Cl tions

A. J. C.
Observations in Arequipa

1910

X plates

Hβ br. stars photographed for variability.

Results.

η Centauri nch. 13460

κ¹ Apodis poor x13444, n.s. 13447, narrow b. 13456, Hβ b. ft. 13518

μ Centauri X13450 July 14, 1922

α Arae X13449 Hβ, Hγ, Hδ b.

υ Sag. X13454, 13459, 13502

15 02-42 nch. X13451 suspected

16 48-50 lines wider, not b. X13452 also B41738, x3050 X11167, 11592 suspected

14 35-62 X13443 ft. bright b.? susp. ? X11971 Hβ sharp. centering a very narrow b. center good unless defective on X11971 no change

15 55-60 X13457 Hβ b. no change. X13499

17 10-47 X13458 Hβ strong b.

χ Oph. X13466 good

θ Cir. X13465 susp. b. n.s. lines wide

17 9-33 Hβ b. X13500

12 36-62 H.R. 4830 X X13495 susp. Hβ b. Hβ, Hγ strong b. lines. dark on old plates.

β Lupi lines single X13461

ε Cap. 13506 Hβ dark.

ρ Car. X13366 lines dark Compare X6271 May 13, 1922

E Car. X13367 Hβ b. changes Perrine found it gone.

14 8-56 X13375 Hβ b. no change. See X5565

μ Crucis

β Lyrae

stars having b. or suspected elsewhere

Cent. J Vel. ε Cap. 27 Canis Maj κ' Ap.

Sag.

υ Sag. + ε Cap. are sp. binaries

κ' Ap. Is this a sp. binary?

15 20.6 −73 2

μ Cent. Hβ, γ, δ, ε br. on old plates 1892, 1894, 1896 & 1897

In 1912, Hβ was greatest Br.? Hγ, Hδ, Hε, relatively ~~bright~~ dark

16 40 −40

On F 7854

J Vel. 10 17 −55 1893 Hβ. Hγ br. Did I state this?

1895 all dark −1920 all dark

p Carinae Hβ Hγ very br. on 10 plates 1894–97

1918 all dark Peru

1920 " " Arequipa

New Objects of Peculiar Spectrum

-57°10676 16 56.9 -57 15 8.6 B3p. Hβ bright A3563. Bh. 143, 58.
Nb UV Aquilae A8335 " " 55

184 .. (1875) 13 40.7 -37 30 Md A6431, p. 64. Hβ bright.
measure position on B32211.

~~[.. (1845) 14 39.4 -67 57 Nb, A4502 143, 68 !~~
~~May be defective. Confirm. [Measure on A5207 (marked)]~~

-11460 (1875) 17 15.3 -36 22 9.5 R3 A6428 143, 72 [Entered in H.D. 17th at time]
183 .. (1875) 17 54.5 -47 14 .. Md Var. new. 143, 47 A4505
2166 12 4.8 -63 26 Hβ bright. H.D. 105675. A3600 143, 77
185 .. 15 1 -14 57 .. Md. Var. new. 143, 90 A8338.
14673 18 49.1 -32 23 Pd A6439, 143, 71. [Not in H.C. 196!]
187 5170 10 23.2 -50 32 16.0 Md A4344, 143, 100
186 ~~Md A4351, 143, 99~~ M. D. A.

✓ 3171 15 46.7 -65 52 Photog. 9.9 Pec. P Cygni type. B21785. Ann. H.A. 96. B21785, 1
noted in H.C. 71. See H.A. 56, as Ap ~~Hβ bright~~
noted in H.C. 196, 184, 178, 22
Has this been announced?

188 9373 14 52.7 -41 59 9.6 Md B39337 143, 14
.. 16 35.4 -62 26 .. Pf A3611, 143, 107
.. 16 45.1 -64 4 Pec P Cygni type. Same as
189 .. 17 1.9 -61 50 .. Nb Var.
.. 12 36.6 (1895) -62 24 .. Oa A3600, 143, 27

Am 15959	Br. m. 17 53 -36.4	~~[illegible]~~ Defeat?	171
B 53214	Merrill's $H\beta$ l. 17 52 -27	+ neb. [illegible] intensities	167
53212	19 15 +22	Br. lines? fh.	167
~~53211~~	~~not ident.~~	~~Class O + Md~~	"
53209	15 34 -48	Md. known See M F 17924 p. 99	166
53208	14 59 -51	M	"
53207	18 12 -32	Md in Cluster	"
53206	17 52 -21	comp. 17 58 -22 36 " 17 52 -26 50 Gas neb. 18 8 -19 km	165
53205	16 48 -44	Comp.	165
53198	14 17 -60	Comp.?	163
53194	18 -30	Br. lines? 17 56 -33	"
53193	17 15 -41	Rp. 17 15 -41 like T Sg.?	162
53192	15 50 -56	T Normae & 3 Comp.	"
53186	16 04 -54	Oa?	161
53184	14 59 -51	Md?	160
53182	17 08 -36	$H\beta$ l.?	"
53181	15 50 -57	3 Comp. M.f.	159
	Object 16 04 -54	several br. lines See B 53186	"
53180	14 00 -66	gas. neb. Known +3637 Hp	158
53175	17 16 -43	Not ident. 2 Md.	"
53173	15 34 -54	Comp	156

1

M F plates. Bl. 146, pp. 50 -

			p.
7822	11 50 -61	No. 2. Neb? Nova? 11 24.8-59.9 Don't see these lines on other plates	50
7835	11 54 -52	Pec. N. or R. S Cent. 12 19 -4853	53
7827	14 17 -60	Two br. lines? Defect. 14 38 -61 18	55
7825	8 2 -36 45		62
7841	11 25 -60	near gas. neb 11 22 H.B. 7	67
7856	1404 -65	1. R? 2. Br. line?	74
7887	2. Class N		85
	3. Hβ br?		"
7904	Md? pl.	13 8 -62 20 Hβ br.?	94
7910	1604 -50	Pec? Class R Neb.	96
7914	9 46 -54	Comp.	97

53170	20 12 +34	Pec? dk. bands	15
53169	19 20 +17	?	"
53168	19 54 +29	χ Cygni? Look up N star in 56	155
53176	18 21 -36	Md? In cluster 18 12 -32	154
53165	16 28 -40	Comp? 16 26 -41 16 16 21 -43 N3R?	153
53162	18 28 -11	Br. lines? 18 14 -14	"
53160	17 24 -37	Pec. 17 14 -41 40 Dk. bands	"
A 12048	12 24 -62	12 5 -61 N	149
		12.5 -63 45 N	"
A 12051		Neb? 16 40 -40 one band near E.	148
		Class O? 16 44 -40	
53141	16 20 -54	One br. band	144
53145	16 28 -46	N	142
53143	15 34 -54	Br. line B star?	"
53135	20 +25	St. Ma. fr. sp. near?	141
53116	14 17 -60	Br. lines? Ma.? bar.?	139
	14 31 -58 35	Neb. in Cape	
53152	17 39 -32	Class O	"
53137	22 00 +12	Md? S Peg?	"
53121	20 12 +22	N 19 58 +20	138
		N 20 0.7 +20	"
		R?	

Tuesday, April 18, 1922

19h - 15° Am 15670 superposed on Am 14873

SZ Aq. ? bright on earlier plate

RZ Sag. " " "

Good looking defect on later plate, also an object which looks like an asteroid

Wednesday April 19, 1922

12-60 Am 15681 superposed on
Am 9112
Nothing found.

13-

Thursday, Apr. 20, 1922

MF 7813 Identifies film side up.
Class N stars, Known
13 15.5 - 63 42 Var.

0, 3, 10.

Friday Apr. 21, 922

10 –30 Am ~~1567 d~~
Am 1382 d

R S Velorum found

Saturday, Apr. 22, 1922

11 50-61 MF 7822 very narrow.

Known Gas. neb.

11 45.4 – 56 38

1 Shows λ4363 with not given in 76,22

Hγ ft. 3869 very strong.

2 Two faint bright lines, perhaps Hβ & 4640

Gas. neb? Nova?

Approx. pos. 11h 24.8 – 59 9 (1875)

not in C.P.D.

(not conf. on MF 7841)

3 Var? Hβ bright?

Typ?

4. Bright line A star

Perhaps defect

Yes, defect.

5 Pec. with emiss.

Type E See MF 7841 Known

Apr. 22, 1922

6. Pec. M. w. R.
Known Class R.

MF 7818 covers same ground but wider and does not show these faint objects.

April 22, 1922

12 40-62 MF 7823. 12 40-62

narrow Numerous black defects on plate

12 32.0 −62 40

Class Oa?

May be a defect in ap of sp.

Confirm

Probably defect. Only one shown on B 11341

Br. line n.s. on A 3600

Obj. marked var. on MF 7823 is Type V. See A 3600. where it was found.

9 46-54 MF 7820

Nothing of interest

8 30-41 7819

Nothing of interest

Monday, April 24, 1922

MF 7835 11 50 -52
Ident. centre 11 54 -52.0 (8775)

1 11 45 -56 35
Known Gas neb. See also MF 7822
p. 50

2. Class Na 0,6,10

~~Look up ident.~~ See H.A. 56 p. 216 ident. as C.P.D.
O.K -52°4904, ~~but it follows & is n. of~~ Dm.
~~star~~
~~56 11 55.3 -56 3.4~~ 9.8
~~Dm star is Class A~~

3. Nb 0, 8, 10
Known

12 9.3 ~~-50~~ 59
TV Centauri

4. Pec. N. or R
Probably S Centauri
12 19 -48 53

✓ April 24, 1922

MF17830 15 34 − 54

Ident. 15 38 − 54 50

1. In making ident. I noticed the absence of a bright C.P.D. star
γ 15 34 − 54 40
Normae which proves to be γ Normae

2. Hδ strong. Comp.?
77a m B41577 K5
Probably −52° 8514 15 24.6 −52 3 8.8
not very pec

3. Double?

Look up these ident. in H.D
~~marked double in H.D.~~ C.P.D.
15 49 − 54 20
290 m B19894 −54° 6889 15 49.7 −54 13
K2

Definition poor for ft. stars
The end from Hβ to Hα looks like that of AX Sag. on MF17963
MF17958 shows this obj. and is not very pec

April 24, 1922
MF 7827 14 17 – 60

Ident, 14 18 – 60 40

1. Class N Bright.
Known 13 51.6 – 55 52

2. Two br. lines. Defect?

14 38 – 61 18

May be defect, but better be looked upon AM plates.

April 24, 1922

M F 7824 ×6 · 17 24–31

~~Two plates on this no.~~

~~19 15 & 16~~

?

~~very narrow.~~ Good × 4 ~~width 0.2~~

Clock running poorly ~~(slightly), but very good plate~~

~~Nothing found~~

1 Fifth type / No medium chart found.

~~Var.~~ 2 Var RW Scorpii Repeat reg.

R W Scorpii M F 7824

Ident. 7 03 +5.5 ~~7 0 3~~ –11

Not identifying. I have recollection of setting at –11. Identify in Cambridge. No Bonn charts here. Yes. set N. instead of S.

Ident. 7 4 +5.5 approx.

1 Class N.

Good width & def.

very good plate. Faint stars much better than on H.D. plate.

Looked up 2 → HD bright 7 +5° 1533 6 56 20.3 +5 21.1 (7.8)

for variability by L.D.W. who found none. See cover of 7824

M F 7840

Narrow. 1.2+ good.

This seems to be correct

April 24, 1922
MF 7831

17 08 - 36
Identifies 17 9 - ~~37 8~~ 36 50

1. Md
W $H\gamma = 1.0$
RX Scorpii $H\delta = 30$
Sp. pl. Probably Mb.

2. Oa
Known 17 11.8 - 34 18

M Mda

3 Md
RS Scorpii

4 Gas. neb. 17 7.0 - 37 0
Known

5 Oa 17 18.5 - 34 6
Known

April 24, 1922

✓ MF 7832 7 15 - 16

Nothing of interest

MF 7829 16 04 - 50

Nothing found

7828 12 59 - 57

Known One very faint O star

15 15 - 62

N star = V Lupi.

Tuesday, April 25, 1922

MF 17826 13.5 - 61
Several pec. objects known.
Positions marked on plate.

Look up object of -61°3753 .. 13 24.2 -61
There is a broad bright band
on a K star. Only one object
in C.P.D. Look up in A plate,
Nothing seen on A2218. Must be band K of
a star & S, as seen on chart plate.
Take another MF plate,
with 2 hours exposure.

Look up!

Object marked Var.? should be
examined for var. Bright line
seen

This plate is poor, focus &
not uniform.

A good region for A spectrum plate

April 25, 1922

7825 8.2 − 36 45
MF1 ~~7825~~ ~~10.4 − 57~~
Ident. 8 15 − 36 40
No plate Kum
~~9 56 − 59 44~~

Comp. Confirm on B plate.

8 25 − 33 50 Comp > Confirm on B
this is CDM. −33°5099
8 25 8.3 − 33 46
= H.D. 72137 K0. on B13046.

MF1 7825 must show fainter stars than B13046, since I have hastily ident. −33 5056, 5058, 5061, and 1066 which can be classified and do not appear there in H.A. 93.

Too thin on B12788, B13046. near edge B39920.
No A plate.

Wednesday, Apr. 26, 1922

MF 17821   10 4-57

On slate known   9 56 - 59 42

And same object found in
MF 7834 p. 59
10 44 - 53
Hγ = 1.0   1450e40   sp. pt.

New? See also p. 59.

Numerous other suspect [illegible]
objects known in of Car. region

Wednesday, April 26, 1922

16^h –30

AM 1$\overset{5}{6}$703 trails
〃 13432

RR Scorpii found,
Brighter on AM 13432

Thursday, April 27, 1922

18 0 AM 15712 } poor, long trails, only
AM 9530 } brightest stars seen,

Nothing found.

15-60 AM 15701 trailed
AM 5331

Nothing found.

57
17-45 AM 1~~75~~04
~~AM 53~~ AM 12126

New P/ C.P.D. -61° 5067 9.2
15 24 26.4 - 61 26.3
Not in II
Faint on new plates,
Br. on AM 12126
Also pl.-in AM 5331
Sp. on edge of MF 7828, av. - F.
(one)

Friday, April 28, 1922

Object on AM 12126 is probably one of those defects found near the edge. It looks exactly like a star. Upon close scrutiny the DM star -61° 5067 is seen nearly beneath the bright object.

Other plates on same date, if any, or adjacent dates to AM 12126 might be looked up in Cambridge

Saturday, April 29, 1922

MF 7841 11 25 − 60

Several objects marked all known except one, which proves to be a new gas. neb. See B 25185 chart, where a tiny neb. is seen. Also B 23016 sp. where a bright band is seen. Seems to be N.G.C. 3699, 11 21 34 149 11.1 (1860) Miss Wells' estimate was 11 22.1 − 59 16 (1875) V.R.

54 6.6
~~11 22 19 54 11.7~~

MF 7842 9 46 − 43

Class N known

Class A + Gas. Neb. Known

2 spectra somewhat pec. marked. May be looked up in Cambridge

MF 7843: 12 40 − 53
Class Oa p. known

1 3 2 L 5-7
But look up spectrum on B plates

Monday, May 1, 1922

MF 7811
Sappho V. [illegible]

MF 7806 Omi
very poor.

MF 7809
very poor.
One object marked which looks like 2 stars superposed, one having a tr. line. May be defect.

MF 7807 9 30 -52
very poor.

MF 7805 12 8 - 63.5
Three apparently tr. lined objects marked.
One is at 11 42 -66 10
✓ Probably defects.

Fogged.
MF 7808 9 09 -57.5
Nothing found. very poor

MF

May 1, 1922

Mn F7810 Apr. 12, 1922, 10 32 - 55.5

Md Sp. very flt, η Car. region

Too flt. to estimate lines

Same object already found on 2 plates

See p. 59 & 63

Not in C.P.D.

10 44 - 53

10 44.8 - 53 39 (1900)

Mn F7812 9 16 - 57

Good

Mn F7813 12 40 - 63

Fair. Class N.

7814 13 29 - 62

Few stars.

7816 narrow & trailed.

Wednesday, May 3, 1922

MF 7854   12 30 -67   Set -64
Ident.   12 35 -65 30

Load 60. Width correct. Def. good

Gas. neb. known
Class N known

MF 7844   14 17 -51   load 10
Ident.   14 22 -51 30
Set dec. 2°.5 to north

Class N = ~~V Lupi~~ - Centauri
14 2-4 - 53 2 8 Var
Trailed. Clock running poorly.

MF 7845   15 00 -48   load 10
Set -45.5
Clock running poorly.

May 3, 1922

M F 7848   7 41 -26

Ident 7 43 - 25.5 Load x3
Good plate, except irregularity of clock made a narrow ridge on one edge.

Images a little too wide to give fnt. stars.

Pec. sp. Var? N or R.
approx 7 55 -30 near edge.
In C DM.
H.D. 65977 Ao.
Probably blue end is cut off on M F 7848

Pec. sp. C. DM. 7^h 5773
7 30 58.5 - 23 33.9 6.4
H.D. 61024 Ko. on B 18301
Strong lines greater than in $H\delta$

Perhaps certainly pec

Two stars on B 18045. N.p. star is slightly brighter. The strong hyd. lines belong to this component, which prob. has sp. of F5 or F8, while the s.f. comp. has sp. of Ko.

Thursday, May 4, 1922

MF 7852   7 28 - 21

Ident. 7 34 - 21 20

- 25.5 southern limit.

Gas. neb. appears 7 37 - 18

Known 7 37.5 - 17 58

Weight 40. Good plate but spectra too wide.

1/2+ mm. wide

MF 7861   13 20 - 67

Ident. 13 20 - 67.1 (Dec. was set 3' south)

Class N   13 15 - 63 4 L known

3 gas. neb. known

Centres 13 20 - 6

The neb. at 13 2.2 - 67 6 is given in 76, 22 as showing only 5007, 4959. This plate shows also $H\gamma$, $H\delta$, $H\epsilon$, $H\zeta$, very narrow.

Blurry at 5007.

$H\gamma = 10$

$H\delta = 4$

$H\delta = 8$

$H\zeta = 10$

1/4 + mm. wide.

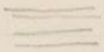
May 4, 1922

On F 7862 14 40 – 63
Ident. 14 44 – 62.8
About 1/3 mm. wide

On F 7849 9 16 – 43
Ident. 9 20 – 42.5

Friday, May 5, 1922

MF 7863   11 03 - 58
Load 50

Irregular  two lines of images

Clock out?
11 08 - 57.4

MF 7864 16 28 - 39
16 25 - 39.6
Load 47
η Carin

MF 7865 15 10 - 60

Does not identify.
A bright Type II in a cluster

Load 54. good

MF 7856   14 02 - 66
Load 70   very narrow
13 58 - 66.8

1   14 04 - 65   Var. R?
Note in Cape
Bright lines

May 5, 1922

MF 7856

2. Br. line?

MF 7857   16 00 – 43
Ident. 16 54 – 43.5
Load 48

Width 0.35 mm

Known var: HV = 10 HD = 5 Sp. Ma
Peaks not well seen.

Faint stars not very well seen
Longer exp. with same load would
be too wide

MF 7869   8.30 – 47
Load 48   No chart to identify center
Width 0.35

MF 7872   14 17 – 51
90m exp.
Ident. 14 26 – 51 30
Width 0.38
Long expos. but ft. stars not very good

May 5, 1922

MF 7873 15 00 -48
Ident. 15 02 near -48 (no chart)

Load 50 width 0.4.
Def. not very good.
Exp. 90m

MF 7874 16 50 -36
Exp. 90m width 0.45 Load 45
Ident. 16 52 -34.5
Var 16 55 -36
RS Scorpii

#1 $H\gamma = 10$
$H\delta = 70$ Sp. Ft.

2 RW Scorpii 170833

$H\gamma = .0$
$H\delta = 60$
4227 very strong. Sp. Ft.

3 RR Scorpii 165030
$H\delta$ br.

May 5, 1922
MF 7874 cont.

Neb. 17 7.0 -37

Class O 17 11 -34

This plate has 3 Md, 1 neb, 1 Class O.

MF 7875 17 39 -26

Select. 17 43 -26.5

Exp. 90 min Load 43
Width 0.55 too wide.

MF 7870 16 21 -63
Exp. 125 m very narrow. O.K.
Load 55
Broken in developing. Piece not given to me.

Saturday, May 6, 1922

MF 7853 8 52 -39
Ident. 8 58 -38.9
Load 40. Width 45
Lines straight H.a. 1 33 W
Excellent definition but does not
show very flat slant.

7858 17 08 -29
16 55 -29.5

var. R W Scorpii
$H\gamma=100$ $H\delta=50$ $H\zeta=1$
Sp. mb.
Type E 17 11.8 -34 18

$H\gamma$
exp. 60 m. Load 44
Width 0.2. Faint plates in
poor def.

May 6, 1922
7859 18 40 0
Does not identify.
Load 34, 60m
Width 0.5

7860 1903 + 11
Fogged & very poor
Plate full of specks.

786~~7~~ 1 ~~11 03 − 58~~ 17 16 − 43
Ident. 17 12 − + 3.5
~~at~~ Load 50, Exp. 70
Width 0.2 0.1
2 brum Type II
1 Gr. Var.? Defect. Not on B23032 30m Exp.
Var.? Var. 16 53 − 45 approx. No chart.
Very flat Lines not well seen
Nothing on chart plate, B13570.
Gas neb.? MF17960, no pos.

MF 7868 18 28 − 5
Ident. 18 26 − 5°.5'
Clock irreg.? Entirely too small
near edge
Pec.? S.B.D. 18 38 − 1028

Bright lines or spaces.
S Centi Class n on plates

May 6, 1922

7871 11 03 -50

11 08 -50 ? No chart.

Indices O.K.

Tuesday, May 9, 1922

MF 7850   10 21-46

Fst stars n. s.

Too far off in dec. for 10 21-57
Take another at 10 21-50

MF 7847   18 17-11

Clock irreg.
Repeat.   R5 star on plate –

MF 7889   8 12-29
8 17-29 40 (1875)

Too wide   0.5.
Faint stars not seen
Slightly fogged by moon
Repeat.

Wednesday, May 10, 1922

AM 15-45 14138
15743

T Normae bright on early plates.

2 defects like stars near edge.

18-30 AM 14143
15745

Mars on 15745
RY Sagittarii bright on old.

16-30 AM 13432
15736

Nothing found.

Friday, May 12, 1922

MF 7876 8 12 — 42
Wb. ~~+2~~ 48 Expos. 68

Width 0.3+ Close img.

$\frac{48}{68} = 0.3$ [illegible]

Nothing of interest found.

MF 7878 14 17 — 58

$\frac{45}{70} = 0.4$

Nothing of interest

MF 7879 15 50 — 57

$\frac{45}{60} = 0.5^{-}$

Nothing of interest

May 12, 1922

MF 7880

16 40 - 48 Class A Peculiarity

Pec. Sp. R? Probably due to superposition

16 30 - 47 (images)

Confirm. On AM 17 - 45

there seems to be a star in this pos.

$\frac{48}{60} = 0.2$

Match O.K.

Def. poor.

MF 7881 19 15 +16

Too wide

$\frac{30}{60} = 0.6$ or 0.7

Good spectra

Nothing of interest

7884 14 00 - 66

very poor

$\frac{70}{90} = 0.2$ def. poor

May 12, 1922

MF 7885   14 17 -51

$\frac{50}{90} = 0.3$

very poor. Fot. shows a blue.

3 Class N. Known

MF 7886   15 50 -57

$\frac{55}{88} = 0.2$

Width O.K. ft. slow poor

MF 7887   ~~16 50 -34~~

$\frac{45}{90} = 0.5$

Daunt: 17 57 -34 35

1 Md.   R R Cor. Aust.   175934

$H\gamma = 10$
$H\delta = 25$ Sp. ~~[illegible]~~ Ma.

2 Class N

3 Hδ br?

Saturday, May 13, 1922

MF 7887 cont.

4 Class O

5 Bright lines. Gas neb.?
18 4 – 34

Some Neb.! 5 h lines. 18 5.5 – 33 53
But nothing is seen on AM
plate one day later, May 6.

Mystery! Mystery. Wendell's Neb. See 56

MF 7888 19 03 + 11

$\frac{35}{59} =$ 0.2 Width O.K.

Nebulosity seen on B 9855.
Apparently a diffuse nebulosity.

May 13, 1922

MF 7891 11 03 -66
Very poor plate, covered with dust spots and dust.
widths O.K. but no fl. stars seen

$\frac{55}{70} = 0.2$
Clouds during exposure

MF 7892 15 00 -48
poor

$\frac{50}{77} = 0.4$

Class N = V Lupi
Gas Neb. 15 10 -45 seen

✓ MF 7893 16 20 -53
very poor $\frac{50}{70} = 0.4$
Class O star seen 16 15 - 51/18

MF 7894 17 39 -26
$\frac{43}{70} = 0.5$ widen
very poor

May 13, 1922

MF17895   17 52 -21

2 Class O known

$\frac{44}{70} = 0.3+$

MF17896   18 52 +5

$\frac{36}{70} = 0.5$ no novae

Tuesday, May 16, 1922

MF
* 7877 13 30 -63
Br. lines objects
All seen. White kmm
Very poor of R. class. Repeat.

MF
* 7897 7 56 -31
Ident. 1888 8h 2m -31.6
Class O. Kmm 7 42 -34

$\frac{45}{68} = 0.4$

MF
* 7898 8 30 -61

$\frac{50}{71} = 0.3$ Good plate except devel. unevenly.

MF
* 7899 11 50 -61
Class N or R kmm

$\frac{60}{70} = 0.2-$

Poor def.

May 16, 1922

AM 14143

$18^h - 30°$ AM 15767

RY Sag.

Several defects *like* stars on edge of old plate.

Wed. May 17, 1922

9^h-60 AM 14665 on 15770
R Carinae bright on 15770

Comet?

13-45 AM 15763 R Centauri bright.
13963

Thursday, May 18, 1922

M F 7912
Br. lines at 18 28 - 14.20
Took up.

Monday, May 22, 1922

MF 7900
Seep. 111

MF 7901 10 21 − 57
η Car. Region Several Class O.
$\frac{50}{61}$ = 0.2 Fair but Adj. not perfect.

MF 7902 11 03 − 60
$\frac{a0}{60}$ = 0.2 good.

MF 7903 12 40 − 62
$\frac{50}{60}$ = 0.2 good.

Md.
Approx 12 20 − 59 30
Near. May be C.P.D. −59° 4225
10.2 mag. 12 19 57.5 − 59 30.9
Not in H.A. 56 as variable
Hγ = 10 Hδ = 30 Hζ = 1
Sp. Md.

Wednesday, May 24, 1922

MF 7904   13 30 -61

Perhaps Md?   13 8 -62 20 (rough)
fl.

H δ bright?

Neb. lines.
13 46 -61 1

Class O + N lines

50/60 = 0.2+
Poor of fl. stars.

Repeat.

7905   14 17 -60

50/60 = 0.2
but very poor.

Repeat.

May 24, 1922

mF. 7906   11 03 - 60

$\frac{48}{60} = 0.2$

Good plate but flt. slant a little hazy.

7907 11 50 - 61

$\frac{48}{60} = 0.2$ good

Md same as 7903

Hγ = 10
Hδ 40   Sp. Mb
Hε = 1

7908   13 36 - 61

$\frac{48}{60} = 0.2+$ much better than 7904

Probably as good as we can get.

7909   1459 - 57

$\frac{42}{60} = 0.2+$ poor of flt. slant.

Repeat

May 24, 1922

MF 7910   16 04-50

$\frac{41}{60} = 0.2$

Def. poor.

Suggt: Pec.?   Class R? Var.?

MF 7911

MF 7912
See p. 92

MF 7913   8 12-36

$\frac{45}{70} = 0.37$ good but too wide.

Lines br. in B star?

May 24, 1922

MF 7914 9 46 -54

$\frac{50}{70} = 0.2$ good

Look up. Comp. sp.

7915 12 40 -56

Md $H\gamma = 10$
$H\delta = 40$
$H\eta = 1$

Same plate as in 7903 and
appears to be C.P.D. -59, 4223
12 7 9 28.5 -59 24.6 9.8
or may be slightly s.f.
Equal in br. in AM 15755 to -58°2145; magn. 8.5.

7917 14 17 -54
Repeat: 2 h. bands. Defects? 14 36 -56
$\frac{50}{60} = 0.2$ back of pl. glass

May 20, 1922

7918 MF 7918 1604-44

$\frac{40}{60} = 0.3$ poor

Repeat

7919 7919 17 24-35

$\frac{35}{60} = 0.3+$ poor

Repeat

~~$\frac{35}{60} = 0.4$ too white~~

Repeat.

var.? Md (Bright) $H\gamma=10$ $H\delta=20$ $H\zeta=3$ $H\eta=2$
$H\iota=1$

Sp. Mb.

~~Pec. RY~~ X Oph. 183308.

~~Does not identify.~~

~~Repeat.~~

7920 18 40+6

$\frac{15}{60} = 0.4$ too white.

May 24, 1922

M F 7921   10 21 −63

$\frac{50}{60} = 0.3$ good, a little wide.

Per. R Flat   10 42 −65

7922   11 03 −57

$\frac{50}{70} = 0.2$ good

7923   14 19 −51

$\frac{50}{70} = 0.3$ fair

792~~1~~4   15 34 −48

no chart. $\frac{50}{82} = 0.3+$ good

Md. If centre is right, at pos

15 40 − 47

$H\gamma = 10$ $H\epsilon = 9$

Sp I   Breaks n.s.

New? Known. 15 39.4 −47 45. (I found it)

May 24, 1922

MF 17925   16 28 -46
superposed on AM

MF 17926   17 52 -21

Bright lines   18 4 -19
Hyd. bright.   Nova?
Not in $\overline{56}$

Sept. 25, 1927. Nebular disc. by Professor Pickering. See B24169
$H\gamma = 10$ $5007 = 40$ $H\beta = 12$
Numerous b. lines from $H\gamma$ to violet.
~~17 57.3 -19 51~~
18 7.8 -19 6

Thursday, May 25, 1922

MF 7927

✓ 7928 11 03 - 66

$\frac{60}{74} = 0.2$

1 Class R.

2. Ft star, pec, may be Class R.

See Bl. 11 12 - 69 10 look up variable.

145, 121 Sp. n.s.m MF 7851 (Apr. 30, 1922), h. m 7935 May 24, 1922 + 7928
for measures.

7929 11 50 - 55

$\frac{50}{79} =$ 0.2 + good.

1. Gas. Neb. ? Kn

look up for var. → 2. Pec. Br. lines. Var. Kn Class R, 11 54.9 - 58 3

3. 12 20 - 59 Md. Same star in 7903.

4. N 11 55.3 - 57 34 Kn

7930

2 N & R ~~both~~ are known

$\frac{50}{73} =$

May 25, 1922

MF 7931   16 28 − 40

$\frac{40}{60}$ = 04.5   Lowndes

Bright lines in S Scorpii

Comp. Sp.
Sch. Sp.   16 38 − 43   R
Known

7932   16 50 − 35

Neb.   17 7 − 37
O   17 18 − 34
Neb   17 8 − 33   RW Scorpii

Hϵ = 10   Hδ = 30   Sp. very fl.

$\frac{40}{60}$ = 0.5   Lowndes

17 8 − 35 would bring Neb., O, Neb, in centre of field.

7933 May 9   17 52 − 15 (Originally no. 7934)
Bright lines also seen in 7926, May 18, but no star in AM
Known Neb.   18 7.8 − 19.6

May 25, 1922

✓ MF 17934 19 45 +22 (Orig. number 7935)

$\frac{30}{65} = 0.4$ too wide

Good def. in places.

7935 11 30 − 67

$\frac{60}{62} = 0.2$

7936 12 50 − 67

Mk. 0, + N all keen

$\frac{60}{60} = 0.2-$

Try 55

7937 13 20 − 67

$\frac{60}{62} = 0.2$

May 25, 1922

MF 7938   14 40-64

$\frac{60}{63} = 0.2 -$

Class O.

(Var? Bright lines?
Uncertain.)

Too narrow for pl. slow.

7939   16 20-50

$\frac{41}{60} = 0.2$

but def. poor.

Repeat.

Class O, known

7940   16 50-4

$\frac{38}{60} =$ 0.3   a little too wide.

Var   17   10-41   ?

May 25, 1922

✓ MF 7941   852-46

$\frac{50}{80}$ = 0.3   good plate

2 Class O: known   9.8 - 49

1 br. line   Var ?   8

840 - 46   no chart

The same line is bright on MF 7815, also B 39930.

Look up.   Perhaps Hβ bright star,

No variation seen by comparing AM

Perhaps Hγ & Hδ of a faint variable star not visible on the AM plates.

7943

7944

Friday, May 26, 1922

MF 7945 16 50-41

$\frac{46}{60} = 0.3$ poor def.

Repeat. Br. line Scorpii

MF 7946 17 08-30

Md. RW Scorpii
$H\gamma = 10$ $H\delta = 40$ Sp. ft.

$\frac{39}{60} = 0.4$ Repeat.

7947 18 05-15

$\frac{35}{60} = 0.4$ no wind

Br. lines
Same object as 7933, & 7926.
Perhaps P Cygni type. Known Neb. see p. 100

7948 19 15 +10
Faint G star

$\frac{25}{60} = 0.4$

New Comp.? Comp. 19 20 +16

Rec. ? on edge. 19 30 ±11 Set MF 7955

Bright star missing. On 7881. Probably too near edge of 7948.

May 26, 1922

Mr F 7882 . 8 30 - 35

$\frac{50}{85}$ = 0.4 poor def.

7883 . 10 41 — 59

1 Br. lines?
N. S. on 7921.

2 Br. hydrogen lines?

-58° 3259 N. S. on B 39865 L. D. W.
B 21379
11 62 - 58 8.6 (1875)
8.8
Not in H.D.

$\frac{50}{80}$ = 0.2

7851 11 50 - 68

$\frac{20}{82}$ = 0.1

Very narrow. Might be of use in gaining general knowledge of spectra of fl. stars. Red stars.

7854 12 30 — 67

$\frac{60}{94}$ = 0.2 good

As good as can be obtained

May 26, 1922

M F17852   7 28 - 21 ~~15 34 - 54~~

$\frac{45}{62} = 0.3$ good

See also p. 72

1   Bright band about 7 30 - 23.4

? Class O or Md?

or neb? ~~No other plates~~

7848 ought to show

7916   15 34 - 54

Thomas Md.   Hγ=10   Hδ=12

Sp. Mb.

$\frac{50}{67} = 0.3$ good plate

Clear

Monday May 2~~8~~9, 1922

Search for some pec. sp. in Merrill's list.

-27° 11944   17 40 21.2 -27 58.4 9.0

On 7919
Br. in edge cluster & Hγ, Hδ,
7894, Br. not well seen

Evidently too faint for 10-inch

-36 11217   16 57.3 -36.6 7.5
11221   57.5 -36.4 8.2

No br. hyd. lines seen on 7911 or 7932

Friday, June 2, 1922

MF 7967 14 59 – 57

Too wide. Clock out?

Comp. C.P.D. −58° 5809 8.5
K0 Kempf. −14 39 47.0 −58 53.0
Comp. 9.0 mag. faint. 3.5, but its spectrum is seen and can not account for the spec.

R or N in edges

Runs V Lupi
Better on MF 7923

MF 7951 14 00 – 66
Neb + 2 Class O Km

Good plate for width

MF 7973 14 40 – 64
Class O Km
Too wide.
7975 16 28 – 46
Br. band Hβ in Class O.
? about 16 55 – 43 nova no chart
Rather wide

June 2, 1922

MF 7974   14 17 - 54

Too wide but excellent of the fb. plates

Composite B.r. near Class N

Known Comp. 14 6.6 - 53 22

Fb plates not seen. See 7917, p. 97

7960   9 16 - 50

Good width and def.

Large corner broken off, not with plate

Pec. bands. Has it been classified?

Pec. sp. 4 strong br. lines dark & violet.

C.P.D. –

7981 taken to show this star but clock was out of order and sp. are too wide

Saturday, June 3, 1922

M F 7942 1021-51

50/70 = 0.2 Good.

very ft. obj. pec? R?

✓ 7943   15 20-60

1.   15 46.7 - 65 52

H. D. 41969 Per. P Cygni type.

Pec. Prob. P Cygni type Bri 56, H β bri

Look up Hγ line very bright. Hδ also bri

2 known Class O.

60/77 = 0.2+ good

✓ 7944   15 50 - 56

Ident. 1324 - 56.6

H.A. evidently set W instead of E.

1. Ft. M or R? very ft.

other objects known ? ft.

7952   17 24 - 31

Ma   R W Scorpii Hγ=10 Hδ=60 Sp. very ft.

class O known

37/60 = 0.4 too much

June 3, 1922

7949 9 16-45

$\frac{45}{65}$ = 0.3+ good but too wide for ft. plates.

7950 12 16-68

$\frac{60}{70}$ = 0.2- very narrow

✓ 7956 8 52-40

$\frac{45}{64}$ = clock vary.

Trail on plate?

2 spec. objects or defects.

7957 10 41-59 η Car

$\frac{53}{70}$ = 0.2. very narrow

✓ 7958 16 04-50

$\frac{50}{64}$ = 0.2 right.

June 3, 1922

7953 17 08 -36

$\frac{42}{60}$ = 0.2+

Md RW Scorpii

$H\gamma$ = 10 $H\delta$ = 5v. 4227 strong

Sp. faint

7954 18 40 0

$\frac{0}{60}$ = very weak

✓ 7955 19 15 +16

Gaseous star also found on 7948 p. 106

$\frac{30}{60}$ = 0.2 good but fl. stars

not well seen

7960 17 08 - 42

$\frac{50}{60}$ = 0.2 −

7961 17 39 - 20

$\frac{39}{60}$ = 0.2+

Not very good,

MF 7959 16 04 - 44

Class N [illegible]

$\frac{50}{76}$ = 0.2 −

Monday, June 5, 1922

MF 7962 18 40 - 6

$\frac{10}{62}$ = 0.5

18 53.8 - 4°15

very red star?
Sp. stops at Hγ.

7963 18 02 - 19

$\frac{30}{60}$ = 0.1

very poor def

ax Sag. on plate. very poor. H.D. 165182.

✓ 7964 18 03 + 5

$\frac{15}{20}$ = 0.5

~~Look up~~ H3h. A

Star nega centre seems V. charact. lines. B type.

~~Known~~ Class Oe 16 47.9 - 44 50

7965 19 15 + 11

Nothing on plate.

796.6 14 17 - 60

Clock irreg very wide

Reflected star on edge.

✓ 7968 16 28 - 46

$\frac{50}{53}$ very wide, Clock irreg

Pos? = 16 47 - 44 50 (probably)

June 5, 1922

7969 17 39 -26

$\frac{40}{67} = 0.3$ fair

7970 18 52 +5

$\frac{10}{63} = 0.6$

good of br. stars

7971 19 15 +10

$\frac{20}{63} = 0.3$

Clock slightly noisy

? Class N at 19 25 + 10

within 56.

Repeat.

? ✓ 7972 19 15 +22

Try for another narrow plate Sp. seems to be pec. but not confirmed

Pec. faint spectrum Seems to have a bright band. Also see 7934, p.103

$\frac{35}{60} =$ +20° 4150 0.2 — 19 21.5 +20 4 26 9.x No var. found by L. D. W.

See comm of 7972

7976 16 50 -41

$\frac{50}{76} = 0.2$ good plate.

Look up - R in H.D. Pec. Class O

Class O 16 -43

very pec. Hβ, Hγ bright also Hδ ? R

Dark lines [illegible]

June 5, 1922

7976 cont.

Comp.* ~~New~~? Comp. sp. about 16 36 - 43?

Known. H.C. 221

7978 18 52 + 11

Class N or R

32/60 = 0.3

7979 19 15 + 22

30/60 = 0.1 very narrow but very poor.

✓ 7980 19 15 + 10

32/60 = 0.2

Not same region as 7971

Comp. ~~New~~? Comp. ~~New~~ +12° 3818 19 15. +12.1

Known. See No. 159 in B. 4171

7981 9 20 - 52

Clock irreg.

7982 12 50 - 67 / 11 59 - 68

Comp. Known

See H.C. 221

Clock irreg.

Wed. June 7, 1922

MF 7977

Two stars on edge.

Class O + M.

7959

very narrow 0.2 or less

Good of pl. stars.

7927

two wide = 0.4

2 Class O one N or R.

7911 17 08 - 36

Md

Neb.

Bx.?

17 8 - 36

Also seen on 7953 but no brighter.

AM 12126 compared. No change.

15812

Wed. June 7, 1922

MF 7783 B

nothing marked -

7890 trail

M.f.

7984 14 17 - 54

= 0.2 good width

2 Class N.

7985 17 08 - 33

Class O.

June 7, 1922

17-45 Am 12126
15812

RY Sag. bright on old plate

18-30 am ~~201~~9 6316
Am 15826

A first glance showed an object on this plate not on

Also not on Am 15818 May 30
15812 May 24.

Defect! It looks like a star.
Approx 17 25 - 35.8 Probably defect

18 0 am 9530
15819 Nothing but defects

June 7, 1922

M.F.I.

~~Dam~~ 7989   15 50-56

$\frac{50}{62}$ = 0.3

f Normae Med

Hr = 10 H5 = 10
Sp. not in good focus.

7987   9 46-49

Sidereal rate & spectra are

$\frac{49}{60}$ = 0.2+

7988   14 40-64

$\frac{60}{62}$ = 0.2− very poor.

7986   9 16-45
Clock stopped, N.G.

7990   16 50-47

$\frac{50}{65}$ = 0.3

Thursday, June 8, 1922

MF 7991   17   -25

0,3

very poor def.

7994   19 03 +11

Ind.   prob. R Aq.

Sp. Mc. H5 very bright.

Look up. Comp. Sp.

$\frac{30}{67} = 0.5.$

Sort of br. Haze,

7992   17 39 -26

$\frac{43}{60} = 0.4$

7993   18 28 -5

$\frac{30}{67} = 0.4$

June 8, 1922

20 1 am 14395
15828

SZ Ag. M. S. m 14351
h. P. m 15828

13 - 45 am 13963
15823

nothing

Friday, June 23, 1922

Examination of B plates spectrum

B53085   13 30-55

1 Class O

3 " N

Width 0.2+

B53086   14 40-64

0.2

Class O.   15 15-62   Known

very good. Much better than MF7988.

B53087   16 04-44

Much too wide. About 0.5

B53088   17 08.30

0,3 not very good.

2 Class O Known

B53086   11 50-55

1 N known

1 R "

1 Pec. M

June 23, 1922

B53090 13 20 −67

B53091 14 00 −66

Good width. 0.2 —

Class O known

B53092 15 50 −58
In Pec. H+K flt.

B53093 16 50 −47
Too wide.

B53094 18 00 −30
Identifies
Br. line. 18 21.5 −31 40
May be defect. No, real, See B53176.
but known gas. neb. found by me 18 22 −31 33 H.C. 224
Class O known
Comp. Br. star, 18 1 −30.0 (1855)
Known H.C. 196.
Mc Var? RV Sag.

B53094 ?
Class Oe?

B53095 14 40 −64
Pec? Strong fm Hβ to Hδ.

June 23, 1922

B 53097 18 28 01
Too wide

B 53098 18 ~~28~~ 52 +11
Too wide.

Monday June 26, '22

18 − 60 AM 15868
14149

Nothing found.

A 12014 sp. 13 30 − 61

One Oe
one Oa or Ab (somewhat near center)
not good for ft. stars
Bri stars not numerous

A 12015 16 46 − 41
wide.
Ft. stars n. s

A 12013 12 57 − 61
nothing
A 12012 η Car
12009 " " poor focus
A 12010 14 − 57 the best.
Many M stars (13)

Tuesday, June 27, 1922

18h -30° Am 15869
Am 6136

RY Sag. bright on old plate

Cambridge, Oct. 2, 1922 Br. lines in B 53100
Seen on B 21640, but I can not find a plate to match them. On B 22473, an image appears to be in correct position for the br. band to be at 4633 or 88, but the image may be a defect. not on A 8253 A 1827, or B 32095.

Nov. 29 See B 1559 where a faint nebula is seen in the correct position.
New nebula.

Wednesday, June 28, 1922

B 53099   14 59-51

No star

Bright lines near edge defect?
other stars also show h. lines

Weight 49   H. A. ~~0~~ 0ʰ 0

Much too wide.

B 53100   15 50-56

Md   Hβ=10   Hδ=8   Hγ=2   Hη=1
S Normae 15 36 54
Comp. 15 3$\overset{s}{7}$ ~~-58~~ -57 48 known

2. Pec. Class O
Not in C.P.D.
Approx. 16   -54

Br. band 4688 also white lines
Prob. seen in Am 5331 15-60 very faint.
This object is A.G. C.P.D. -54° 7265
16

See p. 128

June 28, 1922

B53101   16 50 -47
Too wide. blurry.

B53102   18 05 -10

Very poor. Clock wrong.

Class 0, known

B53103   13 31-55

Class R.
2 " N   known
(Comp.? 10' near other star.
Class 0

Look up Comp. Confirmed.

Comp.? Near a bright. star,

B53104   14 40-64
Class 0   15 15-62   known
Poor plate.

B53105   14 00-66
Class 0 known

June 28, 1922

B53106 14 59 - 51

Narrow

B53107 16 4 - 44

Faint Class N. 16 21 - 43

some

✓ B53108 14 17 - 60

Guide irreg. -
Focus poor

✓ 2 N

✓ Comp.

B53109 16 28 — 46
Class O & N

✓ B53110 17 52 - 21

All ; Comp. spectra. Br. lines

known /17 54 - 20

18 00 - 22 C.DM -22°

✓ B53111 . 18 17 - 11

✓ One Class O

~~Comp.~~ ? One R 5 Comp? Get better plate
Defective

Thursday, June 29, 1922

B 53112 19 03 +5.
R Aql. bright

Hδ very bright. Hγ, Hη br.

Sp Me.

B 53113 19 03 +11

Comp. 2 Comp. both bright.

1 known 19 3.6
1 new
19 9.6 + 11 32

Can not find in known list.

Rough approx. ~~19 05 + 11~~ 3
~~19 15 + 12~~

~~New~~?

B 53114 21 -25

Ft. star Me?

B 53115 19 -36

Monday, July 3, 1922

a1205$\overset{3}{7}$ 14 59′ – 57.0
Looked for M star on B plates.

Not very good def.

a12052 14.0 – 60

Faint fluted spectrum about 14 10 – 62
Probably R5 or perhaps Mc.
No R or N star in 56 in this pos.

Md? Br. line near Hδ defect?
No var. known in pos.

Class Oa. 13 48 – 60 60?
Known

Very good plate.

a12050 16 4 – 54
Faint br. band already found on
53100 (p. 129)
Good plate

a12051 17 1 – 38.0
Def. poor

Tuesday, July 4, 1922

X13427 14 20.0 −41.9

Too broad to have proper density.
Star slightly off center.

X13428 – ι Centauri
Hβ dark. (always was)

X13429 – η Centauri

No br. lines seen. Ft. dark lines
have also disappeared.
Hβ wide but no brightness seen.

X13426 16 25 −10.2
Followed. 7.26
Lines O.K. but not dense enough

X13428 13 13 −60.7
Too ft. Followed.
ι Centauri & several others sp. seen
Lines straight.

July 4, 1922

X 13425   14 35 – 15.8 (P × O)

No star to follow by.

Lines fairly well seen

75m Exp.

X 13420   14 17 – 27.5

Followed . M.

Mag 4.73

4227 very strong.

X 13423   14 38 – 40.7

Followed – C.   Mag. 5.28

Strong exp.

X13440 η Lupi

Near edge. Lines wide

July 4, 1922

B 53130   14 17 -60

neb. Known   13 46 -66

B 53131   15 34 -54

Comp. Ana   15 38 -57
Known   15 37 -57.48 (H.C. 186)
var. S Normae. Md.

neb. $H\beta = 10$ $H\delta = 12$ $H\gamma = 2$ $H\eta = 1$

B 53132   16 04 -54
2 bright lines.
Br. lines found in B 53100 (p.129)
confirmed. See also A 12050 (p.133)

Wednesday, July 5, 1922

B 53118   16 50 -41

Br. lines in Scorpius

B 53119   18 05 - 16

2 Class O known
1 Hγ bright? Probably defect.

~~Next~~. 1. Comp.
                         7 2
(1855) 18 3 -1~~8~~ ~~B~~5
Apprvd.   Known

~~Look up. Not found in list.~~

2. Comp.   Known

B 53120   19 03 +11

R Aq. bright. Hδ very br.

2 Comps found also on B 53113 (p. 132)

~~B 53121   20 12 + 22~~

July 5, 1922

B 53121 20 12 +22
N 19 58 +20 very narrow
N 20 0.7 +20

Class R? May be defective

Gas. Neb. 20 15.6 +1625
5 lines seen Known?

~~[illegible] 76, only one pair~~
5007, Hβ, Hγ Hδ; Hε?
One in violet.
Hγ strongest, prob. 4363 present.

Gas. Neb.
20 17.8 +19 47
One bright band seen

B 53136 21 00 +12
Narrow.

B 53149 14 59 -57
very poor plate, dusty & dark.

July 5, 1922

B 53137   22 00 +12

Md? Fot Md?   May be T Pegasi

Identify.

B 53150   15 34 -50

T Normae

Hγ = 10 Hδ = 12 Sp. mb

B 53151   17 8 -42

Very poor

B 53152   17 39 -32

Class O

? Br line? Very flt.

B 53116 .   14 17 -60

1 Br. lines?

2 Mc?   Var.

(187) 14 31 - 58 35

Not in Cape

M stars numerous

July 5, 1922.

B 53117   14 59 -57.

good plate, but a little wide

B 53123   17 39 -26

Clock wrong.

B 53124   18 40 0

very poor.

B 53125   18 17 -11

fair.

Per. objects [illegible]

B 53126   19 36 +28

19 30 +30 on plate.

Shows Wolf's lines in nebula.

B 53127   20 12 +28

Narrow.

B 53128   22 0 +28

Narrow

July 5, 1922

B 53133   17 24 -31

B 53134   19 03 +17

Narrow

B 53135   20 +25

2 n   km

Fit me,

? What is faint spectrum near

✓ B 53138   12 10 -~~68~~

Ident -58

Gas. Neb. Class O.   Km

Thursday, July 6, 1922

B 53139   14 40-64
Cracked on edge.

B 53140   15 20-60
2 Class O known

53142   17 39-20
Class M known

53143   15 34-54
1 unknown
$H\gamma=10$ $H\delta=11$ $H\zeta=2$ $H\eta=2$
Sp. mtr

Br. line B star?

53144   16 04 -50
Class O known

53145   16 28-46
Class M

July 6, 1922

B53146 16 50-41

Class O in Scorpius

53147 17 24-31

Class O 3 [illegible]
Class N

53148 14 17-60

Very poor, not dusted.

Friday, July 7, 1922

B 53741   16 20 _ 54

Class O here   16 16 - 51

New Class O found on B 53160
seen here. One br. band.

? This object is probably a variable and the bright band is Hδ of a fnt. star.
See Am

? Or perhaps a gaseous neb. having 5007 & 4686 br.

Am 15862	too poor.
15860	bright.
15924	fainter;
915	br.
12126	too poor.
12498	" "
13153	seems about normal,
14138	" " "
15834	" " "
15840	" " "
15852	" " "
15872	defective

Maybe a faint gas. neb. having 5007 & 4686 bright.

See also p. 128, 129.

Monday, July 10, 1922

20 0 am 15911

on

am 14395

R Aq. h. m. on new plates

2 defects near something edge of old
exactly like plates.

16-30 am 15919
am 13432

R R Scorpii h. m. old plate.

on

am 13432

17-45 a 15920
am 14126
nothing

Tuesday, July 11, 1922

15 - 25 am, 15924

am, 4138

Nothing.

Wed. July 12, 1922

12-60 am 5448
am 15927

W Cent. b. m 15927
X " " " 5448 ✓

Saturday, July 15, 1922

X 13443   14 35 -62.5
Taken to see if Hβ is br.
No evidence — Not certain, although there is a faint trace of a bright centre
Certainly no change for brightn. — X 11971 has br. line near Hβ, may be defect.
Not conf. here. So Hβ partly reversed, however

a 12051   171— 38.0

Neb.   17 7   -37 known

5007 = 30   4959 = 10
Hβ = 5   Hγ = 10   4650-88 = 10
Hδ = 3   H = 2

Neb.   16 58 -40 known
Edge 5007 & 4959 seen

? Neb??
One br. band near edge
1640 -40

Look up. Class O?
1644 -40

July 15, 1922

a 12048   12 24 - 62

Near? 12 5 - 61   Class N

N.

Near? 12 . 5 - 63   45   Class N

Def. very poor.

Could not classify ft. stars at all on this plate

x13444 K' Af.
Too poor.

x13445 17 30 - 50
Too poor.

x13447 K' Af.
Too dense

x13446 14 19 . 65
Too poor ?

x13448 16 51 - 33
Too poor

Monday, July 17, 1922

✓ X 13450 η Cent.
H β very wide, also all other d. lines wide. No br. lines seen
Centres 13 45 1855
13 47 1900

3m foll. 1900 pos. η Cent.

X 13451 15 02 – 42.5

Centres 15 0.3 (1900)

1m prec. 1900 pos.

All lines wide. No b. lines seen
Br. lines not conf.

H β prob. pt. br. but not certainly seen.

X 13452
16 48 – 50.5
No chart for ident.
Intended star very near centre
Lines very wide
H β however not distinctly br.
See also B 41738, B 43050

✓ X 13453. 18 2 – 28.5
. Centres about 18 3
1m foll. 1900 pos. star

July 17, 1922

X13454 ν Sag. 19 16

On edge
Hyd. doubles the desired phase

Centres 1918 (1900)

Centre is 2m foll. 1900 pos.
X13455 ξ Cent.
Lines single
X13458 16 51 - 33 1

Clock for moving plate used without following.

Very poor.

Star nearly in centre
Centre of plate precedes intended
by about 1m or less.

X13447 κ¹ Ap. 15 21 - 73
Pos. O.K.

n.g.

X13446 14 18 - 05
not followed. Very neg.

July 17, 1922

X13446   14 19 -65.4
K5 star. Lines sharp.
Not followed

X13449 & Arae
On foll. edge.   17 24 -49.8
Hβ, Hγ, Hδ br.

X13445   17 30 -50
foll. n. ft. star.
Lines wide
Star near center.
K0   5.86   dwarf?

Repeat.

X13444   κ' Ap.
Not followed.
Too narrow.

13450 in Cent.
See p. 150 Hβ, Hγ, wide, no br. lines.

Tuesday, July 18, 1922

Taken July 12.

B 53160   17 24 - 37
Too wide no ph. stars seen.

New Pec.? Look up on better plates

Class O, N + Pec (1855) 17 14 - 41   40
17 11 - 38 , 5x Scorpii   Dark bands.
Known

B 53161   18 40 - 6
Very poor   Class N
Class N. S Scuti.

53162   18 28 - 11
Poor & wide
S Scuti again

Br. lines? 18 14 - 14 appears
Class O   18 13 - 11 known ||

53163   11 50 - 68
Narrow but def. not very good.

53164   16 50 - 35

Neb.   17 7 - 32 known

53165   16 28 - 40
16 24 - 40 Neb. Known
Comp.?   16 26 - 41   10 Comp.?
Pec.   16 21 - 43   Br. known
more like to blue. Prob. M 3 R

July 18, 1922

B53176   18 21 -36

Gas. neb. known. See p. 125. B53094

P Cygni star also on both plates.

Nebular lines seen as described in H.C. 124.   18 9 -30 57

Md? In cluster
18 12 -32

Certainly has bright lines.

New var? By comparing AM 15934
with AM 6136

a star in cluster is seen to be brighter on late plate. This must be the object though I can not make it match exactly.

Jes. A.J. 202
H.B. 781.

See com of AM 15934

Approx. 18 12 -32 20

~~Ot~~

var. on AM 15934 B9855 B43744 n.s. on main plates.

It looks very faint on chart plate, but there is a variable present.

Bright var. RV Sag.
Hγ=10 Hδ=30 Hζ=5 Sp. Md.

Thursday, July 20, 1922

B 53167. 17 24 -25

Wide & poor.

B 531~~7~~^{6}8 ~~14 17 - 6 f~~ 19 54 +29

~~Class O 19 57 +32~~

No charts.

Prob. ident. marked on plate,

Var. = χ Cygni ?

When in Camb. look up all plates
! in this region in 56, and not found yet.

Very narrow. Wt. 32

5316^{9}8 19 20 +17 No plates with this number
? I think the field is correct.
What is this
Lines b. [illegible]
Poor plates.

53170 20 ~~42~~ +34 Cygnus
Pec? Dark bands
6 f Class O

July 20, 1922

B 53171   0 45 - 28

South Galactic

very poor.

Repeat

53172   12 40 - 62

fair, not very [illegible]

53173   15 30 - 54

Comp. prob. here 15   -50 or 51

Var. T Normae.

$H\beta = 10$ $H\delta = 11$ $H\zeta = 2$ $H\eta = 1$

Sp. mb. good

good clear plates

53174   16 50 - 41

Var. RS Scorpii.

Oe here

July 20, 1922

X13455 ζ Cent.
Lines a little wide, not double

X13456 κ' Ap.
Hβ a very narrow br. line

X13457 1555 −6013 6.97

Followed. very poor
Repeat Hβ not ~~clearly~~ very bright, but certainly seen
No change

X13458 17 20 −46
Hβ strongly br. This is 1715−47
Star intended is near centre but
north of pos.
No change. 2 br. line stars. Known
Hβ br., no it br.
X13459. ο Sag. Lines wide Hγ double
✓13460 η Cent.
No br. lines. Lines wide

13461 β Lupi + κ Cent

β Lupi slightly wider. No signs of doubling

X13439 β Lupi
Lines single + well defined.

July 20, 1922

X 13462 15 53 −14

Hβ br.?

Not the right plate evidently as the object is 2nd type

X13466 ~~X~~ H+ ofl.

Numerous br. lines besides hydrogen Bright hyd + numerous other bright lines (much better than C15380, only other long disp. plate

X13463 Scorpius region

A little too far north, + following desired position

X13465 θ Circini

Hβ. Hγ. very wide, as in Hβ bright & trace, no other lines seen

B53175 17 16 −63

Compare w. 53151

~~Identify~~ Id. ~~Does not identify.~~

17 16 −63 RU Arae + Z Triang. Austr.

2 md var. One rather faint

RU Sp. Md. Hγ=10 Hδ=10

Z " " Hγ=10 Hδ=8

? One br. line

53177 20 12 +30

faint

~~53179~~ 81 18 02 −66

Good plate, narrow

Excellent of known gas neb.

4363 much stronger than Hγ. Seen together in 56

July 20, 1922

B53181   15 50 -57

Md.
S Norma

Star near shows br. lines
but none seen on B53173

Look
up
Comp.

3 Comp. on plate.

Md pec? Ge-M star, no H+K bands

2 Class O } known
1 Neb }

Very good plate, although not very
narrow

Object at 16 04 -54 (B53100)
shows several br. lines on this
plate.

B53178   21 +30
~~22 +10~~

Very narrow but still the ft. stars
are difficult

53179   22+10

Very poor.
Nothing M.W.

Friday, July 21, 922

B53182 17 08-36

good
Compare blue ends of several plates.

B stars Hβ br.?

53183 ~~17 08~~ 18 28-5

~~Comp? Perhaps focus.~~
Yes. O.K. on 53237

53184 19 20+23
very narrow ft. stars not
very good

53166 16 20-50

16 04-54 Shows no br. lines.

Actually br. lines probably defraction.
B53161 shows all dark.
Good plate

53154 14 59-51
Too wide. Flare
Mod? Hβ br.? On edge. Tau?
53153 16 28-40
Neb 16 24 -40.2 known

July 21, 1922

53156 15 24-48

Poor.

53157 17 24-25

very poor

53158 15 20-60

2 lines Class O

53159 16 20-50

Good

Several Ma stars

53185 14 59-57

Class O. Rim

53186 16 04-54

Same obj. shows br. lines

Prob. Oa

good pl

53187 17 08-36

Good Objects run

53188 17 39-26

good.

53189 19 15+16

Fit. Ma

very narrow

July 21, 1922

53190 19 15 +10

R Aq.?

Neb. known

53191 12 50 -67
good

53192 15 50 -56
See also 53181 p. 159.
T Normae one of Comp.

53193 17 08 -42

17 15 -41 Pec. Sp.
Classed R in 56, but it
Look up type sp. not typical R. Looks more
like T Sag. R Aqd. etc.
One strong dark line

H.D. 156957 Sp. R star resembles π' Gruis. Prob. Class S.

Var. known R S Scorpii
Hγ=10 Hδ=15 near edge
Sp. Mb or Ma.

Saturday, July 22, 1922

B 53194 18 -30

Class O line

Bright line 17 56 -33. real?

Look up on 53176

53195 19 03 +5

R Aq. Hδ very bright.

53196 19 20 +17

Too under

53197 0 45 -28

Poor

53198 14 17 -60

Good

Comp?

53199 16 04 -50

good but wide

53200 17 52 -15

poor

July 22, 1922

B 53201 18×04+6

53202 19 36+22

Class Prst. 19 46 +17

Tuesday, July 25, 1922

B53203 14 17 – 60

good

B53204 14 59 – 57

Class O here

53205 16 48 – 44

very good plate

Good var. + Class Oe near together

Comp. Good examples
Look up.

Comp. Look up

53206 17 52 – 21
Comp. 17 58 – 22 — 30

Comp 52.5 – 20 52

Br. lines 18 05 – 19

? Same object on MF 7926 p. 100, 7933 and
perhaps other MF plates. Not yet certain
What is this? what it is. Perhaps Class O. Also on B53110?
Take another A Sp. plate
Gas. neb. See p. 100.

July 25, 1922

53206 cont.
RV Sag. 182033 bright.

$H\gamma = 10$ $H\delta = 20$ $H\zeta = 6$.

53207 18 12 -32
Confirms Md sp. in cluster. found
on 53176 18 21 -36 p. 154

other objects known

53208 14 59 -57

Good width
Class N

53209 15 34 -48

Md, see MF 7924 p. 99
prob. known
$H\gamma = 10$ $H\delta = 9$ Sp. Mb

Known. 15 39 -47 45
Stays br. a long time.
53210 17 08 -30

Class O known

July 25, 1922

B 53211 ~~18 17 − 5~~ 18 12 − 31
Not identified
Class O and Md on plates
Repeat.

53212 19 15 +22
Br. lines? faint

53213

53214 17 52 − 27

17 40 − 27.9 Br. lines
New Hβ bright? Hβ very bright
Can not find in any list
Star not new or same as in old
Am plates same as now
See p. 203 Precedes a star in Cordoba chart
Probably in C.D.M.
17 52 − 36 20

Res.
both [illegible] intensified Neb. 18 5 − 28. 5007 & line in violet slight
76 [illegible] Hγ stronger

July 25, 1922

53214 cont.
Hβ light?

53215   18 40–13
Wide.
Comp?

53216   18 52 +5
Med.   R Aq?

53217 (Cep. 193)

July 25, 1922

19-15 Am 14873
15978

Star in Dm at 18 24.0 – 29.5
New var.? bright on Am 14873
not on 15978
Barely seen on 14,143
not on 55
Nova Sagittarii, No. 5! found by I. E. W.
RY Sag. br. in old plate.

Asteroids on old plates

Thursday, July 27, 1922

Am 15981

20 00 Am 14395

R. Aquilae h. m 15981

Saturday, July 29, 1922

18-30 AM 15959 (reversed.)

1. Br. on ~~position~~ old plate
On 15934/15909
Certainly much fainter on 15959. Unless
~~R Cor.~~ defective it is variable. See corr. Looked
~~Aust?~~ Rough ~~14~~ 17 53 - 36 40 up by L.D.W. and
Looked up. ~~Perhaps R Cor. Aust.~~ found bright on 2 AM plates.
Perhaps defective.

2 Br. on old plates.
Known. U Cor. Aust. 183237

3. On new plates.
Also on AM 15931, 15934
Not on any old plate

Nova? approx (1875) 17 40 - 36.5

12.30 AM (Sunday) took spectrum plate
with 8-inch, developed it. The
spectrum shows bright lines and
is probably of nova type.

Sunday, July 30, 1922.

Plates covering region of Nova
17 40 - 36.5

Cooke

~~July~~ June 29	15909
July 1	15920
11	15931
12	15934
17	15959
29	15990

Bache

July 3	53152	17 39 - 32
12	53160	17 24 - 37
17	53187	17 08 - 36
25	53220	17 39 - 32
29	53230	17 40 - 36

Old Am plates covering region

18 - 31	6136	May 15, 1909	M.S. <11.5
	13434	July 20, 1917	
	14143	" 11, 1918	m.s. <11.5
17 - 45	12126	July 3' 1916	<11.
	12498		poor plate <10.5

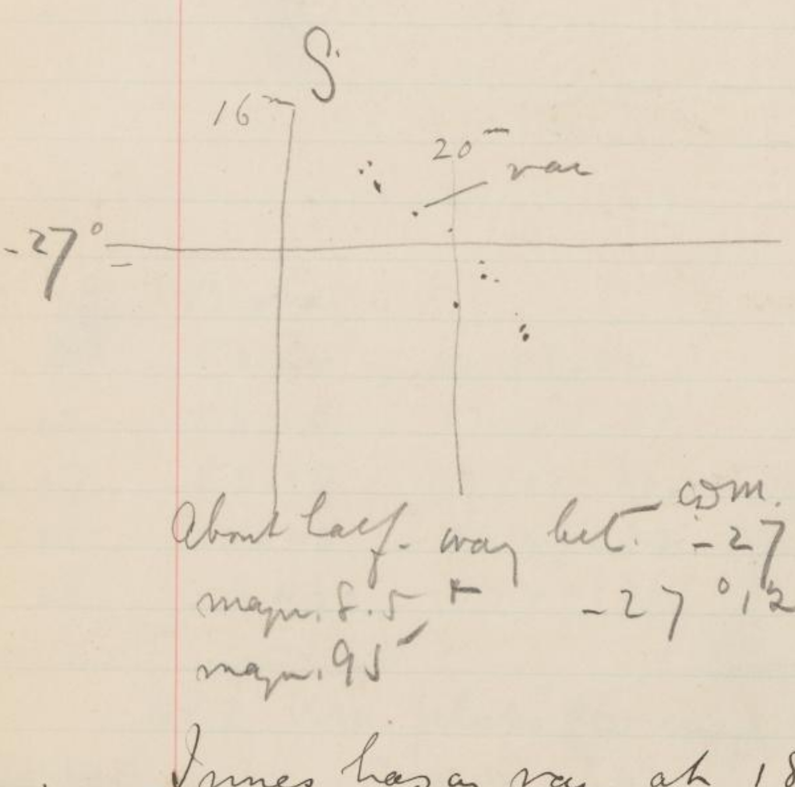
Monday, July 31, 1922

Nova. Spectrum taken with 24-inch Bruce last night by Professor Bailey seems to prove the Nova nature of the spectrum. Hydrogen lines show both bright and dark components.

July 31, 1922

18-30 Plates AM 15959+, 13838 cont.

5. Br. var 13434
Not in C. Dm. Chart.
Am 14143 very flt.
Approx 18 18 -27 15
Not on 6136



About half-way bet. CDM. -27°12837 18h 18m 9.4 -27 23.9
magn. 8.5, + -27°12855, 18h 19 39.5 -27 24,
magn. 9.5

Innes has a var. at 18 19.0 -27 11 (1875)
Cambridge. 10.6 to 7.7, Ann. in Union Cir. 37.301
Sept. 30, 1922 This Circular is lost, and I can not look
it up. Wait until it comes.

Same object Jan. 24, 1923 Object marked on AM 134~~17~~.
N.S. on AM 6170.

Tuesday, Aug. 1, 1922

Position of Nova Scorpii No. 3.
It follows and is N. of −36° 11896
17^h 39 46.8 − 36 41.0, also
in Z.C. 8.5

C.P.D. −36° 7606 17 39 46.3 −36. 40.9
8.3

With respect to A.G.C. 24157
(1875) 17 40 40.53 − 36 28 37.2

the nova precedes ~~follows~~ 16.8 ½ mm.
16.7 17.2
17.0

and is south 10.6 ½ mm.
10.6
10.8
10.9

precedes ~~follows 8.4 mm~~
~~South 5.3~~

10.7 = 5.4 mm

16.8
16.7
17.0
17.2
16.9 = 8.4 mm

(Cos δ) 8.4
4
.8049) 33.60 41.7
32 196
14040
8049
59910

Nova precedes A.G.C. 24157 by 42.2, south 5.4 m

Aug. 1, 1922

A. G. C. 24157 = CDM -36° 11908
17 40 39.9 -36 29.0 8.5

and C.P.D. -36° 7624
17 40 40.3 -36 28.6 8.1

~~17 40 39.9 -36 29.0~~
~~42 5.4~~
~~17 39 57.9 -36 34.4~~

A. G. C. 24157. 17 40 40.53 -36 28 37.2
8½
42 28.6
5.4
17 39 58.53 34.0

(1875) 17 39 59 -36 34.0

Wednesday, August 2, 1922

Observation of Nova Scorpii No. 3

A 12108 taken by Professor Bailey on
with exposures of 1^m 3^m 10^m 30^m 90^m
1^m = 10 ± magn 3 = 11 $\overset{10}{\cancel{4}}$ = 12 30 = 13 90 = 14

that is the faintest image with the different exposures are 10, 11, 12, 13 and 14 respectively.

Nova
4th image seen very clearly, but is of a pec. shape.
Star evidently bet. 10 & 11 magn. on this scale
The ph. star s. f. shows bare trace of 3rd image so about magn. 12 - 13

Sequence marked.
a' = 9.8 very rough estimates
a = 10.0
b = 10.1
c = 10.4 CDM. −36° 11905 17h 40 28.9 −36 40.9 9.8
d = 10.8 Sp. Class A.
e = 11.2
f = 11.6
g = 12.2

August 2, 1922

Observations of Nova Scorpii No. 3

June 29 Am 15909 star" 4 seen. Nova n.s. $<1\overset{2}{\cancel{3}}$

July 11 " 15931 10.5

" 12 15934 10.0

Am 15993 10.2

Am 15990 10.2

15959 10.0

A 12108 bet. c & d. $10.\overset{6}{\cancel{7}}$.

15990

10.3

15920

n.s. Star g seen & entering 0.3 less.

<12.3

Friday, Aug. 4, 1922

Obs. Nov. Scorpii cont.

Am 15988
10.3 near edge.

15996.
10.4
Image has circle around it and certainly looks different from the others.

15993
betw. b & c nearer c
10.4

15959 9.9

Résumé

N.S. & [illegible] fainter than 12.3 on July 1. First chart image on July 11, the mag. was then apparently on increase for the star was at least 1/2 magn. br. on July 12, and July 17. The next plate was on July 29, when it had waned about 1/2 magn.

August 4, 1922

Nova Scorpii No. 3.

Spectrum plates.

July 3 S 3152
(No trace of sp.
Trace of sp. of [illegible] seen. Therefore Nova was fainter than 10.8

July 11 S 3160 On edge. quite bright.

B 53235
Dark component of Hγ seen
H & K br. & dark.
What is dark line below (to violet) of Hγ? Is it λ4417 or 4215?
Wide dark bands of greater λ than H & K
Dark obs. band or line near λ650
Dark K growing fl.

Aug. 4, 1922

B 53234
Numerous br. + dark lines
Dark H well defined.

B 53230 July 29
The first spectrum obtained
Nova character defined further:

53160 July 12
Too near edge. A blur. Bright
lines probably not present.

B 53242
Very poor. Sp. barely seen

53238
K fine.

Aug. 4, 1922

B 53220 July 25
Near edge but clearly showing the nature of the spectrum. It is of the Nova type, besides hydrogen it has one very bright band at 4700 ±.

The spectrum has as much light as b.

Aug. 4, 1922.
Plates covering Nova Scorpii No 3.

June 29 Am 15909 Nova n.S. <12.5
July 1 " 15920 " " "
" 3 B 53152 " " <10.8
" 11 Am 15931 10.5
" 12 " 15934 10.0
" " B 53160
" 17 Am 15959 9.9
~~" B 53187~~ ~~coming?~~
" 25 B 53220
" 29 Am 15990 10.2
" " B 53230 First spectrum taken after discovery
" 30 Am 15993 : 10.2
" " B 53234 1
53235
~~a~~ " " A sp
" 31 Am 15996 10.4
B 53238
" " A 12108 10.6
Aug. 1 Am 15998 10.3 E
" 2 " B 53242
" 2 Am 16012
" " B 53245

Aug. 6, 1922

53226 17 24 – 25
Br. line object Hβ very bright.
P Cygni type? See also pp 167.
Perhaps P Cygni type, and found later than
Too wide
Plate centres about 17 35 – 36

Quality 3

53225 16 50 – 35
Centres 17 03
Qual. 3 Gas. neb, Known 17 7.6 – 37.0
Class O Known 17 11.8 – 3418

53224 16 28 – 40
Quality 2
Objects known

53223 16 04 – 44

16 27.5 – 44 20 br. lines

Aug. 6, 1922

53222 19 20+7

Comp: Comp?
Lockup
4 narrow

53218 16 50-47

Objective hum

53231 17 26 - 26
very poor & wide.

X13467 μ² Scorpii
Lines wide in pl.

X13468 μ¹
Probably double

X13475 η Cent.
Lines single

X13476 κ Aps. July 21, 1922
Hpb.
X13486 ~~κ Cent.~~ β Lupi
Lines single

Monday. Aug. 7, 1922

X plates.

X 13495

Pec. Hyd. dark & narrow.
Hβ totally dark.
Hel. very wide as in ε Cap

13496

16 55 -60
M. S.? very poor
Yes. Object desired was at
15 55 -60

See 13499, good plate of

15 55 -60

13497 Nova H S plates
Bare trace on edge.

13498 κ' Ap.

Repeat Hβ off plates

X 13499 15 55 -60
Hβ bright.

Aug. 7, 1922

X13500 17 9 - 33
Hβ l— Early B

X13501 β Lyrae
Lines not sharp

X13502 ω Sag.
Same lines sharp

13503 α Cap.
fair

13504 15 22 — ×6
very narrow About right width
for abs. magn. Def. fair
(magn. 5.05

13505 β Lyrae fair

13506 ε Cap.
Hβ dark.

13507 (incorrectly numbered 13508)
magn 5.07 Narrow.

13508 β Lyrae

13509 β Cygni
Too wide Should be very narrow

Aug. 7, 1922

X13510
11
12
13

β Lyrae. Last 2 very poor.
Lead 60 too small.

Focus very poor in last two, but no change was made

X13518 κ^1 Apodis
$H\beta$ very ft. bright on edge (cluster)

X13366 ρ Carinae May 13, 1922
Bright line gone as already known
$H\beta$ narrow dark with fuzzy edge to violet
See X6271 taken 1894 $H\beta$ strongly bright
See H.C. 224

May 14, 1922
$H\beta$ bright
$H\gamma$ too dense

X13367 $\bar{E}$ Car.
$H\beta$ still bright. Compared with 6222, it seems to be brighter, yet it may be because this plate (13367) is denser. Perrine gives this as a star in which $H\beta$ bright has disappeared!

X13375 14 8 −56.6
$H\beta$ br. & no change since X6565
$H\gamma$ wider & dark.

X13390 η Centauri. On edge. $H\beta$ dark.

Thursday, Aug. 10, 1922

B 53219   17 08 – 42

R S Scorpii Md
Hγ = 10 Hδ = 30   Sp. Md.
other objects here

R Star is pec., more like R Andm

B 53221   18 05 – 24

Centres 16 57 – 22
Gas neb. Known 16 58.6 – 21 40
Estimate intensities
5007 + 4959 well separated.

Qual. 3   wide

53228   17 39 – 21
Wide
Qual. 2.

53229   17 39 – 26

Very poor

53227   18 4 0
Poor

Aug. 10, 1922

B 53232 1920 +17
Good width
Quad 4 Minimum fl. M class.

53233 14 40 − 43

S Lupi bright Plate scratched in region

Hβ = 15 Hγ = 10
S Lupi Pec. other br. bands bet. Hγ & Hδ.
not md.
Probably like R Andr

Star about 14 55 −41 seems to show
br. lines. In C.D.M. two stars
Probably due to duplicity & near edge

53236 1865 − 10
Center −21° (approx.)

(1) Br. lines Two stars on B 53206

Gas. neb. (2) 18 05 − 19 Br. lines in cluster. See B 53206. p. 165
Evidently a gas. neb. 5007 + 4959 seen
also Hβ + other lines

Aug. 10. 1922

B 53236 very poor. dirty.

53237 18 17 -5

Star at 18 32 -5 5
bright lines? None on 53183
~~Get 53183~~

53239 18 52 +11

(1) R pec?? flt.

R Aq. on plate

Focus very poor.

53240 14 00 -46.
Dark plate. Moon! Lst Quarter 16 04 _ 16°
(1) Br. lines, Two stars?
or are they real? No other plates

Gas. neb. known

Aug. 10, 1922

53241 18 28 +1.0

very poor

53243 18 52 +5

very poor.

53244 17 40 -36
too poor.

53246 17 52 -15

All fogged

53247 19 20 +29
very poor

53248 18 52 +1
very poor

53249 0 40 -38
very poor Good width

Friday, Aug, 11, 1922

B 53211
Centre 18 12 - 31
P Cygni type
Md RX Sag. $H\gamma=10$. $H\delta=50$
Var. in Cluster see p. 154 (B53176)
18 12 - 32

$H\gamma=10$ $H\delta=12$
Numerous other b. lines.

Get later chart plate.

B 53253 17 40 - 36
Nova Scorpii 3 much fainter
Bright & dark hydrogen seen

Aug. 11, 1922

a 12101   16 58 - 41

Gas. neb. Known
16 58 - 40 44
Hβ, 5007, 4959 seen.
others in poor focus.

Def. poor.

a 12100   15 22 - 55

Def. not very good.

a 12106   17 42 - 36
Nova Scorpii 3
Gas. neb. also on plate
17 53 - 38 49 known

This plate shows fainter sp. than

a 12104   15 43 -
Ft. sp. showing br. lines. ??

Ft. M stars numerous.

Aug. 11, 1922

a 12105   16 22 -47.5

Def. poor.

a 12103   18 31 -3

Few stars Is this a hole?

a 12102   17 24 - 31

Fair

12107   18 40 0

Tuesday. Aug. 15, 1922

B plates —

53251 17 40 −36 Nova
Faint Hβ + Hγ bright.
Hβ double?
Br. line about 4380?
Some br. lines at 4640 region.

2 Class N known
Very ft. M star marked

Very good plate for ft. stars near center.

53252 17 24 −31 Too narrow!

Shows very ft. stars. All pec. objects found appear to be known.

Br? Very ft.

53253 17 40 −36
Nova again

121 Gas. Neb.
known

Aug. 15, 1922

B 53254   17 24 - 37

Too narrow!

Very flt. star. Class R?

53255   16 20 - 33

1 Defect? or Class R?

Defect. See B 53258

2 Much contrast bet. portion Hβ - Hγ, and shorter region

53256   17 52 - 15

Setting wrong in dec.

Centres 17 48 - 36

Nova flt. in edge

very good of Class O   17 52 - 32

53257   18 40 - 6

53258   16 20 - 33

ST Scorpii very fee. sp. Class R? See also 53255

No sp. given in 55   R5 in H.D. 96.

Aug. 15, 1922

B

53259 18 40 −6

53260 18 28 −11

Md? Very faint.

53261 19 20 +29

Class N = SS Cygni

R Faint sp.
about 19 20 + 30
Look up. Not in 56

M star Large defect near.

Friday, August 18, 1922

B 53262 18 40 −6
3 Class N [illegible]

Qual 3
rather wide

53263 19 20 +29

Neb. in Class O.
So thin Ring Neb.;

53264 18 28 −11

Qual. 3 Pec. obj. [illegible]

53265 16 48 −41
Special for susp. obj.
Nothing seen. It was a defect in Am plate.

Md R S Serpen
$H\gamma$ 10 $H\delta$ 30
$H\zeta$ 3R $H\theta$ 2 $H\eta$ 1 $H\epsilon$ 2

Poor plate

Aug. 18, 1922

B 53266 18 52 — 1

1. Pec. dark bands.

DM star 18 53 — 156 (rough)

Look up

B53267 16 20 — 33

Qual. 3 Narrow but not very good

53268 17 40 — 38

Nova very good. Br. + dark lines seen.

Very narrow plate

very flt, also near Md?

53269 18 40 — 6

Not ident.

Aug. 18

53270 18 15 +2

53271 0 45 −28

Wednesday, Aug. 23, 1922

B 53289 19 03 +17

1. Comp? h. lines?

2. R? very ft.

3. Pec. Br. bands. Nova? In Sagittar. 1915 1729 ~~Perhaps T Sagittarii~~

4. Md. var. Hγ=10 Hδ= 4. Sp. not.

53288 19 03 +5

1. Hγ, Hδ h.?

2. Comp?

3. β h.? May be a break in the Hγ

4. R Agr.

53287 18 40 0

1. Comp?

2. Br. line 18 4~~0~~2 ~~+0~~ +~~1~~0 (rough)

Var. F.L. in Am 9510

Am. 12271

Not large var. but appears certain.

Nature of sp. not well defined.

Hβ h? or other br. band.

Nova Aql. 3!!!

Aug. 23, 1922

53286 17 39 -26

1. ~~Neb.~~ Pec. Hβ + Hγ br. Variable not in Cat.

new! ~~17 40 -25~~ new? 17 40.3 -27 59

BD M. star on chart, two sp. on plates -27 11944

17 40 21.3 9.0

2. Br. lines. ? -27 58.4

3. " "

53285 19 15 +22

Several on plate

1. No var. seen on B 30347, 27155, 30347.

-27°11944 Arrow near star on B 40329. Also on B 22826, where Hβ + Hγ are bright. See also p. 167

Found by Merrill. See letter of Jan. 7, 1922.

53284 19 03 +11.0

Nothing of interest except R Aq.

53283 18 28 -5.0

poor.

53282 16 04 -50

Thursday, Aug. 24, 1922

53281 19 15 +10
R Aq.
Hδ bright. Hε :: 25.

53280 19 15 +16.0
(Var. Hγ & Hδ br.

53279 18 17 −11.0
R5 known
Class O "

53278 17 08 − 36
new? Md. Appr. ~~17 16~~ 17 16 −38 Ft. star
Hδ very bright.
(51.1916. Not of Class O known
(Known. Found by A.J.C.

53277 1628 − 46
nothing found

Friday, Aug. 25, 1922

53276   19 38 +14
Identify. Md. Hδ br.   R T Cyg. Sp. Me. Hδ very bright,
Md? very fl. —   Perhaps Me

53275   18 52 +5
Hγ br.?

53274   18 05 −22
Gas. neb. 18 19 −23 known
4363 + Hγ separate

Same spec. fld. star

53273   17 26 −26

53272   15 50 −37
Several fld. stars spec.

Aug. 25, 1922

S-3271 0 45 -28

Cambridge Sept. 30, 1922

Good M F plates for Classifying.

7819 8 30 -41
7820 10 21 -57 .
7822
7823

7826
7827 14 15 -60
7829 16 04 -50

7908 13 30 -61 better than 7903, 7904, B53172

7902 11 03 -60 Cluster N.G.C. 3532
near η Car.

2 hours) 2 exp. 7841 11 25 -60 very ft. stars seen but
perhaps no fainter could be classified
than on 7902.

7942 very good 10h 21m -57°
but I do not know whether it shows
much fainter stars. Yes, see corner.

Good place if a southern field is wanted.

B53131 15 34 -54
Pretty good. Compare with old plates.

Medium B plates

18	40 +6	B53201	Qual 4	
19^h	03 +5	B53195	" 5	
19	15 +10	B53190	" 4	
19	22 +17	B3296	4	
19	03 +17	B53134	" 5	very narrow
19	15 +16	B53189	3+	
19	20 +17	53222	4	
19	15 +22	53285	4	narrow? See M 7.7972 7934
19	22 + 33	53184	4	"
19	36 +22	53202	4	
19	36+28	53126	4	
20	00 +25	53135	3+	
20	12 +30	53177	3+	
20	12 +28	53127	4	
21	07 +12	53136	3+	
21	58 +9	53137	3+	

B plates

53137 21 58 +9 too poor to classify

Dec. 6, 1923
Plates just received from Peru.
Good enough to secure from N. sky.

MF	8139	19	40	0
	8135	23	00	+22.5

Mn Fe plates.

No.	p.	No.	p.	No.	p.	No.	p.	No.	p.	No.	p.	
		7833	119	7863	74	7893	87	7923	99	7953	114	7983
7804		34	59	64	"	94	"	24	"	4	"	4
5	68	35	53	65	"	95	88	25	100	5	"	5
6	"	36	59	66	No. omitted	96	88	26	"	6	113	6
7	"	37	"	67	79	97	89	27	118	7	"	7
8	"	38	58	68	"	98	"	28	101	8	"	8
9	"	39	"	69	75	99	"	29	"	9	118	9
7810	69	40	56	70	77	7900	111	30	"	7960	114	7990
11	68	41	67	71	80	1	93	31	102	1	"	1
12		42	"	72	75	2	"	32	"	2	115	2
13		43	"	73	76	3	"	33	"	3	"	
14		44	70	74	76-7	4	94	34	103	4	"	
15	58	45	"	75	77	5	"	35	"	5	"	
16		46	56	76	83	6	95	36	"	6	"	
17	58	47	81	77	89	7	"	37	"	7	110	
18		48	71	78	83	8	"	38	104	8	115	
19	52	49	73	79	"	9	"	39	"	9	116	
7820	"	50	81	80	84	10	96	40	"	7970	"	
21	63	51	107	81	"	11	118	41	105	1	"	
22	50	52	72, 168	82	107	12	92	42	112	2	"	
23	52	53	28	83	"	13	96	43	"	3	110	
24	56	54	107	84	84	14	97	44	"	4	111	
25	62	55		85	85	15	"	45	106	5	"	
26	61	56	74-75	86	"	16	108	46	"	6	116	
27	55	57	75	87	85 86	17	97	47	"	7	118	
28	60	58	78	88	"	18	98	48	"	8	117	
29	"	59	79	89	81	19	"	49	113	9	"	
7830	54	60	"	90		20	"	50	"	7980	"	
31	57	61	72	91	87	21	99	51	110	1	"	
32	60	62	73	92	"	7922	"	7952	112	2	"	

New variables or pec. From Bk 146.

✓53276		19	30	+14.	Md. Hδ br.	
53280	Identify	19	15	+16	W Sagittae See B53289 , var.	
53286		17	40	−27	Hβ, Hγ, Hδ br. −27°11944. Merrill	203
53287		18	42	+1 (rough)	Pec. sp. Small var.	202
53288		19	03	+5	Hγ, Hδ br? Comp?	
✓53289	W Sag.	19	03	+17	^{1}Comp? ^{2}Pec. Br. bands. ^{3}Md. ~~V~~ X Sagittae	
53266		18	52	−1	Pec. dark. 18 53 −1 56	
53263					nb?	199
53261	Known				(not in 56)	198
53260 ?						198
53258					class R?	
53254 53255						197
✓53211					76	193
53239						191
53237 ?					b. line?	"
53236			05	−19	See 53201 in #2926	
53233		14	40	−43	3 comp. sp. not Md. Like R And? Hβ in H.D.	190
53219		17	08	−42	R star pec., like R And?	189
53222		19	20	+7	Comp? Comp?	185
53226		17	~~34~~ 35	−25	−27°11944	184
Am 15959		18	19	−27 11	Innes' star?	174

25 a + a ?
K ?
A3 ?
A5 ?

New variables or pec. From Bk 146.

√ 53276   19 30 +14   Md. Hδ br.

53280 Identif   in Sagittar See B53289
19 15 +16   , var.

53286   17 40 -27   Hβ, Hγ, Hδ br. -27°11944. Merrill   203

53287   18 42 +1 (rough)   Pec. sp. Small var.   202

53288   19 03 +5   Hγ, Hδ br? Comp?

√53289 in Sag.   19 03 +17   Comp?^{1} Pec.^{2} Br. bands. Md.^{3} ~~X~~ V Sagittae)

53266   18 52 -1   Pec. dark.   18 53 -1 56

53263   neb?   195

53261 Ku   0 (not in 56)   188

53260 ?   198

53258   class R?

53254   197

53255

√53211   1.96   193

53239   191

53237?   br. lines?   ,

53236 ^{m}8 05 -19   See 53201 in H 2926

53233   14 40 -43   sp. not Md. Like R And? N p in H. D.   190

53219   17 08 -42   R star pec, like R And?   189

53222   19 20 +7   Comp? Comp?   185

53226   17 ~~24~~ 35 -25   -27°11944   184

Am 15959   18 19 -2711   Jones' star?   174

New variables or pec. From Bk 146.

√53276		19 30 +14	Md. Hδ br.	
53280	Identify	19 15 +16 in Sagittae See B53289	„ var.	
53286		17 40 -27	Hβ, Hγ, Hδ br. -27°11944. Merrill	203
53287		18 42 +1 (rough)	Pec. sp. Small var.	202
53288		19 03 +5	Hγ, Hδ br.? Comp.?	
√53289	in Sag.	19 03 +17	Comp.?[1] Pec.[2] Br. bands. Md.[3] $\overset{V}{X}$ Sagittae	
53266		18 52 -1	Pec. dark. 18 53 -1 56	
53263		19 20 +29	Neb. w. Class O. Ring neb.?	199
53261	Known?	19 20 +29	R 19 20 +30 (not in 56)	198
53260	?	18 28 -11	Md?	198
53258		16 20 -33	ST Scorp. very pec. class R?	
53254 53255		17 24 -37	Class R?	197
√53211		18 12 -31	var. in Cluster See 53196	193
53239		18 52 +11	R pec.? fl.	191
53237?		18 17 -5	Star 18 22 -5 5 br. lines?	„
53236		18 5 -21 ~~10~~	(1) Br. lines. (2) Gas neb. Known 18 05 -19	See 53201 in H 2926
53233		14 40 -43	S Lupi. Not Md. Like R And? Nβ in H.D.	190
53219		17 08 -42	R star pec., like R And?	189
53222		19 20 +7	Comp.? Comp.?	185
53226		17 35 ~~24~~ -25	-27°11944	184
Am 15959		18 19 -27 11	Innes' star?	174

M F plates.

7921	10 42 - 65	Pec. R.	99
7929	11 54.9 - 58	3 Km Clas R.	101
7931	16 38 - 43	Comp.	102
7940.	17 10 - 41	var?	104
7941	8 40 - 46	1 h. line See also 7815, B 39930	105
7948	Great G star Comp. 19 20 +11		106
7851	11 57 - 68	red Class?	107
7852	7 30 - 23	h. band	108
7967	14 39 - 58	Comp.	110
79~~73~~75	16 55 - 43	h.	110

7900 9 16 - 50 Rec. sp. 111

7942 16 21 - 51 pec.? R? 112

7943 15 46 - 65 P Cygni type 112

7944 13 24 - 56 pk. M or R? 112

7962 18 53 - 4 15 very red star ? 115

7963 18 00 - 19 AX Sgr.

7964 Kpk.? 115

7971 19 15 + 10 N? 19 25 + 10 116

7972 19 15 + 22 Pec. 116

7976 16 50 - 41 Pec. Class O. 116

7978 18 52 + 11 N5 R. 117

79~~27~~11 17 08 - 36 Md h.? 118

53120	19 03 +11	2 Comp.	137
53132	16 04 -54	Nebula 16 47-54 37 (1875) Br. lines. See also 53100, 53141, 21640.	136
53131	15 34 -54 1537-57	Md. Thome Comp. Known	"
A12050	16 04 -54	fn. br. See 53100 p.129 See B53132	133
A12052	14 0 -60	R5 or Mc? ah 14 10-62	133
53113	19 03 +11	2 Comp 19 05 +13 19 15 +12	132
53111	18 17 -11	Class O, R5, ~~19 15 +12~~ Comp.	131
53116	17 52 -21	Comp. 17 54 -20 Br. lines? 18 00 -22	"
53109	16 28 -46	O + N	"
53108	14 17 ~~-56~~ -56	2 N Comp Known	"
53103	13 30 -55	O, Comp?	130
53100	15 50 -56	Br. n. band 4688 near? See 53132 etc.	129
A12014	13 36 -61	Oc, Oa or Ob	127
53095	14 40 -64	Pec.?	125
53094	18 00 -30	Gas. neb. Known Mc. var ? RV Sag.	"
53092	15 58 -56	~~Mc. var.?~~ M pec. H+K fn.	"
53089 ~~mq~~?	11 50 -55	Mp? π' Gruis type? R5 on B40117, Pec in B40304.	124
✓ 53085	13 30 -55	Class O, N. 2 N, R 10 Known	"
MF17994	19 03 +11	Comp.	122