KG
11365
696

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44970
44946 } Miss Woods.

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Sc. N subtract 2 from A
" 4 " B

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(over)

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Friday Nov. 14, 1919

~~Thursday Nov. 13, 1919~~

Direct estimates of Var. in Nebulæ Orion.

11:05

10:55 Var	19	24	29	38	52	86	88	B	C	D	E
3874 a 2156 ✓	15.8	14.3	16.0	15.2	15.2	15.9	15.2	14.3	14.9	–	15.3
2854 a 192 ✓	15.2	13.8	15.7	15.4	15.7	16.0	16.0	14.8	15.0	–	14.8
7531 a 8199 ✓	17.1	14.7	15.9	15.6	15.4	15.9	15.7	14.6	14.7	–	14.6
2862 a 216 ✓	14.5	13.9	–	–	–	–	–	–	–	–	14.5
7524 a 8191 ✓	15.5	14.5	15.8	15.6	15.4	15.9	15.3	14.8	14.8	–	14.7
2837 a 153 ✓	15.8	13.7	15.6	16.1	15.4	16.1	–	15.2	15.1	–	14.8
4641 a 3430 ✓	–	13.7	–	–	–	–	–	13.7	–	–	14.3
2830 a 144 ✓	–	14.0	–	–	15.5	–	–	–	–	–	14.8
4632 a 3422 ✓	~~13.9~~	13.9	–	–	–	–	–	14.5	–	–	19.5
4632 a 3424 ✓	–	–	–	–	–	–	–	–	–	–	–
4641 a 3429 ✓	15.1	13.6	15.7	15.8	15.1	15.7	15.8	14.3	15.1	–	14.8
0001 a 10823 ✓	15.8	14.8	15.9	15.7	15.2	pcsuf.	def.	14.8	15.0	–	14.6
4227 a 2865 ✓	–	14.3	–	–	–	–	–	14.4	–	–	–
3873 a 2154 ✓	15.9	13.9	–	15.7	15.0	16.0	15.7	14.5	15.0	–	15.0
2830 a 142 ✓	–	13.7	–	–	–	–	–	–	–	–	–

12:25

2:05

0008 a 10828 ✓	15.8	15.5	15.9	15.7	15.0	15.9	15.8	14.4	14.7	–	14.6
3839 a 2119 ✓	15.5	13.6	16.0	15.5	15.1	15.7	15.3	14.4	15.0	–	14.8 ~~15.5~~
4641 a 3432 ✓	–	13.7:	–	–	–	–	–	–	–	–	–
4641 a 3433 ✓	–	13.7	–	–	14.6	–	–	13.9	–	–	14.4
2798 a 61 ✓	15.2	13.8	15.5	15.5	15.3	–	–	14.5	14.7	–	14.8
4227 a 2864 ✓	–	14.0	–	–	–	–	–	–	–	–	–
2876 a 241 ✓	–	13.6	–	–	–	–	–	–	–	–	–
3221 a 1271 ✓	15.9	14.3	15.5	15.4	15.2	15.9	15.7	14.8	15.0	–	14.9
2825 a 128 ✓	–	13.6	–	–	–	–	–	–	–	–	–

3:00

Seq.	mag.
a	12.6
b	13.0
c	13.4
d	13.7
e	14.0
f	14.4
g	14.8
h	15.2
k	15.5
~~l~~	~~15.8~~
~~m~~	~~16.2~~
o^4	16.3
p^4	16.4
q^4	17.0

See p.5

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1920phae.proj...697A

Friday Nov. 14, 1919

~~Thursday Nov. 13, 1919~~

Remarks -

Two regions used in measuring this group.

f^4 14.5 ; g^4 = 14.7; k^4 = 15.0		e^4	13.6
f^4 14.6 ; g^4 14.8 ; k^4 14.7		b^4	13.7
f^4 14.6; g^4 14.7; k^4 14.8		c^4	13.9
f^4 14.5; g^4 14.5	Blost nebulosity.	d^4	14.0
f^4 14.6 g^4 14.6 k^4 15.0		e^4	14.3
f^4 14.4 g^4 14.7 k^4 14.6		f	14.4
f^4 14.4		g	14.8
f^4 14.7 g^4 14.8 k^4 14.7	Plate scratched in this region	k	15.2
f^4 14.4		k	15.5
Too poor to show any of these var. – Bsh ample.		n^4	15.9
f^4 14.6 g^4 14.9 k^4 15.1		o^4	16.3
f^4 14.5 g^4 14.9 k^4 15.0	g^4 image may be elip.	f^4	16.4
f^4 = 14.5		g^4	17.0
f^4 14.3 g^4 14.7 k^4 14.9			
Too short an exposure to show this group of var.			

general reg. of Orion neb.

f^4 14.5; g^4 14.8, k^4 defective f.c. nearly superp. on b^6

f^4 14.5 g^4 15.1 k^4 15.0 B in ~~bright~~ effected O around bright star.

Plate too poor to show these faint variables

f^4 14.4

q. f^4 14.4 g^4 14.7 k^4 14.7 All faint stars seem about same mag.

Plate does not show faint stars.

" " " " " "

f^4 14.6 g^4 15.0 k^4 14.9

f^4 14.3 14.4 Faintest star seen

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1920phae.proj..697A

Saturday Nov. 15, 1919

Direct Estimates of Variables in Neb. Orion

9:50

	Var.	19	24	29	38	52	86	88	B	C	D	E	f^u	g^u	k^4
8616	A 9971	–	14.0	–	–	–	–	–	–	–	–	–	–	–	–
4227	A 2863	–	14.4	–	–	–	–	–	–	–	–	14.6	14.4	–	–
2865	A 270	–	13.9	15.6	–	15.7	–	–	dif.	14.8	–	14.6	14.4	14.9	14.6
3219	A 1270	–	13.7	–	–	–	–	–	–	–	–	–	–	–	–
4641	A 3431	14.6	13.7	–	–	–	–	–	14.0	–	–	14.7	14.4	14.7	n.
	10:15														
	10:25														
1426	X 2759	14.8	13.8	–	–	14.8	–	–	14.3	14.9	–	14.6	14.7	14.7	14.7
1441	X 2917	–	14.2	–	14.9	15.1	–	–	14.3	15.1	–	14.8	14.8	14.9	14.9
1328	X 265	–	13.8	–	–	–	–	–	14.4	14.7?	–	–	14.5	–	–
2724/5	X 5255	15.8	14.5	15.8	15.3	15.0	15.8	16.2	14.4	14.8	–	15.0	14.6	15.0	14.9
1442	X 2925	15.3	13.7	–	–	15.2	–	–	14.9	15.0	–	14.8	14.6	14.8	14.9
2722	X 5242	15.2	dif.	14.8	14.6	15.1	–	–	14.3	14.9	–	15.2	14.5	14.8	14.7
	X 2756	–	–	–	–	–	–	–	–	–	–	–	–	–	–
0541	MC 7786	–	14.1	–	–	–	–	–	–	–	–	–	–	–	–
9427	MC 1581	–	14.0	–	15.5	15.8	–	–	14.7	14.8	–	14.7	14.9	14.7	15.0
0483	MC 7059	15.8	13.7	–	15.7	15.9	15.8	–	14.3	14.8	–	14.4	14.7	14.5	15.0
9803	MC 2555	–	14.2	–	–	–	–	–	–	–	–	–	–	–	–
0482	MC 7215	15.5	13.7	–	15.2	15.4	15.7	–	14.2	14.9	–	14.7	14.6	14.8	15.1
0433	MC 6737	14.9	14.8	–	–	15.4	15.9	15.8	14.8	14.9	–	14.7	14.5	14.8	14.7
9427	MC 1578	–	14.2	–	–	–	–	–	14.5	14.9	–	–	14.4	14.8	14.9
9805	MC 2572	–	<14.3	–	–	–	–	–	–	–	–	–	–	–	–
0541	MC 7785	16.0	14.0	–	–	15.8	–	–	14.8	14.8	–	14.7	14.6	14.8	15.2
0006	MC 4395	15.9	14.3	15.8	15.1	16.8	15.9	–	14.4	14.7	–	14.6	14.7	14.8	15.0
0460	MC 7037	15.8	14.2	–	–	16.2	15.9	–	14.4	14.7	–	14.6	14.5	14.7	14.9
9426	MC 1570	15.8	14.2	–	–	15.9	–	–	14.9	14.9	–	14.7	14.6	14.6	14.8
	12:10														

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1920phae.proj...6974

Saturday Nov. 15, 1919

Remarks

For sequence used see page 5.
Near edge – stars fainter than 14.0 not seen.

Defect over star 19. Near edge of pl. Film very defective

Film spotted

Near edge
f 4 is near edge of plate, may acct for faintness.
Poor image

Var. 24 not on pl. but spot where it showed is defective
Does not show bright stars.

Faint stars not seen on the plate

29, 38, 86 covered by defs. inv. of bright stars – Long. exp.

f scratched

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1920phae.proj..697A

Monday Nov. 17, 1919

Direct Estimates of Variable in Orion Nebula.

9:50

	Var.	19	24	29	38	52	86	88	B	C	D	E	f^4	g^4	k^4
6760	B 35049	–	13.5	–	–	–	–	15.2	14.5	–	–	14.7	14.3	14.7	14.8
6822	B 35357	–	14.0	–	–	–	–	–	–	–	–	–	–	–	–
2715	B 10250	–	14.8	–	–	–	–	–	–	–	–	–	14.3	14.8	14.8
2803	B 10748	–	–	–	–	14.8	–	–	–	14.8	–	14.8	14.4	14.9	14.8
0297	B 1043	–	13.7	–	–	–	–	–	–	–	–	–	–	–	–
3996	B 18621	–	13.5	–	–	–	–	–	–	–	–	–	–	–	–
0590	B 1771	–	13.7	–	–	–	–	–	–	–	–	–	–	–	–
4181	B 20305	–	13.9	–	–	–	–	–	–	14.7	–	–	–	–	–
7107	B37000		13.6	–	–	–	–	–	–	–	–	–	–	–	–
6813	B 35283	14.6	14.0	–	–	14.7	–	–	–	14.7	–	14.6	14.5	–	–
5337	B 26570	–	14.0	–	–	–	–	–	–	–	–	–	–	–	–
6815	B 35309	15.5	13.4	–	–	14.8	–	15.2	–	14.8	–	14.6	14.3	14.8	dy.
6845	B 32478	15.5	13.6	–	–	15.2	15.8	14.8	14.2	14.7	–	14.6	14.4	18.5	14.8
6757	B 35013	–	12.5	–	–	–	–	–	–	–	–	–	–	–	–
6396	B 32650	–	13.7	–	–	–	–	–	–	–	–	–	14.3	–	–
0681	B 2335	–	13.5	–	–	–	–	–	–	–	–	–	14.1	–	–
0685	B 2354	–	14.0	–	–	14.8	–	–	–	–		14.5	14.8	–	–
0674	B 2312	15.1	14.3?	–	–	15.0	–	–	15.0	14.9	–	14.9	14.7	15.0	15.0
4224	B 20667	15.1	14.0	14.7?	15.8?	15.7	16.3	15.4	14.5	Scat.	–	15.1	Scat	15.0	15.0
	11:15														
	11:25														
6520	L 31447	–	13.7	–	–	–	–	–	–	–	–	–	–	–	–
5015	L 24326	15.3	14.3	–	–	15.0	–	–	13.9	14.9	–	14.8	14.4	14.8	14.8
6544	L 31511	15.5	13.8	+	–	15.2	–	–	14.8	14.6	–	14.7	14.4	14.7	14.8
5018	L 24349	–	13.3	–	–	–	–	–	14.8	–	–	–	14.3	14.8	14.7
7522	L 34333	–	14.0	–	–	–	–	–	–	–	–	–	–	–	–
	11:50														

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Monday Nov. 17, 1919

Remarks.

Same sequence used as given on p. 5.
C nearly superposed by f.C. Dif. own C

Region around bright star fogged.

Film defective in this region — ∴ impossible to estimate both var

Scratch over var. 2 + cannot be sure of estim abs

Estim abs of 29, +38 very uncertain — in neb.

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1920phae.proj..697A

Monday Nov. 17, 19.9

2:00 Direct Estimates of Variables in Orion Neb.

Var.	19	24	29	38	52	86	88	B	C	D	E	f^4	g^4	R^4
7537 I 34391	~	14.3	—	—	—	—	—	—	—	—	—	14.3	14.7	—
3983 I 17446	-	13.5	—	—	—	—	—	—	—	—	15.0	14.7	—	—
1322 I 135	14.0	13.7	—	—	—	—	—	—	—	—	—	—	—	—
7240 I 33837	-	14.3	-	-	15.3	—	—	14.8	14.8	—	14.7	14.3	14.6	14.9
4220 I 19334	-	13.9	—	—	—	—	—	—	—	—	—	—	—	—
2:15														
4220 I 19335	-	13.9	-	-	—	-	-	-	-	-	—	14.3	14.7	-
6519 I 31439	-	13.5	-	—	—	—	—	14.7	—	—	15.2	14.6	15.0	14.8
4632 R 3423	-	13.6	—	—	—	—	—	—	—	—	—	—	—	—

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1920phae.proj...697A

Tuesday, Nov. 18, 1919

Remarks -

Comparison on Roberts Charts of variables in this group.

	19	24	29	38	52	86	88	B	C	E	g^4	g^4	k^4
No. 4 Jan. 3, '03	14.8	13.9	15.2	15.1	14.4	m.	14.9	~~15.1~~ 14.7	14.9	14.8	14.3	14.7	14.9
No. 3 Feb. 14, '98	15.4	14.2	15.2	15.0	15.0	m	15.1	14.1	14.8	14.8	14.6	14.6	14.7
No. 2 Jan. 15, '96	<15.5	14.0	m.	15.0	14.3	m.	14.4	14.8	14.6	14.4	14.4	14.7	14.6
No. 1 Feb. 4, '89	15.3	13.7	m.	m.	14.2	m	m.	14.2	14.8	14.7	14.4	14.6	14.7

Do. plate. 24 at limit of vision and b sum of so to mate

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1920phae.proj..697A

Thursday Nov. 20, 1919

Direct Estimates of Variables in Orion Neb.

Sequence 6

2:05

Var.	32	104	b^5	Remarks
4641 A 3430	14.0	<14.4	13.5	
2837 A 153	14.2	14.3	13.9	
7524 A 8191	15.0	14.7	13.8	
2862 A 216	14.6	<17.8	14.2	
7531 A 8199	14.5	14.1	13.3	
2854 A 192	14.3	14.5	13.9	
3874 A 2156	13.5	15.0	13.7	
4632 A 3422	13.2	<14.3	13.4	
2830 A 144	14.0	14.9	13.6	
3839 A 2119	15.8	15.1	13.7	
0008 A 10828	14.5	14.1	13.6	Film defective
0001 A 10823	14.2	15.2	13.5	
3873 A 2154	13.7	15.0	13.4	
4227 A 2865	-	-	13.8	
4641 A 3429	14.1	14.8	13.5	
3221 A 1271	15.5	15.2	13.8	
2876 A 241	13.5	-	13.7	
4227 A 2864	-	-	13.8	
2798 A 61	14.6	14.6	14.0	
4641 A 3433	14.1	-	13.6	
2860 A 205	13.9?	-	13.6	
4641 A 3431	13.8	-	13.3	
3219 A 1270	-	-	13.8	
2865 A 220	15.1	15.0	13.5	
4227 A 2863	-	-	13.7	
8616 A 9971	-	-	13.3	
2825 A 128	14.1	-	13.8	

Sequence 6.

$a^5 = 13.3$

b^5 = Sus. var.

$e^5 = 13.8$

$d^5 = 14.1$

$e^5 = 14.3$

$f^5 = 14.4$

$g^5 = 14.6$

$h^5 = 14.8$

k^5 = var.

$l^5 = 15.2$

$m^5 = 15.8$

$n^5 = 15.6$

$o^5 = 16.3$

$p^5 = 17.0$

3:20

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1920phae.proj...697A

Friday Nov. 21, 1919

Direct Estimates of Variables in Orion Neb.

10:30 Sequence 6

	Var.	32	104	b^5	Remarks.
9426	MC1570	14.0	14.7	13.4	
0460	MC7037	15.0	15.1	13.6	$g^5 = 15.0$
0006	MC4395	14.3	14.7	13.7 ~~14.7~~	$g^5 = 14.7$
0541	MC7785	14.4	14.6	13.3	$g^5 = 14.6$
9805	MC2572	14.3	14.4	13.6	
9427	MC1578	14.0	14.9?	13.8	$g^5 = 14.6$
0433	MC6737	14.0	14.3	13.6	$g^5 = 15.0$
0482	MC7215	15.5	14.6	13.2	$g^5 = 14.8$
9803	MC2555	$\leq$15.2	14.2	13.5	
0483	MC7259	14.6	15.1	13.8	$g^5 = 14.8$
9427	MC1581	14.2	14.7	13.6	$g^5 = 14.6$
0541	MC7786	-	-	13.5	
11:10 2803	X5503 5242	—	—	13.8	
2722	~~X2756~~	15.2	14.8	13.6	$g^5 = 14.8$
27 24 25	X5255	14.1	15.0	13.8	$g^5 = 14.9$
11:15					
4424	B20667	14.1	14.5	13.8	$g^5 = 14.7$
0674	B2312	14.1?	14.2	13.5	$g^5 = 14.9$
0685	B2354	—	14.1	—	32 + b^5 are so close can't determine them separately.
0681	B2335	14.6?	14.4	13.8	$g^5 = 14.6$
6396	B32690	14.2?	14.0	13.7	
6346	B32478	14.0	14.7	13.6	g^5 14.6 $b^5 = 14.6$
6815	B35309	14.0	13.8	13.4	g^5 14.8
6769	B35211	—	—	13.5	
7167	B37224	—	—	13.1?	b^5 seems brighter than g^5 - Is it continuous light of 32 + b^5?
6863	B36284	—	14.0	13.4?	
"	B36283	13.6	14.3	13.5	$g^5 = 14.7$
11:40					

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1920phae.proj..697A

Friday Nov. 21, 1919

Direct Estimates of Variables in Orion Nebula

2:30 Sequence 6

	Var.	32	104	b^5	Remarks
7107	B 37000	–	–	13.3	
0627	B 2081 ~~2801~~	–	–	13.1	
4181	B 20305	–	15.0	13.7	$g^5 = 14.6$
0570	B 1771	14.5	13.6	13.7	
	B 1821	–	–	13.5	
0297	B 1043	13.9	–	13.8	
2803	B 10748	–	–	13.7	$g^5 = 14.7$
9930	B 330	–	–	–	~~Faints~~ thru stars coron of. stars making set. impossible
2715	B 10268	–	14.8	13.9	$g^5 = 14.9$
6822 6760	B 35357	14.4	14.4	13.3	
2:45	B 35049	14.4	14.9	13.5	$g^5 = 14.7$
6619	I 31439	14.4	14.1	13.5	
4220	I 19335	14.5	–	13.7	p.c. superposed on 104
	I 19334	14.3	–	13.8	" " " "
7240	I 33837	14.4	–	13.2	
1322	I 135	–	14.4	13.5	
3983	I 17406	14.0	15.0	13.8	$g^5 = 14.7$
7537	I 34391	–	15.0	13.5	g^5 covered by trail of bright star near it
5024	I 24385	13.7	14.3	13.6	
7522	I 34333	14.6	14.6	13.4?	a^5 scratched caution in case of b^5 est. $g^5 = 14.6$
5023	I 24377	14.4	14.4	13.5	
	I 66	–	–	13.2	
5018	I 24349	13.6	14.8	13.5	$g^5 = 14.6$
6775	I 32223	13.7	–	13.7	
6544	I 31511	14.1	14.0	13.5	$g^5 = 14.9$
5015	I 24326	14.4	14.6	13.6	$g^5 = 14.7$

3:15

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1920phae.proj...697A

Saturday Nov. 22, 1919

Direct Estimates of Variables in Orion Nebula

9:15 Sequence 6

	Var.	32	104	pg	
1520	I 31447	—	—	13.5	
1338	I 209	14.5	14.2	13.7	Brighter
0677	B 2325	13.5	14.6	12.7	"
	I 32224	13.8	-	13.3	"

9:25

5722	A 5730	14.0	14.4	13.3
5723	A 5731	14.2	14.6	13.7
2364	MC 6646	14.4	14.0	13.8
2366	" 16653	14.2	14.1	13.8
"	" 16654	14.0	14.2	13.9
2371	" 16663	15.0	14.2	13.7
2369	" 16661	14.3	14.3	13.8
"	" 16662	14.2	14.3	13.7
2307	" 16495	14.5	14.4	14.0

Reobservations of 32

X 6242	15.1
A 153	14.3
MC 16653	14.2
" 16654	14.3
" 16661	14.3
" 16662	14.2

a 3423	—	—	13.5	Iso. plate

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1920phae.proj..697A

Thursday February 12, 1920

Direct Estimates of Variables in Orion Neb.

→ Brothers plate.

11:45 A 5730

Var.	28	56	60	62	64	66	67	A	
57/22 A 5730	15.0	15.2	15.0 ~~15.7~~	16.3	15.1	13.3	14.6	15.9	

11:55 ~~AAC 16495~~

↓ Var	4	5	6	10	14	15	80	81	82
A5730	16.1?	15.8	14.8	-	-	-	15.8	15.5	-

12:10 ~~AAC16495~~

Var.	5	65	90	63	(105 m3)
↓ A5730	-	14.9	16.0	13.4	15.4

12:20 ~~AAC 16495~~

↓ Var.	19	24	29	38	52	86	88	B	C	D	E	+4	g4	k4
A5730 ✓ ~~AAC16495~~	15.7	13.6	15.8	15.2	15.1	16.4	15.6	14.4	14.6	-	14.6	14.5	14.6	14.8

12:40 ~~AAC16495~~

Var.	32	104	f5	g5	
↓ A5730	14.0	14.4	13.3	14.6	

12:50 ~~AAC16495~~

2:35 Var.	3	13	23	42	43	46	50	51	55	F	2	B	
↓	16.1 ~~15.7~~	15.7	-	13.9	14.0	13.8	15.6	15.8	14.7	-	-	15.4	

3:00

Var.	18	25	30	35	39	40	45	54	58	H	K	L
	-	15.9	-	14.9 ~~15.3~~	15.7	14.8	14.6	-	15.0	15.0	-	15.1

3:30

Var.	22	26	27	31	33	34	36	37	41	83	84	A1
	16.3	15.3	15.3	16.0	16.2	13.6	14.2	14.3	14.3	14.6	15.7	14.8

3:55

Var.	1	9	12	20	17	76	77	78	79
4:10	14.7	15.0	14.3	15.3	15.0	14.6	15.3	16.2	15.8

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1920phae.proj...697A

Thursday February 12, 1920

Remarks

Use sequence 2 for these variables.
Estimated 66 for 60 first – Corrected value right

Use sequence 3 for these variables
Can't be sure whether im. of 4 is dif. or not.?

Use sequence 4 for these variables ($m^3 = 10.5$)

Use sequence 5 for these variables.

Use sequence 6 for these variables (6 suspected)

Seq. 1, 2 for MC 16 495

Use Sequences 2 + Gen. Seq. for 2, 3, 13, 23. For Flare use Kapteyn + Seq. 4

Use sequence 6 and Kapteyn Seq. –

Use Gen. Seq. (a, b etc) + Seq. 5

Use sequence 5 ~~and Gen. Seq. for this test.~~

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1920phae.proj..697A

Thursday February 12, 1920

Direct Estimates of ~~Stars~~ Variables in Orion Neb.

Broken plate A5730

4:15

(J.D. 5722)	Var.	21	48	49	53	N	O	P	Q
		15.4	15.4	12.9 ~~16.0~~	14.9	15.4	15.7	15.3	16.0

4:30

1920phae.proj...697A

Thursday February 12, 1920

Remarks

cp. 21 with 19a.
cp. 4e with 19K + 20K
cp. 53 " $g^3 + h^3$
N cp. with $l^3 + k^3$
O cp. " $l^3 + n^3$
P cp. " $k^3 + l^3$
Q cp. " $l^3 + n^3$
49 cp. " n^3. Dam not sure that I estimated the right star for 49. It is buried out by the het. in the cloud when the variable are marked and I cannot find any place where it was signally marked on a plate - It might be any one of a number of stars. In H.C. 7:103, 104 it speaks of 49 as a faint star but showing marked variation.

49 cp. with 10K + 11K - wrong star measured at first. Seems more like a bright star than a faint one as referred to.

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1920phae.proj..697A

Thursday February 19, 1920

Direct Estimates of Variables in Draconis.

9:45 Var.	2	3	13	23	F	42	43	46	50	51	55	Y	7
3839 a 2119	16.5	16.2	15.3	15.5	16.2	13.2	13.9	13.8	15.6	–	14.7	15.4	15.2
3874 a 2156	–	15.5	14.9	16.6	16.3	14.1	14.6	14.1	14.7	–	14.5	15.4	15.4
7531 a 8197	16.6	16.7	14.8	16.3	16.4	13.6	15.0	14.2	15.5	16.8	15.1	15.4	15.5
7524 a 8191	16.7	16.7	14.2	16.3	16.5	12.9	15.2	14.2	15.5	16.6	14.7	15.5	15.5
2830 a 144	–	–	14.6	–	–	13.8	14.1	14.1	–	–	14.0	15.3	15.3
4641 a 3430	–	–	14.1	–	–	13.3	14.3	–	–	–	–	–	–
2837 a 153	16.5	16.4	14.3	16.1	–	13.7	14.0	14.2	15.7	15.4?	14.0	15.4	15.4
4632 a 3422	–	–	–	–	–	13.2	14.3	14.0	–	–	14.7	–	–
4632 a 3424	–	–	–	–	–	13.2	–	–	–	–	–	–	–
2864 a 192	–	16.0	15.3	–	–	14.0	13.9	14.2	15.7	~~14~~	14.4	15.4	15.4
2862 a 216	–	–	14.5	–	–	14.1	13.8	13.6	~~14~~	–	14.4	–	–
11:30													
2:20 4641 a 3422	16.5	16.3	14.5	16.1	–	13.7	14.4	15.4	15.3	15.5	14.8	15.4	15.3
4227 a 2865	–	–	–	–	–	14.3	13.9	14.1	~~14.1~~	–	14.1	–	–
3873 a 2154	–	16.0	14.5	~~14.5~~	–	14.5	14.6	14.0	–	–	14.9	15.4	15.5
0001 a 10823	–	–	14.6	15.8	16.2	13.2	15.3	14.2	15.5	15.5	14.2	15.4	15.6
2830 a 142	–	–	–	–	–	13.3	13.7	13.8	–	–	13.8	–	–
0008 a 10828	16.5	16.5	14.4	15.5	16.3	14.0	14.9	13.6	15.1	15.9	14.7	15.3	15.8
4641 a 3432	–	–	14.1	–	–	13.3	14.2	–	–	–	–	–	–
7973 a 8529	–	–	–	–	–	13.0	–	–	–	–	–	–	–
4641 a 3433	–	–	14.1	–	–	13.2	14.2	–	–	–	14.4	–	–
2798 a 61	–	–	14.1	–	–	14.6	14.0	14.2	–	–	14.6	–	–
4227 a 2864	–	–	13.9	–	–	–	14.0	14.0	–	–	14.0	–	–
2788 a 29	–	–	–	–	–	–	–	–	–	–	–	–	–
2876 a 241	–	–	–	–	–	13.7	13.9	–	–	–	13.8	–	–
3221 a 271	16.5	16.5	14.6	16.4	16.5	13.6	14.2	14.0	15.4	15.6	14.5	15.4	15.5
3:35 4632 a 3423	–	–	–	–	–	13.1	–	–	–	–	–	–	–

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1920phae.proj...697A

Thursday February 19, 1920

Remarks.

Use Reg. 3/1 for 2, 3, 13, 23, F, for others use Kapteyn Seq. + Seq. 4.
7 is Robinson variable
2 very ft - may be def. 51 def. can't estimate
Images slightly out of focus 51 is double. (Good plate)
7 Has shown 20 but would not shift to other sequence
sc. on plate near S.

50 barely visible. Not sure of star 51 being the right image

sc. over place where 46 should be can't tell whether star is there or not.

sc. over F.
can't find suitable star to cp. 13 with about 14.2, 56 may be def.

2 very ft + p.c. on this plate

Film def. 2 x 3 at limit of vision 2 very ft. + p.c. (Kap Obsn.)
" spotted

Iso. plate

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1920phae.proj..697A

Friday February 20, 1920

Drift Estimates of Variables in Orion Neb.

9 h 50	Var.	2	3	13	23	F	42	43	46	50	51	55	G	7
2825	A 128	–	–	14.1 ✓	–	–	13.2 ✓	13.9	14.0	–	–	13.8	–	–
8616	A 9971	–	–	–	–	–	13.0 ✓	–	13.8	–	–	–	–	–
4227	A 2863	–	–	14.0 ✓	–	–	–	14.1	14.1	–	–	14.1	–	–
2865	A 220	–	–	14.3 ✓	–	–	13.4 ✓	14.0	14.6	15.3	–	14.3	15.4	15.4
3219	A 1270	–	–	–	–	–	13.8 ✓	13.9	13.7	–	–	–	–	–
4641	A 3431	–	–	14.2 ✓	–	–	13.2 ✓	14.4	–	–	–	14.5	–	–
2860	A 205	–	–	–	–	–	13.6 ✓	13.8	14.1	–	–	14.2	–	–
10:20														
0541														
1:55	MC 7786	–	–	–	–	–	13.2 ✓	14.1	14.1	–	–	–	–	–
9427	MC 1581	–	–	14.5 ✓	–	–	13.8 ✓	14.3	14.0	15.2	–	14.3	–	15.3
0483	MC 7059	–	–	14.1 ✓	–	–	14.0 ✓	14.4	13.4	–	–	14.5	15.3	–
9803	MC 2555	–	–	14.1 ✓	–	–	12.8 ✓	14.2	14.7	–	–	14.7	–	–
0482	MC 7215	–	–	15.4 ✓	–	–	14.0 ✓	14.5	14.0	15.5	–	14.4	15.4	15.5
0433	MC 6737	–	–	14.7 ✓	–	–	12.8 ✓	14.7	13.7	15.8	–	14.5	15.5	15.7
9427	MC 1578	–	–	14.3 ✓	–	–	13.7 ✓	14.6	13.9	–	–	14.4	–	–
9805	MC 2572	–	–	14.1 ✓	–	–	13.4 ✓	14.2	14.1	–	–	–	–	–
0541	MC 7785	–	16.1	14.4 ✓	15.7	–	13.4 ✓	14.9	14.1	15.5	–	14.9	15.4	15.8
0006	MC 4395	–	–	14.1 ✓	–	–	14.0 ✓	15.2	13.6	15.6	–	14.7	15.2	–
0460	MC 7037	16.0	15.8	14.8 ✓	–	–	13.8 ✓	14.7	14.1	15.7	–	15.0	15.1	15.5
9426	MC 1570	–	–	14.9 ✓	–	–	14.0 ✓	14.3	14.2	15.4	–	–	15.5	15.3
2307	MC 6495	16.6	16.6	14.1 ✓	–	–	14.0 ✓	14.5	13.8	14.8	–	14.7	15.8	15.2

Monday February 23, 1920

3:25														
1038	I 209	–	–	14.1 ✓	–	–	14.0 ✓	–	14.1	–	–	–	–	–
0677	B 2325	–	–	14.7 ✓	–	–	13.2 ✓	–	13.8	14.3	–	14.5	–	–
5722	A 5730	–	16.1	15.7 ✓	–	–	13.9 ✓	14.0	13.8	15.6	15.8	14.7	15.4	–
5723	A 5731	16.7	16.0	16.3 ✓	16.9	16.5	13.8 ✓	14.5	14.5	15.9	15.9	14.3	15.4	15.2

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1920phae.proj...697A

Friday February 20, 1920

Remarks.

Use sequences given on p. 21

Re-examined 55 Mar. 23, '20.

Short exp.
sc. over G.

Of Stars 16 + 18 nearly superposed by p. c. difficult to form Set. of 43

This plate has disposition in. 43 section a diff.

55 covered by defect

Broken Plates

Copied from p. 16 for convenience
" " p. 30 " "

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1920phae.proj..697A

Saturday February 21, 1920

Direct Estimates of Variables in Orion Neb.

11.10	Var	2	3	13	23	F	42	43	46	50	51	55	G	7
2371	MC16663	–	~~16.5~~	14.0	–	–	13.2	15.1	13.2	–	–	14.9	15.1	15.7
2369	MC 16661	–	–	13.9	–	–	13.5	14.9	14.2	–	–	15.0	15.4	–
2364	MC16662	–	–	14.2	–	–	13.2	–	14.1	–	–	–	–	–
2803	X 5503	–	–	13.9	–	–	14.0	13.8	14.4	–	–	14.3	–	–
2722	X ~~2756~~ 5242	–	–	15.4	–	–	12.7	14.5	13.9	–	–	14.2	15.4	15.5
1442	X 2925	–	–	14.1	–	–	13.4	14.0	13.5	–	–	14.4	–	–
2724-26	X 5255	16.6	16.5	14.1	15.8	16.5	13.7	14.3	14.0	15.3	15.8	14.2	15.3 ~~15.4~~	15.5
1328	X 2651	–	–	–	–	–	14.4	14.5	14.2	–	–	–	–	–
1441	X 2917	–	–	14.0	–	–	14.0	14.1	13.9	15.4	–	15.0	15.4	15.5
1426	X 2759	–	–	14.0	–	–	14.0	14.8	13.6	–	–	14.7	–	–

12:10

12:20	6760 B 35049	–	–	14.8	–	–	12.7	14.1	14.2	15.2	–	14.8	–	15.1
	2455 B 8895	–	–	14.1	–	–	t.p.	t.p.	13.4	14.9	–	14.2	–	–
	6822 B 35357	–	–	14.0	–	–	13.2	13.8	13.8	–	–	14.9	–	–
	2715 B 10250	–	–	14.7	–	–	13.7	~~14~~	14.0	–	–	14.3	–	–
	9930 B 330	–	–	14.0	–	–	13.4	–	–	–	–	–	–	–
	2803 B 10748	–	–	14.0	–	–	14.0	13.9	14.2	–	–	14.0	–	–
	0297 B 1043	–	–	–	–	–	13.0	14.0	–	–	–	–	–	–
	8264 B 39773	–	–	–	–	–	12.9	–	13.8	–	–	–	–	–
	0570 B 1771	–	–	14.1	–	–	12.6	–	14.2	–	–	–	–	–
	4181 B 20305	–	–	14.7	–	–	13.4	14.1	13.9	14.9	–	14.0	–	–

12:50 Monday February 23, 1920

11:50	7240 I 33837	–	–	14.0	–	–	14.4	14.3	14.9	~~14.7~~ 15.0	–	14.7	–	–
	4220 I 19334	–	–	14.0	–	–	–	14.4	13.6	–	–	–	–	–
	4220 I 19335	–	–	14.1	–	–	14.2	14.1	13.6	–	–	14.8	–	–
	6519 I 3439	–	–	14.7			13.6?	14.3	13.8	–	–	14.8	–	–
12:05	4575 I 21400	–	–	–	–	–	13.0	13.4	13.6	–	–	–	–	–
	6775 I 32224	–	–	–	–	–	13.4	–	–	–	–	–	–	–

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1920phae.proj...697A

Saturday February 21, 1920

Remarks

Use sequence given on p. 21

Can see 13 but no stars cp. with Ilford plate (Wedge)

Crossed by trail

Plates observed Monday Feb. 23, 1920.

Cp. star 13 IF seems fainter than 15 K - Does it vary?

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1920phae.proj..697A

Monday February 23, 1920

Direct Estimates of Variates in Orion Neb.

10:30	Var	2	3	13	23	F	42	43	46	50	51	55	D	7
0627	B 2081	–	–	–	–	–	13.2	~~14~~	14.0	–	–	–	–	–
7107	B 37000	–	–	–	–	–	14.0	14.1	14.0	–	–	–	–	–
6813	B 35283	–	–	–	–	–	13.2	–	13.3	–	–	15.0	15.0	–
"	B 35284	–	–	–	–	–	12.8	–	13.4	–	–	–	–	–
7167	B 37224	–	–	–	–	–	–	–	13.4	–	–	–	–	–
6769	B 35111	–	–	–	–	–	12.7	13.6	–	–	–	–	–	–
6815	B 35309			13.9	–	–	13.0	14.8	14.1	15.2	–	14.6	~~15~~	15.1
? 6345	B 32417	–	15.3	14.1	–	–	14.0	14.7	14.3	15.4	–	14.3	–	14.9
6757	B 35013	–	–	–	–	–	12.7	13.4	–	–	–	–	–	–
6896	B 32690	–	–	–	–	–	13.3	–	13.8	–	–	–	–	–
6820	B 35329	–	–	–	–	–	12.6	–	–	–	–	–	–	–
0681	B 2335	–	–	13.9	–	–	12.9	13.8	14.2	15.3	–	15.2	–	–
0685	B 2354	–	–	–	–	–	12.7	–	–	–	–	–	–	–
0674	B 2312	–	–	–	–	–	12.7	14.0?	13.8	–	–	14.4	–	–
4224	B 20667	16.7	16.5	14.9	–	16.7?	14.2	14.5?	13.9	15.1	15.9	14.1	15.4	15.3
11:15														
6520	I 31447	–	–	–	–	–	13.2	14.1	14.1	–	–	–	–	–
5015	I 24326	–	–	14.8	–	–	13.8	14.9	14.0	–	–	15.0	–	–
6544	I 31511	–	–	14.0	–	–	13.2	14.6	14.2	–	–	14.9	15.2	15.1
6775	I 32223	–	–	–	–	–	13.3	13.8	13.3	–	–	–	–	–
5018	I 24349	–	–	14.3	–	–	13.0	–	14.1	–	–	14.4	–	–
5023	I 24377	–	–	14.4	–	–	13.7	–	14.2	–	–	–	–	–
7527	I 34333	–	–	14.0	–	–	12.9	–	–	–	–	14.3	–	–
5024	I 24285	–	–	14.3	–	–	13.6	–	14.2	–	–	–	–	–
7537	I 34391	–	–	14.8	–	–	13.2	14.8	14.8	–	–	14.7	–	–
3983	I 17446	–	–	14.3	–	–	13.2	14.0	14.1	–	–	14.6	–	–
1322	I 135	–	–	14.0	–	–	–	–	13.6	–	–	14.3	–	–
11:45														

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1920phae.proj...697A

Monday February 23, 1920

Remarks

Use sequence given on p. 21

Region badly scratched

? Neb. makes str. very uncertain
a great many scs. over the region

p.c. superposed on 55

Sc. over 43

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1920phae.proj..697A

Saturday February 14, 1920

Direct Estimates of Variables in Orion Neb.

2:50	Var.	28	56	60	62	64	66	67	A	
2364	MC 16646	15.3	16.2	14.8	14.4	14.7	13.4	14.4	16.1	
2366	MC 16653	15.0	15.5	15.2	14.4	14.5	13.7	14.9	15.0	
"	MC 16654	15.2	–	15.4	14.4	14.6	13.5	15.0	16.3	
5723	a 5731	14.7	15.6	14.8	16.0	15.8	13.3	14.3	15.3	

	Var.	4	5	6	10	14	15	80	81	82
2364	MC 16646	15.3	15.7	15.2	–	–	–	~~15.0~~ –	15.0	–
2366	" 16653	15.6	15.9	15.6	–	–	–	–	14.8	–
2366	" 16654	–	–	15.3	–	–	–	–	15.2	–
5723	a 5731	16.4	15.2	15.4	16.7	15.6	16.2	16.9	15.0	16.9

	Var	5	65	90	63	105
✓	MC 16646	–	15.5	16.1	14.1	15.8
✓	" 16653	–	15.9	16.0	14.1	15.8
✓	" 16654	–	–	–	14.2	–
✓	a 5731	17.2	15.5	16.3	13.4	15.3

	Var.	19	24	29	38	52	86	88	B	C	D	E	f^4	g^4	k^4
✓	MC 16646	15.3	14.2	–	16.1	15.1	–	–	15.2	15.0	–	14.9	14.6	14.8	14.8
✓	" 16653	15.6	14.0	–	–	15.0	–	–	15.0	15.0	–	14.9	14.2	14.7	14.9
✓	" 16654	–	13.9	–	–	–	–	–	15.0	15.1	–	15.1	by.	14.7	15.3
✓	a 5731	15.7	14.1	15.7	15.9	15.8	16.1	15.7	15.2	15.4	16.7	15.2	14.6	15.0	15.0

	Var.	32	104	b^5	g^5
✓	MC 16646	14.4	14.0	13.8	14.8
✓	" 16653	14.2	14.1	13.8	14.7
✓	" 16654	14.0	14.2	13.9	14.7
4:00 ✓	a 5731	14.2	14.6	13.9	14.6

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1920phae.proj...697A

Saturday February 14, 1920

Regions to Map of the Sky

0 +75 −35,60
0 +60 −13,98
0 +45
1 +45 −18,82
1 30 +60 −24,72
2 +75 51
2 +45 41
3 +60 48
3 +45 −7
3 +30 −29
4 +75 36
4 +45 −22
4 +30 −9,89
(4 +15) −32
4 0
4 30 +60 −
5 +45 −21,85
6 +30 −20
5 +15 −8
5 0 −34
6 +60 −14,45,58
6 +45 −27
6 +30 −
6 +15
6 0 −31,74
7 +45 −6,
7 +30 −57
7 +15 −30,90
7 0 −23
8 +30 −16
8 +15 −28
8 0 −12,44,83
17 +30 −37,55
17 +15 43,66,76
17 0 −33,59
18 +60 53
18 +45 73
18 +30 50
18 +15 −41,54
18 0 −10,46,61,67,79,86
19 +45 47,68,85
19 +15 69,84,
1930 +60 64,92
19 +30 −25,62,99
19 0 −42,70
20 +75 −26,65
20 +45 −15
20 +30 49,77
20 +15 58
20 0
21 +60 97
21 +45 −17,75,94
21 +30 63
21 +15
21 0 91
22 +75 52
22 +45
22 +30 87
22 +15 96
2230 +60 56
23 +45 48,88
17+45 8,83
11 −45 −19,38,39,

10:25

This

...w faint stars. 64 double

...ight of ...chin

...tur.

11:05

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1920phae.proj..697A

Saturday February 14, 1920

AC 22 359

11.607

+25 0 25

10 10 - 35

10 16 34 V Antliae Leavitt

10:25 This ... faint stars. Cd double

17 50 + 9 175007 RW Oph. 10.4 13

18 50 + 4 184300

17 15 + 20

17 46 +7 08

175007 - Oph. Ds 44

(7 51)

17 17 23 RS Herculis 7.5 12.8

17 31 20 - Herculis 3 5 19

... ight f section

... ter.

1905 - 10 2

190601 - Aquilae 10.8 11.7

HA 8 52 + 15 34

8 55 +17

11:05

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1920phae.proj..697A

Saturday February 14, 1920

Remarks.

Sequence 2

10:25 This plate observed Fri. Feb. 20. Dark sp. but shows faint stars. 64 double

Sequence 3

Sequence 4

Doubtful about stars - not sure it is in right f section

Sequence 5

86 + 88 probably burned out by bright star.

Sequence 6

11:05

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1920phae.proj..697A

Monday February 16, 1920

Direct Estimates of Variables in Neb. Orion

11:25	Var.	2	~~3~~	13	23	F	42	43	46	50	51	55	G.	?
ID: 2364 ✓	MC 16646	16.5	15.7	13.9 ✓	–	16.1	13.8 ✓	14.6	13.6	15.3	–	15.2	15.3 X	
2366 ✓	" 16653	–	–	14.0 ✓	–	–	14.0 ✓	14.7	14.0	15.6	16.2	14.1 5	15.7 ~~14.7~~ 6	
5720 ✓	" 16654	–	–	13.9 ✓	–	–	13.8 ✓	14.5	13.8	15.5	–	14.8	15.5 ~~14.9~~	
12:00	A 5731	16.7	16.0	16.3	16.9	16.5	13.8	14.2 5	14.5	15.9	15.9	14.3	15.4	15.2
2:00	Var.	18	25	30	35	39	40	45	54	58	H	K	L	?
	MC 16646	–	14.7	15.5	14.4	–	15.4	15.4	–	16.5	15.5	–	15.1	
	" 16653	–	14.6	–	13.6	~~14.9~~ –	~~14.9~~ –	14.9	–	15.4	14.8	15.7	~~14.9~~	
	" 16654	–	14.4	–	13.4	–	15.3	15.0	–	–	14.8	–	14.9	
2:30	A 5731	17.1	15.5	16.3	15.6	16.0	15.5	15.3	15.2	15.4	15.0	16.7	15.2	15.9
3:05	Var.	22	24	27	31	33	34	36	37	41	83	84	M	
	MC 16646	–	~~16.2~~ 14.8	14.6	16.3	–	14.7	15.0	14.7	15.1	15.1	16.0	15.0	
	" 16653	–	14.8	15.0	–	–	14.4	15.7	15.5	15.1	14.8	15.8	14.8	
	" 16654	–	14.9	14.7	–	–	14.6	15.2	15.0	14.9	14.7	–	14.6	
3:30	A 5731	16.8	14.8	15.7	16.3	16.4	14.2	15.0	15.3	14.8	15.0	15.9	15.3	
3:35	Var.	1	9	12	17	20	76	77	78	79				
	MC 16646	16.3	15.1	14.2	15.6	15.9	14.8	16.2	–	16.4	+	+		
	" 16653	–	16.0	14.1	15.4	15.8	15.0	15.9	–	16.0	1			
	" 16654	–	–	14.0	15.4	15.5	15.0	–	–	–				
3:50	A 5731	16.1	15.3	14.6	15.8	15.8	14.8	15.5	15.9	16.0				
3:55	Var	21	48	49	53	N	O	P	Q					
	MC 16646	15.4	15.5	13.7	15.7	16.1	–	15.9	–					
	" 16653	~~15.7~~	15.2	13.7	15.2	15.7	15.9	15.6	–					
	" 16654	15.5?	15.4	13.2	15.5	–	–	–	–					
4:10	A 5731	15.5	16.0	–	15.5	16.0	16.0	16.0	15.8					

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Monday February 16, 1920

Remarks.

Use Seq. 2 for 2 ~~to F~~ Plume, for others use Kapteyn Seq. + Seq. 4

Reobserved 55 Mar. 19, 1920. Found had overestimated its brightness.

11:10 This plate observed Fri. Feb. 20, 1920. 13 in neb.
Use Seq. 6 & Kapteyn Seq.
39 ~~obscured~~ trimmed out by neb. - faint mark on pl. but not estimated

11:30
Use Seq. 5 + Gen Seq. (a, t, z)
Wrong star estimated for z 6 at first.

11:40
Use Seq. 5

Use Seq. 3 + 4 + Kapteyn Seq.

On this plate of 49 with ~~11K + 13F~~ - two bright ps a3
A 5 7 31 21 nearly invisible because of neb
49 seen but not measurable because of nebulosity
53 can't be sure of estimate " " "
12:10 N. O. P all appear same, closely connected with "

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1920phae.proj..697A

Tuesday February 24, 1920

~~Monday February 23, 1920~~

Direct Estimates of Variables in Orion Neb.

10:45																
~~2:10~~	Var.	18	25	30	35	39	40	45	54	58	H	K	L	Lower ?	upper
↓																
J.D. 2865	a ~~3451~~ 220 ✓	-	14.6	14.8	14.1	—	15.0	14.9	-	-	15.0	—	15.2	13.4	13.4
↓2825	a 128 ✓	—	—	—	14.1	-	-	—	—	—	14.6	-	-	13.8 ~~14.0~~	13.4
↓8874	a 2156 ✓	16.5	15.5	15.4	14.2	15.6	15.5	15.6	15.6	16.0	15.4	17.0	15.3	13.8	13.4
↓2830	a 144 ✓	-	-	-	14.3	—	15.4	15.6	15.5	-	15.1	—	15.3	13.4	13.4
↓7524	a 8191 ✓	15.9	15.0	16.6	15.3	16.0	15.2	15.4	16.4	15.8	15.1	16.9	15.3	13.4	13.4
↓7531	a 8199 ✓	16.9	14.9	16.7	15.4	15.6	15.4	15.3	16.7	15.5	15.1	17.0	15.3	13.4	13.4
11:45																
2:00 ↓3889	a 2119 ✓	—	15.3	15.9	14.4	16.2	15.2	15.5	15.1	15.8	15.0	15.9	15.1	13.4	13.4
↓2854	a 1922 ✓	-	14.4	~~14.8~~	14.8	15.7	15.2	15.3	15.6	15.7	15.1	~~15~~	15.2	13.4	13.4
↓2837	a 153 ✓	-	15.2	-	13.2	~~15.1~~	15.4	15.4	15.4	15.5	15.2	~~15~~	15.2	13.4	13.1
↓0008	a 10828 ✓	16.5	15.9	15.1	14.1	—	15.2	15.5	~~16.3~~	15.5	15.0	16.5	15.0	13.9	13.8
↓0001	a 10823 ✓	—	15.7	16.3	14.4	15.9	15.2	15.3	16.4	15.6	15.0	16.4	15.1	13.4	13.6
↓4641	a 3429 ✓	-	16.0	15.2	15.0	—	14.8	15.1	-	15.7	15.0	—	15.2	13.5	13.5
↓3873	a 2154 ✓	-	15.5	-	15.3	15.6	15.2	15.4	-	-	15.1	-	15.2	13.5	13.8
↓3221	a 1271 ✓	16.5	15.2	<16.3	14.0	16.4	15.2	15.3	15.5	16.3	15.1	~~16.1~~	15.1	13.4	13.4
↓2798	a 61 ✓	—	14.8	-	15.1	—	15.3	15.0	-	-	15.1	-	15.1	13.8	13.5
3:30																

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1920phae.proj...697A

~~Tuesday February 24 1920~~
~~Monday February 23, 1920~~

Remarks

Use Sequencie 6 + Kapteyn.
Seq. 6 used in all variables when pointer than 14.9 for 25, 40, 45
For L, use Kapteyn Seq. unless pointer than 15.5

35 is in neb. yet seems to have largest range (lighter path)
p. C. Sup. on 39

Def. at on 39; 54 def. chiz
Def. in. 30

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1920phae.proj..697A

Thursday February 25, 1920

Direct Estimates of Variables in Orion Neb.

9:35	Var.	18	25	30	35	39	40	45	54	58	H	K	L	Sow. ?	up.
1426	X 2759 ✓	—	—	—	14.9	—	15.0	—	—	—	—	—	—	—	
1441	X 2917 ✓	—	—	—	13.8	—	15.4	15.4	—	15.5	15.3	—	15.3	14.0	13.7
24 25	X 5255 ✓	—	15.8	15.6	13.2	15.4	15.1	14.5	15.5	15.6	15.0	15.7	15.2	13.8	13.6
1442	X 2925 ✓	—	—	—	14.0	—	—	—	—	—	—	—	—	13.9	13.6
2722	X 5242 ✓	—	15.4	15.0	14.7	—	15.3	14.6	—	—	15.2	15.6	15.1	13.7	13.6
2307 10:05	MC 16495	—	16.0	15.6	15.1	—	15.2	15.4	—	15.5	15.2	—	15.0	13.6	13.6
9426	MC 1570 ✓	—	14.6	—	15.2	—	15.4	15.4	—	15.5	15.0	—	15.1	13.5	13.7
0460	MC 7037 ✓	—	15.2	15.6	14.2	15.5	15.4	15.3	15.5	15.5	15.0	—	15.2	13.6	13.6
0006	MC 4395 ✓ ~~15?~~		15.0	15.5	14.5	—	15.1	14.5	~~15~~	15.0	15.2	—	15.1	13.4	13.7
0641	MC 7785 ✓	—	14.9	—	15.4	—	15.5	—	15.6	15.4	14.9	—	15.2	13.4	13.8
10:35															
9427 2:45	MC ~~2672~~ 1578 ✓	—	14.2	—	15.1	—	—	15.1	—	—	15.0	—	15.2		
0433	MC 6737 ✓	—	14.7	15.5	15.1	—	15.3	15.1	—	—	15.2	—	15.1		
0482	MC 7215 ✓	—	15.1	15.6	15.4	15.6	15.5	15.6	—	15.5	15.2	—	14.9		
0483	MC 7257 ✓	—	14.8	—	14.9	—	15.2	15.1	—	—	15.0	—	15.2		
9427	MC 1581 ✓	—	14.6	—	15.1	—	15.3	15.2	—	15.4	14.6	—	15.1		
2371	MC 16663	—	14.8	—	13.0	16.0	15.2	15.5	—	15.3	15.2	—	15.1		
2369	MC 16661	—	14.5	15.5	13.0	—	15.0	15.6?	—	15.5	15.0	—	14.9		
"	MC 16662	—	14.2	—	13.0	—	—	—	—	—	—	—	—		
2366	MC 16654	—	14.3	—	13.6	—	15.1	15.1	—	15.2	15.0	—	14.9		
"	MC 16653	—	14.6	—	13.4	—	15.2	15.1	—	15.4	14.8	—	14.9		
2364	MC 16646	—	14.7	15.6	14.2	—	15.3	15.3	—	15.5	15.2	—	15.0		
5722 4:00	A 5730	—	15.9	—	14.9	15.7	14.8	14.6	—	15.0	15.0	—	15.1		
5723	A 5701	17.1	15.5	16.3	15.6	16.0	15.5	15.3	15.2	15.4	15.0	16.7	15.2		

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1920phae.proj...697A

Wednesday February 25, 1920

Remarks

25 off edge — 40 cp. with 19 K+30 K - exp. 6 off edge 7 pl.

39 def. ims — Great many def. on this plat - bl. spots.

p. c. exp. on 45

See page 16 — Copied for convenience
" " 30 — " " "

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1920phae.proj..697A

Thursday February 26, 1920

Direct Estimates of Variables in Orion Net

		18	25	30	35	39	40	45	54	58	H	K	L	?
10:05	Var.													
4181	B 20305 ✓	–	–	–	13.8	–	–	14.8	–	–	14.9	–	–	–
2715	B 10250 ✓	–	–	–	14.0	–	–	–	–	–	–	–	–	–
6822	B 35357 ✓	–	14.4	–	–	–	–	–	–	–	–	–	–	–
2455	B 8895 ✓	–	–	–	13.2	–	–	–	–	–	14.8	–	–	–
6760	B 35049 ✓	–	14.5	–	15.3	–	–	–	–	15.2	15.1	–	15.1	–
4224	B 20667 ✓	16.0	15.7	–	13.2	16.1	15.5	15.6	16.2?	16.1	15.1	–	15.0	–
0674	B 23122 ✓	–	14.6	–	14.0	–	–	–	–	15.2	15.0	–	15.1	–
0681	B 23355 ✓	–	–	–	14.3	–	–	–	–	14.4	14.9	–	–	–
6346	B 32478 ✓	–	14.6	–	–	–	15.2	15.2	–	15.4	14.5	–	15.4	–
6815	B 35309 ✓	–	14.8	–	13.9	–	15.0	15.1	–	–	15.1	–	15.1	–
7167	B 37224 ✓	–	–	–	13.2	–	–	–	–	–	–	–	–	–
6818	B 35283 ✓	–	15.0	–	13.7	–	–	–	–	–	–	–	–	–
10:45														
7240 10:50	I 33837 ✓	–	–	–	14.0	–	–	15.2	–	1–	15.2	–	15.0	
3983	I 17446 ✓	–	14.5	–	14.0	–	–	–	–	–	14.8	–	–	
7537	I 34391 ✓	–	14.8	–	14.3	–	–	–	–	–	15.0	–	–	
6318	I 24349 ✓	–	–	–	14.5	–	–	15.3	–	–	14.9	–	–	–
6544	I 31511 ✓	–	–	–	14.3	–	15.2	15.4	15.2	15.3	14.9	–	15.2	–
5015	I 24326 ✓	–	14.7	–	14.8	–	–	–	–	–	14.8	–	–	–
11:15					Broken Plates									
0677 2:00	B 23225 ✓	–	14.9	–	14.8	–	–	–	–	–	–	–	–	–
1338	I 209 ✓	–	14.5	–	14.5?	–	–	–	–	–	–	–	–	–
2:10														

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1920phae.proj...697A

Thursday February 26, 1920

Remarks

54 not easily distinguished in groups. It turned out by neb.

p. c. sup. on 35

Examined all B plates but no var. of this group seen on rest.

Faint

Examined Abert I plates in this region but var. too faint to be seen on any of them.

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1920phae.proj..697A

Thursday February 26, 1920

Direct Estimates of Variables in Orion Neb.

2:15 Var.	22	26	27	31	33	34	36	37	41	83	84	M
A2863	–	–	–	–	–	13.9	13.8	13.4	14.5	–	–	–
A220	–	15.9	15.8	–	–	~~13.9 +1.2~~	15.7	15.8	14.4	14.3	–	14.2
A3431	–	14.3	–	–	14.8	13.8	14.2	14.6	14.3	14.7	–	14.8
A2156	17.1	14.8	15.4	16.1	15.9	14.1	14.9	15.2	15.3	14.6	15.5	14.9
A128	–	–	–	–	–	13.6	–	–	14.0	14.4	–	14.4
A9971	–	–	–	–	–	13.5	–	14.0	13.8	–	–	–
A8191	15.8	14.6	15.7	16.3	16.0	14.3	14.8	14.1	14.9	14.8	15.7	15.0

3:15

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1920phae.proj...697A

Thursday February 26, 1920

Remarks.

Use Sequence 5

~~Prof fn 34 Sequence 4 used for this plate because 5 was off edge.~~

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1920phae.proj..697A

Direct Estimates of Variables in Orion Neb.

Var.	22	26	27	31	33	34	36	37	41	83	84	M

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1920phae.proj..697A

Remarks.

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Direct Estimates of Variables in Orion Neb.

Var.	22	26	27	31	33	34	36	37	41	83	84	M

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Remarks.

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Direct Estimates of Variables in Orion Neb.

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Remarks

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1920phae.proj..697A

Friday March 5, 1920

Direct Estimates of Variable in Aquarius

12:25	Var.	98	56	60	62	64	cc	67	A	
2371	MC 16663	14.9	—	14.8	14.5	14.7	13.7	13.8	15.4	
2369	" 16661	14.5	-	15.0	14.5	f.p.	13.8	13.7	14.8	
"	" 16662	-	-	-	-	-	13.4	13.2	-	
12:45 2307	" 16495	15.2	16.0	14.2	15.4	15.2	13.4	14.3	16.0	Plate covered with defects

	Var.	4	5	6	10	14	15	80	81	82
	MC 16663	15.8	15.8	15.3	—	—	-	15.6	15.2	-
	" 16661	-	-	15.1	-	-	-	-	-	-
	" 16662	-	-	-	-	-	-	-	-	-
	" 16495	15.6	16.1	15.4	-	-	-	15.5	15.3	-

1:55	Var.	5	65	90	63	105
2:00	MC 16663	-	15.4	15.7	14.3	16.1
	" 16661	-	15.5	-	14.2	-
	" 16662					
	" 16495	-	15.9	-	14.2	16.0

2:10	Var.	19	24	29	38	52	86	88	B	C	D	E	R4
	MC 16663	15.7	14.2	-	15.9	15.4	-	-	14.8	14.9	-	14.8	14.7
	" 16661	-	13.3	-	-	15.5	-	-	dif	15.4	-	15.0	15.3
	" 16648	-	13.9	-	-	-	-	-	-	-	-	-	-
	" 16495	16.0	14.0	-	-	15.3	16.3	-	15.1	15.2	-	15.4	15.0

	Var.	32	104	f5	g5
	MC 16663	15.0	14.2	13.7	14.9
	" 16661	14.3	14.3	13.8	14.7
	" 16662	14.2	14.3	13.7	-
	" 16495	14.5	14.4	14.0	14.6

2:30

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1920phae.proj...697A

Tuesday March 30, 1920

Direct Estimates of Variables in Nebula of Orion.

	Var.	28	56	60	62	64	66	67	A.
2407	MC 16725	–	–	–	–	–	13.5	13.8	–
2407	16726	–	–	–	14.2	–	13.3	14.3	–
2408	16733	14.4	–	15.0	14.3	–	13.6	14.0	–
2408	16734	14.4	–	15.3	14.3	15.3	13.6	14.0	–
2408	16735	14.5	–	15.2	14.6	–	13.4	13.9	–
2407	16724	14.5	–	–	14.3	14.6	13.2	13.8	–

Obs. Friday April 2, 1920

	Var.	4	5	6	10	14	15	80	81	82
	MC. 16725	–	–	–	–	–	–	–	–	–
	16726	–	–	–	–	–	–	–	–	–
	16733	–	–	–	–	–	–	–	–	–
	16734	–	–	–	–	–	–	–	–	–
	16735	–	–	–	–	–	–	–	–	–

	Var.	5	65	90	63	105
✓	MC 16725	–	–	–	13.6 ✓	
✓	16726	–	–	–	13.9 ✓	–
✓	16733	–	–	–	13.8 ✓	–
✓	16734	–	15.3	–	13.9 ✓	–
✓	16735	–	15.2	–	13.7 ✓	–
✓	16724	–	–	–	13.6 ✓	–

	Var.	19	24	29	38	52	86	88	B	C	D	E	F
✓	MC 16725 ✓	–	14.1	–	–	–	–	–	–	–	–		
✓	16726 ✓	–	14.1	–	–	–	–	–	–	–	–		
✓	16733 ✓	–	14.0	–	–	15.0	–	–	14.8	15.0	–	15.0	
✓	16734 ✓	–	13.7	–	–	15.2	–	–	14.8	15.0	–	15.0	
✓	16735 ✓	14.8	14.1	–	–	14.8	–	–	14.9	14.9	–	15.0	
✓	16724 ✓	–	14.0	–	–	14.8	–	–	14.3	14.8	–	14.7	14.8

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1920phae.proj..697A

Wednesday. March 31, 1920

Direct Estimates of Variables in Orion Net.

	Var.	32	104	65
✓	MC16725	<13.8	–	13.8
✓	16726	<14.4	14.1	13.8
✓	16733	<15.2	14.1	13.9
✓	16734	<15.2	14.5	14.0
✓	16735	<15.2	14.3	13.9
✓	16724	15.2	14.3	13.7

def near 104 makes est. difficult.

	Var	2	3	13	23	F	42	43	46	50	51	55	b	7
✓	MC16725	–	–	13.8	–	–	~~13.4~~ 12.9 ✓	–	14.2	–	–	<14.2	–	–
✓	16726	–	–	14.1?	–	–	12.9 ✓	–	14.1	–	–	<14.2	–	–
✓	16733	–	–	13.9	–	–	14.4 ✓	<14.9	13.6	–	–	14.9?		
✓	16734	–	–	13.6	–	–	14.2 ✓	14.7	13.8	–	–	15.0	–	–
✓	16735	–	–	13.8	–	–	14.2 ✓	14.9	14.0	–	–	def.		
✓	16724	–	–	13.8	–	–	13.0	14.9	14.2	–	–	14.9		

Nebulosity

	Var.	18	25	30	35	39	40	45	54	58	H	K	L
✓	MC16725	–	–	–	<14.2	–	–	–	–	–	~~14.2~~	–	–
✓	16726	–	–	–	–	–	–	–	–	–	–	–	–
✓	16733	–	<15.2	–	14.8	–	14.8	15.0	–	–	15.0	–	14.8
✓	16734	–	–	–	14.9	–	14.9	–	–	–	14.8	–	14.9
✓	16735	–	<15.2	–	14.9	–	15.0	–	–	–	15.0	–	14.8
✓	16724	–	–	–	–	–	14.7	–	–	–	15.0	–	14.9

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Thursday April 1, 1920

Direct Estimates of Variables in Orion Neb.
Region near edge of all these plates

	Var.	28	56	60	62	64	66	67	A	
15,18	MC13825	—	—	—	—	—	—	—	—	
15,18	MC13824	-	-	-	-	-.	13.5	13,1	—	
0433	MC6736	13.7 ~~14.2~~	—	14.8	—	—	14.2	13.1	—	60 at limit of nebula
0870	MC10173	—	—	—	—	—	—	—		
0870	MC10172	t.f.	—	14.4	—	—	14.2	14.4	—	ft. star seen 14.5.

	Var.	4	5	6	10	14	15	80	81	82
✓	MC13825	—	—	—	—	—	—	—	—	—
✓	MC13824	—	—	—	—	—	—	—	—	—
✓	MC6736	—	—	15.1	14.1	-	-	-	-	<15.4
✓	MC10173	—	—	—	—	—	—	—	—	—
✓	MC10172	—	—	—	—	—	—	—	—	—

	Var.	~~5~~	65	90	63	105
✓	MC13825	-	-	-	—	—
✓	MC13824	-	-	-	13.4 ✓	
✓	MC6736	-	<15.0	-	<15.0 ✓	-
✓	MC10173	—	—	—	—	—
✓	MC10172	-	-	-	13.8 ✓	-

	Var.	19	24	29	38	52	86	88	B	C	D	E	K4	
✓	MC13825	-	-	—	—	—	—	—	—	—	—	—	—	
✓	MC13824	✓ ~~14.0~~	14.0	—	—	—	—	—	—	—	—	—	—	
✓	MC6736	✓ 14.7	14.3	—	-	t.f.	t.f.	14.7	14.6	14.6	-	14.7	14.6	Pc emp. on 38.
✓	MC10173	—	—	—	—	—	—	—	—	—	—	—	—	
✓	MC10172	✓ ~~13.8~~	13.8	—	-	15,0	—	—	—	14.9	-	14.9	14.9	Diff. contin. pond.

	Var	32	104	b5
✓	MC10173	14.5	14.0	13.8
✓	MC6736	13.8 ✓	14.5	13.5
✓	MC13825	13.8 <—		13.9

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Thursday April 1, 1920

Direct Estimates of Variables in Nebula of Orion

Var.	2	3	13	23	F	42	43	46	50	57	55	8	7
✓ MC 13824	—	—	<14.0	—	—	14.2	14.4?	—	—	—	—	—	— Neb. 00313
✓ MC 6736	—	—	14.3	—	—	12.8	14.9	13.5	—	—	14.6	15.3	<15.3
✓ MC 10172	—	—	14.1	—	·	14.0	14.2	13.6	—	—	14.3		

Var.	18	25	30	35	39	40	45	54	58	H	K	L
✓ MC 10173	—	14.8	—	14.1	—	15.2?	~~15.2?~~	—	15.2	15.0	—	15.1
✓ MC 6736	—	14.8	15.0	14.9	—	14.9	14.9	—	—	14.9	—	14.9

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Friday April 2, 1920

Estimates by Argelander's Method of Gen. Seg. in Gem.

A 3423

(1) 4 (2)
(2) 4/3 (3)
(3) 9 (4)
(4) 5 (5)
(5) 1 (6)
(6) 8 (7)
(7) 7/8 (8)
(8) 3 (9)
9 (1) 10
10 (1) 11
11 (2) 12
12 (3) 13
14 n.s.

A 3422

1 (2) 2
2 (4) 3
3 (9) 4
4 (5) 5
5 (1) 6
6 (5) 7
7 (4) 8
8 (4) 9
9 (1) 10
10 (2) 11
11 (1) 12
12 (3) 13
13 (4) 14
14 (2) 15
16 n.s.

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Tuesday Feb. 8, 1921

Direct Estimates of Variables in Nebula of Orion

	Copied	Var		28	56	60	62	64	66	67	A	Remarks
5762	27245	mc	17143	15	14.4	15.7	15.2	14.4	14.7	14.1	14.0	15.0	
26608		c	17010	1	14.0	16.2?	14.1	13.9	15.6	14.5	13.3	15.7	Not sure whether this is 56 or def.
27245			17138	14	15.1?	<15.9	15.6	14.3	14.7	13.5	13.9	14.9	c.s. g not good im.
26767			17036	2	14.4	16.1	15.1	14.7	14.8	13.9	14.2	15.8	
27217		v	17131	13	14.5	15.8	15.0	14.1	15.0?	13.7	14.4	15.9	im. of 64 hazy diffic. to set.-
26923			17058	3	15.2	15.7	14.2	14.1	14.6	14.3	14.2	14.4	c.s. f + g not good images
27251			17130	12	15.0	<15.5	15.2	14.4	14.8	14.2	15.0	15.5	
26923			17060	4	15.7	15.9	14.4	14.3	14.3	14.1	14.2	14.0	c.s. f poor im.
27178			17127	11	14.5	16.3	14.2	14.4	15.3	14.3	13.8	15.8	" f " "
26956			17068	5	14.7	15.9	15.0	14.4	15.1	14.4	14.6	15.9	62 difficult to set.
27167			17123	10	14.45	16.1	15.5	14.3	14.6	13.6	14.1	15.9	
									15.0				
26978			17074	6	15.3	15.8	15.2	14.4	~~14.5~~	14.3	15.2	14.4	
27067			17089	9	15.0	15.5	15.1	14.3	14.8	14.1	14.9	15.0	
26977			17076	7	15.3	15.9	15.1	14.3	15.2	14.2	15.2	14.6	
27067			17088	8	15.0	<15.0	<15.0	14.3	14.4	14.1	14.9	15.0	

Copied		Var		4	5	6	10	14	15	80	81	82	
	mc	17143		15.4	15.6	15.3	-	-	15.6	15.7	15.1	-	15.8 f fast star seen
	mc	17088											15.2 f fast star in seq.
		17076		15.6	15.5	15.8	15.4	<16.0	15.9	15.5	15.0	16.0	
		17089		-	-	15.1	-	-	-	-	15.1	-	15.4 f fast star seen
	c	17074		15.5	15.5	15.6	15.5	-	-	~~15.5~~	15.0	-	15.6 " " "
		17123		15.3	15.8	15.5	16.1	-	-	16.1	15.2	-	A 16.1 " " "
		17068		15.2	15.6	15.5	14.8	-	-	15.8	15.6	-	16.0 " " "
		17127		15.3	15.3	15.3	<15.8	-	-	-	15.4	-	
		17060		15.7	15.7	15.4	15.8	-	-	15.8	15.2	-	
		17130		-	-	-	-	-	-	-	15.3?	-	15.4 f fast star seen
		17058		15.4	15.4	15.5	-	-	-	-	15.4		15.6 " " "
		17131		15.7	15.8	15.8	-	-	15.7	-	15.5	-	15.8 " " "
		17036		15.4	15.6	15.5	-	-	-	15.8	15.4	-	15.8 " " "
		17138		15.2	15.3	15.6	-	-	-	15.6	15.2	-	15.6 " " "
		17010		15.5	15.7	15.3	-	-	-	-	15.8	-	15.8 " " "

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Thursday Feb. 10, 1921

Direct Estimates of Variables in Nebula of Orion

	Var	5	65	90	63	105	32	104	b^5	
mc	17143	—	15.8	16.2?	12.9	16.3	14.0	13.9	13.8	
MC	17010	-	16.1	<16.1	13.6	15.5	14.0	14.4	13.8	
	17138	-	15.7	<15.8	13.7	<15.8	14.5	14.3	13.8	
	17036	-	16.0	16.1	13.0	15.9	14.2	14.2	13.8	
	17131	-	15.8	15.9	12.9	15.8?	14.4	15.3	13.9	
	17058	-	15.6	<15.8	13.2?	15.5	14.5	14.0	13.7	diffic. to set. 63
	17130	-	-	~~15~~	13.2	15.2	13.7	14.7	14.3	c.s. c^5 scratched out
	17060	-	15.6	15.6	13.3	<15.6	14.6	14.1	13.7	
	17127	-	~~15.9~~ 16.0	16.1	13.6	16.1	14.2	14.7	13.7	
	17068	-	15.9	16.1	13.7	15.9	14.4	13.8	14.0	
	17123	-	16.0	16.1	13.8	15.8	15.0	14.4	13.8	
	17074	-	15.9	15.9	13.3	15.9	13.9	14.2	13.7	
	17089	-	-	+	13.2	<15.0	14.6	14.3	14.0	
	17076	-	15.8	16.3	13.0	16.0	~~14.0~~ 14.1	14.2	13.8	
	17088	-	-	-	13.3	-	14.3	14.5	14.0	

	Var	19	24	29	38	52	86	88	13	c	D	E	12^4	
mc	17143	16.1	14.3	15.9	16.2	15.6	16.2	16.2?	15.4	15.0	—	15.1	15.0	<16.3 Not sure whether ee is nt. star
MC	17088	<15.2	13.9	-	-	15.2	-	-	15.1	15.1	-	15.2	-	13 comes within a ring of b. stars
	17076	15.4	14.3	15.5	15.7	15.3	<15.9	~~15.7~~	15.2	15.0	-	14.8		
	17089	15.4	14.2	<15.5	15.5	15.2	-	-	15.4	15.1	-	15.1		
	17074	15.0	14.6	-	-	-	-	-	15.0	15.2	—	15.3		<15.5
	17123	15.3	14.3	15.9	15.5	15.1	15.9	15.9	15.0	14.7	-	def		
	17068	15.7	15.2	—	—	15.6	—	—	15.6	15.0	-	15.0		<15.8
	17127	15.5	14.1	—	—	15.9	—	—	15.4	15.3	—	15.5		
	17060	15.7	15.0	-	-	15.4	—	—	15.1	15.0	—	15.2		
	17130	<15.8	14.2	-	—	—	—	-	-	15.6	—	15.2		
	17058	15.7	15.0	—	—	15.8	-	-	def	15.0	—	15.3		<15.9
	17131	15.8	14.1	-	15.7	15.6	-	-	15.3	15.0	—	14.7		<15.8
	17036	15.6	13.9	16.0	16.0	15.3	15.9	-	15.3	15.0	—	15.1		
	17138	15.6	14.2	-	15.6	15.6	—	-	15.4	15.2	-	15.1		<15.8
									15.0	15.2	—	14.8		<15.9 "29" "38" comparably diffr. in

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1920phae.proj...697A

Tuesday June 7, 1921

Wednesday June 8, 1921

Direct Estimates of Variables in Nebula of Orion

Var	2	3	13	23	F	42	43	46	50	51	55	G	7	Remarks
MC 17010	–	–	13.9	–	–	14.5	14.5	13.8	15.5	–	15.1	15.4		<15.6
17138	–	–	15.0	–	–	14.4	14.3	13.9	15.4	–	15.0	15.3	·	<15.5
17036	–	16.0	14.4	14.9		14.1	14.3	13.8	15.5	–	15.0	15.4	–	<16.0
17131	–	too ft.	14.9	–	–	14.1	14.2	13.8	15.4	15.4	14.9	15.4	–	
17058	–	–	13.9	too ft	–	14.0	14.4	13.7	–	–	dif	15.4	–	
17130	–	–	15.1	–	–	14.0	14.4	14.1	–	–	14.6	–	–	
17060	–	–	14.1	–	–	14.1	14.6	13.9	15.4	–	14.9	scat	–	
17127	–	–	14.7	15.4	–	14.2	14.6	13.4	–	–	14.8	15.4	–	
14068	–	–	14.1	15.5	–	14.9	14.1	14.0	15.5?	–	15.0	15.4	–	
17123	–	–	14.9	15.4	–	13.9	14.6	14.1	–	–	14.9	15.4	–	
17074	–	–	14.1	too ft	–	14.1	14.3 (5)	14.1	–	–	15.0	15.4	–	
17089	–	–	14.5?	–	–	14.6	14.4	13.7	–	–	14.9	15.4	–	dark pl.
17076	–	–	14.0	15.4	–	14.2	14.1	13.9	15.5	–	15.3	15.4	–	
17088	–	–	14.5	–	–	14.2	14.2	13.6	–	–	14.9	15.3		dark pl.

Copied	Var	18	25	30	35	39	40	45	54	58	H	K	L	
MC	17088	–	–	–	–	–	–	–	–	–	–	–	–	var. too ft. <15.0
	17076	15.7	15.3?	15.7	14.3	t.p	15.3	15.4	15.5	15.5	15.4	–	14.9	
	17089	–	15.2?	–	15.2	–	15.2	15.2	15.1	14.9	–	14.9		2.5 very ft. all var. ft.
	17074	15.5	15.2	–	15.1	15.5	15.3 (3)	15.5	15.4	15.4	15.1	–	15.1	
	17123	–	15.1	15.6	14.7	15.6	15.1	15.4	15.5	15.3	15.1	–	15.1	
	17068	–	15.3	15.6	15.1	15.6	15.2	15.6	15.5	15.6	15.1	–	15.2	
	17127	–	14.7	–	15.5	15.6	15.1	15.6	15.4	15.4	15.0	–	15.1	
	17060	–	15.0	–	14.6	–	15.3	15.4	dif	14.9	15.1	–	15.3	
	17130	–	–	–	15.2	–	–	–	–	14.9	15.2	–	15.1	
	17058	–	14.9	–	14.8	–	16.0	15.5	15.3	14.7	15.1	–	15.3	
	17131	–	15.0	–	15.6	15.6	15.5	15.6	15.2	15.2	15.1	–	15.1	
	17036	–	15.1	–	15.6	–	15.4	15.4	15.2	15.2	14.9	–	14.9	
	17138	–	15.6	–	15.0	15.6	15.2	15.6	15.6	dif	15.1	–	15.2	
	17010	–	15.5	–	15.1	–	–	–	15.6	15.1	15.1	–	15.1	

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Tuesday June 7 1921

Direct Estimates of Variable in Orion Nebula.

22733.533

	28	56	60	62	64	66	67	A			
MC 17151	14.8	15.5	14.3	13.8	15.0	14.0	13.8	15.2			
	4	5	6	10	14	15	80	81	82		
MC 17151	15.6	15.7	15.7	15.8	15.8	-	15.3	15.3	-		
	5	65	90	63	105		82	104	f5		
MC 17151	-	15.4	too ft.	13.7	15.5?		14.5	13.7	13.9		10 sharp ims.
	19	24	29	38	57	86	88	B	C	D	E
MC 17151	15.7	14.4	too ft.	15.8	15.4	15.8	-	14.7	15.1	-	14.8
	2	3	13	23	+	42	43	46	50	51	55	D	7
MC 17143	too ft.	15.9	14.8	-	too ft.	13.9	14.2	13.8	15.5	15.6	14.8	15.5	
" 17151	too ft.	15.9	15.0	(15.1)	too ft.	14.0	14.3	13.5	15.6	-	14.7	15.4	- 23 m.s.
	18	25	30	35	39	42	45	54	58	H	K	L	
MC 17143	too ft	14.9	15.7	15.2	15.5	15.3	15.5	15.3	15.5	15.0	-	15.0	45 defect
" 17151	-	14.8	15.4	15.4	15.6	15.1	15.4	15.3	15.3	15.1	too ft	15.0	

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Monday Feb. 14, 1921

Estimates of mag. at max + min of Variables not published.

Period	Star	Plates	Est.	Region for comparison
Short:	+27°3536	AC 14129	7.7	compared with 64K
		AC 14097	9.6	and Carte 20 +31 30
	~~+46° 2'~~			

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1920phae.proj.0097A

Tuesday Feb. 15, 1921

Estimates of mag. at max. + min. of Variables not yet published

Period	Star	Plates	Est.	Region for comparison
Long?	+46°2753	AC 14135	9.3	39 H + Carte 20 +46 30
		AC 17874	10.4	
Short	+33°3718	AC 20526	8.9	Carte 20 +31 30
		I 22769	10.7	

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1920phae.proj..697A

Wednesday Feb. 16, 1921

Est. of mag at max. + min of Variables not yet published

Period	Star	Plates	Est.	Region for Comparison
Long?	+21°4603	AC 21951	10.0	Carte 21 + 24 30
		AC 13227	10.9	Var. is at limit of visibility
Short	+ 60° 246	AC 17048	9.4	8 K
Algol?		AC 17014	10.7	

Three plates taken Nov. 20, 1919 - show variable at faintest or a bit slightly brighter on the third. Plate taken Nov. 18 + 24, 1919 show normal brightness

Long?	* +46° 3267	AC 17673	9.2	10 Ks
or short		" 17762	10.8	
Var.?				

Short	359 +4610	AC 14895	11.0	Carte 4 +46 30
	Perseus	I 23553	12.2	

This goes off the AC plates when faint so had to find I plate to get range

* +46° 3267 AC 17762 is a very poor plate. Direct comparison of AC 17673 and 17762 does not show more than 0.5 difference, and even this appears to be due to photographic causes. Examination of the plates given in J.C. M. BK 10 p. 41 shows no certain variation. Also 10 additional plates do not show variation.

H.S.L. July 8, 1921

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Thursday Feb. 17, 1921

Est. of mag. & min. of Variables not yet published

Period	Star	Plates	Est.	Region for gp.
Short:	6 36+3225	AC 18454	10.3	Nova Gem. No. 1.
Ft. Nov. 9, 1919 bv.	+32° 1393	AC 22299	11.2	
during Exc. Hagan				
Jan. 21, 1920	016+735	AC 22314	10.3	2K
Short: 1920		AC 14603	12.0	
Ft. Jan. 10 Feb. 27				
bv. Jan. 28				

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1920phae.proj..697A

Friday Feb. 18, 1921

Est. of mag. of Variables not yet published

Period	Star	Plates	Est.	Region for cf.
short	0 19 + 59 55	AC 21897	10.2	84 Cass.
		AC 22313	10.4	

Shows very slight variation. Think image on AC 19061 where Miss Mackie finds star faint, is defective. The plates on which star is found faint by Mk. ~~Hoopl~~ do not usually show faint stars.

Algol	8 20 - 94 (856)	AC 19921	10.7	Carte 8 - 9.5
J.D.		" 17197	213.6	
21217	Ft.	AC 18326	Dec. 19, 1916	Inv.
"		" 18327	" " "	
20581		" 16318	Mar 24, 1915	AC 16308 Mar. 23, 1915
20622		AM 10539	May 4, "	
20111		AC 14637	Dec. 9, 1913	AC 14631 Dec. 8, 1913
19839		AC 13879	Mar. 12, "	
19~~800~~795		" 13687	Jan. 27, "	
20870		" 17197	Jan. 7, 1916	AC 17204 Jan. 8, 1916
19560		AM 8289	June 6, 1912	
19723		AC 13479	Nov. 16, "	

About 75 plates examined. May 2, 1921

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1920phae.proj..697A

Monday Feb. 21, 1921

Est. of mag. of 1 min. of Variables not yet published.

Period	Star	Plates	Est.	Region for Comp.
	+26°3101	AC 20149	} show no variation as far as I can observe.	
		AC 21458		

Looked up several other AC plates and found no variation. Miss Mackie looked the star up on 5 I plates (Bk 6:84) and remarked "very slight variation if any".

63+23°30	AC 20807	10.5	SS Gemini	
	" 17948	9.7		

Miss Mackie has this as a suspected var. It certainly varies and has a greater range than she gives it.

22 0+6428	AC 19139	}	taken same date Sept. 14, 1917
	19138		star appears brighter on AC 19139

but of normal brightness on AC 19138. The image on the first plate is obviously defective when examined with a high power eye piece. I cannot confirm the variability of this star. Cannot see that object is bright on AC 21039.

+31°2847	AC 14174	11.0	Carte 160+31.5
	" 22451	9.9	

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Friday Feb. 25, 1921

Est. of max. & min. of Variables not yet published

Period		Plates	Est.	Region compared
Short.	-2° 2331	AC 22057	9.0	99K
		" 22042	10.9	

This is apparently short period. Plate AC 19456 taken Nov. 12, 1917 shows star bright, while AC 19461 Nov. 13, 1917 shows star faint. AC 23263 Jan. 12, 1921 shows star ft., AC 23283 Jan. 17, 21 also shows star ft., AC 22036 Nov. 24, 19. Inv. AC 22042 Nov. 30, 19, faint, AC 22057 Dec. 2, 19 bright.

+38° 1168 see next page

May 2 1921

-2° 2331 Examination of 20 plates taken at random from boxes 8 0.0 + 7 0.0,

Bright	Bright	Faint
AC 8328	AM 5350	AC 15779
" 9174	" 4052	
" 9884	" 1907	
" 10347	" 457	
" 11174	AC 6271	
" 11445	" 5576	
" 12198	" 19578	
" 12845	" 21072	
" 13631	" 16294	
" 13779		

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1920phae.proj..697A

Tuesday March 1, 1921

Det. of Mag. & Min. of Variable not yet published

Period	Star	Plates	Sat.	Region
short	+38° 1168	AC 23252	11.0	18 Hs
		I 25977	12.1	
~~short~~	+34° 4794	AC 23114	9.5	Carte 2 3 + 39.5
Long		AC 19429	11.0	
short	+46° 4128	AC 4210	10.3	Z Andromeda
		AC 5624	11.4	23 28 +48 16
	+14° 1680	Not confirmed.		
short	+46° 3406	AC {18373}	9.7	10 Hs
		AC {23074}	9.8	
		" 18270	10.3	U Z Cygni

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1920phae.proj..697A

Wednesday Mar. 2, 1921

Est. of Mags. + min. of Variable not yet published

Period	Star	Plates	Est.	Region
Short	+21°3459	AC 19553	7.4	Carte 18+17.5 Ptg. Corr. Col. 50 7.2
		" 19488	9.0	Seq. for Hungaria
Irregular?	+30°741	AC 17411	8.9	SW Aurigae
		" 16845	7.0	Comp. Ptg. 6.8 + 7.2

The star is bright Feb. 14, 1916 - ft. from Mar. 4 - Apr. 8 when it is evidently getting brighter - two more plates until Sept., 1916. Dur. Aug. + until Sept. 13, 1917 it is bright, ft. from Sept. 14-19, + from then on bright. The star was found fainter than normal on Nov. 26, + 28 1914 but not as faint as its usual min. - plates before + after this date do not show it fainter than normal

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1920phae.proj..697A

Thursday March 3, 1921

Est. of Mags. & Mins. of Variables not yet published.

Period	Star	Plates	Est.	Region
Long	516+50 0	AC 12691	10.6	R Aurigae
		I 17303	∠13.6	
	21 22+58	very small variation.		
Long	−60° 2370	AM 4825	9.6	29 Hs
		" 3499	~~10.8~~	
		" 3700	11.0	

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Monday March 7, 1921

Est. of Max. + Min. of Variables not yet published.

Period	Star	Plates	Est.	Region
Long	−39°5653	AM 9767	10.9	Carte 10 − 40.5
		" 5363	9.6	
		" 5394	9.3	
Irregular?	−34°5361	AM 5363	9.3	T Pyxidis
		B 24698	8.6	~~8 49~~ 9 0.5 − 31 59
		AM 332	11.0	
Short?	−42°4112	AM 13792	9.3	27 Ks
		" 4014	10.3	
	19459−050	B 31694	13.2	111 K
		A 5706	14.9	
Short	+38°811	AC 19444	14.5	17 Ks
MDA 7:162		AC 19485	9.0	Nova Persei No. 2

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Thursday March 17, 1921

Reobservations of plates for Novae on which est. were doubtful

	105853. Nova Velorum	
C.S.pl. B27020	A M 4194	11.2 v im. of e + nova not separable
	" 4212	def. near nova cannot est. safely
	" 4364	11.5 v very difficult
	" 4746	11.6 v " "
	" 4765	12.0 v
	B 37353	12.3 v
	B 39999	13.5 v
	" 40001	13.8 v certainly seen.
	110361 R S Carinae	
B 12988	B 15157	< 13.7
	B 15131	~~13.9~~ 14.0 v
	Z Centauri	
B 52686	I 14255	< 12.2 v ~~11.5 diamond into nebula~~
	A 1873	14.7 v
	144059 Nova Circini	
B 13483	A M 4377	11.7 v
	175327 Nova Sag. No. 2	
Print	A M 6676	10.3 or < 10.3 near edge - may be defect
	185613 Nova Sag. No. 1	
A M 104 12.8	I 23060 v	12.0 e B 23213 12.0 v diff ic. im. diff.
14867 " 33 11.9	B 23107 v	11.9 B 25429 13.0
	A 5712	14.3 - chart used for est

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Thursday March 17, 1921

Cont. from p. 108

Nova Normae

B46639 B 11781 11.8

B 14349 ~~11.8~~ ~~rather diffuse~~

X 5784 11.7

X 5792 11.7

X 5802 11.8

B 14349 def on film side in this region probably < 15,1

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Monday March 29, 1920

Examination of plates to confirm variability of η Gem.

AI 18463	~~a v b~~ ~~b v c~~
AI 18486	~~v = b~~ ~~b v c~~
AI 18134	v = b
AI 18145	~~a v b~~ ~~b v c~~
AI 15568	a v b
AI 15597	v = b
AI 14716	v = b
AI 8543	b > v > c
AI 8457	b > v > c
AI 7417	b > v > c
AI 7404	b > v > c
AI 9637	b > v > c
AI 10604	b = v
AI 10615	b = v
AI 11769	a v b
AI 11948	v = a
AI 11963	a v b
AI 12104	v = b
AI 12374	v = b
AI 13388	a v b
AI 13577	v = b
AI 13605	a v b
AI 18163	v = b

Does not know enough variation to make a series of observations advisable.

H.D.A. March 29, 1920

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Saturday April 3, 1920

~~Friday April 2, 1920~~

Measures of Eros for Miss Harwood.

	Exp. 1	Exp. 2	
Mc 6066	t.p.		
Mc 6380	11.3		
Mc 6435	11.4		north exp. called 1
Mc 6385	11.6		
Mc 6442	11.3		north exp. called 1
Mc 6420	11.1		Not sure of star im. elongated too greatly
I 38862	11.5		
I 38924	12.1		
I 38863	11.5	~~12.1~~	
I 38925	11.9		
I 38865	11.6		
I 38926	12.1	~~11.6~~	

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Saturday April 3, 1920

Measures of Eros (1914) for Miss Harwood

		Sep.1	Sep.2	Sep.3	Sep.4	Sep.5	Sep.6	Sep.7	Sep.8	Sep.9	Sep.10
	Mc 6380	11.3									
with Sep.1	" 6435	11.4									
	" 6385	11.6									
	" 6442	11.3									
	" 6420	11.1									
	I 38862	11.5									
	I 38924	12.1									
	I 38863	~~11.5~~	11.5								
	I 38925	11.9									
	I 38865	11.6									
	I 38926	12.1									
	I 38866	–	11.4								
	I 38927	12.0									
	I 38961	12.4									
	I 38867	~~11.7~~	–	–	11.7						
	I 38962	12.4									
	I 38868	–	11.4?								
	I 38963										

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Thursday April 8, 1920

To see if C.S. 9 (23 37.2 + 24 22) is variable
(Miss Harwood's sequence for 510)

I 35021 α 2 (9) 3 1 0 out of focus
I 16804 ~~α = (9) /~~ α 2 (9) 3 1 0
I 16864 (9) = 1 0
I 18823 α 3 (9) 2 1 0
I 18859 α 4 (9) 1 1 0
I 21526 α 1 (9) 4 1 0
I 23771 α 3 (9) 2 1 0
I 23928 α 2 (9) 3 1 0
I 33371 α 2 (9) 3 1 0

This is variable. 35
Confirmed by Miss Harwood.

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Saturday April 10, 1920

T Pyxidis

J.D.			
	I 39919	6.3	20, 4, 6 ✓ Brighter than a, can't be sure of st,
22053	M 7 3222	<13.5	19, 4, 5 ✓
22077	M 7 3410	<13.5	19, 4, 28 ✓
22078	M 7 3434	<13.2	19, 4, 29 ✓
22073	M 7 3325	<13.5	19, 4, 24 ✓
✓	B 49866	<13.7	17, 4, 12 ✓
	B 49917	<13.2	17, 4, 13 ✓
	B 50402	<12.5	17, 5, 13 ✓
	B 50429	<13.2	✓
	B 50430	<12.7	17, 5, 14 ✓
	B 50444	<12.7	17, 5, 15 ✓
	B 50445	<12.7	17, 5, 15 ✓
	B 50480	<12.7	17, 5, 16 ✓
	B 50481	<12.7	17, 5, 16 ✓
	B 50503	<13.2	17, 5, 17 ✓
	B 50527	<12.7	17, 5, 18 ✓
	B 50718	<12.7	" 5, 26 ✓
	AC 22555	6.5	20, 4, 6 ✓

C.S.	mag.		
A	5.1		
B	5.6		
C	6.0		
D	6.2		
E	6.4		
f	6.8		
a	6.9		
b	7.6		
c	7.7		
d	8.0		
e	8.6		
f	8.9		
g	9.0		
h	9.4	g	12.3
k	10.0	r	12.5
l	10.4	s	12.7
m	10.8	t	13.2
n	11.2	u	13.5
o	11.5	w	13.7
p	12.0		

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Saturday April 10, 1920

~~Compar~~ Identification of stars brighter than "a" in region for T Pyxidis, within 5 degrees.

C D Nos.	Position		Ptm.	Ptg.	Sp.
	h m s	° ′			
-28° 7019	9 7 0.6	- 28 26.7			
1900	9 8.1	- 28 32	6.77	7.3	B8
-29° 7194	9 4 39.2	- 29 51.2			
	9 5.7	- 29 57	5.52	6.6	A3
-31° 7162	9 15 27.2	- 31 14.2			
	9 16.5	- 31 20	6.78	7.4	A0
-32° 5770	8 44 47.2	- 32 19.4			
	8 45.8	- 32 25	5.23	7.0	G5
-33° 5973	9 14 37.6	- 33 34.8			
	9 15.6	- 33 41	6.48	6.9	B8
-34° 5243	8 41 52.1	- 34° 9.2			
	8 42.9	- 34 15	6.38	7.0	B3
-36° 5505	9 10 44.4	- 36 53.2			
	9 11.8	- 37 0	4.70	5.12	~~F5~~

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Monday April 12, 1920

T Pyxidis

J.D.								
	Region 8 - 15				Region 8 - 38			
					AM 13948	<11.2	18,5,5 ✓	
21777	AM 14129	<10.0	18,7,2 ✓		" 13988	<11.5	" 5,18 ✓	
21390	AM 13244	<10.4	17,6,10 ✓		" 14008	<10.4	18,5,31 ✓	
21759	AM 14075	<11.2	18,6,14 ✓		" 14050	<12.0	18,6,11 ✓	
21370	AM 13173	<10.4 ✓	18,5,21 ✓		" 14453	<11.5	" 9,28 ✓	
	Region 10 - 45				" 14500	<11.5	" 10,5 ✓	
22111	AM 14742	<11.2	19,6,1 ✓		" 14594	<11.2	19,3,31 ✓	
21865	AM 14454	<11.2	18,9,28 ✓		" 14597	<11.2	" 4,1 ✓	
21868	AM 14472	<10.4	18,10,1 ✓		" 14604	<12.7	" 4,5 ✓	
22054	AM 14605	<10.0	19,4,5 ✓		" 14626	<12.0	" 4,22 ✓	
21746	" 14011	<10.0	18,6,1 ✓		" 14649	<12.0	" 4,27 ✓	
21762	" 14032	<10.0	" 6,6 ✓		" 14711	<11.5	" 5,22 ✓	
21760	" 14079	<9.4	" 6,15 ✓		" 13258	<12.3	17,6,12 ✓	
21761	" 14085	<10.0	" 6,16 ✓		" 13264	<12.0	" 6,13 ✓	
21664	" 13789	<11.2	18,3,11 ✓		" 13284	<12.0	" 6,16 ✓	
21671	" 13792	<11.5	" 3,18 ✓		" 13386	<9.4	" 7,11 ✓	
21693	" 13831	<10.8	" 4,9 ✓		" 13779	<10.4	18,3,8 ✓	
21392	" 13257	<11.5	17,6,12 ✓		" 13795	<12.5	" 4,1 ✓	
	Region 8 - 30				" 13816	<12.3	" 4,4 ✓	
	AM 13170	n.s.			" 14056	<11.5	18,6,12 ✓	
	" 13172	<12.0 ✓	17,5,21 ✓		" 14064	<12.0	" 6,13 ✓	
	" 13626	<11.2	17,9,23 ✓		" 14123	<10.8	" 7,1 ✓	
	" 13675	<12.3	" 10,11 ✓		" 14133	<10.8	" 7,7 ✓	
	" 13781	<11.2	18,3,9 ✓		" 14156	<10.4	" 7,14 ✓	
	" 13791	<12.3	" 3,18 ✓		" 14473	<12.0	" 10,1 ✓	
	" 13824	<13.2	" 4,8 ✓		" 14572	<11.5	19,3,30 ✓	
	" 13830	<12.5	" 4,9 ✓		" 14602	<9.4	" 4,4 ✓	
					" 14666	<11.5	19,5,1 ✓	

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Monday April 12, 1920

T Pyxidis

J.D.						
22371	AC 22407	<10.0	20, 2, 16	AC 22504	7.7	20, 3, 10
	AC 20678	<10.0	18, 11, 10 ✓	AC 22555	6.3	
	AC 20710	<8.9	18, 11, 21 ✓			
	AC 20794	<10.0	" 12, 6 ✓			
	AC 20875	<9.0	" 12, 25 ✓			
	AC 21042	<10.8	19, 2, 1 ✓			
	AC 21102	<10.0	19, 2, 9 ✓			
	AC 19579	<11.2	17, 12, 10 ✓			
	AC 19684	<9.4	18, 1, 15 ✓			
	AC 19715	<9.0	" 1, 20 ✓			
	AC 19756	<10.4	" 2, 1 ✓			
	AC 19817	<10.0	" 2, 13 ✓			
	AC 19922	<11.5	" 3, 15 ✓			
	AC 19465	<9.4	17, 11, 13 ✓			
	BM 14591	<10.8	19, 3, 30 ✓			
	BM 14607	<10.8	19, 4, 6 ✓			
	BM 14634	<10.0	19, 4, 24 ✓			
	BM 14639	<10.4	" 4, 25 ✓			
	BM 14650	<10.0	" 4, 27 ✓			
	BM 14072	<9.0	18, 6, 14 ✓			
	BM 13809	<10.0				
22385	AC 22466	<8.0	20, 3, 1			
22382	AC 22456	<9.4	20, 2, 27			

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Tuesday April 13, 1920

T Pyxidis

AC 22571	7.5	20, 4, 9 ✓
AI 19642	7.6	20, 4, 9 ✓
AC 22540	7.4	20, 3, 28 ✓
AC 22269	<10.8	20, 1, 15 ✓
AC 22337	<9.0	" 1, 31
AC 22016	<8.9	19, 11, 20
AC 21982	<9.0	" 11, 8 ✓

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Monday April 19, 1920

T Pyxidis.

AC 22590	7.8	April 14, 1920	
AC 22581	7.0	April 10, 1920	
AI 19652	7.0	April 10, 1920	
AI 19661	7.8	" 14, "	Difficult
AI 19624	<6.9	" 3, "	

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Saturday April 24, 1920

Nova Ophiuchi No. 4

	Mean		
MC 16377	8.7	$8.85^{\frac{1}{2}}$	9.0 ✓
MC 16375	8.8	$8.85^{0'}$	8.9 ✓
AC 22588	10.4	$10.58^{1'}$	10.6 ✓
AC 22530	10.5	$10.66^{1\frac{1}{2}}$	10.8 ✓ 10.4 10.45 10 (Expect)
AC 22531	10.1	10.10^{00}	10.1 ✓ 10.1 ✓ (faint)
AC 22453	10.4	10.40^{00} ~~10.4~~	✓
AC 22372	10.5	10.50^{00}	10.5 ✓ faint
AC 22247 ~~94~~	10.3	10.30^{00}	10.3 ✓ 10.3 "
AC 22283	9.4	$9.45^{0'}$	9.5 ✓
AI 19562	<8.7		✓
AI 19028	9.3	$9.35^{0'}$	9.4 ✓
AI 19029	9.1?	9.10^{00}	9.1 ✓ nova < f ; g n.s.
AI 19055	t.f.		
AI 19086	t.f.		
AI 19447	<9.4		✓
AI 19465	<9.4		✓
AI 19054	<9.4		✓
AI 19066	9.1	$9.15^{0'}$	9.2
AI 19365	9.7?	9.65^{10}	9.6? ✓
AI 19384	t.f.		
AI 19406	10.0	10.00^{00}	10.0 ✓
AI 19418	t.f		
AI 19436	<9.4		✓
AI 19488	10.4	10.40^{00}	10.4 ✓
AI 19602	10.7	10.70^{00}	10.7 ✓ 10.5 10.63

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1920phae.proj...697A

Saturday April 24, 1920

Nova Ophiuchi No. 4

1909 11

		South up.	
AI 19527	10.5	10.8	10.5 ✓
AI 19504	~~10.6~~	10.85	11.1 ✓
AI 19658	<10.1		✓
AI 19647	<9.6		✓
AI 19640	<9.4		✓
AI 19668	10.9	11.00	11.1 ✓

Op. star "n" remains brighter than "m" on these 2 AI plates.

Reject

Image not quite like others.

Reobservations Monday April 26, 1920

AI 19504	<10.1 ✓
AI 19602	10.5 ✓
AC 22294	10.3 ✓
AC 22536	10.1
AC 22530	10.4 ✓

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1920phae.proj..697A

Thursday April 29, 1920

Measures of Eros (1914) for Miss Harwood -
also D.A.S. 9 which proved variable

Remarks.	Plate	Epf. 1	Var.
Very doubtful est.	MC 6420	10.9	11.5
	MC 6867	11.9	
Epp. = lower of 2	MC 6442	11.4	12.1

Stopped because intervals between comparison stars were greater than the real difference shown on the plates.

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1920phae.proj..6074

Thursday April 29, 1920

(19,4)

Measures of Eros for Miss Harwood

Estimations of C.S. by Argelander's Method.

I 33496	Grade	Diff.	Cu.	Mag.
	$\delta = 0.0$	10.92	10.88	10.88
δ 2 β	$\beta = 0.2$	10.83	10.83	~~10.8~~ 11.03
β 3 α	$\alpha = 0.5$	10.77	10.80	11.30
α 3 γ	$\gamma = 0.8$	10.93	10.95	11.75
~~δ~~ γ 2 10	$10 = 1.0$	11.24	11.30	12.30
10 = 11	$11 = 1.0$	11.46	11.30	12.30

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1920phae.proj..697A

Wednesday May 5, 1920

Measures of C.S. of Eros (1914)

Estimates by Argelander's Method of Intervals.

I 16864

		δ	Diff	Cu.				Mean
δ 1 β		δ = 0.0	10.92	10.92	10.92	10.87	10.88	10.~~87~~ 89 ~~02~~ 03 02 01
β 2 α		β = 0.2	10.93	10.94	11.04	11.01	11.03	11.03 01 02 00
α 3 γ		α = 0.3	10.97	10.97	11.27	11.30	11.30	11.29 02 01 01
γ 3 10		γ = 0.6	11.13	11.13	11.73	11.73	11.75	11.74 01 01 01
γ 3 δ		10 = 0.9	11.34	11.28	12.18	12.12	12.30	12.20 02 08 10
10 = δ		δ = 0.9		11.28	12.18	12.33	·	12.26 08 07 ·
δ 2 11		11 = 1.1	11.36	11.40	12.50	12.33	12.30	12.38 12 05 08

Diff.

I 33496

Recalculated to include δ

	δ = 0.0	10.92	10.87	10.87	
δ 2 β	β = 0.2	10.83	10.81	11.01	
β 3 α	α = 0.5	10.77	10.80	11.30	
α 3 γ	γ = 0.8	10.93	10.93	11.73	
γ 2 δ	δ = 1.0		11.12	12.12	
δ 1 10	10 = 1.1	11.14	11.23	12.33	
δ 1 11	11 = 1.1	11.36	11.23	12.33	

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1920phae.proj..697A

Wednesday ~~Dec~~ May 5, 1920

Measures of Eros for Miss Harwood
(15,14)

Exposure	Plate	Eros	(C.S.9) Var.
Lower = Exp. 2	MC6442	11.4	12.0
	MC6867	12.1	
	MC6385	11.5	11.5
Lower = Exp. 2	MC6435	11.2	11.5
" = Exp. 2	MC6380	11.3?	11.5
	~~MC6845~~	~~12.0~~	

Found that C.S. 5 had been marked diffrently on two plates. Stopped to find out which one Miss Harwood had measured. The original measures are the correct ones, since I made them with the star which was meant for 7.

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1920phae.proj...697A

Thursday May 6, 1920

Measures of ϵ_{Pos} (1914) for Miss Harwood

Exposure	Plate	ϵ_{Pos}	(c.s. 9) Var.
	MC6849	12.0	
difficult	MC6366	11.6	12.1
"	MC6093	11.3i	
"	MC6359	11.0	12.0
Upper = Exp. +1	MC6442	11.4	12.4
" = " +1	MC6435	11.6?	12.0
" = " +1	MC6380	11.5i	11.7
	I38961	12.3?	
	I38927	12.1	
Exp. 1	I38869	11.3i	12.2
" 1	I38968	12.3 ~~12.6~~?	
" 1	I38979	12.5	
" +2	I38980	12.9	
" 2	I38868	11.8	12.2
" 1	I38983	12.7	
" 1	I38925	11.9	
" 1	I38962	12.2?	
" 4	I38867	11.7	11.5
" 1	I38926	12.1	
" 1	I38865	11.7	11.6
" 1	I38924	12.1	
" 2	I38863	11.2?	11.7
" 2	I38866	11.7	12.2
" 1	I38862	11.6	11.9

Exposure	Plate	ϵ_{Pos}	(c.s. 5) Var.
" 6	I38868	11.8	12.2
" 8	I38862	11.7	11.9
" 4	I38866	11.2	12.2
" 5	I38979	12.8	
" 3	I38924	11.9	
" 9	I38867	11.4	11.8
" 4	I38962	12.3?	
" 7	I38983	12.6	
" 5	I38963	12.4	
" 4	I38869 ~~I38925~~	11.6	12.3
" 2	I38925	11.9	
" 7	I38865	11.6?	11.7
" 5	I38980	12.5	
" 7	I38863	11.5	11.8
• 3	I38926	12.1	

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1920phae.proj..697A

Friday May 7, 1920

Measures of Eros (1914) for Miss Harwood.

(morning)

Exposure	Plate	Eros	(C.S.9) Var.
" 8	I 38926	12.1?	
" 3	I 38863	11.1?	11.5
" 10	I 38980	12.6	
" 12	I 38865	11.7	11.9
	~~I 38925~~		
" 2	I 38869	11.4	12.3
" 4	I 38963	12.4	
	~~I 38983~~		
" 8	I 38962	12.1	
" 12	I 38867	11.5	11.9
" 5	I 38924	12.0	
" 9	I 38979	12.8	
" 8	I 38866	11.7	12.2
" 6	I 38862	11.5	11.6
" 10	I 38868	11.6	12.1?
Exposure 6	I 38863	11.4	11.8
" 2	I 38962	12.5	
" 3	I 38866	11.2	12.0
" 4	I 38980	12.1	
" 7	I 38867	11.5	11.7
" 2	I 38924	12.2	
" 2	I 38862	11.6?	11.9
" 2	I 38979	12.5	
" 3	I 38868	11.8	12.2
" 2	I 38926	12.0	
" 10	I 38865	11.8	

(afternoon)

Exposure	Plate	Eros	(C.S.9) Var.
" 2	I 38865	11.8	11.7
" 5	I 38926	12.2	
" 9	I 38868	11.6	12.3
" 3	I 38862	11.7	11.9
" 11	I 38867	11.9	12.0
" 5	I 38868	11.4?	12.1
" 6	I 38867	11.6	11.6
" 5	I 38868	11.5?	12.2
" 3	I 38865	11.4?	11.6
" 8	I 38868	11.7	12.3
Exp. 2	Na 31	11.6? distant	11.8
	Na 28	11.8? "	11.3
Exp. 3	Na 48	11.9	12.2
	Na 36	12.2 distant	11.9
	Na 30	11.9? "	12.0
Exp. 2	Na 49	11.8?	
" 3	Na 63	11.8?	
" 1	Na 45	11.6	12.1
Exp. 1 (Covey)	Na 51	11.9	
" 1	Na 53	11.5	
" 2	Na 62	11.7	
" 1 (+ off)	Na 61	11.5	
" 2	Na 55	11.5	
" 1	Na 54	11.6	

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1920phae.proj..697A

Saturday May 8, 1920

Measures of Es.o (1914) for Miss Harwood

Exp. 2	Na 51	11.6
" 5	Na 54	11.9?
" 5	Na 61	11.3
" 4	Na 55	11.8
" 4	Na 48	12.0
" 1	Na 63	11.5
" 2	Na 53	11.5
" 5	Na 49	11.7
" 5	Na 31	11.6?
Exp. 2	Na 61	11.4
" 3	Na 49	11.8
" 2	Na 63	11.3
" 5	Na 55	11.5
" 2	Na 54	11.5
Exp. 4	Na 49	11.9
" 4	Na 61	11.7
" 4	Na 54	11.7

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1920phae.proj..697A

Monday May 24, 1920

Re-Measure of Eros (1914) for Miss Harwood.

Plate	Exp.	p.129
Na 55 - 2	11.4 ✓	11.5
Na 45	11.5 ✓	11.6
(Upper ~~Lower~~) Na 62 - 2	11.6 ✓	11.7
Na 61 - 1	11.7 ✓	11.5
I 38862 - 1	11.6 ✓	11.6
I 38863 - 6	11.7 ✓	11.4
I 38865 - 2	11.6 ✓	11.8
I 38866 - 8	11.7 ✓	11.7
I 38867 - 9	11.4 ✓	11.4
I 38868 - 8	11.8? ✓	11.7
I 38926 - 3	11.9 ✓	12.1
I 38962 - 2	12.0 ✓	12.5
I 38980 - 4	12.8? ✓	
MC 6359	11.3 ✓	11.0
MC 6380 - 2	11.7? ✓	11.5
MC 6849	11.8 ✓	12.0
MC 6867	11.9 ✓	
I 38866 - 3	11.5 ✓	11.2
I 38863 - 2	11.4? ✓	11.2?
I 38862 - 6	11.7 ✓	11.5
I 38866 - 5	11.4 ✓	11.4?
I 38863 - 3	11.2 ✓	11.1?
I 38862 - 2	11.7	11.6?
I 38863 - 7	11.6 ✓	11.5

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1920phae.proj..697A

Tuesday May 25, 1920

Remeasures of Eros (1914)

Na 45	11.6 ✓
I 38865-2	11.8 ✓
I 38962-2	12.3 ✓
I 38862-1	11.6 ✓
I 38863-7	11.7 ✓ ##
I 38867-9	11.5 ✓
I 38868-8	11.7 ✓
I 38926-3	12.1
I 38863-2	11.3 ✓
I 38862-6	11.6 ✓
I 38863-3	11.3 ✓
I 38862-2	11.6 ✓
I 38863-6	11.6 ✓

Pt. Star interferes with im. of Eros.

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1920phae.proj..697A

Tuesday Sept. 28, 1920

Sc. M. Nova Sagittae - measures of p. c.

MC 5809	Pole			Pole	MC 5814		Mean	Diff.
				Sc 1	Sc 2	Mean		
5	4.9 4.7	5.00	5.1	5.1 4.9	5.0	5.05	5.02	1.47
6	5.6 5.4	5.65	5.7	5.8 5.6	5.7	5.75	5.70	1.41
8	7.2 7.0	7.20	7.2	7.1 6.9	7.0	7.05	7.12	1.11
9			7.8		8.2		7.95	0.88
10			7.8		8.6		8.20	0.82
11			8.7		8.8		8.75	0.80
12			8.9		8.9		8.90	0.96
13			9.4		9.8		9.60	0.70

MC 5810	Nova			Cu.	Mag.
a	5.2 5.0	5.20	5.2	1.48	6.68
b	5.7 5.5	5.65	5.6	1.39	7.04
c	6.1 5.9	6.15	6.2	1.28	7.43
d	6.5 6.3	6.40	6.3	1.23	7.63
e	6.9 6.7	6.95	7.0	1.10	8.05
f			7.9	0.92	8.82
f'			8.0	0.90	8.90
f2			8.5	0.82	9.32
f3			8.7	0.80	9.50
g			8.8	0.78	9.58
g'			9.2	0.75	9.95
h			9.8	0.70	10.50

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1920phae.proj..697A

Tuesday Oct. 5, 1920

Nova Sagittarii No. 4.

Estimate by Argelander's Method between diff. in mag.

A 11690

g				Mean	Mean g h		Diff. Constant + 3.42
11.81 m 2 w 1 n	12.57	12.01	12.47	12.24 23 23	12.40	16 17	15.82
11.43 l = t		11.43	11.50	11.43 a ·	11.58	08 09	15.00
11.45 k 4 t 1 m	11.81	11.45	11.71	11.58 13 13	·	·	
11.05 k 3 s 1 l	11.43	11.35	11.33	11.34 01 01	11.34	00 00	14.76
Chart t 11.05 k 1 r 3 l	11.43	11.15	11.13	11.14 01 01	11.10	04 05	14.52
10.65 h 2 q 1 k	11.05	10.85	10.95	10.90 05 05	10.88	02 03	14.30
10.65 h 1 p 2 k	11.05	10.75	10.85	10.80 05 05	10.78	02 03	14.20
u 9.61 f 2 p' 1 h	10.65	9.81	10.55	10.18 37 37	10.13	05 05	13.55
9.22 2 3 p 1 f	9.61	9.52	9.51	9.52 00 01	9.44	08 08	12.86
Glass up. 8.04 C 4 O 1 l	9.22	8.44	9.12	8.78 34 34	8.73	05 05	12.15
8.04 e 2 n 2 l	9.22	8.24	9.02	8.63 39 39	8.58	05 05	12.00

b 1 m 3 c

h

12.57 n = u		12.57		12.57 a ·	
11.43 l 2 t 1 m	11.81	11.63	11.71	11.67 04 04	
11.05 k 3 s 1 l	11.43	11.35	11.33	11.34 01 01	
11.05 k = r		11.05		11.05 a ·	
10.65 h 2 q 2 k	11.05	10.85	10.85	10.85 00 00	
10.65 h 1 p 2 3 k	11.05	10.75	10.75	10.75 00 00	
9.61 f 1 p' 2 l	10.65	9.71	10.45	10.08 37 37	
9.22 l 1 p 2 f	9.61	9.32	9.41	9.36 04 05	
8.04 C 3 O 2 l	9.22	8.34	9.02	8.68 34 34	
8.04 C 1 n 3 l	9.22	8.14	8.92	8.53 39 39	

m 1 b

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1920phae.proj..697A

Wednesday Oct. 6, 1920

~~Tuesday Oct. 5, 1920~~

Sc. AH$_3$ Nova Sagittarii #4

A11690 Measures of f. s. & diffs. inn. to obtain mag. for f. s.

	Sc. 1	Sc. 2	Cu. mag. +3.42	g Sc 1	g Sc 2	h Sc 1	h Sc 2	Mean	Diff.
c				5.2	5.20 5.2	5.4	5.50 5.6	5.35	2.69
d				5.9	5.90 5.9	6.0	5.95 5.9	5.92	2.71
e				6.2	6.10 6.0	6.5	6.45 6.6	6.28	2.94
f				6.6	6.50 6.4	6.7	6.65 6.6	6.58	3.03
g				6.8	6.80 6.8	7.0	7.00 7.0	6.90	3.23
h				6.8	6.75 6.7	6.8	6.85 6.9	6.80	3.85 ?
k					7.6		7.6	7.60	3.45
l					~~8.6~~ 7.9		~~7.9~~ 7.9	7.90	3.53
m					8.3 8.8		8.6	8.45	3.36
n					9.2		9.0	9.10	3.47
o	5.9	5.85	5.8	2.78	8.63			12.05	
p	6.1	6.10	6.1	2.86	8.96			12.38	
p'	6.7	6.70	6.7	3.10	9.80			13.22	
p^2	6.9	6.90	6.9	3.19	10.09			13.51	
q	~~7.5~~		7.6	3.43	10.03			14.45	
r			7.8	3.47	11.27			14.69	
s	~~7.0~~		7.9	3.48	11.38			14.80	
t			8.7	3.46	12.16			15.58	
u			9.0	3.44	12.44			15.86	

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1920phae.proj..697A

Friday Oct. 8, 1920

Nova Sagittarii #4

Estimates by Angelander-method of diffr. im + f.s.

worth im. (the faintest)

A1686 (Double im.)

g				Mean			* Mean g h		
8.63	d 2 o 1 e	9.22	8.83	9.12	8.98	15	14	8.	68 30 30
9.61	f 1 p 3 g	10.13	9.71	9.83	9.77	06	06	9.	38 39 40
10.13	g 1 p' 2 k	11.05	10.23	10.85	10.54	31	31	10.	08 46 47
11.05	$k = p^2$		11.05	·	11.05	≅	·	10.	98 07 08
11.05	k 1 q 2 l	11.43	11.15	11.23	11.19	04	04	11.	16 03 02
11.05	k 2 r 1 l	11.43	11.25	11.33	11.29	04	04	11.	29 00 00
11.43	l 1 s 2 m	11.81	11.53	11.61	11.57	04	04	11.	62 05 05

h

8.04	C 2 o 1 d	8.63	8.24	8.53	8.38	14	15
8.63	d 2 p 1 e	9.22	8.83	9.12	8.98	15	14
9.61	f = p'		9.61	·	9.61	a	·
10.65	h 2 p^2 1 k	11.05	10.85	10.95	10.90	05	05
11.05	k 1 q $\frac{3}{4}$ l	11.43	11.15	11.13	11.14	01	01
11.05	k 2 r 1 l	11.43	11.25	11.33	11.29	04	04
11.43	l 2 s 1 m	11.81	11.63	11.71	11.67	04	04

Difficult to est. because the brighter of the 2 image influences the est. of degree of brightness of the fainter. d is distant from stars with which it must be used for comparison.

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1920phae.proj...697A

Friday Oct. 8, 1920

Nova Sagittarii #4 -

Same as p. 136

A11686 Southern (The Nights).

		g			Mean.		Mean g	h		Mean n.s.		
8.04	c = o = d	8.63	8.24	8.53	8.38	14	15	8.50	12	13	8.59	09 09
9.22	e = p		9.22	·	9.22	a	·	9.32	10	10	9.35	03 03
9.22	e = p' = f	9.61	9.52	9.51	9.52	00	01	9.96	44	43	10.02	06 06
10.13	g = p' = h	10.65	10.23	10.55	10.39	16	16	10.62	23	23	10.80	18 18
10.65	h = g = k	11.05	10.85	10.85	10.85	00	00	10.95	10	10	11.06	10 11
11.05	k = r = l	11.43	11.25	11.33	11.29	04	04	11.29	00	00	11.29	00 00
11.43	l = s = m	11.81	11.53	11.71	11.62	09	09	11.64	02	03	11.63	01 01
	t = m	~~11.81~~ 11.5	·	11.81	11.81	·	a	11.81	00	00	11.81	· a
	u n.s.											

*p. 136

+3.44 Diffr. Constant

		h					
8.63	d = o		8.63	·	8.63	a	·	12.01
9.22	e = p = f	9.61	9.42	9.41	9.42	00	01	12.77
10.13	g = p' = h	10.65	10.23	10.55	10.39	16	16	13.44
10.65	h = p = k	11.05	10.85	10.85	10.85	00	00	14.22
11.05	k = g		11.05	·	11.05	a	·	14.48
11.05	k = r = l	11.43	11.25	11.33	11.29	04	04	14.71
11.43	l = s = m	11.81	11.63	11.71	11.67	04	04	15.05
	t = m	11.81	·	11.81	11.81	·	a	15.23

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1920phae.proj..697A

Friday Oct. 8, 1920

Sc. AH_3 Nova Sagittarii #4
Measures for faint Stars.

A 10392	Se. 1.	Se. 2
k	1.2	
l	2.0	
m	2.3	
n	4.2	
o	4.4	
f	5.1	
f'	6.4	6.4
f''	6.8	6.9
q		7.7
r		7.9
s		8.1
t		8.8
u		n.e.
f^0	5.8	~~5.1~~
m'	3.5	

Image did not compare well with Scale—
Use Measure on A 10457

1920phae.proj...697A

Friday Oct. 8, 1920

Nova Sagittarii #4

Means for faint stars

D 10457	Sc. 1	Sc. 2	Diff.
k	1.5		9.55
l	2.1		9.33
m	2.6		9.21
n	3.8		8.77
o	4.0		8.75
p	4.7		8.44
p'	5.5	5.45	5.4
p^2	6.0	5.95	5.9
q	6.6	6.60	6.6
r	6.8	6.80	6.8
s			7.4
t			7.8
u			8.4

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1920phae.proj..697A

Friday Oct. 29, 1920

Ref. Plate B50009 — Nova Sagittarii No. 4.

A 11690

C. S.	mag.	Limiting mag. given for plates. Limit 12.0	Limit 13.0	Limit 10.0	Nova not seen. Limit 14.0	offedge
a	7.0	B 52953 ✓	B 45393 ✓	B 45031 ✓	B 46779 ✓	B 44859 ✓
b	7.5	B 53003 ✓	B 46594 ✓	B 43135 ✓	B 44660 ✓	" 44929 ✓
c	8.0	B 42669 ✓	B 44621 ✓		B 44676 ✓	B 43711 t.g.
d	8.6		B 43691 ✓		B 42308 ✓	B 44670 ✓
e	9.2		B 36791 ✓		B 42653 ✓	B 44659 ✓
f	9.6		B 37537 ✓		B 39051 ✓	B 44731 ✓
g	10.1		B 40064 ✓		B 30347 ✓	B 44732 ✓
h	10.6		B 29255 ✓		B 32649 ✓	B 35782 ✓
k	11.0					B 28656 ✓
l	11.4					B 30593 ✓
m	11.8					B 31471 ✓
n	12.4					B 33487 ✓
o	12.8					B 25823 ✓
p	13.2					B 26256 ✓
p'	13.7					B 7874 ✓ pm
p²	14.3					B 23412 ✓
q	14.7					B 23211 ✓
r	14.9 ~~15.2~~					B 45010 ✓
s	15.2					B 35781 ✓
t	15.6					B 38649 ✓
u	16.1					B 30594 ✓
						B 31862 ✓
						B 25506 ✓
						B 22022 ✓
						B 20502 ✓
						B 20465 ✓
						B 17443 ✓

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and Monday Nov. 1, 1920
Tuesday Nov. 2, 1920
Nova Sagittarii No. 4
Nova not seen

limit m. 11.0	limiting m. 12.0	limit m. 13.0	limit 14.0	limit m 15.0
B 44905 e	B 8713	B 26432	B 33921	B 34004
B 51036 e	B 17440	B 8712	B 34623	B 44537
B 48183 e	B 20466 e	B 21077	B 25123	B 26472
B 48174 e	B 53038	B 52954	B 27155	B 26461
B 33486 e	B 44622	B 53050	B 19114	B 9784
B 23696 e	B 44792 e	B 43796	B 23495	B 13748
B 24009 e	B 43797	B 9279	B 3886	B 21703 g
B 9280	B 22748	B 16036	B 12117	B 40159
B 42670 e	B 3754	B 32049 e	B 33759 e	B 37314
B 43744 e	B 3993	B 32032 e sc	B 23172 e	B 33657
B 3992 p.	B 9210	B 38984	B 23745 e g	
B 32354	B 13345	B 43123 c	B 30513 e	
B 46950	B 43354 e	B 50177 e	B 43509	off edge
B 47048	B 36432 e	B 50473	B 4124	B 44876
B 47081 e	B 44733 e		B 50963	B 41380
	B 44724 e			B 16496
	B 31470 e			B 19085
< 12.0	B 30512 e			B 15741
B 15834 e	B 29857 e			B 16099
B 38824	B 25824 e			B 16415
B 50394 e	B 21709 e			B 16550
B 50471 e	B 32544 e			B 16883
B 50962	B 44108			B 35333 t. p.
	B 17093			B 16156
	B 16499 e			B 16576
	B 4136			B 23695
	B 9853			B 25345

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Wednesday Nov. 3, 1920

Nova Sagittarii No. 4

Nova not seen

Limit m. 11.0

B 51438 e
B 51499 e
B 51522 e
B 51558 e
B 50475 e
B 51015 e
B 51039 e
B 51090 e
B 51110 e
B 51150
B 51165
B 51187 e
B 51210 e
B 44946
B 6135 e
B 7694 e
B 7695
B 19575 e
I 36890 p
I 36885 p
I 36895 p
I 36898
I 36900

Limit m. 12.0

B 5245
B 51473
B 51633
B 47710
B 25344 e
B 22478 e
B 25387 e

Limit m. 13.0

B 51472 e
B 51535 e
B 47757
B 41365
B 13536 e
B 13936
B 26116
B 26387
B 53051
B 50123
B 28621
B 31948 e
B 32353 e
~~I~~ 33216
I 33214

Limit m. 14.0

B 44970
B 45394
B 31576
B 40363
B 9854
B 20451
B 24376
B 26491
B 56[illegible]9
Mf 4578

Limit m. 15.0

B 44677
B 44713
B 44722
B 44793
B 13728
B 17651
B 21918
B 23203
B 25197
B 26483
B 32080
B 23787

off edge

B 4395
~~B 51438~~
B 44723
B 36433
B 19026
B 18575
B 38823
I 36899 t. p.
I 24899 r
I 25099

B 29524 corner missing on which region appears.

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Thursday Nov. 4, 1920

Nova Sagittarii No. 4

A 10466 ✓	< 16.1	Broken up,	
A 11690 ✓	< 16.1	(4393) B 51451 ✓	< 11.4
A 11686 ✓	< 16.1	(4147) B 45385 ✓	< 13.7
A 10473 ✓	< 15.6	(4695) B 14045 ✓	< 13.7
A 10480 ✓	< 15.6	(4727) B 40259 ✓	< 13.2
A 10485 ✓	< 16.1	(3338) B 3[illegible]08 ✓	off edge
A 10372 ✓	< 15.6	(3567) B 43769 ✓	" "
A 10365 ✓	< 16.1	(2246) B 30595 ✓	< 13.7
A 4821 ✓	< 14.7	(2129) B 28657 ✓	off edge
A 10437 ✓	< 15.2	(983) B 21946 ✓	" "
A 10443 ✓	< 15.6	(984) B 21710 ✓	< 13.7 p
A 3358 ✓	< 15.2	(411) B 4160 ✓	< 12.5
A 2798 ✓	< 14.7	(2230) B 27666 ✓	off edge
A 2735 ✓	< 16.1		
A 2605 ✓	< 16.1	B 27750 ✓	12.1
A 10457 ✓	< 16.1	B 27438 ✓	10.7 e
A 10492 ✓	< 16.1	B 27408 ✓	11.6 ✓ (nova so near edge that c.s. as fr. as it
A ~~4820~~ 84 ✓	< 16.1	did not show on pl. ∴ n. compared	
A 10392 ✓	< 15.6	with a star near by + this	
A 8386 ✓	< 16.1	star compared with c.s. on 27438)	
A 10421 ✓	< 14.7		
A 10416 ✓	< 15.6		
A 10404 ✓	< 16.1	AM 808 ✓	11.1
A 10510 ✓	< 15.6	" 817 ✓	11.0
A 10512 ✓	< 16.1	AC 1501 ✓	t.p.
		AM 882 ✓	< 10.6
		" 907 ✓	11.4
		AC 1618 ✓	< 9.2
		AC 1840 ✓	t. p.

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Friday Nov. 5, 1920

Nova Sagittarii No. 4

Direct Estimates.

18-30		
19-15		
17-15	AM 1043 ✓	<12.5
19-45	AM 1028 ✓	<12.5
17-45	" 959 ✓	<11.8
	AC 1462 ✓	<10.6
	AM 959 ✓	<11.8
	AC 1527 ✓	<9.6
	AM 868 ✓	<11.4
	" 875 ✓	<11.4
	" 888 ✓	<11.4
	" 835 ✓	11.2
	" 856 ✓	too diffic multiple image
	" 854 ✓	" " "
	" 802 ✓	10.9
	" 841 ✓	11.4
	" 855 ✓	10.4 ✓ diffic. images overlap.
	" 987 ✓	<11.4
	" 827 ✓	11.5
	" 879 ✓	11.6
	" 960 ✓	<11.8
	" 988 ✓	<11.4
	" 1002 ✓	<11.4
	AC 1458 ✓	<10.6
	" 1580 ✓	<9.2
	AM 833 ✓	11.2

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Monday Nov. 8, 1920

Examination of plates for suspected Object near R Pegasi

AC 17072 Dec. 4, 1915 was used to superpose.

0.0 ±0.0 AC 22964 Oct. 9, 1920 shows S Pegasi bright but no object on plate ~~that~~ is not on the other. Region appears on edge of plate

22 +15 AC 22957 Oct. 8, 1920 shows no object which is not on AC 17072. This plate shows fainter stars than AC 22964

The following AI plates were examined but the region is near the edge and only bright stars show.

21 ± 0.0 1 ± 0.0

Oct. 9, 20	AI 19974	AI 20009	Oct. 21, 20
" 7, "	" 19964	" 19988	" 13, "
" 3, "	" 19952	" 19944	" 1, "
" 13, "	" 19986	" 19954	" 3, "
" 1, "	" 19942	" 19976	" 9, "
		" 19966	" 7, "

23 ± 0.0

Oct. 22, 20 AI 20017

The Variable R Pegasi is not visible on AC 22964 or AC 22957

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Friday Nov. 26, 1920

S.C.M. Mag. for Comparison Stars of Nova Cygni No. 3

I 30768 Aug. 24, 1903 P.C. constant 5.0

	Sc 1	Sc 2	Diff.	P.C. Cu.	mag. Cu + 5.0	P.C. Sc. 2	Diff. Cu.
a	off plate						
b	B						5.4 - 1.40
c	B						5.7 - 1.30
d	B						5.9 - 0.98
e	B						6.0 - 0.94
f	B						6.2 - 1.32
g	2.1						7.4 - 1.26
h	1.6						~~7.7~~ 7.0 - 1.10
k	2.5						7.7 - 1.43
l	2.8						7.7 - 1.53
m	2.8						7.9 - 1.09
n	edge						8.5 - 1.32
o	3.4						8.7 - 0.94
p	3.7						8.9 - 0.77
q	3.9						9.1 - 0.64
r	double						
s	4.8 4.6 4.75	4.70	4.6				9.6 - 0.58
t (edge)	4.8 5.1	4.65	4.6				9.7 - 0.42
u	4.9 5.1	5.15	5.2				
w	4.9 5.2	5.10	5.1				
x	5.0 5.6	5.15	5.1				
y	5.4 5.6	5.65	5.7	-1.26	9 4.39	4.51	10.16
z	5.4 6.0	5.60	5.6	4.22	-1.25 9.35	4.52	10.12
α	5.8 6.0	6.00	6.0	4.64	-1.29 9.71	4.48	10.48
β	5.8 6.4	5.90	5.8	4.42	-1.28 9.62	4.50	10.40
γ	6.2 6.9	6.40	6.4	4.60	-1.30 10.10	4.44	10.84
δ	6.7	6.80	6.7	4.44	-1.30 10.50	4.40	11.20

Rel. Cu. mag.

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Friday Nov. 26, 1920

Comparison Stars of Nova Cygni No. 3

I 30768

	Sc. 1	Sc. 2	Diff.	P.C. mag Cu.	Rel. Cu + 5.0	Comp.	mag.
	7.2						
ε	7.0	7.20	7.2	4.38	-1.30	10.90	4.35	11.55
3			7.6	3.94	-1.27	11.33	4.30	11.90
η			7.8	4.21	-1.25	11.55	4.26	12.06
θ			7.9	4.44	-1.24	11.66	4.25	12.15
κ			8.6	4.26	-1.00	12.60	4.28	12.88
λ			8.8	4.61	-0.90	12.90	4.30	13.10
~~μ~~			9.8	4.15	-0.42	14.38	4.45	14.25
ν			9.7		-0.45	14.25	4.43	14.13
ξ			9.8		-0.42	14.38	4.45	14.25
π			10.0		-0.35	14.65	4.48	14.48
ρ			10.0		-0.35	14.65	4.48	14.48
σ								
τ								
φ								

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Friday, Dec. 3, 1920

Dc. M. Mag.' for Comp. Stars of Nova Cygni No. 3

I 22771 Apr. 23, 1899 P.C. Constant 5.0

	Dc. 1	Dc. 2	Diff.	P.C. mag. Cu	Cu + 5.0	P.C. Dc. 2	Diff.
a							
edge b						4.8	-0.80
" c						5.4	-1.00
" d						5.7	-0.78
" e						5.7	-0.64
f						6.0	-1.12
g						7.6	-1.44
h						7.0	-1.10
k						7.4	-1.13
difficult p.c. l	near other star					7.4 5	-1.33
m						8.0	-1.19
n						8.2	-1.02
o						8.6	-0.74
p						8.7	-0.57
defective spot q	in film in region of p.c.					8.8?	-0.34
dbl. r						~~9.4~~	.
s						9.2	-0.18
t						9.8	-0.52
u	film defective in region of p.c.						
w							
x							
y						Rel. Cu	Mag.
q	5.5 5.3	5.55	5.6	4 4.27	-1.00	9.55	4.36 9.91
l	6.7 6.5	6.65	6.6	3.99	-1.82 2 10	8.43	4.12 10.77
p	6.0 5.8	5.95	5.9	4.37	-1.08	9.87	4.28 10.23
r	6.9 6.7	6.85	6.8	4.15	-1.25 10	8.60	4.07 10.92
s	7.2 7.0	7.15	7.1	4.09	-1.29 10	8.86	3.98 11.13

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Friday Dec. 3, 1920

Nova Cygni No 3. (Cont).

Se. M.

I 22771

	Sc 1	Sc 2	Diff.	P.C. Mag Rel. Cu.	Cu + 3.0	Cu. Mag.
E		7.8	3.78	-1.16	11.64	3.80	11.60
3		7.7	3.84	-1.20	11.50	3.83	11.53
η		8.4	3.61	-0.86	12.54	3.68	12.08
θ		8.6	3.74	-0.74	12.86	3.76	12.36
K		8.8	4.06	-0.60	13.20	4.04	12.84
λ		9.0	4.41	-0.46	13.54	4.35	13.35
μ		9.8	(4.15)	+.08	14.88		
V		9.6	(4.47)	-.09	14.51		
3		10.0		+.10	15.10		
π		10.0		+.10	15.10		
ρ		9.9		+.06	14.96		
σ		10.1		+.13	15.23		
~~T~~		n.s					
φ		"					

On this plate the p.c. are sharper images than the pt. stars - ∴ cannot rely too much on the comparison of the two. The p.c. compare better with Scale.

Found R Cygni when measuring this plate

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Friday Dec. 3, 1920

Mag. for comp. stars of Nova Cygni No. 3.
Comparison by Angelopoulos method of ft. stars + p.C.

P.C. constant 5.0

I 33806 Poor images but ft. stars + p.C. resemble
Jan. 19, 1906 each other. Edge of plate.

					Mean + 5.0	
9.58	u 1 σ		~~11.68~~	9.68	9.68 · a =	14.68
9.58	u 2 ρ			9.78	9.78 · a =	14.78
9.58	u = π			9.58	9.58 · a =	14.58
9.58	u = ξ			9.58	9.58 · a =	14.58
9.28	t 3 ν 1 u	9.58	9.58	9.48	9.53 05 05	14.53
9.28	t 3 μ 1 u	9.58	9.58	9.48	9.53 05 05	14.53
8.46	q 3 λ 1 t	9.28	8.76	9.18	8.97 21 21	13.97
8.13	p 2 κ 1 q	8.46	8.33	8.36	8.34 01 02	13.34
6.81	~~π 4 θ 20~~	7.86	7.31	7.76	7.54 23 22	12.54
6.81	m 4 η 20	7.86	7.21	7.66	7.44 23 22	12.44

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Friday Dec. 3, 1920

Sc Att3 Mag. for ft. comp stars of Nova Cygni No. 3
B1646

	Sc.1	Sc2	Diff.	Cu.	mag.	Mean 9a: 214 Diff.	Cu.	Mag.
ζ	1.6		8.22	8.33	9.93	8.18	8.38	9.98
α	~~1.8~~ 2.0		8.64	8.54	10.54	8.50	8.40	10.40
β	1.8		8.52	8.47	10.27	8.38	8.40	10.20
γ	2.5		8.50	8.50	11.00	8.31	8.36	10.86
δ	3.~~4~~		7.84	8.06	11.46	7.68	8.02	11.42
ε	3.8		7.78	7.85	11.65	7.70	7.82	11.62
ζ	3.2		8.34	8.17	11.37	8.35	8.08	11.28
η	4.5		7.51	7.51	12.01	7.54	7.50	12.00
θ	5.2		7.14	7.18	12.38	7.10	7.17	12.37
κ	6.0	6.00 6.0	6.86	6.83	12.83	6.87	6.78	12.78
λ	7.0	7.10 7.2	6.31	6.40	13.50	6.22	6.45	13.55
μ		7.6	6.35?	6.26	13.86	6.62	6.57	14.17
ν		7.7	6.57?	6.22	13.92	6.60	6.65	14.35
ξ		7.8		6.19	13.99	6.52	6.73	14.53
π		7.8		6.19	13.99	6.94	6.73	14.53
ρ		~~8.4~~ 7.9		6.16	14.06	6.80	6.83	14.73
σ		7.9		6.16	14.06	7.33	6.83	14.73
τ		~~8.1~~ 7.8		6.04	14.84	7.47[e]	6.86	16.27[e] 15.66
φ		9.0		6.02	14.02	7.62[e]	6.92	16.62[e] 15.92

Difficult to measure because images on plate are more elongated than those on scale.

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Friday Dec. 3, 1920

Mag. for yr. comp stars of Nova Cygni No. 3
Comparison between stars by Argelander's method.

D 1646

φ 2 T	0.0	ζ	0.0
T 1 σ	0.2	α	0.3
σ 1 ε	0.3	β	0.2
ρ 2 π	0.4	γ	0.5
π 1 ξ	0.6	δ	0.8
ξ 3 ν	0.7	ε	1.1 ~~0.8~~
ν 1 μ	1.0	ζ	0.8
μ 2 λ	1.1	η	1.3
λ 4 κ	1.3	θ	1.5
κ 3 θ	1.7	κ	1.8
θ 2 η	2.0	λ	2.2
η 5 ~~4~~ 3.	2.2.	μ	2.4
ε 3 ζ.	ζ 2.7	ν	2.5
δ = ζ	ε 2.4 ~~3.0~~	ξ	2.8
δ 3 γ	δ 2.7.	π	2.9
γ 3 β	3.0	ρ	3.1
α 1 β	β 3.3	σ	3.2
β 2 Z 0.0	~~781~~	τ	3.3
	α 3.2	φ	3.5
	Z 3.5		

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Friday Dec. 3, 1920

F

Mag. for pt. comp. stars of Nova Cygni No. 3
Argelander's method of estimating steps bet. stars.
A1646 second set of estimates independent of those on p 152.

		p-152			Diff.	Cu.	Cu.	mag.	Mean p. 24 Diff.	Cu.	mag.
2 4 α	ζ	0.0	0.0	0.0	9.82	9.89	9.89	9.89	9.78		
β 1 α	α	0.4	0.3	0.35	10.29	10.12	10.16	10.51	10.15		
β 3 γ	β	0.3	0.2	0.25	10.07	10.06	10.10	10.35	9.93		
γ 4 δ	γ	0.6	0.5	0.55	10.45	10.26	10.30	10.85	10.26		
δ 2 ε	δ	1.0	0.8	0.90	10.34	10.44	10.50	11.40	10.18	10.22	11.12
ζ 3 ε	ε	1.2	1.1	1.15	10.43	10.62	10.66	11.80	10.35	10.45	11.70
ζ 5 η	ζ	0.9 ~~1.5~~	0.8	0.85	10.69	10.44	10.47	11.32	10.70	10.16	11.01
η 1 θ	η	1.4 ~~2.0~~	1.3	1.35	10.66	10.73	10.76	12.11	10.69	10.65	12.00
θ 3 κ	θ	1.5 ~~2.1~~	1.5	1.50	10.84	10.86	10.86	12.36	10.80	10.80	12.30
κ 3 λ	κ	1.8 ~~2.4~~	1.8	1.80	11.06	11.06	11.06	12.86	11.07	11.06	12.86
λ 3 μ	λ	2.1 ~~2.7~~	2.2	2.15	11.26	11.35	11.31	13.46	11.17	11.37	13.52
ν 1 μ	μ	2.4 ~~3.0~~	2.4	2.40	11.55?	11.49	11.49	13.89	11.82	11.56	13.96
ν 2 ξ	ν	2.5 ~~3.1~~	2.5	2.50		11.57	11.57	14.07	11.80	11.64	14.14
ξ = π	ξ	2.7 ~~3.3~~	2.8	2.75		11.76	11.73	14.48	11.57	11.80	14.65
π 1 ρ	π	2.7 ~~3.3~~	2.9	2.80		11.84	11.77	14.57	11.94	11.82	14.62
ρ 1 σ	ρ	2.8 ~~3.4~~	3.1	2.95		11.98	11.87	14.82	11.75	11.92	14.87
σ 1 τ	σ	2.9 ~~3.5~~	3.2	3.05			11.95	16.00	12.18	11.97	16.02
τ 2 φ	τ	3.0 ~~3.6~~	3.3	3.15			12.02	15.17		12.03[e]	15.18[e]
	φ	3.2 ~~3.8~~	3.5	3.35			12.15	15.60		12.12[e]	15.47[e]

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Wednesday Dec. 15, 1920

Direct Estimates of Nova Cygni No. 3 ~~cont~~

Comp stars	mag.					
a	3.0	AC 22932	8.0			
b	4.0	" 22891	6.5			
c	4.4	" 22860	4.4			
f	4.9	" 22917	7.9			
e	5.1	" 22987	9.3			
h	5.9	" 23088	9.5			
g	6.1	" 23091	9.6			
k	6.3	" 23111	9.5			
m	6.8	" 22958	8.8			
n	7.2	" 23092	9.6			
o	7.9	" 22837	3.6			
p	8.1	" 22975	9.2			
q	8.5	" 22945	8.7			
r	9.0	" 23035	9.7			
t	9.3	" 22920	8.0	7.8	2 exp. of 2 m. each	prec. exp. first *
u	9.6	" 22916	7.6	7.8	" " " "	" " "
y	9.8	" 22902	7.0	7.2	" " " "	" " "
β	10.2	" 22897	6.5	6.6	" " " "	" " "
α	10.5	" 22901	6.6	6.7	" " " "	" " "
γ	10.8	" 22815	3.0			
δ	11.1	" 22867	5.9		ninth image exp. 1	
ε	11.6					
η	12.0					
θ	12.3					
κ	12.8					
λ	13.4					
μ	14.2					

* The exposure on the left hand side, film up, was measured first. The first exposure is the following image.

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1920phae.proj..007A

Thursday Dec. 16, 1920

Direct Estimates of Nova Cygni No. 3 (cont.)

Com.	Mag.			
ν	14.3	AC 22823	2,3	the nova is brighter than comp. star "a" so this estimate is not very accurate. α Cygni (near edge of plate) has a comp. pg. mag. of 1.4. Estimated as nearly as possible between α and a but it is difficult.
ξ	14.4			
π	14.6			
ρ	14.8			
σ	14.9			
τ	15.2	AC 22824	2,9	mult. im
φ	15.5	AC 22827	2.8	" "
		AC 22830	3.4	mult im
		" 22831	3,2	" "
		" 22818	3.7	stars a + b with which the nova had to be compared are both much nearer the edge than the nova. Cannot be very sure of this estimate
		AC 22817	3.6	Same remark as for pl. AC 22818
		AC 22832	2.7	mult. im
		" 22863	4.8	" "
		" 22858	4.1	" "
		" 22861	4.7	" "
		" 22852	4.1	" "
		" 22843	4.0	" "
		" 22881	6.0	" "
		" 22885	6.2	" "
		" 22872	5.9	" "
		" 22870	5.9	" "

~~Do~~ The multiple image plates were measured by comparing the last exposures of the nova + comparison stars, i.e, the left hand image, film up.

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1920phae.proj..697A

Friday Dec. 17, 1920

Direct Estimates of Nova Cygni No. 3 (cont.)

AC 22889	6.2	mult. im. exp. 1	
" 22908	7.3	" " " 1	
" 22912	7.4	" " " 1	
" 22893	6.2	" " " 1	
" 22877	6.1	" " " 1	
" 22873	5.9	" " " 1	
" 22836	3.8	" " " 1	
" 22905	7.1	" " " 1	
" 22951	8.8	" " " 1	diff: nova pt.
" 22947	8.6	" " " 1	
" 22946	8.7	" " " 1	
" 22942	8.5	" " " 1	
" 22939	8.6	" " " 1	
~~" 23001~~	~~c9.3~~	~~10m exp. fol. nova N.S.~~	
" 23001	9.3	nova just visible	

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1920phae.proj...697A

Monday Dec. 20, 1920

Direct Estimates of Nova Cygni No. 3 (cont.)

AC 23037	9.6 v	
" 22925	8.0 v	mult. im.
" 22983	8.9 v	
" 23110	9.6 v	
" 23064	9.6 v	
" 22935	8.6.7 v	Nova very ft. if seen at all - q is faintest C. S. seen - cannot be sure of estimate. 2 exp.
AC 22930	8.3 v	2 exp. meas exp. 1
" 22929	8.0 v	" " " " 1
" 22927	7.7 v	
" 22822	3.0 v	Difficult - C. S. 2 far away from nova that estimate is very uncertain.
AC 23010	9.5 v	
" 23013	9.5 v	
" 23066	9.7 v	
" 23121	9.8 v	
MC 16881	5.9 v	Difficult C. S. too distant 2 m. exp.
" 16886	5.9 v	" " " " " "
MD. 16900	6.4 v	
" 16907	6.6 v	
" 16908	7.2 v	Doubtful
" 16913	7.8 v	
" 16914	7.7 v	
" 16920	8.0 v	
" 16922	8.3 v	

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1920phae.proj..697A

Monday Dec. 20, 1920

Direct Estimates of Nova Cygni No. 3 (cont.)

MD	16975	9.4v
"	16977	9.5v
"	16974	9.4v
"	16976	9.3v
"	16978	8.6v
MC	16889	6.1v
MD	16987	9.7v
"	16994	9.8v
"	17000	9.6v
"	17001	9.5v
"	17020	9.4v
"	16996	9.7v
"	17026	9.5v
"	17027	9.5v
AI	19875	3.4v

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1920phae.proj...697A

Friday Jan. 7, 1921

~~Thursday Jan. 5, 1921~~

Direct Estimates of Nova Cygni No. 3 (cont)

DI	19868	4.2 v
"	19951	8.3 v
"	20018	9.6 v
"	20033	9.5 v
"	20029	v.p. v
"	20028	v.p. v
"	19866	4.2? v difficult. edge of pl.
"	19961	8.6 v " " " " "
"	19959	8.3 v
"	19985	9.1 v
"	19982	<8.1 v edge
"	19949	7.7? v difficult edge
"	20007	9.5 v
"	19996	<6.8 v
"	19995	9.4 v
"	19971	<8.1
"	19973	<8.1 v
"	19918	6.3 v
"	19908	5.7 v
"	19911	5.7 v
"	19871	3.4 v difficult - "a" nearer centre than Nova
"	19877	3.5 v
"	19910	5.9 v
"	19895	4.6 v
"	19897	4.6 v
"	19889	4.5 v

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1920phae.proj..697A

Monday Jan. 10, 1921

Direct Estimates of Nova Cygni No. 3 (cont.)

AI	19882	3.5 v
"	20014	<8.1 v edge
"	20016	9.1 v
"	20048	9.6 ? very faint
"	20045	9.6 v
"	20038	<8.5 v
"	20036	9.6 v
"	20052	9.7 v
AC	23014	9.5 v
"	23000	9.3 v
"	23011	9.4 v
"	23040	trailed v
"	23169	9.6 v
"	23229	9.7 v

Jan. 6, 1921

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1920phae.proj...697A

Wednesday Jan. 12, 1921

Brief Estimates of Nova Cygni No. 3 cont.

21, 1, 8	MB 17072	9.7	difficult	m 873 <13.4
	AC 22805	<9.7		" 866 <12.3
	" 22804	<9.7		" 1003 ~~ffidge~~
	" 22916	7.7	Neb. 1	I 31689 <11.6
	AI 20072	9.7		I 31694 <12.0
	" 20060	9.7		
	" 20062	<9.3		
	" 20113	9.8		
	" 20117	9.7		
20, 12, 23	" 20167	<8.1		
	" 20088	t.p.		
	" 20082	<9.3		
	" 20081	9.6?	Limit of visibility	
20, 12, 11	" 20122	9.7		
20, 12, 15	" 20134	9.6	" " "	
	" 20096	9.5		
20, 12, 20	" 20153	<9.3		
20, 12, 21	" 20165	<9.3		
20, 12, 20	" 20164	t.p.		
20, 12, 29	" 20196	<8.5		
	I 40017	nova to be, to be estimated - nothing on plate with which to compare it.		
	MC 16890	5.7	difficult	
	" 16888	5.7	"	
	" 16883	5.6	"	
	" 16884	5.7	"	

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1920phae.proj..697A

Wednesday Jan. 12, 1921

Examination of plates for R S Centauri + R Y Carinae to answer question of J. M. Baldwin Communication

111661 R S Centauri. Slightly to the right of this star is another variable R Y Carinae.

∴ ← R Y Carinae.
↑
R S Cent.

Examined B plates of long exposure to find if R Y Carinae varied.
On B 25185 Apr. 30, 1900, exposure 62 the star R Y Carinae is at the limit of visibility while on B 27574 June 6, 1901, exposure 61 the star is brighter than one below it that is very plainly seen on the first plate. This identification had been made previously by Miss Cannon for she had written on the two plates. R S Centauri is visible on both plates, so no danger of confusion. Evidently the star on Innes' chart is correct.
The star appears near the edge of these 2 B plates.

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1920phae.proj...697A

Thursday Jan. 13, 1921

Direct Estimates of Nova Cygni No. 3

I 8850	ffe ✓
" 8824	" " ✓
" 8773	t p ✓
" 2287	ffe ✓
" 3842	t p ✓
" 5303	ffe ✓
" 6535	t p ✓
" 6760	<11.6 ✓
" 6786	ffe ✓
" 6847	" " ✓
" 7168	" ✓
" 7278	" ✓
" 7754	" ✓
" 7814	" ✓
" 8735	" ✓
" 29760	<13.4 ✓
" 30952	<12.8 ✓
" 31683	<13.8 ✓
" 31684	14.2 ~~<13.4~~ ✓
" 31685	14.2 ~~<13.4~~ ✓
" 31686	14.2 ~~<13.4~~ ✓
" 31679	13.4 ~~<13.0~~ ✓
" 31680	13.4 ~~<13.8~~ ✓

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1920phae.proj..697A

Friday Jan. 14, 1921

Direct Estimates of Nova Cygni No. 3 (cont)

I	31673	~~<13.4~~ <14.2 ✓	I	11381	<14.2 ✓
"	31676	<14.3 ✓	"	11472	off ✓
"	31696	<9.8 ✓	"	11585	" ✓
"	35578	<11.0 ✓	"	11835	" ✓
"	35582	<11.6 ✓	"	13244	t.p. ✓
"	36251	<12.3 ✓	"	22335	<13.0 ✓
"	18801	<10.5 ✓	"	22919	<13.4 ✓
"	18050	off ✓	"	23961	<14.3 ✓
"	18228	" ✓	"	24187	<14.3 ✓
"	18333	t.p. ✓	"	26126	<12.5 ✓
"	18427	<13.4 ✓	"	26230	<12.3 ✓
"	20289	off ✓	"	26321	<14.3 ✓
"	15235	" ✓	"	27370	<13.0 ✓
"	15320	" ✓	"	27470	<12.8 ✓
"	15512	" ✓	"	27522	<14.2 ✓
"	15703	<12.8 ✓	"	27614	<13.4 ✓
"	16946	<14.8 ✓	"	25919	<12.5 ✓
"	17854	off ✓	"	27876	<14.8 ✓
"	17808	" ✓			
"	17665	" ✓			
"	17641	t.p. ✓			
"	17547	<12.0 ✓			
"	17425	off ✓			
"	17296	<12.8 ✓			
"	17077	off ✓			

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1920phae.proj...6974

Wednesday Jan. 19, 1921

Direct Estimates of Nova Cygni No. 3 (cont)

A 1646 <15.5 ✓
A 6111 <14.4 ✓
A 5301 <14.3 ✓
A 1204 off edge
A 850 <12.0 ✓

I 7490 off ✓

I 2065 <12.3 ✓
" 6737 off ✓
" 6581 " " ✓
" 9747 <13.4 ✓
" 16762 off ✓
" 18106 " " ✓
" 18901 <14.8 ✓

Monday Jan. 24, 1921

AC 23790 9.8? Plate does not show many stars. cannot be sure whether object estimated is Nova or depect it is so faint.

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1920phae.proj..697A

Tuesday Jan. 18, 1921

Sc. AH3 Scale measures for faint C. S. of Nova Sag. No. 3

R 11688

Diff. constant +3.42

	Sc. 1	Sc. 2	Diff.	Cu. Mag. +3.42 +Cu.	g Sc. 1	h Sc. 1	Diff.
a					4.3 4.35	4.4	2.29
b'					4.6 4.75	4.9	3.21
b					5.4 5.10	5.0	2.81
c					5.6 5.60	5.6	3.76
d					~~4.9~~	5.6	3.44
e					6.1 6.20	6.3	3.57
f					6.4	star sup.	3.93
g	~~5.2~~				6.9 7.00	7.1	3.58
h	3.4		7.48		~~6.6~~ star sup.	7.2	3.68
k'	3.7		7.10		7.6 7.60	7.6	3.20
k	4.0		7.33		star sup.	7.9	3.43
l	3.9		7.82		8.0 8.00	8.0 ~~7.8~~	3.72
m	4.9		7.18	2.84 11.16 ~~7.74~~	9.1 9.05	7.0	3.03
n	4.9		7.48	2.84 11.16			
o	5.1		7.53	2.98 11.50			
f'	5.7		7.25	3.40 12.52			
p	6.0	6.00	6.0	3.58 13.00			
g'	~~6.4~~ 5.9		7.22	3.54 12.86			
q	6.4	6.40	6.4	3.70 13.62			
n'	6.7	6.65	6.6	6.53 3.71 13.78			
r	7.0	7.10	7.2	3.67 14.19			
s			7.7	3.54 14.66			
t			7.9	3.48 14.80			
u			8.2	3.38 15.00			
w			9.0	3.10 15.52			

Diffr. inv. g has a star superposed

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1920phae.proj...697A

Monday Jan. 24, 1921

Ref. pl. B51039 Direct Estimates of Nova Sag. No. 3
A 11688

Offedge			Limit mag 12,0	<13.0	<14.0	<11,5
B16036	I 25099	12.0	B36085	B43797	B3886	B53050
"12117	" 33215	Ffe	" 9279	" 43796	" 4124	" 53038
" 3993	" 24710	11.6	" 50963	" 44537	" 43509	" 52954
" 22748	" 24891	11.7	" 50962	" 13748	" 38984	" 43950
" 44945	" 33216	<13.5	" 50471	" 13345	" 38824	
" 44622	" 33214	<13.5	" 47081	" 9210e	" 33657	
" 3753	" 1254	t.p.	" 47048	" 3754	" 32354	
" 3994	" 1690	Offe	" 50473	" 50394	" 9784eq	
" 3739			" 46950	" 50177	" 37314	
" 41579	B 28621	13.3	" 76951	" 43123	" 15834	
	B 23695	<13.8	" 7694	" 9854	" 9853	
c.s. mag.	" 28160	13.2	" 36433	" 6135	" 31576	
a 6.7	" 28156	13.3	" 44792	"36e	" 20451	
a' 7.6	" 21918	<14.5	" 50123	" 45394	" 19575	
b 7.9	" 26491	12.3	" 53051	" 47710	" 19326	
c 8.8	" 25197	11.7	" 51150	" 44723	" 13936	
d 9.0	" 26472	12.1e	" 22034	" 51079	" 13536 <147	
e 9.8	" 25746	11.9	" 31685	" 50009	" 41365	
f 10.3	" 26461	12.0 e diffiatt	" 35857	" 51210	" 40363	
g 10.6	" 25345	11.9	" 36047	" 51110	" 47759	
im. blurred	" 30321	14.2?		" 51165	" 13728	
h 10.8	" 29525	14.0?		" 51187	" 17651	
k 11.3	" 24376	10.7		" 51015	" 5245	
l 11.7	" 23203	<14.5		" 50475	" 22515	
m 12.1	" 26483	12.2		" 51633	" 23665	
n 12.4	" 26387	12.2		" 51558		
o 12.7	" 26116	12.3		" 51535		

see next page

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1920phae.proj..697A

Monday Jan. 24, 1921

Direct Estimates of Nova Sag. No. 3

c.s.	mag.			
				<13.0
p'	13.0	B 32080	14.7? ✓	B51522 ✓
q	13.5	B 28734	<11.7 ✓	" 51499 ✓
r	13.9	" 29531	13.6 ✓ ft.	" 51473 ✓
s	14.7	" 23770	<15.0? ✓	" 5438 ✓
t	14.8	" 23758	<15.0? ✓	" 51472 ✓
u	16.0	" 25390	11.8 ✓	" 29904 ✓
w	15.5	" 25879	12.0 ✓	" 22744 ✓
		" 27184	12.8 ✓	" 21284 ✓
		" 27446	13.0 ✓	" 30866 ✓
		" 32309	14.8? ✓	" 33681 ✓
		" 32490	<14.8 ✓	" 32627 ✓
		" 33786	: 14.8? sup 170	" 34250 ✓
		" 27750	13.0 ✓	
		" 27408	13.0 ✓	
		" 27996	13.2 ✓	

Assume that nova is in same position as faint star which is seen on longer f. plates of about 14.8 mag. The image when bright comes on the edge of A plates and the quality of the images is so poor that nothing can prove that the two do not superpose. When A 3805 (good im.) is superposed on A 4331 so that the tip of the poor images on " fall on the good image – the nova & the ft. star seem to match exactly. Therefore the assumption follows.

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1920phae.proj...697A

Tuesday Jan. 25, 1921

Direct Estimates of Nova Sag. No. 3

<12.0	<13.0	<14.0	B27996 slide 1182
B42311 ✓	B42656 ✓	B37695 ✓	remeasure to be missing
" 40184 ✓	" 42752 ✓	" 21226 ✓	found
" 39510 ✓	" 43138 ✓	" 33858 ✓	a 11688 ✓ 14.8 ✓ <15.5
" 43694 ✓	" 43817 ✓	" 19580 ✓	" 3806 ✓ 14.9 " <15.5
" 43214 ✓	" 43931 ✓	" 18925 ✓	" 3809 ✓ 14.8 <15.5
" 42739 ✓	" 36385 ✓	" 14745 ✓	" 3803 ✓ 14.9 <15.5
" 20476 ✓	" 39424 ✓	" 44677 ✓	" 3801 ✓ 14.9 ✓ <15.5
" 9211 ✓	" 39151 ✓	" 44722 ✓ <14.7	" 3802 ✓ 14.9 <15.5
" 6113 ✓	" 40041 ✓	" 44793 ✓	" 3804 ✓ 14.9 <15.5
" 6114 ✓	" 41504 ✓	" 35686 ✓	" 3808 ✓ 14.8 <15.5
" 33338 ✓	" 21519 ✓	" 40259 ✓	" 3800 ✓ 14.9 <15.5
" 53039 ✓	" 43743 ✓	" 14045 ✓	" 3807 ✓ 14.9 <15.5
" 51186 ✓	" 44107 ✓ 13,8,19	MF 4463 ✓ 19,8,19 (10)	" 3805 ✓ 14.9 <15.5
" 44946 ✓	" 17708 ✓	" 4611 ✓ " 8,26 (10)	a 5960 <14.0
	" 17834 ✓	" 3522 ✓ 19,5,3 (10)	a 4331 ✓ 12.0
	" 18772 ✓	" 6250 ✓ 20,7,10 (10)	a 9370 ✓ 14.7 <15.5
	" 19244 ✓		a 9640 ✓ <14.0
	" 19380 ✓	a 7359 ✓ 14.8 <15.5	a 4297 ✓ 11.6
	" 9881 ✓	" 7332 14.9 ✓ <15.5	a 4293 ✓ 11.9 def
	" 13580 ✓		a 8434 ✓ <14.0
	" 16571 ✓		a 4340 ✓ 12.0
	" 16164 ✓		a 2605 ✓ 15.0 <15.5
	" 40279 ✓		" 3358 ✓ <14.0
	" 51039 ✓		" 8876 ✓ 14.7 <15.5
	" 45722 ✓		" 2715 ✓ <14.0
	" 44990 ✓		" 7327 ✓ 14.9 <15.5
	" 4160 ✓		
	" 80595 ✓		

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1920phae.proj,.697A

Wednesday Jan. 26, 1921

Direct Estimates of Nova Sag. No. 3

			No. 3 No. 4
AM 75	<10.8 ✓	B 26473	12.2 ✓
" 46	<10.6	" 33786	14.9 or <15.0 ✓
" 68	<9.8 ✓		
" 87	<11.5 ✓		
" 104	8.4 ✓		
" 116	8.8? ✓		
" 204	10.7 ✓		
" 239	10.9 ✓		
" 685	<10.9		
AC 377	<10.6 ✓		
" 471	t.p. ✓		
" 858	<10.4 ✓		
" 868	<10.8 & yellow		
AM 15	<11.7 ✓		
" 137	9.7 ✓		
" 154	10.4 ✓		
" 461	11.6 ✓		
" 538	12.2 ✓ yellow?		
" 614	<11.7		
" 107	8.6 ✓		
" 125	9.5 ✓		
" 226	10.7? ✓ too ft. to estimate safely.		
" 427	t.p.		
" 506	<10.4 ✓		

A 3699 ✓ 14.9 or <15.5

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1920phae.proj...6972

Wednesday Jan. 26, 1921

Direct Estimates of Nova Sag No. 2 + No. 4
with Nova seen on these plates.

	No. 3	No. 4		No. 3	No. 4
AM 10472	<12.4	<12.5	AM 8369	<12.5	<12.5
" 15239	<11.8	<11.8	" 7265	<11.0	<11.0
" 10570	<12.5	<12.5	" 7163	<12.5	<12.5
" 1099	<9.5	<9.5	" 7033	<11.8	<11.8
" 981	<11.3	<11.4	" 6592	<12.5	<12.5
" 10723	<12.5	<12.5	" 6454	<12.5	<12.5
" 11328	<11.8	<11.8	" 6228	<11.8	<11.8
" 12613	<11.5	<11.5	" 6011	<12.0	<12.0
" 13689	<10.6	<10.6	" 5807	<10.3	<9.6
" 14142	July 11, '18	<11.4	" 5712	<13.0	<13.0
" 14243	~~<12.0~~ 31, "	<11.0	" 5640	<12.5	<12.5
" 14780	<12.0	<12.0	" 5340	<12.5	<12.5
" 9455	<12.0	<12.0	" 5114	<13.0	<13.0
" 3883	<12.5	<12.5	" 4620	<12.5	<12.5
" 3625	<12.5	<12.5	" 4562	<12.7	<12.7
" 1073	<10.6	<10.6	" 4527	<12.5	<12.5
" 1001	<11.0	<11.0	" 4365	<11.5	<11.5
" 949	<11.0	<11.0	" 4311	<12.7	<12.7
" 1010	<10.8	<10.6	" 4205	<12.7	<12.7
" 15394	<12.5	<12.5	" 3537	<12.7	<12.7
" 15042	<10.6	p. plate imp.	" 1278	<12.5	<12.5
" 15021	<10.6	<10.0	AM 1658	ff	<9.6
" 12508	<11.8	<11.8	" 1728	"	<9.6
" 9541	<11.8	<11.8	AM 956	"	<10.6
" 9197	<12.5	<12.5	" 798	<12.1	11.1
" 8748	<10.6	<10.6	" 1094	<10.0	<10.0
" 8522	<12.7	<12.7	" 7195	<11.8	<11.8

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1920phae.proj..697A

Monday Jan. 31, 1921

Se. AH_3 Scale measures for faint C.S. of Nova Sag. No. 1

A 11589 Diffraction Constant + 3.42

	Sc. 1	Sc 2	Cu. mag. + 3.42			Sc. 1 g	Sc. 1 h	Diff.
g						5.7	5.60	2.14
h						5.7	5.75	3.08
k						6.4	6.35	3.25
l						6.7	6.65	3.32
m	3.4					6.5	6.55	3.71
n	3.9					7.0	7.05	3.65
o	4.3					Sc. 2 7.6	Sc 2 7.60	3.64
p	4.7					7.8	8.00	3.67
q	5.0					8.7	8.75	3.23
r	5.9			3.13	9.03 12.45	9.5	9.35	3.04
s	6.1	6.15	6.2	3.26	9.41 12.83	9.8	9.85	3.05
t	6.7	6.70	6.7	3.47	10.17 13.59			
u			7.3	3.65	10.95 14.37			
w			7.4	3.67	11.07 14.49			
x			7.8	3.66	11.46 14.88			
y			7.9	3.63	11.53 14.95			
z			7.6	3.68	11.28 14.70			
β			8.4	3.44	11.84 15.26			
γ			8.7	3.31	12.01 15.43			
δ			8.8	3.27	12.07 15.49			
ε			9.4	3.07	12.47 15.89			

This is by far the best plate for measuring with scale

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Monday Jan. 31, 1921

Scatt 3 Scale Measures for ft. c. s. of Nova Sag. No. 1
R 11553

	Sc 1	Sc 2	Cu. mag. +3.42	g Sc 1	h Sc 1	Diff.
a				3.7 3.75	3.8	3.99
f				4.6 4.70	4.8	4.13
k				5.6 5.60	5.76	4.00
l				5.9 5.95	6.0	4.02
m	2.3			6.0 6.00	6.0	4.26
n	~~3.2~~ 3.2			6.7 6.70	6.7	4.00
				Sc 2	Sc 2	
o	3.6		3.96 10.98	7.6 7.60	7.6	3.64
p	3.8		4.00 11.22	8.0 8.00	8.0	3.67
q	4.0		4.03 11.45	8.9 8.90	8.9	3.08
r	5.0		4.12 12.54	9.9 9.85	9.8	2.54
s	5.9		4.11 13.43			
t	6.4	6.30	6.2 4.09 13.81			
u	6.9	6.90	6.9 3.95 14.27			
w			7.5 3.75 14.67			
x			7.7 3.68 14.80			
y			7.8 3.63 14.85			
α			7.6 3.72 14.74			
β			8.7 3.21 15.33			
γ			8.8 3.15 15.37			
δ			8.9 3.08 15.40			
ε			9.3 2.85 15.67			

Images slightly winged

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Monday Jan. 31, 1921

Sc A H3 Scale measure for faint c.s. of Nova Sag. 1901

A 11367

	Sc 1	Sc 2	Cu. Mag +3.42		g Sc 1	h Sc 1	Diff.
g					3.3 3.35	3.4	4.39
h					4.4 4.50	4.6	4.33
k					5.6 5.65	5.7	3.95
l					6.0 5.95	5.9	4.02
m	1.7				6.0 6.05	6.1	4.21
n	2.9				7.0 6.90	6.8	3.80
o	3.2		4.43	11.05	Sc 2 7.7 Sc 2 7.65	7.6	3.59
p	3.7		4.40	11.52	8.6 8.70	8.8	2.97
q	3.9		4.38	11.70	9.0 8.95	8.9	3.03
r	4.9		4.26	14.58	10.0 10.00	10.0	2.39
s	5.8		4.08	13.30			
t	6.5	6.45	6.4	3.96 13.83			
u	7.0	7.00	7.0	3.80 14.22			
w			7.7	3.52 14.64			
x			7.9	3.44 14.76			
y			7.9	3.44 14.76			
z			7.8	3.48 14.70			
β			8.8	3.04 15.26			
γ			9.4	2.75 15.57			
δ			9.9	2.47 15.79			
ε			n.s.				
			~~H.~~				

Images not very good.

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Tuesday Feb. 1, 1921

Ref. Pl. A 11589 Direct Estimates of Nova Sag. No. 1
B 23759

P. 108

c.s.	mag.					
a	3.4	B 27658	13.5 ✓		B32159	<14.1 ✓
b	4.6	" 27517	<13.0 ✓		B 32278	15.1 ✓
c	5.2	" 27485	14.4 ✓ very ft		" 32341	<15.5 ✓
d	6.1	" 26321	12.9 ✓		" 32405	<14.5 ✓
e	6.9	" 26236	13.4 ✓			
f	7.5	" 25827	<13.0 ✓			
g	7.8	" 25714	<13.0 ✓		B26144	<12.0 ✓
h	8.8	" 25429	13.0 ✓	13.0	" 25396	<12.5 ✓
k	9.5	" 21998	10.6 ✓		" 29656	<12.5 ✓
l	10.0	" 22010	10.5 ✓		" 30869	<13.0 ✓
m	10.3	" 22705	11.8 ✓		" 31735	<13.6 ✓
n	10.7	" 22798	12.0 ✓		AM 864	<13.0 ✓
o	11.2	" 23107	11.9 ✓	11.9	Feb. 25, 1921	
p	11.7	" 23213	11.5? ✓ peculiar	12.0 difficult	B21319	8.5 ✓
q	12.0	" 23366	12.1 ✓		(missing slide 128, just found by Miss Wells)	
r	12.4	" 24529	12.4 ✓ ✓			
s	13.0	" 21290	8.1? difficult edge			
t	13.6	" 23759	12.0 ✓			
u	14.1	" 28626	<12.2 ✓			
w	14.4	" 29537	14.1 ✓ ft			
y	14.8	" 29915	<11.2 ✓			
β	15.3	" 30074	14.5? ✓			
γ	15.4	" 30495	14.7 ✓			
δ	15.6	" 30825	<13.6 ✓			
ε	15.8	" 31812	<14.5 ✓			

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Wednesday Feb. 2, 1921

Direct Estimates of Nova Sag. No. 1

I 23142 12.2 ✓
I 23281 12.2 ✓
I 20428 5.0? ✓ The nova is bright and on the edge of plate so that none of the bright comp. stars are the same shape or consistency. The brightest c.s. near it is "f" which has the same form, but the nova is much brighter. The mag. of f being 7.5. I roughly estimated the nova as 2.5 mag. brighter. This is a very doubtful estimate, comprising the p.c. (difficult) of nova + b (4.6) in center of plate, this estimate is 10% per cent.
I 20612 8.0 e ✓ p.108
I 22549 11.3 ✓
I 22552 11.6 ✓
" 22553 11.8 ✓
" 22595 11.9 ✓
" 22669 11.8? ✓
" 22791 12.4 ✓
" 22883 11.9 ✓
" 23021 11.9 ✓
" 23038 <11.2 ✓
" 29173 <13.6 ✓
" 23060 11.9 ✓ 12.0 e
B — 23849 12.1 ✓

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Wednesday Feb. 2, 1921

Direct Estimates of Nova Sag. No. 1

A 7905	15.7	A 11589	16.0?
A 4086	12.6	" 11553	16.0?
" 4091	12.2	" 5712	14.3 (p108) 14.3 This was measured from chart printed from plate, since the plate was missing.
" 11401	Off edge		
" 7873	15.4		
" 6172	14.7		
" 5732	14.0		
" 5512	14.3		
" 7657	15.8 very ft.		
" 8944	<13.5		
" 9828	15.9		
" 10701	<15.0 a ft.		
" 10749	16.0? The nova is seen		
" 10450	<15.0 a ft.?		
" 10720	<15.0		
" 11365	16.0? The nova is seen		
" 2845	<16.0		
" 11367	<15.6		

broken slide H 20500 5.6? edge no bright star to cp with. This is made by p.c. of b- very questionable

B 23502	12.0	
AM 104	12.3	12.8
" 6606	<12.0	
" 8240	<11.0	
" 4368	<12.0	

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Wednesday Feb. 2, 1921

Direct Estimates of Nova Sag. No. 1

<12.0	<14.0	<12.5	<15.0
B 44225 ✓	B 38259 ✓	B 38287 ✓	B 43525 ✓
" 41657 ✓	" 37981 ✓	" 39181 ✓	
" 40652 ✓	" 44623 ✓	" 38979 ✓	
" 40385 ✓	" 44814 ✓	" 45553 ✓	
I 35722 <11.0	" 46839 ✓	" 46599 ✓	
	" 48056 ✓	" 47765 ✓	
	" 43468 ✓	" 46872 ✓	
	" 44134 ✓	" 46953 ✓	
	" 44228 ✓	" 43935 ✓	
	" 44248 ✓	" 48319 ✓	
	" 46044 ✓	" 44304 ✓	
	" 45061 ✓	" 44316 ✓	
	" 46079 ✓	" 43495 ✓	
	" 40754 ✓	" 48490 ✓	
	" 40490 ✓	" 48442 ✓	
	" 41384 ✓	" 44175 ✓	
	" 40297 ✓	" 44176 ✓	
	" 39137 ✓	" 44224 ✓	
	" 40274 ✓	" 44041 ✓	
	I 35418 ✓	" 44074 ✓	
		" 47053 ✓	
		" 41510 ✓	

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Thursday Feb. 3, 1921

Direct Estimates of Nova Sag. No. 1

<13,0	<14.0	<13.0	<12.0	<11.5 <12,5
M 7 2595	B 50967	B50968	B 57040	B 45555 M 7 2785
" 2700	" 50179	"51018	"51111	" 45623 M 11,170
" 2819	M 7 4640	"51439	"51188	" 45650 " 11014
" 2922	" 4539	"51502	"51213	M 11030 " 3851
B37298	" 4619	"51537	"51475	" 9656
	" 4614	"51567	"51513	" 9212
	" 4703	M 7 6426	"45055	" 6231
	" 2878	" 6289	"45056	" 6107
	" 2886	" 6252	"45675	" 5975
broken	B 44154	" 4639	"51153	" 3491
		" 3750	"51093	" 4036

M 8964 <10.5	MC 11233	16.0? <16.0	Nova is seen - confirmed by W.
" 3597 <10.5	" 12892	<14.5	MC 6006 <15.0
" 4048 <12,0	" 16824	<13.6	" 5903 <15.0
" 4098 <10.5	" 16840	<14.0	" 3597 <13.6
" 4134 <11.5	" 8443	<12.0	" 4036 <15.0
" 4142 <11.5	" 8685	<14.5	" 4048 <13.6
	" 8734	<15,3	" 4098 <12.0
	" 8751	<14.8	" 4134 <13.6
	" 9268	<15.3	" 4142 <14.5
	" 10730	15.8	" 5704 <15.0 x is ft.
	" 1234	16.0 ft.	" 5899 <15.0
	" 1141	<15.6	" 5921 <15.0
	" 5614	<14.5	" 8750 <14.8
	" 6179	<15.0	MC 603 <15.0
	" 6168	<15.3	

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Friday Feb. 4, 1921

Direct Estimates of Nova Sagittarii No. 1

			Sep.				Sep.
	MC 6603	<15.0 ✓		June 6, 1912	AM 8295	<12.0 ✓	56
June 7, 1918	AC 20175	<11.7 ✓	60	Apr. 29, "	" 8093	<11.0 ✓	60
May 16, "	" 20138	<10.7 ✓	48	Oct. 3, 1911	" 7850	<11.0 ✓	60
Nov. 5, "	" 20648	<9.5 ✓	70	Sept. 10, "	" 7741	<11.5 ✓	60
Oct. 1, 1919	" 21859	<10.7 ✓	62	Oct. 7, 1909	" 6636	<11.5 ✓	125
April 18, 1920	" 22606	<10.7 ✓	60	Apr. , 1909	" 6076	<12.0 ✓	60
May 16, "	" 22640	<10.7 ✓	52	Oct. 6, 1908	" 5868	<12.0 ✓	69
Sept. 14, "	AM 15495	<10.7 ✓	68	Sept. 17, "	" 5837	<13.0 ✓	121
July 30, 1919	" 14873	<12.0 ✓	70	Aug. 4, "	" 5725	<12.5 ✓	77
Aug. 9, 1918	" 14274	<10.5 ✓	60	Apr. 10, "	" 5391	<12.0 ✓	55
July 13, "	" 14155	<12.5 ✓	65	Sept. 11, 1907	" 5132	<11.7 ✓	67
Oct. 9, 1920	AC 22960	<11.0 ✓	59	Aug. 15, "	" 5065	<12.0 ✓	60
Nov. 7, 1917	" 19410	<11.0 ✓	62	May 31, "	" 4879	<12.0 ✓	67
Oct. 13, "	" 19269	<11.0 ✓	66	June 7, "	" 4908	<12.0 ✓	60
Sept. 10, 1918	AM 14394	<12.5 ✓	60	Oct. 1, 1906	" 4601	<12.0 ✓	75
Aug. 12, 1917	" 13502	<11.5 ✓	62	Aug. 8, "	" 4473	<12.0 ✓	61
April 9, 1916	AC 17502	<11.7 ✓	52	Apr. 24, "	" 4176	<12.5 ✓	60
May 19, 1915	" 16485	<10.7 ✓	60				
" 23, 1914	" 15199	<11.7 ✓	66				
Nov. 7, "	AM 10262	<12.5 ✓	66				
May 26, 1913	" 8953	<12.0 ✓	60				
Oct 12, 1912	" 8707	<10.7 ✓	61				
Aug. 16, "	" 8552	<11.7 ✓	59				
July 6, "	" 8404	<10.5 ✓	60				
May 9, "	" 8167	<11.0 ✓	60				
		~~<11.0~~					

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Friday March 19, 1921

Sc. N 18504 Nova Aquilae No. 2 Measures for bright C. S. Relative magnitudes with Carte 19-2.5 + Poor Scuti S. F.

AC 20124

	A	B	C	Carte Cu.	Carte Mag.	Poor Scuti Cu.	Poor Scuti Mag.
a		7.2 (6.8, 2.4)	6.8	6.80		1.53	8.33
b		7.8 (7.9)	7.7	7.55	1.37 8.92	1.52	9.07
c		8.3 (8.1)	8.1	8.00	1.40 9.40	1.49	9.49
d		8.5 (8.2)	8.5	8.30	1.42 9.72	1.47	9.77
e		8.6 (8.4)	8.2	8.20	1.41 9.61	1.48	9.68
f		8.8 (8.4)	8.7	8.55	1.43 9.98	1.46	~~9.00~~
g		8.8	8.8	8.60	1.43 10.03	1.44	10.04
h			9.0	-	1.43 10.43	1.41	10.41
k		~~7.2~~	9.2		1.43 10.63	1.40	10.60
l			9.~~4~~ 8			1.38	11.18
m			10.0			1.38	11.38

Carte 19 - 2.5

	A	B	C	Diff.
1		7.4 7.8 (7.9)	7.6	7.50 1.36
2		8.3 (8.4)	8.0	7.95 1.40
3		8.8 (8.5)	8.6	8.50 1.49
4		8.9	8.7	8.60 1.36
5			8.9	1.37
6			8.9	1.57
7			9.5	1.25
8			9.7 (8)	1.18
9			9.~~7~~ 8	1.27
10			9.9	1.86
10a			10.1	1.82
11				

Poor Scuti S. F.

Diff.			A	B	C	
	101		3.5 3.7	3.5 3.9 (5.0, 4)		3.50
1.35 1.45	102	a=102a	5.~~7~~ 5.2 (6.8)	6.8 (7.3)	5.10	6.80
1.73 1.50 (1.50)	103		7.~~7~~ 7.7 (7.5)	7.7	~~7.80~~	6.80
1.61 1.59	104	b=104	7.~~7~~ 7.9 (8.1)	7.8	7.65	
1.50 1.60	105		8.5 (8.5)	8.3	8.20	
1.38 1.44	106		8.9	8.7	8.60	
1.24 1.31	107			8.9		
1.50 1.50	108			9.7		
1.67 1.67	109			10.1		

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Monday March 21, 1921

Sc. 185604 Nova Aquilae No. 2. Measures for bright c, S, Rel. mag. with Carte 19-2.5 & Poor Santi S. 7

AC 20253

	A	B	C	℄	Carte Cu.	Carte mag.	Poor Santi Cu.	Poor Santi mag.
a		7.1 7.5 7.5	6.9	7.00			1.55	8.55
b		7.9 8.1	7.7	7.60	1.27	8.87	1.56	9.16
c		8.5 8.3	8.0	8.05	1.30	9.35	1.54	9.59
d		8.7 8.4	8.4	8.35	1.32	9.67	1.53	9.88
e		8.8 8.6	8.6	8.50	1.33	9.83	1.51	10.01
f		9.0	8.7	8.65	1.35	10.00	1.50	10.15
g			8.8		1.36	10.16	1.49	10.29
h			9.6		1.42	11.02	1.40	11.00
k			9.3		1.40	10.70	1.44	10.74
l			9.9		1.45	11.35	1.37	11.27
m								

Carte 19-2.5

	A	B	C	℄	Diff.
1		8.0 7.6	7.8	7.70	1.18
2		8.0 8.3	7.7	7.65	1.69
3		8.7 8.6	8.5	8.40	1.46
4		9.0	8.7	8.65	1.19
5			8.7		1.39
6			9.0		1.45
7			9.4		1.30
8			9.6		1.16
9			9.6		1.45
10			10.2		1.56
10a					
11					

Diff. Poor Santi

			B	C
~~2.18~~		101	5.0 5.4	4.9 4.95
2.12	1.50	102	7.0 7.4	6.8 6.90
1.40	1.35	102a	7.4 7.8	7.6 7.50
1.50	1.73	103	7.5 7.9	7.7 7.60
1.64	1.66	104	8.0 8.4	8.1 8.05
1.75	1.65	105	8.5 8.9	8.5 8.50
1.54	1.48	106		9.1
1.11	1.04	107		9.9
1.30	1.30	108		10.3
1.47	1.47	109		

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Wednesday March 23, 1921

Mc 5705 185604 Nova Aquilae No. 2
A 6506

e.s.	mag					
a	8.5	I 33295	10.4		I 33416	11.3
b	9.1	I 33345	11.0	see p. 190	" 30753	<12.7
c	9.5	I 33356	11.2		" 31860	<14.0
d	9.8	I 33360	11.2		" 31884	<14.0
f	10.1	" 33367	11.2		" 31901	<13.5
h	10.6	" 33385	11.3		" 32072	<13.5
l	10.9	" 33300	10.7			
m	11.4	" 33301	10.6		B 36062	<13.8
n	11.5	" 33303	10.4		" 36111	<13.5
o	12.3	" 33306	10.7		" 36163	<13.5
p	13.1	" 33326	11.1		" 36217	<14.0
q	13.5	" 33335	11.3	see p. 190	" 36472	<13.0
r	13.8	" 33344	11.2		Aug. 18, 05 B 36701	8.0 brighter than a est. may be too great
s	14.0	" 34264	<12.5		B 36871	10.7
t	14.8	" ~~35895~~ 34263	<10.0		" 37200	11.9
u	15.1	" 35693	<12.3		" 37299	<13.5
w	15.5	" 36195	<11.5		" 37301	<13.5
x	16.0	" 33881	<13.1		" 37395	<11.0
y	16.2	" 33534	11.5		" 38978	<13.5
z	16.4	" 33531	11.5		" 39138	<13.5
α	16.8	" 33488	11.5			
		" 33463	11.4		A 7508	12.0 & haze
		" 33440	11.3		" 7505	11.9 around in
		" 33431	<10.9		" 7721	15.9 hazy
		" 33428	11.3		" 7517	12.2
					" 6508	<16.8

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Thursday March 24, 1921

185604 Nova Aquilae No. 2

1905	9,9	C 15961	10.8✓		(60)	05,9,6	aM3849	10.8✓
"	9,10	" 15966	10.9✓		(64)	" 9,18	" 3898	11.0✓
"	9,14	" 15972	10.9✓		(60)	" 11,16	" 3976	<10.7✓
"	9,14	" 15973	11.2✓	see p.190	(65)	06 5,4	" 4207	<12.3
"	9,21	" 15979	11.2✓		(64)	" 5,29	" 4270	<11.0✓
"	9,22	" 15986	11.2✓		(60)	05,9,18	" 3891	11.1✓
"	9,26	" 16013	11.4✓	see p.190	(60)	" 10,16	" 3953	11.4✓
"	9,8	" 15955	10.8✓		(60)	06,4,24	" 4176	<12.5✓
"	9,5	" 15941	10.7✓		(65)	" 5,26	" 4260	<11.5✓
"	9,5	" 15940	10.7✓		(60)	05,8,2	aC6565	<11.5
"	9,1	" 15938	10.6✓		(67)	" 8,26	" 6632	10.1✓
"	8,31	" 15933	10.6✓		(60)	" 8,31	" 6643	10.7✓ see p.190
"	8,31	" 15931	10.5✓ ft		(60)	" 9,21	" 6699	11.4✓
"	8,31	" 15930	9.9✓ see note p.190		(67)	" 10,13	" 6835	11.2✓
	Sup.				(8.8)	06 7,25	" 7681	<10.9✓
	05,8,17 (61)	RM 3795	8.2✓	very near edge. C.S. "a" is off e. used to stars south of nova to make estimation. Used −5°4848 ⅘5 ptm 7.10 comp plg 7.9 + −5°4841 ⅘5 Ptm 8.2 comp. plg. 8.6				
	05 12,14(60)	aC 7106	t.p.✓					
	05 11,14(64)	" 6990	t.p.✓					
	05 10,23(75)	" 6878	<10.6✓					
	05 10,8 (64)	" 6804	<10.6✓					
	05 9,22 (72)	" 6707	<10.6✓	see p. 190				
	05,8,21 (63)	" 6614	9.6✓	see p.190				
	" 8,3 (80)	" 6572	<11.4					

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Monday March 28, 1921

185604 Nova Aquilae No 2

			<13.0	<11.5	<10.5
05, 7, 22	A M 3726	<11.5	I 6511	I 6611	I 8677
" 7, 26	" 3739	<11.5	" 6570	" 6677	" 2410
" 8, 26	" 3835	10.2	" 6647	" 7283	" 4108
" 8, 31 (300)	" 3839	10.4	" 6785	" 8733	" 4333
" 9, 16	" 3882	10.9	" 6845	" 8869	" 4957
" 9, 30	" 3921	11.0	" 8734	" 8986	" 70 926
06, 3, 27	" 4150	<12.3	" 8842	" 2082	" 18325
" 4, 28	" 4190	<12.3	" 8899	" 2172	" 18347
" 5, 19	" 4244	<11.5	" 9044	" 3973	" 18617
05 10, 1	AC 6758	<10.5	" 2272	" 4034	~~" 15955~~
" 8, 4	" 6576	<10.5 e nigiordy.	" 1341	" 4137	
" 9, 23	" 6713	<11.0 e See p. 190.	" 20392	" 4528	
" 10, 21	" 6863	11.4?	" 20278	" 4664	
06 4, 16	" 7476	<10.6	" 19190	" 4839	
" 5, 14	" 7550	<10.9	" 19552	" 1494	
" 6, 10	" 7596	<11.0	" 20737	" 1546	
05 8, 8 (60)	AM 3764	<12.5	" 20791	" 16591	
" 8, 18 (68)	" 3801	8.7	" 18255	" 18142	
			" 18252 e	" 18708	
	I 4121	<9.8	" 18424	" 15955	
	" 18450	e br. film dirty	" 18480	" 16547	
	" 17844	<14.0	" 16188	" 17667	
	" 16066	<14.0	" 17431		
	" 17644	t. p.	" 14741		
			" 14980		

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Tuesday March 29, 1921

185604 Nova Aquilae No. 2

<11.0	<12.0	<13.0	<14.0	
I 14994	I 15181	I 15324	I 28991	MC 5705 <15.5
" 15549	" 15413	" 15454	" 27780	" 5496 <15.0 2
" 9136	" 15525	" 15488	" 21085	" 5763 <15.5
" 12614	" 9160	" 15777		
" 13779	" 11288	" 12674	MC 5680 e	
" 27314	" 11289	" 13577	" 5593 e	
" 27318	" 11356	" 13419		
" 23215	" 12843	" 13044		
" 21797 e	" 13299	" 28668		
" 21221 e	" 25804	" 25963		
" 21318 e	" 25936	" 26041		
" 21493 e	" 26042	" 27192		
" 21635 e	" 23289	" 23183 e		
	" 23290 e	" 25433		
	" 25533 e	" 25687 e		
	" 25538 e			
	" 25700 e	B 46905		
	" 21062 e	MC 12951		
		MF 4439 e		
	B 41658	MF 4544		
	MD 5267	MF 4562 e		
	MD 5807	B 46876		
	" 6074	B 47100		

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Wednesday March 30, 1921

185604 Nova Aquilae No. 2.

B20 326 t.p. tr.

< 11.0	< 12.0	B 7609 < 10.5 < 13.0	< 14.0	< 15.0
B18613	B19383	B19846	B20327	B13541
" 16808	" 18122	" 19721	" 20613	" 28490
" 15749	" 18730	" 19452	" 19586	
" 15897	" 17145	" 19089	" 19513	
" 16416	" 17485	" 16938	" 19203	
" 25616	" 17715	" 17240	" 17688	
" 25876	" 16118	" 17556	" 13590	
" 26143	" 16791	" 14086	" 9915	< 13.0
" 29707	" 6000	" 16196	" 27578	B40502
	" 7881	" 13631	" 27619	" 40273
	" 8470	" 9916	" 23846	" 40398
	" 9236	" 12545	" 23131	" 33956
	" 25395	" 7879	" 40877	" 33704
	" 25430	" 8471	" 40653	" 34683
	" 26206	" 27791	" 41385	" 34528
	" 27620	" 27976	" 33930	" 34376
	" 23365	" 23345	" 34405	" 33496
	" 21291	" 23450	" 32404	" 32186
	" 21997	" 23503	" 32158	" 32400
	" 41674	" 21320	" 32319	" 30042
	" 34527	" 22704	" 31436	" 30073
	" 33591	" 22860	" 31957	" 31821
	" 30649	" 22931	" 29576	" 29584
	" 28363	" 40753		" 29861
	" 28625	" 41509		

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Wednesday March 30, 1921

185604 Nova Aquilae No. 4

< 11.0	< 12.0	< 13.0	< 14.0
B 47003 ✓	B 47994 ✓	B 47140 ✓	a 1851 ✓
" 47051 ✓	" 47989 ✓	" 44073 ✓	
	" 47001 ✓	" 45580 ✓	
B 6520 (516) ✓	" 47764 ✓	" 45649 ✓	
	" 48345 ✓	" 46837 ✓	
	" 45724 ✓	" 46903 ✓	
	" 46657 ✓		
	" 46836 ✓	B 5999 (481) ✓	
	" 46902 ✓		
	" 46904 ✓		

B 9237 (659) ✓
B 16500 (737) ✓
B 22009 (997) ✓
I 9389 (1313) ✓
B 21521 (3201) ✓
B 45491 (4250) ✓

Monday April 4, 1921

05, 8, 18 (63)	am ~~4908~~ 3800	8.3 ✓	05, 9, 22 (240)	am 3910	11.2 ✓
" 9, 1 (240)	" 3840	10.7 ✓	" 10, 16 (68)	" 3952	< 10.9 ✓
" 9, 19 (60)	" 3897	10.9 ✓			
" 9, 20, 21 {277 253}	" 3905	11.1 ✓			
" 9, 25, 27, 28 {211 64 206}	" 3912	11.2 ✓			

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1920phae.proj...697A

Monday April 4, 1921

185604 Nova Aquilae No. 4

Date	<11.0	<12.0	Date	<11.0	
~~Date~~					
07, 8, 15 (60)	AM 5065 ✓	AM 4908 ✓	07, 6, 7 (60)	AM 8888 ✓	13, 5, 8 (60)
" 9, 11 (67)	" 5132 ✓	" 5725 ✓	08, 8, 4 (77)	" 8707 ✓	<10.0 12, 10, 12 (61)
08, 10, 6 (69)	" 5868 ✓	" 5837 ✓	" 9, 17 (121)	" 13168 ✓	17, 5, 19 (38)
09, 10, 14 (68)	" 6676 ✓	" 7741 ✓	11, 9, 10 (60)	" 13410 ✓	" 7, 16 (60)
10, 8, 5 (60)	" 7191 ✓	AC 19972 ✓	18, 3, 23 (56)	AC 19112 ✓	" 9, 11 (60)
" 9, 10 (95)	" 7292 ✓	" 20124 ✓	" 5, 14 (60)	" 20175 ✓	18, 6, 7 (60)
11, 6, 18 (61)	" 7467 ✓	" 16565 ✓	15, 7, 18 (63)	" 20138	" 5, 16 (48)
" 7, 14 (56)	" 7546 <10.5 ✓	" 16449 ✓	" 5, 10 (60)	" 19410 ✓	17, 11, 7 (62)
" 8, 15 (61)	" 7677 ✓	" 20253 ✓	18 7, 8 (70)	AM 3527 ✓	" 8, 19 (66)
" 10, 17 (60)	" 7886 ✓	AM 14873 ✓	19 7, 30 (70)	AC 19269 ✓	<10.0 " 10, 13 (66)
12 5, 9 (60)	" 8167 <10.5 ✓			" 18608 ✓	" 2, 24 (60)
" 6, 12 (64)	" 8328 ✓			" 18808 ✓	<10.0 " 4, 25 (70)
" 7, 17 (60)	" 8470 ✓ <10.5	<11.0		" 16935 ✓	15, 11, 6 (35)
" 8, 16 (59)	" 8552 <10.5 ✓	AC 20573 ✓	18, 10, 7	" 16807 ✓	" 10, 4 (60)
" 9, 9 (60)	" 8615 <10.5 ✓	" 21345 ✓	19, 4, 14 (68)	AM 10703 ✓	<10.5 " 6, 18 (34)
14 9, 19 (60)	AC 15508 ✓	AM 14798 ✓	" 6, 24 (58)	AC 16411 ✓	" 4, 18 (62)
13, 10, 28 (63)	" 9585 <10.5 ✓	" 14948	" 8, 23 (63)	" 16155 ✓	" 2, 21 (60)
14, 7, 22 (66)	AC 15345 <10.5 ✓	~~AC 21736 <10.0~~		" 16301 ✓	" 3, 19 (60)
" 8, 22 (60)	" 15383 ✓	AC 21886 <10.0 ✓	19, 10, 8 (57)	" 23441 ✓	<10.5 21, 2, 14
" 5, 6 (67)	" 15764 <10.0			" 23062 ✓	20 11, 13 (58)
11, 5, 21 (60)	AM 7423 ✓			" 22940 ✓	<10.0 " 10, 4 (60)
13, 9, 26 (65)	" 9501 <9.8 ✓			" 22835 ✓	" 9, 1 (62)
" 7, 7 (58)	" 9176 ✓			" 22453 ✓	" 2, 26 (56)
" 6, 2 (133)	" 8993 ✓			" 22588 ✓	" 4, 10 (54)

Few plates omitted not needed in Ledger-

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Wednesday April 6, 1921

185604 Nova Aquilae No. 2
Reobservations of a few plates.

✓ I 33335	11.2?	peculiar image. certainly fainter than l=10.9 + brighter than m=11.4.			
p. 183	11.3	R Since I cannot be certain of the est. in this case, entered in ledger as 11.2? rejecting 11.3 p.183			
✓ I 33345	11.0	11.0	11.00	0	0
		p.184			
✓ C 15973	10.9	R 11.2	The est. 11.2 is too faint. By careful study I find 10.9 nearer right. Reject 11.2.		
✓ C 15930	10.5 ft	R 9.9	The est. 9.9 was obtained from a mistake in the image of the nova. ∴ reject.		
✓ C 16013	11.2	R 11.4	The nova is brighter than 11.4 - confused in first est. by writing over C.S. 11.2 will be retained		
✓ AC 6614	9.5 e	9.6	9.55	0	1 Difficult to get exact est. because region is so near edge. Take mean.
✓ AC 6590	<10.0 e				
✓ AC 6643	10.6	quite faint	10.7	10.65	0 1 Since im. is faint + difficult to take mean
✓ AC 6707	<10.7 e	Can find no obj. in pos. of nova on this plate.			
✓ AC 6713	10.9? f e	very doubtful whether this observation is good. Nova is very faint if seen at all. I can't make sure of it.			

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Wednesday April 27, 1921

235053 RR Cassiopeiae

Observations of recent plates

AC 21006	<11.5	AC 21898	12.3
" 21039	<12.3		
" 21714	<11.6		
" 21898	<12.1		
" 22010	<11.9		
" 22013	<12.0		
" 22046	<12.1		
" 22165	<12.3		
" 22222	<11.6		
" 22309	11.8?		
" 22312	<11.8		
" 22381	<12.3		
" 22846	<12.0		
" 22919	<12.3		
" 22977	<11.7		
" 23093	<12.3		
" 23159	<12.1		
" 23191	<12.3		
" 23211	<12.0		
" 23213	<12.1		
" 23353	<12.1		

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Thursday April 28, 1921

Observations of T. J Cassiopeiae

see bk. 2: 209

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Monday May 2, 1921

Reobservations of R J Cephei

Recent plates

			May 4, 21	M.T.	M.T.		May 4, 21
Feb. 25, 21	AC 23473	9.6		5:45	20:47 AC 21576	9.6	June 30,
" 12, "	" 23422	9.3		4:17	21:35 " 21629	10.0	July 25,
" 2, "	" 23390	10.2		4:21	23:52 " 21714	9.5	Aug. 20,
Jan. 27, "	" 23355	9.5		3:04	22:36 " 21749	9.6	Aug. 26,
" 14, "	" 23268	10.1	10.20 10.3	1:59	0:06 " 21811	9.8	Sept. 18,
" 3, "	" 23211	10.0	10.05 10.1	1:09	23:40 " 21842	9.7	" 27,
Dec. 28, 20	" 23191	9.4		1:46	2:25 " 21898	10.2 10.3 (10.25)	Oct. 12,
" 20, "	" 23159	9.9	9.90 9.9?	3:40	22:56 " 21991	9.5	Nov. 10,
" 2, "	" 23093	9.5		1:45	1:03 " 22010	10.0 10.2 (10.10)	" 20,
Nov. 5, "	" 23038	9.5		2:12	2:40 " 22046	9.5	Dec. 1,
Oct. 13, "	" 22977	10.1	10.20 10.3	2:20	2:50 " 22165	10.2	Dec. 29,
Oct. 1, ~~19~~ 20	" 22919	10.2		1:43	3:44 " 22222	10.4	Jan. 10,
Sept. 2, "	" 22846	10.0		23:35	3:35 " 22309	9.6	Jan. 26
" 1, "	" 22838	10.4		0:53	4:07 " 22312	9.9	" 28,
July 27, "	" 22779	9.7		20:23	5:08 " 22381	9.5	Feb. 11,
June 25, "	" 22698	10.3	ft.	21:08			
May 27, "	" 22539	9.4	dark	17:01			
Feb. 27, "	" 22454	9.4		5:44			
Dec. 19, 18	" 20844	9.4	g	2:32			
" 9, "	" 20854	9.9					
Jan. 25, 19	" 21006	10.3		3:36			
Feb. 1, "	" 21039	9.7?		4:41			
May 7, "	" 21433	9.5		18:21			

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Friday May 13, 1921

Reobservations of RY Cassiopeiae

See Bk. 2: 192-199

All these plates have difficult images.

I 27834	10.3	10.25	10.2 ✓				
I 424	10.4	10.30	10.2 ✓	aC 12379	11.2	11.20	11.2 ✓
aC 2085	10.9	10.90	10.9 ✓	" 12543	10.2	10.20	10.2 ✓
" 2063	11.5	11.45	11.4 ✓	" 12546	10.6	10.55	10.5 ✓
" 2188	10.4	10.40	10.4 ✓	" 14438	10.8	10.80	10.8 ✓
" 3060	10.5	10.50	10.5 ✓	" 14549	10.2	10.20	10.2 ✓
" 3168	10.5	10.45	10.4 ✓	" 17791	10.4	10.40	10.4
" 5015	11.9	11.85	11.8 ✓	(c.s. "e" defective)			
" 5640	11.8	11.75	11.7 ✓				
" 5780	10.1	10.15	10.2 ✓				
" 7096	<11.0		✓				
" 7712	10.4	10.35	10.3 ✓				
" 7769	11.0	11.00 R.	11.0 ✓	Retain orig. observation			
" 6687	10.8	10.75 R.	10.7 ✓	Retain original observation			
" 18548	10.9	10.90	10.9 ✓				
" 18881	10.1	10.15	10.2 ✓				
" 19774	~~11.8~~ 10.7	11.15	11.2 ✓				
" 15607	11.9	11.85	11.8 ✓				
" 15803	11.6	11.60	11.6 ✓				
" 10013	11.1	11.05	11.0 ✓				
" 10852	10.5	10.60	10.7 ✓				
" 11100	10.8	10.75	10.7 ✓				
" 11253	~~11.0~~ 10.9	11.05	11.1 ✓				
" 11962	10.2	10.20	10.2 ✓				
" 12179	11.2	11.15	11.1 ✓				
" 12322	t. f.		✓				

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Tuesday May 17, 1921

Reobservations of V Lacertae See Bk. 2: 76-82

I 11465	9.2	9.25	9.3	
I 23521	9.7	9.70	9.7	✓ edge. difficult does not cp. mid
I 23500	8.6	8.65	8.7	✓
AC 17812	8.7	8.65	8.6	✓
" 20349	10.0	9.95	9.9	✓ very faint
" 17791	8.8	8.85	8.9	✓ difficult
" 12622	9.7	9.70	9.7	✓ ?
" 16850	9.2	9.20	9.2	✓
" 1765	8.6	8.60	8.6	✓
" 6501	9.9	9.90	9.9	✓ q

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Wednesday May 18, 1921

B.D. +44° 994 (8.6 mag.)

Monthly Notices, March 1921. Star announced as new Variable in Perseus. By A Stanley Williams

Observed on 15 AC plates.

hr.	ft.
AC 16111	AC 5689
" 12081	" 17108

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1920phae.proj...607A

Friday May 20, 1921

Reobservations of SW Cass. See Bk. 2:128

AC 5745 −	11.1 11.15 11.2	diff im fuzzy
" 6046 −	10.9 10.90 10.9	very poor im.
" 6479 −	10.7	is im. def.? very ft. mountain.
" 6551 −	10.5 10.60 10.7	
" 6933 −	11.0 11.00 11.0	very poor im. dentiform
" 7227 −	11.1 11.15 11.2	" " ".
" 7252 −	10.9	? im. really t. p. to est. dark pl.
" 7646 −	t. p. to est.	
" 1883 ✓ −	10.8 10.80 10.8	
" 1971 ✓ −	10.4 10.45 10.5	diff.
" 1916 ✓ +	10.8 10.80 10.8	" . im. of var. to c. s. not similar
" 2019 ✓	11.2 11.25 11.3	poor im. dark pl.
" 3078 ✓ −	10.8 10.80 10.8	
" 3866 −	im. def.	
" 4355 −	10.8 10.85 ~~11.0~~ 10.9	
" 4524 −	im. thinned does not cp. with c. s.	
" 5280 −	im. def.	can't set safely −
" 5503 −	11.1 11.15 11.2	
" 15607 −	11.1 11.15 11.2	does not cp. well with c. s.
" 15803 −	10.9 10.90 10.9	
" 10013 −	ft. p. to est.	dark pl.
" 11962 −	10.9 10.95 11.0	
" 14549 −	10.7 10.70 10.7	poor im.
" 12622 −	im. of var.	t. p. to est.
" 16850 −	10.8 10.85 10.9	
" 12558 −	11.2 11.25 11.3	

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Friday May 20, 1921

Reobservations of S N Cases.

AC	6501	10.4		im very poor slightly def.
"	5640	11.2	11.20 11.2	
"	7096	10.3	10.25 10.2	im poor
"	6681	11.1	11.15 11.2	
"	19232	10.9	10.95 11.0	? im, poor
"	19623	10.8	10.80 10.8	c. s. "d" has poor im. uncertain st.
"	20225	10.7	10.75 10.8	
"	15449	11.0	11.00 11.0	
"	15506	10.4	10.40 10.4	
"	12611	t. p. to est.		
"	12674	11.0	11.05 11.1	
"	12703	10.4	10.40 10.4	? d' is it def.?
"	13642	10.9	10.95 11.0	
"	13658	10.9	11.00 11.1	I 18744 11.2
"	14270	10.9	10.95 11.0	I 7450 10.8 10.8
"	14284	10.2	10.20 10.2	
"	14621	10.8	10.80 10.8	AC 3289 10.6 10.60 10.6
"	14702	10.9	10.90 10.9	fuzzy im diffic
"	8608	11.0	11.00 11.0	
"	8620	10.4	10.40 10.4	
"	8682	10.9	10.90 10.9	
"	8760	10.9	10.90 10.9	
"	8814	11.0	11.00 11.0	
"	9065	10.4	10.40 10.4	
"	9060	11.0	?11.10 11.2	im. of star very diff from c. s
"	10859	10.9	10.90 10.9	
"	11077	10.5	10.45 10.4	very poor pl. ? of est.

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Sunday May 24, 1921

Variable 27. 1920 Pegasi:
Discovered by Wolf A.N. #5069

Sumner	MC 9275	Sept. 28, 1915
" "	" 15353	Oct. 9, 1918
" "	" 16302	" 8, 1919
" "	B 41326	May 26, 1910

not sumner	A 9894	Oct. 22, 1909
" " "	A 1146	pompeia.
	" 1006	" "
" " "	" 1952	July 21, 1896
" " "	I 31953	Aug. 15, 1904
" " "	I 4504	
	I 13783	
	I 13836	
	I 14077	
	I 24168	Exp. 66 Dec. 4, 1899
	B 10500	
	B 16733	J 30640 78 m. Torrence
	B 21627	30646 " " "
	B 25376	30648 " " "
	B 27981	
	B 29825	J 4156 Sept. 4, 1891 Exp 32 N.S
	I 34932	
(yellow)	MC 11154	
"	" 9219	
"	" 9060	
"	" 8893	

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Wednesday May 25, 1921

Reobservations of I Lacertae Bk 2:84

I 11465	8.6 8.65 8.7	near edge	Adopt 8.6?
I 11457	8.6 ?	near edge difficult to ep.	Bk 2: 117
I 12021	8.6 8.65 8.7		Adopt 8.6?
AC 15822	9.3 9.30 9.3 ✓		
" 13526	9.4 9.40 9.4 ✓		
" 12546	9.3 9.35 9.4 ✓		
" 14702	9.5 9.45 9.4 ✓	fuzzy im	
" 4572	9.5 9.40 9.3 ✓		
AC 7227	8.5 8.50 8.5 ✓		
" 3168	9.4 9.40 9.4 ✓	dkpl	
" 2751	8.9 8.95 9.0 ✓		
" 3223	9.2 9.25 9.3 ✓		
" 5386	9.3 9.35 9.4	sup. 201	
" 4172	9.2 ? 9.20 9.2 ✓		
" 3916	8.5 8.50 8.5 ✓		
" 5158	9.0 8.95 8.9 ✓		
" 6815	9.4 9.40 9.4 ✓		
" 7005	9.3 9.30 9.3 ✓		
" 7171	8.9 8.95 9.0 ✓		
" 7262	9.2 9.30 9.4 ✓	p. pl.	
" 7696	9.3 9.35 9.4 ✓	q	
" 10852	8.6 8.65 8.7 ✓		
" 2188	9.2 9.15 9.1 ✓		
" 7712	9.3 9.30 9.3 ✓ ?		
" 1971	9.3 9.35 9.4 ✓		

AC 3866	8.7 8.75 8.8 ✓ ?	
" 5280	8.8 8.90 9.0 ✓	
" 16850	9.3 9.30 9.3 ✓	
" 6501	9.4 9.45 9.5 ✓	
" 3204	8.9 9.00 ? 9.1 ✓	
" 15449	9.4 9.40 9.4 ✓	
" 15706	8.9 8.95 9.0 ✓	
" 12611	9.00? after Vsac.	dkpl
X does not ep. with c. s.		
AC 14270	9.1 9.15 9.2 ✓ ?	
" 14621	9.4 9.40 9.4 ✓	
" 12391	8.6 8.60 8.6 ✓	
" 13233	8.8 8.85 8.9 ✓	
" 12663	9.3 9.40 9.5 ✓	
" 13364	8.6 8.60 8.6 ✓	
" 12549	9.0 9.05 9.1 ✓ ?	
" 14191	8.6 8.65 8.7 ✓	
" 15954	8.6 8.65 8.5 ✓	
I 11592	9.4 9.35 R 9.3 ?	p. 201
I 9352	9.3 9.30 R 9.3	
I 10672	9.1 9.10 9.1 ? e	
I 11872	9.3 9.40 9.5 ? s	

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Tuesday May 31, 1921

Reobservations

X Lacertae

I 11592	9.2	✓		Bk. 2: 2a?
BC 5386	9.2	9.15	9.1	
" 10905	9.4	✓		
" 12179	9.4			

Z Lacertae

AC 13526 ✓	8.8	8.85	8.9	Bk. 2: 41
" 19232 ✓	8.9	8.85	8.8	same Bk 2: 45
I 9006 ✓	9.1		9.2	
" 6886 ✓	8.9 ✓			

RR Lacertae

I 7244	9.5?			Bk 2: 59
" 9444	9.1		9.2	" " "
AC 6501	9.5	ft.		Bk 2: 57
" 6866	9.6		9.6	same
" 7262	9.3?			Bk 2: 52
" 9031	9.3		9.4	" 2: 55

201

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