If no Brish, Input as 1 to 1000m

*MEDN mm/day	ET=(P-M) Gross mm/day	SAMANI mm/day	Class A Pan, Ep kJ/dm	mm/Day	FAO CASE A(wind), (2) B(day), (2)	UPWIND FETCH, meters	Limit for Kp Calc 2-m wind	RHmin	(FAO-24 Calc Kp) (CASE A)	(CASE B)	ET= FAO-Pan mm/day	ET= FAO-Pan kJ/dm	STM Ra (J/cm²)*12	Ra Equiv E kJ/Tr	Class A Pan Evap kJ/Tr	ET= FAO-PAN kJ/Tr	Kp Monthly	Kp Annual	ET=(ASCE P-M) kJ/dm	kJ/Tr	ET=(FAO-CPER) mm/dm	kJ/dm	kJ/Tr	ET=(CD-4) ET=(CD4) kJ/DAT
5.93	5.73	4.52	9.29	7.69	1	10	84.6	66.0	0.76	999.00	5.88	7.1753225												
5.15	4.81	4.91	7.44	6.50	2	10	113.7	46.5	999.00	0.63	4.11													
2.34	2.78	2.56	3.89	3.19	2	10	173.7	31.9	999.00	0.83	2.06	2.52					0.647		3.39			3.28		
3.36	3.87	3.10	4.89	4.44	2	10	221.4	52.3	999.00	0.63	2.80	3.42					0.700		4.26			4.32		
4.51	5.11	4.25	7.12	5.83	1	500	233.9	51.7	0.76	999.00	4.45	5.43					0.762		6.22			6.56		
6.36	7.36	6.38	8.91	7.84	1	500	200.1	45.0	0.76	999.00	5.23	6.58					0.782		8.44			8.86		
7.48	8.51	7.08	9.09	7.45	1	300	242.5	39.4	0.73	999.00	5.40	6.60					0.726		10.38			13.02		
8.45	9.16	7.95	13.23	10.33	1	500	217.7	31.8	0.71	999.00	7.32	8.93					0.730		10.84			15.25		
8.48	9.04	7.69	13.23	10.82	1	500	237.6	36.3	0.72	999.00	7.79	9.56					0.710		11.03			11.63		
7.73	8.28	7.41	10.95	8.97	1	500	198.8	43.0	0.75	999.00	6.75	8.24					0.732		10.11			10.86		
6.00	3.84	3.75	9.05	7.66	1	200	137.7	36.2	0.75	999.00	5.76	7.03					0.777		4.54			5.12		
3.86	3.89	4.07	5.57	4.56	1	500	132.7	52.6	0.80	999.00	3.64	4.45					0.788		4.75			5.27		
2.22	2.29	2.26	3.46	3.35	2	5	133.7	56.4	999.00	0.78	2.34	2.86					0.722		2.71			2.98		
1.82	2.03	2.83	2.87	2.38	2	10	162.5	30.9	999.00	0.48	1.55	1.90	5347.032151	117.6	91.08	67.37	0.675	0.740	2.47	73.17		2.57		83.69
2.04	2.22	1.90	3.44	2.82	2	10	158.8	48.1	999.00	0.65	1.83	2.22					0.646		2.71			2.80		
3.40	3.90	3.35	4.57	3.78	2	10	174.1	49.6	999.00	0.64	2.43	2.95					0.708		4.45			4.56		
5.13	5.63	4.67	7.34	6.01	1	500	202.8	38.2	0.74	999.00	4.43	5.41					0.737		6.89			7.11		
6.05	6.58	5.60	8.36	7.08	1	500	243.4	45.8	0.74	999.00	5.27	6.43					0.776		7.73			8.35		
8.41	9.43	7.39	11.2	9.16	1	500	286.5	32.7	0.69	999.00	6.32	7.72					0.820		11.51			11.79		
8.93	9.73	8.16	12.17	10.30	1	500	255.1	34.3	0.71	999.00	7.30	8.90					0.732		11.52			11.90		
7.56	8.40	8.09	12.39	10.64	1	500	184.5	51.4	0.77	999.00	8.25	10.06					0.775		10.25			11.44		
3.48	7.76	7.31	11.64	9.54	1	500	180.3	47.6	0.77	999.00	7.35	8.97					0.770		9.47			10.49		
4.23	6.55	6.36	9.82	8.31	1	500	154.7	33.9	0.74	999.00	6.12	7.46					0.761		7.74			8.16		
4.68	5.05	4.84	7.24	5.93	1	500	140.9	44.9	0.77	999.00	4.58	5.60					0.779		6.16			6.53		
3.55	4.09	2.83	4.33	3.67	2	5	215.5	37.4	999.00	0.43	2.25	2.75					0.835		4.84			4.68		
2.68	3.23	2.21	3.87	3.17	2	10	135.9	39.8	999.00	0.60	1.91	2.33	6343.007564	125.0	96.36	70.92	0.603	0.733	3.92	87.22		3.74		91.52
2.27	2.62	2.19	3.27	2.68	2	10	164.2	49.2	999.00	0.64	1.72	2.10					0.641		3.20			3.17		
3.75	4.29	3.21	4.36	3.58	2	10	243.4	46.9	999.00	0.61	2.29	2.83					0.610		4.73			4.75		
5.08	5.63	4.46	6.95	5.73	1	500	232.8	44.4	0.76	999.00	4.32	5.16					0.738		6.87			7.08		
6.82	7.51	6.26	8.46	7.32	1	500	243.5	42.5	0.74	999.00	5.39	6.37					0.735		8.87			9.31		
8.60	9.48	7.18	12.39	9.33	1	500	308.4	34.7	0.69	999.00	8.44	7.86					0.696		11.57			12.02		
9.16	10.48	8.61	12.83	10.00	1	500	263.6	31.0	0.69	999.00	6.83	8.18					0.693		12.93			12.24		
7.86	8.39	8.18	12.36	10.23	1	500	180.4	42.4	0.76	999.00	7.66	9.35					0.757		10.24			11.06		
7.73	8.05	7.91	12.13	9.33	1	500	207.3	39.5	0.74	999.00	6.73	8.22					0.739		10.19			10.75		
6.67	7.29	5.98	10.02	8.48	1	500	219.2	35.5	0.72	999.00	6.13	7.24					0.722		8.61			8.71		
4.48	5.14	4.41	6.77	5.33	1	500	178.8	41.9	0.76	999.00	4.59	5.12					0.756		5.28			5.46		
2.86	3.28	3.26	4.29	3.43	2	3	136.5	44.1	999.00	0.67	2.42	2.86					0.668		3.83			3.84		
2.59	2.69	2.98	2.84	2.36	2	10	188.3	39.0	999.00	0.60	1.39	1.58	6025.473686	123.3	93.46	66.56	0.608	0.713	3.37	89.94		3.35		92.73
2.26	2.48	2.13	3	2.46	2	10	165.6	49.3	999.00	0.64	1.58	1.92					0.641		3.03			3.09		
3.37	3.93	3.24	3.9	3.54	2	10	202.3	45.8	999.00	0.62	2.19	2.43					0.639		4.31			4.23		
4.84	5.39	4.23	6.51	5.33	1	500	237.4	48.8	0.75	999.00	4.81	4.90					0.752		6.58			6.79		
6.51	6.97	5.77	8.14	6.89	1	500	271.6	47.8	0.74	999.00	5.10	6.03					0.741		8.23			8.94		
8.09	9.32	6.83	11.48	9.41	1	500	369.3	30.6	0.66	999.00	6.16	7.52					0.655		12.19			12.30		
7.16	7.90	7.04	11.24	9.52	1	500	199.7	30.2	0.71	999.00	6.76	7.98					0.758		8.86			9.23		
7.58	7.89	7.23	11.62	9.52	1	500	265.4	42.9	0.75	999.00	7.14	8.73					0.750		8.64			10.57		
7.39	7.80	7.03	9.98	8.18	1	500	183.7	56.1	0.77	999.00	6.31	7.73					0.772		9.28			10.35		
6.18	6.46	5.95	10.04	8.50	1	500	180.4	48.6	0.73	999.00	6.56	7.73					0.778		7.43			8.24		
4.69	4.96	4.49	6.65	5.45	1	500	154.9	38.5	0.75	999.00	4.11	5.03					0.758		4.05			6.36		
3.38	3.72	2.93	4.82	4.08	2	5	181.4	39.0	999.00	0.63	2.37	2.93					0.629		4.39			4.28		
1.88	2.06	1.82	2.82	2.31	2	10	146.3	52.1	999.00	0.65	1.51	1.84	5830.922152	119.4	90.20	64.79	0.652	0.718	2.51	82.60		2.60		87.11
1.68	1.45	2.03	2.76	2.26	2	10	161.3	64.7	999.00	0.71	1.62	1.97					0.714		2.01			2.29		
3.03	3.25	3.13	4.26	3.86	2	10	145.8	58.6	999.00	0.68	2.42	2.98					0.677		3.58			3.95		
4.29	4.41	3.66	5.75	4.71	1	500	283.6	58.6	0.76	999.00	3.58	4.38					0.742		5.39			6.12		
6.29	6.57	5.52	8.69	7.36	1	500	264.3	48.3	0.74	999.00	5.48	6.47					0.744		7.78			8.64		
8.82	9.37	6.56	11.21	9.38	1	500	335.6	45.2	0.71	999.00	6.25	7.99					0.732		10.22			11.41		
7.94	8.30	7.43	11.45	9.49	1	500	242.8	43.7	0.74	999.00	7.17	8.47					0.740		9.85			10.72		
7.46	7.40	7.79	9.86	8.08	1	500	163.8	48.4	0.78	999.00	6.28	7.67					0.738		9.28			10.44		
6.62	6.75	4.85	9.86	8.08	1	500	171.3	33.6	0.78	999.00	6.33	7.71					0.791		8.23			9.19		
5.64	5.63	5.95	8.82	7.30	1	500	132.2	34.7	0.80	999.00	5.86	6.92					0.803		6.65			7.59		
4.06	3.25	4.64	6.89	5.45	1	500	178.5	46.4	0.77	999.00	4.34	5.29					0.768		4.41			4.79		
2.83	3.01	2.64	4.28	3.62	2	5	156.8	45.6	999.00	0.66	2.37	2.88					0.655		3.56			3.69		
1.67	1.44	1.95	2.22	1.92	2	10	124.5	69.3	999.00	0.72	1.33	1.60	5793.8559	118.6	85.85	64.15	0.738	0.747	2.03	74.91		2.36		82.95
1.85	1.99	2.27	2.89	2.37	2	10	132.8	68.9	999.00	0.73	1.69	2.06					0.732		2.42			2.53		
2.95	3.06	3.00	3.98	3.26	2	10	159.5	37.9	999.00	0.67	2.19	2.49					0.627		3.50			3.87		
4.21	4.26	3.86	5.38	4.26	1	500	195.1	54.6	0.78	999.00	3.31	4.04					0.780		5.20			5.88		
5.94	6.11	5.84	7.53	6.19	1	500	175.6	46.9	0.77	999.00	4.75	5.63					0.743		7.22			8.03		
6.78	6.84	6.68	9.58	7.85	1	500	183.4	51.7	0.78	999.00	5.12	7.47					0.779		8.35			9.61		
7.31	7.36	6.22	12.75	10.45	1	500	294.3	42.3	0.72	999.00	7.51	8.87					0.695		8.70			9.56		
7.94	8.21	7.43	10.83	8.83	1	500	224.3	46.6	0.75	999.00	6.68	8.16					0.753		10.02			11.08		
6.34	6.34	6.45	10.22	8.37	1	500	171.3	52.9	0.78	999.00	6.56	8.01					0.784		7.77			8.75		
3.77	3.71	4.51	5.64	7.90	1	500	304.5	42.0	0.78	999.00	6.34	7.28					0.755		6.74			7.59		
4.20	4.00	4.45	7.08	5.80	1	500	97.4	41.2	0.78	999.00	4.53	5.53					0.781		4.88			5.64		
2.63	2.54	2.78	4.19	3.49	1	5	87.0	30.5	999.00	0.66	2.36	2.67					0.637		2.95			3.43		
1.62	1.35	1.84	2.73	1.93	2	10	81.5	59.3	999.00	0.70	1.73	1.65	5633.430122	115.4	84.24	63.83	0.701	0.740	1.80	69.65		2.06		78.21

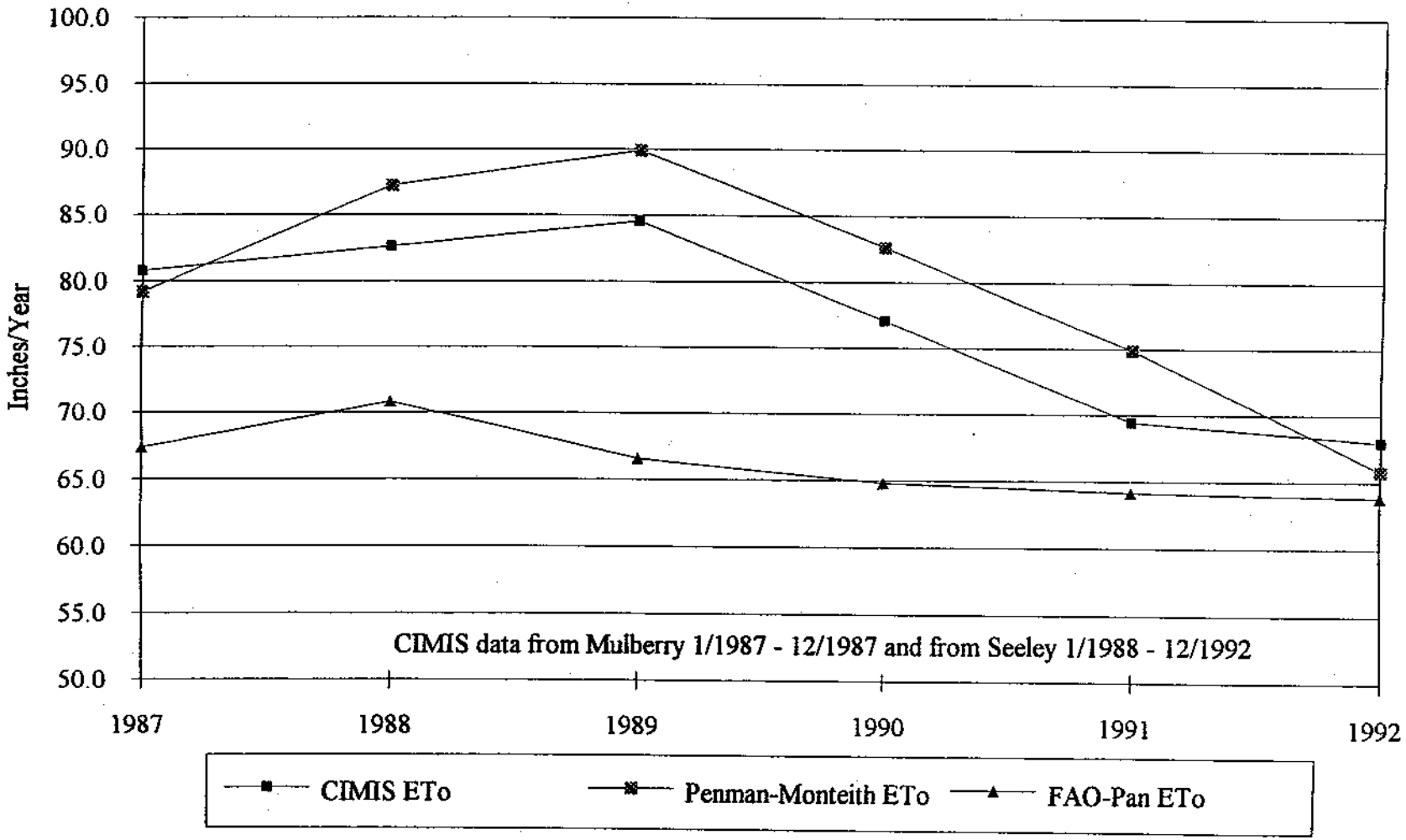
[illegible]ARRY 1/1987-5/1987
[illegible]KLY 6/87-12/93

[illegible]	[illegible]	ETo (FAO-RAD)		ET=(AV) 3 CRMSS [illegible] V STA	(ZN)n	(RNn) ACCUM	(RNn) ANNUAL	U2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2.9		3.12			1.83	1.83		33.93
3.9		4.04			2.73	4.56		68.75
6.1		8.33			4.09	9.37		72.65
8.1		8.78			6.54	15.70		42.15
9.1		10.56			7.32	23.02		76.85
10.75		11.22			7.26	30.28		47.60714
11.13		13.43			7.59	37.87		73.6129
9.61		10.03			7.43	44.91		43.72581
8.28		4.65			3.81	48.71		42.75
4.37		4.83			3.55	52.26		41.20968
3.09		2.83			2.07	54.33		49.37333
2.51	80.78	2.45	80.23		1.56	55.89	37.78	50.45263
3.12		2.42			1.70	1.96		46.82258
4.10		4.08			2.96	4.92		56.06897
6.53		7.51			4.80	9.71		62.74194
7.28		8.01			3.93	15.64		75.85
10.95		12.87			7.52	23.18		88.90774
10.20		11.80			7.71	30.90		79.21667
9.59		10.40			8.13	39.03		60.43548
9.15		8.96			7.34	46.36		55.98387
7.80		8.53			5.14	51.50		48.03333
5.95		6.38			3.92	55.42		43.75806
4.72		4.23			1.96	57.38		66.83333
3.37	82.60	3.33	89.38		1.32	58.70	36.77	60.83871
3.45		3.01			1.78	3.46		51.62903
4.49		4.55			2.78	4.62		75.33929
7.40		8.66			4.59	9.21		78.51613
8.46		9.15			6.30	15.51		76.23333
11.02		11.51			7.40	22.91		95.73419
11.36		12.95			7.52	30.43		81.06667
9.98		10.36			7.51	37.94		56.03613
8.98		5.98			6.74	44.69		64.42581
7.81		8.32			5.06	49.75		58.06667
5.27		6.24			3.73	53.48		55.45161
3.22		4.00			2.15	55.63		40.51667
2.60	84.52	3.34	89.07		0.84	56.47	58.63	39.58065
3.00		3.09			1.80	1.77		51.43548
3.64		4.07			2.62	4.38		62.76786
6.08		6.90			4.67	9.06		73.72581
7.82		8.51			6.23	15.28		84.14667
10.74		11.66			7.16	22.44		104.7581
9.92		9.21			6.40	28.83		42.03333
9.54		9.81			7.16	36.00		63.77419
8.46		9.74			7.33	43.33		68.16129
6.79		7.49			5.33	48.70		59.13667
5.51		6.48			3.69	52.39		48.09677
3.67		4.13			1.99	54.38		56.33333
2.56	77.11	2.44	83.13		1.46	55.83	53.95	49.10833
2.01		2.43			1.91	1.61		31.43161
3.22		3.90			2.84	4.47		45.28571
5.27		5.82			4.77	9.24		87.46774
7.48		8.66			6.42	15.66		82.08333
9.54		10.82			7.69	23.35		104.2097
9.32		10.35			7.53	30.89		75.4
8.47		9.95			7.49	38.38		50.87097
8.04		8.52			6.64	45.22		53.20968
5.89		7.23			5.65	50.87		41.95
3.23		6.40			3.98	54.85		55.37097
3.36		3.36			1.97	56.82		48.9
1.33	49.40	3.98	79.36		2.63	58.46	55.63	38.67742
2.06		2.64			3.01	1.50		40.98387
3.39		3.82			2.85	4.75		49.53448
5.08		5.34			4.58	9.32		66.58065
7.30		8.24			6.12	15.44		54.53333
8.18		9.49			7.54	22.98		56.96774
10.05		8.75			6.58	29.56		91.4
9.31		10.38			7.68	37.24		69.66129
7.47		7.92			6.32	43.56		53.25806
6.60		7.78			5.33	48.89		55.96667
4.54		6.03			3.69	52.59		30.35806
2.92		3.90			1.97	54.56		37.03333
1.51	47.93	2.26	76.93		1.54	56.10	57.33	38.41935

EL CENTRO MONTHLY EVAPOTRANSPIRATION



EL CENTRO ANNUAL EVAPOTRANSPIRATION



CIMIS MELOLAND/MID IMPERIAL PAN

LAT:DEG. = 33 [ET4-EQT.WK1], a Program for calculating ETo or ET from eleven equations (rev. 4) jan. 1992 by W.O Pruitt

LAT:RAD = 0.575958653 Includes latest Eqs. for FAO-24 methods e.g. so eleven "C" in (CPEM).(App.E.ASCE Manual 70, or Allen and Pruitt, 1991)

IEEENEL52 = 1 AVAILABLE DATA: Rs,Rn,Tmax,Tmin,RHmax,RHmin, (U2,DOUW(use value of 2.0 if no data available).

ELEV.(M) = -28 P.MB= 1015

PENMAN-MONTEITH (MONTEITH, 1981). ET of frequently-clipped grass, < 15cm; or alfalfa from 3cm tall to max. ht.), lysimeter etc(..In Pruitt)

EA=6.108*EXP(17.17*Tmin/(Tm+237.3))

D=(EA/TKm)*(6790.5

GAMMA= 24*PA/622*L)

(FOR WARMEST MONTH: 6/1992 MELOLAND CIMIS STATION #87

Mean Tmin = 41.13 3-II EA= 38.31 3-II CT= 0.922

Mean Tmax = 25.32 7-II EA1 52.28 3 II TX= 0.907

EA1-EA1 44.62

Assume,Hc,Zw= 200 d= 0.00 cm

TaRH Hc,Zq= 150 Zom= 1.48 cm

Crop H1,Hc= 12 Zor= 0.13 cm

(Alpha > 15cm 2.88

CROP NO. = 1 Crop rc = 69.44

(FOR GRA ASS: (4)

IALFALFA. (2)

U2=8700-1900 WIND:1940-0/Ind WIND: Note use U2 = 2.0 if no data available

Note: First Row of data are from Davis, California.

Second row is from Brawley, Calif. 1971 data (from Lashlan, et al.)

DATE OR MONTH	DAY OF YEAR	(RA)= MJ/M2/DAY	RS LY/DAY	n/N	MAXIMUM TEMPT. DEG F	DEG C	MINIMUM TEMPT. DEG F	DEG C	RHmax %	RHmin %	WIND RUN AT 10 Zw. Miles/Dy	Km/Dy	OR DAY/ NIGHT	U2 Km/Day	U2 m/s	Tm (DEG C	TKm DEG K	EA MB	RHm	ED MB	GAMMA G	DELTA D	W D/(D+G)
07/25/85	206	16.3	649	0.93	91.9	33.3	37.0	13.9	100.0	32.0	49.7	80.0	0.75	80.0	0.93	23.6	296.3	29.10	66.0	19.21	0.671	1.731	0.721
4/22/71	112	13.3	631	0.91	77.0	25.0	48.0	8.9	58.0	23.0	30.6	113.7	1.30	133.7	1.32	16.9	290.1	19.31	40.5	7.63	0.666	1.223	0.647
1/1987-12/1989 MULBERRY CIMIS STATION #41 1/1990-12/1992 MELOLAND CIMIS STATION #87																							
Jan-87	15	8.1	250.6	0.75	69.3	20.7	34.9	1.6	70.5	27.3	167.9	171.3	1.60	171.7	2.01	11.2	284.3	13.28	51.9	6.99	0.663	0.880	0.571
Feb-87	45	10.0	370.6	0.79	73.3	23.0	41.4	5.2	78.5	26.1	137.5	220.4	1.28	221.4	2.56	14.1	287.1	16.12	52.3	6.43	0.645	1.044	0.611
Mar-87	73	12.6	508.3	0.86	77.3	25.3	43	6.1	82.7	20.7	145.3	232.9	1.10	233.9	2.71	15.7	288.9	17.86	51.7	9.22	0.666	1.141	0.632
Apr-87	106	14.9	626.9	0.94	81.4	33.0	52.3	11.3	77.7	43.3	126.3	200.1	1.30	200.3	2.32	22.1	295.3	26.65	42.6	13.99	0.670	1.621	0.708
May-87	136	16.3	670.9	0.89	93.6	34.2	56.0	14.6	66.8	12	152.3	247.5	1.20	247.3	2.86	24.5	297.7	30.75	39.4	12.12	0.673	1.833	0.752
Jun-87	166	17.2	712.2	0.92	105.3	40.7	66.2	19.0	50.4	6	136.2	219.1	1.20	219.1	2.54	29.9	302.9	42.13	29.3	12.34	0.673	2.415	0.782
Jul-87	197	16.8	702.9	0.93	105.4	40.8	69.0	21.0	50	14.7	139.8	225.1	1.20	233.1	2.60	30.9	304.0	44.45	28.4	15.73	0.675	2.338	0.790
Aug-87	228	13.5	603.4	0.83	101.3	38.6	67	19.4	68.5	11.5	149	239.9	1.28	239.9	2.78	29.0	302.2	40.11	44.8	17.97	0.674	2.313	0.774
Sep-87	259	13.5	519.4	0.63	100.8	38.2	66.6	19.9	64.5	15.3	113.9	189.5	1.30	199.5	2.31	27.0	300.1	35.65	39.9	14.22	0.673	2.090	0.756
Oct-87	289	11.0	360.4	0.42	91.9	27.7	56.0	14.8	82.3	33.4	97.4	154.2	1.30	154.2	1.78	21.3	294.4	28.23	56.0	14.64	0.669	1.547	0.698
Nov-87	328	8.7	312.6	0.73	74.6	23.7	43.4	6.3	88.1	54.3	82.9	132.8	1.00	122.8	1.34	13.9	288.2	17.08	64.3	10.66	0.665	1.098	0.623
Dec-87	350	7.5	242.7	0.61	58.7	14.9	32.1	0.1	88	56.3	92.6	149.1	1.00	149.1	1.72	7.3	280.0	19.34	63.2	8.33	0.660	0.706	0.517
Jan-88	15	8.1	293.1	0.74	69.3	20.7	35.5	1.9	93.4	30.3	106.3	171.0	0.90	171.0	1.98	11.3	284.5	13.41	61.9	8.29	0.663	0.868	0.573
Feb-88	45	10.0	393.3	0.84	78.7	24.8	40.2	4.6	91.7	38.2	108.4	174.5	1.50	174.5	2.02	14.7	287.8	16.71	59.0	9.85	0.665	1.077	0.618
Mar-88	73	12.6	461.0	0.73	78.0	25.6	39.3	3.9	81.3	48.6	113.8	181.6	1.30	181.6	2.10	13.7	288.9	15.72	49.9	7.93	0.664	1.021	0.606
Apr-88	106	14.9	544.8	0.75	84.7	29.3	48.2	9.0	69.2	23	126	202.9	1.30	202.9	2.35	19.1	293.5	22.16	56.1	12.44	0.666	1.381	0.674
May-88	136	16.3	573.4	0.69	88.1	29.0	49.2	9.6	70.4	10.3	167.7	270.0	1.20	270.0	3.12	19.5	292.4	22.13	40.4	9.01	0.668	1.389	0.675
Jun-88	166	17.2	702.0	0.89	101.3	38.6	62.7	17.1	67.8	34	136.2	219.3	1.28	219.3	2.54	27.0	301.0	37.42	40.9	15.30	0.673	2.179	0.764
Jul-88	197	16.8	660.5	0.84	106.5	41.4	73.9	23.3	72.9	23.2	148.8	239.6	1.28	239.6	2.77	32.3	305.5	48.48	49.1	23.78	0.676	2.729	0.801
Aug-88	228	15.5	624.4	0.86	105.1	40.6	73.3	22.9	77.3	24.6	126.3	200.1	1.20	200.1	2.32	31.8	304.9	46.90	51.0	23.89	0.676	2.652	0.797
Sep-88	259	13.5	430.3	0.59	78.6	25.9	50.8	10.4	55.2	18.7	91	146.5	1.30	146.5	1.70	10.2	291.3	20.44	73.0	6.87	0.667	1.308	0.662
Oct-88	289	11.0	420.3	0.93	96.8	35.6	63.2	16.1	86.4	20.9	301.9	164.1	1.50	164.1	1.90	28.9	299.5	33.43	53.7	17.92	0.672	1.975	0.746
Nov-88	320	8.7	330.1	0.72	75.9	24.4	42.8	6.0	63.7	22.5	210.3	177.6	1.00	177.6	2.05	15.2	288.4	17.27	53.1	9.17	0.665	1.109	0.625
Dec-88	350	7.5	291.0	0.83	70.3	21.3	34.9	1.8	68.1	31.9	110.7	178.2	1.00	178.2	2.06	11.5	284.6	13.93	55.0	7.46	0.663	0.895	0.574
Jan-89	15	8.1	284.9	0.70	66.8	19.4	33.6	0.9	89.7	23.1	98.1	157.9	0.80	157.9	1.83	10.2	283.3	12.30	57.4	7.11	0.662	0.828	0.556
Feb-89	45	10.0	394.6	0.82	75.8	23.9	39.2	4.0	83.9	31.5	122.5	197.2	1.50	197.2	2.28	14.0	287.1	15.94	53.7	9.20	0.664	1.074	0.609
Mar-89	73	12.6	429.4	0.66	71.2	21.8	38.4	3.6	68.1	29.3	91	146.5	1.30	146.5	1.70	12.7	285.8	14.63	44.1	8.46	0.664	0.968	0.591
Apr-89	106	14.9	632.9	0.95	92.4	33.6	53.1	11.7	80.2	19.6	120.4	193.8	1.18	193.8	2.24	22.6	295.8	27.48	49.8	13.72	0.670	1.666	0.715
May-89	136	16.5	692.7	0.96	95.3	35.2	57	13.9	67.5	13.5	161.6	259.6	1.20	259.4	3.00	24.3	297.3	30.79	40.0	12.33	0.671	1.839	0.739
Jun-89	166	17.2	712.7	0.92	104.8	40.5	62.6	17.1	64.7	8.1	186.3	233.5	1.30	233.5	2.73	28.8	301.9	39.56	36.4	14.40	0.674	2.288	0.772
Jul-89	197	16.8	656.3	0.84	107.0	40.5	71.3	21.9	70.4	11.9	141.1	227.2	1.20	227.2	2.63	31.2	304.4	45.54	41.0	16.67	0.676	2.585	0.793
Aug-89	228	15.5	624.4	0.84	104.0	40.2	70.4	21.3	72.0	15.7	128.8	207.4	1.28	207.4	2.40	30.8	303.9	44.37	48.7	21.59	0.675	2.527	0.789
Sep-89	259	13.5	542.7	0.67	102.7	39.3	65.3	18.5	64.9	13.2	127.5	205.3	1.30	205.3	2.38	28.9	302.1	39.82	39.3	13.55	0.674	2.301	0.773
Oct-89	289	11.0	420.4	0.81	94.3	32.9	54.8	12.7	73	15.9	113.5	182.7	1.38	182.7	2.11	22.8	296.0	27.76	44.3	12.54	0.670	1.840	0.715
Nov-89	320	8.7	333.5	0.81	84.1	27.5	48	9.1	84.4	32.4	101.4	166.5	1.00	166.5	1.93	16.7	289.8	18.99	53.4	10.14	0.666	1.208	0.644
Dec-89	350	7.5	275.9	0.75	63.6	17.4	27.5	-2.5	82.2	36.3	90.3	145.7	0.80	145.7	1.69	7.5	280.6	10.35	54.3	5.88	0.660	0.707	0.517
Jan-90	15	8.1	306.98	0.88	70.74	21.5	37.48	3.0	78.45	30.68	94.10	151.5	1.60	151.5	1.75	11.3	285.4	14.18	54.6	7.79	0.663	0.939	0.586
Feb-90	45	10.0	304.36	0.75	73.32	23.0	38.64	3.7	71.73	25.21	114.10	183.8	1.50	183.8	2.12	13.3	286.5	15.30	49.3	9.41	0.664	0.997	0.600
Mar-90	73	12.6	494.69	0.84	81.43	23.5	48.94	8.3	72.08	21.58	137.58	221.5	1.10	221.5	2.56	17.9	290.0	20.49	46.8	9.59	0.667	1.289	0.658
Apr-90	106	14.9	595.90	0.87	87.73	31.0	54.70	13.2	72.07	22.73	143.80	232.5	1.18	231.5	2.68	22.5	295.2	26.54	47.9	12.72	0.670	1.614	0.707
May-90	136	16.5	659.39	0.83	89.26	31.8	53.48	13.0	54.96	22.81	163.42	263.3	1.20	263.3	3.42	22.4	295.4	27.14	33.9	9.19	0.670	1.647	0.711
Jun-90	166	17.2	699.98	0.88	100.13	39.5	67.00	19.4	59.30	11.47	124.67	200.7	1.30	200.7	2.32	29.5	303.6	41.18	35.1	14.55	0.674	2.369	0.778
Jul-90	197	16.8	632.39	0.79	106.33	41.3	73.42	23.8	71.42	20.39	134.97	223.7	1.20	223.7	2.59	32.2	305.3	47.93	45.8	21.96	0.676	2.705	0.800
Aug-90	228	15.5	622.29	0.87	105.03	39.5	73.32	22.4	71.08	26.42	117.23	188.7	1.28	188.7	2.18	30.9	304.1	44.75	48.7	21.42	0.673	2.546	0.798
Sep-90	259	13.5	502.97	0.77	99.93	37.2	67.40	19.7	71.49	24.47	112.40	181.0	1.30	181.0	2.09	28.7	301.8	39.37	49.1	19.33	0.674	2.278	0.777
Oct-90	289	11.0	437.16	0.88	91.26	32.9	57.48	14.2	74.48	23.94	91.29	147.0	1.30	147.0	1.70	23.5	296.7	29.02	48.2	13.99	0.671	1.747	0.725
Nov-90	320	8.7	325.67	0.78	78.67	24.9	43.90	7.3	72.77	26.85	112.37	180.9	1.00	180.9	2.09	16.3	289.5	18.56	49.6	9.24	0.666	1.382	0.640
Dec-90	350	7.5	284.77	0.73	64.47	18.3	34.52	1.4	76.77	29.87	97.10	156.3	1.00	156.3	1.81	9.8	283.0	12.14	53.3	6.47	0.662	0.834	0.551
Jan-91	15	8.1	279.87	0.68	67.74	19.9	30.08	1.9	90.06	38.71	81.05	130.3	1.40	130.3	1.51	12.9	285.0	13.96	64.4	8.95	0.663	0.937	0.580
Feb-91	45	10.0	370.28	0.77	79.64	26.1	44.32	7.1	88.91	34.39	94.11	151.5	1.50	151.5	1.75	16.6	289.8	18.92	61.7	11.67	0.666	1.202	0.643
Mar-91	73	12.6	461.55	0.75	73.61	22.0	44.10	6.3	88.74	37.63	156.32	251.3	1.10	251.3	2.91	14.4	287.5	16.37	63.2	10.34	0.663	1.058	0.614
Apr-91	106	14.9	634.47	0.93	83.77	28.4	50.23	10.1	81.30	35.97	127.30	206.4	1.10	206.4	2.39	19.4	292.6	22.39	58.4	13.24	0.668	1.403	0.670
May-91	136	16.5	687.90	0.93	89.39	31.9	54.33	12.4	79.34	30.68	171.23	275.7	1.28	275.7	3.19	22.2	295.5	28.68	59.2	15.90	0.670	1.829	0.708
Jun-91	166	17.2	632.33	0.76	96.83	36.0	62.47	16.9	78.93	38.20	136.47	220.0	1.28	220.0	2.55	26.5	299.6	34.56	58.6	20.26	0.672	2.036	0.752
Jul-91	197	16.8	647.86	0.82	103.19	39.6	68.87	20.5	79.58	33.10	117.42	189.0	1.28	189.0	2.19	30.0	303.2	42.47	56.3	23.93	0.675	2.433	0.783
Aug-91	228	15.5	598.00	0.82	104.43	40.5	73.56	22.8	68.76	27.68	117.16	188.6	1.20	188.6	2.18	31.5	304.7	46.33	48.2	22.93	0.676	2.624	0.795
Sep-91	259	13.5	504.43	0.78	100.50	38.1	67.87	19.9	76.10	30.28	97.47	157.2	1.30	157.2	1.82	29.8	302.2	40.03	53.2	21.28	0.674	2.182	0.774
Oct-91	289	11.0	439.58	0.88	90.06	32.5	61.48	16.4	75.03	24.90	112.00	186.3	1.50	186.3	2.09	24.3	297.5	30.41	51.0	15.56	0.671	1.820	0.751
Nov-91	320	8.7	322.48	0.76	77.63	25.4	46.23	7.9	79.75	32.05	99.80	165.7	1.00	165.7	1.88	16.6	289.8	18.93	55.4	10.52	0.666	1.202	0.645
Dec-91	350	7.5	232.29	0.47	64.68	18.2	41.32	5.2	78.97	43.13	79.45	127.5	1.00	127.5	1.48	11.7	284.8	13.72	61.0	8.51	0.663	0.906	0.577
Jan-92	15	8.1	290.39	0.73	67.90	19.9	37.90	3.3	80.45	38.58	88.19	142.0	1.40	142.0	1.64	11.6	284.8	13.47	58.5	8.06	0.663	0.903	0.577
Feb-92	45	10.0	383.72	0.74	73.32	23.1	47.17	8.4	78.52	43.24	98.21	158.1	1.50	158.1	1.83	13.7	288.9	17.89	60.9	10.80	0.666	1.144	0.633
Mar-92	73	12.6	469.13	0.77	75.90	23.9	46.68	9.3	73.87	33.71	105.65	170.1	1.10	170.1	2.01	16.4	289.5	18.93	53.8	10.16	0.666	1.200	0.643
Apr-92	106	14.9	590.67	0.86	89.13	32.7	54.97	12.8	69.13	23.53	92.46	148.8	1.10	148.8	1.72	22.3	295.4	26.04	51.3	8.41	0.670	1.632	0.709
May-92	136	16.5	636.97	0.82	94.33	34.9	61.77	16.5	70.10	24.00	108.85	174.9	1.20	174.9	2.02	25.6	298.8	32.01	46.3	13.77	0.672	1.944	0.743
Jun-92	166	17.2	659.87	0.89	101.07	38.4	63.70	18.7	51.17	22.33	136.00	218.7	1.20	218.7	2.50	28.5	301.7	39.02	36.8	14.16	0.674	2.260	0.770
Jul-92	197	16.8	648.81	0.82	105.39	40.6	72.16	22.8	56.32	26.41	128.54	203.1	1.30	203.1	2.35	31.3	304.4	45.88	41.4	18.95	0.676	2.548	0.795
Aug-92	228	15.5	578.65	0.78	104.03	41.1	77.58	25.3	67.20	30.98	113.35	182.5	1.20	182.5	2.12	33.1	306.4	50.96	50.0	25.47	0.677	2.949	0.808
Sep-92	259	13.5	534.07	0.80	100.47	40.4	71.75	23.1	73.50	31.30	102.27	164.6	1.30	164.6	1.90	31.3	304.4	45.49	52.4	23.84	0.676	2.383	0.793
Oct-92	289	11.0	498.90	0.74	92.32	33.4	60.01	15.9	81.40	40.70	99.45	160.1	1.30	160.1	1.85	24.8	297.9	31.22	61.3	19.11	0.671	1.862	0.735
Nov-92	320	8.7	329.43	0.80	75.48	24.1	46.37	8.8	87.17	38.63	94.13	151.6	1.00	151.6	1.75	15.5	288.6	17.57	61.9	10.05	0.665	1.128	0.629
Dec-92	350	7.5	232.61	0.56	63.58	17.5	38.29	3.5	76.96	42.19	91.06	146.6	1.00	146.6	1.70	10.5	283.7	12.78	59.0	7.57	0.662	0.947	0.561

RNs = (0*RS/L*0.75+(1.904*10^-8*TKm^4)*(1.34-.044*ED^.5)*(.1+.9n/N)

Ud = URs*(2/n)^2.5*(URs+1)

/TKm)-5.02808)

"a" = .0043*RHmin-n/N-1.41

"b1" = 0.908-0.00481*RHmin+0.7949*n/N+0.0749*n/N*@LN(Ud+1)/2-0.0038*RHmin*n/N-0.000441*RHmin*Ud+0.281*@LN(Ud+1)*@LN(n/N+1)-0.00975*@LN(Ud

"b2" = 1.0656-.0012RHm+.04495*Ud-.0002*RHm*Ud-.115*N^-4*RHm^2-.001RHm*Ud^2

"C" (using limiting values in Col. AM or AK) = 0.892-.0781*(Ud+.002)*RHmin*Ud+.000402*RHmin^2

"C" and Ud = +0.000219*(Ud*URs*RHmax*Ud+.000002)*(Ud^2*RHmin^2)-.0000686*Ud)^2*Ud^2

RHG = 2*(1-.37*ED/P)*(Ud^.5)

3.054*(EXP(17.27*TmaxA/(Tmax+237.3))*(1-0.01*RHmin)+3.054*(EXP(17.27*TminA/(Tmin+237.3))*(1-0.01*RHmin)

(u=u*u)*u(zm/dayy)^.81/574(m m^-1/km day^-1)

GAMMA* = GAMMA (1 + m/u)

(Rnl: IF .017RS < =3.0 3-0, IF .017RS = 12,12,OTHERWISE, = .017RS

(RHmin=5, IF RHmin < = 30,30, IF RHmin > = 90,90, OTHERWISE, = RHmin

"a1" = 0.0043 RHmin - n/N - 1.4 n/N - 1.41 (UdA:IF UdA > 10.0 m/s,UdA = 10.0

N = (24/@PI*ARCCOS(-TAN(PHI)*TAN(.409*SIN(J*@PI*.284+1)/365))) URmax @IF(URs < = 1.0,URmax = 1.0,@IF(URs > = 4,URmax = 4,otherwise URmax = URs)

RNs MM/DY	Ud M/S	(EA-ED)2 MB	(EA-ED)4 MB	RHO kgm^3	ro m/s/m	GAM* MB/DgK	dry/light km, H	Bl-Cr p Mg/cm2 3*e/d	FAO Bl-Cr "a1"	FAO Bl-Cr "b1"	FAO RAD "b2"	Limits for FAO PEN, RAD. & Bl-Cr (FAO RAD & Bl-Cr use (Ud) (RHmin) limit	(Ud) limit	(UR) limit	CPEN "C" limit		SCSBC ks = 1.0 mm/day	FAOBC mm/day	FAOPA mm/day	P-T mm/day	J-H ETo mm/day	FAOPEN mm/day	FAOCPE mm/day	CALIB. FAOCPEN mm/day
6.73	0.81	9.89	17.33	1.143	214.8	###	13.78	0.315	-2.20	1.46	0.87	11.71	90.0	0.81	1.00	1.10	5.79	6.50	7.86	6.13	7.69	6.20	6.85	5.84
5.35	1.49	11.49	14.59	1.216	153.2	###	13.03	0.298	-2.22	1.40	1.06	10.73	58.0	1.49	1.30	1.00	3.63	5.36	4.74	4.28	5.24	5.73	5.72	4.99
1.58	2.47	6.39	9.70	1.241	98.9	###	10.05	0.229	-2.04	1.51	0.99	5.04	38.5	2.47	1.60	0.93	1.70	3.54	2.56	1.00	1.93	2.88	2.69	2.44
2.48	3.01	7.69	11.36	1.227	77.8	###	10.79	0.248	-2.09	1.59	1.01	6.43	38.5	3.07	1.50	0.95	2.00	3.65	3.66	1.93	2.80	4.11	3.92	3.56
3.94	2.84	8.61	13.39	1.220	75.5	###	11.79	0.269	-2.20	1.71	1.08	8.04	62.7	2.84	1.10	1.00	3.00	6.87	5.18	3.33	4.02	5.93	5.36	4.70
3.36	2.43	14.66	28.82	1.193	45.9	###	12.86	0.294	-2.38	1.83	1.02	18.66	77.7	2.43	1.10	1.00	4.97	7.54	7.43	4.78	6.25	7.27	7.50	6.36
6.00	3.12	10.64	26.49	1.143	69.3	###	13.79	0.313	-2.25	1.93	1.07	11.41	66.4	3.12	1.30	1.00	6.07	9.00	8.45	5.34	7.20	9.07	9.03	7.53
6.34	2.77	20.77	40.31	1.142	70.4	###	14.17	0.313	-2.39	1.90	1.30	12.00	50.4	2.77	1.30	0.95	8.24	11.34	10.61	6.25	8.88	10.56	10.02	8.24
6.43	2.84	28.84	38.21	1.157	70.4	###	13.96	0.319	-2.27	2.12	1.00	21.92	56.4	2.84	1.20	0.97	6.51	10.72	9.86	6.42	8.95	10.46	10.07	8.23
5.64	3.03	22.14	30.35	1.163	71.6	###	13.09	0.305	-2.15	1.68	1.04	10.26	68.5	3.03	1.25	0.99	7.36	8.71	7.99	5.50	7.35	8.95	8.83	7.38
4.38	2.61	21.43	31.43	1.172	96.2	###	12.36	0.279	-2.13	1.69	1.05	8.78	64.5	2.61	1.10	0.96	6.34	7.31	6.38	4.19	5.96	7.50	7.23	6.13
2.93	2.14	10.62	13.46	1.195	133.4	###	11.53	0.254	-2.00	1.52	0.95	6.13	82.5	2.14	1.30	0.98	4.08	4.11	3.77	2.54	3.49	4.23	4.18	3.72
1.94	1.96	6.68	10.16	1.223	159.4	###	10.24	0.234	-1.99	1.38	0.93	3.51	88.1	1.96	1.80	0.99	2.68	2.86	2.77	1.53	2.40	2.73	2.79	2.38
1.26	2.22	5.01	5.58	1.257	155.3	###	9.43	0.224	-1.85	1.27	0.93	4.13	88.0	2.22	1.80	0.95	1.22	1.43	1.67	0.82	1.28	1.88	1.79	1.65
0.68	2.46	5.12	8.74	1.240	100.5	###	10.05	0.229	-1.82	1.46	0.94	4.98	98.0	2.46	1.60	0.97	1.31	2.45	2.38	1.16	1.90	2.32	2.43	2.22
2.64	2.42	6.96	13.91	1.224	98.5	###	10.79	0.246	-2.14	1.59	0.93	6.69	90.0	2.42	1.50	1.01	2.55	3.68	3.65	2.06	2.96	3.57	3.63	3.25
3.60	2.20	7.98	12.57	1.229	94.6	###	11.29	0.269	-2.08	1.57	1.08	7.84	81.1	2.20	1.10	1.00	3.39	4.04	4.43	2.73	3.33	4.54	4.54	4.03
4.08	2.46	9.74	16.31	1.204	84.7	###	12.06	0.294	-2.06	1.55	0.97	9.25	89.2	2.46	1.30	1.05	4.14	5.03	5.75	4.15	4.90	5.89	6.33	5.34
5.16	3.42	13.32	19.09	1.206	63.7	###	13.23	0.313	-2.05	1.71	1.08	9.75	70.4	3.41	1.20	0.97	4.45	7.02	6.76	4.39	5.19	7.81	7.61	6.47
6.57	2.77	22.11	32.54	1.169	70.4	###	14.17	0.323	-2.34	1.86	1.05	11.92	67.8	2.77	1.20	1.00	7.45	9.91	9.29	6.32	8.27	9.52	9.64	7.96
6.89	3.02	24.90	33.60	1.148	71.7	###	13.96	0.319	-2.15	1.64	1.03	11.23	72.9	3.02	1.20	1.02	9.30	9.90	8.91	6.36	8.75	9.88	10.01	8.24
6.17	2.33	23.00	31.91	1.150	83.9	###	13.19	0.301	-2.18	1.64	1.00	10.61	77.3	2.33	1.20	1.03	8.57	9.05	8.15	6.20	8.31	8.71	9.00	7.51
3.47	3.92	13.98	17.73	1.211	137.3	###	12.06	0.273	-1.95	1.49	1.06	7.32	55.2	3.92	1.30	0.99	5.67	4.47	4.43	2.99	3.74	5.44	5.08	4.47
3.40	2.28	15.48	24.20	1.175	104.8	###	11.33	0.254	-2.13	1.60	0.98	7.15	86.4	2.28	1.50	1.02	3.30	6.04	4.92	3.19	4.70	5.54	5.44	4.76
1.83	2.64	8.18	12.60	1.232	96.0	###	10.24	0.234	-2.00	1.54	0.99	5.17	85.7	2.64	1.80	0.98	2.51	3.41	2.97	1.44	2.40	3.42	3.29	2.97
1.28	2.65	6.09	10.29	1.239	96.4	###	9.43	0.224	-2.14	1.64	0.98	4.95	98.1	2.65	1.80	0.98	1.79	2.78	2.49	0.92	1.90	2.68	2.58	2.33
1.13	2.25	5.27	8.75	1.245	108.8	###	10.05	0.229	-2.08	1.47	0.96	4.64	89.7	2.25	1.40	0.97	1.61	2.31	2.28	1.07	1.74	2.46	2.48	2.19
1.61	2.34	6.74	10.02	1.228	87.1	###	10.79	0.246	-2.12	1.56	0.97	6.71	83.9	2.34	1.50	0.99	2.41	3.46	3.06	2.00	2.98	3.71	3.66	3.26
3.33	1.78	8.19	11.67	1.215	147.3	###	11.79	0.269	-1.99	1.45	1.01	7.30	48.1	1.78	1.30	0.97	2.97	3.47	4.05	2.49	2.97	4.21	4.07	3.63
5.33	2.25	13.77	23.22	1.190	84.7	###	12.86	0.294	-2.28	1.75	1.00	10.76	80.2	2.25	1.30	1.04	3.12	5.25	7.37	4.94	4.61	7.09	7.39	6.30
6.14	3.27	18.47	27.40	1.182	66.3	###	13.73	0.313	-2.29	1.90	1.07	11.78	67.1	3.27	1.30	1.00	6.06	9.25	8.96	5.70	7.44	9.33	9.55	7.74
6.36	2.97	23.16	38.18	1.145	73.8	###	14.17	0.323	-2.39	1.91	1.00	12.00	44.7	2.97	1.20	1.00	7.83	10.54	9.86	6.38	8.65	10.23	10.34	8.18
6.31	2.87	26.87	37.44	1.134	75.7	###	13.96	0.319	-2.30	1.78	1.06	11.36	30.4	2.87	1.20	1.01	8.00	10.00	9.05	6.31	8.46	9.92	10.03	8.24
6.01	2.61	22.78	31.04	1.154	82.9	###	13.19	0.301	-2.19	1.64	1.01	10.42	73.6	2.61	1.20	1.02	8.01	8.94	8.19	6.05	7.94	8.75	8.92	7.44
4.97	2.69	20.29	34.56	1.164	83.7	###	12.16	0.278	-2.23	1.78	1.06	9.23	64.9	2.69	1.30	0.97	6.75	8.58	7.26	4.95	6.59	8.06	7.83	6.64
3.06	2.56	15.42	23.06	1.190	94.1	###	11.13	0.254	-2.13	1.68	1.03	7.15	75.0	2.56	1.50	0.97	4.47	5.80	4.97	2.98	4.28	5.58	5.38	4.72
1.99	2.49	8.05	14.78	1.216	103.2	###	10.24	0.234	-2.12	1.61	0.99	5.67	84.4	2.48	1.80	0.96	2.00	3.81	3.30	1.53	2.74	3.51	3.45	3.10
1.22	2.17	4.73	7.79	1.238	118.0	###	9.43	0.214	-2.01	1.49	0.97	4.66	92.1	2.17	1.80	0.95	1.22	1.82	2.04	0.79	1.44	2.13	2.05	1.88
1.36	2.16	6.49	9.71	1.230	113.5	###	10.05	0.229	-2.07	1.48	0.97	5.22	78.5	2.16	1.40	0.95	1.96	2.61	2.67	1.36	2.09	2.74	2.61	2.38
2.36	2.35	7.48	11.60	1.211	93.5	###	10.79	0.246	-2.05	1.53	1.04	6.18	71.7	2.35	1.50	0.94	2.29	3.32	3.46	1.79	2.60	3.63	3.62	3.24
3.02	2.69	10.90	15.90	1.211	71.8	###	11.79	0.269	-2.36	1.66	1.02	8.48	72.0	2.69	1.10	0.97	3.49	5.16	3.97	2.18	4.25	5.75	5.57	4.87
5.21	2.85	13.92	19.25	1.193	74.2	###	12.86	0.294	-2.18	1.47	1.08	10.13	73.1	2.81	1.10	1.00	4.56	6.80	7.02	4.64	5.99	7.51	7.50	6.28
2.70	3.73	17.94	23.80	1.195	56.2	###	13.73	0.313	-2.12	1.66	1.13	12.21	84.9	3.73	1.20	0.95	5.68	8.55	8.57	5.21	6.63	9.59	8.95	7.46
4.41	2.53	26.63	30.43	1.162	65.8	###	14.17	0.323	-2.24	1.80	1.07	11.80	59.2	2.53	1.20	0.98	8.00	10.37	9.52	6.38	8.55	9.76	9.63	7.95
6.32	2.82	26.00	36.30	1.149	70.0	###	13.96	0.319	-2.11	1.64	1.05	10.75	71.4	2.82	1.20	1.01	9.03	9.85	8.59	6.37	8.34	9.60	9.69	8.05
6.05	2.38	22.94	30.23	1.154	91.1	###	13.19	0.301	-2.17	1.64	1.04	10.38	71.3	2.38	1.20	1.02	8.00	8.64	8.11	6.00	7.96	8.51	8.64	7.24
4.57	2.19	20.06	37.22	1.163	95.8	###	12.16	0.278	-2.05	1.52	1.00	8.53	71.4	2.17	1.30	0.99	6.68	6.94	6.53	4.44	6.07	7.00	6.91	5.94
3.36	2.04	15.03	21.61	1.196	136.9	###	11.13	0.254	-2.13	1.62	1.00	7.43	74.5	2.04	1.30	1.00	4.66	5.61	5.06	2.97	4.55	5.14	5.11	4.58
1.85	3.09	9.32	12.97	1.218	95.0	###	10.24	0.234	-2.07	1.55	1.01	5.54	72.8	2.09	1.40	0.94	2.73	3.99	3.28	1.49	2.64	3.73	3.50	3.15
1.22	2.33	5.97	8.16	1.247	109.8	###	9.43	0.224	-1.99	1.43	0.98	4.50	76.8	2.33	1.80	0.93	1.53	2.04	2.14	0.85	1.59	2.43	2.26	2.07
1.40	1.86	4.93	7.50	1.253	131.7	###	10.05	0.229	-1.92	1.30	0.91	4.76	90.8	1.86	1.60	0.98	1.89	2.12	2.21	1.18	1.87	2.23	2.13	1.99
2.43	2.20	7.23	11.47	1.235	113.4	###	10.79	0.246	-1.83	1.42	0.93	6.29	88.9	2.30	1.50	1.01	2.93	3.69	3.47	2.13	3.04	3.43	3.47	3.12
3.70	3.03	6.03	8.88	1.225	58.3	###	11.79	0.269	-2.00	1.43	0.95	7.85	66.7	3.05	1.30	1.00	2.72	3.69	4.16	2.93	3.45	4.33	4.32	4.00
5.53	2.50	9.36	13.85	1.205	83.3	###	12.86	0.294	-2.19	1.36	0.96	10.62	81.5	2.50	1.10	1.04	4.22	5.61	6.60	4.72	5.69	6.74	6.50	5.41
6.50	3.48	10.88	15.94	1.191	62.3	###	13.73	0.313	-2.37	1.58	0.98	11.69	79.7	3.48	1.20	1.04	5.31	6.90	7.03	3.79	6.86	7.82	8.16	6.48
6.37	2.78	14.30	20.38	1.172	78.1	###	14.17	0.323	-2.06	1.43	0.97	10.75	78.9	2.79	1.20	1.04	6.96	7.29	7.51	6.03	7.18	7.86	8.15	6.83
6.61	2.39	18.54	28.55	1.156	90.9	###	13.96	0.319	-2.00	1.49	0.97	11.00	79.6	2.39	1.20	1.05	8.17	8.34	8.03	6.32	8.09	8.32	8.73	7.33
5.85	2.38	23.99	31.37	1.151	98.1	###	13.19	0.301	-2.11	1.55	1.01	10.17	68.7	2.38	1.20	1.00	8.29	8.43	7.85	5.86	7.77	8.44	8.49	7.33
4.70	2.86	19.76	25.87	1.161	109.3	###	12.16	0.278	-2.06	1.47	0.97	8.58	76.1	2.86	1.30	1.01	6.78	6.66	6.13	4.58	6.34	6.58	6.68	5.74
3.36	2.50	14.91	19.96	1.182	93.3	###	11.13	0.254	-2.10	1.55	1.00	7.15	73.0	2.50	1.50	0.98	4.87	5.31	4.90	3.00	4.68	5.42	5.30	4.63
1.93	2.39	8.41	12.17	1.216	107.6	###	10.24	0.234	-2.04	1.47	0.97	5.46	79.7	2.39	1.80	0.97	2.73	3.73	3.12	1.56	2.64	3.35	3.23	2.93
1.26	1.90	5.21	6.63	1.238	134.4	###	9.43	0.224	-1.68	1.09	0.92	3.61	79.8	1.93	1.60	0.92	1.82	1.61	1.62	0.91	1.40	2.08	1.92	1.76
1.57	2.02	5.67	8.13	1.228	121.0	###	10.05	0.229	-1.98	1.36	0.95	4.94	80.5	2.02	1.40	0.95	1.85	3.23	2.39	1.34	2.91	2.47	2.36	2.15
2.36	3.20	7.80	9.19	1.219	108.7	###	10.79	0.246	-1.97	1.33	0.94	6.18	78.5	3.20	1.50	0.97	2.76	3.84	3.37	2.04	2.88	3.42	3.32	3.09
3.76	2.10	8.79	11.20	1.216	99.2	###	11.79	0.269	-2.03	1.41	0.97	7.96	71.9	2.10	1.10	0.96	3.20	3.96	4.69	3.05	3.84	4.72	4.62	4.09
4.78	1.80	14.43	24.03	1.194	115.5	###	12.86	0.294	-2.21	1.60	1.06	10.04	69.1	1.80	1.10	0.95	5.41	6.07	7.23	4.23	5.91	6.99	6.83	5.71
6.01	2.33	17.03	23.19	1.177	90.3	###	13.73	0.313	-2.12	1.55	1.08	10.03	70.1	2.21	1.20	1.02	6.44	7.57	7.76	5.62	7.06	7.73	7.66	6.46
6.46	2.72	24.66	31.51	1.166	79.7	###	14.17	0.323	-2.21	1.69	1.07	12.90	51.3	2.72	1.20	0.95	7.73	9.44	9.51	6.27	8.42	9.60	9.33	7.74
6.25	2.56	26.45	33.06	1.154	84.6	###	13.96	0.319	-2.11	1.57	1.04	10.99	56.5	2.56	1.20	0.96	8.66	9.16	8.61	6.25	8.34	9.47	9.34	7.63
5.85	2.31	25.47	31.30	1.146	94.8	###	13.19	0.301	-2.04	1.46	1.00	9.34	67.1	2.31	1.20	0.99	8.94	8.32	7.65	5.90	7.80	8.46	8.40	7.07
4.90	2.13	23.66	29.38	1.152	104.4	###	12.16	0.278	-2.06	1.46	0.99	8.74	73.3	2.13	1.30	1.01	7.33	7.17	6.50	4.60	6.62	7.09	7.13	6.10
3.30	2.12	12.13	17.08	1.179	107.3	###	11.13	0.254	-2.07	1.36	0.98	6.78	81.7	2.12	1.30	1.00	4.99	6.00	4.57	3.11	4.31	4.72	4.71	4.36
2.02	2.26	6.32	9.83	1.220	113.4	###	10.24	0.234	-2.04	1.43	0.99	5.44	97.2	2.26	1.80	0.99	3.30	3.98	2.97	1.60	2.58	2.92	2.90	2.62
1.25	2.18	5.14	6.30	1.243	117.2	###	9.43	0.224	-1.79	1.20	0.94	3.88	76.4	2.18	1.80	0.92	1.45	1.69	1.86	0.84	1.45	2.28	2.03	1.96

I = .00019*UR*UM*RHmsl (cos'd)
H=sqr(2.92*10^-8*UR*UM^2*RHmsl^2 -0.00016*RHmsl^Rs^2
+1)*(LN(RHmsl+1)^2*(LN(n/N+1)

ETo= Da(D + G*yRa + Gn + G/D +G*x5974)(XFO)(Ea-Ed)/(F ro)

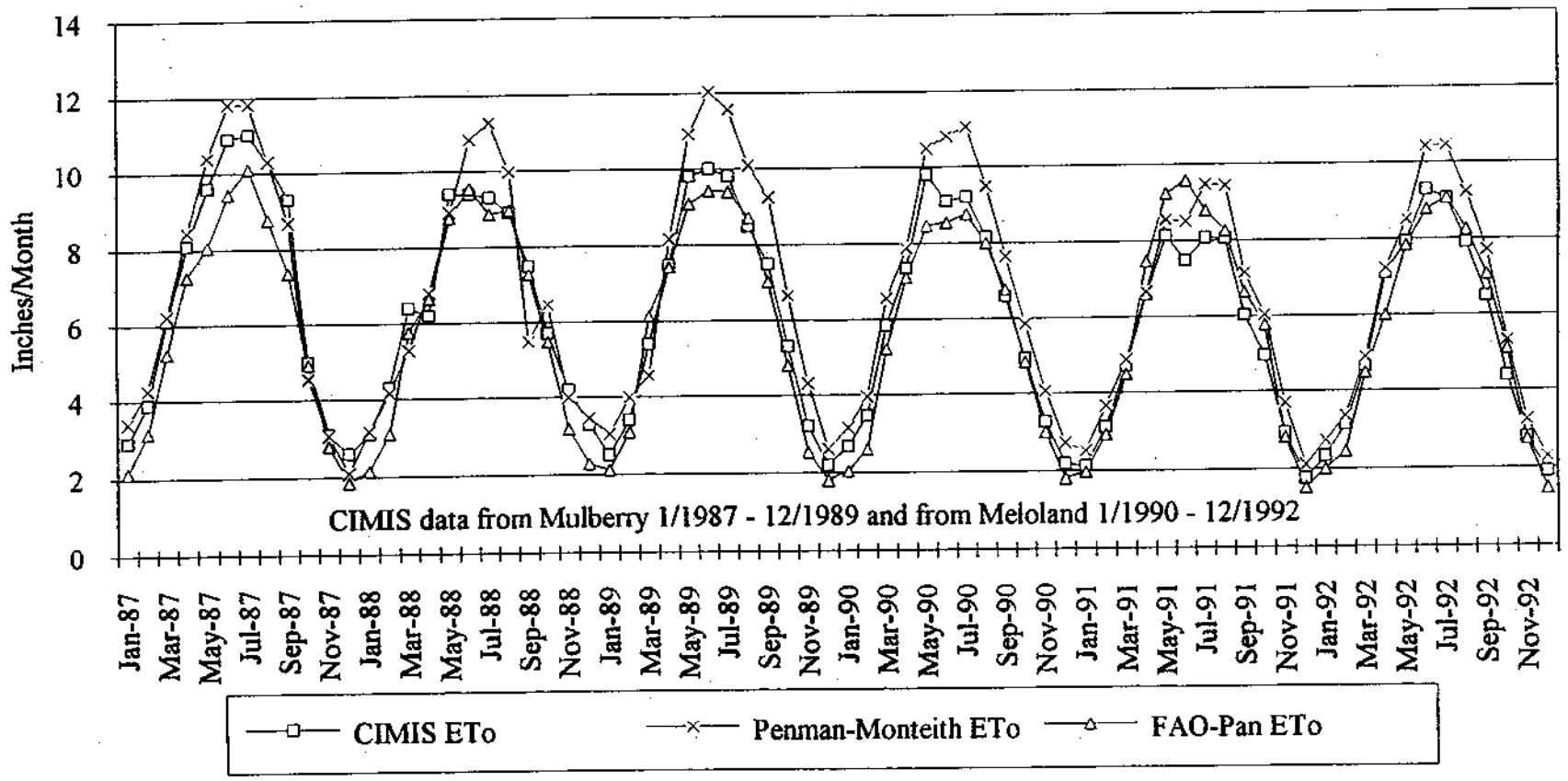
Note: For Irrig. limit to 1 to 1000m

'44PEN Clean mm/day	ETo(P-M) Clean mm/day	SAMANI mm/day	Class A Pan, Ep In/Mo	mm/Day	FAO CASE A(ccu), (1) B(dry), (2)	UPWIND FETCH, meters	Limits for Kp Calc. 2-m wind	RHmsl	(FAO-34 Calc. Kp) (CASE A)	(CASE B)	ETo FAO-Pan mm/day	ETo FAO-Pan In/Mo	SUM(Rs (L,y/day)*12	Rs Equiv. E In/Yr	Class A Pan Evap In/Yr	ETo FAO-PAN In/Yr	Kp Monthly	Kp Annual	ET=(ASCE P-M) In/Mo	(n/Yr)	ETo (FAO-CPEN) mm/Mo	In/Mo	In/Yr	ET=(CB-I) ET=(CB-I) In/DAY
5.93	5.73	6.92	9.39	7.69	1	30	64.0	66.8	0.76	999.00	5.86	7.1753225												
5.19	4.81	4.91	7.48	6.30	2	90	113.7	40.5	999.00	0.63	4.88													
2.34	2.78	2.26	3.58	2.94	2	65	173.7	51.9	999.00	0.59	1.72	2.14					0.595		3.40			3.28		
3.36	3.66	3.10	4.93	4.47	2	75	231.4	52.3	999.00	0.54	3.58	3.15					0.629		4.28			4.22		
4.51	5.31	4.25	7.94	6.36	1	16	253.9	51.7	0.69	999.00	6.29	5.33					0.684		4.34			6.54		
6.29	7.16	6.37	10.29	8.60	1	16	280.1	43.8	0.69	999.00	5.98	7.27					0.709		5.45			8.86		
7.46	8.51	7.68	12.98	10.13	1	16	247.3	39.4	0.65	999.00	8.60	8.06					0.653		10.38			11.02		
8.95	10.00	8.79	14.93	12.30	1	19	219.3	30.0	0.63	999.00	7.74	9.64					0.650		11.41			11.84		
8.87	9.68	8.36	18.58	12.75	1	19	323.1	25.0	0.65	999.00	9.28	10.11					0.650		11.81			12.25		
7.40	8.44	7.31	12.93	10.39	1	28	239.9	44.8	0.68	999.00	7.19	8.78					0.678		10.30			10.75		
6.32	7.35	6.36	10.88	8.93	1	28	199.5	39.9	0.68	999.00	6.04	7.37					0.699		8.68			8.54		
3.48	3.72	3.33	4.85	3.45	1	30	134.2	58.0	0.70	999.00	4.05	4.94					0.743		6.54			3.10		
2.39	2.60	2.73	4.28	3.61	2	80	132.1	65.3	999.00	0.64	2.29	2.80					0.656		3.87			3.36		
1.97	1.71	1.68	3.83	2.40	2	82	149.1	63.2	999.00	0.63	1.52	1.86	5930.524731	121.4	106.09	71.34	0.634	0.671	2.09	85.03		3.19	88.01	
2.09	2.39	2.35	3.44	2.82	2	65	171.8	61.9	999.00	0.61	1.77	2.16					0.627		3.38			3.97		
3.05	3.66	3.36	4.90	4.13	2	75	174.5	59.0	999.00	0.61	2.55	3.13					0.679		4.16			4.13		
3.90	4.34	4.04	8.16	6.48	1	16	181.6	49.9	0.71	999.00	4.72	5.76					0.704		5.29			5.54		
5.46	5.71	5.70	8.88	7.60	1	16	202.9	56.1	0.72	999.00	5.66	6.64					0.748		6.88			7.27		
6.50	7.31	6.20	12.64	11.09	1	16	230.8	48.4	0.65	999.00	7.19	8.77					0.648		8.92			9.28		
8.22	9.26	8.38	13.76	11.64	1	19	219.3	48.9	0.67	999.00	7.82	9.54					0.694		10.82			11.36		
8.51	9.26	8.25	12.86	10.53	1	19	239.6	49.1	0.68	999.00	7.36	8.47					0.690		11.27			12.25		
7.61	8.67	7.66	12.04	10.36	1	28	208.1	51.8	0.71	999.00	7.33	8.97					0.710		9.97			10.99		
4.84	4.64	4.39	10.55	8.93	1	30	146.5	33.8	0.67	999.00	5.98	7.17					0.690		5.48			6.00		
4.08	3.79	4.06	7.52	6.68	1	30	164.1	33.7	0.73	999.00	4.49	5.48					0.729		6.46			6.63		
2.81	3.39	2.63	5.2	4.40	2	80	177.6	55.1	999.00	0.59	2.61	3.19					0.613		4.00			3.89		
2.15	2.84	2.24	3.82	3.13	2	82	170.3	55.0	999.00	0.60	1.87	2.28	5703.309344	116.7	105.02	72.04	0.591	0.686	3.47	79.81		3.15	63.50	
2.06	2.30	2.24	3.46	2.82	2	65	157.9	57.4	999.00	0.62	1.76	2.02					0.618		3.65			2.95		
2.82	3.63	3.26	5.14	4.46	2	75	197.2	57.7	999.00	0.68	2.61	3.09					0.603		3.99			4.03		
3.84	3.73	3.37	8.74	7.16	1	16	146.5	64.1	0.70	999.00	5.02	6.13					0.703		4.56			4.97		
6.22	6.93	6.48	10.8	8.97	1	16	199.8	49.9	0.70	999.00	6.31	7.45					0.703		8.38			8.73		
7.88	8.94	7.41	13.88	11.45	1	19	259.4	40.8	0.65	999.00	7.43	9.09					0.650		10.81			11.36		
8.73	10.20	8.91	14.5	12.26	1	19	235.3	36.4	0.63	999.00	7.98	9.63					0.630		12.05			12.09		
8.50	9.43	8.03	14.04	11.50	1	19	227.2	42.0	0.63	999.00	7.70	9.40					0.669		11.56			12.24		
7.63	8.23	7.33	12.46	10.20	1	30	207.4	48.7	0.70	999.00	7.15	8.73					0.701		10.07			10.68		
6.70	7.82	6.61	10.47	8.86	1	30	205.3	39.1	0.67	999.00	5.95	7.03					0.671		9.24			9.35		
4.63	3.44	4.43	8.89	5.68	1	30	182.7	44.5	0.70	999.00	3.93	4.80					0.697		5.64			5.57		
2.91	3.63	3.17	4.23	3.56	2	80	166.3	55.4	999.00	0.68	2.16	2.53					0.596		4.31			4.02		
1.76	2.16	1.95	2.87	2.42	2	82	165.7	56.3	999.00	0.61	1.48	1.80	5998.47404	122.8	107.43	71.39	0.607	0.666	2.62	67.17		2.50	89.84	
2.27	2.58	2.41	3.84	3.74	2	65	131.5	56.4	999.00	0.62	1.67	2.04					0.611		3.25			3.19		
3.17	3.59	3.16	4.8	4.08	2	75	183.6	48.5	999.00	0.58	2.86	2.60					0.570		3.95			3.99		
4.82	3.36	4.33	7.62	6.34	1	30	221.3	46.5	0.68	999.00	4.27	5.22					0.845		6.55			4.79		
6.25	6.67	5.76	10.4	8.83	1	30	231.5	47.9	0.68	999.00	6.03	7.12					0.684		7.88			3.63		
7.86	8.58	6.61	13.78	11.23	1	16	295.3	33.9	0.62	999.00	6.94	8.47					0.613		10.48			10.92		
8.43	9.14	8.30	13	11.01	1	19	200.7	35.3	0.66	999.00	7.24	8.53					0.658		10.80			11.33		
8.29	9.09	8.26	12.78	10.47	1	19	223.7	45.0	0.69	999.00	7.18	8.76					0.686		11.65			11.83		
7.46	7.78	7.18	11.22	9.28	1	28	188.7	48.7	0.73	999.00	6.56	8.02					0.707		9.49			10.54		
6.05	6.47	6.14	9.02	8.08	1	28	183.0	49.1	0.73	999.00	5.73	6.77					0.711		7.66			8.18		
4.43	4.78	4.53	8.72	5.51	1	28	147.0	48.2	0.73	999.00	3.96	4.84					0.720		5.84			6.24		
3.04	3.45	2.83	5.15	4.36	2	80	140.9	49.8	999.00	0.58	2.54	2.99					0.582		4.07			4.13		
1.97	2.13	1.96	3.02	2.47	2	82	156.3	53.3	999.00	0.60	1.49	1.81	5899.790476	120.6	106.13	63.17	0.600	0.664	2.72	83.63		2.76	88.57	
1.91	2.05	2.21	3.01	2.47	2	65	138.5	64.4	999.00	0.65	1.80	1.96					0.630		2.30			2.65		
3.00	3.32	3.45	4.03	4.20	2	75	231.9	61.7	999.00	0.63	2.63	2.92					0.630		3.47			3.97		
3.87	3.98	3.64	8.28	5.33	1	16	255.7	65.2	0.72	999.00	3.67	4.68					0.716		4.16			5.31		
3.54	3.64	3.31	10.38	8.79	1	16	206.6	56.6	0.72	999.00	6.35	7.48					0.721		8.66			3.60		
6.84	5.82	6.69	13.21	10.82	1	16	275.7	39.2	0.70	999.00	7.57	9.24					0.699		8.57			9.96		
6.57	7.21	7.65	13.3	11.26	1	19	228.0	38.6	0.72	999.00	8.13	9.99					0.721		8.32			9.62		
7.45	7.77	8.87	12.12	9.93	1	19	189.0	36.3	0.73	999.00	7.21	8.80					0.728		9.48			10.66		
7.42	7.74	7.34	11.72	9.60	1	28	188.6	48.2	0.71	999.00	6.78	8.22					0.708		9.64			10.36		
5.81	6.07	6.18	9.11	7.72	1	28	157.3	53.2	0.73	999.00	5.43	6.65					0.720		7.16			7.47		
4.59	4.94	4.23	8.06	6.40	1	28	140.3	51.0	0.72	999.00	4.72	5.77					0.716		6.03			6.47		
3.80	3.13	3.88	6.46	3.94	2	80	140.7	55.6	999.00	0.61	2.39	2.82					0.606		3.69			3.82		
1.75	1.72	1.83	2.37	1.94	2	82	127.9	63.0	999.00	0.66	1.24	1.51	5759.505684	167.9	98.82	69.69	0.639	0.703	2.10	72.68		2.34	86.90	
2.06	2.33	2.36	2.17	2.60	2	65	142.0	58.5	999.00	0.63	1.63	1.99					0.627		2.72			2.68		
2.95	2.96	2.95	4.18	3.42	2	75	158.1	60.9	999.00	0.65	2.16	2.46					0.565		3.75			3.60		
4.10	4.03	3.83	8.24	5.33	1	16	173.3	51.8	0.72	999.00	3.88	4.49					0.730		4.90			5.44		
6.07	6.34	5.96	8.6	7.78	1	16	148.8	51.3	0.65	999.00	5.06	6.00					0.422		7.23			7.85		
6.84	6.97	7.01	11.16	9.34	1	16	174.9	48.1	0.70	999.00	6.43	7.83					0.704		8.51			9.59		
8.43	8.83	8.33	13.70	11.30	1	19	215.7	36.6	0.66	999.00	7.46	8.78					0.657		10.43			11.02		
8.20	8.56	8.17	13.36	10.91	1	19	203.3	41.4	0.68	999.00	7.48	9.03					0.679		10.43			11.16		
7.46	7.56	7.33	11.80	9.49	1	28	182.8	50.0	0.71	999.00	6.76	8.25					0.713		9.23			10.26		
6.34	6.54	6.51	10.08	8.26	1	28	164.6	52.4	0.73	999.00	5.99	7.07					0.702		7.72			8.43		
4.33	4.36	4.33	9.03	3.60	1	28	140.3	61.3	0.75	999.00	4.19	5.11					0.348		5.32			5.93		
2.09	2.73	2.77	4.47	3.46	2	80	131.6	62.9	999.00	0.61	2.32	2.34					0.663		3.29			3.43		
1.82	1.67	1.69	2.38	1.93	2	82	146.6	59.6	999.00	0.63	1.28	1.47	5751.243338	117.7	96.70	63.27	0.624	0.633	2.28	75.37		2.47	82.22	

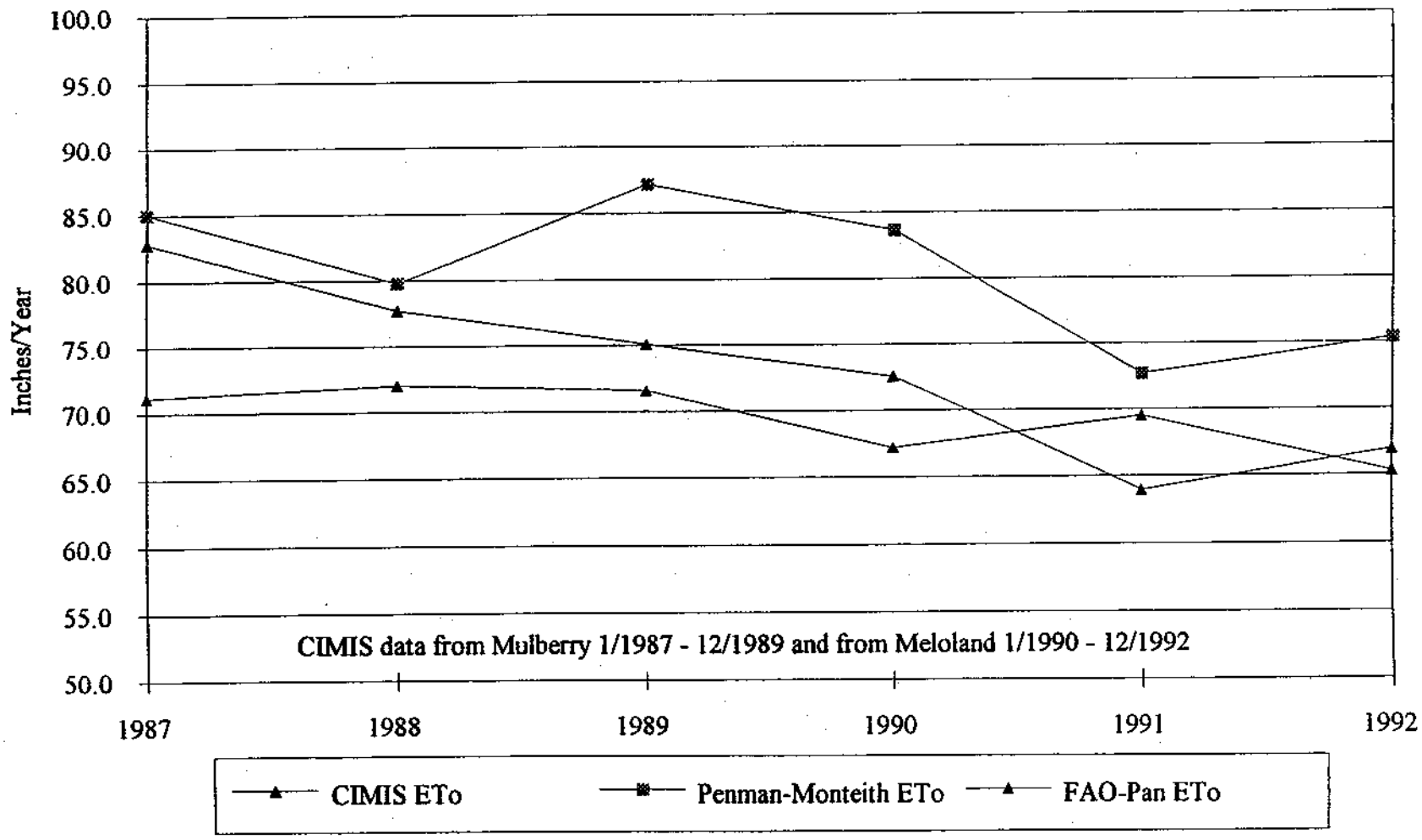
S&MULBERRY 1/1987-12/1989
30MELOLAND1/90-12/ ETo (FAO-RAD)

In/day	In/Yr	In/day	In/Yr	ETo(AV.) 3 CIMIS RAPER. V. STA. In/Yr 83.46	(RN)n In/day	(RN)n ACCUM. INCHES	(RN)n ANNUA INCHES	U2 MPH/2
2.9		3.12			1.43	1.61		53.95
3.9		4.03			2.75	4.36		64.75
4.1		6.33			4.80	9.37		72.45
8.1		8.78			6.34	15.70		62.15
9.6		10.56			7.21	23.02		76.45
10.9		11.97			7.49	30.51		66.1
11		12.04			7.87	38.38		69.9
10.3		9.78			6.68	45.26		74.3
9.3		7.91			5.12	50.38		61.95
5		4.60			3.50	53.96		47.9
3.1		3.28			2.29	56.25		41.25
2.6	82.80	2.86	84.40		1.54	57.79	57.78	66.8
3.1		2.90			1.96	1.96		53.1
4.3		4.16			3.02	4.98		54.2
6.4		5.40			4.40	9.37		56.4
6.2		6.79			5.77	15.14		63
9.4		8.28			6.30	21.44		83.83
9.4		10.96			7.76	29.20		68.1
9.3		10.87			8.16	37.36		74.4
8.9		9.95			7.34	44.70		62.15
7.5		5.72			4.10	49.80		43.5
5.7		6.01			4.13	53.15		50.95
4.2		3.53			2.44	55.31		53.15
3.3	77.70	3.04	77.60		1.56	56.87	56.77	55.55
2.5		2.78			1.86	2.86		49.05
3.4		4.04			2.88	4.74		61.35
5.4		4.95			4.08	8.82		65.5
7.3		8.78			6.55	15.37		60.2
9.4		10.93			7.54	22.91		80.55
10		11.50			7.75	30.66		73.15
9.8		11.06			7.71	38.37		70.55
8.5		9.99			7.34	45.73		64.4
7.3		8.57			5.39	51.12		63.75
5.1		6.86			5.74	54.86		56.75
3.2		3.98			2.28	57.14		51.7
2.2	75.10	2.49	85.06		1.49	58.63	58.63	45.25
2.7		3.25			1.93	1.73		47.04609
3.5		3.82			2.61	4.34		37.08929
5.8		6.55			4.67	9.04		48.79892
7.6		8.58			6.15	15.20		73.9
9.8		10.46			6.96	22.16		91.70060
9.2		11.25			7.57	29.73		62.33333
9.2		10.48			7.72	37.44		69.48383
8.2		9.50			7.36	44.80		56.6129
6.6		7.47			5.39	50.19		56.2
4.9		6.18			3.98	54.17		45.64516
3.5		3.87			2.18	56.35		56.18338
2.2	72.55	2.61	84.12		1.49	57.84	53.96	48.54439
3.1		2.70			1.96	1.61		48.51673
3.1		3.82			2.90	4.51		47.09357
4.7		5.21			4.43	9.12		38.38129
6.4		7.79			6.55	15.66		64.1
8.1		9.51			7.95	23.58		83.8129
7.5		8.84			7.52	31.10		44.33333
8.1		9.80			8.07	39.18		38.70968
8.1		9.56			7.16	46.35		58.58065
6.6		7.29			5.55	51.86		48.63333
5.0		5.99			3.98	55.84		56
2.9		3.48			2.28	58.11		49.9
3.7	65.93	3.98	78.23		3.53	59.65	55.61	39.72581
2.3		2.92			1.94	1.90		44.09677
3.1		3.84			2.93	4.83		49.30345
4.7		5.72			4.59	9.42		33.82256
7.1		8.57			5.63	15.05		46.2
7.9		9.49			7.33	22.40		34.32258
9.3		11.23			7.63	30.03		67
9.1		10.75			7.63	37.66		63.08065
7.9		9.31			7.04	44.80		36.77419
6.3		7.67			5.78	50.59		53.13333
4.4		5.18			4.30	54.89		49.72581
2.8		3.31			2.39	57.08		47.04667
1.9	60.94	2.19	80.53		1.51	58.60	57.31	45.53226

IMPERIAL MONTHLY EVAPOTRANSPIRATION



IMPERIAL ANNUAL EVAPOTRANSPIRATION



CIMIS MELOLAND/MELOLAND PAN

LAT.DEG. = 33 | JET4-EQ5.WK1, a Program for calculating ETo or ET from eleven equations (rev.4 Jan. 1992 by W.O.Pruitt)

LAT.RAD = 0.5759586531 | Includes latest Eqs. for FAO-24 methods e.g. to obtain "C" in (CPEN).(App.E.ASCE Manual 70, or Allen and Pruitt, 1991)

HEM=N1,S2 = 1 | AVAILABLE DATA: Ra,Rs,Tmx,Tmn,RHmx,RHmin, U2,UDAY(use value of 2.0 if no data available).

SZ.EV.(M) = -15 | PAGE= 1015

EA = 6.108*EXP(17.17*Tmn/(Tm + 237.3))

D = (EA/TKm)*(4098.3

GAMMA = 34*P0.622*L)

FOR WARMEST MONTH: 8/1992 MELOLAND CIMIS STATION #87

Mean Tmx = 41.53 | J-H EA2= 78.36 | J-H CT= 0.012

Mean Tmin = 25.32 | J-H EA3 32.28 | J-H TX= -8.916

EA2-EA3= 46.02

PENMAN-MONTEITH (MONTEITH, 1981): ET of frequently-clipped grass, < 15cm; or alfalfa from 3cm tall to max. ht.), known and...in Pruitt)

Asun,Hr,Zw= 200 | d= 8.02 cm | cz*uz=(1.N/(Zo-d)/Zw=0*(LN((Zp-d)/Zw))*0.41^2

T&RH Ht,Zp= 150 | Zoo= 1.48 cm | cz*uz= 298.9261

Crop Ht,Rc= 12 | Zov= 0.15 cm

LAI(hc> 15cm) 2.88

CROP NO. = 1 | Crop rc= 69.66

ED = EA*RHM/100

(FOR GRASS) (1 ASE (1)

(ALFALFA: (2)

UR = 0700-1900 WIND/1900-0700 WIND; Note: min UR = 2.0 if no data available

Note: Full item of data are from Davis, California.

Second row is from Brawley, Calif., 1971-data (from Lehkist, et al.)

DATE OR MONTH	DAY OF YEAR	(RA)= MJ/DAY	RS LY/DAY	n/N	MAXIMUM TEMPT. DEG F	DEG C	MINIMUM TEMPT. DEG F	DEG C	RHmx %	RHmin %	WIND RUN AT 2h 2w. Miles/Dy	Km/Day	UR DAY/ NIGHT	U2 Km/Day	U2 m/s	Tm (DEG C	TKm DEG K	EA MB	RHm	ED MB	GAMMA G	DELTA D	W D/(D+G)
07/2/1945	208	16.5	449	0.93	91.9	33.3	57.0	13.9	100.0	32.0	49.7	80.0	0.76	80.0	0.93	23.6	296.7	29.10	66.0	19.21	0.670	1.751	0.723
4/22/71	112	25.3	431	0.91	77.0	25.0	48.0	8.9	50.0	23.0	70.6	113.7	1.30	113.7	1.31	16.9	290.4	19.32	40.5	7.82	0.666	1.221	0.647
1/1987-12/1990 MULBERRY CIMIS STATION #41									1/1990-12/1992 MELOLAND CIMIS STATION #87														
Jan-87	15	6.1	296.6	0.95	69.3	20.7	34.9	1.6	76.5	27.3	107.9	173.6	1.60	173.6	2.01	11.2	284.3	13.29	51.9	6.89	0.652	0.881	0.571
Feb-87	45	10.8	378.0	0.79	73.5	23.0	41.0	5.2	78.5	26.1	137.3	221.6	1.50	221.4	2.56	14.1	287.3	16.13	52.3	8.44	0.664	1.043	0.631
Mar-87	75	12.6	568.3	0.68	71.5	23.3	43.0	6.1	82.7	28.7	145.3	233.9	1.30	233.9	2.71	15.3	288.5	17.60	51.7	9.22	0.663	1.141	0.632
Apr-87	106	14.9	626.9	0.58	93.0	33.8	52.3	11.3	73.7	12.3	124.3	200.1	1.30	200.1	2.31	22.6	295.8	26.65	45.8	12.08	0.669	1.621	0.706
May-87	136	16.5	670.9	0.89	93.6	34.2	58.6	14.8	66.8	12.0	156.3	247.4	1.20	247.4	2.86	26.5	297.7	30.76	39.4	12.12	0.671	2.037	0.732
Jun-87	166	17.2	713.3	0.93	109.5	40.7	66.1	19.0	56.6	8.0	136.2	219.3	1.20	219.3	2.54	29.9	303.0	42.09	29.3	12.34	0.674	2.414	0.782
Jul-87	197	16.8	700.9	0.93	103.4	40.8	68.5	21.0	56.0	16.7	139.8	225.0	1.20	225.0	2.60	30.9	304.0	44.39	33.4	15.78	0.673	2.518	0.798
Aug-87	228	15.5	603.4	0.83	101.3	38.6	57.6	19.4	68.5	28.1	149.0	239.9	1.20	239.9	2.78	29.0	302.2	40.11	44.0	17.96	0.674	2.315	0.775
Sep-87	259	13.3	516.6	0.81	100.6	38.1	60.4	15.9	64.3	15.3	123.9	199.4	1.30	199.4	2.31	27.0	300.2	35.65	39.9	14.21	0.672	2.090	0.757
Oct-87	289	11.4	386.4	0.62	83.9	27.7	54.6	14.1	82.9	18.4	95.8	154.2	1.30	154.2	1.78	21.3	294.4	25.26	51.0	14.64	0.669	1.347	0.666
Nov-87	320	8.7	312.6	0.73	74.6	23.7	43.6	6.1	88.1	34.5	82.3	132.8	1.60	132.8	1.54	13.0	288.1	17.03	61.3	10.46	0.665	1.097	0.623
Dec-87	350	7.5	242.7	0.62	58.7	14.9	32.3	0.1	88.0	38.3	92.6	149.1	1.60	149.1	1.73	7.5	280.4	10.34	63.1	6.53	0.660	0.706	0.517
Jan-88	15	8.1	293.1	0.74	69.3	20.7	35.3	8.9	93.4	30.3	106.2	171.0	1.60	171.0	1.98	11.5	284.3	13.41	61.8	8.29	0.663	0.888	0.572
Feb-88	45	10.8	369.3	0.84	76.7	24.8	40.2	4.6	91.3	26.2	108.6	174.5	1.50	174.5	2.02	14.7	287.8	16.71	59.0	9.85	0.663	1.076	0.619
Mar-88	75	12.6	461.0	0.75	74.4	23.5	39.3	3.9	81.8	18.6	132.6	213.7	1.10	181.7	2.10	15.7	288.9	17.71	49.9	7.83	0.664	1.030	0.606
Apr-88	106	14.9	544.0	0.73	84.3	29.3	48.2	9.0	69.2	23.0	156.0	252.9	1.10	252.9	2.55	19.1	292.3	22.16	56.1	13.45	0.667	1.380	0.674
May-88	136	16.5	573.4	0.60	84.3	29.0	49.2	9.6	70.4	60.3	147.7	238.8	1.20	238.0	3.13	19.2	292.4	22.34	40.4	9.01	0.667	1.390	0.676
Jun-88	166	17.2	701.0	0.80	101.5	38.6	62.7	17.1	67.8	14.0	136.2	219.3	1.30	219.3	2.54	27.8	301.8	37.41	40.9	15.31	0.675	2.179	0.764
Jul-88	197	16.8	660.5	0.84	106.3	41.4	73.9	23.3	72.9	25.2	148.8	239.5	1.20	239.5	2.77	32.9	305.5	48.49	45.0	23.78	0.676	2.750	0.802
Aug-88	228	15.5	626.4	0.88	105.1	40.6	73.2	22.9	71.3	26.6	126.3	203.1	1.20	200.1	2.31	31.8	304.9	46.89	50.9	23.88	0.678	2.652	0.797
Sep-88	259	13.3	430.7	0.39	78.6	25.9	50.8	10.4	53.3	10.3	91.0	146.5	1.30	146.5	1.69	18.1	291.3	20.83	53.0	6.86	0.667	1.307	0.663
Oct-88	289	11.4	420.7	0.61	96.0	35.6	61.2	16.2	46.4	20.9	101.9	164.1	1.50	164.1	2.90	23.9	299.0	33.39	33.6	17.91	0.671	1.974	0.746
Nov-88	320	8.7	310.1	0.72	75.9	24.4	42.8	6.0	63.7	22.5	110.3	177.5	1.60	177.5	2.05	13.2	288.4	17.28	53.3	9.17	0.663	1.110	0.625
Dec-88	350	7.5	291.0	0.83	70.3	21.3	34.9	1.8	84.1	21.9	110.7	178.2	1.80	178.2	2.06	11.5	284.6	13.59	53.0	7.44	0.662	0.895	0.573
Jan-89	15	8.1	284.9	0.70	66.8	19.4	33.6	0.9	89.7	23.1	98.1	157.9	1.60	157.9	1.85	10.2	283.3	12.39	57.6	7.21	0.663	0.828	0.556
Feb-89	45	10.8	394.6	0.85	75.0	23.9	39.3	4.0	83.9	31.5	122.3	197.2	1.50	197.2	2.28	13.9	287.1	15.93	37.7	9.19	0.664	1.033	0.609
Mar-89	75	12.6	429.4	0.86	71.3	21.8	38.4	3.6	66.1	28.1	91.0	146.5	1.80	146.5	1.69	12.7	285.8	14.66	44.1	6.47	0.663	0.960	0.592
Apr-89	106	14.9	632.9	0.93	92.4	33.6	53.1	11.7	60.2	19.8	120.4	193.8	1.80	193.8	2.24	22.6	295.8	25.58	49.9	13.73	0.670	1.667	0.715
May-89	136	16.5	692.7	0.94	95.3	35.2	57.0	13.9	47.5	52.3	161.1	259.4	1.20	259.4	3.00	24.1	297.7	30.01	40.0	12.32	0.671	1.860	0.753
Jun-89	166	17.2	712.7	0.92	104.1	40.3	62.8	17.1	64.7	8.1	166.3	235.3	1.20	235.3	2.72	28.8	302.0	39.56	36.4	14.42	0.674	2.289	0.773
Jul-89	197	16.8	656.2	0.84	105.0	40.3	71.3	21.9	70.4	12.6	161.1	237.8	1.20	227.1	2.63	31.2	304.6	45.51	41.0	18.46	0.675	2.584	0.795
Aug-89	228	15.5	624.4	0.88	104.4	40.2	70.4	21.3	73.6	23.5	138.8	207.4	1.20	207.4	2.40	30.8	303.9	44.36	48.7	21.59	0.675	2.521	0.789
Sep-89	259	13.3	542.7	0.85	102.7	39.3	65.3	18.3	64.9	33.2	127.5	205.3	1.30	205.3	2.38	26.9	302.0	38.80	39.1	15.53	0.674	2.300	0.773
Oct-89	289	11.0	426.4	0.62	91.3	32.9	54.8	12.7	73.0	13.9	113.5	182.7	1.50	182.7	2.11	22.8	296.0	27.78	46.5	12.34	0.670	1.681	0.763
Nov-89	320	8.7	333.3	0.61	83.1	27.3	49.0	8.1	80.4	22.6	103.4	166.4	1.80	166.4	1.93	16.7	289.9	19.00	55.4	10.15	0.666	1.206	0.644
Dec-89	350	7.3	273.9	0.75	63.4	17.4	27.5	-2.5	88.2	28.3	90.3	145.3	1.80	145.3	1.69	7.5	280.6	10.35	54.2	5.62	0.660	0.707	0.517
Jan-90	15	8.1	306.90	0.80	70.71	21.5	37.44	3.0	78.45	30.68	94.10	151.5	1.60	151.5	1.75	12.8	285.4	14.26	54.6	7.79	0.663	0.938	0.586
Feb-90	45	10.8	344.36	0.75	73.32	23.0	38.64	3.7	71.72	23.21	124.18	199.8	1.50	199.8	2.32	13.3	286.5	15.30	48.3	7.41	0.664	0.997	0.600
Mar-90	75	12.6	494.05	0.84	83.45	27.5	46.94	8.3	72.08	21.56	137.58	221.5	1.60	221.5	2.56	17.9	291.0	20.49	46.8	9.59	0.667	1.289	0.659
Apr-90	106	14.9	595.90	0.87	87.73	31.0	55.70	13.2	71.67	22.37	143.80	231.5	1.10	231.5	2.68	22.6	295.2	26.54	47.9	12.72	0.669	1.616	0.707
May-90	136	16.5	639.39	0.87	89.36	31.8	55.48	13.0	54.54	12.81	183.42	295.3	1.20	295.3	3.41	23.4	295.6	27.16	33.9	9.49	0.669	1.647	0.711
Jun-90	166	17.2	693.90	0.88	104.15	39.3	67.00	19.4	59.20	31.47	124.07	200.7	1.20	200.7	2.32	29.5	302.6	41.18	35.3	14.55	0.674	2.369	0.776
Jul-90	197	16.8	632.39	0.79	106.38	41.3	73.42	23.0	73.43	30.19	126.97	223.7	1.20	223.7	2.59	32.2	303.3	47.97	45.6	21.98	0.676	2.705	0.800
Aug-90	228	15.5	622.29	0.87	103.03	39.5	71.22	22.4	73.06	36.42	117.23	188.7	1.20	188.7	2.18	30.9	304.3	44.73	48.7	21.41	0.675	2.546	0.790
Sep-90	259	13.3	502.97	0.77	99.93	37.7	67.40	19.7	73.43	28.67	113.48	181.0	1.30	181.0	2.09	26.7	301.9	39.37	49.1	19.31	0.674	2.278	0.772
Oct-90	289	11.0	437.16	0.86	91.26	32.9	57.44	14.2	74.46	33.94	91.29	147.0	1.50	147.0	1.70	23.5	296.7	29.02	48.2	13.96	0.670	1.743	0.723
Nov-90	320	8.7	325.67	0.78	76.87	24.9	45.90	7.7	72.77	26.83	112.37	180.9	1.60	180.9	2.09	16.3	289.3	18.58	49.8	9.26	0.666	1.182	0.640
Dec-90	350	7.3	264.77	0.71	64.87	18.3	34.32	1.4	76.77	29.87	97.18	156.3	1.80	156.3	1.93	9.8	283.0	12.14	59.3	6.47	0.661	0.814	0.552
Jan-91	15	8.1	279.87	0.66	67.74	19.9	39.08	3.9	90.06	38.71	95.95	150.5	1.60	150.5	1.51	11.9	285.0	13.91	64.4	8.95	0.663	0.917	0.581
Feb-91	45	10.8	370.31	0.77	79.04	26.1	44.82	7.1	88.93	34.59	94.33	151.5	1.50	151.5	1.75	16.6	289.8	18.92	61.7	11.43	0.666	1.202	0.644
Mar-91	75	12.6	461.33	0.73	73.61	22.0	44.30	6.7	88.76	37.65	158.32	251.7	1.10	251.7	2.91	14.4	287.5	16.37	43.1	10.34	0.664	1.058	0.624
Apr-91	106	14.9	624.87	0.93	83.77	28.8	50.23	10.1	82.30	35.93	128.20	206.4	1.10	206.4	2.39	19.4	292.6	22.59	58.6	13.24	0.668	1.403	0.678
May-91	136	16.5	687.90	0.93	89.39	31.9	54.33	12.4	79.74	38.68	171.23	275.7	1.20	275.7	3.19	23.2	295.3	26.88	38.2	15.80	0.669	1.423	0.708
Jun-91	166	17.2	632.33	0.76	98.33	36.8	62.47	16.9	78.93	38.30	136.67	220.0	1.20	220.0	2.55	30.5	299.6	34.36	54.4	20.26	0.672	2.034	0.752
Jul-91	197	16.8	647.06	0.82	103.19	39.6	68.87	20.5	78.58	51.10	117.42	189.0	1.20	189.0	2.18	30.0	303.3	42.47	56.3	23.93	0.674	2.423	0.783
Aug-91	228	15.5	596.00	0.82	106.43	40.3	73.30	22.8	68.76	27.68	117.16	188.6	1.20	188.6	2.18	31.5	304.7	46.33	48.2	22.33	0.675	2.624	0.795
Sep-91	259	13.3	504.45	0.76	100.30	38.1	67.87	19.9	76.10	30.20	97.67	157.2	1.30	157.2	1.82	29.0	302.2	40.03	53.2	21.28	0.674	2.313	0.774
Oct-91	289	11.0	419.50	0.68	98.08	32.3	61.46	16.4	75.03	26.90	112.00	180.3	1.50	180.3	2.08	24.3	297.5	30.41	51.0	13.50	0.673	1.820	0.731
Nov-91	320	8.7	321.48	0.76	77.43	25.4	46.33	7.9	79.75	31.43	99.88	160.7	1.80	160.7	1.86	16.6	289.4	18.93	53.6	10.12	0.666	1.202	0.644
Dec-91	350	7.3	212.29	0.47	64.64	18.2	41.32	5.2	78.97	45.13	79.45	127.9	1.80	127.9	1.48	11.7	284.8	13.72	62.8	8.51	0.663	0.906	0.578
Jan-92	15	8.1	290.99	0.73	67.90	19.9	33.90	3.3	80.45	36.91	88.19	142.0	1.60	142.0	1.64	11.4	284.8	13.63	58.5	8.02	0.663	0.903	0.577
Feb-92	45	10.0	363.72	0.74	73.52	23.1	43.17	3.4	78.52	43.24	98.21	158.1	1.50	158.1	1.83	13.7	288.9	17.09	66.9	10.09	0.665	1.144	0.632
Mar-92	75	12.6	469.13	0.77	75.30	23.9	48.46	9.3	71.67	35.71	107.65	173.3	1.10	173.3	2.01	15.6	289.5	16.95	53.8	10.18	0.666	1.200	0.643
Apr-92	106	14.9	590.07	0.84	89.13	31.7	54.97	12.8	69.13	33.53	92.40	148.8	1.10	148.8	1.72	22.1	295.4	26.84	51.3	8.41	0.669	1.432	0.709
May-92	136	16.5	636.97	0.82	94.35	34.6	61.77	16.5	70.50	26.06	180.63	334.9	1.20	174.9	2.02	25.8	298.8	32.01	48.1	15.77	0.671	1.944	0.743
Jun-92	166	17.2	699.87	0.89	103.07	38.6	65.70	18.7	51.27	22.33	134.08	215.7	1.20	215.7	2.50	28.5	301.7	39.02	36.8	14.16	0.673	2.260	0.770
Jul-92	197	16.8	646.61	0.80	105.39	40.8	71.14	22.6	54.52	26.48	134.16	203.1	1.15	203.1	2.35	31.5	304.4	45.60	41.6	18.93	0.675	2.588	0.793
Aug-92	228	15.5	570.65	0.75	106.83	41.3	77.58	23.3	67.10	32.90	133.56	182.8	1.20	182.8	2.12	33.2	306.4	50.54	50.0	25.47	0.677	2.849	0.806
Sep-92	259	13.3	514.87	1.00	104.67	40.4	71.73	22.1	71.50	33.39	102.27	164.0	1.30	164.0	1.90	31.3	306.4	45.49	32.4	23.04	0.679	2.565	0.791
Oct-92	289	11.0	398.90	0.76	91.52	33.6	60.64	15.9	84.60	40.34	99.65	160.1	1.30	160.1	1.85	24.8	297.9	31.23	41.3	19.11	0.671	1.862	0.733
Nov-92	320	8.7	320.63	0.80	75.98	24.4	44.27	6.6	67.17	34.63	94.35	151.6	1.80	151.6	1.75	15.5	288.6	17.57	42.9	12.05	0.665	1.324	0.629
Dec-92	350	7.3	232.61	0.56	63.98	17.3	38.29	3.5	76.94	42.19	91.06	146.6	1.80	146.6	1.70	10.5	283.7	12.73	39.4	7.57	0.662	0.847	0.581

Rn = 10*RS/(0.75+(1.994*10^-5*Elev)-0.34*EA) "a" = .0043*RHmax-n/N-1.41 "b" = 0.9[illegible]

Ud = URz*(U2/(43.2*(URz+1))) "c" = 0.0000[illegible]

/(Elev+1.02468) RSO = (1-.170EXP(-7)*Ra) Tmax "d" = 2.8656-.0012RHmin + .04499*Ud-.0002*RHmin*Ud+.315*10^-4*RHmin^2-.0061620*Ud^2

3.054*(EXP(17.27*Tmax/(Tmax+237.3))*(1-0.01*RHmin)) + 3.054*(EXP(17.27*Tmax/(Tmax+237.3))*(1-0.01*RHmax))

es = (es*ea)*ea/(ea/dry)*.011574(dy sec^-1/dm dry^-1)

GAMMA* = GAMMA (1 + rc/ra) (RQS: IF .01785 < = 3.0,3.0, IF .01785 = 12.12,OTHERWISE, = .01785

(RHmax): IF RHmax < = 30,30, IF RHmax > = 90,90, OTHERWISE, = RHmax

"d" = 0.0043 RHmax - n/N -1.41 n/N - 1.41 (HdsIF Hds> 30.0 ea/s,Hds = 30.0

N = (24/pi)*ARCCOS(-TAN(PHI)*TAN(.409*SIN(2*pi*J/364 - 1.39))) (URmax @ IF(URz < = 1.0,1URmax = 1.0,@IF(URz > -4,URmax = 4,otherwise URmax = URz

"C" Omag finding values in Col. AE to AK) = 0.002-0.0781*LN(I + .002)*(Ud/Ra) + 0.000402*RHmax/Ra + .000196*(RH^LN(

"C" cont'd + 0.0000396*Ud*Ud*RHmax/Ra + .0000236*Ud^2*RHmax/Ra - 0.000086*(RH^2*Ud/RHmax) - 2.92*10^-8*

RNe MJ/M^2/DY	Ud M/D	(EA-ED)2 MB	(EA-ED)4 MB	RSO kg/m^2	es mm/m	GAM* MB/Dg/C	elevlight km, M	RHCr g Hd/cm4 yr's H)	FAO RH-Cr "h1"	FAO RH-Cr "h1"	FAO RAD "h2"	Limit for FAO-PEN, RAD, & RH-Cr (FAO RAD & RH-Cr mm (Ud)s (Dk)	(RHmax) Rmk	(Ud) Rmk	(URz) Rmk	CPEN "C" Rmk		SCSBC ks=1.0 mm/day	FAOMC mm/day	FAORAD mm/day	P-T mm/day	J-H ETo mm/day	FAOPEN mm/day	FAOCPEN mm/day	CALIF. FADCPEN mm/day
6.73	0.81	9.89	87.37	3.183	214.8	###	13.78	0.315	-2.20	1.46	0.87	11.71	90.0	0.01	1.00	1.10	3.79	4.30	7.06	4.11	7.19	4.20	6.85	5.84
5.25	1.49	11.49	14.39	1.335	158.2	###	13.08	0.296	-3.22	1.46	1.84	10.71	58.0	1.09	1.30	1.00	3.43	3.36	4.74	4.28	5.24	3.73	5.72	4.99
1.50	2.48	4.39	9.70	1.240	98.9	###	18.03	0.229	-2.04	1.51	0.99	5.04	76.5	2.48	1.40	0.99	1.79	3.54	2.56	3.08	1.92	2.89	2.69	2.44
2.48	3.08	7.49	11.33	1.227	77.6	###	10.79	0.246	-2.09	1.59	1.05	8.43	78.5	3.88	1.30	0.95	2.44	3.63	3.66	3.91	3.80	4.11	3.95	3.50
3.94	3.84	4.62	15.40	1.228	71.3	###	11.79	0.269	-2.20	1.71	1.00	8.64	82.7	2.04	1.10	1.00	3.00	4.07	5.10	3.13	4.82	5.16	3.34	4.78
5.36	2.43	14.65	23.52	1.192	83.9	###	12.86	0.296	-2.30	1.83	1.02	10.66	77.7	2.63	1.10	1.03	4.97	7.54	7.43	4.78	6.25	7.27	7.57	6.10
6.00	3.32	18.82	28.48	1.182	49.3	###	13.79	0.315	-2.25	1.83	1.07	11.41	66.8	3.11	1.20	1.08	6.07	9.00	8.65	5.54	7.20	9.07	8.03	7.53
6.34	2.77	29.75	40.70	1.161	78.4	###	14.17	0.323	-2.28	1.90	1.10	12.00	58.6	2.77	1.20	0.95	8.33	11.33	10.13	6.25	8.09	10.56	10.02	8.23
6.45	2.66	28.61	38.18	1.156	56.4	###	13.96	0.319	-2.27	1.92	1.08	11.92	56.0	2.84	1.20	0.97	8.31	10.73	9.66	6.42	8.96	10.40	10.06	8.26
5.63	3.09	22.14	30.56	1.182	72.6	###	13.19	0.301	-2.15	1.68	1.04	10.26	68.3	3.01	1.20	0.99	7.34	8.31	7.99	5.30	7.36	8.93	8.82	7.38
4.83	2.63	21.44	31.46	1.172	86.2	###	12.56	0.278	-2.15	1.69	1.05	8.76	60.3	2.46	1.30	0.96	6.14	7.33	6.70	4.13	5.96	7.30	7.23	6.14
2.93	2.84	30.42	38.85	1.194	113.9	###	11.43	0.254	-1.89	1.32	0.95	6.33	82.5	2.84	1.50	0.96	4.08	4.11	5.77	2.38	3.48	4.25	4.18	3.72
1.96	1.98	6.59	10.15	1.222	129.5	###	10.24	0.230	-1.99	1.30	0.93	5.31	86.1	1.98	1.80	0.99	2.48	2.06	3.79	1.32	2.40	2.77	2.75	2.30
1.26	2.22	3.81	5.58	1.257	115.3	###	9.43	0.214	-1.83	1.27	0.93	4.13	88.0	2.22	1.80	0.93	1.32	1.44	1.67	0.82	1.28	1.89	1.79	1.46
1.46	2.44	5.12	8.75	1.239	100.5	###	10.05	0.229	-1.82	1.44	0.94	4.98	98.0	2.44	1.60	0.97	1.81	2.41	2.38	1.14	1.91	2.32	2.43	2.22
2.64	2.42	6.88	11.90	1.224	94.5	###	10.79	0.246	-1.34	1.79	0.95	6.69	90.8	2.42	1.50	1.01	2.53	3.63	3.63	2.06	2.94	3.57	3.62	3.25
3.80	2.20	7.88	12.57	1.229	94.6	###	11.79	0.269	-2.00	1.67	1.00	7.84	82.1	2.20	1.10	1.00	2.59	4.04	4.43	2.75	3.95	4.54	4.54	4.02
4.88	2.46	9.72	16.31	1.204	86.7	###	12.86	0.296	-2.06	1.57	0.93	9.23	89.2	2.46	1.10	1.05	4.34	5.63	5.75	4.15	4.90	5.89	6.15	5.34
5.36	2.41	13.32	19.49	1.205	83.7	###	13.78	0.315	-2.05	1.71	1.00	9.75	78.4	2.41	1.20	0.97	6.45	7.03	6.78	4.39	5.19	7.81	7.61	6.47
6.57	2.77	22.16	32.34	1.168	78.4	###	14.17	0.323	-2.24	1.85	1.05	11.52	67.5	2.77	1.20	1.01	7.43	9.93	9.30	6.13	8.21	9.51	9.64	8.96
6.69	3.62	24.70	35.63	1.167	72.5	###	13.96	0.319	-2.15	1.64	1.02	11.23	72.9	3.02	1.20	1.02	9.16	9.96	8.91	6.76	8.36	9.86	10.03	8.24
6.17	2.53	23.02	31.93	1.149	85.9	###	13.19	0.301	-2.16	1.64	1.08	10.61	77.5	2.53	1.20	1.03	8.37	9.85	8.66	6.30	8.14	8.71	9.00	7.50
5.47	1.92	13.97	17.72	1.210	117.4	###	12.56	0.278	-1.95	1.49	1.06	7.32	55.2	1.92	1.30	0.93	3.67	4.68	4.83	2.90	3.33	3.44	3.58	4.47
3.60	2.28	13.48	14.26	1.174	104.6	###	11.43	0.254	-2.15	1.60	0.98	7.15	86.4	2.28	1.50	1.02	5.30	4.84	4.92	3.29	4.30	3.34	3.43	4.76
1.81	2.44	8.11	13.68	1.222	86.8	###	10.24	0.234	-3.03	1.34	0.99	5.27	83.3	2.64	1.80	0.96	2.51	3.41	3.37	2.44	2.40	3.42	3.38	2.97
1.21	2.65	6.09	10.38	1.239	94.4	###	9.83	0.224	-3.16	1.44	0.98	4.95	88.1	2.65	1.80	0.96	1.79	2.70	2.69	0.92	1.91	2.46	2.58	2.35
1.53	2.23	5.28	8.75	1.243	108.8	###	10.05	0.229	-2.00	1.67	0.94	4.84	89.7	2.23	1.60	0.97	1.45	2.23	2.23	1.07	1.34	2.48	2.60	2.39
2.61	2.74	6.75	10.82	1.227	87.3	###	10.79	0.246	-2.12	1.56	0.97	6.71	83.9	2.74	1.50	0.99	2.41	3.48	3.68	2.00	2.90	3.71	3.66	3.24
3.35	1.78	8.19	11.67	1.204	117.4	###	11.79	0.269	-1.99	1.45	1.01	7.36	48.1	1.78	1.10	0.97	2.70	3.47	4.05	2.49	2.98	4.21	4.07	3.63
3.53	3.35	13.77	23.22	1.188	68.7	###	12.86	0.294	-2.28	1.75	1.00	10.76	80.2	3.35	1.60	1.04	5.13	7.33	7.37	4.98	6.43	7.09	7.39	6.30
6.38	3.20	18.49	27.41	1.162	66.3	###	13.78	0.313	-2.29	1.90	1.07	11.78	67.5	3.20	1.20	1.00	6.08	9.23	8.96	5.73	7.43	9.22	9.13	7.74
6.56	2.97	25.16	38.17	1.164	79.8	###	14.17	0.323	-2.29	1.91	1.08	12.08	64.7	2.97	1.20	1.08	7.82	10.94	9.86	6.39	8.64	10.25	10.24	8.38
6.35	2.87	26.65	37.44	1.153	75.7	###	13.96	0.319	-2.20	1.78	1.06	11.18	70.4	2.87	1.20	1.01	8.63	10.60	9.05	6.31	8.47	9.92	10.02	8.24
6.00	2.62	22.77	31.82	1.154	82.9	###	13.19	0.301	-2.19	1.66	1.09	10.02	72.6	2.62	1.20	1.02	6.91	8.94	8.19	6.00	7.96	8.75	8.91	7.44
4.57	2.69	24.24	34.54	1.164	83.7	###	12.56	0.278	-2.23	1.76	1.06	9.23	64.9	2.69	1.30	0.97	6.74	8.38	7.26	5.45	6.98	8.04	7.83	6.63
3.06	2.54	19.42	25.06	1.189	94.1	###	11.43	0.254	-2.15	1.68	1.03	7.53	73.0	2.54	1.30	0.97	4.47	5.40	4.93	3.76	4.29	5.54	5.38	4.72
1.93	2.45	8.85	14.77	1.215	103.3	###	10.24	0.234	-2.13	1.41	0.99	5.63	84.4	2.45	1.80	0.98	2.40	3.13	3.36	1.37	2.74	3.51	3.45	3.10
1.22	2.17	4.74	7.80	1.257	110.0	###	9.83	0.224	-2.01	1.49	0.97	4.68	82.3	2.17	1.80	0.95	1.22	1.82	2.04	0.79	1.44	2.15	2.05	1.88
1.59	2.16	6.49	9.73	1.235	113.5	###	10.05	0.229	-2.07	1.48	0.97	5.22	70.3	2.16	1.60	0.95	1.96	2.61	2.67	1.14	2.09	2.34	2.61	2.18
2.36	2.55	7.40	11.68	1.231	93.5	###	10.79	0.246	-2.05	1.53	1.01	6.19	71.7	2.55	1.50	0.94	2.39	3.32	3.47	1.79	2.60	3.13	3.42	3.24
3.02	2.69	10.90	15.90	1.210	77.6	###	11.79	0.269	-2.16	1.66	1.02	8.40	72.0	2.69	1.40	0.97	3.49	5.14	5.33	3.18	4.26	5.75	5.56	4.87
3.21	2.93	13.82	19.33	1.192	74.2	###	12.86	0.294	-2.18	1.87	1.02	10.13	73.3	2.93	1.10	1.00	4.95	6.80	7.02	4.44	5.93	7.33	7.30	6.23
3.70	3.31	17.94	23.19	1.182	56.2	###	13.78	0.313	-2.22	1.88	1.11	11.21	54.9	3.73	1.20	0.95	5.40	8.35	8.17	5.33	6.64	9.39	8.94	7.46
4.41	2.57	26.63	30.43	1.162	83.0	###	14.17	0.323	-2.24	1.89	1.07	11.80	59.2	2.57	1.20	0.96	8.09	10.37	9.33	6.28	8.56	9.78	9.62	7.95
6.52	2.82	28.98	35.56	1.148	70.0	###	13.96	0.319	-2.11	1.64	1.03	10.75	71.6	2.82	1.20	1.04	9.03	9.83	8.58	6.37	8.35	9.60	9.89	8.00
6.09	2.38	22.94	30.28	1.151	91.1	###	13.19	0.301	-2.17	1.61	1.09	10.38	71.3	2.38	1.20	1.02	8.06	8.44	8.11	6.00	7.97	8.33	8.64	7.24
4.57	2.57	20.06	27.22	1.163	99.0	###	12.56	0.278	-2.07	1.52	1.00	8.55	71.4	2.57	1.30	0.99	6.68	6.94	6.55	4.44	6.08	7.00	6.92	5.94
3.26	3.04	15.93	21.41	1.185	136.9	###	11.43	0.254	-2.17	1.61	1.00	7.43	74.3	3.04	1.50	1.00	4.66	5.61	5.06	2.97	4.50	5.13	5.12	4.58
1.83	2.46	9.32	12.97	1.217	95.8	###	10.24	0.234	-2.07	1.55	1.08	5.94	72.8	2.69	1.80	0.94	2.73	3.59	3.28	1.49	2.64	3.33	3.50	3.14
1.22	2.33	5.97	8.14	1.246	109.8	###	9.83	0.224	-1.99	1.45	0.96	4.30	76.8	2.33	1.80	0.93	1.55	2.08	2.18	0.85	1.39	2.43	2.36	2.07
1.48	1.86	6.95	7.58	1.236	151.7	###	10.05	0.229	-1.92	1.30	0.91	6.74	88.6	1.86	1.60	0.98	1.89	2.12	2.21	1.10	1.87	2.23	2.17	1.90
2.63	2.30	7.25	12.67	1.215	111.4	###	10.79	0.246	-2.03	1.42	0.93	6.29	88.9	2.30	1.50	0.81	2.93	3.49	3.47	2.13	3.04	3.43	3.47	3.12
3.59	3.05	8.82	8.88	1.225	46.3	###	11.79	0.269	-2.00	1.43	0.99	7.85	86.7	3.05	1.10	1.00	2.72	3.60	4.27	2.93	3.43	4.53	4.51	4.08
3.23	2.56	9.34	13.88	1.202	83.3	###	12.86	0.294	-2.19	1.56	0.98	10.62	81.3	2.56	1.10	1.04	4.32	5.61	6.40	4.72	5.49	6.26	6.50	5.61
6.50	3.48	10.88	13.94	1.190	62.3	###	13.78	0.313	-2.17	1.54	0.98	12.69	79.7	3.48	1.20	1.04	5.31	6.90	7.43	5.00	6.87	7.82	8.16	6.80
6.37	2.78	14.30	20.38	1.171	70.1	###	14.17	0.323	-2.00	1.42	0.97	10.75	74.9	2.78	1.20	1.04	6.96	7.29	7.51	4.83	7.19	7.86	8.15	6.97
6.61	2.39	18.54	26.55	1.156	90.9	###	13.96	0.319	-2.08	1.49	0.97	11.00	79.6	2.39	1.20	1.02	6.17	8.34	4.03	6.52	8.09	8.22	8.73	7.31
5.05	2.38	23.99	31.37	1.151	91.1	###	13.19	0.301	-2.11	1.53	1.01	10.17	68.7	2.38	1.20	1.04	8.20	8.45	7.65	5.86	7.77	8.48	8.49	7.13
4.70	2.06	18.76	25.97	1.161	109.3	###	12.56	0.278	-2.06	1.43	0.97	8.38	76.3	2.06	1.30	1.01	6.78	6.68	6.17	4.56	6.14	6.58	6.46	5.74
3.26	2.36	14.91	19.96	1.182	95.5	###	11.43	0.254	-2.16	1.53	1.00	7.13	75.0	2.36	1.50	0.98	4.47	5.53	4.90	3.06	4.48	5.42	5.38	4.65
1.93	2.39	8.41	12.17	1.215	107.8	###	10.24	0.234	-2.04	1.43	0.97	5.66	79.7	2.39	1.60	0.97	2.78	3.57	3.13	1.54	2.64	3.55	3.23	2.92
1.24	1.90	5.21	4.65	1.237	134.4	###	9.83	0.224	-1.68	1.09	0.92	3.61	79.0	1.90	1.80	0.92	1.82	2.61	1.62	0.91	1.40	2.08	1.92	1.76
1.57	2.02	5.87	8.13	1.230	121.8	###	10.05	0.229	-1.98	1.34	0.95	4.94	80.5	2.02	1.60	0.95	2.45	2.23	2.39	1.14	1.92	2.47	2.36	2.15
2.56	2.28	7.00	9.19	1.219	106.7	###	10.79	0.246	-1.97	1.33	0.94	6.18	78.5	2.28	1.50	0.97	2.76	3.06	3.57	2.04	2.88	3.41	3.32	2.99
3.76	2.18	8.73	11.30	1.215	99.2	###	11.79	0.269	-2.03	1.41	0.97	7.96	71.9	2.18	1.10	0.98	3.20	3.96	4.49	3.05	3.85	4.72	4.62	4.09
4.79	1.80	10.43	24.01	1.189	115.3	###	12.86	0.294	-2.33	1.68	1.05	10.04	49.1	1.80	1.10	0.95	3.91	6.07	7.23	4.27	5.92	6.99	6.63	5.71
6.01	2.21	17.03	23.19	1.176	96.3	###	13.78	0.313	-2.12	1.53	1.00	10.83	70.3	2.21	1.20	1.02	6.44	7.37	7.79	5.62	7.06	7.72	7.83	6.63
6.46	2.72	24.66	31.31	1.165	79.7	###	14.17	0.323	-2.21	1.69	1.07	11.96	51.3	2.72	1.20	0.95	7.71	9.44	9.51	6.27	8.42	9.80	9.33	7.76
6.25	2.56	24.65	31.66	1.153	84.6	###	13.96	0.319	-2.11	1.57	1.04	10.99	56.3	2.56	1.20	0.98	6.66	9.16	8.82	6.25	8.15	9.47	9.34	7.61
5.86	2.31	23.47	30.28	1.143	94.8	###	13.19	0.301	-2.06	1.46	1.00	9.04	63.1	2.31	1.20	0.99	5.94	8.12	7.63	5.96	7.84	8.66	8.40	7.06
4.52	2.15	21.44	28.36	1.151	104.4	###	12.56	0.278	-2.28	1.63	0.98	8.76	73.5	2.15	1.30	1.01	7.53	7.95	6.38	4.51	6.43	6.79	6.02	5.86
3.36	2.33	12.11	17.08	1.171	107.3	###	11.43	0.254	-1.97	1.54	0.94	6.78	81.7	2.33	1.50	1.00	4.99	4.69	4.37	3.11	4.32	4.72	4.71	4.16
2.03	2.24	6.32	9.03	1.230	113.6	###	10.24	0.234	-2.04	1.41	0.93	5.60	87.2	2.24	1.80	0.99	2.34	3.94	2.97	1.66	2.38	2.92	2.90	2.62
1.25	2.10	3.14	6.70	1.243	107.2	###	9.83	0.224	-1.79	1.26	0.94	3.95	76.9	2.18	1.80	0.92	1.45	1.69	1.80	0.84	1.45	2.20	1.92	1.85

RHmax=sqrt(1/
(8*(Ed^2+RHmax^2+Ra)
n/(N+1))

-0.000016)*RHmax*Ra^2

ETo= D/(D+G*)Ra+Gw + G/(D+G*)(1.37741)(RH)(1-E)-Ed(4.67 ra)

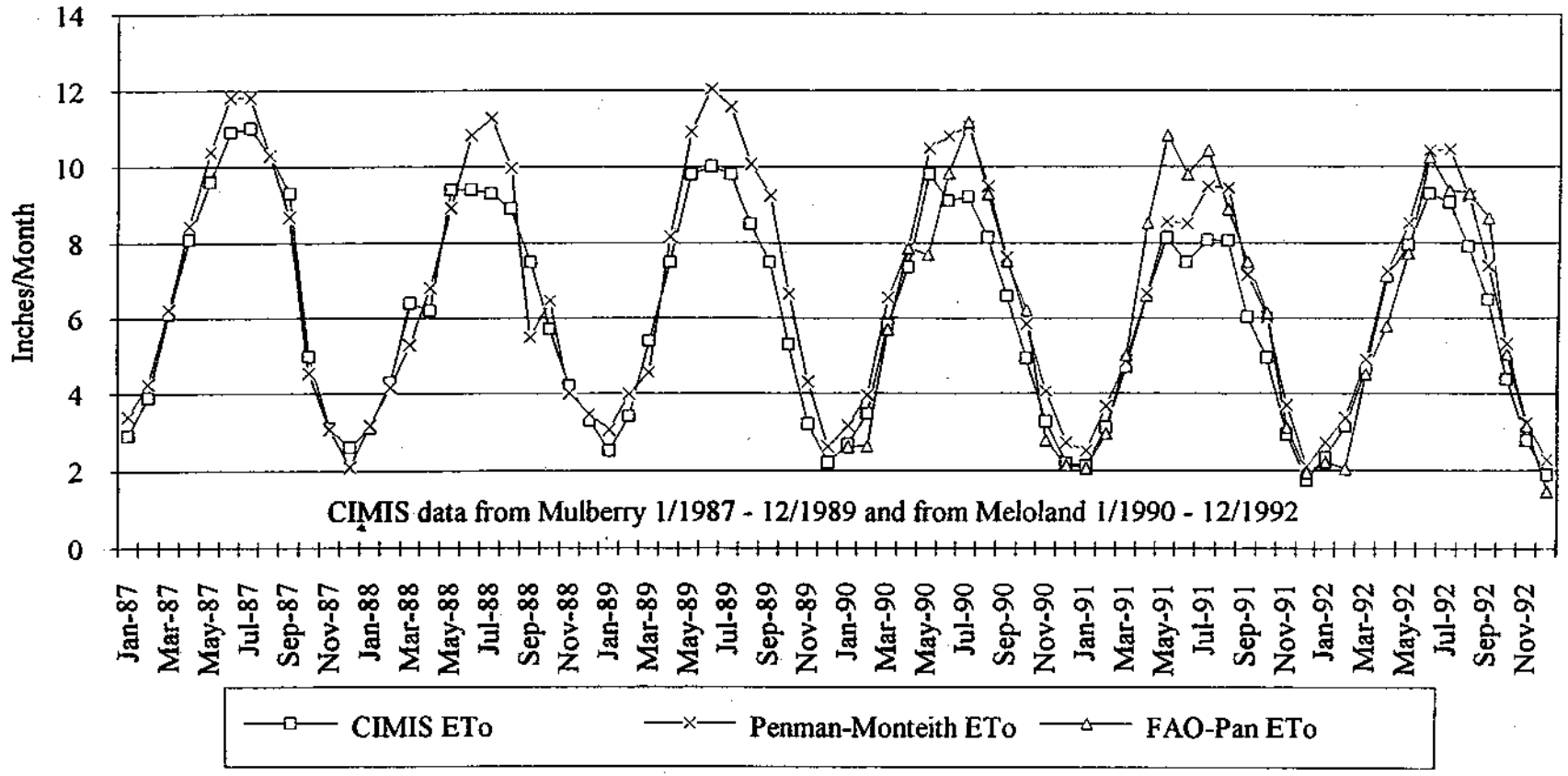
Note: For fetch, limit to 1 to 1000m

^44PEN mm/day	ETo(P-M) Gross mm/day	SAMANI mm/day	Class A Pan, Ep in/day	mm/Day	FAO CASE Arvel, (1) Bjerg, (2)	UPWIND FETCH, meters	Limits for Kp Calc, 2-m wind	RHmax	(FAO 24 Calc. Kp) (CASE A)	(CASE B)	ETo FAO-Pan mm/day	ETo FAO-Pan in/day	SUM Ra (Ly/day)*12	Ra Equiv. E in/Yr	Class A Pan Evap in/Yr	ETo FAO-PAN in/Yr	Kp Monthly	Kp Annual	ETo(ASCE P-M) in/day	in/Yr	ETo (FAO-PEN) mm/day	in/day	in/Yr	ETo(CIMIS) ETo(CIMI in/DAY
5.93	3.75	6.92	9.39	7.66		1	10	64.0	86.0	0.74	999.00	5.88	7.175322493											
5.19	6.83	4.91	7.68	6.50		2	10	133.3	40.3	999.00	0.63	4.11	5.013051668											
2.34	2.78	2.36		0.00		1	125	377.8	53.9	999.00	0.56	0.00												
3.36	3.08	3.10		0.00		1	100	321.4	52.3	999.00	0.57	0.00					#DIV/0!		3.40			3.26		
4.31	5.11	4.23		0.00		1	340	233.9	51.3	0.75	999.00	0.00					#DIV/0!		4.26			4.32		
6.29	7.06	6.37		0.00		1	175	208.8	45.0	0.74	999.00	0.00					#DIV/0!		6.20			6.34		
7.46	8.58	7.04		0.00		1	160	347.4	39.4	0.71	999.00	0.00					#DIV/0!		8.45			8.48		
6.95	10.00	6.40		0.00		1	110	299.5	36.8	0.67	999.00	0.00					#DIV/0!		10.38			11.02		
8.87	9.68	8.36		0.00		1	80	225.0	33.4	0.66	999.00	0.00					#DIV/0!		11.81			11.86		
7.00	8.44	7.31		0.00		1	75	239.9	40.6	0.71	999.00	0.00					#DIV/0!		11.81			11.28		
6.32	7.35	6.56		0.00		1	85	199.4	39.9	0.71	999.00	0.00					#DIV/0!		10.30			10.77		
3.60	3.72	3.55		0.00		1	110	334.2	38.8	0.76	999.00	0.00					#DIV/0!		8.68			9.54		
2.39	2.60	2.54		0.00		1	135	132.8	46.3	999.00	0.62	0.00					#DIV/0!		4.54			5.10		
1.57	1.71	1.48		0.00		1	230	149.1	63.1	999.00	0.63	0.00	3930.524731	121.4	0.00	0.00	#DIV/0!		3.07			3.25		
2.09	2.58	2.33		0.00		1	935	171.0	61.6	999.00	0.62	0.00					#DIV/0!	#DIV/0!	2.09	85.01		2.19	87.99	
3.05	3.64	3.36		0.00		1	300	176.5	39.0	999.00	0.61	0.00					#DIV/0!		3.16			2.97		
3.90	4.33	4.05		0.00		1	340	161.7	49.9	0.76	999.00	0.00					#DIV/0!		4.16			4.13		
5.16	5.75	5.71		0.00		1	175	202.9	56.1	0.77	999.00	0.00					#DIV/0!		5.29			3.54		
6.50	7.31	6.19		0.00		1	160	270.8	40.4	0.70	999.00	0.00					#DIV/0!		6.86			7.27		
8.22	9.16	8.38		0.00		1	130	219.2	48.9	0.71	999.00	0.00					#DIV/0!		8.92			9.25		
8.33	9.23	8.25		0.00		1	80	339.5	49.6	0.72	999.00	0.00					#DIV/0!		10.82			11.38		
7.63	8.17	7.44		0.00		1	75	200.1	30.9	0.74	999.00	0.00					#DIV/0!		11.27			12.26		
4.64	4.64	4.39		0.00		1	85	146.3	33.0	0.70	999.00	0.00					#DIV/0!		9.97			10.99		
4.60	5.29	4.46		0.00		1	110	366.1	35.6	0.77	999.00	0.00					#DIV/0!		5.46			6.00		
2.48	3.39	2.49		0.00		1	135	177.5	33.1	999.00	0.58	0.00					#DIV/0!		4.46			4.61		
2.15	2.84	2.24		0.00		2	120	178.3	35.0	999.00	0.59	0.00	3903.309344	116.7	0.00	0.00	#DIV/0!		4.00			3.89		
2.06	2.50	2.23		0.00		2	225	157.9	57.4	999.00	0.60	0.00					#DIV/0!	#DIV/0!	3.47	79.04		3.35	83.46	
3.12	3.62	2.26		0.00		2	300	197.2	57.7	999.00	0.60	0.00					#DIV/0!		3.03			2.93		
3.04	3.79	3.73		0.00		1	360	144.5	44.1	0.76	999.00	0.00					#DIV/0!		3.99			4.03		
6.22	6.92	6.47		0.00		1	175	193.8	49.9	0.76	999.00	0.00					#DIV/0!		4.55			4.97		
7.66	8.96	7.41		0.00		1	140	239.6	40.8	0.73	999.00	0.00					#DIV/0!		8.26			8.73		
9.73	10.39	8.90		0.00		1	110	233.5	36.4	0.69	999.00	0.00					#DIV/0!		10.93			11.36		
8.49	9.47	8.37		0.00		1	80	227.6	41.0	0.71	999.00	0.00					#DIV/0!		12.04			12.09		
7.62	8.25	7.53		0.00		1	75	207.4	48.7	0.73	999.00	0.00					#DIV/0!		11.55			12.23		
6.78	7.82	6.61		0.00		1	85	201.3	39.1	0.73	999.00	0.00					#DIV/0!		10.07			10.88		
4.63	5.44	4.62		0.00		1	110	182.7	44.5	0.74	999.00	0.00					#DIV/0!		9.24			9.24		
2.92	3.65	3.17		0.00		2	135	166.4	53.4	999.00	0.59	0.00					#DIV/0!		6.64			6.57		
1.36	2.14	1.95		0.00		2	120	145.3	54.2	999.00	0.60	0.00	3998.47404	122.8	0.00	0.00	#DIV/0!		4.31			4.07		
2.23	2.38	2.43	4.37	3.56		2	225	151.3	54.6	999.00	0.60	2.14					#DIV/0!	#DIV/0!	2.42	87.15		2.90	89.03	
3.17	3.39	3.34	6.63	4.28		2	300	185.8	48.5	999.00	0.57	2.39	2.61				0.598		3.13			3.19		
4.82	5.36	4.33	7.74	6.34		1	360	133.3	46.8	0.76	999.00	4.68	2.64				0.572		3.93			2.99		
8.25	8.67	5.74	10.63	9.02		1	175	134.5	47.9	0.74	999.00	6.46	3.71				0.738		6.55			6.79		
7.88	8.38	6.62	11.45	9.38		1	140	295.3	33.3	0.63	999.00	8.31	2.87				0.739		7.68			8.63		
8.43	9.14	8.30	14.81	11.86		1	110	200.7	35.1	0.70	999.00	8.32	7.70				0.672		10.48			10.92		
8.29	9.05	8.26	15.40	12.46		1	80	223.3	45.8	0.72	999.00	9.34	9.93				0.701		10.80			11.37		
7.46	7.78	7.10	12.37	10.30		1	75	188.7	48.7	0.74	999.00	7.45	11.16				0.721		11.09			11.83		
6.09	6.47	6.14	10.1	8.25		1	85	181.0	49.1	0.73	999.00	6.37	9.29				0.729		9.49			10.54		
4.43	4.78	4.53	6.18	6.70		1	110	147.0	48.3	0.74	999.00	5.09	7.53				0.743		7.64			8.16		
3.04	3.43	3.83	4.86	4.11		2	135	180.9	49.8	999.00	0.57	2.35	6.21				0.739		5.84			6.24		
1.97	2.23	0.96	3.6	2.95		2	120	150.3	53.3	999.00	0.59	1.75	2.78				0.571		4.07			4.13		
1.91	2.05	2.21	3.28	2.45		2	225	130.5	54.4	999.00	0.64	1.49	2.13	3489.790476	120.8	107.62	75.46	0.703	2.72	83.62		2.76	88.36	
3.00	3.32	3.45	4.74	4.50		2	300	151.3	40.7	999.00	0.42	2.68	2.06				0.633		2.50			2.65		
3.87	3.98	3.64	6.36	3.37		1	360	151.7	43.2	0.77	999.00	4.12	2.96				0.624		3.66			3.97		
5.34	5.64	5.51	13.04	9.55		1	175	206.4	38.6	0.77	999.00	7.22	5.03				0.766		4.86			5.31		
6.44	7.02	6.98	14.43	11.82		1	140	275.7	39.3	0.75	999.00	8.87	6.53				0.773		6.66			7.68		
6.97	7.21	7.63	13.88	10.91		1	110	220.0	38.4	0.76	999.00	8.29	10.82				0.750		8.57			9.95		
7.43	7.77	8.07	13.73	11.25		1	80	189.0	36.3	0.76	999.00	8.53	9.80				0.761		8.32			9.62		
7.42	7.74	7.94	12.04	9.87		1	75	188.4	48.2	0.74	999.00	7.28	10.43				0.760		9.48			10.66		
5.81	6.06	6.19	9.83	8.12		1	85	157.2	53.2	0.76	999.00	6.36	8.88				0.738		9.44			10.36		
4.59	4.94	4.25	8.11	6.64		1	110	180.3	51.0	0.76	999.00	5.02	7.81				0.764		7.16			7.87		
3.30	3.13	2.88	5.22	4.42		2	135	160.7	55.4	999.00	0.60	2.43	6.13				0.756		6.09			6.47		
1.75	1.72	1.83	3.09	2.53		2	120	127.9	42.0	999.00	0.43	1.46	3.11				0.598		3.69			3.82		
2.08	2.33	2.36	3.6	3.95		2	225	143.8	58.5	999.00	0.61	3.01	0.95	5739.505684	117.9	104.91	73.21	0.736	2.10	72.63		2.34	80.90	
3.95	2.94	2.95	5.52	3.88		2	300	156.1	46.9	999.00	0.62	3.79	2.21				0.614		2.72			2.88		
4.10	4.01	3.82	5.84	4.79		1	360	172.3	53.8	0.77	999.00	3.69	2.64				0.579		3.35			3.80		
6.07	6.14	5.98	8.36	6.87		1	175	146.8	53.3	0.76	999.00	4.69	4.31				0.772		4.90			5.44		
6.84	6.97	7.01	10.21	8.37		1	140	154.9	48.1	0.76	999.00	6.33	5.70				0.690		7.23			7.81		
8.42	8.82	8.13	13.1	12.73		1	110	215.7	36.8	0.70	999.00	8.64	7.73				0.757		8.51			9.50		
8.30	8.56	8.27	13.13	10.76		1	80	203.1	43.4	0.72	999.00	7.99	10.25				0.679		10.41			11.02		
7.64	7.56	7.23	12.49	10.23		1	75	182.8	50.8	0.74	999.00	7.42	9.90				0.715		10.43			11.16		
5.96	6.23	6.31	11.79	9.66		1	85	164.6	52.4	0.74	999.00	7.34	9.58				0.745		9.23			10.25		
4.13	4.39	4.53	6.41	5.35		1	110	160.1	44.2	0.79	999.00	4.53	8.66				0.735		7.41			8.06		
2.49	2.73	2.73	5.23	4.30		2	135	133.6	62.9	999.00	0.62	2.48	5.88				0.766		5.31			5.75		
1.82	1.83	1.81	3.38	1.95		2	120	144.6	39.6	999.00	0.63	1.28	3.16				0.602		3.23			3.43		
													1.63	5751.213536	117.7	96.10	69.53	0.626	0.709	2.24	79.05	2.47	81.86	

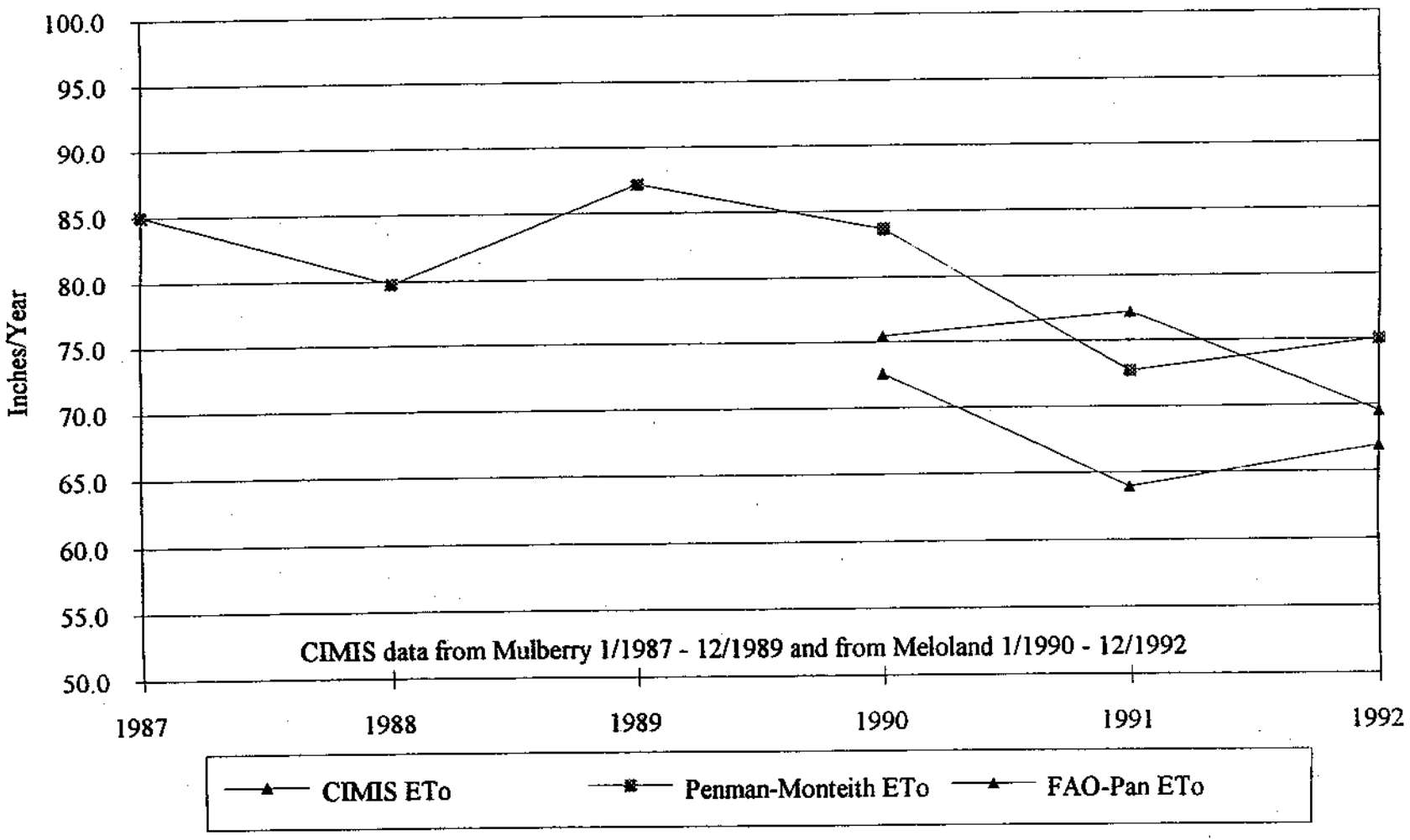
ET=(CIMIS)MULBERRY 1/1997-12/1999
ET=(CIMIS)MELOLAND 1/90-12/92

In/Yr	In/DAY	In/Mo	In/Yr	ETo (PAD-RAD) In/Mo	In/Yr	ETo(AV.) 3 CIMIS SUPER. V. STA. In/Yr 43.46	(RN)o In/Mo	(RN)o ACTUAL BACKUP	(RN) ADORIA DICHIB	U2 MPH/2
			2.9	3.12			1.83	1.43		53.94774
			3.9	4.55			2.73	4.54		48.70706
			6.1	6.35			4.08	9.37		72.42905
			8.3	8.78			6.34	15.70		62.15733
			9.4	10.58			5.32	23.02		76.83473
			10.9	11.97			7.69	30.51		48.1
			11	12.04			7.87	38.38		69.8874
			10.5	9.76			6.80	43.26		74.51013
			9.3	7.91			5.12	50.36		63.95333
			5	4.00			3.50	53.96		47.8878
			3.8	3.28			2.29	56.23		48.23333
67.99			2.6	2.04	84.41		1.34	57.79	57.78	48.30645
			3.3	2.98			1.96	1.96		53.39677
			4.3	4.16			3.02	4.98		54.30946
			4.4	5.45			4.40	9.37		56.60915
			6.2	6.80			5.77	15.14		63
			9.6	8.28			6.30	21.44		63.83484
			9.4	10.98			7.76	29.20		68.11667
			9.3	10.47			8.16	37.36		74.3871
			8.9	9.95			7.54	44.90		62.12903
			7.3	7.71			6.30	49.08		45.68533
			5.7	6.01			4.34	53.13		50.96161
			6.2	7.51			2.38	55.51		55.13333
65.48			3.3	3.04	77.62		1.56	56.87	56.77	55.35484
			2.3	2.78			1.80	2.86		69.04839
			3.4	4.04			2.88	4.76		41.35
			5.4	4.95			4.08	8.82		43.68387
			7.5	6.70			6.53	15.37		68.18333
			9.8	10.94			7.54	22.91		80.36452
			10	11.58			7.73	30.64		79.53333
			9.8	11.04			7.73	38.37		70.53226
			8.5	10.00			7.34	45.71		66.43935
			7.3	8.57			5.39	51.12		63.71
			5.1	6.06			3.74	54.86		56.74194
			3.2	3.90			2.38	57.24		51.66355
89.63			2.2	2.69	85.05		1.49	58.63	58.65	45.36194
			2.7	3.26			1.91	1.37		47.04839
			3.5	3.83			2.61	4.38		57.00929
			5.8	6.36			4.67	9.04		68.79032
			7.6	8.30			6.15	15.20		71.9
			9.8	10.46			6.96	22.16		91.70966
			9.1	11.23			7.57	29.73		42.33333
			9.2	10.48			7.72	37.44		66.48387
			8.2	9.98			7.34	44.80		56.6129
			6.6	7.47			5.39	50.19		56.2
			4.9	6.10			3.98	54.17		43.64516
			3.1	3.67			2.13	56.35		36.14333
86.56			2.2	2.61	84.15		1.49	57.86	53.95	48.54839
			2.1	2.70			1.96	1.81		40.31681
			3.1	3.82			2.90	4.31		47.03333
			4.7	5.21			4.62	9.12		70.16129
			6.6	7.86			6.53	15.66		64.1
			8.1	9.55			7.93	23.58		85.6129
			7.5	8.87			7.52	31.39		68.33333
			8.1	9.01			8.07	39.51		58.70968
			8.1	9.39			7.14	46.71		58.58065
			6.0	7.29			5.53	51.86		48.83333
			5.0	5.99			3.98	55.84		54
			2.9	3.68			2.28	58.13		49.9
80.90			1.7	1.94	76.27		1.33	59.45	55.65	39.72581
			2.3	2.92			1.94	1.90		44.09677
			3.1	3.86			2.89	4.83		49.30345
			4.7	5.72			4.59	9.42		53.52258
			7.1	8.57			5.63	15.07		46.2
			7.9	9.49			7.33	22.40		54.32258
			9.3	11.23			7.83	30.23		67
			9.1	10.73			7.43	37.66		63.06065
			7.9	9.36			7.84	44.80		58.77419
			6.5	7.63			5.34	50.14		51.13333
			4.4	5.33			4.00	54.14		49.72581
			2.8	3.31			2.30	56.43		47.66667
35.86			1.9	48.94	2.19	80.53	1.33	58.16	37.31	45.33226

MELOLAND MONTHLY EVAPOTRANSPIRATION



MELOLAND ANNUAL EVAPOTRANSPIRATION



CHIS MULBERRY/MULBERRY FAN

LAT:DEG. = 33 [RT4-EQS.WK1], a Program for calculating ETo or ET from eleven equations (rev 4 Jan, 1992 by W.O.Pruitt)

LAT:RAD = 0.57595865 Including Jensen Eqs. for FAO-24 methods e.g. to obtain "C" in (CMD)(App.E,ASCE Manual 70, or Allen and Pruitt, 1991)

REM:N1,S2 = 1 AVAILABLE DATA: Rn,Ra,Tmax,Tmin,RHmax,RHmin, (S2,UD/UN)use value of 2.0 if no data available).

ELEV(M) = -20 P.MB= 1015

PENMAN-MONTEITH (MONTEITH, 1981; ET of frequently-clipped grass, <15cm; or alfalfa from 3cm tall to max. ht.), Jensen eds, In Press)

EA = 0.169*(EA/17.27*m1/(m + 237.3))

D = (EA/TKm)*(6.790)^2

GAMMA = 24*PR/(0.622*L)

FOR WARMEST MONTH: 07/1992 MULBERRY CORIS STATION #41

Mean Tmax =	41.67	F-H EA2=	70.26	F-H CT=	0.123		
Mean Tmin =	25.65	F-H EA1	32.48	F-H TX=	-8.557		
		EA2-EA1	43.38				

Zom,Hc,Zw = 200

TA,RH,H,Zp = 150

Crop Hc,Mc = 12

CROP NO. = 1

(FOR GRA ASS: (1)

(ALFALFA: (2)

d= 0.00 cm

Zom= 1.48 cm

Zw= 0.13 cm

L-Alfalfa > 15cm 2.08

Crop rc= 69.44

rc*ra = (LMc(Zw-d)Zom)*(LMc(Zp-d)ZA)*(0.41)^2

rc*ra = 399.9261

ED=EA*RHM/100

Note: First Row of data are from Davis, California.

Second row is from Brawley, Calif., 1971 data (from Lakhani, et al.)

UD=0700-1900 WIND/1000-0700 WIND). Note: use UD = 2.0 if no data available

DATE OR MONTH	DAY OF YEAR	(RA)= MJ/M2/DAY	RS LY/DAY	n/N	MAXIMUM TEMPT. DEG F	MAXIMUM TEMPT. DEG C	MINIMUM TEMPT. DEG F	MINIMUM TEMPT. DEG C	RHmax %	RHmin %	WIND RUN AT Hc Zw. Miles/Dy	Km/Day	U2R DAY/NIGHT	U2 Km/Day	U2 m/s	Tm DEG C	TKm DEG K	EA kPa	RHm	D kPa	GAMMA G	DELTA D	W D/(D+G)
07/25/65	206	16.5	689	0.93	91.9	33.3	57.0	13.9	100.0	32.0	49.7	80.0	0.38	80.0	0.93	23.6	296.7	29.10	66.0	19.21	0.671	1.751	0.723
6/22/71	112	15.3	631	0.91	77.0	25.0	40.0	8.9	34.0	23.0	70.6	113.7	1.38	113.7	1.32	16.9	290.1	19.31	40.5	7.82	0.666	1.223	0.647
01/1987-12/1992 MULBERRY CORIS STATION #41																							
Jan-87	15	8.1	240.63	0.73	69.12	20.7	34.94	1.6	76.45	27.29	607.94	373.8	1.40	373.8	2.06	22.2	294.8	19.29	51.9	6.69	0.663	0.881	0.571
Feb-87	45	10.0	378.00	0.79	75.66	23.9	41.43	5.3	74.54	26.14	137.54	221.4	1.50	221.4	2.56	14.1	287.1	18.13	52.3	8.44	0.665	1.043	0.611
Mar-87	75	12.6	500.12	0.60	77.52	25.3	43.00	6.1	62.46	20.66	191.26	231.9	1.18	231.9	2.71	15.7	288.9	17.66	51.7	9.22	0.666	1.141	0.612
Apr-87	106	14.9	626.47	0.94	93.37	33.0	52.38	11.3	77.70	12.33	324.27	300.1	2.10	300.1	3.38	23.1	295.3	26.85	65.0	12.00	0.670	1.621	0.708
May-87	136	16.5	670.94	0.99	93.61	34.2	54.50	14.0	64.41	12.03	153.66	247.4	1.20	247.4	2.86	24.5	297.7	30.34	39.4	12.12	0.671	1.633	0.732
Jun-87	166	17.2	715.23	0.92	105.33	40.7	66.17	19.0	50.63	8.00	136.20	219.3	1.20	219.3	2.54	29.9	303.0	42.09	29.5	12.34	0.675	2.414	0.782
Jul-87	197	16.8	700.90	0.93	105.33	40.8	69.77	21.0	36.03	14.74	139.77	225.0	1.20	225.0	2.60	30.9	304.0	44.59	35.4	15.78	0.675	2.338	0.790
Aug-87	228	15.5	603.35	0.83	101.48	38.6	67.00	19.4	48.46	22.10	149.63	239.9	1.28	239.9	2.78	29.0	302.2	40.11	44.8	17.96	0.674	2.313	0.774
Sep-87	259	13.3	516.57	0.81	100.00	38.1	60.60	15.9	64.47	33.37	123.87	199.4	1.38	199.4	2.31	27.0	300.2	35.65	59.9	16.21	0.673	2.090	0.756
Oct-87	289	11.0	360.35	0.63	81.90	27.7	50.63	14.8	82.33	53.43	95.77	154.2	1.50	154.2	1.78	21.3	294.4	23.26	81.0	14.44	0.669	1.347	0.698
Nov-87	320	8.7	312.60	0.73	74.63	23.7	43.37	6.3	90.13	34.33	82.47	132.8	1.80	132.8	1.54	15.0	288.2	17.05	81.3	10.46	0.665	1.097	0.633
Dec-87	350	7.5	242.74	0.61	56.74	14.3	32.13	0.1	88.03	50.26	92.61	149.1	1.80	149.1	1.73	7.3	280.6	10.34	83.1	4.53	0.660	0.706	0.513
Jan-88	15	8.1	292.06	0.74	60.26	20.7	33.48	1.9	93.35	50.26	106.19	171.0	1.80	171.0	1.98	11.5	284.5	13.42	81.8	8.29	0.663	0.886	0.573
Feb-88	45	10.0	395.30	0.84	70.86	24.8	40.21	4.4	91.69	26.26	180.38	174.5	1.30	174.5	2.02	14.7	287.8	16.71	59.0	9.85	0.665	1.078	0.610
Mar-88	75	12.4	461.00	0.75	79.35	23.5	39.06	3.9	81.00	68.65	133.84	161.7	1.40	161.7	2.10	13.7	286.9	15.71	49.9	7.85	0.664	1.020	0.606
Apr-88	106	14.9	544.03	0.75	84.73	29.3	48.19	9.0	89.17	23.00	526.00	302.9	2.10	302.9	3.35	19.1	292.3	22.16	56.3	12.43	0.668	1.380	0.674
May-88	136	16.5	573.42	0.65	84.13	29.0	49.23	9.6	70.42	36.29	167.73	270.0	1.20	270.0	3.12	19.3	292.4	22.34	60.4	9.01	0.668	1.390	0.675
Jun-88	166	17.2	706.00	0.89	106.47	38.6	62.70	17.1	67.83	14.00	136.23	219.3	1.20	219.3	2.54	27.8	301.0	37.41	40.9	13.31	0.673	2.179	0.764
Jul-88	197	16.6	660.55	0.84	106.38	41.4	73.80	23.3	72.90	23.19	168.77	239.3	1.20	239.3	2.77	32.3	305.3	48.46	49.0	23.76	0.676	2.780	0.802
Aug-88	228	15.1	624.39	0.88	105.33	40.6	73.09	22.9	77.26	24.58	134.26	300.1	1.20	300.1	2.31	31.8	304.9	46.09	50.5	23.86	0.676	2.652	0.797
Sep-88	259	13.3	530.73	0.59	79.17	23.9	50.77	10.4	58.13	10.73	90.97	348.5	1.30	348.5	1.69	18.1	291.3	20.83	33.0	8.94	0.667	1.307	0.662
Oct-88	289	11.0	420.48	0.81	96.03	35.6	63.16	18.2	86.93	38.94	108.90	864.1	1.50	864.1	1.90	23.9	298.0	35.39	33.6	17.95	0.672	1.974	0.746
Nov-88	320	8.7	310.23	0.72	75.90	24.4	42.80	6.0	93.67	23.47	110.27	177.5	1.80	177.5	2.02	13.2	288.4	17.28	53.1	9.17	0.665	1.310	0.625
Dec-88	350	7.5	290.97	0.83	70.32	21.3	34.84	1.6	88.06	21.93	110.73	178.2	1.80	178.2	2.06	11.5	284.6	13.93	53.0	7.44	0.663	0.995	0.573
Jan-89	15	8.1	284.90	0.70	66.04	19.4	33.85	0.9	89.34	25.06	98.10	157.9	1.00	157.9	1.83	10.1	283.3	12.89	57.4	7.11	0.662	0.828	0.556
Feb-89	45	10.0	394.64	0.85	73.04	23.9	39.68	4.0	83.86	31.44	122.58	197.2	1.20	197.2	2.28	15.9	287.1	15.95	57.3	9.19	0.664	1.033	0.609
Mar-89	75	12.6	429.33	0.66	71.78	21.8	38.42	2.6	66.18	20.13	90.97	146.5	1.30	146.5	1.69	13.7	285.8	14.68	44.1	6.47	0.664	0.960	0.591
Apr-89	106	14.9	632.87	0.95	92.48	33.6	53.13	11.7	80.25	69.60	120.73	193.8	1.30	193.8	2.24	22.6	295.8	27.50	49.9	13.73	0.670	2.047	0.713
May-89	136	16.5	692.71	0.94	95.39	35.2	57.06	13.9	67.48	12.48	168.13	259.6	1.20	259.6	3.00	24.5	297.7	30.83	40.0	12.32	0.671	1.840	0.730
Jun-89	166	17.2	712.70	0.92	104.83	40.5	62.68	17.1	64.73	8.13	146.17	235.5	1.20	235.5	2.72	28.8	302.0	39.58	36.4	14.42	0.674	2.298	0.771
Jul-89	197	16.8	656.32	0.84	104.97	40.5	71.45	23.9	70.42	13.50	141.06	227.8	1.30	227.8	2.63	31.2	304.4	45.51	41.0	18.66	0.676	2.584	0.793
Aug-89	228	15.5	624.42	0.80	104.42	40.2	70.30	21.5	77.58	12.74	138.84	207.4	1.20	207.4	2.40	30.8	303.9	44.36	48.7	21.59	0.675	2.527	0.789
Sep-89	259	13.3	543.70	0.87	103.73	39.3	63.27	18.5	64.95	13.23	127.30	205.5	1.20	205.5	2.38	28.9	302.0	39.60	39.3	15.55	0.674	2.300	0.773
Oct-89	289	11.0	420.42	0.81	91.29	32.9	54.01	12.7	73.03	35.87	113.46	182.7	1.30	182.7	2.11	22.8	296.0	27.76	44.3	12.34	0.670	1.681	0.715
Nov-89	320	8.7	330.50	0.81	81.07	27.3	43.83	6.1	84.45	32.43	103.33	166.4	1.00	166.4	1.93	16.7	289.9	19.00	53.4	10.15	0.666	1.296	0.664
Dec-89	350	7.5	278.94	0.75	63.39	17.4	27.55	-2.5	82.23	26.26	90.46	145.5	1.00	145.5	1.69	7.5	280.6	10.35	54.2	5.63	0.660	0.707	0.517
Jan-90	15	8.1	248.58	0.53	60.65	15.9	29.16	-1.6	83.00	37.56	99.29	159.9	1.00	159.9	1.85	7.2	280.3	10.15	60.3	6.11	0.660	0.694	0.512
Feb-90	45	10.0	362.14	0.74	73.00	22.8	38.14	2.3	84.18	36.96	122.79	197.7	1.30	197.7	2.29	12.3	285.3	14.53	55.6	8.06	0.664	0.953	0.580
Mar-90	75	12.6	490.19	0.69	81.26	27.9	44.69	7.1	65.16	25.13	133.03	212.6	1.10	212.6	2.46	17.3	290.4	19.66	55.2	10.83	0.667	1.344	0.651
Apr-90	106	14.9	589.60	0.83	72.17	22.3	43.72	6.3	72.70	24.03	103.77	167.1	1.10	167.1	1.93	14.4	287.6	16.42	49.4	7.94	0.665	1.085	0.615
May-90	136	16.5	660.00	0.87	92.19	33.4	55.35	13.0	70.35	15.19	182.43	261.5	1.20	261.5	3.03	23.2	296.4	28.45	42.8	12.17	0.670	1.717	0.719
Jun-90	166	17.2	672.00	0.84	100.03	37.8	63.13	16.7	66.27	14.07	117.07	188.5	1.20	188.5	2.18	27.3	300.4	36.23	41.2	14.93	0.673	2.119	0.759
Jul-90	197	16.8	578.87	0.68	105.43	40.8	74.06	23.4	73.00	23.01	244.10	232.0	1.20	232.0	2.68	32.1	305.2	47.38	48.0	22.94	0.676	2.695	0.799
Aug-90	228	15.5	624.32	0.44	91.35	33.0	62.90	17.2	62.58	27.31	105.55	169.6	1.30	169.6	1.96	23.1	298.3	31.81	45.1	14.36	0.672	1.892	0.738
Sep-90	259	13.5	537.93	0.96	99.07	37.4	68.67	20.4	72.38	28.68	112.23	180.3	1.30	180.3	2.08	29.0	302.1	40.01	30.5	20.19	0.674	2.310	0.774
Oct-90	289	13.0	439.16	0.66	91.13	31.0	56.43	13.8	73.00	33.00	93.32	150.4	1.50	150.4	1.74	22.9	296.1	27.99	47.5	12.29	0.670	1.693	0.716
Nov-90	320	8.7	243.70	0.47	59.00	15.0	34.33	1.3	50.93	16.37	67.37	140.5	1.80	140.5	1.63	8.2	281.3	10.84	33.7	3.65	0.662	0.737	0.523
Dec-90	350	7.5	243.90	0.49	46.58	19.2	34.19	1.2	63.05	19.32	107.36	172.5	1.00	172.5	2.00	10.2	283.4	12.46	40.8	5.08	0.662	0.832	0.557
Jan-91	15	8.1	209.35	0.36	36.68	13.7	32.19	0.1	63.71	31.83	75.63	121.7	1.60	121.7	1.41	6.9	280.1	9.96	47.4	4.72	0.660	0.683	0.509
Feb-91	45	10.0	236.00	0.72	38.39	25.4	42.96	6.0	78.25	42.30	101.14	162.8	1.30	162.8	1.88	13.9	286.1	16.07	60.4	10.91	0.666	1.154	0.634
Mar-91	75	12.6	449.34	0.72	72.00	22.0	43.39	6.3	78.42	38.08	145.29	233.8	1.90	233.8	2.70	14.2	287.3	16.28	58.2	9.42	0.665	1.047	0.613
Apr-91	106	14.9	598.93	0.87	80.50	26.9	46.37	8.8	73.00	28.83	135.33	218.2	1.60	218.2	2.52	17.5	290.6	19.95	52.1	10.08	0.667	1.259	0.654
May-91	136	16.5	698.33	0.93	89.19	31.8	53.29	11.8	74.35	26.84	145.48	234.2	1.20	234.2	2.71	21.5	295.0	26.12	58.6	13.22	0.669	1.593	0.704
Jun-91	166	17.2	732.73	0.64	93.47	33.6	53.07	12.1	59.47	22.53	134.43	184.6	1.20	184.6	2.14	20.4	293.3	23.92	41.0	9.81	0.669	1.476	0.668
Jul-91	197	16.8	634.74	0.83	102.33	39.3	69.66	20.9	69.50	27.03	126.64	192.9	1.20	192.9	2.23	30.8	303.2	42.43	48.5	20.56	0.675	2.431	0.783
Aug-91	228	15.5	611.29	0.85	104.36	40.1	73.30	23.0	62.32	25.42	121.74	196.0	1.20	196.0	2.27	31.5	304.7	46.33	43.9	20.32	0.676	2.624	0.795
Sep-91	259	13.3	494.67	0.75	99.67	37.8	70.41	21.4	71.83	31.30	115.46	182.4	1.30	182.4	2.11	29.5	302.6	42.16	51.7	21.27	0.674	2.368	0.778
Oct-91	289	11.0	399.66	0.74	93.53	34.3	60.26	15.7	71.80	33.77	126.45	194.2	1.50	194.2	2.25	24.9	298.3	31.57	48.4	15.33	0.672	1.880	0.737
Nov-91	320	8.7	254.63	0.50	67.27	19.0	39.90	4.4	53.70	22.97	104.90	168.9	1.80	168.9	1.95	12.0	285.2	14.02	38.3	5.37	0.663	0.923	0.542
Dec-91	350	7.5	222.35	0.51	46.48	19.2	43.38	5.8	64.23	43.66	66.32	139.9	1.80	139.9	1.61	12.2	285.4	14.35	64.0	9.15	0.663	0.937	0.585
Jan-92	15	8.1	271.50	0.65	48.61	20.3	37.32	3.1	86.61	33.35	91.45	147.2	1.60	147.2	1.70	11.3	284.9	13.75	61.0	8.39	0.663	0.908	0.574
Feb-92	45	10.0	339.16	0.66	74.03	23.4	45.09	7.8	99.34	44.61	105.72	170.2	1.50	170.2	1.97	15.1	288.6	17.59	67.0	11.78	0.665	1.127	0.629
Mar-92	75	12.6	425.01	0.66	70.23	21.2	40.77	6.5	94.26	45.13	91.32	147.3	1.10	147.3	1.70	13.9	287.0	15.83	59.7	11.06	0.664	1.030	0.608
Apr-92	106	14.9	493.03	0.63	74.30	23.5	44.43	7.0	82.47	29.43	76.47	123.1	1.10	123.1	1.42	15.3	288.4	17.34	56.2	9.79	0.663	1.113	0.626
May-92	136	16.5	631.45	0.82	93.64	34.2	61.23	16.2	78.90	33.97	109.61	176.5	1.20	176.5	2.04	23.2	296.4	28.82	55.4	17.80	0.672	1.908	0.740
Jun-92	166	17.2	636.47	0.75	93.20	34.0	59.73	15.4	65.50	29.37	118.67	191.1	1.20	191.1	2.21	24.7	297.9	32.14	47.4	14.37	0.671	1.657	0.715
Jul-92	197	16.8	632.58	0.79	105.77	39.9	73.86	23.2	62.32	32.77	134.71	216.9	1.30	216.9	2.51	31.4	304.7	46.37	47.6	22.09	0.676	2.424	0.795
Aug-92	228	15.5	584.23	0.79	105.13	40.6	78.13	23.6	69.12	33.13	144.90	233.3	1.30	233.3	2.70	33.1	306.3	50.66	52.1	28.41	0.677	2.835	0.807
Sep-92	259	13.3	549.30	0.88	99.78	36.5	54.43	12.5	48.38	21.33	82.87	133.4	1.30	133.4	1.54	19.5	293.6	22.04	35.0	7.93	0.668	1.066	0.678
Oct-92	289	11.0	388.65	0.73	98.97	35.3	60.00	15.6	70.90	31.41	106.15	170.9	1.30	170.9	1.98	24.6	293.7	30.87	51.4	15.83	0.671	1.844	0.733
Nov-92	320	8.7	307.47	0.71	73.28	34.0	41.75	5.4	71.47	33.97	105.33	169.9	1.80	169.9	1.97	10.7	287.9	16.73	48.7	8.13	0.665	1.079	0.619
Dec-92	350	7.5	236.76	0.57	42.87	21.2	33.97	2.2	86.86	48.39	68.77	123.5	1.80	123.5	1.80	9.3	282.8	12.02	67.2	8.06	0.662	0.806	0.549

RNe=19*Rs/L*0.75+(1.944*10D^-9*TKm^4*(.34-.044*ED^ 5)*(.1+.9n/N)

Ud=URu*(U2/43.2*(URu+U2)

/TKm)+5.02E08)

"n" = .0042*RHmax-n/N-1.41

"ni" = 0.906-0.00443*RHmax+0.7*15*n/N+0.0760*(LN(Ud+1))^2-0.0038*RHmin*n/N-0.00045*RHmax*Ud+0.281*(LN(Ud+1))*(LN(n/N+1))-0.00975*LN(Ud

"h" = 1.0656-.00128RHm+.04495*Ud-.0002*RHm*Ud-.315*10^-4*RHm^2-.001 1026*Ud^2

"C" (using linking values in Col. AH to AK) = 0.892-.0781*Ud+.00219*U.R*Rd+.000402*RHmax*R

"C" case 4 +0.0000190*Ud*UR*RHmax*Rd+.0000130*Ud^2*RHmax*Rd-.000.044*U.R^2*Ud^R

RHO=P/(6-.378ED/P)/(R* Tkm)

3.054*EXP(17.27*Tmin/(Tmin+237.31))*(1-0.01*RHmin)+3.054*EXP(17.27*Tmax/(Tmax+237.31))*(1-0.01*RHmax)

ra=(ca*ustar*ca/km/dz)/*.012374(m sec^-1/km day^-1)

GAMMA* = GAMMA (1 + ra/rs)

(RsX: IF .017Rs < =1.0,1.0, IF .017Rs < =12,12,OTHERWISE = .017Rs)

(RHmax: IF RHmax < =30,30, IF RHmax > =90,90, OTHERWISE = RHmax

"ni" = 0.0043 RHmax - n/N - 3.4 n/N - 1.41 (UHEIP Ud> 10.0 m/s,(Ud)=10.0

N =(24/π)*(ARCCOS(-TAN(PHI)*TAN(.409*SIN(2*π*(N/364+J)/365)))

URhm: IF(URr < =1.0,URhm=1.0,IF(URr > =4,URhm=4,otherwise URhm=URr

RNe MJ/M^2/DY	Ud MJ/M	(EA-ED)2 MJ/M	(EA-ED)4 MJ/M	RHO kg/m^3	ra sec/m	GAM* MJ/DegK	day/kgm km, M	Bi-Cr p M/(mol yr^2 M)	FAD Bi-Cr "ni"	FAD Bi-Cr "h"	FAD BAD "h2"	Lines for FAO-PEN, BAD, & Bi-Cr (FAO BAD & Bi-Cr use (Ud)) (Ro)	(URhm) (km)	(Ud) (km)	(UR) (km)	CPEN "C" (km)	SCSBC kc=1.0 mm/day	FAOBC mm/day	FAORA mm/day	P-T mm/day	J-H ETo mm/day	FAOPEN mm/day	FAOCPE mm/day	CALIF. FAOCPEN mm/day
6.73	9.81	9.49	17.37	1.183	214.6	###	12.74	0.515	-2.20	1.46	0.87	11.71	90.0	0.41	1.00	1.10	5.79	6.50	7.06	6.13	7.03	6.20	6.85	3.68
5.23	1.49	11.49	14.59	1.236	131.2	###	11.02	0.396	-2.22	1.40	1.86	10.75	58.0	1.49	1.30	1.00	3.63	5.30	6.74	4.38	5.11	5.53	5.72	4.99
1.50	2.48	6.39	9.78	1.241	96.5	###	10.05	0.229	-2.04	1.51	0.99	5.04	76.5	2.48	1.60	0.93	1.79	2.54	2.56	1.06	1.86	2.09	2.69	2.44
2.48	3.06	7.69	11.35	1.227	77.6	###	10.79	0.246	-2.09	1.59	1.06	6.43	78.5	3.06	1.50	0.91	2.44	3.83	3.66	2.91	2.72	4.11	3.92	3.50
3.94	2.04	8.82	12.60	1.220	73.5	###	11.79	0.269	-2.28	1.71	1.00	8.04	82.7	2.04	1.10	1.00	3.00	4.87	5.18	3.15	3.94	5.35	5.34	4.70
5.36	2.45	14.05	23.52	1.193	85.9	###	12.86	0.294	-2.30	1.82	1.02	10.68	77.7	2.43	1.10	1.01	4.97	7.54	7.48	4.78	6.12	7.71	7.56	6.38
6.00	3.12	18.62	24.48	1.183	69.5	###	13.73	0.313	-2.39	1.85	1.07	11.41	66.8	3.12	1.20	1.00	6.07	9.00	8.65	5.64	7.04	9.03	9.03	7.33
6.34	2.77	29.75	40.70	1.162	78.4	###	14.57	0.323	-2.29	1.90	1.18	12.06	50.6	2.77	1.30	0.95	8.25	11.13	10.13	6.23	8.70	10.36	10.02	8.20
6.43	2.84	28.43	38.18	1.137	56.4	###	15.36	0.319	-2.27	1.82	1.08	11.97	54.0	2.84	1.20	0.97	8.51	10.71	9.86	6.42	8.78	10.41	10.07	8.17
5.63	3.03	22.34	30.56	1.161	71.6	###	15.19	0.301	-2.13	1.68	1.06	10.26	68.5	3.03	1.28	0.99	7.34	8.71	7.99	5.58	7.20	8.95	8.83	7.18
4.33	2.61	22.44	31.64	1.172	86.5	###	12.16	0.278	-2.15	1.69	1.05	8.78	84.3	2.61	1.38	0.96	6.34	7.51	6.90	4.13	5.65	7.50	7.23	6.18
2.91	2.16	20.42	35.85	1.193	111.5	###	11.19	0.254	-1.89	1.32	0.95	6.53	92.5	2.16	1.58	0.98	4.08	4.11	3.77	2.58	3.41	4.25	4.18	3.72
1.94	1.98	6.39	10.33	1.223	129.5	###	10.34	0.234	-1.99	1.38	0.93	5.38	88.1	1.98	1.88	0.99	2.48	2.06	2.73	1.52	2.34	2.77	2.73	2.30
1.28	2.22	3.84	5.36	1.237	113.3	###	9.83	0.224	-1.85	1.27	0.93	4.17	88.8	2.22	1.88	0.95	1.22	1.46	1.67	0.82	1.21	2.09	1.79	1.63
1.60	2.44	5.12	6.75	1.240	100.5	###	10.05	0.229	-2.02	1.46	0.94	4.96	90.0	2.44	1.60	0.97	1.83	2.45	2.36	1.16	1.65	2.52	2.43	2.22
2.04	2.42	6.86	11.90	1.224	98.5	###	10.79	0.246	-2.34	1.59	0.93	6.09	90.0	2.42	1.50	1.01	2.53	3.68	3.66	2.06	2.90	3.57	3.62	3.25
3.60	2.30	7.68	12.57	1.229	94.8	###	11.79	0.269	-2.08	1.53	1.00	7.04	81.1	2.30	1.40	1.00	2.59	4.04	4.43	2.73	3.28	4.54	4.54	4.02
4.08	2.46	9.73	14.31	1.205	84.7	###	12.86	0.294	-2.06	1.55	0.97	9.25	89.2	2.46	1.30	1.05	4.14	5.83	5.75	4.43	4.78	5.89	6.15	5.34
5.16	3.41	13.32	19.09	1.206	63.7	###	13.73	0.313	-2.05	1.72	1.08	9.75	70.4	3.41	1.20	0.97	4.43	7.03	6.70	4.39	5.07	7.81	7.61	6.47
6.57	2.77	22.10	32.54	1.169	78.0	###	14.17	0.323	-2.24	1.80	1.05	11.97	67.8	2.77	1.20	1.01	7.43	9.93	9.29	6.32	8.10	9.52	9.64	7.96
6.69	3.02	24.70	39.61	1.148	72.8	###	13.96	0.319	-2.13	1.64	1.02	11.23	72.5	3.02	1.20	1.02	9.10	9.90	8.93	6.76	8.56	9.66	10.03	8.24
6.17	2.53	23.02	31.93	1.150	85.9	###	13.19	0.301	-2.18	1.64	1.00	10.41	77.3	2.53	1.28	1.03	8.37	9.06	8.13	6.20	7.99	8.71	9.00	7.58
3.43	1.92	11.97	17.72	1.211	117.6	###	12.16	0.278	-1.93	1.49	1.08	7.52	55.1	1.92	1.50	0.93	3.47	4.86	6.48	2.90	3.65	5.44	5.08	4.47
3.40	2.28	13.48	24.28	1.175	104.8	###	11.19	0.254	-2.13	1.66	0.98	7.15	86.4	2.28	1.30	1.02	3.30	6.04	4.92	3.19	4.60	5.34	5.43	4.74
1.83	2.64	8.11	12.60	1.222	98.8	###	10.34	0.234	-2.03	1.54	0.99	5.22	82.7	2.64	1.80	0.96	2.51	3.41	2.97	1.44	2.54	3.43	3.30	2.97
1.28	2.65	6.09	10.30	1.239	96.0	###	9.83	0.224	-2.14	1.44	0.98	4.93	88.1	2.65	1.40	0.96	1.78	2.78	2.69	0.92	1.83	2.64	2.38	2.33
1.53	2.25	5.16	8.75	1.243	108.8	###	10.05	0.229	-2.00	1.43	0.96	4.84	90.7	2.25	1.60	0.97	1.83	2.31	2.28	0.87	1.49	2.48	2.40	2.19
2.61	2.74	6.75	10.82	1.228	87.1	###	10.79	0.246	-2.32	1.56	0.97	6.78	83.9	2.74	1.50	0.99	2.41	3.44	3.66	2.00	2.82	3.73	3.66	3.28
3.35	1.76	8.19	11.67	1.205	117.4	###	11.79	0.269	-1.99	1.43	1.01	7.30	68.1	1.76	1.18	0.97	2.38	3.47	4.08	2.49	2.89	4.32	4.07	3.63
5.55	2.35	13.77	22.22	1.190	88.7	###	12.86	0.294	-2.38	1.75	1.00	10.76	80.2	2.35	1.18	1.04	5.22	7.23	7.37	4.98	6.27	7.09	7.39	6.38
6.18	3.28	18.49	27.61	1.183	65.3	###	13.73	0.313	-2.29	1.90	1.07	11.78	67.5	3.28	1.20	1.00	6.08	9.25	8.98	5.70	7.28	9.32	9.33	7.74
6.56	2.97	23.16	34.17	1.165	73.8	###	14.17	0.323	-2.29	1.93	1.08	12.00	64.7	2.97	1.20	1.00	7.82	10.96	9.80	6.50	8.45	10.23	10.24	8.39
6.51	2.87	24.85	37.44	1.154	75.7	###	13.96	0.319	-2.20	1.78	1.06	11.38	70.4	2.87	1.20	1.01	8.63	10.60	9.04	6.31	8.29	9.92	10.03	8.24
6.03	2.62	22.77	31.82	1.154	82.9	###	13.19	0.301	-2.39	1.68	1.04	10.42	73.6	2.62	1.20	1.02	8.04	8.94	8.39	6.00	7.80	8.73	8.91	7.44
4.57	2.69	24.34	34.34	1.164	83.9	###	12.16	0.278	-2.25	1.58	1.06	9.28	84.9	2.69	1.30	0.97	6.34	8.38	7.26	4.45	6.45	8.06	7.83	6.83
3.06	2.54	15.42	23.04	1.190	94.1	###	11.19	0.254	-2.13	1.68	1.03	7.15	73.0	2.54	1.50	0.97	4.47	5.88	4.97	2.36	4.19	5.55	5.38	4.72
1.93	2.44	8.83	14.77	1.216	109.5	###	10.34	0.234	-2.12	1.61	0.99	5.67	84.4	2.44	1.80	0.98	2.80	3.81	3.56	1.53	2.67	3.53	3.45	3.16
1.22	2.17	6.74	9.80	1.258	118.0	###	9.83	0.224	-2.05	1.49	0.97	4.66	82.2	2.17	1.88	0.95	1.22	1.82	2.04	0.79	1.39	2.13	2.03	1.88
1.65	2.38	6.03	8.63	1.259	107.5	###	10.05	0.229	-1.78	1.22	0.94	4.16	83.6	2.38	1.60	0.99	1.33	2.41	1.70	0.94	1.22	2.12	1.97	1.68
2.43	2.75	8.46	10.69	1.234	88.9	###	10.79	0.246	-2.03	1.52	0.98	6.16	84.2	2.75	1.50	0.97	2.43	3.16	3.36	1.88	2.43	3.56	3.46	3.11
3.92	2.50	8.83	14.39	1.213	80.9	###	11.79	0.269	-2.13	1.68	0.98	6.55	85.2	2.50	1.50	1.01	3.33	4.79	3.01	2.22	4.02	5.35	5.21	4.50
4.29	2.03	8.48	11.56	1.226	102.9	###	12.86	0.294	-1.95	1.40	1.00	5.32	72.7	2.03	1.10	0.99	2.97	4.13	4.80	3.33	3.37	4.99	4.94	4.36
5.99	3.20	18.23	24.88	1.188	65.7	###	13.73	0.313	-2.28	1.80	1.06	11.22	70.4	3.20	1.20	1.00	5.86	8.41	8.36	5.48	6.44	8.75	8.77	7.34
6.52	3.38	23.31	33.17	1.175	91.2	###	14.17	0.323	-2.19	1.73	1.04	12.42	68.3	3.38	1.20	1.02	7.35	9.27	8.73	6.04	7.65	8.79	8.93	7.46
5.91	3.93	24.84	33.50	1.149	74.1	###	13.96	0.319	-1.99	1.32	1.03	9.84	73.0	3.93	1.20	1.00	9.80	9.16	7.77	5.96	7.43	9.19	9.17	7.65
4.32	3.34	17.45	23.82	1.180	101.3	###	13.19	0.301	-1.73	1.22	1.02	7.22	62.6	3.34	1.30	0.94	6.02	5.50	5.11	3.83	4.53	6.33	5.99	5.21
4.88	2.36	19.03	26.45	1.162	99.1	###	12.16	0.278	-2.15	1.53	1.00	9.14	72.3	2.36	1.30	1.08	6.77	7.22	6.71	4.76	6.41	7.17	7.19	6.15
3.23	3.09	14.69	21.30	1.189	134.2	###	11.19	0.254	-2.18	1.61	1.00	7.47	72.8	2.09	1.50	0.99	4.58	5.48	5.06	3.92	4.39	5.13	5.07	4.46
1.48	3.09	7.19	8.79	1.256	122.3	###	10.34	0.234	-2.01	1.34	0.96	4.16	90.9	2.09	1.80	0.87	1.37	1.93	2.04	0.97	1.80	2.94	2.39	2.33
1.09	2.57	7.38	10.23	1.246	99.6	###	9.83	0.224	-2.02	1.34	0.85	4.41	82.0	2.57	2.80	0.88	1.00	2.43	2.30	0.76	1.56	3.01	2.46	2.42
1.32	1.73	5.34	6.53	1.261	141.2	###	10.05	0.229	-1.86	1.13	0.99	3.36	43.7	1.73	1.60	0.89	0.18	1.28	1.58	0.64	1.05	2.21	1.93	1.81
2.23	2.26	7.16	10.55	1.219	103.5	###	10.79	0.246	-1.96	1.31	0.94	6.05	78.3	2.34	1.50	0.97	2.79	3.03	3.32	2.02	2.76	3.46	3.33	3.02
3.63	2.43	6.76	9.35	1.227	73.5	###	11.79	0.269	-1.97	1.39	0.97	7.45	78.4	2.43	1.10	0.97	3.68	3.53	4.24	2.83	3.25	4.60	4.45	3.95
5.36	2.68	9.53	13.96	1.212	78.8	###	12.86	0.294	-2.18	1.68	1.00	10.18	73.4	2.68	1.10	1.01	5.70	5.43	6.34	4.25	4.95	6.21	6.29	5.44
6.38	2.96	11.90	16.95	1.193	73.4	###	13.73	0.313	-2.24	1.70	1.06	11.88	74.4	2.96	1.20	1.03	5.21	7.45	8.18	5.66	6.73	7.94	8.20	6.92
3.33	2.33	14.11	18.02	1.201	93.3	###	14.57	0.323	-1.95	1.43	1.04	9.75	59.3	2.33	1.20	0.97	4.91	6.26	6.68	4.42	5.27	7.05	6.61	5.83
4.40	2.47	21.06	29.33	1.158	87.7	###	13.96	0.319	-1.13	1.57	1.01	11.53	69.9	2.47	1.20	1.02	6.17	8.57	8.50	6.37	8.02	8.83	9.00	7.50
5.82	2.47	22.00	32.92	1.152	87.7	###	13.19	0.301	-2.15	1.60	1.03	10.29	62.3	2.47	1.30	0.96	8.29	8.79	8.22	5.83	7.78	8.88	8.71	7.29
4.61	2.39	19.40	25.77	1.160	94.1	###	12.16	0.278	-2.03	1.46	0.99	8.43	71.8	2.39	1.30	0.99	6.94	6.74	6.19	4.32	5.93	6.95	6.47	5.90
3.12	2.70	16.24	22.31	1.180	88.3	###	11.19	0.254	-2.04	1.50	1.02	6.79	71.4	2.70	1.50	0.95	5.04	5.37	4.79	2.90	4.25	5.69	5.42	4.75
1.51	2.56	8.64	10.72	1.238	101.6	###	10.34	0.234	-1.81	1.34	1.06	4.53	53.7	2.31	1.80	0.86	2.95	2.46	2.36	1.31	1.66	3.50	3.02	2.73
1.29	2.03	5.64	6.95	1.255	123.4	###	9.83	0.224	-1.74	1.14	0.92	3.78	84.2	2.03	1.80	0.93	1.91	1.79	1.73	0.95	1.47	2.13	2.09	1.82
1.56	2.10	5.37	8.23	1.238	116.7	###	10.05	0.229	-1.91	1.32	0.93	4.42	66.6	2.18	1.60	0.94	1.87	2.10	2.16	1.13	1.75	2.41	2.33	2.11
2.52	2.34	5.81	8.50	1.220	101.0	###	10.79	0.246	-1.88	1.26	0.91	5.37	89.3	2.36	1.50	0.99	2.70	2.84	2.99	1.99	2.59	3.13	3.31	2.81
3.42	1.79	4.91	7.20	1.227	110.7	###	11.79	0.269	-1.87	1.21	0.98	7.24	90.0	1.79	1.30	1.02	2.42	2.88	3.13	2.77	3.05	3.46	3.54	3.10
4.42	1.49	7.80	11.06	1.223	139.6	###	12.86	0.294	-1.96	1.32	0.94	8.38	82.9	1.49	1.30	1.04	3.13	3.94	4.64	3.40	3.73	4.46	4.64	4.11
6.34	1.25	14.31	20.27	1.178	97.4	###	13.73	0.313	-2.05	1.49	0.97	10.80	38.9	1.25	1.30	1.05	6.31	7.13	7.43	5.75	6.32	7.33	7.58	6.52
6.00	2.41	16.33	21.81	1.181	90.8	###	14.17	0.323	-2.03	1.47	1.06	10.65	63.5	2.41	1.30	1.00	6.34	7.27	7.82	5.55	6.62	7.82	7.79	6.61
6.34	2.74	24.28	29.97	1.153	79.2	###	13.96	0.319	-2.06	1.40	1.02	10.75	62.5	2.74	1.28	0.96	8.78	8.73	8.44	6.94	8.04	9.30	9.10	7.58
5.96	2.95	24.25	29.43	1.143	73.3	###	13.19	0.301	-1.85	1.46	1.01	9.93	69.1	2.95	1.28	0.99	8.88	8.39	7.76	6.00	7.73	9.02	8.66	7.42
1.80	1.75	14.71	17.31	1.205	128.8	###	12.16	0.278	-2.32	0.71	0.85	8.42	46.3	1.75	1.30	0.91	4.00	5.79	6.39	1.57	3.47	6.23	5.85	3.43
3.10	2.37	23.02	28.97	1.101	100.6	###	11.19	0.254	-1.98	1.42	0.99	8.66	78.5	2.37	1.30	0.96	4.94	5.01	4.51	2.80	4.08	5.21	4.98	4.39
1.76	2.39	8.58	12.37	1.325	101.2	###	10.34	0.234	-1.06	1.49	1.01	5.23	71.9	2.53	1.80	0.95	3.42	3.18	2.97	1.57	2.27	3.47	3.34	2.92
1.30	2.32	3.94	5.55	1.267	108.3	###	9.83	0.224	-1.77	0.86	0.90	3.99	66.1	2.32	1.80	0.94	1.52	1.49	1.66	0.90	1.36	1.94	1.82	1.67

1+.000196*U2P*U2P*RHmax

(Kmax)-2.91*10^-4*U2P*U2P*RHmax -0.0000161*RHmax^2*U^2

+1)*(g1,N(RHmax+1)) ^2*(2.26/u2N+1)

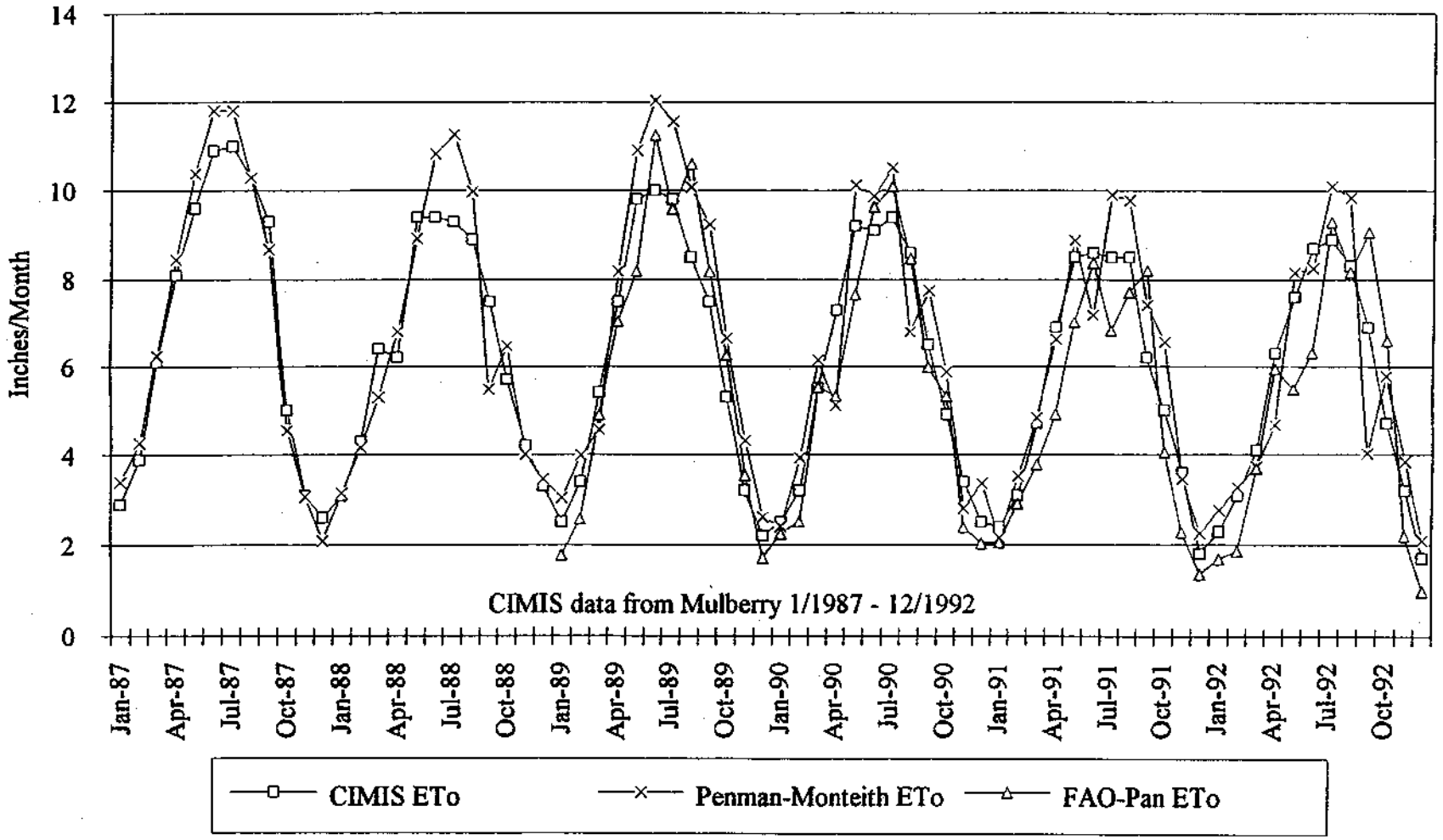
ETo= D/(D+G*(Rn+Gn) + GAD+G*(.53741(RHO)(Ea-Ed)/A^ra)

Note: For fetch, limit to 3 to 1000m

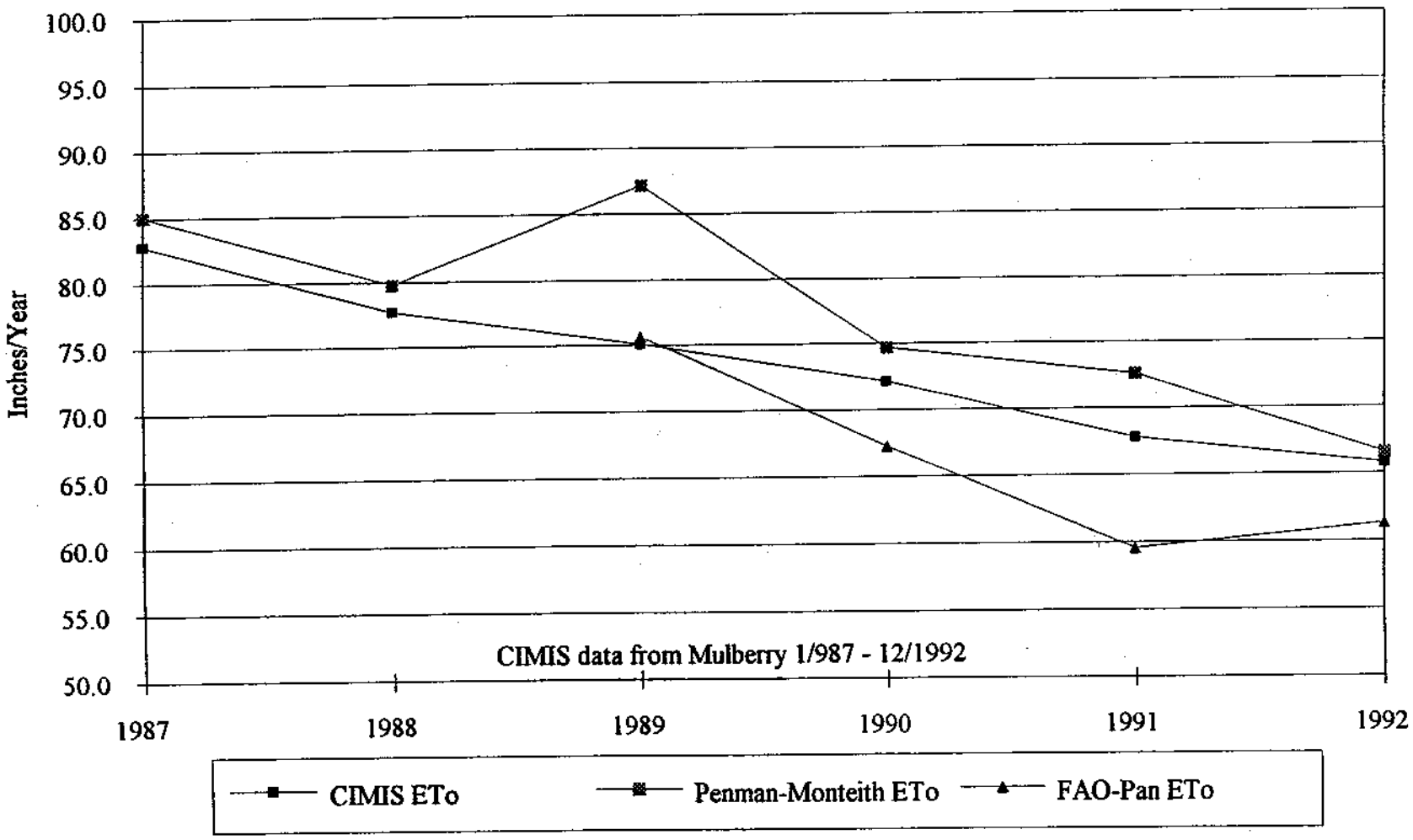
ETo(P-M) Grass mm/day	ETo(P-M) Grass mm/day	SAMANI mm/day	Class A Pan, Ep In/Mo	Class A Pan, Ep mm/Day	FAO CASE A(wind), (1) B(dry), (2)	UPWIND FETCH, meters	Limits for Ep Calc. 2-m wind	RHmean	(FAO-24 Calc. Kp) (CASE A)	(CASE B)	ETo FAO-Pan mm/day	ETo FAO-Pan In/Mo	5184 Ra (Ly/day)*13	Ra Equiv. E In/Yr	Class A Pan Evap In/Yr	ETo FAO-PAN In/Yr	Kp Monthly	Kp Annual	ETo(ASCE P-M) In/Mo	In/Yr	ETo (FAO-CPEN) mm/Mo	In/Mo	In/Yr	ETo (CIM) In/DAY
5.93	5.75	6.92	9.19	7.69	1	10	84.0	66.0	0.36	999.00	5.68	7.2753223												
5.19	4.83	4.96	7.68	6.30	2	10	115.7	40.3	999.00	0.63	4.69													
2.94	2.78	2.36																						
3.36	3.46	3.10																	5.40			3.26		
4.51	5.11	4.23																	4.26			4.22		
6.25	7.16	6.37																	6.26			6.54		
7.60	8.31	7.06																	8.45			8.85		
8.95	10.00	8.80																	10.38			11.02		
8.87	9.68	8.36																	11.81			11.84		
7.60	8.44	7.31																	11.61			12.28		
6.32	7.35	6.36																	10.30			10.77		
3.68	3.72	3.55																	8.68			8.54		
2.39	2.60	2.74																	4.54			5.10		
1.97	1.71	1.66																	3.07			3.25		
2.09	2.39	2.35											5930.524731	121.4					2.09	65.02		2.29	84.08	
3.05	3.64	3.36																	3.16			3.97		
3.99	4.33	4.05																	4.38			4.13		
5.16	5.76	5.73																	5.29			5.54		
6.30	7.31	6.19																	6.80			7.27		
8.22	9.46	8.38																	8.92			9.29		
8.91	9.24	8.25																	10.82			11.38		
7.63	8.17	7.44																	11.27			12.25		
4.64	4.64	4.39																	9.97			10.99		
4.80	5.29	4.86																	3.46			6.00		
2.48	3.39	2.43																	6.46			4.63		
2.15	2.84	2.24																	4.01			3.89		
2.06	2.50	2.23	2.65	2.34	2	50	157.9	57.4	999.00	0.62	1.66	1.76	5701.309344	116.7					3.47	79.81		3.15	61.49	
3.12	3.62	3.24	4.35	3.93	2	130	197.2	57.7	999.00	0.39	2.34	2.58					0.624		3.01			3.93		
3.64	3.73	3.77	6.47	5.50	1	140	246.3	44.1	0.76	999.00	4.08	4.98					0.592		3.99			4.04		
6.22	6.92	6.47	9.28	7.86	1	200	195.8	48.9	0.76	999.00	5.96	7.84					0.757		4.55			4.97		
7.88	8.94	7.41	12.44	9.54	1	190	239.6	46.0	0.78	999.00	8.71	8.20					0.759		8.10			6.73		
8.73	10.28	8.90	13.96	13.53	1	240	235.3	36.4	0.71	999.00	9.53	11.24					0.704		10.93			10.30		
8.09	9.47	8.17	12.51	11.07	1	180	227.1	41.8	0.71	999.00	7.86	9.39					0.706		12.04			12.09		
7.42	8.25	7.53	14.11	11.56	1	200	207.4	48.7	0.75	999.00	8.44	10.60					0.710		11.36			12.24		
6.78	7.42	6.61	13.29	9.36	1	280	205.3	39.1	0.72	999.00	6.92	8.08					0.751		10.07			10.88		
4.63	5.44	4.82	8.92	6.82	1	250	182.7	44.5	0.75	999.00	5.03	4.23					0.724		9.24			9.25		
2.98	3.65	3.17	5.71	4.93	2	30	166.4	33.4	999.00	0.62	3.00	3.53					0.753		6.66			6.57		
1.76	2.15	1.95	2.79	2.39	2	50	146.7	54.2	999.00	0.62	1.41	1.73	5990.47404	122.8	106.28	73.65	0.622		4.31			4.07		
1.70	1.97	1.95	3.56	2.92	2	50	159.9	40.3	999.00	0.63	1.64	2.23					0.624	0.712	2.62	67.10		2.50	89.64	
2.97	3.56	3.36	6.12	3.91	2	130	197.7	35.6	999.00	0.59	2.29	2.53					0.632		2.60			2.40		
4.41	5.03	4.57	7.24	5.93	1	180	212.8	51.1	0.76	999.00	4.53	5.51					0.585		3.93			5.82		
6.37	7.32	6.39	8.98	5.91	1	200	167.1	48.4	0.76	999.00	4.52	3.31					0.704		6.14			6.38		
7.40	8.29	7.08	10.77	8.82	1	150	263.5	42.8	0.71	999.00	6.23	7.87					0.384		5.11			5.84		
7.00	8.37	8.18	13.08	11.07	1	300	186.5	41.2	0.74	999.00	6.16	9.43					0.712		10.12			10.70		
7.89	8.62	8.05	13.85	11.35	1	300	232.0	48.0	0.73	999.00	8.27	10.30					0.736		9.98			10.55		
5.48	5.56	6.06	11.34	9.21	1	200	189.6	45.1	0.75	999.00	6.90	6.48					0.729		10.32			11.39		
6.25	6.36	6.09	7.83	6.82	1	200	180.7	50.3	0.76	999.00	5.06	5.96					0.754		6.79			7.33		
4.41	4.41	4.39	6.9	5.43	2	230	150.6	47.3	0.77	999.00	4.36	5.32					0.765		7.75			8.50		
2.42	2.39	1.92	4.33	3.33	2	30	140.5	33.7	999.00	0.57	2.03	2.46					0.771		5.87			6.39		
2.37	2.75	2.08	3.6	2.93	2	30	172.5	40.8	999.00	0.57	1.67	2.04					0.566		2.82			3.06		
1.83	1.76	1.70	3.43	2.79	2	50	121.7	47.4	999.00	0.61	1.09	2.07	5405.63133	110.7	93.37	67.24	0.567	0.719	3.36	74.69		3.23	79.16	
2.93	3.19	3.44	4.78	4.34	2	120	182.8	60.4	999.00	0.61	2.66	2.93					0.606		2.15			2.41		
3.98	3.95	3.67	4.96	4.06	1	180	233.8	38.2	0.76	999.00	3.18	3.79					0.612		3.52			3.82		
5.40	5.60	5.28	6.49	5.49	1	200	218.2	32.1	0.76	999.00	4.16	4.91					0.763		4.82			5.43		
6.95	7.28	6.31	9.46	7.75	1	150	234.2	30.6	0.74	999.00	5.75	7.02					0.756		6.42			7.43		
6.12	6.09	6.12	11.38	9.62	1	200	164.6	41.0	0.74	999.00	7.09	8.36					0.742		8.84			10.01		
7.39	8.11	7.87	9.21	7.53	1	180	198.9	48.5	0.74	999.00	5.60	6.83					0.737		7.19			8.04		
7.70	8.02	7.37	10.4	8.32	1	200	196.8	43.9	0.74	999.00	6.32	7.71					0.762		9.90			10.98		
8.04	6.29	5.92	10.7	9.06	1	200	182.6	31.7	0.72	999.00	6.95	8.21					0.742		9.78			10.63		
4.75	5.37	4.61	5.34	4.38	1	250	194.2	48.6	0.76	999.00	3.33	4.05					0.767		3.43			4.11		
2.81	2.93	2.33	3.99	3.58	2	30	166.9	38.3	999.00	0.57	3.94	3.29					0.759		4.55			4.62		
1.79	1.83	1.93	2.09	1.71	2	50	139.2	64.8	999.00	0.65	1.13	1.36					0.573		2.46			3.56		
2.03	2.28	2.20	2.65	2.17	2	50	147.2	61.0	999.00	0.64	1.39	1.69	5323.411828	113.1	82.19	59.53	0.651	0.724	2.26	72.36		2.43	79.46	
2.73	2.83	3.04	3.17	2.60	2	120	170.2	47.0	999.00	0.63	1.64	1.87					0.339		2.78			2.82		
3.14	3.06	3.32	4.54	3.72	1	180	147.3	49.7	0.81	999.00	3.01	3.70					0.389		3.27			3.55		
4.87	3.91	4.60	7.7	6.31	1	200	133.1	56.2	0.80	999.00	5.03	5.94					0.813		3.73			4.32		
6.58	6.68	6.93	7.08	3.60	1	150	176.5	55.4	0.77	999.00	4.49	3.47					0.771		4.67			5.48		
8.00	6.99	7.25	8.46	3.10	1	200	191.1	47.4	0.75	999.00	5.35	6.51					0.775		8.16			9.37		
8.88	8.28	7.76	12.89	10.40	1	180	286.9	47.4	0.73	999.00	7.62	9.30					0.729		8.26			9.30		
7.79	8.07	7.03	10.86	8.91	1	200	233.3	52.1	0.75	999.00	6.70	8.17					0.733		10.10			11.71		
5.50	5.43	4.54	12.76	10.43	1	200	133.4	35.8	0.73	999.00	7.60	9.07					0.751		8.86			10.84		
4.42	4.71	4.48	8.53	4.99	1	250	178.9	51.4	0.77	999.00	5.41	6.66					0.711		4.86			4.55		
2.84	3.36	2.88	3.76	3.04	2	30	149.9	46.7	999.00	0.63	1.84	2.20					0.773		5.71			4.06		
1.42	1.72	1.83	1.51	1.24	2	50	133.8	67.2	999.00	0.64	0.81	0.99					0.586		3.83			5.83		
													5328.959430	109.1	63.93	61.32	0.455	0.731	2.10	66.37		2.22	73.37	

25) Mobility In/Hr	In/Yr	ETo (FAO-RAD) In/Mo	In/Yr	ETo(AV.) 3 CIMIS &MPER. V. STA. In/Yr 83.46	(RN)x In/Mo	(RNo) ACCUM. INCHES	(RNo) ANNUA INCHES	U2 MPH/2
2.9		3.12			1.83	1.83		51.96774
3.9		4.03			2.73	4.56		48.76786
4.1		4.31			4.80	9.37		72.62985
4.1		8.77			4.34	13.70		42.13333
9.4		10.54			7.92	23.62		70.83871
10.9		11.97			7.49	30.51		68.1
11		12.02			7.87	38.38		69.4871
10.3		9.76			6.88	45.26		76.51613
9.1		7.91			5.12	50.38		61.93333
5		4.60			3.58	53.96		47.8038
3.1		3.28			2.29	56.25		42.23333
2.6	62.80	2.04	84.40		1.54	57.79	57.74	46.30645
3.1		2.90			1.96	1.96		33.09677
4.3		4.16			3.02	4.98		54.10966
6.4		5.40			4.40	9.37		56.61935
6.2		6.79			5.77	15.14		63
9.4		8.28			6.30	21.44		43.85484
9.4		10.98			7.76	29.20		68.11667
9.3		10.67			8.16	37.36		76.3871
8.9		9.95			7.54	44.90		62.12903
7.3		5.71			4.10	49.00		43.48333
5.3		6.02			4.14	53.15		30.95161
4.2		3.53			3.16	55.31		35.13333
3.3	72.70	3.04	77.60		1.56	56.87	56.77	55.35484
2.3		2.78			1.86	1.86		49.06429
3.4		4.04			2.88	4.74		61.25
3.4		4.95			4.08	8.82		43.48387
7.5		8.70			6.53	15.37		60.10333
9.0		10.94			7.34	22.71		80.54452
10		11.38			7.35	30.06		72.13333
9.8		11.06			7.73	36.37		70.53226
8.5		9.99			7.36	43.73		64.41935
7.5		8.57			5.39	51.12		61.75
5.3		6.06			3.74	54.86		36.74194
3.2		3.90			2.28	57.14		31.48333
2.2	75.10	2.49	85.04		1.48	58.63	58.63	45.34194
2.5		2.08			1.77	1.77		49.64516
3.2		3.68			2.68	4.45		61.39286
5.5		4.12			4.79	9.24		66.04613
7.3		5.67			5.07	14.31		51.88333
9.2		10.09			7.27	21.58		81.20968
9.1		10.38			7.46	29.04		58.52333
9.0		9.48			7.22	36.26		72.04839
8.0		6.24			5.05	41.31		52.67742
6.5		7.98			5.77	47.08		56.11667
4.9		6.18			3.94	50.99		46.75806
3.0		2.41			1.72	52.71		43.63333
2.5	72.10	2.81	72.95		1.33	54.04	53.95	53.58065
2.4		1.63			1.61	1.61		37.80645
3.1		3.66			2.79	4.40		50.57143
4.7		5.17			4.45	8.85		72.59677
4.9		5.48			6.09	14.94		67.76667
8.5		9.94			7.78	22.72		73.74194
8.6		7.89			6.29	29.02		57.31667
8.5		10.37			7.88	36.90		68.83871
8.3		10.04			7.10	44.00		60.87097
6.2		7.31			5.45	49.45		56.7
5		5.34			3.81	53.26		60.32258
3.6		2.79			1.79	55.05		52.45
1.8	67.80	2.21	76.47		1.58	56.62	55.63	43.25806
2.3		2.68			1.90	1.90		45.72581
3.1		3.41			2.87	4.77		53.36287
4.1		4.33			4.41	9.19		48.75806
6.3		5.48			3.22	14.41		38.23333
7.6		9.07			7.50	21.91		54.80645
8.7		9.01			7.08	28.99		39.33333
8.9		10.30			7.74	36.73		67.35484
8.1		9.67			7.27	44.01		72.45161
6.9		5.18			2.67	46.67		41.43333
4.7		5.50			3.38	49.94		53.06452
3.2		3.50			2.06	52.04		52.76667
1.7	65.80	2.08	70.01		1.39	53.43	57.32	48.3871

MULBERRY MONTHLY EVAPOTRANSPIRATION



MULBERRY ANNUAL EVAPOTRANSPIRATION



CIMIS SEELEY/ID EL CENTRO FAN

LAT.DEG. = 33 [ET4-EQ5.WK1], a Program for calculating ETo or ET from eleven equations (rev. 6 Jan. 1992 by W.O Pruitt)

LAT.RAD = 0.575959653 Includes terms Eqs. for FAO-24 methods e.g. to obtain "C" in (C*RN)/[Lp.E.ASCE Manual 70, or Allen and Pruitt, 1991]

HEMIN1,S2 = 1 AVAILABLE DATA: Ra,Rs,Tmx,Tmin,RHmx,RHmin, U2,DD/U(Rmax value of 2.0 if no data available).

ELEV.(M) = -10 P.MB= 1016

PENMAN-MONTEITH (MONTEITH, 1981). ET of frequently clipped grass, <15cm; or alfalfa from 3cm tall to max. ht.), hourly std. In Pruitt

EA=6.108*EXP(17.17*Tm/(Tm+237.3))

D=(EA/TKm)*(Lv/0.3

GAMMA = .24*PA/LZ*L)

FOR WARMEST MONTH. 7/1988 SEELEY CIMIS STATION #68

Mean Tmx = 40.66 J-H EA2= 76.34 J-H CT = 0.032

Mean Tmin = 22.78 J-H EA1 37.72 J-H TX= 9.295

EA2-EA1 38.66

Anem.H1,Zw= 200 | d= 0.00 cm | ra=ln((Zm-d)/Zom)*ln((Zh-d)/Zoh)/(k^2U) s/m

TABLE H1,Zp= 150 | Zom= 1.48 cm | rs*= 150.9281

Crop H1,Hc= 12 | Zoh= 0.15 cm

LAKE> 15cm 2.00

CROP NO. = 1 | Crop rc= 69.44

(FOR GRASS) ASE (1)

(ALFALFA) (2)

ED = GA*RHM/100

UR=0700-1900 WIND;1900-0700 WIND; Note: use UR = 2.0 if no data available

Note: First Row of data are from Davis, California.

Second row is from Brawley, Calif., 1971 data (from Lenders, et al.)

DATE OR MONTH	DAY OF YEAR	(RA)h MM/DAY	N1 LT/DAY	n/N	MAXIMUM TEMPT. DEG F	DEG C	MINIMUM TEMPT. DEG F	DEG C	RHmax %	RHmin %	WIND RUN AT 10 Zw. MiHr/Dy	Km/Day	UR DAY/NIGHT	U2 Km/Day	U2 m/s	Tm (DEG C	TKm DEG K	EA MB	RHm	ED MB	GAMMA G	DELTA D	W D/(D+G)
07/25/65	206	16.5	689	0.93	91.9	33.3	57.0	13.9	100.0	32.0	49.7	80.0	0.74	80.0	0.93	23.6	296.7	29.10	66.0	19.21	0.670	1.751	0.723
6/22/71	112	15.3	831	0.94	77.0	25.0	46.0	8.9	38.0	29.0	30.6	112.7	1.30	113.7	1.32	16.9	290.1	19.13	60.3	7.82	0.666	1.233	0.648
1/1987-12/1987 MULBERRY CIMIS STATION #41																							
1/1988-12/1988 SEELEY CIMIS STATION #68																							
Jan-87	15	8.1	296.65	0.79	69.22	20.7	34.94	1.6	76.45	37.29	107.94	173.8	1.60	173.8	2.01	11.2	284.3	13.29	32.9	4.09	0.662	0.881	0.571
Feb-87	45	10.8	328.08	0.79	73.46	23.0	41.43	5.2	78.54	26.14	137.34	221.4	1.30	221.4	2.56	14.1	287.3	16.15	52.3	8.44	0.660	1.045	0.611
Mar-87	75	12.6	369.32	0.85	77.32	25.3	43.08	6.1	82.68	20.68	166.26	268.9	1.08	223.8	2.79	15.7	288.9	17.64	51.7	9.22	0.665	1.141	0.652
Apr-87	106	14.9	420.87	0.94	90.37	32.0	52.30	11.3	77.70	12.35	234.27	300.1	1.18	300.1	3.31	22.1	295.3	26.45	45.0	13.00	0.660	1.424	0.700
May-87	136	16.5	470.94	0.89	93.61	34.2	58.58	14.8	84.83	12.03	353.68	247.4	0.88	247.4	2.86	26.3	297.3	30.74	39.4	12.12	0.690	1.837	0.755
Jun-87	166	17.3	513.23	0.92	102.33	39.1	66.47	19.0	38.43	5.00	436.20	319.3	1.30	319.3	3.54	29.9	303.0	42.09	29.9	12.54	0.674	2.414	0.782
Jul-87	197	16.8	500.90	0.93	105.39	40.8	69.37	21.8	56.83	14.34	499.77	223.8	1.20	223.8	2.68	30.9	304.0	44.59	35.6	15.78	0.671	2.548	0.790
Aug-87	228	15.3	403.29	0.89	101.46	38.6	67.00	19.4	48.44	21.10	149.03	239.9	1.20	239.9	2.78	29.6	302.2	40.11	44.6	17.96	0.673	2.315	0.773
Sep-87	259	13.5	346.57	0.81	100.40	38.1	60.60	15.9	64.47	15.27	123.63	199.4	1.30	199.4	2.31	27.8	300.2	33.65	39.9	14.21	0.672	2.000	0.737
Oct-87	289	11.8	300.25	0.63	81.90	27.7	54.64	14.0	83.52	33.42	95.77	154.2	1.50	154.2	1.78	24.3	294.4	23.26	58.0	14.64	0.668	1.547	0.698
Nov-87	320	8.7	312.60	0.72	74.63	23.7	43.37	6.3	88.19	34.53	63.47	132.8	1.00	132.8	1.54	15.0	288.2	17.05	61.5	10.48	0.664	1.097	0.623
Dec-87	350	7.5	242.74	0.65	58.74	14.9	32.13	0.1	88.00	30.30	92.61	149.1	0.80	149.1	1.73	7.3	280.6	10.34	63.1	4.53	0.660	0.706	0.517
Jan-88	15	8.1	257.68	0.59	60.52	15.8	32.42	0.2	75.42	23.17	93.65	150.6	0.60	150.6	1.74	8.0	281.2	10.73	49.1	5.29	0.666	0.791	0.526
Feb-88	45	10.0	411.32	0.91	70.97	23.0	42.24	5.7	77.93	28.17	108.14	174.1	1.30	174.1	2.01	13.3	286.5	17.42	49.6	8.63	0.665	1.116	0.623
Mar-88	73	12.6	545.86	0.98	82.55	28.1	45.94	7.7	60.10	16.26	125.44	202.0	1.20	202.0	2.34	17.9	289.1	20.53	38.2	7.84	0.666	1.293	0.660
Apr-88	106	14.9	547.88	0.85	86.80	30.3	51.57	10.6	71.73	19.87	151.30	243.6	1.18	243.6	2.82	20.0	293.1	23.33	45.8	10.68	0.668	1.443	0.686
May-88	136	16.5	724.56	1.00	91.84	34.4	57.18	13.9	55.77	10.84	277.96	286.5	1.20	286.5	3.31	24.1	297.3	30.10	33.8	9.73	0.670	1.804	0.729
Jun-88	166	17.2	719.43	0.93	100.00	38.3	65.03	18.4	53.50	15.98	359.43	255.1	1.30	255.1	2.95	28.3	301.5	38.56	34.7	13.36	0.673	2.237	0.769
Jul-88	197	16.8	654.22	0.88	105.19	40.7	73.00	22.8	77.48	23.25	128.47	194.6	1.20	194.6	2.25	31.7	304.9	46.00	51.4	24.08	0.675	2.847	0.797
Aug-88	228	15.3	622.87	0.87	103.87	39.9	72.26	22.4	69.45	22.72	111.97	180.3	1.20	180.3	2.09	31.1	304.3	45.30	47.6	21.53	0.675	2.573	0.792
Sep-88	259	13.5	552.60	0.90	94.87	34.7	62.50	16.9	82.33	13.75	96.47	154.7	1.30	154.7	1.79	26.8	300.0	35.28	35.3	11.74	0.673	2.071	0.755
Oct-88	289	11.0	433.45	0.84	95.52	35.3	60.39	15.8	86.77	19.19	87.52	140.9	1.30	140.9	1.63	25.5	298.7	32.49	44.8	14.38	0.671	1.938	0.742
Nov-88	320	8.7	332.97	0.81	76.37	24.6	44.60	7.0	85.38	28.07	131.07	213.5	0.88	213.5	2.49	15.8	289.0	17.98	57.6	6.77	0.669	1.149	0.633
Dec-88	350	7.5	302.19	0.80	70.43	21.4	37.52	3.1	90.97	19.71	131.66	195.9	1.00	195.9	2.27	12.2	285.4	14.32	59.5	5.47	0.663	0.915	0.585
Jan-89	15	8.1	292.94	0.74	66.14	18.9	33.74	1.0	79.82	24.58	149.26	166.2	1.60	166.2	1.92	10.0	283.1	12.24	49.2	6.82	0.881	0.820	0.554
Feb-89	45	10.0	403.29	0.84	75.07	23.9	41.71	5.4	67.89	23.95	150.68	242.6	0.80	242.6	2.80	14.7	287.1	16.69	44.9	7.63	0.664	1.076	0.618
Mar-89	73	12.6	489.25	0.83	81.06	27.3	47.84	8.8	64.48	22.38	157.89	252.8	1.10	252.8	2.93	18.8	291.2	20.66	44.4	9.18	0.666	1.296	0.661
Apr-89	106	14.9	627.37	0.84	91.37	33.0	55.17	12.9	69.35	19.73	152.47	245.3	1.30	245.3	2.84	22.9	296.1	27.97	47.5	10.90	0.669	1.691	0.716
May-89	136	16.5	695.42	0.94	99.32	36.6	60.10	15.6	55.26	14.13	191.55	308.6	1.20	308.6	3.57	23.3	298.3	31.50	34.7	11.07	0.671	1.897	0.739
Jun-89	166	17.3	712.87	0.92	105.57	39.8	64.47	18.0	53.20	9.87	263.13	261.0	1.20	261.0	3.02	28.9	302.1	39.02	31.0	12.36	0.675	2.306	0.774
Jul-89	197	16.8	636.35	0.79	104.23	40.1	69.65	20.9	70.55	14.36	332.83	180.4	1.30	180.4	2.08	30.5	303.7	43.73	42.4	18.53	0.674	2.493	0.787
Aug-89	228	15.3	598.42	0.82	103.45	39.7	71.45	21.9	68.81	17.30	328.90	207.5	1.20	207.5	2.40	30.8	304.0	44.43	39.5	17.53	0.675	2.320	0.790
Sep-89	259	13.5	528.93	0.84	97.17	36.2	63.87	17.7	81.63	19.30	334.15	219.2	1.30	219.2	2.54	27.0	300.1	35.58	33.5	12.61	0.672	2.005	0.756
Oct-89	289	11.0	428.73	0.83	89.52	32.0	56.36	13.4	82.48	21.33	180.98	178.4	1.50	178.4	2.07	22.7	295.8	27.37	43.9	11.56	0.669	1.670	0.714
Nov-89	320	8.7	397.47	0.83	82.90	27.7	48.93	9.0	68.30	33.90	81.05	130.5	1.00	130.5	1.51	16.5	289.5	18.58	46.1	8.57	0.665	1.183	0.648
Dec-89	350	7.5	273.97	0.75	73.16	24.0	34.60	1.5	81.35	12.08	43.16	108.1	1.00	108.1	1.25	12.7	283.9	14.72	38.8	2.47	0.663	0.564	0.393
Jan-90	15	8.1	304.36	0.78	63.10	18.4	32.84	0.4	68.84	19.44	102.67	145.6	1.60	145.6	1.92	9.4	282.6	11.81	49.3	5.83	0.661	0.794	0.546
Feb-90	45	10.0	377.95	0.79	74.66	23.6	37.64	3.1	67.18	24.36	125.94	202.1	1.30	202.1	2.34	13.4	286.3	15.34	45.6	7.02	0.663	0.999	0.601
Mar-90	73	12.6	491.98	0.83	81.43	27.3	46.23	7.9	70.14	23.06	147.45	237.4	1.10	237.4	2.75	17.7	290.8	20.34	48.9	9.70	0.666	1.275	0.657
Apr-90	106	14.9	605.37	0.89	87.60	30.8	54.67	12.6	70.07	25.63	168.33	271.0	1.10	271.0	3.14	21.7	294.8	25.92	47.8	12.38	0.669	1.584	0.703
May-90	136	16.5	690.59	0.93	93.84	33.3	58.32	14.6	47.60	16.39	229.51	309.5	1.20	309.5	4.18	23.9	297.1	29.72	30.6	9.09	0.670	1.783	0.727
Jun-90	166	17.3	697.03	0.71	98.87	37.7	57.53	14.0	48.43	12.08	124.07	199.7	1.20	199.7	2.31	23.1	296.3	28.66	30.2	8.68	0.670	1.724	0.721
Jul-90	197	16.8	610.43	0.74	94.35	34.9	59.42	30.8	65.20	20.50	127.53	205.4	1.20	205.4	2.38	28.8	302.8	39.43	42.9	17.02	0.673	2.292	0.773
Aug-90	228	15.3	647.34	0.86	102.06	38.9	71.97	22.2	69.34	30.43	110.32	193.7	1.30	193.7	2.24	30.6	303.7	43.83	50.1	21.97	0.674	2.500	0.788
Sep-90	259	13.5	497.77	0.76	99.43	37.3	70.07	21.1	66.43	30.00	118.23	190.4	1.30	190.4	2.20	29.3	302.5	40.73	48.6	19.82	0.674	2.346	0.777
Oct-90	289	11.0	438.68	0.68	90.71	32.6	57.18	13.9	54.39	20.38	96.19	154.9	1.50	154.9	1.79	23.5	296.6	28.33	38.5	11.00	0.670	1.727	0.720
Nov-90	320	8.7	328.43	0.79	77.80	25.4	45.68	7.5	54.43	23.30	132.67	181.4	1.00	181.4	2.10	16.5	289.6	18.72	36.0	7.29	0.665	1.150	0.641
Dec-90	350	7.5	260.25	0.69	61.55	16.4	31.85	-0.4	69.52	34.64	99.66	160.5	1.00	160.5	1.86	8.0	281.2	10.75	52.1	5.40	0.668	0.721	0.526
Jan-91	15	8.1	231.97	0.65	61.81	17.1	34.03	2.2	80.29	43.00	62.90	101.3	1.00	101.3	1.17	10.6	283.1	12.24	64.7	7.92	0.661	0.820	0.554
Feb-91	45	10.0	373.07	0.78	76.64	25.9	44.32	6.8	80.86	34.32	98.57	143.8	1.30	143.8	1.69	16.4	289.5	18.63	58.6	10.93	0.665	1.183	0.641
Mar-91	75	12.6	491.32	0.83	71.94	22.2	44.52	7.0	82.94	34.33	174.94	241.6	1.10	241.6	3.16	14.6	287.7	16.59	58.6	9.73	0.664	1.071	0.617
Apr-91	106	14.9	640.00	0.97	83.97	28.9	50.93	10.3	68.90	27.63	166.87	264.3	1.10	264.3	3.06	19.4	292.7	22.79	48.3	11.00	0.667	1.414	0.679
May-91	136	16.5	698.16	0.98	89.65	32.0	57.42	14.1	63.73	24.77	208.42	335.6	1.20	335.6	3.88	23.1	296.2	28.32	45.2	12.73	0.670	1.705	0.718
Jun-91	166	17.2	679.60	0.84	95.87	35.5	63.43	17.5	62.30	25.38	150.88	242.8	1.20	242.8	2.81	26.5	299.6	34.36	43.7	15.11	0.672	2.034	0.752
Jul-91	197	16.8	635.48	0.79	102.19	39.0	70.33	21.3	71.31	25.16	101.74	163.8	1.30	163.8	1.90	30.2	303.3	43.80	48.4	20.78	0.674	2.650	0.784
Aug-91	228	15.3	557.30	0.73	99.74	37.6	69.54	21.0	72.16	30.77	108.43	171.3	1.20	171.3	1.98	29.3	302.5	40.82	51.8	20.60	0.676	2.351	0.777
Sep-91	259	13.5	509.30	0.79	99.30	37.4	69.26	20.7	76.63	32.67	82.30	132.2	1.30	132.2	1.53	29.0	302.3	40.12	54.7	21.92	0.675	2.334	0.775
Oct-91	289	11.0	432.94	0.85	93.63	34.2	60.81	16.0	65.19	27.65	118.34	178.3	1.50	178.3	2.06	25.2	298.3	31.91	46.4	14.81	0.672	1.898	0.739
Nov-91	320	8.7	289.00	0.64	73.07	22.8	42.93	6.1	63.37	34.37	97.40	156.0	1.00	156.0	1.81	16.4	287.6	16.65	45.0	7.40	0.664	1.063	0.616
Dec-91	350	7.5	217.32	0.49	67.21	19.4	42.32	5.7	90.65	48.29	77.33	124.5	1.00	124.5	1.44	12.7	285.8	14.64	69.5	10.17	0.663	0.959	0.591
Jan-92	15	8.1	279.32	0.60	68.71	20.4	38.90	3.8	91.55	44.42	81.37	132.0	1.00	132.0	1.53	12.1	285.5	14.13	68.0	9.62	0.663	0.931	0.584
Feb-92	45	10.0	357.21	0.72	73.69	23.2	44.21	7.3	74.24	37.52	99.07	159.3	1.50	159.3	1.85	15.5	288.7	17.64	57.9	10.21	0.665	1.130	0.630
Mar-92	75	12.6	466.39	0.76	75.48	24.2	48.74	9.3	76.74	31.19	124.16	195.1	1.30	195.1	2.26	16.7	289.9	19.05	54.0	10.28	0.665	1.209	0.645
Apr-92	106	14.9	597.33	0.87	88.33	31.3	55.67	13.1	67.39	24.35	109.07	175.6	1.00	175.6	2.03	22.2	295.4	26.80	46.0	12.33	0.666	1.629	0.709
May-92	136	16.5	651.71	0.85	92.66	33.4	61.68	16.4	74.32	28.97	183.94	183.4	1.30	183.4	2.12	24.9	298.1	31.69	51.7	16.29	0.671	1.876	0.737
Jun-92	166	17.2	597.63	0.69	85.31	29.7	57.27	14.0	59.61	25.43	182.80	284.3	1.20	284.3	3.43	21.5	295.0	26.24	42.3	11.30	0.669	1.602	0.703
Jul-92	197	16.8	640.05	0.81	100.33	38.0	70.90	21.6	64.33	28.90	139.32	224.3	1.20	224.3	2.60	29.8	303.0	42.93	44.6	19.53	0.674	2.406	0.781
Aug-92	228	15.3	524.31	0.66	97.33	36.4	70.61	21.6	71.71	32.32	104.32	171.5	1.00	171.5	1.98	29.0	302.1	40.02	52.0	20.82	0.673	2.311	0.774
Sep-92	259	13.5	519.60	0.62	102.43	39.1	68.47	19.1	64.37	29.63	66.13	106.5	1.30	106.5	1.23	29.1	302.3	40.38	62.8	16.96	0.673	2.325	0.776
Oct-92	289	11.0	428.26	0.81	91.99	32.9	59.35	15.2	68.96	31.58	60.32	97.4	1.50	97.4	1.13	24.6	297.2	29.91	41.2	13.31	0.670	1.793	0.728
Nov-92	320	8.7	334.45	0.61	75.23	24.0	43.35	6.2	62.93	34.97	54.07	87.0	1.00	87.0	1.01	15.1	286.5	17.16	54.5	4.61	0.664	1.109	0.624
Dec-92	350	7.5	266.36	0.62	63.32	17.3	37.35	5.0	83.56	13.06	56.64	91.3	1.00	91.3	1.06	10.2	283.4	12.68	59.3	7.40	0.661	0.834	0.538

RNn = 10*RS/L*0.75+(1.9*10^-9*TKn^4)*(.34-.044*ED^.5)*(.1+.9u/H)

Ud=URn*U2/(U2+12)

(TKm)-5.02808)

EKO=P(1-.37ED/7)/(Bd* Tkm)

3.054*(EXP(17.27*Tmax/(Tmax+237.3))/(3-0.01*RHmax)+3.054*(EXP(17.27*Tmin/(Tmin+237.3))/(3-0.01*RHmin)

ea=(ea*ea)+ea(mday)*.0013760(m mc^-1/km day^-1)

GAMMA* = GAMMA (1 + rs/ra)

"a" = .0043*RHmax+N/5-2.61

"b1" = 0.904-0.00681*RHmax+0.7949*n/N+0.0704*(LN(Ud+1))^2-0.0058*RHmin*n/N-0.00049*RHmin*Ud+0.2281*(LN(Ud+1))*(LN(N/N+1))-0.00975*(LN(Ud

"b2" = 1.0636-.0012RHmax+.0449*(Ud)-.0002*RHmin*Ud-.313*10^-4*RHm^2-.0013034*Ud^2

"C"(using missing values in Cal. AB = AK) = 0.892-.0781*Ud+.0621*(LN(Ud+1))^2-.0000492*RHmax*R

"C" cont'd +0.0000196*Ud*UR+RHmax*Ud+.00000134*Ud^2*RHmax*Ra-.000106*URt^2*Ud+R

"b2" = 1.0636-.0012RHmax+.0449*(Ud)-.0002*RHmin*Ud-.313*10^-4*RHm^2-.0013034*Ud^2

(Rn)= IF .01785<=2.0,2.0, IF .01785>=12.12,12,OTHERWISE,=.01785

(RHmax)= IF RHmax<=10,30, IF RHmax>=90,90, OTHERWISE,=RHmax

(Ud)=IF Ud>10.0 m/s,(Ud)=10.0

URdm=@IF(UR/<=1.0,URdm=1.0,@IF(UR/>=4,URdm=4,otherwise URdm=URt

N=(24/pi)*ARCCOS(-TAN(PHI)*TAN(.4093*SIN(2*PI*J/364)))

RNn MJ/m^2/DY	Ud M/S	(EA-ED)2 MB	(EA-ED)4 MB	RHO kg/m^3	ra sec/m	GAM* MB/DgK	dr/dg/dt km, M	Bi-Cr p Kg/cm2 (r > N)	FAO Bi-Cr "a1"	FAO Bi-Cr "b1"	FAO RAD "b2"	Limits for FAO-PEN, RAD, & Bi-Cr (FAO RAD & Bi-Cr use (Ud) (Ra)	(RUmax) limit	(Ud) limit	(UR) limit	CPEN "C" limit		SCSBC (n = 1.0 mm/day	FAOMC mm/day	FAORA mm/day	F-T mm/day	J-H IETv mm/day	FAOPEN mm/day	FAOCPE mm/day	CALIF. FAOCPEN mm/day
6.31	0.81	9.99	17.37	1.162	214.8	AB	11.78	0.315	-2.28	1.46	0.87	11.71	90.0	0.81	1.00	1.10	5.79	6.50	7.06	6.31	7.33	6.20	6.85	5.88
5.29	1.49	11.49	14.39	1.214	151.2	AF	13.05	0.298	-2.22	1.40	1.44	10.73	58.0	1.49	1.36	1.08	3.63	5.36	6.75	4.28	5.37	5.73	5.72	4.39
3.50	3.48	6.39	9.30	1.239	98.9	AF	10.05	0.229	-2.04	1.31	0.39	5.84	74.5	2.48	1.40	0.93	1.79	2.54	2.36	1.00	1.97	2.09	2.69	2.44
1.46	3.08	7.69	11.35	1.324	77.4	AF	10.79	0.246	-2.09	1.34	1.81	6.43	78.5	3.08	1.50	0.91	2.44	3.63	3.66	1.91	2.87	4.11	3.91	3.50
3.54	2.84	8.62	13.60	1.319	73.3	AF	11.79	0.269	-2.20	1.38	1.00	8.64	82.7	2.84	1.18	1.00	3.00	4.47	3.19	3.13	4.12	5.55	5.36	4.70
3.36	2.43	14.65	23.53	1.191	83.9	AF	12.86	0.290	-2.30	1.43	1.82	10.66	72.7	2.43	1.18	1.00	4.97	7.54	5.45	6.79	6.39	7.26	7.90	6.36
6.00	3.32	16.62	26.40	1.182	60.5	AF	13.73	0.313	-2.25	1.42	1.97	11.41	66.0	3.12	1.20	1.00	6.07	9.08	4.65	5.54	7.36	9.07	9.03	7.52
6.34	2.77	29.75	40.30	1.161	70.4	AF	14.17	0.323	-2.29	1.44	1.30	12.88	38.6	2.77	1.36	0.95	8.23	10.13	10.53	8.25	9.06	10.33	10.62	8.33
6.45	2.84	28.61	38.68	1.155	76.6	AF	13.96	0.319	-2.27	1.42	1.08	11.92	56.0	2.84	1.30	0.97	6.51	10.71	9.86	8.43	9.14	10.46	10.06	8.26
5.63	3.03	32.14	30.38	1.161	71.6	AF	13.39	0.301	-2.15	1.40	1.04	10.36	48.3	3.03	1.28	0.99	7.36	8.78	4.00	5.30	5.50	4.94	6.82	7.37
4.33	2.61	21.44	31.44	1.171	86.2	AF	12.46	0.278	-2.15	1.40	1.02	8.78	64.5	2.61	1.38	0.96	6.34	7.31	6.70	6.15	6.09	7.50	7.23	6.16
2.93	2.04	10.42	13.85	1.194	121.5	AF	11.13	0.254	-1.99	1.32	0.95	6.18	82.5	2.14	1.58	0.66	4.04	4.11	3.77	3.58	3.57	4.23	4.18	3.72
1.94	1.96	6.39	10.13	1.221	129.3	AF	10.24	0.234	-1.89	1.28	0.93	5.31	88.1	1.98	1.80	0.49	2.48	2.46	2.77	2.52	2.47	2.77	2.75	2.50
1.28	2.23	3.84	5.58	1.256	165.3	AF	9.83	0.224	-1.85	1.27	0.93	4.13	68.0	2.22	2.00	0.41	1.22	1.44	1.44	0.82	1.33	1.89	1.79	1.63
1.40	2.15	5.47	7.31	1.254	114.0	AF	10.05	0.229	-1.90	1.29	1.00	4.58	75.4	2.15	2.00	0.52	1.33	1.87	2.00	0.92	1.45	2.49	2.30	2.00
2.59	2.42	8.79	13.48	1.221	98.7	AF	10.79	0.246	-2.23	1.30	1.08	7.00	77.9	2.42	1.58	0.99	2.47	4.12	4.16	2.05	3.29	4.05	3.99	3.56
3.93	2.45	12.60	18.00	1.200	85.1	AF	11.79	0.269	-2.32	1.32	1.06	9.23	66.1	2.45	1.18	0.95	3.50	5.69	6.15	3.27	4.61	6.12	5.83	5.06
5.04	2.93	12.64	18.17	1.203	70.6	AF	12.66	0.294	-2.17	1.30	1.04	9.99	71.7	2.93	1.10	0.99	4.36	6.44	6.79	4.34	5.54	7.15	7.07	6.06
6.16	3.62	20.30	27.87	1.184	60.0	AF	13.73	0.313	-2.36	2.04	1.12	12.00	53.8	3.62	1.28	0.94	5.95	9.74	9.72	5.46	7.67	10.23	9.66	7.91
6.55	3.22	23.18	29.27	1.166	67.4	AF	14.17	0.323	-2.27	1.64	1.09	12.00	53.3	3.22	1.20	0.95	7.48	10.39	9.99	6.33	8.79	10.60	10.07	8.27
6.66	2.46	22.75	31.66	1.148	88.3	AF	13.96	0.319	-2.13	1.39	1.08	11.12	77.9	2.46	1.30	1.04	6.85	9.70	8.52	6.09	8.71	8.94	9.37	7.77
6.01	2.26	23.73	31.40	1.152	93.3	AF	13.19	0.301	-2.17	1.41	1.01	10.59	69.5	2.26	1.20	1.01	8.14	8.66	8.14	6.00	8.18	8.49	8.39	7.21
4.36	2.02	23.34	31.18	1.179	111.1	AF	12.46	0.278	-2.25	1.70	1.08	9.39	52.6	2.02	1.30	0.95	6.08	7.64	7.23	6.14	6.48	7.25	6.91	5.93
3.21	1.96	16.31	23.88	1.177	122.6	AF	11.13	0.254	-2.17	1.42	1.04	7.34	66.4	1.96	1.38	0.97	5.26	6.48	5.25	7.00	4.98	5.43	5.33	4.64
1.88	1.21	11.21	16.44	1.220	75.7	AF	10.24	0.234	-2.13	1.48	1.00	5.46	57.2	1.21	1.00	0.47	2.63	3.90	3.38	1.33	2.78	4.55	3.96	3.54
1.08	2.92	8.56	11.73	1.233	97.7	AF	9.83	0.224	-2.12	1.34	1.06	5.19	60.0	2.92	1.80	0.88	1.91	3.35	2.93	0.80	2.13	3.47	3.03	2.77
1.46	2.37	6.22	9.13	1.245	103.4	AF	10.05	0.229	-2.04	1.31	1.00	4.98	73.5	2.37	1.60	0.93	1.60	2.37	2.47	1.02	1.63	2.80	2.60	2.36
2.50	3.37	8.86	11.44	1.224	90.8	AF	10.79	0.246	-2.16	1.39	1.04	6.06	67.9	3.37	1.50	0.92	2.54	4.00	4.12	1.95	3.14	4.67	4.31	3.83
3.36	3.07	11.49	15.91	1.209	88.0	AF	11.79	0.269	-2.16	1.46	1.05	8.32	64.5	3.07	1.40	0.94	3.53	5.22	5.46	3.13	4.34	6.30	5.80	5.06
5.34	2.98	16.07	22.34	1.188	70.0	AF	12.66	0.294	-2.27	1.78	1.05	10.67	65.3	2.98	1.30	0.98	5.21	7.53	7.73	4.82	6.56	8.07	7.88	6.66
6.06	3.89	20.85	27.61	1.180	58.7	AF	13.73	0.313	-2.29	1.93	1.11	11.82	59.3	3.89	1.30	0.94	6.28	9.59	9.43	5.64	7.77	10.48	9.83	8.11
6.37	3.30	27.46	37.76	1.164	65.8	AF	14.17	0.323	-2.28	1.93	1.11	12.08	52.2	3.30	1.30	0.94	7.86	11.00	10.12	6.21	8.84	10.99	10.38	8.47
6.15	2.28	23.17	33.67	1.153	95.3	AF	13.96	0.319	-2.14	1.67	1.03	10.82	70.5	2.28	1.20	1.02	8.37	9.67	8.49	6.30	8.22	8.90	9.07	7.55
5.53	2.42	24.90	33.10	1.155	82.8	AF	13.19	0.301	-2.16	1.68	1.06	10.17	61.8	2.42	1.30	0.97	8.02	9.36	8.18	5.90	7.79	9.06	8.81	7.34
4.18	2.87	22.94	29.16	1.173	70.4	AF	12.46	0.278	-2.17	1.70	1.08	8.99	51.6	2.87	1.30	0.92	6.12	7.49	7.04	4.68	6.22	8.06	7.38	6.29
3.04	2.48	16.01	21.51	1.189	96.5	AF	11.13	0.254	-2.15	1.64	1.06	7.29	62.5	2.48	1.50	0.94	4.44	5.37	5.11	3.74	4.45	5.62	5.29	4.65
2.82	2.90	10.02	15.33	1.217	133.7	AF	10.24	0.234	-2.12	1.56	1.00	5.74	66.1	2.90	1.80	0.95	2.73	3.57	3.39	1.47	2.81	3.41	3.23	2.95
0.70	1.61	12.25	15.76	1.235	139.4	AF	9.83	0.224	-2.11	1.39	1.10	4.46	30.0	1.61	1.80	0.88	1.99	2.08	2.73	0.32	1.96	3.22	2.73	2.09
1.47	2.36	5.96	8.48	1.248	103.8	AF	10.05	0.229	-2.07	1.30	1.00	5.17	69.0	2.36	1.60	0.92	1.52	2.23	2.53	1.04	1.85	2.71	2.53	2.30
2.38	2.91	8.32	12.27	1.230	83.8	AF	10.79	0.246	-2.16	1.39	1.03	6.42	67.2	2.61	1.50	0.93	2.30	3.51	3.69	1.80	2.78	4.14	3.83	3.43
3.13	2.86	10.33	15.29	1.210	72.4	AF	11.79	0.269	-2.14	1.45	1.02	8.36	70.8	2.68	1.60	0.96	3.45	4.94	5.33	3.17	4.31	5.81	5.56	4.86
5.26	3.29	13.55	18.72	1.193	63.4	AF	12.86	0.294	-2.19	1.70	1.04	10.27	70.1	3.29	1.30	0.98	4.84	6.82	7.21	4.66	6.09	7.73	7.57	6.44
5.87	4.67	20.63	26.29	1.165	46.5	AF	13.73	0.313	-2.23	1.97	1.15	11.73	47.0	4.67	1.20	0.88	5.80	9.51	9.35	5.37	7.45	11.41	10.08	8.28
5.42	2.32	20.80	25.86	1.188	86.0	AF	14.17	0.323	-2.06	1.63	1.09	10.32	48.4	2.32	1.20	0.93	5.47	7.90	7.80	4.92	6.43	8.42	7.83	6.64
5.83	2.99	23.43	28.99	1.163	83.7	AF	13.96	0.319	-2.06	1.38	1.04	10.36	45.3	2.99	1.20	0.99	7.72	8.69	8.04	5.72	7.53	8.77	8.68	7.26
6.08	2.45	21.83	28.26	1.154	68.7	AF	13.19	0.301	-2.10	1.36	1.00	10.56	49.8	2.45	1.20	1.01	7.93	8.28	7.99	5.96	7.99	8.41	8.48	7.12
4.53	2.49	30.95	38.55	1.189	90.3	AF	12.46	0.278	-2.04	1.43	1.03	8.46	46.8	2.49	1.30	0.97	6.88	6.84	6.34	4.45	6.24	7.20	6.98	5.96
3.02	2.83	17.38	23.02	1.187	111.9	AF	11.13	0.254	-2.16	1.44	1.04	7.46	36.4	2.15	1.50	0.94	4.68	5.66	5.31	2.74	4.64	5.56	5.21	4.58
1.68	2.30	11.42	14.82	1.217	94.6	AF	10.24	0.234	-2.00	1.40	1.06	5.38	34.6	2.70	1.00	0.89	2.75	3.78	3.50	1.36	2.74	4.39	3.71	3.31
1.19	2.19	5.15	7.01	1.254	107.1	AF	9.83	0.224	-1.93	1.37	0.99	4.43	49.5	2.39	1.00	0.91	1.30	1.70	2.00	0.79	1.46	2.33	2.13	1.95
1.56	3.44	4.22	6.24	1.244	109.7	AF	10.05	0.229	-1.87	2.33	0.89	4.42	84.3	3.44	1.00	0.96	1.00	1.66	1.99	1.00	1.70	1.92	1.87	1.72
2.39	2.02	7.72	11.60	1.213	117.9	AF	10.79	0.246	-2.05	1.40	0.95	6.24	80.9	2.03	1.50	0.99	2.81	3.38	3.34	2.09	3.11	3.56	3.46	3.11
3.91	3.42	6.84	9.63	1.225	81.8	AF	11.79	0.269	-2.10	1.33	0.96	6.35	82.9	3.42	1.18	0.96	2.78	4.11	4.77	3.04	3.81	5.12	5.02	4.42
5.44	3.28	11.79	16.33	1.202	63.6	AF	12.86	0.294	-2.26	1.72	1.05	10.08	66.9	3.28	1.18	0.98	4.26	6.46	7.33	4.66	6.00	7.41	7.31	6.24
6.30	4.24	15.65	20.36	1.187	51.2	AF	13.73	0.313	-2.24	1.95	1.08	11.87	53.7	4.24	1.28	0.97	5.60	8.23	8.87	5.70	7.33	9.65	9.33	7.75
6.38	3.07	19.45	25.34	1.175	70.8	AF	14.17	0.323	-2.14	1.64	1.05	11.49	62.1	3.07	1.20	0.98	6.94	8.63	8.77	4.84	7.84	9.26	9.08	7.56
6.06	2.07	22.07	29.74	1.156	104.9	AF	13.96	0.319	-2.30	2.53	1.00	10.86	71.7	2.07	1.20	1.03	8.25	8.84	8.15	6.23	8.16	8.33	8.56	7.18
5.44	2.16	20.02	26.07	1.159	100.3	AF	13.19	0.301	-2.01	1.43	0.99	9.47	78.2	2.16	1.20	1.00	7.47	7.30	6.98	5.33	6.98	7.30	7.35	6.41
4.70	1.73	18.19	24.42	1.168	130.0	AF	12.46	0.278	-2.06	1.43	0.96	8.66	76.4	1.73	1.30	1.02	6.79	6.45	6.12	4.47	6.30	6.37	6.43	5.55
3.26	2.48	17.18	22.67	1.158	96.4	AF	11.13	0.254	-2.14	1.38	1.02	7.36	65.2	2.48	1.30	0.93	5.09	5.73	5.25	3.03	4.98	5.74	5.49	4.81
1.67	2.33	9.85	11.94	1.225	109.6	AF	10.24	0.234	-1.93	1.41	1.02	4.93	63.4	2.33	1.80	0.96	2.37	2.94	2.79	1.29	2.23	3.44	3.12	2.82
1.38	1.83	4.47	6.32	1.231	130.0	AF	9.83	0.224	-1.89	1.08	0.88	3.70	90.0	1.83	1.80	0.93	1.98	1.67	1.63	0.99	1.35	2.09	1.80	1.65
1.43	1.84	4.55	7.01	1.234	130.2	AF	10.05	0.229	-1.90	1.24	0.89	4.73	90.0	1.84	1.60	0.90	1.94	2.01	2.17	1.23	1.94	2.14	2.09	1.91
2.49	2.22	7.43	10.02	1.219	107.4	AF	10.79	0.246	-1.97	1.36	0.95	6.67	70.2	2.22	1.30	0.97	2.71	3.15	3.33	1.98	2.88	3.50	3.39	3.03
3.73	2.37	8.77	12.73	1.214	88.3	AF	11.79	0.269	-2.04	1.47	0.98	7.93	76.7	2.37	1.18	0.98	3.23	4.32	4.31	3.05	3.94	4.90	4.62	4.25
5.18	3.13	14.47	19.73	1.191	97.9	AF	12.86	0.294	-2.14	1.61	1.01	10.15	67.7	3.13	1.18	1.00	5.08	6.48	6.98	4.63	6.11	6.81	6.80	5.85
6.14	2.32	15.20	20.64	1.178	93.7	AF	13.73	0.313	-2.16	1.56	0.99	11.00	74.3	2.32	1.28	1.01	6.20	7.41	7.77	5.73	7.23	7.61	7.88	6.67
5.77	3.73	15.16	18.86	1.192	58.4	AF	14.17	0.323	-1.99	1.55	1.00	10.16	59.1	3.72	1.28	0.93	5.40	7.34	7.61	4.95	6.06	8.68	8.00	6.83
6.29	2.85	22.38	28.10	1.158	76.6	AF	13.96	0.319	-2.09	1.36	1.00	10.93	64.4	2.83	1.20	0.99	6.09	8.75	8.49	6.20	8.16	9.20	9.06	7.36
5.10	2.17	19.33	24.21	1.168	100.3	AF	13.19	0.301	-1.93	1.34	0.98	8.94	70.7	2.17	1.20	1.00	7.23	8.05	6.49	5.03	6.52	7.10	7.17	6.13
4.31	1.39	23.42	32.24	1.146	161.4	AF	12.46	0.278	-2.54	1.55	1.01	8.81	64.4	1.39	1.30	1.00	6.02	7.10	6.39	4.43	6.48	6.43	6.43	5.55
3.05	1.95	17.00	22.99	1.183	176.4	AF	11.13	0.254	-2.13	1.32	1.01	7.14	40.3	1.95	1.30	0.97	4.05	5.27	4.94	2.78	4.55	4.74	4.43	4.09
1.67	1.30	10.38	14.30	1.223	197.6	AF	10.24	0.234	-2.16	1.38	1.02	5.69	42.0	1.30	1.80	0.98	2.49	3.42	3.31	1.31	2.85	3.05	2.92	2.64
1.26	1.36	5.08	7.12	1.243	189.8	AF	9.83	0.224	-1.88	1.28	0.92	4.19	85.3	1.36	1.80	0.97	1.44	1.72	1.66	0.99	1.56	1.86	1.80	1.66

Kc=.000156*(Ud)*(Ud)*Rlmax(conv'd)
Rlmax2.92*10^-6*(Ud)*(Ud)^2*Rlmax -0.000016*Rlmax*Ra^2
+1)*(@LN(Rlmax+1))^2*(@LN(Ra/R+1)

ETo= D(G)+G*(Ra+Gw + G(D+G*)(51741)(Rl/Ox(Ea-Ed)/(4.F.sa)

Note: For fetch, look in 1 to 3000m

*REPEN mm/day	ETo(P-M) Gross mm/day	SAMANI mm/day	Class A Pan. Ep In/Mo	mm/Day	FAO CASE Area, (1) R(dry), (2)	UPWIND FETCH, meters	Limits for Kp Calc. 2-m wind	RHmean	[FAO-24 Calc. Kp] (CASE A)	(CASE B)	ETo FAO-Pan mm/day	ETo FAO-Pan In/Mo	SUM Ra (Ly/day)*12	Ra Equiv. E In/Yr	Class A Pan Evap In/Yr	ETo FAO-PAN In/Yr	Kp Monthly	Kp Annual	ETo(ASCE P-M) In/Mo	In/Yr	ETo (FAO-CPEN) mm/Mo	In/Mo	In/Yr	ETo(CIMI ETo(CIMI In/DAY
3.93	5.73	6.92	9.39	7.69	1	10	84.0	66.0	0.76	999.00	5.84	5.1753225												
5.19	4.81	4.91	7.68	6.50	2	20	113.7	40.3	999.00	0.63	4.81													
2.34	2.78	2.56	3.88	3.19	2		171.8	33.9	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.40			3.28		
3.36	3.86	3.10	4.88	4.44	2		221.4	32.3	999.00	#NUM!	#NUM!	#NUM!					#NUM!		4.26			4.31		
4.31	5.11	4.23	7.12	5.63	1		233.9	33.7	#NUM!	999.00	#NUM!	#NUM!					#NUM!		5.24			6.54		
6.29	7.15	6.37	8.31	7.06	1		200.1	43.0	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.43			8.85		
7.68	8.31	9.66	9.08	7.43	1		347.6	39.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.30			11.02		
8.94	10.00	8.80	12.23	10.35	1		219.3	30.8	#NUM!	999.00	#NUM!	#NUM!					#NUM!		13.81			13.23		
8.87	9.67	8.34	12.23	10.82	1		225.0	35.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		11.61			12.28		
7.68	8.44	7.31	10.05	8.97	1		239.9	44.5	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.30			10.77		
6.52	7.35	6.56	9.08	7.66	1		199.4	39.9	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.68			8.34		
3.68	3.71	3.55	5.57	4.56	1		154.2	38.8	#NUM!	999.00	#NUM!	#NUM!					#NUM!		4.56			5.10		
2.39	2.80	2.34	3.80	3.35	2		152.8	61.3	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.07			3.25		
1.57	1.71	1.68	2.01	2.20	2		149.1	63.1	999.00	#NUM!	#NUM!	#NUM!	3930.324721	123.4	91.06	#NUM!	#NUM!	#NUM!	2.09	82.00		2.19	87.97	
2.04	2.22	1.90	3.44	2.82	2		150.9	69.1	999.00	#NUM!	#NUM!	#NUM!					#NUM!		2.71			2.80		
3.40	3.98	3.35	4.17	3.78	2		174.1	49.6	999.00	#NUM!	#NUM!	#NUM!					#NUM!		4.45			4.56		
5.13	5.65	4.67	7.34	6.01	2		202.6	38.2	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.89			7.21		
6.06	6.58	5.80	8.38	7.08	1		243.6	45.1	#NUM!	999.00	#NUM!	#NUM!					#NUM!		7.77			8.35		
8.48	9.42	7.19	11.2	9.16	1		286.5	32.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		11.31			11.79		
8.93	9.75	8.36	12.17	10.30	1		233.1	34.7	#NUM!	999.00	#NUM!	#NUM!					#NUM!		11.52			12.90		
7.96	8.40	6.09	12.99	10.64	1		194.6	51.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.35			11.44		
7.48	7.74	7.31	11.64	9.54	1		180.1	67.6	#NUM!	999.00	#NUM!	#NUM!					#NUM!		9.47			10.09		
6.23	6.53	4.16	9.81	8.31	1		156.7	51.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		7.74			8.16		
4.60	5.05	4.64	7.24	5.91	1		140.9	44.0	#NUM!	999.00	#NUM!	#NUM!					#NUM!		4.16			6.51		
3.55	4.09	3.13	4.33	3.63	2		215.5	37.6	999.00	#NUM!	#NUM!	#NUM!					#NUM!		4.64			4.68		
2.68	3.21	2.21	3.87	3.17	2		195.9	39.6	999.00	#NUM!	#NUM!	#NUM!	4143.827564	125.8	96.56	#NUM!	#NUM!	#NUM!	3.92	87.22		3.74	91.52	
3.27	3.62	2.19	4.27	3.64	2		166.2	49.2	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.20			3.17		
3.75	4.39	3.11	4.14	3.76	2		142.6	48.5	999.00	#NUM!	#NUM!	#NUM!					#NUM!		4.75			4.75		
5.09	5.63	4.46	6.48	5.75	1		253.8	44.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.47			7.08		
6.82	7.53	6.36	8.88	7.53	1		245.5	42.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.67			9.31		
8.40	9.48	7.30	11.38	9.33	1		306.4	34.9	#NUM!	999.00	#NUM!	#NUM!					#NUM!		11.57			12.02		
9.36	10.44	8.41	11.01	10.00	1		261.8	31.8	#NUM!	999.00	#NUM!	#NUM!					#NUM!		12.33			12.24		
7.80	8.39	8.18	12.34	10.13	1		188.4	42.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.20			11.86		
7.32	8.33	7.31	11.12	9.11	1		207.3	39.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.19			10.75		
6.67	7.29	5.90	10.02	8.46	1		219.2	35.5	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.69			8.73		
4.60	5.36	4.42	6.77	5.53	1		178.6	41.9	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.28			6.46		
2.86	3.28	3.28	4.29	3.48	2		130.5	46.1	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.47			3.94		
2.39	2.60	2.30	2.84	2.16	2		108.1	30.6	999.00	#NUM!	#NUM!	#NUM!	6825.473886	123.3	93.46	#NUM!	#NUM!	#NUM!	3.37	89.94		3.33	92.75	
2.24	2.48	2.19	3	2.46	2		160.6	49.3	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.03			3.09		
3.37	3.91	3.24	3.8	3.56	2		202.1	45.8	999.00	#NUM!	#NUM!	#NUM!					#NUM!		4.31			4.25		
4.84	5.39	4.55	6.51	5.85	1		237.4	48.8	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.53			6.79		
6.32	6.97	5.77	8.14	6.80	1		271.0	47.8	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.29			8.94		
9.09	9.92	8.43	11.48	9.41	1		360.5	30.6	#NUM!	999.00	#NUM!	#NUM!					#NUM!		12.10			12.30		
7.16	7.90	7.04	11.24	9.52	1		299.7	30.2	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.86			9.23		
7.50	7.89	7.22	11.43	9.52	1		300.4	42.9	#NUM!	999.00	#NUM!	#NUM!					#NUM!		9.64			10.57		
7.39	7.60	7.05	9.86	8.18	1		293.7	30.1	#NUM!	999.00	#NUM!	#NUM!					#NUM!		9.28			10.35		
6.16	6.46	5.91	10.04	8.50	1		290.4	48.6	#NUM!	999.00	#NUM!	#NUM!					#NUM!		7.63			8.24		
4.69	4.96	4.49	6.86	5.45	1		134.9	38.5	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.09			6.36		
3.34	3.72	3.91	4.82	4.08	2		182.4	39.0	999.00	#NUM!	#NUM!	#NUM!					#NUM!		4.39			4.38		
1.90	2.06	1.82	2.82	2.31	2		166.5	52.1	999.00	#NUM!	#NUM!	#NUM!	5480.92211	119.6	90.20	#NUM!	#NUM!	#NUM!	2.51	82.60		2.60	87.11	
1.64	1.85	2.03	2.78	2.29	2		181.2	64.7	999.00	#NUM!	#NUM!	#NUM!					#NUM!		2.01			2.29		
1.83	3.25	3.43	4.20	3.86	2		145.1	38.6	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.54			3.99		
4.29	4.41	3.66	5.75	4.71	1		281.0	38.6	#NUM!	999.00	#NUM!	#NUM!					#NUM!		5.36			6.12		
6.29	6.37	5.52	8.09	7.36	1		264.3	48.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		7.78			8.44		
8.02	8.57	6.56	11.23	9.10	1		335.6	45.2	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.22			11.41		
7.94	8.30	7.43	11.46	9.69	1		343.0	43.7	#NUM!	999.00	#NUM!	#NUM!					#NUM!		9.60			10.72		
7.44	7.60	7.79	9.69	8.08	1		163.3	48.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		9.28			10.44		
6.62	6.75	6.83	8.80	8.08	1		171.3	51.8	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.23			9.19		
5.66	5.63	5.95	8.42	7.30	1		192.2	54.7	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.68			7.59		
4.86	5.25	4.84	6.80	5.65	1		178.3	46.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		6.43			6.70		
2.86	3.01	2.84	4.20	3.62	2		156.8	43.8	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.56			3.69		
1.63	1.66	1.95	3.22	1.82	2		136.3	69.5	999.00	#NUM!	#NUM!	#NUM!	5291.8533	118.6	89.68	#NUM!	#NUM!	#NUM!	2.03	74.91		3.20	82.95	
1.43	1.90	2.23	2.80	2.37	2		132.8	68.0	999.00	#NUM!	#NUM!	#NUM!					#NUM!		2.42			2.33		
2.99	3.06	3.00	3.00	3.20	2		199.3	57.9	999.00	#NUM!	#NUM!	#NUM!					#NUM!		3.50			3.87		
4.21	4.36	3.46	5.38	4.24	1		195.1	54.6	#NUM!	999.00	#NUM!	#NUM!					#NUM!		5.20			5.88		
5.96	6.21	5.84	7.66	6.19	1		173.6	46.6	#NUM!	999.00	#NUM!	#NUM!					#NUM!		7.22			6.03		
6.32	6.86	6.09	8.68	7.85	1		163.4	51.7	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.35			9.43		
7.21	7.36	6.23	12.75	10.45	1		294.3	43.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		8.70			9.54		
7.96	8.21	7.43	10.83	8.87	1		324.3	46.4	#NUM!	999.00	#NUM!	#NUM!					#NUM!		10.02			11.04		
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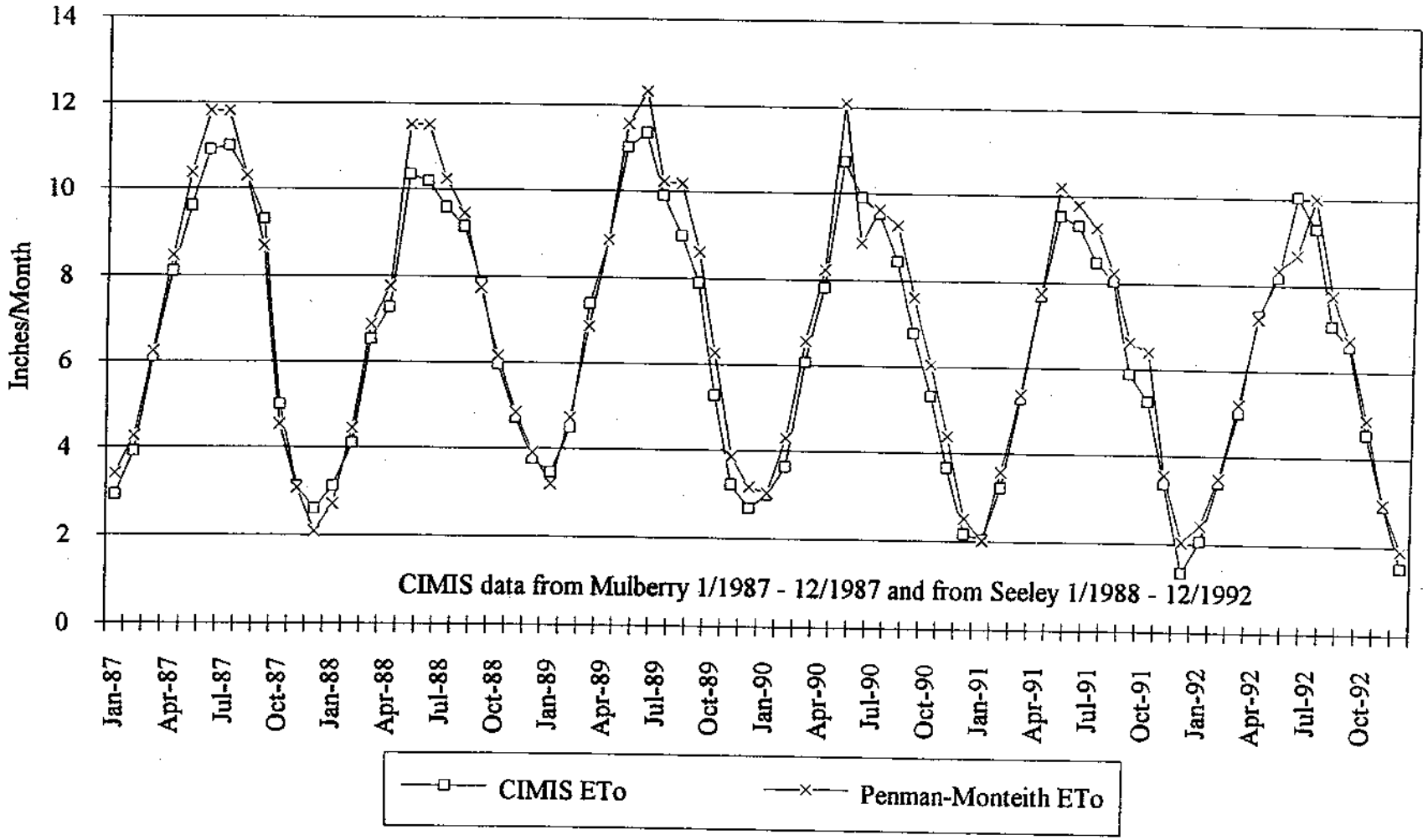
3.77	3.71	4.51	8.04	7.30	1		306.5	42.0	#NUM!	999.00	#NUM!	#NUM!					#NUM!		4.74			7.29		
4.20	4.05	4.43	7.08	5.80	1		97.4	41.3	#NUM!	999.00	#NUM!	#NUM!					#NUM!		4.88			5.64		
2.63	2.50	2.38	4.18	3.43	2		87.4	38.5	999.00	#NUM!	#NUM!	#NUM!					#NUM!		2.95			3.43		
1.42	1.56	1.84	2.38	1.93	2		91.5	39.3	999.00	#NUM!	#NUM!	#NUM!	3637.820122	113.4	88.34	#NUM!	#NUM!	#NUM!	1.90	69.63		2.26	76.21	

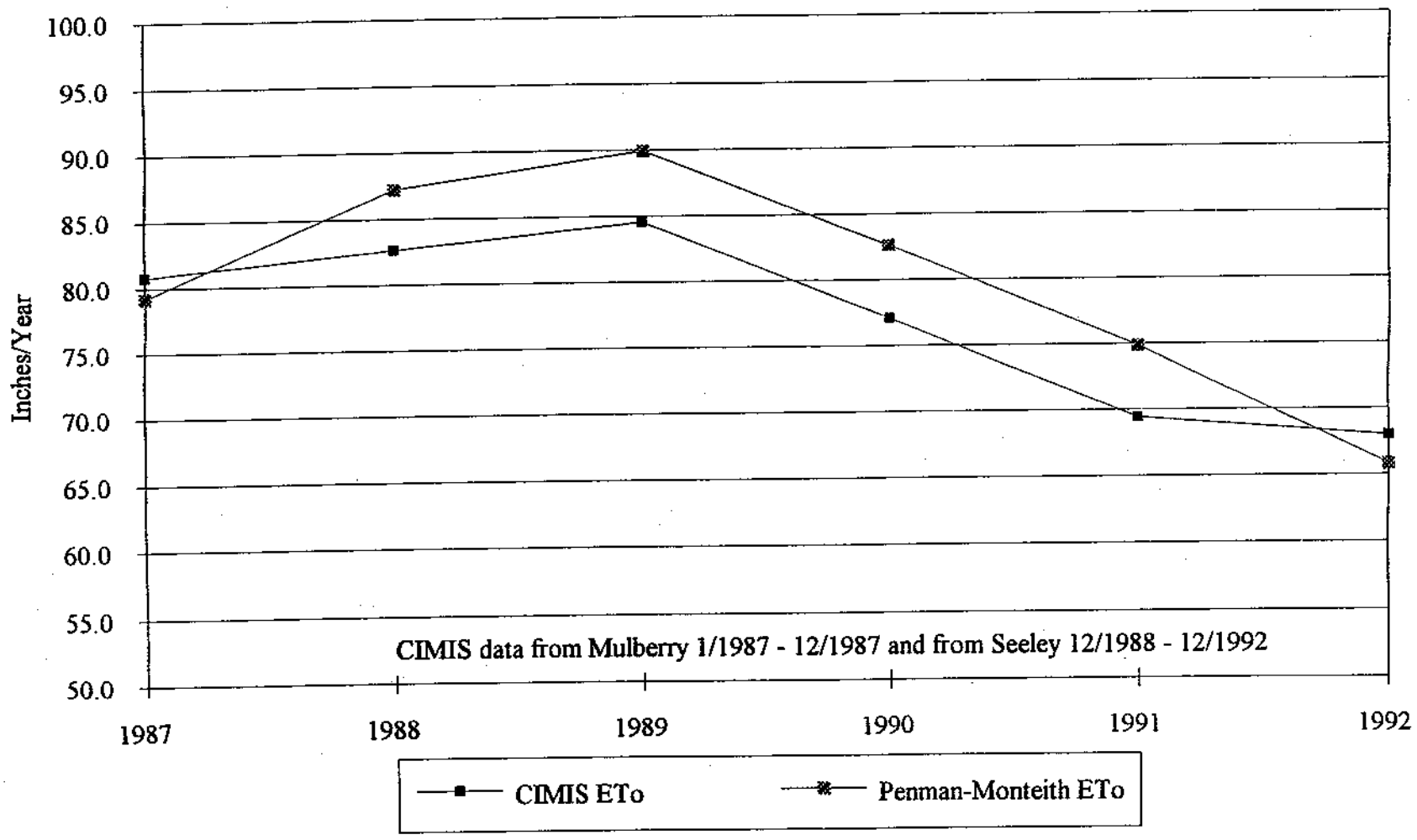
SIMULKERSY 1/1987-12/1987
KEELEY 1/84-12/92

		ETo (FAO-RAD)		ETo(AV.)	(RN)	(RN)	(RN)	U2
In/day	In/Yr	In/day	In/Yr	5 CIMIS BAFER. V. STA. In/Yr 43.46	In/day	ACCUM. INCHES	ANNUA INCHES	MPH
3.9		3.12			1.83	1.83		53.96774
3.9		4.04			2.75	4.36		68.76786
4.1		4.33			4.80	9.17		72.42908
6.1		8.78			6.34	15.70		62.13333
9.6		10.66			7.32	23.02		76.83871
10.9		11.97			7.49	30.51		68.1
11		12.04			7.87	38.38		69.8871
10.1		9.76			6.88	45.26		74.51613
9.3		7.91			5.12	50.38		61.93333
5		4.60			3.56	53.94		47.8871
3.1		3.28			2.79	56.73		41.23333
2.6	32.60	3.04	64.45		1.34	57.79	57.76	46.30645
3.12		3.43			1.70	1.96		46.83258
4.10		4.68			2.96	4.92		54.06897
6.53		7.35			4.80	9.71		62.74194
7.28		8.02			5.95	15.66		75.63
10.35		11.87			7.32	23.14		88.96774
10.35		11.60			7.71	30.90		79.21667
9.59		10.48			8.13	39.03		80.43548
9.15		9.96			7.34	46.36		35.96667
7.06		8.53			5.14	51.50		48.03333
5.95		6.38			3.92	55.42		43.75806
4.72		4.23			1.96	57.38		86.93333
3.73	42.60	3.57	89.30		1.32	58.70	56.77	68.83871
3.43		3.03			1.76	1.86		51.62903
4.40		4.35			2.76	4.62		75.31929
7.68		6.68			4.99	9.61		78.51613
8.46		9.13			6.30	15.91		76.23333
11.02		10.51			7.40	23.31		95.77419
10.36		11.95			7.52	30.83		68.06667
9.90		10.36			7.51	37.34		56.61613
8.96		9.98			6.76	44.10		64.45161
7.00		8.32			5.06	49.75		68.06667
5.27		6.24			3.71	53.46		53.45161
3.72		4.00			2.35	55.81		60.51667
2.88	64.32	3.34	80.07		0.86	56.67	58.63	33.54063
3.00		3.09			1.08	1.77		31.63548
3.84		4.07			2.62	4.39		62.76786
4.68		5.30			4.67	9.08		73.72581
7.82		8.31			6.21	15.28		84.16667
10.74		11.66			7.16	22.44		104.7581
9.92		9.21			6.40	28.85		62.03333
9.34		9.81			7.16	34.88		63.37419
8.48		9.74			7.13	42.33		60.36129
6.75		7.49			5.37	48.70		59.61667
5.31		6.48			3.69	52.39		48.09677
3.43		4.13			1.99	54.38		56.33333
2.36	77.11	2.44	93.13		1.46	55.83	53.95	49.83871
2.95		2.43			1.91	1.61		53.45161
3.22		3.90			2.86	4.47		63.28571
5.23		5.82			4.77	9.24		87.46774
7.48		8.66			6.42	15.66		82.08333
9.54		10.92			7.69	23.35		104.2097
9.32		10.35			7.33	30.68		73.4
6.47		9.95			7.69	38.37		50.97097
8.04		8.52			6.64	45.22		53.20968
5.89		7.23			5.68	50.89		41.03
5.23		4.48			3.96	54.85		53.37097
3.34		3.38			1.97	56.83		48.7
3.33	69.40	3.98	79.36		1.82	58.65	55.63	34.67742
2.86		2.84			2.01	1.98		40.94167
3.39		3.82			2.83	4.75		49.33448
5.00		5.34			4.54	9.32		60.58065
7.30		8.24			6.12	15.44		54.53333
8.88		9.49			7.34	22.78		56.96774
10.05		8.75			6.58	29.36		91.4
9.21		10.36			7.68	37.04		69.86129
7.07		7.92			6.33	43.36		53.26667
6.80		7.78			5.35	48.70		53.06667
4.54		6.03			3.69	52.39		50.25806
2.92		3.66			1.97	54.36		27.03333
1.81	67.93	2.28	76.93		1.54	55.88	57.31	28.61935

SEELEY MONTHLY EVAPOTRANSPIRATION



SEELEY ANNUAL EVAPOTRANSPIRATION

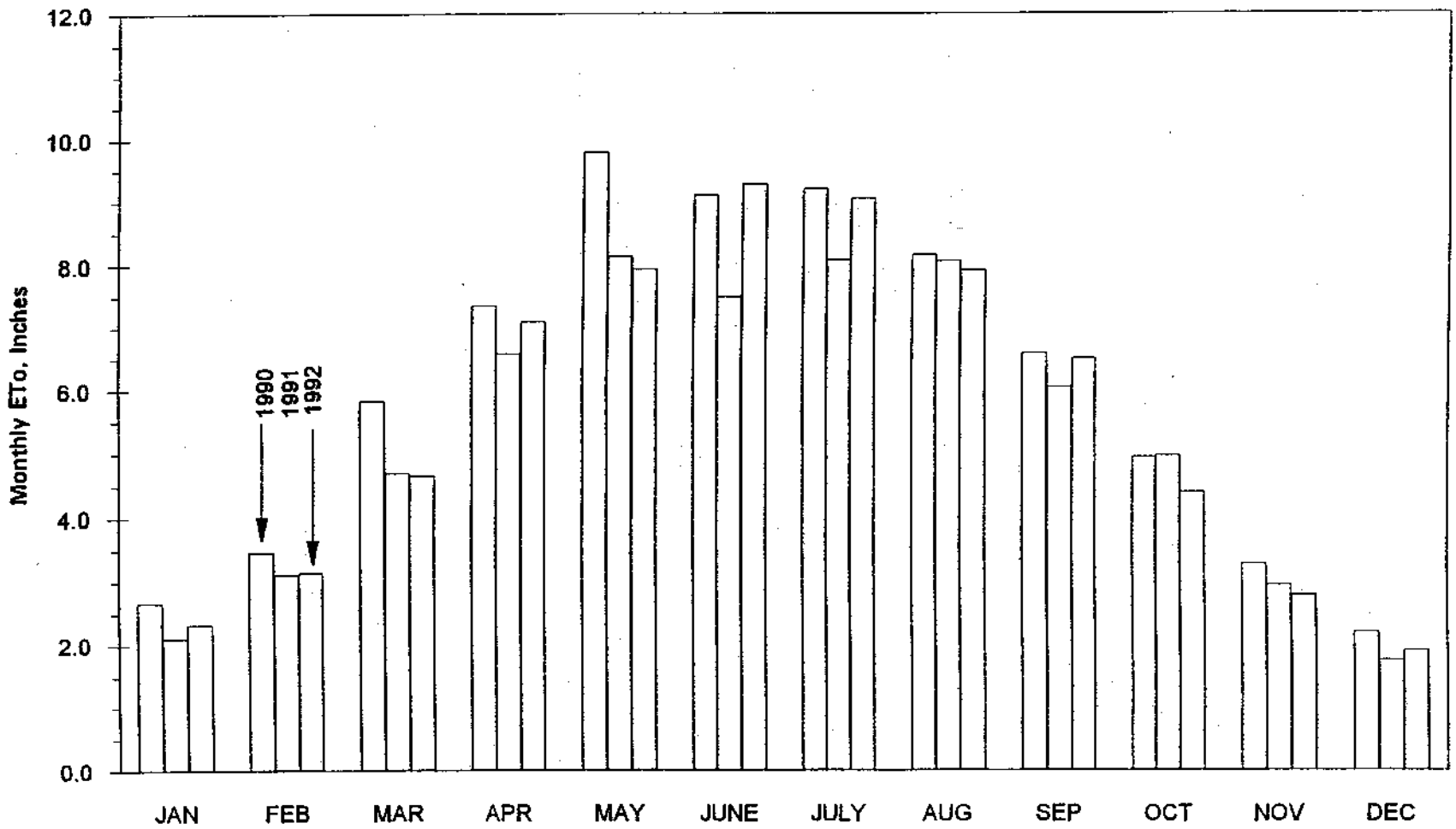


MELOLAND - CIMIS STATION #87

Ref: CIMIS Database

	ETo in/day Total	Precip in/day Total	Solar Ly/Day Average	Vapor P mbars Average	Max T F Average	Min T F Average	Avg T F Average	RHmx % Average	RHmn % Average	Avg RH % Average	Dpt F Average	Wind Speed mph Average	Daily Total mpd Average	Soil T F Average
1990 January	2.7	0.0	306.9	7.3	70.7	37.5	52.7	78.5	30.7	53.2	35.8	3.9	94.1	54.8
February	3.5	0.4	364.4	7.1	73.3	38.6	55.2	71.7	25.2	46.9	34.8	4.7	114.2	57.2
March	5.8	0.2	494.1	8.7	81.5	46.9	63.8	72.0	21.6	42.8	40.2	5.7	137.6	62.8
April	7.4	0.0	595.9	10.8	87.7	55.7	71.4	73.1	22.8	41.7	45.9	6.0	143.8	73.1
May	9.8	0.4	659.4	7.5	89.3	55.5	72.4	54.9	12.8	25.8	36.0	7.6	183.4	77.5
June	9.1	0.2	693.9	10.7	103.1	67.0	85.3	59.2	11.5	26.3	44.3	5.2	124.7	84.1
July	9.2	0.0	632.4	18.9	106.4	73.4	90.4	71.4	20.2	38.8	60.6	5.8	139.0	89.2
August	8.2	1.1	622.3	20.0	103.0	72.3	87.1	71.1	26.4	45.1	62.6	4.9	117.2	86.0
September	6.6	0.3	503.0	18.4	99.9	67.4	84.4	71.4	26.7	44.9	60.0	4.7	112.4	83.4
October	4.9	0.4	437.2	12.6	91.3	57.5	73.1	74.5	21.9	44.6	49.6	3.8	91.3	73.5
November	3.3	0.0	325.7	9.0	76.9	45.9	60.6	72.8	26.8	49.0	41.1	4.7	112.4	65.1
December	2.2	0.0	264.8	6.4	64.9	34.5	48.5	76.8	29.9	53.6	32.1	4.0	97.1	55.4
1991 January	2.1	0.6	279.9	8.9	67.7	39.0	52.1	90.1	38.7	66.7	41.0	3.4	81.0	55.0
February	3.1	0.4	370.2	11.1	79.0	44.8	60.5	88.9	34.4	61.2	47.0	3.9	94.1	57.4
March	4.7	0.6	461.5	10.1	71.6	44.1	58.0	88.7	37.6	61.4	44.5	6.5	156.3	58.8
April	6.6	0.0	624.9	12.6	83.8	50.2	67.4	81.3	36.0	55.3	50.6	5.3	128.2	63.9
May	8.1	0.0	687.9	15.7	89.4	54.4	70.6	79.7	38.7	54.4	54.5	7.1	171.2	66.2
June	7.5	0.0	632.3	19.4	96.8	62.5	79.9	78.9	38.3	56.0	62.4	5.7	136.7	74.2
July	8.1	0.0	647.1	22.9	103.2	68.9	86.8	79.6	33.1	52.5	66.8	4.9	117.4	81.4
August	8.1	0.0	598.0	20.4	104.5	73.1	88.2	68.7	27.7	44.6	63.5	4.9	117.2	84.0
September	6.0	0.3	504.4	20.5	100.5	67.9	81.5	76.1	30.2	48.9	61.7	4.1	97.7	79.6
October	5.0	0.0	419.6	15.6	90.1	61.5	76.8	75.0	26.9	48.3	55.3	4.7	112.0	76.7
November	2.9	0.2	321.4	10.4	77.6	46.2	60.8	79.7	31.4	55.7	44.6	4.2	99.8	65.6
December	1.7	1.2	212.3	9.0	64.7	41.3	51.5	79.0	45.1	64.1	40.8	3.3	79.5	57.4
1992 January	2.3	0.7	290.4	8.2	67.9	37.9	50.5	80.5	36.6	59.7	38.1	3.7	88.2	54.6
February	3.1	1.0	363.7	11.0	73.5	47.2	59.5	78.5	43.2	63.5	46.9	4.1	98.2	60.0
March	4.7	3.4	469.1	9.9	75.1	48.7	61.6	71.9	35.7	53.2	40.7	4.5	107.6	64.1
April	7.1	0.0	590.7	7.8	89.1	55.0	72.6	49.1	13.5	26.1	31.9	3.9	92.4	70.7
May	7.9	0.2	637.0	14.3	94.4	61.8	78.0	70.1	26.1	43.8	53.8	4.5	108.6	76.2
June	9.3	0.1	699.9	13.2	101.1	65.7	83.4	51.3	22.3	33.8	51.5	5.6	134.0	77.1
July	9.1	0.0	646.6	18.3	105.4	71.2	86.4	56.5	26.6	37.6	58.3	5.3	126.2	80.0
August	7.9	0.0	578.6	23.4	106.0	77.6	90.7	67.1	32.9	47.6	67.7	4.7	113.5	83.1
September	6.5	0.0	514.1	21.8	104.7	71.7	87.8	73.5	31.3	48.1	64.3	4.3	102.3	78.8
October	4.4	0.7	398.9	17.7	92.5	60.6	75.9	81.7	40.7	59.9	59.3	4.1	99.5	71.7
November	2.8	0.0	329.6	10.8	75.4	44.3	59.0	87.2	38.6	61.8	45.7	3.9	94.1	60.6
December	1.9	1.2	232.6	7.9	63.6	38.3	50.0	76.9	42.2	61.8	36.2	3.8	91.1	52.5

CIMIS STATION #87 - MELOLAND
1990-1992 Monthly ETo Values



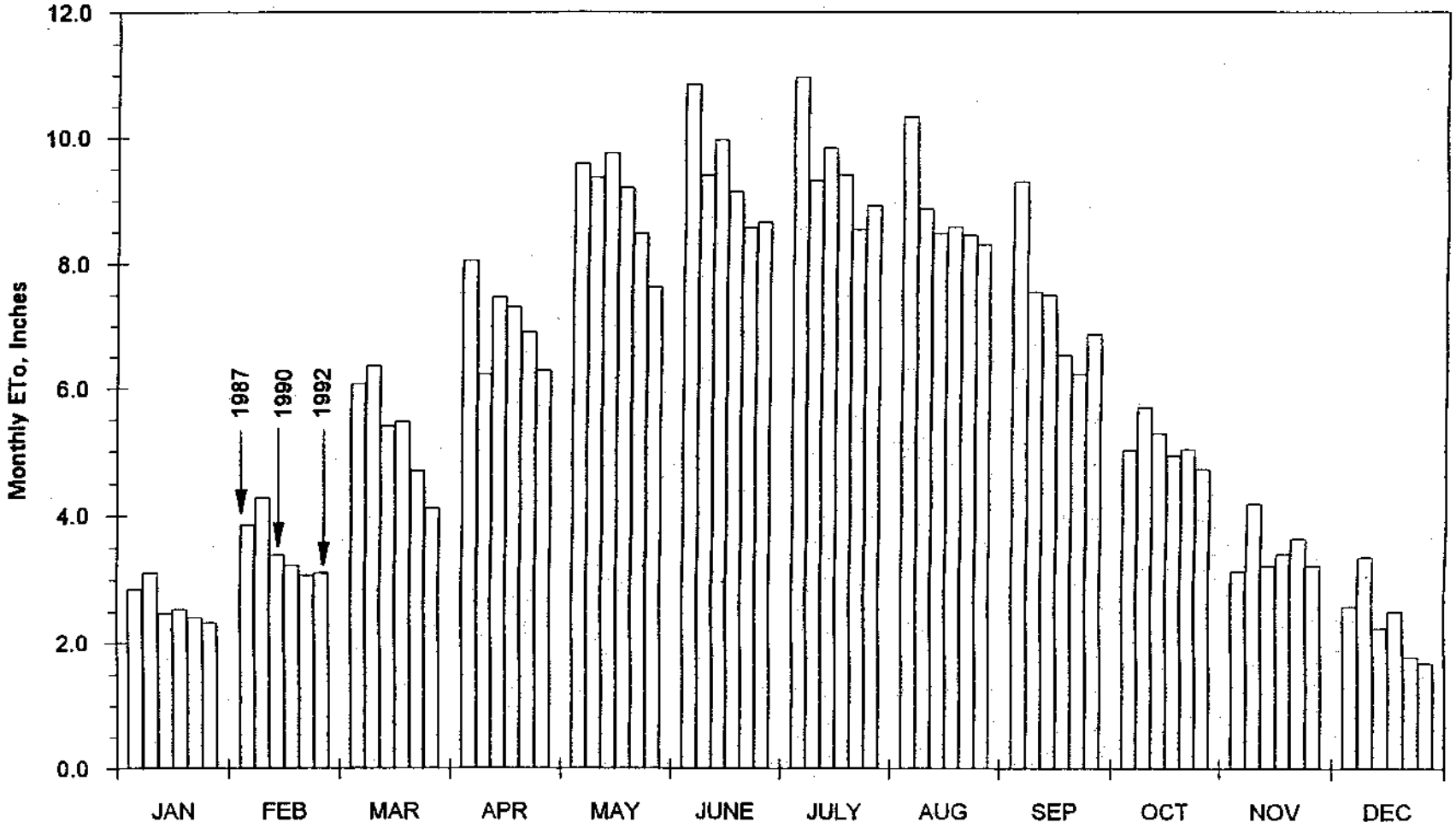
MULBERRY - CIMIS STATION #41

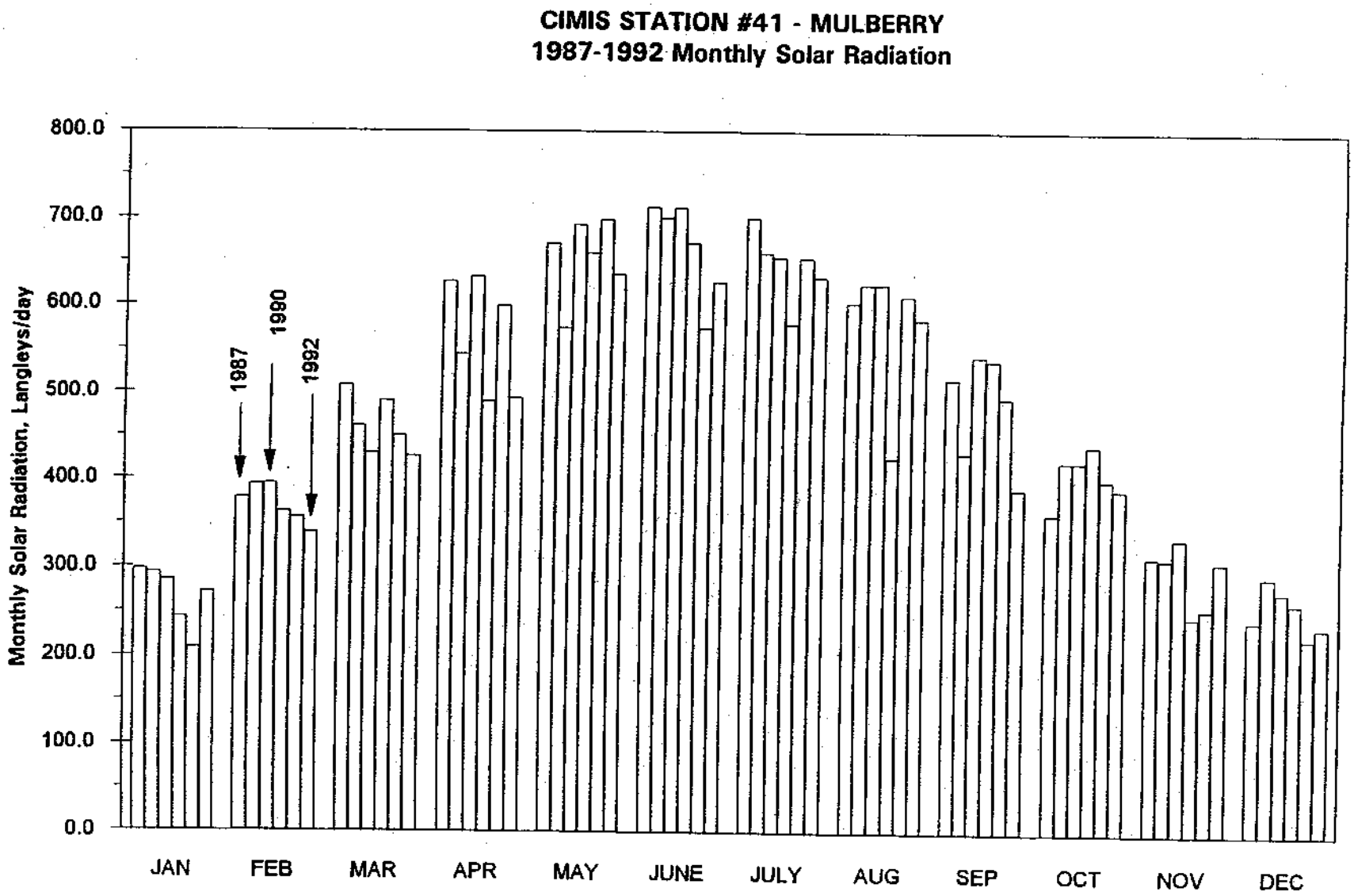
Ref: CIMIS Database

		ETo in/day Total	Precip in/day Total	Solar Ly/Day Average	Vapor P mbars Average	Max T F Average	Min T F Average	Avg T F Average	RHmx % Average	RHmn % Average	Avg RH % Average	Dpt F Average	Wind Speed mph Average	Daily Wind mpd Average	Soil T F Average
1987	January	2.9	0.2	296.6	6.5	69.3	34.9	50.5	76.5	27.3	50.6	32.4	4.5	107.9	50.8
	February	3.9	0.1	378.0	7.6	73.5	41.4	56.5	78.5	26.1	49.1	36.6	5.7	137.5	55.2
	March	6.1	0.2	508.3	8.1	77.5	43.0	60.0	82.7	20.7	45.4	38.1	6.1	145.3	59.1
	April	8.1	0.1	626.9	9.2	91.4	52.3	71.8	77.7	12.3	34.3	41.7	5.2	124.3	67.5
	May	9.6	0.1	670.9	9.7	93.6	58.6	76.3	66.8	12.0	30.7	42.8	6.4	153.7	75.3
	June	10.9	0.0	713.2	8.7	105.3	66.2	86.1	50.6	8.0	20.4	40.1	5.7	136.2	80.6
	July	11.0	0.2	700.9	13.7	105.4	69.8	88.2	56.0	14.7	29.5	51.3	5.8	139.8	82.5
	August	10.3	0.5	603.4	18.7	101.5	67.0	85.6	68.5	21.1	40.1	59.3	6.2	149.0	80.4
	September	9.3	0.1	516.6	13.0	100.6	60.6	83.0	64.5	15.3	33.9	50.2	5.2	123.9	78.5
	October	5.0	1.4	360.4	16.5	81.9	58.6	73.8	82.5	33.4	54.9	55.4	4.0	95.8	68.8
	November	3.1	0.1	312.6	11.5	74.6	43.4	57.0	88.1	34.5	65.7	46.3	3.4	82.5	60.3
	December	2.6	0.6	242.7	7.4	58.7	32.1	43.8	88.0	38.3	62.0	34.2	3.9	92.6	47.5
1988	January	3.1	0.2	293.1	7.8	69.3	35.5	50.5	93.4	30.3	61.6	37.1	4.4	106.2	50.4
	February	4.3	0.8	393.3	9.2	76.7	40.2	57.0	91.7	26.2	57.8	41.3	4.5	108.4	55.2
	March	6.4	0.0	461.0	7.6	74.4	39.1	56.4	81.1	18.6	39.3	34.9	4.7	112.8	55.0
	April	6.2	0.3	544.0	11.3	84.7	48.2	66.1	89.2	23.0	52.1	47.2	5.3	126.0	66.7
	May	9.4	0.1	573.4	8.7	84.1	49.2	67.4	70.4	10.3	29.1	38.5	7.2	167.7	65.8
	June	9.4	0.2	701.0	13.0	101.5	62.7	82.9	67.8	14.0	32.9	49.8	5.7	136.2	77.7
	July	9.3	0.1	660.5	21.4	106.5	73.9	90.0	72.9	25.2	44.3	64.2	6.2	148.8	85.8
	August	8.9	0.3	624.4	21.0	105.1	73.2	88.7	77.3	24.6	44.8	62.9	5.2	124.3	84.8
	September	7.5	0.8	430.7	10.6	78.6	50.8	64.2	55.2	10.7	26.6	39.8	3.8	91.0	62.7
	October	5.7	0.1	420.7	15.5	96.0	61.2	76.7	86.4	20.9	49.7	55.7	4.3	101.9	74.8
	November	4.2	0.4	310.1	8.8	75.9	42.8	58.4	83.7	22.5	47.3	39.1	4.6	110.3	60.3
	December	3.3	0.1	291.0	6.3	70.3	34.9	50.9	88.1	21.9	49.4	31.8	4.6	110.7	53.1
1989	January	2.5	1.0	284.9	6.4	66.8	33.6	48.0	89.7	25.1	52.5	31.6	4.1	98.1	46.7
	February	3.4	0.0	394.6	8.8	75.0	39.2	55.2	83.9	31.5	57.5	40.2	5.1	122.5	51.5
	March	5.4	0.0	429.4	9.2	71.2	38.4	53.5	68.1	20.1	41.5	38.5	3.8	91.0	50.4
	April	7.5	0.1	632.9	12.1	92.4	53.1	72.2	80.2	19.6	44.1	48.6	5.0	120.4	69.3
	May	9.8	0.2	692.7	9.2	95.3	57.0	76.4	67.5	12.5	30.1	41.4	6.7	161.1	71.2
	June	10.0	0.1	712.7	9.3	104.8	62.8	84.5	64.7	8.1	23.1	41.8	6.1	146.3	78.4
	July	9.8	0.1	656.3	14.4	105.0	71.5	90.1	70.4	11.6	30.2	53.2	5.9	141.1	85.6
	August	8.5	0.0	624.4	19.7	104.4	70.4	87.3	73.6	23.7	43.9	61.5	5.4	128.8	84.9
	September	7.5	0.1	542.7	12.9	102.7	65.3	83.5	64.9	13.2	32.7	50.3	5.3	127.5	77.8
	October	5.3	0.2	420.4	10.5	91.3	54.8	71.9	73.0	15.9	38.2	44.5	4.7	113.5	70.7
	November	3.2	0.0	333.5	9.2	81.1	43.0	59.7	84.4	22.4	50.9	40.4	4.3	103.4	59.5
	December	2.2	0.4	273.9	6.0	63.4	27.5	42.9	82.2	26.3	49.7	29.3	3.8	90.5	52.9

	ETo in/day Total	Precip in/day Total	Solar Ly/Day Average	Vapor P mbars Average	Max T F Average	Min T F Average	Avg T F Average	RHmx % Average	RHmn % Average	Avg RH % Average	Dpt F Average	Wind Speed mph Average	Daily Wind mpd Average	Soil T F Average
1990 January	2.5	0.3	243.6	6.7	60.6	29.2	43.1	83.0	37.5	49.5	31.1	4.1	99.3	42.1
February	3.2	0.0	362.1	7.6	73.0	36.1	53.1	84.2	27.0	54.4	36.6	5.1	122.8	51.9
March	5.5	0.1	490.2	10.0	81.3	44.8	62.1	85.2	25.1	51.6	43.8	5.5	132.0	62.7
April	7.3	0.0	489.6	10.6	72.2	43.7	57.4	72.7	24.0	44.0	42.1	4.3	103.8	55.8
May	9.2	0.4	660.0	9.3	92.2	55.4	74.1	70.4	15.2	32.8	41.9	6.8	162.4	72.6
June	9.1	0.1	672.0	11.9	100.0	62.1	81.5	68.3	14.1	30.1	47.3	4.9	117.1	74.0
July	9.4	0.2	578.9	19.3	105.5	74.1	89.5	73.0	23.0	40.5	61.3	6.0	144.1	81.4
August	8.6	0.4	424.5	17.9	91.4	62.9	78.3	62.6	27.7	41.2	55.1	4.4	105.4	76.7
September	6.5	0.5	537.9	20.0	99.7	68.7	83.4	72.3	28.6	50.1	62.5	4.7	112.2	81.2
October	4.9	0.3	439.2	12.7	91.1	55.5	72.0	72.0	23.0	46.6	49.7	3.9	93.5	72.9
November	3.4	0.0	245.7	5.9	59.0	34.3	45.9	50.9	16.4	32.7	28.3	3.6	87.3	47.9
December	2.5	0.0	261.9	5.2	66.6	34.2	48.7	62.0	19.5	42.6	26.0	4.5	107.2	52.4
1991 January	2.4	0.7	209.4	6.3	56.7	32.2	43.7	63.7	31.0	45.8	29.5	3.1	75.6	45.5
February	3.1	0.6	356.0	11.3	78.4	42.9	59.4	78.3	42.5	64.2	46.2	4.2	101.1	59.2
March	4.7	0.7	449.7	9.6	71.7	43.4	57.2	78.4	38.0	59.8	43.1	6.0	145.2	60.5
April	6.9	0.0	598.9	10.8	80.5	46.4	63.8	75.4	28.8	49.2	45.3	5.7	135.5	67.0
May	8.5	0.4	698.5	12.7	89.2	53.3	71.6	74.4	26.8	47.7	50.7	6.1	145.5	75.4
June	8.6	0.2	573.7	13.1	83.5	53.9	69.4	59.5	22.5	37.7	48.0	4.8	114.6	69.1
July	8.5	0.3	654.7	19.7	102.3	69.7	86.1	69.9	27.0	46.5	62.9	5.1	121.7	84.6
August	8.5	0.4	611.2	19.6	104.2	73.4	88.8	62.3	25.4	42.1	62.3	5.1	121.7	84.6
September	6.2	0.8	494.5	20.5	99.7	70.4	84.5	71.8	31.5	50.2	63.8	4.7	113.4	85.8
October	5.0	0.4	399.7	14.8	93.5	60.3	75.9	71.4	25.8	46.8	53.9	5.0	120.6	75.4
November	3.6	0.5	254.6	3.8	67.3	39.9	52.6	53.7	23.0	23.5	18.1	4.4	104.9	53.6
December	1.8	1.3	222.4	9.3	66.5	41.6	52.5	84.2	43.7	67.7	41.6	3.6	86.5	55.0
1992 January	2.3	1.0	271.9	7.8	68.6	37.5	51.5	86.6	35.4	60.2	37.8	3.8	91.5	52.7
February	3.1	1.1	339.1	11.2	74.0	45.7	59.0	89.3	44.6	65.9	47.0	4.4	105.7	59.0
March	4.1	2.4	425.8	12.0	70.2	43.8	56.5	94.3	45.1	67.0	47.8	3.8	91.5	59.8
April	6.3	0.3	493.0	11.4	74.3	44.6	59.2	82.9	29.4	44.9	43.9	3.2	76.5	60.7
May	7.6	0.4	635.5	16.6	93.6	61.2	77.4	78.9	32.0	51.8	58.0	4.6	109.6	78.6
June	8.7	0.0	626.7	15.8	93.2	59.8	76.8	65.5	29.4	41.5	54.7	5.0	118.7	76.1
July	8.9	0.2	632.6	21.5	103.8	73.8	89.2	62.5	32.8	45.5	65.0	5.6	134.7	83.8
August	8.3	0.9	584.2	25.1	105.1	78.1	91.2	69.1	35.1	50.0	69.7	6.0	144.9	85.8
September	6.9	0.1	389.3	14.6	79.7	54.4	66.7	48.5	21.5	32.8	47.1	3.4	82.9	61.8
October	4.7	0.0	388.6	14.8	92.0	60.5	75.2	70.9	31.8	50.0	54.8	4.4	106.1	74.0
November	3.2	0.1	307.5	7.6	75.2	41.7	57.6	71.9	25.6	46.5	36.7	4.4	105.5	60.3
December	1.7	1.6	234.7	8.4	62.9	36.0	48.7	86.1	48.4	70.7	39.5	4.0	96.8	51.8

CIMIS STATION #41 - MULBERRY
1987-1992 Monthly ETo Values



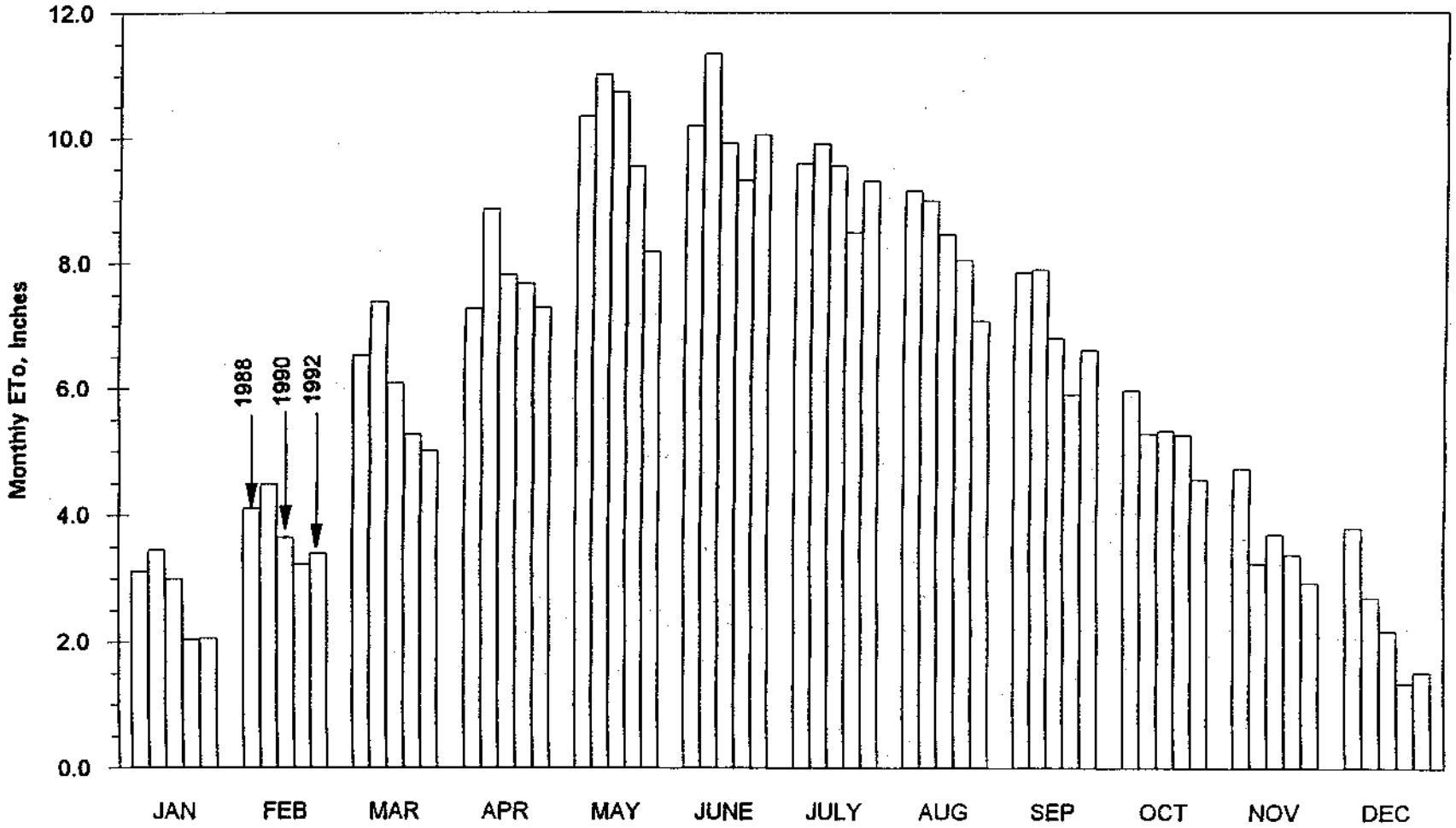

CIMIS STATION #41 - MULBERRY
1987-1992 Monthly Solar Radiation
Monthly Solar Radiation, Langleys/day
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
1987
1990
1992
JAN
FEB
MAR
APR
MAY
JUNE
JULY
AUG
SEP
OCT
NOV
DEC

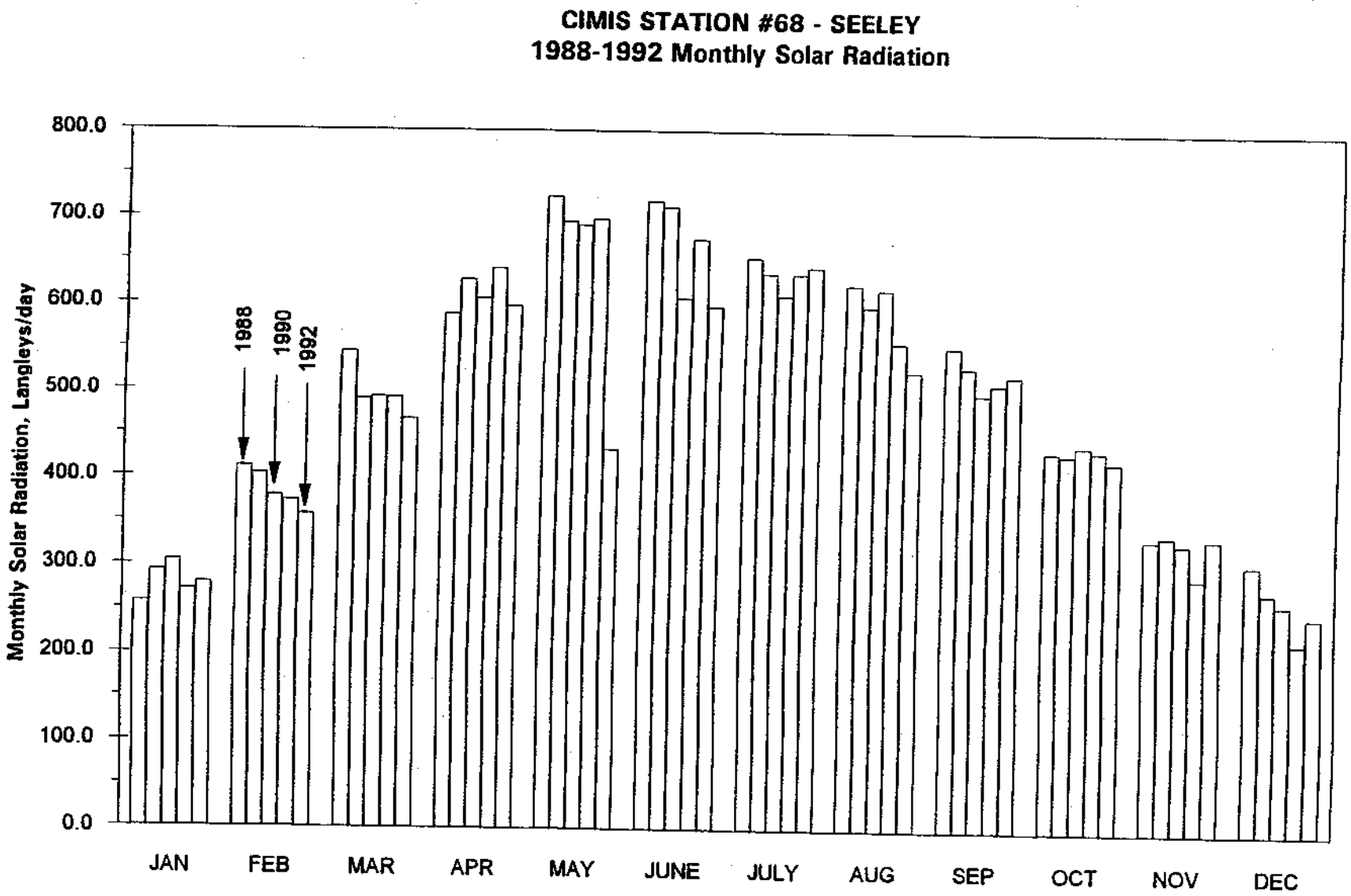
SEELEY - CIMIS STATION #68

Ref: CIMIS Database

	ETo in/day Total	Precip in/day Total	Solar Ly/Day Average	Vapor P mbars Average	Max T F Average	Min T F Average	Avg T F Average	RHmx % Average	RHmn % Average	Avg RH % Average	Dpt F Average	Wind Speed mph Average	Daily Wind mpd Average	Soil T F Average
1988 January	3.1	0.2	257.6	5.6	60.5	32.4	45.0	75.4	22.9	42.5	28.2	3.9	93.6	45.5
February	4.1	0.9	411.5	7.6	77.0	42.2	58.6	77.9	21.2	45.4	36.6	4.5	108.1	57.8
March	6.5	0.0	545.1	6.5	82.5	45.9	64.0	60.1	16.3	32.1	31.9	5.2	125.5	66.7
April	7.3	0.2	587.8	8.6	84.8	51.1	68.1	71.7	19.9	37.1	40.0	6.3	151.3	71.1
May	10.4	0.2	724.6	7.0	93.8	57.1	76.5	53.8	10.8	23.0	34.6	7.4	177.9	80.0
June	10.2	0.1	719.6	11.6	101.0	65.0	83.8	53.5	15.9	28.5	45.9	6.6	158.4	85.2
July	9.6	0.1	654.3	21.6	105.2	73.0	89.8	77.5	25.3	44.9	64.6	5.0	120.9	88.3
August	9.2	0.9	622.9	19.3	103.9	72.3	88.7	69.5	25.8	41.2	58.6	4.7	112.0	87.2
September	7.8	0.2	552.6	10.1	98.1	62.5	80.2	52.8	13.7	25.6	42.3	4.0	96.1	79.8
October	6.0	0.3	431.6	12.1	95.5	60.4	77.4	68.8	19.2	39.1	48.1	3.6	87.5	77.6
November	4.7	0.1	333.0	6.6	76.4	44.6	60.2	55.2	20.1	32.7	31.6	5.6	133.9	65.6
December	3.8	0.1	305.2	4.9	70.5	37.5	52.9	60.0	19.7	35.5	25.3	5.1	121.7	58.7
1989 January	3.5	1.0	292.9	5.4	66.1	33.7	49.3	73.8	24.6	42.3	27.6	4.3	103.3	51.4
February	4.5	0.1	403.3	7.4	75.1	41.7	57.4	67.9	25.9	44.4	35.6	6.3	150.7	57.5
March	7.4	0.1	489.5	8.4	81.1	47.8	64.8	66.5	22.4	36.9	38.7	6.5	157.0	63.7
April	8.9	0.1	627.6	10.5	91.4	55.2	73.7	65.3	19.7	37.4	44.6	6.4	152.5	74.1
May	11.0	0.2	695.4	8.4	94.3	60.1	77.5	55.3	14.1	27.3	38.8	8.0	191.5	80.4
June	11.4	0.1	712.9	9.0	103.6	64.5	84.7	52.2	9.9	22.1	40.2	6.8	162.1	84.7
July	9.9	0.1	636.4	13.3	104.2	69.6	87.8	70.5	14.3	27.4	49.0	4.7	112.0	87.0
August	9.0	0.8	598.4	14.6	103.5	71.5	87.9	61.8	17.1	32.7	52.7	5.4	128.9	89.1
September	7.9	0.2	528.9	12.1	97.2	63.9	80.9	51.6	19.3	30.8	47.4	5.7	136.1	78.2
October	5.3	0.1	428.7	10.6	89.5	56.2	72.0	62.5	21.4	38.9	44.8	4.6	110.9	73.9
November	3.2	0.0	337.5	7.5	81.9	40.9	59.8	68.3	23.9	42.5	35.2	3.4	81.0	62.5
December	2.7	0.2	274.0	2.5	75.2	34.7	53.5	21.4	12.2	17.7	10.6	2.8	67.2	55.2
1990 January	3.0	0.2	304.2	5.3	65.1	32.8	54.4	68.8	29.8	36.6	26.7	4.3	102.9	52.7
February	3.6	0.0	377.9	6.6	74.5	37.6	55.0	67.2	24.4	44.1	33.3	5.2	125.5	54.5
March	6.1	0.2	491.9	8.6	81.5	46.2	63.4	70.8	25.1	42.7	40.0	6.1	147.5	62.9
April	7.8	0.0	605.6	10.6	87.4	54.7	71.1	70.1	25.4	41.9	45.5	7.0	168.3	70.4
May	10.7	0.2	690.9	7.3	91.8	58.3	75.4	47.0	14.2	24.9	35.8	9.6	229.5	75.2
June	9.9	0.4	607.0	8.6	90.9	57.1	74.5	48.4	12.0	21.3	36.8	5.2	124.1	72.3
July	9.5	0.0	610.5	17.2	98.4	69.4	84.7	65.3	20.6	35.3	55.9	5.3	127.5	81.6
August	8.4	0.2	617.7	20.3	102.1	72.0	88.0	69.8	30.4	44.3	63.0	5.0	120.3	84.6
September	6.8	0.0	497.8	18.7	99.4	70.1	85.0	66.8	30.4	45.0	60.5	4.9	118.2	83.0
October	5.3	0.3	438.7	10.2	90.7	57.1	73.4	56.4	20.6	35.8	43.7	4.0	96.2	75.2
November	3.7	0.0	328.4	7.2	77.8	45.4	61.0	54.6	23.3	38.3	35.0	4.7	112.7	64.6
December	2.2	0.1	260.4	5.7	61.5	31.4	45.8	69.5	34.6	47.1	28.9	4.2	99.7	49.9

CIMIS STATION #68 - SEELEY
1988-1992 Monthly ETo Values




CIMIS STATION #68 - SEELEY
1988-1992 Monthly Solar Radiation
Monthly Solar Radiation, Langleys/day
800.0
700.0
600.0
500.0
400.0
300.0
200.0
100.0
0.0
1988
1990
1992
JAN
FEB
MAR
APR
MAY
JUNE
JULY
AUG
SEP
OCT
NOV
DEC

Appendix B

Rainfall Runoff and Effective Precipitation

Municipal and Industrial Water Use

Canal Seepage Calculations

Tailwater

Evaporation and Phreatophyte Water Use Calculations

Technical Appendix B1

Rainfall Runoff and Effective Precipitation

References:

Document A: Freeman-1993, SMRAIN: Summary of Historic Rainfall Data and Runoff Analysis for IID
Document B: IID Water Control-1987:1992, Monthly Meteorological Observations
Document C: IID Water Control-1987:1992, Total Discharge to Salton Sea
Document D: Freeman-1993, Rainfall Runoff Plot Generated for January 4, 1987
Document E: IID Water Department-1987:1990, Summary of Area Served as Listed in Water Reports

1. The rainfall data for 1987-92 for the CIMIS stations is from the main CIMIS database. The "CIMIS Average" is the average of the Calipatria, Seeley, and Meloland stations. The CIMIS rainfall data was not used in any calculations.

2. The rainfall data for the IID weather stations is from Document B. The "IID Average" is the average of the 5 stations. The following table summarizes the average annual rainfall in IID:

Year	Rain, Inches
1987	2.70
1988	1.57
1989	1.12
1990	2.49
1991	4.86
1992	5.50

3. The data for the discharge to the Salton Sea is from Document C. In the SMRAIN.XLS spreadsheet, the column "Discharge to Salton Sea" is the data listed in Document C under "Total to Sea".

4. The following procedure was used in determining the discharge due to rain events in the Imperial Valley:

   a) The daily discharge data was entered into the spreadsheet for days previous to the rain event until the discharge data increased. This date was considered the beginning for analysis purposes.

   b) The daily discharge data was entered into the spreadsheet after the rain event until the discharge data began to increase again. This date was considered the end of the analysis period.

c) To determine the magnitude of the discharge due to rain, the daily discharge data from the beginning to the end of each analysis period was plotted (see Document D).

d) The plots were correlated with rainfall events from the 5 IID weather stations. Each rainfall event was analyzed separately. The flow at the end of the analysis period was considered to be the base flow (see Document D). A straight, horizontal line was drawn from the flow on the last day in the analysis period to the day following the beginning of the analysis period. This line represents the base flow. The dates of the beginning and end points were modified depending upon how the graphs fit the rainfall data.

e) The values along the base line were assumed to be the flows that would have occurred if it had not rained (see Document D). These values were entered into the SMRAIN.XLS spreadsheet in the column "Extrapolated Values".

f) The extrapolated values were subtracted from the daily discharge data to determine the discharge due to rain. The rain discharge was converted to acre-feet and totaled on an annual basis.

5. The following table summarizes the calculated discharge due to rain:

Year	Discharge Due to Rain Acre-Feet
1987	21,363.6
1988	18,677.0
1989	9,441.4
1990	16,123.6
1991	30,886.0
1992	45,780.2

6. The rainfall was analyzed separately for agricultural and non-agricultural lands. The runoff from undeveloped lands was assumed to be negligible because the soil is dry and uncompacted.

7. For agricultural lands the following breakdown was used to determine the destination of rainfall:

Less than 0.10"/day - all non-beneficial evaporation

Between 0.10"-0.20"/day - half evaporation and half ET

Greater than 0.20"/day - tile and runoff = Discharge due to rain minus non-ag runoff minus Mesa storm inflow

- Crop ET is the remainder

The rainfall events were totaled for each of these 3 categories. The total inches of rain in the first 2 categories was multiplied by the "Net Area Irrigated" acreage from Document E. The amount of tile and runoff from ag lands was determined by subtracting the non-ag runoff and Mesa storm inflows from the total discharge due to rain (calculated in the SMRAIN.XLS spreadsheet). The remainder of the greater than .20"/day category was assumed to be Crop ET.

8. For non-agricultural lands the following breakdown was used to determine the destination of rainfall:

   Less than 0.10"/day - all non-beneficial evaporation

   Between 0.10"-0.20"/day - half evaporation and half runoff

   Greater than 0.20"/day - part non-beneficial evaporation and part runoff

   The rainfall events were totaled for each of the 3 categories. The total inches of rain in the first 2 categories was multiplied by the sum of the acreage listed in Document E as "Area of Farms", "Area in Cities", and "Area in Drains". The runoff portion of the rainfall events greater than .20"/day was calculated based on the following assumptions:

   a) 30% of rain falling on the acreage listed as "Area of Farms" and "Area in Cities" is runoff. This acreage varies between 31,567 and 37,952 acres, in 1987 and 1992 respectively.

   b) 50% of rain falling on the acreage listed as "Area in Drains" is runoff.

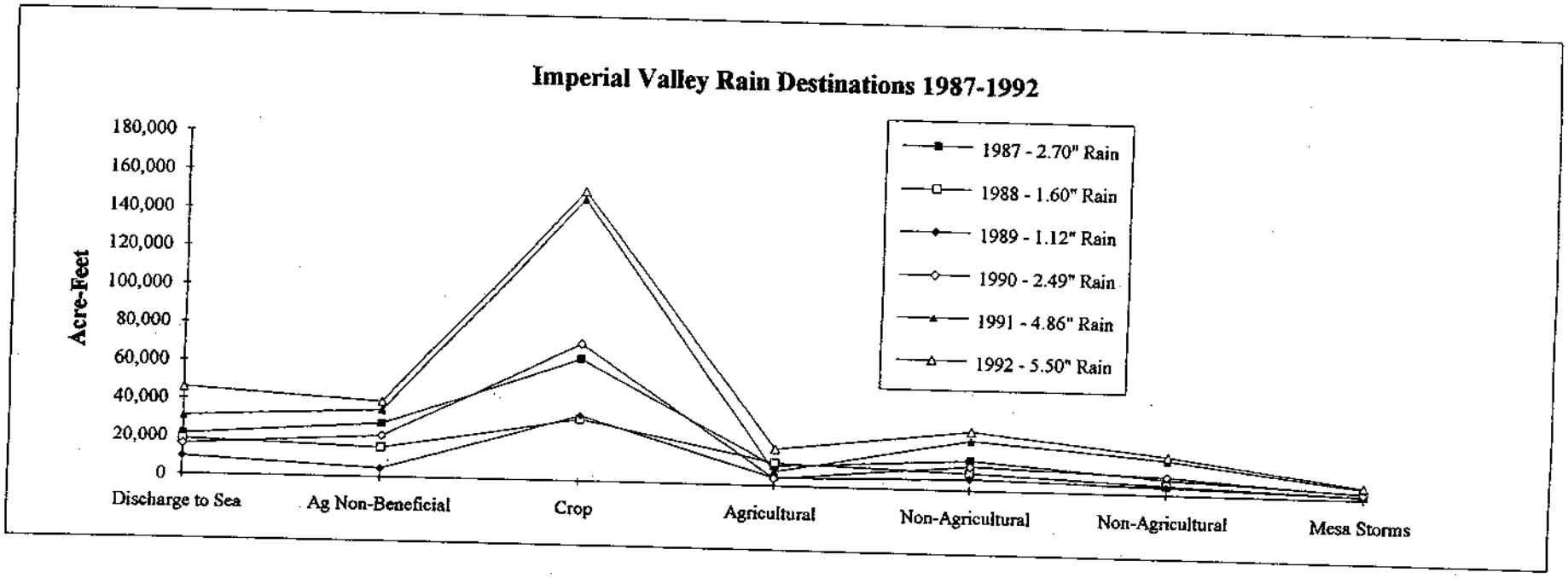
   The remainder of the rainfall above .20"/day was assumed to be non-beneficial evaporation.

9. The discharge due to rain value summarized in item 5 is the sum of three components; agricultural runoff, non-agricultural runoff, and Mesa Storm Inflows. Non-agricultural runoff was calculated using the procedure discussed in item 8. The value for Mesa Storm inflow was assumed to be 3,000 acre-feet in 1987. For the years 1988-1992, the amount of runoff attributable to Mesa Storms varied by the ratio of rainfall in those years compared to 1987. Agricultural runoff is the closure term in the analysis. Agricultural runoff is the remainder of the discharge due to rain after non-agricultural runoff and Mesa Storm Inflows have been taken out. The values for all runoff components (including a breakdown by the size of the rainfall event) is listed in Document A.

10. The following table summarizes the rainfall data used in the IID Water Balance:

Year	Ag NB Evap	Crop ET	Ag Runoff	Non-Ag NB Evap	Non Runoff	Mesa Storms Runoff
1987	28,103	63,908	10,525	15,665	7,838	3,000
1988	15,462	32,563	12,093	8,966	4,845	1,739
1989	4,446	34,553	4,300	5,979	3,897	1,244
1990	21,683	71,596	4,002	12,746	9,355	2,767
1991	35,134	147,144	7,445	26,323	18,041	5,400
1992	39,761	151,473	19,547	31,122	20,122	6,111

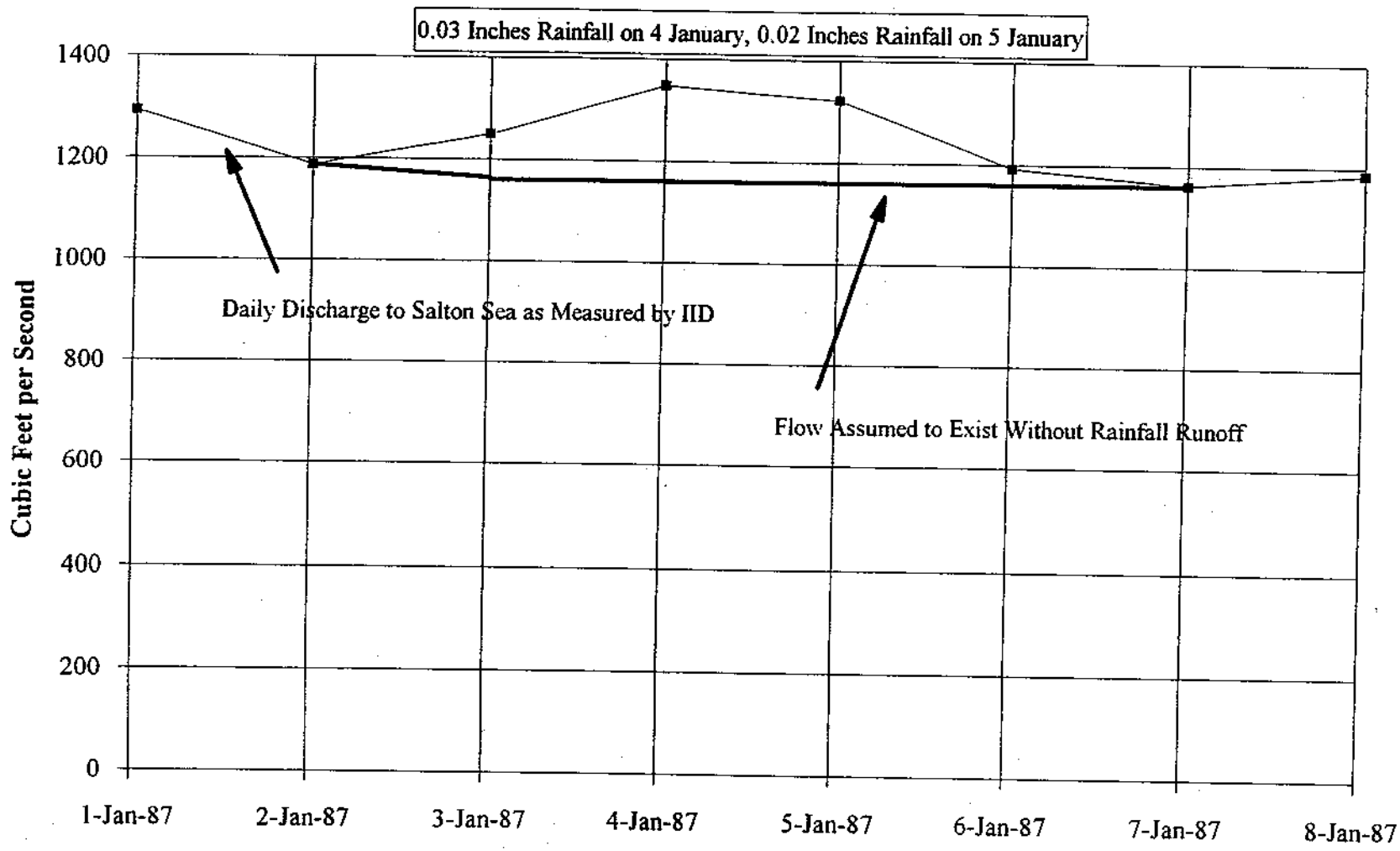
12. The following graph illustrates the rainfall destinations and magnitudes between 1987 and 1992. The data for discharge due to rain from item 5 is also plotted on the graph.



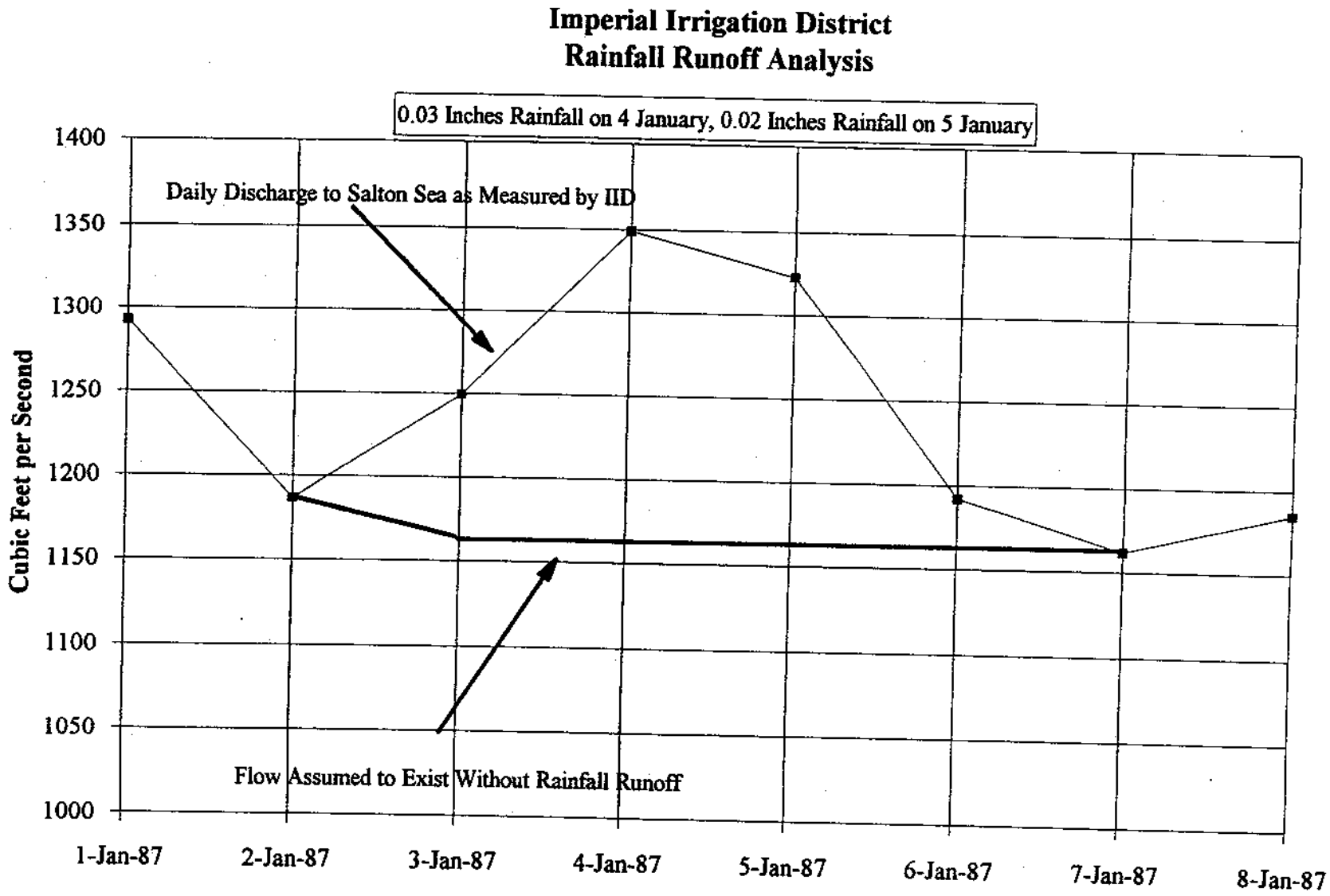
Year	Discharge to Sea due to Runoff	Ag Non-Beneficial Evaporation	Crop ET	Agricultural Runoff	Non-Agricultural Evaporation	Non-Agricultural Runoff	Mesa Storms Inflow
1987 - 2.70" Rain	21,364	28,103	63,908	10,525	15,665	7,838	3,000
1988 - 1.60" Rain	18,677	15,462	32,563	12,093	8,966	4,845	1,739
1989 - 1.12" Rain	9,441	4,446	34,553	4,300	5,979	3,897	1,244
1990 - 2.49" Rain	16,124	21,683	71,596	4,002	12,746	9,355	2,767
1991 - 4.86" Rain	30,886	35,134	147,144	7,445	26,323	18,041	5,400
1992 - 5.50" Rain	45,780	39,761	151,473	19,547	31,122	20,122	6,111

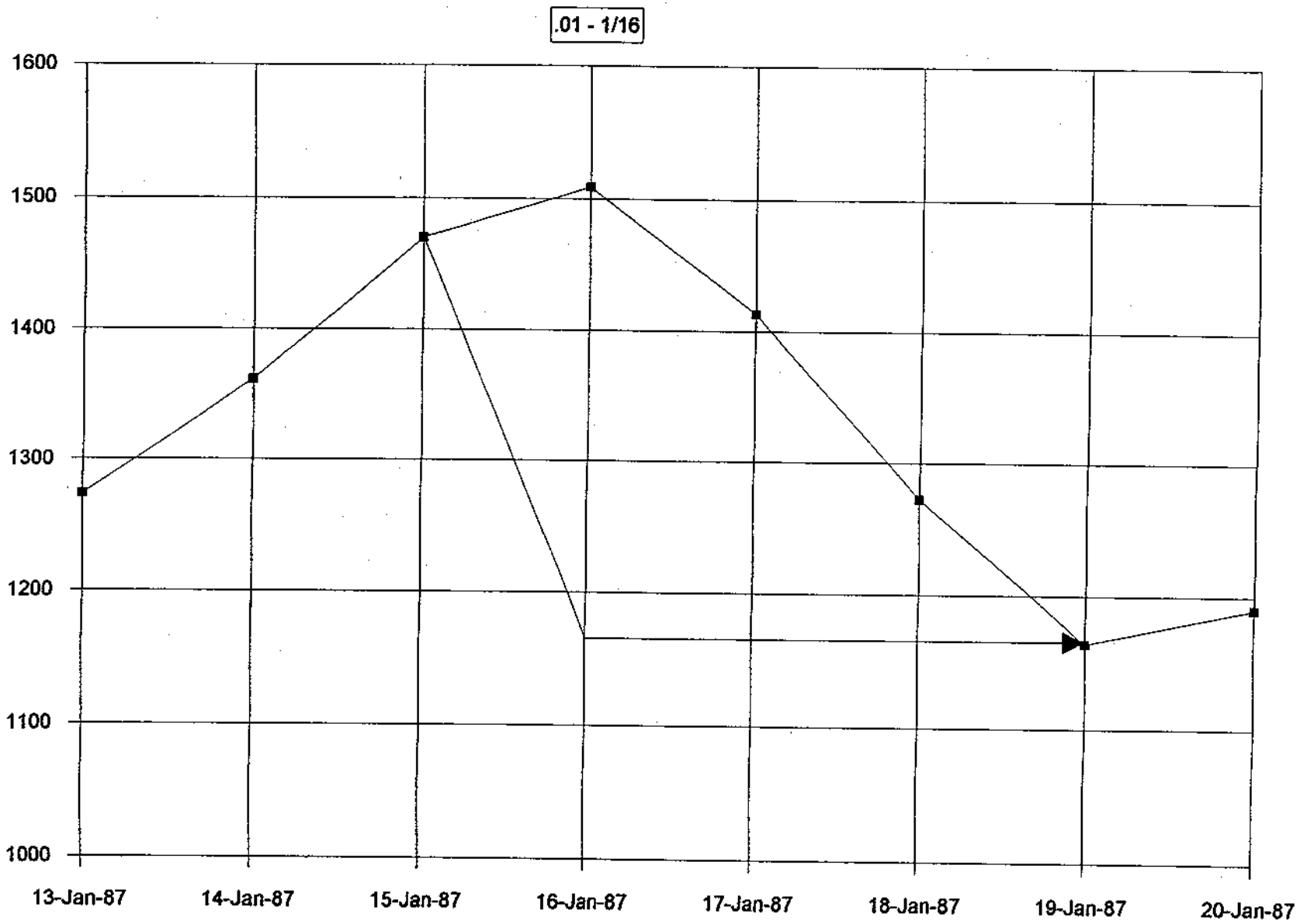
1987

Imperial Irrigation District
Rainfall Runoff Analysis



Imperial Irrigation District
Rainfall Runoff Analysis

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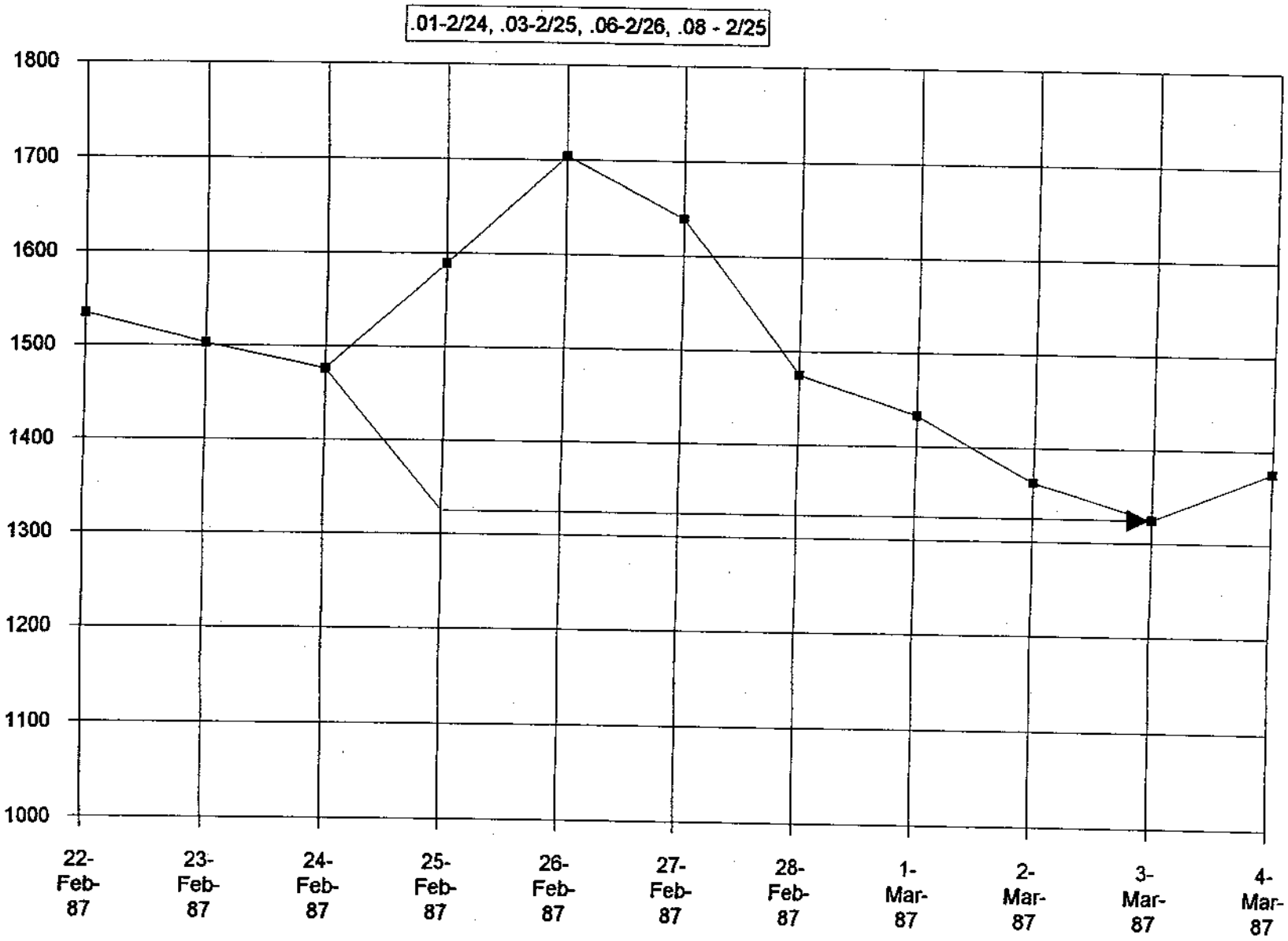
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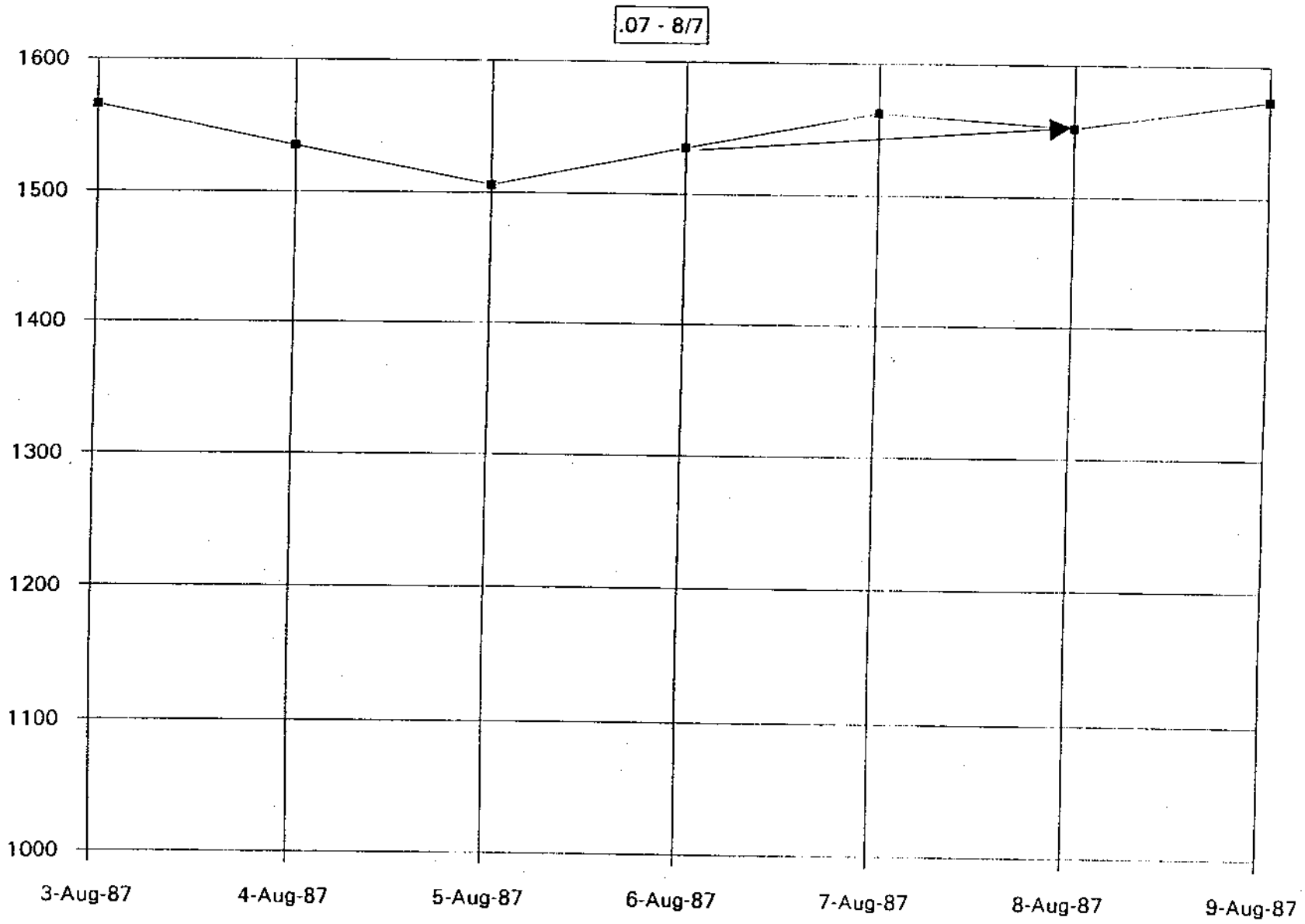
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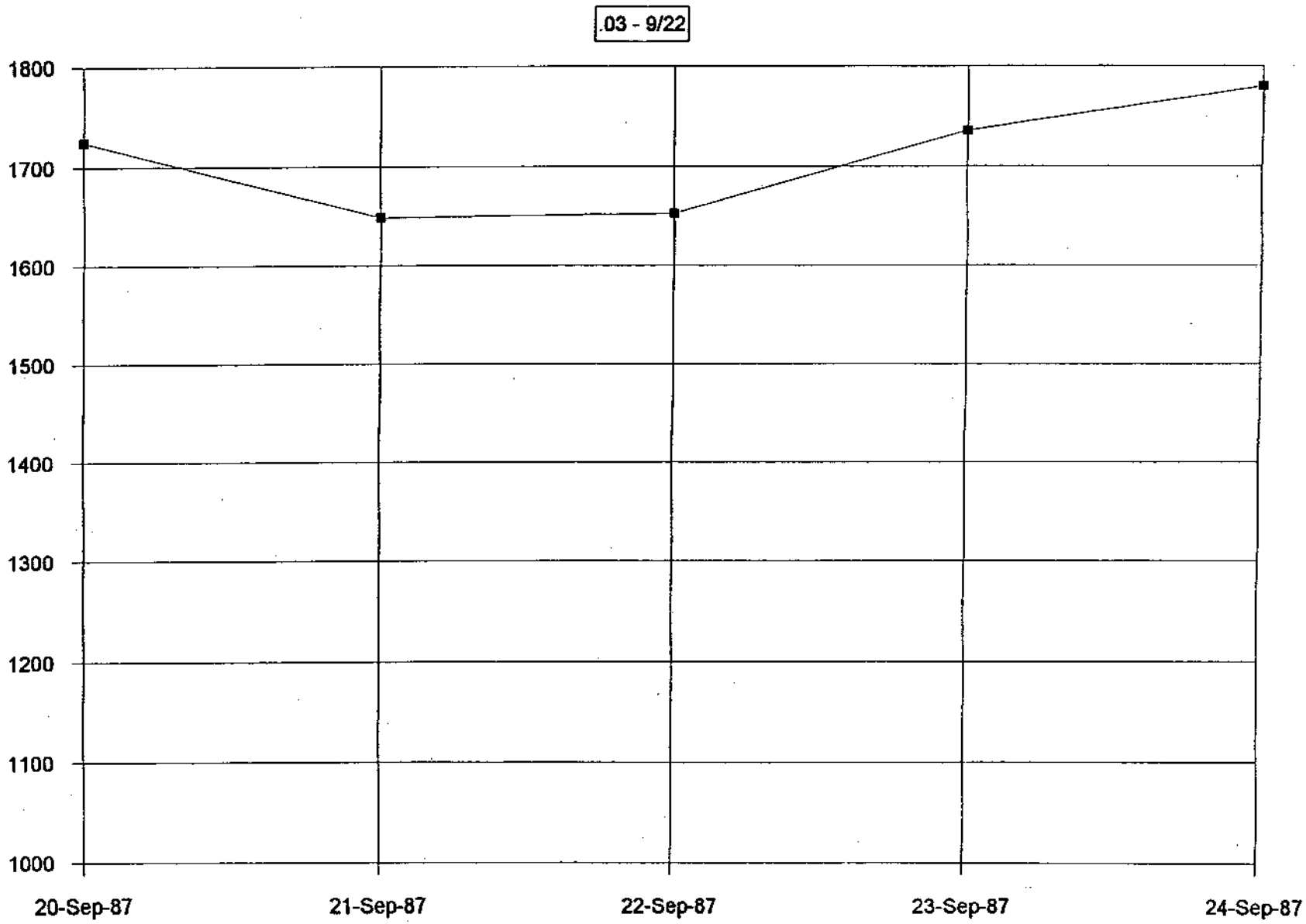
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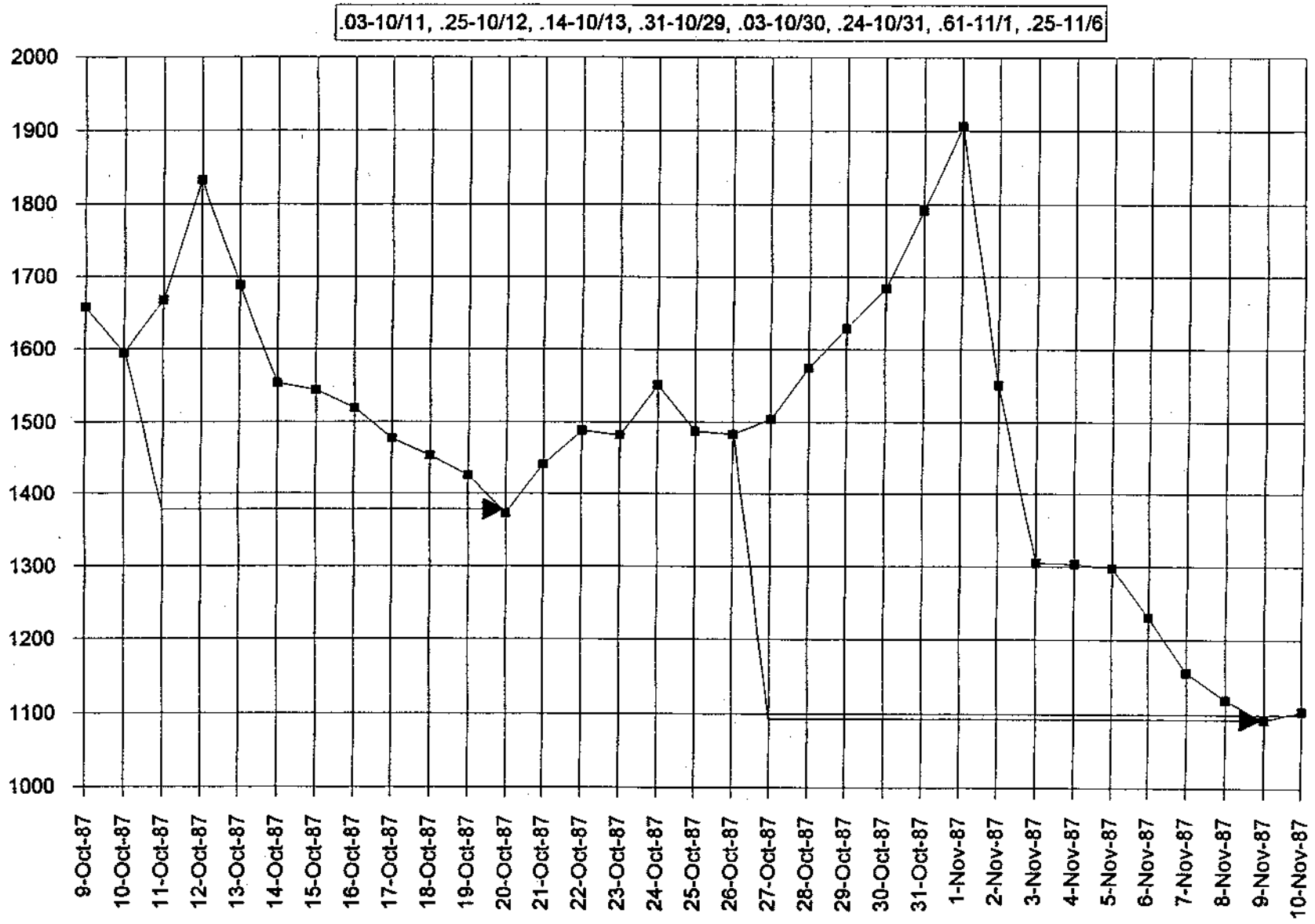
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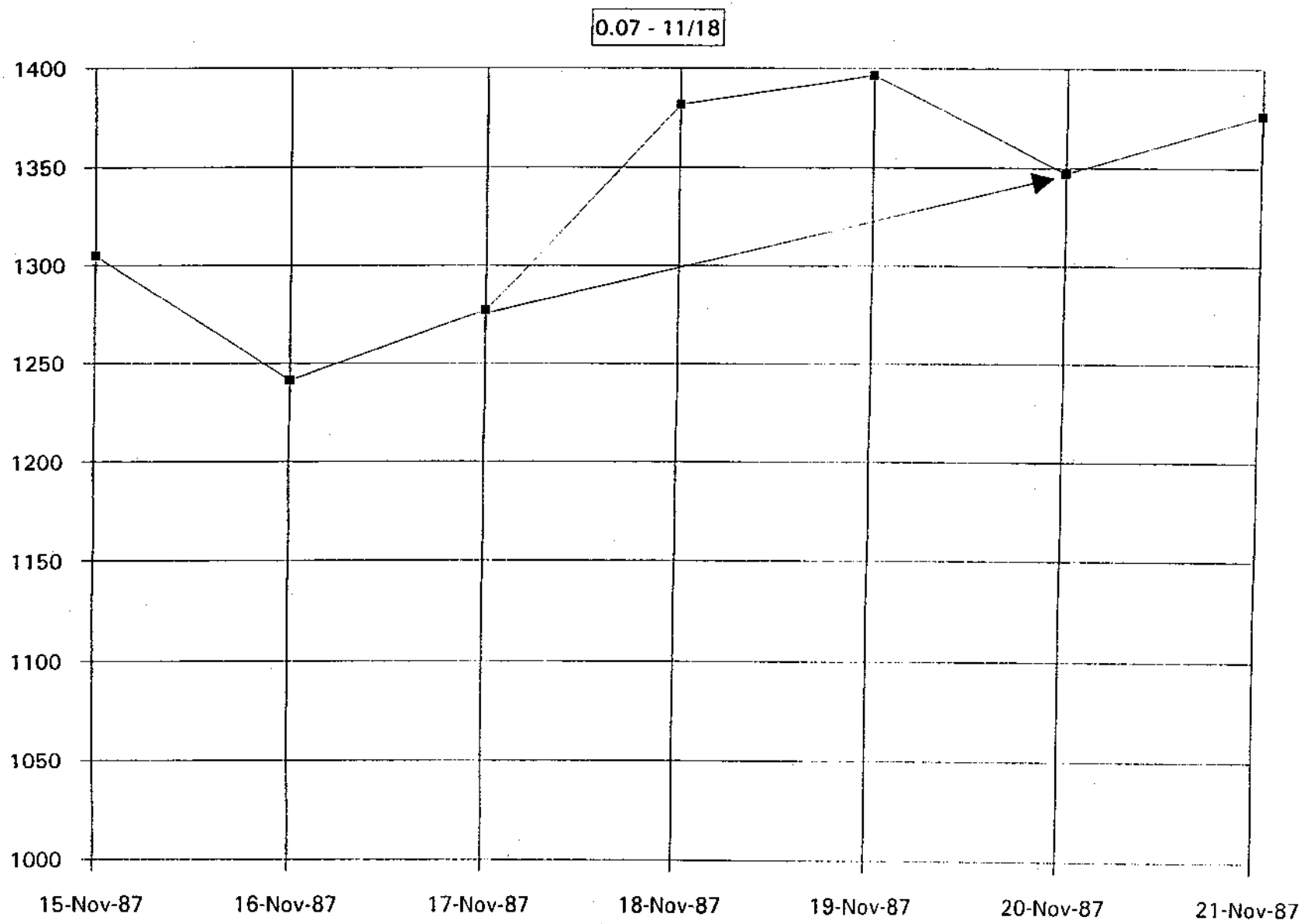
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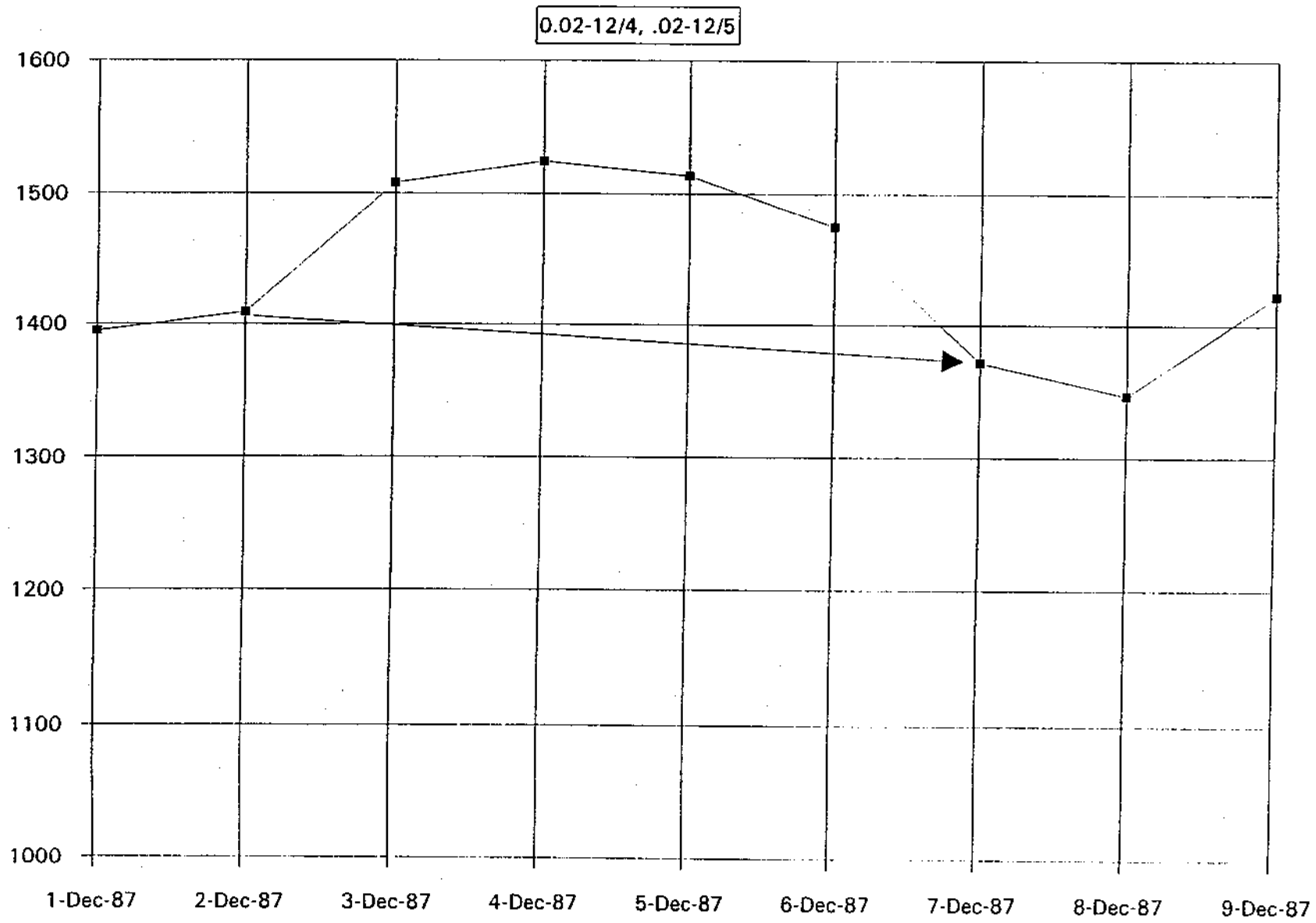
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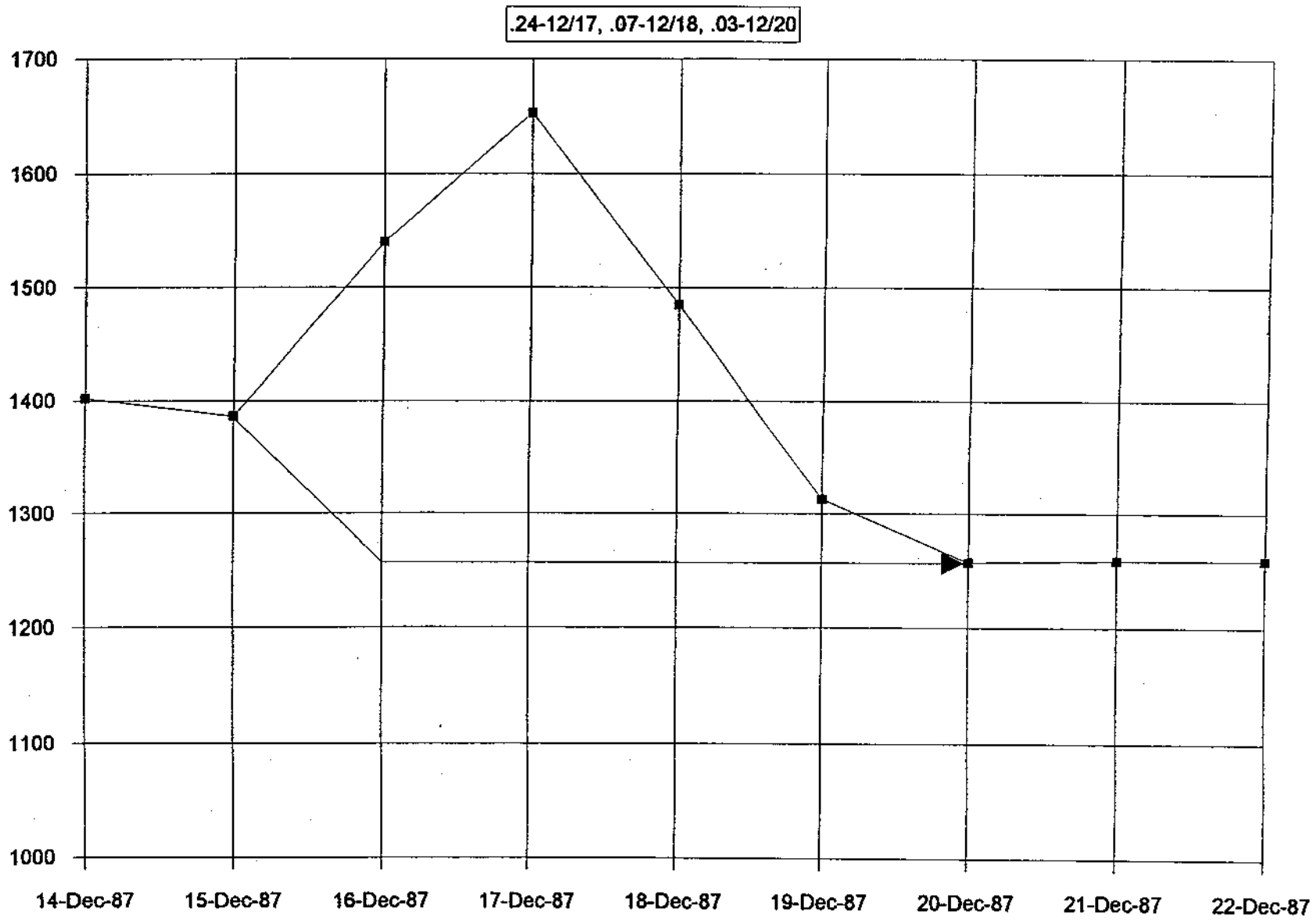
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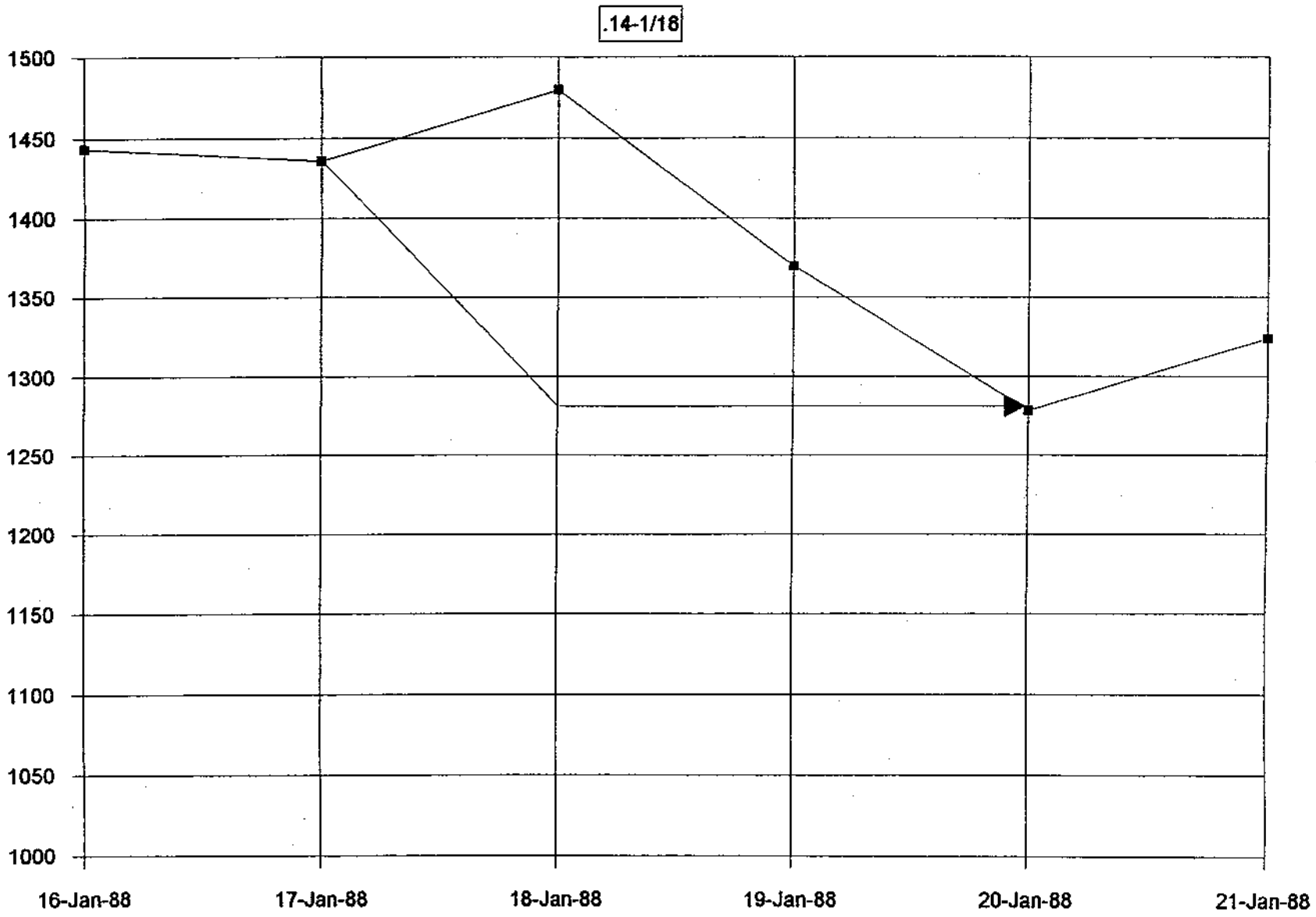
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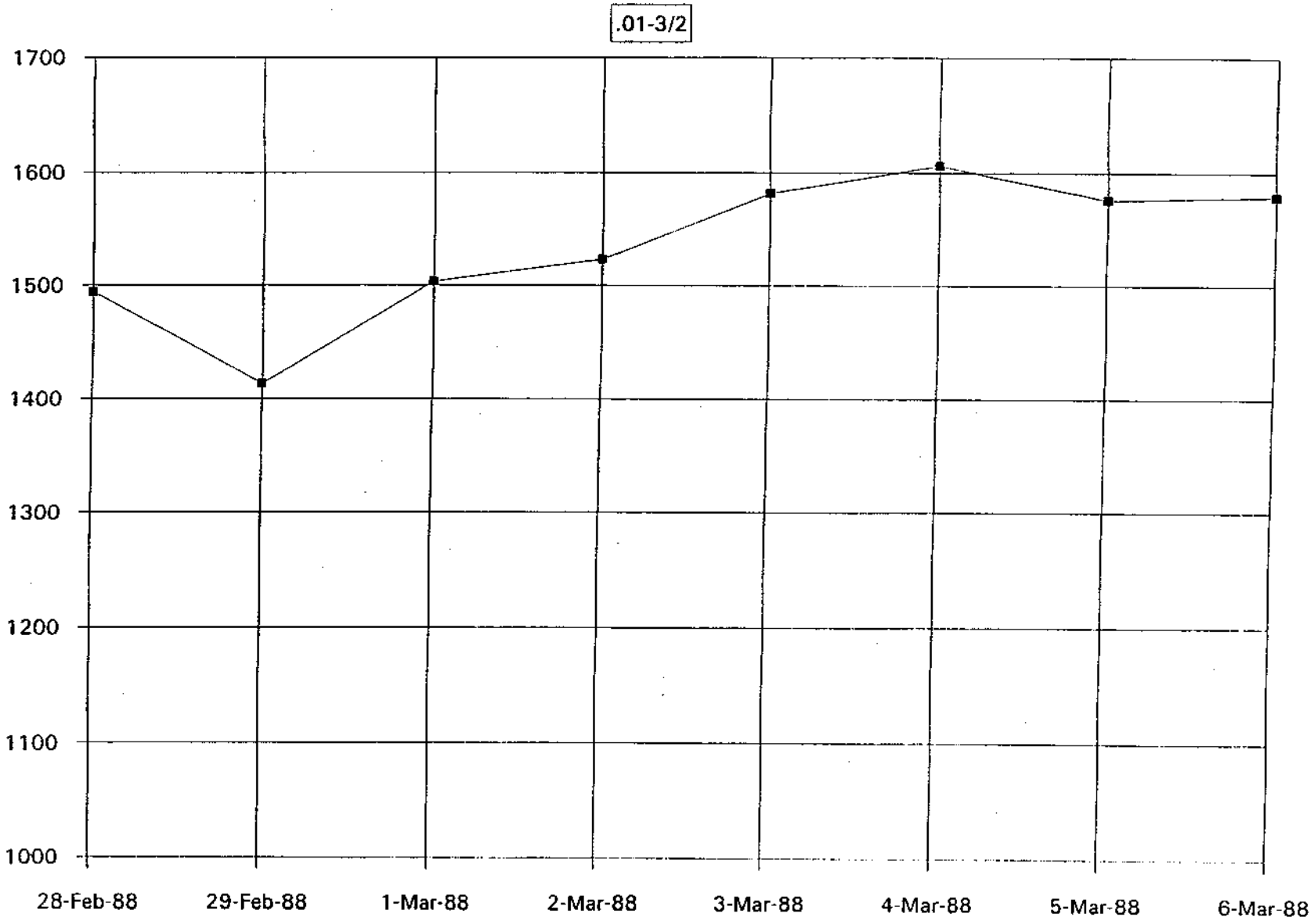
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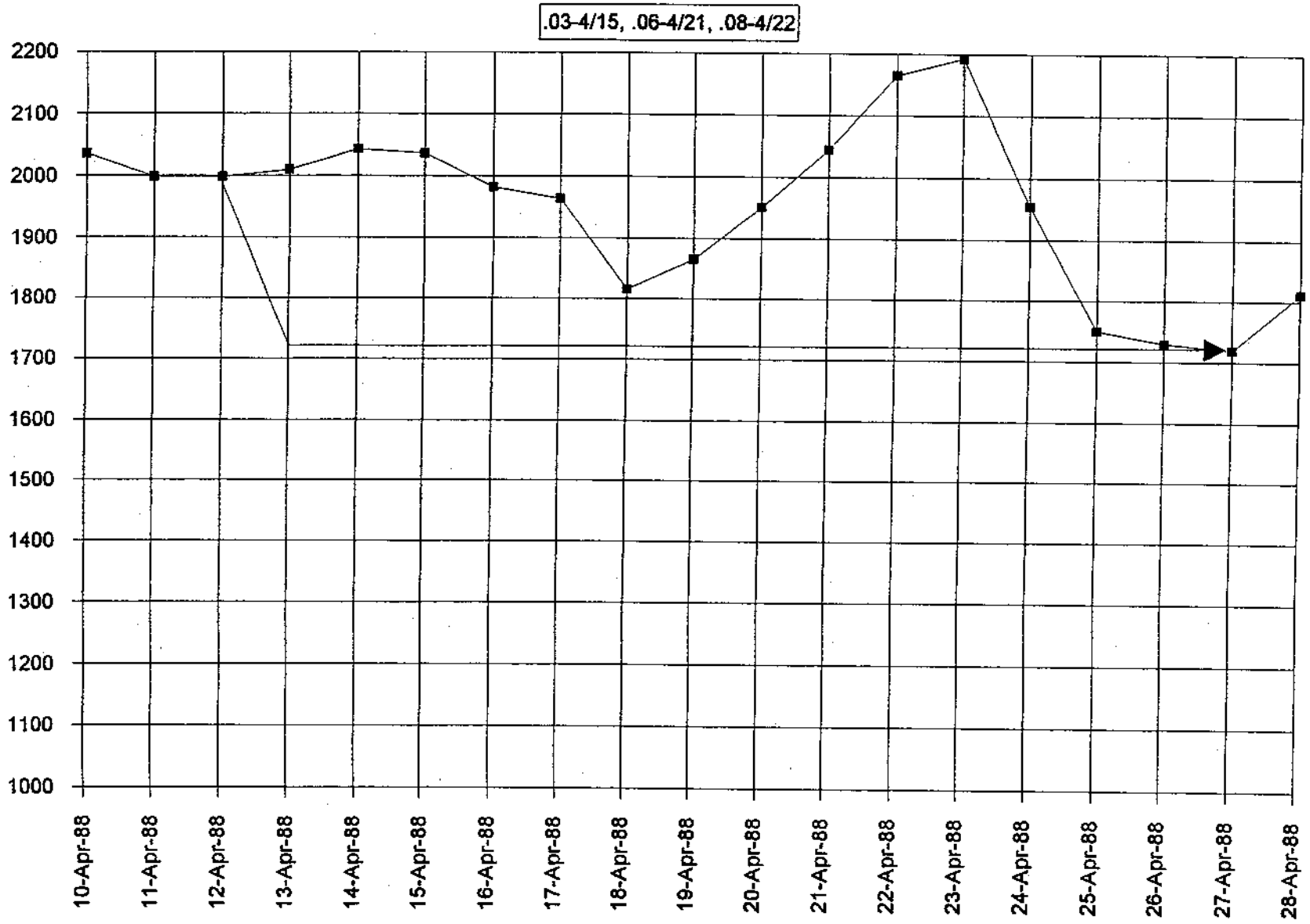
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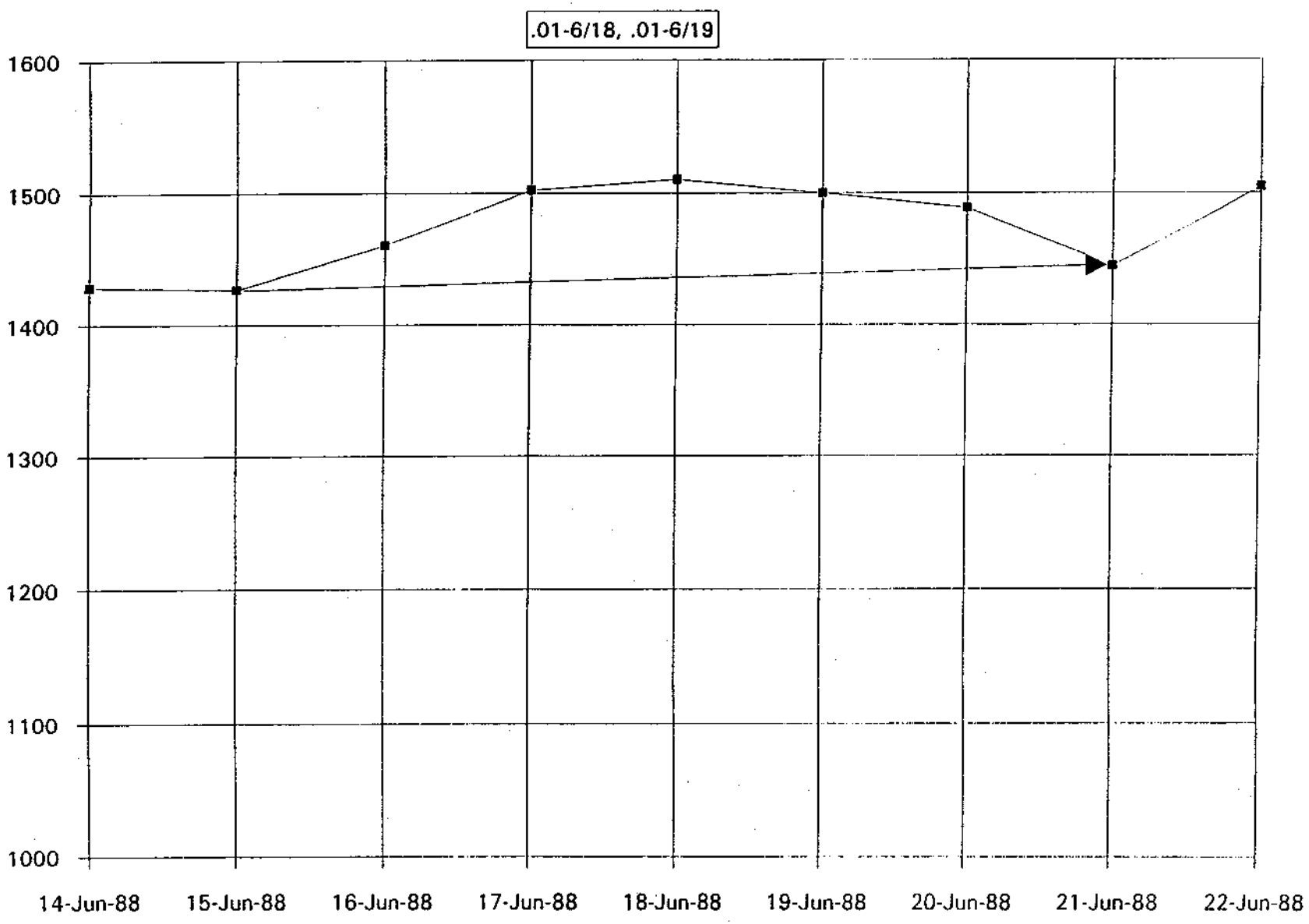
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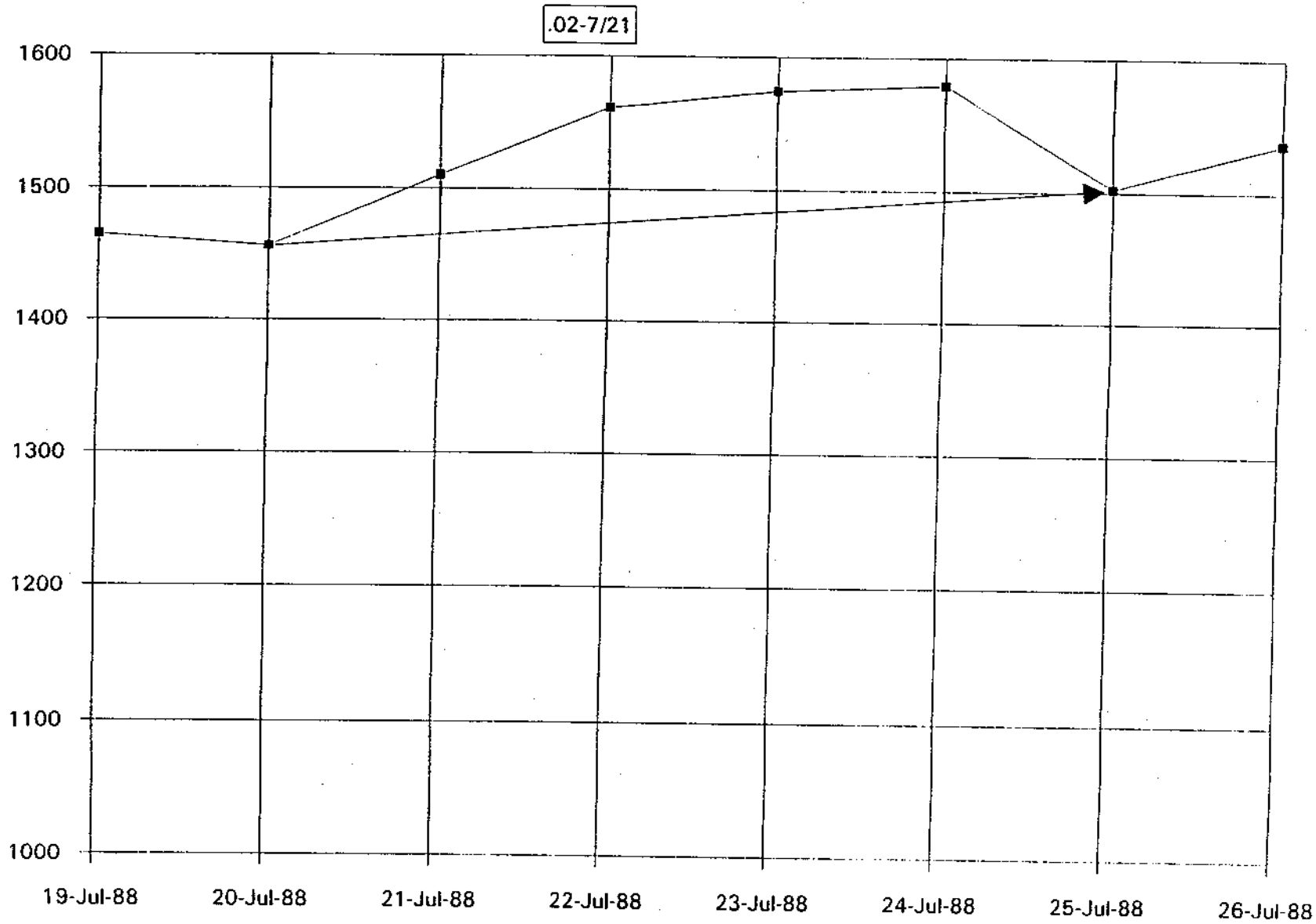
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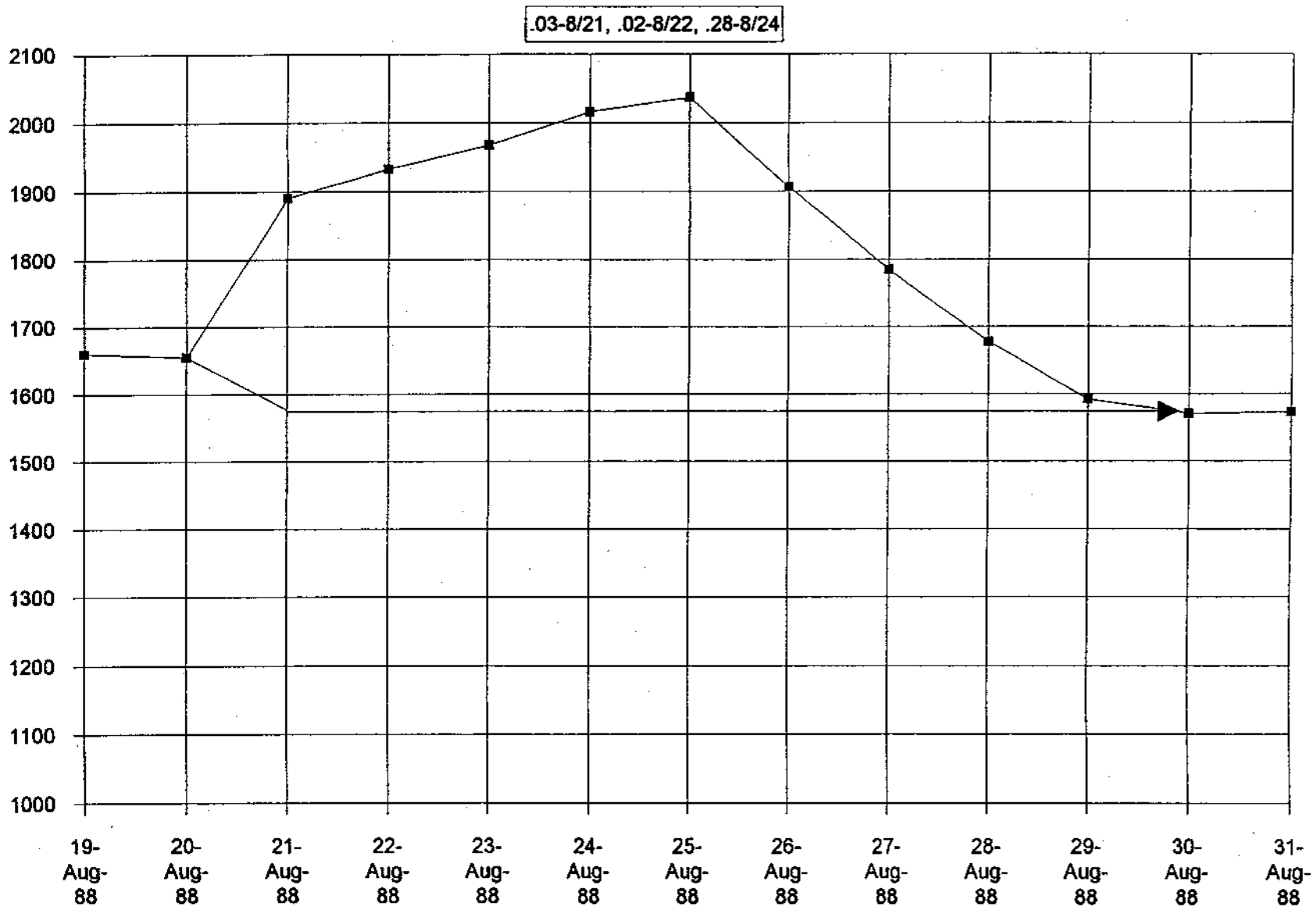
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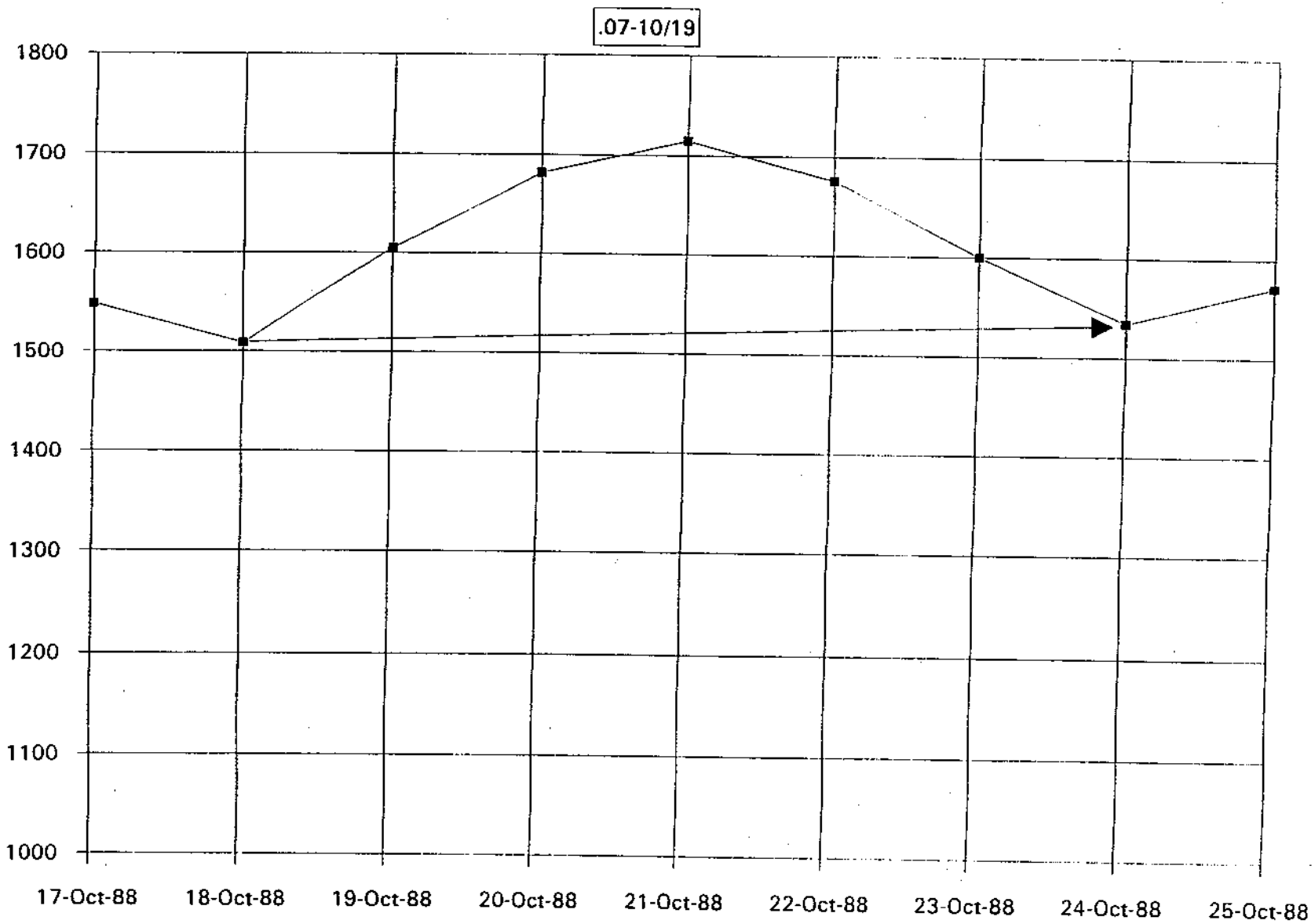
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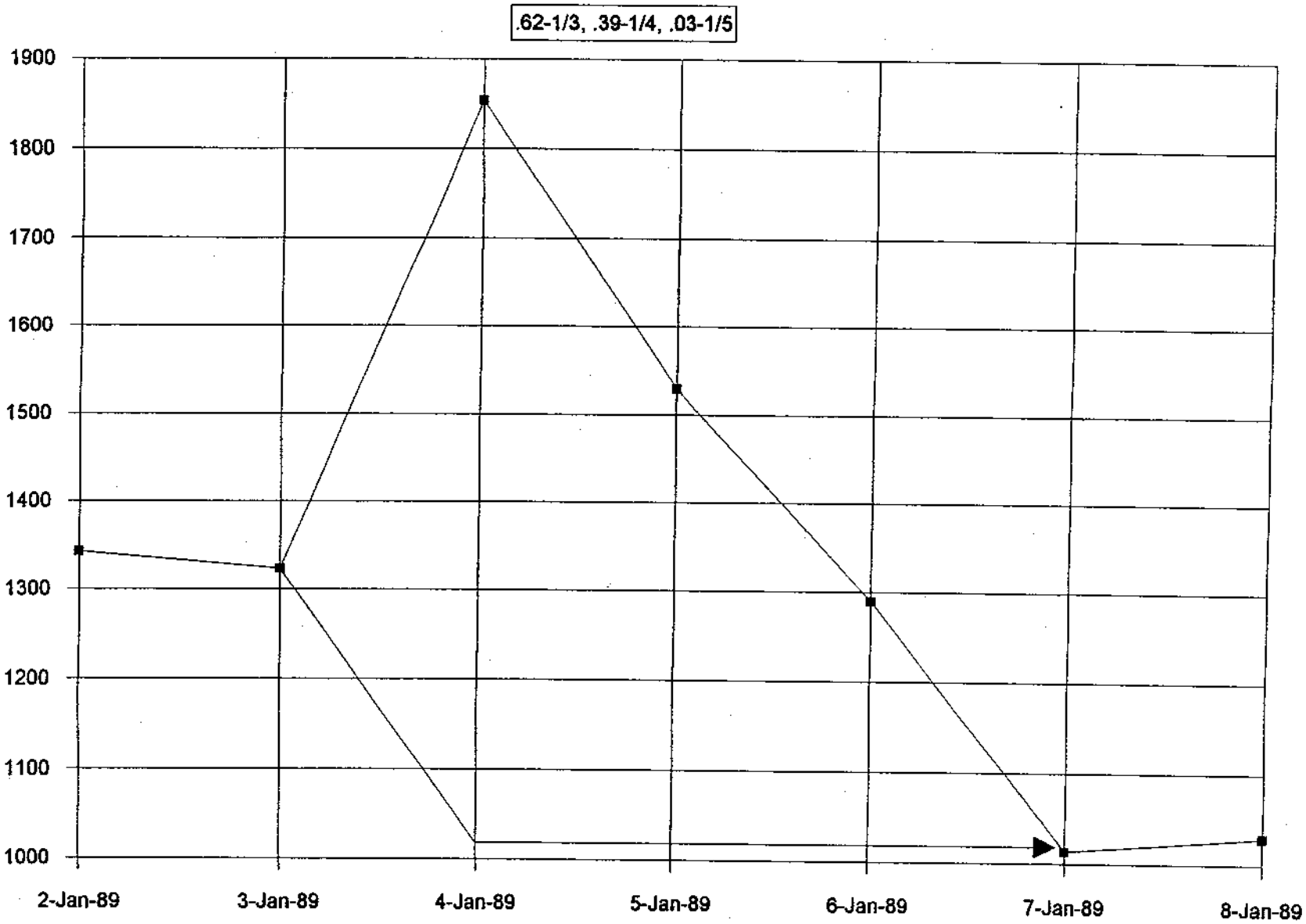
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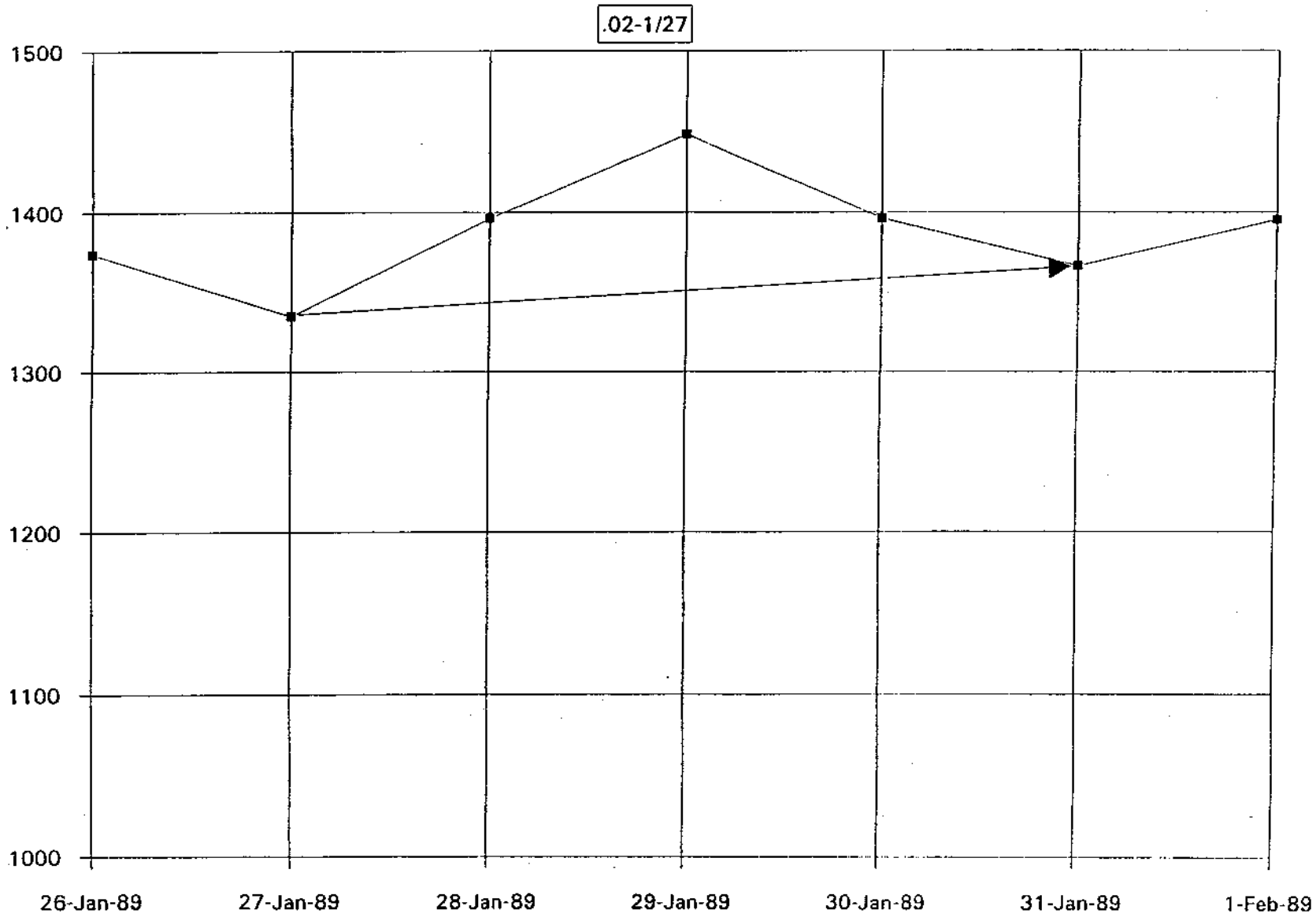
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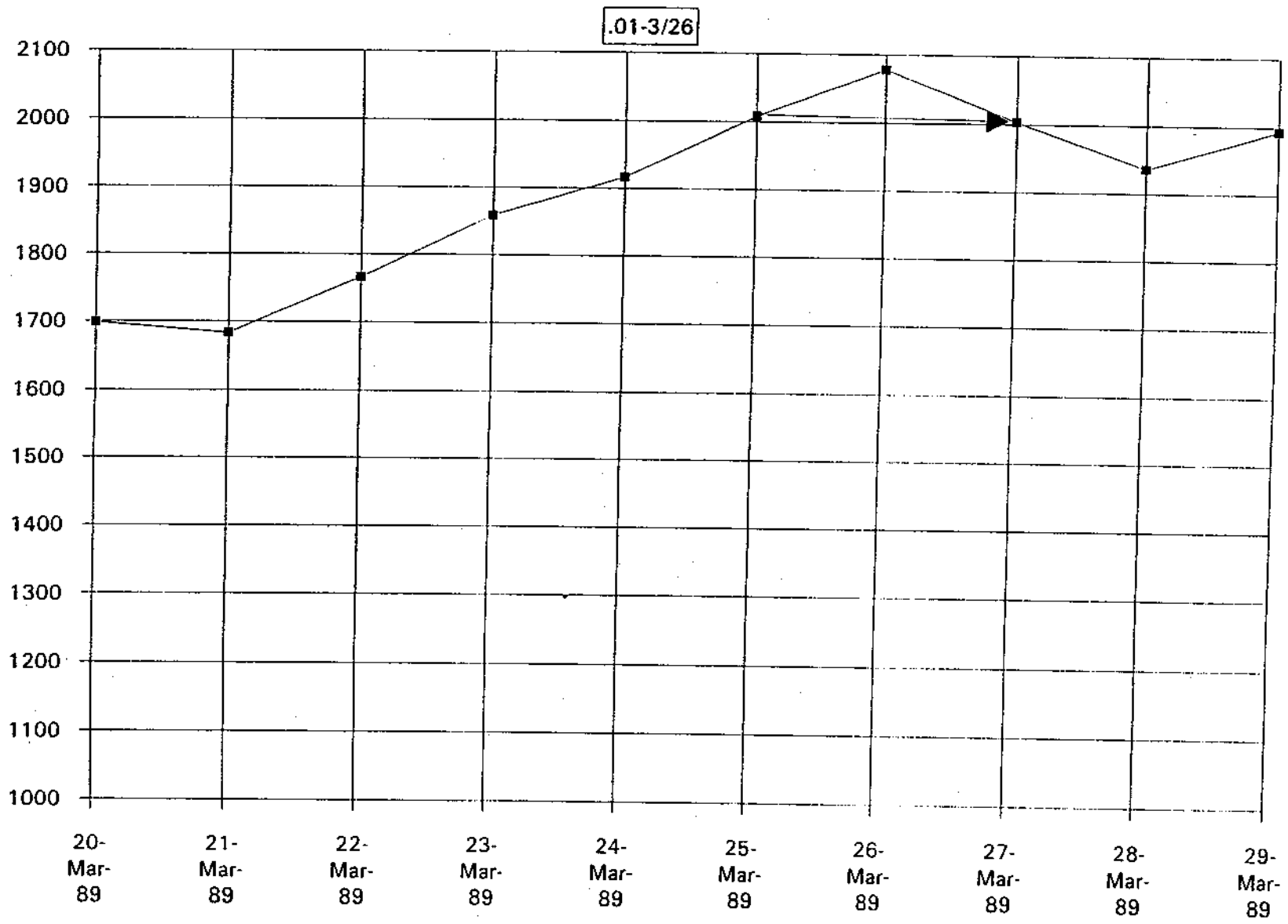
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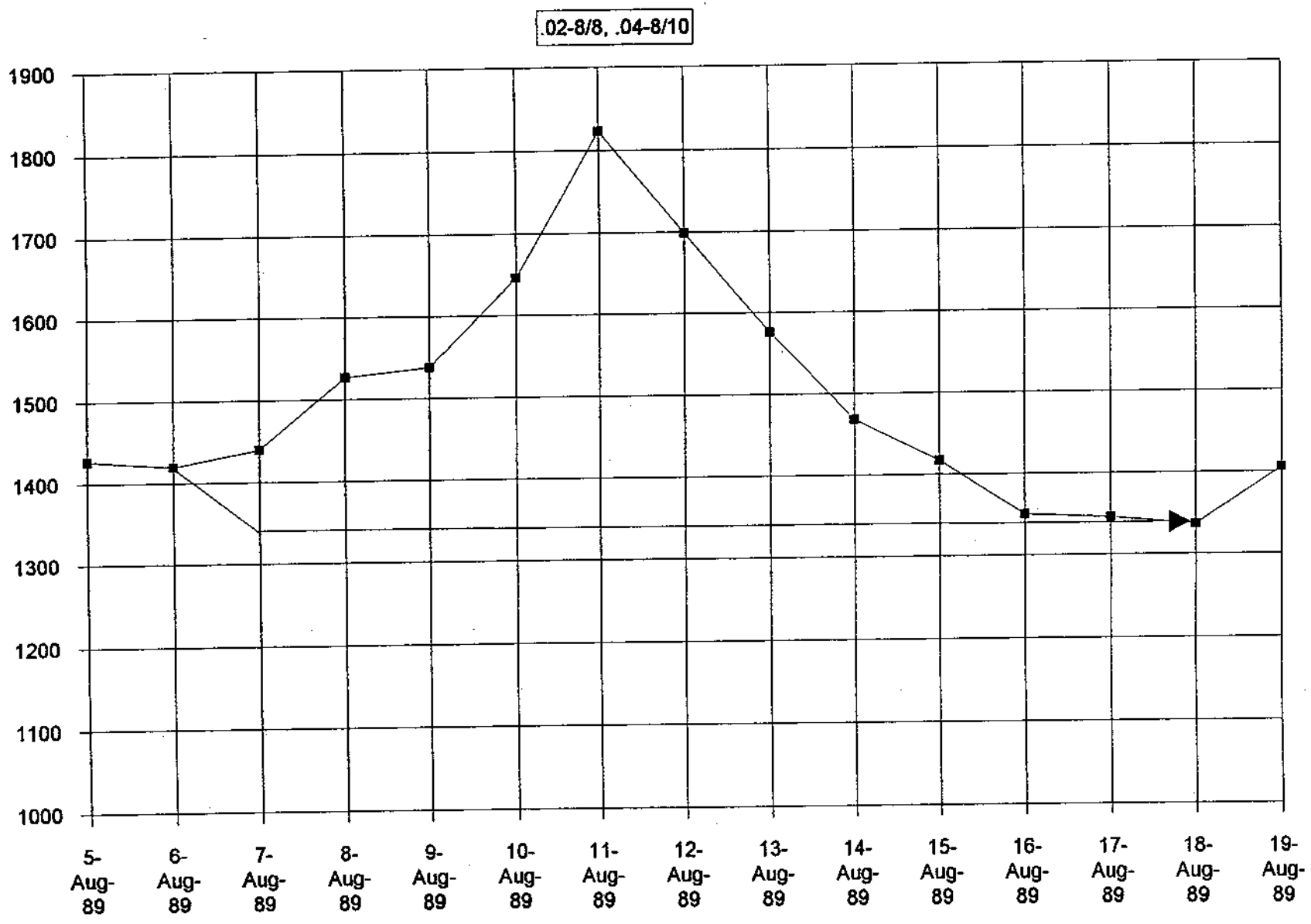
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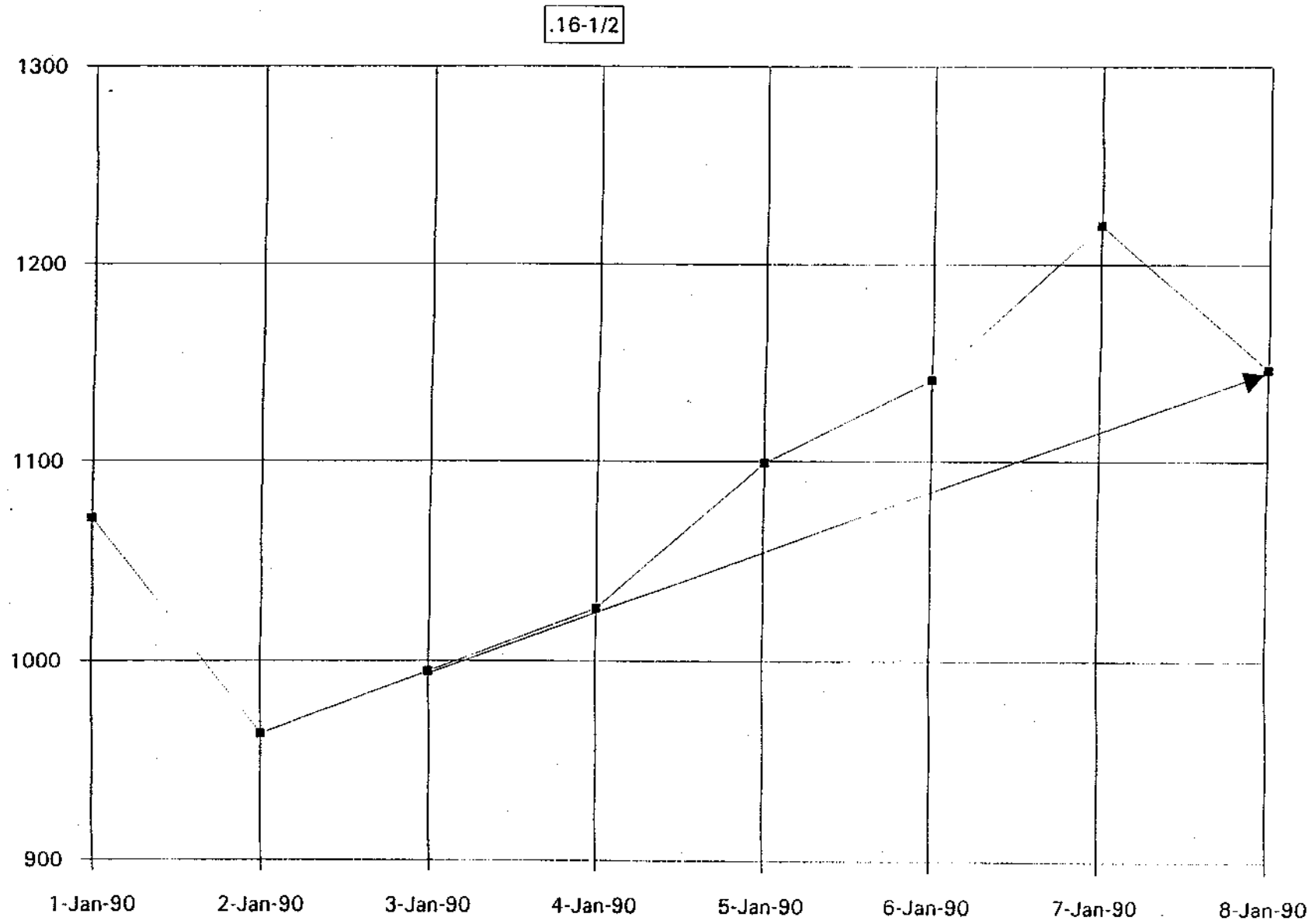
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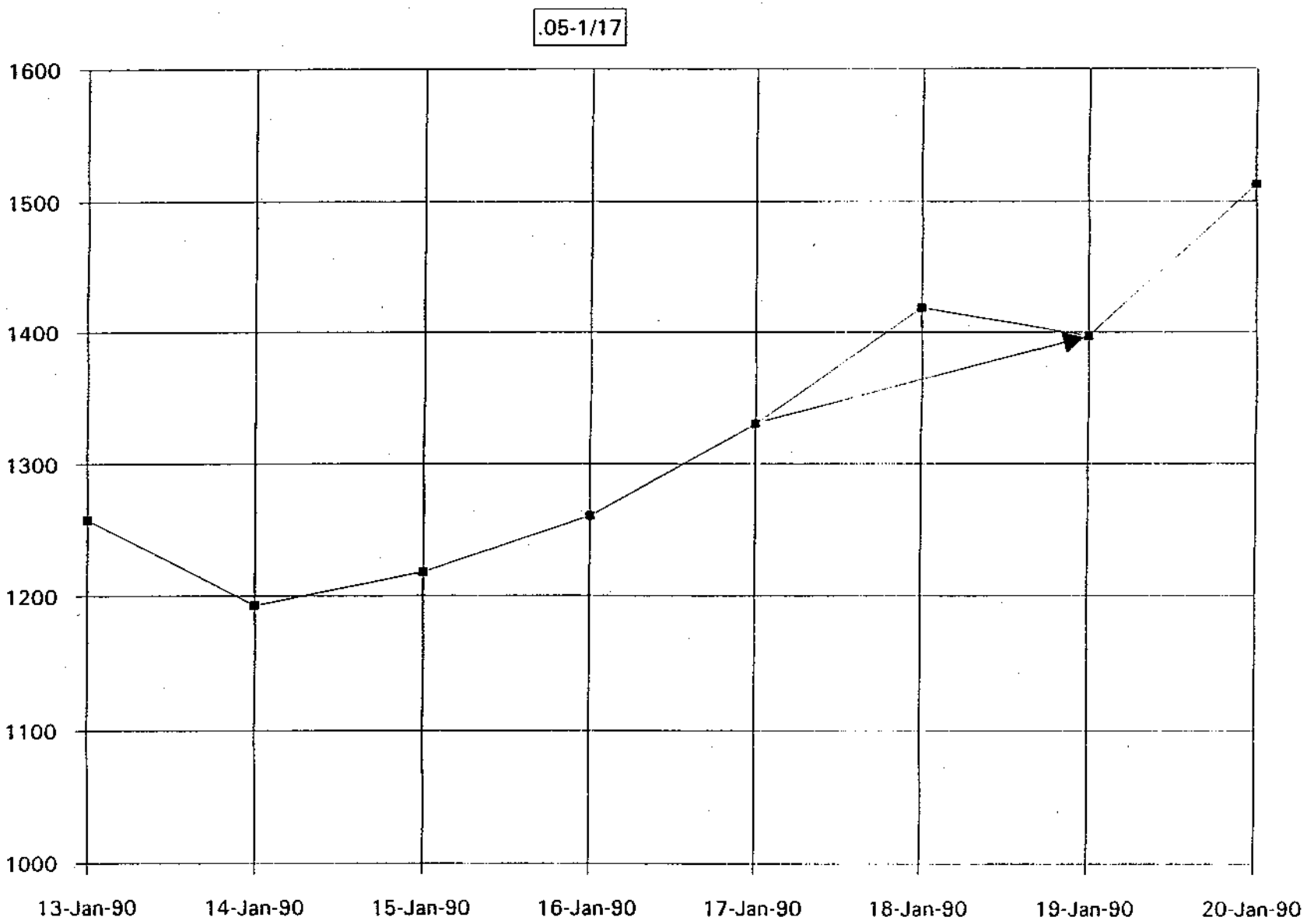
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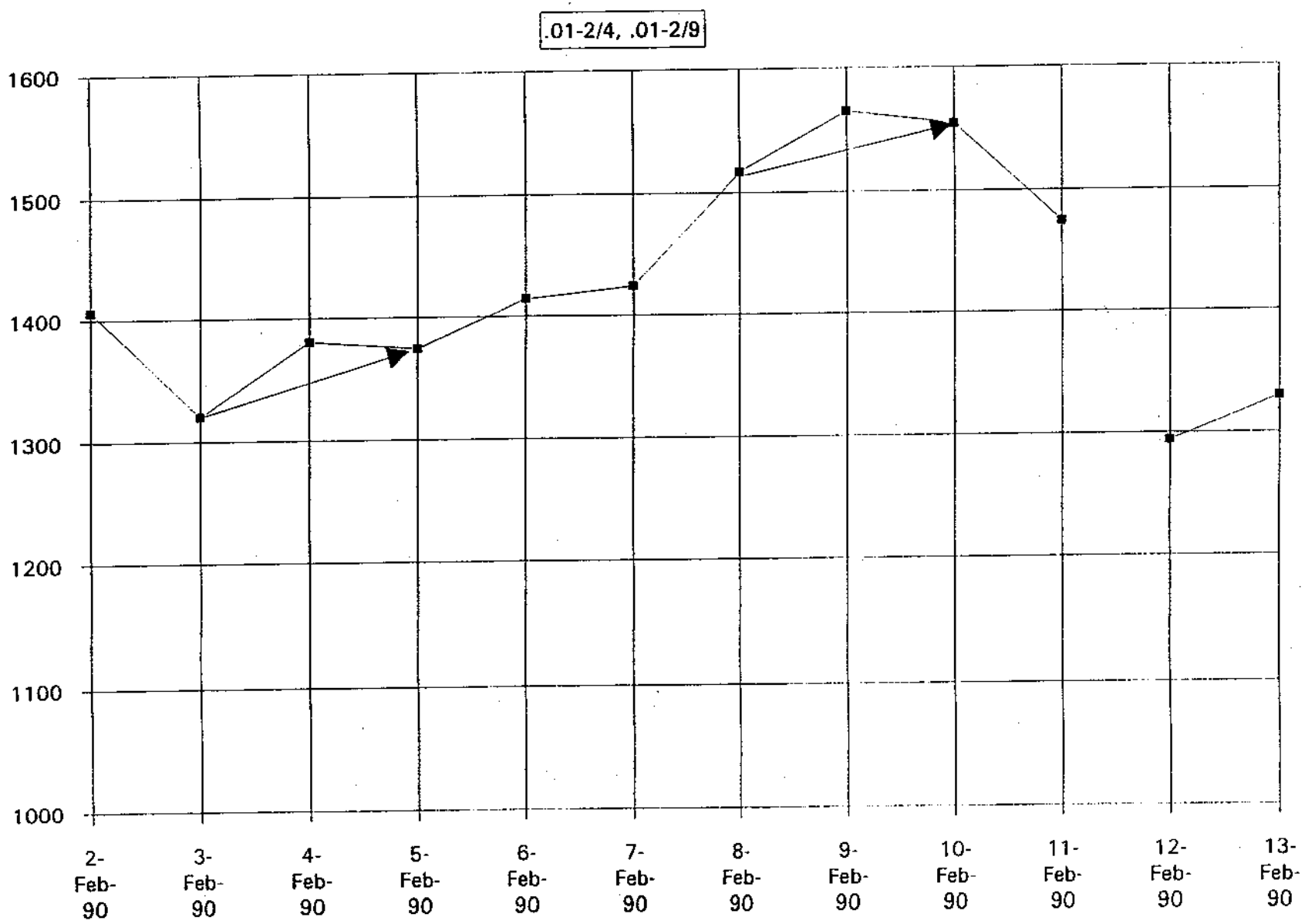
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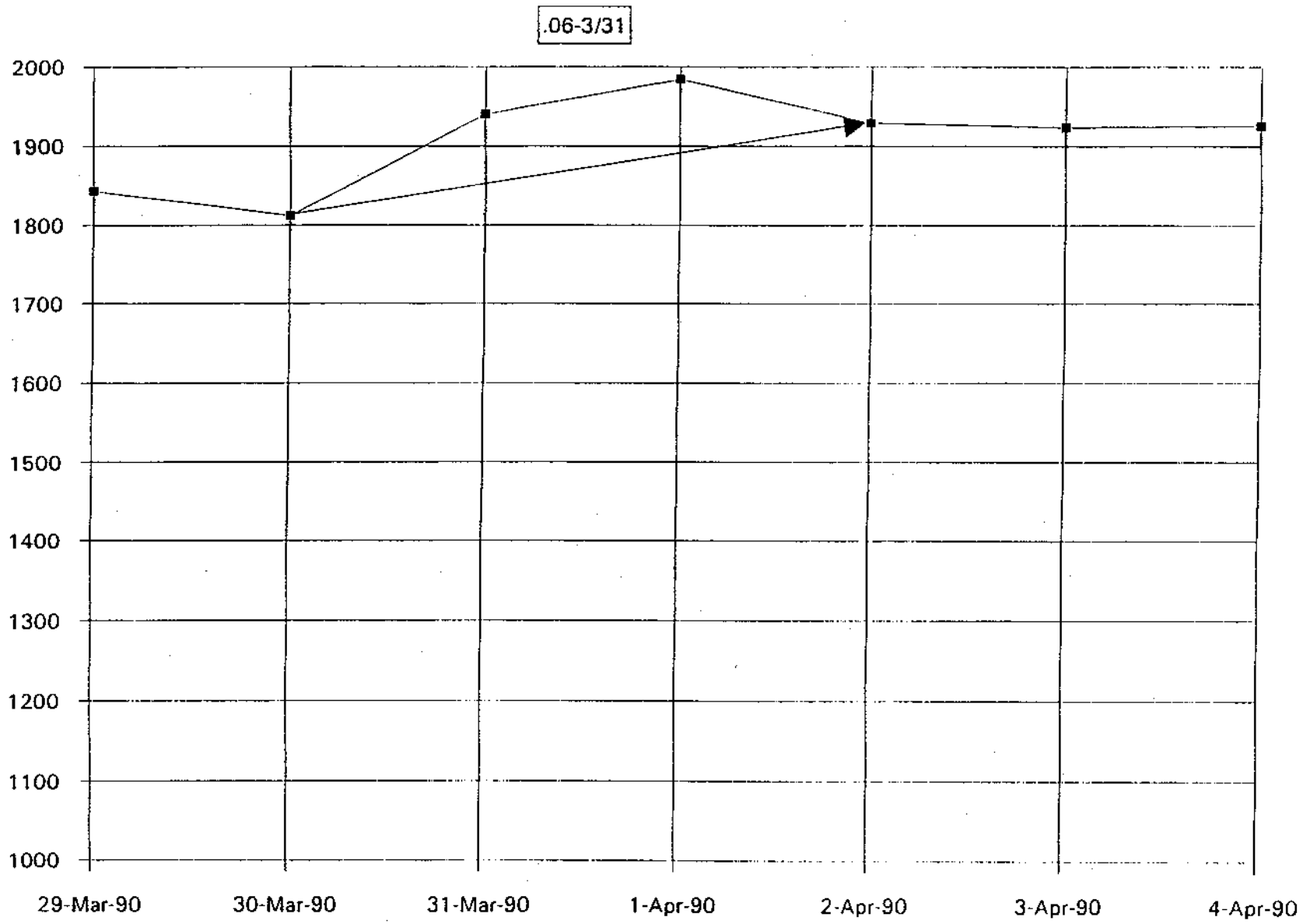
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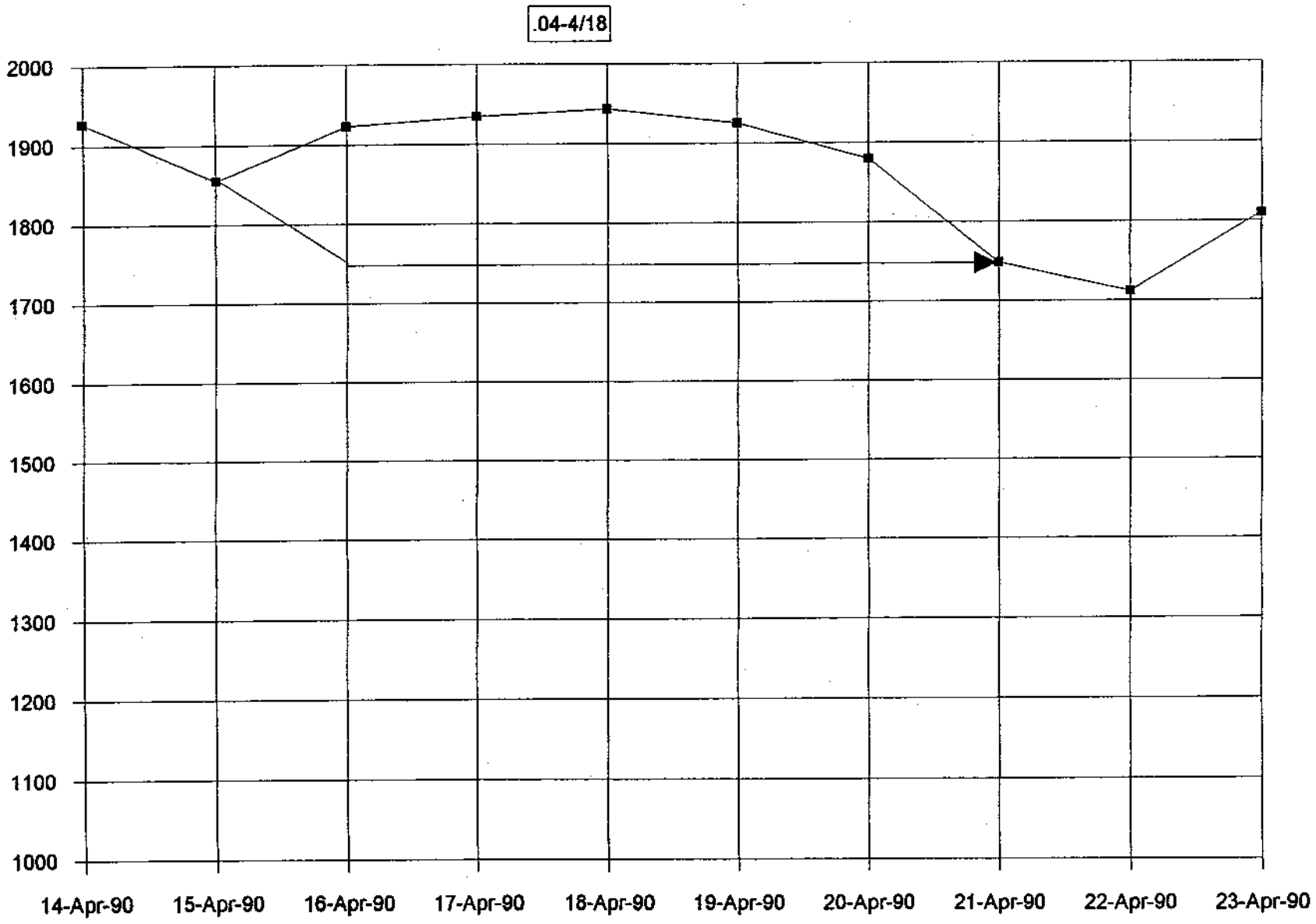
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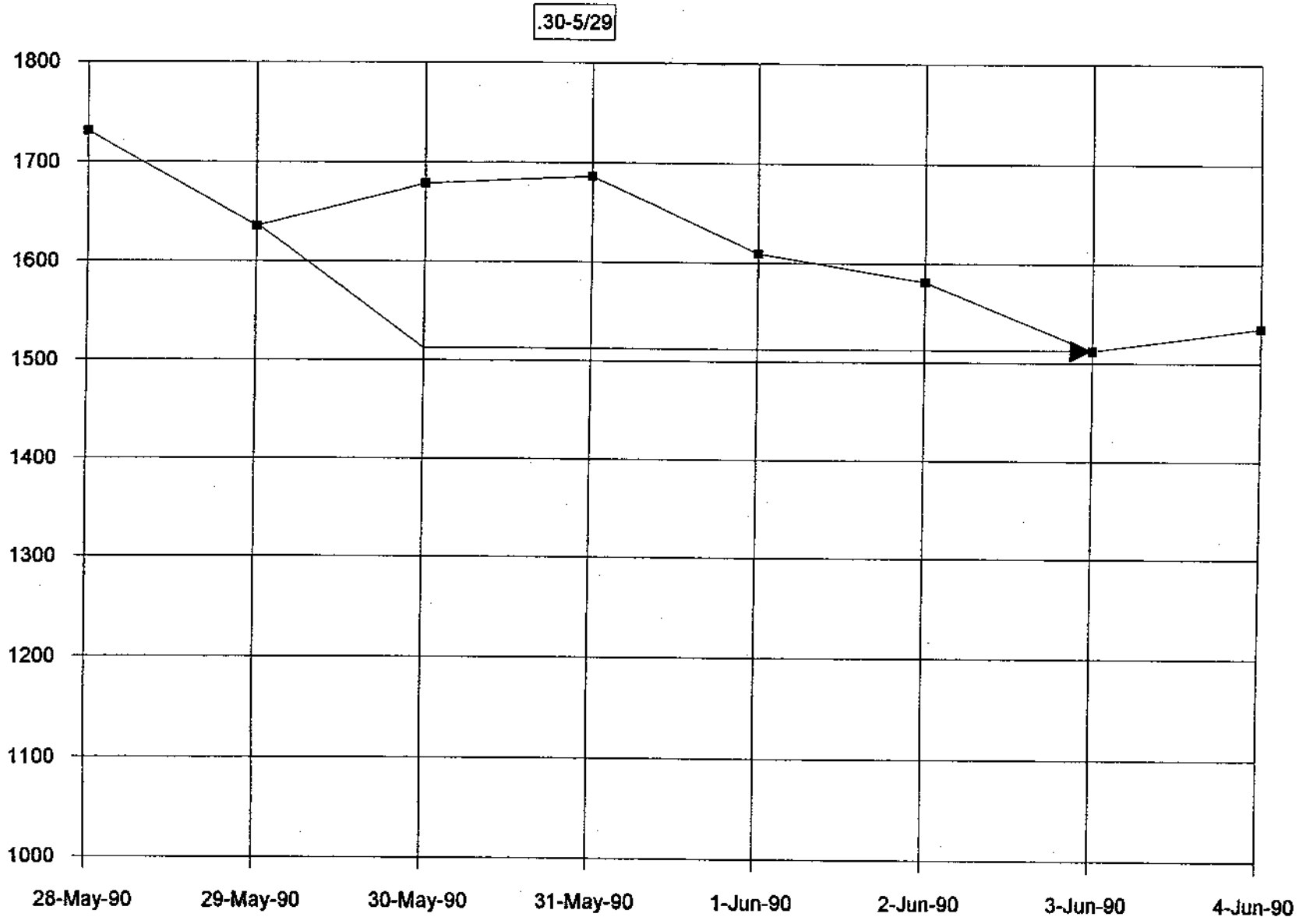
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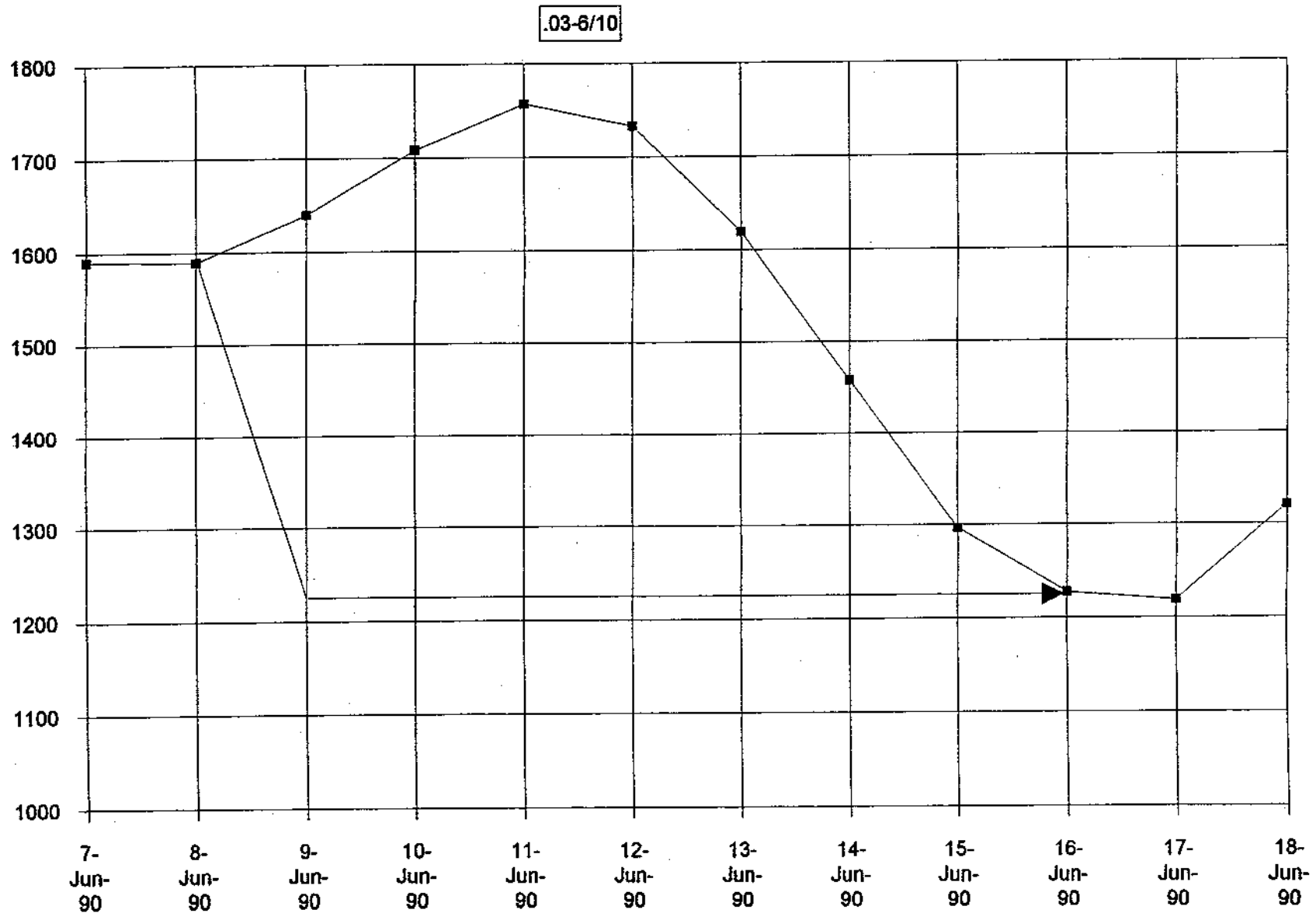
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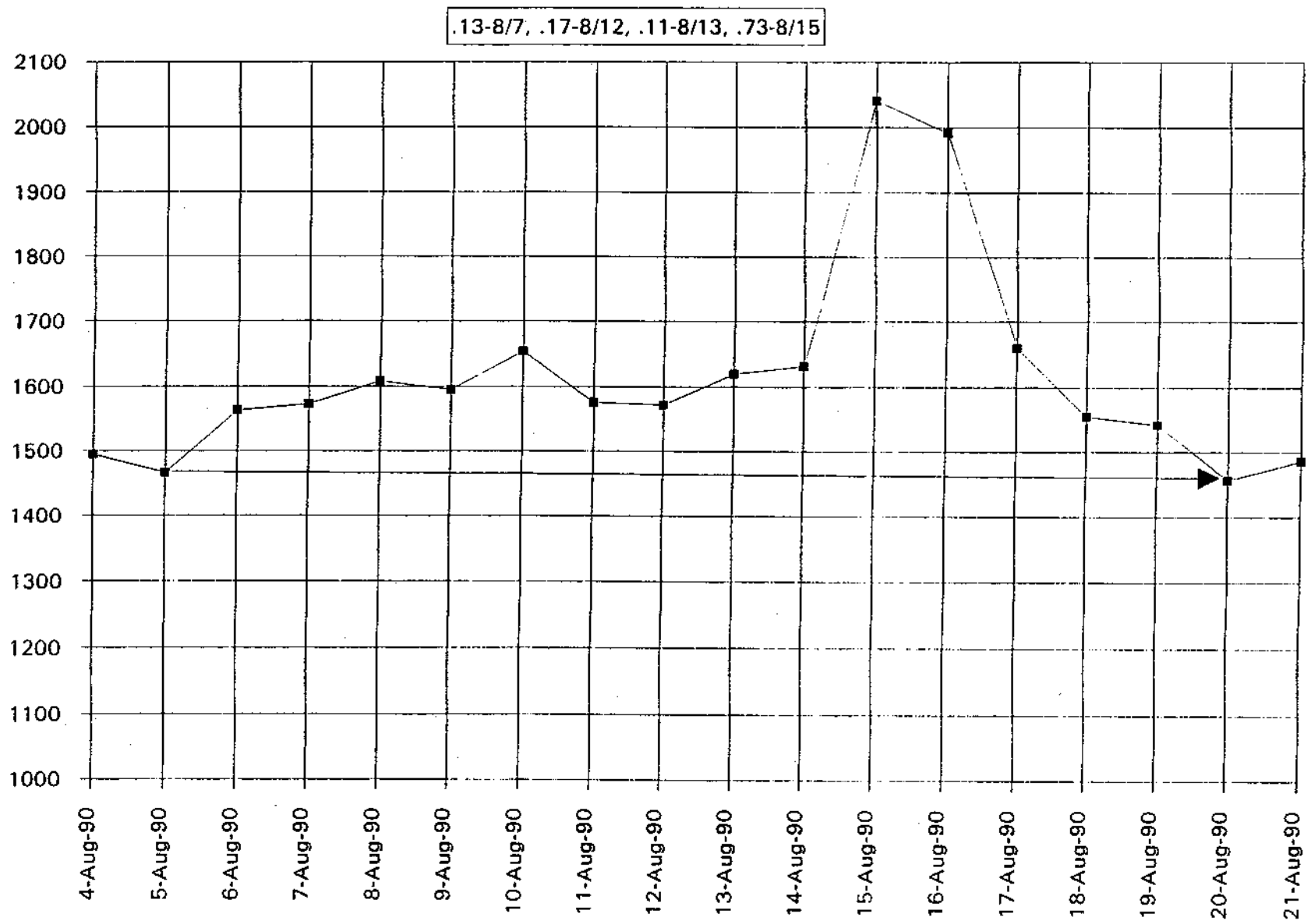
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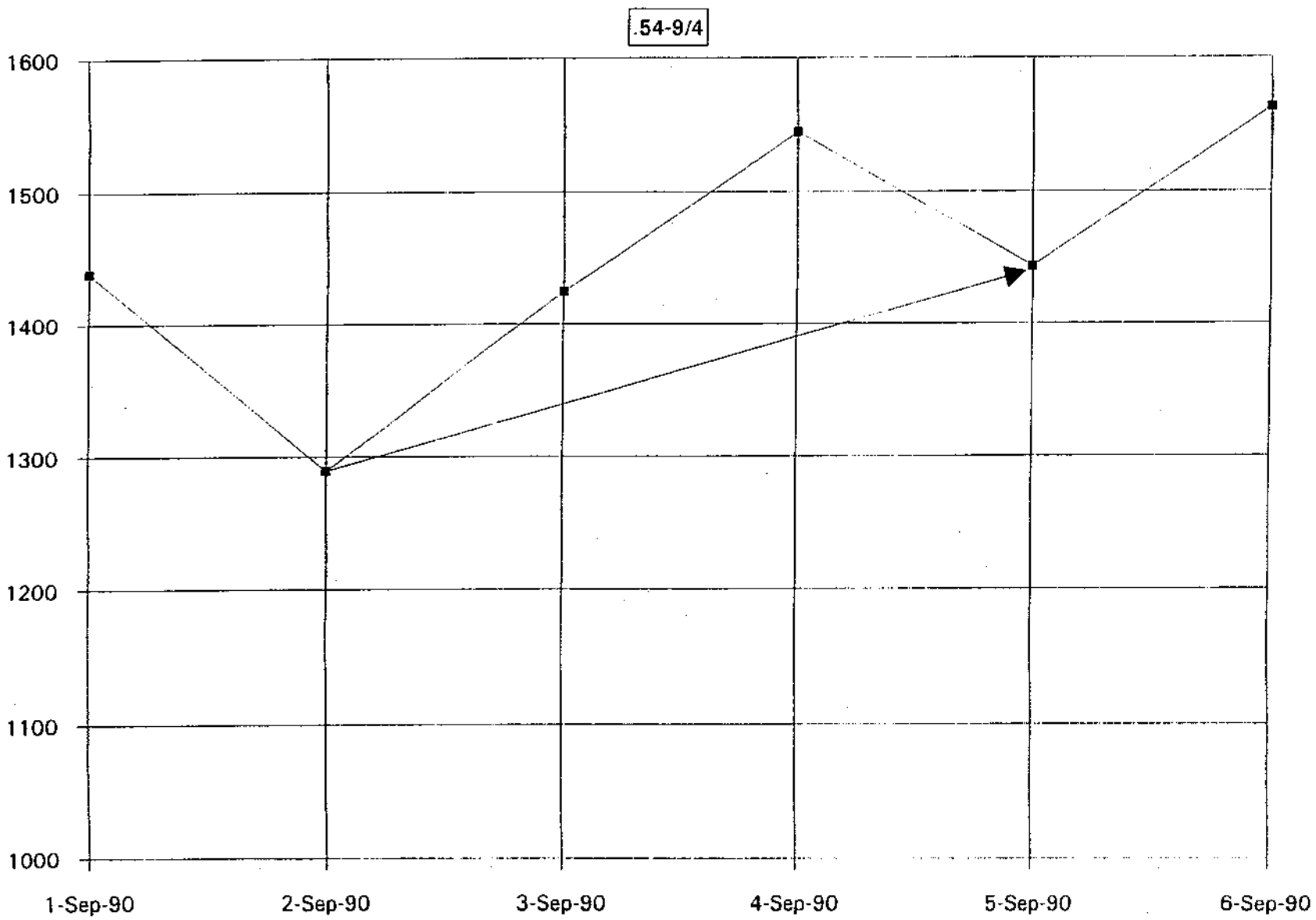
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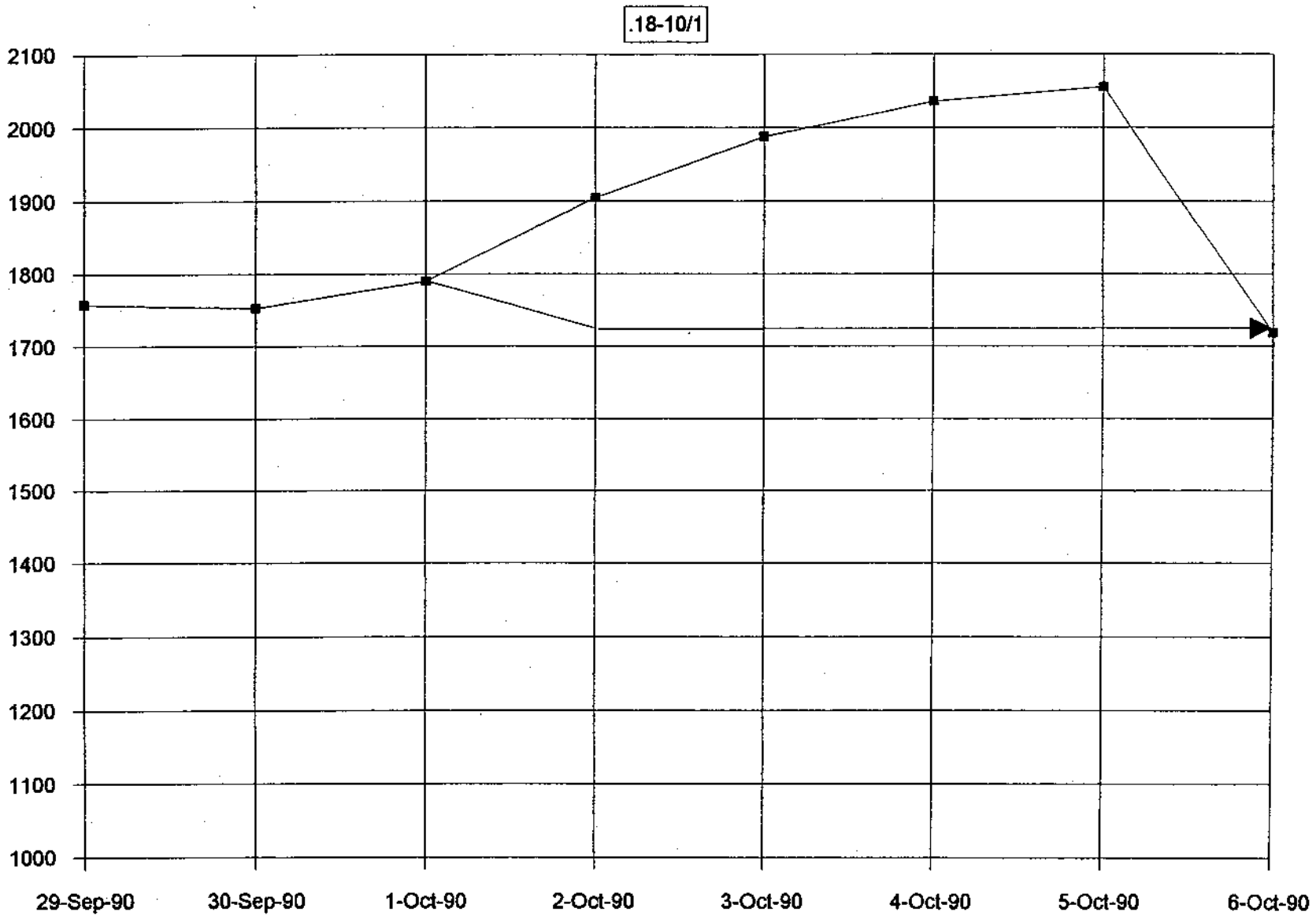
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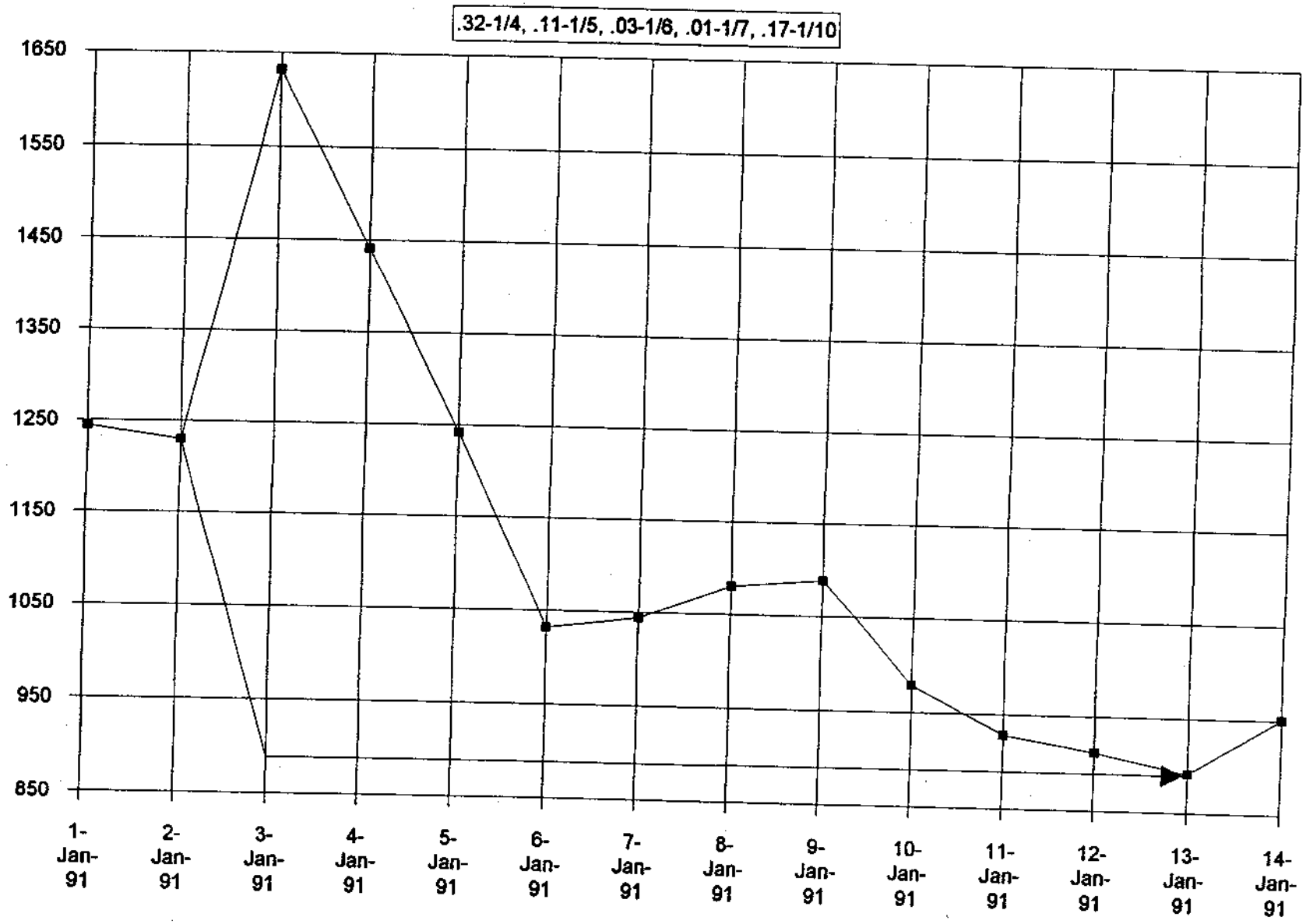
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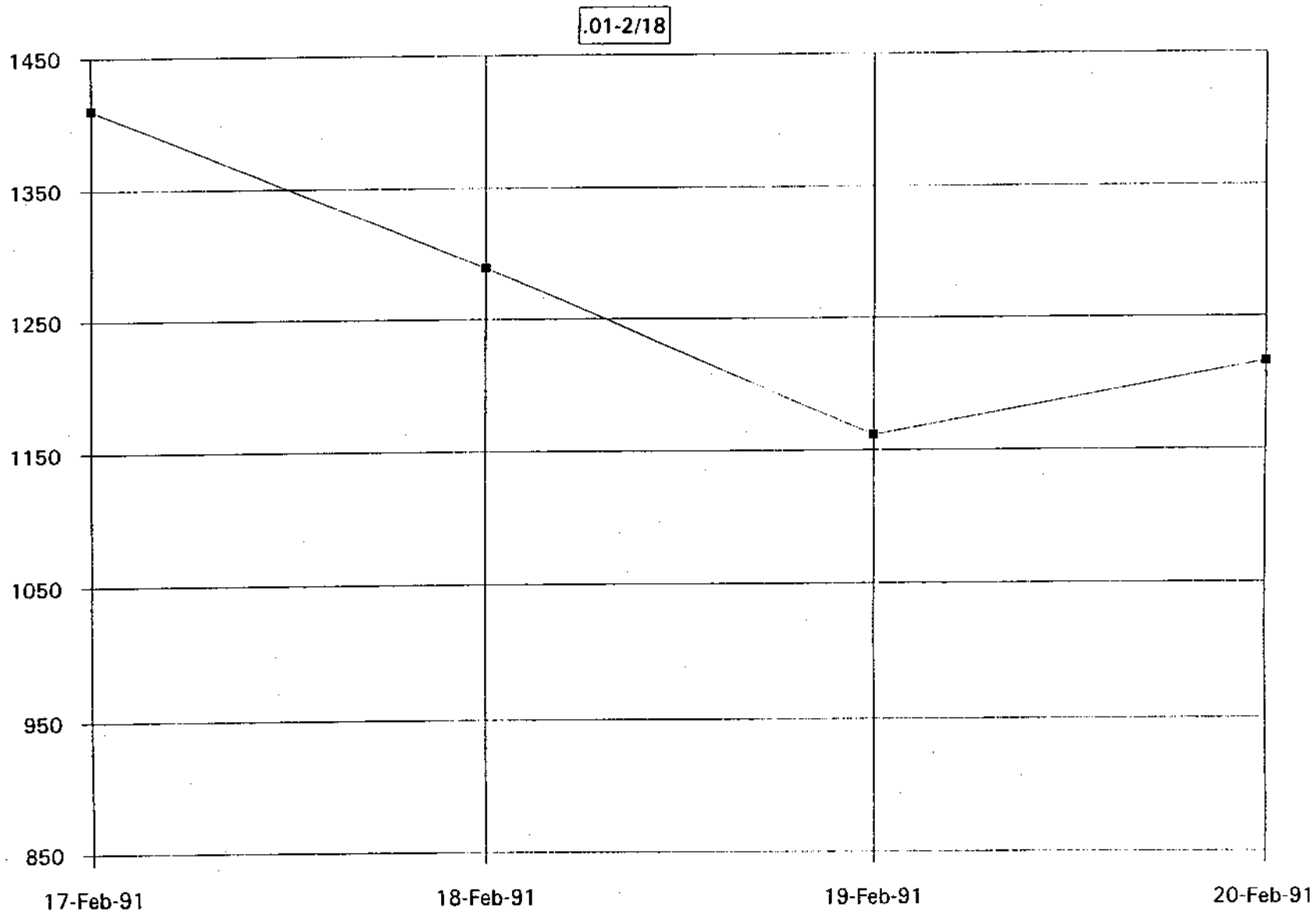
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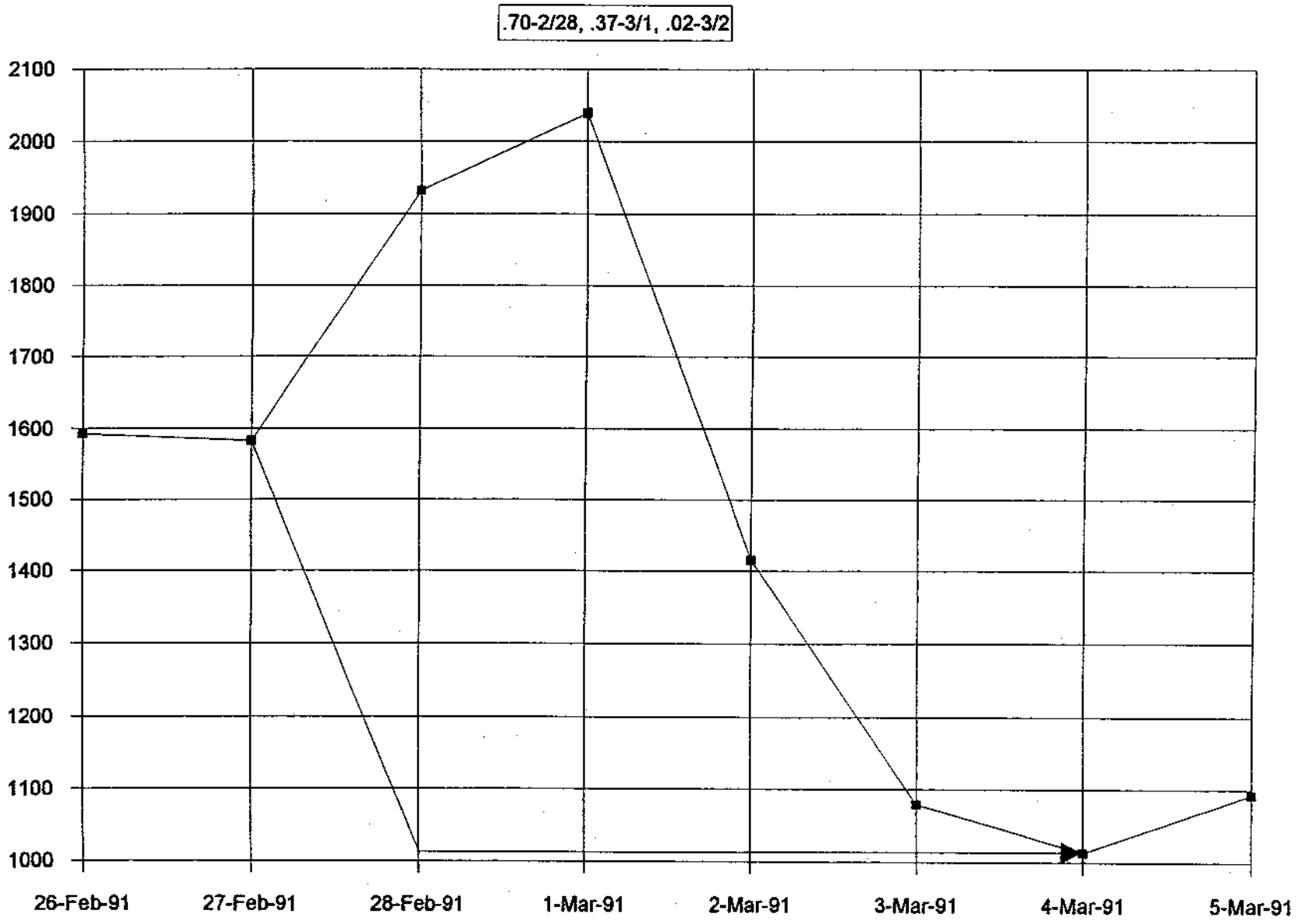
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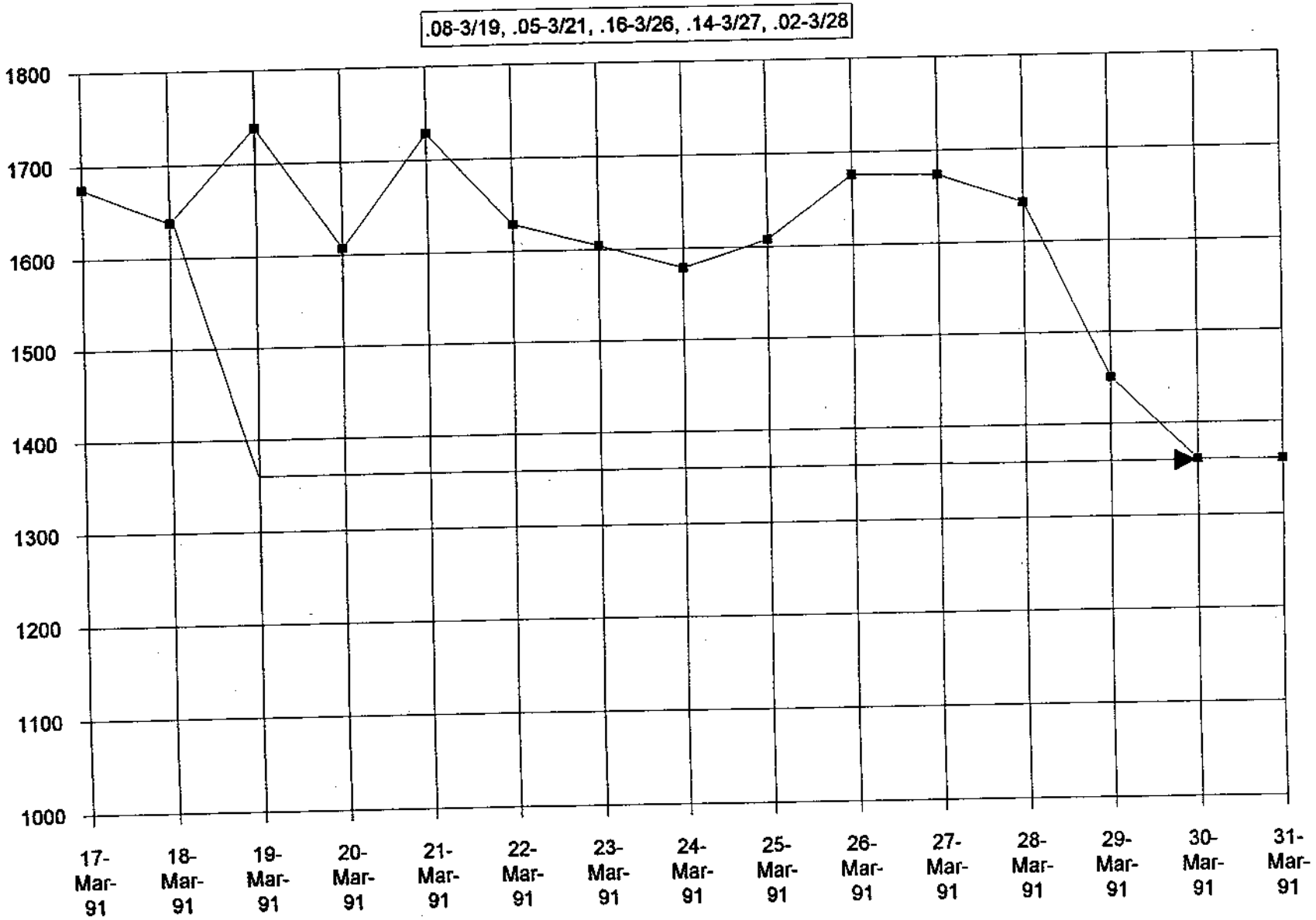
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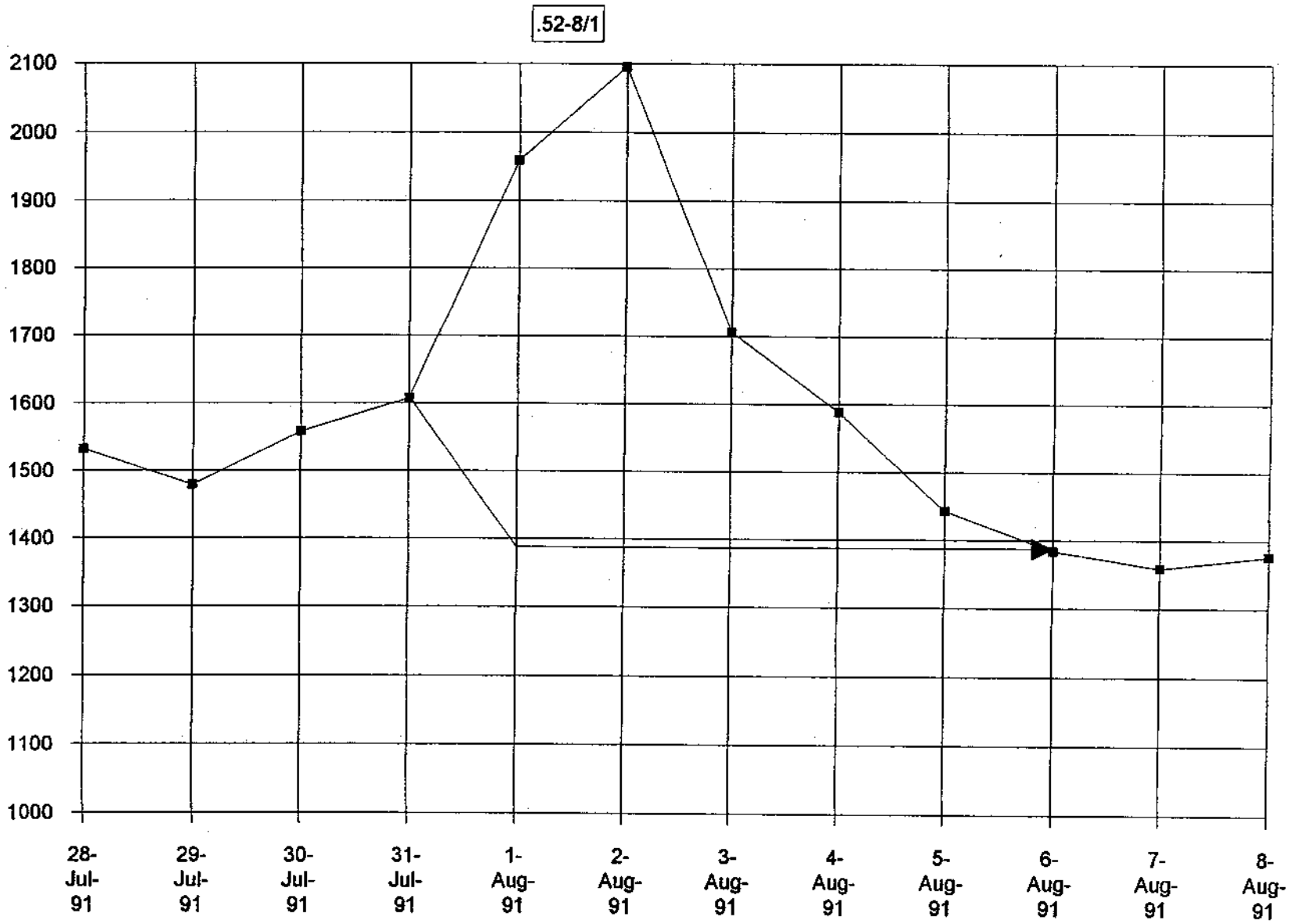
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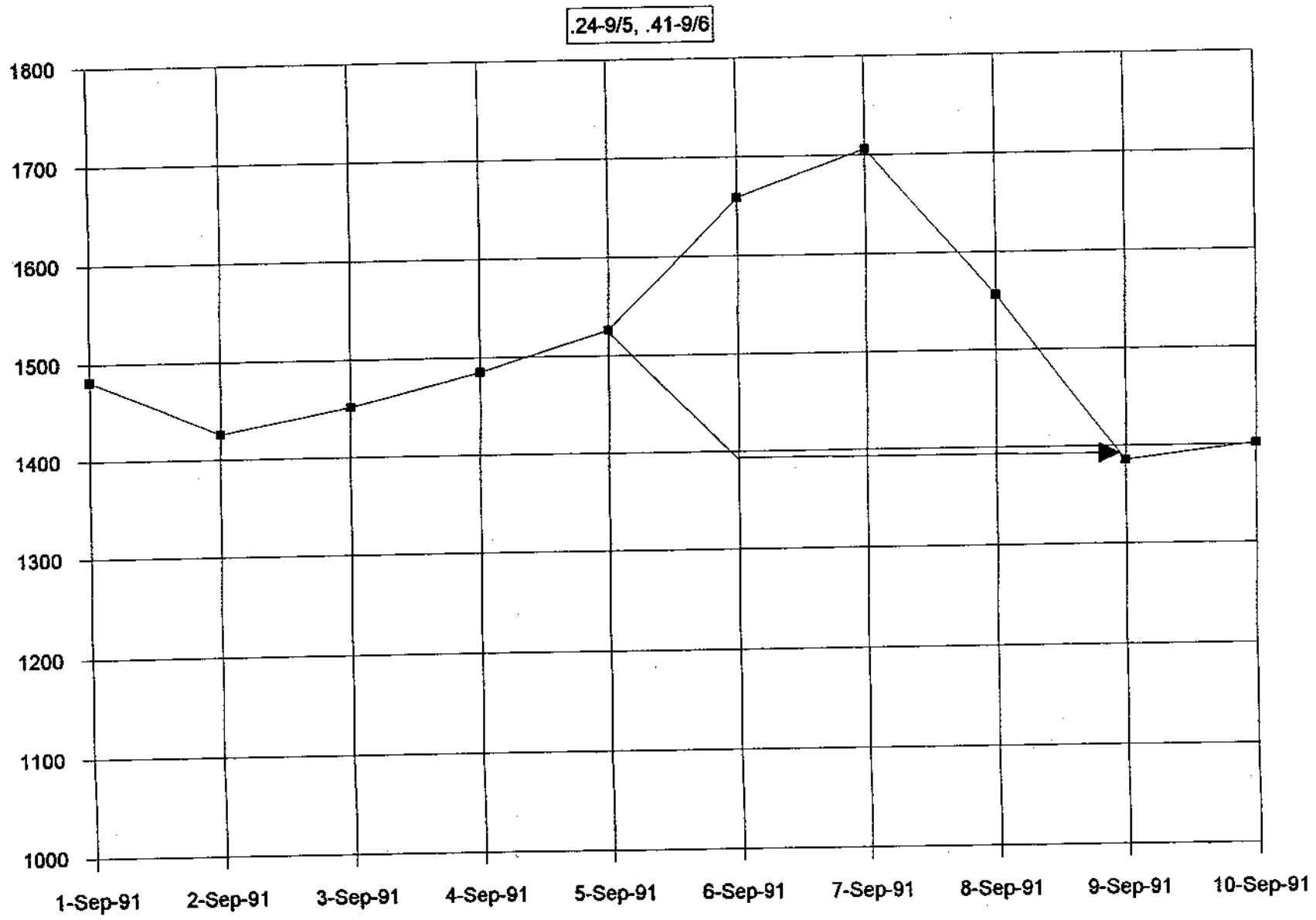
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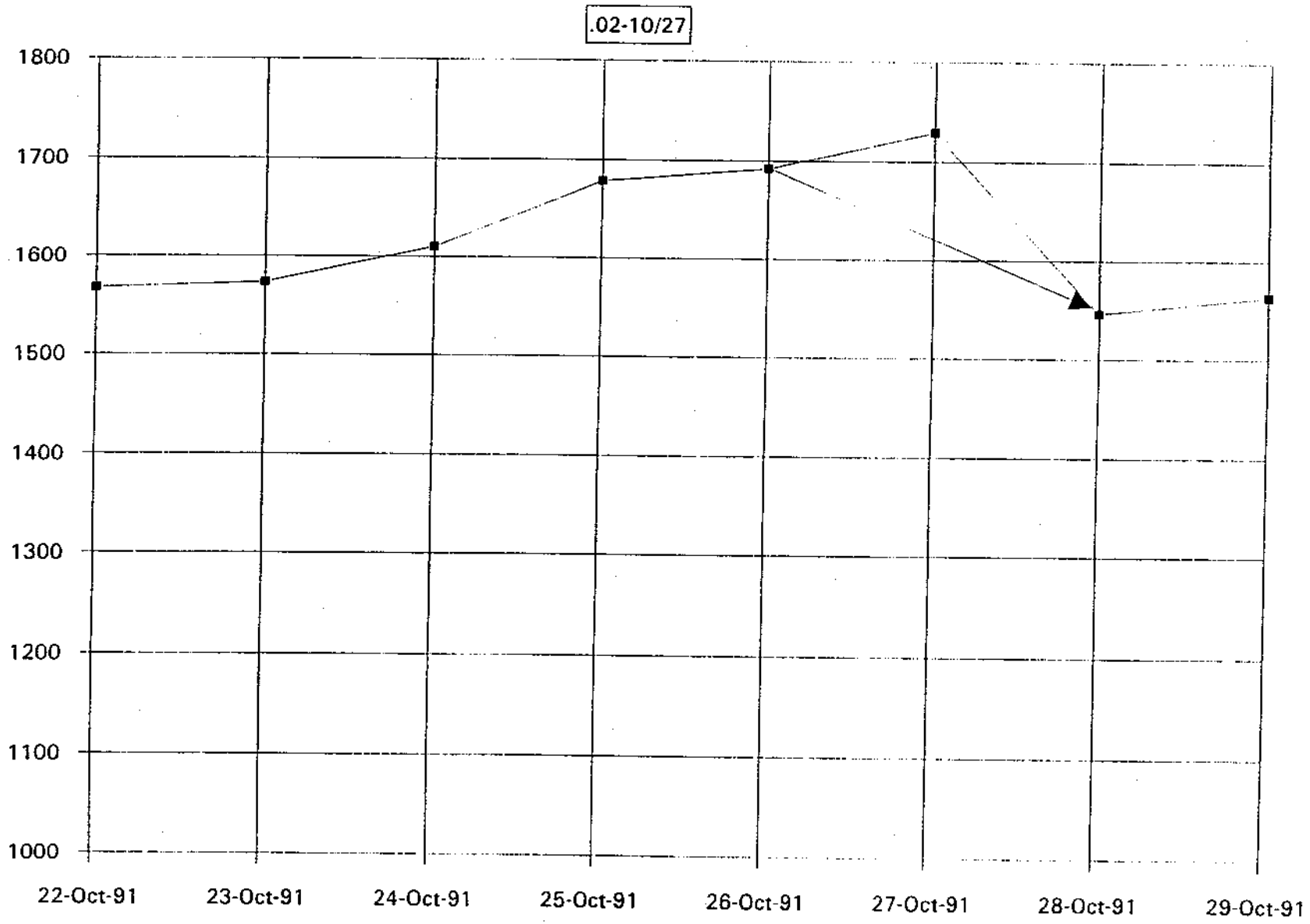
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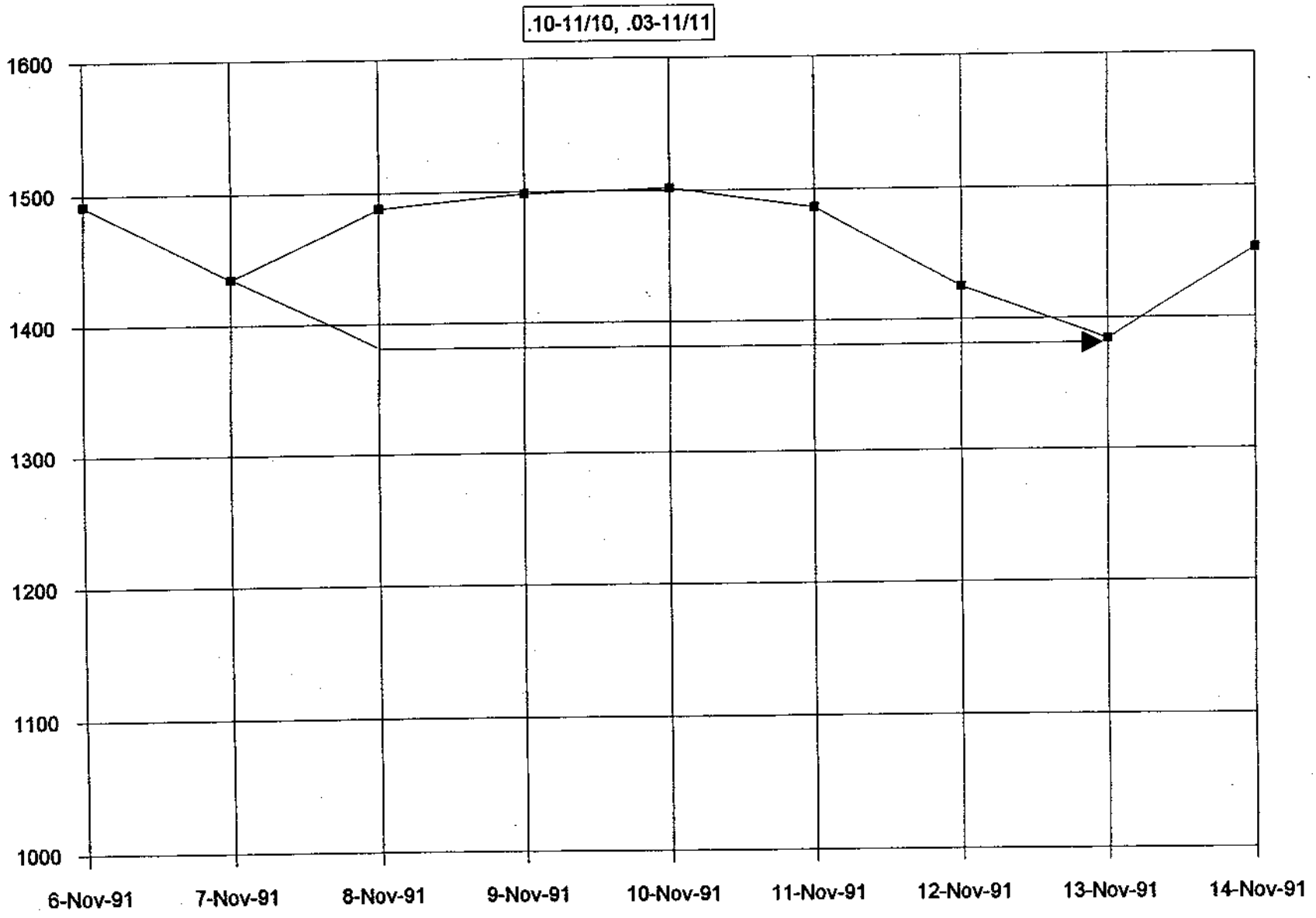
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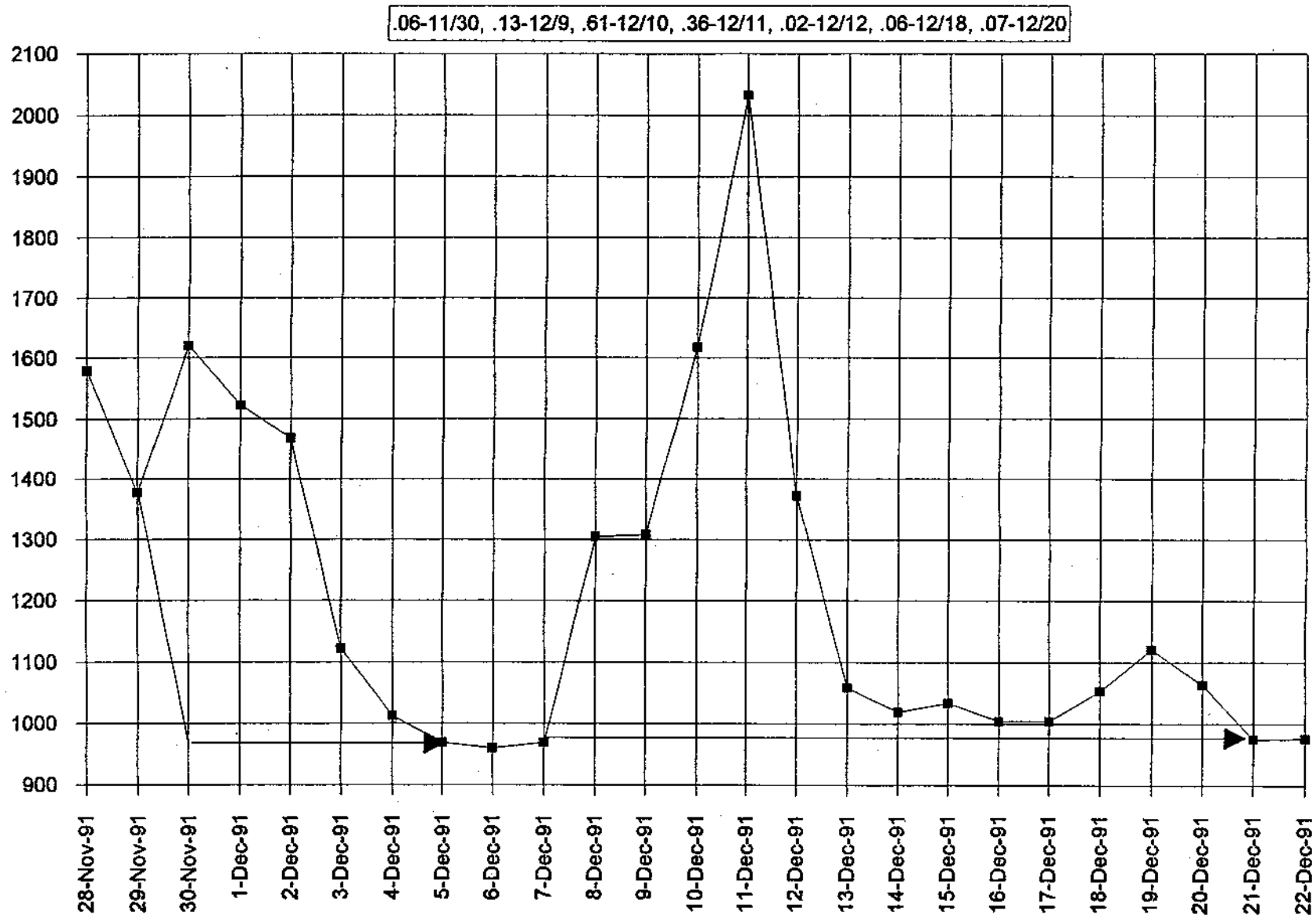
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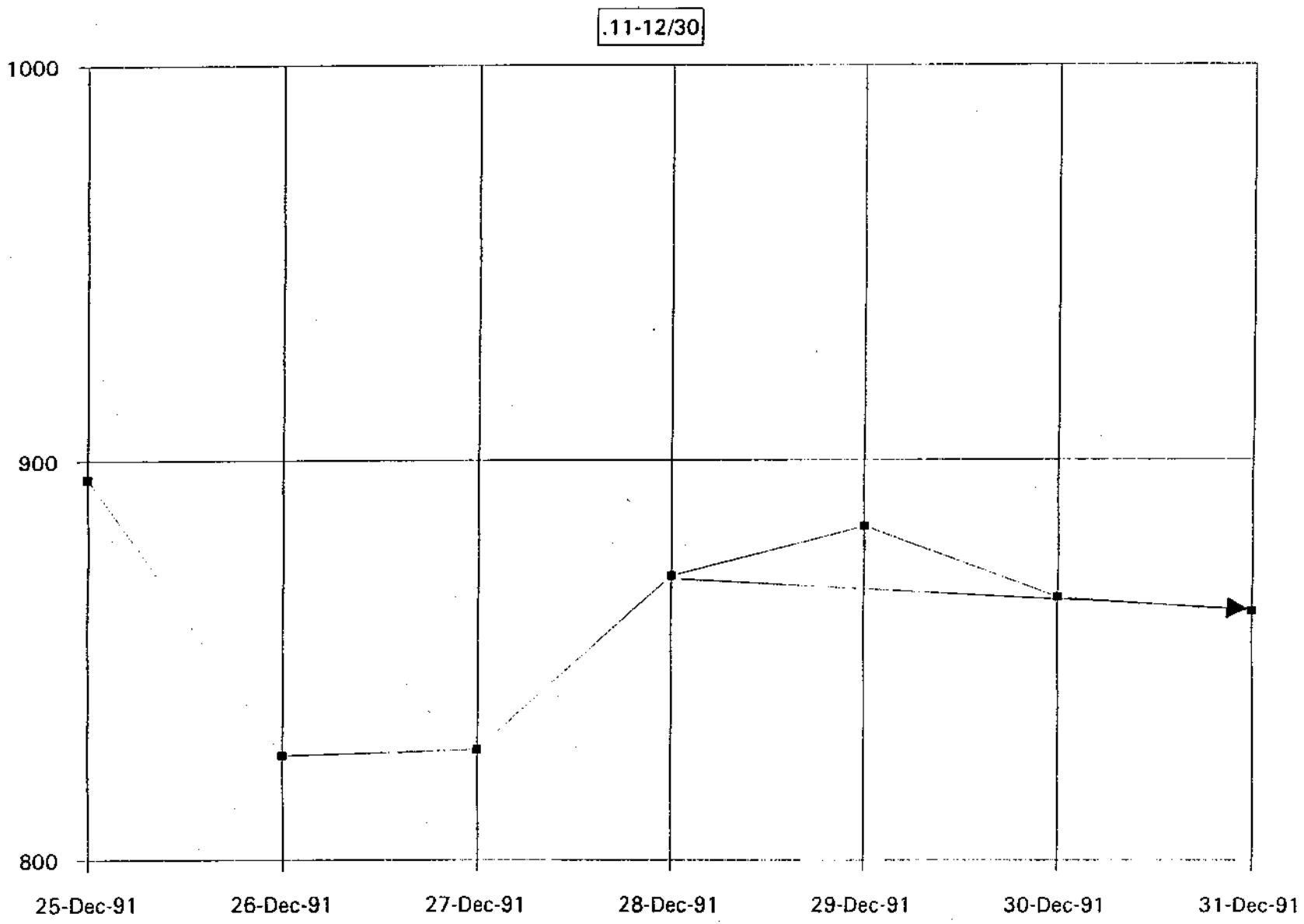
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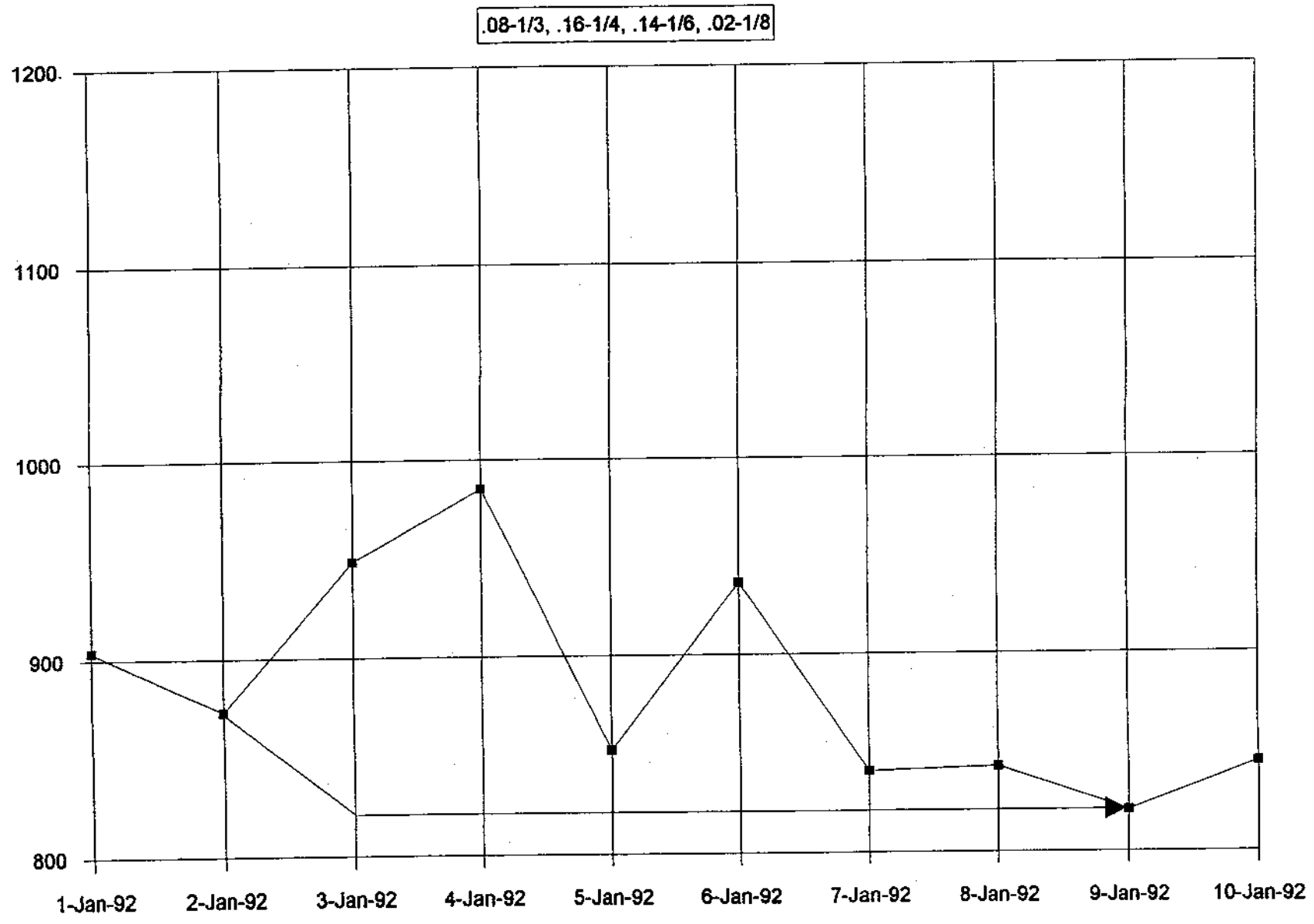
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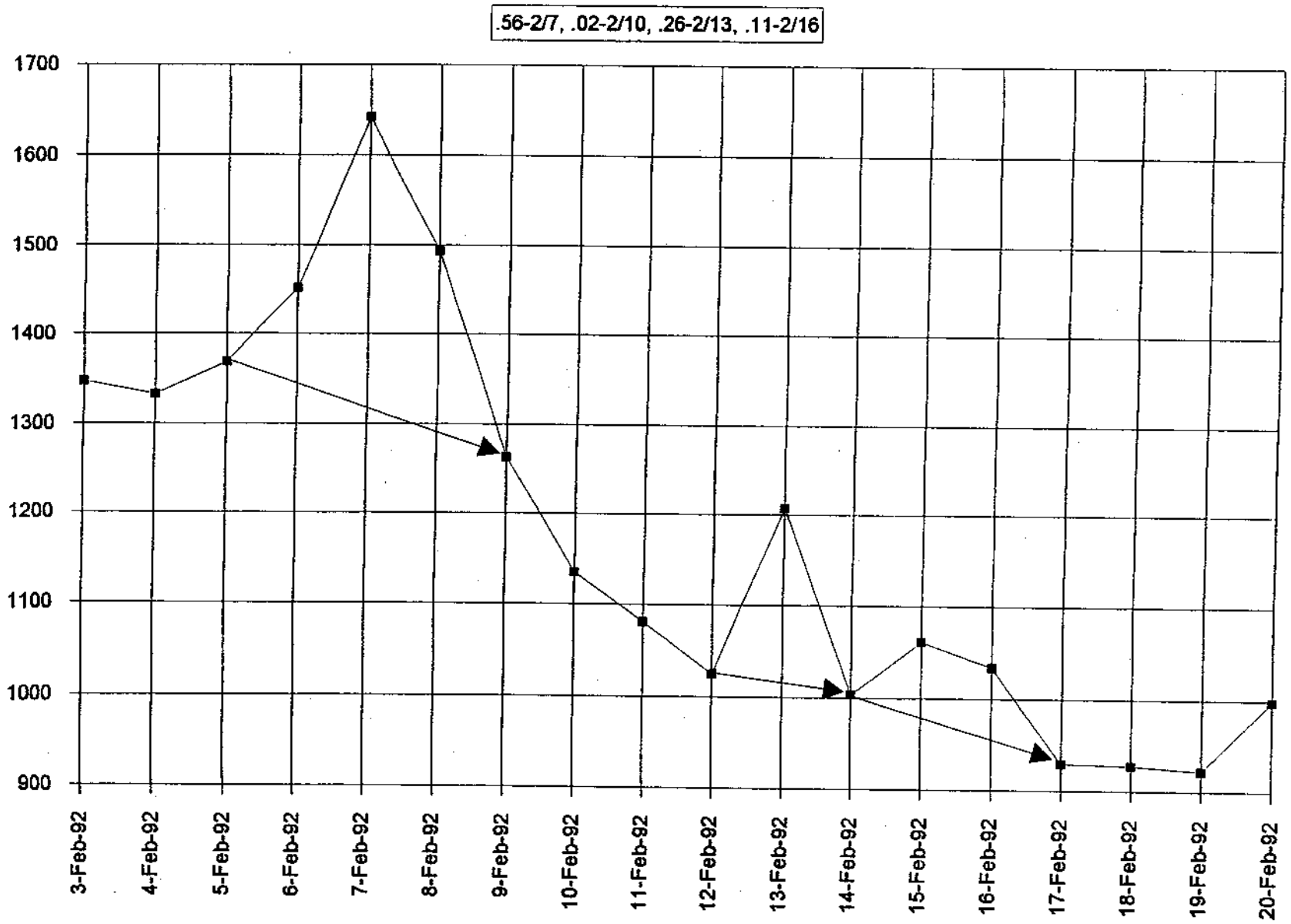
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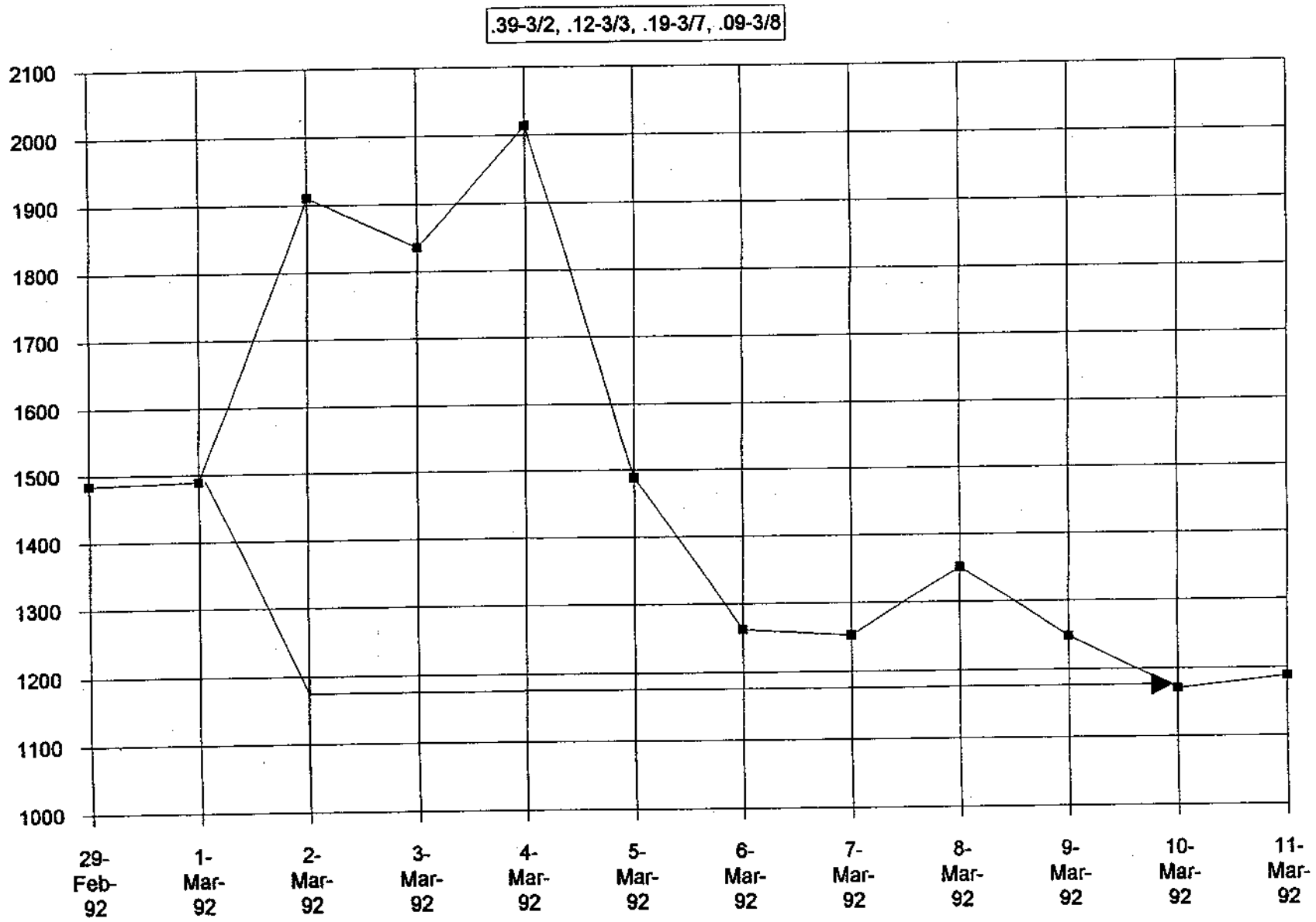
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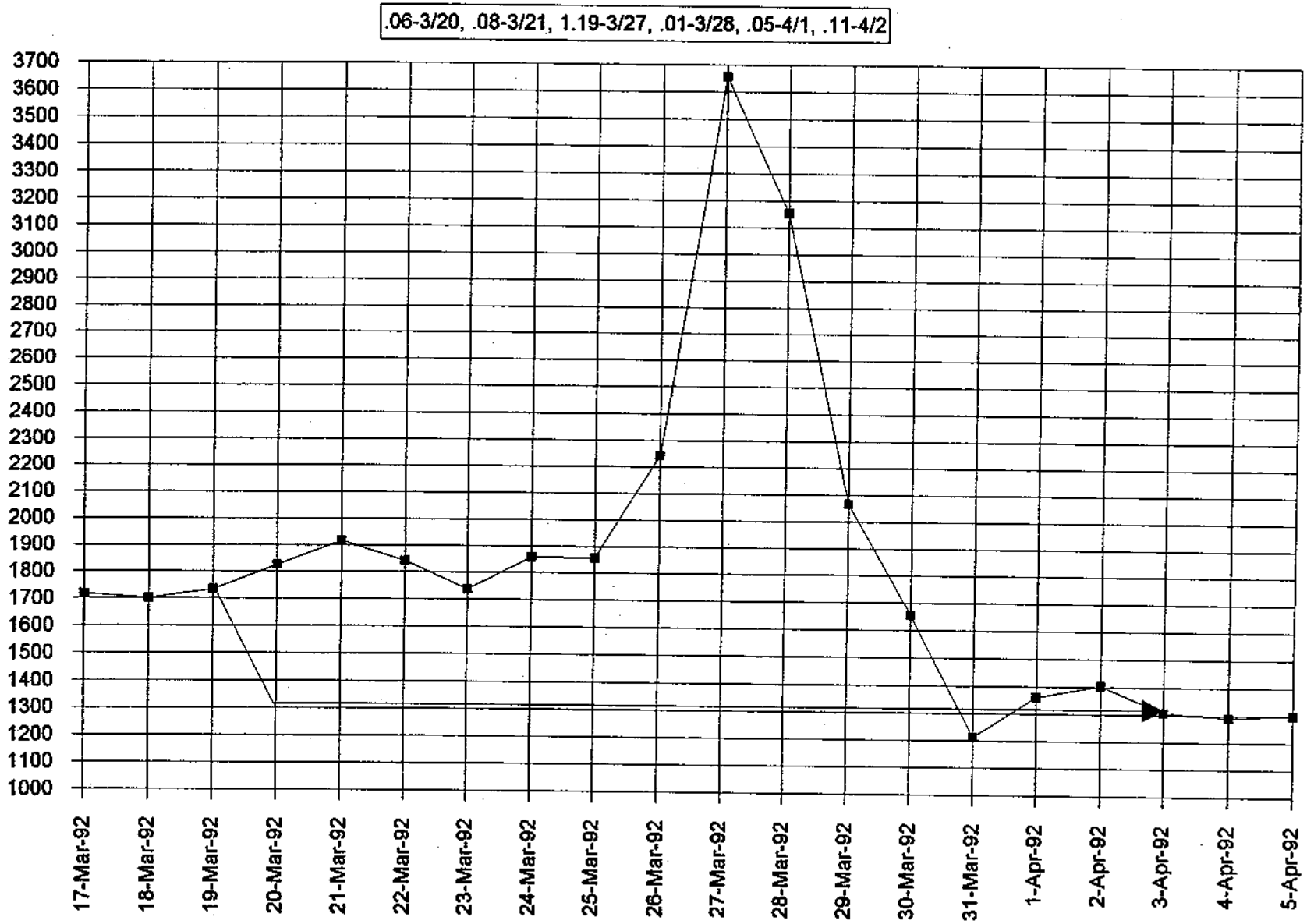
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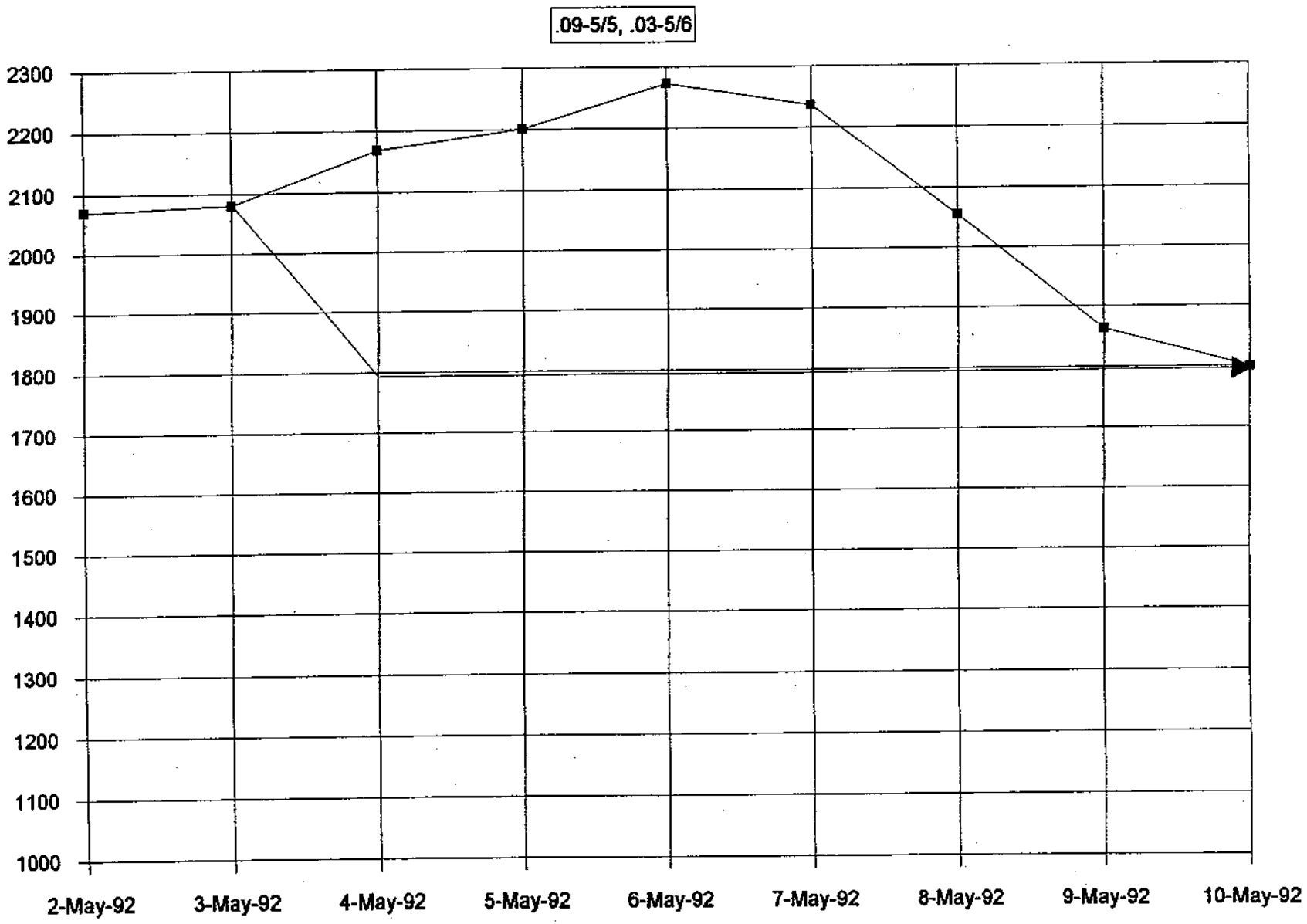
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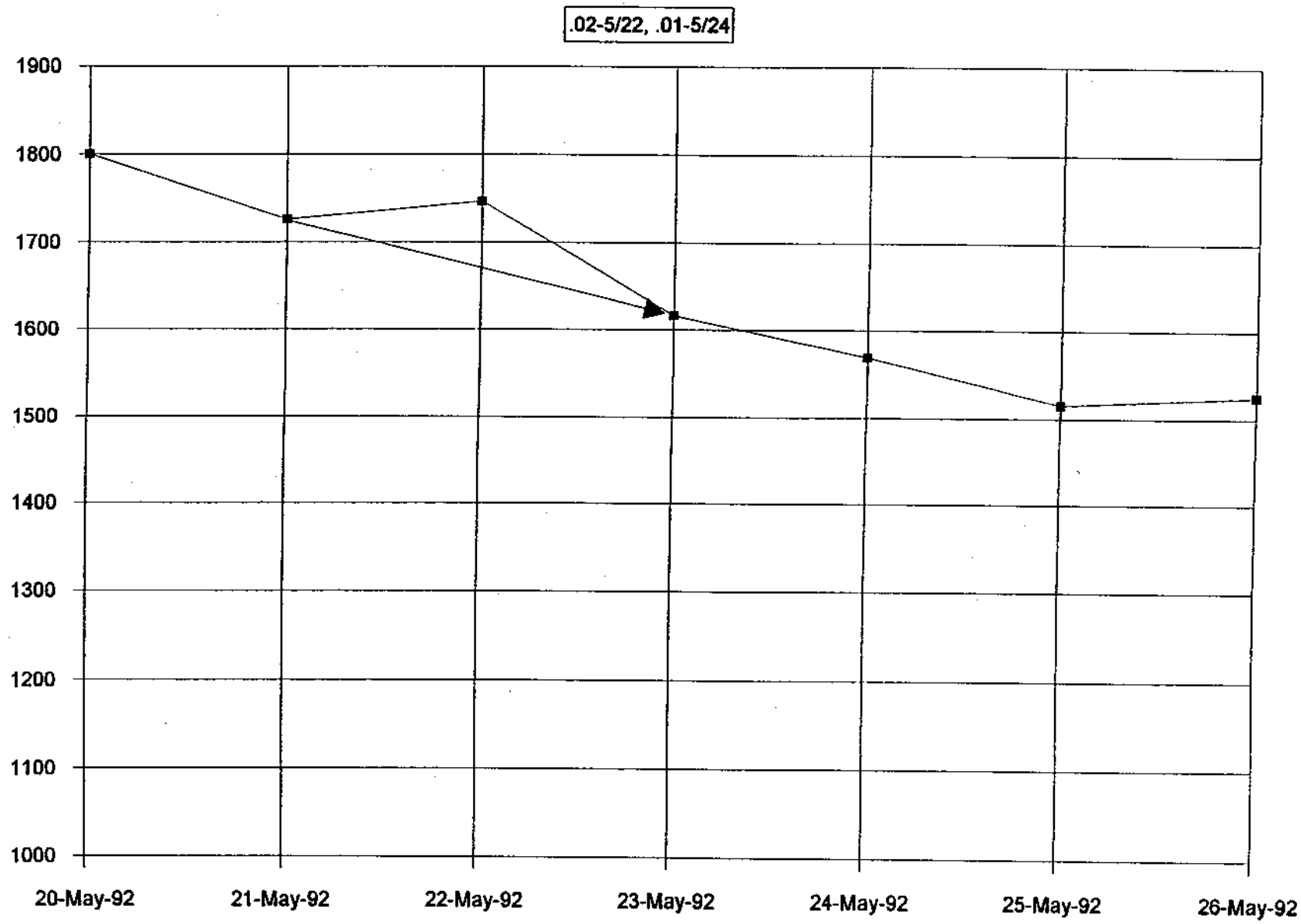
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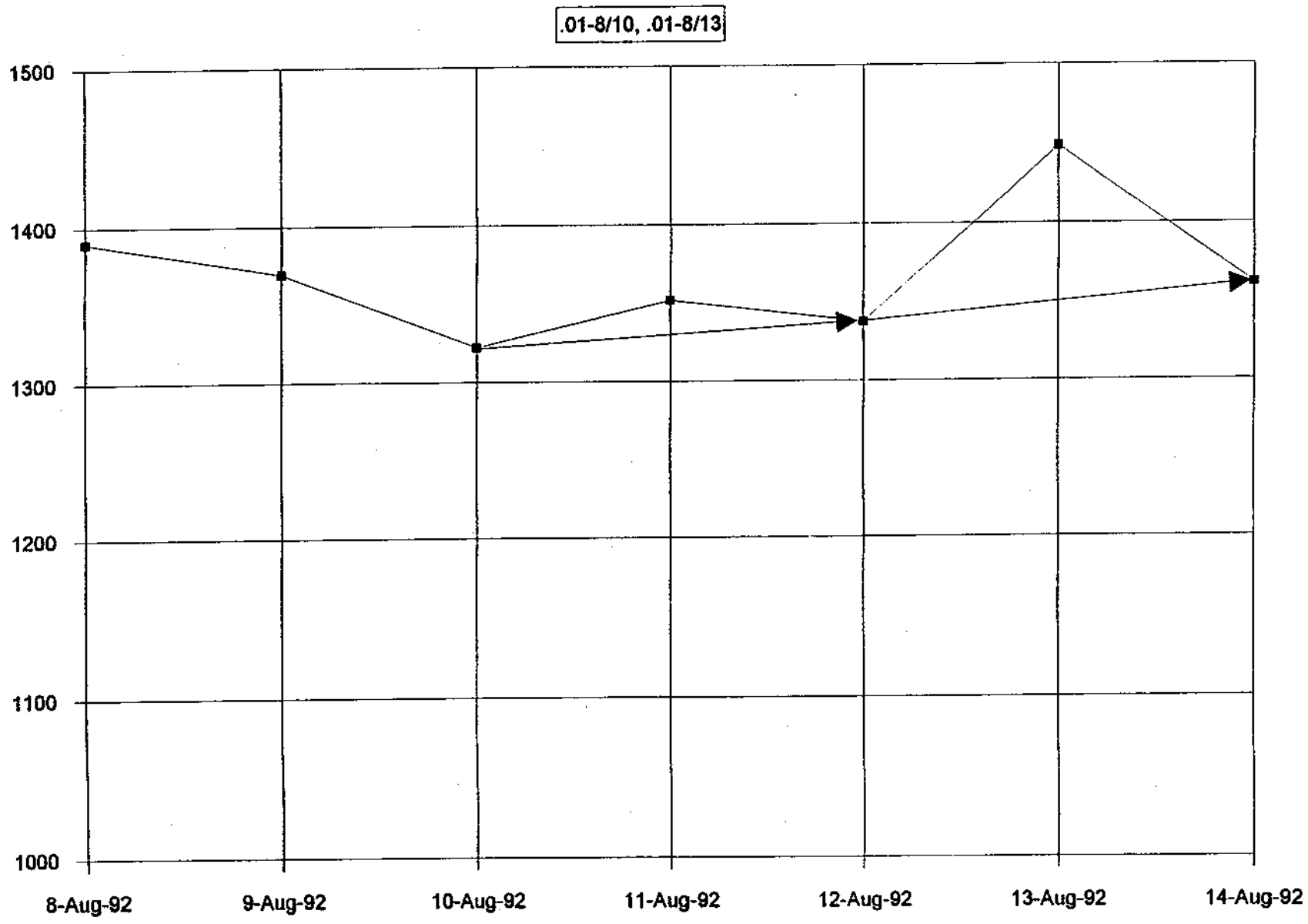
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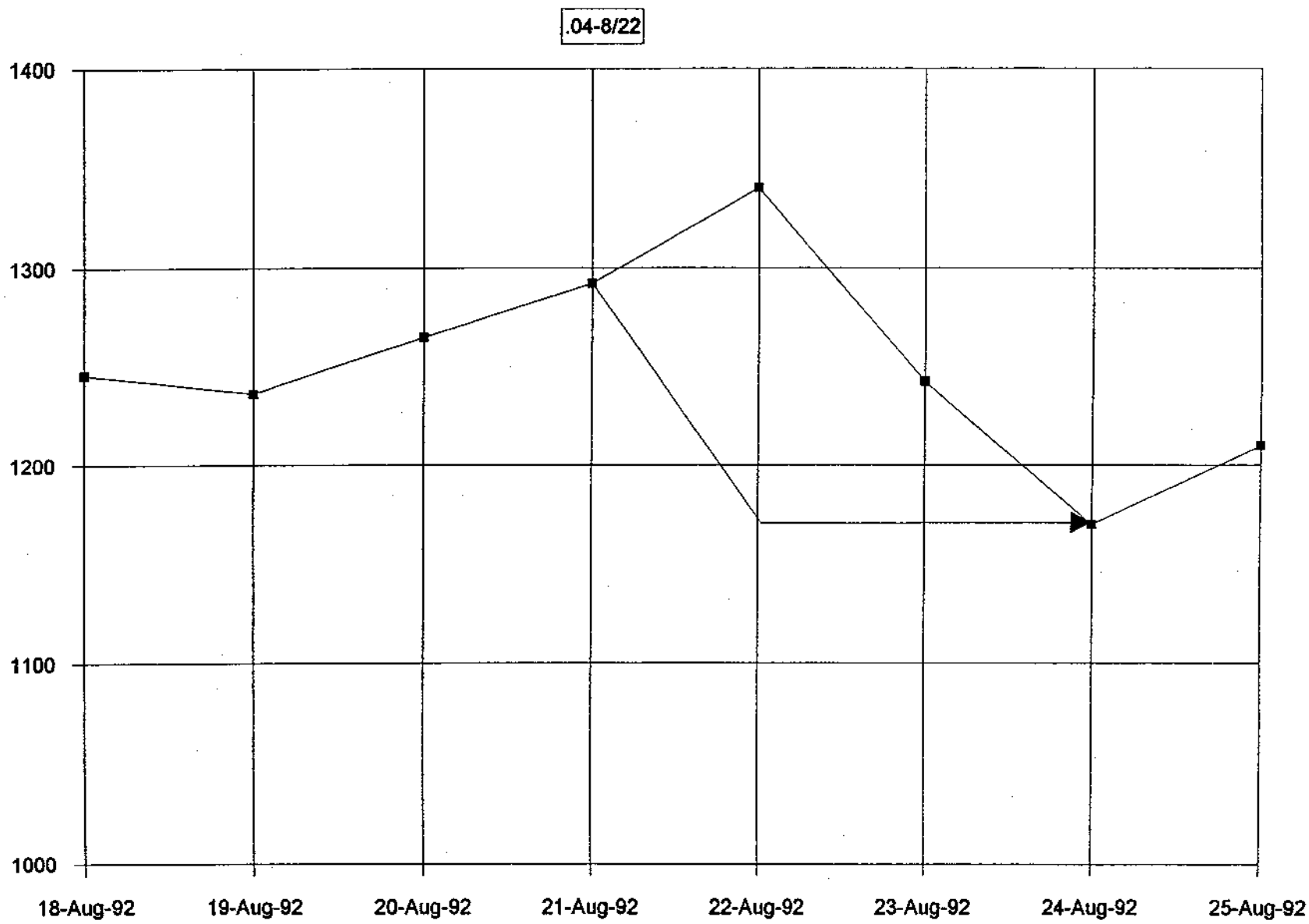
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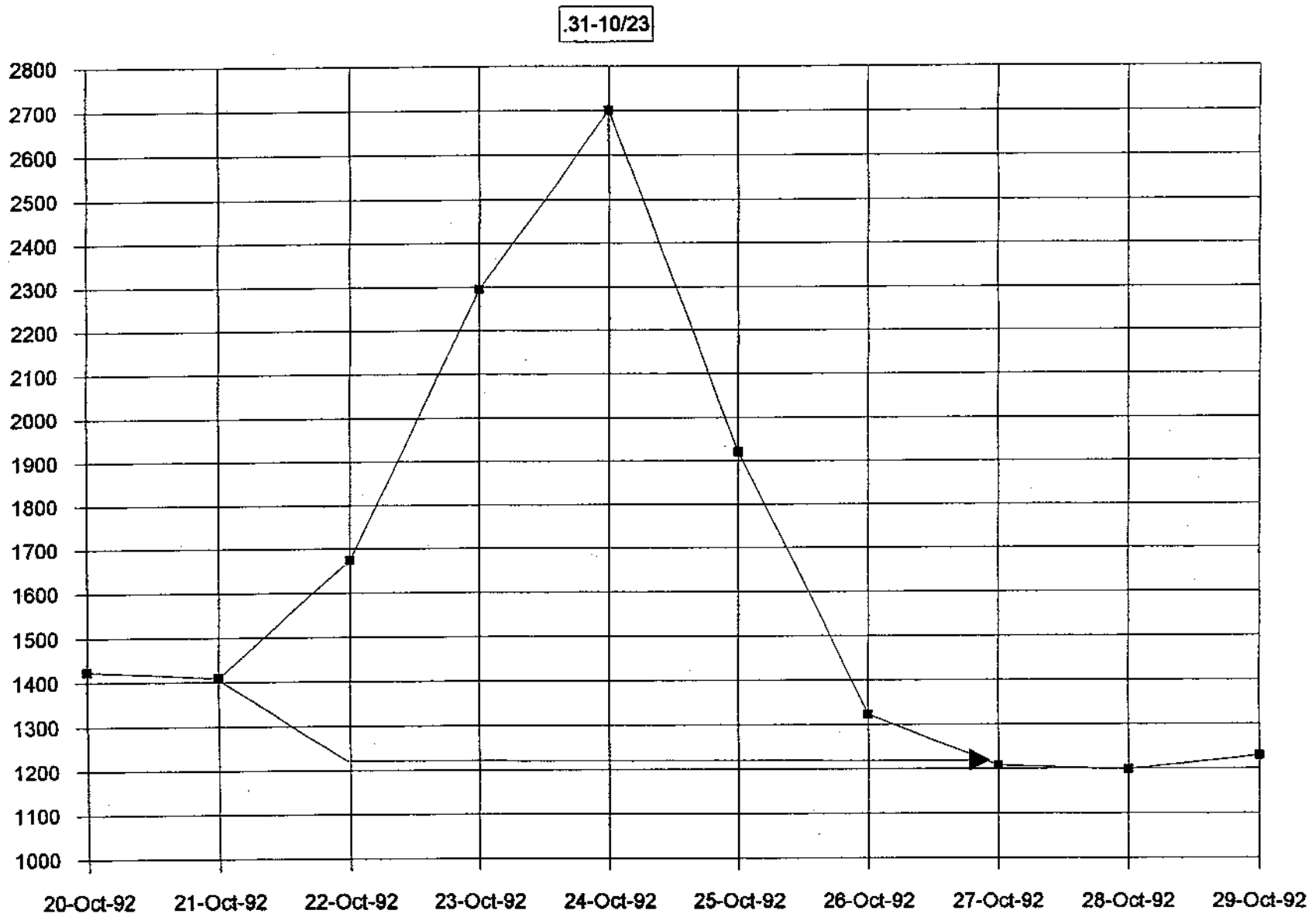
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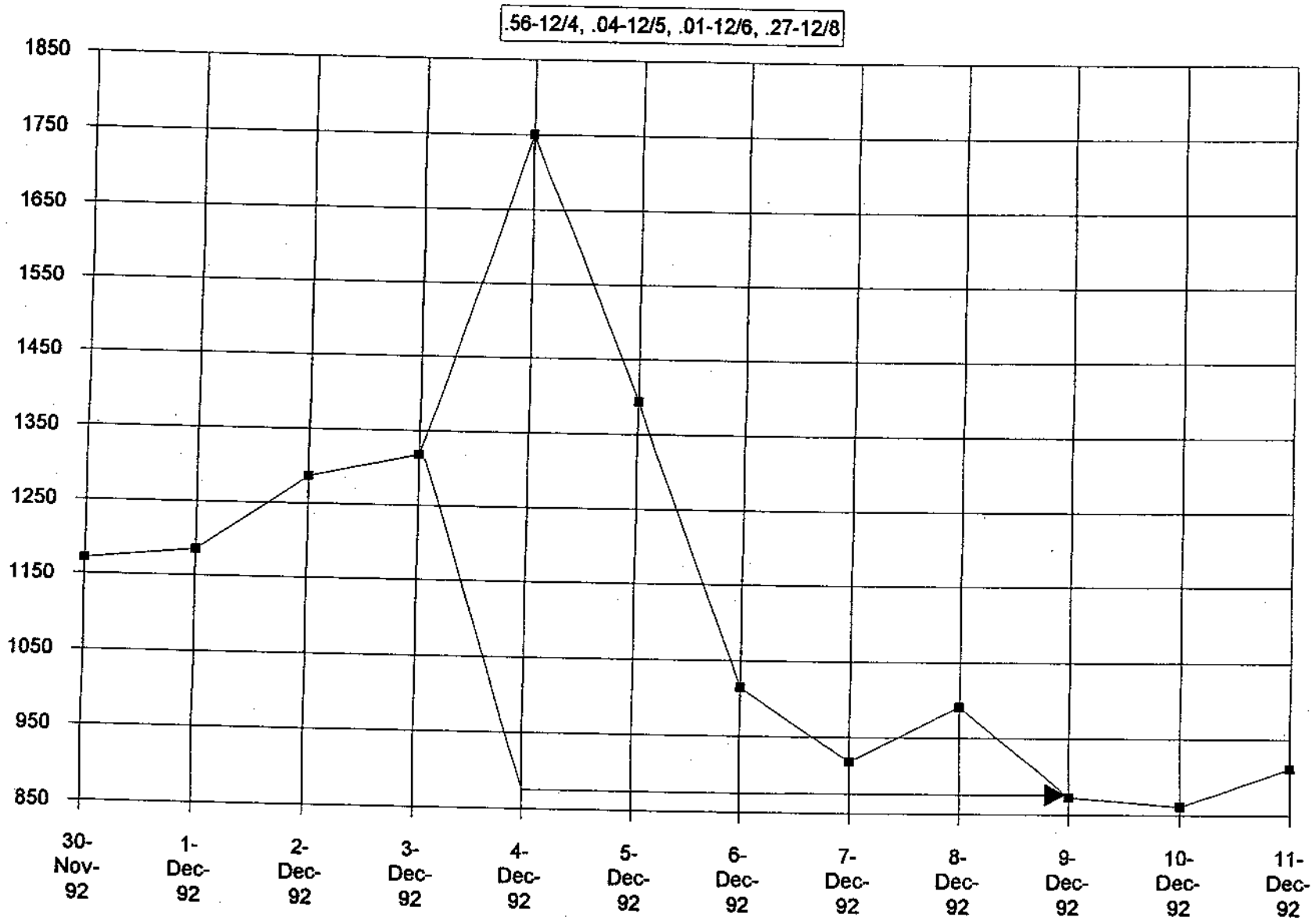
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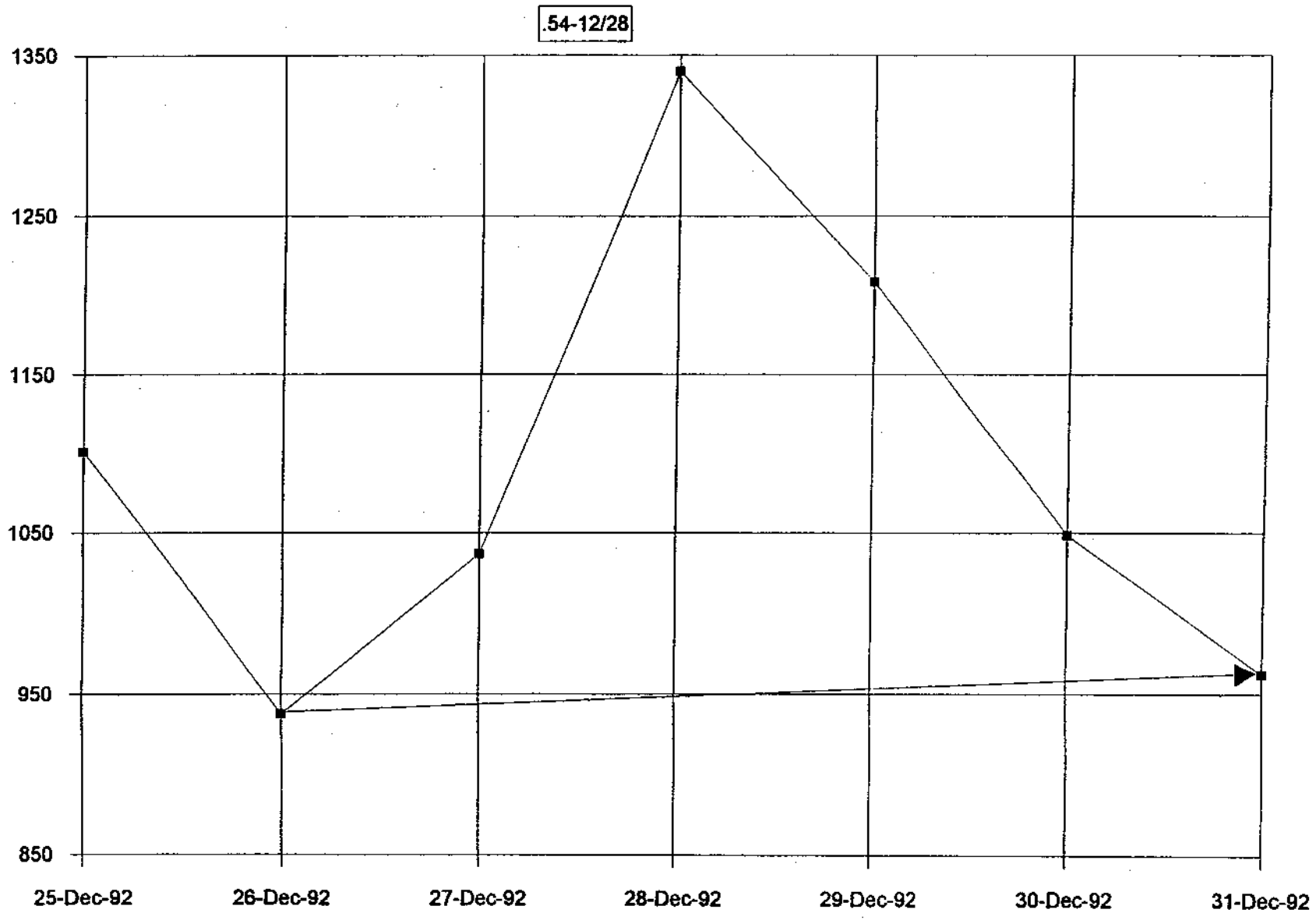
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