

MAUNAOLU COLLEGE

P. O. BOX 267 :: PAIA, MAUI, HAWAII

November 4, 1958.

Dr. Grote Reber,
National Radio Astronomy Observatory,
Box 2; Green Bank, West Virginia.

Dear Friend Reber:

I have finally gotten round to finishing up the September barometric analyses. The general results seem about the same as the usual computations. I made up the modified month of K K to fit the parts we had for K M V I and found that the modified data made very little change in the results (the two raw curves are practically identical).

I then plotted the two ^{KK and K M V I} raw curves, by bringing the two averages to coincide. As you will see, this shows a definite time lag for K K in the afternoon, which catches up by midnight; also, the K M V I amplitude is distinctly greater in the afternoon.

If there is anything else you would like to have done on the comparison, please let me know.

I hope you have found a pleasant set up for your work there, and that you have a good year. Many thanks for the work here, which I have truly enjoyed.

Most sincerely,

P. T. Miller

P. T. Miller.

Time since last report, 115 hours.

KMVI-TV

September 1958

Date	1a	2a	3a	4a	5a	6a
1						
2						
3	985	975	970	965	965	970
4	940	935	930	925	930	935
5	995	990	980	975	980	985
6						
7						
8						
9	090	080	070	065	060	065
10	100	090	080	075	080	090
11	100	090	080	080	080	085
12	065	055	045	040	040	045
13	070	055	045	040	040	045
14	080	070	060	050	050	055
15	045	030	025	020	020	025
16	025	015	005	000	000	005
17	025	020	010	005	010	020
18	010	995	990	985	995	000
19	995	985	980	980	985	990
20	005	000	000	000	005	
21						
22						
23	130	115	105	100	100	105
24	100	085	080	075	075	080
25	040	030	025	015	015	020
26	000	980	970	965	970	975
27	990	980	975	960	955	960
28	000	990	985	975	980	985
29	025	015	010	010	015	020
30						
31	22815	22580	22420	22305	22350	21460
	22	22	22	22	22	21
	1037.0	1026.4	1019.1	1013.9	1015.9	1021.9

7a	8a	9a	10a	11a	N	Date
						1
						2
975	980	985	990	990	980	3
945	955	965	970	970	965	4
Clock stopped.						5
						6
						7
						8
070	080	090	095	095	090	9
095	105	110	115	110	105	10
095	100	105	105	100	090	11
055	065	075	075	070	060	12
050	060	070	075	075	070	13
060	070	075	075	070	055	14
030	040	045	050	050	045	15
010	020	030	035	035	030	16
025	035	040	045	040	035	17
010	020	025	030	030	025	18
000	010	020	020	015	005	19
						20
						21
						22
110	120	125	130	125	115	23
085	090	090	095	090	085	24
025	030	035	035	020	010	25
980	985	990	995	995	990	26
970	980	990	000	000	990	27
990	000	010	015	020	015	28
035	040	050	055	050	045	29
						30
206.15	207.85	209.25	210.05	209.50	208.05	31
20	20	20	20	20	20	
1030.8	1039.2	1046.2	1050.2	1047.5	1040.2	

KMVI-TV

September 1958

Date	1p	2p	3p	4p	5p	6p
1						
2					965	960
3	970	960	945	925	920	915
4	965	960	960	960	965	970
5						
6						
7						
8				040	045	055
9	080	070	065	060	065	070
10	090	075	070	065	070	075
11	070	055	045	045	045	050
12	045	040	035	020	030	040
13	065	055	045	040	045	050
14	045	035	025	025	030	035
15	035	020	015	010	010	015
16	020	010	000	990	995	000
17	020	015	010	005	010	015
18	020	010	995	990	990	995
19	990	985	985	985	985	990
20						
21						
22					085	090
23	100	090	085	080	080	085
24	065	050	035	025	025	030
25	995	990	980	975	985	990
26	970	960	950	945	945	950
27	980	970	960	960	960	965
28	005	000	990	990	995	000
29	035	025				
30						
Sum	20565	20375	19195	20135	22245	22345
No	20	20	19	20	22	22
Ave	1028.2	1018.8	1010.3	1006.8	1011.1	1015.7

7p	8p	9p	10p	11p	MN	Date
						1
960	970	990	995	995	990	2
925	935	945	950	950	945	3
980	995	005	010	005	000	4
						5
						6
						7
070	085	095	100	100	095	8
095	100	105	115	115	110	9
090	100	110	115	115	110	10
060	070	080	085	080	075	11
050	060	075	085	080	075	12
060	075	085	090	090	085	13
040	050	055	060	055	050	14
025	030	040	045	040	035	15
010	020	030	035	035	030	16
020	025	030	030	025	020	17
005	015	020	020	015	010	18
995	005	015	020	020	010	19
						20
						21
110	130	140	145	145	140	22
090	095	110	115	110	105	23
035	050	065	065	060	050	24
000	010	020	025	020	010	25
960	980	990	000	000	995	26
970	985	000	010	010	005	27
015	030	035	035	035	030	28
						29
						30
22565	22815	23140	23150	23100	22975	31
22	22	22	22	22	22	
1025.7	1037.0	1051.8	1052.3	1050.0	1044.3	
		1047.7				

September 1958. Kole Kule

Day	1A	2A	3A	4A	5A	6A
1	645	630	620	620	620	620
2	635	625	615	605	605	605
3	590	585	580	575	575	575
4	595	580	575	575	575	575
5	610	605	600	595	595	600
6	635	625	620	610	610	610
x 7	650	640	635	625	625	630
8	670	660	655	655	655	660
9	705	695	680	675	670	670
10	715	705	695	690	685	685
11	720	710	700	690	690	690
12	685	675	660	645	640	640
13	665	655	650	645	640	640
14	685	675	665	660	655	655
15	645	640	630	625	625	625
16	625	610	600	600	600	600
17	630	620	615	610	615	620
18	615	605	595	590	585	590
19	615	605	595	590	590	590
20	625	620	620	620	625	630
21	665	650	645	640	640	645
x 22	670	665	660	660	665	670
23	735	720	710	705	705	705
24	695	680	675	675	670	670
25	640	630	620	615	615	615
26	605	585	570	565	565	570
27	590	585	575	570	570	575
28	605	600	590	585	585	590
29	640	630	625	625	625	625
30	18800	18510	18275	18140		
Tot	18300 29	18405 2928	18345 2928	18240 2829	18120	18275
No	29	2928	2928	2829	29	29
Ave	653.6 648.3	657.3 638.3	655.9 630.2	650.0 625.5	624.8	630.2

Sept- 58 - K. K

	7a	8a	9a	10a	11a	12a	Day
x	625	635	645	650	655	645	1
	605	610	615	620	610	600	2
	575	585	590	595	600	600	3
	580	595	600	600	600	600	4
	610	620	625	635	640	635	5
	615	625	635	645	645	640	6
	645	650	660	665	665	665	7
x	670	675	690	705	700	700	8
	675	680	695	700	705	700	9
	695	705	715	725	730	725	10
	700	710	715	720	720	720	11
	650	665	675	685	685	680	12
	650	655	665	675	675	675	13
	655	665	675	680	680	675	14
	625	635	645	655	660	660	15
	600	615	630	645	645	640	16
	620	635	640	645	645	640	17
	600	615	625	635	640	645	18
	605	620	630	630	635	625	19
	640	655	660	665	665	660	20
x	650	640	635	630	630	630	21
	685	695	710	725	735	730	22
	715	720	725	735	735	725	23
	670	675	680	680	680	680	24
	620	625	625	625	620	605	25
	575	585	590	590	605	590	26
	585	595	605	610	610	605	27
	595	610	620	625	625	625	28
	635	645	660	675	680	655	29
							30
	18370	18640	18875	19065	19120	18925	TOT
	29	29	29	29	29	29	Ave
	633.4	642.8	650.9	657.4	659.3	654.3	Ave

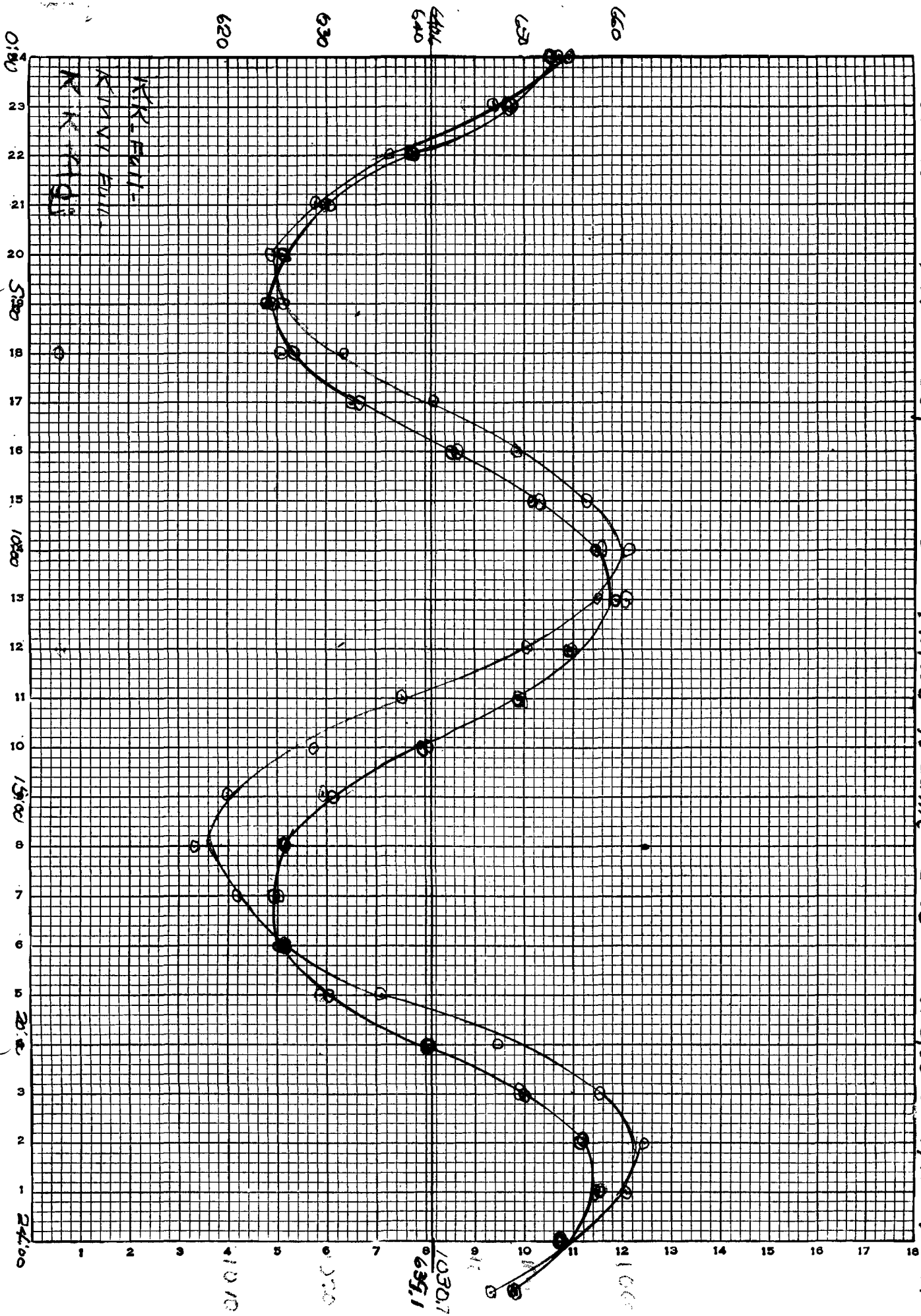
Sept. 1958 K.L.

Day	1p	2p	3p	4p	5p	6p
1	640	630	630	625	625	625
2	585	575	565	565	565	560
3	595	585	580	570	565	565
4	600	600	590	585	585	585
5	635	625	620	620	620	620
6	640	630	625	620	620	620
7	660	655	645	645	645	645
8	690	680	670	670	670	670
9	700	695	685	680	680	680
10	725	715	700	690	685	685
11	705	685	675	670	665	665
12	675	655	640	630	630	635
13	675	665	660	650	650	655
14	665	655	645	640	640	640
15	660	640	625	620	620	625
16	635	620	615	605	605	605
17	635	630	620	620	620	620
18	640	630	620	605	605	600
19	615	610	605	605	605	600
20	655	640	635	630	630	630
21	650	640	635	630	630	630
22	715	710	705	700	695	695
23	720	710	695	695	690	685
24	670	660	640	630	625	625
25	605	595	585	580	580	585
26	585	570	560	555	555	555
27	595	585	580	580	580	580
28	620	615	610	610	610	615
29	640					
30						
Tot	18830	17905	17560	17525	17495	17500
No	29	28	28	28	28	28
Ave	649.3	639.5	627.1	625.9	624.8	625.0

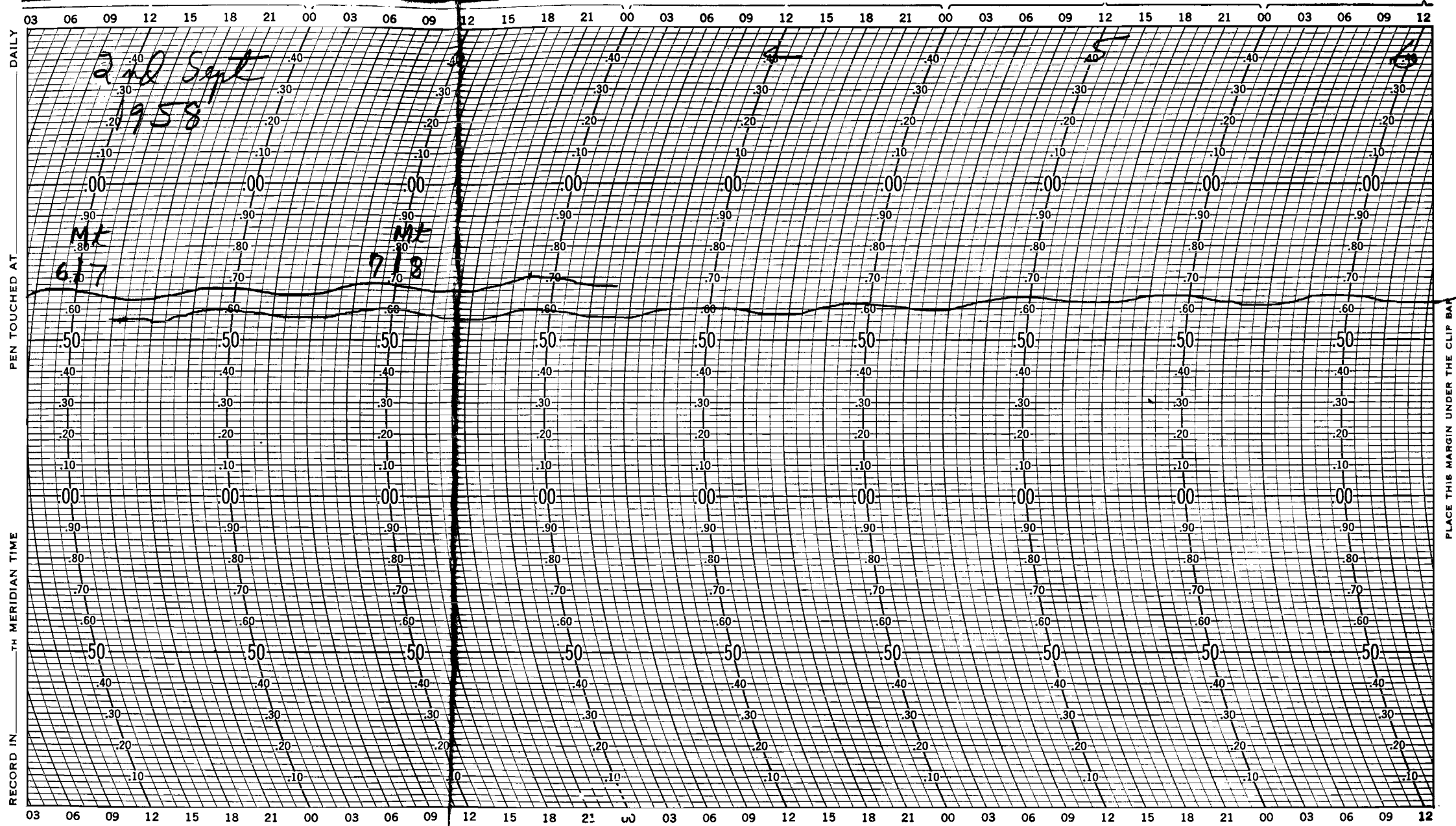
Sep + 58. K K.

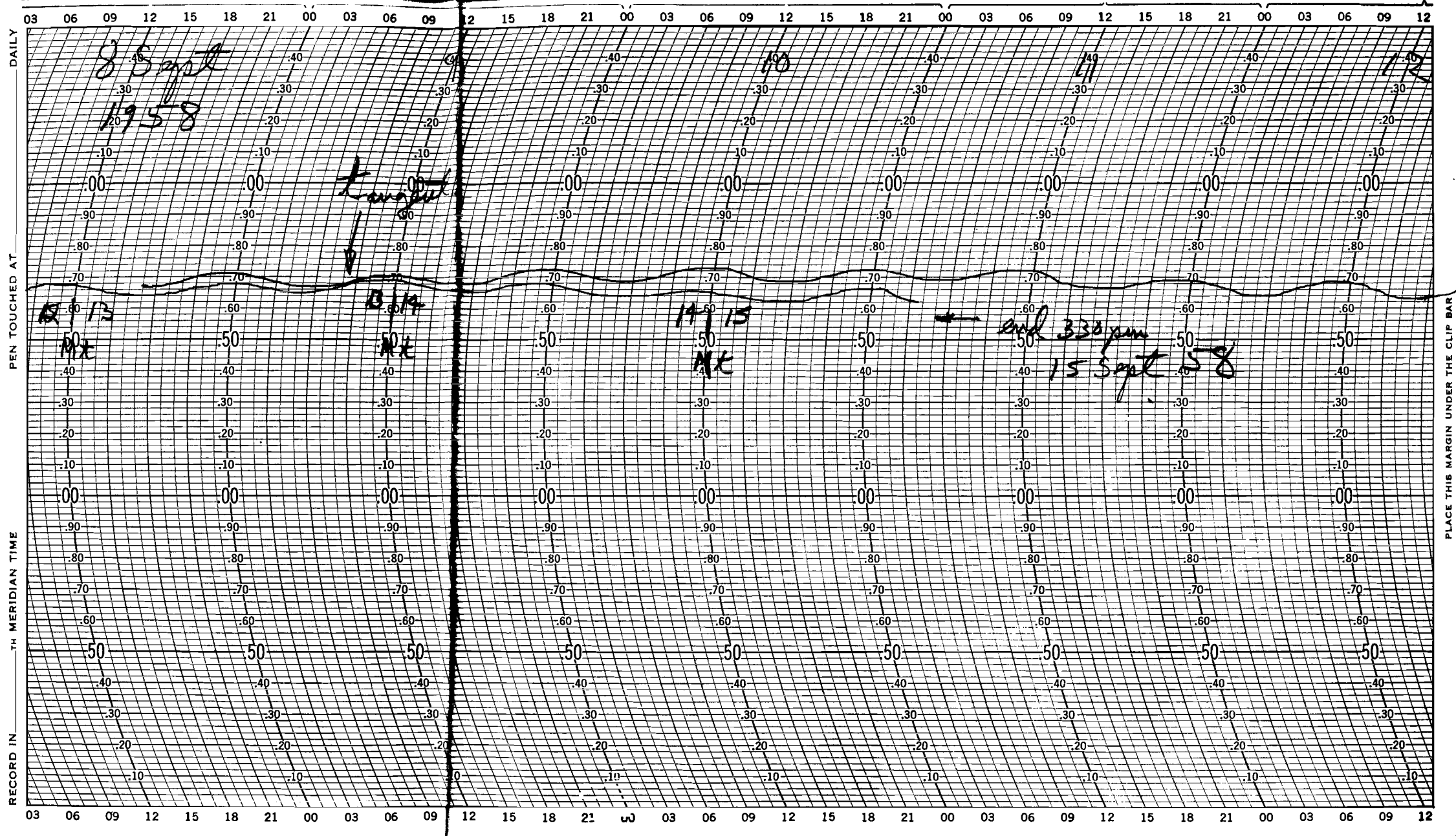
	7p	8p	9p	10p	11p	MN 12p	Day
X	630	635	640	645	645	640	1
	560	575	590	595	600	595	2
	565	575	590	595	600	595	3
	585	600	605	615	620	615	4
	625	630	640	640	640	640	5
X	630	645	655	665	665	660	6
	655	670	680	680	680	675	7
	675	690	700	710	715	710	8
	685	700	710	720	725	720	9
	685	700	705	715	720	720	10
	665	675	690	690	690	685	11
	645	660	670	680	675	675	12
	660	670	685	685	690	690	13
	640	645	650	655	655	650	14
	620	625	635	640	640	630	15
	605	620	625	630	635	630	16
	620	625	620	625	625	625	17
	615	630	630	630	630	625	18
	600	600	605	620	625	630	19
	645	650	660	665	665	665	20
X	640	655	670	675	680	675	21
	710	725	740	750	745	740	22
	685	685	690	700	700	700	23
	635	645	655	660	660	650	24
	585	595	605	610	615	605	25
	565	580	600	605	605	600	26
	590	600	615	620	615	610	27
	625	635	640	645	645	645	28
							29
							30
	17645	17940	18200	18365	18405	18300	Tot
	28	28	28	28	28	28	No
	630.2	640.3	650.0	655.9	657.3	653.6	Ave

KMVI + KIK Sept - 1958 Plotted to same scale - Averages Brought Together.



[illegible]

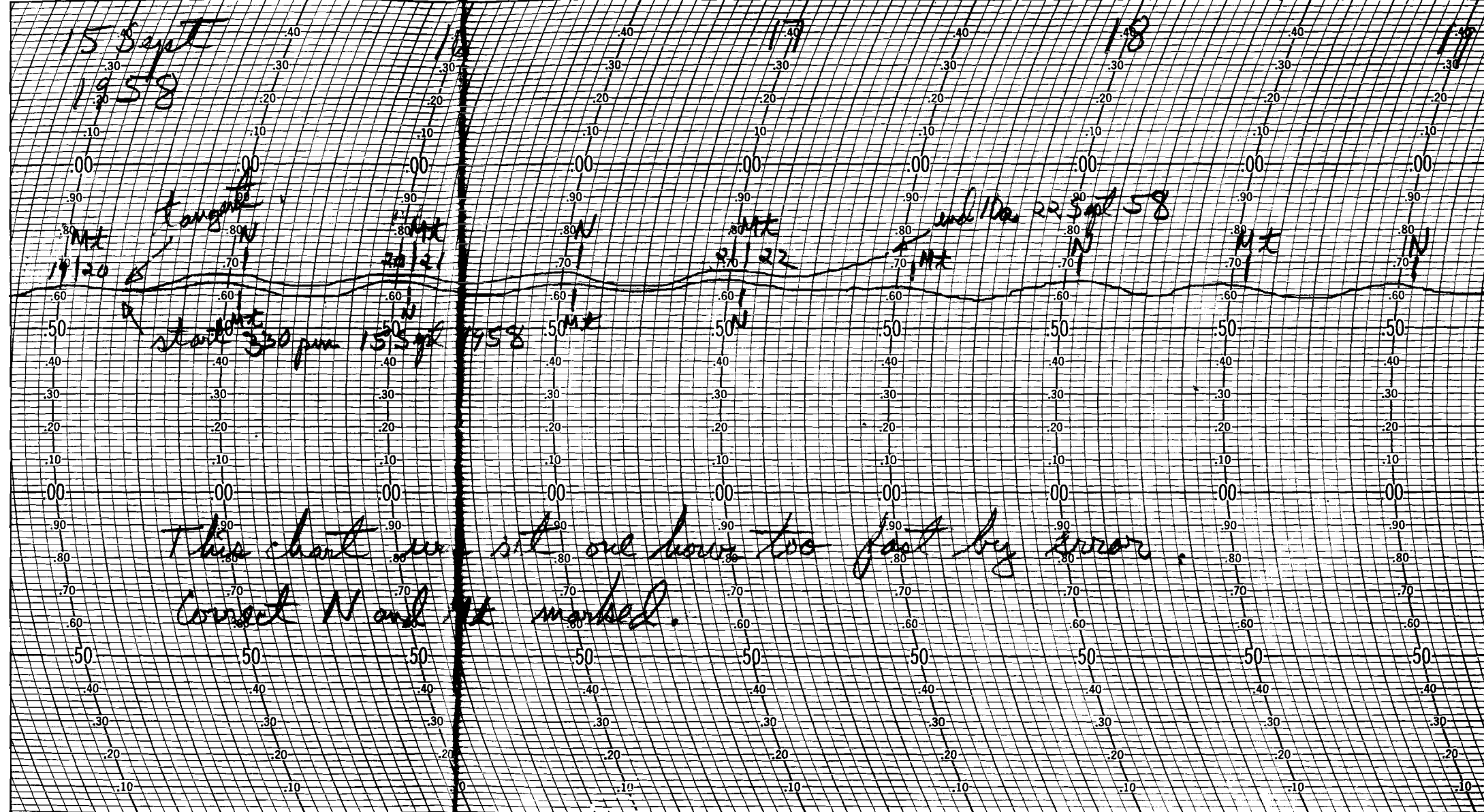




RECORD IN

[illegible]

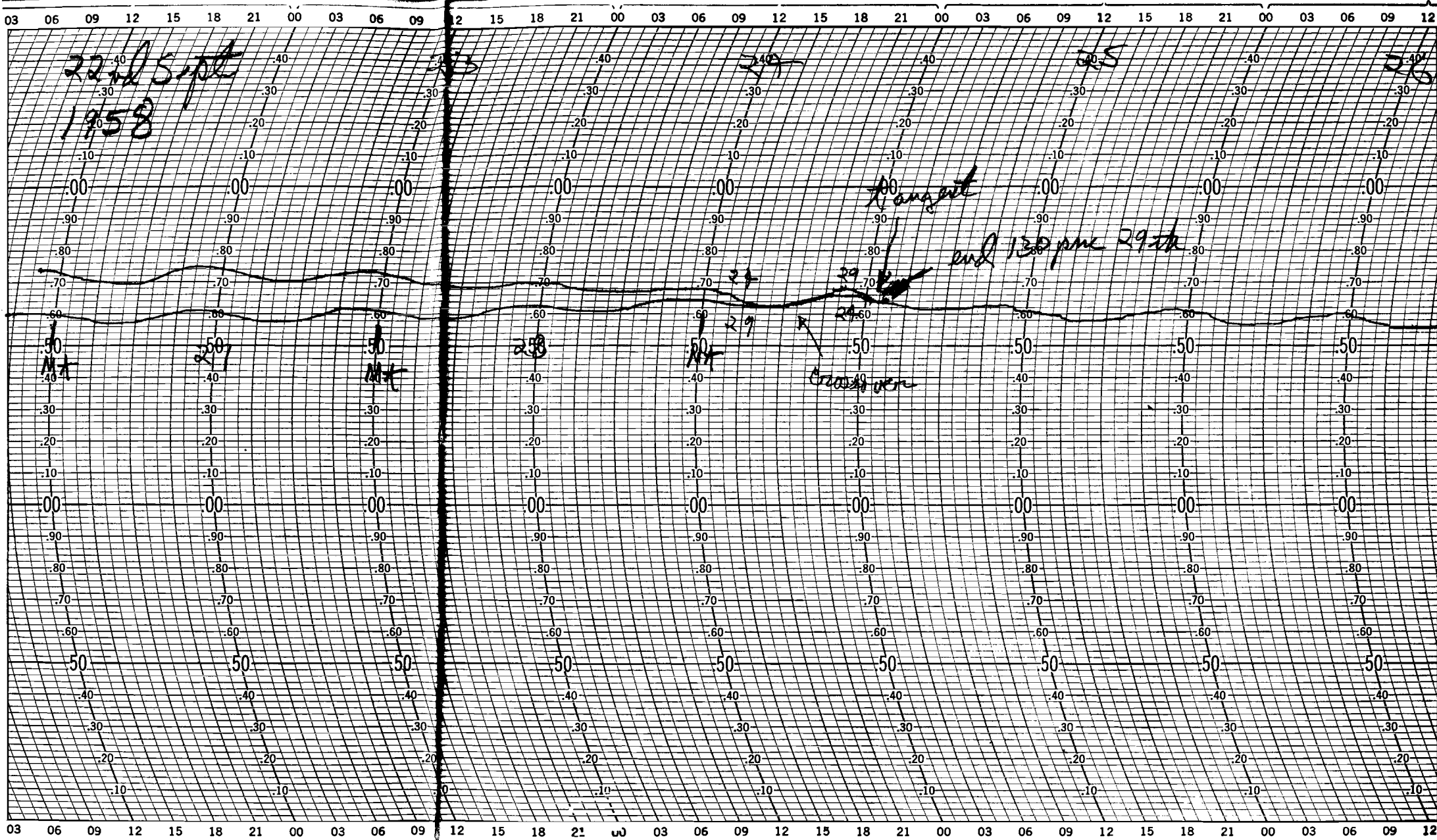
1.40
.30



This chart was set one hour too fast by error.
Correct N and E marked.

PLACE THIS MARGIN UNDER THE CLIP BAR

DAILY



PLACE THIS MARGIN UNDER THE CLIP BAR

September 1958 - Kule Kule - Adjusted.

Record Modified to Fit in with Time KIVI Record
was complete for month. (several gaps.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
hr	B-read.	i	d i.	P ₁	Q ₁	P ₂	Q ₂
01	647.0	0	+ 7.9	+7.90	0.00	+7.90	0.00
02	637.0	1	- 2.1	-2.03	-0.54	-1.82	-1.05
03	628.4	2	- 10.7	-9.27	-5.35	-5.35	-9.27
04	623.9	3	-15.2	-10.75	-10.75	0.00	-15.20
05	622.7	4	-16.4	-8.20	-14.21	+8.20	-14.21
06	624.0	5	-15.1	-3.91	-14.59	+13.08	-7.55
07	631.0	6	- 8.1	0.00	- 8.10	+8.10	0.00
08	641.8	7	+2.7	-0.67	+2.61	-2.34	-1.35
09	650.0	8	+10.9	-5.45	+9.45	-5.45	-9.45
10	656.2	9	+17.1	-12.09	+12.09	0.00	-17.10
11	658.8	10	+19.7	-17.06	+9.85	+9.85	-17.06
12	653.5	11	+14.4	-13.91	+3.73	+12.47	-7.20
13	648.0	12	+8.9	- 8.90	0.00	+8.90	0.00
14	637.9	13	- 1.2	+1.16	+0.31	-1.04	-0.60
15	627.9	14	-11.2	+9.71	+5.60	-5.60	-9.71
16	624.5	15	-14.6	+10.32	+10.32	0.00	-14.60
17	623.9	16	-15.2	+7.60	+13.17	+7.60	-13.17
18	624.1	17	-15.0	+3.88	+14.49	+12.99	-7.50
19	628.2	18	-10.9	0.00	+10.90	+10.90	0.00
20	638.9	19	- 0.2	-0.05	+0.19	+0.17	+0.10
21	648.0	20	+ 8.9	+4.45	-7.71	-4.45	-7.71
22	654.3	21	+15.2	+10.75	-10.75	0.00	-15.20
23	655.9	22	+16.8	+14.55	-8.40	+8.40	-14.55
24	652.0	23	+12.9	+12.47	-3.34	+11.17	-6.45
		Sum +	135.4	82.79	92.81	119.73	0.10
Sum	15337.9	Sum -	135.9	92.29	83.74	26.05	188.93
Ave.	639.08	Net	- 0.5	-9.50	+9.07	+93.68	-188.83
	639.1	Net _{1/2}	-0.04	-0.793	+0.756	+7.807	-15.736
				P ₁	Q ₁	P ₂	Q ₂

$$A_1 = 313^\circ 40'$$

$$A_2 = 153^\circ 36.8'$$

$$a_1 = 1.095$$

$$a_2 = 1.566$$

$$\text{Time} = 9.09 + 1.0 \\ = 10.09 \text{ Hr.}$$

$$\text{Time} = 9.88 + 1.0 \\ = 10.88 \text{ Hr.}$$

Sept. 11. K. K. 58 Adj.

(1) Nr.	(2) B-read	(3) i	(4) di	(5) p ₃	(6) q ₃	(7) p ₄	(8) q ₄
01		0	+7.9	+7.90	0.00	+7.90	0.00
02		1	-2.1	-1.48	-1.48	-1.05	-1.82
03		2	-10.7	0.00	-10.70	+5.35	-9.27 ⁶
04		3	-15.2	+10.74	-10.74	+15.20	0.00
06		4	-16.4	+16.40	0.00	+8.20	+14.20
06		5	-15.1	+10.68	+10.68	-7.55	+13.08
07		6	-8.1	0.00	+8.10	-8.10	0.00
08		7	+2.7	+1.91	-1.91	+1.35	+2.34
09		8	+10.9	+10.90	0.00	-5.45	+9.43
10		9	+17.1	+12.09	+12.09	-17.10	0.00
11		10	+19.7	0.00	+19.70	-9.85	-17.05
12	14	11	+14.4	-10.18	+10.18	+7.20	-12.47
13		12	+8.9	-8.90	0.00	+8.90	0.00
14		13	-1.2	+0.85	+0.85	-0.60	-1.04
15		14	-11.2	0.00	+11.20	+5.60	-9.69
16		15	-14.6	-10.32	+10.32	+14.60	0.00
17		16	-15.2	-15.20	0.00	+7.60	+13.16
18		17	-15.0	-10.60	-10.60	-7.50	+12.99
19		18	-10.9	0.00	-10.90	-10.90	0.00
20		19	-0.2	+0.14	-0.14	+0.10	-0.17
21		20	+8.9	-8.90	0.00	-4.45	+7.71
22		21	+15.2	-10.74	-10.74	-15.20	0.00
23		22	+16.8	0.00	-16.80	-8.40	-14.55
24	14.14	23	+12.9	+9.13	-9.13	+6.45	-11.17
		Sum +		80.74	83.12	88.35	72.91
		Sum -		76.32	83.14	96.25	77.22
		Not		+4.42	-0.02	-7.90	-4.31
		Not/2		+0.368	-0.002	-0.658	-0.359
				P ₃	Q ₃	P ₄	Q ₄

A₃ 90° 19'
90.3°

A₄ 241° 13'
241.2°

a₃ 0.368

a₄ 0.7496

T₃ 8.99 Hrs.

T₄ 4.48 Hrs.

Sept. 1958 K K Adj-

$$\frac{P_1}{Q_1} = \frac{-0.792}{+0.756} = \tan A_1 \quad \text{Quad IV}$$

$$\frac{P_2}{Q_2} = \frac{+7.807}{-15.736} = \tan A_2 \quad \text{Quad II}$$

$$\log 0.792 = 9.89873 - 10$$

$$\log 7.807 = 10.89248 - 10$$

$$\log 0.756 = 9.87852 - 10$$

$$\log 15.736 = 1.19690$$

$$\log \tan A_1 = 10.02021 - 10$$

$$\log \tan A_2 = 9.69558 - 10$$

$$A_1 = 46^\circ 20'$$

$$A_2 = 26^\circ 23.2'$$

$$A_1 = 313^\circ 40' (313.7^\circ)$$

$$A_2 = 153^\circ 36.8' (153.6^\circ)$$

$$\text{Time} = 9.09 + 1.0 = 10.09 \text{ Hr.}$$

$$\text{Time} = 9.88 + 1.0 = 10.88 \text{ Hr.}$$

$$\log 0.792 = 9.89873 - 10$$

$$\log 7.807 = 10.89248 - 10$$

$$\log \sin A_1 = 9.85936 - 10$$

$$\log \sin A_2 = 9.64780 - 10$$

$$\log a_1 = 0.03937$$

$$\log a_2 = 1.24468$$

$$a_1 = 1.095$$

$$a_2 = 17.566$$

$$\frac{P_3}{Q_3} = \frac{+0.368}{-0.002} = \tan A_3 \quad \text{Quad II}$$

$$\frac{P_4}{Q_4} = \frac{-0.658}{-0.359} = \tan A_4 \quad \text{Quad III}$$

$$\log 0.368 = 19.56585 - 20$$

$$\log 0.658 = 19.81823 - 20$$

$$\log 0.002 = 7.30103 - 10$$

$$\log 0.359 = 9.55509 - 10$$

$$\log \tan A_3 = 12.26482 - 10$$

$$\log \tan A_4 = 10.26314 - 10$$

$$A_3 = 89^\circ 41'$$

$$A_4 = 61^\circ 13'$$

$$A_3 = 90^\circ 19' (90.3^\circ)$$

$$A_4 = 241^\circ 13' (241.2^\circ)$$

$$\text{Time} = 7.99 + 1.0 = 8.99 \text{ Hr.}$$

$$\text{Time} = 3.48 + 1.0 = 4.48 \text{ Hr.}$$

$$\log 0.368 = 19.56585 - 20$$

$$\log 0.658 = 19.81823 - 20$$

$$\log \sin A_3 = 9.99999 - 10$$

$$\log \sin A_4 = 9.94342 - 10$$

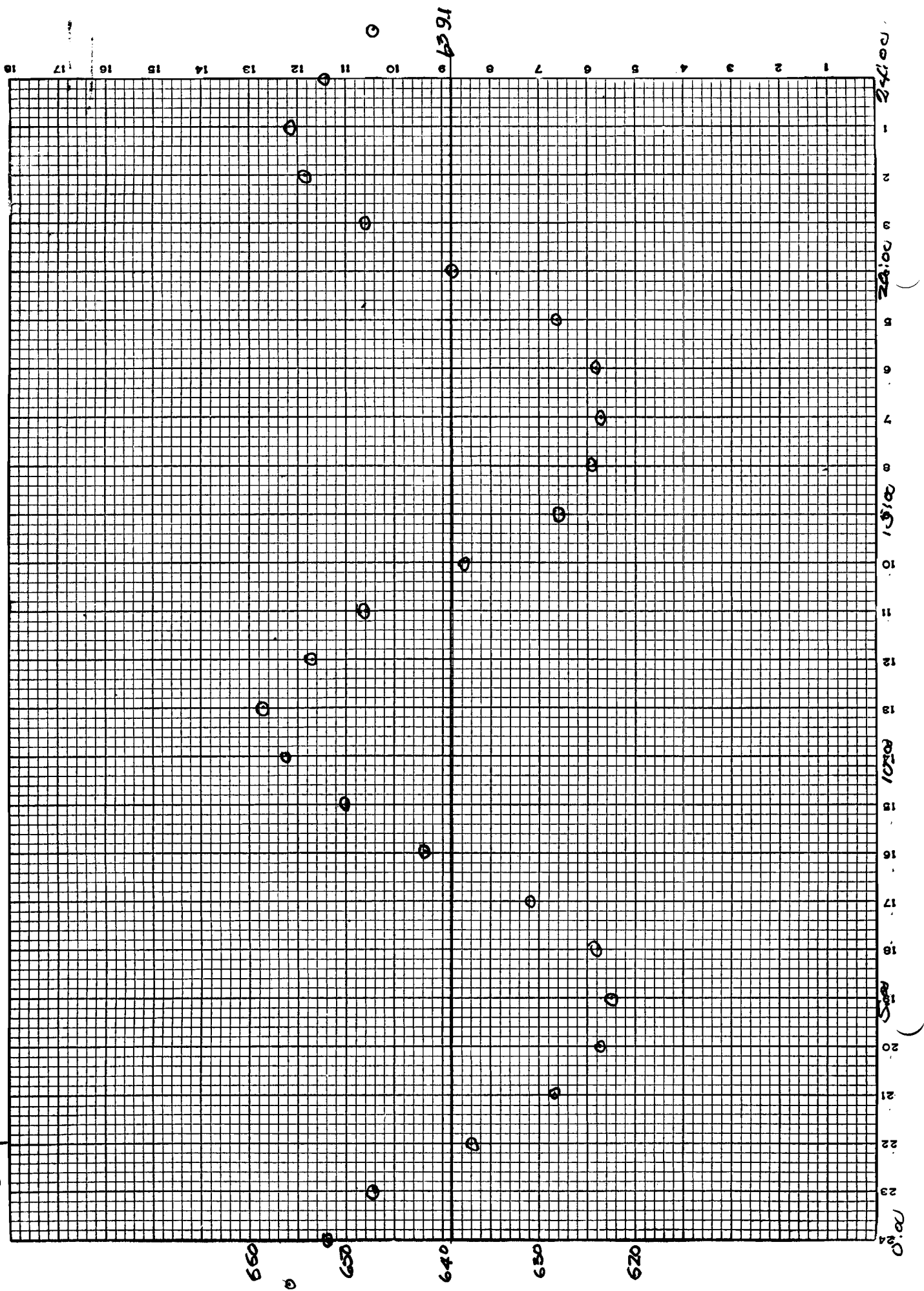
$$\log a_3 = 9.56586 - 10$$

$$\log a_4 = 9.87481 - 10$$

$$a_3 = 0.368$$

$$a_4 = 0.7496$$

Sept-1968 K.K. Reduced to Times of KIMVI



September. 1958 K M V I

(1) Hr.	(2) B-read.	(3) i	(4) di	(5) P ₁	(6) Q ₁	(7) P ₂	(8) Q ₂
01	1037.0	0	+6.3	+6.30	0.00	+6.30	0.00
02	1026.4	1	-4.3	-4.16	-1.11	-3.72	-2.15
03	1019.1	2	-11.6	-10.05	-5.80	-5.80	-10.05
04	1013.9	3	-16.8	-11.88	-11.88	0.00	-16.80
05	1015.9	4	-14.8	-7.40	-12.82	+7.40	-12.82
06	1021.9	5	-8.8	-2.28	-8.51	+7.62	-4.40
07	1030.8	6	+0.1	0.00	+0.10	-0.10	0.00
08	1039.2	7	+8.5	-2.20	+8.21	-7.36	-4.25
09	1046.2	8	+15.5	-7.75	+13.42	-7.75	+13.42
10	1050.2	9	+19.5	-13.79	+13.79	0.00	-19.50
11	1047.5	10	+16.8	-14.55	+8.40	+8.40	-14.55
12	1040.2	11	+9.5	-9.18	+2.46	+8.23	-4.75
13	1028.2	12	-2.5	+2.50	0.00	-2.50	0.00
14	1018.8	13	-11.9	+11.50	+3.08	-10.31	-5.95
15	1010.3	14	-20.4	+17.67	+10.20	-10.20	-17.67
16	1006.8	15	-23.9	+16.90	+16.90	0.00	-23.90
17	1011.1	16	-19.6	+9.80	+16.97	+9.80	-16.97
18	1015.7	17	-15.0	+3.88	+14.49	+12.44	-7.50
19	1025.7	18	-5.0	0.00	+5.00	+5.00	0.00
20	1037.0	19	+6.3	+1.63	-6.09	-5.45	-3.15
21	1047.7	20	+17.0	+8.50	-14.72	-8.50	+14.72
22	1052.3	21	+21.6	+15.27	-15.27	0.00	-21.60
23	1050.0	22	+19.3	+16.71	-9.65	+9.65	-16.71
24	1044.3	23	+13.6	+13.14	-3.52	+11.78	-6.80
		Sum +	154.0	123.80	113.02	87.17	0.00
Sum	24736.2	Sum -	154.6	83.24	89.37	61.64	237.66
Ave	1030.67	Net	-0.6	+40.56	+23.65	+25.48	-237.66
	1030.7	Net _{1/2}	-0.05	+3.380	+1.971	+2.123	-19.805

P₁

Q₁

P₂

Q₂

A₁ = 59° 45.1'
59.8°

A₂ = 173° 52.9'
173.9°

a₁ = 3.913

a₂ = 19.92

Time 3.01 Hrs

Time 10.02 Hrs

Sept. 1958 KML

N

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hr.	B-read	i	d i	P ₃	Q ₃	P ₄	Q ₄
01		0	+6.3	+6.30	0.00	+6.30	0.00
02		1	-4.3	-3.04	-3.04	-2.15	-3.73
03		2	-11.6	0.00	-11.60	+5.80	-10.05
04		3	-16.8	+11.88	-11.88	+16.80	0.00
05		4	-14.8	+14.80	0.00	+7.40	+12.80
06		5	-8.8	+6.22	+6.22	-4.40	+7.61
07		6	+0.1	0.00	-0.10	+0.10	0.00
08		7	+8.5	+6.01	-6.01	+4.25	+7.35
09		8	+15.5	+18.50	0.00	-7.75	+13.41
10		9	+19.8	+13.79	+13.79	-19.50	0.00
11		10	+16.8	0.00	+16.80	-8.40	-14.53
12		11	+9.5	-6.71	+6.71	+4.75	-8.22
13		12	-2.5	+2.50	0.00	-2.50	0.00
14		13	-11.9	+8.41	+8.41	-6.95	-10.89
15		14	-20.4	0.00	+20.40	+10.20	-17.64
16		15	-23.9	-16.90	+16.90	+23.90	0.00
17		16	-19.6	-19.60	0.00	+9.80	+16.95
18		17	-15.0	-10.61	-10.61	-7.50	+12.97
19		18	-8.0	0.00	-5.00	-6.00	0.00
20		19	+6.3	-4.50	+4.50	+3.15	+5.45
21		20	+17.0	-17.00	0.00	-8.50	+14.70
22		21	+21.6	-15.27	-15.27	-21.60	0.00
23		22	+19.3	0.00	-19.30	-9.65	-16.69
24		23	+13.6	+9.62	-9.62	+6.80	-11.78
		Sum +		95.03	93.73	99.25	91.24
Sum		Sum -		93.63	92.43	102.90	92.93
Ave	1030.7	Net		+1.40	+1.30	-3.65	-1.69
		Not		+0.117	+0.108	-0.304	-0.141
		Off					
		112					
				P ₃	Q ₃	P ₄	Q ₄
				A ₃ = 47° 17.8'		A ₄ = 245° 7'	
				47.3°		245.1°	
				a ₃ = 0.159		a ₄ = 0.335	
				Time ₃ = 1.95 hrs		Time ₄ = 4.41 hrs	

Sept. 1958. K M V I

$$\frac{P_1}{Q_1} = \frac{+3.380}{+1.971} = \tan A_1 \quad \text{Quad I}$$

$$\frac{P_2}{Q_2} = \frac{+2.123}{-19.805} = \tan A_2 \quad \text{Quad II}$$

$$\log 3.380 = 0.52892$$

$$\log 2.123 = 0.32695 - 10$$

$$\log 1.971 = 0.29469$$

$$\log 19.805 = 1.29677$$

$$\log \tan A_1 = 10.23423 - 10$$

$$\log \tan A_2 = 9.23018 - 10$$

$$A_1 = 59^\circ 45.1'$$

$$A_2 = 6^\circ 7.1'$$

$$A_1 = 59^\circ 45.1' (59.8^\circ)$$

$$A_2 = 173^\circ 52.9' (173.9^\circ)$$

$$\text{Time}_1 = 2.006 + 1 = 3.01 \text{ hr.} \quad \text{Time}_2 = 9.02 + 1 = 10.02 \text{ hr.}$$

$$\log 3.380 = 0.52892 - 10$$

$$\log 2.123 = 0.32695 - 10$$

$$\log \sin A_1 = 9.93644 - 10$$

$$\log \sin A_2 = 9.02768 - 10$$

$$\log a_1 = 0.59248$$

$$\log a_2 = 1.29927$$

$$a_1 = 3.9127$$

$$a_2 = 19.9\%$$

$$\frac{P_3}{Q_3} = \frac{0.117}{0.108} = \tan A_3 \quad \text{Quad I}$$

$$\frac{P_4}{Q_4} = \frac{-0.304}{-0.141} = \tan A_4 \quad \text{Quad. III}$$

$$\log 0.117 = 19.06819 - 20$$

$$\log 0.304 = 19.48287 - 20$$

$$\log 0.108 = 9.03342 - 10$$

$$\log 0.141 = 9.14922 - 10$$

$$\log \tan A_3 = 10.03477 - 10$$

$$\log \tan A_4 = 10.33365 - 10$$

$$A_3 = 47^\circ 17.5'$$

$$A_4 = 65^\circ 7.1'$$

$$A_3 = 47.3^\circ$$

$$A_4 = 245^\circ 7.1'$$

$$\text{Time}_3 = 0.95 + 1 = 1.95 \text{ hrs.}$$

$$\text{Time}_4 = 3.41 + 1 = 4.41 \text{ hrs.}$$

$$\log 0.117 = 19.06819 - 20$$

$$\log 0.304 = 19.48287 - 20$$

$$\log \sin A_3 = 9.86612 - 10$$

$$\log \sin A_4 = 9.95769 - 10$$

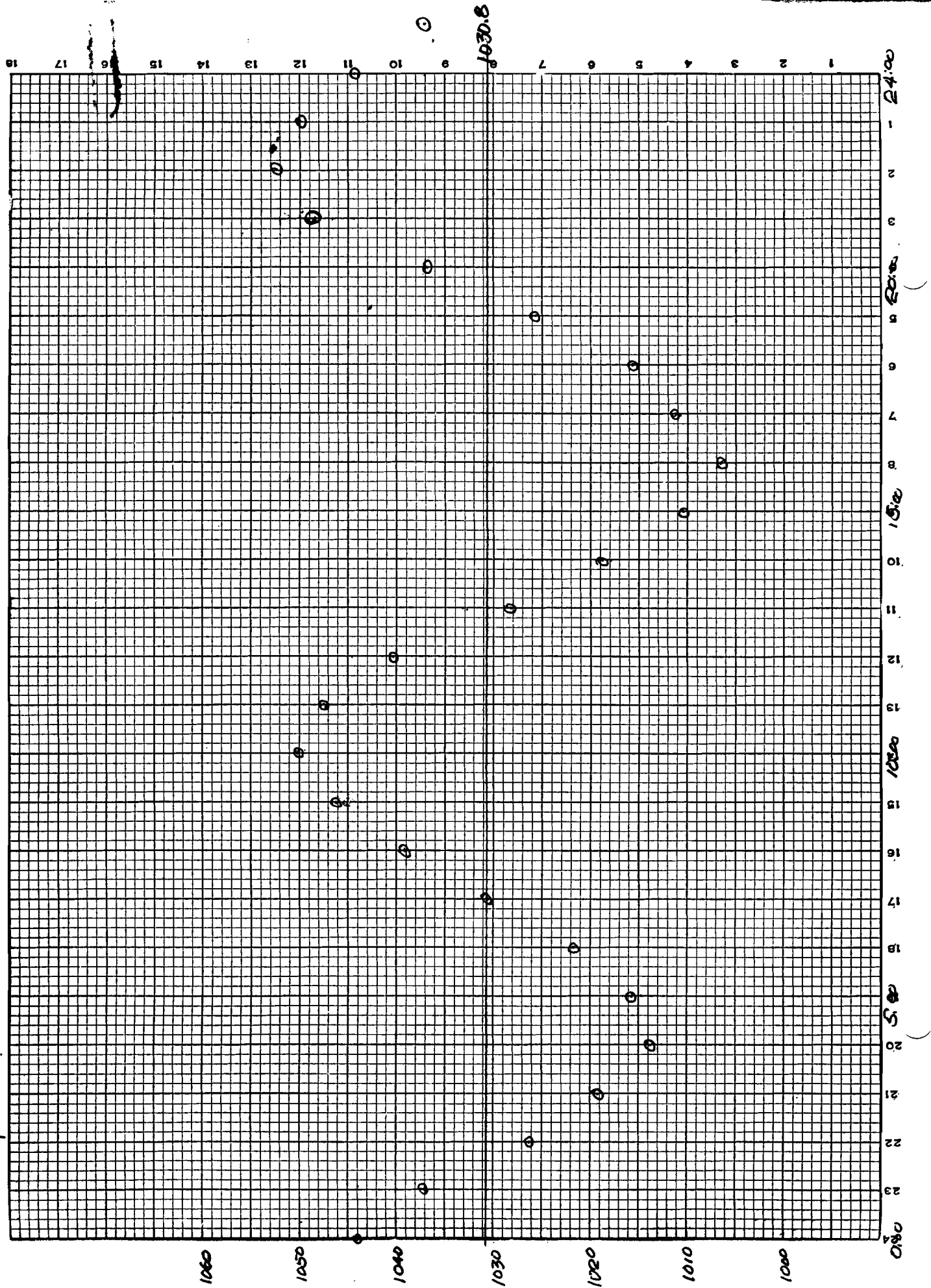
$$\log a_3 = 9.20207 - 10$$

$$\log a_4 = 9.52518 - 10$$

$$a_3 = 0.1592$$

$$a_4 = 0.3351$$

Sept. 1958 - KMYI.



24 Hour Component

Use Feb Consolidated
53,4+8

Month	January		February		March	
Year	P_1	Q_1	P_1	Q_1	P_1	Q_1
1952						
1953	+1.957	+1.532	+4.460	+6.128	-2.799	-4.117
1954	+1.202	-0.005	+0.073	+3.545 ^v	-0.641	-0.270
1957						
1958	+0.400	+2.200	-0.660	+1.210	-1.290	-2.210
Sum	+3.559	+3.727	+3.873	+10.883	-4.730	-6.597
Averages	+1.186	+1.242	+1.258 ⁹¹	+3.628	-1.577	-2.199
P_1/Q_1	+0.955		+0.356		+0.717	
A_1	I 43.7°		I 19.6°		II 35.6° 215.6°	
$\sin A_1$	0.6905		0.3352		0.582	
a_1	1.717		3.851		2.71	
T_1	4.09 hr		5.69 hr		4.63 3.87 16.63 hr	

Month	April		May		June	
Year	P_1	Q_1	P_1	Q_1	P_1	Q_1
1952						
1953	-2.732	-7.579	-3.740	-0.629	-5.813	-3.356
1954	-2.313	-2.055	-0.933	-2.593	-3.758	-1.069
1957						
1958	-1.730	+0.600	-2.799	-2.879	-2.423	-1.076
Sum	-6.775	-9.034	-7.472	-6.101	-11.994	-5.501
Averages	-2.258	-3.011	-2.491	-2.034	-3.998	-1.834
P_1/Q_1	0.749		1.225		2.180	
A_1	III 36.8° 216.8°		III 50.7° 230.7°		III 65.4° 245.4°	
$\sin A_1$	0.5995		0.7745		0.9091	
a_1	3.77 16.55 hr		3.22 15.62 hr		4.39	
T_1	3.45 4.55		4.38 3.62		2.64 14.64 hr	

2.6 month

Feb 17 - Mar 18

Feb 18 - Mar 19

Feb 19 - Mar 20

P_1

Q_1

$A_1, 11.2^\circ$

$a_1, 0.88$

$T_1, 6.25$

$A_1, 27.2^\circ$

$a_1, 0.787$

$T_1, 5.19$

$A_1, 17.0^\circ$

$a_1, 0.871$

$T_1, 5.87$

Feb. 20 - Mar 20

Feb 21 - Mar 22

Feb 23 - Mar 24

2.7 month

2.8 month

-0.1675

-0.1717

-0.1883

+0.1870

-0.779

-0.204

$A_1, 224.3^\circ$

$A_1, 314.9^\circ$

$A_1, 255.3$

$a_1, 0.24$

$a_1, 0.266$

$a_1, 805$

$T_1, 16.05$

$T_1, 10.01$

$T_1, 13.98$

24 Hour Component

Use July 53.4+8 on separate sheet
July

Month Year	August		September	
	P_1	Q_1	P_1	Q_1
1952	-1.919	-4.284	-2.189	+0.379
1953	-4.624	-2.301	-3.882	-3.930
1954	-4.129	-6.562	-3.092	-1.461
1957				
1958			-3.212	+0.476
Sums	-10.672	-12.147	-12.375 -9.163	-4.536 -5.012
Averages	-3.557	-4.049	-3.054 -3.094	-1.671 -1.134
P_1/Q_1	+0.879		1.829	2.725
A_1	$\text{III } 41.8^\circ$	221.3	$\text{III } 69.8^\circ$ $\text{III } 61.8^\circ$	249.8° 241.3°
$\sin A_1$	0.6604		-0.937 -0.8774	-0.830 -0.8895
a_1	5.38		3.30 3.48	0.891 0.871
T_1	4.25	14.25	2.91	14.33 hr 14.91 hr

Month Year	October		November		December	
	P_1	Q_1	P_1	Q_1	P_1	Q_1
1952	+0.008	+2.640	-0.983	+1.157	+2.255	+4.202
1953	-0.473	-1.138	-0.406	-3.532	-0.115	-0.339
1954	-0.332	+0.581				
1957			+1.760	+3.620	+2.980	-1.290
1958						
Sums	-0.797	+2.083	+0.371	+1.245	+5.120	+2.573
Averages	-0.266	+0.694	+0.124	+0.415	+1.707	+0.858
P_1/Q_1	-0.3832		0.299		+1.990	
A_1	$\text{IV } 21^\circ$	339°	$\text{I } 16.6^\circ$		$\text{I } 63.3^\circ$	
$\sin A_1$	0.3580		0.2862		0.8934	
a_1	0.743		0.412		1.911	
T_1	7.4 hr		5.89 hr		2.71 hr	

2.5 Month

Feb 15 - Mar 16

	P_1	Q_1
1953	2.662	3.073
1954	1.102	2.533
1958	-2.13	-2.42
Sum	1.634	3.186
Averages	.545	1.062
P_1/Q_1	.512	
A_1	27.1°	
ave A_1	.455	
a_1	1.20	
T_1	5.20	

12 Hour Component

Practically identical results
on three different analysis.

Month Year	January		February		March	
	P ₂	Q ₂	P ₂	Q ₂	P ₂	Q ₂
1952						
1953	+ 6.745	-18.765	+3.622	-18.190	+3.205	-23.076
1954	+ 3.255	-20.946	+3.032	-19.855	+4.211	-20.238
1957						
1958	+1.560	-20.780	+3.970	-14.970	+5.760	-20.620
Sum	+10.560	-60.496	+10.624	-53.015	+13.176	-63.934
Average	+3.520	-20.163	+3.541	-17.672	+4.392	-21.311
P ₂ /Q ₂	-0.1747		-0.2005		-0.2060	
A ₂	# 9.9	170.4°	# 11.3°	168.7°	# 11.6°	168.4°
sin A ₂	0.1722		0.1965		0.2010	
a ₂	20.45		0.1965		21.85	
T ₂	10.33	9.9	18.04		10.39	11.7

Month Year	April		May		June	
	P ₂	Q ₂	P ₂	Q ₂	P ₂	Q ₂
1952						
1953	+ 8.242	-21.252	+3.758	-16.252	+2.620	-15.228
1954	+4.770	-19.326	+5.171	-16.798	+3.496	-12.098
1957						
1958	+ 6.980	-18.920	+ 7.286	-15.550	+7.119	-12.420
Sum	+18.992	-59.498	+16.215	-48.600	+13.235	-39.746
Average	+ 6.331	-19.833	+5.405	-16.200	+4.412	-13.249
P ₂ /Q ₂	-0.3192		-0.3339		-0.3334	
A ₂	# 17.7°	162.3°	# 18.6°	161.4°	# 18.5°	161.5°
sin A ₂	0.3053		0.3180		0.3160	
a ₂	20.71		20.42		13.97	
T ₂	10.59	17.7	10.62	18.6	10.63	18.9

12 Hour Component

Use July 53, 48 on
separate
July sheet

Month	August		September	
Year	P ₂	Q ₂	P ₂	Q ₂
1952	+5.648	-9.491	+8.100	-15.085
1953	+6.152	-13.545	+6.523	-15.305
1954	+5.515	-10.581	+5.920	-12.672
1957				
1958			+6.987	-13.911
Sum	+17.315	-33.617	+29.330 +17.543	-56.973 -43.062
Average	+5.772	-11.206	+5.848 +6.133	-11.354 -14.293
P ₂ /Q ₂	-0.5142		-0.4072	-0.430
A ₂	27.4°	152.6°	23.3° 22.2°	156.7° 157.8°
sin A ₂	0.4574		0.3770	0.395
a ₂	12.62		15.52	same
T ₂	10.91	27.3	10.78 10.74	22.2

Month	October		November		December	
Year	P ₂	Q ₂	P ₂	Q ₂	P ₂	Q ₂
1952	+1.035	-19.702	-0.830	-17.098	-0.956	-18.613
1953	+3.679	-18.432	+2.825	-20.630	+0.642	-20.828
1954	+1.583	-18.030				
1957			+0.020	-19.002	+1.960	-21.450
1958						
Sum	+6.297	-56.164	+2.015	-56.730	+1.646	-60.891
Average	+2.099	-18.721	+0.672	-18.910	+0.549	-20.297
P ₂ /Q ₂	-0.1122		-0.0356		-0.02705	
A ₂	6.3°	173.6°	2.1°	177.9°	1.6°	178.4°
sin A ₂	0.1113		0.0365		0.0280	
a ₂	18.85		18.42		19.62	
T ₂	10.21	6.3	10.07	.21	10.05	.15

8 Hour Component

Month Year	January		February		March	
	P ₃	Q ₃	P ₃	Q ₃	P ₃	Q ₃
1952						
1953	+1.974	+3.436	+1.260	+3.378	+1.505	-0.655
1954	+0.042	+3.338	+1.314	+2.834	+0.780	-0.007
1957						
1958	+2.010	+4.900	+1.470	+3.520	+0.550	+0.260
Sum	+4.026	+11.674	+4.044	+9.732	+2.835	-0.402
Averages	+1.342	+3.891	+1.348	+3.244	+0.945	-0.134
P ₃ /Q ₃	+0.345		+0.415		-7.05	
A ₃	19.0°		22.5°		98.1°	
sin A ₃	+0.325		+0.381		+0.989	
a ₃	4.14		3.54		0.96	
T ₃	2.58 hr		2.50 hr		0.82 hr	8.82

Month Year	April		May		June	
	P ₃	Q ₃	P ₃	Q ₃	P ₃	Q ₃
1952						
1953	+2.335	-2.010	+0.642	-1.964	-0.397	-2.332
1954	+0.382	-2.108	+0.139	-0.739	-0.083	-0.587
1957						
1958	+1.190	+0.190	+0.394	-1.834	+0.972	-1.821
Sum	+3.907	-3.928	+1.175	-4.537	+0.492	-4.740
Averages	+1.302	-1.309	+0.392	-1.512	+0.164	-1.580
P ₃ /Q ₃	-0.995		-0.259		-0.104	
A ₃	135.1°		165.5°		174.1°	
sin A ₃	+0.703		+0.250		+0.102	
a ₃	1.85		1.57		1.61	
T ₃	0.00 hr 8:00		7.33 hr ✓		7.14 hr ✓	

[illegible]

8 Hour Component

Month	July		August		September	
Year	P ₃	Q ₃	P ₃	Q ₃	P ₃	Q ₃
1952	-1.057	-1.773	-0.618	-0.183	-0.122	+0.652
1953	+0.388	-1.368	-0.052	-1.893	-0.474	+0.589
1954	+0.120	-1.280	+0.069	-1.461	-0.533	-0.056
1957						
1958	+0.925	-1.593	+0.359	-1.072	+0.038	-0.355
Sum	+0.370 +0.849	-6.814 -4.427	-0.793 -0.601	-4.602 -3.537	-1.929 -1.129	+0.830 +1.185
Averages	+0.094 -0.183	-1.509 -1.474	-0.060 -0.200	-1.152 -1.179	-0.273 -0.376	+0.308 +0.395
P ₃ /Q ₃	+0.124		+0.170	+0.0520	-0.954	
A ₃	176.4°		189.7°	183.0°	52.7°	
sin A ₃	+0.871 +0.0618		-0.168	-0.0517	316.4°	
a ₃	-1.23 1.52		+1.19	1.16	-0.953 -0.689	
T ₃	1.49				0.336 0.55	
	6.85 hr	7.07 hr	6.79 hr	6.94 hr	4.17 3.11 hr	

Month	October		November		December	
Year	P ₃	Q ₃	P ₃	Q ₃	P ₃	Q ₃
1952	+1.534	+1.621	+2.327	+1.960	+2.769	+3.412
1953	+0.901	+0.932	+2.840	+1.688	+3.066	+2.076
1954	+0.866	+1.512				
1957			+1.200	+3.120	+1.530	+2.290
1958						
Sum	+3.301	+4.065	+6.367	+6.768	+7.365	+7.778
Averages	+1.100	+1.355	+2.122	+2.256	+2.455	+2.593
P ₃ /Q ₃	+0.812		+0.942		+0.946	
A ₃	39.1°		43.3°		43.5°	
sin A ₃	+0.630		+0.685		+0.689	
a ₃	1.75		3.10		3.57	
T ₃	2.13 hr		2.04 hr		2.03 hr	

6 Hour Component.

Months	January		February		March	
Year.	P ₄	Q ₄	P ₄	Q ₄	P ₄	Q ₄
1952						
1953	-0.400	-0.100	+1.129	-0.198	+0.338	-0.0008
1954	-1.062	-1.982	-0.583	-0.411	-1.100	-0.288
1957						
1958	-1.280	-1.260	-0.580	+0.300	-0.880	-0.930
Sums	-2.742	-3.342	-0.034	-0.309	-1.642	-1.219
Averages	-0.914	-1.114	-0.011	-0.103	-0.547	-0.406
P ₄ /Q ₄	0.821		0.1068		1.348	
A ₄	39.4°	219.4°	6.1	186.1°	53.6	233.6°
Sin A ₄	.6346		0.1048		.8028	
a ₄	1.43		1.44 0.1049		0.681	
T ₄	4.84 hr	32.8	5.4	24.	4.61	36.6

Months	April		May		June	
Year.	P ₄	Q ₄	P ₄	Q ₄	P ₄	Q ₄
1952	+0.276				+0.008	+0.453
1953	+2.758	-0.541	-0.662	+0.122	-0.283	+0.692
1954	-0.815	-0.419	-0.800	-0.042	+0.333	+0.070
1957						
1958	+0.630	+0.220	-0.321	-0.138	-0.433	-0.208
Sums	+0.031	-0.740	-1.783	-0.058	-0.092	+0.315
Averages	+0.0103	-0.247	-0.594	-0.0193	-0.031	+0.105
P ₄ /Q ₄	0.0417		3.080		0.2952	
A ₄	2.4°	177.6°	72.0°	252.0°	16.5°	343.5°
Sin A ₄	0.0417		0.9513		0.2830	
a ₄	0.247		0.625		0.1095	
T ₄	5.54	32.4	4.3	18.	1.11	6.6

6 Hour Component

Use combined 53,448 on

July ^{separate} sheet

August

September

Month	July		August		September	
Year	P ₄	Q ₄	P ₄	Q ₄	P ₄	Q ₄
1952	-0.100	-0.044	-0.229	+0.686	-0.979	-0.139
1953	-0.283	+0.692	+1.288	-0.629	-1.029	-0.428
1954	-0.512	-0.374	-0.367	-0.173	-0.125	-0.072
1957						
1958			-0.525	-0.258	-0.604	-0.211
Sums	-0.895 -0.900	+0.274	+0.167 +0.692	-0.379 -0.116	-2.737 -2.133	-0.840 -0.639
Averages	-0.298	+0.091	+0.042 +0.231	-0.093 -0.039	-0.684 -0.711	-0.210 -0.215
P ₄ /Q ₄	3.274		-0.963 -5.930		3.26 3.340	
A ₄	73.0°	287.0°	34.9° 80.4°	155.1° 99.6°	73.0 73.3°	253.0 255.3°
Sin A ₄	.9565		+0.420 +0.960		.9580	
a ₄	0.312		0.100 0.234		0.713 0.757	
T ₄	3.72	43.2	6.84 3.58 hr 50.4		4.28 4.28	16.8

Months	October		November		December	
Years	P ₄	Q ₄	P ₄	Q ₄	P ₄	Q ₄
1952	-0.696	+0.566	-0.558	+0.651	-0.638	+0.268
1953	-1.133	-0.274	-0.950	-0.045	-1.150	-1.125
1954	-1.188	-0.053	-0.520	-0.210	-1.240	-1.420
1957						
1958						
Sums	-3.017	+0.239	-2.028	+0.396	-3.028	-2.277
Averages	-1.006	+0.0797	-0.676	+0.132	-1.009	-0.759
P ₄ /Q ₄	12.63		5.121		1.329	
A ₄	85.4	94.6°	78.9	101.1°	53.0	233.0°
Sin A ₄	.9968		.9813		.7986	
a ₄	1.00		0.69		1.26	
T ₄	6.91	52.6	6.82	49.2	4.62	37.2

10 Sept 1958

Formulas are:

$$A_K = \tan^{-1} \frac{P_K}{Q_K}$$

$$a_K = P_K / \sin A_K$$

$$T_K = \frac{90^\circ - A_K}{360} (\text{period in hours}) + 1,00 \text{ hour}$$

If A_K is greater than 90° , add another 360° to the 90° making 450°

as of the above date, all the graphs have been brought up to date to include July & August 1958, but should be held for September 1958 when this month becomes available.