KG
11365
796

KG 11365.796

Book 72.

Journal, A E Douglass. 1896.

A E Douglas
Lat & Longitude Work
1894

10 20 Beg. ent. at No 242 fg 24,
12 25 Ended — 335 " 146.

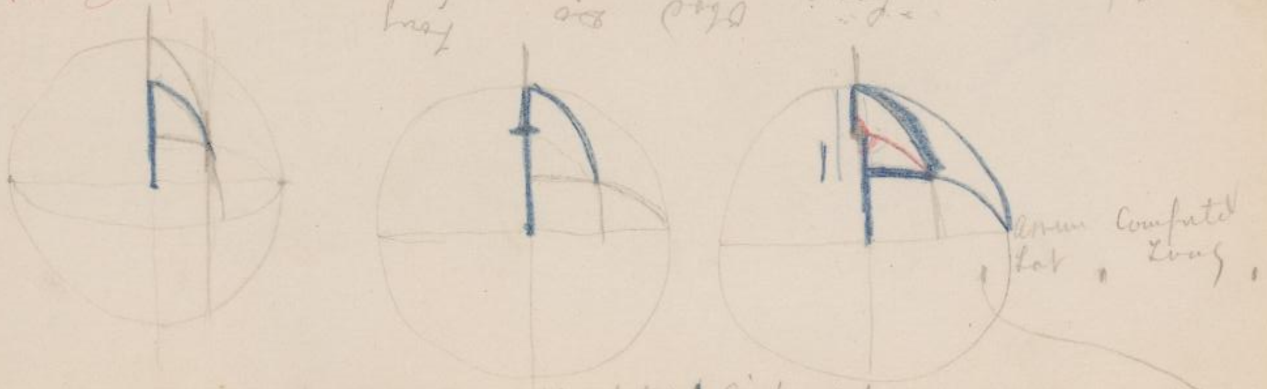
1 30 Beg. time & copy.
32 in 45m
4 32 ended

What does "Beside themselves" mean
Is it the same as Bet. V.

May 29, 35m
9 Day from 12h

		Dist from							
Obsn	Loc	Mer Proc.	or P.V Deg.	Long Cent	Lat Cent	Assum Long	Comp Lat	Assum Long	Comp Lat
37'	U	N $\frac{320}{1186}$	N 20.0°	304.0°	-14.4	324.0	-17.8	328.0	-18.4

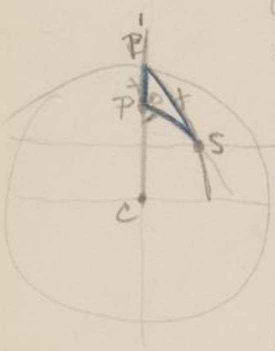
Suggestion for table for computers.



Lat Cent	Dist P.V. (Lat)	Long. Cent! mean mst.	Assum Long	Computed Lat.	Assum. Long	Computed Lat	Dist Merid. (Long	Long. Cent. 1st mst	Assum Lat	Computed Long
			~~324~~	-49,8	~~329~~	-50.5			-24	325,51

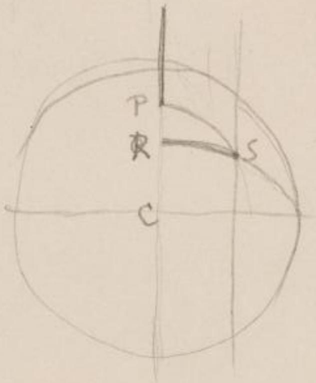
Lat cent	Obsd Lat	Do 1⁰'s	Long Cent ~~meas~~ ~~tr~~	Obsd Long	Do in 1⁰'s	Long Cent 1st mst
-12.4	N $\frac{213}{877}$	N ~~407~~	~~387.4~~	f $\frac{13}{877}$	f 00,2	

Observed Radii not in Parenth.,
assumed " in Parenth.



Obs'd Lat
Assum. Long
We know PP'
Obs'd P'S
Assum P'PS (= Sup. H.A.)

Compute PS
from 2 sides & ∠ opp. one.



Obs'd Long
Assume Lat

Obs'd RS
Assum PS

Compute H.A.$_1$ − RPS

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KG 1131 S.791.

Beginning

1st List of Longitude & Latitude Observations:

No	Date June	Hour	Obr	Book 65. pages	Loc. Marked	Map. I.	Remarks
1	13	13.8	P	40-1	Bottom of Y	y	
1A	"	14.1	"	41	Do	y	
2	16	12.2	P	42	~~S.~~ N. limb to S edge of S. snow	—	
2A	"	12.~~4~~ 5	"	"	σ	σ	Sinus Titanum
3	23	10.7	P	44	S to snow (S), edges	—	
3A	"	11.0	"	"	σ	σ	"
3B	"	11.1	"	"	N to edge [N] snow	—	
4	"	11.7	"	45	σ	σ	"
4A	"	11.8	"	"	S to edge [S] snow	—	
4B	"	11.9	"	"	N to edge [N] snow	—	
4C	"	12.7	"	46	f to Prec. edge [S?] snow	—	
4D	"	12.9	"	"	p to Foll. " " "	—	
5	"	13.1	"	"	N. edge Contin. on Merid. (= Prom. at σVI)	Bet. σ & φ.	
6	24	10.4	P	48	sp. Bay oo,	σVI	
6A	"	11.1 ~~11.9~~	"	49	f to Prec. edge S snow	—	
6B	"	11.2 ~~13.8~~	"	"	p to Foll. " " "	—	
6C	"	11.4 ~~14.0~~	"	"	p to Foll. " " "	—	
7	"	11.9	"	"	Sp σ	σ′	
7A	"	12.7	"	50	f to prec. edge N snow	—	
7B	"	12.8	"	"	p to Foll. " " "	—	
8	"	13.8	"	51	South side Northern Ring	φ′	
9	"	14.0	"	"	Crotch of Ring	φ″	
10	"	14.1	"	"	Dark strip f page 47	σ″	Scamander(?)

Lat.	Long	Gen. map III.	Amplitu.	Lat Cent	Obsd Lat	in 1°'s	Long Cent. mean of mst	Obsd Long	in 1°	Long Cent at mst	Ref. page
m ½	m	U_4		-16.2							
	m	U_4									
m		Sn 1 -		-16.3							
m	m	K_3	2 A	-16.5	N $\frac{21.3}{87.7}$	N		f $\frac{19}{87.7}$	f		78
m ½		Sn 2 - ~~K~~		-16.2							
m	m	K_3	3 A		S $\frac{15}{90.1}$ $\left(\frac{7}{24}\right)$	S		f $\frac{56}{92.6}$	f		78-9
m ½		Sn 3 -	(= V long)								
m	v	K_3	(4)								
m ½		Sn 4 -									
m ½		Sn 5 -									
	m ½	Sn 6 -									
	m ½	Sn 7 -									
m		near P									
m		N		-16.1							
~~m ½~~	m ½	Sn 8 -									
~~m ½~~	m ½	Sn 9 -									
~~m ½~~	m ½	Sn 10 -									
m 2	v	P	(7)								
	m ½	Sn 11 -									
	m ½	Sn 12 -									
m ½		Q_4									
m ½	v	Q_2									
	v	O_5									
14	11m 4V										

1st List of Longitude Observations.

'Copied on preceding × Pages.

				Book 65			
No	Date	Hour		Pages	Md Locat.		Approx. Point.
	June	H					
1	13	13.8		40-1	~~I~~ Book 40 page 130 } = I / g 2		Bottom of Y'
× 1A	"	14.1		41		A 2	" ,
~~2 1~~	~~"~~	~~14.0~~					
~~3 1~~	~~"~~	~~14.1~~					
2	16	12.2		42	N. limb to Edge of S snow		
2A	~~16~~ "	12.4		~~42~~ "	I	σ	Sinus Titanum.
~~3~~	~~"~~	~~12.7~~			~~III~~	~~f~~	~~Ceraunius~~
~~4~~	~~"~~	~~12.9~~			~~II~~	~~m~~	~~Phoenix Lake~~
3	23	10.7		44	S. limb to Edge of S snow		
3A	~~23~~	11.0		~~44~~ "	II	o	"
3B	"	11.1		"	N limb to N. snow edge		
4	"	11.7		45	II	o	"
4C 4A	"	11.8		"	S. limb to edge S. snow		
4D 4B	"	11.9		"	N. " " " N. snow		
5	"	13.1		46	"	bet o & g	N. edge contin., on Mer
6A 6	24	10.4		48	(Sp. D 48	o, o)	on I this o, = o o = o'
6B 6C 7	"	11.9		49	"	o	" " " o = o'
7A 8	"	13.8		51	——		Northern ring, S side g'
7B 9	"	14.0		"	——		Crotch of ring g''
10	"	14. ~~12~~		"	Sp. Dr. 47.	f	Scamander? o''
	July		Obsr		Old Loc.	Map I	
11	6	12.7	P	54	~~II~~	g	
12	"	12.8	"	"		i	
13	"	13.0	"	"		h	
14	"	13.3	"	"			
~~Possib.~~ 14A	"	13.4	"	"	h,	h' ~~h~~ -	~~[illegible] below~~
15	"	13.5	"	"		k ~~or h'~~	See No 14 A k
16	"	13.6	"	"		l	
17	"	14.1	"	55		n	
18	"	14.4	"	"		m	
19	"	15.3	"	"	m,	m'	
20	11	10.4	P	58	Pre edge ocean	a_0 a' ~~a~~	
21	"	10.7	"	"	Gulf pre a	~~[illegible]~~ }	
22	"	19.9	"	"	~~[illegible]~~	a	
23	"	11.5	"	59	(Pre edge ocean)	a'	
24	14	11.2	P	64 ~~[illegible]~~	Sp z, = I	z'	
24A	"	12.2	"	65	Sp Z,		

m = by microm.
V = visual.

Lat Long.

m ~~Long~~ m

~~Long~~ m

m
m ~~Lat~~

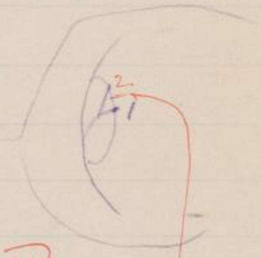
m
m ~~Lat~~ m
m
m ~~Lat~~ v
m
m
m "
m "
m " V
m "
m Lat. " V
V. Long ~~Lat~~ Long Visual
~~Long~~ V ~~Visual~~ Map III

Complete

"	V	D 3	-15,5
"	V	G 1	
"	V	G 2	
"	V	E 1	
"	v	H 2	
"	V	H 5	
"	V	H 1	
"	V	I 2	
"	V	H 3	
"	V	J	
"	m	Z-Z 1	-15,1
m Lat		Y	
m Lat		A 1	
Long	m	Z 1	
Long	V.	Y 1	-14,8
2 m	2 V	1 C 5	

1st List Longitude Observations.

No	Date St'd	Hour	Book 65	Old Locat. marked	Remarks.
25	14	11.5	64	Sp. $63^{\times 4}_{\wedge}$ = I	$a_0^0\,\eta'$
26	"	"	"	" x =	a'_0
27	"	11.7	" & 65	" ζ_2 =	~~ξ~~ ξ'
27A	"	12.8	65	Bay pre. a_1	
28	"	11.9	64	~~Ap~~ Q =	I q.
29	"	12.4	65	1 (snow cap)	
29A	"	12.5	~~→~~ 65	a_1 =	" α'
30	"	12.8	65	η_1 =	" ι
31	"	13.0	"	Bay foll. a_1 =	~~+ α''~~
32	"	13.0	"	η_2 =	" η
32A	"	13.0	"	Half Bet. 1 & 2 (snow cap)	(see above diag.)
33	15	10.8	67		" δ
34	"	10.7	"		u
35	"	11.2	"		t
36	"	11.3	" & 68		a
37	16	10.1	69	Sp. z_1 = I	ζ'
38	"	10.5	" & 70	sp z_2 = I	ζ
39	"	10.4	"	sp y =	y
40	"	10.7	70	sp x =	x
41	"	11.2	"	~~[illegible]~~ =	u
42	"	11.5	" & 71	~~[illegible]~~	δ ~~D~~
43	"	11.9	71	(a_1 on sp. D)	~~a~~ α'
44	"	12.0	"	α_2 (a_2 as sp. D)	α''
45	"	12.2	"	δ_2 = I	ϵ
46	"	12.8	" & 72	ζ_1 = I	ξ'
47	"	12.9	"	ζ_2 = I	~~ζ~~ ξ
48	"	13.5	72	Gulf Pre. a_1 = I	~~ξ~~ a_0
49	17	9.6	73	δ =	δ
50	"	9.7	"	x =	x
51	"	10.1	"	y =	y
52	"	10.9	"	Bay Pre. a_1 =	a_0
53	"	11.2	74	δ =	δ



m = mic
v = visual

Lat.	Long.	Map III	Complete	
m ~~Lat~~		W_4 C_2		−14,8
	v	W_4		
m	v	Y_1	(27)	
	v	Z		
m		P_3		
	v	Sm 12A		
	v	Z_1		
	v	Z_2 (Proj Z_3)		
	v	A_5		
	v	C_1		
	v	F_5		
m	v	W	(33)	−14,7
	v	T_2		
	v	T		
m	v	W_2	(36)	
m	v	U		−14,6
	(& v)? m	U_3		
m		U_4		
	m	U_1		
	v	T_2		
m	v	W	(42)	
	v	W_1		
m		W_3		
	v	Y_2		
m	v	Y_1	(46)	
	v	Y		
	v	~~W_4~~ Z		
m	m	W	49	−14,5
	v	U_1		
	v	U_4		
m		~~W_4~~ Z		
m	m	W	(53)	

1st List Longitude Observations.

No	Date	Hour	Obsr	Bk 65	Loc. marked.	Loc Map I.
54	17 ctd	11.8		74	δ	δ
55	"	11.9		"	Bay Pre. a_1	a_0
56	"	12.3		75	{Sp' 2, ~~a~~ 2_2 ~~a_1 & a_2~~}	2' & 2''
57	"	12,2		"	x	k'
58	"	12,4		"	δ	δ
59	"	13,4		76	Bay Pre a_1	a_0
60	"	14,1		"	"	"
61	"	14,0		"	δ	δ
62	"	14,4		77	b	b
63	"	14,9		"	End Equat. Oc.	c
64	"	15,5	D	78	Gulf Pre. a_1	a_0
65	"	17.1	D	79	Same - (hook	a_0
66	18	12,5	"	80	hook	"
67	19	9.6	P	81	q	q
68	"	10,1	"	"	~~r~~ r	r
69	"	10,2	"	~~8~~ "	δ	δ
x 69A.	"	10.5	"	"	p & s	p & s ~~x~~ (points central)
70	"	10,6	"	" & 82	y_1	y'
71	"	10,6	"	82	y_2	y''
72	"	10,9	"	"	x	x ξ
73	"	11.3	"	"	y	y
74	"	11.6	"	"	s u	s u
75	"	12,1	"	83	δ	δ
76	"	12,7	"	"	u	u
77	"	14.6	D	84	Bay Pre. a_1	a_0
78	"	16,4	"	85	"	a_0
79	20	8,6	P	86	~~r~~ r	r
80	"	10.5	"	87	r	r
81	"	11.4	"	88	x	x
82	"	11.5	"	"	δ	δ

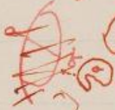
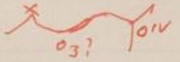
Lat.	Long.	Map III	Complete	
	v	W		
m		Z		
	v	W_1, vW_3		
	v	X_3		
m	m	W	58	
m	m	Z	59	
	v	Z		
m		W		
m		A_2		
	v	B	D's 1st	
m	m	Z	64	
m		Z		
m		Z		−14,4
m	v	P_3	(67)	−14,3
m	v	P_4		
m →	v	W $S_1 - S_3$		
	v	V_1		
m		V_3		
	v	U_1		
	v	U_4		
m		S_3 T_2		
m	m	W	75	
	v	T_2		
m	m	Z	77	
m		Z_1		
m		P_4		−14,2
m	v	P_4	(80)	
	v	U_1		
m(v)		W		

1st List of Longitude Observations.

No	Date	Hour.	Obr.	Bk 65.	Loc Marked,	Do Map I.	
83	20 ctd	11.7	P ctd	88 ctd	r	r	
84	"	11.8	"	" & 89	y	y	
85	"	12.3	"	89	y	y	
86	"	13.1	"	"	δ	δ	
87	"	14,0	D	90	r	r	
88	"	14,8	"	"	ε	δ	–
89	21	9,0	P	92	sf. γ	σ'''	~~on~~ following
90	"	9,0	"	"	sf. ε	σ^{IV}?	"
91	"	10,3	"	" & 93	q	q	
92	"	11,4	"	93	r	r	
93	22	9.6	P	95	γ	σ'''	"
94	"	9.8	"	"	ε	σ^{IV}?	"
95	"	9.8	"	"	ψ	q'''?	
96	"	14.8	D	97	δ	δ	
97	23	8.6	P	99 & 100	white spots a fig 101.	a 723	Sup. cloud
97A	"	8.5	"	99	Center of a "		
98	"	9.4	"	100	c (do)	c 723	" "
99	"	10.4	"	"	Foll. edge ε	σ^{V}	
100	"	10.9	"	"	sf. β	q^{IV}	
101	"	14.4	"	105	New point	a'	
102	24	16.5	D	110	S limit N ocean	z'	closely
103	"	16.5	"	"	N " S "	z'''	
104	25	9.0	P	112	Sf φ	p''	
105	"	9.0	"	"	" χ	p'	
106	"	9.4	"	113	" ω	σ^{VI}	
107	"	10.1	"	" & 114	Prec. edge N ring	about q''	
108	"	9.8	"	"	S. " " "	" q' or prec	
109	"	10.5	"	114	Foll. " " "	" q^{V}?, or q'''	
110	"	13.7	D	116	Interior C.	t' tip of Hellas	
111	"	14.2	"	"	N limit N ocean	y or β cor in Rec Bk.	

Lat.	Long.	Map III.	Compl.	
m		P_4		
m	v	U_4	(84)	
m		U_4		
m	(m) v	W		
m		P_4		
m	m	W	88	
m	v	N_4	(89)	-14,1
m	v	P_2 ?		
m	v	P_3	(91)	
	v	P_4		
m	v	N_4		-14,0
m	v	P_2 ?		
	v	R_2 ?		
	v	W		
	v	O_1		-13,9
——	v	O_6		
	v	P_1		
	v	N_5		
	v	R_1		
	m	T_3		
m or m? (not marked)		U		-13,8
m or m?		T_4		
m	m	N_3	104	-13,7
m	m	N_2	105	
m	v	N		
	m (v)	Q_1		
m		Q_4		
	m	R (or R_2)		
m	m	S	110	
m		U_4		

1st List of Longitude & Lat. Observations

	No	Date	Hour	Obsr	Bk65.	Loc Marked	Do Map I.	
	112	July 25 ctd	14.4	D ctd	116 ctd	~~N~~ S. limb N ocean	about z'	Contd in Rec Bk.
	113	"	15.8	P	117	N point new Ocean	z'' ?	
	114	26	8.8	P	118	Sp. a. clouds?	Ink a	
	115	"	9.0	"	"	" b	" b	
	116	"	9.1	"	"	" c	" c	
	117	"	9.5	"	119	" f	" f –	
	118	"	11.2	D	120	" g	" g	
	119	"	11.5	"	"	" d	" d	
	120	"	11.7	"	"	" e	" e	
120A	120A	"	14.0	"	121	b c foll. edge cap b		
120B	120B	"	14.1	"	122	prec " " a		
	121	27	8.4	P	123	" c	" c	
	122	"	9.5	"	"	" c	" c	
	123	"	9.9	~~D~~ "	124	Sp m	q^VI ab–	
	124	"	10.1	"	"	" n	q'	
	125	"	10.3	"	"	" o	q'' "	
	126	28	8.3	P	129	White streak upper sea.	Ink d	
	127	"	8.4	"	" & 132	do Third, Sea	" c	
	128	"	8.5	"	130	do. lower sea	" c ?	
	129	"		D	133	Sp e = e of 7/27	" c'	
~~Special~~	130 ~~129A~~	29	9.9	D	136	 (b) Sp b	~~729~~ b	~~m~~
~~Special~~	131 ~~129B~~	29	10.0	"	137	Sp a	" a	~~[illegible]~~
Polar Cap. ~~Special~~	132 ~~129C~~	30	14.6	D	143	spot b (snowy cap ~~as above~~)	Snow cap b	polar cap
	133 ~~130~~	31	11.4	P	147	Sp x 	near σVI or σ2 [illegible]	
	134	"	14.3	D	148-9	Sp e Prec. edge light ar.	near σVI	
	~~135~~	August						
	135	1	17.0	D	152	Sp. c.	σIV	
	136	2	9.6	D	153	Black spot SE of center	m°	Phoenicis
2nd Cap	137	"	10.9	"	"	Sp a ~~prec~~ foll. edge cap		
"	138	"	11.5	"	154	Sp. b. Prec. " "		
	139	3		P	158	Sp. x	m''	Beak of [illegible]

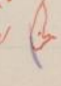
Lat.	Long.	Map III.	Complete.	
m		U		-13.7
m		T_4		
	m	M_1		-13,6
	m	M_2		
	m	M_3		
m		M_4		
	m	O_2		
	m	O_3		
m	m	O_4	120	
	m	Su 13		
	m	Su 14		
	m	M_3		-13.5
m	m	M_3	122	
m		Q_3		
m		Q_4		
	m	Q_1		
m		O_3		-13.4
m	m	M_3	127	
m		0 ~~M_3?~~		
m	m	0	129	
m	v	$⊥_2$		-13.3
	m	$⊥_1$		
m	m	$⊥_4$	132	-13.2
m	m	P_5	133	-13,1
m	m	M_5	134	
m	m	P_2	135	-13,0
m	m	J	136	-12,9
	m	Su 15		
	m	Su 16		
m		K		-12,8

1st List of Longitude & Latitude Observations

	No	Date August	(Hour)	Obsr	Bk 65	Loc. Marked	Do Map I	Rem.
	140	4	8.2	P	161	n	n	Sol. Lac
	141	"	8.1	"	"	h' is probably	~~k~~ h'	Prob. Beat
	142	"	9.3	"	"	o₁	m''	Sinuum
	143	5	7.7	P	166	Cloud near Solis Lacus	a 85	
	144	"	9.0	"	167	Bay x Sp.	n'	
	145	"	10.5	"	168	o, Sp	m''	Beak Sin.
	146	"	11.8	D	169	(o, Sp Long, black pt foll. Terby Sea ~~[illegible]~~	m''	"
	147	"	12.9	"	" & 170	2nd Bay foll. Terby Sea	m'''	
	148	"	13.4	"	170	3d " " " "	o	Sinus Titanum
	149	6	7.1	P	172	Foll edge cloud p	p 86	
	150	"	7.3	"	"	" " " q	q 86	
Ice Cap	151	"	7.3	"	"	Point of S. snow	Sn 86	
	152	"	7.5	"	"	~~[illegible]~~ Solis Lacus (Phoenix Lake)	m'	Phoenix Lake
	153	"	7.7	"	"	~~Solis~~ ditto	m'	"
	154	"	8.1	"	173-4	Snow Mtn	a 85	
	155	"	8.3	"	" "	Solis Lacus	m'	"
	156	"	8.8	"	174	m	m	Tithonius
	157	"	9.0	"	"	x fig 167	n'	
	158	"	9.7	"	" & 5	Solis Lac	m'	Ph. Lacus
	159	"	10.8	"	175 & 6	"	m'	"
	160	"	11.2	"	176	"	m'	"
	161	"	11.5	"	"	"	m'	"
	162	"	11.8	"	"	"	m'	"
C.B.	163	"	13.7	D	177	Terby Sea from nearest limb	m'	" for cloud belt!
	164	"	14.2	"	178	2nd Bay foll. Terby Sea	m'''	
	165	"	14.9	"	"	3d " " "	o	Sinus Titanum
	166	7	7.6	P	180	Foll. end Cld near S. snow	a 87	
	167	"	10.4	"	181	"m"	m ?	
	168	"	10.7	"	" + 2	Solis Lacus	m' ⊕	Ph. Lac.

Lat	Long	Map III	Completed,	
m	m	I_2	140	-12,7
m		H_2		
m	m	K	142	
m	m	H_4	143	-12,6
m		I		
m		K		
	m	K		
m	m	K_2	147.	
m	m	K_3	148	
	m	I_4		-12,5
	m	G_4		
	v	F_4		
m		J		
m		J		
m	m	H_4	154	
m	m	J	155	
	m	H_3		
	m	I		
m	m	J	158	
m	m	J	159	
m		J		
m		J		
m		J		
	m	J		
m	m	K_2	164	
m	m	K_3	165	
	m	F_3		-12,4
m		H_3 ?		
	m (v)	J		

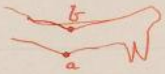
1st List of Longitude & Latitude Observations.

	No ~~169~~	Date August	Hour	Star	Bk 65	Loc. Marked	Do Map I	Rem
	169	7th	11.3	P	182	x page 167	n'	
	170	"	13.5	D	183	Terby Sea	Prob m'	Prob Ph. Lac.
	171	8	7.4	P	185	Foll. edge cloud.	Cl 87?	
	172	"	8.3	"	"	Fons Juventae	g'	Fons Juventae
	173	"	8.7	"	"	Cape S. of Fons Juv.	about g	
	174	"	12.9	D	189	o, 1st Bay,	m''	Beak Sinu
	175	9	8.0	P	190	Prec. end Strait	e'	
	176	"	8.7	"	191-2	Angle of Strait	e''	
	177	"	9.4	"	192	h (pg 163)	h	
	178	"	9.7	"	"	i "	i	
	179	"	10.8	"	"	n h "	n h	
	180	10	7.4	P	194	e	~~e~~ ? e ?	Marg.? Sinus?
	181	"	7.7	"	"	Prec. end Strait	e'	
Snowcap	181.A.	"	8.2	"	"	"Bright point"	Sn 813	
	182	"	8.9	"	196	Angle (or) Fol. end Strait	e''	
	183	"	9.1	"	"	Fol. end Cl'd near S snow. Sn Dr.	Cl 810	
	184	"	10.0	"	"	i	i	
	185	"	10.8	"	"	n	n	Sol. Lac.
Sn Cap.	186	13	8.3	P	197+8	a, in snow's point	Sn 813	
	187	"	9.0	"	198	Sp. c	i'	near Cl 87
	188	14	7.8	P	201	e in Sp Dr pg 201	b'	Sinus Sabaeus
	189	"	8.0	"	"	f " " " "	a'	
	190	"	9.1	"	202	h " " " pg 202	e	Marg. Sin.
	191	"	9.1	"	"	i " " " "	c'	
	192	"	9.8	"	"	j pg 203	about i'	cf No 187
	193	"	10.2	"	"	k Sp Dr-pg 202	e'' (N edge)	
	194	11	13.2	D	204	Foll. tip of Terby Sea	n	
	195	15	12.5	D	210	Sn Dr pg 210	near g	
	196	16	7.2	P	211	N tip of S. snow 	Sn 816	
	197	"	7.1	"	211	Snow foll. tip	7, Sn 816	

Lat.	Long	Map III.	Complete,	
m		I		-12,4
	m	Prob J		
	m	F_3 ?		-12,3
m	m	E_3 ~~D_2~~	172	
m		about D_3		
m	m	K	174	
	m	D		-12,2
m	m	D_2	176	
m		G_2 (or D_3)		
m		G		
m		{ I_2 G_2 or I_2 D_3		
m	m	B_3 ?	180	-12,2
	m v	D F		
	m	D_2		
	m	F_1		
	m	G		
	m	I_2		
m	m	F	186	-12,0
m		F_2		
m		A_3		-11,9
m		Z_1		
m	m	B_3	190	
m		B_1		
m		about F_2		
m		D_2 Marge		
	(poor) v	I_2		
	v	E_4		-11,9
m	m	X		-11,8
m		X_2		

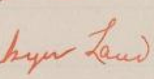
1st List of Longitude and Latitude Observations.

Reg. Book. 66. Map II

No	Date August	Hour	Obsr	Bk. 66.	Loc. marked	II Map. Loc.	Rem
198	17	8.1	P	3	Sf a 	σ	
199	"	8.2	"	"	" b	σ′	
200	18	6.7	P	4	n	~~III~~ n	
201	"	7.4	"	4	Sf a	q′	
202	"	7.6	"	4	" b	p′	
203	"	8.1	"	"	" c	σ″	
204	"	8.4	"	4	ȯ	~~III~~ σ	
205	"	8.6	"	"	Sf d	n′	
206	"	8.9	"	5	" ε	σ‴	
207	"	9.5	"	"	" f	n″	
208	"	10.0	"	6	" g	p″	
209	"	13.3	D	8	Fons Juventae	g′	Fons Juventae
210	19	6.7	P	9	Sf a	s′	N. side Hellas
211	"	7.1	"	~~4~~ "	n	n	Hook of Sin. Sab.
212	"	7.3	"	4	n	n	
213	"	7.5	"	"	n	n	
214	"	8.2	"	10	Point in snow	Su 819	= Su 816 about
215	"	8.6	"	"	o	σ	(Pick. Bay)
216	"	9.6	D	11	n	n	
217	"	10.1	"	11 & 12	n	n	2nd Obs.
218	"	{10.7 / 13.7 ?} poor	"	12	n	n	called poor
219	20	7.9	P	13	-n	n	
220	"	8.1	"	"	n	n	
221	"	8.2	"	"	n	n	
222	"	10.2	D	14	n	n	
223	"	10.4	"	"	n	n	
224	"	10.7	"	"	n	n	
225	"	13.5	"	16	n	n	
226	"	13.7	"	"	n	n	

Lat	Long.	Map III	Complete.	
m		Y		-11.8
m		Z_2		
	m½	Z		-11.8
	m	T_1		
	m	W_2		
m		Y_4		
m		Y		
m		Z_4		
m		X_4		
	m	C_1		
	m	X_3		
m		E_3		
m		– S_4		-11,7
m	m½	Z		
m		Z		
m		Z		
m½	m	X_1		
	m	Y		
m	m	Z	216	
m	m	Z	217	
m? (poor)	m	Z		
m	m½	Z		-11,7
m		Z		
m		Z		
m	m	Z	222	
m	m	Z	223	
	m	Z		
m	m	Z	225	
m	m	Z	226	

1st List of Longitude & Latitude Observations.

No	Date Aug.	Hour	Obs	Bk 66	Loc. Marked	Map II	Rem
227	20 ctd	14.1	D ctd	17	n	n	
228	"	14.3	"	"	n	n	
229	21	9.8	D	18	Sp c. fig 916 pg 19.	p	
230	"	9.9	"	"	Sp d "	σ	
231	"	10.0	"	"	Cloud limit on Equa. Oc. (near hook)	(near n)	
232	"	11.3	"	19+20	Sp c fig 916	p	
233	"	11.5	"	" "	Sp d "	σ	
234	"	11.8	"	20	Sp a. Fig A. pg 20.	o′ᵛ	
235	"	12.1	"	21	Sp b " "	k′	
236	"	12.5	"	"+22	" c " "	i′ (?)	Some confusion in Sp. Dr.
237	"	12.5	"	22	Sp c. Fig 916	p	
238	"	12.9	"	"	" d "	σ	
239	"	13.1	"	"	" d Fig A. See also Sp Dr pg 22	k″	
240	"	13.5	"	23	" d Fig 916	σ	
241	22	8.4	D	24	Sp a. Fig A. pg 24	s″	S. boundary Hellas
242	"	8.6	"	"	" b " "	s‴	P. Boun. Hellas
243	"	9.0	"	25	n	n	
244	"	9.2	"	26	n	n	
245	"	9.3	"	"	n	n	
246	"	11.4	"	"	n	n	
247	"	11.6	"	27	n	n	
248	24	7.6	P	36	Sp a. 	r′	
249	25	9.6	P	40	S. edge Lockyer Land	s′	S. Boun Hellas
250	"	12.1	D	"	W. end of N. ocean	r	
251	"	12.0	"	"	"	"	
252	"	12.0	"	"	"	"	
253	"	12.5	"	41	Special line across disk	about σ″ s′	Different R.A. set !!!
254	"	12.9	"	42	Middle of line r - s - most foll. pt of Lybia	r″	
255	"	12.9	"	"	"	r″	
256	"	13.0	"	"	"	r″	

Lat.	Long	Map III	Complete	
m	m	Z		-11.7
	m	Z		
~~m~~	m	W		-11.7
~~m~~	m	Y		
~~m~~	m	Cl 1 near z		
m	m	W	232	
m	m	Y	233	
m		C_3		
m		C		
m	m	B_2?	236	
	m	W		
	m	Y		
m		C_4		
	m	Y		
m		S		-11.7
	m	S_2		
m	m	Z	243	
m		Z		
m		Z		
m	m	Z	246	
	m 1/4	Z		
m		V_2		-11.7
m		S_4		-11.7
m	m	U_4	250	
	m 1/2	U_4		
	m 1/2	U_4		
m		about Y_4 S_4		
m	m	U_2	254	
	m 1/2	U_2		
	m 1/2	U_2		

1st List of Longitude & Latitude Observations.

No	Date	Hour	Obsr	Bk 66	Loc. marked	Map II	Rem
257	August 26	8.3	P	43	t	t	
258	"	9.1	"	"	Pre. edge Lockyer Land	s'''	P. Boun Hellas
259	"	12,4	D	44	S. limit Lockyer Land	s''	S. Boun Hellas
260	"	12,6	"	"	N. ocean middle of line r-s	r''	By different methods – Th = width of thread
261	"	12,7	"	"	"	r''	
262	"	12,8	"	45	"	r''	
263	"	12,8	"	"	"	r''	
264	"	12,8	"	"	"	r''	
265	27	12,3	D	46	For width of "cloud-bank" along Teren	—	
Sept. 266	31	8,1	P	52	Lake a	w'	Triv. Char.
267	Sept. 2	12,4	D	56	Sp a (fig. a page 57)	t' ?	~~cf. act 22-94~~
268	"	12,5	"	"	" b "	t''	
269	"	13.1	"	58	" d (lat & line t''' s	t'''	
270	"	13.3	"	"	" ε ~~page 59~~	t^iv	
271	"	14,0	"	60	Sp b page 59 - fig.	r'	
272	3	7,5	P	61	Sp a = gen a	a	Mid. Siren.
273	"	8,2	"	"	Sp x - S. Boun. dark Reg. on merid.	v'	
274	4	7.1	P	64	Sp x / south of a [but it isnt]	v''	
275	5	12,5	D	66	Sp d - [point Cim)	t''	Foll. pt Cimmer.
276	6	6.8 ~~7.5~~	P	68	Possible Lake	a' ?	
277	"	7,5	"	"	Sp. N. Lake d. [prob. same]	a'	
278	"	12,5	D	69	Sp a - page 69	v	
279	7	6.6	P	70	b	b	Brok Siren.
280	"	7.6	"	"	Sp Lake b - pg 71	Prob a'	
281	8	6.7	P	72	Sp Lake a	a''	
282	"	8,9	D	74 ~~[illegible]~~	Sp a	b'	
283	"	9,1	"	" ~~" b~~	" b	b''	
284	11	6.4	P	82 & 83	Pre. end Tinly Sea	e	
285	"	6.8	"	83	Foll. " " "	d	meant to be same but not so
286	"	8.1	D	84	" " " "	d'	

Lat.	Long	Map III.	Complete	
	m	P_3		-11.7
	m	S_2		
m		S		
	m	U_2		
	m½	U_2		
	m½	U_2		
	Th.	U_2		
	Th.	U_2		
	m½	Cl 2		-11.7
m	m	Q	266	-11.8
m	m	R_3	267	-11,9
m	(v or m? Same as last) m.	P_2	(268)?	
m	m	R_4 (or $R_4 U_1$)	269	
m	v	V_4		
m	m	V_2	271	
m	m	K_2	272	-11,9
m		N_1		
m		L_3		-12,0
m	m	P_2	275	-12,1
v	v	J_2?	((276))	-12,1
m	m	J_2	277	
m	m	$\overset{*}{P}$	278	
m	v	K	(279)	-12,2
m	m	J_2	280	
m		J_1		-12,3
m		K_1		
m		J_4		
m	m	G_3	284	
{	m	I_2		
m		I_1		

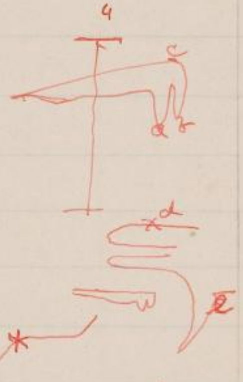
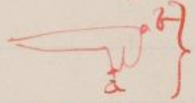
1st List of Longitude & Latitude Observations.

	No	Date	Hour	Obsr	Bk 66	Loc. Marked	Map II	Rem
	287	Sept. 12 ~~[illegible]~~	6.8	P	85	Prec. end cape south of Tely Sea	f	
	288	"	8.1	D	86	Sf Lake 4	a''	
	289	"	10.3	"	87	" " 7 – [in Tely Sea]	e'	For cloud belts. for cloud belts (Test of Diff. Methods)
	290	"	10.4	"	88	Do Bet. Th	e'	
	291	"	10.5	"	"	Do Out. Th	e'	
	292	"	10.5	"	"	Do Th	e'	
×	293	13	8.8	D	90	sf a Foll. end Proj. N pole	—	
×	294	"	9.0	"	91	Sf a. P. " " "	—	
×	295	"	9.1	"	"	Poo. sf c. on Term other Proj.	—	
	296	"	11.1	P	94	Sf x page 89	v'''	
	297	"	11.4	"	95	Sf. Cape Y - pg 89	b'	
	298	15	8.7	P	96	f	f	
	299	"	11.0	D	98 & 99	Sf. Lake 9. [Foll. Ph. La.]	b'''	
	300	"	11.6	"	99 & 100	" " 13 [S. of do]	b''	
	301	"	12.0	"	100	" " 8	b	
	302	"	12.0	"	"	" " 9	b'''	
	303	"	12.1	"	"	" " 2 [Solis Lacus]	e'	for cloud belts. (Test of Diff. methods)
	304	"	12.2	"	"	" may be on fol. end Ely S.=	e' ord	
	305	"	12.2	"	"	"	e'	
	306	"	12.3	"	"	"	e'	
	307	16	6.3	P	101	Dark line at N. Pole	g''''	
	308	"	6.5	"	"	h	h	
	309	"	7.0	"	"	Sp x pg 101	h'	
	310	"	6.9	"	"	" y "	k''	
	311	"	8.1	"	102	Phoenix Lake	c	
	312	"	7.9	"	"	f pg 2	f	
	313	18	8.6	D	112	Proj. [Phoe. Lke Reg.]	c 1018	
	314	20	10.2	D	121	Sp. 2. pg 121	f'	
	315	"	10.3	"	122	Fons Juventi	g'	

Lat	Long	Map III.	Complete	
m	m	G	287	-12,7
m	v	J_1	(288)?	
	m	I_3		
	m½	I_3		
	m½	I_3		
	M	I_3		
	m	Pr. 1		-12,8
	m	Pr 2		
m	m	Pr 3	295	
m		L		
m		K_1		
m		G		-13,0
m	m	J_3	299	
m	m	K_4	300	
	v confd with 300	K		
	v	J_3		
	m	I_3		
	m½	I_3		
	m½	I_3		
	M	I_3		
m½		E_2, ~~D~~		-13,1
m		D		
m	m	D_4	309	
m		C_4		
m	m½	J		
	m	G		
m		M		-13,4
	m	H		-13,6
	m	E_3		

1st List of Longitude & Latitude Observations.

Map III > no lettering

No	Date Sept	Hour	Obsr	Bbb.	Loc. marked	Map II	Rem
316	20 Ctd	11,0	D Ctd	122	Sp. 5. page 121	f''	
317	"	11,2	"	123	Sp. 4 	f'''	
318	21	6.9	P	125	Sp. a	m	
319	"	7,1	"	"	b	l	l
320	"	7,5	"	"	c	k	
321	"	7,7	"	"	d	o'''	
322	"	8,2	"	" & 126	ε	i''	P & D. Comp/sp.
323	"	9,8	D	126 & 127	*	i''	
324	22	7.2	P	129	N. limit cloud (largely) line Sp. x	about ~~E~~ l'	
325	"	7,4	"	"	Sp a } 	m	
326	"	7,6	"	"	Sp b }	k	
327	"	9,9	D	131	Sp g	g''	
328	23	6.7	D	137	Sp l	q'	
329	"	7,1	"	"	" n	p'''	
330	"	7,2	"	138	" p	p''	
331	"	8,0	"	140	" a	n^{IV}	
332	"	8,2	"	"	" b	n'''	
333	"	8,4	"	"	" d	j	
334	"	9.7	P	142	Pec. end Strait	h	
335	29	7.0	P	146	Sp a [S. Boundary Hellas]	s''	

Lat:	Long	Map III.	Comp. plates	
	m 1/4	E_4		-13,6
~~Long Lat~~	~~m~~	H_1		
	m	Z_1		-13,7
	m	A		
m		A_4		
m		X_4		
m	m	B_4	322	
m	m	B_4	323	
	m	about $(X\frac{5}{4})D_4$		-13,8
	m	Z_1		
	m	A_4		
m	m	D_1	327	
	m	T_1 (or T_2)		-14,0
	m	W_1		
	m	X_3		
m	m	Y_3	331	
m		Z_3		
	m	B		
m		D		
m		S		-14,9

Count of Observations in 1st List

~~— not counted in summary below~~

page	Extra nos.	Lat.s	Long. mic.	Long. visual	coincid.
2	14	16 ~~||||~~	13	~~15~~ 16	6
4	2m	13	4	2 ~~1~~ +1+1	8
6	1	19	~~15~~	14	8
8	1v	19	7	15+1	12
10	2	18	~~19~~ 21	1	10
12	0	20	19	1	11
14	1v	19	15	2+1	7
197 nos		~~119~~ 124	~~82~~ ~~74~~ 84	~~69~~ ~~65~~ 74	62 ~~59~~
16	0	22	17	0	10
18	0	20-3	18+3	0	8
20	0	20 & 1v	17 & 1 same as m	3 27h	14
22	0	14	17+2	1 2m	7
24	0	9+1	15-1		4

Book 65
June 13 - Aug. 16.

pag. 335 23
+ ~~19~~ Extra
35 ~~3~~ 8 nos
Corr. May 13.

20 ~~1~~ m & 1v
7
~~210~~ Lats.
208

~~168~~ m & 3 same as m
170
7 ~~8~~ 8 & 47h
~~248~~ 9 Longs.
255 check

Coincidences
105

+ 2 ~~10~~ 08
+ 2 ~~48~~ 55
4 ~~58~~ 63
− 1 0 5
3 5 ~~3~~ 8

Ledger List

1 of Longitude and Latitude Observations.

	Loc.	No.	No in 1st List	Bk.	Page.
(out of place)	A5	1	31	65	645
	A	1	319	66	125
	A1	1	22	65	5-8
	A2	1	62	65	77
	A3	1	188	65	201
	A4	1	320	66	125
		2	326	66	129
	B	1	63	65	77
		2	333	66	140
	B1	1	191	65	202
	B2	1	236✓	66	21-2
	B3	1	180✓	65	194
		2	190	65	202
	B4	1	322	66	125-6
		2	323	66.	126-7

Ledger List.

2

Loc	No	No in 1st List	Bk	Page
C	1	235	66	21
C_1	1	32	65	675
	2	207	66	5
(C_2 See W_4)				
C_3	1	234	66	20
C_4	1	239	66	22
	2	310	66	101
D	1	175	65	190
	2	181	65	194
	3	308	66	101
	4	334	66	142
D_1	1	327	66	131
D_2	1	176	65	191-2
	2	182	65	196
	3	193	65	202
D_3	1	11	65	54
	2	173✓	65	185
See also I_2 3				
D_4	1	309	66	101
	2	324✓	66	129

For C_5 see pg 60

Ledger List.

3	Loc	No	No in 1st List	Bk	Page.
	E_1	1	·14	65	54
	E_2	1	307	66	101
	E_3	1	172	65	185
		2	209	66	8
		3	315	66	122
	E_4	1	195	65	210
		2	316	66	122
		1	181A	65	194
	F	2	186	65	197-8
	F_1	1	183	65	196
	F_2	1	187	65	198
		2	192✓	65	202
	F_3	1	166	65	180
		2	171✓	65	185
(See pg 60 for F_5)	F_4	1	151	65	172
	G	1	178	65	192
		2	184	65	196
		3	287	66	85
		4	298	66	96
		5	312	66	102
	G_1	1	12	65	54

Ledger List.

4 Loc.	No	No in 1st List	Bk	Page
G_2	1	13	65	54
	2	177✓	65	192
G_3	1	284	66	82-3
G_4	1	150	65	172
H	1	314	66	121
H_1	1	16	65	54
	2	317	66	123
H_2	1	14A	65	54
	2	141	65	161
H_3	1	18	65	55
	2	156	65	174
	3	167✓	65	181
H_4	1	143	65	166
	2	154	65	173-4
H_5	1	15	65	54
I	1	144	65	167
	2	157	65	174
	3	169	65	182
I_1	1	286	66	84

Ledger List.

5	Loc.	No	No in 1st List	Bk	Page
	I_2	1	17	65	55
		2	140	65	161
		× prob I_3 3	179	65	192
		4	185	65	196
		5	194	65	204
		6	285	66	83
	I_3	1	289	66	87
		2	290	66	88
		3	291	66	"
		4	292	66	"
		5	303	66	100
		6	304	66	"
		7	305	66	"
		8	306	66	".
	I_4	1	149	65	172
	J	1	19	65	55
		2	136	65	153
		3	152	65	172
		4	153	65	172
		5	155	65	173-4
		6	158	65	174-5
		7	159	65	175-6
		8	160	65	176
		9	161	65	"
		10	162	65	"
		11	163	65	177
		12	168	65	181-2

Ledger List.

6

Loc	No	No in 1st List	Bk	Page
Jeld	13	170✓	65	183
	14	311	66	102
J_1	1	281	66	72
	2	288	66	86
J_2	1	276✓	66	68
	2	277	66	〃
	3	280	66	70
J_3	1	299	66	98-9
	2	302	66	100
J_4	1	283	66	74
K	1	139	65	158
	2	142	65	161
	3	145	65	168
	4	146	65	169
	5	174	65	189
	6	279	66	70
	7	301	66	100
K_1	1	282	66	74
	2	297	66	95
K_2	1	147	65	169-70
	2	164	65	178
	3	272	66	61

Ledger List.

7

Loc	No	No in M Cat	Bk	Page
K3	1	2A	65	42
	2	3A	65	44
	3	4	65	45
	4	148	65	170
	5	165	65	178
K4	1	300	66	99-100
L	1	296	66	94
L1	1	131	65	137
L2	1	130	65	136
L3	1	274	66	64
L4	1	132	65	143
M1	1	114	65	118
M2	1	115	65	118
M3	1	116	65	118
	2	121	65	123
	3	122	65	"
	4	127	65	129
M4	1	117	65	119
M5	1	134	65	148-9

Ledger List.

8	Loc	No	No in 1st List	Bk	Page
	N	1	6	65	48
		2	106	65	113
	N_1	1	273	66	61
	N_2	1	105	65	112
	N_3	1	104	65	112
	N_4	1	89	65	92
		2	93	65	95
	N_5	1	99	65	100
	O	1	128	65	130
		2	129	65	133
	O_1	1	97	65	99-100
	O_2	1	118	65	120
	O_3	1	119	65	120
		2	126	65	129
	O_4	1	120	65	120
For O_6 see page 60	O_5	1	10	65	51
	P	1	5	65	46
		2	7	65	49
		3	278	66	69

Ledger List,

9

Loc	No	No in 1st List	Bk	Page
P_1	1	98	65	100
P_2	1	90	65	92
	2	94	65	95
	3	135	65	152.
	4	268	66	56
	5	275	66	66
P_3	1	28	65	64
	2	67	65	81
	3	91	65	92-3
	4	257	66	43
		~~6~~		
P_4	1	68	65	81
	2	79	65	86
	3	80	65	87
	4	83	65	88.
	5	87	65	90
	6	92	65	93
P_5	1	133	65	147
Q	1	266	66	52
Q_1	1	107	65	113-4
	2	125	.65	124
Q_2	1	9	65	51
Q_3	1	123	65	124

Ledger List.

10

Loc	No	No in 1st List	Bk	Page
Q_4	1	8	65	51
	2	108	65	113
	3	124	65	124
R	1	109✓	65	114
R_1	1	100	65	100
R_2	1	~95	65	95
R_3	1	267	66	56
R_4	1	269✓	66	58
S	1	110	65	116
	2	241	66	24
	3	259	66	44
	4	335	66	146
S_1	1	69A	65	81
S_2	1	242	66	24
	2	258	66	43
S_3	1 See also S_1 1	74	65	82
S_4	1	210	66	9
	2 See also Y_4 ~~[illegible]~~ 2	249	66	40
T	1	35	65	67

Ledger List.

11 Loc	No	No in plist	Bk	Page
T_1	1	201	66	4
	2	328	66	137
T_2	1	34	65	67
	2	41	65	70
		76	65	83
See also S_3 ~~74~~1				
T_3	1	101	65	105
T_4	1	103	65	110
	2	113	65	117
U	1	37	65	69
	2	102	65	110
	3	112	65	116
U_1	1	40	65	70
	2	50	65	73
	3	72	65	82
	4	82	65	88
U_2	1	254	66	42
	2	255	"	"
	3	256	"	"
	4	260	"	44
	5	261	"	"
	6	262	"	45
	7	263	"	"
	8	264	"	"

Ledger List.

12 Loc	No	No in pl list	Bk	Page
U_3	1	38	65	69-70
U_4	1	1	65	40-1
	2	1A	"	41
	3	39	"	69
	4	51	"	73
	5	73	"	82
	6	84	"	88-9
	7	85	"	89
	8	111	"	116
	9	250	66	40
	10	251	66	"
	11	252	66	"
V_1	1	70	65	81-2
V_2	1	248	66	36
	2	271	66	60
V_3	1	71	65	82
V_4	1	270	66	58
~~W~~				
W	1	33	65	67
	2	42	"	70-1
	3	49	"	73
	4	53	"	74
	5	54	"	"
	6	58	"	75

Ledger List

13 Loc	No	No in 1st List	Bk	Page
W ctd	7	61	65	76
	8	69	〃	81
	9	75	〃	83
	10	82	〃	88
	11	86	〃	89
	12	88	〃	90
	13	96	〃	97
	14	229	66	18
	15	232	66	19-20
	16	237	66	22
W_1	1	43	65	71
	2	56	65	75
	3	329	66	137
W_2	1	36	65	67-8
	2	202	66	4
W_3	1	44	65	71
	See also W_1 ~~56~~ 2			
W_4	1	25	65	64
	2	26	65	〃
X	1	196	65	211
X_1	1	214	66	10
X_2	1	197	65	211
X_3	1	~~56~~ 57	65	75

Ledger List.

14 Zone	No	No in 1st List	Bk	Page
X_3 ctd	2	208	66	6
		330	66	138
X_4	1	206	66	5
	2	321	66	125
Y	1 prob. 2	21	65	58
	2	47	65	71
	3	198	66	3
	4	204	"	4
	5	215	"	10
	6	230	"	18
	7	233	"	19-20
	8	238	"	22
	9	240	"	23
Y_1	1	24	65	64-5
	2	27	65	64-5
	3	46	65	71-2
Y_2	1	45	65	71
Y_3	1	331	66	140
Y_4	1	203	66	4
	2	253	66	41
Z_1	1	20	65	58
	2	27A	65	65
	3	48	65	72
	4	52	65	73

Ledger List

15 Loc	No	Nos on 1st List	Bk	Page.
Zetd	4	55	65	74
	5	59	〃	76
	6	60	〃	〃
	7	64	〃	78
	8	65	〃	79
	9	66	〃	80
	10	77	〃	84
	11	78	〃	85
	12	200	66	4
	13	211	66	9
	14	212	66	〃
	15	213	〃	〃
	16	216	〃	11
	17	217	〃	11-2
	18	218	〃	12
	19	219	〃	13
	20	220	〃	〃
	21	221	〃	〃
	22	222	〃	14
	23	223	〃	〃
	24	224	〃	〃
	25	225	〃	16
	26	226	〃	〃
	27	227	〃	17
	28	228	〃	〃
	29	243	〃	25
	30	244	〃	26
	31	245	〃	〃
	32	246	〃	〃
	33	247	〃	27
	34			

Ledger List.

16 Loc.	No	No. on 1st List	Bk	Page
Z, 1	1	23	65	59
	2	29A	65	64-5
	3	189	65	201
	4	318	66	125
	5	325	66	129

See also Z ~~20~~.1

Z, 2	1	30v	65	645
	2	199	66	3
Z 3	1	332	66	140
Z 4	1	205	66	4
Sn	1	2	65	42
	2	3	"	44
	3	3B	"	"
	4	4A	"	45
	5	4B	"	"
	6	4C	"	46
	7	4D	"	"
	8	6A	"	49
	9	6B	"	"
	10	6C	"	"
	11	7A	"	50
	12	7B	"	"
	13	120A	"	121
	14	120B	"	122

Ledger List.

17	Loc	No	No on 1st List	Bk	Page
	Sn ctd	15	137	65	153
		16	138	65	154
	Cl	1	231	66	18
		2	265	66	46
	Pr	1	293	66	90
		2	294	66	91
		3	295	66	"
		4	313	66	112
	Sn 12A	1	29	65	65
See pg 30	C_5	1	24A	65	65
See page 32	F_5	1	32A	65	65
See page 42	O_6	1	97A	65	99

Time Errors

June 13 to Sept. 29. Mc. (+ 2 Oct 13)

Records in Mars book

W. H. P. A. E. D.

$12.^h2$ May 21. Set Watch by clock $12^h 12^m$ A.M.T.
12.1 June 16, S. W. 30^s fast.
12.4 July 6. W $5.^m7$ ahead A.M.T (= M.C) at $3.^h1$. W $5.^m4$ ahead M.C. Bk 68
7.5 " 7. W $6.^m0$ " " (= ") at $3.^m1$ MC $7.^m0$ behind SC
12.5 " 11. W. 7.2 " " (") at $12.^m4$ MC, 4.5 behind SC
Comp.^{sn} makes M.C. $4.^m5$ Beh. S.C. July 12 at 14.8 MC, $12.^m1$ ah SC
12.0 13 W. $9.^m0$ ahead of M.C. (Bk 68) July 13. at 12.0 M.C. 1.0 ah S.C.
11.2 " 14. W same as " (= ")
10.3 " 15 " " " " (= ")
10.— " 16 Cor. to Watch − $2.^m0$
— " 16 22^h. W $2.^m0$ ah. A.M.T (= ")
9.3 " 17. W = A.M.T (= ") July 17. W 5^m slow.
9.5 " 19 W set at " (")
8.5 " 20 Beg. Obns. W set at M.C. (called A.M.T. as below)
8.4 " 21. " " ——— " "
8.2 " 22 " " ———
7.4 " 23 " "
" $9.^h4$ W stopped (found so) (Presumably set)
" " 13.5 W = ~~A.M.T~~ M.C (~~Comp. M.C. & S.C.?~~ in dome) (M.C. $1.^m$ ahead of S.C)
" " 14.6 W $16.^m5$ ahead of M.C. (~~applies to No 101~~ prob.)
S. clock in dome 5^m fast.
" 24 $7.^h4$ W set at M.C.
~~W $7^h 22.^m0$ = S.C. $15^h 33.^m3$~~ (M.C. $1.^m4$ ahead of S.C.)
" 25 10.6 Compared W with M.C. (prob. =)
" 26 8.6 Set W. July 26. 11^h W $3.^m5$ slow.
" " $11.^h4$ put W $3.^m5$ ahead.
" 27 7.9 Set W.
" 28 7.8 " W at M.C. " 28 $14.^h3$ W 65^s slow.

Copied

116

[illegible]

A.E.P.

July 29. $13^h.6$ W 86^s slow

" 30 $11^h.0$ Set W.

fast.

had stp'd.

(see notes) set it.

Aug 4. $11^h.0$ W 80^s slow in 2 or 3 days

" 6 12.7 Set clock (presumably in dome.

" 8 10.6 " "

Comp with

19 40

set it.

" 16 $9^h.0$ W $2^m.0$ slow. set it.

43.4 4.1

A. E. P.

July 29. 13.6 W 86s slow
" 30 11.0 Set W.

41.4
41.3
41.2
41.1
41.0
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
40.1
40.0
39.9
39.8
39.7
39.6
39.5

5 fast.

but had stp'd.

Aug 4. 11h.0 W 80s slow in 2 or 3 days (see notes) set it.

" 6 12.7 Set clock (presumably in dome.

" 8 10.6 " "

fast set it.

" 16 9h.0 W 2m.0 slow. set it.

Entered

42.3

43.4 = 4.1

41.4
41.3
41.2
41.1
41.0
40.9
40.8
40.7
40.6

Copied

A. E. D.

July 29, 13^h.6 W 86^s slow
" 30 11^h.0 set W.

fast.

ut had stp'd.

Aug 4. 11^h.0 W 80^s slow in 2 or 3 days (see notes) set it.

" 6 12.7 set clock (presumably in dome.

" 8 10.6 " "

fast set it.

" 16 9^h.0 W 2^m.0 slow. set it.

A. E. P.

July 29. $13^h.6$ W 86^s slow
" 30 $11^h.0$ Set W.

^{m}5 fast.

tut had stp'd.

Aug 4. $11^h.0$ W 80^s slow in 2 or 3 days (see notes set it

" 6 12.7 Set clock (presumably in dome.

" 8 10.6 " "

Copied

a

last set it.

" 16 $9^h.0$ W $2^m.0$ slow. set it.

	W.H.P.	A.E.P.
		July 29. $13^{h}.6$ W 86^{s} slow
	July 30. $8^{h}.5$ Set W.	" 30 $11^{h}.0$ Set W.
	" 31. 8.8 " "	
	Aug 1 7.2 Found W $0^{m}.5$ fast.	
	" 3 7.2 Set. W.	
	" " 8.5 Reset W which had stp'd.	
	" 4 7.3 Set W.	Aug 4. $11^{h}.0$ W 80^{s} slow in 2 or 3 days, set it. (see notes
	" 5 7.3 " "	
	" 6 7.1 " "	" 6 12.7 Set clock (presumably in dome.
	" 7 7.5 " "	
	" 8 7.4 " "	" 8 10.6 " "
	" 9 7.1 " "	
Rate	" 10 6.6 " "	
	" 13 7.0 W $3^{m}.5$ fast set it.	
	" 14 7.1 Set W.	
	" 15 7.1 " "	
	" 16 6.8 " "	" 16 $9^{h}.0$ W $2^{m}.0$ slow. set it.

42.9	4.6
42.8	4.7
42.7	4.8
42.6	4.9
42.5	5.0
42.4	5.1

Time Errors

1. Clock & Watch notes.

				Sidereal Clock	Mean Time Clock	
					4.9 ~~5.0~~ slow	
	May	31		[illegible] About $0^{m}.2$ slow.	May 21. $6^{h}.5$ $4^{m}.7$ Behind S.C. (65)	
	June	2		0.3 "	Set with S.C (TB)	
	June 5		12^{h}	.1 "		
	June	16				
	"	20		0 Cl. Stopped & ~~Set~~ Prob. $0^{m}.5$ fast.	Kept on towns time (T.B. 165)	
	"	~~28~~ 24		0, $3^{m}.0$ Sl. town time & Set $3^{m}.0$ ahead,		
1-5	"	30		15. Found $7^{m}.0$ fast	Prob set from S.C, (T.B. pg 165)	
	July	6.		7.0 " assumed $9^{m}.0$ f	$3^{h}.1$ $7^{m}.0$ behind S.C. (68)	0 2.0 f
8-10	"	7				
	"	11		7.1 " assumed $6^{m}.8$ f	12.4 $4^{m}.5$ behind S.C. (65)	2.6 f 2.3 f
	"	12	8	$0^{m}.2$ fast	14.8 ~~x3~~ $1^{m}.0$ ahead of S.C (68) (!?)	
	"	13	7	0.2 fast	Found 1.3 fast. set back 0.7 (TB 165) 12.0 1.0 ahead of S.C. (Bk 68.)	$1^{m}.3$ fast
	"	14	7	0.3 "	Found Correct(?) (TB 165)	0.6 f.
	"	15		3		0
	"	16		3	Found Correct (TB 165)	0
	"	17		4		0
	"	18		4		0
	"	19		4		0
	"	20		4	Prob found Correct Set (TB 165)	0
	"	21		5		.2 f
	"	22		5	Found 0.4 fast Set? (TB 165)	0.8
	"	23	8	0.5 "	13.5 $1^{m}.0$ ahead of S.C. (Bk 65)	1.5 f
	"	~~24~~ ~~25~~				
	"	24		.5 "	7.4 $1^{m}.4$ ahead of S.C. (Bk 65)	1.9 f
	"	25		.5 "		1.8 "
	"	26		.5 "		1.7 "

W. H. P.'s watch (Book 65) | A E D's Watch, (Not used till July 17)

May 21. 12.2 Set by M. C. $\overset{m}{4.9}$ ~~5.0~~ Sl.

				June 10	2.3 fast 1.1			
				13	3.4 "			
June 16.	$12^h.1$	Set W. $0^m.5$ fast	0.5f	Cor	4 Sl, 4.2			
			2d	probably 3.6				
							Fig 169	
July 6	{$3^h.1$ 12.4	$5^m.4$ ahead of M. C. $5^m.7$ ahead of M. C.	5.7f	7.2	Cor	9.2	5.9 ff	
			5d		6 4/7			
" 7	$7^h.5$	6.0 " " M. C.					6.4	
" 11	12.5	7.2 " " "	9.8f	9.5	9.0	Cor	8.3	
" 12			2d			2½		
" 13	12.0	$9^m.0$ " " Bk 68	$10^m.3$f	Cor	Cor	Cor	10.3 f	
" 14	11.2	same as "	.6f	✓			0	
" 15	10.3	" " "	0				2 f	
" 16	10 22 At	Cor $-2^m.0$ $2^m.0$ ahead of "	2.0f				2.0f	
" 17	9.3	Same as "	0	~~5.0~~ S 5^m slow (Prob. true error)				
" 18			0	5.4 "	~~Prob set~~ ~~Er. Cor.~~			midnight ~~$0^m.2$ Sl~~
" 19	9.5	Set at "	0	5.8			Pencil	0.6 "
" 20	8.5	" " "	0	6.2				1.0 "
" 21	8.4	" " "	.2f	.2 F (set)				1.4 "
" 22	8.2	" " "	.8f	.2 S				1.8 "
" 23	{7.4	" " "	1.5f	.6				2.2 "
~~" 24~~	9.4	stopped - presumably set by M. C.	1.5f					
~~" 25~~	13.5	^{m}Same as M. C.	1.6f					
	14.6	{$16^m.5$ ahead of M. C. S. Clk in dome 5^m fast (applies to 101)	18.1f					
" 24	7.4	Set at M. C.	1.9f	1.6				2.6 "
" 25	10.6	Compared with M. C. (Presumably same)	1.8	1.4				3.0 "
" 26	8.6	Set (by M. C.) presumably	1.7f.	{11. {1.8 S $3^m.5$ slow 12.4 {1.7 F put correct. (i.e. $3^m.5$ ahead)				3.5 "
							+	0

Time Errors

	2		Sidereal Clock				Mean time Clock
July	27		.6	fast			1.6 fast
"	28		.6				1,5
"	29		.6				1.4
"	30	9±	$\overset{m}{0}.6$	fast.			1,3
"	31		.5	"			1.2
Aug	1		.5	"			1,1
"	2		,4	"			1,0
"	3		,4	"			,9
"	4		,3	"			,8
"	5		,3	"			,7
"	6		.2	"			.6
"	7		,1	"			,5
"	8		,0				.4
"	9		,1	slow			,3
"	10		.2	"			2
"	11	13±	$\overset{m}{0}.2$	slow		about right (7B.165)	0
"	12	15±	0.2	"			2.2 f
"	13	9±	0.2	"	5.6	4.6 ahead S.C.	$\overset{m}{4}.4$ fast
"	14		.2	"	127	4.8 " "	4.6 "
"	15	12.7	0.2	" by Mars 13^{in}	12.8	4.9 " "	4.7 "
"	16				11.3	5.1 " "	4.9 "
"	17						5.2 "
"	18					Figures in black	5.4 "
"	19					from A&D. Journal	5.6 "
"	20					Bk 56. page 130	5.8 "
"	21						5,9 "
"	22						6,1 "
"	23						6.3 "
"	24					changed at $13^{h}17^{m}\pm 49^{m}$	6.4 "
"	25						0

	WHP's Watch			AED's Watch		
July 27	$7.^h9$	Set (by M.C. pressure)	1.6 fast		Probably M.C.	1.0 F
" 28	7.8	" by M.C.	1.5	$14.^h3$	$1.^m1$ slow (65 sec)	0.4 F
" 29			1.4	13.6	1.4 " (86 sec)	0
" 30	8.5	" (" ")	1.3	11.0	Set	0.45 1.3 F
" 31	8.8	" (" ")	1.2			1.0 "
Aug 1	7.2	Found $0.^m5$ fast (Prob not set)	1.6			.6 "
" 2			1.5			.3 "
" 3	7.2 8.5	Set Reset W. which had stopped.	.9			0.5 Sl., 1 Sl
" 4	7.3	Set ~~E~~	.8	11.0	$1.^m3$ slow (80^s) in 2 or 3 days	Set it 0.8 F
" 5	7.3	"	.7			0.7 F used
" 6	7.1	"	.6	12.7	Set clock (Prob. alarm clock in dome	0.6 F
" 7	7.5	"	.5			0.5 F
" 8	7.4	"	.4	10.6	Set clock	0.4 F
" 9	7.1	"	.3			.7 F
" 10	6.6	"	.2			1.0
" 11	Rate	gaining 1.1 per day with refit to M.C.	0			1.3
" 12			3.9 f			1.6
" 13	7.0	$3.^m5$ fast - set it.	4.4			1.9
" 14	7.1	Set	4.6			2.2
" 15	7.1	"	4.7			2.5
" 16	6.8	"	4.9	9.0	$2.^m0$ slow, set it.	2.9 F 4.9 F
" 17	7.9	" (Bk 66)	5.2			4.6
" 18	6.6	"	5.4			4.3
" 19	6.6	Correct.	5.6	10.9	$1.^m6$ (96^s) behind M.C. (TB)	(& 66) 4.0 F
" 20	6.4	Set	5.8	4.3 F		
" 21	no obsn	5.9 (13.8 Clock $1.^m3$ Bet M.C. clk used in obsn		3^h 13.8 4.6	Just $2.^m0$ ~~slow~~ Bet M.C. / Rate " $2.^m2$ (2^m10^s) " " (TB) (since the 16th)	~~3.9 f~~ ~~3.7 f~~
" 22			6.1	3.6 F		
" 23	7.0	Set	6.3	3.5 "		
" 24	7.5	"	6.4	3.4 "		
" 25	9.5	(M.C. moving) (Prob. not set.)	6.5	3.3 F "watch time"		

(When not otherwise stated clock was probably set from Watch issued at rate

Time Error

	Sidereal Clock	Mean time Clock
Aug 26		0
" 27		0
" 28		0
" 29		0
" 30		0
" 31		0.1 slow
Sept 1		0.1 "
" 2		0.1 "
" 3		0.2 "
" 4		0.3 "
" 5		0.4 "
" 6		0.5 "
" 7		0.5 "
" 8		0.6 "
" 9		0.7 "
" 10		0.7 "
" 11		0.8 "
" 12		0.8 "
" 13		0.8 "
" 14		0.8 "
" 15		0.7 "
" 16		0.7 "
" 17		0.7 "
" 18		0.7 "
" 19		0.7 "
" 20		0.7 "
" 21		0.7 "
" 22		0.7 "
" 23		0.7 "
" 24		0.6 "

		W.H.P.'s watch			A.E.D.'s Watch		
August 26	8.3	Set	0			3.2F	3.1F
" 27			0			3.1	3.0
" 28	8.5	"	0			3.0	2.9
" 29	8.6	Correct.	0			2.9	2.8
" 30			0			2.8	2.6
" 31	6.7	Set	0.1 Sl			2.7	2.4
Sept. 1			.1 "			2.6	2.3
" 2			.1 "			2.5	2.1
" 3	7.0	Correct	0.2 Sl			2.4	2.0
" 4	7.0	Set	0.3 "			2.2	
" 5			0.4 "			2.0	$\overset{m}{1.8}$ f
" 6	6.4	Set	0.5 "	13.8	$\overset{m}{2.3}$ f. by M.C. not set (T.B.)		^
" 7	6.4	Correct	0.5 "				2.2 "
" 8	6.5	Set	0.6 "				2.6 "
" 9			0.7 "				3.0 "
" 10	7.4	Set.	0.7 "				3.5 "
" 11	6.2	"	0.8 "	12.0	Found W $\overset{m}{4.}$– f ~~by M.C.~~ Set it. (T.B.)		{4.0 " 0
" 12	6.6	Correct	0.8 Sl	7.1	Set watch (!)	0.8 Sl	
" 13		0.3 Sl	~~0.8~~	7.4	"	.8 "	. S
" 14		0.3F 0.8F	~~0.8~~			.8 "	.4 "
" 15	8.3	$\overset{m}{1.5}$ fast / 9.5 Set it.	0.7 Sl	9.9	"	.7 "	.3 "
" 16	6.3	Set	0.7 "			.4 "	.4 "
" 17			0.7	9.3	W $\overset{m}{0.6}$ ah. M.C. not set.	.1 Sl	"
" 18			0.7	7.4	W $\overset{m}{0.2}$ ah. M.C. not set.	.5 Sl	"
" 19			0.7	7.2	W $\overset{m}{0.1}$ (4^s) "Bet" out by M.C. "	.8 Sl "	"
" 20	6.7	Set.	0.7	9.7	Set	.7 Sl	"
" 21	6.3	"	0.7	9.6	W $\overset{m}{0.5}$ Sl (30^s. Bet M.C.)	1.2 Sl not set	:
" 22	6.4	Correct.	0.7	9.3	W 0.3 Sl (17^s) (Bet M.C.)	1.0 Sl "	0. "
" 23	9.+	19.7 Sl to 0.7 Sl $\overset{m}{19.0}$ slow (for 334) set after 334	i.e. at $10^h.6$	8.7	$\overset{m}{0.2}$ (11^s) bh M.C. (T.B.)	0.9 Sl	0. S
" 24			0.6 S			.8 Sl	

Time Errors

		Sidereal Clock	Mean time Clock
Sept	25		0.6 Slow
"	26		0.6 "
"	27		0.6 "
"	28		0.6 "
"	29		0.6 "
"	30	$0^{m}.8$ fast	0.6 "
October	1		
"	2		
"	3		
"	4		
"	5		
"	6		
"	7		1.0 s
"	8		
"	9		
"	10		
"	11		
"	12		1.3 Slow
"	13		1.3 "
"	14		

		W.H.P.'s Watch			A.E.D.'s Watch.	
Sept. 25			0.6 Sl			.7 Sl
			0.6 "			.6
			0.6 "			.6
			0.6 "			.5
29	6.9	Set	0.6 "	11.4	0.1^{m} (6^{s}) ahead M.C. (T.B)	0.5 Sl
30			0.6 "	12.6	0.2 (9^{s}) " " "	0.4 Sl
Oct 1			0.7 "			.4
2			0.8 "			.3
3			0.8 "			.3
4			0.9 "			.2
5			0.9 "			.2
6			1.0 "			.1
7	6.3	4.5^{m} ah M.C.	3.5 f.	9.6	0.9^{m} ah (53^{s}) f M.C.	0.1 Sl
			1.1 "			.3 "
			1.1 "			.6 "
			1.2 "			.8 "
			1.2 "			1.1 "
12			1.3 S	11.5	1.4^{m} (87^{s}) slow (T.B)	1.4 Sl.
13			1.3 S		~~1.4^{m} (87^{s}) slow~~ ? "	

Time Corrections

To be added to recorded times.
AEDs & W.H.P.s Watches.

		Int
Within	0.1	0.2
Within	1.0	1.2
~~Within 4.0~~		
~~Interpolated~~		
Within 4.0		

{Underlined means obsd}

	W.H.P.s		H.	M. ~~A.E.D.s~~	Limit of Error
May 21	+4.9	~~at 12.2~~	4	50.4	0.1
June 13	−3.4			42.1	4
" 14	−3.8			41.7	"
" 15	−4.1			41.4	"
" 16	−4.4 −0.5	before 12.1 at after 12.1		41.1 — changed at 12.1 45.0	5 2
" 17	−0.9	*−0.8		44.7	"
" 18	−1.2	−1.0		44.5	"
" 19	−1.6	−1.3		44.2	"
" 20	−1.9	−1.5		44.0	"
" 21	−2.3	−1.8		43.7	"
" 22	−2.6	−2.0		43.5	3
" 23	−3.0	−2.3		43.2	"
" 24	−3.3	−2.5		43.0	"
" 25	−3.7	−2.8		42.7	"
" 26	−4.1	−3.1		42.4	4
" 27	−4.5	−3.4		42.1	"
" 28	−4.9	−3.7		41.8	"
" 29	−5.2	−3.9		41.6	"
" 30	−5.6	−4.2		41.3	"
July 1	−5.9	−4.4		41.1	"
" 2	−6.3	−4.7		40.8	"
" 3	−6.6	−4.9		40.6	"
" 4	−7.0	−5.2		40.3	"
" 5	−7.4	−5.5		40.0	"
" 6	−7.7	−5.7 ~~at 3 5.1~~ ~~& 12.4~~		39.8	"
" 7	−8.1	−6.5		39.0	"
" 8	−8.4	−7.2		38.3	"
" 9	−8.8	−8.0		37.5	"

Watch~~es~~ Corrections

A.M.T. 1.5m fast

S. clock in dome 5.5m fast.
L.S. Sid. Clock 0.5m fast
See Time Bk

W. H.	add. H	M	Limit of error			A.E.D.'s H	M	Limit of error
-8,9 -9.2 ~~W. H.~~	4	36.6	1m	July	10	~~A.E.D.'s~~		
-9.8 -9.6		35.7	"	"	11			
-10.0		35.5	"	"	12			
-10.3		35.2	0.1	"	13			
-0.6		44.9	1	"	14			
0		45.5	"	"	15			
-2.0		43.5	"	"	16			
0		45.5	"	"	17	+5m.0	4	50.5	1m.0
0		45.5	"	"	18	+5,4		50.9	6.0
0		45.5	"	"	19	+5,8		Poss 51.3	~~6.0~~
0		45.5	"	"	20	+6,2		over 4m 51.7m say	7.0 or 1.5
-0,2		45.3	"	"	21	-0,2		45.3	"
-0,8		44.7	"	"	22	+0,2		45.7	6.0
See Special Cor. 1,5 (Bec		Special Correction		"	23	+0,6		46.1	5.0
-1,9		43.6	"	"	24	+1.0		46.5	4.0
-1,8		43.7	"	"	25	+1,4 +1,8 at 11h		46.9 47.3	3.0 2.0 T. 11.4 AM
-1,7		43.8	"	"	26	-1.7 at 11.4		43.8	2.0
-1,6		43.9	"	"	27	-1.0		44.5	"
-1.5		44.0	"	"	28	-0.4		45.1	1.0
-1,4		44.1	"	"	29	0		45.5	"
-1,3		44.2	"	"	30	+0.4 – 11h.0 -1,3		45.9 44.2	2.0 T. 11.0 AM 1.0
-1,2		44.3	"	"	31	-1.0		44.5	"
-1.6		43.9	"	Aug.	1	-0,6		44.9	"
-1.5		44.0	"	"	2	-0,3		45.2	2.0
-0.9		44.6	2	"	3	+0.1		45.6	"
-0,8		44.7	"	"	4	+0,5 – 11h.0 -0,8		46.0 44.7	11h.0 AM T. 3.0
-0.7		44.8	3	"	5	-0,7		44.8	4.0
-0,6		44.9	"	"	6	-0.6		44.9	"
-0,5		45.0	"	"	7	-0 5		45.0	5.0

Time Corrections - 2
To be added to recorded times.

Watches

		W. H. P.'s m	H	M	Limit of error	A. E. D.'s m	H	M	L. of Error m
August	8	− 0.4	4	45.1	3.0	− 0.4	4	45.1	4.0
"	9	− 0.3		45.2	4.0	− 0.7		44.8	5.0
"	10	− 0.2		45.3	"	− 1.0		44.5	"
"	11	.0 =		45.5	"	− 1.3		44.2	"
"	12	− 3.9 =		41.6	1.0	− 1.6		43.9	2.0
"	13	− 4.4		41.8	0.1	− 1.9		43.6	5.0
"	14	− 4.6		40.9	"	− 2.2		43.3	"
"	15	− 4.7		40.8	"	− 2.5		43.0	"
"	16	− 4.9		40.6	"	− 2.9 − 4.9		42.6 Changed at 9h.0 A.M.T. 40.6	" "
"	17	− 5.2		40.3	"	− 4.6		40.9	"
"	18	− 5.4		40.1	"	− 4.3 =		41.2	"
"	19	− 5.6		39.9	"	− 4.0		41.5	0.1
"	20	− 5.8		39.7	"	− 4.3		41.2	"
"	21	− 5.9 =		39.6	"	− 4.6 =		40.9	"
"	22	− 6.1 =		39.4	1.0	− 3.6		41.9	3.0
"	23	− 6.3		39.2	0.1	− 3.5		42.0	"
"	24	− 6.4 =		39.1	"	− 3.4		42.1	"
"	25	− 6.5 =		39.0	1.0	− 3.3		42.2	4.0
"	26	0		45.5	0.1	− 3.2		42.3	"
"	27	0		45.5	"	− 3.1		42.4	"
"	28	0		45.5	"	− 3.0		42.5	3.0
"	29	0		45.5	"	− 2.9		42.6	"
"	30	0		45.5	"	− 2.8		42.7	"
"	31	+ 0.1 ~~Slow~~		45.6	"	− 2.7		42.8	"
September	1	+ .1 "		45.6	"	− 2.6		42.9	"
"	2	+ .1		45.6	"	− 2.5		43.0	"
"	3	+ .2		45.7	"	− 2.4		43.1	"
"	4	+ .3		45.8	"	− 2.2		43.3	"
"	5	+ .4		45.9	"	− 2.0 =		43.5	2.0

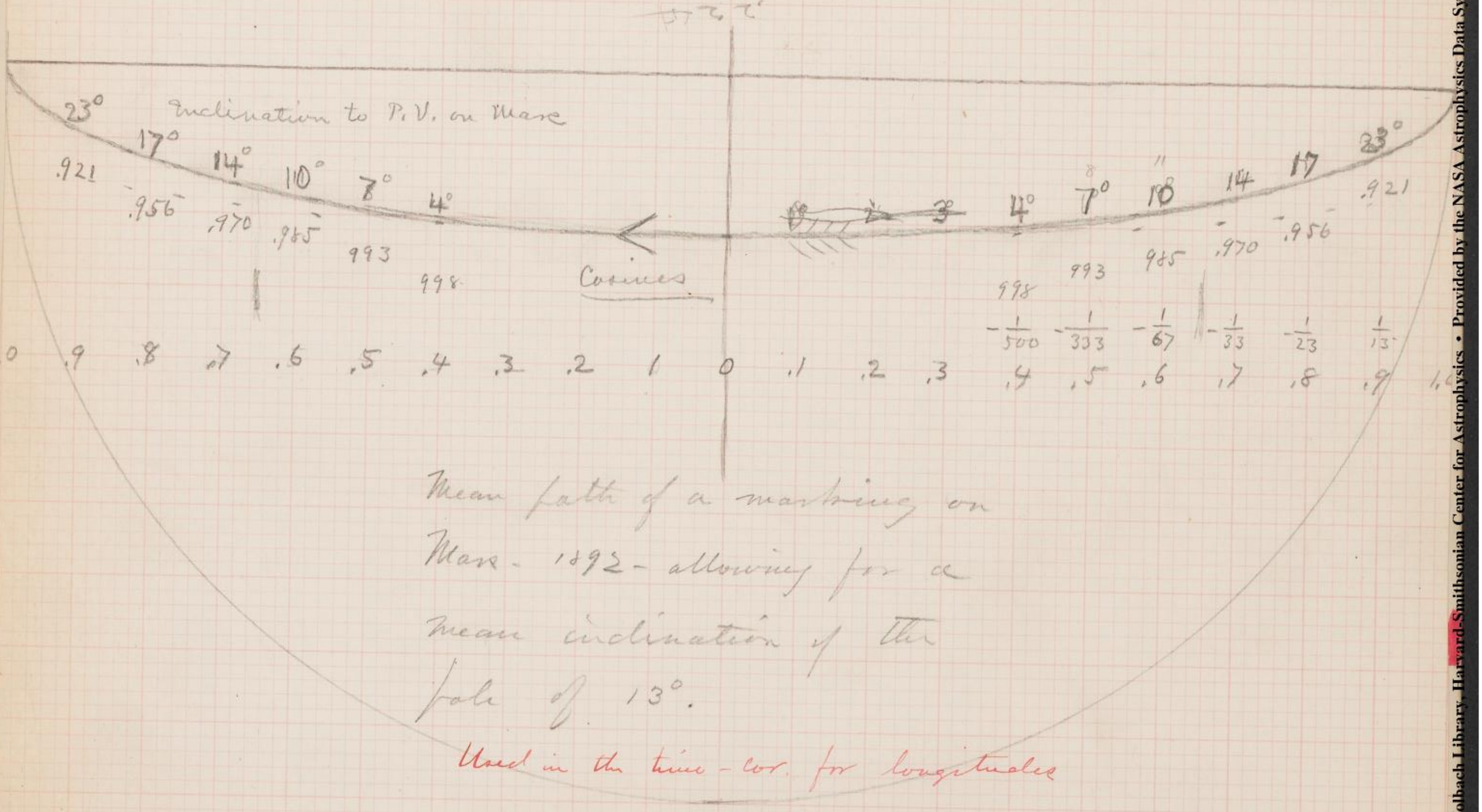
Time corrections
to be added to recorded times
Watches.

					=			Limit of error
September	6	+ 0.5 m	W.H.P.'s	h 4 m 46.0	0.1	− 1.8 m	O.E.D.'s	h 4 m 43.7	0.1 m
"	7	+ 0.5		h 4 m 46.0	L. Err. 0.1 m	− 2.2		h 4	43.3	"
"	8	+ .6		46.1	"	− 2.6		42.9	"
"	9	+ .7		46.2	"	− 3.0		42.5	"
"	10	+ .7		46.2	"	− 3.5		42.0	"
"	11	+ .8		46.3	"	{− 4.0 − 12.0 h { .0		41.5 chr.t 12.0 h 45.5	" "
"	12	+ .8		46.3	"	+ 0.8		46.3	"
"	13	+ .3		45.8	"	+ .8		46.3	"
"	14	− .3		45.2	"	+ .8		46.3	"
"	15	− .8		44.7	"	+ .7		46.2	"
"	16	+ .7		46.2	"	+ .4		45.9	"
"	17	+ .7 =		46.2	"	+ .1		45.6	"
"	18	+ .7		46.2	1.0	+ .5		46.0	"
"	19	+ .7 =		46.2	"	+ .8		46.3	"
"	20	+ .7		46.2	0.1	+ .7		46.2	"
"	21	+ .7		46.2	"	+ 1.2		46.7	"
"	22	+ .7		46.2	"	+ 1.0		46.5	"
"	23	+ 19.7 (to 334) + 0.7 (after ")		65.2 (to 334) 46.2	" "	+ .9 =		46.4	"
"	24	+ .6		46.1	"	+ .8		46.3	1.0
"	25	+ .6		46.1	"	+ .7		46.2	"
"	26	+ .6		46.1	"	+ .6		46.2	"
"	27	+ .6		46.1	"	+ .6		46.1	"
"	28	+ .6		46.1	"	+ .5 =		46.0	"
"	29	+ .6		46.1	"	+ .5		46.0	0.1
"	30	+ .6 =		46.1	"	+ .4 =		45.9	"
October	1	+ .7		46.2	1.0	+ .4		45.9	1.0
"	2	+ .8		46.3	"	+ .3		45.8	"
"	3	+ ~~.8~~		~~46.3~~	"	+ .3		45.8	"
"	4	+ ~~.9~~		~~46.4~~	"	+ .2		45.7	"
"	5	+ ~~.9~~		~~46.4~~	"	+ .2		45.7	"
"	6	+ ~~1.0~~		~~46.5~~	"	+ .1		45.6	"

Time Corrections
To be added to recorded times

Watches

Date	W. H. P.'s					A. E. D.'s				
		m	H	M	L. diff		m	H	M	L. diff
October 7	+	1.0	4	42.0	2.0	+	0.1	4	45.6	1.0
8	+	~~1.1~~		~~46.6~~	〃	+	0.3		45.8	〃
9	+	~~1.1~~		~~46.6~~	〃	+	0.6		46.1	〃
10	+	~~1.2~~		~~46.7~~	〃	+	0.8		46.3	〃
11	+	~~1.2~~		~~46.7~~	〃	+	1.1		46.6	〃
12	+	~~1.3~~		~~46.8~~	〃	+	1.4		46.9	〃
13	+	~~1.3~~		~~46.8~~	〃	+	1.7		47.2	〃
14	+									



Mean path of a marking on Mars - 1892 - allowing for a mean inclination of the pole of 13°.

Used in the time-cor. for longitudes

called Inclination
see page 79.

Wednesday, May 13, 1896

Solution of Complete all micrometer Observations

2 A = K_3 1 ~~S — of K_3~~ K_3 1 June 16.

S.M.T.

S. 12 17 + 4 45 | 17 02 2.177 = 10".82½

N 20 " | 05 1.334 6.63½

3.511 17.46

Phase Cor S. .07

17.53+

N $\frac{2.13}{8.77}$ ~~.2401~~ ~~.24288~~ .24297 ✓ = N 14°.1

Rad = 8.77−

N 6.64−

N 2.13

S.M.T.

f 12 31 + 4 45 | 17h 16m 1.738 = ~~8".64~~ 8".64

p 35 | 20 1.200* 5.97 + 1.28 = 7.25

2.938 15.89

* Think this should be about 1.500

1.500 7.46 + 1.28 = Time Cor .16

8.74

17.38

8.69

17.54

8.77

~~f $\frac{.05}{8.69}$~~

adopted later

~~or, using N&S diam & neglecting p altogether~~

f $\frac{13}{877}$ 11402 .014823 ✓ = f 0°.8

~~These two differ by ½°~~

3 A = K_3 2. 4h 43m S.M.T. June 23 Long Phase Time

f 11 10 | 15 53 | 1.750 = 8".70 8.70

p 16 | 59 | 1.693 = 8.42 + 1".17 + .24 = 9.83

3.443 = 17.12

2)18.53 very small

9.26

8.70

.56

9.26

f $\frac{.56}{9.26}$ .06047 ✓ = f 3°.5

We need another table giving movement in app. Sec^{ds} of Arc at the equator for 1^{m} of our time

For each case this app motion will have to be corrected for Lat, dist of longit. from center and for direction of motion. The value we get is the way

It equals this $\frac{\text{Diam}}{4 \cdot 2 \cdot 57.3} = \frac{\text{Diam}}{458.4} = m$

M = m Cos Lat. Cos Long from Cent. Cos deviation of Dirc from straight across,

In taking ~~Obl~~ Long from ~~M~~ the Num. is as usual & the Denr. is the usual Den. × Cos Lat. from P.V.

The value of the diameter used, will be

ours mean ~~[illegible]~~ (Cerulli's) polar diameter

1 : determined at opposition

or

25".21 (Marth being 24".78)

This is 1.017 × Marth's, or + $\frac{1}{57}$ or + $\frac{43}{2478}$

The change per 1^{m} becomes as follows:—

June 13 ".037
16 .038
23 .041
24 .042
July 7 .048
" 17 .051
" 20 .053

July 25 .054
30 .055
Aug 5 .055
Marth's D.
11 24.67 .055
17 26 .054
23 23.57 .052
29 22.68 .050

Sept 4. 21.66 0".048
10 20.57 .046
16 19.45 .043
22 18.36 .041
28 17.29 .039

3A

4 43 G.M.T. Lat — α'' $K_3^{(?)}$ center

S 10 47 | 15 30 | 1.819 = (9".04 + ".05) = 9".09

N 51 | 34 × 2.256 = (11.22) 11.22

20.31

close to value of S–N pg 44 but more than any other double meas

~~Say × 1.856 = 9.23~~

S $\frac{7}{916}$ (or S $\frac{17}{926}$) S $\frac{107}{1016}$ .1053 = S 6.0

20.31
10.15
9.09
1.07

9.23
2 | 18.32
9.16 (?) (or 9.26)
1.09

copied — later!

To reduce micrometer divisions to seconds of arc.

1″ = 0.2011 div.

									1
	.1	0.0201	3. .1	0.6234	6.1	1.2267	9.1	1.8300	12.
	.2	0.0402	.2	.6435	.2	1.2468	.2	1.8501	
	.3	0.0603	.3	.6636	.3	1.2669	.3	1.8702	
	.4	.0804	.4	.6837	.4	1.2870	.4	1.8903	
	.5	.1006	.5	.7038	.5	1.3072	.5	1.9104	
	.6	.1207	.6	.7240	.6	1.3273	.6	1.9306	
	.7	.1408	.7	.7441	.7	1.3474	.7	1.9507	
	.8	.1609	.8	.7642	.8	1.3675	.8	1.9708	
	.9	.1810	.9	.7843	.9	1.3876	.9	1.9909	
1.0	1.0	0.2011	4. .0	.8044	7.0	1.4077	10.0	2.0110	13.
	1.1	.2212	.1	.8245	.1	1.4278	.1	2.0311	
	1.2	.2413	.2	.8446	.2	1.4479	.2	2.0512	
	1.3	.2614	.3	.8647	.3	1.4680	.3	2.0713	
	1.4	.2815	.4	.8848	.4	1.4881	.4	2.0914	
	1.5	.3016	.5	.9050	.5	1.5082	.5	2.1116	
	1.6	.3218	.6	.9251	.6	1.5284	.6	2.1317	
	1.7	.3419	.7	.9452	.7	1.5485	.7	2.1518	
	1.8	.3620	.8	.9653	.8	1.5686	.8	2.1719	
	1.9	.3821	.9	.9854	.9	1.5887	.9	2.1920	
2.0	2.0	.4022	5. .0	1.0055	8.0	1.6088	11 .0	2.2121	14.
	2.1	.4223	.1	1.0256	.1	1.6289	.1	2.2322	
	2.2	.4424	.2	1.0457	.2	1.6490	.2	2.2523	
	2.3	.4625	.3	1.0658	.3	1.6691	.3	2.2724	.3
	2.4	.4826	.4	1.0859	.4	1.6892	.4	2.2925	.4
	2.5	.5028	.5	1.1060	.5	1.7093	.5	2.3126	.5
	2.6	.5229	.6	1.1262	.6	1.7295	.6	2.3328	.6
	2.7	.5430	7	1.1463	.7	1.7496	.7	2.3529	.7
	2.8	.5631	.8	1.1664	.8	1.7697	.8	2.3730	.8
	2.9	.5832	.9	1.1865	9	1.7898	.9	2.3931	.9
3.0	3.0	.6033	6 .0	1.2066	9.0	1.8099	12.0	2.4132	15.0

1

12.1	2.4333	15.1	3.0366	18.1	3.6399	21.1	4.2432	24.1	4.8465
.2	2.4534	.2	567	.2	600	.2	633	.2	666
.3	2.4735	.3	768	.3	801	.3	834	.3	867
.4	936	.4	969	.4	3.7002	.4	4.3035	.4	4.9068
.5	2.5138	.5	3.1170	.5	204	.5	236	.5	270
.6	339	.6	372	.6	405	.6	438	.6	471
.7	540	.7	573	.7	606	.7	639	.7	672
.8	741	.8	774	.8	807	.8	840	.8	873
.9	942	.9	975	.9	3.8008	.9	4.4041	.9	5.0074
13.0	2.6143	16.0	3.2176	19.0	209	22.0	242	25.0	275
.1	344	.1	377	.1	410	.1	443	.1	476
.2	545	.2	578	.2	611	.2	644	.2	677
.3	746	.3	779	.3	812	.3	845	.3	878
.4	947	.4	980	.4	3.9013	.4	4.5046	.4	5.1079
.5	2.7148	.5	3.3182	.5	214	.5	248	.5	280
.6	349	.6	383	.6	416	.6	449	.6	482
.7	551	.7	584	.7	617	.7	650	.7	683
.8	752	.8	785	.8	818	.8	851	.8	884
.9	953	.9	986	.9	4.0019	.9	4.6052	.9	5.2085
14.0	2.8154	17.0	3.4187	20.0	220	23.0	253	26.0	286
.1	355	.1	388	.1	421	.1	454	.1	487
.2	556	.2	589	.2	622	.2	655	.2	688
.3	757	.3	790	.3	823	.3	856	.3	889
.4	958	.4	991	.4	4.1024	.4	4.7057	.4	5.3090
.5	2.91 60	.5	3.5192	.5	226	.5	258	.5	29[illegible]
.6	361	.6	394	.6	427	.6	460	.6	493
.7	562	.7	595	.7	628	.7	661	.7	694
.8	763	.8	796	.8	829	.8	862	.8	895
.9	964	.9	997	.9	4.2030	.9	4.8063	.9	5.4096
15.0	3.0165	18.0	3.6198	21.0	231	24.0	264	27.0	5.4297

Phase Corrections

(copied from W.H.P.'s Journal, Bk. 70)

F. M. T.

Cor. in red to Ang. Diams

June	12	p 1.″33+5	S 0.″09	July	10	p 0.″68+2	S 0.″00
	13	1.32+~~5~~4	.09		11	65+2	〃
	14	1.31+~~5~~4	.08		12	61+2	〃
	15	1.30+4	.08		13	58+2	〃
	16	1.28+4	.07		14	.54+2	.00
	17	1.27+4	.07		15	51+2	
	18	1.26+4	.07		16	47+2	
	19	1.24+4	.06		17	44+1	
	20	1.23+4	.06		18	40+1	
	21	1.21+4	.06		19	37+1	S 0.00
	22	1.19+4	.05		20	33+1	N 0.00
	23	1.17+4	.05		21	30+1	
	24	1.15+4	.05		22	.26+1	.00
	25	1.13+4	.04		23	23+1	
	26	1.11+4	.04		24	20+1	
	27	1.09+4	.04		25	17+1	
	28	1.07+4	.04		26	15+1	.01
	29	1.04+4	.03		27	.12	1
	30	1.01+3	.03 *		28	10	1
July	1	.98+3	.03		29	8	2
	2	.95+3	.02		30	.06	.02
	3	.92+3	.02		31	5	2
	4	.89+3	02	Aug	1	4	3
	5	.86+3	.01		2	3	3
	6	.82+3	.01		3	2	4
	7	.79+3	.01		4	1	4
	8	.75+3	.01		5	p .00	.05
	9	.72+2	.01		6	f .00	.05

	Aug	6	f 0.″00	N 0.″05	Sept.	7	f 0.″91 +3	N. 0.″22 #
		7	.01	.06		8	.94 +3	.22
		8	2	6		9	97 +3	22
		9	3	7		10	100 +3	22
		10	4	8		11	103 +4	22
		11	6	9		12	106 +4	22
		12	7	10		13	109 +4	22
		13	8	11		14	112 +4	22
		14	10	12		15	115 +4	22
		15	.12	.12		16	1.18 +4	.22
		16	14	13		17	1.20 +4	22
		17	17 ~~+4~~ +1	13		18	123 +4	22
		18	19 ~~+1~~ +1	14		19	125 +4	21
X		19	22 ~~+1~~ +1	14				
		20	25 ~~+1~~ +1	15		20	128 +4	21
		21	28 ~~+1~~ +1	15 #		21	130 +4	21
		22	31 ~~+1~~ +1	16		22	132 +4	21
		23	.35 ~~+1~~ +1	.16		23	134 +5	21
		24	38 ~~+1~~ +1	17		24	1.36 +5	.21
		25	42 ~~+1~~ +1	18		25	138 +5	21
		26	46 ~~+2~~ +2	18		26	139 +5	20
		27	50 ~~+2~~ +2	19		27	141 +5	20
		28	54 ~~+2~~ +2	19		28	142 +5	20
		29	58 ~~+2~~ +2	20		29	144 +5	20
		30	62 ~~+2~~ +2	20		30	145 +5	19
		31	.66 ~~+2~~ +2	.21	Oct	1	147 +5	19
	Sept	1	.70 ~~+2~~ +2	21		2	1.48 +5	.19
		2	73 ~~+3~~ +3	21		3		
		3	77 ~~+3~~ +3	21		4		
		4	80 ~~+3~~ +3	22		5		
		5	84 ~~+3~~ +3	22		6		
		6	87 ~~+3~~ +3	22		7		

June 1. 1896,

Discussion of corrections to be applied in the following table of computation.

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1. Time Cor. for different settings.
A sufficiently accurate method of getting this is on page 79. The moment of each observation is that of the mean of the first two settings. The second pair is invariably corrected to the time of the first.

2. Phase Correction.
The Phase Cor. computed for Martha's Diam.s. is corrected in red on pages 82-3 and thus used in each case. This is the Cor. for the mean value of the respective Arequipa Diam's. The Arq. polar diam was $\frac{1}{57}$ greater than Martha's; the Arq. Equat. diam was $\frac{1}{29}$ greater than Martha's.
See also next section.

3. ~~Correction~~ Diameter Correction.
The diameters obtained in this way vary so much from their mean that any correction to them would alter the place of objects measured if they happened not to be near the centre.

It is uncertain whether a correction should be applied to each part measured in proportion to its size, or equally to each part. Neither correction would affects points at the center. Each would have a max. on the limb & would act in opposite directions.

The phase Cor. is independent of these accidental errors and so is the same for each case on a given date.

1

√1' = U₄ 1 | Lat. June 13 4 42 (m + 4m) Ue Sd from Corr. of Uds

13 36 | N. 0.333 = 3".31 (½ sub) | 3".31

4 42 | S. 1.524 = 15.16 +09 | 15.25

Sm. T. 18 18 | ~~18.47~~ | 2) 18.56

9.28

3.31

5.97

~~61.2~~ 297.9 N $\frac{597}{928}$ .6433 = N 40°.0

√1" = U₄ 1 | Long. June 13 4 42

13 54 f 2.089 = 10".39 = | 10.39

58 p 1.452 = 7.22 + 1.~~32~~36 + 15⁺ = | 8.~~69~~73⁺

4. 42 ~~17.61~~ 15 ~~17.76~~ | ~~18.99~~ ~~9.50~~ ~~8.69~~ ~~81~~ | 19.12⁺ 9.56⁺ 8.73 p 83⁺

Sm. T. 18 36 ~~18 40~~

~~45.6~~ 302.3 ~~p $\frac{81}{950}$ .08526 = p 4°.9~~ p $\frac{83^{+}}{9.56}$ = p 5°.0

√1A = U₄ 2 | Long. June 13 4 42

14 02 | f 2.076 = 10.32 = | 10.32

05 | p 1.402 = 6.97 + 1.3~~4~~6 + 11 = | 8.4~~8~~4

4 42 | ~~17.29~~ 11 ~~17.40~~ | 18.7~~4~~6

Sm. T. 18 44 | 9.38 840 98

~~67.5~~ 304.2 p $\frac{98}{936}$ ~~.10256~~ × ~~p 0°.6~~ = p 0°.6

√2 = Sm 1. | Lat. June 16 4h 45m.0 ± 2m

Sisa. N Edge 12 08 | S 0.376 = 1.87 +.07 | 1.94

4 45 | N 3.296 = 16.39 | 16.39

Sm. T. 16 53 | ~~18.26~~ | 18.33

236.2 | 9.16

S $\frac{722}{916}$ .7882 = S 52°.0 | 1 94

7 22

See page 78

✓ 2A′ = K₃ Lat June 16, P 4 45

12 18 | S 2,177 = 10″,82½ + ,07 = 10.90⁻
4 45 | N 1,334 = 6″,63½ 663⁺
S.M.T. 17 03 | ~~17,46~~ 17.53
876
238.7 N $\frac{213}{877}$ = N 14°,1 663
2.13

✓ 2A″ = K₃ Long

12 31 | f 1,738 = 8,64 8.64
4 45 | p ~~1,520~~ 1×700 = ~~7.46~~ 8.45 + 1.~~24~~ 32 + ,16 = 8.94 9.93
S.M.T. 17 16 | (+ 4ᵐ) = + ~~16,10~~ 17.58 18,57
241.8 Entered 1,200 16 879 R = 9.28
16.26 8.64
f $\frac{~~13~~ 15}{877}$ = f ~~0°,8~~ f 0°.9 ~~+~~ 15 X = +.64

						x	$\frac{x}{2880}$ Change for 1ᵐ
June 12ᵈ	39.88	~~17.73~~		June 23,	18.52	701,48	,24,3569 ✓
14ᵈ	21.16	18.65		July 6	18.20	701.80	.243680 ✓
	– 18.72	701.35		11	18,08	701.92	.243721 ✓
	+ 720.00	6/16 2435		14-16	18,00	702.00	49 ✓
48ʰ	701.28			~~to Aug 10~~ 18	17.94	702.06	243770 ✓
60 2880	quo .2435						
Aug 11	17.72	702.28 24	3850	20	17.90	702.10	3784 ✓
13	17.74	.26 27	43	22	86	702.14	3801 ✓
~~15~~	~~17.76~~	,24	~~36~~	24	82	.18	3815 ✓
17	17.79	,21 22	26	26	78	.22	3829 ✓
19	.82	.18	15	28	.76	.24	3836 ✓
21	85	.15 .14	.243805	30	74	.26	3843
23	89	.11 .10	3787	Aug 1	73	.27	3846
25	94	,06	70	3	71	.29	3853
27	98	,02 00	56	5	70	,30 Max	3857 checked at .243854
29	18.03	701.97	39	7	71	.29	3853
31	.08	701.92	243721	9	71	.29	3853

Quantities in black, not observed.
Missing parts of diameters
supplied from curves of
page 235.

2 (pages 78-9 = 2 A)

√3 = Sn 2 | ~~L~~Lat (½) June 23 4 43.(2 ± 3^m)

3b N. edge S. sun 10 43 | S. 0.451 = 2".24 + .05 (Plus) ~~= 2.29~~ = 2".29

4 43 | N. ——

S.M.T. 15 26

162.9

Marth 18.74
pg 235, curve 7.65
19.44
9.72
S 2 29
7 43

$S\ \frac{743}{972}$ wt ½ .7644 ✓

See pages 78-9

√3B = Sn 3 | Lat ½ June 23

N. to S. edge N. sun 11 05 | ~~B 0.195 + —— + —— 0".97 = 0".97~~

4 43 | N 0.195 = —— + —— + —— = 0.97

S.M.T. 15 48

168.3

As above 9.72
N. .97
8.75

$N\ \frac{875}{972}$ wt ½ = .9002 ✓

√4' = K₃ 3 | Lat June 23

11 41 | S. 1.705 = 8.48 + .05 = 8.53

4 43 | N 2.119 = 10 54 = 10.54
~~19.02~~

S.M.T. 16 24 | 19.07
9.54
8 53
1 01

177.1

$S\ \frac{101}{954}$ .10482 .10587 = S 6°.1

√4" K₃ 3 | Long V. June 23.

11 33 | "0" (K₃) is now past mid of app. disc and about
4 43 | at the middle of the real disc".
16 16

175.1

✓3A' = K3 Lat June 23

10 49 | S 1.819 = 9.05 + .05 = 9.10

4 43 | N 2.256 = 11.22

Sid. T. 15 32

~~20.27~~

11.22
~~20.31~~
~~10.16~~
S ~~9.09~~
~~1.07~~

20.32
10.16
9.10
1.06

164.4

~~S = 107/1016 = S 6°.0~~

106/1016 = ~~S 6°.0?~~ = S 5°.9

✓3A'' = K3 Long June 23

11 10 | f 1750 = 8.70

4 43 | b 1693 = 8.42 + 1.20 + .24 + .6 = 9.86 + .6

Sid. T. 15 53 | (+ 6m) = + ~~17.12~~
+ .24
~~17.36~~

8.70
9.86
18.56
9.28
f 8.70
f 58/926 = ~~f 3°.5~~

169.5

f 58/926 = f 3°.6

			x	x/2580 = change in 1m
Sept.	2	18.13	701.87	.243704
	4	18	.82	.243687
	6	23	.77 80	70
	8	28	.72	52
	10	34	.66	31
	12	39	.61	14
	14	43	.57	243600
	16	49	.51	243579
	18	53	.47 48	.65
	20	58	.42	.48
	22	63	.37	30
	24	67	.33	.243516
	26	72	.28	.243499
	28	76	.24	85
	30	81	.19	68
Oct.	2	85	.15 min.	.243454

3

✓4 A = Sn 4 | Lat ½ | June 23 | 4^h 43^m (2 ± 3^{nt})

S. N. edge S. snow | 11 48 | S. 0.527 = 2.″62 + .05 = | = 2.″67

4 43 | N. —— | (   )

G.M.T. 16 31

178.8

As with 3 B. R = 9.72
S 2.67
705

S $\frac{705}{972}$ wt ½ = .7253 ✓

✓4 B. = Sn 5 | Lat ½ | June 23

N. to S. edge of N. snow | 11 52 | S. —— | (   )

4 43 | N 0.200 = | = 0.″99

G.M.T. 16 35

179.7

R = 9.72
N .99
873

N $\frac{873}{972}$ wt ½ = .8981 ✓

✓4 C = Sn 6 | Long ½ | June 23 | ‡   ‡

prec. edge (S) snow. | 12 42 | f 2.731 = 13.″58 | = 13.″58

4 43 | p —— | (   )

G.M.T. 17 25

191.9

Marth. diam 18.75
Curve pg 235 .83
19.58
9.79
(f) → 13.58
p 3.79

p $\frac{379}{979}$ wt ½ = .3871 ✓

✓4 D = Sn 7 | Long ½ | June 23

foll. edge (S) snow | 12 53 | ~~fMAAA~~ | (   )

4 43 | p 2.714 = 13.″50 + ~~1.17~~ 1.″20 | = 14.″~~67~~ 70

G.M.T. 17 36

194.6

Eq. R = 9.79
(p) = 14.70
f 491

f $\frac{491}{979}$ wt ½ = .5015 ✓

4,

✓ = N mar ~~R~~ | Lat | June 23 | 4 | 43

13 05 | S. 1.835 = 9.12 + .05 = | = 9.17
4 43 | N. 1.999 = 9.94 | 9.94
S.M.T. 17 48 | ~~19.06~~ | 19.11
197.5 | S $\frac{39}{956}$ ·1046 | = .040794✓ = S 2°.3 | 9.56
9.17
39

✓6 = K, ~~N~~ | Lat | June 24 | 4 | 43.0 ± 3

10 27 | S. 1.525 = 7.58 + .05 = | 7.63
4 .43 | N. 2.460 = 12.23 | 12.23
S.M.T. 15 10 | ~~19.81~~ | 19.86
149.8 | S $\frac{230}{993}$ ·1007 = | .231612 ~~40794~~ = S 13°.4 | 9.93
7.63
2.30

✓6 A = Sn 8 | Long ½ | "
fine edge snow

11 07 | f 2.938 = 14.61 | = 14".61
4 43. | p —— | ( )
S.M.T. 15 50

Marth Diam. 18.92
Cum pg 235 + .82
19.74
Eq. Rad 9.87
(f) 14.61
p 4.74

159.5

p $\frac{474}{987}$ wt ½ = .4802✓

✓6 B = Sn 9 | Long ½ | "
fall edge snow

11 12 | ~~[illegible]~~ | (")
4 43 | p ~~3~~(2).624. = 13.05 + 1.1~~5~~8 | = 14.2~~04~~3
S.M.T. 15 55 | (3.624 = 18".02)

160.7

Eq. Rad. 9.87
(p) 14.23
f 4.36

f $\frac{436}{987}$ wt ½ = .4417 ✓

5.

✓6C = Sn 10 Long ½ June 24 $4^h\ 43^m$

foll edge Snow 11 22 | ~~[illegible]~~ (″)

4 43 | p. 2.605 = 12″.95 + 1″.1~~x~~ 88 = = 14.1~~04~~ 3

S.M.T. 16 05

163.2

Marth Diam 18.93

Corr. + .81

19.74

f $\frac{426}{987}$ wt ½ .4316 ✓

Eq. Rad 9.87

(p) 14.13

f 4 26

✓7′ = ~~P~~ 10 Lat. 2. ″ ″

11 50 | S. 1.757 = 8″.74 + ″.05 8.79

4 43 | N. 2.018 = 10.03 10.03

S.M.T. 16 33 ~~18.77~~ 18.82

170.0

9 41

S $\frac{62}{941}$ .0659 ✓

8 79

62

✓7″ ~~#~~ = ~~P~~ 10 Long. V. ″ ″

12 05 "On meridian of app. disc".

4 43

S.M.T. 16 48

173.6

Correction ~~for~~ Phase 1″.18 ÷ 2 = 0″.59 following ~~centre~~ ~~of~~ middle of disc.

~~7#~~

✓7A. = Sn 11~~2~~ Long ½ ″ ″

(5)

prec edge snow 12 43 | f 2.369 = 11.78 = 11″.78

4 43 | p — (—)

S.M.T. 17 26

Eq. Rad. 9.87

182.9

(f) 11.78

p 1.91

p $\frac{191}{987}$ wt ½ = .1935 ✓

6th.

v7B = Su 12 | Long.½ | June 24 | 4 | 43

pole edge (S) snow | 12 47 | [illegible]

4 43 | p 3.141 = 15.62 + 1.18 = 16.80

S.M.T. 17 30

183.9

Eq. Rad 9.87

(p) 16.80

f 6.93

f $\frac{693}{987}$ wt ½

---

v8 = Q4 | Lat.½ | " | "

{S. side} | 13 49 | S —

4 43 | N 1.106 = 5.50

S.M.T. 18 32

199.0

Martian Diam 18.94

Corr. p. 235. + .70

$\boxed{19.64}$

N $\frac{432}{982}$ wt ½

Polar Rad = 982

N 550

432

---

v9′ = Q2 | Lat.½ | " | "

Crotch of ring | 13 59 | S — pol. R. 9.82

4 43 | N 0.822^d = 4.09

S.M.T. 18 42 | 573

201.4

N $\frac{573}{982}$ wt ½

---

v9″ = Q2 | Long. V. | " | "

14 21 | Central = 0".5-9 f. mid. disc

~~18 . 8~~ | 4 43

S.M.T. 19 04

206.8

7.

✓10 = O_5 Long V. June 24 4^h 43^m

14 05 | Central. (in dark stripe f fig 47) = 0".59 f. mid. disc
4 43
S.M.T. 18 48
202.9

✓11 = D_3 Long V. July 6. 4 $\overset{40^m}{(39.8 \pm 4^m)}$

12 39 | central
4 40 | + 0".82 ÷ 2 = + 0".41
S.M.T. 17 19
71.2

✓12 = G_1 " " "

12 48 | central
4 40 | 12 51 past central
S.M.T. 17 28 | + 0".41
73.4

✓13 = G_2 " " "

13 04 | 12 51, not yet central
4 40 | 58 central } 13 04
S.M.T. 17 44 | 13 03 5 still "
77.3 | 14" just past "

+ 0".41

14 = E_1 Long. v. July 6 4 40
13 24 | 13 16 nearly central
4 40 | 17 central
S.M.T. 18 04 | 24 still " } 13 24
82.1 33 past "

✓14 A ~~*~~ = H_2 Long v. " 1
13 26 Central
4 40
S.M.T. 18 06
82.6

✓15 ~~*~~ = H_5 Long. v. " "
13 24 | 13 30 central } 13 24
4 40 | 32 past
S.M.T. 18 04
82.1

✓16 = H_1 Long. v. " "
13 43 | 13 36 nearly Central
4 40 | 38 Central
S.M.T. 18 23 | 46 " } 13 43
86.8 50 past

✓17 = I_2 Long v July 6 4 40

14 24 | 14 08 point appears central
4 40 | 16 central
G.M.T. 19 04 | 25 still "
96.8 | 35 – will be past in 5m
40 past
} 14 24

✓18 = H_3 Long v " "

14 28 | 14 22 point appears central
4 40 | 35 will be past in 5m
G.M.T. 19 08 | 35 past
97.7
} 14 28

✓19 = J Long v. " "

Phoenix Lake 15 15 | 14 50 Not yet central
4 40 | 56 prec. edge central
G.M.T. 19 55 | 15 27 foll " still "
109.2 | 34 " " just past
38 " " clearly "

} p 02 || 14 50 / 15 38 } f 30 || ''

Center central at 15 15 (~~7° across~~)

✓20 = Z-Z, Long m. July 11. 4h 35m.7 ± 1m (4h 36m)

10 27 | f. 2.020 = 10.04 = 10".04
~~11~~ 36 | p 2.400 = 11.93 + ~~.67~~ 6 4 + .25 = 12.8~~35~~ 2
G.M.T. 15 03 | (5m) × .05 = 25 || .25 ~~21.97~~
352.7
+ .25
22.8~~79~~ 6
11.43~~84~~
10 04
1 ~~39~~ 40

f .139 / 1143 .875 .1216 ✓ = f 7°.~~01~~

~~22.22~~

= f 7°.1

√1 = Y (probably Z)   Lat   July 11   4 36

10 43 | S. 2.597 = 12."92
4 36 | N. 1.984 = 9.87 no cor
G.M.T. 15 19 | 22.79
356.6

11.49
987
153

N $\frac{153}{1140}$ .13421✓ = N 7°.7

√22 = A, Lat   "   "

10 57 | N. 1.374 = 6.83
4 36 | S. 3.070 = 15.27 no cor
G.M.T. 15 33 | 22.10
000.0

1105
683
422

N $\frac{422}{1105}$ .3819✓ = N 22°.4

√23 = Z, Long (m)   "   "

11 24 | f. 2.714 = 13."50   13."50
4 36 | p. 1.750 = 8.70 + .6~~1~~ 47 + .25 " = 9.~~602~~ 59
G.M.T. 16 00 | (5m) + .25 [illegible]

~~22.20~~
~~+.25~~
22.45

~~0902~~ 08
23.~~102~~
6.6

11.5~~46~~ 4
960
194~~46~~

p $\frac{19\cancel{46}\,4}{1155}$ .1689✓ = p 9°.7 ?

√24 = Y, Long. v.   July 14, $4^h\ 44^m.9 \pm 1^m$ ($4^h\ 45^m$)

~~24A~~

11 22
4 45
G.M.T. 16 07
341.3

11 12 Central – not quite certain of it
33. now past – difficult.
} 11 22

12 06 Central, very slight contrast
12 17 just passing central – difficult.
} 12 08

√24A = C5   Long. v.

12 08
4 45
G.M.T. 16 53
352.5

✓ 25 = $W_4 C_2$ Lat July 14 4 45

middle of canal 11 27 | S. 1.669 = 8.30

4 45 | N. 2.973 = 14.78 no cor.

S.m.T. 16 12 | 23.08

342,5

11.54

8 30

3 24

S $\frac{324}{1154}$,2808 ✓

S 16°,3

✓ 26 = W_4 Long v. " "

11 10 | 11 26 fast already } Say 11 10 (central)

4 45

S.m.T. 15 55

338,4

✓ $27'$ = Y_1 Lat " "

middle of canal 11 41 | S - 2.620 = 13.03

4 45 | N. 1.993 = 9.91 no cor.

S.m.T. 16 26 | 22.94

345,9

11,47

9 91

1 56

N $\frac{156}{1147}$,1360 ✓

N 7°,8

✓ $27''$ - Y_1 Long v " "

11 38 | 11 30 not yet central

4 45 | 34 central } 11 38

S.m.T. 16 23 | 46 just past central,

345,2

$0''.54 \div 2 = 0''.27$ f

✓27A = Z | Long v. | July 14 | 4 45

12 44 | 12 38 Central

4 45 | 46 still "

G.M.T. 17 29 | 52 passing off from central } 12 44

1.3

✓28 = P_3 | Lat | " | "

11 53 | N. 0.289 = 1.44

4 45 | S. 4.270 = 21.23 no lor

G.M.T. 16 38 | 2 | 22.67

348.8

11.34

1 44

990

N $\frac{990}{1134}$

✓29 = Su 12A | Long v. | " | "

12 24 | Central

4 45

G.M.T. 17 09

356.4

✓29A = Z, | Long. v. | " | "

12 29 | Central

4 45

G.M.T. 17 14

357.6

✓30 = Z_2 (poss. Z_3) Long. v. July 14 4 . 45

12 40 | 12 36 Central } 12 40
4 45 | 57 just " }
Sm. T., 17 25 |
600.3

✓31 = A_5 Long. v. " "

13 00 | 12 55 Central } 13 00
4 45 | 13 08 just past. }
Sm. T., 17 45 |
5.2

✓32 = C_1 Long. v. " "

12 57 Central
4 45
Sm. T., 17 42
4.4

✓32A = F_5 Long. v.

12 57 Central.
4 45
Sm. T., 17 42
4.4

✓33' = W Lat. July 15 4 . 45.5 ± 1 (4 46)

11 09 | S. 2.527 = 12".57 noted.
4 46 | N. 2.188 = 10.88
Sm. T., 15 55 | 23.45
329.4
11.72
10.88
84

N $\frac{84}{1172}$ (D)

1896phae.proj..79ZD

✓33" = W Long. v. July 15 4 46

10 38 | 10 28 Central } 10 38 Seeing bad
4 46 | 48 last " }
G.M.T. 15 24

321.8

0".50 ÷ 2 = 0".25

✓34 = T_2 Long. v. " "

10 36 | 10 34 Central - found it so. Seeing bad } 10 36
4 46 | 10 45 last central
G.M.T. 15 22

321.3

✓35 = T Long. v. " "

11 06 | 10 48 not yet central }
4 46 | 53 Central } 11 06
G.M.T. 15 52 | 11 20 last "

328.6

✓36' = W_2 Lat. " "

11 26 | S. 2.505 = 12.46
4 46 | N. 2.553 = 12.70 no cor
G.M.T. 16 12

25.16
12.58
46
12

333.5

S 12
1258

✓36'' = W₂ | Long 2 | July 15 | 4 46

11 11 | 11 15 Found central — think it will soon be past. } 11 11

4 46 | 11 21 last central

G.M.T. 15 57

329.8

0''.25

✓37' = U | Lat | July 16 | 4 43.5 ±1 (4 44)

10.04 | S. 3030 = 15''.07

4 44 | N. 1.741 = 8.66 no color

G.M.T. 14 48 | 23.73

304.0 | 11.86

8 66

3 20

N $\frac{320}{1186}$

✓37'' = U | Long 2. | '' | 4

10 00 | 10 13 just past } 10 00

4 44

G.M.T. 14 44 | .46 ÷ 2 = .23

303.0

✓38 = U₃ | Long. m (α v) | 10 13 just past, '' } 10 00 difficult. | 4

10 48 | f 3.009 14.96 = ~~14.96~~ | 14.96

4 44 | p 1.545 = 7.68 + .47 + 24 = ~~8.39~~ | 8.89

G.M.T. 15 32 | (5-m)'' .25 × .94 = ''.24 | ~~23.35~~ | 23.35

314.8 | ~~22.64~~ | ~~11.68~~ | 11.68

+.24 | ~~8.38~~ | 8.38

p $\frac{330}{1167}$ | ~~22.88~~ | ~~329~~ | 330

330⁺

0°,2 will be time accuracy

√39 = U_4 Lat July 16 4 44

10 21 | S 3.779 = 18.79
4 44 | N .944 = 4.69 no cor.
Gm.T. 15 05

2 | 23.48
11.74
4 69
7 05

308.2

N 705
1174

√40 = U_1 Long " "

10 37 | f 3.276 = 16.29 16.29
4 44 | p 1.301 = 6.47 + .47 + 23 = 7.17
Gm.T. 15 21 | (5^{m})".25 × .92 = .23

~~22.76~~
+.23
~~22.99~~

2 | 23.46
11.73
7 17
4.56

312.1

p 456
1173

√41 = T_2 Long. V. " "

11 08 | 10 58 Central
4 44 | 11 14 still " } 11 08
Gm.T. 15 52 | 20 last "

319.6

√42' = W Lat " "

11 44 | S 2.511 = 12.49
~~11 11 Central~~
4 44 | N 2.105 = 10.47 no cor
Gm.T. 16 28

| 22.96
11.48
10 47
1 01

328.4

N 101
1148

✓ 42" = W | Long. v. July 16. 4 44

11 23 | 11 11 Central
4 44 | 36 last Central, } 11 23
G.M.T. 16 07 |

.46 ÷ 2 = .23

323.3

✓ 43 = W₁ | Long. v. " "

11 50 | 11 50 found - central
4 44 | 12 00 just past " } 11 50
G.M.T. 16 34 |

329.9

✓ 44 = W₃ | Lat " "

11 57 | S 1.760 = 8.75
4 44 | N 2.809 = 13.97 no cor.
G.M.T. 16 41 |

22.72
11.36
8 75
2 61

331.6

S 261
1136

✓ 45 = Y₂ | Long. v. " "

12 13 | 12 02 first central
4 44 | 25 last " } 12 13
G.M.T. 16 57 |

335.5

B

Accuracy of Long. v. = 1°.5 to 4°.0
(objects are called central during an interval 12^m to 32^m)

v 46' = Y, Lat July 16

13 02 | S. 2736 = 13.61 no cor.
4 44 | N. 2029 = 10.09
G.M.T. $\boxed{17\ 46}$ 2 $\boxed{23.70}$
347.4 11.85
N 10 09
N 176

N $\frac{176}{1185}$

v 46'' = Y, Long. v.

12 40 | 12 34 Central first } 12 40
4 44 | 48 last }
G.M.T. 17 24
342.1

+0''.23

v 47 = Y Long. v.

12 48 | 12 48 Central " } 12 48
4 44 | 55 last " }
G.M.T. 17 32
344.0

v 48 = Z Long. v. "

13 32 | Central
4 44
G.M.T. 18 16
354.7

In 49-53 the P.A. was 264.5 instead of 264.1 {(The numbers increase in wrong direction).

r 49' = W Lat July 17. 4 45.5 ± 1 (4 46-)

9 28 | S 2.432 = 12,09
4 46 | N 2.361 = 11.74 not cor
G.M.T. 14 14 |
286.8

2 | 23.83
~~11.74~~
11.92
N 11 74
N, .18

N $\frac{18}{1192}$ (P.A)

---

r 49'' = W Long (See P.A. 49)

9 37 | ~~f~~ p 3,560 = 17.70
4 46 | ~~p~~ f 1.204 = 5.97 + 0.4~~f~~2 + .22 =
G.M.T. 14 23 | (s m) = +.26
289.0

23.67

Lat. - .005
Long. - .03

17.70
6.63~~0~~ +1
24.3~~0~~1
12.15

p 6.63
5 5~~2~~

p $\frac{552}{1217}$ (P.A)

p ~~17.70~~ + .42 + .22 = 18.12
f 5.97
17.70 + 42 = 18.12
5.97 - 22 = 5.75

75
5.~~97~~
23.87
~~12.16~~
11.94 = R,

12.16 11.94
f 5.97 5.75
6.19 + 6.19 = I

f 6.19
~~12.16~~
11.94

---

r 50 = U, Long v. (See P.A. 49)

9 40 | 9 26 first central } 9 40
4 46 | 54 last "
G.M.T. 14 26 |
289.7

---

r 51 = U4 Long v. (See P.A. 49)

9 55 | 10 05 last central } 9 55
4 46 |
G.M.T. 14 41
293.4

(2.44)

52 = Z | Lat (See P.A. 49) July 17 4 46

10 51 | S. 2.650 = 13.18 no cor.

4 46 | N. 2.192 = 10.90

Sm. T. 15 37

23.98

307.0

11 99

N 10 90

$N \frac{109}{1199}$ (PA) =

1 09

53′ = W | Lat (See P.A. 49) 4 11

11 06 | S 2.539 = 12.63 cor.

4 46 | N 2.240 = 11.14 No

Sm. T. 15 52

23.77

310.7

11 88

$N \frac{74}{1188}$ (PA) =

11 14

N 74

53″ = W | Long. (See P.A. 49) 4 1

11 ~~15~~ 18 | ~~S.~~ p. 2.668 = 13.27 | 13.27

4 46 | ~~N.~~ f. 2.111 = 10.50 + 0.42 + 25 = | 11.16 +0.1

Sm. T. 16 ~~01~~ 04 | (5m) = +.25 | ~~23.77~~ | 24.43 4 +1.

312.9

1st - .005

Long - .004

.25+

$p = 13{\cdot}27 + .42$ ~~+.25~~

$f = 10{\cdot}50 - .25$

12.22

11.16

$p \frac{106}{1222}$ (PA)

p = 1 06

~~12.22~~

~~10.50~~

~~f = 1.72~~

f 13.69

p 10.25 ~~+.42 +.25~~

23.94

11.97

10.25

1.72

X = +1.72

R. = 11.97

---

54 = W | Long. V. (See P.A. 49) 11

11 45 | 11 45 found - central } 11 45

4 46 | 59 " fast

Sm. T. 16 31

320.2

12 15

✓55 = Z Lat July 17 4 46

11 54 | S 2,568 = ~~12.2~~ 12.77
4 46 | N 2.095 = 10.42 no color
Gr.M.T. 16 40 | 23.19
322.4 11.60
N 118/1160 10.42
N 1 18

✓56 = W_1+W_3 Long. v_1 " 4

12 16 | 12 10 first central } 12 16
4 46 | 24 just past "
Gr.M.T. 17 02
327.7

✓57 = X_3 Long. v_1 " 1

12 19 | 12 12 first central } 12 19
~~1703~~ 4 46 | 24 still "
Gr.M.T. 17 05
328.5

✓58' = W_2 Lat. " 4

12 34 | S. 2.524 = 12.50
4 46 | N 2.171 = 10.80 no color
Gr.M.T. 17 20 | 23.30
332.1 11 65
N 85/1165 10.80
N 85

1,57 6

✓5 8'' = W | Long (N.B.) July 17 4 46

12 17 | p 1.860 = 9,25 + 0.42 = 9.67

4 46 | f 2.794 = 13.89 − .18 = 13,71

G.M.T. 17 03 | (4^m) = − .20 ~~23,14~~ 23.38

(− 005 11,69

13 p 9,67

− .18 p 2 02

328,0

p $\frac{202}{1169}$

✓5 9' = Z | Lat " "

13 14 | S 2.757 = 13.71 N

4 46 | N 2,037 = 10.13

G.M.T. 18 00 | 23.84

11 92

N 10 13

1 7 9

341,9

N $\frac{179}{1192}$

✓5 9'' = Z | Long " "

13 30 | p 2.798 = 13.91 + .42 = 14.33

4 46 | f 1.962 9.76 − ~~29~~ 30 = 9.47 − f.

G.M.T. 18 16 | (−6^m) = − .30 ~~23.67~~ 23. 80 − f.

Lat 0 11 90 −.5

Long 1 f 9 47 −.5

− .30 f 2 43

345,8

f $\frac{243}{1190}$

✓60 = Z | Long N. " "

14 05 | 13 58 first central } 14 05

4 46 | 14 12 last "

G.M.T. 18 51

354.3

✓61 = W   Lat   July 17   4 46

14 04 | S 2.431 = 12.09
4 46 | N 2.258 = 11.23 no cor
G.M.T. 18 50 | 23.32
354.1   11 66
N 43/1166 =   N 11 23
43

✓62 = A₄⁴   Lat   (N.B.) (S)   "   "

14 23 | N 2.161 = 10.75
4 46 | S 2.525 = 12.56 no cor
G.M.T. 19 09 | 23.31
358.7   11 66
N 91/1166 =   N 10 75
91

✓63 = B   Long V.   "   "

15 00 | 14 55 Probably crosses at 15ʰ 00ᵐ
4 46
G.M.T. 19 46
7.7

---

this & next mment

✓64" = Z   Long ~~Lat~~   P.A. set 350° instead of 354.1 (Nos increase in wrong direc.)   July 17 (D is first)   4 50.5 ± 1 (4.51)
(doubtful one)

15 17 | p. 1.677 = 8.34 + .42 = 8.76
4 51 | f. 3.414 = 16.98 − .~~42~~ 39   16.5~~6~~9
G.M.T. 20 08 (−8ᵐ) = − .441   ~~25.32~~   25.3~~2~~5
13.1   − .004   12.6~~6~~8
2
p 39~~0~~2/1266 (PA)/(D) =   ~~.42~~ .39   p 876
39~~0~~2

(3.17) ⑤⑤⑧

P.A. 260.0 instead of 264°.1 (Pos. micrometer in wrong direc.)

64' = 2 (doubtful use)

Lat (see last) ~~Average~~ (D's first) July 17. 4 51

15 36 | S. 2.978 = 14.81 cor.

4 51 | N. 2.529 = 12.58 no

G.M.T. 20 27 | $\boxed{27.39}$!

17.7

13.70

N 12 58

1 12

N $\frac{112}{1370}$ (PA) (D)

---

65 = 2

Lat P.A. taken & set at 261.9, cf others.

(N.B.)

17 10 | N. 2.356 = 11.72

4 51 | S. 2.686 = 13.36 no cor

G.M.T. 22 01 | $\boxed{25.08}$

40.6.

12 54

N. 11 72

82

N $\frac{82}{1254}$ (PA)

100

---

66 = 2 Lat July 18 D $4^h\ 50^m.9$ (ϖ − 6^m)

N.B.

12 30 | N. 2.090 = 10.39

4 51 | S. 2.884 = 14.34 no cor

G.M.T. 17 21 | $\boxed{24.73}$

323.4

12 36

N 10 39

197

N $\frac{197}{1236}$

67' = P_3 Lat July 19 P $4^h\ 45^m.5 \pm 1^m$

Two far N to measure well.

9 39 | S. 2.996 = 14.90

4 46 | N. 1.521. 7.56 cor

G.M.T. 14 25 | $\boxed{22.46}$ 5

271.6

11 23

N 7 56

3 67

N $\frac{367}{1123}$

✓ 67'' = P₃ | Long. v. — July 19. P. — 4 46

9 15 | 9 31 just past central } 9 15.

4 46

G.M.T. 14 01

265.7

$0''.36 \div 2 = 0''.18$

✓ 68' = P₄ | Lat — 4

9 54 | S 2.850 = 14.17

4 46 | N 1.781 = 8.86

G.M.T. 14 40 | 23.03 no cor

275.2

N 266 / 1152

11 52

8 86

N 2 66

✓ 68'' = P₄ | Long v. — 4 — 4

~~10 00~~ 9 56 | 10 00 central } ~~10 00~~ 9 56

4 46 | 10 past "

G.M.T. 14 42

275.7

$+0''.18$

✓ 69 = W. | Lat — 4 — 4

10 09 | S 2.305 = 11.46

4 46 | N 2.375 = 11.81 no cor

G.M.T. 14 55 | 23.27

278.9

S 18 / 1164 =

11 64

11 46

S 18

3..38 S_2 S

√69 A = S_1 to S_3 Long. V. July 19. P. 4 46

10 27 | central

4 46

G.M.T. 15 13

283.3

√70 = V_1 Long. V. 4 "

10 31 | 10 31 central } 10 31

4 46 | 41 last "

G.M.T. 15 17

284.2

√71 = V_3 Lat. " "

10 34 | S ——

4 46 | N 0.353 = 1.76

G.M.T. 15 20

285,0

Marth's Diam 23.45

Curve pg 235 + 0

2 | 23.45

1172

N 176

996

N $\frac{996}{1172}$ wt $\frac{1}{2}$

√72 = U_1 Long. V. " "

11 02 | 10 46 not quite central } 11 02

4 46 | 56. Central

G.M.T. 15 48 | 11 11 just past central

291.8

✓73 = U_4 Long. V. July 19. P. 4 46

11 20 | 11 14 first central
4 46 | 22 still " } 11 20
G.M.T. 16 06 | 25 last "

296.2

✓74 = $S_3 T_2$ Lat 4 "

✓

11 35 | S. 1.610 = 8,01
4 46 | N. 3,005 = 14,94 no cor
G.M.T. 16 21 | 22,95

299,8

11 48

S $\frac{347}{1148}$ = S 8 01

S 347

✓75' = W Lat 4 "

11 55 | S 2,487 = 12.37
4 46 | N 2,265 = 11,26 no cor
G.M.T. 16 41 | 23,63

304,7

11 82

N $\frac{56}{1182}$ 11 26

N 56

✓75" = W Long " "

12 10 | p 2,859 = 14,22 + ,35 = 14,57
4 46 | f 1,926 = 9,58 − $\overset{30}{\cancel{,29}}$ = 9,$\overset{28}{\cancel{29}}$
G.M.T. 16 56 (−6ᵐ) = − ,30' ~~23,80~~ 23,86⁵
(− ,006
(− ,006
,30

308.4

1193

f $\frac{264}{1193}$ = f 929

264

1896phae.proj..797P

(3.57) '88

r6 = T₂ | Long. v. | July 19 P | 4 46

12 41 | central
4 46
Gm. T. | 17 27

315.9

P.A. 262.0 for 2 pub {Gm 262.5 / 261.8}

r77′ = Z | Lat | July 19 D | 4h 51m.3 (or to -6m) 4h.51m

14 24 | S. 2.850 = 14.17
4 51 | N. 2.085 = 10.37 no cor
Gm. T. 19 15 | 24.54

12 27
N 10 37
1 90

342.2

N 190/1227 (PA)

---

r77″ = Z | Long | ″ | ″

14 39 | p 3.038 = 15.11 + .35 = 15.46
4 51 | f 1.665 = 8.28 - .43 7.85±
Gm. T. 19 30 | (-9m) = - .46+1. ~~23.39~~ 23.31±

Lat .005
Long - 3
.43+1.

11.65
7 85
f 3 8 0

345.9

f 380/1166 =

---

r18 = Z | Lat | ″ | ″

16 18 | S. 2.796 = 13.90
4 51 | N. 2.144 = 10.66 no cor
Gm. T. 21 09 | 24.56

12 28
10 66
N 1 6 2

10.0

N 162/1228 =

(4 46)

$4^{h}\ \overset{\text{mean}}{45.5} \pm 1^{m}$

✓79 = P_4 Lat July 20. P.

8 37 | S. 2,790 = 13.87
4 46 | N. 1,873 = 9.31 no cor
G.M.T. 13 23 | 23.18
247.5

11 59
9 31
N 2 28

N $\frac{228}{1159}$ =

✓80′ = P_4 Lat "

10 24 | S. 2,803 = 13.94
4 46 | N. 1,815 = 9.03 no cor
G.M.T. 15 10 | 22.97
273.6

11 48
9 03
N 2 45

N $\frac{245}{1148}$ =

✓80″ = P_4 Long v. "

10 40 | 10 29 not yet central } 10 40
4 46 | ~~10~~ 35 Central
G.M.T. 15 26
277.5

0″.32 ÷ 2 = 0″.16

✓81 = V_1 Long v "

11 28 | 11 21 first central } 11 28
4 46 | 36 just past "
G.M.T. 16 14
289.2

(4,,14) (S)

✓ 82 = W | Lat sm. (αv) July 20 . ? 4 46

appears to give more S than N.

11 28 | S 2.440 = 12,13
4 46 | N 2.451 = 12,19 no cor
Sm. Y. 16 14 | 24,32

289.2

S $\frac{3}{1216}$ =

1216
1213
S 3

✓ 83 = P₄ Lat " "

11 45 | S 2.709 = 13,47
4 46 | N 2.013 = 10,01 no cor
Sm. Y. 16 31 | 23,48

293.3

N $\frac{173}{1174}$ =

1174
1001
N 173

✓ 4' = U₄ Lat " "

11 59 | S 3.873 = 19,26
~~7643~~ 4 46 | N 1.047 = 5,21 no cor
Sm. Y. 16 45 | 24,47

296.8

N $\frac{703}{1224}$ =

1224
521
N. 703

✓ 4'' = U₄ Long. v. " "

11 57 | 11' 50 found central }
4 46 | 12 07 last " } 11 57
Sm. Y. 16 43

296.3

+.16

✓85 = U_4 Lat NB not Cor for Th. 80 July 20 Taken Bet. Th. P, 4 46,

(Bet Th)

12 16 | N. 1,091 = 5,43 fr 219 − .30 = 5.13

4 46 | S. 3.812 = 18,96 = 18.96

~~24.39~~ 24.09

ΣM.T. 17 02 | 12 04

300.9 N 5 13

N $\frac{691}{1204}$ 691

✓86′ = W Lat u 4

12 40 | S, 2.508 = 12,47

4 46 | N, 2.343 = 11.65 no Cor

ΣM.T. 17 26 | 24.12

306.8 12 06

N $\frac{41}{1206}$ 11 65

N 41

✓86″ = W Long. V. (x fort m) (omit) 4 4

13 30 | 13 22 first central } 13 3.0

4 46 | 39 last "

ΣM.T. 18 16

318.9 +0°.16

✓87 = P_4 Lat ⑤ July 20 D 4^h $51^m.7$ (or $^m7$)

13 57 | S, 2.677 = 13.31

4 52 | N, 2.507 = 12.47

ΣM.T. 18 49 | 25.78 no Cor

327.0 12 89

N $\frac{42}{1289}$ = 12 47

N 42

(4 „ 38) J

√ 8' = W Lat July 20 D 4 52 ±

14 35 | NB N. 2,314 = 11,51 ✓
4 52 | S. 2.475 = 12,31 ✓
S.m.T. 19 27 23.82
336.3 1191
N $\frac{40}{1191}$ = N 1151
40

√ 8 8'' = W Long 1 4

14 50 | p 1.686 = 8.38 + .32 = 8.70
4 52 | f 3.076 = 15.30 - .46 = 14.884
S.m.T. 19 42 (-9m) = - .48 ~~23.68~~ 23.584
339.9 -.01 11787
p $\frac{307}{1178}$ = 1 p 870
.46 3087

(S.m.T. 13 30 on No 90)

√ 8 9' = N4 Lat July 21 . P, 4.45 4h 45m.3 ± 1m

8 53 | S, 1.146 = 5.70 ✓
4 45 | N, 3.506 = 17.43 ✓
S.m.T. 13 38 23.13
242.2 1156
S $\frac{586}{1156}$ = S 570
586

√ 8 9'' = N4 Long v1 " "

9 04 | 8.47 first central
4 45 | 9 00 . still "
S.m.T. 13 49 | 18 " "
244.9 22 last "
.35m

9 04

.30 ÷ 2 = .15

(Hour) = time of all to off. of value. Mic^d to Sec^s.

[26^m to fill in 1^st lines on 14 pages, i.e. 56, 1^st lines]
[2^h 09^m to fill in rest up to reduction to Seconds of arc.

✓ 90' = P_2? Lat (S) July 21 ? 4 45

9 09 | S. 2.589 = 12.87 wo cor
4 45 | N. 2.090 = 10.39

G.M.T. 13 54

246.1

23.26
11 63
N 10 39
1 24

N $\frac{124}{1163}$ =

✓ 90'' = P_2? Long. V. " 1

8 45 | 9 00 first past central } 8 ~~4~~5
4 45 |

G.M.T. 13 30

240.3

✓ 91' = P_3 Lat " 4

9 59 | S. 3.204 = 15.93 wo cor
4 45 | N. 1.413 = 7.03

G.M.T. 14 44

255.3

22.96
11 48
7 03
N 4 45

N $\frac{445}{1148}$ =

✓ 91'' = P_3 Long. V. " 4

10 36 | 10 31 first central } 10 36
4 40 | 42 past "

G.M.T. 15 21

267.3

(137)

time 4.53

✓92 = P4 Long v July 21 P 4 45

11 24 central

4 45

G.M.T. 16 09

279.1

×

✓93' = N4 Lat ~~24~~ (Here & hereafter not Cor for Bub. Th.) July 22 . P, 4h 44m.7 ± 1m

Rest of Long. lat in blue

9 ~~11~~ 24 | S 1.2226 Bub. Th. 6.10 − 19219/.30 = 5.80

4 45 | N. 3.522 ~~[illegible]~~

17.51 17.51

~~23.64~~ 23.31

G.M.T. ~~1~~4 09 1166

240.9

$S \frac{586}{1166}$ * S $\frac{580}{586}$

No 94 = 14 15

✓93" = N4 Long v, "

9 48 | 9 38? not quite central } 9.48

4 45 | 43 Central

G.M.T. 14 33

246.7

.26 ÷ 2 = ±.13

No 95 = 14 39

✓94' = P2? Lat "

9 57 | S, 2.608 = 12.97

4 45 | N, 2.108 = 10.48 no Cor

G.M.T. 14 42 23.45

248.9 1172

$N \frac{124}{1172}$ = N $\frac{1048}{124}$

✓ 94" = P₂? Long. v. July 22, P. 4 45

9 30 | 9 43 just past } 9 30

4 45

G.M.T. 14 15 +.13

242.4

✓ 95 = R₂? & P₂ Long. v.

9 54 | 9. 46 just central, } 9 54

4 45

G.M.T. 14 39

248.2

✓ 96 = W Long. v. July 22, D, 4 45.1 (orbit 3?)

14 50 | about on meridian. (4 46)

4 46

G.M.T. 19 36

320.6

✓ 97A = O_b Long. v. July 23 P 4 44.0 ± 1

8 10(?) | 8 30 already has crossed merid } 8 10 (roughly)

4 44

213.7 G.M.T. 12 54(? roughly)

✓ 97B. O₁ 8 54 | 8 46 Central } 8 54

4 44 | 9 01 "

G.M.T. 13 38

224.4

555
48

✓98 = P₁ Long. v. July 23. P. 4 44

9 24 | 9 15 first central
4 44 | 25 still " } 9 24
G.M.T. 14 08 | 33 last "

231.7

✓99 = ~~K₅~~ Long. v. "
P₂ (?)

10 20 | 10 15 first central } 10 20
4 44 | 28 just past "
G.M.T. 15 04

245.4

✓100 = R₁ Long. v. "

10 37 | 10 30 first central } 10 37
4 44 | 46 just past "
G.M.T. 15 21

249.5

150

✓101 = T₃ Long. ~~v.~~ "

14 14 | f 2.951 = ~~10.20~~ 14.67
4 46 | p 1.816   9.03 + .22 + .2~~1~~9 =
G.M.T. 19 00 (+6^m) = + ~~.25~~ .32
Lat 30° −.03

302.9

p ~~40 37 64~~ (p) 256/1210

~~10.20~~
~~9.47~~ 54
~~19.67~~ 74
~~9.8~~ 47
~~9.47~~
p ~~37~~
~~40~~

14.67
9.54
24.21
12.10
9.54
2.56

✓
✓
✓
✓

✓ 102 = U Prob Lat. July 24. D. 4h 46m.5 (or to 57s) (4 47)

16 31 | Prob. S 2.606 = 12.96

4 47 | " N 2.546 = 12.66

25.62

Sid. T. 21 18

~~336.6~~ 327.7

N(?) $\frac{15}{1281}$

1281

1266

d? 15

✓ 103 = F4 Prob. Lat. "

16 39 | (Prob.) S. 1.969 = 9.79

4 47 | N. 3.255 = 16.19

25.98

Sid. T. 21 26

~~332.5~~ 329.6

S? $\frac{320}{1299}$

1299

979

S 320

subsq. {13 27, 38, 52}

✓ 104' = N3 Lat July 25. P. 4h 43m.7 ± 1m

~~8 45~~ 9 14 | S 1.244 = 6.19

4 44 | N 3.450 = 17.16 no cor

23.35

Sid. T. 13 58

211.5

S $\frac{549}{1168}$ =

1168

619

S 549

✓ 104" = N3 Long "

8 43 | p 2.630 = 13.08 + .17 = 13.25

4 44 | f 2.537 = 12.62 − .18− = 12.44+

Sid. T. 13 27 | (−5m) = −.28 −1. ~~25.70~~ 25.69+

203.9

Lat 52 = − .18−

12.85

12.44

f 41

f $\frac{41}{1285}$ =

25 35 S.

√105′ = N_2 Lat July 25 P 4 44

9 08 | S, 1,002 = 4,98 Wd

4 44 | N. 3,840 = 19,10 N°

Sid T, 13 52 24.08

210,0.

1204

498

S $\frac{706}{1204}$ = S, 706

√105″ = N_2 Long

8 54 | p 2,130 = 10,59 +,17 = 10,76

4 44 | f 2,845 = 14,15 −,18 13,97+

Sid T, 13 38 (-5m) = −,27 ~~24,74~~ 24,73+

206,6 Lat 52 − 9

−,18

12,37

10 76

p $\frac{161}{1237}$ = p 161

~~14 00~~

(14 09)

√10C′ = N_6 Lat

9 28 | S. 2,255 = 11,21 Wd

4 44 | N. 2,484 = 12,35 N°

Sid T, 14 12 23,56

214,9

1178

11 21

S $\frac{57}{1178}$ = S 57

√106″ = N_6 Long V,

9 25 | on merid.

4 44

Sid T, 14 09 0″.20 ÷ 2 = +0″.10

214.2

14 29

✓107 = Q1 Long (+ʊ) July 25. P. 4 44

10 09 | f 3.152 = 15.67 = ~~15.67~~ 15.67

4 44 | p 1.556 = 7.74 + .17 + .23⁺¹ = 8.14 8.07 wt $\frac{3}{2}$

Gm.T. 14 53 | (+5ᵐ) = + .26⁺¹ ~~23.41~~ 23.74

Lat 28° = −.01 −.02 = .23

224.9

4 ? ∂ α p at 10.05 of 1.603 = 7.97 (−4ᵐ) − .14⁺¹ = 7.83 1187 793

p $\frac{394}{1180}$ wt $\frac{5}{4}$ at 9.36 – just passed } 9 16 / 4 44 / 107 A. Gm.T. 14 00

(6 settings)

~~15.97~~ ~~8.00~~ 8.00 .14 mean 8.07 p 3934

✓108 = Q4 Lat "

9 45 | S 3.610 = 17.95 w

4 44 | N 1.218 = 6.06 no

Gm.T. 14 29 | 24.01

219.0 12 00

6 06

N $\frac{594}{1200}$ = 0.4950 N 594

= N 29.°7

✓109 = R (or R2) Long "

10 32 | p 2.625 = 13.~~05~~ 02 mean + .17 = 13.19 wt $\frac{3}{2}$

4 44 | f 2.404 = 11.95 − .26 11.69

Gm.T. 15 16 | (−5ᵐ) = − .27 ~~25.60~~ 24.88

Lat+18. −.01 / .26

230.5

∂ α p = 2.615 = 13.00 at 10 26 12 44

11 69

f $\frac{75}{1244}$ (wt $\frac{5}{4}$) f 75

✓110′ = S Lat July 25 D 4ʰ 46.ᵐ9 (corr to 50ᵐ)

13 44 | S. 1.039 = 5.17

4 47 | N. 3.649 = 18.15 no corr

Gm.T. 18 31 | 23.32

278.1 11 66

S $\frac{649}{1166}$ 5 17

S 649

Reduced to Sec² 35 in 45ᵐ by mach } table better.
18 in 13ᵐ by table

(163)

90ᵐ to fill in 25 as long as Red. to Sec.

5 25 48

✓10" = S Long July 25. D. 4 47

13 56 | N.B. p = 2.305 = 11.46 + .17 = 11.63
4 47 | f = 2.764 = 13.74 − .15 = 13.59
Gm T, 18 43 | (−5m) = −.27 ~~26.20~~ 2522
281.0

Lat Say 53° = −.11
−.16 or .15 say

1261
1163

p 98/1261 =

p 98

✓111 = U_4 Lat " 4

14 15 | S. 4.040 = 20.09
4 47 | N. 0.796 = 3.96 no cor
Gm T, 19 02 | 24.05
285.6

1202

N 806/1202

N 396
806

✓112 U Lat " 4

14 28 | N = 2.334 = 11.61
4 47 | S = 3.027 = 15.05 no cor
X Gm T, 19 15 ✓26.66✓
288.8

1333

N 172/1333 =

N 1161
172

✓113 T_4 Lat July 25. P. $4^h\ 43.7^m \pm 1^m$ ✓ ✓

15 44 | S 1.775 = 8.83
4 44 | N 3.089 = 15.36 no cor.
Gm T, 20 28 | 24.13
306.6

1206

S. 323/1206

S 883
323

✓114 = M₁ Long July 26, P. 4^h $43.8^m \pm 1^m$

8 47 | p = 1.493 = 7.42 + .14 = 7.56
4 44 | f = 3.575 = 17.78 − .14³ = 17.64³
Gm T. 13 31 | (−4ᵐ) = −.22 ~~25.20~~ 25.20 (19)
196.0
45° Lat −.07
Long 27½ −.2
.19
1260
p $\frac{504}{1260}$ = p 756
504

✓115 = M₂ Long 4

8 55 | p = 2.089 = 10.39 + .14 = 10.53
4 44 | f = 3.074 = 15.29 − .15 = 15.14
Gm T. 13 39 | (−4ᵐ) = −.22 ~~25.68~~ 25.67
198.0
Same Lat (−.07
.15
1283
p $\frac{230}{1283}$ = p 1053
230

✓116 = M₃ Long 4

9 07 | p = 2.601 = 12.93 + .14 = 13.07
4 44 | f = 2.341 = 11.64 − .13 = 11.51
Gm T. 13 51 | (−3½) = −.19 ~~24.57~~ 24.58
200.9
Same Lat −.06
−.13
1229
f $\frac{78}{1229}$ = f 1151
78

✓117 = M₄ Lat 4

9 26 | S 1.072 = 5.33
4 44 | N 3.730 = 18.55 + .01
Gm T. 14 10 | 23.89 ✓
205.5
1194
S $\frac{661}{1194}$ S 533
661

53 + 35

(Except for 118)

√118 = O_2 Long July 26 D, 4^h $43^m.8$ (or < 46^m)

11 04 | p 2.337 = 11.62 + .14 = 11.76
4 47 | f 2.529 = 12.58 − 15 = 12.43
S.M.T. 15 51 | (prob − 4^m (or 5^m)) = −.22 ~~.24~~ ~~.20~~ 24.19
230.2 Lat 45. −.07 12 10
−15 p 11 76
34

p $\frac{34}{1210}$ =

√119 = O_3 Long " "

11 29 | p. 2.146 = 10.67 + .14 = 10.81
4 44 | f 2.802 = 13.93 − .08 = 13.85
S.M.T. 16 13 | (f $3\frac{1}{2}^m$) = −.19 ~~24.60~~ 24.66
235.5 Say Lat −65 −.11 = .08 12 33
−.08 p 10 81
1 52

p $\frac{152}{1233}$

1624

√120′ = O_4 Lat " "

12 50 | N, 3.107 = 15.45 + .01
4 44 | S. 1.845 = 9.17
S.M.T. 17 34 | 24.63
12 32
S 9 17
3 15

~~239.2~~
255.3

S $\frac{315}{1232}$ =

√120″ = O_4 Long , " "

11 40 | f = 2.569 = 12.77 12.77
4 44 | p = 2.426 = 12.06 + .14 + .13 = 12.33
S.M.T. 16 24 | (+ assume 3^m) = + .16 ~~24.83~~ 25 10
238.2 Say Lat 35 = −.03 12 55
+ 13 p 12 33
22

p $\frac{22}{1255}$

N.B. In reducing Long^s
a Lat. is assigned from Lowell's map.
The Long. marked after in the same place is really the distance
from the P.V.

r120 A = Su13. Long, July 26 D 4 44

14 ~~02~~ | f 1.447 = 7.20 — 7.20
4 44 | p 3.456 = 17.19 + .14 + limb snow 0 = 17.33
G.M.T. 18 46 | (+6^m) = +.32 ~~24.39~~ — 24.53
272.8 f 506/1226 — 1226
f 720
506

---

r120B = Su14, Long, " "
1
14 14 | f 3.573 = 17.77 — 17.77
4 44 | p 1.759 = 8.75 +.14 + limb snow 0 = 8.89
G.M.T. 18 58 | (+5^m) = +.27 ~~26.52~~ — 26.66
275.8 p 444/1333 = — 1333
p 889
444

---

r121 = M3 Long July 27 P, 4 43.9 ± 1
8 20 | p = 3.322 = 16.52 +.11 = 16.63
4 44 | f = 1.680 = 8.35 −.17 = 8.18
G.M.T. 13 04 | (−5^m) = −.27 ~~24.87~~ — 24.81
180.6 — 1240
~~Lat −45 .09~~
~~Long ~~20~~ 23 (Su 4 & 14) − .01~~
~~− .17~~
f 422/1240 — f 818
422

---

14 05
r122' = M3 Lat "
9 36 | S, 1.128 = 5.61
4 44 | N. 3.605 = 17.93 + .01
G.M.T. 14 20 — 23.55
199.1 — 1178
S 617/1178 — S 561
617

45+25+25

✓122" = M₃ Long July 27, P, 4 44

9 21 | p = 2.924 = 14,54 +.11 = 14,65
4 44 | f 1.983 = 9,86 −.11 = 9.75
Gm.T., 14 05 | $(-3\tfrac{1}{4}^{u})$ = −.17 ~~24.40~~ 24.40
195.4

Lat −45 .06
Zen 13.3 .11

f $\frac{245}{1220}$

1220
f 9 75
2 45

✓123 = Q₃ Lat a

9 48 | N 0.429 Bel. Th. = 2.13 Bel. Th. /9219 −.30 phase cor. +.01 = 1,84
4 44 | S. 4.468 Us. way. = 22,22 = 22.22
Gm.T., 14 32 | ~~24,35~~ .00? 24.06
202.0

N $\frac{1019}{1203}$

1203
N 184
1019

✓124 = Q₄ Lat "

10 04 | S, 3,530 = 17.55
4 44 | N, 1,225 = 6,09 +.01
Gm.T., 14 48 | 23.65
205.9

N $\frac{572}{1182}$

1182
610
N 572

✓125 = Q₁ Long "

10 15 | p 2.421 = 12.04 +.11 = 12.15
4 44 | f 2.702 = 13,44 − 36 = 13.08
Gm.T., 14 59 | (-7^{u}) = −.38 ~~25.48~~ 25.23
208.6

Lat +180 −.02
.36

p $\frac{.47}{1262}$

12.62
p 12 15
47

√126 = O_3 Lat July 28. P. 4 44.0 ± 1

8 18 | S. 0.719 = 3.58

4 44 | N. 4.016 = 19.97 +.01

Sm.T., 13.02 | 23,56

171.2

$S\,\frac{820}{1178}$

1178

S 358

820

√127′ = M_3 Lat 4

8 23 | S 1.434 = 7.13

4 44 | N 3.548 = 17.64 +.01

Sm.T., 13 07 | 24.78

172.4

$S\,\frac{526}{1239}$

1239

S 713

526

---

13 13

√127″ = M_3 Long 4

10 51 | p: 2.467 = 12.27 +.09 = 12.36

4 44 | f = 2.690 = 13.38 −13 13.25

Sm.T., 15 35 | $(3\frac{1}{2}^{m}) = -.19$ ~~25,65~~ 25.61

208.5

Lat −45 $\frac{.06}{13}$

1280

$p\,\frac{44}{1280} =$

p 1236

44

√128 = O Lat 4

8 29 | S. 2.170 = 10.79

4 44 | N. 2.762 = 13.73 +.01

Sm.T., 13 13 | 24.53

173.9

$S\,\frac{147}{1226}$

1226

S 1079

147

24 to Red. in 70ᵐ

4 13
2.5
~~17 06~~
16 5 3' 6 7 12 unreal 14m [illegible] 14m

√129' = O Lat July 28 D 4 40.1 ± 1

12 44 | S 1.844 = 9.17
4. 45 | N 3.018 = 15.01 + .01
G.M.T. 17 29 |

24.19
12.10
S 9 17
2 9 3

236.3

S 293/1210

√129" = O Long 4

12 21 | p 2,554 = 12.70 + .09 = 12,79
4 45 | f 2,509 = 12,48 − .65 11,83
G.M.T. 17 06 | (−13m) = − .72 ~~25.18~~ 24.62
Lat −26 = −.65

230.7

1231
f 1183
48

f 48/1231

14 33

√130' = ⊥ x/4 Lat July 29. D. 4 (4 46) 45.5 ± 1

9 53 | N 3.358 = 16.70 + .02
4 46 | S 1.645 = 8.18
G.M.T. 14 39 |

24.90
1245
S 8 18
4 2 7

~~18 4.5~~
186.0

S 427/1245

√130" = ⊥ x/4 Long. V. "

9 47 Center of "b" on meridian
4 46
G.M.T. 14 33

184.5

0.06 ÷ 2 = +0.03

✓ 131 = $\perp_1$ Long July 29 D 4 46

10 01 | f = 2.536 = 12,61 = 12.61

4 46 | p = 2.201 = 10,94 +.07 +.10 = 11,11

Gm.T. 14 47 | (+ 2^m) = +.11 ~~23,55~~ 23.72

187,9

Say Lat -26. -.01

1186

p 11 11

p 75 / 1186

75

19 13

✓ 132' = $\perp_4$ Lat July 30. D, 4 44,2 ± 1

14 45 | S. (0.553 Bel. Th.) = 2.75 -.40 (Bel. Th. Pg 219) = 2.35

4 44 | N. 4.790 = 23,82 +.02 = 23.84

Gm.T. 19 29 ~~26.57~~ ~~.30?~~ 26.19

247,8

13.10

S 235

S 1075 / 1310

1075

✓ 132'' = $\perp_4$ Long "

14 29 | p 2.266 = 11,27 +.05 = 11.32

4 44 | f 3.041 = 15,12 -.09+ = 15.03-

Gm.T. 19 13 | (-5^m) = -.27½ ~~26,39~~ 26.35-

243.9

Say Lat 70° -.18 / .09

1317

p 11 32

p 185 / 1317

185

16 29

✓ 133' = P$_5$ Lat July 31 P 4 44,3 ± 1

12 07 | S 1.972 = 9,81

4 44 | N 2.774 = 13,79 +.02

Gm.T. 16 51 23,62

200.4

1181

S 981

S ~~280~~ 200 / 1181

200

(8 in 27^m) GR.

8 07
35
2
3

√133″ = P₅ Long July 31 . P. 4 44

11 45 | p. 2.556 = 12.71 +.04 = 12.75
4 44 | f 2.579 12.82 − .20 = 12.62
G.M.T. 16 29 | (− 4ᵐ) = −.22 ~~25.53~~ 25 37
195.1 (Lat −25) −.02 −20 12 68
f 12 62
6

f $\frac{6}{1268}$

1905

√134′ = M₅ Lat July 31 . D, 4 44.5 ± 1 (4 45ᵐ)

15 00 | S, 1.650 = 8.20
4 45 | N, 3.113 = 15.48 +.02
G.M.T. 19 45 | 23.~~68~~ 70
242.9 11 85
S 8 20
365

S $\frac{365}{1185}$

√134″ = M₅ Long, 1,

14 20 | p 1.696 = 8.43 +.04 = 8.47
4 45 | f 3.247 = 16.15 − .22⁺ = 15.93
G.M.T. 19 05 | $(-\overset{ab.}{5})$ = −.27½ ~~24.58~~ 24.40
233.1 ~~Sky~~ Lat −30 −.03½ 1½ 12.20
p 8 47
373

p $\frac{373}{1220}$ =

21 29

√135′ = P₂ Lat Rev. 1.000 in error Aug . 1, D 4 44.9 ± 1

17 09 | S, (1.663) F 8.287 ~~Lat~~ in error add 1 Rev. of Sc. 4.97 = 13.24
4 45 | N. 2.303 = ~~11.45 +.02~~ + 03 8 27 13 24 11.48
G.M.T. 21 54 | ~~19.76~~ 24.72
265.5 ~~9 88~~ 12.36
~~S 8 28~~ N 11 48
~~160~~ 88
1236

~~S $\frac{160}{988}$~~ (D) ~~13.0 9.3 Lat 22.3~~

N $\frac{88}{1236}$ = N 4°.1 13.0 4.1 Lat 8.9

✓135″ = ?₂ Long? Rev. 1,000 in error Aug 1 D, 4 45

16 4.4 | p = (1,109) = (5,51) + ,03 = 5.54 add 1 Rev. 4.97 = 10.51

4 45 | f = 3,097 = 15,40 − ,23 = 15, 17 15.17

Gm. T. 21 29 | (−5ᵐ) −.27½ ~~20,41~~ 20. 71 ! 25.68

259.4

Lat 12 1

Long 29° 3½

−23

1 0.36

5 54

4 8

1284

p 1051

233

~~p 482 / 1036~~ (D) = p 274 / 259.4 / 232 Error of 1,000 in f brings it 219 } Error is in p.

" " 1. " " p " " 245

259.4

p 10.6

248.8

p 233 / 1284

✓136′ = J Lat Aug 2, D, 4ʰ 45ᵐ.2 (or −2ᵐ)

9 29 | S, 2.471 = 12,29

4 45 | N, 2.618 = 13,02 +,03

Gm. T. 14 14 | 25,34

144.4

1267

S 37 / 1267 =

S 1229

37

✓136″ = J Long 11 1

9 38 | p 0,936 = 4,65 +,02 = 4.67

4 45 | f 4,036 = 20,07 − 21⁺ = 19 86

Gm. T. 14 23 | (−5ᵐ) = −.27½ ~~24,72~~ 24 53

146.6

Lat −17 −,01

Long 37 −,05⁺

−,21⁺

12 26

p 4 67

759

p 759 / 1226 =

✓137 = Sn15 Long u

10 55± | p = 3,448 = 17,1~~5~~ 7 4 (+,02)

.4 45 | f = 1,386 = 6,89

Gm. T. 15 40 | E & W limit. 24,0~~4~~ 6

165.4

1203

f 514 / 1203

f 689

514

,15
1
1

✓138 = Su 16 | Long | Aug 2. D.

11 05 ± | p 1.750 = 8,70 } +,02 = 8.72

4 45 | f N.B. 1.737 (prob. another p) = 8,64 } +,02? 8.66

G.M.T. 15 50 ± | Marth's Diam, 24".72 | p mean 8.69 wt 2

167.8 | Ds. Eq. Cor. fq 235 + 50

25,22

12,61

p $\frac{392}{1261}$ wt $\frac{1}{1}$? | p 8,69

392

✓139 = K | Lat | Aug 3. P. 4h 44m.6 (or -2m)

9 26 | S. 1.663 = 8,27

4 45 | N. 3.211 = 15,97 + ,04

G.M.T. 14 11 | 24,28

134,9 | 1214

S $\frac{387}{1214}$ | S 827

387

✓140' = 1₂ | Lat | Aug. 4, P. 4h 44m.7 (or -2m)

7 55 | S, 1.642 = 8,17

4 45 | N. 3,153 = 15,68 + ,04

G.M.T. 12 40 | 23,89

103.8 | 1194

S $\frac{817}{377}$ | S 817

377

---

12 50

✓140'' = 1₂ | Long

8 31 | p 2.069 = 10,29" nolor = 10 29

4 45 | f 2,995 = 14,89 N -,19 = 14.70

G.M.T. 13 16 | (-4m) = -.22 ~~25,18~~ | 24.99

112.6 | Lat 30° -.03 | 12.50

-.19

p $\frac{221}{1250}$ = | p 10.29

221

✓141 = H_2 Lat Aug. 4, P. 4 45

8 05 | S. 2.465 = 12.26

4 45 | N. 2.331 = 11.59 +.04

Gm.T. 12 50 |

23.89

106.3

1194

N $\frac{31}{1194}$ N 1163

31

13 48

✓142′ = K Lat "

9 29 | S. 1.697 = 8.44

4 45 | N. 3.226 = 16.04 +.04

Gm.T. 14 14 |

24.~~48~~ 52

126.7

1226

S $\frac{382}{1226}$ S 844

382

✓142″ = K Long 4

9 03 | p = 3.224 = 16.03 w/cor = 16.03

4 45 | f = 1.910 = 9.50 −.23 9.27

Gm.T. 13 48 | (−5m) = −.27½ ~~25.53~~ 25.30

Lat 30° 3½

Long 14½ 1−

120.4 −23−

1265

f $\frac{338}{1265}$ f 927

338

✓143′ = H4 Lat PA, 260.2 instead of 259.5 (pos inc. backd) Aug 5, P. 4 44.8 (or −3m)

7 37 S. 2.010 = 10.00

4 45 | N. 2.740 = 13.63 +.05

Gm.T. 12 22 |

23.68

90.6

1184

S $\frac{184}{1184}$ (P.A) 1000

S 184

,5
2
2
3

✓143″ = H4 Long Aug, 5. P. 4 448.

7 52 | p = 2,533 = 12,60 − 0 1260.

4 45 | f 2,646 = 13,16 − .26 = 12.90

Sm. T. 12 37 | (− 5^m) = −.27½ ~~25,76~~ 25,50

94.2

Say Lat −20° − 2 1275

.26 p 1260

15

p $\frac{15}{1275} = \frac{1}{85}$ = .011765

= p 0°.7

✓144 = I Lat 4

8 58 | S, 1,428 = 7,10

4 45 | N, 3.297 = 16.39 +.05

Sm. T. 13 43 | 23,~~49~~ 54

1177

110.3

S $\frac{467}{1177}$ S 710

467

✓145 = K Lat 4

10 28 | S, 1,605 = 7,98

4 45 | N. 3.116 = 15.49 +.05

Sm. T. 15 13 | 23,~~47~~ 52

1176

132.3

S $\frac{378}{1176}$ S 798

378

✓146 = K Long Aug, 5. D, 4 44.^{m}8 (or −4^m)

11 46 | p = 1,854 = 9,22 − 0 9,22

4 45 | f = 3,226 = ~~16,04~~ − .33 = 15.71

Sm. T. 16 31 | (− 7^m) = −.38½ ~~25,26~~ 24.93

151.3

Lat 30 − 5

Long 150½ 1

−.33 1246

p $\frac{324}{1246}$ = p 922

324

v147' = K₂ Lat aug. 5. D.

12 40 | S. 1,969 = 9,79

4 45 | N. 2,984 = 14,84 +,05

G.M.T. 17 25 | 24.~~83~~ 68

164.5

S $\frac{255}{1234}$

1234

S 979

255

---

v147" = K₂ Long "

13 01 | p 2,282 = 11.35 − 0 11.35

4 45 | f 2,980 = 14,82 − 38 = 14.44

G.M.T. 17 46 | (− 8ᵐ) = −.44 ~~26.17~~ 25.79

169.6

Lat 30° ± −.05½

Long 7½ −½

−.38

12.89

p 11.35

154

p $\frac{154}{1289}$ =

---

18 01

v148' = K₃ Lat "

13 33 | S 2.299 = 11.43

4 45 | N 2.860 = 14.22 +.05

G.M.T. 18 18 | 25.~~65~~ 70

177.4

S $\frac{142}{1285}$

1285

S 11 43

1.42

---

v148" = K₃ Long "

13 16 | p 2,787 = 13.86 − 0 13.86

4 45 | f 2,308 = 11.48 − 26 = 11.22

G.M.T. 18 01 | (− 5ᵐ) = −27½ ~~25.34~~ 2508

173.2

Lat 20° ± −2

−.26

1254

f 11 22

132

f $\frac{132}{1254}$ =

24 in 85ᵐ

6½ s

✓149 = I_4 Long Aug. 6. P. $4^h\ 44^m.9$ (or -3^m)

7 05 | p 2,310 = 11.49

4 45 | f 2,908 = 14,46 +,01 −,14 = 14.33

(11 45)

G.m.T. 11 50 | (-3^m) = −,16½ ~~25,95~~

73.9

Say Lat −35 = −,02½

−,14

11.49
14.33
(25.82
12,91
p 1149
142

p $\frac{142}{1291}$

✓150 = G_4 Long ½ ''

7 18 | p {1,087 Bel. Th.} = 5,41 (Bel. Th.) −.30 = 5.11

4 45

G.m.T. 12 03

77.1

Marth's Diam
Corr. pg 235.

− ~~24.78~~
~~.60~~
~~24.18~~
~~12.09~~

24.78
+.60
2538
1269
p 511
758

Mean Obs'd Eq. Rad =

p $\frac{758}{1269}$ wt ½

✓151 = F_4 Long v. ''

7 00 | 7 20 just past meridian } $7^h 00$

4 45

G.m.T. 11 45

72.7

✓152 = J Lat ''

7 29 | S : 2,342 = 11,65

4 45 | N = 2,444 = 12,15 +.05

G.m.T. 12 14

79.8

23,80 5
1192
S 1165
27

S $\frac{27}{1192}$

✓153 = J Lat Aug. 6, P. 4 45

7 39 | S 2.355 = 11,71
4 45 | N 2.429 = 12,08 +,05
Sid. T. 12 24 | 23,~~77~~ 84
82,2
1192
S 21/1192
S 1171
21

✓154' = H4 Lat 4

7 53 | S. 2,100 = 10,44
4 45 | N. 2,833 = 14,09 +.05
Sid. T. 12 38 | 24,5~~3~~8
85.6
1229
S 185/1229
S 1044
185

✓ 155' ~~154~~ = J ~~H4~~ ~~Long~~ Lat. u

Order Reversed

8 03 | S. 2.422 = 12,04
4 45 | N. 2.453 = 12,20 +.05
Sid. T. 12 48 | 24,2~~4~~9
88,1
1214
S 10/1214 =
S 1204
10

✓154'' = H4 Long, u

8 16 | p 2.671 = 13.28
4 45 | f 2.398 = 11.92 +.01 −.21 = 11.72
Sid. T. 13 01 | (−4m) = −.22 ~~25.20~~
91.2

Lat ab. −20°

.01+
−.21

f 78/1250

13.28
11.72
25 00
1250
f 1172
78

$\frac{G.S.}{2}$

✓ 155″ = J Long, Aug. 6, P. 4.. 45

8 26 | p = 3.440 = 17.11 17.11

4 45 | f 1.769 = 8,80 +.01 − .25 = 8.56

S.M.T. 13 11 | $(-5^m) = -.27\frac{1}{2}$ ~~25.91~~ 25,67

93.7

Lat − 17. $= -\frac{1}{22}$ = -1^+

Long 19° 1

−.25

$f\ \frac{428}{1284}$

1284

f 856

428

✓ ✓156 = H_3 Long, "

8 47 | p 2.599 = 12,92 12.92

4 45 | f 2.598 = 12,92 +.01 − 27 = 12.66

S.M.T. 13 32 | $(-5^m) = -.27\frac{1}{2}$ ~~25,84~~ 25.58

98,8

Lat 12° -1^-

−.27

$f\ \frac{13}{1279}$

1279

f 1266

13

✓ ✓157 = 1 Long "

9 01 | p 2.820 $(wt\frac{3}{2})$ = 14.02 $wt\frac{3}{2}$ 14.02

4 45 | f 2.148 = 10.68 +.01 − 20^+ = 10.49^-

S.M.T. 13 46 | $(-5^m) = -.27\frac{1}{2}$ ~~24.70~~ $wt\frac{5}{4}$ 24 51

Say 400° $6\frac{1}{2}$

102.2

Long $9\frac{3}{4}^+$ 1^-

-20^+

$f\ \frac{176}{1225}\ wt\frac{5}{4}$

1225

f 1049

176

✓ ✓158′ = J Lat "

9 31 | S 2.532 $(wt\frac{3}{2})$ = 12,59 $wt\frac{3}{2}$

4 45 | N 2.494 = 12.40 +.05

S.M.T. 14 16 | ~~24.9~~9 $wt\frac{5}{4}$

109.5

2504

$N\ \frac{7}{1252}\ (wt\frac{5}{4})$

1252

1245

N 07

✓ 158'' = J Long Aug. 6, P.

9 45 | p 2.687 = 13,36 = 13.36
4 45 | f 2.548 = 12,67 +.01 -.32 = 12.36
Sid. T. 14 30 | (-6m) = -.33 ~~26,03~~ 25.72
112.9 Lat -17 .01½ 1286
f 1236
50

f $\frac{50}{1286}$

✓ 159' = J Lat "

10 40 | S 2.460 = 12,23
4 45 | N 2.429 = 12,08 +.05
Sid. T. 15 25 | 24,3~~7~~6
126.3 1218
N 1213
5

N $\frac{5}{1218}$

✓ 159'' = J Long "

10 56 | p = 1.855 = 9,22
4 45 | f = 3.146 = 15,64 +.01 -.25 = 15.40
Sid. T. 15 41 | (-5m) = -.27½ ~~24,86~~
130.2 Lat -17 -.01+
Long 15° 1-
-.25

922
15.40
24.62
1231
p 922
309

p $\frac{309}{1231}$ =

✓ 160 = J Lat "

11 13.5 | S. 2.350 = 11,69
4 44.9 | N. 2.502 = 12,44 +.05
Sid. T. 15 58.4 | 24.18~~3~~
134.4 1209
S 1169
40

S $\frac{40}{1209}$

25 45

My 29 – 3h 20m to reduce to 1"'s all not.

✓161 = J | Lat | Aug. 6. P.

11 33 | S. 2.410 (wt $\frac{3}{2}$) = 11.98 wt $\frac{3}{2}$
4 45 | N 2.541 = 12.64 + .05
Sm. T. 16 18 | 24.62 wt $\frac{5}{4}$
139.3 | $\boxed{2467}$
S $\frac{36}{1234}$ wt $\frac{5}{4}$ | 1234
S 1198
36

✓162 = J | Lat | "

11 48 | S. 2.259 = 11.23
4 45 | N. 2.488 = 12.37 + .05
× Sm. T. 16 33 | ✓ $\boxed{23.6\cancel{0}^5}$ ✓
142.9 | 1182
S $\frac{59}{11.82}$ | S 1123
59

✓163 = J | Long ½ | Aug. 6. D 4 4. 4. 9 (or – 4m)
For C. B.

13 51.5 | p (0.536 Bet. Th.) = 2.67 – .50 = 2".17 Bet. Th. CB. Corfer Bet. Th. Sept 219.
4 4~~5~~4.9
Sm. T. 18 36.4 | Martha Diam 24.78
172.9 | Conn pg 235 + .56 – A&D – Eq.
$\boxed{2534}$
See pg 216 A – Eq. Rad = 1267
~~p $\frac{1050}{1267}$ wt $\frac{1}{2}$~~ note at bottom, p 217
(not for Longitude) 1050

(18 49)

✓164' = K2 | Lat | "

14 13 | S. 2.016 = 10.02
4 45 | N. 3.121 = 15.52 + .05
Sm. T. 18 58 | $\boxed{25.5\cancel{4}^9}$
178.3 | 1280
S $\frac{278}{1280}$ | S 1002
278

✓ 164″ = K_2 Long Aug. 6. D.

14 04 | p = 2,063 = 10,26 — 10.26
4 45 | f = 3,070 = 15,27 +.01 −.19⁻ = 15.09⁺
Sm. T. 18 49 | (−4ᵐ) −.22 ~~25.53~~ — 25.35⁺
176,1 Lat −30 −.03 .19⁻ — 1268
p 242/1268 — p 10 26 / 242

✓ 165′ = K_3 Lat

14 47 | S, 2,409 = 11,98
4 45 | N, 2,744 = 13,64 +.05
Sm. T. 19 32 | 25,67
186,6 — 1284
S 86/1284 = — S 11 98 / 86

✓ 165″ = K_3 Long

14 54 | p 2.216 = 11,02 — 11.02
4 45 | f 2.971 = 14,78 +.01 −.38⁻ = 14,41⁺
Sm. T. 19 39 | (−7ᵐ) = −.38½ ~~25.80~~ — 25.43⁺
188,3 Lat 22 1⁻ .38⁻ — 1272
p 170/1272 = — p 11 02 / 170

0

✓ 166 = ~~K_3~~ F_1(?) Long Aug. 7, P, 4 45.0 (or −3ᵘ)

7 33 | p = 2,083 = 10,36 — 10.36
4 45 | f = 2,800 = 13,92 +.02 −.16 = 13,78
Sm. T. 12 18 | (−5ᵐ) = −.27½ ~~24.28~~ — 24,14
71.9 Call the Lat −55, .11⁺ .16 — 1207
p 171/1207 (Lat?) — p 10 36 / 171

24 2 53ᵐ

(1050) all

167 = H$_3$ ~~(?)~~ Lat Aug. 7. P 4 45

10 20 | S. 2,631 = 13,08
4 45 | N. 2.240 = ~~11.74~~ 11.20 ~~+.06~~
SmT. 15 05 | 24.28

1214
N 11 20
94

112.6

N $\frac{94}{1214}$

✓168 = J Long (+v) "

10 41 | p = 2.396 = 11,91
(15.14) 4 45 | f = 2.721 = 13,53 +.02 −.31$^+$ = 13.24$^-$
SmT. 15 26 | (−6^m) = −.33 ~~25.44~~

11,91
13.24$^-$
25.15$^-$
1257
p 11,91
66

117.7 (114.7)

apply Central 10 29
168A 4 45
SmT. 15 14

Lat. 17. 1$\frac{1}{2}$
Long 2
−.31$^+$

p $\frac{66}{1257}$

✓169 = 1 Lat "

11 17 | S. 1.354 = 6.73
4 45 | N 3.319 = 16.50 +.06
SmT. 16 02 | ~~23.23~~ ✓

6.73
16.56
23.29
11.64
S 673
491

126.5

S $\frac{491}{1164}$

✓170 = Prob J. Long Aug. 7. D. 4 45.0 (or −5^m)

13 26 | p = 0.761 = 3.78
4 45 | f = 4.419 = 21.97 +.02 −.25 = 21.74
SmT. 18 11 | (−6.8^m) = −.37^4 ~~25.75~~

3.78
21.74
25.52
1276
p 378
898

158.0

Lat −17. 2
Long 45° .10
25

~~p $\frac{898}{1276}$~~ (?) =

2174
1268
906

✓171 = ~~F~~$_3$? Long. Aug. 8, P. 4^h $45^m.1$ (or -3^m)
F$_1$(?)

7 23 | p = 2.502 = 12.44
4 45 | f = 2.447 = 12.17 +.03 − 13 = 12.07
Sm.T. 12 08 | (-4^m) = −.22 ~~24.61~~
60.6

Lat − 55 (See 166) 9
−.13

f $\frac{19}{1226}$ (Lat.?)

12.44
12.07
24.51
12.26
f 12.07
19

✓172′ = E$_3$ Lat "

8 30 | S 2.836 = 14.10
(13 01.6) 4 45 | N 2.021 = 10.05 +.07
Sm.T. 13 15 | ~~24.15~~
76.9

N $\frac{199}{1211}$

14.10
10.12
24.22
12.11
N 10.12
199

✓172″ = E$_3$ Long 4

8 16.5 | p = 2.410 = 11.98
4 45.1 | f = 2.813 = 13.99 +.03 −.27 = 13.75
× Sm.T. 13 01.6 | (-5^m) = $-.27\frac{1}{2}$ ~~25.97~~ ✓
73.7

Lat − 10. — nearer

p $\frac{88}{1286}$

11.98
13.75
25.73
12.86
p 11.98
88

✓173 = about D$_3$ Lat

8 44 | S 2.480 = 12.33
4 45 | N 2.469 = 12.~~28~~ 35 ~~+.07~~
Sm.T. 13 29 |
80.3

24.6~~4~~8

S $\frac{1}{1234}$ = (0$''$.05) = 0. S
12.34
12.33
1

Reduce to 1" [illegible] in 14m since pg 130, (8 in 13m)

✓174' = K | Lat | Aug. 8. D. 4 45

12 50 | S. 1.707 = 8.49
4 45 | N. 3.151 = 15.~~67~~ 74 ~~+.07~~
Gm T. 17 35 | (with 19m) | 24.~~16~~ 23
140.3

12.12
S 8 49
3 63

S $\frac{363}{1212}$

✓174'' = K | Long | "

13 04 | p. 2.036 = 10.12 | 10.12
4 45 | f. 2.826 = 14.05 +.03 −14 = 13.94
Gm T. 17 49 | (−3m) = −.16½ ~~24.17~~ | 24 06
143.7
Lat −30. −.02+
−.14
1203
p 10 12
191

p $\frac{191}{1203}$

✓175 = D | Long | Aug. 9, P. 4 45.2 (or −4m)

8 01 | p 1.763 (wt $\frac{3}{2}$) = 8.77 wt $\frac{3}{2}$ | 8.77
4 45 | f 2.982 = 14.83 +.04 −26 = 14.61
× Gm T. 12 46 | (−5m) = −.27½ ~~23.600~~ | 23.38
61.0
Corr Lat −15. −.01
Long 15° .01
−.26
1169
p 8 77
2 9 2

~~p 877~~

p $\frac{292}{1169}$ (wt $\frac{5}{4}$)

✓176' = D₂ | Lat | "

9 03 | S. 2.548 = 12.67
(13 03) 4 45 | N. 2.168 = 10.~~78~~ 86 ~~+.08~~
× Gm T. 13 48 | 23.~~45~~ 53
76.1
1176
N 1086
90

N $\frac{90}{1176}$ =

90^m to do 120 first lines, including the ruling.

✓ 176″ = D_2 Long Aug. 9. P. 4 4.5

8 18 | p = 2,340 = 11,64 11,64

4 45 | f = 2,937 = 14,60 +,04 − .48 = 14,16

× Sm.T. 13 03 | (− 9^m) = −.49^5 ~~26,24~~ 25,80

65,2 Say −15° .01^5 1290

.48 p 1164

p $\frac{126}{1290}$ 126

✓ 177 = G_2 (or D_3) Lat

9 25 | S, 2,148 = 10,68

4 45 | N. 2,705 = 13,~~45~~ 53 ~~+,08~~

Sm.T. 14 10 | 24.~~13~~ 21

81.5 1210

S 1068

S $\frac{142}{1210}$ 142

✓ 178 = G Lat

9 41 | S, 1,701 = 8,46

4 45 | N. 3,184 = 15.~~83~~ 91 +,08

Sm.T. 14 26 | 24.~~29~~ 37

85.4 1218

S 846

S $\frac{372}{1218}$ 372

✓ 179 = (I_2 G_2) or $I_2 D_3$ Lat → I_3 (see sp. diag pg 192)

10 48 | S, 2,126 = 10,57 = 10,57

4 45 | N, 2,810 = 13,97 +,08 = 14,05

Sm.T. 15 33 | ~~24,54~~ 24,62

101.7 1231

S 1057

S $\frac{174}{1231}$ 174

✓ 180' = B_3(?) Lat   Aug. 10.   ρ   4 45,3 (or -4^m)

7 14 | S, 3,433 = 17,07

4 45 | N. 1,283 = 6,~~38~~ 46 ~~+,08~~

X Sm.T. 11 59 | 23,~~45~~ 53

40.7   11,76

N $\frac{530}{1176}$ N 646

530

✓ 180'' = B_3(?) Long   ~~Aug 10~~ 4

7 27 | p = 1,693 = 8,42   8,42

4 45 | f = 3,563 = 17,72 +,05 − 20 = 17,57

X Sm.T. 12 12 | (-4^m) = −,22 ~~26,14~~   25,99

Lat 14° −,01   13,00

43.9   Long 21 ,2   p 8,42

−,20   458

p $\frac{458}{1300}$

✓ 181 = D   Long   "

7 38 | p = 2.506 = 12,46   12,46

4 45 | f = 2.544 = 12,65 +,05 −,32 = 12,38

Sm.T. 12 23 | (-6^m) = −,33 ~~25,11~~   24,84

Lat −15, ,01   12,42

46.5   f $\frac{4}{1242}$ = 0°,2   ,32   f 12,38

4

✓ 181A = F   Long 3r.   8 15   Central

4 45

Sm.T.   13 00

55,6

✓ 182 = D_2 Long   "

8 48 | p = 2,504 = 12,45   12,45

4 45 | f = 2,688 = 13,37 +,05 −35 = 13,07

Sm.T. 13 33 | ($-6\frac{1}{2}^m$) = −,36 ~~25,82~~   25,52

Lat −15   −,01+   1276

63.6   ,35−   p 1245

p $\frac{31}{1276}$ 31

✓ 183 = F_1 Long. Aug. 10, P, 4 45

8 59 | p = 2.453 = 12.20 12.20

4 45 | f = 2.781 = 13.83 +.05 −30 = 13.58

X Sm. Y. 13 44 | (+ 9½^m) = −.52 ~~26.03~~ (25.78

66.3 Calc Lat −55 (See 166 etc) −.22 1289

−.30

p 1220

69

p $\frac{69}{1289}$ (Lat?)

✓ 184 = G Long 4

9 52 | p = 2.358 = 11.73 11.73

4 45 | f = 2.679 = 13.32 +.05 −34 = 13.03

Sm. Y. 14 37 | (−7^m) = −.38½ ~~25.05~~ (24.76

79.2 Lat 25° −.04+ 1238

−.34

p 1173

65

p $\frac{65}{1238}$

✓ 185 = I_2 Long ״

10 46 | p = 2.826 = 14.05 14.05

4 45 | f = 2.227 = 11.07 +.05 −24 = 10.88

Sm. Y. 15 31 | (−5^m) = −.27½ ~~25.12~~ (24.93

92.4 Lat 30 −.03½ 12.46

−.24

f 10.88

158

f $\frac{158}{1246}$

✓ 186′ = F Lat Aug. 13, P, 4 41.1

8 15 | S. (0.542 Bet. Th.) = 2.70 (Bet. Th.) − .30 (Ly 219) = 2.40

4 41 | N. 4.529 = 22.52 + .12 = 22.64

Sm. Y. 12 56 | ~~25.22~~ 34 (25.04

~~388.0~~ 28.0 1252

S 240

1012

S $\frac{1012}{1252}$

✓186" = F Long Aug 13, P, 4 41

8 23 | p = 2,541 = 12,64. 12,64

4 41 | f = 2,609 = 12,97 +,09 −11 = 12,95

Gm.T, 13 04 | (−4ᵐ) = −,22 ~~25,61~~ 25,59

~~38.9~~ 29,9

Calc Lat −60 −,11 12,80

−,11 p 1264

$p\,\frac{16}{1280}$ (φ Lat?) 16

✓187 = F₂₂ (F₂ but why ~~dense~~ classed as dense? (cloud)) Not so classed. W.H.P.

Lat (of pos. line D + X₃) 11

8 56 | S, 1,384 = 6,88

4 41 | N, 3,320 = 16,~~51~~ 63 ~~+ ,12~~

X Gm.T, 13 37 | 23,~~39~~ 51

~~34.0~~ 38,0 1176

S 688

$S\,\frac{488}{1176}$ 488

✓188 = A₃ Lat, Aug 14, P, 4 40,9

7 48 | S, 2,476 = 12,31 12,31

4 41 | N, 2,411 = 11,99 +,12 = 12,11

Gm.T, 12 29 | ~~24,30~~ 24,42

12,5 1221

N 1211

$N\,\frac{10}{1221}$ 10

✓189 = Z, Lat 11

7 59 | S, 3,111 = 15,47

4 41 | N, 1,629 = 8,~~10~~ 22 ~~+ ,12~~

Gm.T, 12 40 | 23,~~57~~ 69

15,2 1184

N 822

$N\,\frac{362}{1184}$ 362

✓190′ = B_3 Lat. Aug. 14. P, 4 41

9 33 | S. 3.464 = 17.23 17.23

[illegible] 4 41 | N. 1.389 = ~~6.91 + .12~~ = 7.03

Shu.T. 14 14 | ~~24.14~~ 24.26

38.1 12.13

N 7 03

$N\,\frac{510}{1213}$ 510

✓190″ = B_3 Long ″

8 41 | p = 2.419 = 12.03 12.03

4 41 | f = 2.798 = 13.91 + .11 − 32 = 13.70

Shu.T. 13 22 | (− 6^m) = − .33 ~~25.94~~ 25.73

~~Lat 12~~ − 1 12 86

25.4 − .32 p 12 03

$p\,\frac{83}{1286}$ 83

✓191 = B_4 Lat ″

9 02 | S. 2.885 = 14.35

4 41 | N. 2.071 = 10.~~30~~ 42 ~~+ .12~~

Shu.T. 13 43 | 24.~~65~~ 77

30.6 12 38

N. 10 42

$N\,\frac{196}{1238}$ 196

✓192 = about F_2 Lat ″

9 48 | S, 1.417 = 7.05 7.05

4 41 | N. 3.394 = 16.88 + .12 = 17.00

14 29 | ~~23.93~~ 24 05

41.8 12.02

S 7 05

$S\,\frac{497}{1202}$ 497

(about 37)

✓193 = $D_2^{\text{N edge}}$ Lat Aug. 14. P. 4 41

10 13 | S. 2.669 = 13.27

4 41 | N. 2.219 = 11.$\overset{15}{\cancel{23}}$ ~~+.12~~

G.M.T. 14 54 | $\overset{42}{24.\cancel{30}}$

12 21

N 11 15

1 06

47.9

N $\frac{106}{1221}$

✓194 = I_2 Long. v. (poor) Aug. 14, D. 4 43.3 (or −5m)

13 33 | 13 15 will reach Mer. in less than ½h – say 15 or 20m } 13 33

4 43

G.M.T. 18 16

97.1

✓195 = E_4 Long. v. Aug. 15, D. 4 43.0 (or −5m)

12 30 | Merid. passes through – (on sketch)

4 43

G.M.T. 17 13

72.9

✓196' = X Lat Aug. 16, P. 4 40.6

7 03 | S. 0.484 (Brh. Th.) = 2.41 −.30 = 2.11 (Brh. Th. pg 219)

4 41 | Marth. Diam. 24.31

G.M.T. 11 44 | Comm pg 235. −.17

24.14

343.8

Polar Rad —— 12."07

S 2 11

9 96

S $\frac{996}{1207}$ wt $\frac{1}{2}$

✓196" = X Long Aug 16, P. 4 41

7 12 | p 2,425 = 12,06 12,06

~~(11 48)~~ 4 41 | f 2,635 = 13,10 +.15 −,06 = 13,19

Sm. T. 11 53 | (−3½ m) = −,19 ~~25,16~~ 25,25

345,9 ~~Call it 70~~ −,13 1262

,06 1206

~~$p \frac{56}{1262}$ (Lat?)~~ 56

✓197 = X_2 Lat.

7 07 | S, 0.405 (Bel. Th.) = 2,01" − .30 (Bel. Th. p 219) = 1,71"

4 4.1

Sm. T. 11 48

344,7

Polar Rad 12",07

S 1 71

10 36

$S \frac{1036}{1207}$ wt ½

End of Book 65.

Beg. of Book 66. f.19 N14

✓198 = Y Lat. Aug. 17, P. 4 40,3

7 59 | S. 2,677 = 13.31 13.31

4 40 | N. 2,132 = 10,60 +.14. = 10,74

Sm. T. 12 39 ~~23,91~~ 24.05

348,34 1202

$N \frac{128}{1202}$ N 10.74

128

✓199 = Z_2 Lat. "

8 12 | S, 2.512 = 12.49 12,49

4 40 | N. 2.422 = 12,04 +,14 = 12,18

Sm. T. 12 52 ~~24,53~~ 24,67

351,4 12 34

N 12 18

$N \frac{16}{1234}$ 16

f .22
N. .4

v200 = Z | Long, ½ | ' Aug 18 . P. Bibith. Phase ~~4 40.1~~

6 41 | f 0.680 (Bibith) = 3.38 +.29 − .40 = 3".20 (Cor. pg 219)

4 40

Sm T, 11 21

320.3

Marths Diam 24.11

P's Eq. Cor. pg 235 +.53

24.64

Eq. Rad. 12.32

f 3 20

9 12

~~not for Long.~~

~~f $\frac{912}{1232}$ wt ½~~

---

v201 = T₁ | Long | "

7 20,5 | p 2,135 = 10.62

4 40,1 | f 2,728 = 13.57 +.22 −.21 = 13.58

Sm T, 12 00,6 | (− 5,8) = −.31 ~~24.19~~

330.0

call Lat −45° / 0 −.10 / −.21

10.62
13.58
24.20
12 10
p 10 62
1 4 8

p $\frac{148}{1210}$

---

v202 = W₂ | Long | "

7 37 | p = 2,818 = 14.01

4 40 | f = 2.179 = 10.84 +.22 −.24 = 10.82

Sm T, 12 17 | (−5m) = −.27 ~~24.85~~

334.0

Lat −25, −.03 / −.24

14.01
10.82
24.83
12 42
f 10.82
1 6 0

f $\frac{160}{1242}$

---

v203 = Y₄ | Lat | "

8 12 | S. 1.716 = 8.53

4 40 | N. 3.031 = 15.~~07~~21 ~~+14~~

X Sm T, 12 52 |

342.5

23.~~60~~74
11 87
S 8 53
3 3 4

S $\frac{334}{1187}$

✓ 204 = Y | Lat | Aug. 18, P. | 4 40.1

8 26 | S: 2.699 = 13.42

4 40 | N 2.157 = 10.~~73~~ 87 ~~+.14~~

Sid. T. 13 06 | (24.~~15~~ 29

345.9

12 14

N. 10 87

1 27

N 127 / 1214

✓ 205 = Z_4 | Lat | "

8 36 | S 2.537 = 12.62

4 40 | N 2.392 = 11.89 +.14

Sid. T. 13 16 | ~~24.51~~

348.4

12.62

12 03

(24.65

12 32

N 12 03

29

N 29 / 1232

✓ 206 = X_4 | Lat | "

8 55 | S. 1.420 = 7.06

4 40 | N. 3.172 = 15.~~77~~ 91 ~~+.14~~

Sid. T. 13 35 | (22.~~83~~ 97

353.0

11 48

S 7 06

4 42

S 442 / 1148 (D)

✓ 207 = C_1 | Long. | "

9 27.0 | p 2.245 = 11.16

4 40.1 | f 2.549 = 12.68 +.22 −.24 = 12.66

× Sid. T. 14 07.1 | (−5 m) = −.27 ~~23.84~~

000.8

Call Lat −25

−.3

.24

11.16

12.66

(23.82

11 91

p 11 16

75

p 75 / 1191

✓ 08 = X_3 Long Aug 18, P.

9 51.5 | p. = 2.078 = 10.33

4 40.1 | f. = 2.659 = 13.22 + .22 − .31 = 13.13

× Gm.T. 14 31.6 | $(-7^m.5)$ −.41 ~~23.55~~

6.8

Call Lat −40. −.10

−.31

$p \frac{140}{1173}$

10.33
13.13
23.46
1173
p. 1033
140

✓ 209 = E_3 Lat Aug. 18, D, 4 41.2 (-5^m)

13 16 | S_1 2.786 = 13.85

4 41 | N_1 2.060 = $10.\overset{38}{\cancel{24}}$ ~~+.14~~

Gm.T. 17 57 | $24.\overset{23}{\cancel{09}}$

56.9

1212
N 1038
174

$N \frac{174}{1212}$

$+25.\overset{N}{15}$

✓ 210 = S_4 Lat Aug 19. P 4 39.9

6 39 | S. 1.718 = 8.54

4 40 | N 3.062 = $15.\overset{38}{\cancel{23}}$ ~~+.15~~

Gm.T. 11 19 | $23.\overset{92}{\cancel{77}}$

310.9

1196
S 854
342

$S \frac{342}{1196}$

✓ 211' = Z Lat "

7 11.5 | S. 2.658 = 13.22

~~(11 45)~~ 4 39.9 | N. 2.197 = 10.92 + .15 = 11.07

Gm.T. 11 51.4 | ~~24.14~~

318.8

13.22
11.07
24.29
12.14
N. 1107
107

$N \frac{107}{1214}$

✓211'' = Z   Long ½   Aug. 19, P, 4 40

7 05 | f 0.734 (Bet. Th.) = 3.65 + .25 − .40 = 3.50 (Bet. Th., Phase, fig 219)
4 40
G.M.T. 11 45

317.3

not for Long.

Marth's Diam 24''.00
P's Eq. Cor. fig 235, .50
24.50
Eq. Rad. = 12''.25
f 3 50
8 75

f $\frac{875}{1225}$ wt ½

✓212 = Z   Lat

7 19 | S. 2.654 = 13.20 ''   13.20
4 40 | N. 2.199 = 10.93 + .15 = 11.08
G.M.T. 11 59   ~~24.13~~   24.28
12.14
N. 11 08
1 06

320.7

N $\frac{106}{1214}$

✓213 = Z   Lat

7 27 | S. 2.663 = 13.24 ''   13.24
4 40 | N. 2.194 = 10.91 + 15 = 11.06
G.M.T. 12 07   ~~24.15~~   24.30
12 15
N 11 06
1 09

322.6

N $\frac{109}{1215}$

✓214' = X, Lat ½

7 57 | (S) 0.475 Bet. Th. = 2.36 − .30 = 2''.06 (fig 219)
4 40
G.M.T. 12 37

330.0

Marth's Diam, 24''.00
P's Pol. Cor. + .12
24.12
Polar Rad. 12''.06
S 2 06
10.00

S $\frac{1000}{1206}$ wt ½

v214'' = X, Long Aug. 19. P. 4 40

8 18 | p = 2,613 = 12,99 — 12,99

4 40 | f = 2.408 = 11,97 +,25 − ~~,08~~ ,13 = 12,~~11~~ 09

G.M.T. 12 5.8 | (−6m) = −,32+ ~~24,46~~ — [~~25,13~~ 08]

335,1

Calc lat ~~75 .32 bal .01~~ 67 .4 bal .13

12 5 ~~6~~ 4

f $\frac{44}{1254}$ (lat?) — f 1214 — 44

---

v215 = Y Long "

8 31 | p = 2.886 = 14,35 — 14,35

4 40 | f = 2,385 = 11,86 +,25 − ,42 = 11,69

X G.M.T. 13 11 | (−8m) = −43 ~~26,21~~ — [26,04

338,2

Lat 80 — ½ ½ — −,42

13,02

f 11 69

f $\frac{133}{1302}$ — 1 33

---

v216' = Z Lat Aug. 19. D 4 41,5

9 43+ | S. 2,759 = 13,72

~~(14 11)~~ 4 42− | N. 2,110 = 10,~~49~~ 64 ~~+,15~~

G.M.T. 14 25 | [24,~~21~~ 36

356,3

12,18

N 1064

N $\frac{154}{1218}$ — 154

---

v216'' = Z Long "

9 29.5 | p 2,749 = 13,67 — 13,67

4 41.5 | f 2,304 = 11,46 +,25 − ,29 = 11,42

14 11.0 | (−5.5m) = −,30 ~~25,13~~ — [25,09

352,9

Lat 10, ½ ½ — −,29

1254

f 1142

f $\frac{112}{1254}$ — 112

217′ = Z Lat Aug 19: D 4 41,5

10 17 | S, 2.785 = 13.85
~~(14 34.5)~~ 4 42 | N, 2,258 = 11, ~~23~~ 38 ~~+.15~~
Em. S, 14 59 | [25, ~~38~~ 33
4.6

1262
N 1138
124

$N \frac{124}{1262}$

217″ = Z Long "

9 53 | p = 2,477 = 12.32 — 12.32
4 41.5 | f = 2.549 = 12.68 +.25 − .32 = 12.61
14 34.5 | (-6^m) = −.32 ~~25.00~~ — [24.93
Lat −8.
358.6

1246
f p 1232
14

$p \frac{14}{1246}$

218′ = Z Lat (poor) i.e. seeing very poor.

13 43 | S 2,550 = 12.68 — 12.68
(15 20.5) 4 42 | N 2.475 = 12.31 +.15 = 12.46
Em. S, 18 25 — ~~24.99~~ — [25.14
54.8

1257
N 12.46
11

$N \frac{11}{1257}$

218″ = Z Long " "

10 34.0 | p = 1,890 = 9.40 — 9.40
4 41.5 | f 2,950 = 14.67 +.25 − .21 = 14.71
Em. S, 15 20.5 | (-4^m) = −.22 ~~24.07~~ — [24.11
Long 13 − 1
−.21
9.8

1206
p 940
266

$p \frac{266}{1206}$

f .28
N .15

✓ 19' = z Lat Aug. 20. P 4 39.7

7 ~~56~~ 55 | S, 2.601 = 12.93
~~(12 26.2)~~ 4 40 | N, 2.149 = 10.~~69~~ 84 ~~+ .15~~
× Gm.T. 12 35 | 23.~~62~~ 77
320.5

1188
N 1084
104

N 104/1188

✓ 219" = z Long. ½ ~~(not marked Bit. th)~~ prove

7 46.5 | f 0.663 = 3.30 + .28 = 3.58
4 39.7 |
Gm.T. 12 26.2 |
318.4

Mars Diam. = 23.″88
P's Eq. Cor. fig 2.35 + .50
24.38
Eq. Rad 12.19
f 3.58
861

~~f 861/1219 wt ½~~ not for long.

✓ 220 = z Lat "

8 04 | S, 2.634 = 13.10
4 40 | N. 2.134 = 10.~~61~~ 76 ~~+ .15~~
× Gm.T. 12 44 | 23.~~71~~ 86
322.7

1193
N 1076
117

N 117/1193

✓ 221 = z Lat "

8 14 | S, 2.601 = 12.93 12.93
4 40 | N, 2.182 = 10.85 + .15 = 11.00
× Gm.T. 12 54 | ~~23.78~~ 23.93
325.2

1196
N 1100
96

N 96/1196

✓222′ = 2 Lat   Aug. 20. D, 4 41.2   1

10 14* | S, 2.761 = 13.73   13.73

~~(14 47.2)~~ 4. 41⁺ | N. 2.442 = 12.14 +.15 = 12.29

X Sid. T, 14 55 | ~~25.87~~   26.02

354.7

13.01

N 12 29

72

N $\frac{72}{1301}$

✓222″ = 2 Long   4

10 06 | p = 2.688 = 13.37   13.37

4 41.2 | f = 2.378 = 11.82 +.28 −.16 = 11.94

Sid. T, 14 47.2 | (−3ᵐ) = −.16   ~~25.19~~   25.31

no cor.

352.8

1266

f 11 94

72

f $\frac{72}{1266}$

✓223′ = 2 Lat   4

10 29 | S. 2.738 = 13.62

~~(15 00.2)~~ 4 41 | N. 2.153 = $10.\overset{86}{\cancel{71}}$ ~~+.15~~

Sid. T, 15 10 | $24.\overset{48}{\cancel{33}}$

358.3

12 24

N 10 86

1 3 8

N $\frac{138}{1224}$

✓223″ = 2 Long..   ″

10 19 | p = 2.650 = 13.18   13.18

4 41.2 | f = 2.569 = 12.77 +.28 −.21 = 12.84

Sid. T, 15 00.2 | (−4ᵐ) = −.21   ~~25.95~~   26.02

no cor

355.8

13.01

f 12 84

17

f $\frac{17}{1301}$

✓224 = 2 Long Aug. 20, D, 4 41.2

10 39 | p = 2.329 = 11.58 11.58

4 41.2 | f = 2.708 = 13.47 +.28 −.26 = 13.49

Sm.T, 15 20.2 | (−5m) = −.26½ ~~25.05~~ 25.07

000.8

− ½

.26

1253

p 11 58

95

$p\ \frac{95}{1253}$

✓225' = 2 Lat "

13 32 | S, 2.559 = 12.72

~~(18 00.2)~~ 4 41.2 | N, 2.115 = 10.52 67 ~~+.15~~

Sm.T, 18 13 23.24 39

42.9

1170

N 10.67

103

$N\ \frac{103}{1170}$

✓225'' = 2 Long "

13 19 | p = 0.834 = 4.15 4.15

4 41.2 | f = 4.166 = 20.72 +.28 −.18 7 = 20.82 3

Sm.T, 18 00.2 | (−4½m) = −.24 ~~24.87~~ 24.97 8

39.8

Lat −8 ¼

Long 42° mc −1 6 −.18 −1 17

12 489

p 4 15

83 34

~~p 833 4 1248~~ not for Long

Mars's Diam 23".85

Cor for 235 1 09

24.94

m. of eq. R. = 12 47

✓226' = 2 Lat "

13 52 | S 2.671 = 13.28

~~(18 20.7)~~ 4 41 | N 2.311 = 11.49 64 ~~+.15~~

Sm.T, 18 33 24.77 93

47.8

12 46

N 11 64

82

$N\ \frac{82}{1246}$

226" = Z Long Aug 20. D. 4 41,2

13 39.5 | p 0.657 = 3,27 3.27

4 41.2 | f 4.444 = 22,10 + .28 − .14 (13) = 22.25

Smit. 18 20.7 | (−4m,0) = −.21 ~~5,37~~ 25,52

44,8

Lat 8 −7 1276

Long 49° −.14

inc. −.01 −.1 p 327

−.13 949

p 949/1276 not for Long

227' = Z Lat

14 09+ | S. 2,672 = 13,29

~~(18 40,2)~~ 4 42− | N. 2.447 = 12,17 (32) ~~+,15~~

Smit. 18 51 | 25.46

52,2

12.80

N 48/1280

N 1232

48

227" = Z Long 4

13 59 | p = 0.486 = 2,42 2,42

4 41.2 | f = 4.512 = 22,44 + ,28 − ,14 = 22.58

Smit. 18 40,2 | (−4½) = −.24 ~~24,86~~ 25.00

49,6

Lat −8. − ¼ 1250

Long 53 = (6) ,14 p 242

1008

p 1008/1250 not for Long

---

228 = Z Long.

14 14,5 | p = 0,386 = 1,92 1.92

4 41.2 | f = 4.615 = 22,95 + ,28 − .13 = 23.10

Smit. 18 55,7 | (−4½) = −.24 ~~24,82~~ 25.02

53,4− (53,35+)

Lat −8 −.11 ¼ 1251

Long 57 (54) −.13 p 192

1059

p 1059/1251 not for Long

f .31
N .16

✓ 229 = W Long. Aug. 21. D 4 40.9 ✓

9 44 | p = 1.882 = 9.36
4 40.9 | f = 3.083 = 15.33 + .31 − .23⁺ = 15.41⁻
G.M.T. 14 24.9 | (−4½ᵐ) = −.24 ~~24.69~~

9.36
15.41⁻
24.77⁻

~~348.16~~
338.4D

Lat −12 — ¼
Long 13 — ½⁺
−.23⁺

p 302/1238

1238
p 936
302

✓ ✓ 230 = Y Long. " ✓

9 53 | p = 2.509 = 12.48
4 40.9 | f = 2.370 = 11.79 + .31 − .21⁻ = 11.89⁺
G.M.T. 14 33.9 | (−4ᵐ) = −.21 ~~24.27~~

12.48
11.89⁺
24.37⁺

~~350.35~~
340.60

Lat −8 — ⅕
−.21

f 30/1219

1219
f 1189
30

---

near 2
✓ ✓ 231 = Cl. 1. Long. " ✓

10 00⁺ | p = 3.214 = 15.98
4 41.⁻ | f = 1.580 = 7.86 + .31 − .20⁻ = 7.97⁺
G.M.T. 14 41 (−4ᵐ) = −.21 ~~23.84~~

15.98
7.97⁺
23.95⁺

~~352.1~~
342.3

Lat −12 — ¼
Long 19 — 1⁺
−.20⁻

f 401/1198

1198
f 797
401

✓ ✓ 232′ = W Lat " ✓

(15 46)
(15 50)

11 32 | S, 2.390 = 11.88
4 41 | N, 2.573 = 12.~~79~~ 95 ~~+.16~~
G.M.T. 16 13

24.~~67~~ 83

~~14.5~~
4.8

1242
S 1188
54

S 54/1242

r 232'' = W | Long | Aug 21. D 4 40.9

11 05 | p. 1,066 = 5,30 | 5.30
4 41 | f. 3,713 = 18,46 + ,31 − ,17 = 18.60
Sm.T. 15 46 | (−4ᵐ) = −,21 ~~23,76~~ | 23.90
−½
Lat −12 | 1195
Long 32 − 3 | p. 530
.17 | 665
~~7,9~~
358.2
p 665 / 1195

---

r 233' = Y | Lat ''

(MB)
11 38 | N 2,177 = 10,83 +,16 = 10.99
4 41 | S 2,684 = 13.35 | 13.35
Sm.T. 16 19 | ~~24,18~~ | 24.34
~~16,0~~ | 12.17
6.2 | N. 1099
N 118 / 1217 | 118

---

r 233'' = Y | Long 4

11 14.+ | p 1,880 = 9.35 | 9.35
4 41.− | f. 3,220 = 16,01 + ,31 − 18− = 16,14+
Sm.T. 15 55+ | (−3½ᵐ) = −,18½ ~~25,36~~ | 25,49+
Lat − 8 | ½− | 12.75
Long 15 − 1/30 | ½+ | p 935
~~10,1~~ | −,18− | 340
000.4
p 340 / 1275

---

r 234 = C₃ | Lat ''

11 48 | S. 1,032 = 5,13 | 5,13
4 41 | N. 3,776 = ~~18,78 +,16~~ 44 = 18,94
Sm.T. 16 29 | ~~23,91~~ | 24.07
~~18,4~~ | 1204
8.7 | S 513
S 691 / 1204 | 691

✓235 = C | Lat | Aug. 21, D.

12 08 | S, 2,314 = 11,51
4 41 | N, 2,638 = 13,~~12~~ 28 ~~+,16~~
Gm. T, 16 49 | 24,~~63~~ 79

1240
S 1151
89

~~23.3~~
13,5

S 89/1240

×

✓236' = B₂? | Lat

12 22 | S, 2,871 = 14,28 | 14.28
4 41 | N, 2,000 = 9,95 +,16 = 10.11
Gm. T, 17 03 | ~~24,23~~ | 24.39

12,20
N 10 11
209

~~26.7~~
16.9

N 209/1220

✓236" = B₂? | Long

(17 11)

12 37 | p, 2,651 = 13,18 | 13,18
4 41 | f, 2,359 = 11,73 +,31 −,29⁻ = 11,75⁺
Gm. T, 17 18 | (−5½ᵐ) = −,29 ~~24.91~~ | 24,93⁺

Lat 3° no cor

1247
f 1175
72

~~30.4~~
20,6

f 72/1247

✓237 = W | Long | "

12 30 | p: 0,413 = 2,05 | 2,05
4 41 | f: 4,579 = 22,77 +,31 −,08⁺ = 23.00⁻
Gm. T, 17 11 | (−3ᵐ) = −,16 ~~24,82~~ | 2505

Lat −12
Long 55. = (.57) → −7½ + ⅓
.09
Inc −.1
.08+

mathis Diam. 23.74
Cor fig 235 110
2484
W.O.R. 1242

1252
p 205
1047

~~28.7~~
18.9

~~p 1047/1252~~ not for Long

✓238 = X Long Aug. 21. D. 4 40.9

12 51 | p. 0.767 = 3.81 3.81

4 41 | f = 3.958 = 19.68 +.31 − 12 = 19.87

X Sm.T. 17 32 | (− 3ᵐ) = −.16 ~~23.49~~ 23.68

~~33.8~~ 24.0 Lat −8 1/100 −.4 −.16

Long 43 : (73) −.13

me − 1/40

−.12 −.5

1184

p 803/1184 p 3.81 / 803

not for Long

✓239 = C₄ Lat 4

13 04 | S. 0.852 = 4.24 4.24

4 41 | N. 3.988 = 19.83 +.16 = 19.99

Sm.T. 17 45 | ~~24.07~~ 24.23

~~36.9~~ 27.2 1212

S 788/1212 S 4.24 / 788

✓240 = Y Long 4

13 30 | p. 0.599 = 2.98 2.98

4 41 | f. 4.514 = 22.45 +.31 −.13 = 22.63

X Sm.T. 18 11 −¼ | (−4ᵐ) = −.21 ~~25.43~~ 25.61

~~43.2~~ 33.4 Lat −8 −.15

Long 50° −.7

me .1⁺

−.13

1280

p 982/1280 p 2.98 / 982

not for Long

+.34 N.16

✓241 = S Lat Aug. 22. D. 4 41.9 (or −3ᵐ)

8 27 | S. 0.770 = 3.83 3.83

4 42 | N. 4.156 (wt ½) = 20.67 wt ½ +.16 = 20.83 wt ½

Sm.T. 13 09 | ~~24.50 wt ¾~~ 24.66 wt ¾

311.0 1233

S 850/1233 (wt ¾) S 3.83 / 850

√242 = S_2 Long. Aug. 22, D, 4 41.9 (or −3m)

8 38+ | p. 1,380 = 6.86 6.86
4 42 | f. 3.370 = 16.76 +.34 −12+ = 16.98
Sm T. 13 20 | (−4m) = −.21 ~~23.62~~ 23.84
313.6
call Lat −45, −.07 11.92
Long 25, 30, −2+ p 6.86
−.12+ 5.06
p $\frac{506}{1192}$

√243′ = Z Lat ″

9 05 | S. 2.705 = 13.45 13.45
4 42 | N. 2.115 = 10.52 +.16 = 10.68
Sm T. 13 47 ~~23.97~~ 24.13
~~(13 37)~~
320.2 1206
N 1068
138
N $\frac{138}{1206}$

√243″ = Z Long ″

8 55 | p. 4.118 = 20.48 20.48
4 42−.1 | f. 0.844 = 4.20 +.34 −.14+ = 4.40
Sm T. 13 37−.1 | (−4m) = −.21 ~~24.68~~ 24.88
317.8−
Lat −8, −1/15 1244
15 f 440
Say 14+ 804
f $\frac{804}{1244}$

√244 = Z Lat ″

9 11+ | S. 2.606 = 12.96 12.96
4 42 | N. 2.107 = 10.48 +.16 = 10.64
Sm T. 13 53 ~~23.44~~ 23.60
321.7 1180
N 10.64
116
N $\frac{116}{1180}$

r 245 = Z Lat Aug. 22. D. 4 41.9 (or −3ᵐ)

9 20 | S. 2.588 = 12.87 12.87

4 42 | N. 2.198 = 10.93 +.16 = 11.09

Sm T. 14 02 | ~~23.80~~ 23.96

323.9

1198

N. 1109

$N\ \frac{89}{1198}$ 89

---

r 246′ = Z Lat 4

11 28+ | S. 2.803 = 13.94 13.94

(15 58.4) 4 42 | N. 2.168 = 10.78 +.16 = 10.94

Sm T. 16 10 | ~~24.72~~ 24.88

355.1 1244

N 1094

$N\ \frac{150}{1244}$ 150

---

r 246″ = Z Long 4

11 16.5 | p. 2.758 = 13.71 13.71

4 41.9 | f. 2.163 = 10.76 +.34 −.28 = 10.82+

Sm T. 15 58.4 | (−5½) = −.28½ ~~24.47~~ 24.53+

352.2+ Lat −8 − ⅓ 12.27

Long 7° −¼ f 1082

.28− 145

$f\ \frac{145}{1227}$

---

r 247 = Z Long ¼ 1

11 36 | p 2.618 Wt ½ = 13.02 Wt ½

4 42 | Mars's Diam. = 23.62

Sm T. 16 18 | Di Eq. Cor. 4235 = +1.08

357.0 24.70

12.35

$f\ \frac{67}{1235}$ Wt ¼ (p) 13.02

f 67

√248 = V₂ Lat. Aug. 24. P. 4 39.1

7 33 | S. 3.988 = 19.83 19.83
4 39 | N. 0.891 = 4.43 +.18 = 4.61
Sh.T. 12 12 | ~~24.26~~ 24.44
279.1
12.22
N 461
761
N 761/1222 D

S 45
N 18

√249 = ~~S₄~~ S Lat Aug. 25. P 4 39.0 ± 1ᵐ

9 39 | S. 0.584 = 2.90 2.90
4 39 | N. 3.863 = 19.21 +.18 = 19.39
X? Sh.T. 14 18 | ~~22.11~~ 22.29
300.9
11 14
S 290
824
S 824/1114

√250′ = V₄ Lat Aug. 25. D 4 42.2 (or + 4ᵐ)

12 15 | S. 3.483 = 17.32 17.32
(see next time) 4 42 | N. 1.100 = 5.47 +.18 = 5.65
X? Sh.T. 16 57 | ~~22.79~~ 22.97
339.6
11 48
N 565
583
N 583/1148

√250″ = V₄ Long

″ .

11 56.5 | p. 0.757 = 3.76 3.76
4 42.2 | f. 4.015 = 19.97 +.45 −.10⁺ = 20.32
Sh.T. 16 38.7 | (−3.5) = −.18 ~~23.73~~ 24.08
335.16
Calc Lat +20° −.01⁺
Long 50. −.6⁺
−.10⁺
1204
p 376
828

~~p 828/1204~~ Do not use for Long.

See page 220

✓251 = U_4 Long ½ Aug. 25, D, 4 42.2 (out 4^s)

	12 03.5	p 0.763 Bet. Th. = 3.79 (Bet. Th.)	Reduced to moment of 250"
	4 42.2		Δ = 7^m.0 = .36
S.M.T.	16 45.7	Martha Diam. 23.19	Lat +20 −.02
336.87		D's Eq. Cor. for 235 .93	.34
	(Not for Long.)	24.12	Long 58°± = (53) −
		Eq. Rad = 12.06	.18
			Inc −.1
			.17
			Cor. = +0".17

✓252 = U_4 Long ½

	12 06.5	p 0.601 Out. Th. = 2.99 (out. Th.)	Reduced to moment of 250"
	4 42.2		Δ = 10^m.0 = .51+
S.M.T.	16 48.7	Eq. Rad = 12".06	Lat +.20 .03
337.60			48
	(Not for Long.)		Long 58± (53)
			.25
			.1
			−.24
			Cor. = +0".24

✓253 = about $Y_4 S_4$ Lat P.A. 251.4 instead of 255.0 ("1"05 inc. backward). This gives P.A. of line,

	12 33	S. 1.560 = 7.76
	4 42	N. 3.069 = 15.~~26~~ 44 ~~+.18~~
S.M.T.	17 15	23.~~02~~ 20
344.0		1160
		S 776
	S $\frac{384}{1160}$ (P.A.)	384

✓254' = U_2 Lat

	13.06	S. 2.581 = 12.83
(see next time)	4 42	N. 1.921 = 9.~~33~~ 73 ~~+.18~~
S.M.T.	17 48	22.~~38~~ 56
352.1−		1128
		N 973
	N $\frac{155}{1128}$	155

254" = V₂ Long. Aug. 25, D, 4 42,2 (or + 4^m)

12 49 | p. 0.505 = 2.51 2.51

4 42,2 | f. 4.440 = 22,08 +,45 − 11⁺ = 22.42⁻

Sm.T. 17 31,2 | (− 4^m) = −,21 ~~24,59~~ 24.93⁻

347,96

Calc Lat −5° 1246

Long 54° −.59 bac. .12 p 251

.81 = − 1/22 − 1⁻ 995

−.11⁺

~~p 995/1246~~ not for Long)

---

255 = V₂ Long ½ 4

12 56,5 | p. 0.464 Bet. Th. = 2.31

4 42,2

Sm.T. 17 38,7 Mean Obs'd Eq. Rad 12".06

349.79

(not for Long.)

Reduced to 254"

Δ = 7.5^m = .38

Calc Lat −5 0

Long 57± .54½ .20

Inc .84 .01

.19

2.31

Cor + .19

2,50

---

256 = V₂ Long ½ 4

12 58,5 | p. 0.247 Out. Th. = 1.23

4 42,2

Sm.T. 17 40,7 Mean Obs'd Eq. Rad. 12".06

350,28

(not for Long.)

Reduced to 254"

Δ = 9.5^m = .48⁺

Calc Lat −5. 0

Long 57± 26 .54½

Inc .84 = 1/19 1⁺

.25⁻

1.23

Cor + .25

1.48

8.50

1.19

---

257 = P₃ Long Aug. 26. P

8 22 | p. 1.670 = 8,30 8,30

4 45,5 | f. 2.691 = 13,38 +,50 − 26 = 13.62

Sm.T. 13 07,5 | (− 5^m ¼) = −.27³ ~~+.68~~ 21.92

274.~~70~~ 68

Calc Lat 0 0 10.96

Long .14 − 7/8 p 830

Inc .24 −.26 266

p 266/1096

✓ 258 = S_2 Long. Aug. 26. P.

9 06 | p. 2.058 = 10.23 — 10.23
4 45.5 | f. 2.619 = 13.02 + .50 − .20⁻ = 13.32⁺
S.M.T. 13 51.5 | (− $5^m \frac{1}{2}$) = − .28½ ~~23.25~~ — 23.55⁺
285.40

Call Lat + 5
Long 9.
−.20

$p \frac{155}{1178}$

1178
p 1023
155

✓ 259 = S Lat Aug. 26. D. 4 42.3 (or +4^m)

12 24 | S. 0.778 = 3.87 — 3.87
4 42 | N. 3.756 = 18.68 + .19 = 18.87
G.M.T. 17 06 | ~~22.55~~ — 22.74
~~347.4~~
332.8

$S \frac{750}{1137}$

1137
S 387
750

✓ 260 = U_2 Long 4

12 34 | p. 0.590 = 2.93 — 2.93
4 42.3 | f. 4.016 = 19.97 + .50 − .15⁺ = 20.32⁻
S.M.T. 17 16.3 | (− 5^m) = −.25½ ~~22.90~~ — 23.25⁻
~~349.95~~
335.32

Call Lat − 5. −1/10
Long 49.5 = .05 .16
Inc .76 = −1/27 − 1⁻
−.15⁺

~~$p \frac{869}{1162}$~~ not for Long)

1162
p 293
869

✓ 261 = U_2 Long ½

12 41.5 | p. 0.636 Bet. M. = 3.16″ Bet. M.
4 42.3 |
S.M.T. 17 23.8 | Marth's Diam 23.04″
~~351.78~~
337.15 (not for Long.)

Ds Eq. Cor. pg 235 + .84
23.88
Eq. Rad. 11.94

Reduced to 260.
Δ = 7.5^m = .38″
Call Lat. 5. = − 1/250 = 0
Long 52 = .62 = 23½⁺
Inc .79 = − 1/24 1
~~Cor~~ = .23
3.1[illegible]
Reduced 3.39 Bet. M.

v262 = U_2 | Long ½ Aug. 26, D

12 45,5 | p. 0.342 Out. Th. = $\overset{\text{out. th}}{1.70}$

4 42,3

Mean Observed

Sid. T. 17 27,8 | Eq. Rad 11."94

~~352.75~~

338,13

(not for Long.)

Reduced to 260

$\Delta = 11^m.5 = .58^6$

Lat = $-\frac{1}{250}$ = $-\frac{1}{5}$

Long = .62

36

Inc $-$ 1

Cor = +".35

1.70

Reduced 2,05

v263 = U_2 | Long, Th, 4

12 48 | p 3.5th placing two Th. adjacent.

4 42

Mean Obs'd

Sid. T, 17 30 | Eq. Rad. 11."94

~~355.30~~

338.67

(not for Long.)

Reduced to 260

$\Delta = 14^m.0 = .71^4$

Lat = $-\frac{1}{250}$ = $-\frac{1}{4}$

Long .62

.44

Inc 1

Cor +0".43

v264 = U_2 | Long. Th. 1

12 48 | p 4.0th placing two Th. apart by 1 Th

4 42

Mean Obs'd

Sid. T. 17 30 | Eq. Rad. 11."94

~~355.30~~

338.67

(not for Long.)

Reduced to 260

$\Delta = 14^m$

Same as above

Cor = +".43

v265 = Cl. 2. | Long ½ Aug. 27. D. 4 42,4 (or +7^m)

12 20

4 42 | f 0.797 = 3,96 $\overset{\text{phase}}{+,54}$ = 4.50

Sid. T. 17 02

322.9

Martin's Diam. 22,90

D's Eq. Cor. pg 235 + ,82

23.72

11,86

f 4.50

736

f $\frac{736}{1186}$ wt ½

✓266' = Q Lat Aug. 31, P, 4 45.6

7 54 | S. 3.266 = 16.24 16.24

4 46 | N. 1.096 = 5.45 +.21 = 5.66

Gm.T. 12 40 ~~21.69~~ 21.90

222.9 1095

$N \frac{529}{1095}$ N $\frac{566}{529}$

✓266" = Q Long * "

8 08.5 | p. 1.451 = 7.22 7.22

4 45.6 | f. 2.984 = 14.84 +.70 − .42 = 15.12

Gm.T. 12 54.1 | (−10^m) = −.49 ~~22.06~~ 22.34

226.~~31~~ .27 Lat +16 −.03 11.17

Long 23 → −.04 p 7.22

Inc .39 −.42 395

$p \frac{395}{1117}$

---

f .78

N .21

✓267' = R₃ Lat Sept. 2, D, 4 43.0 (or +3^m)

12 31 | S. 2.821 = 14.03 14.03

4 43 | N. 1.710 = 8.50 +.21 = 8.71

~~(17 04.5)~~
~~(17 10.)~~

Gm.T. 17 14 ~~22.53~~ 22.74

271.5 11.37

$N \frac{266}{1137}$ N $\frac{8.71}{266}$

✓267" = R₃ Long "

12 21.5 | p. 1.237 = 6.15 6.15

4 43. | f. 3.163 = 15.73 +.78 −.13 = 16.36⁺

Gm.T. 17 04.5 | (−3^m) = −.15 ~~21.88~~ 22.51⁺

269.15 Call Lat +05. 0 11.26

Long 28 02 p 6.15

Inc −.13 511

$p \frac{511}{1126}$

√268' = P₂ Lat Suff. 2, D. 4 43.0 (+3ᵐ)

12 36 | N.B. N. 2,295 = 11,41 +.21 = 11.62

4 43 | S. 2,188 = 10,88 10,88

Slu. T. 17 19 | ~~22,29~~ 22,50

272,7

11,25

S 10 88

37

$S \frac{37}{1125}$

√268" = P₂ Long (NB)

12 27 | Long. same as 267" ~~[illegible]~~, Δ(= time Int) = 5ᵐ,5 = ".27

4 43 | Call Lat 267" ~~15~~ +5 −.05

Slu. T. 17 10 | Long 27° = $-\frac{1}{9}$ −.3

270.5

267" $p \frac{5,11}{11,26} = \frac{\text{from Merid}}{\text{Rad.}}$ 0".24

Cor + $\frac{.24}{\text{Rad.}}$

$p \frac{535}{1126}$ (sp) = ,48° = 28°.7

270.5
28.7
242

$p \frac{535}{1126,}$

√269' = R₄ (or R₄ O₁) Lat

13 00 | S. 3.225 = 16,04 16,04

4 43 | N. 1.188 = 5,91 + .21 = 6,12

Slu. T. 17 43 | ~~21,95~~ 22.16

278,5

11 08

N 6 12

496

$N \frac{496}{1108}$

√269" = R₄ (~~R₄ O₁~~) Long

~~13 05,5~~ | p 2.144 = 10,66 10.66

4 43,0 | f 2.368 = 11.78 + .78 − .10 = 12.46

Slu. T. 17 48 | (−2ᵐ) = −.10 ~~22.44~~ 23.12

279,8

Call Lat −5 no Cor

1156

p 1066

90

$p \frac{90}{1156} = \frac{1}{12.84} = 0.0779$.

p 4°.5

r 270' = V_4 | Lat | Sept. 2, D

13 21 | S. 3.702 = 18,41 | 18,41

~~(17 58)~~ 4 43 | N. 0.765 = 3.80 +.21 = 4.01

S.M.T. 18 04 | ~~22,21~~ | 22,42

283,7 | 11.21

N 401

N $\frac{720}{1121}$ | 720

---

r 270" = V_4 | Long V. | "

13 15 now on meridian.

4 43

S.M.T. 17 58

282,2

$0\overset{''}{.}82 \div 2 = -0\overset{''}{.}41$

---

r 271' = V_2 | ~~Lat~~ | "

13 54 | S. 3.878 = 19.28 | 19.28

4 43 | N. 0.488 = 2.43 +.21 = 2.64

S.M.T. 18 37 | ~~21.71~~ | 21.92

291,7 | 1096

N 264

N $\frac{832}{1096}$ | 832

---

r 271" = V_2 | Long | "

13 59 | p. 2.197 = 10,92 | 10,92

4 43 | f. 2.371 = 11.79 +.78 − 12⁻ = 12.45⁺

S.M.T. 18 42 | (−3ᵐ) = −.15 ~~22,71~~ | 23,37⁺

292,9 | Lat +36. | .12 | 1169

Long 3+0 | p 1092

p $\frac{77}{1169}$ | 77

√272' = K_{f_3} Lat Sept. 3. P. 4 45.7

7 53 | S. 1.897 = 9.43

~~(11 51)~~ 4 46.– | N. 2.354 = 11.~~71~~ 93 + .22

Sm.T. 12 39 | 21.~~74~~ 36

195.4

1068

S 943

125

S $\frac{125}{1068}$

√272'' = K_{f_3} Long

7 05 | p. 2.170 = 10.79 10.79

4 46– | f. 2.269 = 11.28 + .82 – .23 = 11.87

Sm.T. 11 51– | (–5½m) = –.26½ ~~22.07~~ 22.66

Calc Lat – 30 3¼

183.7 – .23

11.33

p 10.79

54

p $\frac{54}{1133}$

√273 = N_1 Lat

8 12 | S. 1.229 = 6.11 6.11

4 46 | N. 2.976 = 14.80 + .22 = 15.02

Sm.T. 12 58 | ~~20.91~~ 21.13

200.0

1056

S 611

445

S $\frac{445}{1056}$

√274 = L_3 Lat Sept. 4. P. 4 45.8

7 06 | S. 1.233 = 6.13 6.13

4 46 | N. 2.966 = 14.75 + .22 = 14.97

Sm.T. 11 52 | ~~20.88~~ 21.10

174.8

1055

S 613

442

S $\frac{442}{1055}$

✓ $275' = P_2$ Lat. Sept. 5. D. 4 43.5 (or $+2^m$)

12 36 | S. 2.303 = 11.45 11.45

~~(11 12)~~ 4 44⁻ | N. 2.104 = 10.46 +.22 = 10.68

Shu. T. 17 20⁻ ~~21.91~~ 22.13

245.6

11 06

N 10 68

38

$N \frac{38}{1106} = .03436$

✓ $275'' = P_2$ Long. P.A. 1° too much. N°s 2nd back. 4

12 28.5 | p. 2.442 = 12.14 12.14

4 43.5 | f. 1.547 = 7.69 +.89 −.10⁻ = 8.48

× Shu. T. 17 12.0 | (-2^m) = −.10⁻ ~~19.83~~ 20.62

243.66

Calc Lat −15 − ⅓

Long .17 = 10°

1031

f 848

183

$f \frac{183}{1031}$ (P.A.) .1775

✓ $276' = J_2(?)$ Lat v. Sept. 6. P. 4 46.0

6 48 | ¼ diam. from N. limb. = N 30°.0

4 46

Shu. T. 11 34 | Becomes N 30°.0

152.2

$N \frac{1}{2}$

N 30°.0

✓ $276'' = J_2(?)$ Long. v. 4

6 48 | On meridian.

Shu. T. 11 34

152.2

0″.92 ÷ 2 = −0″.46

f, .92
N, .22

√ 277' = J₂ | Lat | Sept. 6. P.

7 26 | S, 3.228 = 16,05 | 16,05

4 46 | N, 1.102 Bes. Th. = 5,48 + .22 = 5.70

Gm.T. 12 12 | ~~21,53~~ | 21.75

161,45 | 1088

N 5,70

$N \frac{518}{1088}$ = [illegible] | 518

√ 277'' = J₂ | Long | "

7 38 | p, 1,249 = 6,21 | 6,21

4 46 | f, 2.845 = 14,15 + .92 − .16 = 14,91

× Gm.T. 12 24 | (−5m) = −.236 ~~0,36~~ | 21,12

Lat +16. − 1 | 1056

164,4 | 7/8 Long. 65 = 41° 6 | p 621

$p \frac{435}{1056}$ | Inc. 65 − ½ | 435

−.16

√ 278' = P | Lat | Sept. 6. D, 4 43,7

12 28 | S, 2.028 = 10,08 | 10,08

4 44 | N, 2,357 = 11,72 + .22 = 11.94

Gm.T. 17 12 | ~~21,80~~ | 22,02

~~262.4~~ | 11,01

234,5 | S 1008

$S \frac{93}{1101}$ | 93

√ 278'' = P. | Long | "

12 33 | p, 1.164 = 5.79 | 5.79

4 44 | f, 3.017 = 15,00 + .92 − 16⁻ = 15.76⁺

× Gm.T. 17 17 | (−4m) = −.19⁻ ~~20,79~~ | 21,55⁺

~~264,1~~ | Calc Lat −20. −.01⅕ | 1078

235,8 | Long 46 − 27° = .16⁻ | p 579

$p \frac{499}{1078}$ | Inc. 46 | 499

f .96
N .22

P.A. 259.0 instead of 254.6 } object too near centre of disc to make any dif. } Bk 66 1470.

✓279′ = K Lat P.A. 259.0 instead of 254.6 nos five Back. Sift T. P. 4 46.0

6 32 | S, 1.400 = 6.96
4 46 | N. 2.655 = 13.~~20~~ 42 ~~+.22~~
Sm.T. 11 18 | [20.~~16~~ 38

139.1

10.19
S 6 96
3 23

S $\frac{323}{1019}$ (P.A.)?

✓279″ = K Long. V. 4

6 34.5 | On merid.
4 46.0
Sm.T. 11 20.5

139.75

0″.96 ÷ 2 = −0″.48

✓280′ = J₂ Lat "

7 34 | N.B. N, 0.895 = 4.45 + .22 = 4.67
4 46 | S, 3.178 = 15.50
Sm.T. 12 20 | ~~20.25~~

154.3

15.80
[20.47
10.24
N 4.67
557

N $\frac{557}{1024}$

✓280″ = J₂ Long 4

7 49 | p. 1.440 = 7.16
4 46 | f. 2.664 = 13.25 + .96 − .33⁺ = 13.88
Sm.T. 12 35 | (−8m) = −.376 ~~20.41~~

157.9

Lat +16 −.016
½ Long 22 .3½
five 37 .33⁺

7.16
13.88
[21.04
1052
p 716
336

p $\frac{336}{1052}$

8 99
5 .22

✓281 = J₁ | Lat | Sept. 8. P. | 4 46.1 ✓

6 40 | S. 2.995 = 14.89
4 46 | N. 1.079 = 5.~~37~~ 59 ~~+.22~~
Sid. T. 11 26 | 20.~~26~~ 48
132.0
1024
N 559
465

N 465/1024

✓282 = K₁ | Lat. | Sept. 8. D. | 4 42.9 ✓

8 58 | S. 1.395 = 6.94
4 43 | N. 2.957 = 14.~~70~~ 92 ~~+.22~~
Sid. T. 13 41 | 21.~~64~~ 86
164.9
1093
S 694
399

S 399/1093

✓283 = J₄ | Lat | ″ ✓

9 07 | S. 2.120 = 10.54
4 43 | N. 2.022 = 10.~~05~~ 27 ~~+.22~~
Sid. T. 13 50 | 20.~~59~~ 81−
167.0
1040
N 1027
13

N 13/1040

1.09
.22

✓284 = G₃ | Lat | Sept. 11. P. | 4 46.3 ✓

6 20− | S. 1.684 = 8.37 | 8.37
4 46+ | N. 2.393 = 11.90 +.22 = 12.12
Sid. T. 11 06 | ~~20.27+~~ | 20.49+
99.5
1025
S 837
188

S 188/1025

✓ $284'' = G_3$ Long Sept. 11, P,

6 30⁻ | p, 1.263 = 6.28
4 46⁺ | f, 2.758 = 13.71 + 1.09 − .19 = 14.61
Sm. T. 11 16 | (-5^{m}_{+}) = −.23⁺ ~~19.99⁺~~
101.9

Call Lat −25, .21
Long 24° = .91 2
.19

$p\ \frac{417}{1045}$

6.28
14.61
20.89⁺
1045
p 628
417

✓ $285 = I_2$ Long "

6 46,5 | p. 2.228 = 11.08
4 46.3 | f, 2.173 = 10.81 + 1.09 − .16⁺ = 11.7~~4~~
Sm. T. 11 32.8 | (-4^{m}) = −.19⁻ ~~21.89~~
106.03

Call Lat −30. $3^{-\frac{1}{2}}$
.16⁺

$p\ \frac{33}{1141}$

11.08
11.74
22.82
11.41
p 1108
33

✓ $286 = \cancel{X_1}\ I_2$ Lat Sept. 11, D, 4 41.5

8 08 +? | S, 1.385 = 6.89
4 42.⁻ | N, 2.863 = 14.24 + .22 = 14.46
Sm. T. 12 50 | ~~21.13⁻~~
124.8

$S\ \frac{378}{1067}$

6.89
14.46
21.35⁻
1067
S 689
378

✓ $287' = G_5$ Lat Sept. 12, P, 4 46.3

6 56⁻ | S, 0.939 = 4.67
([illegible]) 4 46⁺ | N, 2.940 = 14.62 + .22 = 14.84
Sm. T. 11 42 | ~~19.29⁻~~
99.1

$S\ \frac{508}{975}$

4.67
14.84
19.51⁻
9.75
S 467
508

√287'' = G | Long | Sept, 12, P. | 4 46.3

6 41.3 | p, 1.352 = 6.72 | 6.72

4 46.3 | f, 2.583 = 12.84 + 1.12 − .23+ = 13.73

Sm. T. 11 27.6 | (−6 1/4 ~) = −.28 ~~19.56~~ | 20.45

95.57

Calc Lat −27 .25 | 1022

1/30 Long 20.5 .35 −1½+ | p 672

.23+ | 350

p 350/1022

√288' = J, | Lat | Sept, 12, D, | 4 46.3

8 18 | S, 3.003 = 14.93 | 14.93

4 46 | N. 1.066 = 5.30 + .22 = 5.52

Sm. T. 13 04 | ~~20.23+~~ | 20.45+

119.1

1023

N 552

471

N 471/1023

√288'' = J, | Long V, | "

7 36 | 0.2 ^m^ fine. Phoenix Lake – (both near merid)

4 46

Sm. T. 12 22

108.8

~~√289 = I~~$_3$ | ~~Long~~ | "

~~10 11 | p, 0.487 = 2.42 | 2.42~~

~~4 46.3 | f, 3.523 = 17.52 + 1.12 − .10+ = 18.54~~

~~Sm. T. 14 57.3 | (−4 1/2 ~) = −.20+ ~~19.94~~ | 20.96~~

146.66

~~Calc Lat −27, .18 | 1048~~

~~Long 52 = .62 .11 | p 242~~

~~Inc .79 − 1/24 − −½− | 806~~

~~.10+~~

~~p 806/1048~~ not for Long.

✓290 = 1_3 Long $^1/_2$ Sept 12, D.

10 22 | p. 0.541 Bet. M. = 2,69 Bet. M.

4 46.3

G.M.T. 15 08.3

149.34

Martte's Diam. 20."10

D's Eq. Cor fq.235 + ,60

20,70

mean Obs'd Eq. Rad. 10,35

(not for Long.)

Reduction to 289

Δ = 11^m = ".495

Lat .9$^-$ .44

Long 55 .57 ,25

Inc .82 1

Cor = .24

2,69

2."93

✓291 = 1_3 Long $^1/_2$

10 26,5 | p, 0.310 Out. M. = 1.54 Out. M.

4 46,3

G.M.T. 15 12,8 Eq. Rad. 10."35

150,44

(not for Long.)

Reduction to 289

Δ = 15.^{m}5 = .69^7

Lat 9$^-$ .62

Long .57 .35$^1/_3$

In $-\frac{1}{21}$ = $-1^2/_3$

Cor = .34$^-$

1,54

1,88

✓292 = 1_3 Long .7h

10 32 | p. 4.^{m}5. ± .5

4 46,3

G.M.T. 15 18,3 Eq. Rad. 10."35

151,77

(not for Longs)

Reduction to 289

Δ = 21^m = .94^5

Lat .9 = .84

Long .57 .48$^-$

Inc 2

Cor = .46

No R.A. given for D's Mst of this date – but they are prob. correct or within 0.2

✓293 = Pr 1 Long Sept. 13, D. 4 46.3

F 44 | p, 2,292 = 11,40 11.40

4 46 | f, 1,308 = 6.50 + 1.15 – .06 = 7.59$^+$

X G.M.T. 13 30 | (– 4^m) = –.18 ✓~~47.90~~✓ 18.99$^+$

116.2

Lat. unknown call it +60° .09

.3 Long .73 = 47° .06

Inc .73 = $-\frac{1}{30}$

950

f 759

191

f $\frac{191}{950}$ (Lat?)

√294 = Pr 2 | Long | Sept. 13, -D 4 46.3

8 58.5 | p, 1.125 = 5.59 5.59

4 46.3 | f, 2.788 = 13.86 + 1.15 − 0 = 15.01

Sh. T. 13 44.8 | $(-3^{m}) = -.13\tfrac{1}{3}$ ~~19.45+~~ $\lfloor 20.60$

119.79

Same factor +60 .06 2/3 10.30

3 Long - on or near limb 0 p 5 59

$p\,\frac{471}{1030}$ 471

√295' = Pr 3 | Lat | '

9 11+ | S, 3.841 = ~~+0~~ 19.10 19.10

(13 50.8) 4 47− | N. 0.332 Beh. Th. = 1.65 Beh. Th. + .22 Phase Fig 219 − .40 = 1.47

Sh. T. 13 58 | ~~20.97+0.2~~ $\lfloor 20.57$

123.0 10.28

$N\,\frac{881}{1028}$ 59° N 1.47

881

√295'' = Pr 3 | Long. | ''

9 04.5 | p, 2.704 = 13.45 13.45

4 46.3 | f, 1.081 = 5.38 + 1.15 − .06+ = 6.47−

Sh. T. 13 50.8 | $(-3^{m}) = -.13\tfrac{1}{2}$ ~~18.83~~ $\lfloor 19.92-$

121.25+ Lat 46 .09 9.96

½ Long. 70 = 45 .7 f 650

$f\,\frac{346}{996}$ .063 346

inc. 70, −1/33 = 2

.06+

√296 = 4 | Lat | Sept. 13, P. 4 45.8

11 07+ | S, 1.013 = 5.04

4 46− | N, 2.760 = 13.~~72~~ 94 ~~+ .22~~

Sh. T. 15 53 | $\lfloor 18.$~~70~~ 98

151.0 949

S 504

$S\,\frac{445}{949}$ 445

✓297 = K, Lat Sept. 13, P, 4 45.8

11 27 | S, 1.393 = 6.93
4 46 | N, 2.459 = 12.~~23~~ 45 ~~+.22~~
Sm. T. 16 13 | 19.~~76~~ 38
155.9

969
S 693
276

S 276
969

✓298 = G Lat Sept. 15, P, 4 44.7

8 44+ | S, 1.344 = 6.68
4 45− | N, 2.493 = 12.~~40~~ 62 ~~+.22~~
Sm. T. 13 29 | 19.~~08~~ 30
97.5

965
S 668
297

S 297
965

✓299′ = J3 Lat Sept. 15, D, 4 46.2

11 11 | S, 2.195 = 10.91 10.91
~~(15 33)~~ 4 46 | N. 1.767 = ~~8.79 +.22~~ 97 = 9.01
Sm. T. 15 57 | ~~19.70~~ 19 92
133.5

996
N 901
95

N 95
996

✓299″ = J3 Long. "

10 47 | p, 2.111 = 10.50 10.50
4 46 | f, 1.682 = 8.36 + 1.21 − .21 = 9.36
Sm. T. 15 33 | (−5m) = −.21 ½+ ~~18.86~~ 19.86
127.7

Lat −5 − 1/10
Long 3° −.21

9.93
f 936
57

f 57
993

✓✓300′ = K$_4$ | Lat Sept 15 - D 4 46.2

11 19 | S. 1.730 = 8.60 8.60

4 46 | N. 2.266 = 11.27 + .22 = 11.49

S.M.T. 16 05 | ~~19.87 + .~~ 20.09+

135.5 10.05

S $\frac{145}{1005}$ S 8.60

145

✓✓300″ = K$_4$ | Long. 4

11 51 | p. 1.801 = 8.96 8.96

4 46+ | f. 2.135 = 10.62 + 1.21 - .20- = 11.63+

S.M.T. 16 37+ | (- 5m) = -.21½+ ~~9.58~~ 20.59+

143.3 Call Lat -23 -.01¾ 10.30

Long 4° -.20- p 8.96

p $\frac{134}{1030}$ 134

✓✓301 = K | Long (of 300) ′

11 57 | Same as 300″ - ~~Long~~

4 46 | Reduce 300 to this inst.

S.M.T. 16 43 | Δ = 6m = 6 × .043 = .26-

144.7 300″ is p $\frac{1.34}{10.30}$ (300″'s) Lat -23 - 2-

Long 5 .24

p $\frac{158}{1030}$ (sp) Corr now = +.24

p $\frac{158}{1030}$

✓✓302 = J$_3$ | Long (of 300) ′

"Slightly precedes 300 long".

Call this $\frac{1}{3}$″ & we have

S.M.T. 16 43

144.7

p $\frac{191}{1030}$

303 = 1_3 Long Sept. 15, D, 4 46.2

12 05.5 | p. 0.508 = 2.53 2.53

4 46.2 | f. 3.534 = 17.57 +1.21 −.06 = 18.72

~~//~~ Glw. T. 16 51.7 | (−2½) = −.11 ~~= 20.10~~ 21.25

146.84

Calc Lat −27 as before (.9) .09 1062

p ~~809/1062~~ Not for Long.) $\frac{1}{33}$ Long 51 Inc .78 = $-\frac{1}{25}$ .06 p 253 809

---

304 = 1_3 Long ½

Prob. taken on ½ owing to poor seeing

12 11.5 | p 0.618 Bet. Th. = 3.07 (Bet. Th.) 4

4 46.2

Glw. T. 16 57.7

148.30

Martha's Diam. 19."52

D's Eq. Cor. pg 235 = .70

20.22

(Not for Long.) Mean Obs'd Eq. Rad. 10.11

Reduction to 303

Δ = 6m = .043 .26

Lat. .9 .23

Long 53.6 .14

Inc $-\frac{1}{23}$ − ½

Cor. + .13

Identification uncertain. 3.07

3.20

---

305 = 1_3 Long ½

12 13.5 | p. 0.213 Out. Th. = 1.06 (Out. Th.) 4

4 46.2

Glw. T. 16 59.7 | Eq. Rad. 10."11

148.79

(not for Long.)

Reduction to 303

Δ = 8m = .34

Lat .9 .34 .31

53.6 .18

$-\frac{1}{23}$ − ¾

Cor +.18

1.06

1.24

---

306 = 1_3 Long: Th.

12 16 | p 3.5 Th.

4 46.2

Glw. T. 17 02.2 | Eq. Rad. 10."11

149.39

(not for Long.)

Reduction to 303

Δ = 10m.5 = .45+

Lat .9 .40+

54.6 .24

$-\frac{1}{23}$ 1

Cor +.23

√307 = E₂ Lat ½ Sept. 18, P, 4 46.2

6 21⁻ | N. 0.197 Bet. Th. = Bet. Th. 0.98 + phase .22 → pg 219 .30 = 0.″90

4 46⁺

S.M.T. 11 07

53.6

Martin's Diam 19.″36

P's pol. Cor. pg 235 − .52

18.84

N 852/942 wt ½

Mean Obsd Polar Rad. 9.42

N .90

8.52

√308 = D Lat ″

6 29 | S. 2.070 = 10.29

4 46⁺ | N. 1.679 = 8.~~35~~ 57 ~~+ .22~~

S.M.T. 11 15

18.~~64~~ 86

55.6

9.43

N. 8.57

.86

N 86/943

√309′ = D₄ Lat ″

6 37 | S. 1.056 = 5.25

4 46 | N. 2.676 = 13.~~31~~ 53 ~~+ .22~~

S.M.T. 11 23

18.~~56~~ 78

57.5

9.39

S 5.25

4.14

S 414/939

√309″ = D₄ Long ″

7 16.2 | p. 1.521 = 7.56 7.56

(~~[illegible]~~) 4 46.2 | f. 2.135 = 10.62 + 1.23 − .26 = 11.59⁺

S.M.T. 12 02.4 | (− 8ᵐ/₄) = −.35½⁻ ~~18.18~~ 19.15⁺

67.1

Corr Tab −42 .27⁻

9.58

7/8 Long 23 15° Inc. .26 1

p 7.56

.26

2.02

p 202/958

✓ 310 = C4 Lat Sept. 16, P, 4 46.2

6 55,5 | S, 0.552 Bes. M. = 2,74 ~~Bes. M.~~ 2.74
4 46.2 | N. 3.249 = 16,16 +.22 = 16.38
Sm. T. 11 42,— | ~~18.90~~ 19.12
62,1
956
S 274
S 682/956
682

✓ 311′ = J Lat ″

8 14 | S. 1.807 = 8,99 8,99
~~([illegible])~~ 4 46 | N. 1.900 = 9.45 +,22 = 9.67
Sm. T. 13 00 | ~~18.44~~ 18,66
81,1
933
S 899
S 34/933
34

✓ ~~311″ = J Long ½ ″~~

~~7 42,5~~
~~4 46,2 | f. 0.492 ~~Bes. M.~~ = 2″,45 ~~Bes. M.~~ + 1.23 = 3″,68~~
~~Sm. T. 12 29 —~~ (For Cloud Diam)? meaning?
73.6

not for Long,

Marth's Diam. 19.36
Cor fy 235 = — ,54
18,82
M. Ob. Eq. R. 941

✓ 312 = G Long ″

7 51 | p. 1.848 = 9,19. 9.19
4 46 | f. 1.698 = 8.44 +1,23 —,20 = 9.47
Sm. T. 12 37 | (—5½ᵐ) = —.237 ~~17.63~~ 18,66
75,5 Cal Lat 31 = —1/7 .034
—.20
933
p 919
p 14/933
14

313 = M Lat. Sept. 18, D, 4 46.0

8 36 | S, 1.251 = 6.22 6,22

4 46 | N, 2.400 = 11.93 + ,21 = 12,14

S.M.T. 13 22 | ~~48.15 +~~ 18,36

68.0

9 1 8

S 6 2 2

$s\ \frac{296}{918}$ = .32244 = S 18°.8 +

2 9 6

√314 = H Long Sept. 20, D, 4 46.2

10 08 | p, 2.245 = 11.16 11,16

4 46,2 | f, 1.410 = 7.01 + 1,33 - ,20 = 8,14

S.M.T. 14 54,2 | (−5^m) = −,21 ~~+8,17+~~ 19,30

71,82

Call Lat 15 − 2/3

Long 7°.5 −,20

9,6 5

$f\ \frac{151}{965}$

f 8 1 4

1 5 1

√315 = E$_3$ Long "

10 18,5 | p, 1.866 = 9,28 9,28

4 46.2 | f, 2.059 = 10,24 + 1,33 - ,29 = 11,28

X S.M.T. 15 04.7 | (−7^m) = −,29½ ~~19.52~~ 20 56

74.38

Call Lat 10 − ½

Long 5° ,29

1 0 2 8

$p\ \frac{100}{1028}$ = 0.0973

p 9 2 8

1 00

p 5°.6

√316 = E$_4$ Long 1/4 "

11 03 | p 1.600 wt ½ = 7.96 wt ½

4 46

S.M.T. 15 49 very nearly half way between E$_3$ & H

(316A)

85,2

Mars's Diam. 18".62

D's Eq. Cor. p. 235 = +.82

19,44

$p\ \frac{176}{972}$ wt ¼

9.72

p 7.96

1 7 6

✓317 = H, ~~Lat~~ Sept. 20, D,

11 12,5 | S, 2,446 = 12,16

4 46.2 | N, 1,431 = 7,33 ~~7,12 +,21~~

Sid. T. 15 59 | 19,49 ~~19,28~~

87,6

974

N 733

241

$N\ \frac{241}{974}$

✓318 = Z, Long Sept. 21, P, 4 46,2

6 52. | p, 1,269 = 6,31 6,31

4 46.2 | f, 2,241 = 11,14 + 1,35 − ,15± = 12,34−

Sid. T. 11 38,2 | (−4m) = −,16½ ~~17.45+~~ 18,65−

14,76

Lat + 5

$\frac{1}{20}$ Long 20° 1

Inc. 345 −,15+

932

p 631

301

$p\ \frac{301}{932}$

✓319 = A Long 4

7 07 | p = 1.472 = 7.32 7.32

4 46,2 | f, − 1,918 = 9,54 + 1,35 − ,17 = 10.72

Sid. T. 11 53,2 | (−4¼m) = −17½ ~~16,86~~ 18.04

18,41

Lat + 5

$\frac{1}{20}$ Long 11°

−,17

902

p 732

170

$p\ \frac{170}{902}$

✓320 = A4 Lat "

7 29 | S, 2,021 = 10,05 10,05

4 46 | N, 1,576 = 7,84 +,21 = 8.05

Sid. T. 12 15 | ~~17,89−~~ 18.10

23.7

905

N 805

100

$N\ \frac{100}{905} = .1105$

N 6°.34

✓321 = X₄ | Lat | Sept, 21, P. 4 46.2

7 42,5 | S. 1,155 = 5,74 | 5,74

4 46.2 | N. 2.453 = 12,20 +.21 = 12,41

G.m.T. 12 29 – | ~~+7,94~~ | 18,15

27,1

908

S 574

334

S $\frac{334}{908}$

✓322' = B₄ | Lat | "

7 55 | S. 2.000 = 9,95 | 9.95

4 46 | N. 1.576 = 7,84 +.21 = 8.05

G.m.T. 12 41 | ~~+7,79~~ | 18,00

30,1–

9.00

N 805

95

N $\frac{95}{900}$ = .1055̇

N 6°.1–

✓322'' = B₄ | Long | "

8 15,5 | p. 1.936 = 9.63 | 9.63

4 46.2 | f. 1.714 = 8.52 + 1,35 – .44 = 9.43⁺

G.m.T. 13 01,7 | (–10.7) = –.44 ~~+8,15+~~ | 19,06⁺

35,10

Mean lat –8. | – ½

– .44–

953

f 943

10

f $\frac{10}{953}$ = .0105

f 0°.6

✓323'' = B₄ | Long. (out of place) | Sept. 21, D, 4 46.7

9 ~~37~~ 38 | p. 1.367 = 6.80 | 6,80

4 47 | f. 2.326 = 11,57 + 1.35 – .50 = 12.42

G.m.T. 14 25 | (–13ᵐ) = –.533 ~~18,37~~– | 19.22

55,4

Lat 8° – .06

Long 17° .03

–.50

961

p 680

281

p $\frac{281}{961}$

√323' = B₄ ~~Long~~ Lat. (reversed order) Sept. 21, D.

10 01 | S. 2.118 = 10,53 — 10,53

4 47 | N. 1.865 = 9,27 + .21 = 9,48

X Sm T. 14 48 | ~~19.80~~ — 20,01

61.0

1000

N 948

52

N 52/1000 = .0520

N 3°.0

√324 = ~~(v ¼)~~ D₄ about or South Long Sept. 22, P. 4 46.2

7 09.5 | p. 3.020 = 15.02 — 15.02

4 46.2 | f. 0.498 = 2,48 + 1,37 − .08 = 3.77⁺

Sm T. 11 55.7 | $(-3\frac{1}{4}^m) = -.13\frac{1}{3}$ ~~17.50~~ — 18.79⁺

9.71

Call Lat −40 — .33 — 940

9/10 Long ~~.89~~ .65 41° — .10 — f 377

.08 — 563

f 563/940

√325 = Z, Long 4

7 21 | p. 1.386 = 6.89 — 6.89

4 46.2 | f. 2.219 = 11,03 + 1,37 − .21 = 12.19

Sm T. 12 07.2 | $(-5\frac{1}{2}^m) = -.22\frac{7}{}$ ~~17.92~~ — 19.08

12,50

Lat +5 — −1/10 — 954

1/20 Long .29 .30 18° — 1 — p 689

−.21⁺ — 265

p 265/954

√326 = A₄ Long 4

7 33 | p. 1.743 = 8,67 — 8,67

4 46.2 | f. 1.724 = 8,57 + 1.37 − .22 = 9.72⁺

Sm T. 12 19.2 | $(-5\frac{1}{2}^m) = -.22\frac{7}{}$ ~~+7.24~~ — 18.39

15,43

Lat −15 — − .07 — 9,20

.22 — p 867

53

p 53/920

327' = D, Lat Sept_22, D, 4 46.5

10 03 | S. 1.672 = 8.31 8.31

(Sum not one) 4 46.5 | N. 1.938 = 9.64 + .21 = 9.85

Sm. T. 14 49.5 | ~~+7.95+~~ 18.16

52.03

908

S. 831

S $\frac{77}{908}$ 77

√327'' = D, Long "

9 46 | p, 2.030 = 10.09 10.09

4 46.5 | f. 1.323 = 6.58 + 1.37 − .16⁻ = 7.79

Sm. T. 14 32.5 | (−4ᵐ) = −.16⁴ ~~16.67+~~ 17.88

47.89

Calc Tab −18 − 8

−.16⁻

894

f 779

f $\frac{115}{894}$ 115

√328 = T, (or T₂) Long Sept. 23, D, 4 46.4

6 42 | p. 1.147 = 5.70 5.70

4 46.4 | f. 2.536 = 12.61 + 1.40 − .10 = 13.91

× Sm. T. 11 28.4 | (−4ᵐ) = −.16⁴ ~~18.31+~~ 19.61

353.71

Calc Tab 45 .11⁵

1/5½ Long .+2/.50 30° = −1/8 .1⁴

−.10

980

p 570

p $\frac{410}{980}$ 410

√329 = W, Long "

7 00.5 | p. 1.312 = 6.52 6.52

4 46.4 | f. 2.288 = 11.38 + 1.40 − .07⁺ = 12.71⁻

Sm. T. 11 47.⁻ | (−2ᵐ) −.08 ~~17.90~~ 19.23⁻

358.2

Calc Tab −17 − 1/3

Long .33 19° 1/3

.07⁺

961

p 652

p $\frac{309}{961}$ 309

✓ 330 = X_3 Long Sept. 23. D.

7 09+ | p. 1,897 = 9.43 9.43
4 47− | f. 1,835 = 9.12 +1.40 −.12− = 10.40+
× Sm. T. 11 56 | (−4m) = −.16⁴ ~~16.55+~~ 19 83+
000.4 Calc Lat −40 .12 992
$\frac{1}{10}$ Long — .12 p 943
p $\frac{49}{992}$ 49

✓ 331′ = Y_3 Lat ″

8 04 | S. 1,442 = 7,17
(See next one) 4 46+ | N. 2,307 = ~~11.47~~ 68 ~~+.21~~
Sm. Y. 12 50+ | ~~18.64~~ 85
13.6 942
S 717
S $\frac{225}{942}$ 225

✓ 331″ = Y_3 Long ⁴

7 57.5 | p. 1.573 = 7.83 7.83
4 46.4 | f. 2.013 = 10.01 +1.40 −.06− = 11.35
Sm. T. 12 43.9 | (−2m) = −.08 ~~17.84~~ 19.18
12.10 Calc Lat 40 .06− 959
$\frac{1}{10}$ Long .19 .21 12° — .06 p 783
p $\frac{176}{959}$ 176

✓ 332 = Z_3 Lat ⁴

8 11 | S. 1,891 = 9.40 9.40
4 46 | N. 1,962 = 9.76 +.21 = 9.97
× Sm. T. 12 57 ~~19.16~~ 19.37
15.3 968
S 940
S $\frac{28}{968}$ 28

333 = B Long Sept. 23. D. 4 46.4

8 19 | p. 1.829 = 9.10 9.10

4 46.4 | f. 1.745 = 8.68 +1.40 −.16 = 9.92

Sm. T. 13 05.4 | (−4ᵐ) = −.164 ~~17.78~~ 19.02

17.33

Corr Lat −8 − .02

.16

951

p $\frac{41}{951}$ p 910

41

---

334 = D Lat Sept. 23. P. (Sp. Corr.)

9 42 | S. 2.030 = 10.09 10.09

Sp. Corr. 4 65 | N. 1.534 = 7.63 +.21 = 7.84

Sm. T. 14 47 ~~17.72~~ 17.93

42.1

896

N 784

N $\frac{112}{896}$ 112

---

335 = S Lat Sept. 29. P. 4 46.1

6 58 | S. 0.541 Bes. Th. = 2.69 ~~[illegible]~~ 2.69

4 46 | N. 2.792 = 13.88 +.19 = 14.07

Sm. T. 11 44 ~~16.57~~+ 16.76

301.3

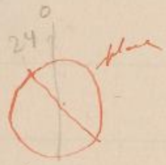
838

S 269

S $\frac{569}{838}$ 569

Sept 20. $8^h 06^m$

Planet this shape



Lat Cent −13°.6 } Phase Angle
Long " 42°. } 33°.3

214°.0
175
13
402
360
Long C. 42°

$4^h 45^m.3$
8 06.
$12^h 51^m.3$

Calc fals to Pl Pole 24°
the term. pass. 10° Prec.

Ceraunius

Position Diameters

List of corrected diameters
from the foregoing L. & Z. work.
In seconds of arc.

Gw.T. 0h		Polar	Equa.	Interpolated Mars	Residuals Polar	Residuals Equat.
June 12, 16".57	June 13	18".56		16.89	+1.67	
14 16.93	"		19".12	"		+2.23
16 17.29	"		18.76	"		+1.87
18 17.66	16	18.33		17.41	.92	
	"	17.53		"	.12	
	"		17.58	"		.17
22 18.42	23	20.32		18.74	1.58	
24 18.80	"		18.56	"		−.18
26 19.19	"	19.07		"	.33	
	"	19.11		18.75	.36	
	24	19.86		18.92	.94	
	"	18.82		18.93	−.11	
July 10, 21.88	July 11		22.86	22.17		+.69
12 22.24	"	22.79		"	+.62	
14 22.58	"	22.10		"	−.07	
16 22.91	"		23.08 ~~22.20~~	22.18		+.90
18 23.22	14	23.08		22.67	+.41	
	"	22.94		"	+.27	
	"	22.67		"	0	
	15	23.45		22.84	+.61	
	"	25.16		"	2.32!	
	16	23.73		23.00	.73	
	"		23.35 ~~22.64~~	"		+.35
	"	23.48		"	.48	
	"		23.46 ~~22.76~~	"		.46
	"	22.96		"	−.04	

A&D: Errors in blue

July			Marth.	Polar	Equat.
16 cld	22,72		23,00	−,18	
"	23.70		23,01	+,69	
17	23,83		23,1~~5~~6	+,67	
		24,31 ~~23,67~~	23,16		+1,15
	23,98		23,16	,82	
	23.77		23,17	,60	
		24,44 ~~23,77~~	"		1,27
	23,19		"	,02	
	23.30		23,18	,12	
		23,~~14~~ 38	"		0,20
	23,84		"	,66	
		23,~~67~~ 80	23,18		,62
	23,32		23,19	,13	
	23.31		"	,12	
17.D		25,3~~2~~5 ~~D~~	"		2.16
"	27.39		23,19	4,20	
"	25,08		23.21	1.87	
18,D	24,73		23,32	1.41	
19.P.	22,46		23,45	−,99	
	23,03		"	−,42	
	23,27		"	−,18	
	22,95		23,46	−,51	
	23,63		"	+,17	
		23,8~~0~~5	"		,39
19.D.	24,54		23,48	1,06	
		23,3~~9~~1	"		−,17
	24,56		23,49	1,07	
20,P	23,18		23,59	−,41	
	22,97		23,60	−,63	
	24,32		"	+,72	

10,12 1,99

July, Ctd			Month	Polar	Equat
20.P.	23.48		23.61	−.13	
	24.47		"	+.86	
	24,09		"	+.48	
	24.12		"	.51	
20.D.	25,78		23.62	2.16	
	23.82		"	.20	
		23.~~68~~54	"		−.08
21.P.	23.13		23.73	−.60	
	23.26		"	−.47	
	22.96		"	−.77	
22.P	1 Pick. Th. 23.31		23.85	−.54	
	23.45		"	−.40	
23.P		24.21.	23.98		+.23
24.D	25.62		24.12	+1.50	
	25.98		"	1.86	
25.P.	23.35		24.19	−.84	
		25,~~70~~69	"		+1.50
	24.08		"	−.11	
		24.7~~4~~3	"		.54
	23.56		"	−.63	
		23,~~71~~74 Wt 6/4	"		−.45
	24.01		"	−.18	
		~~25.00~~ 24.88	"		+.69
25.D.	23.32		24.20	−.88	
		25,2~~0~~1	"		1.01
	24.05		"	−.15	
	26.66!		"	+2.46!	
25.P.	24.13		24.21	−.08	
26.P		25.~~20~~19	.28		.91
		25.6~~6~~7	"		1.39

July, ctd			Mearth	Polar	Equat
26.P		24.5~~7~~8	24.28		+.30
	23.8~~8~~9		"	-.39	
26.D		24.~~20~~19	"		-.09
		24.66	"		+.38
	24.63		24.29	+.34	
		25.10 ~~24.83~~	"		.81
		24.~~37~~53	"		.24
		26.~~52~~66	"		2.37
27.P.		24.81	24.36		.45
	23.5~~4~~5		24.37	-.82	
		24.40	"		+.03
	1 Bel. Th. 24.06		"	-.31	
	23.6~~4~~5		"	-.72	
		25.~~44~~23	"		+.86
28.P.	23.56		24.44	-.88	
	24.78		"	+.34	
		25.61	24.45		+1.16
	24.53		"	.08	
28.D.	24.19		24.46	-.27	
		24.62 ~~25.18~~	"		+.16
29.D	24.~~88~~90	~~8~~	24.52	+.38	
		23.~~55~~72	"		-.80
30.D	1 Bel. Th. 26.19		24.59	+1.60	
		26.3~~1~~5	"		+1.76
31.P.	23.6~~0~~2		24.65	-1.03	
		25.~~53~~37	"		+0.72
31.D	23.~~88~~70		24.66	-.96	
		24.~~56~~40	"		-.26
Aug 1.D.	24.72 ~~[illegible]~~		24.70	+.02 ~~[illegible]~~!	?
		25.68 ~~[illegible]~~!	"		+.98 ~~3.99~~ ?

	Date Aug	Polar	Equat.		Polar	Equat
	2.D	25.34		24.72	+.62	
			24.~~72~~53	〃		-.19
			24.06	〃		-.66
	3.P	24.2~~7~~8		24.75	-.47	
	4.P	23.8~~5~~9		24.77	-.88	
			24.99 ~~25.18~~	〃		+.22
		23.89		〃	-.88	
		24.~~48~~52		〃	-.25	
			25.~~53~~30	〃		+.53
	5.P	23.68		24.78	-1.10	
			25.~~76~~50	〃		+.72
		23.~~49~~54		〃	-1.24	
		23.~~47~~52		〃	-1.26	
	5.D		24.93 ~~25.26~~	〃		+.15
		24.68		〃	-.10	
			25.79 ~~26.17~~	〃		+1.01
		25.~~65~~70		〃	+.92	
			25.~~34~~08	〃		+.30
	6.P.		25.~~45~~82	〃		+1.04
		23.85		〃	-.93	
		23.~~49~~84		〃	-.94	
		24.58		〃	-.20	
155'		24.29		〃	-.49	
			25.00	〃		+.22
			25.67	〃		+.89
			25.58	〃		+.80
			24.57 wt $\frac{5}{4}$	〃		-.27
		25.04 wt $\frac{5}{4}$ ~~24.99~~		〃	+.26	
			25.72	〃		+.94
		24.36		〃	-.42	

		aug, ctd				Polar	Equat
		6. P		24.62	24.78		−.16
.1			24.18		"	−.60	
			ut $\frac{5}{4}$ 24.67		"	−.11*	
			23.65		"	−1.13	
		6. D	25.59		"	+.81	
				25.35	"		+.57
			25.67		"	+89	
				25.43	"		+65
		7. P.		24.14	24.77		−.63
			24.28		"	−.49	
				25.15	"		+.38
	169		23.29		"	−1.48	
Aug 7.	24.78	7. D		25.52	24.76		+.76
9	74	8. P.		24.51	24.75		−.24
11	67		24.22		"	−.53	
13	57			25.73	"		+.98
15	43		24.68		"	−.07	
17	26	8. D	24.23		24.74	−.51	
19	.06			24.06	"		−.68
21	23.83	9. P.		23.38	24.72		−1.34
23	57		23.~~45~~ 53		"	−1.19	
25	29			25.80	"		+1.08
27	00		24.~~13~~ 21		"	−.51	
29	22.68		24.~~29~~ 37		"	−.35	
31	35		24.~~54~~ 62		"	−.10	
S/r. 2	01	10. P.	23.~~45~~ 53		24.69	−1.16	
4	21.66			25.99	"		+1.30
6	30			24.84	"		+.15
8	20.94			25.52	"		+.83
10	.57			25.78	"		+1.09
12	.20						

aug. std.			Marth	Polar	Equat
10.P.		24.76	24.69		+.07
		24.93	24.68		.25
13.P.	1 Bch, Th. 25.04		2*4.54	+.50	
		25.59	"		+1.05
	23.~~39~~51		"	-1.03	
14.P.	24.42		24.47	-.05	
	23.69		"	-.78	
	24.~~44~~26		24.48	-.22	
		25.73	24.47		+1.26
	24.~~65~~77		"	+.30	
	24.05 ~~23.93~~		24.48	-.43	
	24.~~30~~42		"	-.06	
16.P		25.25	24.31		+.94
17.P.	24.05 ~~23.91~~		24.21	-.16	
	24.67		"	+.46	
18.P.		24.20	24.11		+.09
		24.83	"		+.72
	23.~~60~~74		"	-.37	
	24.29		"	+.18	
	24.65		24.10	+.55	
	22.97		"	-1.13	
		23.82	"		-.28
		23.46	"		-.64
18.D.	24.~~09~~23		24.09	+.14	
19.P.	23.92		24.00	-.08	
	24.29		"	+.29	
	24.28		"	+.28	
	24.30		"	+.30	
		25.08	"		+1.08
		26.04	23.99		+2.05

Aug.			Martth	Polar	Equat
19.D	24.36		23.99	+ .37	
		25.09	"		+1.10
	25.23 ~~25.08~~		"	+1.24	
		24,93	23.98		+ .95
	25.14 ~~24.99~~		"	+1.16	
		24.11	"		+ .13
20.P	23.77		23,88	− .11	
	23,86		"	− .02	
	23,93		"	+ .05	
20.D.	26,02 ~~25,87~~		23.87	+2.15	
		25.31	"		+1.44
	24.48		23.86	+ 64	
		26,02	"		+2.16
		25.07	"		+1.21
	23.39 ~~23.24~~		23,85	− .46	
		24,98	"		+1.13
	24.92		"	+1.07	
		25,52	"		+1,67
	25,61		"	+1.76	
		25,00	"		+1.15
		25.02	"		+1.17
21.D		24.77	23,76		+1.01
		24.37	"		+ .61
		23,95	"		+ .19
	24.83		23,75	+1.08	
		23,90	"		+ .15
	24.34		"	+ .59	
		25,49	"		+1.74
	24.07 ~~23,97~~		"	+ .32	
	24.79 ~~24.63~~		"	+1.04	

	Std			Marth	Polar	Equat.
Aug	21.D	24.39		23.74	+ .65	
			24.93	"		+1.19
			25.05	"		+1.31
			23.68	"		- .06
		24.~~07~~23		"	+ .49	
			25.61	"		+1.87
	22.D	wt 3/4 24.66		23.63	+1.03	
			23.84	"		+ .21
		24.13 ~~23.97~~		"	+ .50	
			24.88	"		+1.25
		23.60		"	- .03	
		23.96		23.62	+ .34	
		24.88		"	+1.26	
			24.53	"		+ .91
	24.P.	24.44		23.36	+ 1.08	
	25.P.	22.29		23.20	- .91	
	25.D.	22.97		23.19.	- .22	
			24.08	"		+ .89
		23.~~02~~20		"	+ .01	
		22.56		"	- .63	
			24.93	"		+1.74
	26.P.		21.92	23.06		+1.14
			23.55	"		+ .49
	26.D	22.~~55~~74		23.04	- .30	
			23.25	"		+ .21
	31.P.	21.~~64~~90		22.28	- .38	
			22.34	"		+ .06
Sept	2.D.	22.~~53~~74		21.88	+ .86	
			22.51	"		+ .63
		22.~~29~~50		"	+ .62	

					Marth	Polar	Equat	
		Sept 2d 2.D	22.16 ~~21.95~~		21.88	+.28		
				23.12	"		+1.24	
			22.42		"	+.54		
			21.92		21.87	+.05		
				23.37	"		+1.50	
		3.P.	36 21.~~14~~		21.75	−.39		
				22.66	"		+.91	
			21.13 ~~20.91~~		"	−.62		
		4.P	21.10 ~~20.88~~		21.57	−.47		
		5.D.	22.13 ~~21.41~~		21.35	+.78		
				20.62	"		−.73	!
		6.P.	~~+Bar. M.~~ 21.75		21.21	+.54		
				21.12	"		−.09	
		6.D.	22.02		21.17	+.85		
				21.55	"		+.38	
		7.P.	20.38		21.03	−.65		
			47 20.~~25~~		"	−.56		
				21.04	"		+.01	
		8.P.	48 20.~~26~~		20.85	−.37		
Sept 12	20.20	8.D	86 21.~~64~~		20.84	+1.02		
14	19.83		81 20.~~59~~		"	−.03		
16	.45	11.P	49 20.~~27~~		20.29	+.20		
18	08			20.89	"		+.60	
20	18.72			22.82	"		+2.53	!
22	.36	11.D.	21.35		"	+1.06		
24	00	12.P.	19.51		20.11	−.60		
26	17.64			20.45	"		+.34	
28	.29	12.D.	20.45		"	+.34		
30	16.95			20.96	20.10		+.86	
		13.D		18.99	19.91		−.92	

Sept. std			Month	Polar	Equat
13.D		20.60	19.91		+.69
	1 Bet. Th. 20.57		"	+.66	
		19.92	"		+.01
13.P.	18.98		19.90	−.92	
	19.38		"	−.52	
15.P.	19.30		19.53	−.23	
15.D.	19.92		19.52	+.40	
		19.86	"		+.34
	20.09		"	+.57	
		20.59	"		+1.07
		21.25 ~~20.59~~	"		+1.73
16.P	18.86 ~~18.64~~		19.36	−.50	
	18.78 ~~18.56~~		"	−.58	
		19.15	"		−.21
	~~1 Bor. Th.~~ 19.12		"	−.24	
	18.66		[illegible]	−.70	
		18.66	"		−.70
18.D.	18.36		18.98	−.62	
20.D.		19.30	18.62		+.68
		20.56	"		+1.94
	19.49		"	+.87	
21.P.		18.65	18.45		+.20
		18.04	"		−.41
	18.10 ~~17.89~~		"	−.35	
	18.15 ~~17.94~~		"	−.30	
	18.00		"	−.45	
		19.06	18.44		+.62
21.D		19.22	"		+.78
	20.01 ~~19.80~~		"	+1.57	
22.P		18.79	18.27		+.52

Diff. etd			Marth	Polar	Equat
22.P		19.08	18,27		+,81
		18.39	"		+,12
22.D.	18.16 ~~17.95~~		18,26	−,10	
		17,88	"		−,38
23.D.		19,61	18.09		+1,52
		19,23	"		+1,14
		19,83	"		+1,74
	18,85		"	+,76	
		19.18	"		+1,09
	19.37 ~~19.16~~		"	+1,28	
		19,02	"		+,93
23.P.	17.93		18.08	−,15	
29.P.	16.76 ~~16.57~~		17.04	−,28	
	197	142			74 | 3.860 0,522

339 Double couplets.

68 | 50.76
0.746

If a set of ~~six~~ 6 settings - five Difs - has a weight 1 - on the full Diam; two settings or a single couplet has a Wt $\frac{1}{3}$; and a double couplet has a weight $\frac{1}{6}$.

339 double couplets are therefore the equivalent of over 56 full measured diameters.

Full diams:
Equivalent

$\underbrace{33^- \quad 24^-}_{56^+}$

216 A

List of Bet. [illegible] | 4" or less measured in usual way i.e. small quant; List of Obsns. near limb. ^.

whole 85. P. U4 Cf. 84' { Us. 84' 5."21 / Bet. 85 5.43 / .18 } same time near Mer. ✓
whole 93'. P. N4. S 6."10. cf 89' Us. 5.70 July 21 / Bet. 6.10 " 22 / .40 } at Mer. ✓
whole 123. P. Q3 N. 2."13 ~~[illegible]~~ no cf. ✓
whole 132'. D. 44. S. 2."75 no cf. ✓
150. P. G4 p 5."41 " ✓
163. D. J. p 2."67 ✓ Cor.
186'. P. F. S. 2.70, whole D. " ✓
196'. P. x S. 2."41 part D. " ✓
197. P. X2, S 2.01 " " ✓
~~200. P. Z. f 3.38 " place~~ ✓ f Cor.
~~211". P. Z. f 3.65 " "~~ ✓ f Cor.
214'. P. X1, S. 2.36 " — ✓
~~217". P. Z. f. 3.30 " "~~ ✓ f
=
~~251. D. U4. p 3.49 "~~ —
(~~232. " 2.99 Oct. 26~~). —
~~255. D. U4 p 2."31 "~~ —
(~~256. " 1.23 Oct. 26~~) " —
295'. D. Pr3 N 1.65 whole. place ✓
307. P. E2 N 0.98 part. ✓

all corrected for cloud belt P −."40 D −."50
P −."30 D −."40

219"

No.	amt. mea.	above mean				
1' N	3."31	~~[illegible]~~	P	+70		
2 S	1.94	~~[illegible]~~	"	0		
3 S	2.29	—	"			
3B N	0.97	—	"			
4A S	2.67	—	"			
4B N	0.99	—	"			
28 N	1.44	[illegible]	"	−30		
71 N	1.76	—	"			
111 N	3.96	−.57	D			D4
126 S	3.58	[illegible]	P	−.28		
170 p	3.78	+.16	D		✓	J
225" p	4.15	+.02 (2)	D		✓	Z
226" p.	3.27	+.56 (2)	" same date		✓	Z
227" p	2.42	+.04 (2)	"		✓	Z
228 p	1.92	+.06 (2)	"		✓	Z
237 p	2.05	+.21	D		✓	W
238 p	3.81	−1.16	"		✓	Y
240 p	2.98	+.77	"		✓	Y
241 S	3.83	−0.7	"			
249 S	2.90	[illegible]	P	−.81		
~~250"~~	~~3.76~~	~~0~~	~~D~~			
~~254"~~	~~2.51~~	~~+.80~~	~~D~~			

Note - Msts. used for work on cloud belt crossed out in blue pencil.

216B ~~Bet.~~ Th.

Small Quan. in Us. way,

~~261. D. $1\frac{1}{2}$ p. 3.16 part D. out~~

~~(262 D 1.70 out Th.) + 263-4. in terms of 1 Th.~~

~~263~~

~~264~~

~~290 13 p 2.69 Bet~~

~~(291 1.54 out) 292 in terms of 1 Th.~~

295'. D. Pr.3. N. p 1.65. whol. phase

~~304 3.07~~

~~(305. 1.06 out.)~~

307. P. E₂ N p 2.98 part. phase

259. S 3.87 {~~0 or~~ ~~-.80~~} D

~~260 2.43 -.07 D~~

265 f 3.96 — D — Cl 2.

270' N 3.80 -.06? D

271' N 2.43 (~~.38 or~~ ~~.55~~?) D

~~289 2.42 +.28 D~~

~~303 2.53 +1.03 P~~

~~311" f 2.45 ~~[illegible]~~ P. — f J~~

324 f 2.48 ~~[illegible]~~ P. +.10 — D4.

335 S 2.69 ~~(Aver)~~ P ~~(-.10?)~~

16 | +1.40 6 | -.59

(C) (D +.09 per case) (P -.10 per case)

(A)

Whole Diams - 1 Bet. Th.

	mean obsd.	Diff		quant. meas.d
85. P.	23.41	+0.98		5.43
93'. P.	23.65	-0.04		6.10
123. P.	23.77	+.59		2.13
132' D	24.60	+1.97	D	2.75
186' P	24.22	+1.12		2.70
295' D	20.61	+.36	D	1.65
		6 | 4.98		

1 Th = .83 = Value obtained from comparing diam^s when one part is Bet.-Th. with the mean observed diameter. This is probably largely accidental.

D, when measuring small parts makes the whole diam. 0.1" larger than usual. P. makes it 0.1" smaller than usual.

This seems of no account.

(B) P. is Bet. & Us.

85 .18

93' .40

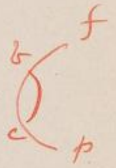
216A.

Discussion of ~~[illegible]~~ Measurements of small arcs.

1

References for Cor. to Diam.

Meas of cap in Long — July 26.



$\{$b c 1.589 (d)

b f 1.447
b p 3.456

c f 3.573
c p 1.759

Bk 66 pg 40. within 10m

Long. N. and N. Ocean.

250″	Unwalway	p 0.757 f 4.015	23″.737	757	11..56
251	Bet. Th.	0.763		682	
252	Out. Th	0.601		682	12..07

2 | 1.762

Width of Th. .081 affective width

Method A.

Bk 66. page 42. within 10m

254″	Long. midd. line r–s.	p 0.505 f 4.440	.505	12..48
	Bt Th	0.464	.383	12..56
	Out. Th.	0.247	.327	12..58

| 217
.108 affective width.

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True size object 0″.58	Observed size	0″.5 (or better		″.47
		0.5	"	.47
		0.5	"	.47
		0.35	"	.33
			mean	.425

Discussion of ~~[illegible]~~ Measurements of small arcs.

2

Width of Threads

Bk 66. pg 44–5

Middle line r–s

p	0.590	590	12..32–40
f	4.016		
Bt M p.	0.636	.555	41–2
Out. M. p	0.342	.423	45
	2.244		
	.147 effective width.		

Placing 2 M. adj. p 3.5th 48

" 2 M. – 1th apart p 4.0

Bk. 66. page 87–8.

10..10–17 p 0.487
f. 3.523

21+ p .541 Bt. M.

28 p .310 Out. M.

1.231
.116 effective width.

Method A.

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0.5	"	.47
0.5	"	.47
0.35	"	.33
	mean	.425

Discussion of ~~[illegible]~~ Measurements of small arcs.

3

Width of threads

Bk 66. page 100.
take a

12.05 p 0.508 508 on 1/3
f 3.534

But thr p 0.618 .537 prob. on 1/2 instead of 1/3

Out. thr p 0.213 .294 on 1/3

|405
.202 effective width.

12.16. Tr thr p 3.5th.

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True size object 0.58	Observed size	0.5	for better	.47
		0.5	"	.47
		0.5	"	.47
		0.35	"	.33
			mean	.425

Discussion of ~~[illegible]~~ Measurements of small arcs.

The preceding page contains all the notes I have on the subject. See slips under [illegible].

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Method A.

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follows:-

True size object 0.58	Observed size	0.″5 (or better	.″47
	0.5	"	.47
	0.5	"	.47
	0.35	"	.33
		mean	.425

min max
.04 to .06 both Eps

a 0.″5 in terms of Th. referred to Mic. Sc.
or is this 0.″47

a .5 — 345

a 0.35 — 714

Mean .46

4)

True 0.″58

Eff. val 1Th = Mic Val · $\frac{58}{46}$ = .″59

Obns on Disk at [illegible]

Width of disc in terms of thread.

~~Among Prof. W.A.P.'s results consult also his recent — June 1896 — Obns on disc for diff. bet. Bet Th. & usual way.~~

Discussion of ~~[illegible]~~ Measurements of small arcs.

The preceding page contains all the notes

[illegible] slips under [illegible]

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 [illegible] .47 + .16, .08

ead, It was

1" = .2011^06 Ms d on Stone
1" = .20172 Ms d. The of Sc. by Microscope.

103.7
.160 - .01
42.20
-.037
2.183
.43
2.61

45
.60
2.700
-.045
2.655
.46
3.112

35
.60
21.060
35
2.065
.23
2.38

1.645
23
1.875

.47
3.5
235
141
1.645
43
2.075

315.5
415.5

.47
4.5
235
188
2.115
.46
2.575

.47
4
1.88
.43
2.31

actually observed by W. H. P. as follows:—

True size object	0.58	Observed size	0.5 / or better	.47
			0.5	.47
			0.5	.47
			0.35	.33
			mean	.425

Discussion of ~~[illegible]~~ Measurements of small arcs.

5,

Width of threads

Position Obns

826
1206

aug 25. Reduced to one time.

250" - p 3."76
f 20.32
R = 12.04
251 Bet 3."96 — mean 3.64 — 1 th = ".20 — 1 th = ".53
1 th = ".36
252 Out. 3."23

---

aug 25. Reduced to one time

254" p 2."51
22.42
R = 12.46
255 Bet. 2."50 — mean 2.16 — 1 th = -".01 — 1 th = 1".03
~~256 Out~~ — 1 th = ".51
256 Out 1".48

---

1 th. by Mic. Sc. = 0".47

30 settings, ±

Bet. ~~dd~~. ".20 } to produce true value (Range
Us. " 0".11 } 2mm to 38mm

This is result of W.H.P.'s work, on disc 1m = 1".7

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Method A.

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actually observed by W.H.P. as follows:—

True size object 0".58	Observed size	0".5 / or better	".47
		0.5	.47
		0.5	.47
		0.35	.33
		mean	.425

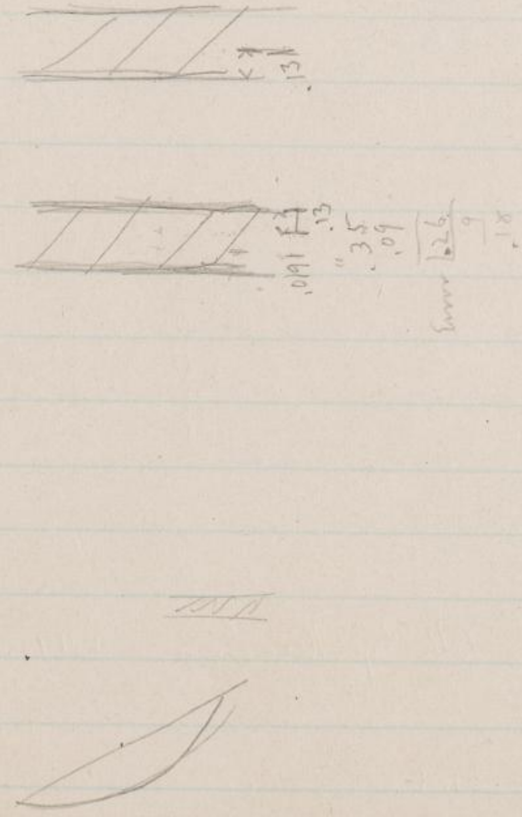
Discussion of Measurements of small arcs.

W.H.P. Bet. Th. Cor. -".30

A.E.D. " " -.40

larger neg. Cor. give less C.B.

Us. Cor. always 0. except to be on safe side in testing for cloud belt when Us. becomes -.10 and Bet. Th, -.50



.47
.18
.29

47 - 26/35 47

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0.5	"	.47
0.5	"	.47
0.35	"	.33
	mean	.425

Discussion of ~~[illegible]~~ Measurements of small arcs.

6

Reduced to one time.

E.V. = .47 +.17 for 1 th
E.V. = .94 +.17 " 2 th
= 1.11
.56
3.5
280
168
1.96

2.99
1.96
4.95
2.48
instead of 2".80
?

Aug. 26.

260 p 2".93
f 20.32
R = 11.62
261 Bet 3".39 → mean 2.79
262 out 2".05

} 1 th = ".46
} 1 th = ".67
} 1 th = .88

(cf with mean)

263. (two th. adj.) 3.5 th = " + ".43 = ~~2.08~~
264 (th. apart 1 th) 4.0 = 2".56 + ".43 = ~~2.3~~ 2.99
.64

Reduced to one time

Sept 12.

289 p 2".42
f 18.54
R = 10.48
290 Bet 2".93 → mean 2".41
291 out. 1.88

} 1 th = ".51
} 1 th = ".52
} 1 th = ".54

292 4.5 th ± .5 = " + ".46 = 2.58

W.H.P. Under 5'4" range
Ho. to true value – subtract ".13

Method A.

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	ther	".47
0.5	"	.47
0.5	"	.47
0.35	"	.33
	mean	.425

Discussion of ~~[illegible]~~ Measurements of small arcs.

7

Reduced to one time.

Sept 15.

303 p 2.53″

f 18.72 / R = 10.62

304 ~~Bet.~~ 9 cent. mean. 3″.20 → mean 2″.32

}17h = ″.67

}17h = ″.98

}17h = 1″.29

305 Out 1.24

306 p $\overset{7h}{3.5}$ = +″.23 = ~~1.48~~

---

mean .08 too small
Us. .11 too big

Nº	Mean	½ B+O	B+Us.	O+Us.	Us.–Mean			
1	3″.64	″.36	″.20	″.53	″.12	17h = → .64		
2	2.16	.51	–.01	1.03	.35	~~″.59~~		↓
3	2.79	.67	.46	.88	.14	~~2″.61~~	+.18	2.80
4	2.41	.52	.51	.54	.11	~~3.12~~	+.71	3.34
5	2.32	.98	.67	1.29	.21	2.30	.22	2.47
		5)3.04	5)1.83	4.27	5).93			
		″.61	.37	0.85	.19			

7h. Obsns ″.61 value for Us. ″.13 Bet. + Out. 7h. Provisional

			17h = .47
3	2.36	{3.5 / 4.0} (3.7)	2.19 corrected
4	1.95	4.5	2.58 "
5	2.09	3.5	1.88 "
	6.40	11.7	

17h = $\frac{6''.40}{11.7}$ = 0″.55 Effective value in terms of mean of other methods. Provisional

The mean of the three methods Bet. Out. & Us. agrees well with the value in ~~terms~~ of a 7h. reduced to effective value by adding 16% as found at Flagstaff.

Method A.

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Discussion of ~~[illegible]~~ Measurements of small arcs.

The preceding page contains all the notes I have on the subject. See slips under [illegible].

There are four methods of measuring small arcs:- A, in terms of one thread; B, in the usual way using the micrometer screw and making similar sides of the two threads coincide with the ends of the distance to be measured, called the usual way, or inside threads; C, making the interior sides of the threads, and D, making the exterior sides of the threads coincide with the ~~[illegible]~~ ends of the distance. It appears that for small arcs of less than 4" none of these give correct results. Method A is probably best because through a range of less than 4", from experiments at Flagstaff. The Flagstaff thread was ~~about~~ 0".97 in diameter measured by the micrometer screw. ~~as~~ Through a range from $0^{th}.4$ to $4^{th}.0$ its effective (true) value in Method A. was 1".07. Below $0^{th}.4$ its ~~value~~ effective value increased until $0^{th}.05$ was 0".11

Method A. The thread at Arequipa measured by the micrometer screw was 0".47 in diameter. Its effective value might be therefore .47 + ".16, ".08 occurring on each edge of the thread. It was actually observed by W. H. P. as follows:-

True size object 0".58	Observed size	0".5	(or better	".47
		0.5	"	.47
		0.5	"	.47
		0.35	"	.33
			mean	.425

(492) Discussion of Mst. of small arcs – Ctd.

Method A, Effective value 1 Th.

The observed value (4 obsns) thus comes by chance exactly as in Flagstaff (14? obsns). The effective value is then $\frac{58}{42}\times 0''.47 = ''.64$~~7~~ No obsns were made by A.E.D. so that this may be considered his value.

Methods B, C, & D. W.H.P.

Professor Pickering made no tests of the other methods at Arequipa. At Cambridge, using a finer thread he finds that for arcs $3''.4$ or greater, Method B gives a result $''.11$ too great, (restricting the range to $3''.4$ to $5''.7$, it becomes $0''.13$) and C, $''.20$ too great. The usual way (B) then is $''.11$ too great and Prof. P. (C) with a fine wire is $''.09$ greater. He however observed this last quantity at Arequipa twice (in observations 85 & 93) obtaining $''.18$ and $''.40$ respectively instead of $''.09$. This gives us ~~an~~ ~~Arequ~~ a mean of $''.29$ for this difference. The error in the usual method need not necessarily differ with different threads while the method C depends directly on the size of the thread; we therefore have for W.H.P.'s observations:– effective value 1 Th = $''.64$; Usual method (B), $0''.13$ too great in a range of $3''.4$ to $5''.7$ ~~[illegible]~~, Between threads method (C) is $0''.42$ too great for same range.

Methods B, C, & D. A.E.D.

A.E.D. in Arequipa made five measurements of arcs from $2''.16$ to $3''.64$ by Methods B, C, & D and with three of these method A was compared. The following tables show the comparisons between the methods.

June 12. Upon discussing the matter we adopt the following

Bet. Th. Cor. W.H.P. −0".30 "Usual" Cor. 0 − except in observations on Cloud belt, then {Bet −0".50, Usu. −.10} A.E.D., Out. +.20

A.E.D. −.40 This latter is in order to be on the safe side. & {Bet −.40, Usu. −.10} W.H.P.

From the five cases we have

$\frac{1}{2}(C - D) = 0''.61$ = ½ Dif. between Bet. Th. & Out. Th. = {Value of 1Th. (by this method)}

$C - B = .37$ = Dif " Usual & Bet. Th.

$B - D = .85$ = " " " " Out. Th.

$B - \frac{B+C+D}{3} = .19$ = " " " " Mean of three methods

From the three cases we have

~~No. 3~~	Mean B, C, & D.	A (1Th = .64")	Mean A, B, C, & D	Last Col greater than second	Do less than third
No. 3	2.79	2.80	2.79	0	.01
" 4	2.41	3.34	2.64	+ .23	.70
" 5	2.32	2.47	2.36	+ .04	.11
	3) 7.52		7.79	.27	.82
	2.51		2.60	+.09	−.27

As most of the difference between A and the other methods occurs in one Obsn we cannot correct the other methods by the above comparisons ~~this way~~. It is therefore best to adopt for A.E.D.:— Usual (B) 0".13 too great Bet. Th. (C) 0".50 too great. Out. Th. (D) 0".72 too small} and allow 1Th. to remain as 0".64

Summary — Corrections to Observations

	W.H.P.	A.E.D.
A. Effective value of 1Th	−0".64	(−0".64)
B. Usual method too great	−.13	(−.13)
C. Bet. Th. " "	−.42 29	−.50 39
D Out. Th. " small	—	+.72
(Mean of B. C, & D.	—	+.06)

Let these apply to all quantities under 4" — of which there is a list on page 216.

Solution of Cloud Belt Observations

Five Obsns. made two on Aug 25, one each on Aug. 26, Sept. 12. and Sept. 15.

In these obsns the Rad. will be the mean observed radius of the dates – as follows:–

Aug 25.	12″.06
" 26	11.94
Sept. 12.	10.35
" 15	10.11

Aug. 25, 250″ U4 Mean B.C.D. = p. 3″.64 Cor. pg 219 + .06 p 3.70	12.06 3.70 8.36	$p\,\frac{836}{1206}$ wt $\frac{4}{2}$ = .6932 = 43°.9
Aug 25. 254″ U2 Mean B.C.D. = p 2″.16 Cor + 6 2.22	1206 222 984	$p\,\frac{984}{1206}$ wt $\frac{4}{2}$ = .8159 = 54°.7
Aug. 26. 260 U2 Mean B.C.D = p 2″.79 Cor +.06 2.85 wt 3 Do in 1th. 2.80 wt 1 Mean 2.84	1194 284 910	$p\,\frac{910}{1194}$ wt $\frac{5}{2}$ = .7621 = 49°.6½
Sept. 12. 289 l3 Mean B.C.D. = p 2″.41 Cor 6 2.47 wt 3 Do in 1th 3.34 " 1 Mean 2.69	10.35 269 766	$p\,\frac{766}{1035}$ wt $\frac{5}{2}$ = .7401 = 47°.7+
Sept. 15. 303 l3 Mean B.C.D = p 2.32 Cor + .06 2.38 wt 3 Do in 1th 2.47 " 1 Mean 2.40	10.11 240 771	$p\,\frac{771}{1011}$ wt $\frac{5}{2}$ = .7626 = 49°.7

Each lacks wts from off limb

List of other measurements available for

Cloud Belt.

163 D. J. Aug 6, 172°.9 p $2''.67^{\text{Bk. pg 219}} - .50$ = 2.17 $\overset{\text{mean obs'd}}{R}$ = 12.67 III p $\frac{1050}{1267}$ wt $\frac{1}{2}$ C

170 " J? " 7 158.0 p $3.78^{\text{wo}} - .13$ = 3.65 R = 12.68 II p $\frac{~~9~~\,904.5}{1268}$ wt 1 C

200 P ✓

211" 4 ✓

219" 4 ✓

225" D ✓

226" 4 ✓

227" 4 ✓

228 4 ✓

237 4 ✓

238 4 ✓

240 4 ✓

~~215" P~~

250 D ✓

254 4 ✓

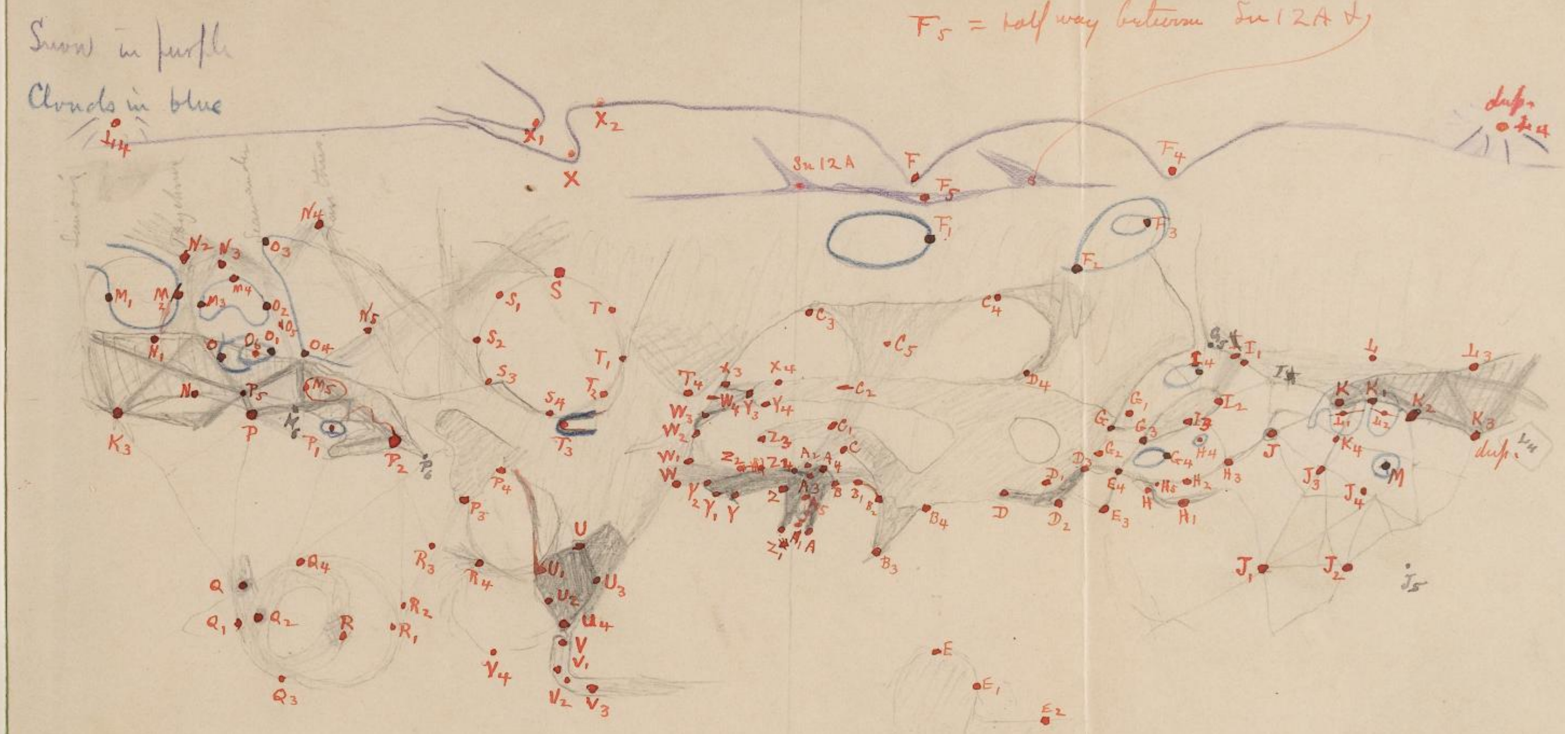
260 4 ✓ See opp page

284 4 ✓

303 4 ✓

311 P

Maps


Snow in purple
Clouds in blue

F5 = half way between Su 12 A &)

1st General Map. Map III.

R4 = pt. of Div. of Canals.

128 Points Named.

1 = H5
1 = O5
1 = N5
1 = P5
1 = M5.
1 = Z4
1 = C5
1 = O6
1 = F5
1 = A5

~~136~~

138

Sn 14
+ Cl 4
Pr 3

Snow, Cloud, & Projections. These 21 are indefinite positions not supposed to be surface objects except Snow - (which moves).

138 + 21 = 159 points ~~on map~~
– 3 " not used
156 points observed.

12~~9~~ points 128

Description of Work in Book 72
and its continuation.

Table, pages 1-25. List of Observations in order and identification. Obsr, page of Book &c.
Summary of preceding - page 26.
Ledger List pages 28-61, Contains Obsns in order of locality & page references. It ~~was~~ is intended to put the computed results in this list for averaging.
Time Work is on pages 62-76 On 73-6 are found the Corns & Gr. M. Time which have been entered in the record book.
Pages 77-85 Contain various corrections &c used in the following table, ~~Pages 78-9 give~~
Pages 86 to 202 Contain the general reductions of observations and it is from this table that the work will be continued. See below
Page 203. Solution of Sept. 20. obsn. on flattening of terminator.
Pages 204-15 give a list of the Position, or Indirect, diameters, compared with Marth's values (exact i.e. not roughly given as in another table - pages 228-31), The differences are given & plotted on (supplimentary) page 235

Pages 216 to 216B give a list of Bet. Th. Obsns - all of which have been corrected in Table pp. 86-202, Also a table of all measures less than 4".00 (with one or two more than 4") On these pages are found (A). Cor for Bet. Th. deduced from six Diam^s in which a Bet. Th. Obsn. was made. (B) W.H.P.'s value of Bet. Th. Cor. from two direct comparisons and (C) D. & P.'s tendency to increase and decrease diameter when measuring small quantities.

The slips underneath these pages are notes on this subject while ________

Pages 217-9 give a discussion of the subject of correction for different methods and (on the margin of 219) the quantities adopted.

Pages 220-1 give a list of cloud belt observations These have been copied out in full and retained by me to be computed when the mean positions (of J, Z, W, Y, U_4, U_2, & U_3) are received.

Page 223 gives Reference Map

Supplementary Pages are in folder at back of book.

225 gives means of full-measured diameters at or near opposition; Dif from Marth, and flattening.

226. Marth, Ang. & Flagstaff reduced to Dist. unity.

227 Early polar (Ang) Diams. Full-Meas^d. They give greater diff. from Marth than those at Oppos.

228-31 give all full Meas^d Diam's, compared with Marth. The Marth values are not rigorous. (Correct values could be obtained from Table on pages 204-15 — using when necessary the G.M.T. of Obns in Table 86-202)

232. Gives the Curves of Marth's values from preceding table and our Diam's.

233. Gives Mean curves — P & D, both Eq. & Pol.

234. Gives mean curves of Dif. ~~Bet~~ between Ang. & Marth.

235. Gives " " " " " "Indirect Diam^s."

Then follow some notes used chiefly in producing the first & second tables — pages 1-61.

Continuation of Work

A. Details to reëxamine.

Possible obns – Bk 72 page 103   No 38 A.

127   # 107 A

all of doubtful value   148   168 A

196   316 A

Examine 135′ + 135″ (the primes + seconds not yet marked in record books) of Aug. 1. comparing readings with point of coincidence of threads to see if correction of 1 Rev. has been properly made.

The following diameters by W.H.P. are somewhat out and should be examined in same way to see if error can be found. These are found by examining page 235 (and referring back by the date and Diff. to pgs 204-15 and thence for number to 86-202).

Diams. by D have not been examined.

No 33	July 15	2″	too large
248	Aug 24	1	" "
285	Sept 11	2	" "
175	Aug 9	2	" small
215	" 19	1½	" large
257	" 26	1½	" small

Continuation of Work. General.

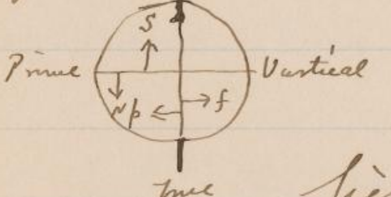
The work goes on from table pages 86-202

There are two kinds of observations - roughly (A) visual longitudes and (B) Micrometer measurements.

(A) The former have not been reduced. The longitude of the center for the time of meridian passage is given. Most of these Obsns are by W.H.P. In this work objects are called central during an interval of 12^{m} to 32^{m}. The maximum error range therefore from 1°.5 to 4°.0 (see page 106 - top) With W.H.P. the object is central when it is central on a line perpendicular to the true axis. With A.E.D. central probably means the same. Central, with regard to an object on the polar cap, would be referred to the cap. "On the Meridian" is probably an estimate of the true meridian.

B. Micrometer measurements are in this table all reduced to seconds of arc and then corrected for phase (using Ang. pole-measured & polar & Equatorial diameters) for Bet-Th. &c & ~~for~~ with Longitudes for elapse of time between halves of the observation. This latter correction is usually done out in detail in the space under the micrometer readings - In doing this a latitude has to be assumed. It is always noted (except in some early Obsns. when the object was near the equator) For this Cor. see also pg 79. When there is great uncertainty in the Lat. or in any other feature - it is noted in parentheses after the "position fraction" (E.g. see 19:147 at bottom).

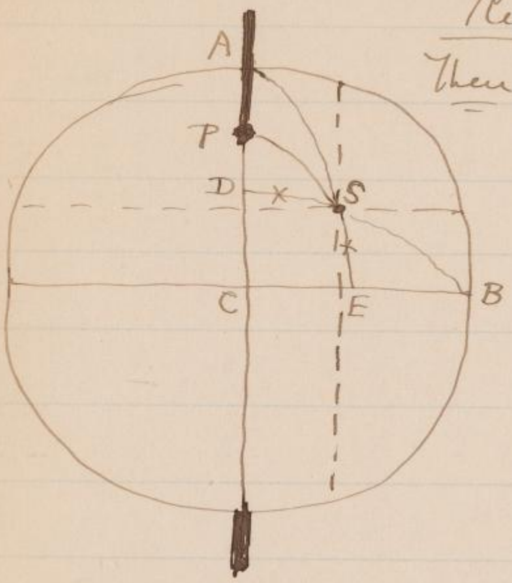
The parts of this table to be used are:— No, Identification, Date (for Lat. Center - see pages 1-25), Longitude of center in purple or blue on margin and fractional position just inside margin.



The letter before the fraction shows the direction in which the object lies. (In copying for computation it better be expressed by a sign) The denominator gives the observed radius in seconds of arc and the numerator gives the distance in seconds from the meridian or prime vertical as the case may be. The fraction then is the Nat. Sine of the distance in degrees from ~~the~~ meridian or prime vertical.

Continuation of Work - general computation

Reduce fractional positions to degrees.



Then. In Latitude Observations

SE is observed - hence SA.

In Δ SAP assume two Hour Angles (i.e. Longitudes) SPC (= 180 - SPA) and for each compute SP.

PA is Lat. Center.

In Longitude Observations.

SD is observed ~~whence SB~~.

Assume two Latitudes - SP

In Rt angl Δ SPD compute SPD for each, which is the Hour angle and hence longitude.

Enter the results in table pages 28-61 & average.

Those observations with some question mark (e.g. PA? or Lat?) after the fractional position will probably need reëxamination.

A. E. Douglass

Av. Res. Polar 12 52 – 56 – 4m to mult. dif.

Aug	3	09	5.045	=P	25.09	24.75	.34
~~Aug~~ "	~~4~~ "	04	5,056	P	.14	.75	.39
~~Aug~~ "	~~3~~ "	03	5,057	D	.15	.75	.40
~~Aug~~ "	4	1	5,066	D	.19	.77	.42
"	"	1	5,065	D	.19	.77	.42
"	5	17	5,104	P	.38	.78	.60
"	"	21	5,112	D	.42	.78	.64
"	"	13	5,096	D	.34	.78	.56
"	6	3	5,075	P	.24	.78	.46
"	7	21	5,025	P	24.99	.77	.22
"	"	14	5,037	D	25.06	.77	.29
"	8	1	5,066	P	.19	.75	.44
		$\frac{1.08}{\pm .09}$ 2,				North	5,18 .432

Mean Polar Dif. 0''.432

North 24.78
.43
Mean Ag. 25.21

$\frac{43}{2478}$ = .017 ~~3527~~ 43

or 1.74% or $\frac{1}{57}$

This will never affect the phase Cor at all,

ca 24m   5''2m

"	3	4	5.137	P	25.55	24.75	.80
"	"	7	5,131	P	.52	.75	.77
"	"	5	5,155	D	.64	.75	.89
"	4	12	5,174	D	.73	.77	.96
"	"	24	5,102	D	.37	.77	.60
"	5	13	5,177	P	.75	.78	.97
"	"	8	5,168	D	.70	.78	.92
"	"	18	5.188	D	.80	.78	1.02
"	6	31	5.090	P	.31	.78	.53
"	7	4	5.142	P	.57	.77	.80
"	"	18	5,185	D	.79	.77	1.02
"	8	1	5,144	P	.58	.75	.83
		$\frac{1}{1.25}$ ± .10					10.11 | .843

Mean Equatorial Diff 0''.843

24.78
.84
Mean Ag. 25.62

$\frac{.843}{2478}$ = .03402

or 3.4%

or $\frac{1}{29}$

This will not affect Phase Cor from July 27 to Aug 16. Inc

$\frac{41}{2562}$ = .01600 = $\frac{1}{62}$

Distance unity

1892

Marth. Aug 5-7. 24.78″ log Dist from Earth = 9,576788

9,352

1,394101

0,970889

not final – omitted at oppos:

Aug. 9,514 Pol. 25.21

9,674 Eq. 25.62

9,576788	9,576788
1,401573	1,408579
0,978361	0,985367

1894

Marth Oct. 12. 21.70

9,357

9,634494

1,336460

0,970954

Hag. 9.44 (Reduced). 9.49

with mod

9.(32).44

9.(37).49

Change in value of Mic. Screw (997, 95) in direction indicated by extra Mst of value, would increase these ~~values~~ quantities by 0 to 0.08″ (0.95)

1890plate.proj..7970

(2 A)

	Early polar diams, P		phase cor.	Marth	Dif.	Resids
		"		" *	+	
July 7	4,506 3 p	22.41	+.01	21.42	1.00	.37
17	4.846 3 p	24.10		23.14	.96	.33
20	4.775 3 p	23.74		23.58	.16	.47
21	4.970 3 "	24.71		23.72	.99	.36
22	4.910 2 "	24.42		23.84	.58	.05
24	4.975 2 "	24.74		24.07	.67	.04
25	4.939 3 "	24.56		24.18	.38	.25
"	5.023 3 "	24.98		24.18	.80	.17
28	4.982 2 "	24.77	+1	24.44	.34	.29
"	5.037 3 "	25.05	+1	24.44	.62	.01
31	5.072 2 "	25.22	+2	24.62	.62	.01
"	5.042 2 "	25.07	+2	24.62	.47	.16
					759	251
					.63	.21

Full-measured Diams.' compared with Marth.

					Marth	ang.	Phase Marth red. to our Diam	Marth amt. red.	Dif.
June 13	P	3,698	P	345	16.″84 ±4	18.″39	.09	16.″75	1.″64
	E	3.541			"	17.61	+4 1.32	15.52	2.09
16	"	3.777			17.38	18.78	+4 1.28	16.10	2.68
"	"	3.522			"	17.51	"	16.10	1.41
"	P	3.758			"	18.69	.07	17.31	1.38
23	P	4.104			18.71	20.41	.05	18.66	1.75
"	E	3.632			"	18.06	+4 1.17	17.54	0.52
24	P	3.843		714	18.90	19.11	.05	18.85	0.26
"	E	3.713			"	18.46	+4 1.15	17.75	0.71
"	P	3.891			"	19.35	05	18.85	0.50
"	E	3.819			"	18.99	+4 1.15	17.75	1.24
July 7	P	4506			21.42	22.41+	.01	21.41	1.00
"	E	4.475			"	22.25	+3 .79	20.63	1.62
17	P	4.846		345	23.14	24.10	0	23.14	0.96
"	P	5.431	D.		"	27.01	0	23.14	3.87
"	E	5.220	D		"	25.96	+1 .44	22.70	3.26
18	P	5003	D		23.29	24.88	0	23.29	1.59
19	E	5052	D		23.43	25.12	+1 .37	23.06	2.06
"	P	5072	D		"	25.22	0	23.43	1.79
20	P	4775	P		23.58	23.74	0	23.58	0.16
"	E	4902	P		"	24.38	+1 .33	23.25	1.13
"	E	4851	D		"	24.12	"	23.25	0.87

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					Σ martin	ang.	Phase cor v Red.	Martin aut. used	dif.
July 20th	P	4846	D	345	23.58	24,10	0	23.58	0.52
21	P	4970	P		23.72	24.71	0	23.72	0.99
"	P	4980	D		"	24.76.	0	23.72	1.04
"	E	5012	D		"	24,92	+1 ,30	23.42	1,50
22	P	4910	P	714	23,84	24.42	0	23.84	0.58
21	E	5030	P		"	25.01	+1 .26	23.58	1.43
24	P	4975	P		24.07	24.74	0	24.07	0.67
"	E	5002	P		"	24.87	+1 ,20	23.87	1,00
25	E	5069 -?	P	345	24,18	25,21	+1 ,17	24.01	1.20
"	P	4939	P		"	24,56	0	24.18	0,38
"	P	5023	P		"	24.98	0	24.18	0,80
27	P	5126	D		24,36	25,49	0	24.36	1.13
"	P	5184	D		"	25,78	0	24.36	1.42
28	E	5088	P	714	24.44	25,30	.10	24.34	0.96
"	P	4982	P		"	24.77	.01	24.43	0,34
"	P	5037	P		"	25,05	,01	24.43	0,62
"	P	4990	D	345	"	24,81	.01	24,43	0.38
"	E	5085	D		"	25,29	.10	24,34	0,95
29	E	5032	D	712	24,51	25,02	,08	24.43	0.59
30	E	5127	P	for all rest	24,58	25.50	,06	24,52	0.98
"	P	5067	D	=	"	25,20	.02	24.56	0.64
31	E	5162	P		24.64	25,67	.05	24,59	1.08
"	P	5072	P		"	25.22	,02	24.6~~0~~2	0,60
"	P	5042	P		"	25.07	.02	24.6~~0~~2	0,45

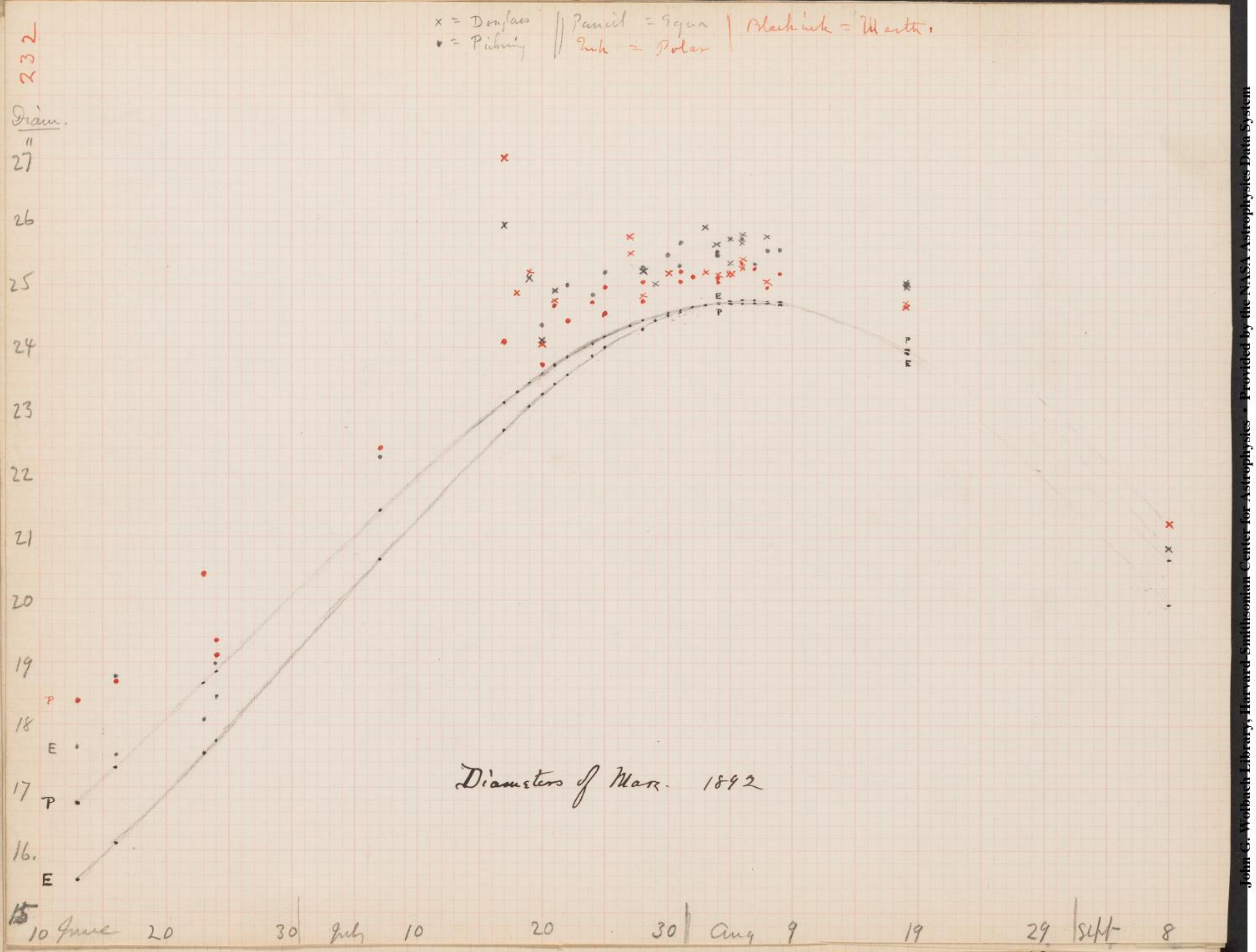
		ct		Obsr	(3) Marth	Ang	Phase cor	Marth ant Msd	Dif
	July 31	E	5093	P	24.64	25,33	.05	24,59	0.764
	Aug 1	P	5055	P	24,68	25,14	.03	24,65	0,49
	2	P	5071	D	24,72	25,22	.03	24,69	0,53
	"	E	5213	D	"	25,92	,03	24,69	1.23
	3	P	5056	P	24,75	25,14	,04	24.71	0.43
order confused	"	E	5137	P	4/C	,55	02	,73	0,82
	"	"	5131	P		,52	02	,73	0,79
	"	"	5155	D		,64	,02	,73	0,91
	"	P	5045	P		25,09	,04	,71	0,38
	"	"	5057	D		,15	,04	,71	0,44
	4	P	5066	D	24,77	,19	,04	,73	0,46
		P	5065	D		,19	,04	,73	0,46
		E	5174	D		,73	,01	,76	0,97
		"	5102	D		,37	,01	,76	0,61
	5	P	5104	P	2478	,38	,05	,73	0,65
		"	5112	D		,42	,05	,73	0,69
		"	5096	D		,34	,05	,73	0,61
		E	5177	P		,75	0	,78	0,97
		"	5168	D		,70	0	,78	0,92
		"	5188	D		,80	0	78	1,02
	6	P	5075	P		,24	,05	,73	0,51
	"	E	5090	P		,31	0	,78	0,53
	7	P	5025	P	24,77	24,99	,06	,71	0,28
		"	5037	D	"	25,06	,06	,71	0,35

std				(4) Mearth std	ang	Phase Cor	Martha ant M^sd	Dif.
7	E	5142	P	2477	25,57	01	24.76	0"81
"	"	5185	D	"	,79	,01	24,76	1,03
8	P	5066	P	2475	25,19	,06	24,69	0.50
"	E	5144	P		58	.02	24.73	0.85

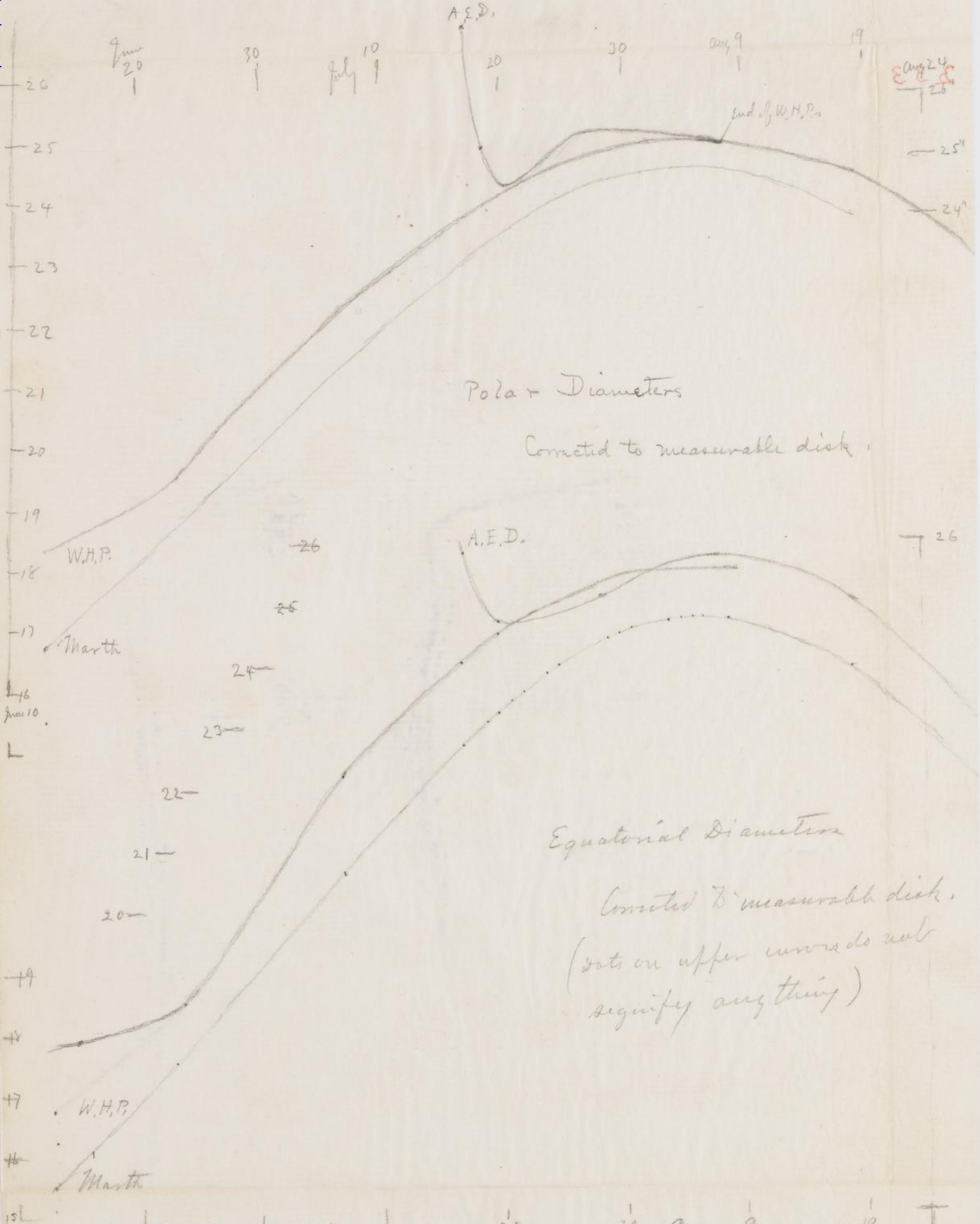
Burh 66.

				may					
Aug 18	P	4957	D	712	24.11	24,65	.14	23.97	0"68
	E	5031	"	"	"	25,02	+1 .19	23.92	1.10
	E	5032	"	"	"	25.02	+1 ,19	23.92	1.10
	P	4964	"	"	"	24,68	,14	23.97	0.71
Sept. 8.	P	4271	"	"	20.85	21.24	+1" 22	20.63	0.61
	E	4184	"	"	"	20,81	+3 .94	19.91	0.90

80 Diam^s



Diameters of Mars. 1892



Polar Diameters

Corrected to measurable disk.

Equatorial Diameters

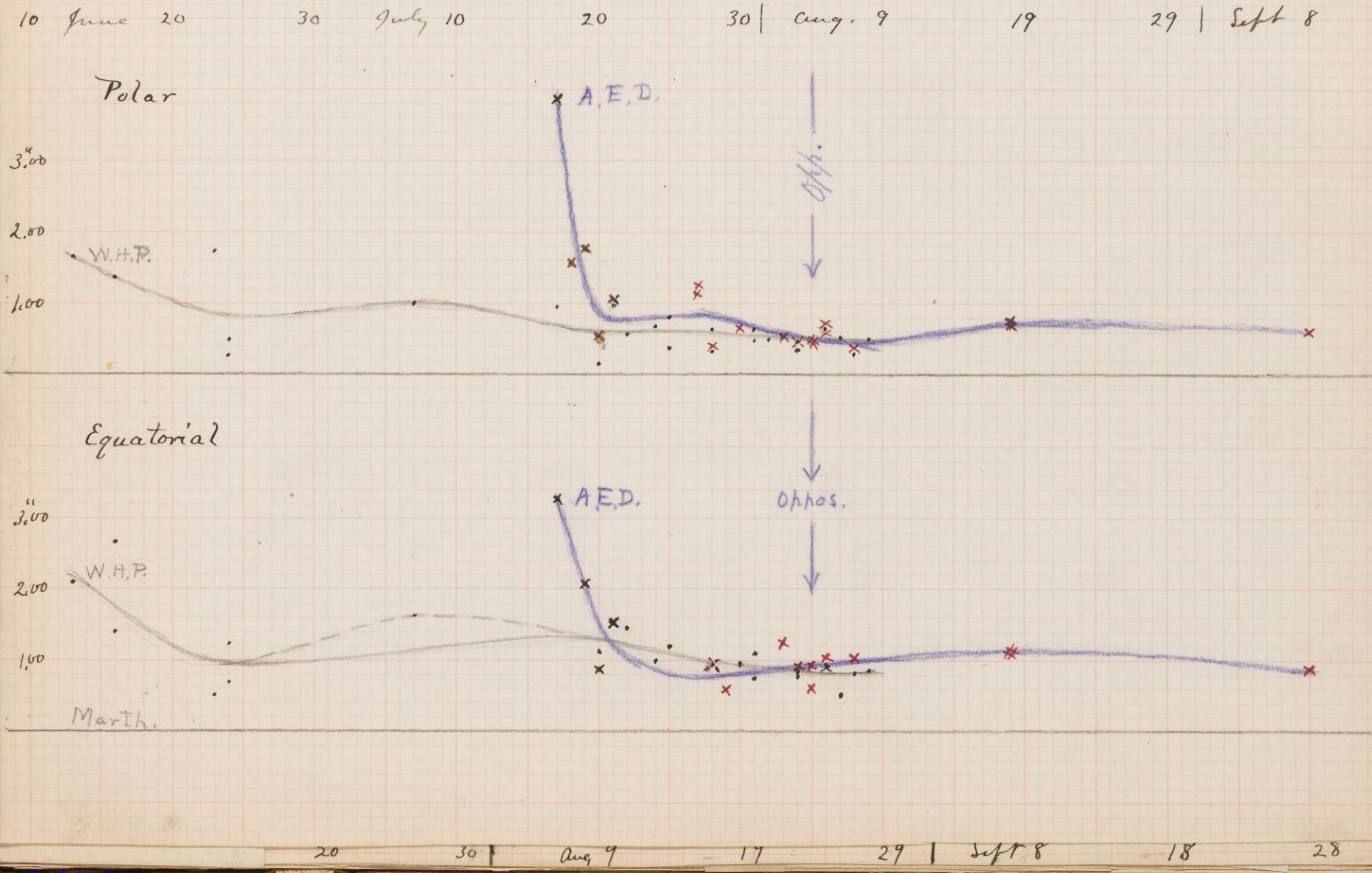
Corrected to measurable disk.
(dots on upper curves do not signify anything)

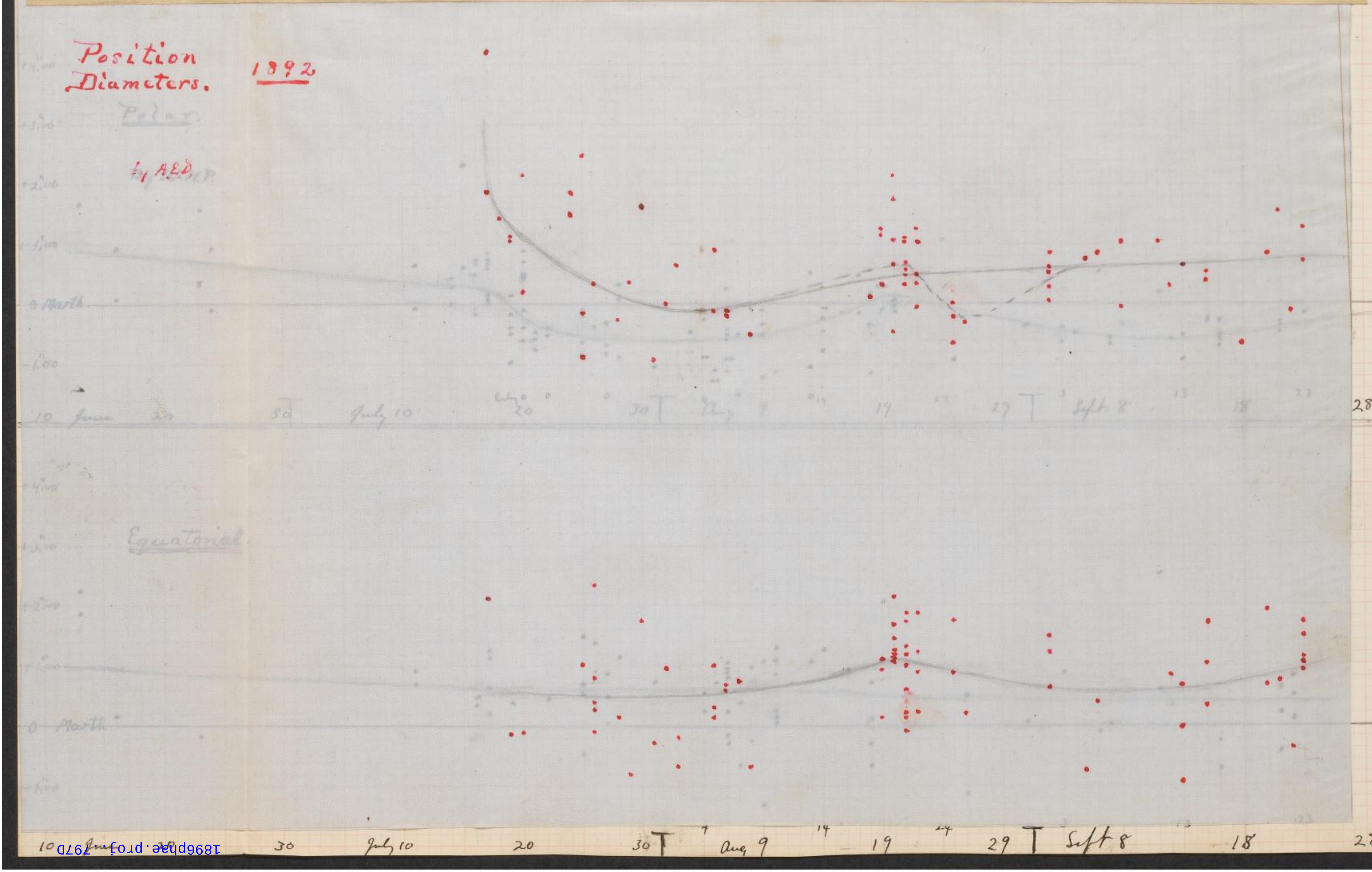
20 30 Aug 9 17 29 Sept 8 18 28

1892, Diameters of Mars. 1892.

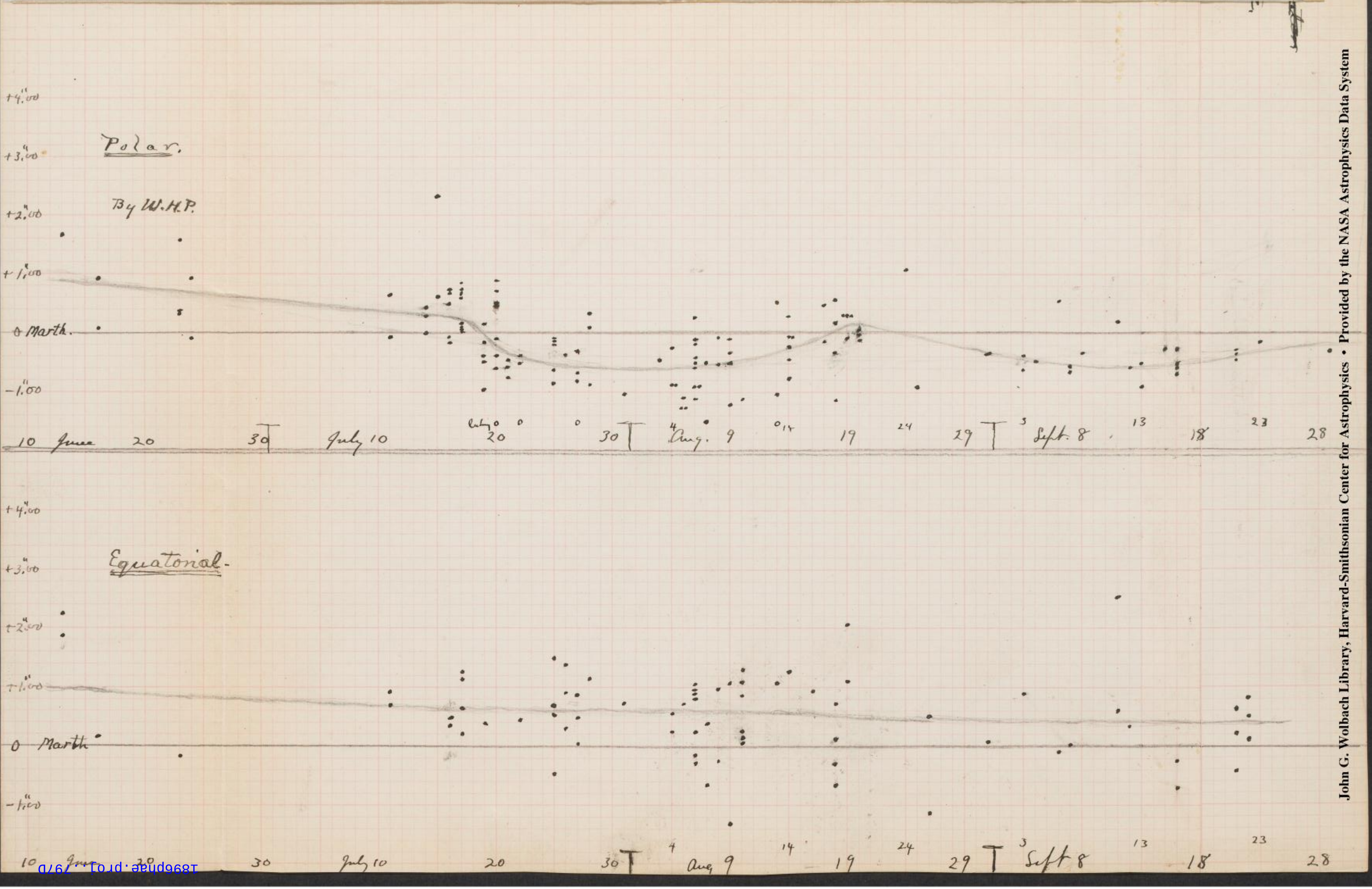
Difference between Arequipa M^{ts} and Marth's Ephemeris.

Showing Original Observations.





Position Diameters. 1892


Polar.
By W.H.P.
+4.″00
+3.″00
+2.″00
+1.″00
0 Marth.
−1.″00
10 June
20
30
July 10
20
30
4 Aug. 9
14
19
24
29
3 Sept. 8
13
18
23
28
Equatorial.
+4.″00
+3.″00
+2.″00
+1.″00
0 Marth
−1.″00
10 June
20
30
July 10
20
30
4 Aug. 9
14
19
24
29
3 Sept. 8
13
18
23
28

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Notes –

65

Fig 54. July 6. A.M.T. 13 48.3 & check.
P's Watch. 13 54.0

" 60 " 11. Watch & Sid Clk. Comp^d

" 64 " 14 A M T same as watch.

" 67 " 15 " " " ".

" 69 " 16 Cor. to watch $-2\overset{m}{.}0$

---

81. 7/19 Watch set at A.M.T.
92 7/21 Set " " "
95 7/22 " "
" "
105 " N.B. Cor to watch
" " S. Clock 5^m fast in Dome
108 7/24 S Cl. & W. Comp.
118 26 Set watch.
123 27 "
150 Aug 1. W. $0\overset{m}{.}5$ fast
166 " 5 W all right.
172 " 6 Set W
190 " 9 "
~~194~~ " 10 "
197 " 13 Found W $3\overset{m}{.}5$ fast. set it.
201 " 14 Set W
205 " 15 "

Entered

A sid is time.
78. 7/19 Watch 5^m sl.
126 7/26 note watch change

Entered.

Bk 66

12. Watch 1^m 36^s slow by M.T.Cl.
23. 8/21. Clock time used 80^s slow by M.T.Cl.
& comp. mean.

June 1.

Parts of work remaining

~~1. Reduc. of Long. Cent. by use of H.C.O.~~ 1 day

2438

~~2. Enter phase Cor, as corrected in vol 40. in each Long.~~

9.7520

~~3. Enter Long. Cor. for times of exp. in each Long.~~

~~4. Reduce fractional position~~

119.07

5. Reduce last to percent position

6. Reduce last to degrees from prime vert. or Merid.

~~Through 29 A. Bot. pg 100.~~

$\frac{H}{h}$		M	Cor.	Diam.
1^h	=	60	$0''.01$, is fr.	$4''.58$
2^h		120	.02	9.16
3^h		180	.03	13.74
4		240	.04	18.32
5		300	.05	22.90
6		360	.06	27.48
7		420		
8		480	.001	.46
9		540	.002	.92
10		600	.003	1.37
11		660	.004	1.83
12		720	.005	2.29
13		780	.006	2.75
14		840	.007	3.21
15		900	.008	3.68
16		960	.009	4.14
17		1.020		
18		1080		
19		1140		
20		1200		
21		1260		
22		1320		

2

Rules for this classifying

I { Include (and give a separate number to) every measurement to any limb or from object on disk to terminator

This includes position of E & W ends of snow & N & S when meas^d to limb. Also Rifts in snow when meas^d to limb & all points noted as near or past the Merid.

II { Class single Lats & Longs together under one number calling the longitude, (No) B.

III { Assign to each line-number a weight depending on the number of settings

6

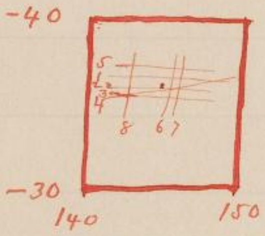
A. Latitudes,

	No	Date	Long Cent	Obsr
~~A.~~	1.	June 13,	133	P
	2.	July 12	150	P
	3,	" 13	151	P
	4,	" 14.	172	P
	5,	Sept. 18.	146	D

Imaginary

Longitudes

No	Date	Long Center	Obsr
6.	July 10.	128	P
7,	" 15.	145	P
8.	" 16.	137	P



Mean Position 145 −36

Average error Lat. 1°.8

" " Long 2.4

Average Error = $\frac{\sum \text{dist to each line}}{\text{No of lines } (=8)}$

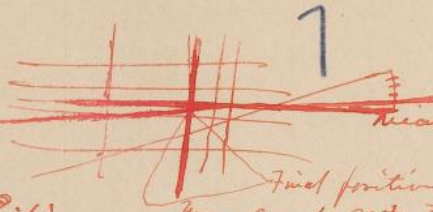
$$\frac{2400}{5000}100 \qquad \frac{x}{100}$$

$$\frac{24,4,2^{00}}{5187}.100 = x = \underline{.47079}$$

50

~~2nd Method~~.

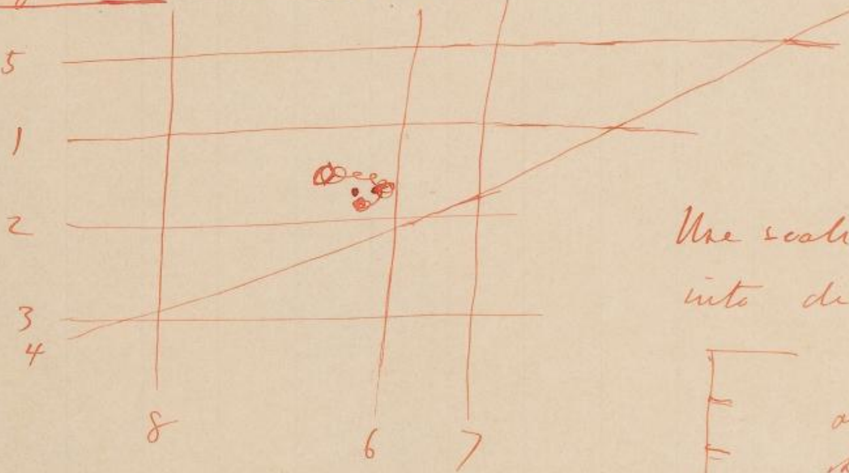
7



Final position — after having this, measure distance to each line & give av. Resid for ~~each~~ Long and Lat. Sep.

1st Find mean position.

2nd Get mean Resid's —



Use scale divided into degrees

about this size & try several points, as 1, 2, 3, Getting the sum (of the squares of) dist. of dot from Each line

	1	3
1	1.0	1.3
2	.7	.5
3	3.5	3.0
4	1.2	1.0
5	.7	3.0
6	1.3	.8
7	3.5	2.3
8	4.0	4.0
	179	159

See above for getting final position & taking means

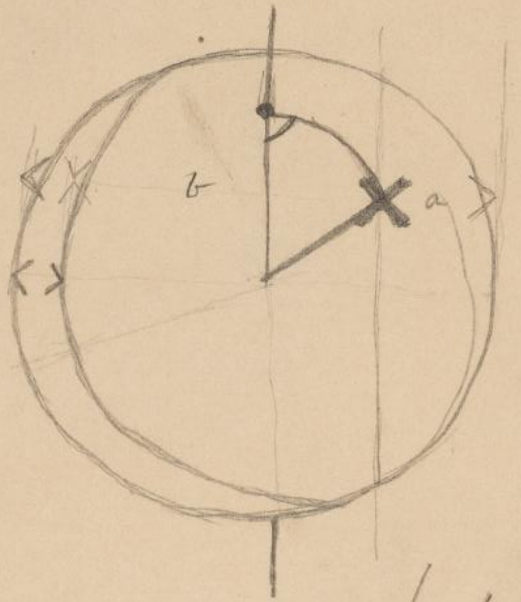
1	13	add
2	.5	this by marking on
3	3.0	edge
4	1.0	of paper
5	3.0	and read off the sum
5	8.8	from scale
	1.76	
6	.8	Measured on scale suited to the lat.
7	2.3	
8	4.0	
3	7.1	
	2.4	

~~Add by edge of pap. for Resids~~ — Then read from scale & divide by No of lines when least sum is found.

~~15.9~~
~~8~~

For vertical lines allowance must be made for less value of degrees in terms of 1° at equator

1° at Equator better be standard of distance



243

$\boxed{1728}$

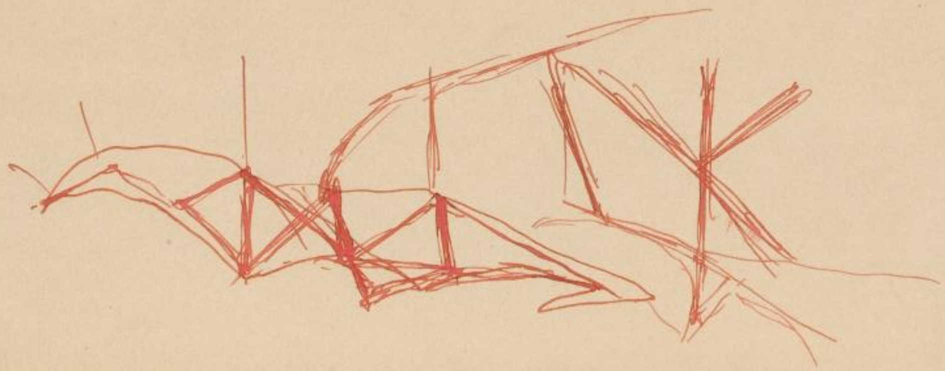
1971

$\left(\begin{array}{r}25.87-1.21\\ -1.21\\ \hline 24.66\end{array}\right)$

$13. \quad -\;3''.06$

$\left(\frac{25.87}{2}\right)$

puk



1896phae.proj..797P

Reconciler - To change Map II & Map III.

~~For~~ Map II.

$a = K_2$
$a' = J_2$
$a'' = J_1$
$b = K$
$b' = K_1$
$b'' = J_4$
$b''' = J_3$
$b^{IV} = K_4$
$c = J$
c' 1018 = M Proj.
$d = I_2$
$d' = I_1$
$e = G_3$
$e' = I_3$
$f = G$
$f' = H$
$f'' = E_4$
$f''' = H_1$
~~g~~
$g' = E_3$
$g'' = D_1$
$g''' = E_2$
$h = D$
$h' = D_4$
~~i~~
$i' = B_2$
$i'' = B_4$
$j = B$
$k = A_4$
$k' = C$
$k'' = C_4$
$l = A$
$m = Z_1$

$n = Z$
$n' = Z_4$
$n'' = C_1$
$n''' = Z_3$
$n^{IV} = Y_3$
$o = Y$
$o' = Z_2$
o'' Y_4
$o''' = X_4$
$o^{IV} = C_3$
$p = W$
$p' = W_2$
$p'' = X_3$
$p''' = W_1$
~~q~~
$q' = T_1$ (or T_2?)
$r = U_4$
$r' = V_2$
$r'' = U_2$
(~~s~~ $= U_1$)
$s' = S_4$
$s'' = S$
$s''' = S_2$
Su 819 = X_1
$t = P_3$
$t' = R_3$?
$t'' = P_2$
$t''' = R_4$
$t^{IV} = V_4$
~~u~~
$v = P$
$v' = N_1$
$v'' = H_3$
$v''' = 4$

~~w~~
$w' = q$

1896phae.proj..797P

Fig	Lat	Long
2	10	

4 C & D
6 A B C
7 A & B

W. H. P.

120 A & B
f Pos 14 A. pg 54

The P.A. of Mic ought to be checked in each case.

I had better keep a running index of every subject in 2nd Bk.

~~Not through with book.~~ pg 153

~~Has Express come~~.

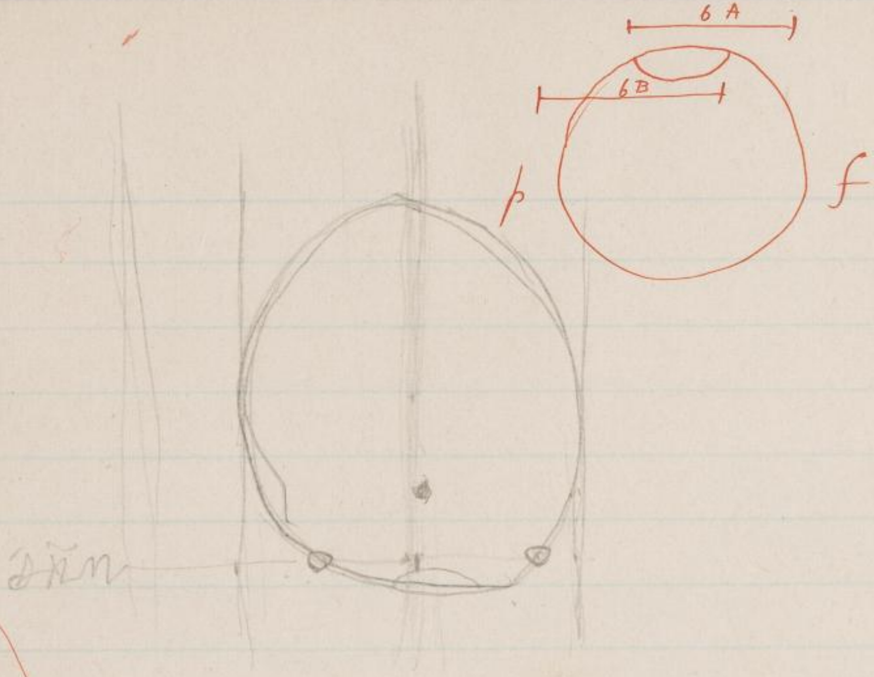
{ Including Obsns on snow cap.
Width not used but any
Dist from limbs which
involves this same reduction
is included.

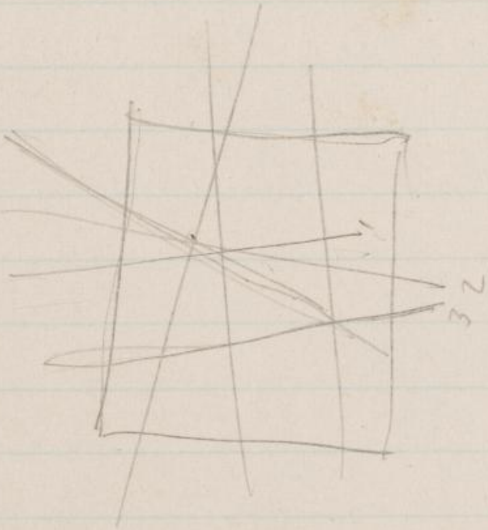
His diags. of phase & size are best for Pos. Ang. Snow

Long. Y.
~~Entered 1 A. pg 41 - instead of second (pg. 1.~~ 1A
~~16th 1 B 42 N to S snow.~~ (changed 2 to 2 A) 2
23d ~~2 A 44 S to S snow~~ (changed 3 to 3 A) 3
" ~~3 A " N to N "~~ 3B
" ~~4 A 45 S & N " "~~
" ~~4 B & C 46 f p Edges~~ " 4 C 4 D { f to p edge snow
6 A & B ~~4 A~~ 49 Longs. " 6 A, B, & C, 7 A & B { p to f " "
Do Do
7 A & B 50 " N " Do Do.
~~Entered~~ 6 9 A 81 p & S Long Vis
120 A & B. 121-2 " S " both edges.

14 ~~10~~ points - up to #136.

Prob. ~~Posit~~. 14 A - pg 54 Long Vis of h, ~~if not so~~ if h, = h' h, = k.


6 A
6 B
p
f
Dun


1
2
3

g' & e''

I	III
a	A_1
a'	Z'
a''	A
a_0 =	Z
b =	A_2
b' =	A_3 (?)
c =	B
c'	B_1
e	B_3
e' =	D
f =	E
g	D_3
g'	E_3 ~~D_2~~
e'' =	D_2 (later)
h =	G_2 (& D_3)
h' =	H_2
i	G_1 (& G)
i'	F_2 (Cloud?)
j	E_1
k -	H_5
l	H_1
m	H_3
m' =	J
n =	I_2
n'	I
m'' =	K
m'''	K_2
o	K_3
o' =	P
o'' =	O_5
o''' =	N_4
o^{IV} =	P_2

$o^{V} = N_5$
$o^{VI} = N$
$p = S_1$
$p' = N_2$
$p'' = N_3$

Ink	a =	M_1
"	b	M_2
"	c	M_3
"	d	O_3
"	e	O_4
"	f =	M_4
"	g	O_2
"	c'	O

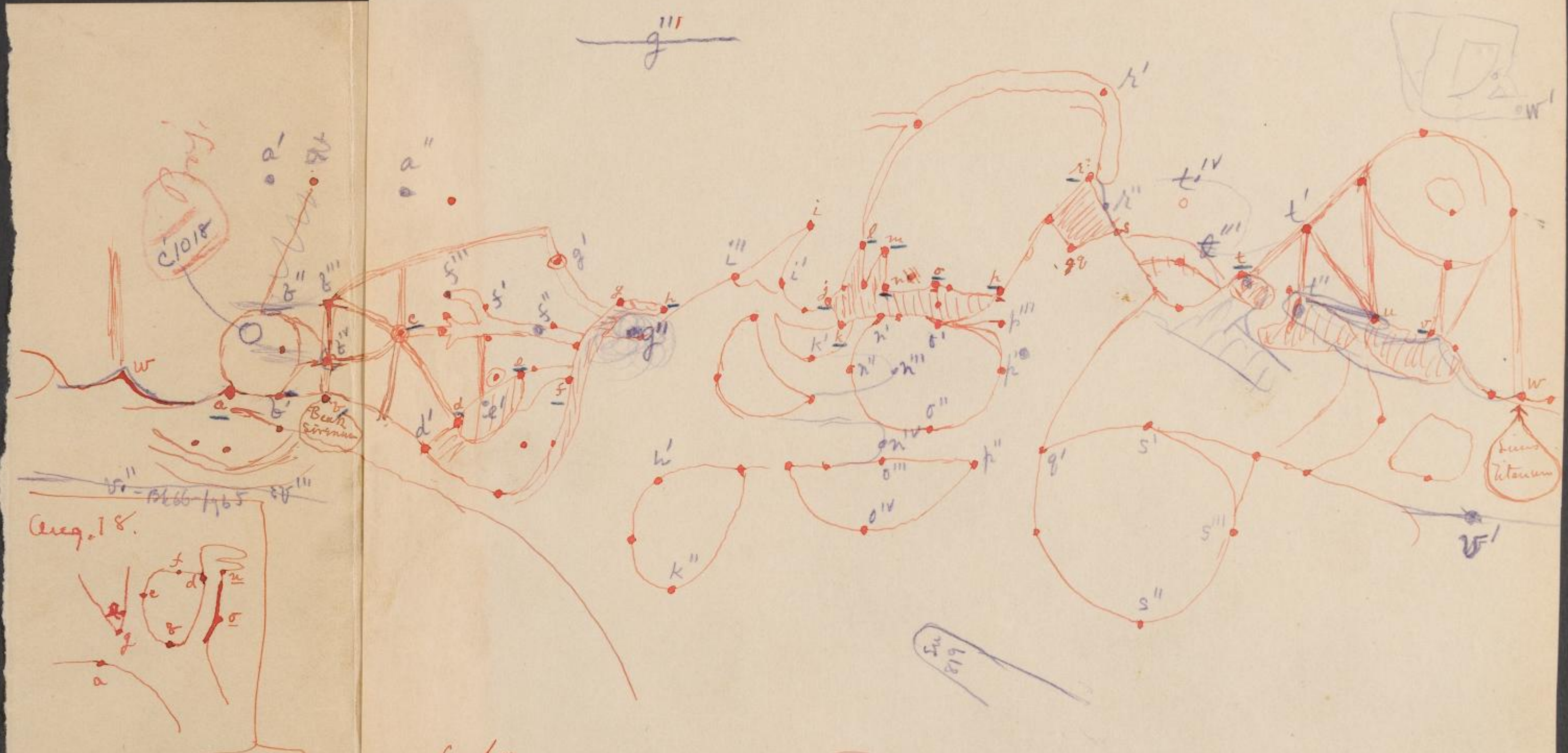
$q = P_3$
$g' = Q_4$
$= Q_1$? edge
$q'' = Q_2$ Scratch
$q''' = R_2$
$q^{IV} = R_1$
$q^{V} = R$
$q^{VI} = Q_3$
$r = P_4$
$s = S_3$
$t = T$
$t' = S$
$u = T_2$
$x = U_1$
$y = U_4$
$z = U_3$
$z' = U$
$y' = V_1$
$y'' = V_3$
$\alpha = W_2$
$\alpha' = W_1$
$\alpha'' = W_3$
$\alpha''' = T_4$
$\alpha_0 = W_4$
$\delta = W$
$\varepsilon = Y_2$

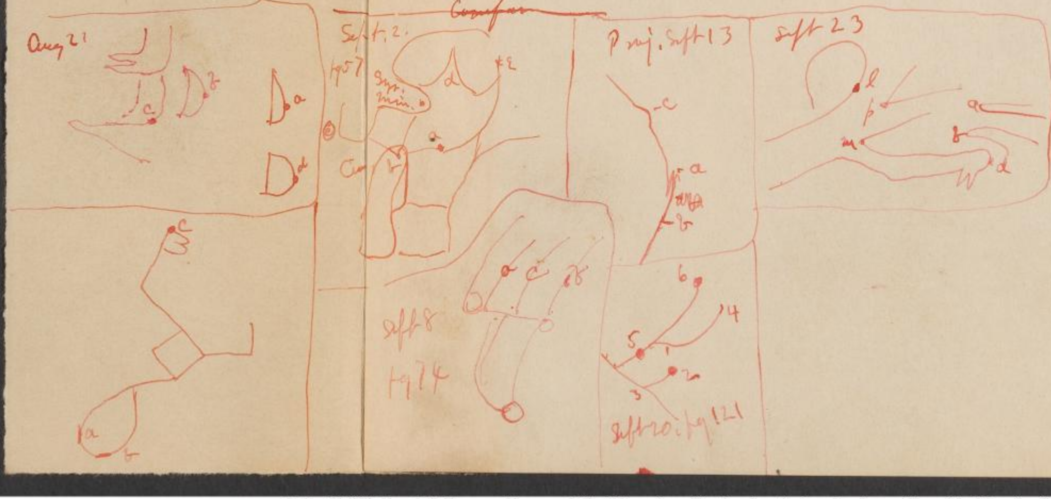
$\xi = Y$
$\xi' = Y_1$
$\iota = Z_2$ (or Z_3)
$\kappa' = X_3$
$\eta = C_1$
$\zeta' = C_2$

a 729	L_1
b 729	L_2
a 85	H_4
p 86	I_4
q 86	G_4
Su 86	F_4
~~a 85~~	
Cl 87	F_3
Cl 810	F_1
Su 813	F
Su 816	X
7 Su 816	X_2

II

Book 66 - page 2





The period of the Prof's clouds
over Sirenum & Cimmerium
was when those seas were
badly formed, light, & hardly
recognizable by the drawings
of Sept 92 & the 94 opp. This
period was followed in say
a month (1 presentation) by
the darkening of Sirenum
and Cimmerium and their
taking the form & density
common in 1894.

1896phae.proj..797P

1892 o = Sinus Titanum - ~~6~~5 - 42

June 16.

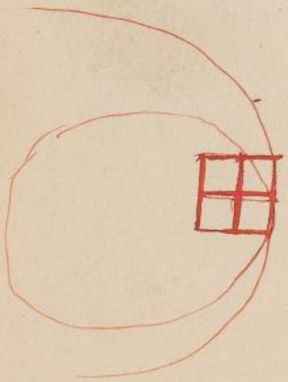
h m

12 16,5 S - σ 2,177

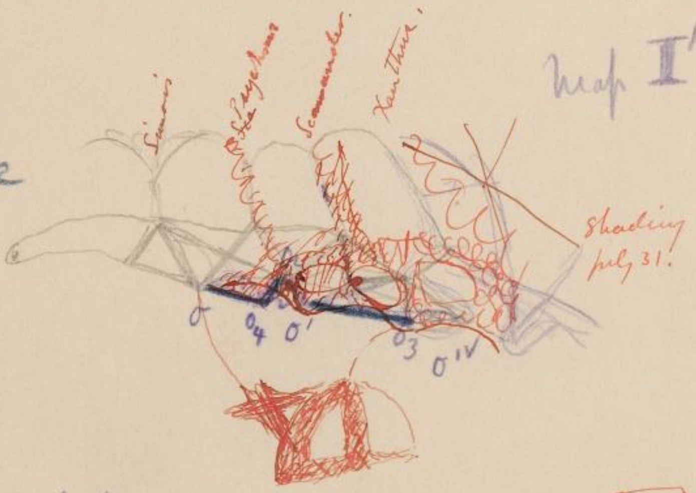
20,5 N - σ 1,334

31.0 f - σ 1,738

35.0 p - o 1,200 - prob. about 1500



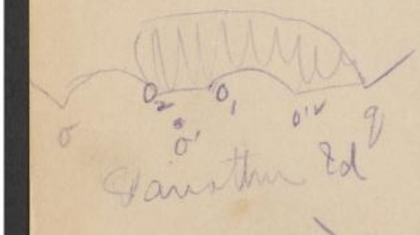
Additions in blue make it explain 1892 Contours



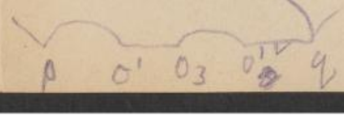
Mr. Limb 550

.12
.16

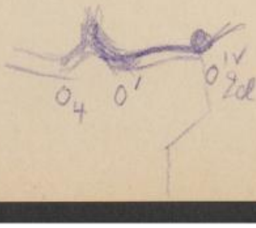
Poss Ident July 26



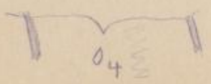
Xanthus 2d



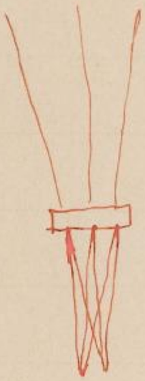
July 31 may be



Poss 2d Aug 3.2

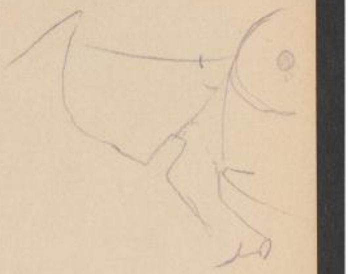


Long 180 - 190.



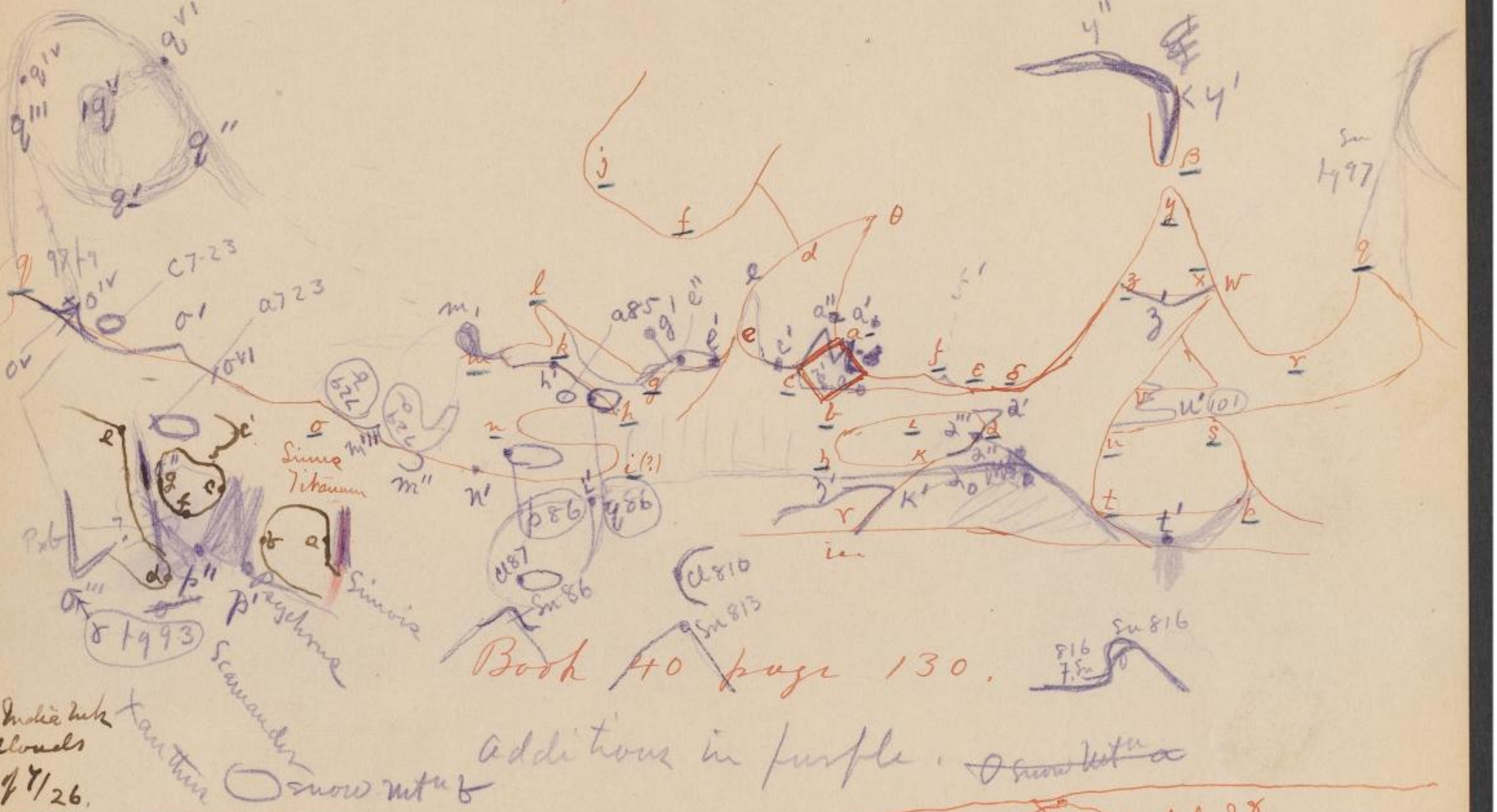
	~~Sub-1~~	Sub - 1	Sub - 2	Sub - 3	Sub - 4	Sub - 5	Extras
A	31, 219,	22,	162,	168.	320, 326,		
B	63, 333.	191	236✓,	180✓, 190.	322, 323,		
C	235.	32, 207.	(25 W_4)	234.	239, 310,		
D	175, 181, 308, 334,	327	176, 182, 193.	11, 173✓, (179 ½)	309, 324✓)		
E	not used	14,	307,	172, 209, 315,	195, 316,		
F	186,	183.	187, 192✓,	166, 171✓,	151,		
G	178, 184, 287, 298, 312,	12,	13, 177✓,	284.	150,		
H	314.	16, 317.	14A, 141.	18, 156, 167✓,	143, 154	15,	
I	144, 157, 169.	286,	17, 140, 179-(D_3) 185, 194, 285,	289-292, 303-6.	149,		
J	19, 136, 152, 153, 155, 158 to 163. 168, 170✓, 311,	281, 288,	276✓, 277, 280.	299, 302,	283,		
K	139, 142, 145, 146, 174 279, 301	282, 297,	147, 164, 272,	2A, 3A, 4, 148, 165,	300,		
L	296,	131,	130,	274.	132,		
M	(313 below) not used here	114	115,	116, 121, 122, 127,	117,	134	
N	6, 106,	273.	105.	104	89, 93,	99	
O	128, 129,	97,	118,	119, 126,	120,	10,	
P	5, 7, 278	98,	90, 94, 135, 268, 275,	28, 67, 91, 257,	68, 79, 80, 83, 87, 92,	133,	
Q	266,	107, 125.	9,	123,	8, 108, 124		
R	109✓	100,	95,	267,	264✓,		
S	110, 241, 259, 335	69A-(S_3)	242, 258,	(69A) 74-(T_2)	210, 249, (253 Y_4)		
T	35,	201, 328	34, 41, (74 S_3) 76,	101	103, 113,		
U	37, 102, 112,	40, 50, 72, 81,	254-6, 260-4.	38.	1, 1A, 39, 51, 73, 84, 85, 111 250, 251, 252		
V	not used	70,	248, 271	71.	270,		
W	33, 42, 49, 53, 54, 58 61, 69, 75, 82, 86, 88, 96.	43, 56-(W_3) 329,	36, 202,	44, (56 W_1)	25-(C_2) 26,		W 229, 232, 237
X	196.	214,	197.	57, 208, 330,	206, 321,		
Y	21, 47, 198, 204, 215 230, 233, 238, 240.	24, 27, 46.	45,	331,	203, 253-(S_4)		
Z	$\overset{(21)}{20}$, 48, 52, 55, 59, 60 64, 65, 66, 77, 78, 200.	$\overset{\boxed{2}}{(29)}$ 23, 29, 189, 218, 325.	30✓, 199,	332.	205		Z 211-3, 216-228, 243-7
Su	2, 3, 3B, 4A, 4B, 4C, 4D, 6A, 6B, 6C, 7A, 7B, 120A, 120B, 137, 138,						
Cl	231, 265						
Pr.	293, 294, 295	313					

Consult Drawings
July 22 Cim. Reg.
" 23 " "



I

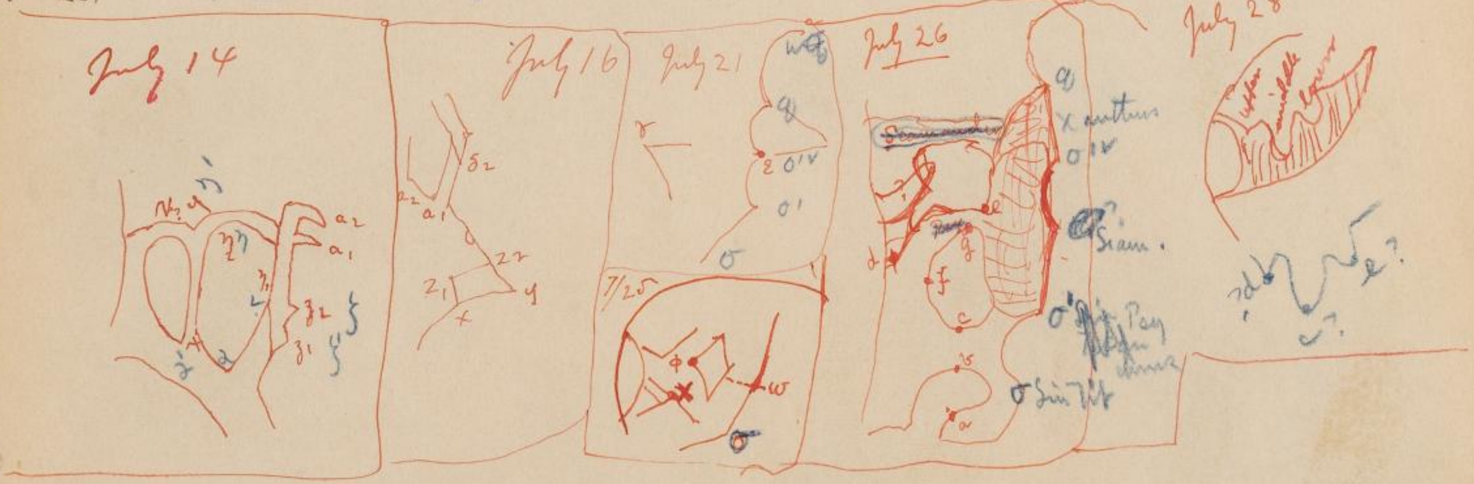
From Bk 40 page 130
Compare Ident. Diag. pg 163 - Bk 65
Compare New Id. Diag - Map I'.



Book 40 page 130.

additions in purple. ~~O snow mt a~~

India Ink
clouds
7/26.



1896phae.proj...797P

2465	12,26
2331	11,59
1697	8,44
3226	16,04
3224	16,03
1910	9,50
2010	10,00

2740	[illegible]
2533	12,60
2646	13,16
1428	7,10
3297	16,39
1605	7,98
3116	15,49
1854	9,22