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Radiometric Book I.

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4/8/38 - Observations are made on alternate thermojunctions until a total of 10 have been obtained. To p.74, two sets of 5 each were obtained; since then a straight series of 10 have been taken. The first deflection is always obtained with the star image on the upper junction (as seen through the eyepiece). Since p. 82 the star image has been placed on the lower junction for about 10 sec. before starting the series of observations.

The entries in the columns are as follows:

1 - Number or other designation for the observation (letters)

2 - Filter number. Nos 2 to 6 are provided for filters. No. 1 is no filter. No entry in this column means that no filter was used throughout the night.

3 - Name of star 4 - α 5 - δ

6 - G.C.T. or J.D.

7 - Sidereal time

8 - Hour angle of observation

9 - $S = (\sec z - 1)$, z = zenith distance of observation

10 - $6\Delta = 3(y_2 + y_4) - 2(y_1 + y_3 + y_5)$ for two sets of 5 gal. deflections.

11 - $\overline{6\Delta}$ = the mean 6Δ

12 - $a = \frac{5}{2} \log_{10} \overline{6\Delta}$ 13 - Remarks and gal. period

14 - $a + \epsilon S$. ϵ = extinction. Usually the extinction is computed by the formula $\epsilon = -\frac{\Sigma as}{\Sigma s^2}$, in which the a's and s's are residuals from the mean a and s for each extinction star. A number in the first column means that the star was used for determining extinction; a star keeps the same number throughout the night. In a few cases ϵ is obtained in some other manner; in all cases a note is made of the method used.

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Emberson

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DATE,_____19

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
					Fresh silver on mirrors September 30, 1937

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2

Filter INSTRUMENT, 61"

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A. computed	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	none	δ Cas A(5) (2.80)	1h 22	+59°.9	9 p m EST	0h 17m E	109.5	128.0	114.0	136.8	124.5
b		51 And K0 3.77	1h 34	+48°.3	9:20 EST	0h 9m E	122.0	149.6	136.5	162.0	147.9
c		47 Cep Ma 5.72	2h 58	+79°.2	9:40 EST		220.0	225.2	220.4	228.9	226.2
d		Same					290.0	294.0	282.0	289.2	279.0

GCT

a	-	β Cas	0 5 (6)	+58.8	2:40						
b	-	Capella	5 11 (12)	+45.9	4:53	1h 2m E	293.0	17.0	288.0	18.0	287.0
c	-	5 Cam Z 0	5 30 (34)	+68.8 (69.0)	5:08	1h 10 E	234.0	231.2	229.6	227.0	226.0
		5 Cam	"	"	5:21	(0h 57m E)	218.1	220.1	225.9	221.4	220.6
d	-	U Ur. Min	14 15 (16)	+67.2 (67.1)	6:12	(8:47) 9h E	239.0	239.3	257.0	248.2	257.5
e		Capella	5 11	+45.9	6:27	(32) 30m W	351.0	112.0	350.0	94.0	335.0
f		β Cas	0 5	58.8	6:43	(5:54) 1h W	256.0	240.8	260.8	241.2	258.5
g		5 Ur. Min	15 33 (32)	79.0 (78.8)	7:10	(9:04) 9h E	207.8	199.0	211.8	203.8	215.2
h	-	5 Cam	5 30	+68.8	7:27	1h 15 W (1:11)	210.7	216.0	222.0	224.2	227.5
i		β Cas			7:42	(6:53) 7h W	206.0	180.0	193.5	167.0	182.0
j	-	"			8:17	(7:28) 7:35 W	190.0	164.2	177.0	146.0	156.5
k	-	Z Ur. Maj	11 31 (53)	+58.4 (58.2)	8:42	(3:54) 3:50 E	176.2	156.8	156.8	140.8	149.3
l	-	5 Ur. Maj	12 39 (41)	61.6 (61.4)	8:55	(4:29) 4:00 E	227.0	232.2	238.0	235.0	234.0

1. positions not in ( ) are for 1900.0
2. positions in ( ) are correct

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DATE, Nov 16-19 1937

Sec	SKY AT START	Stopped	Exp.	C'lds	Obs'r	graduation	REMARKS
		liviar mm	s			mm	
1.05	ice particles	16.4	7	S	RME RLTES	17.6	∴ 51 And − δ Cas = 0m.22 (ext. assumed to be 0m.20) (bright)
1.01		20.3	7			19.7	liviar graduation
		4.8	5			5.98	51 And − δ Cas = 0m.12
		7.9	liviar			8.98	

Nov 21-22, 1937

	Sec	liviar	5-7s	25	TES RME RLTES	Δ grad	
							Clouded up
O? - drifts to NW							
O? - haze	1.02	271.8				271.0	(mp = -0.38; 5.7 tm/mm.) 5m.85 per mm outside alm.
O?	1.13	00.8.77				.60	
	1.13	00.8.78				3.51	
O?	2.31	5.42				6.56	
O?	1.01	242.3				245.2	
O?	1.70	17.4				18.9	(mp = 2.25; 5.5 tm/mm) 5m.85 per mm
	1.79	10.2				10.3	
O? - haze (quick)	1.13	-0.03				1.18	
"	2.04	20.3				20.1	
"	2.30	19.4				21.0	
"	1.29	12.0				9.49	
	1.38	-0.60				2.52	

star	av Sec	½ log average Δ
Capella	1.02	6.025
β Cas	2.01	3.199
		2.826
	0.99	−2.63 (= .38 + 2.25)
		.20

∴ extinction coeff is 0m.20, provisional.

star	mv (provisional)	mv (provisional)
Capella	−0m.38	0.21
S Cam	+6m.36	
υ UMi	+3m.55	10.
β Cas	+2m.25	2.42
S UMi	+2m.97	~~10.2~~ 8.5
ζ UMa	+2m.89	8
S UMa	———	7.5

quadratic: ext. is 0m.15
5m.80 / mm outside alm

Capella	−0.38
S Cas	5.01
υ UMi	3.41
β Cas	2.25
S UMi	3.00
ζ UMa	3.16
S UMa	4.59

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4

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	S
			(20)	(49.6)		(3:22)						
a	–	α Persei	3 19	49.9	7:20	3.30 W	293.1	234.9	267.1	206.1	246.1	1.
b	–	"	"	"	7:28	3:28 3.35 W	241.1	189.1	239.1	186.1	233.9	1.
c	–	"	"	"	8:12	4:13 4.17 W	272.3	218.7	256.0	205.9	248.7	
d	–	α Ml. Maj	10 59									
			( )	1937.0								
			mt ( )	~~1900.~~ mt.								
					GCT	ST	H.A. Comp.	Sec Z	Hr. Ang.	Obsvr.		
"	"	"	"	"	"	"						

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DATE, Nov 22-23 1937

ns	Sec z	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
			China		Cloud	RL +	
.1	1.22		48.3	8s	47.2	RLH	Telescope not driving correctly
.9	1.24		50.4		51.1	"	
8.7	1.37		46.7		44.8		

Thermocouples broke!

Irvin Schwalfer refraction by L.S: 0.38 ± 0.32 (N.G.)

assume 0.20; then 1 mm = 6.09 outside air

quadratic: 6.02 outside air.

Clouds & remarks

Bright flash flash flash

dysentery

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6

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started GCT	Obs. H. A.	Obs. ~~Dec.~~ HA Sect A Tel. ~~E. or W.~~	Load	Focus	Prisms
a	-	β Cas	0:06	+58.8	1:46					
b	-	Capella	5:12	+45.9	6:00	5:56; 58½	45m			
c	-	"	"	"	8:42	8:40; 42½	3h 29m	102·8 108·6		
d	-	γ Cas	0 53	+60.4	9:27	9:24½; 27½	8h 33m	13·6 12·7		
e	-	Capella		"	9:48	9:47; 49	4h 36m	64·6 49·0		

1.56 1 ✓
2.20 9 ✓
2.27 11 ✓

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RL & RME.

DATE, Dec. 1–2 1937

Remarks SKY AT START	Sky	Stopped	Exp.	C'lds	Obs'r	REMARKS
	65	New set B coupler				17.59 23.68 31.61 39.09 43.50?
0?	55	with very much				21.32 33.53 25.69 35.48 27.52
0?	75	enlarged by flashy				101.2 210.1 119.1 241.2 148.3
		coating & distorted.				157.8 280.3 188.1 315.4 221.8
						405.9 404.8 370.8 361.2 331.6
						311.9 309.0 284.2 289.1 262.9
						~~148.4~~ 131.6 57.4 114.0 (464.4)?
						38.2 87.2 38.0 81.8 30.4

of lenior change of Δ, $\sigma_{cal} = 1^m.59$
" " " Δm = 1.54

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8 New thermocouples – taken off pump December 8, 1937
Resistance ~ 87 Ω
Wire size ~

INSTRUMENT, 61" S/H " " E = − " " W = +

H A Sec z Δ Δ av

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		Capella	5:11.2	+45.9	5:24	5:58:40; 56:00	0h 43m	+			
b		"	"	"	5:48	6:16:30; 21:15	1 07	1.02	218.2 221.4	219.8	
c		γ Cas	0:53	+60.4	6 04	6:33:40; 36:20	5 42	1.62	19H 18.6	19.0	
d		S Cam	5:34.2	+68.8	6 51	7:21:20; 23:10	1 48	1.15	4.47 3.63	4.05	
e		Capella			7 06	7:36:45; 37:40	2 25	1.11	217.6 ---	217.6	
f		α UMa	11:00 10:57	+62.1	7 22	8:52:10; 54:10	-3 06	1.20	63.0 62.0	62.5	
g		κ Leonis	3:29	+49.6	7 52	8:23:00; 8:21:40	5 05	1.59	30.6 32.5	31.6	
h		Capella (60)			8 02	8:32:20; 34:10	3:21	1.23	211.2 207.9	209.6	
i		α UMa			8 12	8:42:10; 43:50	-2 16	1.13	59.9 60.6	60.2	
j		α UMa			9 28	9:57:05; 60:50	-0:59	1.07	58.9 60.9	59.9	
k		Capella			9 40	10:11:50	5:00	1.62	195.1 194.2	194.6	
l		Capella			10 08	10:38:40 40:40	5:28	1.80	186.1 190.0	188.0	
m		α UMa (68)			10 17	10:48:15; 50:00	-0 10	1.06	59.6 61.8	60.7	
n		β UMa	10:58	+56.7	10 26	10:56:45; 58:30	0 00	1.03	16.9 16.5	16.7	

Solved b, e, b, h, i, j, k, l, m for ephemeris and change of sensitivity. Eph. = 0m.135 ± 0.035 m.e.
= +0m.0160 ± 0m.0056 m.e. (sensitivity diminished)
Δm/hour

Cap – α UMa = 1m.344 ± 0.014 m.e. (external)
Cap – S Cam = 4.31
Cap – γ Cas = 2.58
Cap – α Per = 2.01
Cap – β UMa = 2.73

Cap	-.38 (standard)
α UMa	0.96
S Cam	3.93
γ Cas	2.20
α Per	1.63
β UMa	2.35

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Rh + RMOB

DATE, Dec. 9-10 1937

ns	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
0	$\frac{5^s}{7^s}$					
0						
0						
0						
0						
0						
0						
0?						
0?						
0?						
0?						
0?						
0?						
0?						

av 1st-2nd reading: $-0^{mm}.55 \pm 0.61$; not sig.
Cap. out: $-0^{mm}.47$

Fundamental solution – nothing assumed.

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10

INSTRUMENT, 61" S 14

(5/27 Vega)

No.	Class	Object	R. A.	Dec.	GCT Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		56am	5 34	+68.8		8.02	-1 32		5.22		
b		5 Cam			3 34	9:11:30; 13:20	-1 22	1.14	6.13 7.15	6.64	2.058
c		γ Cas	0 53	+60.4		5:42:30; 45:10			~~17.3~~ ~~18.3~~		
d		γ Cas			5 14	5:51:30; 53:30	4 59	1.46	17.3 18.3	17.8	3.125
e		α Per	3 20	+49.6	5 24	6:01:20, 03:15	2 42	1.14	32.0 32.0	32.0	3.762
f		Capella									
f'		α U Ma	11 00	+62.1	5 48	6:25:40; 28:15	-4 34	1.38	51.4 51.2	51.3	4.278
g		β U Ma	10 58	+56.7	6 2	6:39:50; 41:50	-4 17	1.35	11.5 8.58	10.0	2.500
h		ζ U Ma	11 53	+58.2	6 30	9:07:55; 10:05	-4 47	1.43	7.65 9.38	8.52	2.325
i		ε U Ma	12 41	+61.4	7 48	8:26:05; 27:55	-4 14	1.27	3.25 2.82	3.04	1.205
j		α U Ma			7 57	8:35:10; 36:55	-2 24	1.14	52.3 53.8	53.0	4.310
k		β U Ma			8 04	8:42:05; 43:45	-2 15	1.11	14.5 14.1	14.3	2.888
l	-	Capella	5 12	+45.9	8 13	8:51:20; 53:10	3 40	1.28	190.3 192.2	191.2	5.705
m	Glass	Capella									
n	Glass	Capella			9 31	10:09:05; 10:65	4 58		177.1 177.4	177.2	5.620
o	-	Capella			9 36	10:14:10; 16:10	5 3	1.64	200.6 203.0	206.8	5.762
p	-	α U. Ma			9 46	10:24:55; 26:45	- 34	1.07	63.4 63.9	63.6	4.508
q	-	β U Ma			9 55	10:33:25; 35:10	- 24	1.03	17.0 16.8	16.9	3.068
r	-	U U Min	14 16	+67°.1	10 18	10:56:40; 11:01:20	-3 18	1.24	7.98 8.70	8.34	2.300
s		U U Min			10 24	11:02:25; 04:35	-3 13	1.23	~~8.40~~ ~~8.71~~	8.68	2.348
t		S U Min	15 32	+78°.8	10 49	11:21:25; 29:45	-4 4	1.37	1.97 3.40	2.68	1.070
u		α U Ma			10 59	11:39:00	39	1.07	65.7 65.0	65.4	4.540

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DATE, Dec. 11-12 1937

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
0? 7.0					αUMa = 0.96 standard J Per = 1.56 ~~standard~~ γ Cas = 2.08 βUMa = 2.75 ζ UMa = 2.89 2.26 Cap = -0.38 standard sUMa = 4.12 αUMa = 1.06 βUMa = 2.50
Changed from focus a					
Off Scale					Cap -0.38 standard αUMa 1.06 βUMa 2.51 vUMi 3.21 vOri 3.17 sUMi 4.40 (wavy star) αUMa 1.03
~~7.6~~					
7.6					Cap-αUMa = 1.395 vs 1.114
Off scale					
8.0					Cap-αUMa = 1.254 vs. 1.57 .141/.43 = .3344.
Very faint					Bad night?
10.6 star almost on border when can't be upper					(wavy star) Note that this star (ie, the one measured by mistake) is given on map as mag. 10.6

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12

INSTRUMENT, 61" SH

No.	Class	Object	R.A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	–	T Cephei	21 8.7	+68.2		2:45:25; 49:10	5:37	1.53	42.08 41.98	42.03	4.059
b		S Cep	21 36.1	+78.3							
c		S Cep				3:04:40; 05:25	5:29	1.47	7.25 7.08	7.16	2.137
d		RU Cyg	21 38.6	+54.0		3:21:05; 22:50	5:43	1.73	17.22 17.45	17.33	3.097
e		γ Cas	0 53	+60.4		3:31:10; 33:45	2:39	1.15	24.70 24.65	24.68	3.481
f		α Per	3 20	+49.6		3:40:25; 42:10	0:21	1.01	44.00 43.83	43.92	4.107
g		S Cam	5 34	+68.8		3:59:15; 62:15	-1:33	1.14	5.68 3.23	4.46	1.623
h		Capella	5 12	+45.9							
i		α Per				9:16:25; 18:00	0:57	1.02	43.40 42.70	43.05	4.084
j		α Per				5:32:05; 33:40	2:13	1.09	40.80 40.25	40.52	4.020
k		αU Ma	11 00	+62.1		5:48:40; 50:25	-5:11	1.49	63.87 64.60	64.24	4.520
l		βU Ma	10 58	+56.7		5:58:25; 60:10	-4:59	1.49	17.77 (42.3)	17.8	3.126
m		βU Ma				6:02:45; 04:20	-4:55	1.48	15.95 16.63	16.29	3.030
n		S Per	3:39	+47.3		8:39:20; 41:15	5:01	1.60	8.40 9.52	8.96	2.381
o		α Per				8:48:25; 50:15	5:29	1.73	36.43 35.40	35.92	3.888
p		αU Ma				9:21:10; 25:00	-1:38	1.10	47.57 48.17	47.87	4.200
q		Capella				9:29:55; 31:35	4:18	1.42	163.0 160.8	161.9	5.523
r		ZU Ma	11:53	+58.2		9:54:50; 56:30	-1:58	1.10	8.20 8.82	8.51	2.325
s		α U Min	14:16	+67.1		10:28:30; 31:30	-3:46	1.28	0.75 0.92	0.84	-0.1892
t		S U Min	15:32	+78.7		11:49:50; 51:00	-3:42	1.345	8.97 10.17	9.57	2.452
u		Capella				11:05:00; 06:50	5:54	2.01	142.02 141.70	144.86	5.399
v		αU Ma				11:36:30; 38:10	0:37	1.07	47.72 46.77	47.25	4.186

From α Per, $\epsilon = 0.^{m}267$

Capella, $\epsilon = 0.^{m}209$ ave $\epsilon = 0.^{m}217$

Assume Capella = -0.38 at zenith

rg - uv Capella – αU Ma $\epsilon = 0.^{m}174$

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RWE + RL

DATE, Monday Dec 13-14 1937

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
		$\varepsilon(\sec z - 1)$			
Haze, clouds all around horizon. 6.57	m 0.115		1.601	1.486	
Very red	.102		3.523	3.421	
	.158		2.562	2.404	
	.032		2.179	2.147	
	0		1.553	1.553	
	.030		4.037	4.007	
Off scale					
	0		1.576	1.576	
	.020		1.640	1.620	
	.106		1.140	1.034	
	.106		2.534	2.428	
halo around moon	.104		2.630	2.526	
Turned dome to NW facing in hill. Gal went off scale. Slow drift based on. Will wait until it comes on, rather than change period. Still almost off					
	.130		3.279	3.149	
See note in gal book re: change zero point + period	.158		1.772	1.614	
6.53	.022		1.041	1.029	
	.091		-.29	-.381	
Wten 10:01:50 PST E	.022		2.916	2.894	
	.061		5.430	5.369	
Did wrong star previous night	.015		2.789	2.774	
Very Windy - poor seeing	.227		-.15	-.377	
	.015		1.055	1.040	
then use α UMa = 1.034 from a to 0.					

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14

INSTRUMENT, 61" 5H (Acc 7)

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	
a	-	Capella	5 12	+45.9		9:30:10; 32:00	-0:41	1.01	98.4 102.2 104.78	103.4	5.036	Go
b		ε Aur.	4 58	+43.7		9:48:15; 50:00	-0:09	1.00	5.35 5.65	5.50	1.851	Fill
c		ε Aur.		"		9:54:05; 55:50	-0:03	1.00	4.8 4.9	4.85	1.714 1.737	
d		Capella		45.9		5:01:30; 03:10	-0:10	1.00	100.6 104.0	102.3	5.025	
e		γ Cas	0:53	60.4		5:14:45; 16:35	+4:22	1.35	8.27.9 8.3	8.25	2.291	
f		α Per	3:20	49.6		5:26:10; 27:55	+2:07	1.09	14.0 13.5	13.75	2.846	
g		δ Per	3:39	47.6		5:33:35; 35:10	1:55	1.07	2.2 2.1	2.15	0.8310	
h		β Cas	0:06	58.8		5:41:35; 43:20	5:36	1.62	7.46 7.48	7.52	2.191	
i		γ Cas		60.4		5:48:45; 50:50	4:57	1.46	7.55 8.23	7.89	2.242	
j		Capella		45.9		5:57:20; 59:00	0:46	1.01	99.9 99.3	99.6	4.996	
k		i U Ma	8 55	48.3		6:09:45; 11:25	-2:45	1.14	2.58 3.0	2.90 2.76	1.156	
l		κ U Ma	8 59	+49.4		6:15:50; 17:30	-2:43	1.14	1.63 1.78	1.72 1.65	.589	
m		ζ U Ma	11 53	58.2		7:06:45; 08:30	-4:45	1.43	2.71 2.6	2.65	1.058	
n		θ U Ma	9 29	+51.9		7:14:25; 16:05	-2:14	1.10	3.965 3.31	3.60 3.475	1.352	
o		ψ U Ma	11 06	+44.8		7:22:10; 29:50	-3:42	1.29	8.8 9.0	8.90	2.374	
p		χ U Ma	11 51	+54.0		7:34:00; 35:35	-4:16	1.36	5.2 5.3	5.25	1.801	
q		i U Ma	8 55	48.3		8:08:15; 89:50	-0:46	1.02	2.6 2.2	2.40	.9505	
r		Capella	5 12	45.9		8:15:40; 17:30	+3:04	1.19	82.1 81.0	81.5	4.778	
s		δ Per	3 20	49.6		8:22:20; 24:00	+5:03	1.58	11.3 12.4	11.8	2.680	
t		i U Ma		48.3								to

jr ε = +1.21

dfrs ε = -0.m27

jkqr ε = +0.25

kq ε = +1.2

deij ε = +0.0

fs ε = +0.339

ei ε = +0.285

(adj)r ε = +1.34

ave = 0.m45

Assume Capella = -0.38. Ave a, d, j for

Of all, ε = 0.m54 ± 0.m12

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1937phae.proj.-798E

Rh + RMB

~~Wednesday~~ Monday Jan 3-4 ~~Dec. 15-16~~ 1938

DATE,

→ Assume $\epsilon = 0.44$ from $\Sigma as/\Sigma s^2$

sms	SKY AT START	Stopped ϵ(sec 7-1)	Exp. C'Ids m'	Obs'r m_z	$a + \epsilon s$	t	m_z	REMARKS
036	Good night ξ rein 7 no clouds	m 0.004	-0.397	-0.39	5.040	45		
151	Filter dick off by one division	0	2.788	2.79	1.851	48	2.80	
714 37		0	2.925 3.502	2.92 3.50	1.714	49	2.93	
25		0	-0.386	-0.386	5.025	50		
291		.157	2.368	2.211	2.445			
846		.040	1.793	1.753	2.886	54	1.75	
310		.031	3.808	3.777	0.862			
91		.279	2.448	2.169	2.464			
42		.207	2.399	2.192	2.444			
96		.004	-.357 -.449	-.359 -.445	5.000	60		
56		.063	3.449	3.486	1.218			
89		.063	4.003	3.940	0.651			
58	Sky not so good	.194	3.489	3.295	1.247			
52		.045	3.156	3.111	1.396			
74		.130	2.193	2.043	1.502			
01		.247	2.746	2.499	1.959			
05		.049	3.597	3.588	0.959			
78		.085	-0.231	-0.316	4.862			
80		.261	1.867	1.606	2.935			

too poor to continue

for a to j, ave. j or from j to 5. Used ave. value $\epsilon = 0.^{m}45$

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INSTRUMENT, 61" 54

No.	Class	Object	R. A.	Dec.	Started (GCT)	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	1-	Capella	5 12	45.9		6:12:10; 13:55	1:01	1.02	101.07 101.73 101.40		5.013
b		ε Aur	4 58	43.7		6:20:25; 22:00	1:23	1.05	5.92 5.38 5.65		1.180
c	2-	α Per	3 20	49.6		6:28:05; 29:50	3:09	1.19	15.88 15.90 15.89		3.003
d	3-	δ Per	3 39	47.6		6:34:15; 35:55	2:56	1.17	3.70 3.03 3.36		1.316
e		"	"	"		6:38:45; 40:25	3:00	1.18	3.25 3.33 3.29		1.293
f		ιU Ma	8 55	48.3		6:46:00; 47:40	-2:08	1.09	3.00 2.32 2.66		1.062
g		κU Ma	8 59	47.4		6:51:40; 53:20	-2:07	1.09	1.47 1.15 1.31		.293
h		θU Ma	9 29	51.9		6:57:40; 59:15	-2:30	1.13	4.12 3.90 4.01		1.508
i		βU Ma	10 58	56.7		7:07:55; 09:30	-3:49	1.28	5.63 5.58 5.60		1.870
j		αU Ma	11 00	62.1		7:14:00; 15:35	-3:45	1.27	26.10 26.70 26.40		3.554
k		ψU Ma	11 06	44.8		7:20:30; 22:00	-3:45	1.30	9.22 9.32 9.27		2.418
l		ζU Ma	11 53	58.2		7:44:20; 46:41	-4:08	1.32	2.65 2.46 2.55		1.016
m	1-	Capella	5 12	45.9		8:04:50; 06:30	+2:54	1.17	100.43 99.37 99.90		4.999
n	3-	δ Per	3 39	47.6		8:11:10; 13:20	+4:33	1.46	3.53 2.95 3.24		1.276
o	2-	α Per	3 20	49.6		8:17:35; 19:15	+4:58	1.56	14.68 14.25 14.47		2.901
p		αU Ma	11 00	62.1		12:15:50; 17:35	+1:16	1.08	31.43 32.82 32.12		3.767
q		SU Ma	12 41	61.4		12:48:50; 50:30	+0:09	1.06	-1.72 +0.52 -0.60		
r		"				12:52:40; 54:15	+0:12	1.06	-1.65 -1.35 -1.50		
s		UU Mi	14 16	62.1		13:13:00; 19:00	-1:00	1.11	10.73 11.62 10.93		2.596
t		"	14 16			13:21:45; 23:20	-0.54	1.11	12.53 13.58 13.20		2.802
u		αU Ma	11 00	62.1		13:28:30; 30:10	+2:29	1.15	35.70 35.88 35.79		3.884

a c m o ε = 0.39 dn 0.14

a (de) m n ε = 0.93 pu 1.67

a m ε = 0.11 (adeg mnd) +0.90 & −1.20

c o ε = 0.38

e n ε = 0.06

and ε = 0.38 ± 0.175 (pe)

a − o, Aruuae Capella = −0.38

p − u, " αU Ma = 1.01

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RMBE

Rh

DATE, Wednesday Jan. 5-6 1938

Assume ε = 0.19 from Eas/ES

sms	SKY AT START	G	ε (Stopped (sec z-1))	Exp. C'lds m	Obs'r m_z	a+ES	t	m_2	REMARKS
913	haze-0?	7.3s	.008	-.352	-0.36	5.019	62		
80			.019	2.783	2.764	1.890	63	2.75	
53			.072	1.660	1.588	3.039	65	1.60	
16			.065	3.347	3.282	1.348	66		
73			.068	3.370	3.302	1.327	66		
32			.035	3.601	3.566	1.079			
93			.035	4.370	4.335	0.310			
08			.042	3.155	3.113	1.533			
70			.106	2.793	2.687	1.923	71	2.72	
54			.103	1.109	1.006	3.605	72	1.04	
18			.114	2.245	2.131	2.475			
16			.122	3.647	3.525	1.077			
19			.065	-0.336	-0.401	5.031	81		
76			.175	3.387	3.212	1.363	82		
01			.213	1.762	1.549	3.007	83	1.64	
						assume ε = 0.19			
67	vis. better, seeing bad	8s	.030	1.125	1.095	3.782			
			.023						
			.023						
96			.042	2.296	2.254	2.617			
02			.042	2.090	2.048	2.823			
84			.057	1.008	0.951	3.912			

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	-	β Cas	0:06	58.8		3:12	3:06	.19	94.1 101.5	97.8	4.976
b		γ Cas	0:53	60.4		3:20	2:27	.15	97.8 96.5	97.2	4.969
c		α Cas	0:37	56.2		3:26	2:49	.16	183.5 201.1	192.3	5.710
d		α Per	3:20	49.6		3:32	0:12	.01	177.9 178.0	178.0	5.626
e		δ Per	3:39	47.6		3:38	-0:01	.005	47.6 45.5	46.6	4.171
f		γ Per	3:00	53.3		3:42	0:42	.03	94.5 100.6	97.6	4.974
g		ε Aur	4:58	43.7		3:50	-1:08	.02	74.9 67.4	71.2	4.631
~~h~~		~~Capella~~	~~5:12~~	~~46.1~~							
h		ε Aur	4:58	43.7		4:26	-0:32	.01	68.9 70.0	69.4	4.604
i		Capella	5:12	46.1		4:32	-0:40	.01	995.0 1052.3	1023.6	7.525
j		~~ζ UMa~~	~~8:55~~ ~~4:58~~	~~48.3~~ ~~46.1~~		4:56	-3:59	.33	302 30.0	30.1	3.696
k		ζ UMa	8:55	47.4		5:07	-3:52	.32	20.4 24.9	22.6	3.385
l		Capella	5:12	46.1		5:14	0:02	.00	952.2 955.5	953.8	7.449
m		ε Aur	4:58	43.7		5:20	0:22	.01	138.5 153.7	148.8	4.423 ~~4.221~~
n		α Per	3:20	49.6							

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RMBE RL

DATE, Sunday Jan. 9-10 19 36

Assume $\bar{\epsilon} = 0.30$

isms	SKY AT START	ε (Stopped)	Exp.	C'lds	Obs'r	$a+\epsilon s$	t	m_z	REMARKS
176	Moon; sky/air. Seeing poor/ 8s					5.033			
69						5.014			
10						5.758			
26						5.629			
71						4.172			
174						4.983			
631	telephone out.					4.637:			
	Clouds to S+E / 8s								
604	Readjustment					4.607		2.54	
525						7.528			
96						3.795			
385						3.481			
49						7.449			
423						4.426			
21									
	Clouds coming in from west.								

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INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Lead	Focus	Prisms
a	1	Capella	5 12	46.1	GCT	8:58	3:46	.30	906.3 910.7	908.5	7.396
b	2	ε Aur	4 58	43.7		9:03	4:05	.38	57.9 61.2	59.6	4.438
c		β Aur	5 55	44.9		9:10	3:15	.21	95.1 93.2	94.2	4.935
d		ι U Ma	8 55	48.3		9:16	0:21	.01	33.7 34.4	34.0	3.829
e		κ U Ma	8 59	47.4		9:22	0:23	.01	23.1 24.4	23.8	3.441
f	4	β U Ma	10 58	56.7		9:28	-1:30	.07	65.8 71.5	68.6	4.591
g	5	α U Ma	11 00	62.1		9:34	-1:26	.09	267.8 266.0	266.9	6.066
h		ψ U Ma	11 06	44.8		9:40	-1:26	.04	100.8 98.4	99.6	4.996
i		γ U Ma	11 51	54.0		9:46	-2:05	.09	63.6 61.3	62.4	4.488
j		ε U Ma	12 51	56.3		9:52	-2:59	.17	97.6 109.7	103.6	5.038
k		θ U Ma	9 29	51.9		9:59	+0:30	.02	49.7 51.9	50.8	4.265
l		S Cam	5 34	68.8		10:26	+4:52	.42	3.3 3.7	3.5	1.360
m	2	ε Aur	4 58	43.7		10:33	+5:35	.90	47.3 44.0	45.6	4.147
n	1	Capella	5 12	46.1		10:39	+5:27	.79	812.9 797.5	805.2	7.265
o	3	ι U Ma	8 55	48.3		10:45	+1:50	.07	34.4 32.9	33.6	3.816
p		κ U Ma	8 59	47.7		10:51	+1:52	.07	22.7 28.1	25.4	3.512
q		θ U Ma	9 29	51.9		10:57	+1:28	.05	46.1 42.8	44.4	4.118
r	4	β U Ma	10 58	56.7		11:02	+0:04	.04	62.1 64.7	63.4	4.505
s	5	α U Ma	11 00	62.1		11:08	+0:08	.06	258.8 262.4	260.6	6.040
t	5	α U Ma	11 00	62.1		12:12	+1:12	0.08	258.4 253.2	255.8	6.020
u		β U Ma	10 58	56.7		12:18	+1:20	.06	68.2 67.8	68.0	4.581
v		ζ U Ma	11 53	58.2		12:27	0:34	.05	33.2 35.9	34.6	3.848
w		S U Ma	12 41	61.4		13:05	0:24	.06	13.1 10.9	12.0	2.698
x		ε U Ma	12 51	56.5		13:11	0:20	.04	108.7 107.8	108.2	5.086
y		η U Ma	13 45	49.6		13:18	-0:27	.02	91.8 86.9	89.4	4.878
z		U U Mi	14 16	67.1		13:30	-0:46	.11	33.5 37.7	35.6	3.879

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RMRE + RL

DATE, Monday Jan 10 – 11 1938

t = 0.26 from 240/5.5

Exp.	SKY AT START	G	Stopped	Exp.	C'lds	Obs'r	a+6s	t	REMARKS
396	Haze all around	8.0					7.474	90	
138							4.537	90	2.56 OP
135							4.990		
129							3.832		
141							3.444		
191							4.609	95	2.48
166							6.089	96	1.00
196							5.006		
188							4.511		
138							5.082		
165							4.270		
160							1.469		
147							4.347	106	2.72
165							7.447	109	
116							3.834		
512							3.830		
8							4.131		
105							4.515		
148							6.056		
120							6.041		
181							4.597		
148							3.861		
198							2.714		
186							5.096		
878							4.883		
879							3.908		

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Diagonal
aa		SU Mi	15 32	78.8		13:40	-1:52	.25	73.7 67.2	70.4	4.619
ab		γ U Mi	15 21	72.0		13:45	-1:36	.18	57.0 51.5	54.2	4.335
ac		η Dra	16 23	61.6		13:51	-2:32	.15	107.3 108.5	107.9	5.083
ad	5	α U Ma	11 00	62.1		13:58	+2:38	.19	265.6 264.9	265.2	6.059
ae	4	β U Ma	10 58	56.7		14:03	3:05	.19	63.3 62.5	62.9	4.488
af	3	ι U Ma	8 55	48.3		14:09	5:14	.66	35.6 32.2	33.9	3.826
ag		μ U Ma	8 59	42.4		14:14	5:15	.68	11.2 17.0	14.1	2.873
ah		θ U Ma	9 29	51.9		14:19	4:50	.50	40.0 38.5	39.2	3.983
ai		γ U Ma	11 51	54.0		14:25	2:34	.13	60.6 62.9	61.8	4.477
aj		ε U Ma	12 51	56.3		14:30	1:39	.07	111.1 108.5	109.8	5.102
ak		η U Ma	13:45	49.6		14:35	0:56	.02	92.6 90.1	91.8	4.902

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1937phae.proj..798E

RWDE & RL

DATE, Monday, Jan 11 1938

ε=0.26

SKY AT START	Stopped	Exp.	C'lds	Obs'r	a+εs	t	m_z	REMARKS
					4.684			
					4.382			
					5.122			
					6.108			
					4.537			
					3.998			
					3.050			
					4.113			
					4.571			
					5.120			
					4.907			

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24

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Lead	Focus	Distance
a	1-	Capella	5 12	+45.9		5:16	0:04	.005	1131.4 1133.9	1132.6	7.635
b		β Cas	0 06	58.8		5:26	5:20	.55	66.7 88.6	77.6	4.725
c		α Cas	0 37	56.2		5:32	4:53	.49	182.4 192.5	187.4	5.682
d		γ Cas	0 53	60.4		5:37	4:44	.41	89.1 91.1	90.1	4.887
e		δ Cas	1 22	59.9		5:42	4:20	.36	56.4 60.2	58.3	4.414
f	2-	ε Cas	1 50	63.4		5:47	3:57	.30	26.0 30.1	28.0	3.618
g	3-	γ Per	3 00	53.3		5:53	2:53	.16	88.7 87.5	88.1	4.862
h	4-	α Per	3 20	49.6		5:58	2:38	.14	172.5 176.4	174.4	5.604
i		δ Per	3 39	47.6		6:04	2:25	.12	36.3 39.6	38.0	3.949
j		ε Aur	4 58	43.9		6:09	1:11	.03	72.4 67.9	70.2	4.616
k	1-	Capella	5 12	45.9		6:14	1:02	.02	1140.4 1139.7	1140.0	7.642
l		β Aur	5 55	44.9		6:20	0:25	.01	106.7 105.5	106.1	5.064
m		ι UMa	8 55	48.5		6:26	-2:29	.13	37.8 46.2	42.0	4.058
n		μ UMa	8 59	47.4		6:32	-2:27	.13	35.6 33.2	34.4	3.841
o		θ UMa	9 29	51.9		6:38	-2:51	.16	53.3 56.6	54.9	4.349
p	5-	β UMa	10 58	56.7		6:44	-4:14	.35	68.7 63.3	66.0	4.549
q	6-	α UMa	11 00	62.1		6:49	-4:11	.33	295.2 300.3	297.8	6.184
r		ψ UMa	11 06	49.8		7:00	-4:06	.37	110.6 107.7	108.8	5.092
s	1-	Capella	5 12	45.9		7:19	+2:07	.09	834.7 797.2	816.0	7.279
t	2-	ε Cas	1 50	63.4		7:26	+5:36	.57	21.9 20.8	21.4	3.326
u	3-	γ Per	3 00	53.3		7:32	+4:32	.43	64.7 65.7	65.2	4.536
v	4-	δ Per	3 20	49.6		7:38	+4:18	.39	129.5 131.7	130.6	5.290
w	1-	Capella	5 12	45.9		7:44	+2:32	.13	875.4 887.1	881.2	7.363
x	1-	"	"	"		10:27	+5:15	.70	789.4 791.9	790.6	7.245
y	5-	β UMa	10 58	56.9		10:34	-0:24	.05	53.7 57.0	55.4	4.359
z	6-	α UMa	11 00	62.1		10:40	-0:20	.07	237.5 231.6	234.6	5.926

~~ε = 0.36 from Eagles~~

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1997phae.proj.:798E

RMS + RL

DATE, Tuesday Jan-11-12 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Haze all around 8s seeing very poor.	7.635	53			
	4.846				
	5.790				
	4.977				
	4.493				
	3.684				
	4.897				
	5.654 (335)	60		1.66 (163)	
	3.942 (375)	~~61~~			
	4.623	62		2.64	
	7.641	62			
	5.066				
	4.089				
	3.870				
	4.384				
	4.626				
	6.257				
	4.173				
hals around moon. 7.7 seeing very poor image fuzzy Mountain	7.311 (299c)	73			
	3.451				
	4.631				
	5.438 (376)	76		1.58 (61)	Poor - just how weights
	7.410 (392c)	77			
	7.440 (395)	105			
	4.364 (62)	106		2.18 (6)	
	5.951 (41)	107		1.92 (177)	

1

Revised with $\epsilon = 0.22$ from (a, s, c) where c accounts for change of period

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INSTRUMENT, 61" SA

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prism Δ
aa	6-	αU Ma	11 00	62.1	10:55		-0:05	.06	241.1 246.7	243.4	5.966
ab		ζU Ma	11 53	58.2	11:05		-0:48	.05	25.1 36.0	30.4	3.714
ac		"			11:27		-0:26	.05	38.5 37.7	38.1	3.952
ad		γU Ma	11 51	54.2	11:33		-0:18	.03	64.2 64.2	64.2	4.519
ae		SU Ma	12 41	61.4	11:43		-0:58	.07	19.0 14.3	16.6	3.050
af		~~5~~ U Ma'	~~12 51~~ 13:21	~~56.3~~ 55.2	11:51		-1:30	.07	~~66.3~~ ~~66.1~~ ~~66.1~~ 66.3	66.2	4.552
ag		" 2	"	" 1	11:55	11:55	-1:26	.06	~~34.7~~ 32.7	33.7	3.819
ah		"	"	"	12:00	12:00	-1:21	.06	40.3 29.9	35.1	3.863
ai		ε U Ma	12 51	56.5		12:08	-0:43	.04	110.8 116.7	113.8	5.140
aj		5U Mi	15 32	78.8		12:23	-3:09	.32	[26.3-35.8] 51.1	31.0	3.728
ak		γU Mi	15 21	72.0		12:32	-2:49	.23	41.3	46.2	4.162
al		η U Ma	13 45	49.6		12:38	-1:07	.03	90.1 89.1	89.6	4.881
am	6-	αU Ma	11 00	62.1		12:44	+1:44	.10	248.2 250.8	249.5	5.993
an	5-	βU Ma	10 58	56.7		12:50	+1:52	.09	60.5 58.9	59.7	4.440
ao		iU Ma	8 55	48.3		12:56	+4:01	.33	28.6 32.5	30.6	3.714
ap		κU Ma	8 59	47.4		13:03	+4:04	.35	16.6 17.8	17.2	3.089
aq		θU Ma	9 29	51.9		13:30	+4:01	.32	34.5 37.5	36.0	3.891
ar	5-	βU Ma	10 58	56.7		13:35	+2:37	.14	54.0 54.8	54.4	4.339
as	6-	αU Ma	11 00	62.1		13:40	2:40	.16	235.3 235.0	235.2	5.929
at		η U Ma	13 45	49.6		13:46	0:01	.01	80.5 78.1	79.3	4.748

$$\mu_x = \frac{1}{6}\sqrt{\frac{\Sigma(\delta\Delta_1 - \delta\Delta_2)^2}{78}} = 1.22$$

$$\mu_y = \frac{1}{8}\sqrt{\frac{\Sigma(\delta\Delta_1 - \delta\Delta_2)^2}{78}} = 1.02$$

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RMTE + RL

DATE, Tuesday Jan. 11-12 1938

SKY AT START	(a + 0.5) Stopped	Exp.	C'lds	Obs'r	δΔ	graduate c δΔ	δΔ/δ	δΔ/δ	REMARKS	
	5.979				322.3 327.1	324.7	40.6	40.6	4.020	4.02
	3.725				46.3 52.5	49.4	6.17	5.07	1.98	1.76
	3.963				58.5 57.1	57.6	7.20	6.33	2.14	2.00
	4.526				90.1 88.6	89.4	11.2	10.7	2.70	3.08
	3.065				32.5 21.4	27.0	3.38	2.77	1.32	1.10
Bright component Mizar Faint component Mizar	4.567				92.4 95.8	94.1	11.8	11.0	2.68	2.60
	3.832				41.6 45.6	43.6	5.45	5.62	1.84	1.88
Alcor	3.876				53.9 45.2	49.6	6.20	5.83	1.95	1.92
	5.149				148.4 153.1	150.6	18.8	18.8	3.18	3.20
$\frac{1}{2}\Delta$	3.798				42.9 49.4	46.4	5.80	5.17	1.91	1.78
	4.213				54.9 69.3	62.1	7.76	7.70	2.22	2.22
	4.888				124.3 130.8	127.6	15.8	14.9	3.00	2.93
	6.015				333.4 334.6	334.0	41.8	41.6	4.05	4.05
	4.460				77.7 80.5	78.8	9.85	9.95	2.48	2.50
	3.787				49.0 38.8	39.4	4.82	5.10	1.71	1.77
	3.166				23.9 23.8	23.8	2.88	2.87	1.15	1.14
	3.961				53.0 48.0	50.5	6.31	6.00	2.00	1.94
	4.370				70.4 70.5	70.4	8.65	9.07	2.33	2.40
	5.964				319.0 311.4	315.2	39.4	38.2	3.99	3.98
	4.750				107.8 110.5	109.1	13.6	13.2	2.84	2.80

$\Sigma \frac{5}{2} \log \frac{8\Delta}{8} - \frac{5}{2} \log \frac{6\Delta}{6} = +0.^{m}48$

$\frac{0.48}{20} = +0.^{m}024$

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28 N.G

INSTRUMENT, 61" SH

DEC 7-1

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Stops
a	-1	Capella	5:12	+45.9		4:56	-0:16	.01	965.0 6959	7.004	7.114
β	2-	α Per	3:20	49.6		5:01	+1:41	.06	119.6 126.2	122.9	5.224
c	3-	δ Cas	1:22	59.9		5:08	+3:46	.27	42.6 38.1	40.4	4.016
d	4-	ε Cas	1:50	63.4		5:13	+3:23	.24	19.0 18.7	18.8	3.185
e		α Mi	1:41	89.0		5:20	+4:39	.47	101.6 98.7	100.2	5.002
f	1-	Capella	5:12	45.9		5:49	+0:37	.01	771.5 764.7	768.1	7.213
g		W Cas	0:54	58.2		6:05	+5:14	.52	7.2 3.0	5.1	1.769
h		W Cas	"			6:09	+5:18	.52	6.8 5.5	6.2	1.981
i		γ Cas	0:53	60.6		6:12	+5:22	.51	52.1 57.4	54.8	4.347
j	5-	δ Per	3:39	47.6		6:21	+2.42	.15	27.9 40.6	34.2	3.835
k		X Cam	4:38	+75.0		Too faint to observe					
l		ε Aur	4:58	+43.7		6:48	1:50	.07	48.5 47.4	48.0	4.203
m	6-	β Aur	5:55	44.9		6:57	1:02	.02	80.6 77.5	79.0	4.744
n	1-	Capella	5:12	45.9		7:03	1:51	.07	745.4 731.8	738.6	7.171
o	3-	δ Cas	1:22	59.9		7:08	5:46	.56	36.7 37.6	37.2	3.926
p	4-	ε Cas	1:50	63.4		7:14	5:24	.49	15.7 15.9	15.8	2.995
q		α Mi	1:41	89.0		7:21	5:40	.48	91.8 93.4	92.6	4.916
r	2-	α Per	3 20	49.8		7:27	4:07	.34	112.7 109.6	111.1	5.114
s	5-	δ Per	3 39	47.6		7:32	3:53	.32	25.4 23.3	24.4	3.468
t	1-	Capella	5 12	45.9		7:37	7:25	.12	738.1 742.2	740.2	7.173
u	6-	β Aur	5 55	44.9		9:42	1:47	.07	76.8 78.7	79.8	4.727
v		α Ma	8 25	60.9		7:49	-0:36	.06	46.7 46.8	46.4	4.166
w		ι Ma	9 55	48.3		9:54	-1:01	.02	35.6 34.7	35.2	3.866
x		κ Ma	8 59	47.4		9:59	-1:00	.02	29.4 (3.7)	27.8	3.610
y	7-	β Ma	10:58	56.7		8:05	-2:53	.17	54.6 53.6	54.1	4.333
z	8-	ζ Ma	11:00	62.1		8:10	-2:50	.18	209.1 208.9	209.0	5.800

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RMEBSRL

DATE, Saturday Jan 15-16 1935

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Small holes around moon; promising.	at 63				
Windy					
25 clouds in N					
Windy					

E 2.59 / N G

.75
.1825

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30
N.O.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa	1-	Capella	5:12	45.9		10:58	+5:46	.77	642.4 640.4	641.4	7.018
ab	6-	β Aur	5:55	44.9		11:04	5:09	.65	61.0 60.0	60.5	4.454
ac	7-	β UMa	10:58	56.7		11:11	0:13	.04	46.5 48.5	47.5	4.192
ad	8-	α UMa	11:00	62.1		11:16	0:16	.07	198.9 203.7	201.3	5.760
ae		i UMa	8 55	48.3		11:23	2:28	.13	31.2 31.3	31.2	3.735
		Sky too bright to see			Z Cam						
		" " " " "			RS "						
		Clouds coming over.									

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DATE, Jan 15-16 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
15-30 clouds drifting back in from W –					NG, $\epsilon > 0.5$

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32

INSTRUMENT, 61" S.H.

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	1-	Capella	5:12	+45.9		5:14	0:02	.00	778.1 773.7	775.9	7.224
b		"	"	"		5:19	0:07	.00	763.1 768.4	775.8	7.210
c	2-	δ Cas	1:22	59.9		5:25	4:03	.30	44.4 38.6	41.5	4.045
d		"	"	"		5:27	4:05	.32	40.4 -	40.4	4.016
e	3-	ε Cas	1:50	63.4		5:35	3:45	.26	20.2 16.2	18.2	3.150
f		"	"	"		5:39	3:49	.27	18.8 19.6	19.2	3.208
g		αU Mi	1:41	89.0		5:45	4:04	.47	95.6 97.3	96.4	4.960
h		"				5:49	4:08	.47	97.9 96.4	97.2	4.969
i	4-	γ Per	3:00	53.3		5:55	2:55	.17	58.7 61.9	60.3	4.451
j		"	"	"		5:58	2:58	.17	62.0 58.7	60.4	4.452
k	5-	α Per	3:20	49.6		6:04	2:44	.15	124.5 121.0	122.8	5.223
l		"	"	"		6:07	2:47	.16	123.4 126.9	125.2	5.249
m	6-	δ Per	3:39	47.6		6:12	2:33	.14	28.6 33.7	31.2	3.732
n		"	"	"		6:15	2:36	.14	31.2 33.9	32.6	3.783
o	7-	ε Aur	4:58	43.7		6:22	1:24	.05	51.7 49.6	50.6	4.260
p			"	"		6:25	1:27	.05	52.5 51.0	51.8	4.286
q	1-	Capella	5:12	45.9		6:29	1:17	.03	756.7 764.3	760.5	7.202
r		"	"	"		6:33	1:21	.04	761.9 763.0	762.4	7.206
s		"	"	"		7:10	1:58	.08	777.6 779.2	778.4	7.228
t		"	"	"		7:13	2:01	.08	770.7 776.7	773.7	7.222
u	2-	δ Cas	1:22	59.9		7:19	5:57	.70	38.1 36.1	37.1	3.924
v		"	"	"		7:23	6:01	.71	35.0 37.8	36.4	3.903
w	3-	ε Cas	1:50	63.4		7:29	5:39	.59	17.9 20.2	19.0	3.197
x		"	"	"		7:32	5:42	.60	15.8 16.6	16.2	3.034
y	4-	γ Per	3:00	53.3		7:38	4:38	.44	55.3 68.6	62.0	4.481
z			"			7:41	4:41	.46	54.2 58.0	56.1	4.372

ε = .28 from Cas 25

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Plate + Rh

DATE, Tuesday, Jan 18-19 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	E=0.28 a+es				
Haze 7.0	7.224	52			
7.217 (52)	7.210	53			
	4.129				
	4.106				
	3.223				
	3.284				
	5.092				
	5.101				
	4.499				
	4.500				
	5.265	61		1.582	
	5.289	61		1.552	
	3.771				
	3.822				
	4.274	64		2.57X	
	4.300	64		2.552	
	7.210	65			
7.230 — 69	7.217	66			
	7.250	72			
	7.244	72			
	4.120				
	4.102				
	3.362				
	3.192				
	4.604				
	4.501				

X O.K.

H 17

X opt only

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34

INSTRUMENT, 61ϕ S H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa	5-	α Per	3:20	+49.6		7:46	4:26	.43	117.4 / 114.4	115.9	5.160
ab		"	"	"		7:49	4:29	.44	116.0 / 115.6	115.8	5.159
ac	6-	δ Per	3:39	+47.6		7:53	4:14	.37	21.7 / 25.6	23.6	3.432
ah		"	"	"		7:56	4:17	.39	25.6 / 29.9	27.8	3.610
ae		χ Cam	4:38	+75.0		8:39	4:01	.34	3.6 / 1.5	2.6	1.038
af	1-	Capella	5:12	45.9		8:45	3:33	.26	744.6 / 744.5	744.6	7.180
ag		"	"	"		8:48	3:36	.27	748.2 / 754.1	751.2	7.190
ah	4-	γ Per	3:10	53.3		8:54	5:54	.80	54.2 / 50.5	52.4	4.298
ai		"	"	"		8:57	5:57	.82	53.4 / 51.0	52.2	4.294
aj	5-	α Per	3.20	49.6		9:02	5:42	.80	108.3 / 108.8	108.6	5.090
ak		"	"	"		9:05	5:45	.83	102.3 / 111.4	106.8	5.072
al	6-	δ Per	3:39	47.6		9:10	5:31	.77	21.7 / 22.0	21.8	3.346
am		"	"	"		9:13	5:34	.79	22.4 / 24.2	23.3	3.418
an	7-	ε Aur	4:58	43.7		9:20	4:22	.46	42.9 / 46.7	44.8	4.128
ao		ε Aur	"	"		9:23	4:25	.47	43.8 / 48.0	45.9	4.154
ap	1-	Capella	5:12	45.9		9:27	4:15	.40	739.5 / 731.9	735.7	7.167
aq		Capella	5:12	"		9:31	4:19	.41	735.5 / 738.0	736.8	7.168
ar	9-	β Aur	5:55	44.9		9:36	3:41	.31	73.3 / 72.8	73.0	4.658
as		"	"	"		9:39	3:44	.31	77.3 / 75.7	76.5	4.709
at	8-	β UMa	10:58	56.9		9:46	-1:12	.06	52.1 / 53.8	53.0	4.311
au		"	"	"		9:48	-1:10	.06	55.4 / 56.5	56.0	4.370
av	10-	α UMa	11:01	62.1		9:53	-1:07	.08	217.7 / 213.7	215.7	5.834
aw		"	"			9:56	-1:04	.08	216.9 / 213.8	215.4	5.833
ax	9-	β Aur	5:55	44.9		11:48	5:53	1.05	62.5 / 63.2	62.8	4.495

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RUKE + RH

DATE, Tuesday Jan 18-19 1938

SKY AT START	Stopped (ε=0.28, a+ES)	Exp.	C'lds	Obs'r	REMARKS
7.230 - 69	1 — 5.286	78		1.579	
	5.288	78		1.577	
	3.536				
	3.719				
	1.133				
7.260	7.253	88			
	7.266	88			
	4.522				
	4.524				
	5.314	90		1.571	
	5.316	91		1.569	
	3.562				
	3.639				
Halo around	4.268	93		2.625	
sun	4.294	94		2.599	
	7.273	94			
7.275 - 94	7.277	95			
	4.745				
	4.796				
	4.328	98		2.58	
	4.387	98		2.52	
	5.856	99		1.05	
	5.855	99		1.05	
	4.789				

Rest G.P. on next page.

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. Err. of W.	Load	Focus	Prisms
ay	s-	β UMa	10 58	+56.7		12:31	1:33	.07	68.5 65.7	67.1	4.567
az		"	"			12:34	1:36	.07	64.5 71.6	68.0	4.581
ba	10-	α UMa	11:00	62.1		12:38	1:38	.10	280.0 278.1	279.0	6.114
bb		"	"	"		12:41	1:41	.10	280.0 274.8	277.4	6.108
		Z Cam too faint to observe									
bc		RS Cana				13:28			14.2 15.8	15.0	2.940
bd		"				13:31			13.0 11.8	12.4	2.734
		TU Mu too faint to observe									
be	s-	β UMa	10:58	56.7		13:44	2:46	.16	65.3 66.4	65.8	4.546
bf		"	"	"		13:47	2:49	.16	69.7 70.4	70.0	4.613
bg	10-	α UMa	11:00	62.1		13:53	2:53	.18	267.9 271.1	269.5	6.076
bh		"	"	"		13:56	2:56	.18	267.6 271.2	269.4	6.076

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RMB+Rh

DATE, Tuesday Jan 18-19 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
					ε=0.28 a+ε5
S 7.4	4.578	125			
	4.592	126			
	6.142	126			
	6.136	127			
	4.591	137			
	4.658	138			
	6.126	139			
	6.126	139			

1111

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INSTRUMENT, 61" 5H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	1-	(capella) α Aur	5:12	45.9		5:17	0:05	.00	612.6 606.4	609.5	6.968
b		β Cas	0:06	58.8		5:24	5:18	.56	57.1 48.4	49.8	4.243
c		γ Cas	0:53	60.4		5:34	4:41	.41	53.0 51.2	52.1	4.292
d		δ Cas	1:22	59.9		5:40	4:18	.35	32.9 30.6	31.7	3.753
e		ε Cas	1:50	63.4		5:45	3:55	.29	17.0 17.4	17.2	3.089
f		α U Mi	14:1	89.0		5:51	4:10	.48	84.7 86.2	85.4	4.829
g		γ Per	3:00	53.3		5:57	2:57	.16	49.6 48.7	49.2	4.230
h		α Per	3:20	49.6		6:03	2:43	.15	99.3 97.7	98.5	4.984
i		δ Per	3:39	47.6		6:09	2:30	.13	21.0 27.3	24.2	3.460
j		ε Aur	4:58	43.7		6:15	1:17	.04	41.9 40.3	41.1	4.036
k	-1	(capella) α Aur	5:12	45.9		6:20	1:08	.02	626.1 626.9	626.5	6.992
l		β Aur	5:55	44.9		6:26	0:31	.01	63.2 64.4	63.8	4.512
m		β U Ma	10:58	56.7		6:35	-4:23	.38	38.3 38.7	38.5	3.964
n		α U Ma	11:00	62.1		6:40	-4:20	.34	147.3 158.0	152.7	5.460
o		~~α Aur~~	~~5:12~~	~~45.9~~							
p	=	(capella) α Aur	5:12	45.9		8:48	3:36	.27	619.3 616.5	617.9	6.977
q		α Per	3:20	49.6		8:53	5:33	.77	89.8 83.8	86.8	4.846
r		δ Per	3:39	47.6		8:58	5:19	.72	19.8 17.2	18.5	3.168
s		β Aur	5:55	44.9		9:04	3:09	.22	64.0 63.3	63.6	4.509
t		β U Ma	10:58	56.7		9:11	-1:47	.09	45.6 47.5	46.6	4.191
u		α U Ma	11:01	62.1		9:16	-1:44	.10	182.6 186.1	184.4	5.668
v		ο U Ma	8:25	60.9		9:23	0:58	.09	41.8 43.5	42.7	4.067
w		ι U Ma	8:55	48.3		9:28	0:33	.01	28.1 31.0	29.6	3.678
x		κ U Ma	8:59	47.4		9:33	0:34	.01	21.3 21.2	21.2	3.316
y		η U Ma	9:27	53.3		9:38	0:11	.07	25.9 27.8	26.8	3.570
z		θ U Ma	9:29	51.9		9:43	0:14	.02	38.3 40.0	39.1	3.980

false ~~assume~~ ε = 0.18 from $\frac{E_{as}}{E_s}$ adopt ε = 0.42 from (c, s, a) solution

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1937phae.proj..798E

RUB + RL

DATE, Thursday, Jun 20-21 1938

SKY AT START		Stopped $\epsilon = 0.42$ $a + \epsilon\delta$	Exp.	C'lds	Obs'r	REMARKS
	16.9	6.968	53			
Seemybad		4.478	54			
		4.464	56			
		3.900	57			
		3.211	58			
		5.031	58			
		4.297	59			
		5.047	61		1.57	
		3.515	62			
		4.051	62		2.57	
		7.000	63			
		4.516	64			
		4.124	66		2.51	
		.649	67		0.98	ext trap
	17.0	7.090	88			
		5.169	89		1.54	
		3.470	90			eptap
		4.601	91			
		.209	92		.50	
		.706	93		1.00	ext only O.K.
		4.096	94			
		3.682	95			
		3.320	96			
		3.599	96			
		3.988	97			

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40 Note: Scale distance = 405 cm.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa		ZUMa	9 47	59.3		9:49	0:02	.05	20.6 23.2	21.9	3.351
ab		μ UMa	10 19	41.8		9:55	-0:24	.01	138.7 139.9	141.3	5.375
ac		ψ UMa	11 06	44.8		10:01	-1:05	.02	68.4 68.3	65.9	4.588
ad		β UMa	10 58	56.7		10:08	-0:50	.06	48.7 51.4	50.0	4.248
ae		α UMa	11 03	62.1		10:12	-0:48	.07	186.2 193.9	190.1	5.698
af		χ UMa	11 43	48.1		10:19	-1:24	.05	46.6 51.0	48.8	4.221
ag		γ UMa	11 57	54.0		10:25	-1:26	.06	52.6 54.0	53.3	4.317
ah		ε UMa	12 51	56.3		10:34	-2:17	.17	80.3 77.8	79.0	4.744
ai		α UMa	11 03	62.1		10:39	-0:21	.07	188.7 186.6	187.6	5.683
aj		β UMa	10 58	56.7		11:45	-0:13	.05	51.4 46.3	48.8	4.221
ak	2-	α Aur	5 12	45.9		11:07	5:55	1.01	632.1 636.0	634.0	7.005

Se

Cl

fr

~~wind~~, rained in NW opposite approaching clouds.

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RMR2 + R4

DATE, Thursday Jan 20-21 19 38

isms	SKY AT START	Stopped E=0.42 a+E's	Exp.	C'lds	Obs'r	REMARKS
351		3.372	98			
325		5.379	99			
88		4.596	100			
48		4.274 .294	101		2.42	ext? X (O R.)
98		~~5.727~~ 5.704	102		1.03	
21		4.242	103			
17		4.342	104			
44		4.794	106			
83		~~5.712~~ 5.689	106			
21		~~4.229~~ 4.242 .161	107		2.47	
05	Seeing very bad / 7.3	7.069	111			
	Clouds coming over from S E					

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1937phae.proj..798E

42 Heated quartz tube.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	-	Capella	5:12	45.9		7;18	2:06	.09	1392.4 / 1346.8	1344.6	7.821
b	-	ε Aur	4;58	43.7		7;32	2:34	.14	~~1015~~ ~~827.5~~ 83.2	82.8	4.795
c		Capella				7;41	2:29	.13	1365.0 / 1354.3	1357.8	7.834

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RUBE + MS.

DATE. Friday Jan. 28-29 1938

SKY AT START	Stopped (Annual E=0.20 ates)	Exp.	C'lds	Obs'r	REMARKS
Good night	18^{S} 7.839				
	4.823				
	7.860				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. S.T. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	-	Capella	5 12	45.9		5; 40	0:28.01		1103.0 1077.3	1089.6	7.593
b		ε Aur.	4 58	43.7		5; 45	0:47.01		54.5 52.2	53.4	4.319
c		α Cas	0 37	56.2							
d		γ Cas	0 53	60.4							

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RMK & RL

DATE, Tuesday, Feb. 1-2 1938

SKY AT START	G	Stopped	Exp.	C'lds	Obs'r	REMARKS
Good sky	16.5	7.595				assume b=0.20
Poor images		4.321				

Telescope won't move in dec.

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1937phae.proj..798E

INSTRUMENT, 61" S.I.

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1 a		Capella	5 12	45.9		6:58	1:46	.06	6.777	536.8 / 491.2	514.0
1 b		"	"	"		9:35	4:23	.44	7.106	695.0 / 695.7	695.4
2 c		β U Ma	10 58	56.7		9:46	-1:12	.06	3.980	39.5 / 38.7	39.1
3 d		α U Ma	11 00	62.1		9:53	-1:07	.08	5.705	190.1 / 192.9	191.5
4 e		γ U Ma	13 45	49.6		10:01	-3:44	.29	4.410	57.0 / 59.2	58.1
5 f		β U Mi	14 51	74.4		10:09	-4:42	.40	5.952	234.6 / 246.1	240.4
6 g		γ U Mi	15 21	72.0		10:15	-5:06	.44	3.674	31.6 / 27.3	29.5
	th	ζ Dra	16 23	61.6							
	h	α U Mi	1 41	+89.0		10:26	+8:45	.50	5.234	124.4 / 123.6	124.0
3	i	α U Ma	11 00	62.1		10:34	-0:26	.07	5.790	208.8 / 205.2	207.0
2	j	β U Ma	10 58	56.7		10:39	-0:19	.04	3.903	34.8 / 38.0	36.4
1	k	Capella	5 12	45.9		10:47	+5:35	.84	7.064	663.9 / 674.1	669.0
	l	β U Ma	10 58	56.7		13:02	2:04	.10	3.926	37.1 / 37.3	37.2
	m	α U Ma	11 00	62.1		13:07	2:07	.13	5.746	203.4 / 194.0	198.7
	n	α U Mi	1 41	89.0		13:50	-11:51	.51	5.053	104.8 / 105.3	105.0
8	o	α U Ma	11 00	62.1		14:15	+3:15	.22	5.846	224.7 / 211.3	218.0
2	p	β U Ma	10 58	56.7		14:20	3:22	.22	4.532	66.5 / 63.6	65.0
4	q	γ U Ma	13 45	49.6		14:28	0:43	.02	4.855	86.7 / 78.6	82.6
5	r	β U Mi	14 51	74.4		14:35	-0:16	.18	6.192	298.9 / 300.7	299.8
6	s	γ U Mi	15 21	72.0		14:40	-0:41	.16	4.128	39.9 / 49.7	44.8
	t	ζ Cyg	20 39	45.1							

ε = 0.39 from 225 / 252

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RMBE + RL

DATE, Friday Feb. 4-5 1938

ıgms	SKY AT START	Stopped (a+6s)	Exp.	C'lds	Obs'r	REMARKS
4.0	Seeing impossible / 6.15	6.806				
.4	Seeing still bad.	7.278				
7.1		4.003				
1.5		5.736				
2.1		4.523				
0.4		6.108				
.5		3.846				
4.0		5.429				
2.0		5.817				
6.4		3.919				
.0		7.392				
2.2	Seeing still bad	3.965			2.04	
8.7		5.797				
5.0		5.252				
9.0		5.932				
.0		4.618			2.39	
6		4.863				
9.8		6.262				
.8		4.190				

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1937phae.proj..798E

48 Mirrors resilvered - 2/8/38

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		β U Ma	10 58	56.7		12:48	1:50	.08	104.6 89.4	97.0 ~~140~~	4.967
b		α U Ma	11 00	62.1		12:56	1:56	.11	404.2 427.8	416.0 ~~830~~	6.548
c		θ U Ma	9 29	51.9		13:17	3:48	.29	76.4 62.8	69.6	4.606
d		η U Ma	13 45	49.6		13:25	-0:20	.01	162.0 166.7	164.4	5.540
e		β U Mi	14 57	74.4		13:31	-1:20	.19	503.1 501.9	502.5 ~~501.8~~	6.759
f		γ U Mi	15 21	72.0		13:40	-1:41	.18	74.6 72.0	73.0	4.658
g		η Dra	16 23	61.6		13:46	-2:37	.16	159.4 163.3	161.4	5.520
h		ζ Dra	17 08	65.8		13:54	-3:14	.23	81.0 72.3	76.6	4.710
i		β Dra	17 29	52.3		14:10	-3:29	.25	150.0 125.4	137.7	5.347
j		γ Dra	17 55	51.5		Tail piece slipped					
k		β U Ma	10 58	56.7		Telescope won't move in Dec.					

(Have been having more + more trouble as Temp has been falling

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1937phae.proj..798E

RLLE + RL

DATE, Thursday Feb. 10 – 11 1938

Prism	SKY AT START	Stopped (assume ε 0.20) a+ε5	Exp.	C'lds	Obs'r	REMARKS
.967	Clouds, haze & aurora earlier. Better now but gusty 6.8	4.983				
.548	wind from north	6.570				
.606	Seeing very bad.	4.664				
.540		5.542				
.759		6.791				
.658		4.694				
.520		5.552				
.710		4.756				
.347		5.397				

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Level	Focus	Prisms
a		Capella	5 12	+45.9		6:12	1:00	.02	1056.0 1060.2	1058.1	7.561
b		ε Aur	4 58	43.7		6:17	1:19	.04	80.6 82.2	81.4	4.776
c		χ Per	3 00	53.3		6:24	3:24	.23	80.4 90.4	85.4	4.829
d		ξ Per	3 39	49.6		6:31	3:11	.21	178.8 181.3	180.0	5.638
e		δ Per	3 39	47.6		6:36	2:57	.17	59.6 50.7	55.2	4.355
f		Capella	5 12	45.9		6:44	1:32	.05	1062.0 1066.9	1064.4	7.568
g		Capella	5 12	45.9	—	7:06	1:54		1451.0 1439.0		
h		"				7:10	1:58	.08	123.0 134.3	1440.0	7.896
i		β Ma	10 58	56.7		7:22	-3:36	.26	387.6	1286	5.273
j		α Ma	11 00	62.1		7:26	-3:34	.25	388.6 133.0	388.6	6.474
k		γ Ma	11 51	54.0		7:33	-4:18	.36	136.5	134.8	5.324
l		ε Ma	12 57	56.3		7:41	-5:10	.54	186.6 187.1	186.8	5.678
m		Capella	5 12	45.9		7:50	+2:38	.15	1452.8 1497.8	1475.3	7.922
n		α Per	3 20	49.6		7:55	4:35	.46	240.7 337.1	238.9	5.946
o		δ Per	3 39	47.6		8:00	4:21	.41	60.1 62.3	61.2	4.467
p		ε Aur	4 58	43.7		8:06	3:08	.22	104.5 109.7	107.1	5.074
q		Capella	5 12	45.9		8:11	2:59	.18	1443.2 1455.4	1449.3	7.903
r		"	"	"		8:35	3:23	.24	1430.2 1440.5	1435.4	7.892
s		β Aur	5 55	44.9		8:40	2:45	.16	185.5 182.1	183.8	5.661
t		ο Ma	8 25	60.9		8:49	0:24	.05	70.0 77.2	73.6	4.667
u		ι Ma	8 55	48.3		8:56	0:01	.01	70.9 68.7	69.8	4.610
v		κ Ma	8 59	47.4		9:22	0:23	.01	48.3 40.9	44.6	4.123
w		η Ma	9 27	63.3		9:27	0:05	.07	46.6 45.6	46.1	4.159
x		θ Ma	9 29	57.9		9:33	0:04	.02	79.4 77.2	78.3	4.734
y		ν Ma	9 47	59.3		9:38	-0:09	.05	47.1 50.3	48.7	4.219
z		Capella	5 12	45.9		9:46	+4:34	.49	1263.0 1283.0	1273.0	7.762

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KUIPER + RH

DATE, Wednesday, Feb. 16–17 1938

SKY AT START	Stopped (ϵ=0.17)	Exp.	C'lds	Obs'r	REMARKS
Good sky. 16.2	7.564				
	4.783				
	4.868				
	5.674				
	4.384				
	7.576				
Gal zero O.K.					
17.4					
	7.914				
	5.317			2.22	
	6.516				
	5.385				
	5.770				
	7.948				1.52
	6.024			1.52	1.38 1.54
	4.537				
	5.111				
	7.934				
	7.933				
	5.688				
	4.675				
	4.612				
	4.125				
	4.171				
	4.737				
35 clouds coming over from north!	4.228				
	7.845				

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1937phae.proj..798E

INSTRUMENT, 61" SA

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Lead	Focus	Prisms	
2 aa		βUMa	10 58	56.7		13:25	2:27	.13	123.4 96.6	110.0	5,104	35 cl ha
3 ab		αUMa	11 00	62.1		13:31	2:31	.15	381.2 382.0	381.6	6,454	
4 ac		γUMa	11 57	54.0		13:41	1:50	.07	119.2 122.4	120.8	5,205	
5 ad		εUMa	12 51	56.3		13:47	0:56	.05	215.7 208.8	212.2	5,817	
ae		δUMi	1 41	89.0		13:59	-11:42	.51	236.9 235.6	236.2	5,933	
af		"	"	"		14:02	-11:39	.51	211.6 216.5	214.0	5,826	
ag		βUMi	14 51	74.4		14:10	-0:41	.19	463.0 477.0	470.0	6,680	
ah		γUMi	15 21	72.0		14:16	-1:05	.16	77.1 76.6	76.8	4,714	
ai		η Dra	16 23	61.6		14:22	-2:01	.12	158.2 156.6	157.4	5,492	
aj		ζ Dra	17 08	65.8		14:28	-2:40	.18	81.5 76.3	78.9	4,743	
3 ak		αUMa	11 00	62.1		14:38	+3:38	.26	372.2 362.6	367.4	6,413	
2 al		βUMa	10 58	56.7		14:43	+3:45	.28	117.5 112.3	114.9	5,151	ha a

e = 0.17 from $\frac{2\,as}{25}$

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1937phae.proj..798E

RWBE + RL

DATE, Wednesday Feb 16-17 1938

isms	SKY AT START	ε = 0.17 Stopped	Exp.	C'lds	Obs'r	REMARKS
	35 clouds to south,					
104	haze - 1s? all over.	5.126			2.41	
154		6.480				
205		5.217				
817		5.825				
733		6.020				
826		5.913				
80		6.712				
714		4.741				
492		5.512				
743		4.774				
13		6.457				
51	haze - 1s clouds all around horizon.	5.199			2.34	

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54

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W. (Face-1)	Load	Focus	Prisms
1	a	Capella	5 12	45.9		6:34	1:22	.04	1453.8 1455.0	1453.9	7.906
2	b	β UMa	10 58	56.7		6:42	-4:16	.36	107.7 111.0	109.4	5.098
3	c	α UMa	11 00	62.1		6:50	-4:10	.33	375.2 374.2	374.7	6.434
4	d	γ UMa	11 51	54.0		6:56	-4:55	.48	111.6 108.7	110.1	5.104
5	e	ε UMa	12 51	56.3		7:04	-5:47	.71	182.5 184.3	183.4	5.658
1	f	Capella	5 12	45.9		7:27	2:15	.10	1426.5 1420.9	1423.7	7.883
6	g	α Per	3 20	49.6		7:34	4:14	.38	228.1 234.3	231.2	5.909
7	h	δ Per	3 39	47.6		7:39	4:00	.33	65.8 58.4	62.1	4.484
8	i	ε Aur	4 58	43.7		7:44	2:46	.16	110.4 101.3	105.8	5.061
1	j	Capella	5 12	45.9		7:49	2:37	.14	1405.3 1415.4	1410.4	7.873
9	k	β Aur	5 55	44.9		7:53	1:58	.07	174.6 176.2	175.4	5.610
	l	σ UMa	8 25	60.9		7:59	-0:26	.06	75.4 89.7	82.6	4.791
	m	ι UMa	8 55	48.3		8:04	-0:51	.02	78.1 71.1	74.6	4.679
	n	κ UMa	8 59	47.4		8:08	-0:51	.01	45.3 49.4	47.4	4.188
	o	λ UMa	9 27	63.3		8:14	-1:13	.09	61.6 65.8	63.7	4.507
	p	θ UMa	9 29	51.9		8:19	-1:10	.04	85.2 74.5	79.8	4.755
	q	ζ UMa	9 49	59.3		8:24	-1:23	.07	58.7 59.5	59.1	4.429
10	r	ψ UMa	~~11 06~~	44.8		8:32	-2:34	.14	155.4 151.0	153.2	5.468
3	s	α UMa	11 00	62.1		8:39	-2:21	.15	391.4 394.2	392.8	6.486
2	t	β UMa	10 58	56.7		8:43	-2:15	.12	123.2 144.5	133.8	5.316
1	u	Capella	5 12	45.9		8:50	+3:38	.28	1384.3 1389.2	1386.8	7.855
6	v	α Per	3 20	49.6		8:56	5:36	.78	232.6 231.0	231.8	5.913
7	w	δ Per	3 39	47.6		9:01	5:22	.72	69.7 66.9	68.3	4.583
8	x	ε Aur	4 58	43.7		9:06	4:08	.40	101.8 109.7	105.8	5.061
1	y	Capella	5 12	45.9		9:10	3:58	.34	1394.2 1392.3	1393.2	7.860
9	z	β Aur	5 55	44.9		9:15	3:20	.24	173.9 178.9	176.4	5.616

ε = 0.156 from $\frac{\Sigma as}{\Sigma s^2}$ for (1-13)

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RMBT RL

DATE, Sunday Feb 20 - 21 1938

SKY AT START	G	(Stopped)	Exp.	C'lds	Obs'r	REMARKS
Night	16.6	7.912				
Seeing only fair		5.154				
		6.485				
		5.179				
		5.769				
		7.899				
		5.968				
		4.535				
		5.086				
		7.895				
		5.621				
		4.800				
		4.682				
		4.190				
		4.521				
		4.761				
		4.440				
		5.485				
		6.509				
		5.335				
		7.899				
		6.035				
		4.695				
		5.645 (1 2 3)				
		7.913				
		5.653				

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1 aa		Capella	5 12	45.9		10;43	5:31	.81	1327.8 1315.6	1321.7	7.803
9 ab		β Aur	5 55	44.9		10:48	4:53	.59	156.7 156.2	156.4	5.484
2 ac		β U Ma	10 58	56.7		10:54	-0:04	.04	121.7 118.2	120.0	5.198
3 ad		α U Ma	11 00	62.1		10:58	-0:02	.06	371.5 379.2	375.3	6.436
4 ae		γ U Ma	11 51	54.0		11:03	-0:48	.03	126.7 111.2	119.0	5.190
10 af		ψ U Ma	11 06	44.8		11:08	+0:02	.00	138.9 135.7	137.3	5.344
ag		χ U Ma	11 43	48.1		11:15	-0:28	.01	7.7 9.4	8.6	2.335
5 ah		ε U Ma	12 51	56.3		11:20	-1:31	.08	207.3 196.3	201.8	5.764
ai		ζ, U Ma	13 21	55.2		11:25	-1:56	.08	128.0 123.1	125.6	5.247
aj		ζ₂ U Ma	"	"		11:29	-1:52	.08	46.7 34.7	40.7	4.017
ak		80 U Ma	"	"		11:34	-1:47	.07	38.3 46.5	42.4	4.063
al		η U Ma	13 45	49.6		11:40	-2:05	.09	178.1 183.2	180.6	5.642
am	(	2 U Mi)	1 41	89.0		11:46	+0:05	.49	223.5 201.2	212.1	5.817
an		β U Mi	14 51	74.4		11:52	-2:59	.26	488.1 477.1	482.6	6.707
ao		γ U Mi	15 21	72.0		11:57	-3:24	.28	74.7 76.5	75.6	4.694
11 ap		η Dra	16 23	61.6		12:02	-4:21	.35	142.8 157.9	150.3	5.445
12 aq		ζ Dra	17 08	65.8		12:09	-4:59	.44	46.4 56.6	51.5	4.277
13 ar		β Dra	17 29	52.3		12:15	-5:14	.61	140.3 136.6	138.4	5.356
3 as		α U Ma	11 00	62.1		12:23	+1:23	.09	383.1 376.8	380.0	6.449
2 at		β U Ma	10 58	56.7		12:27	+1:29	.07	127.3 118.9	123.1	5.227
au		ζ U Ma	11 53	58.2		13:03	+1:10	.06	74.3 69.4	71.8	4.638
av		δ U Ma	12 41	61.4		13:15	+0:34	.07	10.9 7.2	9.0	2.386
aw		U U Mi	14 16	67.1		Too faint to observe - faint					
ax		δ U Mi	15 32	78.6		13:45	-1:49	.26	86.8 77.2	82.0	4.785
3 ay		α U Ma	11 00	62.1		13 53	+2:53	.18	384.3 375.0	379.6	6.449
2 az		β U Ma	10 58	56.7		13 58	+3:06	.18	114.1 107.6	110.8	5.110

$\epsilon = .156$ from $\frac{\Sigma as}{\Sigma s^2}$ for (1–13)

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RMTE & Rh

DATE, Sunday Feb. 20-21 1938

SKY AT START	(a Stopped)	Exp.	C'lds	Obs'r	REMARKS
	7.929				
	5.576				
	5.204				
	6.445				
	5.195				
	5344				
	2.337				
	5.776				
Mizar	5.259				
	4.029				
Alcor	4.074				
	5.656				
	5.893				
	6.748				
	4.738				
	5.500				
	4.346				
	5.451				
	6.463				
	5.238				
	4.647				
	2.397				
from 10^m vis.					
($\frac{1}{2}$ deflections)	4.826				
	6.477				
	5.138				

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58

INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
2 b a	-	β U Ma	10 58	56.7		14:36	+3:38	.25	111.9 126.1	119.0	5.190
3 b b		α U Ma	11 00	62.1		14:41	+3.41	.27	383.2 380.7	382.0	6.454
b c		μ U Ma	10 18	41.8		14:48	+4:30	.51	267.7 250.9	259.3	6.032
b d		λ U Ma	10 13	43.2		14:53	+4:40	.55	55.3 45.8	50.5	4.257
b e		12 Comae	12 53	38.6		14:59	+2:06	.10	70.1 71.8	70.9	4.625
b f		(α U. Mi)	1 41	89.0		15:06	-10:35	.50	201.9 196.2	199.0	5.748
b g		γ U Mi	15 21	72.0		15:11	-0:10	.15	77.3 67.0	72.2	4.645
11 b h		η Dra	16 23	61.6		15:17	-1:06	.08	151.6 148.6	150.1	5.442
12 b i		ζ Dra	17 08	65.8		15:22	-1:46	.13	71.2 61.3	66.2	4.550
13 b j		β Dra	17 29	52.3		15:28	-2:01	.08	157.6 163.4	160.5	5.514
b k		γ Dra	17 55	51.5		15:33	-2:22	.12	482.3 471.5	476.9	6.692
3 b l		α U Ma	11 00	62.1		15:40	+4:40	.48	386.9 369.5	378.2	6.443
2 b m		β U Ma	10 58	56.7		15:46	+4:48	.45	123.1 119.7	121.4	5.212

On check of (sec z - 1) for 2/20-21, A - E: +2: 1; +1: 15; 0: 35; -1: 10; -2: 2; -3: 1 (hundredths)

t = 0.156 from $\frac{\Sigma as}{\Sigma s^2}$ for (1-13)

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RMRE-RL

DATE, Sunday Feb. 20-21 1938

SKY AT START	(a.m.) Stopped	Exp.	C'lds	Obs'r	REMARKS
	5.229				
	6.496				
	6.112				
	4.343				
	4.641				
	5.826				
	4.668				
	5.454				
	4.570				
	5.526				
	6.711				
	6.505				
	5.282				

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60

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E or W	Load	Focus	Prisms
1a		Capella	5 12	45.9		7:34	2:22	.12	1263.8 1260.9	1262.35	7.753
7 f		~~χ~~ Per	3 ~~29~~ 29.6	48.4		7:41	4:21	.42	209.6 208.4	209.0	5.800
c		β Per	3 04	40.7		7:45	4:41	.59	51.4 50.6	51.0	4.269
d		ρ Per	3 01	38.6		7:49	4:48	.67	492.4 489.4	490.9	6.727
e		δ Per	3 00	53.3		7:53	4:53	.50	96.1 92.9	94.5	4.933
1 f		Capella	5 12	45.9		7:59	2:47	.15	1294.3 1289.4	1291.8	7.778
2 g		β U Ma	10 58	56.7		8:05	-2:53	.17	124.3 122.2	123.25	5.227
3 h		α U Ma	11 00	62.1		8:10	-2:50	.18	353.7 369.3	361.5	6.395
4 i		γ U Ma	11 57	54.0		8:15	-3:36	.26	118.0 120.9	119.45	5.193
5 j		ε U Ma	12 57	56.3		8:20	-4:31	.39	178.5 168.9	173.7	5.600
6 k		ζ¹ U Ma	13 21	55.2		8:26	-4:55	.49	140.5 117.6	129.05	5.277
l		ζ² U Ma	"	"		8:29	-4:52	.47	40.5 37.6	39.05	3.979
m		81 U Ma	"	"		8:33	-4:48	.47	31.4 59.4	45.4	4.143
3 n		α U Ma	11 00	62.1		8:38	-2:22	.16	369.0 373.2	371.1	6.424
2 o		β U Ma	10 58	56.7		8:43	-2:15	.12	126.3 128.3	127.3	5.262
1 p		Capella	5:12	45.9		8:50	+3:38	.27	1268.9 1280.5	1274.7	7.764
q		ε Aur	4:58	43.7		8:54	+3:56	.34	88.6 90.6	89.6	4.881
r		ι Aur	4:53	33.1		8:59	4:06	.50	236.5 232.4	234.45	5.925
s		ξ Per	3:55	35.6		9:04	5:09	.90	26.7 28.3	27.5	3.598
7 t		α Per	3 20	49.6		9:09	5:49	.86	190.7 191.2	190.95	5.702
u		ζ Per	3 39	47.6		9:14	5:35	.81	49.7 45.6	47.65	4.195
v		ε Per	3 54	39.8		9:18	5:24	.92	50.4 49.4	49.9	4.245
w		β Tau	5 22	28.6		9:25	4:03	.57	162.9 160.2	161.55	5.521
x		η Aur	5 02	41.2		9:30	4:28	.53	45.5 43.7	44.6	4.123
y		ε Aur	4 58	43.7		9:34	4:36	.52	82.2 77.0	79.6	4.752
1 z		Capella	5:12	45.9		9:38	4:26	.46	1252.6 1245.1	1248.85	7.741

Assume $\epsilon = 0.10$ from $\frac{\Sigma as}{\Sigma s^2}$ for all but #2 {Examined $d\epsilon/dt$ + $d(\text{focal sensitivity})/dt$.}

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RMRE + RL

Saturday DATE, Feb. 26-27 1938

SKY AT START	(a+05) Stopped	Exp.	C'lds	Obs'r	REMARKS
Good night 17.0	7.765				
	5.842				
	4.328				
	6.794				
	4.983				
	7.793				
	5.244				
	6.413				
	5.219				
	5.639				
	5.326				
	4.026				
	4.190				
	6.440				
	5.274				
	7.791				
	4.915				
	5.975				
	3.688				
	5.788				
	4.276				
	4.337				
	5.578				
	4.176				
	4.804				
	7.787				

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1937phae.proj..798E

62

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1 aa		Capella	5 12	45.9		10:00	4:48	.56	1215.6 1218.5	1217.05	7.713
ab		β Aur	5 55	44.9		10:04	4:09	.39	142.0 139.3	140.65	5.370
ac		θ Aur	5 56	37.2		10:09	4:13	.19	75.3 66.0	70.65	4.673
ad		o U Ma	8 25	60.9		10:15	1:50	.11	76.3 79.4	77.85	4.778
ae		ι U Ma	8 55	48.3		10:20	1:25	.04	61.6 59.6	60.6	4.456
af		κ U Ma	8 59	47.4		10:24	1:25	.04	42.3 42.0	42.15	4.062
ag		h U Ma	9 27	63.3		10:30	1:03	.08	48.5 49.4	48.95	4.224
ah		θ U Ma	9 29	57.9		10:35	1:06	.04	71.7 65.5	68.6	4.591
ai		ζ U Ma	9 47	59.3		10:39	0:52	.06	38.7 42.9	40.8	4.027
2 aj		β U Ma	10 58	56.7		10:44	-0:14	.04	104.8 112.8	108.8	5.092
3 ak		χ U Ma	11 00	62.1		10:49	-0:11	.06	360.9 357.1	359.0	6.388
4 al		γ U Ma	11 51	54.0		10:54	-0:57	.04	113.6 115.9	114.75	5.149
5 am		ε U Ma	12 51	56.3		10:59	-1:52	.08	196.1 194.3	195.2	5.726
6 an		δ U Ma	13 21	55.2		11:04	-2:17	.12	120.3 127.9	124.1	5.734

On check of (zecz-1) L-E: -2 -1 0 +1 +2
2 7 17 5 4

ε = 0.10

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1937phae.proj..798E

RMZ & RL

DATE, Sat. 7 Feb 26–27 1938

Prisms	SKY AT START	Stopped a+δ	Exp.	C'lds	Obs'r	REMARKS
.713		7.769				
370		5.409				
623		4.672				
728		4.739				
456		4.460				
062		4.066				
224		4.232				
591		4.595				
127		4.033				
092		5.096				
388		6.394				
49		5.153				
726		5.734				
234		5.246				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1 a		Capella	5:12	45.9		7:14	2:02	.08	(2) 843.4 (1) 849.0	846.2	7.319
b		"	5:12	45.9		7:18	2:06	.09	831.3 836.7	837.0	7.307
c		"	"	"		7:23	2:11	.10	830.0 826.2	828.1	7.295
d		ε Aur	4:58	43.7		7:28	2:30	.13	55.9 56.4	56.15	4.373
e		β U Ma	10:58	56.7		7:35	-3:23	.23	65.0 68.4	66.7	4.560
f		α U Ma	11:00	62.1		7:42	-3:18	.22	229.8 231.2	230.5	5.907
g		γ U Ma	11:51	54.0		7:55	-3:56	.30	59.9 56.2	58.05	4.410
h		ε U Ma	12:51	56.3		8:01	-4:50	.47	101.1 100.0	100.55	5.006
i		γ Per	3:00	53.3		8:09	5:09	.57	61.2 63.7	62.45	4.489
j		ρ Per	3:01	38.6		8:14	5:13	.86	321.3 317.2	319.25	6.260
1 k		Capella	5:12	45.9		8:18	3:06	.20	810.4 813.4	811.9	7.274
1 l		"	"	"		8:49	3:37	.28	793.7 797.5	795.6	7.252
m		β Per	3 04	40.7		8:55	5:51	1.15	56.5 53.8	55.15	4.354
n		α Per	3 20	49.6		7:00	5:40	.80	114.7 113.0	113.8	5.140
o		δ Per	3 39	47.6		9:04	5:25	.73	26.2 23.4	24.3	3.464
p		ζ Per	3 50	31.7		9:10	5:20	1.16	31.9 29.1	30.5	3.711
q		ε Per	3 54	39.8		Clouds coming over					

$\epsilon = 0.290$ from $\frac{\Sigma a s}{\Sigma s^2}$

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1937phae.proj..798E

RWE & RL

DATE, Monday March 7-8 1938

Prisms	SKY AT START	G	a Stopped	Exp.	C'lds	Obs'r	REMARKS
319	0) ½ Δ's on Tot junction	7.6	7.342				
307	regular		7.333				
295	½ Δ's on Lowa junction		7.324				
373			4.411				
560			4.627				
907			5.971				
410			4.497				
006			5.142				
789	low clouds to W		4.674				
260			6.509				
274	Clouds coming over		7.337				
252			7.333				
354			4.696				
140			5.372				
164			3.676				
711	Clouds coming up		4.047				

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66

INSTRUMENT, 61" 5 H

	No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1	a		Capella	5 12	45.9		6:42	1:30	.04	927.7 / 932.7	930.2	7.421
	b		ρ Per	3 01	38.6		6:48	3:47	.37	400.0 / 391.0	395.5	6.493
	c		β Per	3 04	40.7		6:53	3:49	.34	88.4 / 78.2	83.3	4.802
	d		α Per	3 19	49.6		6:57	3:38	.26	157.3 / 156.0	156.6	5.487
	e		η Tau	3 43	23.9		7:03	3:20	.41	44.0 / 48.0	46.0	4.157
	f		ζ Per	3 50	31.7		7:09	3:19	.31	46.9 / 49.5	48.2	4.208
	g		ε Per	3 54	39.8		7:13	3:19	.25	49.1 / 40.9	45.0	4.133
	h		ξ Per	3 55	35.6		7:18	3:23	.29	20.4 / 20.3	20.4	3.274
	i		α Tau	4 32	16.4		7:23	2:51	.40	1145.8 / 1137.0	1141.4	7.644
	j		i Aur	4 53	33.1		7:28	2:35	.18	179.3 / 176.1	177.7	5.624
	k		ε Aur	4 58	43.7		7:33	2:35	.13	71.2 / 69.7	70.4	4.619
1	l		Capella	5 12	45.9		7:38	2:26	.12	927.1 / 923.6	925.4	7.416
2	m		β Tau	5 22	28.6		7:43	2:21	.17	127.5 / 127.9	127.7	5.265
	n		θ Aur	5 56	37.2		Wrong position (?)			~~68.7~~		
	o		β U Ma	10 58	56.7		7:54	-3:04	.18	72.7 / 68.7	70.7	4.624
	p		α U Ma	11 00	62.1		7:58	-3:02	.19	247.3 / 238.3	242.8	5.963
3	q		γ U Ma	11 50	54.0		8:04	-3:46	.27	88.1 / 70.8	80.0	4.758
4	r		ε U Ma	12 51	56.3		8:09	-4:42	.44	123.9 / 113.7	118.8	5.187
5	s		12 Com Vn	12 53	38.7		8:14	-4:39	.61	55.7 / 52.5	54.1	4.333
6	t		β Leo	11 46	14.9		8:20	-3:26	.63	93.4 / 95.0	94.2	4.935
	u		η Leo	9 57	8.3		8:26	-1:31	.30	66.1 / 61.7	63.9	4.514
	v		ε Leo	9 42	24.1		8:31	-1:11	.10	85.5 / 77.8	81.5	4.778
	w		β Gem	7 41	28.2		8:37	0:56	.05	410.8 / 408.9	409.6	6.531
	x		α C Mi	7:36	5.4		8:42	1:06	.31	521.0 / 520.3	520.6	6.791
7	y		i Gem	7:22	27.9		8:48	1:26	.09	44.7 / 44.3	44.5	4.121
8	z		δ Gem	7:16	22.1		8:52	1:36	.14	36.5 / 32.8	34.6	3.848

$\epsilon = 0.093$ from $\frac{\Sigma 25}{\Sigma 5^2}$

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RMKE + RL

Tuesday DATE: March 8–9 1938

Prisms	SKY AT START	G	a	Stopped	Exp.	C'lds	Obs'r	REMARKS
421	O		6.8	7.425				
493				6.527				
802				4.834				
487				5.511				
157				4.195				
208				4.737				
133				4.156				
274				3.301				
644				7.681				
624				5.641				
619				4.631				
416				7.427				
265				5.281				
524				4.641				
963				5.981				
758				4.783				
187				5.228				
353				4.390				
935				4.994				
514				4.542				
778				4.787				
531				6.536				
791				6.820				
21				4.129				
348				3.861				

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INSTRUMENT, 61" SH

	No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
	aa		51 Gem	7:10	16·2		8:58	1:48	.22	86.2 84.4	85.3	4.827
	ab		3 Gem	7:01	20.7		9:05	2:04	.20	37.9 37.1	37.5	3.935
	ac		c Gem	6 40	25.2		9:11	2:31	.23	95.6 101.4	98.5	4.984
	ad		α C Ma	6 43	-16.6		9:18	2:35	1.79	1577.4 1575.0	1576.2	7.994
	ae		γ Gem	6 34	+16.4		9:32	2:58	.44	99.9 102.1	101.0	5.011
	af		η Gem	6 11	+22.5		9:36	3:25	.45	255.1	256.4	6.022
	ag		β Aur	5 55	44.9		9:42	3:47	.36	104.5 96.6	100.6	5.006
2	ah		β Tau	5 22	28.6		9:47	4:25	.71	104.6 114.9	109.8	5.102
1	ai		Capella	5 12	45.9		9:52	4:40	.51	864.3 866.1	865.2	7.343
	aj		H Leo	9 57	+8.3		10:01	0:04	.21	59.9 62.4	61.1	4.465
	ak		α Leo	10 05	+12.3		10:06	0:01	.16	168.0 165.0	166.5	5.554
	al		γ Leo	10 17	+20.2		10:11	-0:06	.08	231.6 224.5	228.0	5.895
	am		"	"	"		10:15	-0:02	.08	206.2 188.0	197.1	5.737
	an		"	"	"		10:18	+0:01	.08	81.2 61.3	71.2	4.631
	ao		δ Leo	11 11	+20.8		10:24	0:47	.09	69.9 76.7	73.3	4.663
	ap		ν Vir	11 43	+ 6.9		10:29	1:14	.31	83.3 82.6	83.0	4.798
6	aq		β Leo	11 46	14.9		10:34	1:12	.18	90.3 87.6	89.0	4.873
	ar		β Vir	11 48	+2.1		10:39	1:09	.38	38.7 43.2	41.0	4.032
3	as		γ U Ma	11 50	54.0		10:48	1:02	.04	74.9 75.7	75.3	4.692
4	at		ε U Ma	12 51	56.3		10:53	1:58	.09	124.3 123.3	123.8	5.232
5	au		12 C Vn	12 53	38.7		10:59	1:54	.08	56.4 52.7	54.6	4.343

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Tuesday DATE, March 8-9 1938

risms	SKY AT START	Stopped at 6h5	Exp.	C'lds	Obs'r	REMARKS
827		4.847				
35		3.954				
184		5.005				
794		8.160				
01		5.052				
22		6.064				
06		5.034				
02		5.168				
43		7.390				
55		4.485				
54		5.569				
95	Both	5.902				
37	brighter	5.744				
31	fainter	4.638				
63		4.671				
98		4.827				
73		4.890				
32		4.067				
92		4.696				
32		5.240				
43		4.350				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1 a		Capella	5 12	45.9		7:14	2:02	.08	(2) 766.5 770.5	768.5	7.214
2 b		α Tau	4 32	16.4		7:19	2:47	.39	948.4 943.4	945.9	7.440
c		ι Aur	4 53	33.1		7:25	2:32	.17	144.3 145.6	145.0	5.403
d		ε Aur	4 58	43.7		7:30	2:32	.13	50.2 51.1	50.6	4.260
e		η Aur	5 02	41.2		7:35	2:33	.14	27.2 26.7	26.85	3.572
f		β Tau	5 27	28.6		7:39	2:17	.17	102.2 99.4	100.8	5.009
g		θ Aur	5 56	37.2		7:44	1:48	.08	43.6 43.8	43.7	4.101
3 h		~~ε~~ Leo	9 42	24.1		7:53	-1:49	.15	61.9 60.8	61.4	4.470
4 i		~~π~~ Leo	9 57	8.3		7:58	-1:59	.37	52.0 45.9	48.95	4.224
5 j		α Leo	10 05	12.3		8:04	-2:01	.31	133.5 131.8	132.6	5.306
k		β U Ma	10 58	56.7		8:10	-2:48	.15	62.4 65.3	63.85	4.513
l		α U Ma	11 00	62.1		8:14	-2:46	.17	201.6 198.1	199.8	5.752
6 m		12 CVn	12 53	38.7		8:20	-4:33	.57	39.2 37.3	38.25	3.956
n		β Gem	7 41	28.2		8:27	0:46	.05	342.5 335.3	338.9	6.325
1 o		Capella	5 12	45.9		8:33	3:21	.23	744.7 748.9	746.8	7.183
2 p		α Tau	4 32	16.4							
q		"									
r		"				8:41	4:09	.92	871.9 874.8	873.8	7.354
s		γ Ori	5:21	+6.3		8:47	3:26	.90	83.6 87.4	85.5	4.830
t		δ Ori	5:29	−0.3		8:53	3:24	1.18	49.5 44.2	46.85	4.177
u		ε Ori	5:33	−1.2		8:58	3:25	1.24	74.6 74.4	74.5	4.680
v		ζ Ori	5:38	−2.0		9:03	3:25	1.30	71.7 70.7	71.2	4.631
w		α Ori	5:52	+7.4		9:09	3:17	.77	2579.0 2588.8	2583.9	8.531
~~x~~		~~β Tau~~	~~5:55~~	~~+4.9~~							
x		α CMa	6:43	−16.6		9:16	2:33	.78	1149.1 1177.8	1163.4	7.664
y		α CMi	7.36	+5.4		9:23	1:47	.39	403.8 403.8	403.8	6.515
z		β Aur	5:55	44.9		9:29	3:34	.26	81.7 82.3	82.0	4.784

$\epsilon = 0.354$ from $\frac{243}{E52}$

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Wednesday DATE, March 9–10 1938

risms	SKY AT START	a + ε Stopped	Exp.	C'lds	Obs'r	REMARKS
214	0-Windy	16.0 7.242				
140		7.578				
403		5.463				
260		4.306				
572		3.622				
09		5.069				
01		4.129				
70		4.523				
224		4.354				
06		5.416				
513		4.566				
752		5.812				
756		4.158				
325		6.343				
83		7.264				
54		7.680				
30		5.149				
77		4.595				
80		5.119				
31		5.091				
531		8.803				
64		8.294				
515		6.653				
84		4.876				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. of W.	Load	Focus	Prisms
1 aa		Capella	5 12	+45.9		9:36	4:24	.44	702.9 707.1	705.0	7.120
ab		η Gem	6 11	22.5		9:41	3:30	.48	204.2 202.5	203.8	5.773
ac		γ Gem	6 34	+16.4		9:47	3:13	.50	78.5 76.1	77.3	4.720
ad		ε Gem	6 40	+25.2		(omitted by note)					
ae		ζ Gem	7 01	20.7		9:55	2:54	.36	31.6 29.9	30.75	3.720
af		57 Gem	7 10	16.2		10:00	+2:50	.41	64.3 64.1	64.2	4.519
ag		δ Gem	7 16	22.1		10:05	+2:49	.32	29.0 25.3	27.15	3.584
ah		ι Gem	7 22	27.9		10:09	2:47	.25	38.8 33.4	36.1	3.894
ai		β Gem	7 41	28.2		10:13	2:32	.21	326.0 326.8	326.4	6.284
3 aj		ε Leo	9 42	24.1		10:18	0:36	.06	59.0 63.0	61.0	4.463
4 ak		μ Leo	9 57	+8.3		10:24	0:27	.22	51.9 58.8	55.35	4.358
5 al		α Leo	10 05	+12.3		10:29	0:24	.17	141.6 142.0	141.8	5.379
am		"	"	"		10:33	0:28	.17	159.0 132.6	145.8	5.409
an		"	"	"		10:36	0:31	.17	130.6 135.2	132.9	5.309
ao		δ Leo	11 11	20.8		10:41	-0:30	.09	64.2 59.2	61.7	4.476
ap		2 Vir	11 43	6.9		10:47	-0:56	.26	74.2 76.0	75.1	4.689
aq		"	"	"		10:51	-0:52	.26	85.2 59.4	72.3	4.648
		"	"	"		10:54	-0:49	.26	69.2 71.8	70.5	4.620
6 ar		12 CVn	12 53	38.7		11:01	-1:52	.08	54.1 44.7	49.4	4.234

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DATE, Wash. March 9—10 1938

Prism	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
		a+es				
	—	7.276				
		5.943				
		4.897				
		3.847				
		4.664				
		3.697				
		3.982				
		6.358				
		4.484				
		4.437				
	½△ on u.j.	5.439				
		5.469				
	½△ on 4j	5.369				
		4.508				
		4781				
	⅓△ u.j. & ½△ 4j	4.740				
		4.712				
		4.262				

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74 3/15/38 Filter 3 quartz - alum (potassium) - quartz Alum - 0.043" thick = .1075 cm
In #2 Each - Quartz - 0.058" " = .145 cm

INSTRUMENT, 61" SA

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E or W	Load	Focus	Prisms
a	1	Capella	5 12	45.9		8:37	3:25	.25	493.9 (1) 491.3	492.6	6.731
b	2	"	"	"		8:42	3:30	.25	267.3 262.3	264.8	6.057
c	1	"	"	"		8:45	3:33	.26	471.4 488.2	479.8	6.703
d	1	"	"	"		8:49	3:37	.26	409.2 464.8	437.0	6.601
e	1	"	"	"		8:53	3:41	.27	463.5 467.7	465.6	6.670
2 f	1	β UMa	10 58	56.7		9:00	-1:58	.09	46.7 41.3	44.0	4.109
g	2	"	"	"		9:04	-1:54	.09	17.7 19.0	18.4	3.162
h	2	α UMa	11 00	62.1		9:09	-1:51	.12	72.1 67.1	69.6	4.606
3 i	1	α UMa	"	"		9:13	-1:47	.11	146.0 140.4	143.2	5.390
3 j	1	"	"	"		9:16	-1:44	.11	130.8 145.4	138.1	5.350
3 k	1	"	"	"		9:19	-1:41	.11	137.4 140.6	139.0	5.356
4 l	1	γ UMa	11 51	54.0		9:26	-2:29	.12	50.9 42.1	46.5	4.169
m	2	"	"	"		9:27	-2:24	.12	18.4 18.9	18.65	3.177
n	2	ε UMa	12 51	56.3		9:33	-3:18	.21	38.8 32.2	35.5	3.876
5 o	1	"	"	"		9:37	-3:14	.21	68.8 69.8	69.3	4.602
p	1	α Tau	4 32	16.4		Trees in way					
p	1	ε Aur	4 58	43.7		9:48	4:50	.59	32.9 28.4	30.65	3.716
q	2	"	"	"		9:53	4:55	.62	13.1 15.5	14.3	2.888
r	2	η Aur	5 2	41.2		9:58	4:56	.67	9.9 3.1	6.5	2.032
s	1	"	"	"		10:05	5:03	.72	19.3 14.8	17.05	3.079
t	1	β Tau	5 22	28.6		10:11	4:49	.92	57.1 55.1	56.1	4.372
u	2	"	"	"		10:15	4:53	.95	30.7 28.5	29.6	3.678
v	2	β Aur	5 55	44.9		10:20	4:25	.46	30.1 25.8	27.95	3.616
w	1	"	"	"		10:39	4:44	.55	74.5 71.7	73.1	4.660
x	2	"	"	"		10:43	4:48	.57	34.9 41.2	38.05	3.951
y	2	Capella	5 12	45.9		10:48	5:36	.85	385.8 376.0	380.9	6.452
1 z	1	"	"	"		10:51	5:39	.88	690.5 627.9	634.2	7.006

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RMME + RL

$\epsilon > 0.5$

N.G.

75

Tuesday DATE, March 15-16 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
0? Sirius y fair	16.8				
½ΔU,J.					
½ΔL,J.					
½ΔU,J.					
½ΔL,J.					
	172				

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INSTRUMENT, 61" SH

	No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Lead	Focus	Prisms
	aa	1	θ Aur	5 56	37.2		10:58	5:02	.80	43.8 / 31.0	37.4	3.932
	ab	2	"	"	"		11:01	5:05	.83	11.7 / 17.6	14.65	2.915
	ac	2	o U Ma	8 25	60.9		11:07	2:42	.16	26.3 / 15.8	21.05	3.308
	ad	1	"	"	"		11:10	2:45	.17	57.0 / 46.4	51.7	4.284
2	ae	1	β U Ma	10 58	56.7		11:16	0:18	.05	71.2 / 56.3	63.75	4.511
	af	2	"	"	"		11:19	0:21	.05	31.8 / 28.8	30.3	3.704
	ag	2	α U Ma	11 00	62.1		11:23	0:23	.07	108.8 / 106.9	107.8	5.082
3	ah	1	"	"	"		11:27	0:27	.07	205.7 / 198.7	202.2	5.764
	ai	1	85 Cam	8 41	79.2		11:37	2:56	.31	17.6 / 19.7	18.65	3.177
	aj	2	"	"	"		11:41	3:00	.31	-2.1 / -1.8	-1.95	—
	ak	2	i U Ma	8 55	48.3		11:47	2:52	.16	21.7 / 14.0	17.85	3.129
	al	1	"	"	"		11:51	2:56	.17	35.0 / 38.6	36.8	3.915
4	am	1	ν U Ma	11 51	54.0		12:01	0:10	.03	64.8 / 60.2	62.5	4.490
	an	2	"	"	"		12:05	0:14	.03	23.9 / 31.5	27.7	3.606
	ao	2	ζ U Ma	11 51	58.2		12:11	0:20	.04	12.7 / 8.6	10.65	2.568
	ap	1	"	"	"		12:15	0:24	.04	39.3 / 42.8	38.55	3.965
5	aq	1	ε U Ma	12 51	56.3		12:20	-0:31	.04	100.4 / 97.6	99.0	4.989
	ar	2	"	"	"		12:23	-0:28	.04	48.7 / 55.0	51.85	4.287
	as	2	γ Dra	16 23	61.6		12:30	-3:53	.28	45.6 / 35.4	40.5	4.019
6	at	1	"	"	"		12:34	-3:49	.28	84.7 / 83.6	84.15	4.813
7	au	1	ι Dra	17 55	51.5		12:41	-5:14	.62	238.9 / 236.0	237.4	5.939
	av	2	"	"	"		12:45	-5:10	.59	110.7 / 107.1	108.9	5.092
5	aw	1	ε U Ma	12 51	56.3		14:32	1:41	.08	101.7 / 97.3	99.5	4.995
	ax	2	"	"	"		14:36	1:45	.08	40.0 / 50.9	45.45	4.144
	ay	2	S U Ma	12 41	61.4		15:09	2:28	.15	2.7 / -4.3	-0.8	—
	az	1	"	"	"		15:13	2:32	.15	4.9 / 7.3	6.10	1.963

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RMDE + RL

$\epsilon > 0.5$
NG.

77
X

DATE, Tuesday March 15-16 1937

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Seeing steady but large images	17.2				
sl. haze?					

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1937phae.proj..798E

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
3 ba	1	α UMa	11 00	62.1		15:19	4:19	.34	169.7 / 160.7	165.2	5.545
bb	2	"	"	"		15:23	4:23	.34	89.8 / 85.9	87.85	4.859
bc	2	η Dra	16 23	61.6		15:29	-0:54	.07	35.1 / 25.2	30.15	3.698
6 bd	1	"	"	"		15:33	-0:50	.07	58.4 / 65.9	62.15	4.484
7 be	1	γ Dra	17 55	57.5		15:38	-2:19	.11	185.0 / 183.7	184.35	5.664
bf	2	"	"	"		15:42	-2:13	.10	83.0 / 83.8	83.4	4.803

Cloudy all over - last measures may not be of much value

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1937phae.proj..798E

RMJE & RL

$\epsilon > 0.5$
N.G.

Tuesday March 15-16

DATE, _____ 19 38

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Clouds coming up in NW.					

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	S.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	
a		Capella	5 12	+45.9		9:10	3	58	394.7 397.8	395.6	6.493	.33	O?
b		ε Aur	4 58	+43.7		9:14	4	16	26.3 19.7	23.0	3.404	.42	Sec
c		β U Ma	10 58	+56.7		9:21	-1	37	22.7 21.3	22.0	3.356	.07	
d		α U Ma	11 00	62.1		9:26	-1	34	105.4 97.2	101.3	5.014	.10	
		Heated quartz tube — twice											
e		α U Ma	11 00	62.1		11:22	0	72	234.0 230.6	232.3	5.915	.07	SU
f		β U Ma	10 58	56.7		11:27	0	29	46.6 41.6	44.1	4.111	.04	

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1937phae.proj.:798E

PMW & RL

DATE, Sunday March 27-28 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
O? Smoke to N 16.8					
Seeing poor					
Seeing poor					

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1937phae.proj..798E

82 In each case, put star image on lower junction for 10-15^s before first recorded deflection from upper junction.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	
1 a	-	α UMa	11 00	+62.1		12:46	1 46	.10	206.5 / 205.1	205.8	5.784	
2 b		β UMa	10 58	+56.7		12:51	1 53	.08	49.4 / 41.0	45.20	4.138	
3 c		ε UMa	12 57	56.3		12:56	0 05	.03	80.8 / 79.3	80.05	4.757	
d		β UMi	14 51	74.4		13:02	-1 49	.20	285.8 / 279.8	282.8	6.129	
e		η Dra	16 23	61.6		13:08	-3 15	.22	76.3 / 67.7	72.0	4.693	
f		ζ Dra	17 08	65.8		13:14	-3 54	.29	30.0 / 20.6	25.3	3.508	
g		γ Dra	17 55	51.5		13:20	-4 35	.44	252.7 / 241.2	246.95	5.982	
h		RS Cana	8 41	79.2		13:31	4 50	.42	0.8 / 5.8	3.3	1.296	
					Haze coming in from NW							
1 i		α UMa	11 00	62.1		14:27	3 27	.24	204.1 / 196.9	200.5	5.755	
2 j		β UMa	10 58	56.7		14:32	3 34	.24	43.5 / 40.6	42.05	4.059	
k		ζ UMa	11 53	58.2		14:40	2 47	.16	29.1 / 21.5	25.3	3.508	
l		γ UMa	11 51	54.0		14:45	2 54	.16	47.1 / 43.7	42.9	4.081	
m		58 UMa	12 41	61.4		14:51	2 10	.12	-5.9 / -8.3	-7.1	—	
3 n		ε UMa	12 57	56.3		14:57	2 06	.10	31.5 / 29.3	30.4	3.694	
o		U UMi	14 15	67.1		15:20	1 05	.11	37.0 / 39.5	38.25	3.957	
p		β UMi	14 51	74.4		15:45	0 54	.18	48.4 / 38.4	43.4	4.094	
q		5 UMi	15 32	78.8		Sky too poor to continue						

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1937phae.proj..798E

RHB RH 6 > 0.5 N.G

83 X

DATE, Sunday, April 3-4 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
0? Clds low / 7.2 in NW + SE					
Clds NW + SE but good in zenith					
Very thick N + NW. $m_v \sim 11.5$ Zero point shifts (due to some radiation (not C.R.)					

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INSTRUMENT, 61" SA

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
									99.3		
2 a		β UMa	10 58	+56.7		10:48	-0:10	+0.04	101.4	100.4	5.004
1 b		α UMa	11 00	+62.1		10:53	-0:07	.06	361.1 / 347.1	354.1	6.373
c		"	"	"		10:56	-0:04	.06	313.0 / 321.4	317.2	6.254
d		"	"	"		10:59	-0 01	.06	310.0 / 320.4	315.2	6.246
e		Blank	"	+62.0		11:04	+0 04	.06	24.4 / 23.1	23.75	3.439
3 f		ε UMa	12 51	56.3		11:11	-1 40	.08	183.4 / 159.4	171.4	5.585
6 g		β UMi	14 51	74.4		11:16	-3 35	.30	414.4 / 417.6	416.0	6.548
4 h		η Dra	16 23	61.6		11:21	-5 02	.47	118.2 / 117.1	117.6	5.176
i		RS Cam	8 41	+79.2		11:36	2 55	.31	26.4 / 26.5	26.45	3.556
j		σ UMa	8 25	60.9		11:42	3 17	.22	71.6 / 66.3	68.95	4.596
k		ι UMa	8 35	48.3		11:48	2 53	.16	52.2 / 50.1	51.15	4.272
l		κ UMa	8 59	47.4		11:52	2 53	.17	33.5 / 34.6	34.05	3.830
m		λ UMa	10 13	43.2		12:03	1 50	.07	38.9 / 39.0	38.95	3.976
n		μ UMa	10 19	41.8		12:08	1 49	.07	241.4 / 243.7	242.6	5.962
2 o		ρ UMa	10 58	56.7		12:13	1 15	.06	100.2 / 95.8	98.0	4.978
1 p		α UMa	11 00	62.1		12:18	1 18	.08	337.6 / 336.8	337.2	6.320
q		ζ UMa	11 53	58.2		12:26	0 33	.05	66.5 / 61.1	63.8	4.572
r		γ UMa	11 51	54.0		12:31	0 40	.03	90.4 / 90.7	90.55	4.892
s		δ UMa	12 41	61.4		12:38	-0 03	.06	24.6 / 23.7	24.15	3.457
3 t		ε UMa	12 51	56.3		12:42	-0 09	.04	156.9 / 153.6	155.25	5.478
u		5 UMa	13 21	55.2		12:48	-0 33	.03	113.5 / 105.7	109.6	5.100
v		υ UMi	14 16	67.1		12:56	-1 20	.12	53.4 / 43.4	48.4	4.212
w		β UMi	14 51	74.4		13:03	-1 48	.20	386.0 / 389.9	387.9	6.472
x		α UMi	1 41	89.0		13:08	11 27	.50	178.6 / 171.4	175.0	5.608
4 y		η Dra	16 23	61.6		13:16	-3 07	.20	94.3 / 89.9	97.1	4.968
z		Blank	"	61.2		13:23	-3 00	.19	14.8 / 81.1		

Clouds coming over from NW. During z, the faint star in field would sometimes disappear.

ε = 0.315" from 2a5 / 5b2

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RWE+RL 42 8:37-43 = 6^m 56½ 85

DATE, Monday April 4-5 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	a+ES				
0? 12.0	5.016				
	6.392				
½ Δ Uj;	6.273				
½ Δ bj.	6.265				
faint stars in kept title field; moved j's up + down	3.458				
	5.610				
	6.643				
	5.324				
	3.654				
	4.665				
	4.322				
	3.884				
	3.998				
	5.984				
	4.997				
	6.345				
	4.528				
	4.901				
	3.476				
	5.490				
	5.109				
	4.250				
	6.535				
	5.766				
	5.031				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
2	ba	β UMa	10 58	+56.7		14:56	3 58	.30	82.7 84.2	83.45	4.804
1	bb	α UMa	11 00	62.1		15:03	4 03	.30	325.8 327.0	326.4	6.284
	bc	58 UMi	15 32	78.8		15:13	-0 19	.24	54.8 55.6	55.2	4.355
6	bd	β UMi	14 51	74.4		15:19	0 28	.18	449.0 441.8	445.4	6.622
	be	"	"	"		15:23	0 32	.18	431.0 423.8	427.4	6.577
	af	"	"	"		15:26	0 35	.18	402.2 394.8	398.5	6.502
	ag	Blank	"	74.0		15:31	0 40	.18	17.3 18.0	17.65	3.117
	ah	γ UMi	15 21	72.0		15:38	0 17	.15	75.8 75.1	75.45	4.694
4	ai	η Dra	16 23	61.6		15:43	-0 40	.07	133.4 127.6	130.5	5.289
	aj	5 Dra	17 08	65.8		15:48	-1 20	.11	65.4 53.2	59.3	4.433
	ak	β Dra	17 29	52.3		15:53	-1 36	.05	132.0 126.3	129.1	5.277
5	al	γ Dra	17 55	51.5		15:59	-1 56	.08	410.4 407.8	409.1	6.530
	am	α Lyr	18 35	38.7		16:07	-2 28	.14	654.2 660.0	657.1	7.044
	an	Blank	"	"		16:12	-2 23	.13	17.1 15.6	16.35	3.034
	ao	"	"	"		16:15	-2 20	.13	1.2 3.1	2.15	0.831
	ap	"	"	38.8		16:19	-2 16	.12	14.7 15.0	14.85	2.930
	aq	"	"	"		16:21	-2 14	.12	-0.7 +0.9	+0.1	-2.50
	ar	AF Cyg	19 28	45.8		16:33	-2 55	.18	66.5 67.4	66.95	4.564
	as	5 Cyg	19 43	45.0		16:39	-3 04	.19	64.4 64.5	64.45	4.523
	at	α Cyg	20 29 20	45.1		16:46	-3 53	.32	252.1 242.1	247.1	5.982
	au	T Cep	21 09	68.2		16:57	-4 12	.33	261.2 255.4	258.3	6.030
	av	5 Cep	21 36	78.3		17:11	-4 25	.39	54.1 56.6	55.35	4.358
	aw	ε U Cyg	21 39	54.0		17:21	-4 18	.37	82.5 80.3	81.4	4.776
	ax	VV Cep	21 55	63.5		17:29	-4 26	.36	99.2 101.6	100.4	5.004
	ay	α Cep	21 17	62.5		17:33	-3 44	.27	90.9 98.4	94.65	4.940
5	az	γ Dra	17 55	51.5		17:40	-0 15	.02	407.6 399.8	403.7	6.515
	aZZ					17:50	—	—	-1.4 -2.2	-1.8	—

ε = 0.315 from $\frac{245}{252}$

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RMB + RL

DATE, Monday April 4-5 1938

sions	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
04	Sl. haze in NW	4.899				
84		6.379				
55	½ Δ u j.	4.431				
22		6.679				
99	½ Δ u j.	6.634				
02	½ Δ l j.	6.559				
17		3.174				
94		4.741				
89		5.311				
33		4.468				
77		5.293				
30		6.555				
44	½ Δ l j.	7.088				
34	Cloth on tailpiece	3.075				
31	" + motion	0.872				
30	No cloth; motion	2.968				
50	" " ; no "	-2.462				
64		4.621				
23		4.583				
82		6.083				
30	$m_v \sim 10$	6.134				
58	$m_v \sim 8.5$	4.481				
76		4.893				
04		5.117				
40		5.025				
15		6.521				
	Dome closed; telescope off; cloth on tail piece (motion)					

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E or W.	Load	Focus	Prisms	
1 a	-	α UMa	11 00	+62.1		12:42	1 42	.10	321.4 / 309.4	315.4	6.247	sl
b		"	"	"		12:46	1 46	.11	160.7 / 164.0	167.3	6.279	½
c		"	"	"		12:49	1 49	.11	145.2 / 144.0	144.6	6.153	½ △
d		β UMa	10 58	+56.7		12:54	1 56	.09	78.5 / 72.1	75.3	4.692	
e		ε UMa	12 51	56.3		12:59	0 08	.03	115.2 / 117.6	116.4	5.165	
f		β UMi	14 51	74.4		13:05	-1 46	.20	406.7 / 405.9	406.3	6.522	
g		η Dra	16 23	61.6		13:10	-3 13	.21	103.9 / 105.8	104.9	5.052	
h		ζ Dra	17 08	65.8		13:15	-3 53	.28	32.3 / 31.7	32.0	3.763	
i		β Dra	17 29	52.3		13:20	-4 09	.34	107.1 / 99.3	103.2	5.034	
2 j		α Lyr	18 35	38.7		13:26	-5 09	.82	573.2 / 558.3	565.8	6.882	
k		α UMi	1 41	89.0		Gal. off scale for some reason						
k		α UMi	1 41	89.0		14:03	-11 38	.50	181.0 / 176.7	178.8	5.631	
l		ζ UMa	11 53	58.2		14:11	2 18	.12	55.5 / 55.8	55.65	4.364	½ d
m		5 UMa	12 41	61.4		14:21	1 40	.10	25.6 / 24.6	25.1	3.499	
n		4 UMi	14 16	62.1		14:28	0 12	.10	40.1 / 38.9	39.5	3.992	
10		α UMa	11 00	62.1		14:33	3 33	.24	293.3 / 302.5	297.9	6.500	Cl
2 p		α Lyr	18 35	38.7		14:40	-3 55	.39	571.0 / 554.2	562.6	6.876	Cl

$\epsilon = -0.179$ from $-\frac{\Sigma a_1}{\Sigma s^2}$

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1937phae.proj..798E

Rllez + Rl

DATE, Thursday April 7-8 1938

Plates	SKY AT START		Stopped	Exp.	C'lds	Obs'r	REMARKS
		G	a + E3				
747	sl haze	7.8	6.229				
279	½ △ u.j.		6.259				
153	½ △ lj		6.133				
72			4.676				
65			5.160				
527			6.486				
252			5.015				
63			3.713				
334			4.973				
82			6.635				
	– stray moonlight?						
31			5.541				
164	Cl ds to W		4.343				
99			3.481				
92			3.974				
500	Cl ds coming over from W		6.457				
76	Clds not yet to zenith		6.806				

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1937phae.proj..798E

90 Cotton plug in filter #2 - moonshield in place

INSTRUMENT, 61" S4

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	1	Capella	5 12	+45.9		9:44			1289.2 / 1277.2		
b	1	ε Aur	4 58	+43.7		9:48			85.1 / 91.4		
c	1	Blank	"	"		9:52			13.9 / 8.7	+11.3	
d	2	"	"	"		9:55			1.5 / -3.3	-0.9	
e	2	"	"	"		9:58			-0.2 / -1.0	-0.6	
f	1	β UMa	10 58	56.7		10:12			114.4 / 110.5		
g	1	α UMa	11 00	62.1		10:16-19			370.2 / 371.6		
h									376.0 / 368.7		
i									368.8 / 367.6		
j									361.0 / 355.1		
k									345.9 / 359.4		
l									361.6 / 362.2		
m									363.6 / 355.6		
n									357.1 / 350.2		
o		Taken continuously							345.9 / 350.9		
p									349.9 / 351.8		
q									364.9 / 360.0		
r									360.9 / 347.2		
s									337.9 / 349.7		
t		Blank	"	"		10:50-11:04			30.3 / 17.0	23.65	
u		"							19.8 / 25.0		
v		"							24.3 / 41.9	33.16	
w		"							26.6 / 17.1	21.8	
x		"							22.9 / 19.5	20.2	
y	2	Blank	"	"		11:06-11:11			3.3 / -1.7	+0.8	
z	2	"	"	"					-1.1 / -2.8	-1.95	

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RMB & RL

DATE, Sunday, April 10-11 1938

risms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	Haze to W	8.2				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a a	1	η Dra	16 23	+61.6	11:16	11:17			127.9		
									126.1		
a b	1	γ Dra	17 55	51.5		11:28			383.4		
									388.9		
a c	1	Blank	"	"		11:32			-2.0		
									-0.9	-1.45	
a d	1	"	"	"		11:35			1.2		
									-1.0	+0.1	
a e	1	"	"	"		11:38			15.8		
									9.8	10.3	
a f	2	"	"	"		11:42			-0.9		
									0.0	-0.45	
a g	2	"	"	"		11:46			-1.8		
									-1.4	-1.6	
a h	2	"	"	"		11:48			+1.8		
									-0.1	+0.85	
a i	Thermo couples disconnected								+1.3		
									+0.5	+0.90	
a j	"		"						-4.8		
									+0.4	-2.20	
	Put cloth over opening in back side of tail piece										
a k	2	Blank	13:20	+43		13:14			0.4		
									-4.6	-2.1	
a l	1	"	"	"		13:17			-20.0		
									-16.3	-18.15	
a m	1	"	"	"		13:20			-22.0		
									-15.1	-18.5	
a n	1	"	"	"					-12.5		
									-13.7	-13.1	
a o	1	"	Telescope up + turned off						6.0		
									-0.3	+2.85	
a p	1	"	"						5.8		
									5.5	5.65	
a q	1	"	Thermo couples disconnected						1.7		
									-0.7	+0.5	
a r	1	"	"						+1.9		
									-1.5	+0.2	
	Mirror cover open 1/3 of way; other conditions same										
a s	1	"							-14.3		
									-17.0	-1	
a t	1	αH Dra	11 00	62.1		17:01			476.6		
									447.7		
a u	1	η Dra	16 23	61.6		17:07			148.7		
									178.2		
a v	1	γ Dra	17 55	51.5		17:13			456.7		
									434.9		

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RMK + Rh

DATE, Sunday, April 10 - 11 1938

'risms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	no motion (Right Star out of field)					
	" " "					
	with " "					
	" " "					
	no "					
	" " "					
	with motion					
	cloth over front of tail piece					
	Put some lights on top shutter closed over top of telescope					
	cloth over tail piece					
	Paper tunnel from tail piece to slit					
	"					

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INSTRUMENT, ~~test~~ Pages for gal. test in gal. record

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
									6 Δ		
1st Pair; couples connected in box. Heater off.									-4.5 +0.7	-1.9	
									-2.8 1.7	-0.55	
									2.3 -0.3	1.0	
									0 -2.1	-1.05	
									-1.2 1.2	0.00	
									1.2 1.0	1.1	
									-.6 -1.6	-1.1	
									-1.6 -1.5	-1.55	
									.8 -2.1	-.65	
									1.2 X	(1.2)	

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1937phae.proj. .798E

book DATE,_____ 19

risms | SKY AT START | Stopped 8 A | Exp. | C'lds | Obs'r | REMARKS

	-4.5			
	1.6	-1.45		
	-2.4			
	1.6	.4		
	2.3			
	-2.4	-.05		
	-0.5			
	-4.3	-2.4		
	-1.6			
	2.1	.25		
	1.6			
	1.5	1.55		
	-3			
	-2.3	-1.3		
	-3.3			
	-1.0	-2.15		
	-2.1			
	-2.3	-2.2		
	-0.4	(-0.4)		

X

Av A = 0.165 mm (millimeter)

Av A = 0.163 mm (millimeter)

0.165
0.163 check

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A. S.T.	Obs. Dec.	Tel. E. or W.	Load 6Δ	Focus 6Δ	Prisms
a		Blank	+15 10	+45		15:20			1.5↓ -4.2↓	-4.35	
b		Blank	"	"		15:29			-2.4↓ -1.8↓	-2.1	
c		"	"	"		15:36			1.9↓ -1.2↓	-6.8	
d		"	"						7.5↓ 15.0↓	-11.2	
e		"	"	"		15:43			17.8↓ 18.6↓	-18.2	
f		"	"	"		15:46			-13.9↓ +2.1↓	-5.9	
g		"	"	"		15:54			-11.9↓ 1.9↓	-5.0	
h		"	"	"		15:57			-19.3↓ -17.0↓	-18.2	
i		Blank T.C in box; dome shut; line connected to gal.									
k		same, not continuous									
l		continuous									
m											

Magnetic storm?

Yes (See "Nature" for April 23, 1938.
Max at ═══ April 16, 7h G.M.T.)
(= "19h" in R.L.'S notation in Gale, Cook)
$\frac{\delta H}{H} \sim \frac{1}{8}$ (!!)
TES "One of greatest storms in the last 100 years".

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RULE, RL TES.

DATE, Friday April 15-16 19 38

Prism	SKY AT START	Stopped	Exp.	C'lds	5-2 Obs'r 8Δ	REMARKS
	With motion / 10.5			-.5 / 9.9	4.7	~~No~~ Δ
	fairly uniform / clothing / but / motion			-9.7 / -7.4	8.6	
	With motion } cloth			+6.2 / 17.7	11.6	
	continuous } over end			+10.0 / 9.10	+9.5	
	In sky - with motion			+12.4 / 22.8	17.6	
	bright curving - no motion			-.7 / -1.7	-1.2	
	Well covered front + back - with motion			-1.1 / -11.8	-6.4	
	Same - no motion			+1.1 / 16.5	8.8	no real Δ (drift only) See plot (ignore 2nd Δ.)
	Fog blowing over - probably small stars					
				-.4 / 4.7	2.2	no real Δ (drift only)
				+.6 / 5.1	2.8	numerical Δ = (1.7)
				+6.2 / -3.2	+1.5	
				+1.9 / -2.5	-0.3	

No Motion – no effect. (1.5)

Motion in sky (11.2)

cloth front (9.9)

covered all over (7.6)

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		Blank	10 40	+50		10:28			Lead wires disconnected		
b		"	"	"		10:32			19.5 17.7	18.6	
c		"	"	"		10:35			11.6 1.9	6.7	
d		"	"	"					29.0 16.9	22.9	
e		"	"	"		10:42			16.1 18.6	17.3	
f		"	"	"					14.9 10.7	12.8	
g		"	"	"					-2.0 +7.8	2.9	
h		"	"	"					5.6 -1.0	2.3	
i		"	"	"					8.2 5.3	6.7	
j		"	"	"		11:52			9.1 11.0	10.0	
k		"	"	"					9.3 10.6	10.0	
l		"	"	"					2.7 -0.8	1.0	

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RMRE+RL

DATE, Sat. April 16-17 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Hazy all around / 8.4					No △
~~on sky with motion~~					△
" " - no motion					no real △
cloth on front - with motion					△
" "					△
" "					△ ~ 1 mm
" - no motion					No △
" " "					No △
cloth front + back - with motion					△ ~ 1 mm
" "					△
" "					△
" - no motion					no real △

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all measures: Dome shut, Mirror covered.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
									8Δ		
a		Breathing for 15 sec alternate intervals on t.c. box. No Motion							+2.2 -1.3	.45	
b		Not Breathing; No Motion							-.4 -.9	-.65	
c		Breathing; No Motion, as in (a).							+1.0 -2.7	-.85	
d		Hard on T.C. for 15 sec intervals, off 15 sec interval. No Motion							15.7 -8.0	3.85	
e		Mouth, nose & face below eyes, of RME covered. Guiding but no motion.							4.3 +1.5	2.9	
f		Same as e							.5 2.7	1.6	
g		Cardboard over eye piece, 15 sec on & off; Obs. not grounded							-1.5 2.8	+.65	
h		Same; Obs. grounded							3.7 -.7	1.5	
i		Plug in front of t.c., motion, face covered as in (e), guided							0.7 -0.7	0	
j		Same as i, but face uncovered							0 3.3	1.65	
k		Breathing on t.c. box for 150 sec, off 150 sec, etc. Plug, No Motion.							37.9 —	37.9	
l		Motion, No plug, tail piece all covered, no D trap							-27.0 -15.1		
m		Same as (l)							-15.8 -10.0		
n		Same as (l), but D trap							3.9 6.3	5.1	

1. (a, c)(k) Breathing as usual in guiding by itself produces no Δ, but a curved drift. (*applied to t.c. box)
2. (d) Warmth* causes badly
3. (e, b) Deflecting the breath from t.c. box avoids 1.
4. (g, h) Radiation entering eye piece, normally causes no trouble.
5. (i, l, m, n) Radiation entering front of cell from inside of tail piece causes Δ's is less serious when D trap is present. It is caused by thermal difference (Tac affect junction differently. With no cover on t. p., reflected
6. From (l, m), time of relaxation is 145 sec ($\Delta T = (\Delta T)_0 e^{-t/145}$). Expected
7. The magnetic storm on night of April 15-16 affected galvanometer,

all v. faint measures before this page are doubtful, owing

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TES & PME (Cobs. House) 61"

Tests

DATE. Monday April 18 (afternoon) 1938

SKY AT START	Stopped (Drift) (1+10-5-6)	Exp.	C'lds	Obs'r	REMARKS
Pairing heavily.	-14.9				No Δ, but curved drift ⌒
	+2.7				No Δ, nearly strt. drift —
	-14.9				No Δ, but curved drift ⌒
	-36.5				Small Δ, enormously curved drift ⌒
	-3.8				No Δ, nearly strt drift —
	-1.6				" " " " " —
	0.7				" " " " " —
	0.6				" " " " " —
	-0.4				" " " " " —
	-15.9				" " curved drift ⌒
	~~X~~				Large Δ (drift ~~X~~)
	-0.5				Large Δ strt drift —
	+1.0				" " " " —
	-1.6				Small Δ " " —

curved drift. ⌒ It impairs accuracy, & demands a quadratic formula.

when motion occurs. It is thermal radiation from the walls of tail piece, & (tailpiece vs flat, & tail pieces tail piece) which, when motion of t. c.'s occurs, radiation can also act; & temp. differences are increased besides. time for Aluminium (40 cm) is $\sim \frac{40^2}{10} = 160^s$; check. probably, directly; & not the lines.

to 5. above.

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms

Test of new radiation

4/27-28/38 — Photographic tests on gal. — Green bead bulb —
Series A. — No cylindrical lens. 1) V = 3.3 5 exp ⅞
2) V = 5.0 3 " "
Series B — Cylindrical lens. 1) V = 3.3 3 exp ⅞

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RUE + RL

DATE, Tuesday, April 26-27 19 38

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Fluid D.					
— 3.8 volts					
2-5-10-15-20 ~~sec~~.					Spot stationary. Dev. on spot. - 10, 15-20 show OK.
2-4-6 sec each.					No motion. Dev. on spot - all show.
2-5-8 sec each.					" " " " " "

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
									-0.8		
a		Blank	In zenith			13:22			5.1	2.1	
b		"	13 30	+70		13:33			+4.2 -5.3	-0.6	
c		"	10 40	+40		13:40			-2.1 -1.6	-1.8	
d		"	10 40	+40		13:45			-2.9 1.4	-0.7	
e		α Ursa	11 00	+62.1		13:50			85.6 86.7	86.15	

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DATE, Thursday May 5-6 1938

SKY AT START	Stopped δ Δ	Exp.	C'lds	Obs'r	REMARKS
with motion	-.2 +.1 -.05				
W.M.	-.9 5.6 2.35				
W. M. Moonlight on tube	-0.8 -2.8 -1.8				
" "	5.7 -4.7 0.5				
13-25-10 p.	116.6 113.3 114.95				

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106 Gal tests - p106-107 5/26/38

INSTRUMENT,_____

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms

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Heated quartz tube

107

DATE, June 1, 1938 19

SKY AT START	Stopped	Exp.	C'Ids	Obs'r	REMARKS

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108 Heated Quartz tube

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
									14.3		
a		γ Dra	17 08	+65 58		16:51			7.7	11.0	
b		ε UMa	12 51	56.3		17:04			40.0 44.9	45.0	

Heated Quartz Tube.

a		ε UMa	12 51	56.3		16:40					
b		γ Dra	17 55	51.5		16:48					

6/4/36 Heated Quartz Tube — took thermo couples into

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RMWE & RL

DATE, Wednesday June 1-2 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS

RMWE & RL — Thursday, June 2-3, 1938

centred building to get more voltage on heater. RMWE & TES.

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started, U.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		η Dra	16 23	+61.6			No reflection				
a	1	γ Dra	17 55	+51.5		19:14	1:19	.04	206.4 211.2	208.8	5.799
b	2	β Dra	17 29	52.3		19:20	1:51	07	53.8 51.7	53.75	4.326
c		Blank	17 30	52.3		19:23	1:53	—	- 1.4 0.1	-.65	—
d		~~R Lyr~~	~~18 53~~	~~43.9~~							
d		S Cyg	19 43	45.0		19:39	-0:04	00	23.5 23.8	23.65	3.434
e		α Cyg	20 39	45.1		19:46	-0:53	01	121.4 120.3	120.85	5.206
f		Blank	20 40	45.1			-0:50	—	- 1.7 1.9	.10	-2.500
g		α Cep	21 17	62.5		19:55	-1:22	09	42.5 40.9	41.7	4.050
h		R Lyr	18 53	43.9		20:02	1:09	02	269.5 269.2	268.4	6.072
i	2	β Dra	17 29	52.3		20:07	2:38	14	56.4 52.1	54.25	4.336
j	1	γ Dra	17 55	+51.5		20:12	2:17	.11	206.2 200.6	203.4	5.771
k		Blank	17 56	51.5				—	- 2.6 - 0.1	-1.35	—
l		Zenith							+ 2.4 - 0.6	± 0.9	-0.114

$e = .39$ from $\frac{\Sigma was}{\Sigma ws^2}$

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RMB + RL

Wed. DATE, June 8–9 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
15-35 cldstow hazy-ground fog	7.0	s			Resistance of thermocouple & line measured 12-2 — ∴ short.
					(100 at 100°C)
"	7.9				582
					436
with motion					
					343
					521
					409
					608
					439
					581
					"

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112 Heated quartz tube.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Lead	Focus	Prisms
a		γ Dra	17 55	+51.5		Broken line					
b		ε U Ma	12 51	56.3		16:30	3;39	.25	33.4 / 30.5	31.95	376
c		ζ U Ma	13 45	49.6		16:38	2;53	.16	52.8 / 53.1	52.95	431
d		ζ U Ma	"	"		16:56	3;11	.20	39.4 / 44.7	42.05	406
e		γ Dra	17 55	+51.5		17:05	- 50	.03	159.7 / 163.2	161.5	552

Friday, June 10, 1938 — Took thermo - with oxygen flame.

(assume ε = .30)

rule out for clouds?

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PLATES.

DATE, Thursday, June 9-10 1938

isms	SKY AT START		Stopped	Exp.	C'lds	Obs'r	REMARKS
	hazy - 15-35-9pW	S 7,3					
62	Streaks 935 mm N, 33-5p to S	7.0	384				
1			436				
06			412				
2			553				

couples in to Cambridge to heat gravity tube

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		β U Ma	10 58	+56.7		15:24	4:26	.38	23.6 / 27.6	25.6	3.527
b		α U Ma	11 00	+62.1		15:29	4:29	.31	129.6 / 133.3	131.4	5.296
c		ε U Ma	12 51	+56.3		15:35	2:44	.15	535 / 548	54.2	4.335
d		η U Ma	13 45	49.6		15:51	2:06	.09	474 / 478	48.6	4.217
1 e		β U Mi	14 51	74.4		15:58	1:07	.19	171.1 / 175.5	173.3	5.597
1 f		β U Mi	"	"		17:05	2:14	.23	175.1 / 175.3	175.2	5.604
g		Blank	14 54	74.4		17:10	2:16	~~.23~~	-3.2 / -2.8	-2.5	—
h		γ Dra	16 23	61.6		17:14	0:51	.07	43.6 / 46.7	45.2	4.138
i		3 Dra	17 08	65.8		17:19	0:11	.09	12.5 / 14.3	13.4	2.818
j		Blank	17 10	65.8		19:22	0:12	~~.09~~	-1.3 / -0.9	-1.1	—
2 k		Υ Dra	17 55	51.5		17:54	-0.01	.02	173.1 / 168.7	170.9	5.582
l		Blank	17 58	51.5		17:57	-0.10	~~.02~~	0.0 / 1.5	.75	—
m		Blank	17 58	86.0		18:03	0:05	~~.02~~	-0.9 / -1.5	-1.2	—
3 n		(R Lyr)	18 53	43.9		18:09	-0:44	.01	228.6 / 223.5	226.0	5.885
4 o		Υ Cyg	20 20	40.1		18:17	-2:03	.09	58.3 / 56.9	57.6	4.401
5 p		α Cyg	20 39	45.1		18:23	-2:16	.11	94.6 / 93.4	94.0	4.933
q		Blank	20 41	45.1		18:27	-2:14	———	-2.8 / -0.9	-1.85	—
6 r		α Cep	21 17	62.5		18:33	-2:44	.17	32.5 / 29.5	31.0	3.728
s		Blank	21 19	62.5		18:37	-2:42	———	-2.0 / -0.6	-1.3	—
1 t		β U Mi	14 51	74.4		18:44	3:53	.33	170.3 / 166.4	168.4	5.566
u		Blank	14 53	74.4		18:48	3:55	———	-2.4 / -1.4	-1.9	—
v		Υ U Mi	15 21	72.0		18:54	3:33	.28	17.4 / 17.7	17.6	3.114
2 w		Υ Dra	17 35	51.5		20:10	2:15	.10	160.9 / 158.5	159.7	5.510
x		α Lyr	18 35	38.7		20:16	1:41	.06	240.8 / 235.4	238.1	5.942
3 y		R Lyr	18 53	43.9		20:21	1:28	.04	220.4 / 215.4	217.9	5.845
z		S Cyg	19 43	45.0		20:26	0:43	.01	15.4 / 11.5 ↑?	13.4	2.818

$\epsilon = -0.293$ from $\frac{\Sigma 95}{\Sigma 5}$

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PMRE + RL

DATE, Monday June 13 - 14 1938

isms	SKY AT START	Stopped $\epsilon = .3$	Exp.	C'lds	Obs'r	REMARKS
7						
521	0? /7.0	363				
296		541				
33.5		438				
.17		425				
597	(10^3 time interval — clock stopped 3) thin cirrus out to W	566				
609		568				
38	3-3: coming from NE	416				
318		285				
	clouds getting all over sky					
582		559				
	from fair to 5; reduced light falling on telescope; 11					
883		588				
101		443				
133		496				
28		378				
	moonlight by scale behind tail piece					
66		567				
14		319				
510	hazy - 2 S to W	554				
142		596				
345		586				
318		~~284~~ (297)				ignore lower measure
		✓✓				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load 6Δ	Focus	Prisms
4 aa	C	γ Cyg	20 20	40.1		20:31	0:11	.01	59.4 / 54.1	56.8	4.386
5 ab		α Cyg	20 39	45.0		20:36	-0:03	.00	88.1 / 83.1	85.6	4.831
6 ac		α Cep	21 17	62.5		20:42	-0:35	.07	30.4 / 28.3	29.4	3.671
ad		γ Cep	23 37	77.3		20:47	-2:50	.29	31.6 / 26.8	29.2	3.682
ae		β Cas.	0 06	58.8		20:52	-3:14	.21	40.6 / 37.1	38.8	3.977
af		α Cas	0 37	56.2		20:57	-3:40	.27	82.0 / 80.4	81.2	4.774
ag		(γ Cas)	0 53	60.4		21:03	-3:50	.28	34.6 / 33.5	34.0	3.829
ah		Blank	0 55	60.4		21:06	-3:49	—	-3.2 / 0.6	-1.3	—
ai		"	Zenith			21:12		—	-0.7 / -3.1	-1.9	—
							Mantz		.64	-1.37 avg	5: 3.716 Δ

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RWETRL

DATE, June 13 - 14 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	439				
	483				
	369				
	375				
	403				
	485				
	391				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		β U Ma	10 58	56.7		15:22	4:24	.37	29.0 / 31.5	30.25	3.702
b		α U Ma	11 00	62.1		15:27	4:27	.37	137.1 / 138.1	137.6	5.346
c		γ U Ma	11 51	54.0		15:32	3:48	.27	29.0 / 28.2	28.60	3.641
d		ε U Ma	12 51	56.3		15:37	2:46	.16	57.9 / 54.1	56.00	4.370
e		η U Ma	13 45	49.6		15:41	1:56	.08	49.0 / 47.1	48.05	4.204
f		β U Mi	14 51	74.4		15:47	0:56	.18	90.8 / 186.9	188.8	5.696
g		γ U Mi	15 21	72.0		15:52	0:31	.15	19.3 / 14.6	16.95	3.072
h		η Dra	16 23	61.6		15:56	-0:27	.07	53.4 / 52.7	53.05	4.312
i		ζ Dra	17 08	65.8		16:01	-1:07	.10	13.5 / 13.7	13.10	2.793
j		β Dra	17 29	52.3		16:07	-1:22	.04	47.8 / 48.0	47.90	4.201
k		γ Dra	17 55	51.5		16:12	-1:43	.06	183.6 / 184.4	184.0	5.662
l		α Lyr	18 35	38.7		16:18	-2:17	.12	294.6 / 288.6	291.6	6.162
m		(R Lyr)	18 53	43.9		16:23	-2:30	.14	238.6 / 238.1	238.4	5.943
n		δ ε Cyg	~~19~~ 20	~~43~~ 45.0		16:29	-3:14	.20	19.1 / 21.2	20.15	3.261
o		Blank	19 42	45.0		16:33	-3:09	—	-1.8 / -2.7	-2.25	
p		Blank	"	"		16:40	-3:02	—	-0.3 / -0.8	-0.55	—
q		κ Cyg	20 20	40.1		16:46	-3:34	.30	63.2 / 60.7	61.70	4.476
r		α Cyg	20 39	45.1		16:51	-3:48	.31	99.1 / 98.6	100.4	5.004
s		γ Dra	17 55	51.5		16:57	-0:58	.03	189.6 / 188.4	189.0	5.691
t		Blank	17 56	51.5		17:03	-0:53	—	+0.6 / 0.0	+0.3	—
u		Blank	"	"		17:05	-0:51	—	-2.5 / -3.0	-2.75	—
v		β Dra	17 29	52.3		17:10	-0:19	.02	48.4 / 48.3	48.35	4.211
w		Blank	17 30	52.3		17:15	-0:15	—	-2.6 / -4.5	-3.55	—
x		"	"	"				—	+1.1 / 0.4	+0.75	—
y		"	"	"				—	+0.3 / -2.5	-1.10	—
z		"	"	"		17:24	-0:06	—	-2.6 / -2.3	-2.45	—

(assume C = .30)

Blanks (red) G0 -2.62 -0.47
(yellow) G5 -0.16 -0.03

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1937phae.proj..709E

RMSE + RL

DATE, Tuesday June 14-15 19 38

SKY AT START		Stopped	Exp.	C'lds	Obs'r	REMARKS
Four doubs	7.0	381				
		546				
		372				
		442				
		422				
		574				
		312				$\bar{\delta}$ 0.12. when plotted
		433				
		282				
		421				
		568				
		620				
		598				
		332				
Regular motion						
Reversed telescope: 20^s interval						
		457				
		509				
		570				
Reversed telescope; 20^s						
Regular motion						
		422				
Regular motion						
Telescope motion 20^s.						
" " "						
Regular motion						

$\sigma_\alpha = \overline{0.12}$ from mean
$\sigma_\delta = 0.12$ from 0

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1937phae.proj..798E

INSTRUMENT, 61" SA

No.	Class	Object	R. A.	Dec.	U.T. Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		β UMa	10 58	+56.7		16:24	5:26	0.60	29.4 / 29.4	29.40	3.67
b		α UMa	11 00	+62.1		16:28	5:28	.55	135.3 / 135.6	135.4	5.32
c		γ UMa	11 51	54.0		16:33	4:42	.49	28.7 / 27.2	27.95	3.616
d		ε UMa	12 51	56.3		16:38	3:47	.27	56.0 / 56.0	56.00	4.370
e		12 C Vn	12 53	38.7		16:42	3:49	.39	18.3 / 19.0	18.65	3.177
f	M	ζ UMa	13 45	49.6		16:47	3:02	.18	48.4 / 48.7	48.55	4.215
g	2	β UMi	14 51	74.4		16:53	2:02	.22	184.3 / 187.3	185.8	5.671
h		γ UMi	15 21	72.0		16:58	1:37	.17	18.5 / 17.8	18.15	3.141
i	3	η Dra	16 23	61.6		17:03	0:40	.07	53.0 / 50.3	51.65	4.283
j		ζ Dra	17 08	65.8		17:08	0:00	.09	12.8 / 12.7	12.75	2.764
k	4	β Dra	17 29	52.3		17:13	-0:16	.02	45.2 / 46.4	45.80	4.152
l	5	γ Dra	17 55	51.5		17:18	-0:37	.02	173.8 / 177.0	175.4	5.761
m	6	α Lyr	18 35	38.7		17:23	-1:12	.03	266.4 / 265.6	266.0	6.062
n		(β Lyr)	18 48	33.3	4:25	17:30	-1:18	.03	10.1 / 5.6	8.15 / 10.68	257 / 2.993
o		(R Lyr)	18 53	43.9		17:37	-1:16	.03	234.5 / 227.8	231.2	5.910
p		δ Cyg	19 43	45.0		17:42	-2:01	.08	16.9 / 16.1	16.50	3.044
q		γ Cyg	20 20	40.1		17:47	-2:33	.14	54.8 / 56.8	55.80	4.367
r		α Cyg	20 39	45.1		17:51	-2:48	.16	94.9 / 87.9	91.40	4.902
s		α Cep	21 17	62.5		17:57	-3:20	.23	33.3 / 29.4	31.35	3.741
t		γ Cep	23 37	77.3		18:04	-5:33	.48	31.1 / 28.4	29.75	3.684
u		β Cas	0 06	58.8		18:10	-5:56	.71	36.6 / 33.9	35.25	3.864
v		12 C Vn	12 53	38.7		18:19	5:26	.97	13.5 / 13.1	13.30	2.810
w		Blank	12 54	"		18:24	5:30	1.01	-1.1 / -0.9	-1.0	
x		"	"	"					-1.6 / +0.9	-0.35	
y		12 C Vn	12 53	38.7		18:33	5:40	1.12	14.0 / 12.2	13.10	2.793
z	M	ζ UMa	13 45	49.6		18:42	4:57	.55	39.4 / 37.2	38.30	3.953

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1937phae..proj...798E

RMWE + RL

DATE, Friday June 19-20 1938

Prisms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
.671	D? / 8.0	396				
.321	very humid	559				
.616		386				
.370		450				
.177		336				
.215		430				
.671		578				
.141		323				
.283		431				
.764		280				
.152		416				
.610		562				
.062		607				
.57						
.298		~~229~~ 259				Old plotted; Big drift. 10.68 by 5,12 formula (1.83 / 1.73)
.910		592				
.044		308				
.367		444				
.902		498				
.741		385				
.484		391				
.846		421 l				l.w.
.810		327 l				
	Reg motion d-motion - 20s.					
.793	" " "	333 l				
.958	Obs coming in from N	422				
		✓✓				

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa	2	β UMi	14 51	74.4		19:55	5:04	.43	167.5 166.9	167.2	5.558
ab	3	η Dra	16 23	61.6		20:05	3:42	.27	45.0 45.1	45.05	4.134
ac		~~ζ Dra~~	17 08	65.8		20:09	3:01	.21	13.4 13.1	12.75	2.764
ad	4	β Dra	17 29	52.3		20:14	2:45	.15	46.8 46.5	46.65	4.172
ae	5	γ Dra	17 55	51.5		20:18	2:23	.11	172.4 173.0	172.7	5.593
af	6	α Lyr	18 35	38.7		20:23	1:48	.07	265.0 264.2	264.6	6.05
ag		(R Lyr)	18 53	43.9		20:28	1:35	.05	230.0 231.4	230.7	5.90
ah		R Lyr	"	"		20:33	1:40	.05	232.5 228.4	230.4	5.906
ai		(AF Cyg)	19 28	45.8		20:42	1:14	.03	19.9 22.5	21.20	3.316
aj		Blank	"	"		20:46	1:18	.03	+2.3 -0.1	+1.10	0.103
ak		(AF Cyg)	19 28	45.8		20:50	1:22	.04	24.8 20.0	22.40	3.376
al		δ Cyg	19 43	45.0		20:56	1:13	.03	19.1 19.9	19.50	3.225
am		δ Cyg	"	"		20:59	1:16	.03	17.8 19.4	18.60	3.174
an		γ Cyg	20 20	40.1		21:09	0:49	.01	60.7 58.5	59.60	4.438
ao		α Cyg	20 39	45.1		21:14	0:35	.01	100.3 96.9	98.60	4.985
ap		α Cep	21 17	62.5		21:19	0:02	.07	30.9 28.2	29.55	3.676
aq		β Cas	0 06	58.8		21:25	-2:41	.15	41.3 41.2	41.25	4.039
ar		α Cas	0 37	56.2		21:30	-3:07	.19	91.5 91.3	91.40	4.902
as		(γ Cas)	0 53	60.4		21:35	-3:18	.23	38.0 35.4	36.70	3.912

$\epsilon = .48 \left(\frac{\Sigma w a s}{\Sigma w s^2}\right)$

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1937phae.proj. .798E

RHVE + Rh

Sunday

DATE, June 19–20 1938

isms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
558	Clds gone on over to S.	577				
134	〃	426				
764	〃	286				
172	〃	424				
593	〃	564				
05	〃	609				
70		593				
906	Moved Telescope 20^s	593				
316	hazy-all over?	333				
103	Rg motion	~~11~~				
376	Moved telescope -20^s	340				
225	〃 〃 -20^s	324				
174	Rg motion	318				
138		444				
985		498				
676	〃	371				
039	〃	411				
702	〃	499				
912	〃	402				
	large wind waves					
		〃				

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		β UMa	10 58	+56.7		14 23	3:27	.24	31.8 29.0	30.40	3.707
b		α UMa	11 00	+62.1		14 33	3:33	.24	134.2 132.1	133.2	5,311
c		ψ UMa	11 06	+44.8		14 37	3:31	.26	45.3 43.1	44.20	4.114
d	F	χ UMa	11 43	+48.1		14 43	3:00	.18			
e		χ UMa	11 43	+48.1		15 29	3:46	.29	24.3 27.0	25.65	3.523
f	2	γ UMa	11 51	+54.0		15 34	3:43	.27	29.9 30.1	30.00	3.693
g	3	ε UMa	12 51	+56.3		15 39	2:48	.16	57.5 56.3	56.90	4,388
h	4	12 CVn	12 53	+38.7		15 44	2:51	.18	18.8 17.1	17.95	3.135
i		ζ_1 UMa	13 21	+55.2		15 55	2:34	.13	35.5 33.0	34.25	3.837
j		ζ_2 UMa	13 21	+55.2		15 59	2:38	.14	7.2 7.3	7.25	2.151
k		Blank	"	"		16 04	2:43	.14	-1.5 -0.4	-0.95	
l	5	β UMi	14 51	74.4		16 11	1:20	.20	179.1 175.3	177.2	5.621
m	6	γ UMi	15 21	72.0		16 16	0:55	.16	18.8 14.6	16.70 18.63	320 3.057
n		η Dra	16 23	+61.6		16 22	-0:01	.06	50.6 49.0	49.80	4,243
o		ζ Dra	17 08	+65.8		16 27	-0:41	.10	14.0 9.0	11.50	2.652
p		β Dra	17 29	+52.3		16 33	-0:56	.03	48.5 48.2	48.35	4.211
q	8	δ Lyr	18 35	+38.7		16 40	-1:55	.08	281.4 280.1	280.8	6.121
r		δ Cyg	19 43	+45.0		16 47	-2:56	.17	21.6 16.9	19.25 20.42	328 3.241
s	7	λ ~~Lyr~~ Cyg	20 39	45.1		16 54	-3:45	.30	97.6 90.4	94.00	4.933
t		λ Cep	21 17	+62.1		17 02	-4:15	.33	34.6 30.3	32.45	3.778
u		χ UMa	11 43	+48.1		17 14	5:31	.77	24.5 22.4	23.45	3.425
v	2	γ UMa	11 51	+54.0		17 21	5:30	.65	25.4 31.1	28.25	3.628
w	3	ε UMa	12 51	+56.3		17 26	4:35	.41	55.0 55.7	55.35	4.358
x	4	12 CVn	12 53	+38.7		17 33	4:40	.61	18.4 15.2	16.80	3.063
y	5	β UMi	14 51	+74.4		17 45	2:54	.26	186.4 184.5	185.4	5.670
z	6	γ UMi	15 21	+72.0		17 51	2:30	.22	19.4 19.9	19.65	3.233

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1937phae.proj..798E

AL & RME

Monday

DATE, June 20-21 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
15-35 2W 18.0	371				
	531				
	411				
stuffy by clouds					
0?	352				
	369				
	439				
	314				
	384				
	215				
regular station					
	562				
	320				? ON, by drift. {3.105 / 3.16} 5,2 3.105 ×6 = 18.63
	424				
					? " 1.88 / 2.44 > NGC by 5,2
	421				
	612				
	3248				? " 3.26 / 3.54 > 012 3.41
	493				
	378				
	3421				
	3631				
	436				
	3061				
	567				
	323				
	"				

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126

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa		γ UMi	15 21	72.0		19:05	3:44	.30	18.4 / 26.1	18.4 / 22.25	3.316 / 3.368
ab		Blank	"	"		19:09	3:48	.30	+1.6 / +0.8	1.20	0.198
ac	7	α Cyg	20 39	45.1		21:05	0:26	.01	74.4 / 72.5	73.45	4.665
ad	8	α Lyr	18 35	38.7		21:12	2:37	.15	213.1 / 208.6	210.8	5.810

s, a, c, w

C = .002

C = 0.00

C = -29.3

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1937phae.proj..798E

RMEXRL

Monday June 20-21 DATE, 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	ates				
1 —	316				? Measure 3 & N6. Last 5 used.
	339				
neg. motion					
	ates				
1716	496				
	610				
	—				

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1937phae.proj..798E

INSTRUMENT, 61" S11 ✓ S ✓ ✓ a

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a		β UMa	10 58	+56.7		14:36	3:38	E 25	21.1 / 20.7	20.90	3.300
b		α UMa	11 00	+62.1	—	Telescope drive stopped					
b		α UMa	11 00	62.1		14:54	3:54	E 29	102.4 / 103.2	102.8	5.032
c		ψ UMa	11 06	44.8		14:59	3:53	E 33	37.6 / 36.8	37.20	3.926
d		χ UMa	11 43	48.1		15:14	3:31	E 25	25.3 / 22.4	23.85	3.444
e	1	γ UMa	11 51	54.0		15:19	3:28	E 24	21.7 / 19.9	20.80	3.295
f	2	ε UMa	12 51	56.3		15:24	2:33	E 14	49.0 / 41.1	45.05	4.134
g		12 CVn	12 53	38.7		15:28	2:35	E 15	17.6 / 14.5	16.05	3.014
h	3	η UMa	13 45	49.6		15:35	1:50	E 07	36.7 / 38.6	37.65	3.939
i	4	β UMi	14 51	74.4		15:41	0:50	E 18	151.7 / 149.2	150.4	5.443
j		(α UMi)	1 41	89.0		15:46	-9:55	E 50	53.5 / 55.5	54.50	4.341
k	5	γ UMi	15 21	72.0		15:51	0:30	E 15	18.8 / 14.8	17.16 / 16.80	309 / 3.045
l		η Dra	16 23	61.6		15:57	-0:26	E 06	42.9 / 38.9	40.90	4.029
m		ζ Dra	17 08	65.8		16:04	-1:04	E 10	12.1 / 9.9	10.65 / 11.15	256 / 2.648
n	6	β Dra	17 29	52.3		16:09	-1:20	E 05	40.0 / 35.5	37.75	3.942
o	7	γ Dra	17 55	51.5		16:14	-1:41	E 06	144.7 / 145.8	145.25	5.405
p	8	α Lyr	18 35	38.7		16:19	-2:16	E 11	225.2 / 223.2	224.2	5.877
q		(R Lyr)	18 53	43.9		16:24	-2:29	E 13	192.0 / 191.8	191.9	5.708
r		δ Cyg	19 43	45.0		16:30	-3:13	E 22	14.5 / 15.4	14.95	2.937
s	9	γ Cyg	20 20	40.1		16:35	-3:45	E 34	47.9 / 48.8	48.35	4.211
t	10	α Cyg	20 39	45.1		16:39	-4:00	E 35	79.2 / 72.9	76.05	4.703
u	11	κ Cep	21 17	62.5		16:45	-4:32	E 38	29.6 / 21.1	25.35 / 25.56	352 / 3.510
v	2	ε UMa	12 51	56.3		16:53	4:02	E 31	43.1 / 42.8	42.95	4.082
w	1	γ UMa	11 51	54.0		17:00	5:09	E 56	23.2 / 19.8	21.50	3.331
x		5' UMa	13 21	55.2		17:05	3:44	E 28	25.1 / 23.6	24.35	3.466
y	3	η UMa	13 45	49.6		17:09	3:24	E 22	12.8 / 11.3	12.05	2.702
z		γ Boo	14 30	38.6		17:15	2:45	E 18	14.5 / 11.2	12.85	2.772

Wrong star. TES

×4 formula

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1937phae.proj..798E

RWE + RL

DATE, Tuesday June 21-22 19 38

SKY AT START	Stopped	Exp.	C'lds	Obs'r	8Δ 75-2	6Δ from last 4 days.	REMARKS
	a+es-4,8+ 1048+						
Low haze 9.9	266	70			26.8 26.1	20.1	
	437	72			137.2 139.1	103,5	? challenge all measures slipping low by ¼ or more of smaller of the two -6Δ"s. YES!!
Drive N.G. again	328	72			45.3 49.4	34.4	
	277	73			29.4 25.2	22.4	
	262	73			32.1 26.7	24.2	
	342	74			63.0 54.8	47.2	
	230	74			22.8 23.0	17.0	
	321	75			51.1 52.8	37.0	
	473	75			201.6 203.1	150.9	
	369	76			72.0 73.5	52.8	
	235.6	76			23.4 22.4	16.0	? OK by dist {5.12 / 2.80 / 2.92}
	327	77			56.6 52.7	42.8	
Drive N.G. again - clock stopped.	187	77			13.7 14.7	9.9	? OK by dist {1.84 / 1.71}
	317	78					
	464	78					
	512	78					
	495	79					
	220	79					
	348	80					
	398	80					
	278.9	81					? " {3.98 / 4.54}
	334	81					
	263	82					
	271	82					
- Many stars? YES		82					
	198	82					? " {1.82 / 2.69} NG

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa	2	ε UMa	12 51	+56.3		17:58	5:07	.53	42.1 / 40.9	41.50	4.045
ab	3	ζ UMa	13 45	49.6		18:03	4:18	39	40.3 / 38.3	39.30	3.986
ac	4	β UMi	14 51	74.4		18:08	+3:17	29	161.4 / 159.0	160.2	5.512
ad	5	γ UMi	15 21	72.0		18:13	2:52	24	15.6 / 14.8	15.20	2.955
ae		β Boo	15 00	40.6		18:18	3:18	25	23.2 / 20.6	21.90	3.351
af		Blank	"	40.6		18:23	3:23	—	-0.2 / -0.7	-0.45	—
ag		δ Boo	15 13	33.5		18:28	3:15	28	20.9 / 19.3	20.1	3.258
ah		α CrB	15 32	26.9		18:33	3:01	30	29.7 / 29.6	29.65	3.680
ai		ε Her	16 39	31.7		18:50	2:11	13	29.7 / 28.8	29.25	3.665
aj		η Her	16 41	39.0		18:55	2:14	11	18.9 / 20.2	19.55	3.228
ak		Blank	"	"		18:58	2:17	—	+0.2 / -1.3	-0.55	—
al		η Her	"	"		19:03	2:22	12	25.6 / 23.6	24.60	3.477
am		ζ Her	17 13	36.9		19:07	1:54	08	55.7 / 53.0	54.35	4.338
an		Blank	"	"		19:10	1:57	—	+1.8 / +1.6	1.70	—
ao	6	β Dra	17 29	52.3		19:16	1:47	07	41.8 / 39.5	40.65	4.023
ap	7	γ Dra	17 55	51.5		19:21	1:26	05	*164.1 / 165.4	164.8	5.542
aq	8	α Lyr	18 35	38.7		19:27	0:52	02	267.0 / 262.1	264.6	6.056
ar		Blank	"	"		19:32	0:57	—	+0.1 / -0.4	-0.15	—
as	8	α Lyr	"	"		19:38	1:03	02	267.5 / 262.0	264.8	6.057
at		(R Lyr)	18 53	43.9		19:43	0:50	01	219.5 / 218.4	219.0	5.857
au	9	γ Cyg	20 20	40.1		19:50	-0:30	01	60.5 / 51.6	56.05	4.371
av	10	α Cyg	20 39	45.1		19:55	-0:44	01	96.8 / 97.9	96.95	4.966
aw	11	α Cep	21 17	62.5		20:01	-1:16	09	30.3 / 29.7	30.00	3.693
ax		γ Cep	23 37	77.3		20:06	-3:31	32	33.3 / 25.6	31.95 / 29.75	376 / 3.693
ay		β Cas	0 06	58.8		20:11	-3:55	29	39.5 / 38.5	39.00	3.978
az		α Cas	0 37	56.2		20:16	-4:21	36	85.0 / 81.2	83.10	4.799

*Last 4 or 5 minutes

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RMS + RL

DATE, Tuesday June 21-22 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Fair, haze to N 1s to E	329	86			
	322	86			
	470	87			
	213	87			
	253	88			
		88			
	243	89			
	286	89			
	280	90			
	234	91			
		91			
Moved telescope - 20^s	260	91			
	344	92			
		92			
	311	93			
	462	93			
clock stopped.	513	93			
		94			
Moved telescope - 20^s	512	94			
	490	95			
	342	95			
	401	96			
	~~275~~	96			
	~~278~~ 287	96			? " (5.22 / 5.42)
	307	97			
	391	97			
	~~				

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132

INSTRUMENT, 61" SH ✓ s ✓ ✓ a

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	
ba		(γ Cas)	0 53 ~~37~~	60.4 ~~42.2~~		20:25	-4:28	.38	32.3 / 34.3	33.30	3.806	Seat
bb		o And	22 59	42.0		20:31	-2:28	13	7.8 / 7.9	7.85	2.237	
bc		Blank	"	"		20:34	-2:25	—	-1.9 / -2.0	-1.95	—	
bd		o And	"	"		20:39	-2:20	12	~~10.0~~ / 5.1	~~7.55~~	~~2.192~~	Mon
be	11	α Cep	21 17	62.5		20:44	-0:33	07	30.6 / 28.6	29.60	3.678	
bf		Blank	"	"		20:47	-0:36	—	+1.1 / +2.7	1.90	—	
bg	11	α Cep	"	"		20:52	-0:25	07	31.9 / 28.4	30.15	3.698	Shar
bh	10	α Cyg	20 39	45.1		20:57	+0:18	01	96.4 / 93.8	95.10	4.945	
bi		Blank	"	"		21:00	+0:21	—	+0.9 / -0.8	+0.05	—	
bj	10	α Cyg	"	"		21:05	+0:26	01	102.1 / 94.8	98.45	4.983	Shar

Using 4, 7, 8, 10 equal wts, e = .22

first $\frac{da}{dt} = 0^m.048/\text{hour}$

$\therefore \quad a + \epsilon s - 0.048t$

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RMB & RL

DATE, Tuesday June 21-22 1938

ns	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
36	Hazy pour	291	98			
37		129	98			
			99			
2	Moved telescope -20^s	~~123~~	99		?/	1.35 } NG
18		269	99			1.94 }
			100			
8	Moved telescope -20^s	271	100			
45		393	101			
33	Moved telescope -20^s	397	101			
		~~				

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a 1		β UMi	14 31	+74.4		16:56	2:05	E 22	103.2 / 101.7	102.5	5.027
b 2		ε UMa	12 51	56.3		17:04	4:13	34	29.7 / 27.7	28.70	3.645
c		ζ UMa	13 21	55.2		17:11	3:50	29	19.9 / 19.4	19.65	3.233
d 3		η UMa	13 45	49.6		17:17	3:32	25	26.1 / 28.9	27.50	3.598
e		γ UMi	15 21	72.0		17:22	2:01	19	9.5 / 8.0	8.75	2.355
f 4		γ Dra	16 23	61.6		17:29	1:06	07	29.7 / 26.2	27.95	3.616
g		ξ Dra	17 08	65.8		17:35	0:27	09	6.7 / 7.0	6.85	2.089
h 5		γ Dra	17 55	51.5		17:41	-0:14	02	102.1 / 93.8	97.95	4.978
i 6		(R Lyr)	18 53	43.9		17:50	-1:03	02	141.6 / 139.3	140.4	5.368
j		~~ζ Cep~~ ~~ζ Cyg~~	~~21 17~~ ~~19 43~~	~~62.5~~ ~~45.0~~		18:04	-3:13	21	17.2 / 19.5	18.35	3.159
k 2		ε UMa	12 51	56.3		18:13	5:22	58	27.8 / 25.0	26.40	3.554
l 3		η UMa	13 45	49.6		18:19	4:34	45	25.2 / 25.3	24.25	3.462
		Reversal procedure – 1st reading on lower junction									
m 1		β UMi	14 51	74.4		19:57	5:06	43	101.2 / 102.2	101.7	5.018
n		γ UMi	15 21	72.0		20:03	4:42	40	9.3 / 11.1	10.20	2.522
o 4		γ Dra	16 23	61.6		20:10	3:47	27	29.4 / 33.2	31.30	3.739
p		β Dra	17 29	52.3		20:15	2:46	15	27.9 / 28.9	28.40	3.633
q 5		γ Dra	17 55	51.5		20:20	2:25	12	105.4 / 104.7	105.0	5.053
r 7		α Lyr	18 35	38.7		20:35	2:00	09	162.4 / 159.0	160.7	5.515
s (6)		(R Lyr)	18 53	43.9		20:40	1:47	06	142.5 / 145.8	144.2	5.399
t		5 Cyg	19 43	45.0		20:45	1:02	02	11.4 / 13.3	12.35	2.729
u		α Cyg	20 39	45.1		20:51	0:12	00	59.9 / 61.3	59.60	4.438
v		α Cep	21 17	62.5		20:56	-0:21	07	22.6 / 22.1	22.35	3.373
w		α Cep	"	"		21:08	-0:09	07	10.3 / 14.1	12.20	2.716
x 6		R Lyr	18 53	43.9		21:16	2:23	12	76.9 / 83.7	80.30	4.762
y 6		"	"	"		21:20	2:27	13	86.9 / 87.0	86.70	4.845
z 7		α Lyr	18 35	38.7		21:27	2:52	19	99.2 / 101.0	100.4	5.004

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RMcE + R.H.

DATE, Wednesday, June 29-30 19 38

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
0? Telescope [illegible] a few beats / 9.6	1000 a + .32 s − 2.25 t, 512, 377	7 2 / 11 2			
Seeing poor	334	9 2			
	370	8 2			
	243	6 1			
	365	2 1			
	213	3 1			
	500	1 1			
	538	1 0			
	323	7 0			
	374	19 0			
	359	14 −1			
	512	14 −4			
	260	13 −5			
	378	9 −5			
	363	5 −5			
	504	4 −5			
	548	3 −6			
	535	2 −6			
	268	1 −6			
	438	0 −6			
	332	2 −7			
[illegible] out again / 6.8	274	2 0			
(worked out [illegible])	480	4 0			
	488	4 0			
	506	6 0			
	LL				

e = .32

a + .32 s − 2.25 t (hours)
(×100)
↑ hundredths

(w, a, t, s)

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136 #2 filter quartz alum quartz

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a	1	β Dra	17 29	+52.3		17:54	0:25	.02	17.1 / 16.2	16.65	3.054
b	2	"	"	"		17:59	0:30	02	9.9 / 9.0	9.45	2.43
c	2	γ Dra	17 55	51.5		18:13	0:18	02	29.1 / 27.4	28.25	3.628
d	1	"	"	"		18:17	0:22	02	46.6 / 55.3	50.95	4.268
e	1	"	"	"		19:38	1:43	06	55.7 / 56.0	55.85	4.368
f	2	"	"	"		19:43	1:48	07	27.4 / 29.0	28.20	3.626
1 g	2	α Lyr	18 35	38.7		19:48	1:13	03	58.5 / 56.2	57.35	4.396
h	1	"	"	"		19:52	1:17	04	90.3 / 91.5	90.90	4.896
i	1	R Lyr	18 53	43.9		19:59	~~1:04~~		+1.6 / -0.9	+0.35	
2 j	1	(R Lyr)	18:53	43.9		20:04	1:11	03	74.3 / 68.3	71.30	4.63
k	2	"	"	"		20:08	1:15	03	26.8 / 28.0	27.40	3.594
3 l	2	δ Cyg	19 43	45.0		20:13	0:30	01	3.5 / 2.1	2.80	1.118
m	1	"	"	"		20:17	0:34	01	7.0 / 7.7	7.35	2.164
~~n~~	~~1~~	~~γ Cyg~~	~~20 20~~	~~40.1~~							
~~n~~	~~1~~	~~α Cyg~~	~~20 39~~								
n	1	α Cyg	21 17	62.5		20:25	-0:52	08	9.9 / 10.4	10.15	2.516
o	2	"	"	"		20:29	-0:48	07	7.1 / 8.3	7.70	2.216
p	2	β Cas	0 06	58.8		20:36	-3:30	24	9.5 / 7.9	8.70	2.349
q	1	"	"	"		20:40	-3:26	23	13.6 / 13.9	13.75	2.846
r	1	α Cas	0 37	56.2		20:47	-3:50	29	27.5 / 30.0	28.75	3.647
s	2	"	"	"		20:50	-3:47	28	15.4 / 15.7	15.55	2.979
t	2	γ Cas	0 53	60.4		20:56	-3:57	30	7.1 / 5.8	6.45	2.021
u	1	γ Cas	0 53	60.4		21:00	-3:53	29	12.4 / 11.9	12.15	2.711
v	1	δ Cas	1 22	59.9		21:06	-4:16	34	7.6 / 6.8	7.20	2.143
w	2	"	"	"		21:10	-4:12	33	7.0 / 4.3	5.65	1.880
x	2	α Cyg	20 39	45.1		21:18	+0:39	01	21.0 / 20.5	20.75	3.293
y	1	α Cyg	"	"		21:22	+0:43	01	32.8 / 32.1	32.45	3.778
z	1	Blank	"	"		21:25	+0:46	—	+0.9 / -2.3	-0.70	

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RMLE + RH.

DATE, Wednesday, July 6-7 1938

sms	SKY AT START	Stopped G	Exp.	C'lds	Obs'r	REMARKS
54	hazy? - 1s-3s bars (lightning around, especially s.	305				all #2's have been
43	Drive out of beat!	244	61			reduced by mistake with c=.10
62		363				instead of .15, & should
268	3s clouds over - ng.	427	64			be corrected in column G before
368	0?	438	74			being used. TES
26		364				
396		440				
796		490	50			
	Nuvy slow					
3		463	104			
92		359				
18		112				?
16		217	105			
716		253	30			
16		223				
49		238				
846		287	50			
47		368	67			
79		301				
924		205				
711		274	69			
43		218	26			
380		192				?
93		329				
178		378	49			

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INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
aa	1	r Cyg	2020	+40.4		21:31	1:11	.03	18.7 16.5	17.60	3.114
ab	2	"	"	"		21:35	1:15	04	12.5 13.2	12.85	2.772
3 ac	2	δ Cyg	1943	45.0		21:40	1:57	07	2.5 4.3	3.40	1.329
ad	1	"	"	"		21:43	2:00	08	8.3 ~~6.5~~	~~2.00~~	~~2.158~~
2 ae	1	(R Lyr)	1853	43.9		21:48	2:53	17	71.6 69.4	70.50	4.620
af	2	"	"	"		21:52	2:59	18	29.34 28.8	29.05	3.658
1 ag	2	α Lyr	1835	38.7		21:58	3:23	27	56.7 53.0	54.85	4.348
ah	1	"	"	"		22:02	3:27	29	88.3 88.9	88.60	4.868

ε = 0.109 from ε was ε ws for fille 1
" " .15 " " " for fille 2

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1937phae.proj..798E

Rwb + Rt

DATE, Wednesday, July 6-7 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	311	34			
	277				
	134			?	
	~~217~~ ~~83~~			?	{74/8 97/8} 5,2 NG
	464	96			
	368				
	438				
	490	52			

++ Gun #1

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1937phae.proj..798E

INSTRUMENT, 6" S 14

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	6A Load	6A Focus	5 by 6 Prisms
a	1	γ Dra	17 55	+51.5		19:30	1:35	.06	34.6 / 36.8	35.70	3.88
b	2	α Lyr	18 35	+38.7		19:37	1:02	02	64.7 / 62.1	63.90	4.50
c	3	(R Lyr)	18 53	43.9		19:42	0:49	01	55.9 / 55.9	55.90	4.36
d	4	δ Cyg	19 43	45.0		19:47	0:04	00	3.5 / 5.3	4.40	1.669
e		α Cyg	20 39	45.1		Tank in way					
e	5	α Cep	21 17	62.5		20:05	-1:12	09	9.8 / 7.1	8.49	2.319
b		γ Cep	23 37	77.3		20:10	-3:27	32	11.9 / 5.0	8.00	2.25
g		(V V Cep)	21 55	63.5		20:18	-1:37	11	7.5 / 8.0	7.75	2.223
h		Blank	"	"		20:21	-1:34	—	-1.4 / +0.1	-0.65	
i		(V V Cep)	21 55	63.5		20:26	-1:29	10	11.1 / 8.7	9.90	2.487
j	5	α Cep	21 17	62.5		20:32	-0:45	07	11.8 / 7.52	9.65	2.467
k		Blank	"	"		20:35	-0:42	—	-1.3 / -0.5	-0.90	
l	5	α Cep	21 17	62.5		20:38	-0:39	07	5.9 / 7.6	6.75	2.677
m		α Cyg	20 39	45.1		20:44	+0:05	00	24.6 / 21.5	23.05	3.407
n	6	γ Cyg	20 20	40.1		20:50	+0:30	01	14.6 / 11.9	13.25	2.806
o	4	δ Cyg	19 43	45.0		20:55	1:12	03	4.7 / 5.8	5.00	1.747
p	3	(R Lyr)	18 53	43.9		21:00	2:07	04	52.8 / 49.0	50.90	4.249
q	2	α Lyr	18 35	38.7		21:05	2:30	15	68.6 / 62.6	65.60	4.5
r	1	γ dra	17 55	51.5		21:10	3:15	21	36.0 / 37.5	36.75	3.91
s		β dra	17 29	52.3		21:14	3:45	28	11.1 / 8.9	10.00	2.500
t		(AF Cyg)	19 28	46.1		21:21	1:53	07	7.1 / 3.1	5.10	1.766
u		Blank	"	"		21:25	1:57	—	+0.8 / 1.9	+1.35	0.326
v		(AF Cyg)	"	"		21:30	2:02	08	7.7 / 4.3	6.00	1.944
w	6	γ Cyg	20 20	40.1		21:37	1:17	04	14.6 / 12.1	13.35	2.814
x		Blank	"	"		21:41	1:21	—	-0.3 / +0.2	-0.05	
y	6	γ Cyg	"	"		21:44	1:24	04	16.0 / 12.8	14.40	2.896
z	4	δ Cyg	19 43	45.0		21:48	2:05	69	4.2 / 2.8	3.00	1.92

e = 0.25

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1937phae.proj..798E

RMLE + RK · N.G. ε > .25

DATE, Sunday - July 10 - 11 1938

SKY AT START	Stopped (ε = .25)	Exp.	C'lds	Obs'r	REMARKS
Had to work on drive first day - 35-24 W	8.0				
	390				
	450				
	437				
	~~161~~				? NG {89/8, 45/8} ε>.52
	~~234~~ 233				? {1.35, 1.55} ~~1.40~~
	~~234~~				? NG {70/8, 10/8}
	225				
Moved telescope - 20s interval	251				
" " - 20s "	~~248~~				? {95/8, 55/8} NG
Reg. + 15s - - -					
	~~209~~				? {113/8, 57/8} NG
	341				
	281				
	~~176~~				? {59/8, 41/8} NG
	427				
	458				
	396				
	~~287~~ 264				? {1.84, 1.52} 1.78
	~~179~~				? {53/8, 78/8} NG
Moved telescope - 20s -	~~196~~ 193				? {1.86, 1.08} 1.97
" "	282				
Reg - 6s					
" "	291				
	~~138~~ 121				? {.49, .51} .50

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
a a		(T Cep)	21 09	+68.2		22:03	0:54	:12	28.3 33.1	30.70	3.718
a b		Blank	"	"		22:07	0:58	—	+0.2 +0.6	+0.40	
a c		(T Cep)	"	"		22:11	1:02	12	37.5 36.6	37.05	3.922
a d 4		α Cep	21 17	62.5		22:17	1:00	08	7.7 7.7	7.70	2.216
a e		Blank	"	"		22:20	1:03	—	-0.3 0.0	-0.15	
a f 5		α Cep	21 17	62.5		22:25	1:08	08	9.1 10.8	9.74	2.471
a g 1		γ Dra	17 55	51.5		22:31	4:36	44	35.3 37.9	36.60	3.909
a h 2		α Lyr	18 35	38.7		22:36	4:01	41	55.4 56.0	55.70	4.365
a i 3		(R Lyr)	18 53	43.9		22:41	3:48	31	51.9 52.5	52.20	4.294

$\epsilon = 0.2 \times 1^{-4}$ from — $\frac{\Sigma w a s}{\Sigma w s^2}$ $(w = \Delta\eta \gamma (s-2))$

$\sqrt{w}$ ~ Δ or 6Δ

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1937phae.proj..798E

RMBZ+RH

DATE, Sunday, July 10-11 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Haze in west / —	375				
Shroud Telescope - 20^s	395				
" " "	224				
Reg. — 15^s —					
" "	249				* 3 obs.
	402				
	447				
	437				
	--				

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1937phae.proj..798E

144

INSTRUMENT, 61" 5H -

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
~~a~~	RVE	ρ Per	3 01	+38.6							
a		β And	1 06	35.3		23 35	-1 31				
b		β Tri	2 06	34.7		23 44	-2 22				
c		ρ Per	3 01	38.6		23 50	-3 11				
d	RL	"	"	"		0 02	-2 59				
e	RL	α Per	3 20	+49.6		0 08	-3 12				
f	RVE	ε Aur	4 58	43.7		0 20	-2 38				
g		ε Aur	"	"		0 24	-2 34				
h		Capella	5 12	45.9		0 30	-4 12				
i		"	"	"		0 35	-4 37				
j		ε Aur	4 58	43.7		0 43	-4 15				

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1937phae.proj..798E

RMK + RL
automatic recording
Friday

DATE, Aug 5–6 1938

Prisms

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
No visible deflection					8^{5} period. Light ¼ in cent.
telescope motion					
"					
"					
"					
"					
screw motion					
" "					Sky all covered with
telescope motion					15–35 clouds – in bars
screw motion					
					Heavy rain clouds over southern
					half of sky. Measures probably
					all affected by 15–35 clouds.

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1937phae.proj..798E

146 Resilvered telescope mirrors - Tuesday, Oct 11, 1938
New thermo couples.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started E.S.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
350	-	β Cas	0 06	58.8	4:30	1:27					

→ Bi = 8 1/4 μ diameter.
Sb = 8 3/4 μ " .
R = 100 Ω
one copper disk ≈ 490 μ diameter } both irregular in shape.
second " " ≈ 460 × 520 μ.

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1937phae.proj..798E

RMB & RMS + automatic recording

Sunday DATE, Oct. 16-17 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
17.0					

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1937phae.proj..798E

148

INSTRUMENT, 61" SH

250 log a

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Δ Load	Focus	Prisms
352	-	α Cep	21 17	+62.5	0:59?	22:10	0:53				
353	-	α Cyg	20 39	+45.1	1:05	22:23	1:44				
354	-	γ Cyg	20 20	40.1	1:13	22:30	2:10				
355	-	δ Cyg	19 43	45.0	1:21	22:38	2:35				
356	-	R Lyr	18 53	43.9		22:47	3:54				
357	-	R Lyr	-	-	1:33	22:52	3:59	.36	45.50	414	
358	-	α Lyr	18 35	38.7	1:41	23:00	4:25	.53	54.98	435	
359	-	δ Cyg	19 43	45.0	1:49	23:08	3:25	.25	4.57	165	
360	-	γ Cyg	20 20	40.1	1:55	23:14	2:54	.18	12.21	272	
② 361	-	α Cyg	20 39	45.1	2:02	23:21	2:42	.14	22.79	339	
362	-	α Cyg	21 17	62.5	2:09	23:28	2:11	.14	7.34	216	
363	-	β Cas	0 06	58.8	2:17	23:36	-0:30	.05	10.97	260	
① 364		α Cas	0 37	56.2	2:24	23:43	-0:54	.04	21.62	334	
#2 ① 365	-	α Cas	-	—	4:05	1:18	+0:41	.03	22.39	338	
366		β Cas	0 06	+58.8	4:10	1:24	+1:18	.06	11.40	264	
367		α Cep	21 17	62.5	4:17	1:31	+4:14	.33	8.32	230	
368		Blank	21 17	61.0	4:23	1:36	4:19		.05	-325	
369		Blank	—	—	4:27	1:41	4:24		-.16		
② 370		α Cyg	20 39	45.1	4:35	1:49	5:10	.69	21.00	331	
371		(ξ Cas)	0 53	60.4	4:43	1:57	1:04	.09	9.99	250	
372		δ Cas	1 22	59.9	4:50	2:03	0:41	.06	6.61	205	
373		ε Cas	1 50	63.4	4:56	2:10	0:20	.08	3.46	135	
374		α UMi	1 41	89.0	5:03	2:17	0:36	.45	16.94	307	
375		ζ Per	3 00	53.3	5:11	2:25	-0:35	.02	9.39	243	
③ 376		α Per	3 20	49.6	5:18	2:33	-0:47	.02	20.84	330	

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RMTE + RMS + automatic recorder
Covers off Galv.

DATE, Friday, Oct. 21-22 1938

SKY AT START		Stopped	Exp.	C'lds	Obs'r	REMARKS
0?	5 6.7	a+ES (limit .01)				forgot to put on dew guard
		433				
		462				
		177				
		282				
		346				
		223				
		262				
		336				
		339				
		268				
		247				
						Merid telescope
		367				
		255				
		209				
		139				
		380				poor images in N.E.
		244				
		331				

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INSTRUMENT, 61" SH

250 lyn a

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
#3 377	-	α Per	3 20	+49.6	6:23	3:37	0:17				
378	-	ζ Per	3 39	47.6	6:30	3:43	0:04				
379	-	ε Aur	4 58	43.7	6:42	3:56	-1:02				
380	-	Blank	—	—	6:48	4:03	-0:55				
381	-	Blank	—	—	6:53	4:08	-0:50				
382	-	ε Aur	—	—	6:58	4:12	-0:46	.02	1/2 wt 7.53	219	
383	-	ε Aur	—	—	7:03	4:17	-0:41	.02	7.54	220	
384	-	Blank	—	—	7:08	4:22	-0:36		.15	-206	
~~385~~	~~-~~	~~η Aur~~	~~5 02~~	~~41.2~~							
384a	-	Blank			No	motion			(motion over .16 min - cut 96		
385	-	Capella	5 12	45.9	7:21	4:35	-0:37				
386		ζ Per	3 39	47.6	7:33	4:57	+1:18	.04	4.75	169	
#4 s 387		ζ Per	3 39	+47.6	8:02	5:16	1:37	.05	4.84	171	
③ s 388		α Per	3 20	49.6	8:12	5:26	2:06	.08	21.22	332	
s 389		β Per	3 04	40.7	8:21	5:35	2:31	.14	11.08	261	
④ s 390		ρ Per	3 01	38.6	8:30	5:44	2:43	.17	55.36	436	
390A		Blank	—	—	8:34	5:48	2:47		-.32		
391		ε Aur	4 58	+43.7	8:41	5:55	0:57	.02	7.56	220	
392		η Aur	5 02	+41.2	8:48	6:02	1:00	.02	4.10	153	
393		ρ Aur	5 55	44.9	8:54	6:08	0:13	.00	13.74	284	
394		δ UMa	8 25	60.9	9:03	6:18	2:07	.11	6.25	199	
#5 395		ρ Aur	5 55	44.9	9:33	6:48	0:53	.01	14.28	289	
396		η Aur	5 02	41.2	9:40	6:54	1:52	.07	3.77	144	
397		~~ε Aur~~ Blank	~~4 58~~	~~43.7~~	9:44	6:58	1:56		-.06		
398		ε Aur	4 58	43.7	9:50	7:05	2:07	.09	7.77	222	

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PMTE, RMS, auto-rec.

DATE, Friday Oct 21-22 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
clear	a+GS				
O' seeing only moderate					
	Out of gear				
telescope motion					
telescope motion	220				
telescope motion	221				
t.m.					
t.m.					
t.m.	171				
t.m.	173				
"	336				
"	268				
"	445				
"					Poor rec. images
	221				
	154				
	284				
	205				
	289				
	148				
	227				

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INSTRUMENT, 61" S.H

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	250 log Δ Focus	Prisms
399	-	δ Per	3 39 47.6	9:58	7:13	3:34	.27	3.72	142		
(3) 400	-	α Per	3 20 49.6	10:03	7:18	3:58	.32	17.63	312		
401		β Per	3 09 40.7	10:10	7:24	4:20	.43 (.48)	8.96	238		
(4) 402		ρ Per	3 01 38.6	10:16	7:30	4:29	.55 .61	45.70	415		

ε from $-\frac{\Sigma \Delta S \Delta^2}{\Sigma S^2 \Delta^2} = .52$

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1937phae.proj..798E

RMS + RMS + auto-rec.

DATE, Friday Oct 21-22 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	9+ES				
	156				
	328				
	268				
	444				

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154

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started ~~EST~~	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
						S.T.					
404	-	Sun	13h 58m	-12.°1		16:44	2:46	1.50			
406	-	Arcturus	14 13	+19°.5	17h 39m	17:27	3:14	.45			
407		"	"	"		17:33	3:20	.48			
405	-	Sun	13h 58m	-12.°1		18:50??	2:52	1.60			

3K

22 14 11
2 10 54
20. 3 17
- 4 46 14
17 27 57

Oct 25
+20h (3rd)
lens

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1937phae.proj..798E

RL, RME

Covers off Galv.

DATE, Tuesday Oct 25 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
3K clouds foreing over	12.5				Focal plane depth = 3 mm Upper depth = 4 mm regular Δ Selinguery bad " "

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1937phae.proj..798E

156

2429198

INSTRUMENT, 61" SH

a 250 log A

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec. HA	Tel. E. or W.	Load Δ	Focus	Prisms
#1											
E 408	1	α Cyg	20 39	+45.1	0:28	21:58	1:19	.04	26.54	356	
409	-	α Lyr	18 35	38.7	0:35	22:06	3:31	.30	69.87	461	
410		(β Lyr)	18 48	33.3	0:43	22:13	3:25	.32	2.30	90	
411		R Lyr	18 53	43.9	0:48	22:19	3:26	.26	47.82	420	
412		γ Lyr	18 57	32.6	0:55	22:25	3:28	.34	3.72	143	
413		δ Cyg	19 43	45.0	1:01	22:32	2:49	.15	5.25 (½)	180	
414		δ Sgr	19 45	18.3	1:08	22:39	2:54	.39	18.46	316	
415		α Aql	19 48	8.7	1:15	22:46	2:58	.61	37.32	393	
416		γ Sgr	19 56	19.3	1:22	22:52	2:56	.38	13.34	281	
#2											
S 417	1	α Cyg	20 39	45.1	2:34	0:05	3:26	.25	24.69	348	
418		ε Cyg	20 44	33.7	2:45	0:16	3:32	.35	10.07	251	
419		ζ Cyg	21 10	30.0	2:55	0:25	3:15	.31	7.0 (½)	211	
420		ε Peg	21 41	9.6	3:06	0:36	2:55	.57	23.60 (⅓)	343	
421		ε Peg	21 41	9.6	3:12	0:42	3:01	.60	25.78	353	
422		ο And	22 59	42.0	3:24	0:55	1:56	.07	2.43	97	
423	1	α Cyg	20 35	45.1	3:35	1:06	4:31	.48	25.72 (½)	352	
424	1	α Cyg	20 35	45.1	3:41	1:12	4:37	.50	25.92 (½)	353	
425		β Peg	23 01	27.8	3:52	1:23	2:22	.19	66.91	458	
426		α Peg	23 02	14.9	4:00	1:31	2:29	.36	6.20	198	
427		Blank			4:06	1:37			-.57		
#3											
428		ο Ceti	2 16	-3.3	5:55	3:25	1 09	.53	—		
429		α Ceti	2 59	+3.9	6:02	3:33	0 34	.31	48.37	421	
430	2	ζ Per	3 1	38.6	6:08	3:40	39	.01	54.64	434	
431		(β Per)	3 4	40.7	6:13	3:44	40	.01	11.81	269	
432		η Tau	3 43	23.9	6:23	3:54	11	.06	5.28	180	
433		ζ Per	3 50	31.7	6:29	4:01	11	.02	6.20	198	
434		ε Per	3 55	35.6	6:35	4:07	12	.01	—		

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1937phae.proj..798E

Observers for s'd observations.
RMS + RMS + as. 20s interval
Cover off Galv.

DATE, Tuesday, Oct 25–26 1938

SKY AT START	Stopped a+ES	Exp.	C'lds	Obs'r	REMARKS
0 / 6.3	357				
	465				
	94				
	424				
	148				
	182				
	321				
	402				
time wad to oil up recorder	286				
25–35 clouds W.	351				
	256				
	215				
	351				
	361				
	98				
	359				
	360				
	459				
	203				
(Off paper) 44°F					
	425				
	434				
	269				
	181				
	198				
Record bad					

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1937phae.proj..798E

INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load Δ	Focus	Prisms
435	-	ε Aur	4 58	+43.7	6:45	4:16	-0:42	.01	8.17	228	
436		η Aur	5 2	41.2	6:51	4:22	- 40	.01	4.68	167	
437	6	ι Aur	4 53	33.1	6:57	4:28	- 25	.02	24.14	346	
438		β Tau	5 22	28.6	7:03	4:35	- 47	.04	17.12	308	
439		θ Aur	5 56	37.2	7:11	4:42	-1 14	.03	7.29	215	
440	3	η Gem	6 11	22.5	7:17	4:49	-1 22	.12	34.89	386	
441	4	ζ CMi	7 36	5.4	7:25	4:57	-2 39	.60	58.47	459	
442	5	β Gem	7 41	28.2	7:32	5:04	-2 37	.22	54.68	434	
443	2	ρ Per	3 1	38.6	8:26	5:58	+2 57	.20	53.37 (½)	432	
444		β Per	3 4	40.7	8:33	6:04	3 00	.20	11.92	269	
445		α Per	3 19	49.6	8:40	6:11	2 52	.17	21.01	331	
446		ε Aur	4 58	43.7	8:47	6:19	1 21	.04	8.08	227	
447		Blank	-	-	8:52	6:23			.39		
448		η Aur	5 2	41.2	8:59	6:32	1 30	.05	4.30	158	
449		Blank	-	-	9:04	6:36			.03		
450	6	ι Aur	4 53	33.1	9:13	6:42	1 49 ~~1 52~~	.09	23.93	344	
451	3	η Gem	6 11	22.5	9:20	6:49	0 48	.07	35.78	388	
452		ε Gem	6 40	25.2	9:27	6:59	0 19	.05	13.64	284	
453		θ Aur	5 56	37.2	9:35	7:07	1 11	.03	7.07	212	
454		β Aur	5 55	44.9	9:42	7:14	1 19	.04	14.32	289	
455		3 Gem	7 01	20.7	9:50	7:21	0 20	.08	3.72	143	
456		51 Gem	7 10	16.2	9:56	7:28	0 18	.12	10.02	251	
457	4	ζ CMi	7 36	5.4	10:02	7:34	0 2	.26	72.71	465	
458	0	β Gem	7 41	28.2	10:09	7:41	0 0	.03	56.37	438	
459		Blank	-	24	10:14	7:46			.40		

$\epsilon = .14$ from $\frac{\Sigma a s \Delta^2}{\Sigma s^2 \Delta^2}$

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1937phae.proj..798E

RMS 2 + RMS

DATE, Tuesday, Oct 25-26 1938

isms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
		a+GS				
	O	228				
		167				
		346				
		309				
		215				
		388				
		467				
		437				
		435				
		272				
		333				
		228				
	15-35-2p tobras NW					
		159				
		345				
		345				
		289				
		285				
		212				
		290				
		144				
		253				
		469				
		438				
	pretty good night all through 41°F					

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1937phae.proj..798E

160

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
#1 460	1	α Cyg	20 39	+45.1	1:49	23:19	2 40	15	23.36	342	
461	1	α Cyg	—	—	1:54	23:26	2 47	15	23.87	344	
462	2	α Cep	21 17	62.5	2:05	23:37	2 20	14	7.83	224	
463	3	γ Cep	23 37	77.3	2:16	23:49	12	22	7.11	213	
464		β Cas	0 06	58.8	2:25	23:58	− 8	05	10.40	254	
465		α Cas	0 37	56.2	2:35	00:07	− 30	04	20.42	328	
466		γ Cas	0 53	60.4	2:43	0:16	− 37	06	9.50	244	
467		α And	23 56 / 22 59	42.0	2:54	0:27	+ 31	01	.23		
468		α And	22 59	42.0	3:03	0:36	1 37	05	2.08	80	
#2 469		α And	—	—	3:41	1:14	2 15	11	1.83	66	
470	1	α Cyg	20 39	45.1	3:54	1:27	4 48	57	20.18	326	
471	2	α Cep	21 17	62.5	4:05	1:38	4 21	35	7.76	222	
472		T Cep	21 9	68.2	4:25	1:58	4 49	40	32.19	377	
473		Blank	—	—	4:32	2:05	4 56	42			
474		S Cep	21 36	78.3	4:41	2:14	4 38	40	6.34	201	
475		Blank	—	—	4:48	2:20	4 44	41			
476		VV Cep	21 55	63.5	4:59	2:32	4 37	40	7.72	222	
477		Blank	—	—	5:05	2:39	4 44	41			
478	3	γ Cep	23 37	77.3	5:14	2:47	3 10	30	6.90	210	
~~479~~		~~β Cas~~	~~0 06~~	~~58.8~~							
#3 479		γ Per	3 00	53.3	7:07	4:40	1 40	07	8.02		
480		ζ Per	3 01	38.6	7:17	4:50	1 49	07	45.42		
481		ε Per	3 04	40.7	7:25	4:59	1 55	07	8.82		
482		α Per	3 20	49.6	7:35	5:08	1 48	06	16.71		
483		δ Per	3 39	47.6	7:45	5:18	1 39	05	4.01		
484		ε Aur	4 58	43.7	7:54	5:27	0 29	01	5.96		
485		η Aur	5 02	41.2	8:02	5:36	0 34	01	3.21		

e = .40 from $\Sigma \frac{as A^2}{\Sigma}$

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1937phae.proj..798E

RMS & RMS - 30^{s} interval
Covers on Oct 5

DATE, Wednesday, Oct 26-27 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	ares				
0?- Clds close to NW 7.0	348				
Telescope motion	350				
	230				
Seeing only fair	222				
	256				
aurora in N 50°F	330				
	246				
Wrong star - 11 hr. Not 0 And					
	82				
poor record (did)	(70)				
	349				
	236				
	393				
	217				
	238				
Getting hazy?					
	222				
Rule Out ↓					
Clds coming up in NW					
Probably Thermal Contact in T.C. box.					

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started G.S.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
486		η Aur	5 02	+41.2	8:38	6:11					
487		η Aur	—	—							
488		—									
489		—									
490		—									
491		—			9:10	6:43					

Continuous run

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1937phae.proj..798E

RMS + RM5

DATE, Wed. Oct 26 – 27 19 38

risms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	C'lds to W, NW + N. / – heavy dew. 98°F					
	Clr up to zenith.					

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1937phae.proj..798E

INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
#1 492	+	α Cyg	20 39 44.1		1 40	23 32 27	2 53	18	30.16	3.70	
493	1	α Lyr	18 35 38.7		1 50	23 36	5 06	81	74.09	466	
494	2	α Cep	21 17 62.5		1 59	23 45	2 33	16	10.24	252	
495		γ Cep	23 37 77.3		2 08	0 01	24	22	9.54	2.45	
496	3	γ Per	3 00 53.3		2 26	0 18	-2 42	14	10.84	259	
497	4	α Per	3 20 49.6		2 36	0 29	-2 51	16	23.64	3.43	
498	5	β Aur	5 55 44.9		2 49	0 42	-5 13	72	12.55	2.75	
499		γ Cas	0 53 60.4		3 01	0 54	1	5	12.18	2.72	
500	6	α Cas	0 37 56.2		3 13	1 06	29	3	25.97	354	
501		β Cas	0 06 58.8		3 21	1 14	1 8	7	13.85	285	
502	1	α Cyg	20 39 45.1		3 32	1 25	4 46	55	28.51	364	
503	2	α Cep	21 17 62.5		3 42	1 35	4 18	34	10.26	253	
#2 504	2	α Cep	21 17 62.5		5 14	3 07	5 50	63	9.73	247	
505		ο And	22 59 42.0		5 23	3 16	4 11	44	2.88	115	
506		γ Cep.	23 37 77.3		5 32	3 25	3 48	33	9.65	246	
507		β Cas	0 06 58.8		5 41	3 34	3 28	23	13.90	286	
508	6	α Cas	0 37 56.2		5 49	3 42	3 5	20	26.94	357	
509		γ Cas	0 53 60.4		5 57	3 51	2 58	18	12.19	272	
510	5	β And	1 06 35.3		6 07	4 01	2 55	21	72.32	465	
511		δ Cas	1 22 59.9		6 16	4 10	2 48	17	7.82	224	
512		β Tri	2 06 34.7		6 26	4 19	2 13	13	6.15	197	
513	7	ρ Per	3 01 38.6		6 34	4 28	1 27	5	66.03	455	
514		β Per	3 04 40.7		6 42	4 35	1 31	5	14.56	291	
515	4	ε Per	3 20 49.6		6 53	4 45	1 25	5	24.98	349	
516	3	γ Per	3 00 53.3		7 00	4 53	1 53	7	11.30	264	

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1937phae.proj..798E

RME, RMS - + a.n.

DATE, Mon. Oct 31 ~ Nov 1 1938

'risms	SKY AT START		Stopped	Exp.	C'lds	Obs'r	REMARKS
	15-25 ip to S W.		9+65				
	0?- Moon	7.8 S	373				
			477				
			254				
			248				
			261				
			345				
			285	??			
			273				
	Seeing fair	40° F.	354				
			286				
			372				
			258				
			256				
			121				
			251				
			289				
			360				
			275				
			468				
			226				
			199				
			456				
			292				
			350				
			265				

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1937phae.proj..798E

166

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
#3 517	-3	γ Per	3 00	+53.3	7 36	5 30	2 30	12	11.20	262	
518		ε Cas	1 50	63.4	7 45	5 39	3 49	27	3.98	150	
519	6	α Cas	0 37	56.2	7 54	5 47	5 10	54	25.43	351	
520		β Cas	0 06	58.8	8 04	5 57	5 51	69	12.69	276	
521		α UMi	1 41	89.0	8 14	6 07	4 26	48	20.32	327	
522		η Aur	5 02	41.2	8 26	6 19	1 17	4	4.70	168	
523		ε Aur	4 58	43.7	8 34	6 28	1 30	5	9.56	246	
524	8	i Aur	4 53	33.1	8 43	6 37	1 44	8	28.89	364	
525	5	β Aur	5 55	44.9	8 52	6 46	51	2	8.87	307	
526		θ Aur	5 56	37.2	9 02	6 56	1 -	2	8.14	228	
#4 527		η Aur	5 02	41.2	9 30	7 24	2 22	13	11.94	269	
528		ε Aur	4 58	43.7	9 39	7 33	2 35	14	9.30	242	
529	8	i Aur	4 53	33.1	9 48	7 42	2 49	21	27.81	361	
530		ε Per	3 54	39.8	9 57	7 51	3 57	38	5.66	188	
531		δ Per	3 39	47.6	10 05	7 59	4 20	41	5.58	187	
532	4	α Per	3 20	49.6	10 14	8 07	4 47	50	23.76	344	
533	7	ρ Per	3 01	38.6	10 22	8 16	5 15	89	59.22	443	
534	5	β Aur	5 55	44.9	10 32	8 26	2 31	14	16.18	302	

ε = .14 (was)

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1937phae.proj..798E

RWB & RMS + a.z.

DATE, Monday, Oct 31-Nov 1 1938

isms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	0 . . . . 1—	264				
		154				
		359				
		286				
		334				
		169				
		247				
		365				
		307				
		228				
	(?)	271				wrong star?
		244				
		364				
		193				
		193				
		351				
		455				
	Cloud in sight all through	304				

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec. H.A.	Tel. E. or W.	Load	Focus	Prisms
#1 535	-	σ And	22 59	+42.0	0 50	22 45					
536	-	α Peg	23 02	14.9	1 00	22 56	- 6	12	(12.48)	(274)	
537		α Per (g)	-	-	1 07	23 03	1	12	14.42	290	
538		β Tri	2 06	34.7	1 19	23 15	-2 51	21	9.22	241	
539	1	η Tau	3 43	23.9	1 32	23 27	-4 16	76	8.21	228	
540			3 45.1	23.85	1 51	23 47	-3 58	62	3.90	148	
541		1	-	-	1 58	23 54	-3 51	59	4.02	151	
542		2	3 46.0	23.5	2 07	0 04			-		
543		3	3 46.2	22.0	2 19	0 13			-		
544		4	3 46.5	25.4	2 28	0 24			-		
#2 545		4	-	-	3 25	1 21			-		
546		5	3 47.2	23.8	3 37	1 33			-		
547		6	3 45.2	23.7	3 46	1 42			-		
548		1	3 45	23.8	3 54	1 50	-1 55	15	4.58	165	
549		2	3 46	23.5	4 02	1 58			-		
550		3	3 46	22.0	4 10	2 07			-		
551		4	3 46	25.4	4 18	2 14			-		
552		5	3 47	23.8	4 27	2 23			-		
553		6	3 45	23.7	4 35	2 31			-		
554	1	η Tau	3 43	23.9	4 43	2 39	-1 4	9	8.98	238	
#3 555		η Tau	3 43	23.9	6 34	4 30			-		
556	1	η Tau	-	-	6 42	4 39	56	7	9.71	247	
557			3 45	23.8	6 51	4 47			-		
558		2	3 46	23.5	~~7 06~~	~~5 02~~			-		
559		2	-	-	7 06	5 02			-		
560		3	3 46	22.0	7 15	5 11	1 25	14	59	-57	

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1937phae.proj. 798E

RMS & RMS tan

DATE, Tuesday Nov 1-2 1938

Prism	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	0? 50° F.	13.5				Not accurately measurable; diff.
	Cal. zero off paper - shifted	(278)				8 spots
		294				
		248				
		252				
	Cal. zero off paper - shifted	167				The small depletions, without telescope motion, are unreliable and are not entered. Those with t. m. are v. probably reliable. See previous blanks with rad. shield but ordinary motion up & down of coupler.
		169				
		170				
	Seeing getting worst					
		241				
	Telescope motion	249				Record not easily & accurately measured only 5 spots
	" "					OK Paper
	" "					"
	Cal zero point off paper					
	T.m.					Record N.O.
	T. m.	-53				50/62 OK

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
561	-	4	3 46	+25.4	7 25	5:21	1 35	12	1.03	+3	
562		5	3 47	23.8	7 34	5:30	1 43	14	.51	-73	
563		6	3 45	23.7	7 44	5:40	1 55	16	.36	-111	
564		Blank	—	—	7 57	5:47	—		-.03		
565	1	η Tau	3 43	23.9	8 32	6:29	2 46	29	8.49	232	
566			3 45	23.8	8 41	6:38	2 53	31	4.00	150	
567		2	3 46	23.5	8 49	6:46			—		
568		3	3 46	22.0	8 58	6:55			—		
569		4	3 46	25.4	9 06	7:03			—		
570		5	3 47	23.8	9 15	7:12			—		
571		6	3 45	23.7	9 24	7:20			—		
572		Blank	—	—	9:30	7:27	—		-.12		
573	1	η Tau	3 43	23.9	9:38	7:34	3 51	58	7.22	214	

Hα

		ptm	
1	HD 23850	3.25	B8
2	23923	6.11	B8
3	23950	5.92	B9
4	23985	5.38	A3
5	24076	6.1	A0
6	23822	6.57	F0

ε = .31 (S, a, w)

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1937phae.proj. - 798E

RMS + RMS + ans

DATE, Tuesday Nov 1-2 19 38

risms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	tion [illegible] /-	+7				112 82 OK
	tran	-69				.71 .25 N.G.
	tran.	-106				33 34 O.K.
	t.m.					
		241				
		160				O.K.
	44° F	232				

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1937phae.proj..798E

172

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
575	-	α And	22 59	+42.0	0:29	22:28	- 31	2	2.68	1,07	
576		η Tau	3 43	23.9	0:44	22:43	-5 0	123	3.28	129	
577		#1	3 45	23.8	0:53	22:53	-4 52	114	1.83	66	
578		#2	3 46	23.5	1 02	23 02	-4 44	104	10/24	-250	
579		#3	3 46	22.0	1 11	23 11	-4 35	100	.29/24	-134	
580		#4	3 46	25.4	1 21	23 20	-4 26	80	.47/24	-82	
581		#5	3 49	23.8	1 29	23 28	-4 19	78	.08/24	-274	
582		#6	3 45	23.7	1 37	23 36	-4 09	70	.28/24	-138	
583		Blank	—	—	1 44	23 43			-.03		
584		η Tau	3 43	23.9	1 52	23 52	-3 51	58	3.93/24	149	
							〃	〃			

ε = .131 but ε probably increased
to ε 7 .131

See 8 too great to make measures, with
haze, visible. The low sensitivity
indicates much absorption.

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1937phae.proj..798E

RMOB-RMS + ar.

DATE, Wednesday, Nov. 2-3 1938

sms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	hazy. t.m. $15^{s}.6$ (dec. motion slower because of longer hour.) t.m. t.m.	108				
		166				
		101				
		-218				$\{{}^{-2}_{20}\}$ NG
		-103				$\{{}^{32}_{32}\}$ OK
		-58				$\{{}^{34}_{54}\}$ NG
		-250				$\{{}^{24}_{46}\}$ NG
		-117				$\{{}^{21}_{31}\}$ OK
						$\{{}^{2}_{-9}\}$ OK
	t.m. cirr. just moving, clds from east. just 4 warnings IVS. Probably only just 2 should be used. No visible clds for # 583 or earlier - only haze.	167				

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1937phae.proj..798E

174

INSTRUMENT, 61" SH

1 11
24

No.	Class	Object	R. A.	Dec.	Started U.T.	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
#1 593		α And	0 05	+28.8	2:16	0:24	19	3	B40	282	
594		β And	1 06	35.3	2:30	0:39	- 27	2	7.430	468	
595		η Tau	3 43	23.9	2:40	0:48	-2 55	31	5.88	192	
596		1	3 45	23.8	2:49	0:57	-2 48	30	3.10	123	
597		2	3 46	23.5	2 56	1 04	-2 42	27	.40	-100	
598		3	3 46	22.0	3 03	1 12	-2 34	29	.36	-111	
599		4	3 46	25.4	3 11	1 20	-2 26	25	.61	-54	
600		5	3 47	23.8	3 21	1 30	-2 17	22	~~.42~~		
601		6	3 45	23.7	3 29	1 37	-2 8	19	~~.35~~		
602		Blank	-	-	3 35	1 44			.06		
603		η Tau	3 43	23.9	3 43	1 52	-1 51	16	6.96	210	
604		5 Per	3 50	31.7	3 52	2 00	-1 50	09	7.11	218	
#2 605		η Tau	3 43	23.9	4 43	2 52	- 51		6.18		
606		1	3 45	23.8	4 50	2 59	- 46	07	3.22		
607		2	3 46	23.5	~~5~~ 45 06	3 05					
608		2	—	—	5 54	4 03			.10		
609		3	3 46	22.0	6 08	4 17			.30		
610		4	3 46	25.4	6 17	4 25			.16		
611		5	3 47	23.8	6 25	4 33			.13		
612		6	3 45	23.7	6 33	4 42			.19		
613		α And	0 05	28.8	6 44	4 53	4 48	90	5.90		
614		β And	1 06	35.3	6 54	5 03	3 57	42	43.70		

vv

595 & 603 } ℓ = 1.20 (!)

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1937phae.proj.-798E

Plate + Plate + ar,

DATE, Friday, Nov. 4-5 1938

SKY AT START		Stopped	Exp.	C'lds	Obs'r	REMARKS
Bright moon O? t.m 54°F	11.0 S	286				
Cirro-str; Sat W 2nd. t.m.		470				
Seeing very poor t.m. t.m.		229				
		159				OK
		-~~88~~				OK 37 42
		-76				OK 36 36
		-24				OK 41 61
						NG 2 24
						~~Focus~~ (14 58) NG
		229				
		229				

t.m.

(1)

Something gone wrong at gd h.

Drive-rod over finder plat, etc. 55° F

(2-4)

8 spots

26 -5 34 26 12 21 15 10 11 27

Dew Examd. Don't use

Identifications correct?

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1937phae.proj..798E

176

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
615		η Tau	3 43	+23 9	8 37	6:46					
616		5 Per	3 50	31.7	8 45	6.54					
617		ε Per	3 54	39.8	8 53	7 02					
618		ξ Per	3 55	35.6	9 01	7 10			1.04		
619		i Aur	4 53	33.1	9 09	7 18					
620		ε Aur	4 58	43.7	9 17	7 27					
621		η Aur	5 02	41.2	9 27	7 36					
		Gal.		Stuck?							
622		η Aur	—	—	9 54	8 03					
623		ε Aur	4 58	43.7	10 02	8.11					
624		i Aur	4 53	33.1	10 11	8 19					

Nt Nw 1-2

		m
η	246	3.07
1	167	3.86
2	—	—
3	-53	6.06
4	7	5.46
5	—	—
6	-106	6.59

Nw 4-5
3.07
3.77
6.04
6.12
5.60
—
—

If only O-C'd measures are used. (Selected for agreement of 1st & 2nd setting 5)

average

η	3.07 (0,0)
1	3.81 (5,4)
2	6.04
3	6.09 (-3,3)
4	5.53 (-7,7)
5	—
6	6.59

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1937phae.proj. - 798E

DATE, Friday, Nov 4-5 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
Clear / —					Something wrong with A.
9.6					
Good night except for occasional dew	/				

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1937phae.proj..798E

178 Recorder mounted on new pier. Distance mirror to paper = 100 cm.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1000	-	ε Gem	6 40	+25.2	8 35	7 03	23	E	8.10	227	
1001	1	51 Gem	7 10	16.2	8 44	7 12	2	W	6.33	200.3	
1002		α C Mi	7 36	5.4	8 54	7 21	- 15	W	43.88	411	
1003		γ Leo	10 17	20.2	9 04	7 32	-2 45	W	17.74	312	
1004		α Leo	10 05	12.3	9 13	7 41	-2 24	W	12.22	272	
1005		π Leo	9 57	8.3	9 21	7 49	-2 8	W	3.84	146	
1006		ε Leo	9 42	24.1	9 31	7 59	-1 43	W	5.18	179	
1007		β Gem	7 41	28.2	9 40	8 08	27	W	32.67	379	
1008		~~51 Gem~~	7 ~~10~~ 05	16.2	9 51	8 18					
1009	1	51 Gem	7 10	16.2	10 02	8 31	1 21	W	6.14	197.0	

(ε = .15 / 1000 1009 (on it.)) assume ε = .35

(ε to date .27)

1937phae.proj..798E

RMOE + RMS + a.z.

DATE, Wednesday, Nov 9–10 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
0?-Moon 36°F/6.0	229				
	203				
	418				
	320				
	282				
	156				
	182				
Seeing poor Washington-5m W	380				
	202				

(425)

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1937phae.proj..798E

180

INSTRUMENT, 61" S A

No.	Class	Object	R. A.	Dec.	Started G.T.	Obs. H. A. S.T.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
7011	-	α Cyg	20 39	+45.1	3 01	1 36					
7012	-	55 Cyg	21 39	43.1	Sky too poor.						

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1937phae.proj..798E

RUBBERMS tan.

DATE, Friday, Nov 11-12 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
? 15-25-3p NW		16.0 S			

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1937phae.proj..798E

INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load mm	Focus	Prisms
1014	--	α Cyg	20 39	+45.1	11 50	22 36	1 54	.07	20.58	3.28	
1015		ε Cyg	20 44	33.7	12 00	22 47	2 03	.11	13.32	2.81	
1016		55 Cyg	21 39	43.1	12 56	23 43	2 04	.08	0.29	1.34	
1017		α Peg	23 02	14.9	1 07	23 53	0 51	.15	5.61	1.87	
1018		β And	1 06	35.3	1 19	0 06	-1 00	.03	49.0	4.22	
1019		β Tri	2 06	34.7	1 28	0 15	-1 51	.09	3.88	1.47	
1020		α Cet	2 59	3.9	1 38	0 25					
1021		α Tau	4 32	16.4	1 49	0 36					
1022		α Cyg	20 39	45.1	2 01	0 48					
1023		ε Cyg	20 44	33.7	2 10	0 57					
1024		ο And	22 59	42.0	2 20	1 08					
1025		β Peg	23 01	27.8	2 29	1 16					
1026		κ Peg	23 02	14.9	2 38	1 25					
1027	S	κ And	0 05	28.8	2 51	1 34					
1028	S	β And	1 06	35.3	3 02	1 50					
1029	S	α Ari	2 03	23.2	3 14	2 01					
1030	S	β Ari	2 06	34.7	3 25	2 12					
1031	S	ο Cet	2 16	-3.3	3 37	2 23					
1032	S	α Peg	23 02	14.9	3 54	2 41					

Paper not feeding

1033		α Tau	4 32	16.4	5 55	4 43	0 11	.11	134.6	5.32	
1034		α C Mi	7 36	5.4	6 06	4 54	-2 42	.64	53.9	4.33	
1035		β Gem	7 41	28.2	6 15	5 03	-2 38	.22	45.2	4.14	
1036		α Leo	10 05	12.3	6 30	5 17	-4 48	1.75	11.5	2.65	
1037		ι Aur	4 53	33.1	6 41	5 28	+0 35	.03	18.8	3.19	

ε = 0.099

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1937phae.proj...798E

RMS & RMS

DATE, Monday, Nov 14-15 1938

isms	SKY AT START	Stopped a+es	Exp.	C'lds	Obs'r	REMARKS
	0? 37°F 16.7	3.29				
	Stray quality varied - cb to tcb	2 82				
	Identifications checks with map but stars not red'tn.	-1.26				
	15-35-2p SW-W-NW	1 88				
		4 22				
	25-38-10-E	148				
						started on this couple
		5 33				
		4 39				
		416				
		282				
		319				

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1937phae.proj..798E

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1038		η Aur	5h 02	+41.2	6 51	5 38	0 36	.01	2.92	1.16	
1039		HD32655	5 02	+43.1	7 01	5 48	0 46	.01	0.285	-1.36	
1040		ε Aur	4 58	43.7	7 10	5 58	1 00	.01	6.22	1.98	
1041		β Tau	5h 22	28.6	7 19	6 07	0 45	.04	12.89	2.78	
1042		θ Aur	5h 56	37.2	7 28	6 16	0 20	.01	5.34	1.82	
1043		γ Gem	6 34	16.4	7 38	6 25	-0 09	.11	10.49	2.55	
1044		ε Gem	6 40	25.2	7 47	6 34	-0 06	.05	10.61	2.56	
1045		51 Gem	7 10	16.2	7 55	6 43	-0 27	.13	8.70	2.35	
#3 1046		δ Gem	7 16	22.1	8 46	7 33	+0 17	.07	2.83	1.13	
1047		α Tau	4 32	16.4	8 58	7 45	+3 11	.50	128.0	5.27	
1048		ι Gem	7 22	27.9	9 05	7 53	+0 31	.04	3.84	1.46	
1049 2		α CMi	7 36	5.4	9 13	8 02	+0 26	.28	55.3	4.36	
1050 3		β Gem	7 41	28.2	9 22	8 10	+0 29	.04	44.8	4.13	
1051 5		ε Leo	9 42	24.1	9 33	8 22	-1 20	.11	7.05	2.12	

$$\epsilon = -\frac{\Sigma w a s}{\Sigma w s^2} = 0.099$$

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1937phae.proj...798E

RUN 2 RMS

DATE, Monday, Nov 14-15 1938

SKY AT START	Stopped ✓ a + ε s	Exp.	C'lds	Obs'r	REMARKS
	116				
	-136				
	198				
	278				
	182				
	256				
	256				
	236				
	114				
	532				
	196				
	439				
	413				
-35-7¢ from NW	213				Clds S west and over star

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186 New gal. test coil.

$V_{gal} = V_{applied} \times 5 \times 10^{-7}$

INSTRUMENT, 61" S.H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1057	-	ρ Per	3 01	+38.6	4:17	3:29	+0 28	.01	468	6.67	
1058		η Tau	3 43	23.9	4:30	3:42	-0 01	05	42.4	4.12	
1059		α Ceti	2 59	3.9	4:55	4:07	+1 08	33	376	6.43	
1060		α Tau	4 32	16.4	5:04	4:15	-0 17	12	1294	7.78	
1061		i Aur	4 53	33.1	5:13	4:25	-0 28	02	194.2	5.72	
1062		ε Aur	4 58	43.7	5:23	4:35	-0 23	01	57.0	4.39	
1063		η Aur	5 02	41.2	5:34	4:46	-0 16	01	31.8	3.76	

Assume $\epsilon = 0.25$

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PMB, PMS, a.v. - 4x speed

DATE, Sunday, Nov. 20 - 21 1938

risms	SKY AT START		Stopped ates	Exp.	C'lds	Obs'r	REMARKS
	0	17.3	6.67				
			4.13				
			6.51				
			7.81				
			5.72				
			4.39				
			3.76				

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1937phae.proj..798E

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. of W.	Load	Focus	Prisms
1064	-	α U Ma	11 00	+62.1	16:44	15:58	4 58		194.4	5.72	
1065	-	γ U Ma	11 51	+54.0	16:55	16:09	4 18	W, Gl.			
1066	-	ε U Ma	12 51	+56.3	17:05	16:19	3 28	~~N.G~~			
~~1067~~	~~-~~	~~17 C Vn~~	~~12 53~~	~~+38.7~~				NG			
1067	-	δ Dra	17 55	+51.5	17:25	16:39					
1068	-	Sun	15:45	-19.8	18:	17:15					
		"	"	"	18:09	17:23					
1069		Aretusa	14 13	+19.5	18:26	17:40					
1070		"	"	"	18:32	17:46					
1071		"	"	"	18:38	17:51					
1072	e	γ Dra c	17 55	+51.5	19:10	18:24	0 29	0.02	201.3	5.76	
1073	e	α Cyg	20 39	+45.1	19:23	18:37	-2 2	.08	NG.		
1074	m	α Cep	21 17	+62.5	19:~~33~~ 28	18:42	-2 35	.16	NG		
~~to 76 exp~~											
~~1076~~		~~β Cas~~	~~0 06~~	~~58.8~~							
1075	m	α Cep	21 17	62.5	20:03	19:17	-2 00	.12	49.9	4.25	
1076	e	β Cas	0 06	58.8	20:14	19:28	-4 38	.41	53.9	4.33	
1077	e	α Cyg	20 39	+45.1	20:23	19:37	-1 02	.02	149.8	5.43	
1078	m	η Dra	16 23	+61.6	20:31	19:45	+3 22	.23	44.6	4.12	
1079	e	β Dra	17 29	52.3	20:46	20:00	2 31	.13	70.2	4.62	
1080	e	~~ε Dra~~ α Lyr	18 35	38.7	20:54	20:08	1 33	.05	433	6.59	
1081		δ Cyg	19 43	45.0	21:03	20:17	0 34	.01	31.2	3.79	
1082		β Cas	0 06	58.8	21:14	20:28	-3 38	.26			
1083		~~γ Dra~~	~~17 55~~	~~51.5~~							

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PHOTOR Rh, RMS. J.V. + 4X speed

DATE, Monday, Nov 21 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
5-35-1p NW 16.0					
5-35-10p					
} gal light not on					
Remainder thru clouds					
Scale 9, Disturbance 3, C					Fowler Junct
Drift Curve					
Sky good					Lower Junct
"					"
"					Upper Junct
Hazy 10p 16.0					
Image blew out.					
Repeat					
15-25 clds.					

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INSTRUMENT, 61" S A

No.	Class	Object	R. A.	Dec.	Started G.T.	Obs. H. A. S.T.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1083	-	α Ari	1 6	+23.2	2:42	1:37			20.53		
1084		α Ari	—	—	2:48	2:03					
1085		α Ari	—	—	3:10	2:25			21.22		
1086		α Ari	—	—	3:17	2:32			21.50		
1087		α Ari	—	—	3:35	2:50			21.08		
1088		α Ari	—	—	3:42	2:57					

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DATE, Monday, Nov 21-22 19 38

isms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	D 15,8					
	4X speed					
	1X speed					
	2X speed					

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192 U.T. 12:26 = ST 0:06

INSTRUMENT, 61" SH ✓ ✓ ✓

	No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1	1089		β And	1 06	+35.3	1:31	1 11	0 05	0.01	485	6.71	
4	1090		α Cet	2 59	+3.9	1:41	1 21	-1 38	.40	387	6.47	
	1091		~~ε~~ Per	~~3 01~~ 3 19	38.6	1:52	1 32	-1 29	.05	453	6.64	
2	1092		α Tau	4 32	16.4	2:01	1 41	-2 51	.41	1270	7.76	
3	1093		ε Ori	5 33	-1.2	2:13	1 53	-3 40	1.45	77.0	4.72	
	1094		α Ari	2 03	+23.2	2:23	2 03	0 00	.06	237	5.93	
	1095		β Tri	2 06	34.7	2:32	2 12	+0 06	.01	37.8	3.94	
	1096		ο Cet	2 16	-3.3	2:41	2 21	+0 05	.44	807	7.26	
	1097		γ Tau	3 93	23.9	2:51	2 31	-1 12	.10	38.2	3.96	
	1098		ζ Per	3 50	31.7	2:59	2 39	-1 11	.05	43.1	4.08	
	1099		ε Per	3 54	+39.8	3:08	2 48	-1 06	.02	37.1	3.92	
	1100		~~ζ~~ Per	3 55	35.6	3:39	3 19	-0 36	.02	14.5	2.90	
	1101		~~γ Tau~~ α Tau	4 ~~32~~ 53	33.1	3:48	3 28	-1 25	.06	189.7	5.70	
	1102		ε Aur	4 58	43.7	3:59	3 39	-1 19	.03	58.4	4.41	
	1103		η Aur	5 02	41.2	4:07	3 47	-1 15	.03	29.8	3.69	
	1104		HD32655	5 02	43.1	4:17	3 57	-1 05	.02	3.18	1.26	
8	1105		α Aur	5 12	45.9	4:26	4 06	-1 06	.02	1004	7.51	
2	* 1106		α Tau	4 32	+16.4	4:37	4 17	-0 15	.12	1278	7.76	
1	* 1107		β And	1 06	+35.3	4:49	4 39	3 33	.33	445	6.62	
4	1108		α Cet	2 59	+3.9	5:57	5 37	2 38	.64	312	6.24	
2	1109		α Tau	4 32	16.4	6:07	5 47	1 15	.17	242	7.74	
3	1110		ε Ori	5 33	-1.2	6:22	6 02	-0 29	.40	95.9	4.95	
5	1111		α C Mi	7 36	+5.4	6 32	6 12	-1 24	.34	483	6.71	
6	1112		α Leo	10 05	12.3	6 45	6 26	-3 39	.79	113.1	5.13	
	1113		β UMa	10 58	56.7	6 56	6 37	-4 21	.36	55.8	4.37	
	1114		α UMa	11 00	62.1	7 04	6 45	-4 15	.33	243	5.96	

ε = 0.07

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1937phae.proj.:798E

RWE + RMS & a.n 1x speed

DATE, Sunday, Nov. 27-28 1938

Prisms	SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	0- overhead 21-25-2p NW-W-SW- 17.0 21°F	6.71				
		6.50				
		6.64				
		7.79				
		4.82				
		5.93				
		3.94				
		7.29				
		3.97				
		4.08				
		3.92				
		2.90				
		5.70				
		4.41				
	-1m meteor N between Tri & ζ	3.69				
	T.m.	1.26				
		7.51				
	*(Motor carried over)	7.77				
		6.64				
		6.28				
		7.75				
		4.98				
		6.73				
		5.19				
		4.40				
		5.98				

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1937phae.proj..798E

INSTRUMENT, 61" SH ✓ ✓ ✓ ✓

	No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. S E. or W.	Load	Focus	Prisms
	1115		θ Aur	5 56	+37.2	7:17	6 59	+1 03	0.02	47.6	4.19	
	1116		γ Gem	6 34	16.4	7:27	7 09	+0 35	.13	93.0	4.92	
	1117		ε Gem	6 40	25.2	7:37	7 19	+0 39	.06	100.2	5.01	
	1118		51 Gem	7 10	16.2	7:48	7 30	+0 20	.12	80.4	4.76	
	1119		δ Gem	7 16	22.1	7:57	7 39	+0 23	.07	24.2	3.46	
	1120		ι Gem	7 22	27.9	8:07	7 49	+0 27	.04	36.9	3.91	
5	1121		α C Mi	7 36	5.4	8:16	7 58	0 22	.27	520	6.79	
	1122		β Gem	7 41	28.2	8:25	8 07	0 26	.04	428	6.57	
7	1123		ε Leo	9 42	24.1	8:35	8 17	+1 25	.10	64.9	4.53	
	1124		π Leo	9 57	8.3	8:45	8 27	+1 30	.30	49.8	4.24	
	1125		ρ Leo	10 17	20.2	8 54	8 36	+1 41	.16	221	5.87	
	1126		σ Leo	11 11	20.8	9 08	8 50	+2 21	.25	47.7	4.19	
	1127		μ UMa	10 19	41.8	9 19	9 01	+1 18	.03	181.2	5.65	
6	1128		α Leo	10 05	12.3	9 29	9 11	+0 54	.19	129.6	5.28	
8	1129		α Aur	5 12	45.9	9 42	9 24	+4 12	.38	826	7.29	
5	1130		α C Mi	7 36	5.4	9 55	9 37	2 01	.43	446	6.62	
7	1131		ε Leo	7 42	24.1	10 06	9 47	0 05	.05	59.6	4.44	

$$\epsilon = -\frac{\Sigma w a s}{\Sigma w s^2} = 0.07$$

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1937phae.proj..798E

DATE, Sunday, Nov 27-28 1938

risms	SKY AT START	Stopped a+ES	Exp.	C'lds	Obs'r	REMARKS
	0? . | —	4.19				
		4.93				
		5.01				
		4.77				
		3.46				
		3.91				
		6.81				
		6.57				
		4.54				
		4.26				
		5.88				
		4.21				
		5.65				
		5.29				
		7.32				
		6.65				
		4.44				

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1937phae.proj..798E

UT 2:30 = ST 2:13

INSTRUMENT, 61" SH ✓ ✓ ✓ ✓

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1136		α Ari	2 03	+23.2	2:46	2 29	0 26	0.07	199	5.75	
1137		α Cet	2 59	+ 3.9	2:56	2 39	-0 20	.30	333	6.31	
1138		α Tau	4 32	+16.4	3:05	2 48	-1 44	.21	1102	7.61	
1139		β Ori	5 12	-8.3	3:16	2 59	-2 13	.93	291	6.17	
~~1140~~		~~α CMi~~	~~7 36~~	~~+5.4~~	~~3:31~~	~~3 14~~					
1140		β Gem	7 41	28.2	3:31	3 14	-4 27	.74	303	6.21	
1141		ζ Per	3 50	31.7	3:42	3 25	-0 25	.03	37.0	3.92	
1142		β Tri	2 06	34.7	3:52	3 35	+1 29	.06	27.0	3.58	

Assume $\epsilon = 0.25$

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1937phae.proj..798E

RMB, RMS, arm lengths

DATE, Monday Nov 28-29 1938

isms	SKY AT START	Stopped a+ES	Exp.	C'lds	Obs'r	REMARKS
	23°F 15-25-3p W (7.1 S	5.77				
		6.39				
		7.66				
		6.41				
		6.39				
		3.93				
	Meteor - NW through Cas. 15-35 - 5p NW-N → S.	3.60				

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1937phae.proj..798E

198 U.T. 11:26 = ST 23:20

INSTRUMENT, 61" S A ✓ ✓ ✓ ✓

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A.	Obs. Dec.	Tel. S E. or W.	Load	Focus	Prisms
1 1160	-	α Cyg	20 39	+45.1	11:50	23:44	+3 05	0.21	156.3	5.49	
2 1161		α Cep	21 17	62.5	0:00	23:54	2 37	.16	56.8	4.39	
1162		55 Cyg	21 39	43.1	0:17	0:11	2 32	.13	2.3	0.90	
1163		55 Cyg			0:25	0:19	2 40	.15	1.4	0.36	
1164		β Cas	0 06	58.8	0:36	0:30	+0 24	.05	72.9	4.66	
6 1165		α Per	3 20	49.6	0:47	0:41	-2 39	.14	125.4	5.24	
3 1166		α Aur	5 12	45.9	1:01	0:55	-4 17	.41	79.5	7.25	
1167		ε Cas	1 50	63.4	1:13	1:07	-0 43	.08	19.8	3.24	
1168		α UMi	1 41	89.0	1:22	1:16	-0 25	.45	98.9	4.99	
4 1169		β UMi	14 51	74.4	1 37	1 31	+10 40	1.17	23.3	5.92	
1170		γ Cep	23 37	77.3	1 50	1 44	2 07	.25	52.9	4.31	
2 1171		α Cep	21 17	62.5	2 01	1 55	4 38	.38	35.3	3.87	
1 1172		α Cyg	20 39	45.1	2 12	2 06	5 27	.80	133.5	5.32	
1173		o And	22 59	42.0	2 22	2 16	3 17	.24	16.4	3.04	
5 1174		β And	1 06	35.3	2 33	2 27	1 21	.05	41.3	6.54	
5 1175		β And			5 11	5 05	3 59	.45	40.5	6.53	
1176		β Tri	2 06	34.7	5 21	5 15	3 09	.25	31.0	3.73	
1177		γ Per	3 00	53.3	5 31	5 25	2 25	.12	65.7	4.54	
6 1178		α Per	3 20	49.6	5 40	5 34	2 14	.10	131.9	5.31	
1179		δ Per	3 39	49.6	5 48	5 42	2 03	.08	26.9	3.58	
1180		ε Per	3 54	39.8	5 57	5 51	1 57	.08	30.2	3.70	
1181		i Aur	4 53	33.1	6 07	6 01	1 08	.04	158.4	5.50	
3 1182		α Aur	5 12	45.9	6 15	6 09	0 57	.02	84.5	7.32	
1183		HD32655	5 02	43.1	6 38	6 32	1 30	.04	2.1	0.81	
1184		η Aur	5 02	41.2	6 47	6 41	1 39	.05	26.5	3.56	
1185		ε Aur	4 58	43.7	6 55	6 49	1 51	.06	47.4	4.19	

ε = 0.13

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1937phae.proj.:798E

RMS + RMS

DATE, ~~Wednesday~~ Thursday, December 1-2 1938

SKY AT START	Stopped a+6s	Exp.	C'lds	Obs'r	REMARKS
0 20° F / 6.5	5.52				
	4.41				
Tw	0.92				
tw,	0·38				
	4.67				
	5.26				
	7.30				
	3.25				
	5.05				
	6.07				
	4.34				
	3.92				
	5.42				
	3.07				
	6.55				
	6.59				
	3.76				
	4.56				
	5.32				
	3.59				
	3.71				
	5.51				
	7.32				
T.M.	0.82				
	3.57				
	4.20				

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1937phae.proj..798E

200

INSTRUMENT, 61" S H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1186		Blank	4 58	+43.7	7 01	6 55	1 57	0.07	-0.4	?	
6 1187		α Per	3 20	49.6	7 10	7 04	3 44	.28	131.6	5.29	
7 1188		δ U Ma	11 00	62.1	7 21	7 15	-3 45	.27	214	5.83	
8 1189		β U Ma	10 58	56.7	7 32	7 26	-3 32	.24	50.6	4.26	
1190		σ U Ma	8 25	60.9	7 43	7 37	-0 48	.06	45.7	4.15	
1191		Z Cam	8 18	73.3	8 02	7 57	-0 21	.17	-0.9	?	
1192		Blank	–	–	8 10	8 04	-0 14	.17	+0.6	-0.55	
1193		Z Cam	–	–	8 17	8 11	-0 07	.17	+0.1	-2.50	
1194		ε U Ma	8 55	48.3	8 27	8 21	-0 34	.01	30.4 (C+9)	3.71	
1195		κ U Ma	8 59	47.4	8 36	8 30	-0 29	.01	17.2	3.09	
1196		η U Ma	9 27	63.3	8 46	8 40	-0 47	.08	22.1	3.36	
1197		θ U Ma	9 29	51.9	8 55	8 49	-0 40	.03	37.0	3.92	
1198		ζ U Ma	9 47	59.3	9 05	8 59	-0 48	.05	17.8	3.12	
3 1199		α Aur	5 12	45.9	9 57	9 51	+4 39	.51	775	7.23	
1200		λ U Ma	10 13	43.2	10 07	10 01	-0 12	.01	17.9	3.14	
4 1201		β U Mi	14 51	74.4	10 17	10 13	-4 38	.39	242	5.97	
1202		ε U Mi	12 51	56.3	10 30	10 24	-2 27	.13	77.0	4.71	
7 1203		κ U Mi	11 00	62.1	10 38	10 32	-0 28	.07	139.0	5.36	
8 1204		β U Mi	10 58	56.7	10 46	10 40	-0 18	.05	33.8	3.82	

$$\epsilon = -\frac{\Sigma wcs}{\Sigma ws^2} = 0.13$$

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1937phae.proj..798E

DATE, Thursday, December 1-2 1938

SKY AT START	Stopped a+es	Exp.	C'lds	Obs'r	REMARKS
t.m 12°F | —					
	5.33				
	5.87				
	4.29				
	4.16				
T.m.					
t m					
t m m. n 12					
	3.71				
	3.09				
	3.37				
	3.92				
	3.13				
	7.30				
	3.14				
	6.02				
15-25-1p E.	4.73				
	5.37				
10°F - Good transparent night, seeing only fair at times.	3.83				

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1937phae.proj..798E

202

UT 2:40 = ST 2:38

INSTRUMENT, 61" S.H

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A. ST	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1205		ε Cas	1 50	+63.4	3 05	3 03	+1 13	0.09	30.3	3.70	
1206		β Tri	2 06	34.7	3 12	3 10	1 04	0.03	39.4	3.99	
1207		γ Per	3 00	53.3	3 23	3 21	0 21	.03	74.7	4.68	
1208		α Per	3 20	49.6	3 31	3 29	0 09	.01	169.9	5.58	
1209		δ Per	3 39	47.6	3 39	3 37	-0 02	.00	37.2	3.93	
1210		ε Aur	4 58	43.7	3 49	3 47	-1 11	.02	62.0	4.48	
1211		ζ Aur	5 02	41.2	3 58	3 56	-1 06	.02	31.7	3.75	
1212		HD32655	—	43.1	4 06	4 04	-0 58	.01	+2.7	1.08	
1213		α Aur	5 12	45.9	4 14	4 12	-1 00	.02	106.2	7.56	
1214		o U Ma	8 25	60.9	4 23	4 21	-4 04	.31	50.4	4.26	
* 1215		h U Ma	9 27	63.3	4 33	4 31	-4 56	.44	24.2	3.46	
1216		θ U Ma	9 29	51.9	4 45	4 43	-4 46	.49	42.6	4.07	
1217		ζ U Ma	9 47	59.3	4 55	4 53	-4 54	.46	19.8	3.24	
1218		β U Ma	10 58	56.7	5 04	5 02	-5 56	.75	57.8	4.40	
1219		α U Ma	11 00	62.1	5 12	5 10	-5 50	.64	24.3	5.96	
1220		α Aur	5 12	45.9	5 22	5 20	+0 08	.00	100.4	7.50	
1221		ι Aur	4 53	33.1	5 36	5 34	0 41	.03	189.5	5.70	
1222		ξ Per	3 55	35.6	5 49	5 45	1 50	.08	13.8	2.85	
1223		ε Per	3 54	39.8	5 56	5 54	2 00	.08	35.1	3.86	
1224		ξ Gem	3 50	31.7	6 05	6 03	2 13	.14	43.0	4.08	
1225		α Per	3 20	49.6	6 15	6 13	2 53	.16	160.1	5.57	
1226		ρ Per	3 01	38.6	6 23	6 21	3 20	.26	43.9	6.61	
+29											

$\epsilon = -\frac{\Sigma w a}{\Sigma w s^2} = -0.527$ assume $\epsilon = 0.25$

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1937phae.proj.:796E

RMBZ, RMS

DATE, Friday Dec 2-3 1938

SKY AT START	Stopped a+ES	Exp.	C'lds	Obs'r	REMARKS
0? + 15° F / 9.2	3.72				
	4.00				
	4.69				
	5.58				
	3.93				
	4.49				
	3.77				
T. M	1.08				
	7.57				
	4.34				
* Pushed "continuous run" switch — stopped clock run.	3.57				
	4.19				
	3.36				
	4.59				
	6.12				
	7.50				
35-1p W	5.71				
	2.87				
Telescope out of balance	3.88				
	4.12				
	5.55				
	6.67				
Cld's all around					

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1937phae.proj..798E

INSTRUMENT, 61"5 H

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms	
1227		5 Per	3 50	+31.7	3 49	3 56	+0 06					hay
1228		α Tau	4 32	16.4	3 57	4 04	-0 28					
1229		α C Mi	7 36	5.4								Du
1230		α C Mi	7 36	+5.4	6 46	6 53	-0 43					15-
1231		α Leo	10 05	12.3	6 56	7 03	-3 02					hay

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1937phae.proj.-798E

RMDE + RMS

DATE, Sunday, Dec. 4-5 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
haze? 33°F / 7.4					
Dew all over mirror					
15-1p W. Mirror about dry. haze - 15 coming over E.					

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1937phae.proj..798E

206

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started GST	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus a	Prisms
1232		α Tau	4 32	+16.4	5 40	5 56					
1233		i Aur	4 53	33.1	5 50	6 05					
				61" SH							
1234		α Cyg	20 39	+45.1	0 02	0 21	3 42	0.29	187.6	5.68	
1235		o And	22 59	42.0	0 14	0 33	1 34	.05	11.5	2.65	
1236		α And	0 05	28.8	0 24	0 43	0 38	.05	68.8	4.59	
1237		α Peg	23 02	14.9	0 34	0 52	1 50	.25	47.7	4.19	
1238		β And	1 06	35.3	0 45	1 03	-0 03	.01	499	6.75	
1239		α Ari	2 03	23.2	0 59	1 18	-0 45	.08	236	5.93	
1240		β Tri	2 06	34.7	1 07	1 25	-0 41	.02	36.4	3.90	
1241		o Cet	2 16	-3.3	1 17	1 35	-0 41	.47	774	7.22	
1242		α Tau	4 32	16.4	1 30	1 49	-2 43	.39	1292	7.78	
1243		β Ori	5 12	-8.3	1 42	2 00	-3 12	1.56	355	6.38	
1244		α Aur	5 12	45.9	1 55	2 13	-2 59	.18	966	7.46	
1245		η Aur	5 02	48.2	2 02	2 21	-2 41	.15	29.6	3.60	
1246		HD32655	-	43.1	2 09	2 28	-2 34	.14	+2.6	1.04	
1247		Blank	-	-	2 16	2 35	-2 27	.13	-0.4	|-1.00|	
1248		ε Aur	4 58	43.7	2 23	2 42	-2 16	.10	53.5	4.32	
1249		i Aur	4 53	33.1	2 31	2 50	-2 03	.11	183.6	5.66	
1250		β Gem	7 41	28.2	2 40	2 59	-4 42	.87	349	6.36	
1251		η Tau	3 43	23.9	2 49	3 07	-0 36	.07	38.9	3.97	
1252		ζ Per	3 50	31.7	2 56	3 15	-0 35	.03	45.1	4.14	
1253		α Peg	23 02	14.9							
1253		α Tau	4 32	16.4							

no ε Assume ε = 0.25

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1937phae.proj.:798E

RMS & RMS

DATE, Tuesday, December 6-7 1938

sms	SKY AT START	Stopped at ES	Exp.	C'lds	Obs'r	REMARKS
	39°. 1K-1p W | 8.1 Δ Scud W→NE					
		Wednesday, Dec. 7-8, 1938				
	07 40° | 8.0	5.75				
		2.66				
		4.60				
		4.25				
		6.75				
		5.95				
		3.91				
		7.34				
	* Blank - one run in N.M.	7.88				
		6.77				
	* Blank - one run N.M.	7.50				
		3.64				
	t.m.	1.08				
	t.m.					
	1s-3s-1p E	4.34				
		5.69				
		6.58				
		3.99				
		4.15				
	3s-4s-3p W→E					
	Clds all over.					

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1937phae.proj..798E

208

INSTRUMENT, 61" SH. ✓ ✓ ✓ ✓

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1253		α Tau	4 32	+16.4	3 10	3 39	-0 53	0.13	499	6.75	
1254		η Tau	3 43	23.9	3 21	3 50	+0 07	.05	17.1	3.08	
1255		Blank	—	—					-0.3	-1.31	
1256		Blank	—	—					+0.4	-1.00	
1257		~~Blank~~ η Tau	—	—	3 39	4 09	—	—	NG 7.8	NG	
1258		Blank	Light on + off on alternate records on last 4						-1.0		

~~Sr.~~ 5:55:57 U.T. – Meteor mag -3 – from above moon to SE horizon.

Sky clear or completely overcast (½hr period) during first half of night. It has now turned colder + strong wind from west, so this clear may be permanent.

1259	1	γ Gem	6 34	+16.4	6 11	6 50	+0 16	.12	78.4	4.74	
~~1260~~	2	~~51 Gem~~	~~7 10~~	~~+16.2~~	~~6 19~~	~~6 57~~	~~-0 13~~	~~.12~~	~~9.2~~	~~2.41~~	
1261	3	α CMi	7 36	+5.4	6 27	7 06	-0 30	.27	44.4	6.62	
1262	4	α Leo	10 05	+12.3	6 37	7 16	-2 49	.49	121.2	5.21	
1263		Blank	—	—	6 43	7 22	-2 33	.41	+0.2	-1.75	
1264		ν Vir	11 43	+6.9	6 52	7 31	-4 12	1.42	63.4	4.51	
1265	5	α Ser	5 12	45.1	7 03	7 41	2 29	.13	83.3	7.30	
1266		η Ser	5 02	41.2	7 11	7 50	2 48	.17	23.4	3.42	
1267		HD32655	—	43.1	7 19	7 58	2 56	.18	+6.6	2.05	
1268		ε Ser	4 58	43.7	7 28	8 07	3 09	.21	48.4	4.20	
1269		Blank	—	—	7 34	8 13	3 15	.22	-1.7	-1.92	

$\epsilon = 0.15$

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1937phae.proj - 798E

DATE, Sunday, Dec 11-12 1938

SKY AT START	Stopped	Exp.	C'lds	Obs'r	REMARKS
	a+ES				
15-35-4pN hazy all over?	17.0				
t.m.					
no. m.					
t. m.					
t.m. (*I moved dome & telescope while recording) Sky too poor to continue					

Monday, Dec-12-13, 1938

o? 30°	16.9	4.76			
This observation is not consistent with any others on 51 Gem - wrong star or cloud.					
		6.66			
		5.28			
t.m.		-1.69			
		4.72			
Poor seeing		7.32			
t.m. Gentry and		3.45			
t.m.		2.08			
t.m.		4.23			
t.m.		—			

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INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1270		θ Aur	5 56 37.2		7 44	8 23	2 27	0.14	40.8	4.02	
1271		ε Gem	6 40 25.2		7 53	8 31	1 51	0.14	90.3	4.89	
1272		δ Gem	7 16 22.1		8 01	8 40	1 24	.13	27.0	3.57	
1273		i Gem	7 22 27.9		8 10	8 49	1 27	.09	36.6	3.91	
1274	6	β Gem	7 41 28.2		8 18	8 57	1 16	.08	360	6.39	
1275		ε Leo	9 42 24.1		8 27	9 06	-0 36	.09	59.7	4.44	
1276		π Leo	9 37 8.3		8 35	9 14	-0 43	.23	47.6	4.19	
1277		γ Leo	10 17 20.2		8 43	9 22	-0 55	.10	210	5.81	
1278		δ Leo	11 11 20.8		8 52	9 30	-1 41	.17	48.0	4.20	
1279		ν Vir	11 43 6.9		9 00	9 39	-2 04	.41	68.6	4.59	
1280		β Leo	11 46 14.9		9 09	9 48	-1 58	.26	68.0	4.58	
1281		γ UMa	11 50 54.0		9 19	9 58	-1 52	.08	52.0	4.29	
1282		ε UMa	12 51 56.3		9 27	10 06	-2 45	.16	94.6	4.94	
1283	4	α Leo	10 05 12.3		9 37	10 16	+0 11	.16	129.1	5.28	
1284	3	α Aur	5 12 45.9		9 47	10 27	-5 15	.70	767	7.21	
1285	1 2	γ Gem	6 34 16.4		9 57	10 37	4 03	.87	72.4	4.65	
1286		si Gem	7 10 16.2		10 06	10 45	3 35	.65	68.5	4.59	
1287	3	α CMi	7 36 5.4		10 14	10 54	3 18	.85	412	6.53	
1288	6	β Gem	7 41 28.2		10 22	11 02	3 21	.36	355	6.38	
1289		μ UMa	10 19 41.8		10 32	11 11	0 52	.01			

$$\epsilon = -\frac{\Sigma w a s}{\Sigma w s^2} = 0.15$$

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DATE, Monday, Dec 12-13 1938

SKY AT START	Stopped a+es	Exp.	C'lds	Obs'r	REMARKS
	4.04				
	4.91				
	3.59				
	3.92				
	6.40				
	4.45				
	4.22				
	5.83				
	4.23				
	4.65				
	4.62				
	4.30				
	4.96				
	5.30				
	7.31				
	4.78				
	4.69				
	6.66				
	6.43				

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1937phae.proj..798E

212

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1308		α Lyr	18 35	+38.7	22 55	23 36	5 01	0.75	358	6.38	
1309		α Cyg	20 39	45.1	23 03	23 44	3 05	.20	149.6	5.44	
1310		ε Cyg	20 44	33.7	23 11	23 52	3 08	.26	101	5.01	
1311		o And	22 59	42.0	23 19	0 01	1 02	.02	15.7	2.99	
1312		β Peg	23 01	27.8	23 27	0 09	1 08	.07	473	6.69	
1313		α Peg	23 02	14.9	23 35	0 17	1 15	.18	41.8	4.05	
1314		~~X Aqr~~ And	0 5	28.8	23 44	0 25	0 20	.04	63.1	4.50	
1315		γ Peg	0 10	14.8	23 52	0 33	0 23	.14	28.7	3.65	
1316		β And	1 06	35.3	0 00	0 41	-0 25	.02	401	6.50	
1317		α Cet	2 59	+3.9	0 09	0 50	-2 09	.50	305	6.21	
1318		α Per	3 19	49.6	0 17	0 59	-2 20	.11	121.7	5.21	
1319		α Tau	4 32	16.4	0 26	1 07	-3 25	.57	984	7.48	
1320		α Aur	5 12	45.9	0 35	1 17	-3 55	.33	742	7.18	
1321		α Cyg	20 39	45.1	0 50	1 31	+4 52	.59	136.7	5.34	
1322		Saturn	0 45	+2.0	3 03	3 45	3 00	.84	136.5	5.34	
1323		β And	1 06	35.3	3 36	4 18	3 12	.25	380	6.45	
1324		β Peg	23 01	27.8	3 45	4 27	5 26	1.42	373	6.43	
1325		ε Per	3 50	31.7	3 55	4 37	0 49	.03	32.0	3.76	
1326		ε Per	3 54	39.8	4 02	4 44	0 50	.02	25.9	3.53	
1327		α Tau	4 32	16.4	4 11	4 52	0 20	.12	1014	7.51	
1328		β Ori	5 12	-8.3	4 19	5 01	-0 11	.59	330	6.30	
1329		γ Ori	5 21/12	+6.3	4 27	5 09	-0 12	.25	79.5	4.75	
1330		β Tau	5 22	28.6	4 36	5 17	-0 05	.03	83.5	4.80	
1331		θ Aur	5 56	37.2	4 44	5 26	-0 30	.01	341	3.83	
1332		d C Mi	7 36	5.4	4 53	5 35	-2 01	.43	380	6.45	
1333		β Gem	7 41	28.2	5 02	5 44	-1 59	.13	326	6.28	
1334		α Leo	10 05	12.3	5 11	5 53	-4 12	1.12	90.9	4.89	

ε = 0.15

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DATE, Tuesday 13-14 1938

SKY AT START	Stopped a+ES	Exp.	C'lds	Obs'r	REMARKS
07-25-IP W 30° / 6.8	6.49				
	5.47				
	5.05				
	2.99				
	6.70				
	4.08				
	4.51				
	3.67				
	6.50				
	6.29				
	5.23				
	7.57				
	7.23				
	5.43				
	5.47				
	6.49				
Kind go Tue?	6.64				
	3.76				
	3.53				
	7.53				
	6.39				
	4.79				
	4.80				
	3.83				
	6.51				
	6.30				
	5.06				

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214

INSTRUMENT, 61" Sth

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1335		α Per	3 19	49.6	5 26	6 08	2 49	0.16	114.9	5.15	
1336		ε Aur	4 58	43.7	5 35	6 17	1 19	.03	39.8	4.00	
1337		α Aur	5 12	45.9	5 44	6 26	1 14	.03	75.1	7.19	
1338		η Aur	5 02	41.2	5 56	6 34	1 32	.04	17.8	3.13	
1339		HD32655	—	43.1	5 59	6 41	1 39	.05	1.1	0.10	
1340		Blank	—	—	6 05	6 48	1 46	.06	-0.1	-2.50	
1341		Blank	—	—	6 12	6 55	1 53	.07	-0.3	-1.30	

As moon came up bars of 15 - 25 speeds ac

$$\epsilon = -\frac{\Sigma w a s}{\Sigma w s^2} = 0.15$$

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1937phae.proj. - 798E

DATE, Tuesday, Dec. 13-14 1938

ms	SKY AT START	Stopped ✓ at ES	Exp.	C'lds	Obs'r	REMARKS
		5.17				
		4.00				
		7.19				
		3.14				
	t. m.	0.11				
	t. m.	1—1				
	as M.	1—1				
	ic as south east to zenith at times.					

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1937phae.proj..798E

216
1379.

INSTRUMENT, 61" SH

No.	Class	Object	R. A.	Dec.	Started UT	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1357		β Peg	23 01 27.8		22 10 56	23 44	0 43	0.05	526	6.80	
1358		α Peg	23 02 14.9		22 10	23 58	0 56	.16	46.2	4.16	
1359		α Cyg	20 37 45.1		22 19	0 07	3 28	.25	162.1	5.52	
1360		o And	22 59 42.0		22 29	0 17	1 18	.03	19.2	3.21	
1361		α And	0 05 28.8		22 37	0 25	0 20	.05	69.5	4.60	
1362		γ Peg	0 10 14.8		22 46	0 34	0 24	.14	31.8	3.76	
1363		β And	1 06 35.3		0 01	0 49	-0 17	.01	461	6.66	
1364		α Cet	2 59 3.9		0 10	0 58	-2 01	.47	346	6.35	
1365		α Tau	4 32 16.4		0 18	1 06	-3 26	.58	1091	7.59	
1366		α Per	3 19 49.6		0 27	1 15	-2 04	.08	139.1	5.36	
1367		Blank	—	—	0 34	1 22	-1 57	.07	+3.1	1.23	
1368		Blank	—	—	0 40	1 28	-1 51	.07	+0.07	-2.89	
1369		Blank	—	—	0 47	1 35	-1 44	.06	-0.44	-0.89	
1370		α Aur	5 12 45.9		0 57	1 45	-3 27	.26	866	7.34	
1371		β Ori	5 12 -8.3		1 08	1 56	-3 16	1.61	307	6.22	
1372		ε Per	3 54 39.8		1 17	2 05	-1 49	.07	28.6	3.64	
1373		δ Per	3 50 31.7		1 25	2 13	-1 37	.08	37.6	3.94	
1374		ρ Per	3 01 38.6		1 35	2 23	-0 38	.01	395	6.49	
1375		α Cet	2 59 3.9		1 44	2 32	-0 27	.30	348	6.35	
1376		o Cet	2 16 -3.3		1 58	2 46	+0 30	.46	656	7.04	
1377		β Tri	2 06 34.7		2 07	2 55	0 49	.02	33.0	3.80	
1378		α Ari	2 03 23.2		2 15	3 03	1 00	.09	214	5.83	
1379		β Peg	23 01 27.8		2 27	3 15	4 14	.65	491		
1380		α Per	2 3 02 14.9		2 37	3 25	4 23	1.14	39.4	3.99	
1381		α And	0 05 28.8		3 32	4 20	4 15	.63	61.9	4.48	
1382		β And	1 06 35.3		3 41	4 29	3 23	.29	434	6.59	

ε = 0.19

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1937phae.proj..798E

DATE, Thursday Dec 15-16 1938 ST=GMT+48m

ms	SKY AT START	Stopped a+es	Exp.	C'lds	Obs'r	REMARKS
	No eyepiece in finder / 7.1	6.81				
	0°. 18°	4.19				
		5.57				
		3.22				
		4.61				
		3.79				
		6.66				
		6.44				
		7.70				
		5.38				
	t. m	1.24				
	reg. m.	-2.88				
	no. nv.	[-0.88]				
		7.39				
		6.53				
		3.65				
		3.96				
		6.49				
		6.41				
		7.13				
		3.80				
		5.85				
		6.73				
	Ci. tr. light cirri	4.21				
		4.60				
		6.65				

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1937phae.proj..798E

218

INSTRUMENT, 61" S.I.

No.	Class	Object	R. A.	Dec.	Started GMT	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1383 6		α Tau	4 32	+16.4	3 51	4 39	0.07	0.11 E	1177	7.68	
1384		ε Aur	4 58	43.7	4 00	4 48	-0 10	00 E	49.8	4.24	
1385 8		α Aur	5 12	45.9	4 07	4 55	-0 17	00 E	918	7.41	
1386 10		β Gem	7 41	28.2	4 16	5 04	-2 37	.23 E	396	6.49	
1387 11		α CMi	7 36	5.4	4 26	5 14	-2 22	.53 E	460	6.66	
1388 12		α Leo	10 05	12.3	4 36	5 24	-4 41	1.57 E	104.3	5.04	
1389 9		β Ori	5 12	-8.3	4 49	5 37	+0 25	.64 E	376	6.44	
1390		γ Ori	5 21	6.8	5 02	5 50	+0 29	.25 E	96.6	4.96	
1391 5		α Cet	2 59	3.9	5 10	5 58	2 59	.76 E	320	6.26	
1392 4		β And	1 06	35.3	5 20	6 08	5 02	.84 E	404	6.52	
1393 7		α Per	3 19	49.6	5 28	6 16	2 57	.17 E	135.7	5.33	
1394		ι Aur	4 52	33.7	5 45	6 33	1 41	.07 E	168.1	5.56	
1395		ε Aur	4 58	43.7	5 55	6 43	1 45	.06 E	47.6	4.19	
1396		η Aur	5 02	41.2	6 03	6 51	1 49	.06 E	24.1	3.46	
1397		HD32655	—	43.1	6 10	6 58	1 56	.07 E	+2.5	0.99	
1398		Blank	—	—	6 16	7 04	2 02	.08 E	-0.07	-2.89	
1399		Blank	—	—	6 23	7 11	2 09	.09 E	-0.44	-0.89	
1400 6		α Tau	4 32	16.4	7 54	8 42	4 10	.93 E			
1401 10		β Gem	7 41	28.2	8 07	8 55	1 14	.07 E			
1402 11		α CMi	7 36	5.4	8 15	9 03	1 27	.35 E			
1403		51 Gem	7 10	16.2	8 24	9 12	2 02	.25 E			
1404		δ Gem.	7 16	22.1	8 32	9 20	2 04	.19 E			
1405		ι Gem	7 22	27.9	8 41	9 29	2 07	.15 E			
1406		κ Gem	7 41	24.5	8 48	9 36	1 55	.16 E			
1407		ε Leo	9 42	24.1	8 57	9 45	0 03	.05 E			
1408		π Leo	9 57	8.3	9 05	9 53	-0 04	.21 E			
1409 12		α Leo	10 05	12.3	9 13	10 01	-0 04	.16 E			

ε = 0.19

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1937phae.proj..798E

DATE, Thursday Dec 15-16 19 38

SKY AT START	Stopped a+ES	Exp.	C'lds	Obs'r	REMARKS
1-	7.70				
	4.24				
	7.41				
	6.53				
	6.76				
	5.34				
	6.56				
	5.01				
	6.40				
	6.68				
	5.36				
	5.57				
	4.20				
	3.47				
	1.00				
	1-2.87				
	1-0.87				

lost

8:19 - 2 meteors north through belt of Orion

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INSTRUMENT, 61" SH Thursday Dec 15-16, 1938

No.	Class	Object	R. A.	Dec.	Started	Obs. H. A.	Obs. Dec.	Tel. E. or W.	Load	Focus	Prisms
1410		3 Leo	10 04 17.1		9 22	10 10	+0 06	0.11			
1411	8	α Sm	5 12 45.9		9 32	10 20	5 08	.66			
1412	12	α Leo	10 05 12.3		9 46	10 34	0 29	.17	125.2	5.24	
1413		γ Leo	10 19 20.2		9 54	10 42	0 25	.09	20.2	5.76	
1414		δ Leo	11 11 20.8		10 03	10 51	-0 20	.08	46.1	4.16	
1415		θ Leo	11 11 15.8		10 11	10 59	-0 12	.12	20.7	3.29	
1416		β Leo	11 46 14.9		10 22	11 10	-0 36	.14	66.8	4.56	
1417		12 CVn	12 53 38.6		10 31	11 19	-1 34	.05	29.4	3.67	
1418		ε UMa	12 57 56.3		10 41	11 29	-1 22	.06	92.7	4.92	
1419		5 UMa	13 21 55.2		10 50	11 38	-1 43	.07	59.2	4.43	

$$\epsilon = -\frac{\Sigma was}{\Sigma ws^2} = 0.192 \quad (\text{from } \#2 - 9, 12)$$

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Pris

$a+\epsilon s$
5.27
5.78
4.18
3.31
4.59
3.68
4.93
4.44

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E 33-869

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The nights Oct. 25-26 to Dec. 15-16 have been used to form a preliminary catalogue. ALL nights from 11/14-15 on were reduced and checked with the same routine; the Δ's were computed by means of the formula: $\Delta = \frac{1}{8}(y_1 - 4y_2 + 6y_3 - 4y_4 + y_5)$. The values in the Δ columns are all means of Δ's computed from two consecutive sets of five y's. Unless otherwise noted, the formula $\epsilon = -\frac{\Sigma w a s}{2 w s^2}$ was used; assumed $\sqrt{w} \sim \Delta$. The nights of 10/25-26, 26-27, 31-11/1 were not reduced and checked in the same routine as the other nights; however the results from these three nights should be as reliable as any of the others. In all cases the galvanometer deflections were photographically recorded.

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