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2

July 5, 1917
B36171 Hung

17
26 Aq2 J18

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/	1	−71°	2726	22	40.3	−71	0	6.2 32 on B.19967
/	2	−72°	2759	23	16.4	−72	51	7.2 110 " B38385

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July 5, 1917
B3835 cont. from 5-3, 202

135-4 F8
136.6 F18

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135	-71°	2769	23	32.8	-71	49	8.0	48	on B12082
136	-71°	2765	23	27.1	-71	39	7.6	46	" "

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Friday, July 6, 1917
B40897 Emb. Jan 125, 68

235	2	K
236	1	K5
237	1	F5
238	1	G0
239	4	F5

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1917phae.proj.2220C

235	−32°	15h 9m 87	20	21.1	−32	31	9.0	86m B40728
236	−31°	17h 9m 2	20	12.1	−31	39	8.3 ✓	
237	−29°	17 0 20	20	15.8	−29	23	9.2 ✓	
238	−29°	17 0 31	20	16.7	−29	22	9.1 ✓	
239	−29°	17 0 36	20	17.0	−29	9	8.7 ✓	

Identn. in book by A.M.C. July 10, 1917
" on cards" M.A.H. July 12, 1917
Identn. compared by G.R.B. July 12, 1917

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1917phae.proj.2220C

July 6, 1917
B21397 cont. from 46, 47

✓ 203	3	G5
✓ 204	2	K0
✓ 205	2	K5
✓ 206	2	K0
✓ 207	2	K5
✓ 208	3	K0
✓ 209	3	K2
✓ 210	2	K2
✓ 211	3	F5
✓ 212	2	K2
✓ 213	2	K2
✓ 214	2	G5
215	1	a
216		
217		

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1917phae.proj.2220C

203	−84°	617	20	5.2	−84	45	8.9 ✓
204	−84°	616	20	4.0	−84	30	9.3 ✓
205	−84°	615	19	49.3	−84	26	9.3 ✓
206	−84°	614	19	46.0	−84	26	9.3 ✓
207	−84°	613	19	35.0	−84	47	9.4 ✓
208	−84°	612	19	32.0	−84	55	9.3 ✓
209	−84°	611	19	28.2	−84	41	9.1 ✓
210	−83°	689	19	35.0	−83	44	9.3 ✓
211	−83°	688	19	32.7	−83	5	8.9 ✓
212	−82°	778	19	21.3	−82	57	8.8 ✓
213	−82°	786	19	31.4	−82	41	8.9 ✓
214	−82°	778	19	13.9 +~~5.4~~	−82	52 ~~45~~	8.6 ~~9.8~~ ✓
215	Approx. 1875		+9	27	−83	13	

Ident. on cards by ~~M.A.H.~~ a.m.e. July 12, 1917
" " in book " M.A.H. " "
" compared by G.R.B. July 12, 1917

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1917phae.proj.2220C

July 6, 1917
B 3064 Lmp

1 7 Ko

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1917phae.proj.2220C

✓ 1 _ 4 1996 23 57.2 -4 22 5.2 41 m B.4.1.8

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1917phae.proj.2220C

Saturday, July 7, (91)
B1660 Long.

1 3 B0

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1917phae.proj--2220C

✓ 1 +20°4218 M9 34.1 +20 9 6.7 ~~6g~~ 1Fi m J3785g

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1917phae.proj.2220C

Monday, July 9, 1917

X 4985

/ −41°11033 B
Superpose on 11036

−41°11025 B Beeks Probably B8
Superpose on 11024

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1917phae.proj.2220C

Thursday, July 12, 1917

B21696 Re. 14am

✓ 185 Two close stars on Ch. pl. B3849 05
A careful examination of objective
spectrum plate shows that
the preceding N. star is
class K. This star is
slightly fainter on short
plate than the N.F.
The N.F. component has
very narrow hydrogen
lines Hγ, Hδ, He, and
4026 appears due, present.
This Spectrum appears ~~exactly~~
like B8, although it is possible
that it might be A with very
narrow lines

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1917phae.proj.2220C

Tuesday, July 17, 1917

B4270S – Comp.

15 Ags Comp.

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1917phae.proj.2220C

✓ ~~7h~~ -73 4 0 4.5 -73 5T 6.5 62 m Bi 208

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1917phae.proj.2220C

Wash July 18, 1917
λ 26124

1 nb

Found to be variable.

2 4 B almost cmb.

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1917phae.proj.2220C

1 +22 1109 s 48.3 +22 49 8.2

2 +21°858 s 36.2 +21 23 8.1 9 m √3808

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1917phae.proj.2220C

July 18, 1917
D 33411

1 1 eg n. f.
2 2 a s. f.

D 37310 Re-run

✓ 60 Certainly composite. n. f. = G.
Brighter = a2.

B 20538 Re-run

✓ 82 K5

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1917phae.proj.2220C

✓	1	+62	87	0	20.9	+62	42	8.8
✓	2	+62	88	0	21.0	+62	40	8.8

} 127 on 38060

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1917phae.proj.2220C

Sunday. July 23, 1917

Class R. Observations to
form sequence between K & R

The two strong absorption bands 4227
and 4640 & 4750.
Also strong absorption from 4395 towards G.

Rx[0] B38112 −10° 5057. 19 17.6 −10 17.4

Probably the first class of R stars.
4227 is broader than 4640 & 4750.
both are strong.
H & K very strong
G band seen but absorption band
to red of this is stronger than G

B 11410 81 2 30.2 −9 53
Probably like −10°5057

+42°2811 17 10.4 +42 15
98 m B38773, B36677 about

1917phae.proj.2220C

July 23, 1917

Stars intermediate between K and R

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1917phae.proj.2220C

July 23, 1917

R stars which are alike

+5° 5223	23 44.0	+5 50	8.7	38m B17058	
+20 5071	21 59.7	+20 34	8.7		

These stars are much brighter between Hβ and Hγ than Hγ & Hδ.

They appear to be later than −10° 5057
They show H+K bands, but much
fainter than
R 3 4227 wider than 4640 to 4750

1	36.2	−59 46	10.2	1m B42811
3	46.7	−43 50		5m B24618

Perhaps portion between Hγ & Hε is slightly fainter in this than in others.

19	52.5	−0 2	16m B37590.
19	44.0	+85 9	B 1 N4592

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1917phae.proj.2220C

July 23, 1917

I 1905 ~~15~~ · R star

Resembles +5°5323

I 33486.

3 57.2 +61 +61°667

In I 37427 long classified 0, 6, 10 which is not exactly true on short disp. plates.

It resembles R_3 but is different in having the red end shortened. It is nearly a 3, 6, 10, star.

Call it R_6 typical star

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1917phae.proj.2220c

Tuesday July 24, 1917.

−3°1685−

3, 6, 10 plates. 6 56.0 − 37

10 8 m B20867

R5− Bands 4227, , 4640 to 4750 all seem
about nearly equally shiny, very little
effect of shorter λ than 4227.

+53°66 0.19.1 +53 44

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1917phae.proj.22206

Wednesday, July 25, 1917

19 Piscium B, 0158 Plant
Bright only in K, 8, 10 bands,
G band barely seen
4227 appears like a narrow line
Sp seen as far as H + K Cent
very faintly.

+61°667 differs from 19 Piscium
in having H + K stronger, 4227
wider
+61°667' has more blue light than
19 Piscium and seems to resemble
the 3, 6, 10 stars in some respects.

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1917phae.proj.2220C

July 25, 1917.

B 40331 +6° 3898

18 37.1 +6 43

Fairt, consists of the two bands about equally bright, and a very, very faint trace of spectrum perhaps up to H & K.

Classified N p, resembling I Cam p.

See B 33286, where list of plates are given "showing var. of about 0.5^{m} to help the comp of B 40333

17 53.2 +69 4

D 32499

Very faint. R 1

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1917phae.proj.2220C

Thursday, Aug. 9, 1917

B 4345 8 mv. 67 faint
−8° 7852 faint, but shows
band λ670 strongest, Probably
R3, as it appears resemble

+5° 05223.

a 8329 17 N. 8 −43 43
R1 or R3 probably R1
Band at λ660 well seen, & spectrum
as far as H & K.

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1917phae.proj.2220C

August 14, 1917

B21397 Re-repan

" 133 A0
" 184 A5
" 189 B5
" 190 K0

B20538 Re-repan

" 144 A2
" 149 B0
" 170 K2

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1917phae.proj.2220C

Tuesday, Aug. 21, 1917

I_{21}-942

For star of 7.8 magn. near

φ Pegasi

✓ +49° 445-

/Ls —

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1917phae.proj.2220C

Thursday Aug 23, 1917

B44374 Long.

1 5 F2

2 6 1 G0

1917phae.proj.22206

✓ 1	−60 112	1 20.6	−60 9	7.4	15″ m	B17629
✓ 2	−6 1 58	0 56.2	−6 1 32	7.1	42″ m	B11991

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1917phae.proj.2220C

Friday October 5, 1917

B 37590 for M stars

No.	Dur.	class	Remark
✓ 1	2	Mb	
✓ 2	1	Mb	
✓ 3	1	Ma	
✓ 4	2	Mb	
✓ 5	2	Mc	The northern of two, same R.a.
✓ 6	2	Ma	
✓ 7	1	Mb	The free of two.
✓ 8	1	Ma	
✓ 9	4	Ma	
✓ 10	1	Ma	
✓ 11	3	Mb	
✓ 12	2	Mb	
✓ 13	3	Ma	
✓ 14	5	Mb	
✓ 15	2	Md	1 to very bright R R Aquilae
✓ 16	2	R3	

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1917phae.proj.2220c

1	+2°	3961	19	33	28.4	+2	9.5	9.2 ✓
2	+1°	4073	19	35	3.6	+1	21.7	9.4 ✓
3	+0°	4333	19	44	18.0	+0	32.7	9.5 ✓
4	+2°	4005	19	43	37.6	+2	~~52.1~~ 48.0	~~9.4~~ 9.3 ✓
5	~~+3°~~ approx. 1855	~~4155~~ ≠	19	41	22.2	+3	18.8	~~9.5~~
6	+2°	4048	19	50	53.1	+2	58.7	9.2 ✓
7	+4°	4303	19	52	23.3	+4	39.4	9.3 ✓
8	+3°	4223	19	52	52.2	+3	3.7	9.0 ✓
9	+0°	4382	19	53	15.7	+0	57.9	8.5 ✓
10	+3°	4240	19	57	47.6	+3	20.5	9.5 ✓
11	+3°	4238	19	57	33.1	+3	48.1	9.3 ✓
12	+4°	4335	19	57	51.2	+4	10.3	9.3 ✓
13	+4°	4340	19	58	30.7	+4	44.7	9.2 ✓
14	+5°	4435	20	4	1.9	+5	55.8	7.9 ✓
15	Pub. pos.		19		52.4	−2	+11.9	
16	~~−0~~	3883	19	50	12.1	−0	8.8	9.3 ✓

Ident. on cards by M.K. Oct. 5, 1916.
" in book " M.A.H. Oct. 15, 1917
" compared by E.R.B. Oct. 15, 1917

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Saturday, Oct. 6, 1917

λ 27920 shut

1	2	K5
2	2	a
3	5	K0

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1917phae.proj..2220C

✓	1	+19°4208	19	49.2	+19	38	8.5	123 cm ✓37235
✓	2	+19 4206	19	49.2	+19	44	9.0	sup. on 123 cm ✓38016
✓	3							

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1917phae.proj.2220C

Monday Oct. 8, 1917
Spectra of P Sag.

B14181 m edges
Hγ=10 Hβ=20 Hδ=3
All bright lines Hβ + Hγ
Not Mod. Bright + dark bands betw.
Hγ & Hβ.

I11252 Too poor.
Hβ probably bright.

B14200 edges
Hγ=10 Hβ=15 Hδ=3
Sp. like B14181

B38106 Thin fil.
Hγ=10 Hδ=2
Hβ not clearly seen but the
focus is not good on this plate at Hβ
Bright bands widely betw. β & γ.

B14208
Hγ=10 Hδ=3
Sp. ends at Hβ, which may be bright.

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1917phae.proj.2220C

Oct. 8, 1917
J Sagittarii (Contr.)

B37615
Star very ft. No h. lines.

B20207 Star very ft.
Dark bands only.

B20061 ft.
Dark bands only.

B14480 on edge.
Rather ft. Hβ bright.
Focus rather poor for other lines.

B14380
Hγ=10 Hδ=3
Good to enlarge.

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1917phae.proj.2220C

Wednesday, Oct. 10, 1917

† 37937 (Cont. from Bk. 50, P. 80.)

No	Mt	Class	Remark
77	9	B9	
78	.2	F8	
79	6	G5	
80	2	G5	

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1917phae.proj.2220C

77	+47°	50	0	9.5	+47	8	6.0	9 m 9 38896
78	+52	6	0	0.6	+52	59	8.0	10 m 1 38557.
79	+49	429	1					10 m 1 37810
80	+48	4225	-					6 " "

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1917phae.proj.2220C

Thursday, Oct. 11, 1917

B 2187 from M Plaut

✓ 1	2	mb
✓ 2	1	mb
✓ 3	1	ma
✓ α	3	a
✓	2	Ks a

Spectrum composite.

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1917phae.proj.2220c

1	+5°	4229	19	32	32.2	+5	25.5	9.1
2	+10°	4006	19	32	26.3	+10	3.7	8.6 ✓
3	+11°	3868	19	24	4.0	+11	19.4	9.1
4	+10°	4035	19	38	1.6	+10	35.0	9.1 ✓
5	+10°	4034	19	37	58.6	+10	36.4	8.7 ✓

5

Ident. in book by M.A.H. Oct. 15, 1917
Ident. ~~in book~~ on cards by MK. Oct. 11, 1917.
2-4-5 " compared by G.R.B. Oct. 15, 1917

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1917phae.proj.2220C

Wednesday October 17, 1917

α 37349 cont from Bk. 35, 84

215	3	K0
216	2	#8
217	2	K0
218	1	K5
219	2	K2
220	2	a0
221	2	a0
222	1	K2
223	1	a0
224	3	B8
225	1	g5
226	1	K0
227	1	K2
228	1	a2
229	2	a2
230		

230 1 K5

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1917phae.proj.2220c

215	+48°	2933	1q	36.3	+48	36	8.2 ✓ 60 on Q37392
216	+46°	2746	1q	34.7	+46	34	8.7 ✓
217	+44°	~~3514~~ 3178	1q	30.0	+44	46	8.5 ✓
218	+45°	2927	1q	31.1	+45	7	8.3 ✓
219	+45°	2912	1q	25.7	+45	10	8.3 ✓
220	+46°	2705	1q	26.4	+46	12	8.5 ✓
221	+46°	2697	1q	25.0	+46	4	8.7 ✓
222	+44°	3193	1q	33.0	+44	54	8.5 ✓
223	+46°	2749	1q	35.6	+46	14	9.0 ✓
224	+44°	3237	1q	41.3	+44	34	8.9 ✓
225	+43°	3348	1q	40.2	+43	43	8.6 ✓
226	+43°	3376	1q	40.1	+43	57	8.5 ✓
227	+42°	3420	1q	36.4	+42	56	8.5 ✓
228	+47°	2929	1q	45.0	+47	4	9.1 ✓
229	+47°	2933	1q	45.9	+47	26	9.0 ✓

Ident in book by A.M.C. Oct. 26, 1917
" on cards " M.A.H. " 27, 1917
Ident. compared by G.R.B. " 27, 1917

✓ 230 +43 3267 1q 26.4 +43 32 7.9

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1917phae.proj.2220C

Wednesday October 17, 1917

Mc 5816 cont-from Bk 84, 194

410	3	K5
411	6	F8
412	3	A0
413	3	A2
414	4	A2
415	4	K0
416	6	A0
417	3	K0
418	2	A2
419		

419 #2 Pd N.G.C. 6884

Hδ, Hγ, Hδ barely seen perhaps 4686 also 5007 absent, 4959 weak,

5007 = 4 times 4959. Hβ and Hγ that there is no comparison

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1917phae.proj.2220C

410	+44°	3257	19	44.3	+44	30	8.8 ✓
411	+44°	3258	19	44.3	+44	36	8.4 ✓
412	+44°	3260	19	44.4	+44	43	8.9 ✓
413	+44°	3263	19	45.3	+44	13	8.9 ✓
414	+44°	3252	19	43.7	+44	32	9.0 ✓
415	+44°	3253	19	43.7	+44	49	8.3 ✓
416	+44°	3248	19	42.6	+44	29	8.8 ✓
417	+44°	3249	19	42.9	+44	15	8.9 ✓
418	+44°	3250	19	43.2	+44	29	9.4 ✓

Identified in books by A.M.C. Oct. 26, 1917
" on cards " M.A.H. " 27 "
" compared by E.R.B. Oct. 27, 1917

419 H.G.C. 6884

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1917phae.proj.2220C

Sunday, Oct. 22, 1917

37392 cont from 137,57

207 1 K5

208 1 G5

1917phae.proj.2220C

207 +50°	2905	19	H7.8	+50	9	8.0
208 +50°	2904	19	H7.6	+50	25	7.3

Identt. on cards by M.A.H. Oct. 22, 1917
Identt in book by A.M.C. Oct. 22, 1917

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1917phae.proj.2220c

Friday Oct. 26, 1917

B37599 s. Jr M Hans.

No.	Int	Class	Remark.
1	2	Ma	
2	1	Mb	
3	4	Md	$H\gamma = 10$ $H\delta = 12$ Sp. Mb.
4	3	Md	$H\gamma = 10$ $H\delta = 20$ Sp Mc
5	3	Mb	
6	b	M	
7	1	Mb	
8	2	Mb	
9	2	Ma	
10			

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1917phae.proj.2220C

1	+3°		4269	20		2.6	+3	30.3	9.4
2	+4°	approx.	4360	20	2.6	25.3	+4	34.5	9.0
3		approx.	Pub.	20		8.0	+6	0	(1900)
4	+4°	approx.	(1855)	20		5.7	+5	53	
5	+9°		4509	20	16	32.7	+9	37.0	8.9
6	+9°		4549	20	22	27.6	+9	25.0	8.5
7		approx.	(1855)	19		57.7	+8	14	
8	+7°		4353	19	56	28.8	+7	49.2	9.3
9	+8°		4296	19	53	32.7	+8	3.5	9.3
10									

Idents. on cards by M K. Dec. 15, 1917.
" in book" M.A.H. Dec. 15, 1917

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1917phae.proj.22206

Friday October 26, 1917

B 5173 long

No		
1	6	B2

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1917phae.proj.2220c

1	-24°	13615 17	47.2	-24 52	6.6

Card made out.

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1917phae.proj.22206

56

Oct. 26, 1917

I 22968

1 Mar

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1917phae.proj.2220c

✓ 1 +39° 310H 17 14.9 +39 26 8.1 2on Q38779

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1917phae.proj.2220C

Monday Nov. 5 1917

B 22155 · re-exam

/ 168 B Lens nearer? faint
/ 169 B Perhaps Occ

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1917phae.proj.2220c

Wed. Nov. 7, 1917

D 37609 Renewal

✓ 2 ✓✓

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1917phae.proj.2220C

Tuesday, June 13, 1917

B24340 Re-run

1 60 B5p. Hyth. Lewis very narrow K=Sanerwein

1917phae.proj.2220c

Tuesday, Nov. 20, 1917

J 37496 No. 33

Two stars.

+47°1013 much F5

+47 1012 much F perhaps F5.

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1917phae.proj.2220C

Monday Dec 10 1917

J 35508 Re-meas

J 136 75 a3

Comp.
The two plates may be nearly equal in brightness

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1917phae.proj.2220C

Thursday, Dec 13, 1917

J 37365 enters from 132, 130

364	3	B_0	
365	3	B_0	
366	3	B	Partly sup. on 367
367	2	K	" " " 366

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1917phae.proj.2220C

364	+34°	1046	5	18.0	+34	38	8.8
365	+34°	1049	5	18.1	+34	34	8.5
366	+34°	1051	5	18.2	+34	39	8.3
367	+34°	1052	5	18.3	+34	46	8.4

Sdevk. in Book by A.M.C. Dec. 13, 1917

" on cards" M.A.H. Dec. 13, 1917

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1917phae.proj.2220C

Dec. 13, 1917

B39685 cmh

~ 1371 a Same slit as 77 on B38410

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1917phae.proj.2220C

Dec. 13, 1917

137535 Re-appears

85 Per Hγ appears bright on edge of Allen Lewis entrance

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1917phae.proj.2220C

Dec. 13, 1917

I 19792 from a double star

✓	1	Ag	10	+18° 863
✓	2	~~Fl~~	7	+18 864

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1917phae.proj.2220C

Friday, December 14, 1917

λ 3727.4 Remeasure.

81 Certainly composite.
Brightness = a
Ft. — g
Numerous solar lines present.

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1917phae.proj.2220c

Monday December 17, 1917

Continued from Bl. 91, p. 170 δ 38808 long

Ms.	Sub.	Class	Remarks
26	3	B	Lines barely seen. Perhaps Comp. Bed ~~Bed~~ end resembles K

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1917phae.proj.2220C

26 +18° H085 19 21.0 + 18 0 7.1 b on 2 37931

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1917phae.proj.2220C

Friday, Dec. 21, 1917

B45102 contin from 27, 172

26 + F0

27 5 K2

1917phae.proj.2220C

-26	-23	37	0	V: 6	-23	31	7.8	15-m B237K6
-27	-26	56	0	7.4	-26	K3	7.2	14-m B8886

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1917phae.proj.2220C

Dec. 21, 1917

D37942 cont. from 72, 74

123 A1 A3

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1917phae.proj.2220C

α 123 +45 83 0 16.5 +45 5 7.9 95-m 13889 6

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1917phae.proj.2220c

Wed. Jan. 2, 1918.

B 44268 long.

[illegible] 1 7.3 F0 (good).

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1917phae.proj.22206

✓1 −48°102 0 24.4 −48 54 5.7 19m B37262

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1917phae.proj.2220c

Monday, Jan. 7, 1918

T 3 8 5 3 7/8 Comet. June 61, 1446

24 1 Ma

25 1 Q3

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1917phae.proj.2220C

✓24	+61	211	0	58.8	+61	52	8.3	36m	J38108
✓25	+66	105	1	10.6	+66	28	8.0	33m	J38905

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1917phae.proj.2220c

Saturday, Jan 12, 1918

C 5754 x Arietis

Kx powder

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1917phae.proj.22206

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1917phae.proj.2220C

Wed. Jan. 16, 1918

B 41989 lmg.

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1917phae.proj.2220c

✓ 1 -18°6154 22 28.0 -18 12 6.5 45 m BD0869

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1917phae.proj.2220C

Jan 16, 1918
In ℱ 177

1	1	Mbn	Faint
2	5	Con	SS Cygni very narrow hyd. lines reversed
3	3	K_2	
4	3	K_5	
5	1	Per.	Perhaps K or R.
6	2	Per.	Br. lines, Var?
7	4	Ors	

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1917phae.proj.2220c

1	+44°	3895	21	34.0	+44	32	9.2	I 18607, no 4660.
2	Pub. 1900		21	38.8	+43	8		
3	+39°	4567	21	23.2	+39	45	7.9 ✓	
4	+39°	4568	21	23.2	+39	50	8.0 ✓	
5	+37°	4407	~~37~~ 21	37.3	+37	21	var. dn	
6	+42°	4030	21	10.1	+42	51	9.3 ✓	Defective plate.
7	+42°	4241	21	47.9	+42	48	8.8 ✓	

Ident. on cards by M.K. Jan. 23, 1918.
" in book by M.A.H. " " "
" compared by G.R.B. " " "

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1917phae.proj.2220C

Lunacy Feb. 11, 1918

D 26125

+ 21° 16' 0

Geo. Mot. Resp. on this.

Sp. As

1917phae..proj..2220c

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1917phae.proj.2220C

Tuesday, Feb 13, 1918

H plates.

Dec 10, 1917

H 1969 W Persei

1 W Persei Only red and blue
+ bright at extreme red.

2 +57°662
1:10 Proportion of region from
Hβ to Hδ to Hβ to greater
Probably K5

3 +57°641
1:16
K5

4 +57°647
0:16
Probably Ma

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1917phae.proj.22200

Feb. 13, 1918

H 196 G

1 +56°747
K5

" 2 +56°756
K5? faint

" 3 +57°672
K5 (in H.D)

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1917phae.proj.2220C

Feb 13, 1918

H 1962

1 +49°3673
Like +43°5-3 but the protein
If shortest ℓ is faintest. This may
be due to faintness of the slit

2 +49°3671
3;10
K2

3 +49°3667
Mn. Resembles m H 1866

4 +49°3687
3;10
K2

5 +49°3692
5;10
K0 in H.D.

6 +49°3651
1;10
Ma

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1917phae.proj.2220C

Feb. 13, 1918

H 1964

1 +48°3523
2; 10
K5

2 +49°3535 Espin's No.
very faint.
1; 10
Repeat.

3 +48°3394
2; 10
K5 or Ma faint.

H 1965

1. +48°3392
3 4; 10
Kz

2. +47°3429 very faint
1; 10
Too faint to be sure
Perhaps K5 or M.

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1917phae.proj.2220C

Feb. 13, 1918

H 1970

1. Mpa R Cygni
Lehr slow on H 1866

2 +53°2705
Mb

3 K5 vr Ma Sorpl.
~~21 42.2 +53 48~~ approx
21 43.0 +53 29 approx
+53°2692 on plate
Capris N.
R in 56, 218 says this sp. via
not Class N.
This plate shows it to be an
excellent Class K0

4 K5 vr Ma. Fl.
~~+40 2603~~
approx. 21 42.2 +53 48

5 +40 2603
Mb

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1917phae.proj.2220C

Feb. 13, 1918

H 1972

1 +5°2689
K5

2 +5°2693

very faint. Perhaps N.C.
Spectra Type II. only one band
strong red one, but there
is faint 4F even with the same
class.

3 +5°3832
Ma

4 +5°3033
Resembles No. 3, only perhaps
redder.

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1917phae.proj.2220c

Feb, 13, 1918

H 1969

1 +56°724 W Persei
Only one comp Mn

2 +57°662
Mn ?

3 +57°664
Mn ?

+57°667
Mn
Less blue light than 3.

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1917phae.proj.2220C

Feb. 13, 1917

H 1647

1 +58°2396
One h. band shrred.
Originally called E. P Class Mb

2 +58°2390
Mc Orig. Class C

3 +58°2387
Mc

H 1646

1 Mc wMb.
+41°3991

2 +41°4004 Class Mb.
500y slit-spot, three plates in red

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1917phae.proj.2220c

Thursday Feb. 14, 1918

H 1867 × Mrs. Mey.

H Mrc. Bro. lines seem complete
✓ do not appear blended to eye drop

H 1685 R Serpentis.

H 5 bright conts. sp. very faint
bright bands at red end

1917phae.proj.2220c

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1917phae.proj.2220c

February 15, 1918 Friday

B 37135 long

1 8 J8

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1917phae.proj.2220c

1 −40° 15285 23 H8.1 − 41 0 6.1 6 on B14371

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1917phae.proj.2220C

Saturday February 16, 1917

J36282

1	2	a0		
2	2	F8		
3	2	F1	65 m	J38903
4	1	K5	+75°904	20.24 m J38133
5	3	F2	+73°1043	64 " "

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1917phae.proj.2220C

1									
2	+71°	12 39	23	49.5	+71	18	8.7	✓	49 on D38903

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1917phae.proj.2220C

Monday Feb 18, 1918

B1268S Re-exam

✓ 139 ao
ao

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1917phae.proj.2220c

Feb. 18, 1918

H 1859

1 ✓ 6 33.2 +22 42
Faint Nearly all red light. Perhaps resembles +43°53

2 Pec. ~~Perhaps Class R~~. Probably Ma
6 29.8 + 22 41 (1855)

3 ✓ +22°1419
Ma

✓ H 1856 6 20.3 +19 8
Pec. Appears blue exactly like +43°53

H 1854
1 Ma p. No blue light. Red and resembles Class Ma
+3°1214

2 Mb +3°1219

3 Mb faint +3°1207

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1917phae.proj.2220C

Feb. 18, 1918

H 1857 737.5 ~ -10 39 2 vars

1 Mrn.

2 Mrn

H 1860 -12 2289

1 Mrn 759.5 ~ -12 49

2 Very faint Mrn -13° 2359

3 Mrn (good) -12° 2283

H 1853

Taken for Esphei Glen +14° 1594,
but this is Class R.
+14° 1598 is per. & red.

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1917phae.proj.2220C

Feb. 18, 1918

H 1877

+14°1598
red
Probably Mc
Somewhat like +13°53 but probably
nearer to Mc.

2 +15°1511
Mc

3 Rs +15°1522

H 1861
+14°2048
3, 6, 10 Rs

H 1863
1 Faint. R3

2 Mc +53°1389
~~H Rs~~

H 1929
One band in red.
Mc

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1917phae.proj.2220C

Saturday February 23, 1918

B Ha 240 hmg

1 5 Bq

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1917phae.proj.2220c

1 −13°	H226	15	33.2	−13	30	7.2	118 on B H05 & 4

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1917phae.proj.2220c

Sunday, Feb. 25, 1918

H 1981

1 Mas
2 Mas
3 Mb
4 Iorpor
5 Mb
6 M Perhaps Mc Portion of cluster
+ chain HB is very faint. Perhaps outer
medgeite Cellwein Mb and +63°53
7 K5

H 1961

1 +61°2134
Mc (very much like RR Cygni)

2 Irreg. Probably K5

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1917phae.proj.2220C

Feb 25, 1918

B20646 smith. from 102, 1854

1909. F0

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1917phae.proj..2220C

α 90 -37°516 1 16.5 - 37 42 6.6 13m B10635

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1917phae.proj.2220C

Sunday, Feb 26, 1918

D 34973

✓ 1 K −9°6155 mean H.R. 8841.

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1917phae.proj.2220C

Wed. Feb. 27, 1918

Lines of Nova Monoc. H 1990

Line		Meas.		Int.	Meas.		Int.	
3889 59.5		10.9		1	10.3	7	2	7.0
3970 52.5		11.6	7	2	11.0	8	2	8.0
4101 44.5	Hδ	12.4	8	5	11.8	16	5	15.5
434.0 29.0 436.3	Hγ	13.9	15	10	13.6		10	8
21.0		14.8	9	1	14.3	7	1	6
4686 150	46 ~~44~~ 50	15.4	6	4	14.9	6	4	10
4862 5.0	Hβ	16.4	10	1	15.9	10	1	5
5007 0.0	5007	16.9	5 ~~6~~ 7	3	16.4	5	3	16
16.		18.3	14	2	18.2	18	1	5.3
21.0 21.3		18.9	6	3	18.6	4	3	
24.5	~~50~~							~~65.8~~
38.	Hα 6562							~~80.8~~ 60.4

4520 4540 5630 5750

4862

5007 10.2 16
11.8 6
12.4

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1917phae.proj.2220C

Wed. Feb. 27, 1918

Lines of Nova Monoc. H 1987

Line	Meas.		Int.	Meas.		Int.	
0. 5,007	11.1	21	1	10.3	21	2	21.0
21.	13.2	4	2	12.4	3	3	3.5
24.5	13.6	13	1	12.7	14	1	13.5
38. Hα	14.9		10	14.1		10	

H 1987 Scale 1 div = 1/3 mm

Line		
5007	10.0	
	13.9	3.9
	14.3	0.4
	16.4	2.1

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1917phae.proj.2220c

Monday, March 4, 1918

H 1782
+27°1026
Nb.

H 1854

1 +30°2214 Pec Like Nne but red
but has no blue light.
2 Nea
3 Nea

H 1871

1. Nb
+20°2465 10 11.7 +20 36

H 1955

2 3.4 +63 9
Cephei N.
but with N probably Mas with K5
several K5 on Nea plate mpl

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1917phae.proj.2220C

August 6, 1918

~~March~~

Nova Aquilae. H 1994 Measures of Lines

Scale 1 div. = 1/5 mm

Line	Meas	Int.
H~~δ~~	− 6.3*	15
	5.2	0.1
	4.8	0.5
5007	0.0	3
4862 Hβ	0.9	2
4650	2.6	3
4339 Hγ	5.0	10
4101 Hδ	7.7	2

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1917phae.proj.2220c

Tuesday March 5, 1918

δ 3 & 146

1 ϕ5 As Trace of G band seen.

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1917phae.proj.2220C

✓ 1 +22° 637 4 0.3 +22 14 7.0 neb m 34714

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1917phae.proj.2220c

Tuesday March 5, 1918

Cont from B89, 102 Q39901

107	1	K5
108	2	K2
109	1	K5
110	6	B9
111	2	B10
112	2	A3
113	1	A5 Indistinct

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1917phae.proj.2220c

107	+17°	3687	18	35.2	+17	33	7.5	stars missing in vol. 54
108	+17°	3691	18	36.2	+17	35	7.5	
109	+11°	3589	18	38.7	+11	27	8.1	

Cards made out
March 5, 1918

✓ 110	+15°	3587	18	40.9	+15°	21	7.7	7 on √37202
✓ 111	+16	3450	18	12.2	+16	57	7.6	
✓ 112	+16	3580	18	33.7	+16	26	8.0	
✓ 113	+14	3607	18	33.4	+14	2	7.8	

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1917phae.proj.2220C

Wednesday March 6, 1918

Cont from Bl. 85, 10 ~ D 38507

164 3 F8

165 1 G5

162 2 K0

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1917phae.proj.2220c

164	+20°	4584	20	11.9	+20	2	7.6
165	+26°	4682	20	35.4	+20	11	7.8

} missing in ~~Dol~~ 54

Cards made out Mar. 6, 1918

✓ 166	+21	4358	20	40.7	+21	27	7.7

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1917phae.proj.2220C

Wednesday March 6, 1918

Q 32 3, 2 Short

No

1 3 Ko

2

3 See Pl. 144, 71

4

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1917phae.proj.22206

1	+24°	4593	22	21.4	+24	9	7.5

missing in Vol. ~~57~~

Card made out Mar. 6, 1918

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1917phae.proj.2220C

March 6, 1918

H 1864

Mem +54°1337

H 1986

1 Very faint.
Mem

2 R Gem
Pec. One br. band shred

3. +22°1579 = 071122C

Ks-

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1917phae.proj..2220C

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1917phae.proj.2220C

Thursday, March 7, 1918

B 20538 cinh. 126, 156

2124 Kr

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1917phae.proj.22206

v 212 -79 152 + 45.1 -79 42 8.2 1 m B20557

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1917phae.proj.2220C

Friday March 8, 1918

Cont from Bl. 524, 108 B15165

No

52 7 K2

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1917phae.proj.22206

52 −81° 1024 23 1.6 −81 35 7.7 missing in Vol 50

Card made out March 8, 1918

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1917phae.proj.2220C

Friday March 8, 1918

I 25982 plate

No					
1	5	K0			
...					
2	2	K5	95 m	38140	+43° 4462
3	2	F0	57	" "	+44 4475
4	2	K2	73	" "	+41 4864
5	2	K2	134	" "	+45 4325
6	3	G0	131	" "	+41 4878
7	2	F8	130		+40 5158

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1917phae.proj.22206

1	+42°	H719	23	31.0 + 42 16	7.5 missing in Vol. 57.

Card made out Mar. 8, 1918.

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1917phae.proj.2220C

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Friday March 8, 1918

l 23968 phot

No
1 4 K5

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1917phae.proj.2220C

	1	+44°	3744	21	8.5	+44	56	7.6	missing in Vol 57.

Card made out Mar. 8, 1918

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1917phae.proj.2220c

Monday, March 11, 1918

H 1805 −24°12084

Red end = other portion on higher dispersion
Focus poor. Probably R0

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1917phae.proj.2220c

Tuesday, March 12, 1918

H 1858
0 16.6 +58
Neb

2 Kor K5 +58°39

3 Neb
+58°44 0 16.9 +58 8

H 1973

1
R 8

2 +61°653
Neb

H 1968

1. Nc

2. Nc

3 Nc ?
4 5 Kopff

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1917phae.proj.2220c

March 12, 1918

H 1777

1 +63° 56
Ma

2 +62° 86
Mb.

H 1647

1 +58° 2396 (9.1)
Ma?

2 Ma +58° 2387

3 Mb +58° 2390

H 1983

1 +29° 1354
Ma

2 + Gem
Md.

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1917phae.proj.2220c

March 26, 1916

B 44172 lmg.

55 1 4 95 Hγ + H5 lmg

1917phae.proj.2220c

- 1 -15 950 5 16-15 18 6.5 50 m B39704

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1917phae.proj.2220c

Saturday, March 30, 1918

B1750
1 7 B8
2 7 B8

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1917phae.proj.222oc

~	1	−18	1058	14 m B K 6350
✓	2	−18	1055	15 " "

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1917phae.proj.2220c

Monday April 8, 1918

in Centaurus. Plates examined to determine where bright hydrogen lines change. See letter of Pennie

June 12, 1896	X 7596	long	Hβ and Hγ bright. Edge	
June 30, 1894	5633	short	Hβ, Hγ, H5, He bright.	
~~June 4, 1897~~ February 8, 1897	8132	long	" " " " "	
June 17, 1892	4126	short	" " " " "	Edge
June 27, 1894	5619	"	" " " " "	sharp.

	B7715	long	Too dense. Lines n.s.
May 11, 1890	B5170	"	Hβ bright. Image dense but line is well marked
July 10, 1912	B43264	"	Hβ not well defined, appears blue, very fr. h. line not dark edges
	B43870	"	Hβ off edge
June 4, 1912	B43163	"	n.s. Hβ not clearly seen Hγ, H5 dark.
	B8407	"	Too dense

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1917phae.proj.2220c

Wednesday April 10, 1918

B20802

No. 146 re-examined.

2 plates, Spectrum composite.

The s.f. star is of Class A.

The n.f. appears to be of Class G.

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1917phae.proj.2220C

April 10, 1918

I 37463

31 Two bright stars superposed.

+42·1744 Both Fs.

1745

All available plates examined.

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1917phae.proj.2220C

Monday, April 15, 1918

R U Camelopardalis.

I 38655, 35

I 36323

Very faint. Looks like Class N but has some blue light.

I 37085

Star faint

Class R. Shows 4227 wide absorption and 4700.

I 36562

Star bright. Spectrum appears like Class K with strong dark band at 4227.

I 36694

Star bright

Same as I 36562, only not so good.

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1917phae.proj.2220c

Thursday, April 18, 1918

D 37321,

1 5 Oes

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1917phae.proj.2220C

v 1 +52° 7 3 46.7 +52 13 6.5 24m B3073

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1917phae.proj.2220C

Friday, April 19, 1918

B38/39

1 3 Q3

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1917phae.proj.2220C

c 1 -73 1 0 2.9 -73 9 98 5-3 on B3835

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1917phae.proj.2220c

Monday, April 22, 1918

B4360 4 lmg

1 8 Fs

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1917phae.proj.2220C

~ 1 -23 1565 3 41.5 -23 37 3.9 5mB 6670

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1917phae.proj.2220C

Wed. April 24, 1918

B 420 54 Shut

" 12 G5

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1917phae.proj.2220C

✓1 -37 1556 3 55.6 -37 20 9.0 163mB3E655

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1917phae.proj.2220c

April 24, 1918

D363 64 shut

1 4 Aug

2 4 Fil

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1917phae.proj.2220C

✓	1	+27°624	3	58.1	+27	17	8.3	6m	✓38135	
–	2	+26 689	4	2.8	+26	33	8.9	17	"	"

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1917phae.proj.2220C

Friday April 26, 1918

D 32761

1 1 K5

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1917phae.proj.2220c

-1 +2° 1161 6 6.2 +2 3 8.9 55-m B15138

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1917phae.proj.2220C

Tuesday, April 30, 1918

B39929

1 a 6 almost
2 g n Completely superposed

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1917phae.proj.2220C

✓ 1	−47° 3192	7	34.8	−47	25	9.3	No. 79 m 13249 B
2	3193	"		"	26	8.3	

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1917phae.proj.2220C

April 30, 1918

L 6125

Spec. 1 R8

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1917phae.proj.2220c

v 1 +24°1686 7 23.1 +24 49 f.2 166 on 37K72

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1917phae.proj.2220C

April 30, 1918

I 37462

15 A3.

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1917phae.proj.2220C

✓1 +31°1886 7 38.9 +36 59 2.1 11 Dm √37468

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1917phae.proj.2220C

Friday, May 3, 1918

B 10639

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1917phae.proj.2220c

1	-37	3886	7	41.7	-37	37	6.6	18 m B42928
2	-37	4116	7	51.7	-36	56	6.6	22 m B8897

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1917phae.proj.2220c

Saturday, May 4, 1918

B1858-9.

1	3	Bg
2	6	Bg

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1917phae.proj.2220c

1 -44° 3868 ? 50.8 -44 3 8.0 128m B 8897
2 -44 3847 41m B 42662

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1917phae.proj.2220C

Tuesday, May 7, 1918

D 36962

1 3 K2

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1917phae.proj.2220c

~ 1 +15°742 4 58.8 +15 44 7.8 105 mb 7.87

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1917phae.proj.2220C

May 7, 1918
B 4293 1 Emp.

1 4 K2

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1917phae.proj.2220c

~ 1 -28°3183 6 31.3 -28 4J 7.0 201 m B2052

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1917phae.proj.2220C

Wed. May 8, 1918

99932

12 A3

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1917phae.proj.2220c

✓ 1 +17'1587 7 21.4 +17 40 δ5-64 on 137472

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1917phae.proj.2220c

Tuesday, May 14, 1918

I 33648

1 2 g
2 2 g

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1917phaeproj--2206

1 +25°4895 21 29.5 +25 X3 8.9 193 a √3F057

2 +25 4575a " " 9.0

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1917phae.proj.2220c

May 14, 1918
B12788 cont. from 71, 178

1097 K_2 Absorption clump at 4227
1682 ? < K_{2_1}

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1917phae.proj..2206

109	−33°4705	8	8.8	−33	12	7.0	196 m B1305
110	−32 4997	8	8.7	−32	53	7.9	195 "

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1917phae.proj.2220C

Wednesday, May 15, 1918.

B7415

1 6 a3

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1917phae.proj.2220c

✓ 1 -19 2262 8 2.3 -19 57 6.7 20 mB11036

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1917phae.proj.2220C

May 15, 1916

R S Puppis.

Classified Mam B13054 (1,3)
where the plate is very faint.

B12658 Dut 6
No comparison stars lines,

B39920
K5

1917phaed.proj.22200

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1917phae.proj.2220c

Saturday, May 18, 1918

38218 emits from 68, 92

84 3 Kr

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1917phae.proj..2220C

84 +27 1575 8.6 +27 29 7.5 106 m 37503

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1917phae.proj.2220c

Monday, May 20, 1918

~~159~~ B9004

16 As

1917phae.proj.2220C

✓ 1 -73 488 8 16.2 -73 25 6.7 87 m B2 K5 37

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1917phae.proj.2220c

Tuesday May 21, 1918

B 4222 emb from 71, 156

29 5 139

30 3 Oes

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1917phae.proj.2220c

✓ 1 -36 4578 8 19.3 -36 19 7.3 7 cm B8897
✓ 2 -39 4631 8 34.6 -39 58 8.1 68 " B13064

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1917phae.proj.2220c

May 21, 1918

B430+60 emiss from 66.8

53 3 Ki
54 3 F5
55 8 a0

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1917phae.proj.2220C

53 -22°2278 4 s-m B1103b

54 -22 2276 " 4 "

55 -22 2286 46 " "

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1917phae.proj.2220C

Med. May 22, 1918

136963

1 4 As

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1917phae.proj.2220C

– 1 +13 14825 6 50.1 +13 27 fir 60m d36977

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1917phae.proj.2220c

Thursday, May 22, 1918

B.14649

1 3- F5-

2 3 G5-

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1917phae.proj.2220C

✓	1	-31°1786	4	13.5	-31	10	8.5	67 m B44072
✓	2	-29 1721	4	21.6	-29	14	8.5	57 " "

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1917phae.proj.2220C

Friday, May 24, 1918

d 26325−

1 5 95

d 22648

1 03

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1917phae.proj.2220C

✓ 1 +42°1034 & 345 +42 1Ć 8.5 70 m 1345+42

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1917phae.proj.2220C

May 25, 1918

D22648

1 4 F10

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1917phae.proj.2220C

- 1 +7° 2014 8 32.7 +7 40 8.7 194m I37617

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1917phae.proj.2220C

May 25, 1918
B1301 8

1 6 710

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1917phae.proj--2220C

~ 1 -58°1153 8 32.0 -58 22 7.8 4mBK2241

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1917phae.proj.2220c

Friday, July 5, 1918

B 20154 Eng.

17 Ko

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1917phae.proj.2220C

ξ Mensae 1 −82° 106 101 m B20557

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1917phae.proj.2220C

Thursday, July 18, 1918

J 3150

1 3 Ko.

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1917phae.proj.2220C

✓ 1 +12 1906 8 39.6 +12 41 8.7 56 cm $38[28

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1917phae.proj.2220C

July 18, 1918

B 15 78

1 3 F8

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1917phae.proj.2220C

v 1 8 47.6 −75 26 −75°536 8.6 207 m B21453

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1917phae.proj.2220C

Friday, July 19, 1918

B 42158 Lmy

1 4 B5

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1917phae.proj.2220C

✓ 1 -5-1 °3420 8 56.7 -5 1 4 7.0 38m B4885

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1917phae.proj.2220C

July 19, 1918

I3 P109

1 1 G5

2 2 G5

B 39361

1 3 K0

B44470 long

1 7 B85

2 5 B8

B4986 long

1 8 B3

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1917phae.proj.2220C

1	+3° 2133	8	56.7	+3	37	6.4	15m	37606
2	+3° 2134	8	56.7	+3	36	6.5		

1	-41° 5497	21	30.8	-41	40	8.7	26m	B41077

1	-56° 2594	9	37.7	-56	38	6.3	27 0m	B39826
2	-56 2179	9	36.8	-56	25	7.4	269	"

1	-44 5846	9	41.6	-44	11	5.7	8m	B35949

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