KG
11365
964

XLI

miscellaneous

KG 11365.964

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YELLOW

10.00

Scale R2

Saturday May 6, 1916

Yellow

Pleiades – measures on Yerkes plate 0,205

		Exp. A			Exp B			g			~~k~~			h		
		a	B	C	a	B	C	a	B	C	~~a~~	~~B~~	~~C~~	a	B	C
	15				B			B						B		
	16				B			B						B		
	17				B			B						B		
off plate	18															
off plate	19															
off plate	20															
off plate	21															
off plate	22															
	23	B			B			2.9						2.6		
	24	B			B			2.7						2.9		
off plate	25															
off plate	26															
too near edge	27															
too near edge	28															
	29	B			B			4.1						4.0		
off plate	30															
	31	B			3.1	B				8.7						
	32	3.8 4.0?	B		6.1 4.9	5.5? 5.6				10.9				poor		
	32a	3.7?			4.7	5.2				10.2						10.7
	33		5.8? 5.7?		6.0	6.8? 6.9				q						11.2? 10.9
	34			8.8?		8.6	8.0	not seen								
	34a		8.7?	8.3? 8.1?	.	9.0	8.7 8.6	not seen						not seen		
78 =	35			8.9?	.	.	8.7	not seen								
	35a			11.0			10.8									
	36			10.5?	.	.	10.6									
not seen	37	not seen			not seen											
	38			10.6?	.	.	10.0									
	39a															

Saturday May 6, 1916

Scale 2

Yerkes 0.205

		Exp A			Exp B			g			h		
		a	B	C	a	B	C	a	B	C	a	B	C
	2	B			B								
	7				B			B					
	12	B			B								
	51	4.6?	B		5.9?	6.0q				9.8			
	52	B			2.9	B				7.9			8.9
	53	t p											
	54			8.6?			8.7?						
	55	t p											
	56			9.8?			10.0?						
too near edge	57												
	58	B			1.1?					7.8q			7.9
	59		8.1?	5.8?		8.7	8.2?						
	60		7.7?	t p		8.2	8.1						
too near edge	61												
	62			9.3?			9.4						
too near edge	63												
	64		6.0?			7.9?							
	65			10.6?			10.6						
	66	B			1.8					8.3			8.2
	67	1.8?			3.8	B				8.9 9.2			9.1
	68	t p											
	69		6.6?			4.7?							
	70			8.2?			8.7						
t.p.	71												
t.p.	72												
	73		5.8?			7.1							
	74			8.4?			8.8						
	75	3.8?			4.7	4.6				10.2			10.7

Saturday May 6, 1916

Yerkes 0.205

Scale 2

	Ex a			Exp B			g			h		
	a	B	c	a	B	c	a	B	C	a	B	e
76			10.8?			10.7						
77			9.7			10.4						
35 = 78			8.8			8.8						
79	3.0?			4.9	4.8				10.2			10.0
80	tp											
81	tp											
82			8.9?			8.9						
83	2.8?			4.1	B				9.9			9.1
84	2.8?			4.9	4.7				10.1			10.3
85	tp											
86			9.4?			9.1						
87			8.8?			8.9						
88			9.0?			8.9						
too near edge 89												
too near edge 90												
too near edge 91												
92	~~9.8~~		9.8			10.0						
93			9.7?			9.8						
94	tp											
95			8.8?			8.7						
96			9.6?			9.7						
97	tp					9.8						
98	3.9?	4.8?		5.3	5.8				11.1			10.9
99			11.1?			11.1						
100	tp					9.6?						
101	3.8?			4.9	4.9				10.1			10.6
102	tp											
103		6.8?			7.2							

Saturday May 6, 1916

Yerkes 0.205

Scale 2

	Exp a			Ex B			g			h		
	a	B	e	a	B	e	a	B	e	a	B	e
104			7.9?			8.2?						
105			9.9?			9.1						
106	tp											
107			7.7?			8.6						
108			8.6?			8.7						
109		4.7?		6.0	5.9				10.8			10.9
110			10.2?			10.1						
111			9.7?			9.0						
112	B			4.1q					10.8			
113	tp					8.9?						
114			8.9?			9.1						
115			9.3?			8.9						
116			10.1?			10.7						
117			8.7?			8.8						
118	B			2.9	B				9.2			9.3
119	B			2.8					8.9			8.9
120			9.5?			9.9						
121	~~tp~~		10.9			10.7						
122	B			2.1?					8.6			8.8
123	tp											
124		6.8?			7.7				11.1?			
125	B			2.1q					8.9			9.2
126			8.5?			8.7?						
too near edge 127												
too near edge 128												
too near edge 129												
too near edge 130												

Saturday, May 6, 1916

Yerkes 0.205

Scale 2

	Esp A			Esp B			g			h		
	a	B	C	a	B	C	a	B	C	a	B	C
To near edge 131												
132	tp											
133	tp											
134	tp											
135	tp											
136	tp											
137	tp											
138	tp											
139	tp											
36			10.7?			10.7						
31	B			3.6	B			8 ~~7~~				9.0
38			10.1?			10.2? q						
32a	3.7?	B		4.8?	5.4			10.7				10.8
24	B			B			3.0			2.7		
34			7.8?			8.5						
29	B			B			3.8			3.8		
32	3.8	B		5.1	5.5			10.9				t.p.
33		5.8?			6.~~8~~7?			q				11.2?
34a			8.2?			8.7						

Stars numbered 51 to 139 marked on Yerkes Plate O 205.

11.05

11.10

Saturday, May 6, 1916

Yerkes 0.205

Scale p

	Esp A		Esp B		g			h	
	Sc1	Sc2	Sc1	Sc2	Sc1	Sc2	Mean g, h	Sc1	Sc2
15	B		B		2.7 2.4		2.4 a.		
16	B		B		2.8? 2.5?		2.5? a.		
17	B		B		3.0? 2.7?		2.70? 00	3.0? 2.7?	
23	B		2.0? 1.7?		3.7? 3.4?		3.40? 00	3.7? 3.4?	
24	B		B		4.8 4.5		4.45 10	4.7 4.4	
27	tp								
28	tp								
29	B		2.8? 2.5?		4.3 4.0	4.7 4.35	4.45 10,10	4.5 4.2	4.9 4.55
31	3.7? 3.4?		4.2 3.9?			8.4 ~~[illegible]~~	8.4 ~~48~~ Ⓡ a		4.8 Rej.
32	4.2? 3.9?		6.2? 5.9?			9.6	9.6 ~~58~~ a ~~R~~ R		5.8 Rej.
32a	5.2? 4.9?		6.6? 6.3?	5.0		9.6	9.65 01		9.7
33		6.3?		6.8	q		10.0 .a		10.0
34		7.9?		7.9					
34a		8.4?		8.6?					
77 = 35		8.0?		8.6?					
36		9.6?		9.7					
not seen 37									
38		9.7		9.2					
2	B		B		B				
7	B		B		B				
12	tp								
35a		9.7?		9.6					
51	tp								
52	tp								
53		8.0?		8.4?					
54		7.8?		7.8					
55	tp								
56		9.1?		9.2					

Saturday May 6, 1916

Yerkes 0.205

Scale p	Exp a Sc1	Exp a Sc2	Exp B Sc1	Exp B Sc2	g Sc1	g Sc2	h Sc1	h Sc2
57		9.8?		tf.				
58	2.0?		3.7?q			7.8q		7.9q
59		7.7?		8.0?q				
60		6.8?		7.7?				
61		9.1?		9.2?				
62		8.8?		8.8				
63	tp							
64		6.4?		7.5?				
65		9.6?		9.7				
66	2.1?		3.8?			7.8		7.8
67	3.9?		5.0	4.8		8.7		
68	tp							
69		10.1		9.7?q				
70	tp							
71	tp							
72	tp							
73		5.7?		6.8		10.1		9.8
74		8.4?		8.4				
75		4.2?	5.8	4.9		9.6		9.7
76		9.8?		9.6				
77		8.8		9.1				
35 = 78		8.3?		8.6?				
79	4.9?	x	5.6	5.8		9.2		9.4
80	tp							
81	tp							
82		8.6?		8.6				
83	4.7?		5.6	5.7		9.2		9.5
84	4.6?		5.6	5.8		9.3		9.5
60a		9.6		9.8				

Saturday May 6, 1916

Yerkes 0.205

Scale p	Exp a Sc1	Exp a Sc2	Exp B Sc1	Exp B Sc2	g Sc1	g Sc2	h Sc1	h Sc2
85	tp							
86		8.9?		8.7				
87	8.6?	→		8.7				
88		9.0?		8.7				
89	tp							
90		5.2?	B	6.7		9.7		9.8
91	tp							
92		9.3?		9.1				
93		9.0?		9.1				
too near edge 94	h							
95		8.8?		9.0				
96		9.2?		9.0				
97		9.2?		9.4				
98	5.0	5.5?	5.5	6.3		9.9		9.9
99		9.8?		10.0				
100	tp			8.6				
101	5.0?		5.8?	5.8		9.5		9.6
102	2.0?		3.0?			7.8?		7.9?
103		7.6?		7.7				
104		7.9?		7.8				
105		8.7?		7.7				
106	tp							
107		8.9?		9.6				
too near edge 108								
109		6.8?	6.8	6.6?		9.7		9.9
110		9.4		9.4				
111		7.7?		8.7				
too near edge 112								

YELLOW

Saturday May 6, 1916.

Yerkes 0.205

Scale p	Exp A Sc1	Exp A Sc2	Exp B Sc1	Exp B Sc2	g Sc1	g Sc2	h Sc1	h Sc2
113		8.6		8.6?				
114		7.7?		8.9?				
115	~~2.9~~	9.0?	~~3.8?~~	7.9		~~8.9~~		~~7.7~~
116		9.2?		9.6				
117		7.9?		8.1				
118	3.8?		4.5	4.5		7.8		8.8
119	4.0?		4.8	B		7.4		8.3
120		8.9?		8.9?				
121		9.8		9.4?				
122	3.1?		3.9			8.3		8.4
123	tp							
124	tp							
125	2.9		3.8?			8.3		8.7
126		4.9?		8.0		10.1		10.1
127	tp							
128	tp							
129	tp							
130	tp							
131	tp							
132	tp							
133	tp							
too near edge 134								
135		9.8?		9.2				
too near edge 136								
137	tp							
too near edge 138								
139	tp							
140	B		B		2.9?		2.8	
141	B		B		2.6?		2.7	

YELLOW

Saturday, May 6, 1916.

Yerkes 0.205

Scale p	Exp A Sc1	Exp A Sc2	Exp B Sc1	Exp B Sc2	g Sc1	g Sc2	Mean g, h	h Sc1	h Sc2
What star? 35		9.7?		9.7					
32	4.7? 4.4?		5.8 5.5	6.2	9.9 9.6		9.6 a.	tp	
34a		8.0?		8.2					
33	6.0? 5.7?	5.9?	6.7 6.4	5.7	9		9.9 . a	~~9.9~~ 9.9	
36		9.7?		9.7					
31	2.8? 2.5?		5.3 5.0	4.7		9.0	9.00 0 0		9.0
38		9.4?		9.7q					
32a	5.0? 4.7?		5.9? 5.6?	5.7?		9.5	9.60 1 1		9.7
16	B		B		2.5 2.5		2.55 1 0	2.9? 2.6?	
17	B		B		3.0? 2.7		2.65 1 0	2.9? 2.6?	
34		7.8?		7.9					
29	B		2.6? 2.3?	~~6.3~~	5.2 4.9	5.00 11 5.1	5.15 15 15	5.3 5.0	5.30 3 3 5.6
24	B		2.0? 1.7?		4.4? 4.1?		4.10 0 0	4.4? 4.1?	

	p.11 Mean	p.15 ~~p.11~~	Mean				Mean		p.11 Mean g, h	p.15	Mean		
15	B	.	B		B		B		2.4	.	2.4	a.	
16	B	B	B		B	B	B		2.5	2.55	2.52	02,03	
17	B	B	B		B	B	B		2.70	2.65	2.68	02,03	
23	B	.	B		1.7?		1.7? a		3.40	.	3.40	a.	
24	B	B	B		B	1.7?	1.7? B a		4.45	4.10	4.28	19, 18	
29	B	B	B		2.5?	2.3?	2.40	1,1	4.45	5.15	4.80	35,35	
31	3.4?	2.5?	2.95	4,5	4.9?	4.85	4.88	02,03	8.4	9.00	8.70	30,30	
32	3.9?	4.4?	4.15	3,2	5.9?	5.85	5.88	02,03	9.6	9.6	9.60	00,00	
32a	4.9?	4.7?	4.80	1,1	6.3?	5.65?	5.98	32,33	9.65	9.60	9.62	03,02	
33	6.3?	5.80?	6.05	25,25	6.8	6.55	6.68	12,13	10.0	9.9	9.95	05,05	
34	7.9?	7.8?	7.85	1,0	7.9	7.9	7.90	0,0	.				
34a	8.4?	8.0?	8.20	2,2	8.6?	8.2	8.40	2,2	.				
35a	9.7?	9.7?	9.70	0,0	9.6	9.7	9.65	0,1					
35	8.0? 8.3?	.	8.15	a.	8.6? 8.6?	.	8.60	a.					12.00
36	9.6?	9.7?	9.65	0,1	9.7	9.7	9.70	0,0					
38	9.7?	9.4?	9.55	1,2	9.2	9.7q	9.45?	2,3					

Monday, March 26, 1917

2 25

Messier 15. Estimates of Magnitudes of Stars in Sequence
Intervals, Argelander Method

	Mean	Resid.	H 1751	H 1745	H 1749	H 1746	H 1180
a	39	11111011	a5b	a3b	a3b	a3b	a3b
b	24	10121002	b3c	b2c	b3c	b4c	b$\overset{3}{2}$c
c			c0d	c0d	c2d	c1d	c2d
d	15	22010010	d3e	d4e	d3e	d2e	d4e
e	23	12102211	e1f	e0f	e1f	e0f	e0f
f	09	01011110	f0g	f1g	f0g	f0g	f1g
g	01	01001100	g3h	g3h	h defect.	g3h	g3h
h	30	00.00000	h0k	h$\overset{3}{2}$k	g5k	h2k	h3k
k	27	30.10101	k3l	k0l	k2l	k1l	k1l
l	08	21100211	l1m	l4m	l0m	l2m	l2m
m	19	12200202	m2n	m2n	m1n	m0n	m3n
n	04	22103120	n50	n10	n40	n40	n30?F
o	36	13001321	o2p?7	o6p	o3p 7	o3p	o2p?F
p	35	22112 1..	p3q?7	p2q	p1q?7	p0q	q n.s.
q	15	1012....					

Stars m, n, o, and p are always near limit of visibility. Observations marked (?) are retained, as they are practically as good as any others.

2 35

Monday March 26, 1917

2 35

Messier 15 Estimates Cont.

	~~M~~ H 1184	H 1752	H 1071
Sum	a4b	a5b	a5b
a 0.00	b2c	b2c	b0c
b 0.39	c2d	c3d	c2d
c 0.63	d0e	d1e	d1e
d 0.78	e2f	e2f	e1f
e 1.01	f1g	f0g	f0g
f 1.10	g3h	g3h	g3h
g 1.11	h4k	h3k	h4k
h 1.41	k1l	k0l	k0l
k 1.68	l4m	l2m	l0m
l 1.76	m1n	m2n	m0n
m 1.95	n10	n60 F	n50
n 1.91	o5p F	p n.s.	
o 2.27	p0q F	q n.s.	
p 2.62			
q 2.77		poor plate	

2 45

Monday, March 26, 1917

~~H~~ 2 45 Messier 15.

Estimates of magnitudes of faint stars in terms of grating.

Greek letters are diffs. in gr of br. stars,

Magn from MC Series. Bk9a:202

α	$10.1\overset{2}{8}$
β	10.64
γ	11.25
δ	11.36
ε	10.91
ζ	11.59
η	12.30
θ	12.74
K	13.12

H 1752 ~~H 107~~

10.12 α 3 a 10.42 10.43 01, 01
10.44 a 2 β 10.64

α 5 b 10.62 10.74 12, 10, 21
b 0 β 10.64
10.95 b 3 γ

β 1 c 10.74 10.84 10, 11
10.95 c 3 γ

β 3 d 10.94 11.00 $\overset{06}{\cancel{22}}$, 25, 19
11.25 d 0 γ ~~11.25~~ ~~10.95~~
10.81 d 1 ε
(δ too poor)

γ 1 e 11.35 $11.0\overset{3}{2}$ $3\overset{2}{8}$, 32
10.71 e 2 ε

ε 1 f 11.01 11.15 14, 14
11.29 f 3 ζ

ε 1 g 11.01 11.10 09 09
11.19 g 4 ζ

ε 2 h 11.11 11.20 09 09
11.29 h 3 ζ

ε 5 K 11.41 11.63 22 04 27
11.59 K 0 ζ
11.90 K 4 η

ζ 1 l 11.69 11.84 15 16
12.00 l 3 η

ζ 4 m 11.99 12.10 11 10
12.20 m 1 η

ζ 2 n 11.79 11.90 11 10
12.00 n 3 η

η 3 0? 12.60? 12.60? a.
K ft

Very poor plate

255

Monday, March 26, 1917

3 40 Messier 15

Estimates cont.

Mean p18, p19

H $175\overset{2}{\beta}$ (repeated by mistake

10.40 03 02 α 3 a 10.42 $10.\overset{38}{46}$ 04 04
10.34 a 3 β

10.74 00 00 α 6 b 10.72 10.74 02 10 11
10.64 b 0 β
10.85 b 4 γ

10.80 04 03 α 6 c 10.72 10.77 05 13 18
10.64 c 0 β
10.95 c 3 γ

11.00 00 00 β 2 d 10.84 11.00 16 15
11.15 d 1 γ

10.96 07 06 β 3 e 10.94 10.90 04 35 39
11.25 e 0 γ
10.51 e 4 ε to

11.08 07 08 ε 1 f 11.01 11.00 01 01
10.99 f 6 ζ

11.15 05 05 ε 3 g 11.21 11.20 01 01
11.19 g 4 ζ

11.25 05 05 ε 4 h 11.31 11.30 01 01
11.29 h 3 ζ

Mean p18, p19

ε 7 K 11.61 11.70 09 11 20 11.66 03 04
11.59 K 0 ζ
11.90 K 4 η

ε 5 l 11.41 11.45 04 04 11.64 20 19
11.49 l 1 ζ

ζ 3 m 11.89 12.10 21 20 12.10 00 00
12.30 m 0 η
θ sup.
K too ft.

ε 5 n 11.41 $11.6\overset{7}{4}$ 26 08 33 11.78 12 11
11.59 n 0 ζ
12.00 n 3 η

η 3 0? 12.60 12.60? a 12.60? 00 00

Monday, March 26, 1917

Messier 15

Estimates Cont.

H 1749

α 2 a 10.32 10.43 11 11
10.54 a 1 β

α 4 b 10.52 10.58 06 06
10.64 b 0 β
b – γ.

ε 5 l 11.41 11.45 04 04
11.49 l 1 ~~β~~ζ
ζ, not η March 27, 1917.

η 1 o 12.40 12.71 31 31
13.02 o 1 K 7

K 2 p ? 7 13.32 13.32? a.

K 3 q ? 7 13.42 13.42? a.

Stars omitted
are not com-
parable with
diffr. images

H 1751

α 3 a 10.42 10.43 01 01
10.44 a 2 β

α 5 b 10.62 10.67 05 03 08
10.64 b 0 β
10.75 b 5 γ

β 2 c 10.84 10.84 00 01
10.85 c 4 γ

β 5 d 11.14 11.10 04 05
11.05 d 2 γ

β 6 e 11.24 11.20 04 05
11.15 ~~10.81~~ e 1 γ

β 6 f 11.24 11.20 04 05
11.15 f 1 γ

β 7 g 11.34 11.13 21 12 32
11.25 g 0 γ
10.81 g 1 ε

ε 2 h 11.11 11.10 01 01
11.09 h 5 ζ

Monday, March 26, 1917

Messier 15

Estimates Cont.

H 1751 cont

ε 3 k 11.21 11.20 01 01
11.19 K 4 ~~b~~ g ζ

ε 5 l 11.41 11.40 01 01
11.39 l 2 ζ

ζ 1 m 11.69 11.90 21 20
12.10 m 2 η

ε 7 n 11.61 11.73 12 14 27
11.59 ~~ζ~~ n 0 ζ
12.00 n 3 η

η 1 o 12.40 1$\overset{2}{\cancel{1}}$.66 26 26
12.92 o 2 K

K 2 p ? 13.32 13.32? a.
K 3 q ? 13.42 13.42? a.

	H1749 p. 20	H1751 20, 21	H1752 19	Mean		+3.42
a	10.43	10.43	10.40	10.42	01, 01, 02	13.84
b	10.58	10.67	10.74	10.66	08, 01, 08	14.08
c	.	10.84	10.80	10.82	. 02, 02	14.24
d	.	11.10	11.00	11.05	. 05, 05	14.47
e	.	11.20	10.96	11.08	. 12, 12	14.50
f	.	11.20	11.08	11.14	. 06, 06	14.56
g	.	11.13	11.15	11.14	. 01, 01	14.56
h	.	11.10	11.25	11.08	. 08, 07	14.50
k	.	11.20	11.66	11.43	. 23, 23	14.85
l	11.45	11.40	11.64	11.50	05, 10, 14	14.92
m	.	11.90	12.10	12.00	. 10, 10	15.42
n	.	11.73	11.78	11.76	. 03, 02	15.18
o	12.71	12.66	12.60?	12.66	05, 00, 06	16.08
p	13.32?	13.32?	.	13.32?	00, 00.	16.74?
q	13.42?	13.42?	.	13.42	00, 00.	16.84?
x						

400

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Messier 15

Estimates of Intervals between successive Comparison Stars.

	MW 2602	MW 2620	MW 2588	MW 2619			Sum
e	e2f	e0f	e1f	e1f	e	10 1100	0.00
f	f2g	f1g	f2g	f2g	f	18 0100	0.10
g	g1h	g1h	g2h	g0h	g	10 0011	0.28
h	h1k	h2k	h2k	h2k	h	18 1000	0.38
k	k2l	k0l	k1l	k0l	k	02 2010	0.56
l	l3m'	l3m'	l3m'	l3m'	l	-30 0000	0.58
	m'1n'	m'0n'	m'1n'	m'1n'	m	-08 0100	0.88
	n'1o'	n'1o'	n'0o'	n'1n	n	05 1201	0.96
	o'0n	o'1n	0n n2m	n1o'	n	100 0101	1.01
	n1m	n1m	m50	o'2m	o	18 1000	1.01
	m40	m40	o1p'	m20	m	38 0012	1.19
	o0p'	o0p'	p'3p	q0p' p'3q	o	-02 0010	1.57
	p'3q'	p'4p	p2q'	q'2p	p	-38 1011	1.59
	q'1p	p0q'	q'1q	p2q	q	08 2111	1.97
	p3q	q'3q	q4r'	q2r'	pq	28 0001	1.89
	q0r'	q'1r'	r'3s'	r'3s'	qr	18 2120	$2.\overset{1}{2}7$
	r'3s'	r'3s'	s'3t'	s'4t'	sr	30 0000	$2.\overset{3}{\cancel{4}}5$
	s'2t'	s'2t'			s	-28 1101	$2.\overset{6}{\cancel{7}}5$
					t		$\overset{2}{\cancel{3}}93$

The effect of distance appears to vary on different plates. Stars brighter than l are uncertain

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Wednesday, May 9, 1917

Messier 15.

Distances of Comparison stars from Centre of Ref

	H1749	H1750	1752	MW 2602 (center of ref)	MW 2619 ~~Same~~ Diam 25mm	MW 2588 Center of cluster ~~Same~~ Diam 18mm	MW 2613 Centre of cluster Diam 15mm	MW 2609 Not center of cluster Diam 15mm
α	15	10	9					
β	11	18	13					
γ	17	11	9					
δ	4	7	12					
ε	21	19	11					
ζ	22	23	13					
η	15	17	8					
θ	14	17	8					
κ	16	20	12					
a	10	13	4	8	8			11
b	9	12	6	~~6~~ 8	8			9
c	14	18	9	6	6			10
d	11	14	5	6	6			9
e	14	17	9	6	6			9
f	13	18	11	7	7			5
g	14	19	10	10	10			12
h	14	19	10	9	9			11
k	10	16	9	6	6			3
l	14	19	11	8	8			6
m	14	19	11	9	10			7
n	14	20	12	11	11			8
o	15	21	13	13	13			10
p	16	22		15	14			12
q	16	21		12	12			10
p'				9	9			8
m'				9	9			6
n'				8	8			7

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Messier 15

Estimates of Diffraction images on H plates, in Grades)

H1749	H1751	H1752
α 2 β	α 4 β	α 6 β
β 8 δ	β 7 γ	β 4 γ
δ 1 γ	γ 0 δ	γ 0 δ
γ 0 ε	δ 1 ε	δ 0 ε
ε 4 ζ	ε 5 ζ	ε 5 ζ
ζ 2 η	ζ 2 η	λ ζ 3 η
η 1 κ	η 2 κ	κ n.S.
θ supp.		

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Comparison of Different Scales

		AH3 Meas. with Scale R A	B				Scale R Meas. with AH3		
A	1	2.7 3.0			A	1	-		
	2	4.0 4.3				2	.		
	3	5.5 5.8				3	-		
	4	6.7 7.0	6.8	6.90	4.3	4	1.2		1.2
	5	7.7 8.0	7.8	7.90	5.3	5	1.8		1.8
	6	8.8 9.1	9.0 8.8	8.97	6.3	6	2.9		2.9
~~6.~~	7		10.9		7.3	7	3.7	4.5	4.10
7.6	8		12.4		8.3	8	4.8	5.6	~~4~~5.20
8.3	9		13.6		9.3	9	5.8	6.6	~~5~~6.20
B	4	6.9 7.2	7.0	7.10	B	6	3.1		3.1
	5	7.9 8.2	8.6	8.40		7	4.0	4.2	4.10
	6		9.9			8	5.0	5.5 5.1	5.20
	7		11.8			9	5.9	6.0 5.8	5.90
	8		12.9			10	6.3 6.~~7~~3	6.1 6.2	6.22
	9		13.7			11	7.4 7.2 7.0 7.10	7.0 6.8	7.00
	10		14.2			12	~~8~~7.8 7.5 7.9 7.6 7.55	7.7 7.7	7.62
						13	9.0 8.3	8.6	8.45
						14		10.0	10.0

Comparison of Diff. Scales

Scale R reversed
Meas. with Scale AH3

		A		B	
	A 1				
	2				
	3				
4.3	4	1.0			
5.3	5	1.9			
6.3	6	2.9		3.1	
7.3	7	4.2		4.1	4.15
8.3	8	5.0		5.0	5.00
9.3	9	5.9		5.9	5.90
10.3	10	6.6		6.7	6.65
	B 6	3.1			3.1
	7	3.8		4.1	3.95
	8	4.9		4.9	4.90
	9	5.3		5.1	5.20
	10	5.9		6.2	6.0 6.03
	11	7.0		6.5	6.75
	12	7.5	7.3	7.0	7.15
	13	8.0	7.5	7.9	7.70
	14			9.2	

Scale AH 3 reversed
Meas. with Scale R

		A		B	
	A 1	3.1	3.4		
	2	4.2	4.5		
	3	5.6	5.9		
	4	6.7	7.0	6.8	6.90
	5	7.8	8.1	8.3	8.20
	6	8.5	8.8	9.9	9.35
	7			12.1	
7.6	8			12.9	
8.3	9			13.6	
	B 4	~~7.2~~ ~~6.9~~	7.2		7.2
	5	8.0	8.3	~~8.7~~ 8.0	8.15
	6	9.2	9.5	~~9.6~~ 9	9.55
	7			~~12.1~~ 11.8	11.8
	8			13.0	
	9			~~13.6~~ 13.8	
	16			14.3	

Comparison of Diff. Scales

Scale R reversed
meas. with AL

		A		B	
	A 1				
	2				
	3				
	4				
	5				
6.3	6	1.3	2.0		
7.3	7	2.9	3.5		
8.3	8	4.1	4.7		
9.3	9	5.2	5.8		
10.3	10	7.4	8.0	8.0	8.00
	B 6				
	7	2.2	2.8		
	8	4.0	4.6		
	9	4.8	5.4		
	10	6.0	6.6	6.9	6.75
	11	7.7	8.3	8.8	8.55
	12			10.0	
	13			11.6	
	14			13.9	

Scale AL reversed
Meas. with Scale R

		A		B	
1.7	A 1	5.4	5.7		
2.7	2	5.9	6.2		
3.7	3	7.2	7.5	6.9	7.20
4.7	4	8.2	8.5	8.0	8.25
5.7	5	8.9	9.2	9.1	9.15
6.7	6			10.1	
7.7	7			10.8	
8.7	8			11.2	
	B 7			10.0	
	8			10.6	
	9			11.0 6	
	10			11.8	
	11			12.0	
	12			12.7	
	13			13.2	
	14			14.1	

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Comparison of Different Scales

Scale P Removed
Meas. with Scale R

			A			B	
A	0.7	1	B				
	1.7	2	0.9?	1.2?	~~1.5?~~		1.2 ~~1.5~~?
	2.7	3	3.1	3.4	~~3.7~~		3.4
	3.7	4	5.0	5.3	~~5.6~~		5.3
	4.7	5	5.9	6.2	~~6.5~~		6.2
	5.7	6	7.8	8.1	~~8.4~~	8.2	8.15
	6.7	7				10.6	10.6
B		4	5.0	5.3	~~5.6~~		5.15
		5	6.6	6.9	~~7.2~~	6.7	6.80
		6				7.8	
		7				10.7	
		8				12.1	
		9				13.5	
		10				14.2	

Scale R Removed
Meas. with Scale ~~P~~ O

		A		B	
1.3	A 1	1.~~7~~0?	0.7?		0.7?
2.3	2	1.8?	1.5?		1.5?
3.3	3	2.7	2.4		2.4
4.3	4	3.0	2.7		2.7
5.3	5	3.7	3.4		3.4
6.3	6	4.8	4.5	4.6	4.55
7.3	7	5.6	5.3	5.~~5~~3	5.30
8.3	8	6.3	6.0	6.0	6.00
9.3	9			6.5	
10.3	10			7.0	
	B 6	4.5	4.2	4.6	4.40
	7	5.5	5.2	5.0	5.10
	8	6.0	~~6~~5.7	~~6~~5.8	5.75
	9			6.3	
	10			6.8	
	11			7.0	
	12			7.7	
	13			8.8	
	14			10.0	

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Scale A L Diameters

			Diam.						$\sqrt{\text{Diam.}}$
1.7	A	1	160		162		161		12.7
2.7		2	152	8	145	17	148	13	12.2
3.7		3	~~115~~ 127	25	~~115~~ 122	23	124	24	11.1
4.7		4	115	12	115	7	115	9	10.7
5.7		5	100	15	107	8	104	11	10.2
6.7		6	87	13	92	15	90	14	9.5
7.7		7	82	5	83	9	82	8	9.1
8.7		8	67	15	72	11	70	12	8.4
	B	7	95		92		94		9.7
		8	86		79		82	12	9.1
		9	73		70		72	10	8.5
		10	68		65		64	8	8.0
		11	52		57		54	10	7.3
		12	46		50		48	6	6.9
		13	40		44		42	6	6.5
		14	35?		35?		35?	7	5.9

The ~~starting~~ zero of scale of Diameters is at 15

Scale A L has sharp images and a clear background and diameters are easily measured, except for images 1 to 4 inclusive, which are hazy

Thursday, May 10, 1917

Scale R. Diameters

		Diameter		Mean	√Diam.
A 1.3	1	355	350	352	18.8
2.3	2	263	310	286	16.9
3.3	3	253	280	266	16.3
4.3	4	230	232	231	15.2
5.3	5	210	218	214	14.6
6.3	6	180	175	178	13.3
7.3	7	162	155	158	12.6
8.3	8	146	132	139	11.8
9.3	9	123	115	119	10.9
10.3	10	104	98	101	10.0
B	6	182	188	185	13.6
	7	160	162	161	127
	8	127	130	128	11.3
	9	115	122	118	10.8
	10	108	113	110	10.5
	11	96	98	97	98
	12	89	88	88	9.4
	13	83	75	79	8.9
	14	50?	65?	60?	7.7?

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Scale for Diameters. Superseded by page 37

Measures to determine Value of Scale

Reading		perp.		D Mean mm			.0134R	O-C		OC
200	-75	30	25	.27.5	7.5 10.0	-078	2.68	-68	+26	+007
250	-25	35	30	.32.5	5.0	-028	3.35	-85	+9	-010
300	+25	40	40	.40.0	7.5	+047	4.02	-102	+8	-002
350	+75	45	45	.45.0	5.0	+097	4.69	-119	-25	-019
100	-175	10	10	.10.0		-253	1.34	-34	+60	-034
150	-125	15	20	.17.5		-178	2.01	-51	+43	-026
400	+125	~~45~~ 50	50	.50.0		+147	5.36	-136	-42	-036
450	+175	60	60	.60.0	10.0	+247	6.03	-153	-59	-003
2200	+400			2825		+538		-758	+138	-130 +007
8	-400			8		-537		-748 8	-134	-123 8
275				0.353				-94	-272 8	-.015
								+238 ~~50~~ -490 8) -272 -34	-35	

.00134
800) 1075
800
2750
2400
350
3200

$$D = \overset{-.015}{\cancel{-34}} + 0.00134\ R$$

D = Diameter expressed in millimetres

Adopted formula (page 37) Diameter = -0.036 mm +0.0014 R

The above measures were made with eyepiece ruled in millimetres. Results from glass plate ruled in mm on page 37 should be much better. Readings at +50, -50 and +45 0 were rejected because in the two former cases the distances are too small for accurate estimates, and in the latter, too near edge of field.

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Observations to Determine Elongation of Measurable Images.

Stars of Various Densities taken without identification.

~~B~~ a 3875H

R.A.	Dec.	Diff.
~~X~~	~~X~~	
120	180	60
142	185	43
100	155	55
115	145	30
75	135	60
100	140	40
752	940	288

Ratio 1.25

Mean diff. 48 = 0.0~~X~~67 mm ~~0.031~~

Images, while obviously elongated, could be easily measured with scale

a 6~~587~~053

R.A.	Dec.	Diff.	R.A.	Dec.	Diff
160	200	40	95	155	60
95	150	55	85	145	60
135	190	55	105	160	55

Images elongated, but measurable with scale

~~Mean~~ Sum	Sum	Sum
680	1000	325

Mean diff 54 = 0.0~~8~~76 mm ~~0.040~~

Ratio 1.47

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Obs. Cont.

a 5166

R.A.	Dec.	Diff	R.A.	Dec.	Diff
160	2~~45~~30	70	100	150	50
130	190	60	88	120	42
115	170	55	75	125	50

Sum R.A. 668 Dec. 9~~90~~85

Sum Diff. 327

Mean Diff. 54 = 0.0~~8~~76 mm ~~0.040~~ 0.076

Ratio 1.47

Images none elongated are often measured with scale

Faintest images have reading about 70. = 0.057 mm

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Measures of Densities Cont.

MC 10855 B+

R.A.	Dec.	Diff.	R.A.	Dec.	Diff.	
90	105	15	70	86	16	Sum R.A. 506 Dec. 690
57	78	21	68	83	15	Sum Diff. 124
53	76	23	85	105	20	Mean Diff. 18 = 0.025mm
			143	157	14	Ratio 1.22

Elongation slight

MC 11464 A-

85	88	+3	65	72	7	Sum R.A. 635 Dec. 665
105	105	0	132	140	8	Sum Diff. 30
68	68	0	65	72	7	
60	62	+2	55	58	3	Mean Diff 4 = 0.006mm

Faintest images about 50 = 0.031

Ratio 1.06

A difference of 10 in reading corresponds to 0.014 mm

For larger ratios, MC plates, see Book 39: 86-89, where four plates give differences of 30, 32, 27, 31, respectively, and ratios of 1.30, 1.43, 1.40, and 1.44. These latter plates are at the limit of elongation for scale measurements, but such plates are often measured. In millimeters the differences are 0.042, 0.045, 0.038, 0.043.

Plate MC 10855, above, is a fair sample of many plates, though as many or perhaps more, are as good as MC 11464

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Conclusions with Regard to Elongation of Images.

A Plates

Plate	Ratio	Diff.	Diff mm	
A 3875	1.25	48	0.~~067~~ ~~.031~~	Easily measurable with scale
A 6053	1.47	54	0.0~~67~~76 .040	Measurable, not easily
A 5166	1.47	54	~~0.067~~ 76 .040	" " "

Images more elongated than the above are often measured.

MC Plates

MC 10855	1.22	18	0.025	Elongation slight
11464	1.06	4	0.006	Good images
4835	1.30	30	0.042	
6286	1.43	32	0.045	much elongated
3758	1.40	27	0.038	" "
2876	1.44	31	0.043	" "

Smallest images on Bruce Plates have densities
of about 70 = 0.~~054~~ .079 0.062 mm = ~~5″~~ 3″.7
MC " 50 = 0.~~031~~ ~~.052~~ 0.034 mm = ~~5″~~ 3″.3

In general, a ratio, for faint images, of 1.5 between the two axes would be the limit of measurability with scale, and this will usually cause discordance in scale of Magn. For this ratio, the differences in millimeters corresponding are for A plates, 0.0~~7~~8, for MC plates, 0.0~~5~~4, expressed in arc, for A plates, 5″~~4~~, for MC plates, 4~~5~~″

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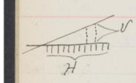
Scale for Diameters.
Measures with Glass Plate Ruled in Millimetres.



Reading	1-inch eye piece Vertical	Horizontal mm	2-inch eye piece Vertical	Horizontal	Mean V	H
0	~~0~~	0			.	
50	.03	1.05	.05-		.050	1.05
100	.10	2.10	.10	2,10	.100	2.10
150	20	3.15	.15	3.15	.175	3.15
200	.25	4.20	.25	4.20	.250	4.20
250	35	5.30	30	5.25	.325	5.28
300	.40	6.35	.35	6.40	.375	6.38
350	45	7.40	.40	7.40	.425	7.40
400	.55	$8.\overset{4}{\cancel{3}}5$	.50	8.45	.525	8.45
450	65	9.50	.60	9.50	.625	9.50
500			.70	~~28 50~~	.70	~~44 51~~
550			75	9 3	.75	4751 9 5.28
-50	.10	1.05	.05		-.075 ~~-.075~~	-1.05
-100	.20	$\overset{2}{\cancel{1}}.10$	.15		-.175	-2.10
-150	.25		.25		-.250	
-200	.30	4.20	.30	4.25	-.300	-4.22
-300						
-400						

$+\overset{28}{\cancel{36}}50$
- 800
13
+ .158

Omit ±50 and 450 + 2175
- 725
10
+ .145

The quantities at -50 and +50 in H are too small to read with accuracy, and 450 is toward edge of field. These three are, therefore, omitted for ~~H~~ V.

Wednesday, May 30, 1917

Read.	Resid ~~H~~ Read.	Resid. V	.00138 R	O-C	Omit. ±50 and 450 Resid. R	Resid. V	0.0139 R	O-C	Resid. R	Resid. H	0.021 R	O-C
-200 ~~-75~~	-335	+ $-\overset{4}{\cancel{3}}58$	-.276	-.024	-330	+ -.445	-.278	-.022				
— ~~150~~	$-\overset{2}{\cancel{4}}85$	+ -408	-.217	-.033	-280	+ -395	-.208	-.042				
— ~~100~~	-235	+ -333	-.138	-.037	-230	+ -.320	-.139	-.036				
- 50	-185	+ -233	-.069	-.006	-	-	-					
+ 50	-85	+ -108	+.069	-.019	-	-	-		-200	+ -4.23	1.05 ~~-4.24~~	0 ~~+1~~
100	-35	+ -058	+.138	-.038	-30	+ -.045	+.139	-.039	-150	+ -3.18	2.10 ~~-3.18~~	0
150	+15	+017	+.207	-.032	+20	+.030	+.209	-.034	-100	+ -2.13	3.15 ~~-2.12~~	0 ~~-1~~
200	+65	+092	+.276	-.026	+70	+.105	+.278	-.028	-50	+ -1.08	4.20 ~~-1.06~~	0 ~~-2~~
250	+115	+167	$+.34\overset{5}{\cancel{7}}$	-.020	+120	+.180	+.348	-.023	00	0.00	5.25 ~~00~~	+3 ~~8~~
300	+165	+217	+.414	-.039	+170	+.230	+.417	-.042	+50	+1.10	6.30 ~~+1.06~~	+8 +4
350	+215	+267	+.483	-.058	+220	+.280	+.487	-.062	+100	+2.12	7.35 ~~+2.12~~	+5 ~~2~~
400	+265	+367	+.552	-.027	+270	+.380	+.556	-.031	+150	+3.17	8.40 ~~+3.18~~	+5 ~~-1~~
450	+315	+467	+.621	+.004	~~+320~~		-		+200	+4.22	9.45 ~~+4.24~~	+5 ~~-2~~
+2250	+1155	+1594			+870	+1205		359	+500	+1661		~~5-6~~
- 500	-1160	-1598			-870	-1205		10	-500	-1062		+30
13		+3192				~~+2210~~ +2410		-.036				9
+ 135												+.033

1000) 21.23
0.0212

Unit of Scale = 0.0212 mm

Division of Scale = 0.212 mm

0.00138
2315) 3.192
2315
8770
6945
18250
18520

$0.001\overset{9}{\cancel{3}}8$
1740) 2.410
1740
~~4700~~
6700
5220
14800
13920
880

Omit ±50 and 450 +1750
- 450
10
+ .130

+50 to 450 2250
9
+250 Angle 3°.75

Diameter (mm.) = 0.00139 R - 0.036
0.0014 R - 0.036
0.0656 mm ∓0.036 mm

Wednesday July 18, 1917

Rich Region Southern Sobieski
Catalogue 4° Square. Discordances

No.	DM	RA.	Dec	
	$-7^{\circ}\left\{\begin{matrix}4677\\4678\end{matrix}\right.$	$18^h\ 37^m.8$	-7.5°	. South following component only measured according to DM southern component precedes. On plate it follows. Comparison of Plate I 19242, May 26, 1897 and MC 5497 May 1, 1914 shows no evidence of proper motion. Positions apparently interchanged in DM
204	-7° 4738	18 45.2		A star of about magn 10.5, photovisual is exactly in position of DM the star 204, which was measured has the magnitude 9.5 photovisual. Is position in DM out by 1′.2 (the distance of star 204 sought from the star having magnitude 10.5? Or was the brighter star left out of DM while fainter star was measured. Or is the star variable? Examination of 10 AM plates shows no variation in either star. Of course magnitude may have changed since Argelander's time

Wednesday, July 18, 1917

Rich Sout. Sob. Cont

Blue $\overset{0.00}{118}$ 5 $\overset{0.5}{103}$ 4 $\overset{0.9}{104}$ 1 $\overset{1.0}{102}$ 1 $\overset{119\ 0.9}{109}$ 1 $\overset{1.0}{105}$ 10 $\overset{2.0}{106}$

Yellow $\overset{0.0}{118}$ 0 $\overset{0.0}{103}$ 4 $\overset{0.4}{104}$ 2 $\overset{0.6}{105}$ 1 $\overset{0.7}{106}$ 0 $\overset{0.7}{119}$ 2 $\overset{0.9}{102}$

Blue - Yellow				Sp.	C. I.
	118	0.0	white	A3	0.82
	103	0.5	yellow	K0	1.21
	104	0.5	yellow	B×	0.55 ×
	102	0.1	white	A0	0.08
	105	0.4	yellow	K0	0.51
	106	1.3	red	..	0.98
	119	0.2	white	A0	0.23

The above estimates of comparative brightness on blue and yellow plates, by Argelander's method, while showing some discordances from the color indices found by measurement in general agree fairly well with color and spectrum, except for No. 104 which agrees with measured color but is discordant with spectrum B (not checked)

Notice that star 118 is estimated 0.5 magn brighter than star 103 on blue plate, but equal on yellow plate. This is confirmed by measures - Blue 118, ~~8.86~~ 8.86; 103, 9.35
Yellow 8.04 8.14

There certainly does not appear to be so great a difference in color as is indicated by spectra A3 and K. If the former ~~sp~~ color index is too large, the latter must be also. ~~It appears much so~~ In each case blue measure depends on pusion. comp. and yellow on one primary in. and one p.c. This probably accounts for ma

Wednesday, November 14, 1917

11 40 H 1298 124358

Observations of Brightness. Seq. on B 31 97

Reduction in black ink made with arbitrary magnitudes derived from measures on AM plates reduced in manner described in H.A. 60 No. 5.

d = 8.60
e = 8.98
f = 9.42
g = 9.70
h = 10.10
k = 10.72

AM 4300 7375.538
e 2 v 9.18, 9.32 9.25 07,07
v 3 f

AM 3370 6911.750
g 1 v 9.80, 9.80 9.80 00,00
v 3 h

AM 1724 6080.859
d 4 v 9.00, 8.98, 9.02 9.00 00, 02, 00
v 0 e
v 4 f

AM 4134 7291.754
~~f 1 v~~ g 1 v 9.80, 9.90 9.85 05, 05
~~v 2~~ v 2 h

AM 4194 7331.640
e 1 v 9.08, 9.22 9.15 07, 07
v 2 f

AM 4212 7341.611
f 2 v 9.62, 9.60 9.61 01, 01
v 1 g

AM 4364 7394.569
e 3 v 9.28, 9.42, 9.30 9.33 05, 09, 03
v 0 f
v 4 g

AM 3700 July 10, 1905 7037.532
e 2 v 9.18, 9.22 9.20 02, 02
v 2 f ~~9.22~~

AM 3444 6942.744
f 3 v 9.72 9.60 9.66 06, 06
v 1 g

AM 3487
Too poor

AM 3499 6972.663
f 2 v 9.62, 9.50 9.56 06, 06
v 2 g

AM 1970 May 27, 28, 29, 1903
f 3 v 9.72, 9.60 9.66 06, 06
v 1 g

AM 2117 6310.549
d 3 v 8.90 8.98 9.02 8.97 07, 01, 05
v 0 e
v 4 f

AM 2717 6638.556
f 3 v 9.72, 9.60 9.66 06, 06
v 1 g

Wednesday, Nov. 14, 1917

1150 H 1298 Cont.

AM 2738 6643.587
g 1 v 9.80, 9.90 9.85 05, 05
v 2 h

AM 2801 6664.560
e 1 v 9.08 9.12 9.10 02 02
v 3 f

AM 6101 May 9, 1909
f 1 v 9.52 9.40 9.46 06 06
v 3 g

AM 1808 3 exp. 6132.823
(1) f 1 v 9.52 9.50 9.51 01 01
v 2 g

(2) f 1 v
v 2 g 9.52 9.50 9.51 01 01

(3) f 1 v 9.52 9.50 9.51 01 01
v 2 g

AM 1839 6190.630
g 2 v 9.90 9.80 9.85 05 05
v 3 h

AM 1843
Too poor

AM 1899 6239.633
f 2 v 9.62 9.60 9.61 01 01
v 1 g

AM 1915 6241.639
e 1 v 9.08 9.22 9.15 07 07
v 2 f

AM 1944 6260.651
e 4 v 9.38 9.42 9.40 9.40 02 02 00
v 0 f
v 3 g

AM 1258 5887.579
e 1 v 9.08 9.12 9.10 02 02
v 3 f

AM 1411 5933.546
f 2 v 9.62 9.50 9.56 06, 06
v 2 g

AM 1467 5945.503
Broken

AM 1159 5820.663
f 1 v 9.52 9.40 9.46 06, 06
v 3 g

12 00

Wed. Nov. 14, 1917

12 ~~15~~ 20

H 1298 Cont

am 1229 5871.662
e 4 r 9.38 9.42 9.40 9.40 02 02, 00
r 0 f
r 3 g

7651.783
am 47~~7~~6 March 16, 1907 (4 written above the struck 7)
f 3 r 9.72 9.70 9.70 9.7~~2~~1 01 01 01
r 0 g
r 4 h

7699.602
am 4~~8~~98 May 3, 1907 (7 written above the struck 8)
e 3 r 9.28, 9.42, 9.40 9.37 09 05 03
r 0 f
r 3 g

7707.659
am 4825 May 11, 1907
g 2 r 9.90 9.90 9.90 00 00
r 2 h

7731.535
am 4901 June 4, 1907
f 1 r 9.52 9.50 9.51 01 01
r 2 g

7966.892
am 5287 Jan. 25, 1908
e 3 r 9.28 9.32 9.30 02 02
r 1 f

1230

am 5313 Feb. 27, 1908 7999.714
f 3 r 9.72 9.60 9.66 06 06
r 1 g

am 5320 March 9, 1908 8010.763
e 3 r 9.28 9.32 9.30 02 02
r 1 f

am 5342 March 28, 1908 8029.766
e 4 r 9.38, 9.42, 9.40 9.40 02 02 00
r 0 f
r 3 g

am 5375 Apr. 8, 1908 8040.685
e 1 r 908 912 910 02 02
r 3 f

am 5419 Apr. 29, 1908
f 2 r 9.62 960 961 01 01
r 1 g

am 5420 Apr. 29, 1908
f 2 r 9.62 960 961 01 01
r 1 g

am 5433 May 6, 1908 8068.628
g 2 r 9.90 980 985 05 05
r 3 h

Wed. Nov. 14, 1917

12 35

H 1298 Cont.

am 5439 May 7 1908
e 5 r 9.48, 9.42, 9.40 9.43 05, 01 03
r 0 f
r 3 g

am 5440 May 7, 1908
e 4 r 9.38, 9.32 9.35 03, 03
r 1 f

am 389 5705.821
e 5 r 9.48, 9.42, 9.30 9.40 08, 02, 10
r ~~2~~ 3 f
r 4 g

~~am 400~~

am 445 mult. in 5134.
(1) e 3 r 9.28, 9.12 9.20 08, 08
r 3 f

(2) e 2 r 9.18, 9.12 9.15 03, 03
r 3 f

~~am 446 mult. in~~
superposed

am 782 5518.540
g 3 r 10.00, 9.90 9.95 05, 05
r 2 h

am 738 5470.665
e 1 r 9.08, 9.02 9.05 03, 03
r 4 f

am 806 5532.606
e 1 r 9.08, 9.02 9.05 03, 03
r 4 f

am 846 (iso) 5547.66
e 4 r 9.38, 9.42, 9.40 9.40 02, 02, 00
r 0 f
r 3 g

am 928 5589.524
d 4 r 9.00, 8.98, 9.02 9.00 00, 02, 02
r 0 e
r 4 f

am 2098 6302.526
f 2 r 9.62, 9.60 9.61 01, 01
r 1 g

am 2442 6489.824
e 4 r 9.38, 9.42, 9.40 9.40 02, 02, 00
r 0 f
r 3 g

Wed. Nov. 14, 1917

12 40 H 1298 cont

am 2478 6549.790
f 1 v 9.52, 9.40 9.46 06,06
v 3 g

am 2529 6583.639
e 2 v 9.18, 9.12 9.15 03,03
v 3 f

am 2569 6593.655
f 2 v 9.62, 9.50
v 2 g

am 2588 6603.708
e 2 v 9.18, 9.12 9.15 03,03
v 3 f

am ~~3012~~ 3557 6991.639
f 2 v 9.62, 9.60 9.61 01,01
v 1 g

am 3604 7006.535
e 2 v 9.18, 9.12 9.15 03,03
v 3 f
Three rings of each star. No change

am 4053 7237.755
d 3 v 8.90, 8.98, 9.02 8.97 07,01,05
v 0 e
v 4 f

12 45

am 400 5110.573
d 4 v 9.00, 8.98 8.92 8.97 03,01,05
v $\overset{0}{4}$ e
v 5 f

am 1457 5945.503
e $\overset{3}{2}$ v 9.28, 9.32 9.30 02,02
v 1 f

am 1799 6130.735
e 1 v 9.08, 9.02 9.05 03,03
v 4 f

~~am 2645 6613.643~~
too poor

am 3306 6855.818
g 1 v 9.80, 9.70 9.75 05,05
v 4 h

am 3664 7021.597
e 4 v 9.38, 9.42, 9.40 9.40 02,02,00
v 0 f
v 3 g

am 3682 7030.533
f 3 v 9.72, 9.70, 9.60 9.67 05,03,07
v 0 g
v 5 h

12 55

Wed Nov. 14, 1917

1 05 H 1298 Cont

am 5525 8098.609
f 1 v 9.52, 9.60 9.5$\overset{6}{7}$ 04,04
v 1 g

am ~~3012~~ 5644 8131.537
f 2 v 9.62, 9.60 9.61 01,01
v 1 g

am 56$\overset{5}{6}$6 8133.619
d 4 v 9.00, 8.98 8.92 8.97 03,$\overset{01}{05}$,05
v 0 e
v 5 f

am 55$\overset{1}{X}$2
g 2 v 9.90, 9.80 9.85 05,05
v 3 h

am 5631
too poor

July 22 1906

am 5672 8145.670
d 3 v 8.90, 8.88 8.89 01,01
v 1 e

am 5524 8098.577
f 2 v 9.62, 9.60 9.61 01,01
v 1 g

1 15

am 5532 8099.513
g 1 v 9.80, 9.70 9.75 05,05
v 4 h

am 5571
f 2 v 9.62, 9.60 9.61 01,01
v 1 g

am 5630
g 1 v 9.80, 9.70 9.75 05,05
v 4 h

am 5533 8099.537
f 1 v 9.52, 9.50 9.51 01,01
v 1 g

am 5526 8098.638
e 5 v 9.48, 9.42, 9.50 9.47 01,05,03
v 0 f
v 2 g

am 5510 8092.531
g 1 v 9.80, 9.70 9.75 05,05
v 4 h

am 5519 8097.714
e 5 v 9.48, 9.42, 9.40 9.43 05,01,03
v 0 f
v 3 g

Wed. Nov. 14, 1917

1 45 H 1298 Cont.

am 5626 8127.598
e 1 v 9.08, 9.02 9.05 03,03
v 4 f

am 5545 8100.756
f 1 v 9.52, 9.50 9.51 01,01
v 2 g

am 5501 8090.524
e 3 v 9.28, 9.22 9.25 03,03
v 2 f

am 5546 8100.772
f 2 v 9.62, 9.50 9.56 06,06
v 2 g

am 5606 8119.525
e 4 v 9.38, 9.42, 9.40 9.40 02,02,00
v 0 f
v 3 g

am 5500 8090.496
e 1 v 9.08, 9.02 9.0~~3~~5 03,__
v 3 f

am 5671 8145.641
d 3 v 8.90, 8.88 8.89 01,01
v 1 e

am 5578 8097.698
e 4 v 9.38, 9.32 9.35 03,03
v 1 f

am 5625 8127.568
e 1 v 9.08, 9.02 9.05 03,03
v 4 f

am 5482 8082.647
e 3 v 9.38, 9.32 9.35 03,03
v 1 f

am 5662 8143.623
g 3 v 10.00, 9.90 9.95 05,05
v 2 ~~f~~ h

am 5657 8133.647
d 4 v 9.00, 8.98, 8.92 8.9~~8~~7 03,01,05
v 0 e
v 5 f

am 5514 8093.732
f 4 v 9.82, 9.70, 9.60 9.71 11,01,11
v 0 g
v 5 h

am 5661
badly
scratched

1 55

Wed. Nov. 14, 1917

1 55 H 1298 Cont.

am 5573 8093.578
f 2 v 9.62, 9.60 9.61 01,01
v 1 g

am 5471 8076.576
e 3 v 9.28 9.22 9.25 03,03
v 2 f ~~9.~~

am 5515 8093.748
g 1 v 9.80, 9.70 9.75 05,05
v 4 h

am 5448 8070.653
d 3 v 8.90, 8.98 9.02 ~~9.02~~ 8.97 07,01,05
v 0 e
v 4 f

2 00

Wednesday Nov. 14, 1917

H 1298

Estimates of Comparison Stars in terms of Preliminary Magn. of Seq. for 31 Ks.

31 K a $\overset{1}{4}$ = 8.3   2, 8.6   3, 8.8   4, 9.3   5, 9.7
6, 10.2   7, 10.7   8, 10.9   9, 11.0

Comparison Stars d, e, f, g, h, k for H 1298

Ann 3370

d	8.2?
e	8.6
f	9.0
g	9.5
h	10.0
k	10.8

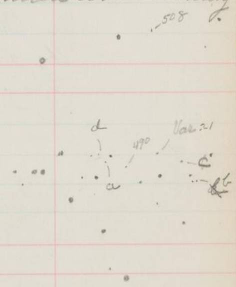
Thursday, November 15, 1917

Nebula of Orion

Examination of Stars which give discordant Magnitudes, when measured on yellow plates.

Bond 490. Magnitudes derived from MC 4909, 8048, 8206 are 13.49, 13.52, 12.76, respectively. On examination of plates it is found ~~that~~ the original measures were correct. On MC 8206 the star is certainly bright when compared with stars in the immediate vicinity. On 8206 it is slightly fainter than c, ~~about equal~~ brighter than ~~to~~ d, ~~and~~

c 1 (490) 1 d
(490) 4 e



MC 4209 Other Stars show Var
~~b 1 c 2 d 3 a 0 (490)~~
b 1 c 2 d 3 a 0 (490)

MC 8206
a 0 b $\overset{2}{3}$ c 1 (490) 2 d

MC 8048
a 1 b 0 c 4 d 2 (490)

Star a is Bond 516
b " " 370
c " " 399
d " " 524

MC 6775
b 1 a 0 c 2 (490) 1 d

d is susp. Var. 12 HC 78/p 5
Orig. No. 44

MC Cormick B 163
c 1 b 0 d 4 (a) (2 490)

MC Cormick B 164
b 1 c 3 d 2 a 2 490

(over)

~~Tues~~Thursday November 15, 1917

Nebula of Orion Cont.

The nebula interferes very much with measures of Bond 490 and stars a, b, c, and d on MC plates. There certainly appears, however, to be variation in (a) Bond 516 and in Bond 490. The ~~former~~ latter appears bright on MC 6775 and MC 8206; faint on MC 4209, MC 8048. Bond ~~490~~ 516 appears bright on MC 8048, 6775, and 8206; faint on MC 4209

On McCormick plates, the Nebula does not interfere with observations. They agree very well in showing both a and 490 faint

Conclusion Bond 490 appears faint on both McCormick plates and on 2 MC plates, while it appears bright on 2 MC plates

Bond 516 appears faint on both McCormick plates and on one MC plates; very bright on one MC plate, moderately bright on 2 MC plates

Both stars probably vary, but this should be confirmed by McCormick plates.

Bond 508 This star shows no variation on any of the six plates examined. The large residuals are due to accidental errors of measurement.

Friday, November 23, 1917

S Ursae Majoris.

3 40 Estimates of magnitudes on [illegible] plates examined by M.H.V.

AC 18433
n.s. < 12.5 e

AC 18629
Too poor e fogged ✓

AC 18815 ✓
10.1? e g/

AC 17512 ✓
n.s. < 11.0 e

AC 1762~~5~~9 ✓
n.s. < 10.3 e

3 50

Wednesday, Jan. 9, 1918

49 K)

Examination of Star 13 of the sequence, which according to Kapteyn is magn. 12.96, resid. -0.98. He makes it brighter than Star 10. Examined and found of normal brightness, 13.9, on the following plates.

MC 1649
I 31216
I 24163
MC 2335 already measured in series.

Thursday, January 23, 1918

12 15 V Persei (Nova No. I)
Estimates on Early Plates

B 2068
9.3 ? Image defective?

B1977
9.5

B1979
9.3

B1954
9.6 e

B1953
9.6?e

The comparison stars a, b, c, magnitudes 8.6, 9.1, 9.8, are off the edge

B1818
Spectrum plate
No safe estimate can be made. Spectrum extremely faint.

(over)

Thursday January 24, 1918

12 35 V Persei Continued.

Plates Reversed

B1977
9.2

B1953
9.6

B2068
9.2

B1954
9.6e

B19~~2~~71x
9.~~4~~

On all of the plates the images are very large and estimates difficult.

On B1977 the two estimates are 9.2 and 9.5. Inspection of plate shows that neither is certainly wrong. Retain both.

Wednesday, January 30, 1918

1 05 Nova Persei No. 2
Estimates on Plates from Lowell Observatory

Date	Magn.
Nov. 12, 1917	14.3✓
Nov 11	13.9✓
" 9	13.5✓
" 5	13.3✓
Oct 19	14.6✓
" 18	14.7✓
Aug. 14	14.8✓
" 12	14.7✓
July 31	13.6✓
July 30	13.5✓
July 27	13.8?✓ nebula troublesome
Mar. 19	13.5✓
Mar. 17	13.7✓
Feb 8	12.8✓
Mar 13	13.5?✓ nebula troublesome

1 15

(over).

Wednesday, Jan. 30, 1918

Nova Persei No. 2.
Plates from Lowell Observatory.
South at Top

1 50

Aug. 12, 1917	14.7 ✓	Neb. ~~19~~ 18.5	
Nov. 12, 1917	14.6 ✓	Neb. n.s. < 18	
Oct. 19	14.6? ✓	Neb 18.5	~~troublesome~~
July 30	13.4 ✓	18.5	
Oct 18	14.7 ✓	< 18	
Nov. 9	13.5 ✓	< 18	Star-like obj. just def. n p 17th mag.
Mar. 17	13.5 ✓	18.5?	
Mar. 17	13.7 ✓	18.5	
Nov. 5	13.4 ✓	< 18	
Mar. 19	13.5 ✓	< 18	
Nov. 11	13.8 ✓	< 18	
July 27	14.1 ✓	18.5	troublesome
Feb. 8	12.8 ✓	18.5	
Aug. 14	14.9 ✓	18.5	
March ~~Nov~~ 13	13.8?	18.5	troublesome
July 31	13.6?	18.5	troublesome

2 05

The object on plate of Nov. 9 is certainly a defect. No trace of it on any other plate. Shape slightly different from that of star images.

There is no evidence that the brightness of the nebula changes, though observations are so difficult that this cannot be said to be certain. Comparison of plates of March 13 and Oct. 19 seems to prove that there is no change.

Friday, February 1, 1918

4 00 Nova Persei No. 2
Estimates on Early Plates

I 4928 ✓
n.s. < 13.2

✓ I 2563
n.s. < 12.9

✓ I 17098
7? < 13.2

✓ I 5007
n.s. < 12.5

✓ I 10233
n.s. < 12.6

✓ I 16965
7? < 13.2

✓ I 10251
n.s. < 13.2

✓ ~~I~~ 2402
7? < 12.9
Reject ~~plate~~ definite estimate.

✓ I 7958
7? < 13.6
Reject ~~plate~~ definite estimates.

4 20

✓ I 11614
13.2
A clear excellent image
Certainly bright as compared with I 7958

✓ I 23552
12.7? ef ~~F~~
Very poor, but certainly bright.

✓ I ~~21649~~ 19305
13.6

~~I 16100~~

Remark Plates found exchanged in envelopes Feb. 5, 1918 and evidently were so exchanged when observation was made. See below for I 21649

✓ AC 18550
13.0? f

✓ AC 11007
12.4? f n.s.?
Very uncertain

AC 8317
✓ 11.8? f n.s.?
Very uncertain.

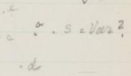
I ~~193~~21649 (Recorded Feb. 5, 1918)
13.8

Friday, February 1, 1918

4 40 T Coronae

Examination to see if there is Variability

Plates selected by M.W.V.



c 10.23
d 10.58
e 10.96
f 11.4^2
g 11.79
h 12.32

✓ I 28786 (Companion star plate)
10.96 e 3 v 11.26, 11.22
v 2 f 11.42 11.24 02, 82

AC 6368
✓ e 4 v 11.36, 11.32
v 1 f

✓ AC 8326
e 4 v 11.36, 11.32
v 1 f

AC 324
✓ e 4 v ? 11.36, 11.42
v 0 f ?
At lim. of vis.

✓ AC $\overset{28}{\cancel{19}}$16
e 4 N < 11.3

AC 2787
✓ e 4 v 11.36, 11.32
v 1 f

✓ AC 3724
e 3 v 11.26, 11.22
v 2 f

AC 3724 Cont.
Star near a bright (call it s)
c 2 s
s 1 d

AC 3753
✓ d 4 v 10.98, 10.96, 10.92
v 0 e V = 10.95 03, 01, 03
v 5 f
Images poor
c 3 s
s 0 d
s $\overset{3}{\cancel{2}}$ e

AC 5106
✓ e 4 v 11.36, 11.32
v 1 f

s normal

AC 1916
too poor

Friday, Feb. 1, 1918

T Coronae Cont

✓ AC 7389
e 4 v 11.36, 11.32
v 1 f
s normal

AC 8505
11.46, 11.42
(e? c) 5 v ~~10.73~~, ~~10.58~~, 11.69
v 1 f V = 11.52
v 1 g
s normal

AC 10163
✓ e 3 v 11.26, 11.22
v 2 f
s normal

✓ AC $\overset{16477}{\cancel{17621}}$
e 4 v 11.36, 11.32
v 1 f

AC 10163
✓ e 2 v 11.16, 11.12
v 3 f
s normal

✓ AC 13946
e ~~f~~ 4 v 11.36, 11.32
v 1 f
s normal

✓ AC 11700
e ~~f~~ 3 v 11.26, 11.22
v 2 f
s normal

AC 12397
✓ g 1 v 11.89, 12.22
v 1 h V = 12.06
F
Certainly faint.
s normal

AC 13105
✓ g 3 v 12.09, 12.22
v 1 h V = 12.16
V looks hazy
s normal

✓ AC 15232
d 2 v 10.$\overset{7}{\cancel{8}}$8, 10.86
v 1 e V = 10.82
s normal

Friday, Feb. 1, 1918

T Coronae

Observations of suspected Star S

AC 5106
S normal

AC 3753
normal

AC 3724
normal

AC 2787
d 4 S
S 0 e
S 5 f

AC 2816
d 3 S?
S 1 e?
faint, perhaps normal

AC 324
c 1 S
S 1 d

5 10

Too dark to continue

Friday, Feb. 1, 1918

Examination of Star 9 in Sequence for Carte Region at 4^h, $-23°.5$

$-24°$ 2096 $4^h 1.1^m$ $-24°.0$ 9.6

Approximate Magnitudes from Series Plates

8	11.2
10	11.9
11	12.0
12	12.3
13	12.6
14	12.7

Miss Mackie confirms this star as variable with a range of less than a magnitude. See her Book 2:115

It was picked up by H.S.L. on account of discordance on MC series plates. Inspection of plates showed slight variation.

It is well seen near minimum (?) on AM 2298

⑪ 3 ⑨ 1 ⑫ 12.3, 12.2 12.25

AM 3781

⑧ 5 ⑨ $\overset{4}{3}$ ⑩ 11.7, 11.5 11.60

AM 3063

⑧ - ⑨ 0 ⑩ 3 ⑪ Bright 11.9, 11.7 11.80

B 17802

⑬ 3 ⑨ 2 ⑭ (faint) 12.9, 12.5 12.70

B 16993

Variation about 0.5 mag.

⑫ 3 ⑨ 2 ⑬ 12.6, 12.4 12.50

B 20812 11.9, 11.9, 12.1 ~~12.00~~ 11.97

⑧ - ⑨ 0 ⑩ 1 ⑪ 5 ⑬ (bright

B 19819

⑩ 1 ⑨ 0 ~~10~~ ⑪ 4 ⑬ 12.0, 12.0, 11.9 11.97

From Sequence, range appears to be from 11.6 to 12.7, but this is probably an exaggeration. Probably from 11.8 to 12.5

Monday, Feb. 4. 1918

T Coronae Cont. from page 60

Bright on I 5673, 28786, 25234
AC 14030, 14048, 13090, 8380

Faint on I 14561
AC 6252, 12619, 17693, [13105, 12397]
(8268)

Monday, February 18, 1918

Nova Persei No. 2.
Examination of Some Discordant Plates.

√ AC $\overset{3345}{\cancel{8104}}$
10.4 g/
Reject 10.0 in ledger

√ AC 8104
too poor Reject plate

√ AC 5273
F reject plate

√ AC 5689
Extensive edge. Reject plate

√ AC 5737
11.0
Retain early obs.

AC 5317
too poor Reject plate

√ AC 5722
7 Reject plate

√ AC 1741
6.0 B
Reject 5.4 in ledger

√ AC 1182
n.s. < 11.3
{Reject observations
13.3, ~~12~~ < 12.5

√ AC 34$\overset{3}{\cancel{7}}$5
Defective Im. Reject

√ AC 5709
11.6
Retain earlier obs.

√ AC 5597
12.4? f
Retain ~~for~~ obs. in ledger

√ AC 5525
11.5
Reject 11.1 in ledger

AC 5$\overset{2}{\cancel{5}}$32
√ 11.4? g/
Retain obs. in ledger

√ AC 1171
~~to~~ n.s. < 11.0
Reject 13.3 in ledger

Monday, Feb. 18, 1918

12 40 Nova Pers. No. 2 Cont.

AC 5271
√ 7 < $\overset{11}{12}$.0
Reject Obs. in ledger
(too poor)

√ AC 5369
11.0? e
Retain Obs. in ledger

√ AC 5685
Too poor. Reject plate

AC 6883
√ 11.2
Reject 11.8 in ledger

√ AC 8088
~~11.3? f~~
Too poor. Reject plate

AC 7871
√ 11.4?
Retain Obs. in ledger

AC 7862
11.2
Retain Obs. in ledger

AC 8023
√ 11.8
Rej. 11.5 in ledger

√ AC 8080
7? < 11.0
Reject Obs. in ledger

√ AC 12$\overset{3}{\cancel{8}}$31
13.0? f
Retain Obs. in ledger

~~12.4~~
AC 12338
√ 12.4?
Retain Obs. in ledger

AC 13817
√ 12.2
Reject 12.7 in ledger

√ AC 12899
Too poor. Reject plate

AC 12324
√ Too poor. Reject plate

√ AC 5348
Too poor. Reject

Monday, Feb. 18, 1918

Nova Pers. No. 2 Cont.

√ AC 5625
12.4?
Retain Obs.

√ AC 5653
11.4?
Too Poor. Reject plate

√ AC 7854
7 < 11.0
Reject Obs. in ledger

Tuesday, Feb. 19, 1918

Nova Persei No. 2 Cont.

10 50

AC 8017
7 def?
√ Reject obs. in ledger

I50~~1~~31
√ 7? < 13.6
Rej. obs. in ledger

I16163
| 13.6? f
Retain obs.

I17095
√ 13.5? f
Retain obs. in ledger

I19998
√ 7? < 13.4
Give obs. in ledger
in Remark. Too faint
for safe estimate

I24699
√ 13.5
Retain obs.

I26584
[Found in comp. of 26616]
√ 13.2
Retain obs. in ledger

I26616
√ scratched on image
Reject plate

I32041
√ 12.7
Retain obs.

I32290 (mult. im.)
nearly superposed
√ Image No. 7 12.3

I32292 (mult. im.)
√ Image No. 8 12.3

I32404 (mult. im.)
Im. No. 16 11.7?

√ AC 5491
10.9

Compare directly AC 5491, 5525, I 32290, 32292

Tuesday, Feb. 19, 1918

Nova Persei No. 2 Cont.

Direct comparison of Plates I 32292, Nov. 9, 1904, and AC 5525, Nov. 14, 1904, shows that beyond question the nova was much fainter when the I plate was taken. The variation is obviously not related to instrumental or photographic peculiarities.

Direct Comparison of AC 5491, Nov. ~~8~~ 7, 1904, and I 32290, Nov. 8, 1904, shows that there was more than a magnitude difference on the two dates.

While it is unfortunate that the rapid fluctuations on Nov. 7, 8, 9, and 14 cannot be confirmed on plates taken with the same instrument, the differences are so large and the images so good that there is no doubt that the changes are real.

Thursday, February 21, 1918

Wolf's Nova $7^h\ 22^m$ $-6^\circ\ 29'$ (1900)

a~~I~~C 16677 Jan. 1, 1918
5.4

aI 16802 Feb. 4, 1918
8.9

a~~I~~C 19835 Feb. 17, 1918
9.0

a~~C~~I 16658 Dec. 22, 1917
< 9.8

aI 16848 Feb. 17, 1918
9.~~9~~0

aI 16946 Jan. 4, 1918
6.0

There is an object of about 9.9 on aI 16658, Dec. 22, 1917, recorded above but it seems not to be in quite the position of the Nova.

Friday, Feb. 22, 1918

Wolf's Nova

May be compared with sequences for which standard magnitudes have been obtained, as follows:-

Carte	$7^h.0$	$-2^\circ.5$	AC Carte	$7^h, 0^\circ$ and $7^h, -15^\circ$
Carte	~~7~~8.0	−9.5		8 0
D4	~~4~~7.0	−15.0		7 −15

The two Carte regions are better placed. Try measuring 2 AC plates at $7^h\ 0^\circ$ for one Carte region ($7^h - 2^\circ.5$) and 2 plates at $8^h, 0^\circ$ for Carte Reg ($8^h - 9^\circ.5$)

Comparisons with D4, which is much more distant, had better not be made.

Mr. Campbell has brought in a chart made at the telescope in which he has inserted several stars. - Star p for which he had no ~~designation~~ identification, he calls t. ~~Star n he has omitted because given the wrong identification~~ e² inserted (already called f')

Friday, Feb. 22, 1918

Wolf's Nova

Order of all stars selected by H.S.L. and Wolf, through q

Alphabetical order

α, a, a′, b, b′, c, d, e, e′, e^2, e^3, f, g, g′, h, k, l, m, n, n′, n^2, o, p, q, ~~[r, s, t]~~ [p = Campbell's ✱ t]

Order (L.C.)

a, a′, b, c, b′, d, f, e, e′, e^2, e^3, g, h, k, m, l, n, n′, n^2, o, q, r, s, p

Order (photographic)

a^2, a, b, b′, c, d, a′, e, f, e^2, g, g′, e^3, h, é, k, l, m, n, o, s, r, n^2, p, n′, q, t, u, w, x, y, z, α, β, γ, δ, ε

Sequence marked on Plates B 26873, AM 2423, MC 2734, AC 18112

Additional Comparison Stars, B 38556

Saturday, Feb. 23, 1918

Wolf's Nova - Comparison Stars.

Comparison of MC 14538 with Pole Plate MC 14539 - Both plates taken Feb. 21 with exposures of 2^m

Direct estimates in terms of Polar Sequence

Star	Magn
Nova	9.8
h	8.9
k	9.1
l	$9.\overset{4}{6}$
m	$9.\overset{8}{9}$
n	10.1
o	10.5
Nova	9.6

Both plates are excellent, but comparison is not satisfactory, as the plate for the Nova, though not noticeably foggid, is less clear than that for the Pole, and images are slightly larger and ~~hazier~~ more hazy.

Saturday, Feb. 23, 1918

Wolf's Nova.

Estimates of Intervals between Comparison Stars

AI 16650

a^2 $\overset{3}{x}$ a 5 b 2 b' 1 c 3 d 1 a' 2 e 1 f 6 e^2 1 g
g 2 g' 3 h

AI 13103

a^2 3 a 5 b 2 b' 0 c 3 d 1 a' 3 e 1 f 6 e^2 2 g
g 3 g' 2 e^3 0 *h 3 k 2 l 0 m

AC 18112

g 2 g' 3 e^3 2 h $\overset{0\ e'}{\wedge}$ 2 k 2 l 3 m 4 n 5 0
0 o s 0 r 0 m^2 3 p 2 n' 2 q 3 t 3 u

MC 14538

k 2 l 3 m 3 n 5 0 2 s 2 m^2 1 r 0 p 3 n'
n' 1 q 3 t 2 u 5 w 4 x 3 y 2 z 1 α

Saturday, Feb. 23, 1918

Wolf's Nova.

Examination of Plates on which there seems to be a star image in position of Nova

Enlargement from
I

This was suspected before sending one for enlargement. At very limit of visibility May be a defect.

B26873 (Comp. Low plate)

Object fainter than ε of seq. in same position as on enlargement.

B31296

Object of the same brightness in the same position

B27236 (insp. M. H. Vann)

Object probably present

Thursday, March 7, 1918

2 35 α Orionis Observations on Plates
Obtained by M.H.V. BK III:
Estimates by Argelander's Method

a = 1.4
b = 1.9
c = 2.5
d = 2.8

√M 290
b 4 V 2.31 } 2.36 05
V 1 c 2.40 04

√M252
b 1 V 2.01 } 2.00 01
V 5 c 2.00 00
Images of V sharp, elong.

√M 1224
b 3 V 2.21 } 2.16 05
V 4 c 2.10 06

√M 249
b 3 V 2.21 } 2.26 05
V 2 c 2.30 04

√M263
b 4 V 2.31 } 2.30 01
V 2 c 2.30 00

√M 1237
Too poor

√M 305
2 42
b 3 V 2.21 } 2.30 09
V 1 c 2.40 10

√M 1240
b 4 V 2.31 } 2.30 01
V 2 c 2.30 00

√M 259
b 5 V 2.41 } 2.44 03
V 0 c 2.50 06
V 4 d 2.41 03

√M 1245
b 2 V 2.11 } 2.26 15
V 1 c 2.40 14
poor

√M 2644 poor
b 1 V 2.01 } 2.06 05
V 4 c 2.10 04

√M 1234
too poor Images defective

√M 301
c 1 V 2.60 } 2.56 04
V 3 d 2.51 05

√M 1252
Too poor

Thursday March 7, 1918

2 42 α Orionis Direct Estimates

√M 252
too poor & sharp

√M 290
2.6

√M 249
2.2

√M 1224
2.3?
Very poor

√M 305
2.5

M 1237
Too poor

√M 263 V
2.4

√M 259 V
2.4

√M 1240
2.4?

2 48

√M 301
2.3

√M 1234
Too poor

√M 2644
Too poor

√M 1245
2.6?
Very poor

√M 1252
Too poor

On many plates images are defective. These should not be used.

There seems to be no advantage in estimates by Argelander's Method. Better results would be obtained by making two direct estimates, reversing plate the second time.

Saturday, March 9, 1918

S Ursae Majoris.
Estimates on Plates selected for
3 55 Various Observers. not yet observed by LSL.

✓ AC5560 $\frac{65-65}{10}$ ±.14 ~~±.135~~
11.6 -03

✓ AC5792 $\frac{58-58}{10}$ ±.12 ~~±.116~~
10.5 -.03

AC7471 Plate rejected
9.9? g .

✓ AC7332 $\frac{21-21}{10}$ ±.04
~~X~~ 10.8 +07

✓ AC5669 $\frac{62-62}{10}$ ±.12
11.5 e -.06

✓ AC7444 $\frac{44-48}{10}$ ±.09
9.4 ±.06

✓ AC7217 $\frac{75-75}{10}$ ±.15
12.1? f +.27

✓ AC5673 $\frac{49-49}{10}$ ±.10
11.4 -.03

✓ AC7284 $\frac{34-34}{10}$ ±.07
10.9? ef +12

✓ AC7418 $\frac{40-46}{10}$
9.6 -05

✓ AC7393 115-115
10.2? f +.21

✓ AC7409 $\frac{70-70}{10}$
10.0? g +.25

✓ AC7440 $\frac{85-80}{9}$
9.6? e +10

✓ AC7459 $\frac{66-66}{10}$
9.5 +.01

✓ AC7415 $\frac{76-76}{10}$
~~9.8~~ 10.0 +29

✓ AC7580 $\frac{44-44}{10}$
11.0 ef +.07

✓ AC7538 $\frac{56-56}{\cancel{44-44}}$ 10
10.~~8~~4 ef +.01

✓ AC7436 $\frac{\overset{70}{\cancel{60}}-70}{10}$
9.7 +.10

Saturday, March 9, 1918

S Urs. Maj.

✓ AC5756 $\frac{9-9}{10}$ ±.02
11.6? ef +.09

✓ AC7392 $\frac{70-70}{10}$ ±.14
~~9.8~~ 10.0 +.05

✓ AC5719 $\frac{80-80}{10}$ ±.16
11.4 +.08

✓ AC7344 $\frac{76-76}{10}$ ±.15
10.3 g -.09

✓ AC7376 $\frac{45-45}{10}$ ±.09
10.2 -.15

AC7381

4 10 ~~18~~

Monday, March, 11, 1918

10 55

S Ursae Majoris Cont.

✓ AC7381 $\frac{76-76}{10}$ ±.15
10.2 −.11 ~~+.07~~

✓ AC7475 $\frac{60-60}{10}$ ±.12
9.8 +.22

✓ AC7395 $\frac{100-100}{10}$ ±.20
10.1 eg .00 ~~+.02~~

✓ AC7385 $\frac{78-78}{10}$ ±.16
10.2 +.12

✓ AC7403 $\frac{76-75}{10}$ ±.15
10.0 +.19

✓ AC7499 $\frac{68-68}{10}$ ±.14
10.1 +.27

✓ AC5819 $\frac{70-70}{10}$ ±.14
10.2 +.40

✓ AC5897 $\frac{54-54}{10}$ ±.11
9.8 +.14

✓ AC7523 $\frac{115-115}{10}$ ±.23
10.2 +.27

✓ AC2336 $\frac{40-40}{9}$ ±.09
11.6 +.10

✓ AC7452 $\frac{52-52}{10}$ ±.10
9.6 +.02

✓ AC7507 $\frac{9-9}{10}$ ±.02
10.1 eg +.31

✓ AC6050 $\frac{32-32}{10}$ ±.03
10.6 −.16
~~+~~

✓ AC6105 $\frac{60-60}{10}$ ±.12
11.1 −.15

✓ AC5994 $\frac{46-46}{10}$ ±.09
10.3 −.08

✓ AC5960 $\frac{90-90}{10}$ ±.18
10.4 +.32

✓ AC5976 $\frac{92-92}{10}$ ±.18
10.2 +.18

AC6029
f t. p.
Reject plate

S Urs. Maj. Cont.

✓ AC5963 $\frac{92-92}{10}$ ±.18
10.1 +.12

✓ AC5930 $\frac{41-41}{10}$ ±.08
10.0 +.17

✓ AC6058 $\frac{55-55}{10}$ ±.11
11.1? fe +.17

✓ AC5852 $\frac{56-56}{10}$ ±.12
9.8 +.12

✓ AC6073 $\frac{47-47}{10}$ ±.09
11.2? fe +.0~~8~~9

✓ AC5887 $\frac{51-51}{10}$ ±.10
9.7 e +.03

✓ AC7462 $\frac{60-60}{10}$ ±.12
9.5 −.04

✓ AC7439 $\frac{70-70}{10}$ ±.14
9.5 ~~−.24~~ −.20
Three images
of each star

✓ AC2247 56-55
11 30 10.2? ef −.31

✓ AC7342 $\frac{90-90}{10}$ ±.18
11.0 ef ~~+.17~~ +.10

✓ AC6135 $\frac{54-54}{10}$ ±.11
11.5 e −.02

✓ AC5874 $\frac{27-24}{7}$ ±.07
9.7 g −.01

✓ AC7530 $\frac{79-79}{10}$ ±.16
10.3 efg +.07

✓ AC7516 $\frac{85-85}{10}$ ±.17
10.3 ef +.11

✓ AC7467 $\frac{58-58}{10}$ ±.12
9.8 e +.14

✓ AC5876 $\frac{62-62}{10}$ ±.12
9.6? g −.03

✓ AC7554 $\frac{70-70}{10}$ ±.14
10.8? ef +.20

✓ AC3413 $\frac{55-52}{8}$ ±.13
10.3? eg −.01

Monday, March 11, 1918

11 30 S Urs Maj. Cnt.

✓ I 340$\overset{3}{5}$7 $\frac{46-46}{10}$ ±.09
10.3 eg -.01

✓ I 20170 $\frac{\overset{74}{\cancel{84}}-70}{9}$ ±.15
11.3 g -.34

I 33976
✓ t.p.e.

✓ I 32542 $\frac{50-50}{10}$ ±.10
10.0 eg/p +.22

I 34027 $\frac{80-80}{10}$ ±.16
✓ 9.9? eg +.25

✓ I 32542 [See above]
10.? eg

✓ I 33976 $\frac{70-70}{10}$ ±.14
9.7? eg .00
Reject?

✓ I 13437 $\frac{74-70}{8}$ ±.18
11.2? +.0$\overset{8}{\cancel{9}}$

11 50 ✓ I 20375 $\frac{90-86}{9}$ ±.20
10.0? -.12

✓ AC 5976 $\frac{92-92}{10}$ ±.18
10.2? +.18

✓ MC 5476 $\frac{47-45}{8}$ ±.12
10.$\overset{3}{\cancel{0}}$ -.01 (primary in)
10.5 (p.c. $\boxed{+.19}$

✓ MC 3286 $\frac{24-20}{8}$ ±.06
13.6 -.02

MC 3264 ~~Estimate MC 3286~~
13.6?
S not seen

✓ MC 5771 $\frac{30-32}{8}$ ±.08
13.6 +.12

Monday, March 11, 1918

S. Ursae Majoris

This variable has been observed by different people as a test object. It is very difficult to observe and therefore poorly adapted to such a purpose.

The variable itself on AC plates is apt to be larger than the images of comparison stars, with a nebulous appearance. This is usual with red stars on AC plates.

N.B. Sequences for red stars should be composed as far as possible from stars of class K or redder in order that the variable and comparison stars should ~~be~~ appear more nearly alike.

The sequence for S Ursae Majoris is unsatisfactory, especially between the magnitudes 9.6 and 10.6. In observations on pp. 76 to 80, I did not use comparison star g^2 (9.9) which usually appears, on AC plates equal to or fainter than h (10.2). Comparison star $k^{(11.0)}$ is apt to appear nearly as faint as m (11.4) making comparisons between 10.6 and 11.6 difficult.

On I plates when near the edge and bright, the differences in appearance caused by varying distances from the centre makes observation difficult and uncertain.

Friday, March 22, 1918

Experiment in Examining Plates for Novae.

To determine whether it is best to superpose two negatives or a negative and a positive.

Plate AC 19787 R.A. 8^h Dec. 0° taken Feb. 5, 1918. Shows Nova Monocerotis, magnitude 9.

Superposed on Plate AM. When glass sides were up, images on AM plate were not well seen. Turned film up, AM plate being on top. The images then matched fairly well. N.B. The scale of the AC plate with Lens No used since , 1917, is nearly the same as that of AM plates.

Found the Nova after 15 minutes. Spent 10 minutes more going over the rest of the plate, but found nothing of interest. Just before finding the Nova, a variable was found bright on AM plate. Looked up and found to be R S Monocerotis.

Conclusions. For the purpose of finding conspicuous objects, two negatives are probably as advantageous as a negative and a positive. They have the additional advantage that slight differences of scale do not seriously hinder superposition.

Plates may be superposed with either film or glass side toward the observer; in most cases the former is preferable. They should be so arranged as to make the two sets of images appear approximately equal. About a half an hour to a pair of plates is as long a time as should be given.

Record should state the numbers of the plates compared and length of time required. Any variables noted should, of course be looked up to see if they are already known and a record kept.

It is decided to use two positives. Miss Mackie is assigned this work.

Tuesday, April 2, 1918

Examination of Hebe for Variability

Multiple-Image Plates

MC 14598 March 16, 1918
14599 " " "
14600 " 17 "
14601 " " "

The images were examined on the above plates. In each case the order of brightness of the different images was the same as that of the corresponding exposures of adjacent stars.

These plates do not give evidence of variability such as can be seen, at least by careful inspection. I do not believe that scale measures would reveal any change.

Wednesday, April 3, 1918

S S Aurigae

Estimates on recent plates by Argelander's Method
(For L. Campbell)

MC 14712 March 29, 1918
e 5 v
v 2 f
v 2 k

AC 19671 Jan. 13, 1918
e 3 v
v 3 f
v 3 k

AC 19682 Jan. 15, 1918
f 2 v
k 2 v
v 5 l

AC 19673 Jan. 13, 1918
e 3 v
v 3 f
v 3 k

The above are all available plates since January 1. No plates in February, the time for which L. C. especially wished observations. Notice that the magnitude in March was practically the same as in January. Probably about the eleventh magnitude.

Wednesday, May 8, 1918

3 10 R S Ophiuchi

Measures to Confirm large Variations

√B3 2660
~~11.6~~ 12.1

√MC 5737
12.2

√am 1542 √
11.0

√ I 31856
Mistake of a unit corrected May 12
1$\overset{1}{\cancel{2}}$.9? l
Corner of plate

√I 33450
11.6? l

√I 18448
11.6 l

√I 23211
318 11.9

√B 19772
Too poor.
Omit from ledger

Even when near edge the observations are usually fairly good, as the comparison stars are well situated.

Friday, May 10, 1918

5 35 R S Ophiuchi cont.

I 23224
√ 11.5? l
Corner of plate

√ I 31858
$\overset{11}{\cancel{12}}$.6

~~B~~√I 19377
Too poor
Omit from ledger

√~~B~~ I 23055
$\overset{11}{\cancel{12}}$.6

√B I 23325
$\overset{12}{\cancel{11}}$.2 l

√^{B}I 23101
12.2 ~~11.2~~ l

√am 3811
11.1

√am 6505
Too poor
Omit from ledger

5 50

√am 28
Too poor.
Omit from ledger

√am 72
Too poor. Omit

√ ~~am~~ ac 16411
7 < 11.6

√am 6588
12.0?
Qui. defective?

√am 6312
7 < 12.0
Very poor. Star m appears nearly as bright as l

√AC 10782
Too poor. Omit

√A 3719
12.1? B

√A 3642
12.1

Monday, May 27, 1918

10 55 T Coronae

~~Measures~~ Estimates to Confirm large fluctuations

A1456' Sup.62
11.5?

✓ G25234 Sup p.62
11.2

✓ G25564
11.4

AC 17532 Yellow
✓ t.p.e
Reject plate

✓ AC 17557
11.8

AC13113
✓ t.p.e
Reject plate

✓ AC15488
t.p.e
Reject plate

✓ AC12954
11.4? eg

✓ AC 13035
10.9? eg

✓ AC13038
11.3? eg

✓ AM 2895
tpe

✓ ~~AC~~ AM 2906
Does not cover Reg

✓ AC5053
tpe

✓ AC5097
t.p.e

✓ AC5141
t.p.e

✓ AC5218
tpe

✓ AC5251
tpe

Monday, May 27, 1918

T Coronae cont.

✓ AC5041
Does not cov. Reg.

✓ AM 2762
11.4? e

✓ AC3817
tpe

✓ AM 2175
11.4? e

✓ AM 2764
11.4? e

✓ AM 2824
tpe

✓ AM 2834
tpe

✓ ~~AM~~ AC 3214
11.3? e

AM 3214
taken 6h – 75°
~~to this 3421~~

✓ AC 3509
tpe

✓ AM 1219
11.2? e

✓ AC2509
11.3? eg

✓ AM1335
10.9? e

✓ AM 1361
11.3 e

✓ AM 1208
11.4? e

✓ AC12388
11.4 g

✓ AC12397 sup.59
11.8 f

✓ AC12443
11.4? g

✓ AC12619
t.p
Reject plate

Monday, May 27, 1918

✓ AC 12934
11.4

✓ AC 13130
11.7

AC 13105
✓ 11.6 q see p 59

✓ AC 13090
11.2

✓ AC 15407
11.4?

✓ AC 715
11.0? q

AC 722
✓ t. p.
Reject plate

✓ AC 2530
11.3

✓ AC 2462
11.1? q

✓ AC 3418
tp
Rej. plate

✓ AC 3808
10.8? q
Very doubtful

✓ AC 4942
11.4? f

✓ AC 6161
11.7 f q

✓ AC 6252
11.6

✓ AC 6363
11.4? ef

✓ AC 6109
11.7 ? ef

✓ AC 6665
tp e

✓ AM 3639
11.0? ef

Monday, May 27, 1918

I Cruise Cont.

✓ AC 6009
11.4? ef

✓ AC 6604
tp
Rej. Plate

AC 6518
tp
Rej. plate

✓ AC 6407
tp
Rej plate

✓ AC 3747
11.1? e

✓ AC 6472
tp
Rej Plate

✓ AM 3421
tp
Rej plate

✓ AC 6368
11.4

✓ AC 5878
10.9?

✓ I 23135
11.4

✓ I 33095
11.3

✓ I 33108
11.3

✓ I 33217
11.2

✓ AC 6123
11.4 f

✓ AC 6280
tpe
Rej.

✓ AC 6444
tpe
Rej

✓ AC 6278
11.5

Monday, May 27, 1918

ac 6461
11.4? f

✓ac 6513
11.4? f

✓ac 6543
11.4

✓ac 6579
11.1

✓ac 6525
11.3

✓ac 6639
11.3

✓ac 6673
11.0? f

✓ac 5964
11.4

✓ac 5997^3
11.6? fg

✓ac 6051
tf
Reject

ac 6260
✓tpe
Reject

✓ac 6199
tpe

✓ac 6598
tpe
Reject

ac 6577
✓tpe
Reject

✓ac 6531
tpe
Reject

✓ac 6521
tpe
Reject

Monday, May 27, 1918

T Coronae Cont.

✓ac 6511
tpe
Reject

✓ac 6498
tpe
Reject

✓a~~c~~m 3889
tpe
Rej

✓a~~c~~m 3821
tpe
Rej

am 37~~1~~93
✓tpe
Rej

am 3749
✓tpe
Rej

am 3658
✓tpe
Rej

✓am 3585
11.2? ef

✓am 3536
tpe Rej

am 3462
✓tpe Rej

✓am 3442
tpe Rej

✓ac 6779
tpe rej

✓ac 5952
11.4? ef

✓ac 6086
tpe Rej

✓
ac 6060
tpe Rej

✓ac 6032
tpe Rej

Monday, May 27, 1918

✓ AC 6155
+pe Rej

✓ AC 6121
11.8? fe

AC 6564
✓ +pe Rej

✓ AC 6356
11.4? ef

✓ AC 6327
+p Rej

✓ AC 6243
11.4

✓ AC 6216
+pe Rej

✓ AC 6187
11.8? e

AM 3529
11.2? e

AM 3455
✓ +pe Rej

✓ AM 3431
tp Rej

✓ AM 3419
+p Rej

✓ AM 3404
+pe Rej

✓ AM 3637
11.4? e

✓ AM 3820
11.3? ef

✓ AM 3589
11.4? e

12 m

T Carinae

Summary of Observations.

Observations on pp. 58, 59, 60, 62, 88-94

✓ The star certainly fluctuates in brightness, but probably by an amount smaller than indicated by the observations. Many of the plates are very poor.

Observations on plates where the variable is near limit of visibility should be rejected as such images can be used safely only for variables of large range.

Friday, May 31, 1918

000126 TT Pegasi (Cannon)

For Mr Campbell

Estimates on Yellow Series Plates in Comparison with Polar Stars. Approximate Photovisual Magnitudes

{ MC 13920 { Compared with Pole Plate
{ $0^h 10^m$ +27°.5 { MC 13922

Des Butterworth	Des. H	Magn. pts
a	b	7.0
B	a	6.~~4~~5
α	.	~~7.0~~ 6.3?
x	.	9.7
y	.	10.2
z	.	11.2
1	.	9.2
2	c	8.6
3	.	10.7
4	.	9.6
5	.	10.5
6	g	11.5
7	f	10.7
8	.	nS
9		10.9
10		nS
11		nS
12	m	n.S.
13	.	nS
14	.	nS

Butt.	H	Magn.
15	n	nS
16	.	nS
17	.	nS
TT		9.9

Friday, May 31, 1918

TT Pegasi Cont.

MC 13977 RA = $23^h 50^m$ Dec. = +27°.5
Compared with MC 13979 (Pole Plate)

Butt.	H	Magn.	p. 98	Mean		Magn given to L. Campbell
A	b	7.5?	7.2?, 7.5?	7.~~26~~ 40??	4 1 2 3 2,1	7.4?
B	a	6.3		6.40	1 1	6.4
α		6.2?		6.25	1 0	6.2
x		9.7		9.70	0 0	9.7
y		10.1		10.15	0 1	10.2
z		x 11.2? f		11.20	0 0	11.3
1		9.3		9.25	0 1	9.2
2	c	8.5		8.55	0 1	8.6
3		10.7		10.70	0 0	10.7
4	.	9.5		9.55	0 1	9.6
5		10.7		10.60	1 1	10.6
6		nS		11.5	a .	11.7
7		10.5		10.60	1 1	10.6
8		nS		nS		.
9		11.0?		10.95	1 0	11.0
10		nS		nS		
11		nS		nS		
12		nS		nS		
TT		10.0				

Results from the two series very accordant. Magnitudes of Stars z, and 6 made fainter than obs. magn. by 0.1 and 0.2, respectively, to bring them near the scale which will probably be adopted.
Star A = b is in corner of plate, and magn. is very uncertain

Friday, May 31, 1918

TT Pegasi
Repeated Estimates of Brightness of Star A = b, on Plates measured on pp 96, 97

MC 13920 Comp. with MC 13922
7.2? Star in Corner of Plate

MC 13977
7.5?

Star b is in extreme corner of plate on MC 13977, and nearly as distant on MC 13920

Monday, June 10, 1918

Nova Aquilae No. 3

$\overset{k}{a}$ = +0° 4027 MC 14960 pe June 7, 1918 see also p. 101
6.26 Ao n pe 1 a k 6.16
g b 1 n 5.78 6.08 08, 30, 22
$\overset{g}{b}$ = $-\overset{10}{8}$° $35\overset{59}{27}$ -1° 3602 d 1 n 6.30
$5.\overset{68}{80}$ Ao Image of Nova hazy in comparison with other stars.
$\dot{d}$ = -1° 3602
6.20 Ao The designations $\overset{e}{a}$, b, d, are for temporary use only. Changed to k and g. Star p not in provisional sequence

~~On the comparison star plate~~;

Wednesday, June 12, 1918

Nova Aquilae No. 3
Estimates of Brightness

Call primary images & s
prism. comp. p
diffr. im. g (north 1, south 2)
diffr. im. of prism comp. pg

MC 14969 June 8 J.D. 1753.830 Exp. 10^m

Comp. 1
pc + primary

$^{5.04}$e(s) 4 N(p) 5.44
$^{5.51}$f(s) 0 N(p) 5.51
Np 5 K(s)$^{6.23}$? 5.73?

N(p) is sharp and clearly defined, while e(s), f(s) and K(s) have the hazy images of white stars. Comparisons may easily be wrong by a magnitude. A good comparison could be obtained only with a red star. There are none of suitable magnitude on the plates. Region of the Nova much fogged.

Comp. 2
pc diffr and primary

$^{7.90}$O(s) 3 N(pg1) 8.20
$^{8.35}$p(s) 0 N(pg1) 8.35 8.31
N(pg1) 3 q(s)$^{8.67}$ 8.37

Comp. 3
pc diffr. and p.c.

N(pg1) 3 e$^{5.04}$(p) 4.74 − 3.74 = 1.00

If star ~~d~~ is of magnitude 5.0, the above comparison (3) would make the Nova of mag. 5.0 − 0.3 − 3.74 = 0.96

Wednesday, July 31, 1918

Nova Aquilae No. 3

Estimates on early plates using preliminary stars and magnitudes on page 18 of sheets.

A α Aqu.	1.0
B α Oph.	2.3
C γ Aqu.	3.0
a δ Aqu.	3.6
b λ Aqu.	3.6
c η Ser.	4.2
d θ Ser.	4.2 dbl
e	5.0
f	5.5
g	5.7
h	5.9
k	6.2
(l	6.7)
(m	7.4)
(o	7.8)

AI 17201 June 7 Foot of Page J.D. 1752.765
6.7 6.7

AI 17195 June 3
n. s. s = 0.1

AC 20175 June 7 Foot of page 1752.764
6.7 6.7

AC 20~~182~~ 299 ~~June 8~~ ~~July 29~~ July 21
4.~~7~~ 5

MC14960 June 7 1752.785
6.2 (from p.c.) page 99, 608

There is an interval of about half an hour between Plate MC14960 and Plates AI 17201 and AC 20175 which were taken almost simultaneously. The Nova gained about 0.5 mag. during this time. It was gaining, therefore, about a magnitude an hour.

Star image too bright for observation. It has the appearance to the unassisted vision of being much brighter than K (= 6.2) but this is caused by the large penumbra due to the blueness of the star. The best comparison is obtained by means of the prismatic companion. The diffraction images of the prism. comp. are also faintly seen and are about equal to those of star K.

AC 20175 AI 17201
6.7 6.7

Wednesday, July 31, 1918

Nova Aquilae No. 3 Cont.

AI 17323 faintest image July 27
3.6

~~AI 17339~~

Friday, August 2, 1918

Nova Aquilae No. 3 Cont. and Mars contd

AI 17339 July 28
4.3? second image
Film spotted over images of Nova.
Comp. star c (η Serpentis) not seen
though d (θ Serp.) and e (λ Aquilae
are seen. Film in good condition
Look up other plates of this date
Star f is also well seen and g faintly seen
AI 17323 July 27
a 0 b 5 d 5 c 3 e 4 f
b 2 N 4 d 3.84, 3.81 3.82 02, 01 Adopt
a 1 N 8 e 3.75 4.24 4.00 25, 24

AI 17332 July 28
ζ ~~Oph.~~ Aqu. 7 N 0 a 3 images $3.6\overset{6}{5}$
b 1 N 3.74, 3.81, $\overset{R}{4.34}$ 3.78 04, 03
N 4 d
N 7 e
a 0 b 6 d 0 c $\overset{?}{10}$ e
~~b 6 d~~

AI 17292 July 18
ζ Aq. 4 N? 3.36?, 3.44, 3.40 04, 04
N 2 b
~~N 3 c~~
b 1 a 1 c $\overset{3}{\cancel{4}}$ d 8 e

Saturday, August 3, 1918

Nova Aquilae No. 3

4 40

a I 17339 second im. Exp. 3m July 28
d 3 N ?. 4.51, 4.94 4.72? 21, 22
N 1 e ?

None of images of Star c seen
Second image of Star d = 0.5

a I 17281 July 15
ζ Aq. 2 N 3.16, 3.45 3.30 14, 15
N 2 a
a 0 b 7 d 4 c 2 e 3 f 3 g

a I 17305 July 21
d 1 N 1 4.31, 4.54 4.42 11, 12
N 5 e
a 0 b 5 c 0 d 7 e 4 f 2 g

a I 17292 July 18
ζ Aq. 5 N 3.46, 3.45, 3.44 3.45 01, 00, 01
N 2 a
N 2 b
b 1 a 2 c 3 d 6 e 2 f 4 g

a I 17332 First Exp 10m July 28
X ζ Aq. 6 N 3.56, 3.55, 3.54 3.55 01, 00, 01
N 1 a
N 1 b
b 1 a 5 c 1 d 7 e 3 f 2 g

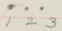
Saturday, Aug. 3, 1918

Nova Aquilae No. 3

a I 17332 Exp. 1m July 28
ζ Aq. 7 N 3.66, 3.64, 3.55 3.62 04, 02, 07
N ~~a~~ 0 b
X N 1 a
b 1 a 4 c 0 d 4 e

a I 17323 Exp. 5m July 27
b 1 N 3.74, 3.65, 3.71 3.70 04, 05, 01
N 0 a
N 5 d
b 1 a 6 d 5 c 3 e 4 f

a I 17273 July 14
ζ Aq. 6 N 3.56, 3.45 3.50 06, 05
N 2 a
a 0 b 6 d 1 c 5 e 5 f 3 g



a I 17251 Image 1 July 4
ζ Aq. 2 N 3.16, 3.15 3.16 00, 01
N 5 a
a 0 b 5 c 0 d 7 e 4 f
Image 2
a 0 b 6 d 3 c 3 e 4 f
Image 3
a 0 b 6 d 7 e 5 f 3 g 1 c
L. fb.

Saturday, Aug. 3, 1918

Nova Aquilae No. 3

A I 17244 Exp. 10 m June 21
ζ Aqu. 7 N 3.66, 3.55 3.60 06,05
N 1 a

a 6 d 5 c 2 e 5 f 1 b 4 g
b very ft. High power eyepiece shows that image is defective

Exp. 2 m
a 6 d 4 c 2 e 4 b 2 f
b still ft. Image defective?

Exp. 1 m
ζ Aq. 7 N 3.66, 355 3.60 06,05
N 1 a

a 5 d 3 b 2 c 1 e
f n.s.
b still faint Image looks normal.

A I 17221 ~~too poor~~ Exp. 3 s June 15
α Aq. 4 N 1.4?
N — ζ Aq.
b 2 a 6 d 1 c 5 e 3 f

A I 17334 (exposure 60m)
b 5 c 0 d 8 e
Images too large for good estimates but c is certainly of nearly the same magnitude as d.

Saturday, August 3, 1918

Nova Aquilae No. 3

A I 17341 Exp. 3 m July 29
ζ Aqu. — [illegible] N
N 0 a 3.65, 3.74 3.70 05,04
b 1 N

b 1 a 5 c 1 d 7 e 5 f
All three exposures show the same relative brightness.

A I 17335 July 28
Star c is too near edge for observation.

A I 17319 Exp. 77 m July 26
b 4 d 5 c 3 e
Images large and poor, but star c is unmistakably faint

A I 17222 Exp. 91
b 5 d 0 c 6 e
This plate resembles A I 17319 closely in quality. Star c is certainly brighter on A I 17222.

Saturday, August 3, 1918

Nova Aquilae No. 3 and Star c ~~f~~

AI 17249 exp. 2^m July 2
3 Aqu. 2 N 3.16, 3.25 3.20 04, 05
N 4 a
a 1 b 6 d 4 c 3 e 4 f
Exp. 1^m
a 0 b 6 d 7 c 0 e 6 f
Image of c possibly defective
~~Exposure 2m~~
Exposure 4^m
a 1 b 7 d 5 c 3 e

AI 17262
Star c appears fainter than e

AC 17264
Exp. 10^m ~~a b 2 d~~
b 6 d 2 c 5 e
Exp. 2^m
b 6 d 8 e 1 c

Saturday, Aug. 3, 1918

Star c of Sequence for Nova Aquilae No. 3. Also Star d

A number of plates show Star c apparently very faint. This was first noticed on AI 17339, on which it is not seen and is apparently fainter than f while normally it equals d.

It seems to me probable that this is a purely photographic effect, due to the distance of c from other comparison stars. The corrections for distance increase as rapidly for ~~[illegible]~~ AI as for AC plates (see H.A. 84, No. 3). The only advantage over the latter, therefore, is that images are nearer together and hence more conveniently observed.

This star should doubtless be kept under observation. This is difficult, as there are no suitable comparison stars near it. Satisfactory results might be obtained by setting directly on the position, thus giving stars in each direction for comparison.

Star d (θ Aquilae) is double. A variation of a magnitude was observed in one of the components by Professor Searle. This has not been confirmed. The plates observed on pp. 103 to 108 do not show variation.

Wednesday, August 14, 1918

08104$\overset{1}{2}$ Re-examination

AM 4012 Orig. Est. 13.2 Reject
13.8 f

AM 4618
13.3? f Orig Est. 12.8 Reject

There is no question that the original estimates are much too bright and should be rejected. Re-examination of the plates makes this appear certain.

Thursday, August 15, 1918

Nova Monocerotis
Examination of Plate MC & 14675

Magn. $\overset{10}{\cancel{9}}$.3

Miss Vann rejected her original measures 10.7^{y} and 10.3 y, saying that they were too faint. Her final estimate was 9.8, which she retained. See MHV 4:38

Reject all of Miss Vann's observations on this plate. Miss Block and Miss Mackie estimated 10.2 and 10.3, respectively. The latter's estimate was not recorded. Take mean of DWB and JHS.L.

AI 17011
Image to limit of visibility. Reject this plate, and all observations hitherto made on it.

Saturday, August 17, 1918

Nova Aquilae No. 3

primary in = s
p.c = p
diffs. in = g, h
diff. in p.c. = {pg / ph

Plate MC 14970
June 9 J.D. 1754.

This plate is so badly fogged in the region of the Nova that probably it ought to be repeated. This probably explains the fact that it appears fainter than on June 8 (see p. 100) though it was certainly much brighter

Exposure 1

5.04 e(S) 1 N(p) 5.14 5.17
N(p) 3 f(S)^5.51 5.21

e(S) 0 N(g) 5.04 5.08 − 3.74 = 1.35
N(g) 4 f(S) 5.11

e(S) 1 N(h) 5.14 5.18 − 3.74 = 1.45
N(h) 3 f(s) 5.21

Exposure 2

p.c. and pg and ph superposed
f.

N(g) 1 e(s) 4.94 4.98 − 3.74 = 1.24
N(g) 5 f(s) 5.01

Exposure 3

e(s) 4 N(p) 5.44 5.42
N(p) 1 f(s 5.41

e(s) 4 N(g) 5.44 5.42 − 3.74 = 1.68
N(g) 1 f(s 5.41

e(s) 4 N(h) 5.44 5.48 − 3.74 = 1.74
N(h) 0 f(h) 5.51

Sat. Aug. 17, 1918

Nova Aquilae No. 3 Cont

MC 14970 (cont)

Exposure 4

e(s) 1 N(p) 5.14 5.22
N(p) 2 f(S) 5.31

4.90 o(S) 1 N(pg) 8.00 8.12
N(pg) 1 p(S)^8.35 8.25

e(g) 1 N(pg) 5.14 5.08 − 3.74 = 1.34
N(pg) 5 f(g 5.01

N(pg) 5 e(p) 4.54 4.64 − 3.74 = 0.90
N(ph 3 e(p) 4.74

Exposure 5 Too bright

Comparisons of N g, h and primary 1.35, 1.45, 1.24, 1.68, 1.74
Mean 1.49 14, 04, 25, 17, 25 42-43 ± 0.17

Including Exposure 4 (N p g and ~~from~~ {p.c / g)

~~1.45 10, 00, 21 23, 29, 11, 55~~ 5
1.39 04, 06, 15, 29, 35, 05, 49 70-73 ±.20

Adopt value 1.39 for this sitting, but observe again.

Sat. Aug. 17, 1918

Nova Aquilae No. 3
MC 14971

The Nova is the only star image on the plate. the image of the grating is about 1.5 magn. brighter than the limit of the plate. This means that it is at least 5.2 magn. brighter than e (= 5.04) and may be brighter by an indefinite amount. Record
(brighter) > 0.8

Tuesday, August 27, 1918

Examination Plates from British Columbia Sent by Plaskett.

Plate for B8 $20^h\ 0^m$ +45° Aug. 4 13^h,35–14,40
~~Diameter of circle about~~ 23 ff 5^m.
Focus changed about .045 in during hour
Diameter of Circle about 23 mm = 8.6 = 518″
Centre of circle about 6 mm from geometrical centre, direction south following
Star 18 at geometrical centre
Star 28 near center of circle
Images in circle somewhat elongated. Faint stars not well defined
- Star 36 about 3 magn. brighter than limit of Plate
This would indicate that stars of magn. 19.5 or fainter are seen.

Plate for B9 Aug. 11 $\overset{21^h\,45}{22^h\,52^m}$ focus about 0.01 in shorter at end
Diameter of circle about 26 mm = 585″ = 9.7′
Center of circle distant about 5 mm south preceding geometrical centre
Star 38 is about 2 mag. brighter than limit of plate, which is 19th magn. or fainter. Focus and form of image good. Ft stars well seen; i.e. clearly defined.

Examination of Plates Cont

Plate for C 10   Aug. 11 $19^h 55^m$ to $21^h 2^m$
Total exp. 60^m
Focussed at beginning of exp. only

Diameter of Circle about 30 mm = 675" = 11'.2
Centre distant about 6 mm. south following the geometrical centre
Shows Star 37 faint about the same as for Plate MW 1262, exp. 60^m.
Images well shaped but rather pale and hazy

Plate for Pole   August 12, 1918 12 05-51 [illegible]
Seeing good
Circle about 28 mm in diameter = 630" = 10'.5
Distant about 4 mm from centre of plate.
Star 42 just seen - magn. 19.7.
Images poor, elongated and winged.

Distance Star	10 to p	50.0 mm	1128"	22.56
	11 r	17.6	402	22.84
	10 to 11 r	67.8	[1530]	[22.55]
	16 to p	45.0	1006	22.35
	14 to p	23.8	529	22.23
				5 | 253
				22.5
				22.5

Scale about 22".5 = 1 mm

Plates with 72-inch

B 8 Centre of circle 6 mm south of and ~~preceding~~ following centre of region

B 9 Centre 6 mm south following centre of region

C 10 Centre 7 mm south of centre of region

Wednesday, August 28, 1918

Plates with 72-inch Victoria Tel.

Circles re-drawn. Making the distances as great as possible from the centre. There are slight wings near the circumference.

C10 Ellipse 37 mm ~~x~~ by 25 mm longer axis extends in north preceding and south following direction. Centre 4 mm South of Centre of Region

B8 Ellipse 38 mm by 25 mm n p to s f Centre 6 mm south of centre of region and slightly preceding.

North Pole Circle 38 mm in diameter Images very poor, elongated. Drawing of circle very uncertain.

B9 Ellipse 38 mm by 27 mm from north preceding to south following Centre 7 mm south of and preceding centre of plate

In each case except Pole, the ellipse is about 38 mm by 25 mm and the longer axis extends from north preceding to south following in direction. Centre Centre always

Wednesday Sept. 11, 1918

Miss Raymond's Variable +18° 3186

Estimates on Multiple Image Plate AM 858.

J.D. 5555.

.554	1	9.7
.570	2	9.5
.591	3	$\overset{6}{9.\cancel{7}}$
.612	4	9.9
$\overset{34}{.653}$	5	10.1
$\overset{53}{.6\cancel{74}}$	6	10.6
$\overset{74}{.6\cancel{95}}$	7	10.6
$\overset{695}{.736}$	8	10.7
$\overset{36}{.757}$	9	11.0
$\overset{57}{.77\cancel{8}}$	10	11.1
$\overset{7}{.7\cancel{9}8}$	11	11.1
$\overset{.798}{.8\cancel{17}}$	12	11.3
$\overset{19}{.8\cancel{40}}$	13	11.3
$\overset{46}{.8\cancel{61}}$	14	11.4
$\overset{61}{.8\cancel{77}}$	15	11.4
	16	Exposures 16, 17, 18 not photographed on this part of plate
	17	
	18	

Comparison Stars marked on AC 12559

a	7.7	e	9.0	i	11.1
b	8.1	f	$\overset{9}{\cancel{1}0.6}$	j	11.6
c	8.8	g	10.0		
d	8.7	h	10.8		

+18° 3186

Estimates on Multiple Im plate AM 857

JD 5554.

.498	ft m	1	–
.511		2	n.s. < 10.1
.532		3	n.s. < 10.1
t	ft m	4	–
t	ft m	5	–
t	bent/	6	F
t		7	F
.615		8	10.8?
.636		9	10.2?
.654	long im	10	9.5
t	assume .674	11	9.3
t	ft m.	12	–
.719		13	9.7?
.739		14	9.8?
.760		15	10.0?
.781		16	10.5?
.802		17	10.7?
.823		18	nearly superposed
.8~~64~~43		19	" " "
.864		20	" " "
.879	ft m.	21	–

Record book states that clock was running irregularly, but that it is fairly certain that the above markings are correct.

Plates from Victoria Cont. from page 118

The plates were washed and enlarged. Circles drawn again this afternoon

Plate 1 C 10 Ellipse 37 mm × 28 mm
Centre 3.5 mm South preceding centre of Reg.

Plate 2 Pole Ellipse 43 mm × 36
Centre 4 mm below and to left of Centre of Plate

Plate 3 B9 Ellipse 38 mm × 27 mm
Centre 7 mm South following centre of Reg.

Plate 4 B8 Ellipse 38 mm × 23 mm
Centre ~~4~~ 5 mm South of centre of Reg

The above Ellipses and centres closely confirm the observations on page 118

Wednesday Sept. 11, 1918

Enlargements of Plates from Victoria

Measures with millimetre scale on Enlargements.

	Victoria D 18257 North Pole	D 14704 North Pole M.W.
16 s to 29	128.2 mm	142.0 mm
5 s to 26 s	117.5	130.0
8 s to 14	188.6	208.5
33 to 36	79.8	88.2
85 to 32	25 off print	140.0

	N.P.D.			Scale Victoria	Scale M.W.
5 s	432″	16 s to 29	644″	5.″00 = 1 mm	4.″5 = 1 mm
8 s	420	5 s to 26 s	591	5.03	
16 s	292	8 s to 14	949	5.03	
26 s	159	33 to 36	402	5.04	
14	529				
29	352				
32	41				
33	413				
36	11				

Wednesday Sept 11, 1918

Count of Stars on Victoria Plate of Pole

Enlargement D 18257 North Pole

Paper print.
Circle 96 mm in diameter = 8′ cut out of paper. ~~Fastened to~~ The sheet with circle cut out was fastened with clips to the print so that the Pole for 1900 should be at centre.

This print is too full of defects to make estimates

Original plate – Circle 8′ in diam.

𝍸 𝍸 𝍸 𝍸 𝍸 |||| 29 stars

Corresponds to about 45 in 10′ diam.
Corresponds to about 180 in 20′ diam.

Circle 10′ diam.

𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||| 58 stars

Thursday September 12, 1918

Count of Stars
Victoria Plate 2 – North Pole

Enlargement D18257

Circle 8′ in diameter
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸
𝍸 𝍸 𝍸 𝍸 |||

93 objects that could not be distinguished from star images with reading glass.

Compare the 29 stars found on the original negative in the same area, page 123

Victoria Plate 4 B8
Enlargement D18259
Circle 8′ in diameter
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 75
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 75
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 | 31
181

181 stars in circle of 8′ diameter as counted on paper print from enlargement

Thursday Sept. 12, 1918

Count of Stars
Victoria Plate 3 B9
Enlargement D18258

9	26	25
25	25	11
19	29	
33	36	

238 stars

Victoria Plate 1 C1

Thursday September 12, 1918.

Count of Stars.

Victoria Plate 4 B8
Original negative

Circle ~~21.33~~ 22 mm in diameter = ~~8′~~ 8′.2

15 47 64:100 64:144
56 30 16:25 8:18
76 4:9

224 stars corresponds to about 330 in 10′ dia
505 12°

Victoria Plate 3 B9
Original negative

10 29 23
14 30 19
18 17

160 corresponds to about 240 in 10′ 3¿
360 in 12

Victoria Plate 1 C10
60 82 37
73 73 36
63 79

493 corresponds to about 750
in 10°
about 1125 in 12°

Thursday, Sept. 12, 1918

Count of Stars.

Mt Wilson Plate 1262

C10 Original Negative

Circle 18.0 mm = 8′.16 = 8′.2

6 96
64 86
92 68
86 13

511 ~~*~~ Corresponds to about
~~2′ 44~~ 1150 in 12′

Saturday, November 2, 1918

2 45 Direct Estimates of Magnitudes of additional stars in Carte Region 0^h +64°.5 - Common to Greenwich and Rome

Add. Stars MC 9568

Des	Magn	scale (below)		Des.	Magn.		
a	8.5? p e	7.72 e	⑦⑧	g	12.0	12.02	02
b	9.2 p	9.11	09	h	11.5	11.45	05
c	9.3 p	8.97	33	k	11.4	11.12	28
d	10.6	10.72	12	l	11.1	11.12	02
e	10.5	10.58	08				
f	11.2	11.25	05				

$\frac{\overline{75-29}}{9}$ ± 0.116 (omitting a)

2 55

3 00 Scale Measures

Scale M.

p = prism comp.

		Corr	Magn	~~Seq~~ Sequence		Magn.	Diff.	Corr ~~Mag~~ Magn
a	7.0 p	~~9.52~~ 0.72 e	7.72 e p	1	7.6 p	8.70	0.90	0.94
b	8.0 p	1.11	9.11 p	2	8.3 p	9.60	1.30	1.32
c	7.9 p	1.07	8.97 p	3	5.0	10.22	5.22	5.24
d	5.7	5.02	10.72	4	5.2	10.48	5.28	5.18
e	5.5	5.08	10.58	5	5.9	10.89	4.99	4.92
f	6.6	4.65	11.25	6	6.6	11.20	4.60	4.63
g	7.5	4.52	12.02	7	7.0	11.51	4.51	4.53
h	6.9	4.55	11.45	8	7.5	12.06	4.56	4.81
k	6.4	4.72	11.12	9	7.6	12.08	4.48	4.52
l	6.4	4.72	11.12	10	7.9	12.71	4.81	

3 10 Reduction completed at 3 17

The two methods require about same length of time. Reduction requires about 7 minutes or less.

Thursday, December 5, 1918.

T Pyxidis

B 5289

T Pyxidis about equal in brightness to comparison star d. Enter in ledger the magnitude of d with ? Make remark that T Pyxidis is on the extreme edge of the plate and the magnitude is uncertain by 0.3 or 0.4 magn.

Wednesday, December 11, 1918.

Examination of Plates taken for Eclipse of Iapetus on Monday, December 9.

Earlier plates of ~~Iap~~ Saturn.

MC 15453 Nov. 26, 1918

15483 Nov. 29, 1918

On both of the above plates Iapetus was identified by Mr. Campbell. It is 0.4 magn. or 0.5 magn. brighter than the prismatic companion of +13° 2206 (Dm magn. 7.3).

Plates taken December 9

15524 Not seen. Star at about $10^{h}\,0^{m}.1$ +13° 30′ (1855) not seen

15525 Not seen Faint star at $10^{h}\,0^{m}.1$ at lim. of visibility

15526 Faint star better seen than on MC 15525. Two objects very near faint star may possibly be the satellite

15527 Faint star not seen. Objects near the required position are probably defects.

15528 Faint star at limit of visibility. Images near position of Iapetus are probably defects.

Star 1 8.09 Star +13° 2206 estimated 0.8 magn. brighter than
10 14.20 Star 1 of Ref. Seq. on MC 4848. 7.3
11 14.41 Faint star 0.4 fainter than Star 10 and 0.2 brighter than Star 11 14.4

On Nov. 26 and 29, Iapetus was of about the 11th magn.
" Dec. 9, it was certainly fainter than 14.4 on all the plates taken.

Thursday December 11, 1918

Examination of Plates of Saturn Cont.

Mr Campbell furnishes the following positions of Iapetus for dates on which we have plates

	s	pos. ∠
Nov. 26	484	276
29	410	[273]
Dec. 6	165	[260]
8	85	[245]
9	15	[200]
13	−140	[105]

Position on the 13th corresponds nearly to that on the sixth, but on the opposite side.

Identified on the following plates

MC 15453 Nov. 26
15483 Nov. 29
15501 Dec. 6
15523 Dec. 8

It is evident that the satellite was much too close to Jupiter for observation on plates taken December 9. The image is quite lost in the fogging from Saturn itself.

Wednesday, February 19, 1919

Estimates of brightness of Comparison Stars for the Jordan for S Z Tauri

Jordan's a = +18° 666
" b = +18° 658

Estimated in terms of H.S. Sequence C3

ac 14615
7 1 a
a 3 8

7 2 b
b 2 8

ac 9888
~~AM 4057~~
6 5 a
a 0 7
a 3 8

7 3 b
b 0 8
b 5 9.

The two sequences are too far apart for safe comparison.

Wednesday, Feb. 19, 1919

Copied Bk 9a: 217
Sheet no 400

11 45

Loud(?)R Measures of brightness of Comparison Stars for S Z Tauri in Series.

alt Cow +18

Series 856

MC 13815 Pole

	P.C.	Diffr of P.C.	Diffr	P.C. 13815	13821	14329	14335	Mean		Diff.
3	9.~~6~~ 2	13.8 13.75 0 1 13.7	· ~~g~~ g	9.2	~~96~~	·	·	9.2	a . . .	·
4	8.9	13.6 13.7 1 2 13.8	· g g	8.9	·	·	·	8.9	a . . .	·
5	9.6	n.s. n.s.	· 8.2 8.30 1 8.4	9.6,	9.6,	8.7,	80	9.0	0.6 0.6 0.3 1.0	−2.51
6	10.3		9.4 9.40 0 9.4	10.3,	10.5	9.8,	96	10.00	3 5 2 4	−2.89
7	10.8 ~~9.6~~		9.6 9.55 0 1 9.5	10.8,	10.6	9.9,	9.8	10.30	5 3 4 5	·
8	11.8		10.7 10.65 1 0 10.6	11.8	11.9	11.6	11.4	11.70	1 2 1 3	−3.47
9	12.9		11.7 11.55 1 2 11.4	12.9	12.8	12.7	12.3	12.70	2 1 0 4	−3.87

MC ~~138~~ (9) 19 S Z Tauri

	P.C.	Cu.	magn	Diffr	Ae.	magn.
a	10.0	−3.20	6.80	8.5 8.55 1 0 8.6	−1.85	6.70
b	10.7	−3.47	7.23	9.0 9.10 1 1 9.2	−2.00	7.10
c	10.8	−3.48	~~7.~~ 7.32	9.3 9.45 1 2 9.6	−2.10	7.35
Jordan's a	12.0	−3.72	8.28	10.9 10.85 1 0 10.8	−2.52	8.33
Jordan's b	12.3?	−3.8~~4~~5	8.45?	11.0 10.90 1 1 10.8	−2.54	8.36

Dr. P.C.	Mean	Diff.		Diffr. mean	Diff
5	9.60	0 0	−3.11	8.22 ~~0~~5	07 −1.73
6	10.40	1 1	−3.29	9.20	20 20 −2.09
7	10.70	1 1	−3.39	9.30	25 20 −1.99
8	11.85	0 1	−3.62	10.68	03 02 −2.45
9	12.85	1 0	−4.02	11.55	00 00 −2.72

Diffr.

MC 13821 Pole

	P.C.	Diffr					Mean					Diff
5	9.6 ~~6.8~~	8.2 8.15 1 0 8.1	8.30	8.15	6.90	6.80	7.54	76	61	64	74	−1.05
6	10.5	9.1 9.00 1 1 8.9	9.40	9.00	8.20	7.85	8.61	79	39	41	76	−1.50
7	10.6	9.0 9.05 0 1 9.1	9.55	9.05	8.25	8.05	8.72	83	33	47	67	·
8	11.9	10.7 10.70 0 0 10.7	10.65	10.70	9.65	9.60	10.15	50	55	50	55	−1.92
9	12.8	11.6 11.55 0 1 11.5	11.55	11.55	10.50	10.55	~~10.59~~ 11.04	~~04~~ 51	~~04~~ 51	~~09~~ 54	~~04~~ 49	−2.21

12 05

Wednesday, February 19, 1919

12 10

Sheet no 400

Scale R

S Z Tauri Cont. alt corr + 18

Series 893

MC 14329 Pole

	P.C.	g	h	14329	14335	Mean			Diff
5	8.7	g	6.9	8.7	8.0	8.35	3	4	-1.86
6	9.8	8.5 $^{8.20}_{3}$	7.9	9.8	9.6	9.70	1	1	-2.59
7	9.9	8.6 $^{8.75}_{4\ 3}$	7.9	9.9	9.8	9.70	1	1	-2.39
8	11.6	9.7 $^{9.65}_{1\ 0}$	9.6	11.6	11.4	11.50	1	1	-3.27
9	12.7	10.5 $^{10.50}_{0\ 0}$	10.5	12.7	12.3	12.50	2	2	-3.67

MC 14332 SZ Tauri

			corr	magn			corr	
+19°742	a	9.0	-2.18	6.82	g	7.1	-0.49	6.61
+19°744	b	9.9	-2.58	7.32	7.9 $^{7.90}_{0}$	7.9	-0.80	7.10
+18°684	c	10.3	-2.77	7.53	8.1 $^{8.15}_{1}$	8.2	-0.90	7.30
	~~Jordan's a~~	~~10.8~~						
	~~Jordan's b~~	~~11.4 10.8~~						
+18°666	Jordan's a	11.4	-3.21	8.19	9.8 $^{9.75}_{0\ 1}$	9.7	-1.44	8.26
+18°658	Jordan's b	11.5?	-3.26	8.24?	9.8 $^{9.75}_{0\ 1}$	9.7	-1.44	8.26

MC 14335 Pole

5	8.0	6.9 $^{6.80}_{1\ 1}$	6.7	6.9	6.80	6.85	1	0	-0.36
6	9.6	7.8 $^{7.85}_{0\ 1}$	7.9	8.20	7.85	8.02	2	2	-0.91
7	9.8	8.1 $^{8.05}_{1\ 0}$	8.0	8.25	8.05	8.15	10	10	-0.84
8	11.4	9.6 $^{9.60}_{0\ 0}$	9.6	9.65	9.60	9.62	03	02	-1.39
9	12.3	10.6 $^{10.55}_{0\ 1}$	10.5	10.50	10.55	10.52	02	03	-1.69

12 30

Wednesday, Feb. 19, 1919

Barnard's variable

$\alpha = 17^h\ 34^m$ $\delta = -11°55'.2$ (1875)

See Letter of Feb. 10, 1919.

Comparison Stars a to h selected by DWB and marked on MC 14821 See DWB

Transferred to A 9537 by H.S.L. and additional stars k, l, m, n, marked by H.S.L.

Preliminary magnitudes found by DWB on MC 14821 compared with Pole plates

a	10.36	d	12.34	g	12.93
b	10.66	e	12.34	h	13.56
c	~~12.34~~ 11.07	f	12.73	K	13.9
				l	14.2
				m	14.4

} see p. 136

Observations of Variable by H.S.L.

MC 14821

a 3 v 10.66 10.61

10.56 v 1 b

A 9~~7~~537

h 4 v 13.96 V = 13.9

v 1 K

B 38973

l 1 v Est magn. 14.5

v 0 m

lim of Vis

Order of Comparison Stars

A 9~~7~~537: e 3 f 8 g 3 h 5 K 3 l 2 m

~~B 38973~~ MC 14821: a 4 b 4 c ⑪ d 0 e 4 f 8 g 2 h 4 K ~~5 l 1 m~~

Wednesday February 19, 1919

12 10

Scale R

Sheet no 400

S Z Tauri Cont.

alt corr +18

Series 893

MC 14329 Pole

	P.C.	g		h	14329	14335	Mean			Diff
5	8.7	g		6.9	8.7	8.0	8.35	3	4	-1.86
6	9.8	8.5	8.20 3 3/	7.9	9.8	9.6	9.70	1	1	-2.59
7	9.9	8.6	8.25 4 3	7.9	9.9	9.8	9.70	1	1	-2.39
8	11.6	9.7	9.65 1 0	9.6	11.6	11.4	11.50	1	1	-3.27
9	12.7	10.5	10.50 0 0	10.5	12.7	12.3	12.50	2	2	-3.67

MC 14332 S Z Tauri

			cu	magn				cu	
+19° 742	a	9.0	-2.18	6.82	g		7.1	-0.49	6.61
+19° 744	b	9.9	-2.58	7.32	7.9	7.90 0	7.9	-0.80	7.10
+18° 684	c	10.3	-2.77	7.53	8.1	8.15 0 1	8.2	-0.90	7.30
	~~Jordan's a~~	~~10.8~~							
	~~Jordan's b~~	~~11.4 10.8~~							
+18° 666	Jordan's a	11.4	-3.21	8.19	9.8	9.75 0 1	9.7	-1.44	8.26
+18° 658	Jordan's b	11.5?	-3.26	8.24?	9.8	9.75 0 1	9.7	-1.44	8.26

MC 14335 Pole

5	8.0	6.9	6.80 1 1	6.7	6.9	6.80	6.85	1	0	-0.36
6	9.6	7.8	7.85 0 1	7.9	8.20	7.85	8.02	2	2	-0.91
7	9.8	8.1	8.05 1 0	8.0	8.25	8.05	8.15	10	10	-0.84
8	11.4	9.6	9.60 0 0	9.6	9.65	9.60	9.62	03	02	-1.39
9	12.3	10.6	10.55 0 1	10.5	10.50	10.55	10.52	02	03	-1.69

12 30

Wednesday Feb. 19, 1919

Barnard's variable

α = 17h 34m   δ = -11° 55'.2 (1875)

of Feb. 10, 1919.

Comp by DWB   See DWB

and

Trac S. L. and

add revised

by

Pre by DWB

on Pole plate

a   g 12.93

b   h 13.56

c   K 13.9

l 14.2 } see p. 136

m 14.4

a	10.4
b	10.7
c	11.1
d	12.3
e	12.3
f	12.7
g	12.9
h	13.6
k	13.9
l	14.2
m	14.4

Obser

MC

10.5

a

h 4 v 13.96   v = 13.9

v 1 K

B 38973

l 1 v   all magn. 14.5

v 0 m

lim of vis

Order of Comparison Star

a 9 $\overset{5}{b}$ 3 7: e 3 f 8 g 3 h 5 k 3 l 2 m

~~B 38973~~ : a 4 b 4 c ⑪ d 0 e 4 f 8 g 2 h 4 k ~~5 l 1 m~~

MC 14821

Wed. Feb 19, 1919

Barnard's Variable Cnb

Order of magn.
B 38973
a 5 b 4 c – d 1 e 4 f ⑩ g 3 h 4 l 1 m

On MC 14821, Star l is at the limit of visibility. The limit of visibility on the plates in this series is about 14.2.

Assume magn. of l = 14.2
m = 14.4
k = 13.9~~8~~

Wednesday February 26, 1919

12 10

Nova Persei No. 2.
Observations on Early plates.

no.	Magn
9	7.2
10	7.5
10a	7.9
10b	8.2
11	8.4
12	8.8
13	8.9
a	9.0
a'	9.6
a^2	9.7
b	10.5
d	10.9
c	11.3
c'	11.7
e	12.0
f	12.5
g	12.8
~~8~~7	6.2
8	6.6

PC of Nova compared with primary images of Comparison Stars

I 26788 8.6 ✓ Image winged	I 26718 7.0? ✓ very poor
I 26809 10.3 ✓ good	I 26686 6.0? ✓
I 26820 9.0 ✓ sharper than primary images	I 26684 5.7? ✓ fair
I 26825 9.0 ✓ fair	I 26683 too poor ✓
I 26836 9.6? ✓	I 26682 5.5? ✓
I 26735 7.5? ✓	I 26681 Too poor ✓
I 26687 7.5? ✓ winged	I 26673 5.7?
I 26708 yellow Too poor ✓	

Wednesday, Feb. 26, 1919

12 30 Nova Persei No. 2

Estimates Repeated

Plates turned 180°

Magn
[-5.0

I26788 p.137
8.5 8.55 8.6 3.55 ✓ 10

I26718
6.7? 6.85? 7.0? 1.85 ?✓ 12

I26681
Too poor t.p. ✓ . ..

I26686
6.0? 6.00? 6.0? ~~6~~ 1.00 ?✓ 00

I26820
8.9? 8.95? very sharp 9.0 3.95 ? 10

I26809
10.1 10.20 10.3 5.20 ✓ 11

I26687
7.4 7.45? 7.5? 2.45 ?✓ 01

I26735
7.3 ? 7.40? 7.5? 2.40 ?✓ 11

I26683 ✓
6.0 badly burnt out t.p.

I26673
5.8? 5.75? 5.7? 0.75 ?✓ 01

I26825
8.8 B 8.90 9.0 3.90 ✓ 11

I26684
5.7? 5.70? 5.7? 0.70 ?✓ 00

I26836
9.6 9.60? 9.6? 4.60 ?✓ 00

I26682
5.4? 5.45? 5.5? 0.45 ?✓ 01

Wednesday, Feb. 26, 1919

1 50 Nova Persei No. 2 Cont.

Plate Rev.

I26705
Spectrum plate

I26875
9.9 9.7 9.80 4.80 ✓ 11

I26895
t.p.

I26896
Spectrum

I26929
Sp

I27053
10.1 ? 10.0? 10.05? 5.05 ?✓ 10

I27096
Reg.

I27102
p.c. too ft

I27138
Class S

I27140
Class S

I26894
p.c. not comp. not any

I27073, 26878
Spectrum

I26743
8.5 8.50 8.5 3.50 ✓ 00

I26693
Spectrum

I26706, 26707
Sp.

Wed. Feb. 26, 1919

Nova Pers. No. 2 Cont.

		Rev.			
I 27174	10.3	10.2	10.25	5.25 ✓	10
27194	Spect.	-		✓	
27196	not comp.	-		✓	
27202	10.2	10.2	10.20	5.20 ✓	00
27207	10.4	10.3	10.35	5.35 ✓	01
27214	t.p. trails	-		✓	
272$\overset{2}{3}$3	10.2	10.3	10.25	5.25 ✓	01
27232	10.5	10.4	10.45	5.45 ✓	10
27235	Class S	-		✓	
27246	trails	-		✓	
27267	tp	-		✓	
27279	10.6	not comp.		✓	
27282	10.5	10.6	10.55	5.55 ✓	10
27297	10.1	10.0	10.05	5.05 ✓	10
27329	10.4?	not comp.	10.4?	5.4? ✓	a r
27330	10.5	10.$\overset{6}{\cancel{5}}$	10.55	5.55 ✓	10
27338	Class S	+		✓	
27364	" "	-		✓	
27394	not comp.	-		✓	
27410	tp.	-		✓	
27429	Class S	-		✓	
27437	$\overset{10}{\cancel{9}}$.8 f	10.8	10.80	5.80 ✓	00
27448	10.7	10.7	10.70	5.70 ✓	00
27481	Class S	-		✓	
27489	trails	-		✓	
~~28038~~	11.7?	11.8	11.75	6.75 ? ✓	10

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Nova Pers. No. 2 Cont.

I 28042	11.6	11.6	11.60	6.60 ✓	00
28052	not comp.	-			
28053	11.6	not comp.	11.6	6.6	a r
28054	11.6	11.6	11.60	6.60 ✓	00
27512	10.$\overset{8}{\cancel{6}}$	10.7?	10.75	5.75 ✓	01
27573	10.$\overset{8}{\cancel{7}}$	10.9	10.85	5.85 ✓	01
27539	tp	-		✓	
27542	tp.	-		✓	
27568	10.9	11.0	10.95	5.95 ✓	10
27571	not comp.	-		✓	
27682	Reg	-		✓	
27699	not comp.	-		✓	
27746	10.9	10.9?	10.90?	5.90 ✓	00
27785	11.2	11.3	11.25	6.25 ✓	01
27794	11.7	11.8	11.75	6.75 ✓	10
27811	11.5	11.6	11.55	6.55 ✓	10
27855	not comp.	-			
27861	11.1	tp.	11.1	6.1 ✓	a r
2795$\overset{4}{\cancel{7}}$	Class S	-			
27987	not comp.	-			

26686 re-observed too poor

26687 " " " "

2 50

Wednesday, Feb. 26, 1919

4 15 Nova Persei No. 2 Cont.

Comparisons of p.c. of Nova with p.c. of primary images

~~226687~~	~~6.8~~				
28042	6.8	6.8	6.80	06	✓
26788	>2.9	>2.9	>2.9		✓
28038	6.9	6.8	6.85	10	
26687	>2.9	>2.9	>2.9		✓
27861	6.7	6.5	6.60	11̲	✓
27811	6.3	6.2	6.25	10	✓
27794	6.3	6.3	6.30	00	✓
27785	6.2	6.1	6.15	01̲	✓
27746	6.2	6.2	6.20	00	✓
27513	6.0	6.0	6.00	00	✓
27568	6.2	6.1	6.15	01̲	✓
27512	6.0	6.1	6.05	01	✓
28053	6.7	6.7	6.70	00	✓
27448	6.1	6.0	6.05	10	✓
27437	6.0	6.0	6.00	00	✓
27330	5.9	6.0	5.95	1̲0	✓
27329	5.8	5.6	5.70	11̲	✓
27297	5.6	6.0	5.80	2̲2	✓
27282	6.0	6.1	6.05	01	✓
27279	5.9	5.9	5.90	00	✓
27232	6.0	6.0	6.00	00	✓
27$\overset{2}{X}$23	5.9	5.6	5.75	12̲	✓
27207	5.6	5.6	5.60	00	✓

I $\overset{2}{S}$7202	5.5	5.4	5.45	10	✓
27174	5.6	5.5	5.55	01̲	✓
26705	ofu.				
26875	4.1?	4.3?	4.20?	1̲1	✓
26896	sp.				
27102	tp.				
26718	>2.9		>2.9		✓
26836	t.p. ✓				
26802	4.1??		4.1??		
26825	tp. ✓				
26809	5.1?	4.9	5.00?	11̲	✓
26735	tp. ✓				
26684	tp ✓				
26683	tp ✓				
26681	>2.9 ✓		>2.9		
26673	tp ✓				
26682	tp ✓				

Friday, Feb. 28, 1919

Nova Persei No. 1

Examination of Plate $\overset{B}{I}$957, taken Dec. 21, 1886. In H.A. 56 page 169 it is stated that on this date the Nova was not seen and was fainter than the magnitude 14.

This is a spectrum plate. There are no stars in the region of the Nova; plate poor in that region. The Double Cluster in Perseus is in the centre of the plate. Star 5, Magn. 9.01 is just visible. The Nova on that date, therefore was fainter than the magnitude 9.0.

The Remark in H.A. 56 was evidently intended to refer to Plate # B 103, taken Nov. 3, 1885, on which the magnitude is actually less than 14, as stars of that magnitude are well seen.

Saturday, March 8, 1919

primary = s
p.c. = p
diffr. in = g. h
diffr. in } of p.c. } = pg / ph

Nova Aquilae No. 3.

Examination of Plates MC 15068 (blue) and MC 15069 (yellow) For Colors
Estimates by Argelander's Method

MC 15068 blue

$Np\overset{g}{h}$ 3 $\overset{e}{g}$ pg 4.72 4.69 05,05 direct
Nph 4 $\overset{e}{g}$ ph 4.62

N g and N h too badly burnt out

Star	Ptg	Ptv	C.I.	Sp.
p	8.34	8.07	.27	F2
q	8.69	8.65	.04	A0
r	9.05	8.76	.29	F0
e	9.28	8.50	.78	K2
t	9.80	9.23	.57	.
l	5.02	5.04	$\underline{.02}$	B5

p^s 4 N p 8.74 8.73 01,$\underline{0}$4,02 −3.85 = 488 (comp. p
N^p 0 q^s 8.69
N^p 3 r^s 8.75

Star images intense N p somewhat less intense with smoother edge. Comparison difficult

β^s 1 N pg 11.74 11.80 $\underline{06}$,06 $-\left[3.74+3.85\right] = 4.21$
N^{pg} 3 γ^s 11.86

Mean comp. p^{g}_{h} = 4.31

β^s 3 N^{ph} 11.94 12.00 $\underset{-}{06}$,06 $-\left[3.74+385\right] = 4.41$
N^{ph} 1 γ^s 12.06

For additional comparisons on MC 15068, see p. 146

MC 15069 Yellow

N^p 1 e^p 4.94 $4.\overset{97}{\cancel{85}}$ direct
N^g 2 e^g 4.84 4.84 0,0 direct
N^h 2 e^h 484

r^s 2 N p 8.96 9.00 $\underline{0}4$,03 −385 = 5.15 (comp. p)
N^p 2 t^s 9.03

(over

Saturday March 8, 1918

Nova Aquilae No. 3

MC 15069 yellow cont

p^s 3 N^g 8.37 8.44 07,06,01 −3.74 = 4.70
N^g 0 S^s 8.50
N^g 2 q^s 8.45 Yellow Mean $\overset{p\,g,h}{\text{Comp.}}$ = 4.75

p^s 4 N^h 8.47 8.54 07,06,01 4.80
S^s 1 N^h 8.60
N^h 1 q^s 8.55

MC 15068 Blue cont from p. 145

n~~x~~^{p} 4 N^{pg} 8.02 7.92 10,02,08 7.92−3.74 = 4.18
N^{pg} 0 o^p 7.90
N^{pg} 5 f^p 7.84 Blue Mean $\overset{\text{computed } p\,g,h}{\wedge}$ magn. 4.24

x n^p 5 N^{ph} 8.12 8.05 07,05,01 8.05−3.74 = 4.31
o^p 1 N^{ph} 8.00
N^{ph} 3 p^p 8.04

Diffc. images so much poorer than p.c. that comp. is very doubtful

Plate	Magn. dir.	Comp. p	Comp. g, h	Comp. p g, h	Dir.-p	Dir.-g h
15068 (blue)	4.67	4.88	4.24	4.31	−0.21	+0.43
15069 (yellow)	4.~~44~~89	5.15	4.75	.	−0.26	+0.14
Blue minus y.	−0.22	−0.27	−0.51	.		

By all methods, Nova much brighter on blue plate
All comparison stars used are comparatively white except s.

Saturday, March 8, 1918

Plates for Nova Aquilae No. 3
Observations & Determine value
of Constant for precise comparisons.

Direct Estimates of p.c. in terms of primary in.

MC 15068 blue		Magn	Diff.
e^p	9.2	5.0	4.2
g^p	10.3	5.7	$\boxed{4.6}$ double
l^p	10.4	6.8	3.6
m^p	11.0	7.3	3.7
n^p	11.2	7.6	3.6
o^p	11.5	7.9	3.6
q^p	12.6	8.7	3.9
r^p	12.9	9.0	3.9
s^p	13.3	9.3	4.0
t^p	13.8 ? f	9.8	4.0
p^p	12.2	8.3	3.9
			84
			10
			3.84

MC 15069 yellow			
e^p	9.1	5.0	4.1
g^p	9.7	5.7	4.0
l^p	10.6 ?	6.8	3.8
m^p	f		
n^p	f		
k^p	9.8	6.3	3.5
			34
			3.85

Constant for p.c. on these plates, 3.85

Wednesday March 13, 1914

North Polar Sequence

Estimates of Magnitudes for determination of Contrast for Grating.

Diffraction Images Estimated in terms of faint stars of sequence

Order "2". Diffraction Images compared with Primary.

Des	MD 15637 Blue Stars	Red Stars	Magn.	Diff Blue	Diff Red	Resid Blue [3.23]	Resid Red [3.47]	Mean Resid
1	t.p.							
2	t.f.							
3	t.p.							
4	9.1	9.4	5.99	3.11	3.41	12	06	09
5	9.7	9.9	6.49	3.21	3.41	02	06	04
6	10.4	10.7	7.11	3.29	3.59	06	12	09
7	10.6	10.8	7.31	3.29	3.49	06	02	04
8	11.3	11.8	8.23	3.07	3.57	16	10	03
9	12.0	12.3	8.83	3.17	3.47	06	00	03
10	12.5	12.4	9.02	3.48	3.38	25	09	08
11	12.7?f	13.1?f	9.55	[3.12?	3.52]	⑫?	05?	03?
12	n.s.		~~9.86~~ Mean	162 7 3.23	332 3.47	37−36 ±0.10	22−21 ±0.06	
1r	9.7	9.9	6.80	2.90	3.10	[2.85] .05	[3.01] 09	07
2r	10.4	10.7	7.87	2.53	2.83	32	18	25
3r	11.9	11.8	8.75	3.15	3.05	30	04	17
4r	12.0	12.1	9.10	2.90	3.00	05	01	02
5r	12.7?f	13.0	9.91	2.79	3.09	06	08	01
6r	n.s.	-	~~10.30~~ Mean	1427 5 2.85	1507 3.01	40-38 ±0.16	21-19 ±0.08	
1s	tp.	x	~~9.14~~					
a5 2s	9.8	10.3	6.48	3.32	3.82			
f 3s	10.0	10.3	6.65	3.35	3.65			
g 4s	12.7?f	13.0	10.12	2.58?	2.88			

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Contrast of Grating Cont.

Faint Stars estimated in terms of diffraction Images

~~Blue~~ Order "1" Primary Images compared with Diffraction.

Des	blue stars	red stars	Magn.	Diff. Blue	Diff. red	Resid B [3.29]	Resid R [2.84]	Mean
10	5.9	B	9.02	3.12	.	⑰	.	
11	6.4	B	9.55	3.15	.	⑭	.	
12	6.5	6.8?	9.86	3.36	3.06	07	22	14
13	7.0	7.6	10.30	3.30	2.70	01	14	06
14	7.3	7.8	10.65	3.35	2.85	06	01	04
15	8.0	8.8 H	11.08	3.08	2.68	21	16	18
16	8.1	8.7	11.40	3.30	2.70	01	14	06
17	8.4	8.8	11.63	3.23	2.83	06	01	04
18	8.7	9.1	12.06	3.36	2.96	07	12	10
19	9.1	9.5	12.42	3.32	2.92	03	08	06
20	9.8?	10.6	12.73	[2.85?	2.73]	㊹	⑪	㉘
21	n.s.	—	~~12.96~~ Mean	230 8 3.29	678 8 2.84	25-27 8 ±0.06	43-45 ±0.11	
4r	B	B	~~9.10~~					
5r	6.4	6.8	9.91	3.51	3.11	02	08	05
6r	6.5	7.1	10.30	3.80	3.20	31 ~~69~~	17	24
7r	7.1	7.8	10.70	3.60	2.90	11	13	01
8r	8.0	8.7 H	11.20	3.20	2.80	29	23	26
9r	8.2?	8.6	11.70	3.50?	3.10	01	07	04
10r	9.0	9.4	12.35	3.35	2.95	14	08	11
11r	9.5	9.8	12.97	3.47	3.17	02	14	06
12r	n.S.	n.S	13.48					
				2343 7 3.49	2123 7 3.03	45 −45 ±.13	46 −44 ±.13	

Thursday, March 13, 1919

11 15

Constant of Grating MF 2459
North Polar Sequence

Comparison 1 - Primary Images estimated in terms of Diffraction Image

Des	blue stars	red stars		Diff. Blue	Red	Residuals b [3.36]	r [3.54]	Mean Resid.	b r	b-r (r00)
11	B	B			.					
12	7.0	B	9.86	2.86	.	(50)	.			
13	7.7	B	10.30	2.60	.	(76)	.			
14	8.0	B	10.65	2.65	.	(71)	.			
15	8.1	B	11.08	2.98		(38)	.			
16	8.2	7.9	11.40	3.20	$\overset{5}{3.20}$	16	04	10	30	12
17	8.4	8.1	11.63	3.23	3.53	13	01	07	30	12
18	8.9	8.6	12.06	3.16	3.46	20	08	14	30	12
19	9.2	8.8	12.42	3.22	3.62	14	08	03	40	22
20	9.5	9.1	12.73	3.23	3.63	13	09	02	40	22
21	9.6	9.6	12.96	3.36	3.36	00	18	09	00	18
22	9.7	9.6	13.19	3.49	3.59	13	05	09	10	08
23	9.8	9.8	13.34	3.54	3.54	18	00	09	00	18
24	10.3	10.3	13.64	3.34	3.54	02	00	01	20	02
25	10.3	10.3	13.83	3.57	3.57	21	03	12	00	19
26	10.7	10.7	14.33	3.63	3.63	27	09	18	00	18
									200 11 -18	81-82
27	ns.									
5r	7.0?	~~7.8~~ B	9.91	2.91?	.	(35)?	.			
6r	7.4?	B	10.30	2.90?	.	(36)?	.			
7r	7.5	~~7.6~~ B	10.70	3.20	.	(06)	.			
8r	8.1	7.9	11.20	3.10	3.30	16	08	12		20
9r	8.5	8.5	11.70	3.20	3.20	06	08	12		00
10r	8.9	8.8	12.35	3.45	3.55	19	17	18		10
11r	9.6	9.3	12.97	3.37	3.67	11	29	20		30
12r	10.3?	10.3?	13.48	3.18?	3.18	08?	20	14?		00 12

r-b-(r-r) = r-b

Mean

b r

~~48 06~~

39 7 59 7
11 11
3.36 3.54
79-78 34-31
±.14 ±.06

[Nos. 24-26
3.51 3.58]

Nos. 22-25
~~3.48~~ 3.56

b r 130

130 ~~142~~.
5 5
3.26 3.38
30-30 46-46
±.12 ±.18

[Nos 11r, 12r
3.27 3.42]

Thursday, March 13, 1919

MF 2459 Cont.

Comparison 2 - Diffr. Im. in terms of Primary

Des	blue stars	red stars	Magn. 210.91.4	Diff. blue	red	Resid, b 3.52	r	Mean Resid	b-r
5	9.5?	9.7?	6.49	2.81?	3.21?	(39)? 71?	(14)?	(12)	(+40)
6	10.0	9.8?	7.11	2.89	2.69?	(31) 63	(38)	(34)	(+20)
7	10.0	10.0	7.31	2.69	2.69	51 83	38	44	00
8	11.4	11.2	8.23	3.17	2.97	03 35	10	06	20
9	12.0	11.7	8.83	3.17	2.87	03 35	20	12	30
10	12.2	12.0	9.02	3.17	2.98	03 35	09	06	19
11	12.7	13.0	9.55	3.15	3.45	05 37	38	16	30
12	13.4	13.2	9.86	3.54	3.34	34 02	27	30	20
13	13.8	13.5	10.30	3.50	3.20	30 02	13	22	30
14	14.2	f	10.65	3.55	.	(35) 03	.		
15	f	-							
				2239 ~~2809~~ 7 3.20	2150 3.07	64-65 7 ±.18	78-77 ±.22		119-30 7 -13
1r	f	~~11.0~~	6.80	.	.				
2r	11.4	11.0	7.87	3.53	3.13	10	24	07	40
3r	12.1	12.5	8.75	3.35	3.75	08	38	15	40
4r	12.3	12.5	9.10	3.20	3.40	23	03	10	20
5r	13.5	13.3	9.91	3.59	3.39	16	02	09	20
6r	13.8	13.5	10.30	3.50	3.20	07	17	05	30
7r	14.2	-	10.70	(3.50)	.				
8r	013.	-							
				21 7 5 3.43	18 7 3.37	33-31 ±.13	43-41 ±.17		90-60 +06

b-b-(r-b)

b-r-(r-r) = (b-r)

Nos 12, 13
b r
3.52 3.27

Nos 10-13
3.34 3.24

Nos 5r, 6r
3.54 3.30

12 15

Thursday March 18, 1919

4 10

Constant of Grating. MF 2406
North Polar Sequence

Comparison (1) Primary images comp. with Grating

	Des	blue stars	red stars		Diff. b	Diff. r	Resid. b	Resid. r	Mean Resid.
	12	6.9	B	9.86	2.96				
	13	7.1	B	10.30	3.20	.	(10)	.	
	14	7.3	7.6	10.65	3.35	3.05	05	36	16
	15	7.8	7.9	11.08	3.28	3.18	02	23	12
	16	8.2	8.0	11.40	3.20	3.40	10	01	06
	17	8.~~7~~6	8.5	11.63	3.03	3.13	27	28	28
	18	8.8	8.8	12.06	3.23	3.26	07	15	11
	19	9.0	9.1	12.42	3.42	3.32	12	09	02
	20	9.5	9.3	12.73	3.23	3.43	07	02	02
	21	9.9	9.6	12.96	3.06	3.36	24	05	14
Nos 22-25	22	9.9	9.6	13.19	3.29	3.59	01	18	08
b r	23	10.0	9.7	13.34	3.34	3.64	04	23	14
3.46 3.68	24	10.0	9.8	13.64	3.64	3.84	34	43	38
	25	10.3	10.2	13.87	3.57	3.67	27	26	26
	26	7	7		364	12 487	82 -78	112 -117	
					3.30	3.41	12 ±.13	±.19	
	5r	7.1	B	9.91	2.81	.			
	6r	7.1	B	10.30	3.20	.			
	7r	7.3	7.6?	10.70	3.40	3.10	10	27	08
	8r	8.2	8.1	11.20	3.00	3.10	30	27	28
Nos 11r, 12r	9r	8.5	8.4	11.70	3.20	3.30	10	07	08
3.36 3.58	10r	8.9	8.8	12.35	3.45	3.55	15	18	16
	11r	9.5	9.3	12.97	3.47	3.67	17	30	24
	12r	10.2	10.0	13.48	3.28	3.48	02	11	04
					180 6	220	42 -42	59 -61	
					3.30	3.37	±.14	±.20	

Thursday March 18, 1919

MF 2406 Cont.

Comparison (2) Grating comp. with Primary

	Des	b	r		Diff. b	Diff. r	Resid. b	Resid. r	Mean Res.
	5	9.1	9.~~B~~2?	6.49	2.61	2.71?	50	47	48
	6	10.2	~~9~~10.0?	7.11	3.09	2.89?	02	29	16
	7	10.4	10.2?	7.31	3.09	2.89?	02	29	16
	8	11.3	11.6	8.23	3.07	3.37	04	19	08
	9	12.0	12.2	8.83	3.17	3.37	06	19	12
	10	12.3	12.4	9.02	3.28	3.38	15	20	18
	11	12.6	12.9	9.55	3.05	3.35	06	17	06
Nos 12, 13 3.32 3.32?	12	13.0	13.2	9.86	3.14	3.34	03	16	10
Nos 10-13	13	13.8	13.6?	10.30	3.50	3.30?	39	12	26
3.24 3.34	14	14.1	7	10.65	3.45	.	63 -64	103 -106	
					28 00 9	28 60	9 ±.14	±.23	
					3.11	3.18			
	1r	B	B						
	2r	10.6?	10.8	7.87	2.73?	2.93	60	40	30
	3r	11.9	12.3	8.75	3.15	3.55	18	22	02
Nos 5r, 6r	4r	12.6	12.4	9.10	3.50	3.30	17	03	07
3.64? 3.44?	5r	13.6	13.4	9.91	3.69	3.49	36	16	26
	6r	13.9?	13.7?	10.30	3.60?	3.40?	27	07	17
	7r	n.s.	.						
					1667 5	1667	80 -78	45 -43	
							±32	±17	
					3.33	3.33			

5 00.

Friday, March 14, 1919

Constant for Grating MD 15635

Comparison (1)

Des	blue	red		Diff. b	Diff. r	Resid. b	Resid. r	Mean Resid.
10	B	B		.	.			
11	~~6.4?~~ B	B		.	.			
12	6.5	7.2?.	9.86	3.36	2.66	01	09	04
13	7.0	7.8	10.30	3.30	2.50	05	25	15
14	7.3	7.9	10.65	3.35	2.75	00	00	00
15	7.8	8.4	11.08	3.28	2.68	07	07	07
16	8.0	8.6	11.40	3.40	2.80	05	05	05
17	8.3	8.8	11.63	3.33	2.83	02	08	03
18	8.7	9.1	12.06	3.36	2.96	01	21	11
19	9.0	9.7	12.42	3.42	2.72	07	03	02
20	9.4	9.9	12.73	3.33	2.83	02	08	03
21	tp.	-						
22	tp.	-						
23	10.1? -	-	13.34	$\boxed{3.24}$				
24	ns.?	-		313	673	14 −16	42 −44	24-26
25	f?.			9 3.35	2.75	±.03	±.10	±.06
26	.							
1r								
5r 1r 2r	6.6	6.8?	9.91	3.31	3.11?	12	18	03
6r 2r 3r	7.0	7.6	10.30	3.30	2.70	13	23	18
7r 3r 4r	7.2	7.8	10.70	3.50	2.90	07	03	02
8r 4r 5r	7.7	8.3	11.20	3.50	2.90	07	03	02
9r 5r 6r	8.2	8.9	11.70	3.50	2.80	07	13	03
10r 6r 7r	8.8	9.2	12.35	3.55	3.15	12	22	17
11r 7r ~~8r~~	9.6f?	10.0	12.97	3.37?	2.97	07	04	02
12r 8r	n.s.?	n.s.		303 7 3.43	653 2.93	33 −32 ±.09	44 −42 ±.12	24-23 ±.07

Friday, March 14, 1919

MD 15635 Cont.

Comparison 2

Des	blue	red		Diff. b	Diff. r	Resid. b	Resid. r	Mean Resid.
5 ~~9r~~	9.9?.	B	6.49	3.41?	- . -	⑳	.	
6 ~~10r~~	10.2	10.4	7.11	3.09	3.29	11	07	09
7 ~~11r~~	10.7	10.7	7.31	3.39	3.39	18	03	10
8 ~~12r~~	11.1	11.5	8.23	2.87	3.27	34	09	22
9	12.0	12.1	8.83	3.17	3.27	04	09	06
10	12.3	12.4	9.02	3.28	3.38	07	02	04
11	12.8	13.0	9.55	3.25	3.45	04	09	06
12	13.3?.	13.3?	9.86	3.44?	3.44?	23	08	16
				2249 7 3.21	249 3.36	52 −49 ±.14	22 −25 ±.07	36-37 ±.10
1r	9.6?.	9.7	6.80	2.80?	2.90	14	21	18
2r	10.5	10.8	7.87	2.63	2.93	31	18	24
3r	12.0	12.2	8.75	3.25	3.45	31	34	32
4r	12.2	12.4	9.10	3.10	3.30	16	19	18
5r	12.8?	13.0	9.91	2.89?	3.09	05	02	04
6r	13.3?	13.3?	10.30	3.00	3.00	06	11	02
7r	n.S.	n.s.	10.70	.	.			
				567 6 2.94	1867 3.11	53 −50 ±.17	53 −52 ±.17	50-48 ±.16

Tuesday, March 18, 1919

2-50 Nova Aquilae No. 3.

Estimates on Transit Photometer Plates

Comp. Stars marked M 1189~~5~~

α Lyrae 0.14
γ Sagitt. 1.97
ζ Sagitt. 2.77

M 11895 ✓
0.4?

M 11902 ✓
1.1?

M 11897 ✓
0.5?

M 11907 ✓
1.5?

M 11916 ✓
Too poor

M 11901
1.0? ✓

M 11899 ✓
0.8?

M 11911 ✓
Too poor

Saturday March 29, 1919

Scale R. North Polar Sequence MC 15814

Measures to determine Value of Grating Constant

12:10

Exposure 1 20s

Diff Curve	Magn		Sc 1	Sc 2 Dist.	Sc 3 Cor. for Dist.	Curve	Cor cu.	Magn		g sc1	g sc2	h sc1	h sc2 No Cor. for Dist.	Cu.	Magn
		1	3.5? 3.8?	3.5	2 4.1?	0.73	B	4.48 4.53?							
.		2		.	.	.		.							
.		3	5.0g. 5.3	5.6	~~5.7~~ 7.9	0.35	0.21 7	5.98 5.65							
.		4	5.6 5.9	5.5	5.5	0.14	0.47	5.92 6.05							
.		5	6.3 6.5	~~6.1~~ B. ry. 6.3	6.3	-0.09	0.12	✓ 6.41	5	11 ~~12.7~~	11.75 ±0	11.8		-5.26	6.49
.		6	7.5 7.8	~~7.7~~ B. ry. P 7.8	7.7	-0.69	0.55	7.20 7.11	6	12.7	12.70 00	12.7		-5.37 50	7.33 20
.		7	Sup.	T~~X~~	.	.		.	7	13.2	13.10 11	13.08		-5.~~40~~ 60	7.~~70~~ 50
..		8	T.F.	9.6	9.6 ~~9.6~~	-1.30	1.34	✓ 8.30	8	13.8? 6 dif?	~~13.25~~ 43 3 13.75?	12.9?		-5.~~70~~ 72	~~7.85~~ ~~8.53~~ 8.03
.		9	10.4	✓		-1.60	8.80		9	14.0?		n.S.		-5.49	8.51 Reject, D effect
-5.16	5.64	10	10.8	✓		-1.64	9.16		5712	n.S				.	
-5.20	6.00	11	11.2			-1.75	9.45		5715	n.S				.	
-5.25	6.45	12	11.7			-1.80	9.90								
-5.28	6.72	13	12.0			-1.87	10.13								
-5.~~35~~ 50	7.~~35~~ 20	14	12.7			~~-1.98~~ 2.02	10.~~72~~ 68								
-5.~~39~~ 59	7.~~71~~ 52	15	13.1			-2.~~04~~ 12	~~11.06~~ 10.98								
-5.~~38~~ 57	7.~~02~~ 43?	16	13.0 2.			-2.~~02~~ 10	10.9~~8~~ 0								
.	.	17	N.S.			.	.								

	Prism Curve.	Magn
5	-1.82	9.93
6	-~~1.98~~ 2.02	10.~~72~~ 68
7	-2.~~08~~ 12 4	11.0~~2~~ 6 10.98
8	-~~2.08~~ +2 -2.27	~~11.1~~ 11.632 48? 7 ?
.		.

18 Prism. Comp.

19

20 sc sc2 sc3 sc

1

2

3

4

5 12.7

6 Is nearly suppressed

7

N.Col.

North Polar Sequence Measures continued

M.C. 15814

Diff Cu.	Magn		Sc 1	Sc 2	Sc Corr. Dist	Cu.	Corr. cu.	Magn	g sc1	g sc2	g sc3	h sc1	h sc2
.		1r	T.P.			.							
.		2r	T.F.	8.5	8.5 ~~8.5~~	-0.96	0.92	✓ 7.54		13.3		13.10 2 2 -5.~~39~~ 60	12.9 7.~~71~~ 50
.		3r		9.8g.	9.7 ~~9.7~~	-1.39	1.37	8.33 8.41		n.S.			n.S. .
-5.16	5.64	4r		10.8		-1.65		9.15		n.S			n.S. .
-5.25	6.45	5r		11.7		-1.80		9.90		n.S			
-5.28	6.72	6r		12.0		-1.86		10.14				Prism Cu. -2.~~04~~ 12	11.06 ~~10.~~98
-5.36 52	7.~~44~~ 28	7r		12.8		~~-1.99~~ 2.05		10.~~84~~ 75					
-5.~~47~~ 72	8.~~33~~ 08 ✓	8r		13.8g.		-2.~~13~~ 28		11.~~67~~ 52 ✓					
.	.	9r		N.S.		.							
.	.	10r		N.S.		.							
.		1s	B 6.5			.						11.70 00	-5.25 6.45 1
.		2s	6.2g.		63 ~~6.2~~	-0.09	+0.17	6.30 6.11		11.7			12.7?
.		3s	T.P.			.				TP			
-5.28	6.72	4s		12.0		-1.86		10.14				Pri. c.	
-~~5.36~~ 52	7.~~44~~ 28	5s		12.8 2		-~~1.99~~ 2.05		10.~~84~~ 75					-1.80 9.90
-5.~~41~~ 66	7.~~99~~ 82	6s		13.4g.		-2.~~10~~ 18		11.~~30~~ 22 ✓					
.	.	7s		T.P.		.		.					
.	.	+88° 2		10.2 fogged	10.2	-1.50	~~-1.58~~	✓ 8.70		n.S			
.	.	+88° 80		10.6	10.5	-1.60	-1.58	8.92 9.00		n.S			n.S
.	.	+88° 86		10.0	9.9 ~~9.9~~	-1.46	1.42 ✓	8.48 8.54		n.S			n.S
-5.17	5.73	+88° 90		10.9	10.9	-1.66		✓ 9.24		n.S			n.S
.	.	+88° 105		10.5	10.5	-1.58		✓ 8.92					n.S.
-5.15	5.55	+88° 115		10.7	10.7	-1.62		✓ 9.08		n.S			n.S.
.	.	+87° 12 TF		9.9	9.8 ~~9.8~~	-1.40	~~1.40~~ -1.38	8.42 8.50					n.S
.	.	+87° 15		9.0	8.8 ~~8.8~~	-1.03	1.04 ✓	7.76 7.97					n.S.

Sat. Mar. 29, 1919.

Scale R. North Polar Seq. continued

12:35 M.C. 15814

Diff. Curve	Magn	Ind Exp 1 min.	Sc1.	Sc3	Sc2	Cu. (Corr Cu.)	Magn	g sc2		h sc2			Prim Cu.	Magn
.		1		~~Corr Dist~~ Corr. Dist		"	,	T.P.			.			
.		2				.	,	Off plate			.			
.		3	TP.			.	,	TP			.			
.		4				,	,	T.P.			.			
.		5	5.3? 5.0?	3.1? ~~5.0?~~	B	. 1.47 ~~1.52~~	6.57? ,	10.6	10.60 0 0	10.6	-399	6.61		
.		6	6.0 5.7	6.0 ~~5.8~~		1.00 ~~1.20~~ 1.12	7.12 7.00	11.2	11.10 1 1	11.0	-416	6.94		
.		7	sup.	.	T.P.	,	,	11.5	11.65 1 2	11. ~~12~~8	-4.30	7.35		
.		8	8.0 7.7	7.9 ~~7.9~~	B ~~7.7~~	. 0.37	8.29 ,	12.8	12.95 2 1	13.1	-468	8.27		
.		9.		8.7	8.8	-0.04 +0.06	8.76	13.2	13.60 1 4 4	14.0?	-4.81	8.79		
.		10			9.4q.	-0.23 -0.20	9.17	sup.						
-396	6.24	11			10.2	-0.47	9.73				Prim Cu.	Magn		
.	,	12			9.9	-0.38	9.52				-0.58	10.02		
-4.00	6.70	13			10.7	-0.59	10.11				-0.69	10.41		
-4.28	7.22	14			11.5	-0.79	10.71				-0.83	10.82		
-4.32	7.38	15		-	11.7	-0.85	10.85				-1.10	11.85		
-4.44	7.66	16	.		12.1	-0.94	11.16				-1.21	12.39?		
-4.65	8.25	17			12.9	-1.09	11.81							
-4.69	8.31	18			13.0	-1.10	11.90							
-4.81	8.79?	19			13.6?	-1.21	12.39?							
.	.	20.			14.1?	-1.30	12.80?							
,		87°15	7.9 7.6	7.80 7.6 ~~7.4~~	7.7	0.32 0.50 ~~0.60~~	8.10 8.12	13.1?q.	13.0 13.05 ? 1 0	13.0?	-4.69	8.36?	-1.11	11.94?
,		87°12	8.3 8.8	8.45 8.2 ~~8.1~~	8.6	0.08 28 ~~0.30~~	8.48 8.53	13.9?	13.7 ? 13.85 ? 1 0	13.8?	-4.80 -4.88	8.90? 8.97?	-1.26	12.59?
,		88°2	F		8.7	0.00 0.05	8.75 8.70	13.7?	13.80 ? 1 1	13.9	-4.87	8.93?	-1.25	12.55?
,		88°8		8.6	8.8	-0.05 0.10	8.70 8.75	13.7?	13.7 13.85 ? 1 2	14.0?	4.80 -4.88	8.90? 8.97?	-1.26	12.59?
,		88°8		8.3 ~~8.2~~	8.5	0.05 0.2	8.52 8.55	13.2	13.3 13.40 ? 2 2	13.6?	-4.70 -4.78	8.60 8.62?	-1.18	12.22?
,		88°9			9.8	-0.34 -0.33	9.46	N.S.		N.S.	.	,	,	,
,		88°10.5		~~8.8~~	8.9	-0.07 -0.02	8.88 8.83	13.2?		N.S.	-4.74	8.46?	-1.14	12.06?
.		88°11.5			9.5	-0.26 -0.29	9.27 9.24	13.8	13.95 ? 2 1	14.1?	-4.89	9.06?	-1.28	12.67?

H.C.D.

Sat. Mar. 29, 1919

Scale R. North Polar Seq. Continued.

12:35 M.C. 15814. Sc1 Sc3 Sc2

Diff Curve	Magn		Sc1	Sc3 (Corr Dist)	Sc2	Cu. (Corr)	Magn		g sc2		h sc2	Cu	Magn
.		1n				.							
.		2n	6.9 6.6	6.9	B	0.65 -0.80 7.25	7.70		11.9	11.95 1 0	12.0	.440	7.55
.		3n	TF	8.7 ~~8.6~~	8.8	-0.04 0.05	8.76 8.75		13.2	13.2 13.25 0 1	13.3	-.475	8.50
.		4n			9.2	-0.17 -0.12	9.03		N.S		13.8	-.487	8.93
.		5n			9.8	-0.35 -0.32	9.45		N.S		N.S	.	.
-4.01	6.69	6n			10.7	-0.60	10.10	~~10.7~~	↓				
									Prim Curve		Magn		
-4.16	6.94	7n			11.1	-0.69	10.41	~~12.2~~	-0.80		11.15		
-4.39	7.51	8n			11.9	-0.89	11.01	~~12.4~~	-1.15		12.10		
-4.64	8.16	9n			12.8	-1.07	11.73	~~13.2~~	-1.25		12.55		
-4.91	9.09	10n			14.1q	-1.28	12.72	~~13.8~~	.		.		
.	.	1s				,			B		11.4		
.	.	2s	5.3 5.0q.	5.0 ~~4.9~~		. 1.50 ~~1.54~~	6.54		10.3	10.3 10.35 1 0		-3.90	6.45
.	.	3s				.			T.P.		T.P.	.	.
-4.01	6.69	4s			10.7	-0.60	10.10		N.S.			.	.
-4.30	7.30	5s			11.6	-0.82	10.78		Prim Cu.				
-4.44	7.66	6s			12.1	-0.95	11.15		-0.40		9.95		
-4.78	8.62	7s			13.4	-1.18	12.22						

~~13.1~~
~~13.7~~

1.05

Sat. March 29, 1919

Scale R. North Polar Seq continued

2.85 M.C 15814.

3rd Exp. 3 min Sc1 sc2 sc

Diff Culb.			Sc1	sc2	sc ~~Cor. Dist~~ Dist	Cu.	Cor Cu.	Magn	g sc2 ~~sc~~	Cor. Dist	h sc2 ~~sc~~	Cu.	
.		1											
.		2											
.		3											
.		4											
.		5	3.4? (3.7)	B	~~3.3~~ 3.4	2.59	~~3.20~~ 3.21	6.29 (6.50)	8.9	8.90 0 0 ✓ 8.8	8.9?	-2.42 (-2.38)	6.48?
.		6	4.4 (4.7)	~~9.8~~	~~4.5~~ 4.6	2.24	~~2.63~~ 2.51	6.94 (7.11)	9.8	9.85 0 1	9.9	-2.74	7.11
.		7	5.0 (5.3)	B	~~4.9~~ 5.0	2.03	~~2.28~~ 2.34	7.33 (7.34)	10.3	10.15 1 2 10.1	10.0	-2.77	7.38
.		8	6.5 (6.8)	~~6.7~~ B	~~6.6~~ 6.7	1.60	~~1.80~~ 1.87	8.40 (8.40)	sup		~~11.4~~ 11.7	-3.46	8.24
.		9	7.0 (7.3)	~~7.7~~ B	~~7.1~~ 7.2	1.44	~~1.58~~ 1.52	~~9.04~~ 8.72 8.74	12.7	12.70 0 0	12.7	-3.73	8.97
.		10	7.1 (7.4)	~~7.7~~ B	7.4	1.40	~~1.47~~ 1.48	8.80 (8.88)	12.6	12.60 0 0	12.6	-3.71	8.89
-2.28	6.22	11	T.F.	8.5		1.05	~~1.08~~ 1.10	9.55 (9.60)	13.6	13.30 3 3	13.0	-3.77	9.53
-2.35	6.35	12	T.F.	8.7		1.00	1.02 ✓	9.70 (9.72)	14.0	13.85 2 1	13.7	-3.81	10.04
-2.49	6.61	13	~~*~~	9.1		0.88	✓	✓ 9.98	~~13.1~~ 14.1?		N.S.	~~-3.79~~ 82	~~9.31~~ 10.28
-2.80	7.20	14		10.0		0.61	✓	10.61	N.S.			.	.
-3.09	7.61	15		10.7		0.42		11.12			N.S.	.	.
-3.17	7.73	16		10.9		0.35		11.25					
												Prim Cu.	Magn
-3.40	8.30	17	*	11.7		0.11		11.81			5	0.93	9.83
-3.50	8.40	18		11.9		0.05		11.95			6	0.66	10.51
-3.64	8.66	19		12.3		-0.03		12.27			7	0.56	10.71
-3.78 (6)	9.14	20		12.9		-0.08		12.82			8	0.11	11.81
-3.78	9.22	21		13.0		-0.08		12.92			9	-0.08	12.62 (6)
-3.80	9.40	22		13.2		-0.07		13.13			10	-0.07	12.53
-3.82	9.78	23		13.6		-0.06		13.54			11	-0.07	13.23
-3.81	9.59	24		13.4		-0.06		13.34			12	-0.06	13.79
.	.	25		N.S.		.		.			13	~~-0.08~~ .5	14.05 0 ~~13.02 1~~
												.	.

H.C.D.

Sat. March 29, 1919

Scale R. North Polar Seq. Continued M.C 15814

2.105 Ac1 sc2 sc

Diff. Cu.			sc1	sc2	sc ~~Cor. Dist~~	Cu		Magn	sc g/2		h sc2	Cu.	Magn	Prim Cu.	Magn
.		1r				.		.							
.		2r	6.5 (6.8) Reject uncertainty Morg	B	6.8 ~~6.8~~	~~1.59~~	1.70 ✓	8.50 ~~8.39~~	11.0	10.90 1 1 ✓	10.8	-3.15	7.75	0.35	11.25
.		3r	6.9 (7.2)		~~6.9~~ 7.0	1.47	~~1.68~~ 1.48 1.60	8.67 (8.60)	11.9	11.95 1 0 ✓	12.0	-3.52	8.43	0.04	11.99
.		4r	7.1 (7.4)	~~7.5~~ B	~~7.3~~ 7.4	1.40	1.51 (1.48)	8.80 (8.88)	12.5	12.45 1 0 ✓	12.4	-3.67	8.78	-0.06	12.39
-2.30	6.30	5r	TF	8.6		1.03	1.08 (7)	9.63 (8.67 9)	F.		N.S.	.	.	.	.
-2.73	7.07	6r		9.8		0.67		10.47	13.8		N.S.	-3.82	9.98	-0.05	13.75
-2.85	7.25	7r		10.1		0.59		10.69	N.S.	.		.	.		.
-3.13	7.67	8r		10.8		0.38		11.18							
-3.42	8.18	9r		11.6		0.14		11.74	N.S.						
-3.69	8.81	10r		12.5		-0.06		12.44							
-3.72	8.98	11r		12.7		-0.08		12.62							
-3.78	9.32	12r		13.1		-0.08		13.02		Cor. Dist.					
.		1s													
.		2s	4.0? (4.3?)		3.9? ✓	2.38	~~2.40~~ 86	6.68? (6.76)	8.7	8.75 1 0 ~~8.6~~ 8.7	8.8	-2.36 (-2.30)	6.39	0.99	9.74
.		3s				.		.				.	.	.	.
-2.70	7.00	4s	T.F.	9.7		0.71		10.41	13.9	13.80 1 1	13.7?	-3.82	9.98	-0.05	13.75
-2.98	7.42	5s		10.4		0.50		10.90	N.S.		N.S.	.	.		
-3.06	7.54	6s		10.6		0.44		11.04	N.S.			.	.		
-3.58	8.52	7s		12.1		0.01		12.11							
.															
.		8802	6.9 (7.2)	~~7.0~~ B	~~7.1~~ 7.2	1.47	~~1.58~~ 1.53	8.67 (8.73)	12.5	12.35 1 2 ✓	12.2	-3.65	8.70	-0.04	12.31
.		8880	7.0 (7.3)	~~7.5~~ B	~~6.9~~ 7.0	1.44	~~1.68~~ 1.60	8.74 (8.60)	12.7	12.80 1 1 (12.7)	12.9	-3.74 (-3.72)	9.06 (8.98)	-0.08	12.72 (12.62)
-2.39		8886	~~6.7~~ ~~4.0~~ 7.0	~~6.9~~ B	~~6.6~~ 6.7	1.54	~~1.80~~ 1.70 ~~8.54~~	7.54 (8.40 8)	12.3	12.20 1 1	12.1	-3.57	8.63	0.00	12.20
.	↳ 6.41	8890	TF	8.8	8.7 ✓	0.96	1.02 ✓	9.76 (9.72)	13.2	13.40 2 2 13.3	13.6?	-3.81 ✓	9.59 (9.49)	-0.07	13.33 (13.22)
.		88105	6.9 (7.2)	~~7.6~~ B	~~7.1~~ 7.2	1.46	~~1.58~~ 1.53	8.66 (8.73)	12.3	12.50 2 2	12.7	-3.69	8.81	-0.06	12.44
.		88115	7.6 (7.9)	~~7.6~~ B	~~7.8~~ 7.9	1.25	~~1.31~~ 1.30	9.15 (9.20)	12.6	12.60 0 0	12.6	-3.71	8.89	-0.07	12.53
.		87126	6.7 (7.0)	~~7.1~~ B	~~6.6~~ 6.7	1.54	~~1.80~~ 1.64	8.54 (8.34)	12.6	12.45 2 1	12.3	-3.64	8.81	-0.06	12.39
		8715	5.8 (6.1)	B	~~5.6~~ 5.7	1.80	~~2.18~~ 2.08	7.90 (7.78)	11.6	11.65 0 1 ✓	11.7	-3.46	8.19	0.12	11.77

Sat Mar. 29, 1919.

Reject diff. magn of white stars when primary magn are brighter than 3.2

Scale R. North Polar Seq. continued

2:25 M.C. 15814

4th Exp. 10 mins

Diff curve			sc1	sc2		Cu	Magn	g sc2	Cor. Dist.	h sc2	Cu	Magn	Prim Cu	Mag
		1												
		2												
		3												
.		4												
.		5	2.9? 2.6?	2.6? ~~2.5?~~		15 4.88		7 8.3?	7.95 ? 12 B 7.3	7.6?	-0.70 -1.18	6.75 6.77	2.50 2.42	10.37
.		6	2.9? 2.6?	2.8 ~~2.7~~		15 4.88		8.2?	8.35 ± B 8.3?	8.5	-1.13 -1.32	7.17 7.03	2.29	10.64
.		7	B 3.0? 2.7?	2.5 ~~2.4?~~				8.6	8.70 ± 1 B 6 8.5	8.8	-1.30 -1.46	7.50 7.24	2.16	10.86
.		8	5.3 5.0	5.2	B	3.09 2.88	8.30 8.18	10.5	10.45 1 0	10.4	-2.03 -1.75	8.42 8.70	1.57 1.52	12.02 11.97
.		9	6.1 5.8	5.9	B	2.90 2.80	8.80 8.90	10.9	10.90 0 0	10.9	-2.15 -1.88	8.75 9.02	1.47 1.50	12.37 12.40
.		10	6.2 5.9		B	2.80 2.78	9.00 8.98	11.0	11.20 2 2	11.4	-2.20 -2.21	9.00 8.99	1.40 1.28	12.60 12.48
-0.97 B	6.13 B	11	7.1 6.8		B	2.60 2.65	9.70 9.75	11.7	11.90 2 2	12.1	-2.37 -2.15	9.53 9.75	1.24 1.19	13.14 13.09
-0.97 B	6.13 B	12	7.1 6.8	~~6.8~~	B	2.60 2.65	9.70 9.75	12.4	12.35 0 1	12.3	-2.48 -2.49	9.87 9.86	1.16 1.14	13.51 13.49
-1.09 B	6.51 B	13	7.6 7.3	~~7.4~~	B	2.48 2.54	10.08 10.14	12.9	12.90 0 0	12.9	-2.56 -2.57	10.30 10.33	1.13 1.13	14.03
-1.27 B	6.98 B	14	8.2 7.9 8.25 0 1	8.3		2.27 2.32	10.52 10.57	13.3	13.30 0 0	13.3	-2.68 -2.61	10.62 10.69	1.00 1.10	14.30 14.40
-1.60 B	7.40 B	15	F. -	9.0		2.00 2.05	11.00 11.05	13.9	13.95 1 0	14.0	-2.73 -2.70	11.22 11.25	0.89 1.10	14.84 15.05
-1.82 B	7.88 B	16		9.7		1.78 1.81	11.46 11.51	13.9		N.S	-2.73 -2.68	11.17 11.22	? 0.90 1.11	14.80 15.01
-1.86 B	7.94 B	17		9.8		1.73 1.76	11.53 11.56	N.S.			,	,	,	,
-2.07 -2.03	8.47 8.43	18		10.5		1.56 1.52	12.06 12.02							
-2.20 -2.22	8.98 9.00	19		11.2		1.40 1.37	12.60 12.51							
-2.28	9.22	20		11.5		1.32 1.23	12.82 12.73							
-2.32	9.38	21		11.7		1.29 1.21	12.99 12.91							
-2.38	9.50	22		11.9		1.24 1.19	13.14 13.09							
-2.38	9.50	23		11.9		1.24 1.19	13.14 13.09							
-2.52	10.08	24		12.6		1.13 1.12	13.73 13.72							
-2.52	10.08	25		12.6		1.13 1.12	13.73 13.72							
-2.66 -2.60	10.54 10.60	26		13.2		1.00 1.10	14.20 14.30							
-2.72 -2.68	11.08? 11.12?	27		13.8?		0.90 1.10	14.70? 14.90?							
,	,	28		N.S		,	,							

Sat Mar 29, 1919.

Scale R North Polar Seq. continued

2:25 M.C. 15814

Diff Cu.			sc1	Cor. Dist.	sc2	Cu	Magn	g sc2	Cor. Dist.	h sc2	Cu.	Magn	Prim Curve	Magn
.		12				.								
.		2r	4.1 3.8	4.1 ~~4.0~~	B	.		9.5	9.60 1 1	9.7	-1.70 e -1.80	7.90 e 7.80	1.80 1.84	11.40 11.44
.		3r	5.6? 5.3?	5.8?		3.07 2.84	8.37? 8.44?	10.5	10.30 2 2	10.1	-2.00 -1.99	8.39 8.31	1.60	11.90
		4r	5.5 ~~5.2~~ Reject certainly wrong May 12		B	~~2.85~~	R ~~8.35~~	11.1	11.25 1 2	11.4	-2.22 -2.24	9.03 9.01	1.38 1.27	12.63 12.52
-0.97 B	6.13 B	5r	7.1 6.8	7.1 ~~7.0~~	~~6.9~~ B	2.60 2.65	9.70 9.75	12.5	12.55 1 0	12.6	-2.51	10.04	1.13 1.11	13.68 13.66
-1.27 B	6.63 B	6r	7.9 7.6		~~7.8~~ B	2.38 2.44	10.28 10.34	12.8	12.75 0 1	12.7	-2.57 -2.54	10.18 10.21	1.10	13.85
-1.43 B	7.17 B	7r	F		8.6	2.11 2.20	10.71 10.80	12.9	13.30 4 4	13.7	-2.68 -2.61	10.62 10.69	0.98 1.10	14.28 14.40
-1.73 B	7.67 B	8r			9.4	1.87 1.97	11.27 11.37	13.9	13.9 a	N.S.	-2.72 -2.69	11.18 11.21	0.90 1.10	14.80 15.00
-.09 ~~-2.32~~	8.61 ~~9.38~~?	9r	assumed 10.7		~~11.7~~?	1.50 ~~1.21~~ 1.45	12.20 15 ~~12.91~~	N.S		N.S	,	,	,	,
-2.18	8.82	10r			11.0	1.44 1.35	12.44 12.35							
-2.30	9.30	11r			11.6	1.30 1.23	12.90 12.83							
-2.41	9.69	12r			12.1	1.20 1.17	13.30 13.27							
.		1s												
.		2s	T.P.			.		7.6?	7.50 1 1 7.3	7.4?	-0.70 e B -1.06	6.70 e 6.44	B 2.56	B 10.06
~~1.01~~		3s	7.3			2.61	9.91							
-1.01 B	6.29 B	4s	7.0			2.54	9.84	12.7	12.65 1 0	12.6	-2.55 -2.53	10.10 10.12	1.11	13.76
-1.43 B	7.17 B	5s	8.4 8.1	8.60 2 2	8.8	2.14 2.20	10.74 10.80	13.7	13.45 3 2	13.2	-2.73	10.72	0.98 1.10	14.43 14.55
-1.52 B	7.28 B	6s	F		8.8	2.09 2.11	10.89 10.91	13.9	13.75 1 2	13.6	-2.70 -2.68	11.05 11.07	0.92 1.10	14.67 14.85
-2.32	9.38	7s			11.7	1.28 1.21	12.98 12.91	N.S.		N.S.	,	,	,	,
-2.160 -2.56	10.30 10.34	8s			12.9	1.04 1.10	13.94 14.00							
.	,	88 2	5.8 5.5	8 5.~~7~~	B	2.92 2.82	8.72 8.62			10.9	-2.15 -2.15	8.75 8.75	1.46 1.40	12.36 12.30
.		88 80	6.1 5.8	7 5.~~5~~	B	2.96 2.80	8.66 8.90	11.1	10.90 2 2	10.7	-2.15	8.75	1.50 1.40	12.36 12.30
.		88 86	5.7 5.4	3 5.~~1~~	B	3.08 2.83	8.38 8.53	10.8	—	9.6	~~-2.12~~		~~1.48~~	~~11.08~~
.		88 90	7.0 6.7	9 6.~~8~~	~~6.8~~ B	2.64 2.66	9.54 9.66	12.2	12.00 2 2	11.8	-2.40	9.60	1.21 1.18	13.22 13.18
.		88 105	5.8 5.5	8 5.~~7~~	B	2.92 2.82	8.72 8.62	11.4	11.30 1 1	11.2	-2.24	9.06	1.37 1.30	12.67 12.60
.		88 115	5.9 6.2 ~~4.8~~	1 6.~~x~~	B	2.85 2.78	8.95 8.98	12.1	11.80 3 3	11.5	-2.35	9.45	1.27 1.20	13.0 13.00
.		87 12	5.4 5.1	5.0 ~~4.7~~	B	3.14 2 2.86	8.14 e 8.26	10.9	10.85 1 0	10.8	-2.13	8.72	1.48 1.42	12.33 12.27
.		87 15	5.1 4.8	6 4.~~x~~	B	. B	B .	9.8	9.85 0 1 9.7	9.9	-1.73 e -1.88	7.97 e 7.97	1.72 1.73	11.57 11.58
-2.72 -2.67	10.98 11.03	9s			13.7	1.10 0.93	14.63 14.80							

Sat. Mar. 29 '19

Scale R. North Polar Seq. continued

2:55 M.C 15814

5th Exp. 30 mins

Diff. Cu.	Magn		sc1	sc2	Cu.		sc 9	Corr. Dist	h sc2			Prim Cu	
		1											
		2											
		3											
		4			Cu.			B 6.3					
		5	B		.	sc1	6.5	6.50 00 sc1 6.5	B	. B	.	3.95	B 10.45
		6			.	sc1 7.2	~~7.1?~~ B	7.00 2 2 B 6.9 sc1 6.8	~~6.8~~ B	-0.05 B	6.95 B	3.73	B 10.73
Diff. Cu.	Magn	7	B 2 3 ~~4.2~~	~~3.6~~	.	7.5	~~7.6~~ B	7.30 2 2 B sc1 7.0 7.1	~~7.6~~ B	-0.15 B	7.15 B	3.61	B 10.91
.	.	8	3.2 2 4 ~~4.1~~	2 ~~2.9~~	5.33 5.08	8.23	8.9	8.80 1 1 8 ~~8.1~~	8.7	-0.52 -0.64	8.28 8.16	3.09	11.89
.	.	9	3 4 ~~4.1~~	3.9 ~~4.1~~	.5.00 4.80	8.90	9.7	9.65 1 0 9.6	9.6	-0.80 -0.90	8.80 8.75	2.87	12.52
.	.	10	3	0 ~~4.1~~	.4.94 4.80	8.94	~~10.1~~ 0	9.95 0 2	9.9	-0.95 -1.00	9.00 8.95	2.79	12.74
.	.	11	5.2 4.9		.4.50 4.29	9.70	10.7	10.70 00	10.7	-1.24	9.46	2.62	13.32
.	.	12	5.3 5.0		.4.47 4.43	9.77	11.4	11.35 0 1	11.3	-1.46	9.89	2.47	13.82
.	.	13	6.1 5.8		4.19 4.17	10.27	11.7	11.70 00	11.7	-1.55	10.15	2.40	14.10
.	.	14	6.5 6.2	B	3.96	10.46	12.5	12.50 00	12.5	-1.70	10.80	2.22	14.72
-0.21	B 7.29	15	7.5 7.2	~~7.2~~ B	3.54	11.04	12.6	12.55 0 1	12.5	-1.70	10.85	2.21	14.76
-0.35	B 7.55	16	7.9 7.6	~~7.7~~ B	3.38	11.28	13.0	12.85 2 1	12.7	-1.69	11.16	2.15	15.00
-0.48 -0.59	8.22? 8.11	17	F	8.7?	3.15	11.85?	13.7	13.40 3 3	13.1	-1.61	11.79	2.05	15.45
-0.62 -0.72	8.48 8.38	18		9.1	3.01	12.11	13.7?	13.75? 1 0	13.8	-1.56	12.19	2.00	15.75
-0.78 -0.85	8.72 8.65	19		9.5	2.90	12.40	13.9	13.85 1 0	13.8	-1.54	12.31	1.99	15.84
-0.92 -0.98	8.98 8.92	20		9.9	2.80	12.70	N.S.		14.0	-1.51	12.49	1.96	15.96
-1.11 -1.15	9.29 9.25	21		10.4	2.69	13.09			N.S.	.	.		
-1.24	9.46	22		10.7	2.61	13.31	14s	13.6?		-1.59	12.01	2.02	15.62
-1.27	9.53	23		10.8	2.60	13.40	Star 29	14.0?		-1.51	12.49	1.96	15.96
-1.34	9.66	24		11.0	2.54	13.54	30	N.S.		.	.	.	
-1.27	9.53	25		11.8	2.60	13.40	13s	12.9		-1.68	11.22	2.15	15.05
-1.67	10.53	26		12.2	2.29	14.49	~~10s~~			.	.		
-1.70	10.90	27		12.6	2.20	14.80	10s	12.7		-1.70	11.00	2.19	14.89
-1.66	11.34	28		13.0	2.12	15.12	12s	~~13.4~~ 12.9		-1.68	11.22	2.15	15.05

Sat. March 29 1919

Scale R. North Polar Seq. continued.

2:55

Diff. Cu.	Magn		sc1	sc2 Corr. Dist		Cu.			sc2 9	Corr. Dist.	h sc2	Cu		Prim Cu	Magn
.		1n	3.0	3.0		5.									
.		2n	2.7	~~2.9~~ 8		.5.30	8.30	sc1 7.7 7.4	~~7.5?~~ B	7.70 00 sc1 7.7 7.4	~~7.4~~ B	-0.08 -0.29	B 7.62 7.41	3.5? 3.45	11.22 11.15
.		3n	4.2 3.9	~~3.7~~		.5.02	8.82		8.7	8.70 00 8.6	8.7	-0.42 -0.59	8.18 8.11	3.14 3.11	11.74 11.81
.		4n	4.2 3.9	4.1 ~~4.0~~		.4.90	9.00		9.8	9.70 1 1	9.6	-0.86 -0.91	8.84 8.79	2.86	12.56
.		5n	5.3 5.0	3 5~~2~~		.4.48	9.88		10.9	11.00 1 1	11.1	-1.34	9.66	2.54	13.54
.		6n	6.2 5.9			.4.10	10.30		11.7	11.70 00	11.7	-1.55	10.15	2.40	14.10
0.10	B 6.90	7n	6.8 6.5		B	3.82 3.88	10.68	10.62	12.7?	1	11.8?	~~-1.58~~	?	~~2.38~~	~~14.18~~
-0.11	B 7.09	8n	7.2 6.9		~~7.7~~ B	3.64 3.70	10.90	10.84	12.8	12.75 0 1	12.7	-1.70	11.05	2.18	14.93
-0.40	B 7.65	9n	8.1 7.8	8.05 1 0	8.0	3.31 3.38	11.43	11.36	13.3	13.45	13.6	-1.60	11.85	2.04	15.49
-.82 ~~-0.86~~	~~8.6~~ 8.72 ~~8.04~~ 8.78	10n	F	9	8.6	~~3.14~~ 2.88		12.48 ~~11.74~~	13.9?	13.95? 1 0	14.0?	-1.52	12.43	1.97	15.92
-1.18	9.32	11n			10.5	2.64		13.14			N.S.	.			
-1.35	9.65	12n			11.0	2.54		13.54			N.S.	.			
.		2s	B			.		sc1 6.7 6.4	~~6.7~~ B	6.70 00 6.5 ~~6.4~~ sc1 6.4 6.7	~~6.4~~ B	0.06 B	6.76 B	3.88 B	10.58
.		3s				.		.				.	.	.	.
.		4s	6.1 5.8		B	.4.18	10.28	.	11.6	11.65 0 1	11.7	-1.53	10.12	2.41	14.06
-0.11	B 7.09	5s	7.2 6.9		~~6.9~~ B	3.64 3.70	10.90	10.84	12.7	12.60 1 1	12.5	-1.70	10.90	2.20	14.80
-0.11	B 7.09	6s	7.2 ~~5.9~~		~~7.3~~ B	3.64 3.70	10.90	10.84	12.9	12.75 1 2 sc1 ~~6.8~~	12.6	-1.70	11.05	2.18	14.93
-1.00	9.00?	7s	F		10.0?	2.78		12.78?	N.S.		13.8?	-1.55	12.25?	1.98	15.78?
-1.60	10.30 ~~9.49~~	8s			11.9	2.35		14.25	N.S.		N.S.	.	.	.	
-1.54	10.16	9s			11.7	2.40		14.10	N.S.		N.S.	.	.	.	
.		88 2	4.4 4.1	3 4.~~2~~		4.84		9.14	9.6?	9.60 00	9.6	-0.80 -0.89	8.80 8.71	2.87	12.47
.		88 80	4.8? 4.5?	2 4.~~1~~		4.88		9.08	9.6	9.35 2 3 9.2	9.1	-0.67 -0.80	8.53 8.55	2.96 ~~2.94~~	12.16 12.29
.		88 86	4.3 4.0	7 3.~~5~~		5.04		8.74	9.7	9.35 3 1 9.2	9.0	-0.67 -0.80	8.53 8.55	2.96 2.94	12.16 12.29
.		88 90	5.1 4.8	9 4.~~8~~		4.61		9.51	10.6	10.60 00	10.6	-1.20	9.40	2.63	13.23
.		88 105	4.4 4.1	3 4.~~2~~		4.84		9.14	9.9		def.	-0.98	8.92	2.80	12.70
.		88 115	4.7 4.4	6 4.~~3~~		4.70		9.30	10.0	9.85 2 1	9.7	-0.92 -0.97	8.93 8.88	2.81	12.66
.		87 124	4.3 4.0	3.8 ~~3.6~~		5.01		8.81	9.1?	8.95 1 2 8.7	8.8	-0.47 ~~-0.85~~ -0.68	~~7.95?~~ 8.27? 8.23?	3.11 3.04	11.81? 11.99?
.		87 153	3.7? 3.4?	3.0 ~~2.9~~		5.30		8.30	8.5?	8.45 1 0 8.2	8.4	-0.51 -0.27	7.94? 7.93?	3.32 3.18	11.52? 11.63
-1.62	11.68	~~13s~~ 11			13.3	2.06		15.36							

Sat. March 29, '19.

Reject diffraction images of white stars when primary images are brighter than 3.2 on Scale ~~M~~ R
Red stars are not affected. Diffr. img. brighter than 7.2

Scale R. North Polar Seq. continued
3:35
6th Exp. 1m.

sc1 M.C. 15814

Remark Diffraction images of white stars brighter than No. 8 are badly burnt out by principal image, and hence extremely unreliable.

Corr. Dist R = 90mm
Cor. for Dist.
Corr. Dist sheet 14, p18 Series 16.7

Diff calibr

		sc1	sc1	sc2	Cu.	Magn Cor. for Dist.
		1				
		2				
		3				
		4				
		5 B.			,	,
		6 B				
		7 B	~~3.2~~ 2.9	2.8	B 5 ~~29~~	B ~~8.39~~ 8.35
		2.9	3.2 3.8	2.9	5.~~20~~ 33	8.42 8.38 ~~8.40~~ 53
		3.6	3.9 4.4	3.5 ~~3.6~~ 33	5.~~44~~ 20	8.88 8.92 8.85 ~~9.04~~ 10
		3.3	3.6 3.7 4.5	3.6 3.6	5.28 5.~~16~~ 27	8.95 8.92 ~~8.76~~ 87
		3.9	4.2 4.3 5.0	4.2	5.13 5.~~28~~ 15	9.43 9.40 ~~9.28~~ 35
		4.7	5.0 5.7		4.97	10.00 9.97
		5.1	5.4 6.1		4.90	9.28 10 10.30
		5.7	6.0 6.6		4.71	10.70 10.71
~~0.25~~	~~6.25~~ B	6.0	6.3 6.8	B	4.62	10.92
0.27	~~6.57~~ B	6.8	7.1 7.5	~~6.9~~	B 4.34	11.44
~~0.32~~	~~7.42~~ B	7.0	7.3 7.7	~~7.0~~	B 4.26	11.56
~~0.33~~	~~7.63~~ B					
0.26 0.35 0.40	8.26 8.35 8.40 8.35	7.7	8.0 8.4	~~7.0~~	B 3.99	11.99
0.21 0.50 0.27	8.31 8.50 8.47	F	8.5	8.2	3.91	12.11
-0.15 -0.10	9.05? 9.20? 9.10		9.9?	9.2?	3.53	12.73?
-0.30	9.40		9.9	9.7	3.35	13.05
-0.37	9.53		10.0	9.9	3.29	13.19
-0.49	9.81			10.3	3.14	13.44
-0.58	10.02			10.6	3.04	13.64
-0.63	10.17			10.8	3.0~~0~~ 3	13.8~~0~~ 3
-0.79	10.51			11.3	2.~~8~~2 9	14.~~1~~2 2
-0.96	10.84			11.8	2.~~67~~ 80	14.~~47~~ 60
-1.14	11.46			12.6	2.~~44~~ 63	15.~~04~~ 23

sc1 sc2		sc1	sc2	Cor. for Dist.	Cu	Magn Cor Dist	Prim Cu	Magn
6.2 5.9	6.4?	6.30 ?1±	6.2?	6.4? 6.~~2~~ B	0.27	B B 6.57	4.64	B 10.84
6.1			5.9?	5.9? 6.1? B	0.27	B B 6.57	4.62	B 10.92
6.5	6.8 ~~6.9~~	B 6.90 ±1	6.7 7.0	6.9 6.8 B	0.31	B B 7.21	4.42	3 11.32
6.7	7.0 ~~6.7~~	B 7.00 00	6.7 7.0	6.7 6.9 B	0.32	B B 7.32	4.39	B 11.39
7.6	7.9 8.1	8.00 ±1	F 7.85 2±1	7.8 7.7 7.8	0.40 0.31 ~~0.26~~	8.28 8.23 8.20 8.16	4.04	11.89
F	8.9	8.80 1±1		8.7	0.05 0.00	8.80 8.80 8.80	3.69	12.42 12.49
	8.9	9.10 ±2		9.3	-0.12	9.02 8.98	3.58	12.68
	10.4	10.10 3±3		10.4 9.8	-0.44	9.66	3.21	13.31
	10.6	10.55 0±1		10.6 10.5	-0.56	9.99	3.07 10	13.67 5
	10.7	10.75 ±0		10.8	-0.60	10.15	3.01 4	13.76 9
	11.5	11.75 3±2		12.0	-0.95	10.80	2.69 81	14.44 56
	11.8	11.95 2±1 ~~12.45~~ 3		12.1	0.98 ~~-1.10~~	10.97 ~~11.35~~	2.62 ~~2.49~~ 76	14.94 57 71
	12.4	12.30 1±		12.2	-1.12	11.18	2.52 69	14.82 99
	12.8	12.85 0±1		12.9	-1.16	11.67	2.39 58	15.24 43
	13.3	13.30 00		13.3	-1.19	12.11	2.30 50	15.60 80
	13.3	13.40 ±1		13.5	-1.20	12.20	2.26 49	15.66 89
	14.0?	14.00 00		14.0	-1.21	12.79	2.15 40	16.15 40?
				14.1?	-1.21	12.89	?2.14 39	16.24? 49

sc2
29 * 13.5 ~~-0.52~~ ~~2.28~~ 2.24 ~~12.98~~ 15.74
* def cu magn
30 def. , , 13.5 2.48 15.98
31 sub. , ,

29 Cu diffr. -1.20 12.30

*Star 29 is defective. Star 30 has good image – Assume mistake in recording. H.S.L. Oct. 17, 1921.

Sat. March 29 1919.

Remark Corrections in green ink are most accordant. They require a large negative correction between Distance 75 and 90 mm

Scale R. North Polar Seq. continued
3:35

			sc1		sc2 Cor. Dist	Cu	Cor. for Dist	sc2	sc2	Cor. Dist		Cu	Cor. for Dist	Prim Cu	Magn
		1r	2.2												
		2r	1.9	21	2.1 2.2	5.53 e	7.70 7.68 7.62 7.73 e	6.7	~~6.8~~ B	6.75 1±0 6.8	6.9? B	0.732 0.73 e	B 7.70 7.07 7.53 ~~6.95~~	4.45 4.48	11.23 11.25
		3r	3.0? 3.3? 4.0	27	2.9 2.9 ~~3.1?~~	5.~~78~~ 28	8.16 8.08 8.27 8.48 58?	7.7	~~7.8~~ B	F 7.445 ~~7.45~~ 7.5	7.8 B	0.51 e 0.31	B 8.10 ~~8.01~~ 8.01	4.20 4.10	11.68 11.80
		4r	3.7 4.5	38	3.8 3.9	5.~~12~~ 19	9.08 9.10 9.17 ~~9.12~~ 9	F	8.7	8.70 00 8.7 8.6	8.7	0.09 0.04	8.80 8.79 8.74	3.72	12.42
		5r	4.2	44	43 4.4	5.~~05~~ 10	9.48 9.5~~2~~ 9.55 60		10.3	10.30 00	10.3	-0.49	9.81	3.15	13.45
		6r	4.8 5.1			4.94	10.08 10.16 10.04		10.6	10.60 00	10.6	-0.58	10.02	3.05 10	13.65 70
		7r	5.4 5.7			4.80	10.48 10.50		10.8	10.90 ±1	11.0	-0.66	10.24	~~2.96~~ 3.01	13.86 91
0.27	6.57 B e	8r	6.0 6.3			4.69	10.99		12.0	11.95 0±1	11.9	-0.99	10.96	2.~~62~~ 77	14.~~57~~ 72
0.32	7.42 7.75	9r	6.8 7.1		B	4.33	11.43		12.6	12.70 ±1	12.8?	-1.14	11.56	2.42 60	15.12 30
		10r	F		~~7.9~~ B	,	,		def.		13.7	-1.20	12.50	2.21 43	~~15.91~~ 16.13
-0.30	9.40	11r			9.7	3.36	13.06		n.S.		n.S.	,	,	,	,
-0.37	9.53	12r			9.9	3.30	13.20	6.1? 5.8?	B	6.05 ?1 0 6.0? 5.8? 5.5? 5.8 5.6? 5.7? 5.6?	B				
,	,	2s	B			,	,					,	B , B	4.75 4.70	B 10.55? 10.75
		3s				,	,								
,		4s	4.8 5.1		B	4.94	10.16 10.04		10.6	10.65 0±1	10.7	-0.58	10.07	3.04 7	13.69 72
0.19	6.79? B	5s	6.3? 6.6?		B	4.52	11.12?		11.6	11.50 ±1	11.4	-0.85	10.65	2.76 87	14.26 37
0.26	6.46 B	6s	5.9 6.2		~~7.9~~ B	4.64	10.84		11.9	12.15 3±2	12.4	-1.05	11.10	2.58 72	14.73 87
-0.34	9.46	7s	F		9.8	3.32	13.12		13.7?	13.45 ?3±	13.2?	-1.19	12.26	?2.26 48	15.71? 93
-0.90	10.80	8s			11.7	2.~~70~~ 81	14.4~~0~~ 51	n.S.	~~13.0?~~	~~13.45 ?4 5~~	n.S. ~~13.7~~	~~-1.19~~	~~12.26~~	~~?2.26~~	~~15.71?~~
-0.96	10.84	9s			11.8	2.~~66~~ 80	14.4~~6~~ 60		n.S.		n.S.	,	8.70 8.65 ,		,

-0.90 1080
-0.98 10.92
-1.12 11.38
-1.16 11.64

edge
edge

	sc1		Cu	Cor. for Dist		sc2	Cor. Dist		Cu	Cor. for Dist	Prim Cu	Magn
8 8 2r	3.2 3.5 4.1?	3.3 3.4 3.4	5.~~16~~ 28	8.80 8.70 8.72 8.66 78	F	8 8.7	8.05 5.5 8.5 8.5 3.4 1 2	8.4	0.27 10	8.~~61~~ 65 8.32	3.97 78	12.02 33
8 88 0	3.8? 3.6?	~~3.3?~~ 4.3 2.9 3.4	5.~~12~~ 17	9.47? 8.70 8.72 9.22 27	F	8.0	8.30 3±3 7.9 8.4 ~~8.1~~ ~~8.0~~	8.6	0.16	8.62 8.58 8.46 28	3.88	12.18 pa0
8 88 6	3.3?	2.8? 3.7? 2.6 2.8	5.~~15~~ 27	8.97 8.70 8.87 8.78	F	7.8	8.10 3±3 7.6 8.1 ~~4.9~~ 7.8	8.4	0.15	8.45 8.08 8.25	3.95	12.05 11.80 ~~12.00~~
8 89 8	4.7? 5.0?	4.7? 4.5? 4.8	4.97	9.97 9.77 9.82 9.70	10s 11.7	9.3	9.50 ±2 9.5 9.5 9.4	9.7	-0.25	9.25 9.25	3.43	12.93
5 8 10	3.5? 3.8?	3.6? 3.6 3.7?	5.~~14~~ 22	9.02? 8.92 8.98? 8.94	12s 12.9	8.8	8.9.05 2±3 9.0 9.0 9.0	9.3	-0.10	9.00 9.05 8.75	3.60	12.65
8 8 11	3.8 4.1	3.9 ~~4.0~~ 3.8	5.~~12~~ 17	9.17 9.17 9.20 9.16 9.22	13s 12.5	9.4	9.25 2±1 9.2 9.2	9.1	-0.17	9.10 9.05 9.08	3.50	12.75
87 1 5	2.9? 9.2?	1.9 2.3 3.4 2.5	5.~~17~~ 33	8.53? 8.37 8.62 7.87 8.90	14s 12.8	7.6 B	7.9 7.9 7.4 7.6 7.8	B	0.43 0.29	8.32 8.19 7.61	4.02	11.68 11.92
87 12 r	3.7 4.0	3.0 ~~3.4~~ 3.9 4.0 ~~3.0~~	5.~~13~~ 19	9.A 8.62 9.17 8.70 42		8.8	8.10 ±1 8.1 8.20 ±1 7.7 7.9 7.8	8.3	0.23	8.45 8.48 8.23	3.95	11.87 11.97 12.05
-1.14 11.46			2.~~38~~ 62	15.~~0~~3 22				5.? 2.0				

Thursday, April 3, 1919

Nova Aquilae No. 3
Additional Observations

✓ MC 5786
11.1~~7~~

✓ MC 1162
1~~2~~1.3? Images very large and poor

✓ MC 5877
11.3

✓ MC 6047
11.3

✓ MC 3555
Too poor. Omit from Ledger

✓ MC 5897
10.9.

✓ MC 6177
10.9

✓ MC 8501
Too poor Omit from Ledger

✓ MC 5762
11.0

Thurs. Apr. 3, 1919

Nova Aq. No. 3

✓ MC 31157
Too poor Omit from Ledger

✓ ~~I 8843~~ 31801
10.9

✓ A 9331
11.3

✓ A 7992
Too poor. Images large and hazy. Omit.

✓ A 4443
Too near edge. Omit

✓ A 2580
Images too large. Omit

✓ A 1002
11.2? Near edge. Very poor

✓ A 10783
11.3

✓ A 10738
11.2
Several Images of each star. Comparison made with following (faintest) image

Thursday, April 3, 1919

Nova Aquilae No. 3

✓ A~~C~~M6389 — AC6389 does not cover region.
10.8

✓ AC10854
11.2? f

✓ AM6192
10.6

✓ AM6444
Too poor

✓ AC10916
Too poor

✓ AM6172
10.7

✓ AC10826
too poor

✓ AM6325
10.8

✓ AM6166
10.8? f

Thurs. Apr. 3, 1919

Nova Aquilae No. 3

✓ AC10701
Too poor

✓ AM6312
10.7

✓ AM6144
10.7

✓ AC10637
too poor

✓ AM6257
10.7

✓ AM6126
10.7

✓ AC10592
too poor

✓ AM6251
10.7

✓ AC10532
too poor

Thurs. Apr. 3, 1919

Nova Aquilae No. 3 Cont.

✓ A 10779
Too poor. Omit

✓ A 10732
Too poor. Omit.

✓ A 10733
Too poor. Omit

✓ A 9849
11.6
Images poor, but faintness seems certain.
Compared with A 9331 the faintness is unquestionable. The Nova is comparable with Star β and with several adjacent stars not in sequence, while on all the other A plates examined it is very much brighter than β and cannot be compared with it or with any neighboring star.

✓ I 8843
10.9? Very poor, near edge

✓ I 1734
11.0

✓ I 13347
10.9

Thurs. Apr. 3, 1919

Nova Aquilae No. 3

✓ I 31801
10.9

✓ I 35693
10.9

✓ I 4122
11.2
Probably faint. Very poor

✓ B 44073
10.9

✓ B 41385
10.8e

See also pp 178, 179

Thurs. Apr. 3, 1919

Nova Geminorum No. 1

Plate A I855
not seen
< 9.5

This plate has apparently not been observed regularly before. It is probably the one mentioned in H.C. 70 ~~at~~ as taken March 2, 1903 and not showing the Nova, though ninth magnitude stars were seen.

Thurs. Apr. 3, 1919

Nova Aurigae

I5793 p.c.
5.7
Plate badly fogged (Moon screened?)

I5796 p.c.
5.8
Plate badly fogged

I5809
Too badly fogged. Reject

I5818 p.c.
6.1?
Plate badly fogged

I6004
12.7? ~~15.1~~? Fogged. very poor Reject

I6005
~~14.5?~~ 14.0?
Badly fogged

I6016
14.5?
Extremely badly fogged

I5782 p.c.
5.6
Badly fogged

Thurs, Apr. 3, 1919

Nova Aquilae No. 3

✓ am 6360
too poor

✓ am 6405
too poor

✓ am 6462 too poor

✓ am 6471
10.9? e

✓ am 6493 10.9? e

✓ am 6503 10.8? e

✓ am 6575 too poor

✓ am 6606 not seen < 11.1

n.

✓ am 6623 f? < 11.3

✓ am 6636 too poor

✓ am 6676 too poor

✓ ac 10825 too poor

✓ ac 11028 n.s. < 11.2

Thurs Apr. 3, 1919

Nova Aquilae No. 3

✓ ac 10908 too poor

✓ ac 10943
11.3? f e

✓ ac 10885 too poor

✓ ac 10621 too poor

✓ ac 10643 too poor

✓ ac 106$\overset{5}{\cancel{5}}$0 t p

✓ ac 10675, 10794, 10736, 10717, 10836 too poor

✓ am 6200 10.7
✓ am 6245 10.8
✓ am 6280 10.8
✓ am 6294 10.8
✓ am 6412 10.8
✓ am 6632 n.s. < 11.2 scratched
✓ am 6321 10.7
✓ am 6510 11.0? f e
✓ am 6455 11.5? e
✓ am 6433 11.0? e

Monday, April 14, 1919

2 30

W Cephei

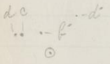
Estimate of Magnitude on Plates selected by Miss Applegate to show extreme range, with some intermediate plates.

Magnitudes adopted Book prop sequence on AC 14483

Star f added by H.S.L.

assumed magn. ~~8.9~~ 8.8

b 8.6
dk 9.2
d' 9.3
g' 9.8
h' 10.4



AC 14483	9.1	AC 13233	9.2? ef
AC 3204	9.1	3060	9.0
AC 2777	9.1	2085	9.1
AC 2650	9.0	1765	9.2
AC 13642	8.9	2964	8.9
AC 12703	9.3	3168	9.1
AC 1883	8.8	2188	8.7
AC 2751	9.1	1696	9.2
AC 2077	8.7	2684	8.8
AC 3127	9.1	13698	8.9
AC 3223	9.1	3078	9.0
2141	8.7	2063	8.7

This star certainly varies, with a range of 0.5 magn

2 50

Monday, May 12, 1919

North Polar Sequence MC 1188

Distance from Pole for 1900 of 8 Catalogue Stars for Star [illegible]

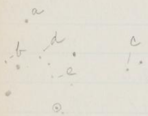
	mm		×97.7″	H.A. 71.3	R	0.96 D ″	0	Dist from ~~Optical~~ MC 15814 Centre mm Geometrical	Optical
+87°15	76	-	7425			7130	2.0	~~66~~	80
88 2	42		4103			3940	1.1	~~34~~	43
87 12	75	-	7328			7035	1.9	~~65~~	78
88 86	83	+	8109			7780	2.2	~~94~~	79
88 105	49		4787			4600	1.3	~~58~~	43 ~~83~~
88 80	86	+	8402			8065	2.2	97	83
88 115	55		5374			5160	1.5	58	50
88 90	62	◦	6057			5815	1.6	73	58
2s	67	◦	6546	6285	.96	6285	1.~~5~~7	77	67
3r	71	-	6937	6528	.94	6667	1.8	80	68
7	70	-	6839	6539	.96	6565	1.8	77	71
2r	39		3810	3644	.96	3658	1.0	44	33
6	41		4006	3841		3845	1.1	41	46
4r	51		4983	4733		4780	1.3	53	46
5r	43		4201	3953		4030	1.1	52	41
5								48	60
8								38	53
9								43	59
10									16
11									19

See Remarks on Cover of Plate MC 15814

1	98
2	8
3	119
4	90

Thursday, May 15, 1919

Examination of Plates for
"Variable 3" suspected by M.E. Applegate



The following plates were given me by Miss Applegate

Film up. aC6956 Centre 6h +60°
a 1 v 1 b 1c

aC4428 Centre 6h, +60°
a 1 v 1 b 2c

aC12291 Centre 6h, +60°
a 2 v 0 b 1c

aC11236 Centre 6h, +60°
a 1 v 1 b 2c

aC156 Centre 6h, +75°
a 1 v 2 b 1c

I find no evidence of variation in this object. The plates differ in quality and the centres vary a little. The star may be reddish. Star b shows at least as much tendency to variation as No 3.

Thursday, May 29, 1919

North Pole 20 Standard Sequences
T V W and U

Reduced with "Approx. Ptr. Magn."

Red ink Ptr May, 1919 MC plates only.

Estimates on Yellow plates, to determine approximate color.
MC 10259 Yellow Exp. 60 m
Sequence T p.c.
p +88° 105 5 b 2 +88° 115 4 a 3 e 0 c 2 d
T diffr
+88° 105 3 b 4 +88° 115 3 a ~~?~~ 2 e 1 c 2 d
T primary
+88° 115 3 a 2 e 4 c 3 d 0 f 4 h 2 g ~~6 m~~
g 5 k 1 m 3 l 1 n 4 p 1 0
Comparison with Polar Sequence

p.c. 10 H a 9.28 9.34 8 5 b 8.53 8.58 11 3 c 9.66 9.75
a 1 11 9.26 9.35 b 0 9 8.74 8.77 c 1 12 9.48 9.52 9.64
9.27 01 01 9.34 b 3 10 8.58 8.64 8.66 9.57 09,09
8.62 09, 12, 04
11 2 e 9.56 9.65
e 3 12 9.28 9.32 9.48
9.42 14,14

5r 2 b 8.66 8.71 8.68 6r 1 a 9.12 9.18 7r 1 e 9.77 9.82 10.10 9.96
b 4 6r 8.62 8.70 a 2 7r 9.47 9.62 9.40 e 2 8r 9.98
8.64 02,02 9.30 18,17 9.88

primary 6r 2 a 9.22 9.28 9.52 4r 4 b 8.50 8.55 7r 3 c 9.97 10.02 7r 9.82 10.00 9.91 e 9.77
a 2 7r 9.47 9.40 f 0 5r 8.46 8.57 8.52 8.58 c 1 8r 10.08 10.20 10.11 e 3 8r 9.88
9.34 f 5 6r 8.49 8.57 10.02 9.82

8r 1 d 10.28 10.40 8r 3 f 10.48 10.60 9r 4 g 11.04 11.17 8r 10.80 10.67 10.74 5 h 10.68
d 5 9r 10.14 10.27 10.34 f 2 9r 10.44 10.57 10.58 g 3 10r 11.49 11.63 11.40 h 1 9r 10.54
10.21 10.46 11.26 10.61

11r 2 k 12.09 12.14
k 2 12r 12.00 12.16 12.15
12.04

Thurs. May 29, 1919

Standard Sequences Cont.

MC 10259 Cont
Sequence T cont

Primary cont
10 4 a 9.28 9.34 8 6 b 8.63 8.68 12 3 c 9.88 9.92
9.25 8.67 9.97
a 2 11 9.16 9.30 f 1 9 8.64 8.67 c 2 13 9.88 9.94
9.22 8.64 9.88

14 1 d 10.34 10.43 12 2 e 9.78 9.82 14 2 f 10.44 10.53
10.45 9.97 10.65
d 3 15 10.34 10.44 e 2 13 9.88 9.90 f 1 15 10.54 10.59
10.34 9.83 10.49

16 1 g 11.04 11.16 14 4 h 10.64 10.73 18 2 k 11.76 11.91
10.99 10.65 11.95
g 2 17 10.84 11.08 h 1 15 10.54 10.69 k 1 19 11.84 11.93
10.94 10.59 11.80

20 4 l 12.59 12.73 18 3 m 11.86 12.01 20 4 n 12.59 12.73
12.69 11.95 12.69
l 2 23 12.56 12.71 m 1 19 11.84 11.98 n 2 23 12.56 12.71
12.58 11.85 12.58

25 1 o 13.38 13.54 23 2 p 12.96 13.09
13.50 13.34
o 1 26 13.32 13.52 p 1 25 13.18
13.35 13.07 13.22

Sequence V

primary +88° 115 3 a 0 c 4 e 2 b 7 d 1 g
g 5 f 5 h 1 k 3 l ~~m l 11 m~~ l 2 n 2 m

pr 10 pr 4 a pr 9.28 10 pr 5 c pr 9.38
a 1 11 9.26 c 1 11 9.26
9.27 9.32

primary 10 4 a 9.28 13 1 b 10.19 10 5 c 9.38
a 2 11 9.16 b 2 14 10.04 c 1 11 9.26
9.22 10.12 9.32

Thurs, May 29, 1919

Standard Sequences Cont.

Sequence V cont
15 2 d 10.84 13 4 e 10.48 17 4 f 11.44 15 2 g 10.84
d 1 16 10.84 e 1 14 10.14 f 1 18 11.46 g 1 16 10.84
10.84 10.32 11.45 10.84

19 2 h 19 3 k 20 4 l 25 2 m
h 1 20 k 0 20 l 3 23 m 1 26
k 6 23

20 7 n
n 6 23
n 2 25

Sequence W
pr b 3 a 2 c 1 e
primary b 3 a 0 c 4 e 3 d 6 f 1 g 4 h 1 k
k 0 m 3 l 4 n 0 p 2 o

pr 10 3 a 10 1 b 11 0 c
a 4 11 b 6 11 12 0 c
c 4 13

Sequence δ
pr a 5 b
primary a - b - c = d = e - f 8 g 3 h 2 k 5 l 2 m

pr b 3 a 4 2 3 a
a 3 9 a 2 5 2

primary 17 3 f 20 2 g 23 1 k 26 2 l
f 1 18 g 3 23 k 1 25 l 1 27

Thursday June 19, 1919

MC 7976 Three Diff. Foci

	A 16.6		B 16.8		C 17.0	
~~0^h-6^h~~	Distance mm	Comparison	Dist	Comp	Dist	Comp
	92	2a	90	4a	87	3a
	100	1	100	2a	98	5
	110	0	110	2	109	3a
	102	1	107	2	110	3a
	40	5	37	4b	100	4a
	38	5	35	4b	114	4a
	41	4b	72	~~4a~~ 4a	94	4a
0-6	77	3a	66	4b	112	3a
	72	3a	50	5	35	2a
	54	4a	87	4a	32	2a
	87	2a	48	5	65	3a
	48	4a	42	4b	60	2a
	43	4b	24	5	47	1
	28	4b	~~21~~		87	4b
	23	4b	21	5	48	1
	77	3a	80	4a	22	2
					~~80~~	~~3a~~
18-0	90	2a	88	4a	88	4b
continued from	44	4b	42	5	41	2
page 187	50	4a	50	5	50	1
	20	4b	15	5	10	2
	30	4b	27	5	23	2
	72	3a	67	4b	60	3a

Thursday June 19, 1919

MC 7976 Three Different Foci

Comparison of Primary Images with p. c.

Quadrant	A 16.6		B 16.8		C 17.0	
0^h-6^h	Distance mm	Comparison	Dist mm	Comp.	Dist mm	Comp.
	59	3a	53	5	58	2a
	76	3a	71	4a	65	3a
	92	2a	88	4a	85	3a
	38	5	34	4b	31	2a
	39	5	37	4b	34	2a
	67	3a	64	4a	62	3a
	100	1a	98	2a	97	5
	110	0	108	2a	107	3a
6 - 12	23	4b	23	5	23	1
	93	1	93	2	93	4a
	102	0	101	1	100	4a
	119	0	119	0	119	4a
	81	3a	83	4a	86	3a
	5	3b	~~7~~ 10	5	15	2
	88	3a	92	4a	100	5
12-18	30	5	38	4b	42	4a
	52	4a	58	4b	63	4a
	83	2a	88	4a	93	4b
	71	2a	76	3a	81	4b
	96	1a	100	3a	103	5
	100	6	104	3a	108	5
	109	0	111	3a	114	5
	78	3a	78	4a	79	3a
	97	1	98	3a	100	5
	107	6	107	2a	107	5

Thursday, June 19, 1919

MC 7976 Thru Different Foci

Comparison of Primary Images + P.C.
Repeated from preceding page

	A 16.6		B 16.8		C 17.0	
	Dist.	Comp.	Dist.	Comp.	Dist	Comp
0^h-6^h	112	0	107	2a	100	3a
	93	6	90	3a	88	4a
	81	3a	77	5	75	4a
	101	0	100	3a	97	5
	98	0	98	2a	97	3a
	70	4a	69	4b	68	3a
	38	5a	34	5b	31	2a
	39	5	37	4b	34	2a
	82	3a	77	4b	72	3a
	76	4a	71	5	66	3a
	69	4a	63	4b	58	2a
	23	4b	19	5	13	1a
6^h-12^h	100	0	100	3a	100	4a
	89	1a	90	4a	91	5
	83	3a	85	5	87	4a
	108	0	110	3a	113	5
	62	5	67	4b	67	3a
	71	5a	77	4b	80	3a
	54	5	59	4b	63	3a
	21	3b	26	5	31	0
	42	3b	48	5	52	1
	84	3a	89	3a	94	4a
	5	3b	10	5	15	0

Thursday, June 19, 1919

MC 7976 Cont.

	A 16.6		B 16.8		C 17.0	
	D	C	D	C	D	C
12^h-18^h	53	5	~~68~~ 58	3b	63	3a
	~~62~~ 72	5	78	4b	85	4a
	85	2a	90	5	95	4a
	90	3a	95	4a	100	5
	80	-	83	5	88	4b
	86	3a	90	4a	94	4b
	68	5	69	5	71	3a
	100	2a	100	3a	101	5
	38	4b	38	4b	38	3a
18 - 0	52	4b	51	4b	51	3a
	19	3b	15	5	13	2a
	52	5a	47	4b	41	2a
	78	4a	71	4b	68	3a
	113	2	111	3a	107	4b
	85	3a	82	3a	80	4a
	115	1a	113	3a	112	4a
	89	3a	88	5	87	4b
	52	4b	52	4b	51	3a

Plate re-observed – some mistakes seem to have been made in first observation.

Saturday, June 21, 1919

Measures to determine values of Scale V in terms of Scale R

Scale R

Image	Scale V First Scale 1		2	
1	2.0	2.3	B	2.3
2	4.7	5.0	B	5.0
3	6.2	6.5	6.2	$6.\cancel{4}^{35}$
4	6.9	7.2	7.6	7.4
5	7		8.6	8.6
6			9.7	9.7
7			10.8	10.8
8				
9				
10				

Second Scale

4	6.9	7.2	7.0	7.10
5	7.8	8.1	8.0	8.05
6			9.6	9.6
7			10.2	
8			~~12.0~~ 11.2	
9			12.2	
10			14.1	

Scale V)

Im.	Scale R First Scale 1	2	
1	B		
2	B		
3	B		
4	$1.2^{1.3}$		
5	$2.0^{2.1}$		
6	$2.8^{2.9}$		
7	$3.6^{3.7}$		
8	$4.5^{4.6}$	4.4	4.50

Second

6	$2.6^{2.7}$		2.7
7	$3.2^{3.3}$		3.3
8	$4.5^{4.6}$	4.6	4.60
9	$5.5^{5.6}$	5.6	5.60
10	$6.3^{6.4}$	6.5	6.45
11	$7.0^{7.1}$	7.3	7.20
12		8.6	8.6
13		9.2	9.2
14		10.0	10.0

Sat. June 21, 1919

Scale V in terms of Scale M

Scale M Im	Scale V in terms of M First Scale		
1	$1.1^{1.3}$		
2	$2.1^{2.2}$		
3	$3.0^{3.2}$		
4	$4.0^{4.2}$	B	4.2
5	$5.2^{5.4}$	5.3	5.35
6	$5.9^{6.1}$	6.1	6.10
7	$7.0^{7.2}$	7.2	7.20

Second scale

		1st sa	
4	B	$3.8^{4.0}$	4.0
5	5.2	$5.1^{5.3}$	5.25
6	6.3	$6.0^{6.2}$	6.25
7	7.3	$7.0^{7.2}$	7.25
8	8.2		8.2
9	9.3		9.3
10	10.1		10.1

~~M~~ Sc V

Im.	Scale M in terms of V 1		
1	B		B
2	$1.7^{1.8}$		1.8
3	$2.8^{2.9}$		2.9
4	$3.8^{3.9}$	B	3.9
5	$4.7^{4.8}$	4.7	4.75
6	$5.8^{5.9}$	6.0	5.95
7	$6.9^{7.0}$	7.1	7.05

4	$3.6^{3.7}$	B	3.7
5	$4.7^{4.8}$	4.6	4.70
6	$5.8^{5.9}$	5.7	5.80
7	$6.7^{6.8}$	6.8	6.80
8		7.8	7.8
9		8.8	8.8
10		9.9	9.9

Thursday, September 4, 1919

Nova Aquilae No. 1 Estimates on Recent Plates

MC 6180
n.s. y = 0.5 Nova < 15.4

MC 6011
n.s. y = 0.3 Nova < 15.2

MC 16221
n.s. y = 0.3 Nova < 15.2

September 30, 1919

11 20

MC 5083 . Cat. of stars in North Polar Sequence.

Scale A L V H

Primary Images

#	1st		1st		
~~11~~ 4	297	1118			
1					
~~12~~ 5	1513	651			
~~13~~ 6	1747	922			
~~14~~ 7	1578	463			
~~15~~ 8	1651	1512			
~~16~~ 9	1731	1517			
~~17~~ 10	1485	1185	$2.1^{2.9}$		
~~18~~ 11	1426	920	$2.8^{3.6}$		
~~19~~ 12	1316	937 ✓	$3.1^{3.9}$	1300	938 ✓
~~20~~ 13	1302	1018 ✓	$3.7^{4.5}$	1287	1018 ✓
~~21~~ 14	1406	1160 ✓	$4.5^{6.3}$	1378	1160 ✓
~~22~~ 15	1482	1070	$5.0^{5.8}$	1448	1042
~~23~~ 16	325	1178	$5.4^{6.2}$	1385	1175

Pris. Comp.

	1st	2nd		
4	..	..		
5	$3.8^{4.6}$		1492	1642
6	$5.7^{6.5}$		1715	907
7	$5.0^{5.8}$		1545	445
8	$7.4^{8.2}$		1693	1492
9	~~9.4~~	9.4	1707	1482
10		9.3	1460	1151
11		10.7	1390	888
12		10.9	1275	905
13		12.0	1250	987
14		12.9	1348	1047
15		13.9	1414	1032

			1st	2nd		
17	1279	1107	$5.6^{6.4}$		1240	11.07
18	1302	1125	$6.6^{7.4}$		1252	1132
19	1352	1102	..	8.2	1340	1082 ~~1202~~
20	1372	1122	..	8.9	1349	1102
21	1307	1090	..	8.9	1285	1070
22	1315	1112	..	9.8	1285	1085
23	1392	1112	..	10.2	1359	1090
24	1337	1107	..	9.9	1300	1080
25	1350	1098	..	10.8	1308	1080
26	1365	1109	..	11.8	13.15	1090
27	1398	1131	..	12.0	1348	1112
28	1412	1070	..	12.8	1357	1050

11 4 ~~4~~ 6

finish 3rd zone 1 05

Thursday, October 1, 1919.

For Reduction of Zones 4 ~~to~~ and 5.

10.40 MC 5083

Polar Sequence

Scale	Primary Scale 1	Scale 2	End		P.C. Beginning Sc. 1	Sc 2		End
4								
5								
6	Br				$4.9^{5.7}$			
7	B				$5.0^{5.8}$			
8	B				$6.8^{7.6}$	7.7		7.7
9						8.8		8.8
10	$2.2^{3.0}$		$2.0^{2.8}$ ~~4.1~~			9.8	9.1	~~12.0~~
11	$2.5^{3.3}$		$2.6^{3.4?}$			10.0		10.4
12	$3.2^{4.0}$					11.0		
13	$4.1^{4.9}$		$4.1^{4.9}$			11.9		12.0
14	$4.6^{5.4}$					12.8		13.0
15	$4.8^{5.6}$		$4.9^{5.7}$			13.3		13.1
16	$5.4^{6.2}$					m.s.		
17	5.8^{66}							
18		7.8						
19		7.9						
20		8.6	8.5	8.4				8.
21		8.9						
22		9.2						
23		9.8	9.75	9.7				
24		9.9						
25		10.7						
26		11.6						
27		.						
28		.						

10.48 finished zone 5 at 12.00

Thursday, October 1, 1919.

For Reduction of Zones 6 and 7

2.02 MC 5083

	Primary		P.C.	
	Sc 1	Sc 2	Sc 1	Sc 2
5			$3.8^{4.6}$	
6			$4.8^{5.6}$	
7			$5.0^{5.8}$	
8	B		$7.2^{8.0}$ $^{7.85}$	7.7
9				8.3
10	$1.8^{2.6}$			9.6
11	$2.2^{3.0}$			10.7
12	$3.2^{4.0}$			11.0
13	~~4~~3.7$^{4.5}$			11.8
14	$4.0^{4.8}$			13.0
15	$5.2^{6.0}$			13.6?
16	$5.4^{6.2}$			
17	$6.6^{7.4}$			
18	$7.0^{7.8}$ $^{7.65}$	7.5		
19	$7.6^{8.4}$ 815	7.9		
20		8.7		
21		9.2		
22		9.7		
23		9.7		
24		10.1		
25		10.8		

2.09 finished zone 6 2.54

Wednesday, October 22, 1919

Estimates of Magnitudes of Provisional Sequence of Comparison Stars for Nova Ophiuchi No. 4

J.C.M $18^h\ 9^m\ 27^s.0$ $+11^\circ\ 35'.1$ (1900)

Comparison Stars marked on Plate AC 21798

. Compared with Prov. Magn. for Z Herculis

Z Herculis Prov. Magn.	
a	6.9
c	7.1
b	7.6
b'	8.4
b^2	8.7
d	9.2
e	9.5
f	9.7
g	10.8
h	11.0
k	11.8
l	12.4
m	12.8
n	13.4
o	13.7
p	13.9
q	14.4
r	14.8

AC 21978	
a	6.7
b	7.3^{1}
c	~~7.5~~ 83
d	8.6
e	8.6
f	8.6
g	9.1
h	9.7
k	10.2
l	10.4
m	10.6
n	10.8
o	10.8
p	11.5?

Ft Star (1) np Nova Magn 11.5
(2) sf Nova Magn 13
(3) sp Nova Magn 14

Nova on ~~M~~ aC 21798 7.5
AC 21868 8.0

Friday, November 7, 1919

Nova Ophiuchi No. 4 (J.C.M.

18^h 9^m +11°.6

Comparison Stars Book 38 page 72

		Published Magn.	
~~A~~	~~6.80~~	~~6.8~~	
a	6.94	6.9 $^{6.8}$	6.80
a′	7.42	7.4 $^{7.2}$	7.16
~~a²~~	~~7.88~~	~~7.9~~ $^{7.7}$	7.68
b	7.88	7.9 $^{7.7}$	7.67
c	8.08	8.1 $^{8.0}$	8.00
d	8.68	8.7 $^{8.7}$	8.66
e	8.71	8.7	8.70
f	~~9.37~~ 8.70	8.7 ✓	8.71
g	~~9.61~~ 9.37	9.4 ✓	9.38
h	9.61 ✓	9.6 ✓	
k	9.79 ✓	9.8 ✓	
l	10.09 ✓	10.1 ✓	
m	10.48	10.5 ✓	10.47
n	10.99	11.0 ✓	10.96
o	11.15	11.2 $^{11.1}$	11.11
p	11.56	11.6 $^{11.5}$	11.50

July 27 AC 21635 ^{22167} n.s. < 9.6

Sept. 13 AC 21798 ^{22215} 7.4 7.2

~~Oct.~~ Aug. 4 21663 ^{22175} n.s. < 9.5

Oct. 28 21947 ^{22260} 9.2

Oct. 8 21886 ^{22240} 7.5 7.3 e

Oct. 29 21960 ^{22261} 9.1

Oct. 29 21962 ^{22261} 9.1 g

Oct. 1 21860 ^{22233} 8.6

Oct. 6 21868 ^{22238} 7.9 7.7

Sept. 26 21830 ^{22228} 9.1

Oct. 28 21949 ^{22260} 9.1

Aug. 22 21724 ^{22193} 9.2

Aug. 23 21730 ^{22194} 9.3

Aug. 20 21710 ^{22191} 9.3

Sept. 24 21818 ^{22226} ~~too poor~~ n.s. < 8.0

Sept. 29 21854 ^{22231} 9.3

Oct. 24 Σ 39691 ^{22256} 9.3

Oct. 22 39686 ^{22254} 9.4

Oct. 24 396~~90~~89 ^{22256} 9.4

Oct. 22 39684 ^{22254} 9.4

~~39~~

Aug. 8 A 18745 ^{22179} n.s. < 9.4

Oct. 18 18970 ^{22250} n.s. < 8.2

Oct. 6 18923 ^{22238} 7.8 7.6

Aug. 9 18~~8~~749 ^{22180} n.s. < 9.0

Sept. 27 18895 ^{22229} 9.2? 7

Aug. 10 18756 ^{22242} too poor

Aug. 21 18784 ^{22253} n.s. < 7.4 < 7.2

Oct. 7 18931 ^{22239} 7.8? g 7.6?

Oct. 8 18941 ^{22240} 7.8 e 7.6?

Oct. 17 18961 ^{22249} 7? < 8.6

Oct. 17 18962 ^{22249} 8.7 7

Oct. 19 MC 16331 ^{22251} p 9.4

g 9.4

Oct. 20 MC 16332 ^{22252} g 9.4

Magnitudes in red ink changed to accord with revised values of Comparison stars.

Nova Ophiuchi

Oct. 28 A 19002 ^{22260}

n.s. < 8.0

A 19003 too poor

Aug. 9, 1919 AC 21682 T/ edge

Aug. 11 AC 21692 ^{22182} n.s. < 8.4

Aug. 29 A 18834 ^{22300} n.s. < 8.0

Aug. 25 A 18805 ^{22296} n.s. < 7.9 < 7.7

Sept. 13 A 18856 ^{22215} too poor

Sept. 4 A 18837 ^{22206} n.s. < 7.9 < 7.7

Aug. 28 A 18828 ^{22299} too poor certainly not brighter than 6.5

Aug. 25 A 18804 ^{22296} too poor " " " " "

Sept. 5 A 18~~923~~845 ^{22207} n.s. < 7.0 < 6.8

Aug. 28 18826 ^{22299} 8.5? 7

Sept. 5 18844 ^{22207} 7? < 8.7

Sept. 24 18874 ^{22226}

Sept. 5 18846 ^{22207} 8.7

Monday, November 10, 1919

Scale AH3 Nova Ophiuchi No. 4

Measures of Comparison Stars

on Plate A 6912

adopt provisionally

				Diff. BD 38 p.72	Curve	Magn.	Dotted Curve	
q'	3.2			9.72	9.70	12.90	9.53	12.73
q	2.8			9.40	9.90	12.70	9.70	12.50
r	3.1			9.83	9.77	12.87	9.60	12.70
s	3.8			9.32	9.41	13.21	9.40	13.20
t	4.2			9.49	9.21	13.41	9.20	13.40
u	5.1			8.88	8.78	13.88	8.87	13.97
u'	5.1			8.62	8.78	13.88	8.87	13.97
w	5.7	5.6	5.65		8.50	14.15	8.68	14.$\overset{3}{5}$3
x	5.9	6.0	5.95		8.39	14.34	8.58	14.53
y	6.1	6.1	6.10		8.29	14.39	8.51	14.61
z	~~7.0~~ 6.7	6.8	6.75		7.99	14.74	8.28	15.03
α	~~7.2~~ 6.9	6.9	6.90		7.90	14.80	8.22	15.12
β	6.8	6.8	6.80		7.9$\overset{6}{8}$	14.76	8.26	15.06
γ	~~8.0~~	7.5	7.5		7.62	15.12	8.00	15.50
δ	~~8.2~~	7.7	7.7		7.51	15.21	7.96	15.66
ε		7.9			7.41	15.31	7.88	15.78
ζ		8.6			7.09	15.69	7.62	16.22
η		9.0			6.90	15.90	7.49	16.49

Measures very difficult. Curve greatly extrapolated. Magnitudes probably fainter than those given here. Adopt second Magn. (dotted curve) provisionally

Measured also by M.D. Applegate Book 4, page 219

Saturday, January 3, 1920

Examination of Asteroid Plates

(7) Iris MF 88$\overset{2}{1}$, 855, 856, 857, 1035, 1114
No variability seen on careful inspection of the above plates. Images very good. Should give excellent positions and mean magnitudes.

(80) Sappho MC 14370, 14371, 14390,
MF 1321, 1322, 1340, 1341.
No variability seen on careful inspection. Measure for position and mean magnitude

(29) Amphitrite MF 1136, 1137, 1145, 1146
Plates not very good. No variation seen ~~Too near edge~~ measure for mean magn. Measure position

(11) Parthenope. MC 14486, 14487, 14499, 15920
I 39648, 39649.
No variability seen on careful inspection. Very good plates. Measure position and mean magnitude

(13) Egeria MC 14565 14745, 14746
No variation seen. Measure position

(18) Melpomene MC 15064, 15065
No variation seen.
Near edge - measure position

Monday January 5, 1920

Nova J.C.M. Nova Lyrae

R.A. = 18h 49m 31s Dec. = +29° 6'.3 (1900)

Comparison Stars on I 25194

Estimates of brightness of Comparison Stars.

Inclusions of Carte 19h + 24°S		Inclusions of Kapten 19h + 30°S	
AC 22132			
~~K 7.4~~	too distant	n	9.0
l		o	9.0
		p	9.3

Monday January 5, 1920.

Estimates of Nova. Nova Lyrae

Corr. Magn.				J.D.
a = 5.8	Dec 6	AC 22113	6.8	2299
b = 5.0	Dec 10	AC 22093	7.4? Defective, edge	2303
c = 6.5	Jan 2	AC 22180	~~7.6~~ 8.0? Film defective.	2326
d = 6.6	Dec 17	AL 19194	6.5	2310
e = 7.0	Dec 20	~~AC 22132~~	~~9.0 - probably nearer 8.5~~	
f = 7.4	1920 Jan. 2	I 39713	8.5?	2326
	1919 Dec 4	AI 19147	n.s. < 7.5	~~2299~~ 97
	Nov. 14	AI 19055	n.s. < 9.3	2277
	Jan 3	I 39717	8.5?	2327
l 8.5?				
m 8.8?				
n 9.0				
	Dec 20	AC 22132	8.8	2313

Re-observed with better values for Stars l, m

Monday January 12, 1920

10 15 Nova Persei No. 2.

Observations in Positions from Lowell Observatory sent by C.O. Lampland

North at top

g	12.8
l	13.2
k	13.3
h	13.5
m	13.6
n	13.6
n′	13.8
o	13.9
q	14.7
p	14.7
r	15.1
s	15.3

Oct. 1, 1919	13.7	Neb 18. troublesome
Oct 1, 1919	13.7	18 "
Sept. 3, 1919	13.6	18 "
July 30, 1919	14.9	n.s. < 16
Jan. 19, 1919	14.4	18 not troublesome
Dec. 28, 1918	14.0	18 troublesome
Dec. 5, 1918	13.5	n.s. < 16
Nov. 8, 1918	13.4	n.s. < 16
Oct. 30, 1918	14.8	n.s < 16
Nov. 15, 1917	14.6	n.s. < 16
Dec. 2, 1917	14.3	n.s. < 16
Dec. 10, 1917	14.4	n.s. < 16
Jan. 2, 1918	14.7	18 Troublesome
Feb. 2, 1918	13.8	18 "
Feb. 28, 1918	14.3	n.s. < 18
March 1, 1918	14.6	18 Troublesome
July 16, 1918	14.9	n.s. < 16
Aug. 16, 1918	14.8	18 troublesome
Sept. 10, 1918	13.6	18 ,

10 25

Monday January 12, 1920

10 30 Nova Persei No. 2

Estimates repeated - South at top

		P. 206	Mean	
Oct. 30, 1918	14.7	14.8	14.75^{01}	Dec 28, 191~~9~~8 North at top
Nov. 8, 1918	13.4	13.4	13.40^{00}	14.1
Dec. 5, 1918	13.5	13.5	13.50^{00}	Dec 28, 191~~9~~8 South at top
Dec. 28, 1918	14.4	14.0	$14.20^{2\underline{2}\underline{1}1}$	14.3
Jan. 19, 1919	14.5	14.4	14.45^{10}	
July 30, 1919	14.8	14.9	14.85^{01}	
Sept 3, 1919	13.5	13.6	13.55^{01}	
Oct. 1, 1919	13.6	13.7	13.65^{01}	
Oct 1, 1919	13.6	13.7	13.65^{01}	
Sept 10, 1918	13.7	13.6	13.65^{10}	
Aug. 16, 1918	14.6	14.8	$14.70^{\underline{1}1}$	
July 16, 1918	14.9	14.9	14.90^{00}	
March 1, 1918	14.5	14.6	14.55^{01}	
Feb. 28, 1918	14.4	14.3	14.35^{10}	
Feb. 2, 1918	13.7	13.8	13.75^{01}	
Jan. 2, 1918	14.6	14.7	14.65^{01}	
Dec. 10, 1917	14.5	14.4	14.45^{10}	
Dec. 2, 1917	14.4	14.3	14.35^{10}	
Nov. 15, 1917	14.6	14.6	14.60^{00}	

Dec. 28, 191~~9~~8 Difficult retain

10 45 all four observations

Saturday, January 17, 1920

$121\overset{5}{\cancel{6}}6\overset{1}{\cancel{4}}$ - $\overset{RY}{\cancel{X}}$ Ursae Majoris H.V.

No. 19
H.S.L. XXII, f.
Wrongly identified
as +64° 890.
Really +62° 1224
Discovered again in
1908 by M + K,
announced as
1,1909. Dec.
RY Urs. Maj.
See A.N. 180, 111

46, 1907 H.C. 127

Miss Cannon has R.A. = 12^h 15.8^m, while H.C. 127 gives 12^h 16.2^m. Have Miss Walker check precession. +64° 890 - Not the right star

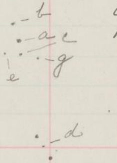
Not found variable by Sperra P.A. 16,488
W. Münch 7.33-7.63 ~~P.A. 16, 488~~
"Not sure" A.N. 182,119

Hoffmeister A.N. 208, 240
51 obs. June 9, 1914-1918
"No variation". Always 0.4 brighter than +63° 1009 (7.0)

Pračka Bull. Int. L'A. Sciences de Bohême 1912, 11
+64° 690 is not variable, and is not the star intended to be announced by H.S.L.

Estimates of brightness in terms of Sequence for S Urs. Maj)

Comp. Stars on 925342



	AC 3351		Carte 12^h +64°.5 AC 3351	
a	7.9	?	B	
b	8.6	7	B	
c	9.1	5	9.1	
d	9.0	-1	9.1	0
e	9.4	4	9.6	5
f	9.6	2	9.8	2
g	10.1	5	10.2	6

$121\overset{5}{\cancel{6}}6\overset{1}{\cancel{4}}$ - $\overset{RY}{\cancel{X}}$ Urs Maj Cont

AC 7427
7 Urs. Maj. and Carte

a	7.8	
b	8.3	5
c	8.7	4
d	9.0	3
e	~~8.7~~ 9.4	4
f	~~9.4~~ 9.6	2
g	10.2	6

Mean AC 3351 }
AC 7427 }

			Prov. Magn.	
a	7.8~~5~~	1,0	7.8	6 ~~7.5~~
b	8.45	2,1	8.4	5
c	8.90	2,2	8.9	1
d	9.00	0,0	9.0	4
e	9.45	1,0	9.4	2
f	9.65	1,0	9.6	6
g	10.20	0,0	10.2	

~~a certainly as bright as 7.5~~

Jan. 17, 1920

3 15 121$\overset{5}{\cancel{4}}$6$\overset{1}{\cancel{4}}$ RY Ursae Majoris Cont.

Estimates on AC plates

Comparison Stars on D 25342

			J.D.			
✓ 1910 Jan. 16	a	7.$\overset{5}{\cancel{8}}$	18688	AC 1131$\overset{3}{\cancel{4}}$	9.0	
✓ 1909 Dec. 21	b	8.4	18662	11195	9.1	
✓ 1903 Feb. $\overset{23}{3}$	c	8.9	16149	3351	8.8	
✓ 1909 Mar. 29	d	9.0	18395	10373	8.9	
✓ 1907 Apr. 29	e	9.4	17695	8469	8.8	
✓ Apr. 20	f	9.6	17686	8443	9.0	
✓ Apr. 2	g	10.2	17668	8388	9.1	
✓ 1901 June 17			15553	1550	9.0	
✓ 1901 Feb. 1			15417	1196	9.3	
✓ 1906 Mar. 31			17301	7427	9.3	
✓ 1910 Jan. 8			18680	11269	8.7	
✓ 1913 Feb. 13			19812	(mult. im.) 13781	9.1	throughout
✓ 1919 Mar. 9			22027	21$\overset{2}{\cancel{8}}$52	8.8	
✓ " 31			22049	$\overset{21312}{\cancel{20277}}$	8.7	
✓ Apr. 13			22062	-21337	8.9	
✓ " 14			22063	21341	8.9	
✓ May 6			22085	21425	8.8	
✓ " 23			22102	21461	9.0	
✓ " 25			22104	21465	9.0	
✓ June $\overset{21}{\cancel{24}}$			22131	21544	8.0	! Certainly very bright - fine image But this is a yellow plate
July ~~14~~						
✓ July 14			22154	21609	9.2	
✓ Aug. 9			22180	21681	9.4	(good)
✓ Sept. 5			22207	21781	9.4	
✓ " 28			22230	21853	9.3	
✓ 1912 June 13			19567	13174	9.0	

Jan. 17, 1920

121$\overset{5}{\cancel{4}}$6$\overset{1}{\cancel{4}}$ RY Urs. Maj. Cont.!

✓ 1912 July 2	19586	AC 13184	8.9	
✓ " 5	19589	13201	8.9?	Im. appears nebulous
✓ " 22	19606	13229	9.0	
✓ Nov. 29	19736	13524	9.2	
✓ 1913 Jan. 12	19880	13641	9.0	
✓		13869	9.1??	Image very nebulous
✓ 1913 Apr. 25	19883	13977	9.0	
✓ " 30	19888	13989	9.0	
✓ 1919 Feb. 2	21992	21054	9.2? e	
✓ " $\overset{3}{\cancel{4}}$	21993	21066	9.1? e	
✓ " 11	22001	21125	-	too near edge
✓ Mar. 8	22026	21251	8.9	
✓ " 20	22038	21289	8.8	
✓ Apr. 2	22051	21327	8.9 e	
✓ " 14	22063	21342	8.9 e	
✓ May 5	22084	21416	8.8 e	
✓ " 23	22102	21463	8.8 e	
✓ June 3	22113	21499	8.8 e f	
✓ Oct. 28	22260	21950	9.1? e f	
✓ 1914 $\overset{Mar. 4}{\cancel{Feb.}}$	20196	14931	9.3? e	throughout mult. im. nebulous im.
✓ 1913 Apr. 1	19859	13929	9.2? e	throughout mult. im.
✓ 1919 Jan. 20	21979	20997	9.0	
✓ Feb. 3	21993	21064	9.0	
✓ " 11	22001	21122	8.8	
✓ Mar. 2	22020	21226	8.9	
✓ " 4	22022	21240	8.9	
✓ " 9	22027	21252	8.9	
✓ Sept. 28	22230	21853	9.3	

Jan. 17, 1920

$121\overset{5}{\cancel{6}}6\overset{1}{\cancel{4}}$ $\overset{RJ}{-}$Urs. Maj. Cont.

	J.D.			
✓ 1919 Feb. 26	22016	AC 21204	8.8 e	
✓ Mar 2	22020	21224	89 e	
✓ " 3	22021	21233	9.0 e	
✓ " 11	22029	21266	89 e	
✓ Apr 1	22050	21319	8.8 e	
✓ Apr 25	22074	21386	9.0 e	
✓ May 6	22085	21424	8.7 e	
✓ July 28	22168	21639	9.3 e	
✓ 1919 Jan. ~~Nov 13~~ 20	21979	20998	8.9 e	
✓ Feb. 2	21992	21053	9.1 e	
✓ " 7	21997	21098	9.0 e	
✓ 1918 Nov 29	21927	20763	9.3 e	
✓ Dec. 8	21936	20804	9.2 e	
✓ " 23	$219\overset{5}{\cancel{6}}1$	20869	9.1 e	
✓ " 29	21957	20887	9.2 e	
✓ 1918 Apr 26	21710	20073	9.0? e	
✓ " 28	21712	20078	9.0? e	
✓ May 15	21729	20128	8.9? e	
✓ June 26	21771	20236	9.0? e	
✓ Oct. 21	21888	20608	9.3 e	good
✓ 1918 Mar. 15	21668	19925	8.8? e	
✓ 1919 Apr. 2	22051	21326	8.8 e	
✓ " 19	22068	21354	8.9 e	
✓ 1919 Feb. 3	21993	21065	8.9? e	
✓ Feb. 11	22001	21124	8.9? e	
✓ 1918 Dec. 1	21929	20779	9.2 e	
✓ " 8	21936	20805	9.2 e	

Monday, January 19, 1920

10 20

$121\overset{5}{\cancel{6}}6\overset{1}{\cancel{4}}$ $\overset{RJ}{-}$Urs. Maj. Cont.

	JD		
✓ 1917 Sept 13	21485	AC 19129	8.9? 7
✓ " " 30	21502	19220	9.0? ef
✓ " Nov 16	21549	19477	9.3
✓ " " 16	"	19480	9.2
✓ " Dec 12	21575	19595	9.3
✓ 1918 Jan 13	21607	19674	9.2
✓ " " 15	21609	19685	9.2
✓ " " 17	21611	19697	9.2
✓ " Feb 1	21626	19758	8.9
✓ " " 15	21640	19828	9.1
✓ 1916 Nov 7	21175	18133	9.0? ef
✓ " Dec 12	~~21180~~ 1210	18291	9.0
✓ " Dec 23	21221	18339	9.2
✓ 1917 Jan 16	21245	18444	9.2
✓ " " 16	"	18447	9.1
✓ " Feb 11	21271	18545	9.3
✓ " " 22	21282	18595	9.2
✓ " Mar 15	21303	18668	9.2
✓ " " 22	21310	18697	9.2? neb. im
✓ " " 24	21312	18706	9.2
✓ " Apr. 4	21323	18759	9.2
✓ " " 17	21336	18788	9.2
✓ " May 3	21362	18816	9.0
✓ " " 31	21380	18876	9.1
✓ " June 22	21402	18910	8.9
✓ " July 31	21441	$189\overset{86}{\cancel{54}}$	8.9
✓ 1917 Sept 5	21477	19079	8.9

Monday, Jan. 19, 1920

121$\overset{5}{\cancel{6}}$6$\overset{1}{\cancel{4}}$ – ^{RY}Urs. Maj. Cnt.

		JD			
✓	1918 Mar. 2	21655	AC 19889	8.9	
✓	" " 15	21668	19923	9.0	
✓	" " 19	21672	19954	8.9	
✓	" Apr 15	21699	20051	8.8	
✓	" May 7	21721	20099	8.9	
✓	" " 14	21728	20121	9.0	
✓	" July 26	21801	20312	9.1	
✓	" Sept 29	21866	20550	9.3	
✓	" Nov 2	21900	20637	9.2	
✓	" " 10	21908	20676	9.3	
✓	" " 23	21921	20719	9.3	
✓	" " 25	21923	20730	9.3	
✓	" " 26	21924	20744	9.2	
✓	" Dec 19	21947	20850	9.2	
✓	1919 Jan 10	21969	20927	9.1	
✓	1916 Dec 8	21206 ~~230~~	18280	8.9? i f	
✓	" " 30	21228	18383	9.1? e	
✓	1917 Jan 12	21241	18426	9.1	
✓	" Feb 16	21276	18568	9.2? e	
✓	" " 24	21284	18605	9.2	
✓	" May 16	21365	18842	9.0? e	
✓	" June 27	21407	18921	9.0? e	
✓	1917, Nov 14	21541	19469	9.3 e	
✓	" Dec 4	21570	19563	9.4 e	
✓	1918 Jan 1	21595	19639	9.2? e	
✓	" " 20	21614	19717	9.2 e	
✓	" Feb 2	21627	19769	9.1 e	

Monday, Jan. 19, 1920

121$\overset{5}{\cancel{6}}$6$\overset{1}{\cancel{4}}$ – ^{RY}Urs. Maj. Cnt.

		JD			
✓	1918 Mar 2	21655	AC 19888	9.1? e	neb. im.
✓	" Nov 27	21925	20756	9.2	
✓	" Dec 23	21951	20870	9.3 e	
✓	" " 29	21957	20888	9.2 e	
✓	1919 Jan 8	2$\overset{19}{\cancel{20}}$67	20920	9.1 e	
✓	1918 Oct 8	21875	20581	9.4 e	
✓	1918 Nov 23	21921	20720	9.$\overset{2}{\cancel{3}}$ e	
✓	" Sept 10	21847	20474	9.3 e	
✓	" June 24	21769	20230	9.0 e	
✓	" July 8	21783	20252	9.1 e	
✓	" May 1	21715	20083	8.9 e	
✓	" May 11	21725	20117	9.0 e	
✓	1918 Mar 19	21672	19953	8.9 e	
✓	" " 8	21661	19908	9.0 e	
✓	1917 Dec 22	21585	19621	9.3 e	
✓	1918, Jan 1	21595	19638	9.2? e	
✓	" Feb 1	21626	19759	9.0? e	
✓	" " 18	21643	19848	9.1? e	
✓	1917 Sept 8	21480	19095	9.0 e	
✓	" Apr. 4	21323	18760	9.2? e	neb.
✓	" Mar. 20	21308	18689	9.2 e	
✓	" Feb 22	21282	18597	9.4 e	
✓	" Jan 14	21243	18433	9.0 e	
✓	1916 Dec 12	21210	18293	9.1 e	

The plates on the last $\overset{5}{\cancel{4}}$ pages are intended to cover the time since Nov. 1916 as fully as possible, using overlapping regions

121$\overset{5}{\cancel{4}}$6$\overset{1}{\cancel{4}}$ - RY Urs. Maj. Cont.
Jan. 19, 1920

	JD	AC 1598	8.9
✓1901 Nov 20	15709	1991	9.3
✓ " Dec 6	15725	2068	9.3
✓ " " 27	15746	2116	9.4
✓1902 Jan 1	15751	2140	9.3
✓ " " 30	15780	2259	9.0
✓ " Feb 3	15784	2265	8.9
✓ " " 15	15796	2336	8.9
✓ " Mar 15	15824	2416	8.8
✓ " " 25	15834	2431	8.9
✓1901 Feb 25	15441	1292	9.2 ?
✓ " Mar 23	15477	1372	9.2
✓ " " 30	15484	1387	9.2 ?
✓ " Apr 26	15501	1414	9.1
✓ " May 3	15508	1434	9.1
✓ " " 6	15511	1444	9.0
✓ " " 8	15513	1450	9.0 ?
✓ " " 12	15517	1457	9.0
✓ " " 23	15528	1485	9.0
✓ " June 19	15555	1557	9.1 ?
✓ " " 21	15557	1561	9.0
✓1900 Apr 6	15116	800	9.2
✓ " May 20	15160	859	9.1
✓1901 Jan 2	15387	1123	8.9
✓ " " 7	15392	1137	8.9
✓1899 May 11	14786	319	9.2 ?
✓ " " 26	14801	333	9.2
✓ " Nov 25	14984	558	8.8

Monday, Jan. 19, 1920

121$\overset{5}{\cancel{4}}$6$\overset{1}{\cancel{4}}$ - RY Urs. Maj Cont

	JD			
✓1899 Dec 19	15008	AC 610	8.9	
✓1900 Feb 19	15070	726	8.9	
✓ " Mar 12	15091	753	9.2	g
✓1899 Mar. 24	14738	259	9.0	
✓1904 Aug 25	16718	5178	8.9 ?	g
✓ " July 20	16682	5080	9.2 ?	g
✓1904 June 17	16649	4979	9.2	
✓ " May 4	16605	4884	9.0	
✓ " Apr 2	16573	4789	8.8	
✓ " Mar 4	16544	4702	8.7	
✓ " Jan 10	16490	4516	8.8	
✓1905 " 22	16868	5874	8.8	
✓1904 Dec 13	16828	5719	8.8	
✓ " Nov 18	16803	5560	8.8	
✓ " Oct 22	16776	5415	8.9	
✓ " May 24	16$\overset{990}{\cancel{625}}$	6395	9.2	
✓1905 Apr 17	16953	6292	9.3	
✓1905 Feb 10	16887	5976	8.9	
✓1903 Dec 10	16459	4340	8.8	
✓ " Nov 10	16429	4199	8.9	
✓1903 May 25	16260	3680	8.6	? neb im.
✓ " June 27	16293	3737	8.9	
✓1903 May 10	16245	3610	8.9	
✓1903 Apr 12	16217	3500	8.8	
✓1903 Feb 18	16164	3317	8.9	
✓1902 Dec 23	16107	3097	8.9	
✓1902 Oct 24	16047	2932	9.0	

Monday, Jan 19, 1920

$121\overset{5}{\cancel{6}}6\overset{1}{\cancel{4}}$ - ^{RJ} Urs. Maj. Cut

	JD			
✓1902 July 16	15947	AC 2694	8.5	
✓ " June 6	15907	2611	8.6	
✓ " May 9	15879	2534	8.8	
✓ " Apr 15	15855	2475	8.8	
✓1912 May 17	19540	13132	9.0	
✓ " June 8	19562	13161	9.1	
✓ " Apr 20	19513	13097	8.9	
✓ " Mar 31	19493	13049	8.8	
✓1912 Feb 9	19442	12905	9.4	
✓1911 Aug 22	19271	12524	8.9 e	
✓1910 May 19	18811	11673	9.3	
✓ " Apr 5	18767	11565	9.4	
✓ " Mar 26	8757	11537	9.2	
✓ " Feb 5	8708	11357	8.8	
✓1909 June 3	8461	10545	9.2	
✓ " May 12	8439	10503	9.0?	
✓ " Apr 8	8405	10405	8.9	
✓ " Feb 28	8366	10270	8.8	
✓ " Jan 31	8338	10190	8.9	
✓1908 June 12	8105	9539	8.8	
✓ " Apr 24	8056	9446	9.0	
✓ " Mar 16	8017	9345	8.8	
✓ " Feb 2	7974	9229	8.9?	Image sharp
✓ " Jan 14	7955	9176	9.1?	
✓1907 Aug 14	7802	8690	8.9	
✓ " July 29	7786	8640	8.9	
✓ " June 19	7746	8554	8.9	

Monday, Jan. 19, 1920

$121\overset{5}{\cancel{6}}6\overset{1}{\cancel{4}}$ - ^{RJ} Urs. Maj. Cut.

	JD		
✓1907 May 20	17716	AC 8504	9.0
✓ " Mar 21	7656	8371	9.0
✓ " Feb 2	7609	8207	9.2
✓1906 Nov 23	7538	8048	9.4
✓1906 Aug 28	7451	7751	8.8
✓ " June 10	7372	7594	9.6
✓ " Apr 8	7309	7462	9.3
✓ " Mar 14	7284	7376	9.2
✓ " Feb 10	7252	7273	9.4
✓ " Jan 26	7237	7217	9.3
✓1905 Nov 27	7177	7066	8.9
✓1905 July 19	7046	6525	8.9
✓ " June 25	7022	6457	9.1
✓ " May 25	6991	6402	9.4
✓1914 Nov 28	20465	15811	9.0
✓1915 Feb 20	0549	16148	9.2 2
✓ " Mar 9	0566	16226	9.1?
✓1914 Apr 23	0246	15125	8.9
✓ " May 2	0255	15153	8.9
✓1914 Mar 13	0205	14972	8.9
✓1913 May 19	9907	14036	8.8
✓ " June 3	9922	14059	8.9
✓ " July 3	9952	14136	9.0
✓1914 Jan 31	0164	14820	8.9
✓1915 Mar. 23	0580	16323	9.2
✓ " Apr 12	0600	16391	9.3
✓ " May 14	0632	16463	9.3

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121$\overset{5}{6}$64 - $\overset{R}{Y}$ Urs. Maj.

		AC ~~16562~~	~~too poor~~
✓1915 July 15	20694	16587	9.2
✓ " Aug 11	0721	16639	9.1
✓ " Nov 15	0817	16995	8.8
✓ " Dec 19	0851	17138	8.8
✓1916 Jan 23	0886	17242	9.3
✓ " Feb 1st	0909	17323	9.4
✓ " Mar 28	0951	17452	9.2
✓ " Apr 10	0964	17507	9.1
✓ " June 23	1038	17676	9.0?
✓ " Aug 14	1098	17778	8.9
✓ " Sept 16	112$\overset{3}{7}$	17887	8.9
✓ " " 25	1132	17929	8.9

Continued BK 44, 6-

The plates on pp 216-220 are all for centre
12^h +60°, intended to include about 1 plate
12 45 a month between 1900 and 1917