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Project PHaEDRA - Annie Jump Cannon 14

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[[preprinted]] 1 [[/preprinted]]

[[underline]]March 22, 1904[[/underline]]

Examinations of spectrum of epsilon Aurigae on C plates.

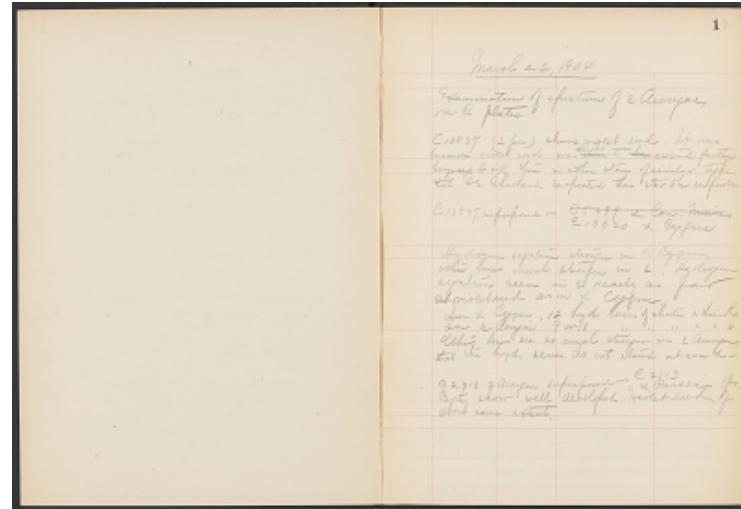
C10837 (2 prs.) shows violet end]. It was because violet end was ~~seen~~ thought to ~~be~~ extend farther beyond H & K than in other stars of similar type, that Dr. Abrahams suspected this star to be composite.

C10837 superposed in ~~C5399~~ + Can.
Minoris ~~C10620~~ alpha Cygni

Hydrogen system stronger in epsilon Cygni, other lines much stronger in epsilon. Hydrogen systems seen in epsilon nearly as far at violet end as in alpha Cygni.

In alpha Cygni, 12 hyd. lines of shorter lambda than K.
In epsilon Cygni, 9 or 10 " " " " "
Other lines are so much stronger in epsilon Aurigae, that the hyd. series do not stand out as in alpha.

C 2310 epsilon Aurigae superposed on [^][[C 2113]] alpha Persei 1 pr.
Both show well developed violet end of about same extent.



Project PHaEDRA - Annie Jump Cannon 14
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Extracted Aug-29-2022 12:06:08

[[preprinted]] 4 [[/preprinted]]

April 8, 1904.

X10759 zeta Cap.
H beta sharp dark & distinctly br. on edge of gr. lambda.
H gamma also slightly bright on edge of gr. lambda.
Orion lines hazy.

x10758 epsilon Sag.
very narrow & poor
H beta not distinctly seen

x10760 epsilon Sag.
The best phot. yet seen of the fine lines in this spectrum. [[unclear]] the
measur. et.
H beta bright on edge of gr. lambda and a distinct bright lines seen at
about lambda 5013.
Intensities shiny near H gamma.
A special study must be made of this plate.

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April 8, 1904.

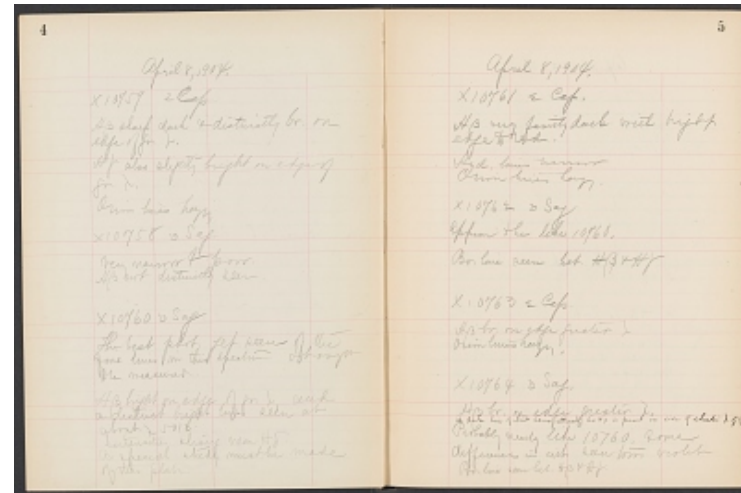
x10761 epsilon Cap.
H beta very faintly dark with bright edge to red.
Hyd. lines narrow
Orion lines hazy.

X1076 epsilon Sag.
Appear the like 10760.

Br. line seen bet. H beta & H gamma

x10763 epsilon Cap.
H beta br. on edge greater lambda
Orion lines hazy.

x10764 epsilon Sag.
H beta br. on edge greater lambda.
A dark line of about same intensity as H beta is present on side of
shorter lambda of H beta
Probably nearly like 10760. Some differences in int. seen twr. violet.
Br. line seen bet. H beta & H gamma.



[[preprinted]] 8 [[/preprinted]]

April 8, 1904.

X 10779 epsilon Cap.
H beta very faint with bright edge. H gamma very faintly bright twr. red.

X 10780 A.G.C. 9181
omega Can. Maj. shows H beta and H gamma bright.

9181 shows H beta dark with just a suspicion of a bright line. Other lines dark.

X 10781 epsilon Cap.
H beta just a faint hazy blur with faint bright line seen.

X 10784 epsilon Cap.
Narrow. Too poor to see H beta distinctly.

X 10785 epsilon Cap.
H beta very faint. Bright line seen.

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[[preprinted]] 9 [[/preprinted]]

April 8, 1904.

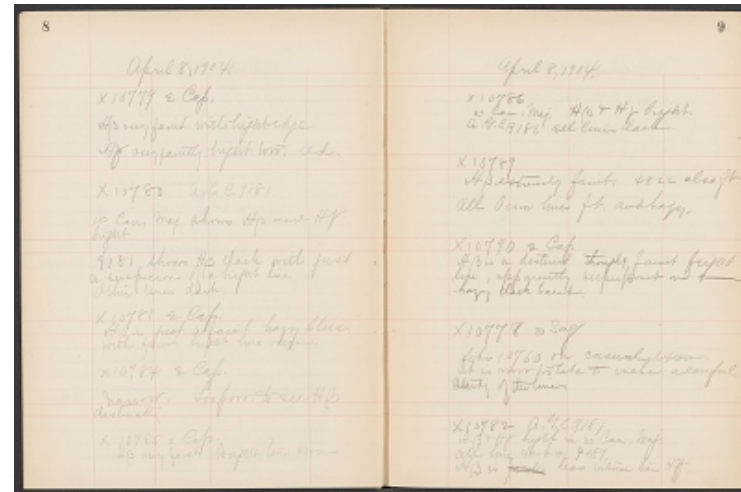
X 10786 omega Can. Maj. A.G.C. 9181
H beta & H gamma bright. All lines dark.

X 10789
H beta extremely faint. 4922 also ft. All Orion lines ft. and hazy.

X 10790 epsilon Cap.
H beta is a distinct though faint bright line, apparently superposed on a hazy dark band.

X 10778 upsilon Sag.
Like 10760 on casual exam. It is never too late to make a careful entry of this line.

X 10782 A.G.C. 9181
H beta & H gamma bright in omega Can. Maj. All lines dark in 9181. H beta is ~~fainter~~ ~~less intense~~ than H gamma.



Project PHaEDRA - Annie Jump Cannon 14
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Extracted Aug-29-2022 12:06:08

[[preprinted]] 16 [[/preprinted]]

April 28, 1904

C 13857 ϵ Sag. (cont.)

H beta is not seen on this plate but 4922 is quite strong.

H gamma < 4387

H delta < ~~3~~ ~~4128-31~~

H epsilon ~~H delta~~ K and 4036 are of nearly equal intensity.

C 13857 compared with C 13859 α Cygni

The violet end of ϵ agrees much more nearly with that of β Orionis than with α Cygni.

In α Cygni there is a trace of a fine line bet. H theta and H iota, but of no great intensity and probably not the same as the strong band seen in ϵ .

The violet end of ϵ appears to be more of Orion type than later on this plate which shows the faint phase of the hydrogen lines.

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April 28, 1904.

ϵ Sag.

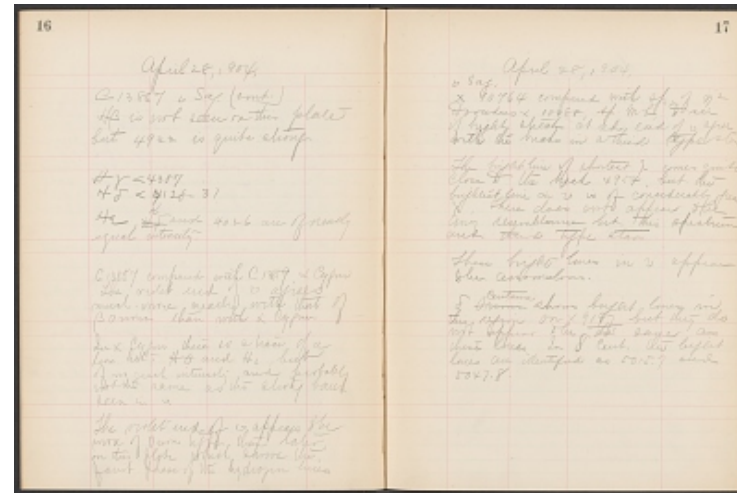
X 10764 compared with sp. of η ²

Doradus X 10088, sp. Mb, to see if bright streaks at red end of ϵ agree with the breaks in a third type star.

The bright line of shortest λ comes quite close to the break 4954, but the brightest line in ϵ is of considerably greater λ . There does not appear to be any resemblance bet. this spectrum and third type star.

These bright lines in ϵ appear to be anomalous.

~~δ Orionis~~ Centauri shows bright lines in this region on X 9197 but they do not appear to be the same as these lines. In δ Cent. the bright lines are identified as 5015.7 and 5047.8



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 12 [[/preprinted]]

May 1, 1904.

x 10355 (cont.)

Sp. appears to be like beta Orionis as to all the stronger lines and the fainter lines appear to be due to the other star

K appears to be widely double or to have a familiar band to violet.

X 10272

H beta invis. or 1

4922 bright to red

4471 < 4481. Otherwise helium very strong.

X 10483

H beta absent. other hydrogen ft. But in intensities of fine lines, this sp. is more nearly like that of 10355 with strong hyd. lines than of 10704

[[end page]]

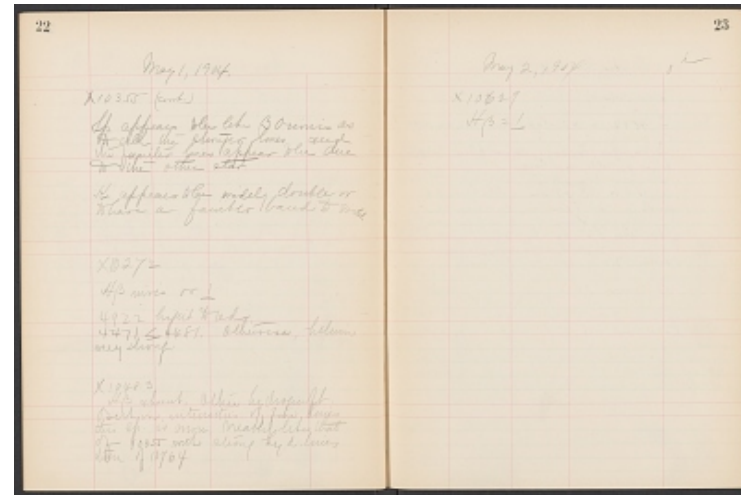
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May 2, 1904

X 10629

H beta = 1



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 24 [[/preprinted]]

[[underline]] Tuesday, May 24, 1904 [[/underline]]

Examination of C plates

C 14832 epsilon & rho Sagittarii May 22, 1904

Both spectra hazy, atmospheric condition being probably very bad. The faint phase of the hydrogen lines is seen in epsilon Sagittarii. The violet end is stronger in epsilon than in rho. The spectrum of epsilon appears to be like that of C 13857 (see p. 14) as far as general effect goes. Image too poor for detail. H beta is not seen at all in epsilon but the focus is very poor at red end.

C 14821 epsilon & rho Sag. May 12, 1904
Images very narrow & near the edge.
epsilon Sag. H beta not seen, spectrum appears to be just like that in C 13857.

[[end page]]
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May 22, 1904

C 14823 Com. Ber.
Very good plate.
8 spectra seen and part of another.

[[margin]] (1) H.P. 2103 [[/margin]]
K line very sharp
Sp. A2F like iota Centauri

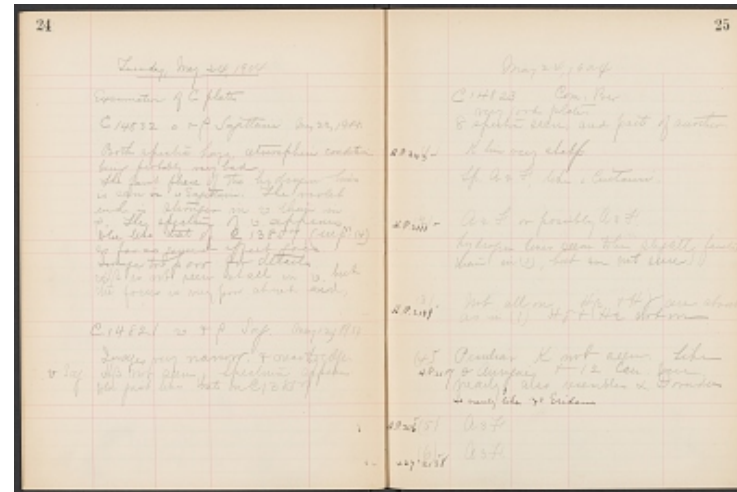
[[margin]] (2) H.P. 2111 [[/margin]]
A2f or possibly A3F
Hydrogen lines seem to be slightly fainter than in (1), but am not sure.

[[margin]] (3) H.P. 2109 [[/margin]]
Not all on. H beta & H gamma are as in 91). H delta & H epsilon not on.

[[margin]] (4) H.P. 2117 [[/margin]]
Peculiar. K not seen. Like theta Aurigae & 12 Can. Ven. nearly, also resembles alpha Doradus. Is nearly like lambda [[subscript]] 9 [[/subscript]] Eridani.

[[margin]] (5) H.P. 2116 [[/margin]]
A3F

[[margin]] (6) +27 degrees 2138 [[/margin]]
A3F



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 26 [[/preprinted]]

May 24, 1904

C 14823 cont.

[[margin]] (7) +26 degrees 2352 [[/margin]]
A3F

[[margin]] (8) + 26 degrees 2345 [[/margin]]
A5F

[[margin]] (9) +26 degrees 2343 [[/margin]]
A5F

C 14822 Com. Ber.
(4) Peculiar. Not so good an image as on 14823.
Other stars too faint.

C 14824 Com. Ber.
(1) A2F
(2) A2F
(3) Not enough on

[[end page]]
[[start page]]

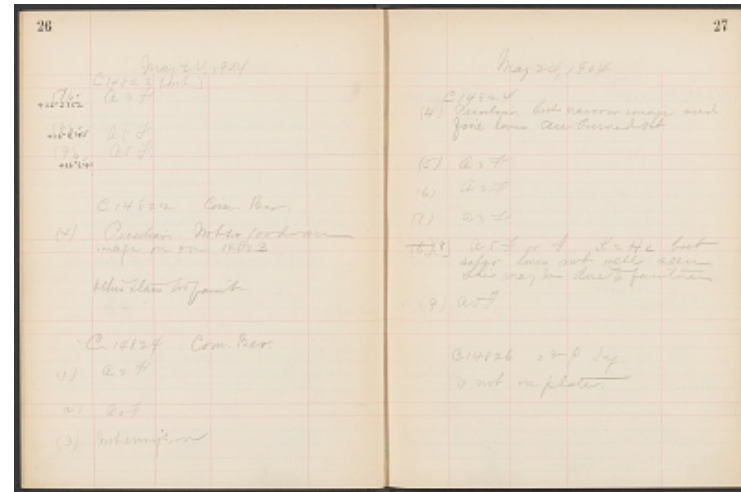
[[preprinted]] 27 [[/preprinted]]

May 24, 1904

C 14824
(4) Peculiar. but narrow image and fine lines are burned out.

(5) A3F
(6) A3F
(7) A3F
~~[[/strickethrough]]~~ (6) ~~[[/strickethrough]]~~ (8) A5F or F. K = H epsilon but
solar lines not well seen. This may be due to faintness.
(9) A5F

C 14826 upsilon & rho Sag.
upsilon not on plate



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 28 [[/preprinted]]
[[underline]] Tuesday, Sept. 20, 1904 [[/underline]] 23 (check mark)

[[margin]] 67 Urs. Maj. [[/margin]] C 14852 H.P. 2054 = DC 5984
A3F with strong lines resembling delta Normae.

C 14853 alpha Cygni
Focus plates. Too dense.

C 14854 H.P. 3162 -Serpentis 5.71m
Qual. 2
Too poor.

[[margin]] eta Delphini [[/margin]] C 14855 H.P. 3597 = DC 9173
A2F

[[margin]] 7 Pegasi [[/margin]] C 14856 H.P. 3826 = DC 9489
2nd type
Shows bands but too faint to classify.
[[end page]]

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[[preprinted]] 29 [[/preprinted]]
Sept. 20, 1904

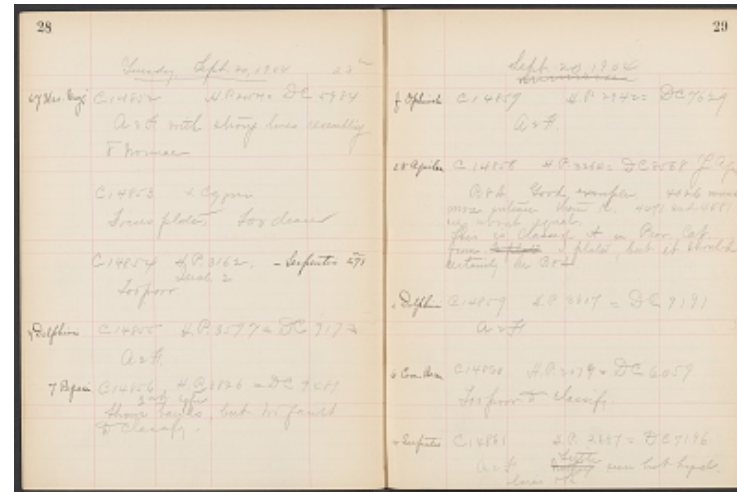
[[margin]] f Ophiuchi [[/margin]] C 14857 H.P. 2942 = DC 7629
A2F

[[margin]] 18 Aquilae [[/margin]] C 14858 H.P. 3264 = DC 8568 f Aquilae
B8A. Good example. 4026 much more intense than K. 4471 and 4481
are about equal.
This is classed A in Prov. Cat. from ~~[[strikethrough]] B plates~~
~~[[strikethrough]] I plates~~, but it should certainly be B8A.

[[margin]] iota Delphini [[/margin]] C 14859 H.P. 3607 = DC 9191
A2F

[[margin]] 6 Com. Beren. [[/margin]] C 14860 H.P. 2079 = DC 6059
Too poor to classify.

[[margin]] pi Serpentis [[/margin]] C 14861 H.P. 2687 = DC 7196
A2F ~~[[strikethrough]] Nothing~~ Little seen but hyd. lines &
K.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 32 [[/preprinted]]
Sept. 21, 1904 0^h

[[margin]] 7 Pegasi [[/margin]] C 14875 H.P. 3826
K5M

[[margin]] 74 Urs. Maj. [[/margin]] C 14894 H.P. 2122
1st Type
Too poor. Very narrow.

[[margin]] 74 Urs. Maj. [[/margin]] C 14895 H.P. 2122
A5F
[[end page]]

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[[preprinted]] 33 [[/preprinted]]
[[underline]] Oct. 12, 1904 [[/underline]]

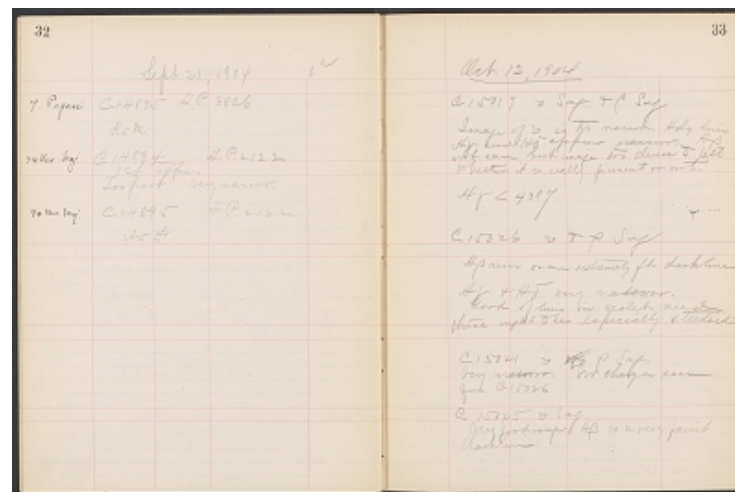
C 15019 ϵ Sag. & ρ Sag.
Image of ϵ is too narrow. Hd. lines, H γ and H δ appear narrow. H β not seen but image too dense to tell whether it is really present or not.

H γ < 4387

C 15026 ϵ Sag. & ρ Sag.
H β invis. or an extremely ft. dark line.
H γ & H δ very narrow.
Good of lines in violet and these ought to be especially studied.

C 15041 ϵ Sag. & ρ Sag.
very narrow. No changes seen from C 15026.

C 15045 ϵ Sag.
Very good image. H β is a very faint dark line.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 34 [[/preprinted]]
Oct. 12, 1904

C 14902
18 Aquarii DC 9395 H.P. 3770 21 19 -13.3
A5F. Just like alpha Pictoris

C 14903
nu Draconis DC 7633, 7634 H.P. 2945 and 2946
These spectra are partly superposed. They are much alike and probably
A5F Pec.
In the intensities of some of the lines, they resemble delta Normae.

Reserved to be examined when I have more plates of the same
dispersion. Former C plates are of greater dispersion.

- Sagittarii C 14904 DC 8570 H.P. 3263
Sp. B5A or possibly B3A.
4128-4131 is seen but of less intensity than 4120.
Second examination shows that this is nearer B3A. [[end page]]

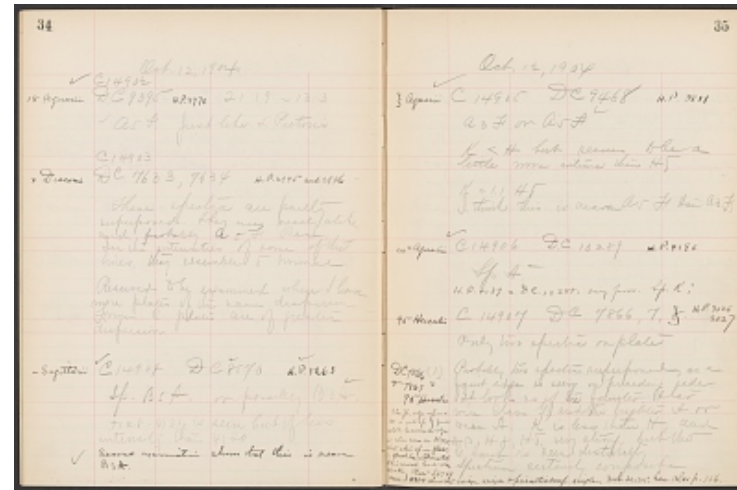
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[[preprinted]] 35 [[/preprinted]]
Oct. 12, 1904

xi Aquarii C 14905 DC 9468 H.P. 3811
A3F or A5f
K < H but seems to be a little more intense than H delta.
K = 1.1 H delta
I think this is nearer A5F than A3F.

iota ² Aquarii C 14906 DC 10289 H.P. 4190
Sp. A
H.P. 4189 = DC 10288. Very Poor. Sp. K?

95 Herculis C 14907 DC 7866, 7, 8 H.P. 3026, 3027
Only two spectra on plate.
(1) Probably two spectra superposed, as a faint edge is seen on
preceding side. It looks as if the fainter star were class G and the
brighter A or near A. K is less than H, and G band is seen distinctly.
Spectrum certainly composite.

[[margin]] DC 7866 & 7867 = 95 Herculis
The faint edge referred to is not sp. of fainter star, because the edge is
also seen on DC 7878, the other sp. on plate therefore must be
instrumental. This must be a star double. Plates I 8729 and I 11104
show the image single & prismatic comp. single. Mch 20, 1905. See also
p. 156. [[/margin]]



[[preprinted]] 36 [[/preprinted]]

Oct. 12, 1904

H.P. 3033 = 96 Herculis (2) C 14907 (cont.) DC 7878
B3A

sigma Aquilae C 14908 DC 8840 H.P. 3394
Sp. B3A Poor focus. A better plate might show it to be B2A.

C 14909 DC 9328, 9329 H.P. 3726, 7

(1) gamma Equuli Peculiar F
Identify line marked
(2) 6 Equ. H.P. 3727 A2F

11 Pegasi C 14910 DC 9521 H.P. 3851
[[/strickethrough]] A2F [[/strickethrough]] A 4481 is the only conspicuous
solar line.

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[[preprinted]] 37 [[/preprinted]]

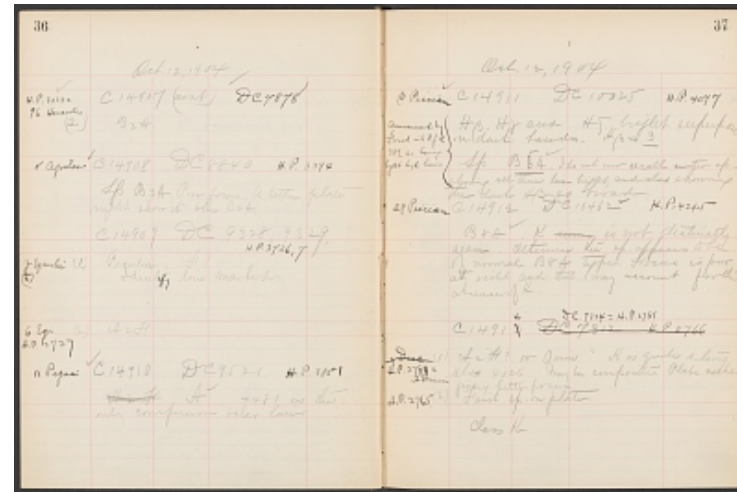
Oct. 12, 1904

beta Piscium C 14911 DC 10025 H.P. 4077
[[margin]] Announced by Frost in A.P.J. 18, 389 as having bright hyd.
lines [[/margin]]
H beta, H gamma and H delta bright superposed on dark bands. H beta
= 3
Sp. B [[/strickethrough]] 3 [[/strickethrough]] 5a. I do not now recall another
sp. showing all three lines bright and also showing the dark H beta so
broad.

29 Piscium C 14912 DC 10462 H.P. 4245
B8A K [[/strickethrough]] seems [[/strickethrough]] is not distinctly seen.
Otherwise the sp. appears to be of normal B8A type. Focus is poor at
violet and that may account for the absence of K.

C 1491 [[/strickethrough]] 3 [[/strickethrough]] 4 [[/strickethrough]] DC 7312
H.P. 2766 [[/strickethrough]] DC 7334 = H.P. 2781
(1) [[/strickethrough]] eta Drac. [[/strickethrough]] H.P. 27811 = A Draconis
A2F? or Orion ? K is quite strong, also 4026. May be composite. Plate
needed giving better focus.

(2) H.P. 2765 Faint sp. on plate
Class K



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 38 [[/preprinted]]

[[underlined]] Oct. 13, 1904 [[/underlined]]

[[/strickethrough]] A [[/strickethrough]] eta Draconis C 1491 [[/strickethrough]]
4 [[/strickethrough]] 3 DC [[/strickethrough]] 7334 [[/strickethrough]] 7312
H.P. [[/strickethrough]] 2781 [[/strickethrough]] 2766
G5K
[[/strickethrough]] A2F 4076 quite strong. May be composite. Repeat
[[/strickethrough]] +62 degrees 1478 is also seen adjoining this sp. And
also [[/strickethrough]] appears to be [[/strickethrough]] is G5K.

30 Pegasi C 14919 DC 9738 H.P. 3948
Too narrow
Only hyd. lines seen
May be A or some division of B
Repeat.

31 Pegasi C 14920 DC 9748 H.P. 3951
Too dense
Probably Orion type
Repeat

34 Piscium C 14921 DC 36 H.P. 12
Too poor
May be orion or A
repeat

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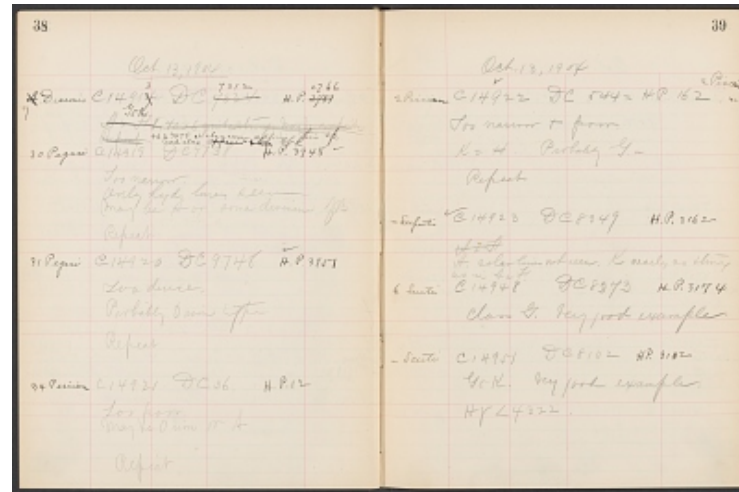
[[preprinted]] 39 [[/preprinted]]

Oct. 13, 1904
epsilon Piscium C 14922 DC 544 = H.P. 162
Too narrow & poor
K = H Probably G.
repeat

-Serpentis C 14923 DC 8349 H.P. 3162
[[/strickethrough]] A2F [[/strickethrough]]
A. Solar lines not seen. K nearly as strong as in A2F.

6 Scuti C 14948 DC 8373 H.P. 3174
Class G. Very good example.

-Scuti C 14951 DC 8102 H.P. 3102
G5K. Very good example.
H gamma < 4322



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 40 [[/preprinted]]

Oct. 13, 1904

{sigma

{61 Draconis C 14952 DC 8819 H.P. 3389

G5K with some advance towards K in strength of 4227 and a few other lines. Intensities peculiar, should be studied. Compare with a K star of same dispersion.

C 14959 DC 8668

F? Too thin

Repeat

-Sagittarii C 14970 DC 10168 H.P. ~~3312~~

~~4149~~

G5K

-Sagittarii C 14971 H.P. 3142

B8 or 9A

Too thin

Repeat

[[end page]]

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[[preprinted]] 41 [[/preprinted]]

Oct. 13, 1904

27 Pegasi C 14974 DC 9648 H.P. 3912

(1) H.P. 3917 pi Pegasi F5G. Good spectrum.

(2) H.P. 3912 G5K

16 Lacertae C 14975 DC 9979 H.P. 4055

B3A fainter sp.

H.P. 4073 = omicron Androm. B3A. Br. sp. near edge. These may be the same.

-Lyrae C 14977 D.C. 8046

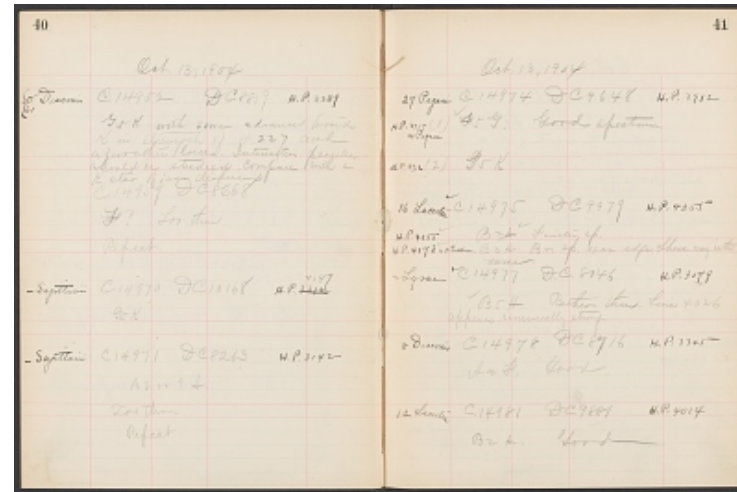
B5A Rather thin. Line 4026 appears unusually strong.

pi Draconis C 14978 DC 8716 H.P. 3345

A or F. Good

12 Lacertae C 14981 DC 9881 H.P. 4014

B2A. Good



[[preprinted]] 42 [[preprinted]]

Oct. 13, 1904

iota Androm. C 14982 DC 10247 H.P. 4176
Probably B8A. Thin.
On comparison, this is certainly B8A.

iota Aquarii C 14987 DC 9621 H.P. 3901
B8A on re-examination
B8A? or B9A. Focus poor.

-Draconis C 14993 DC 8535 H.P. 3249
(1) B3A. Excellent example
(2) G or G5K. Image thin.

theta Cephei C 14994 DC 9170 H.P. 3594
A5F. Hyd. lines rather narrow. Compare with others.

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[[preprinted]] 43 [[preprinted]]

Oct. 13, 1904

2 Lacertae C 14995 DC 9751 H.P. 3953
B5A

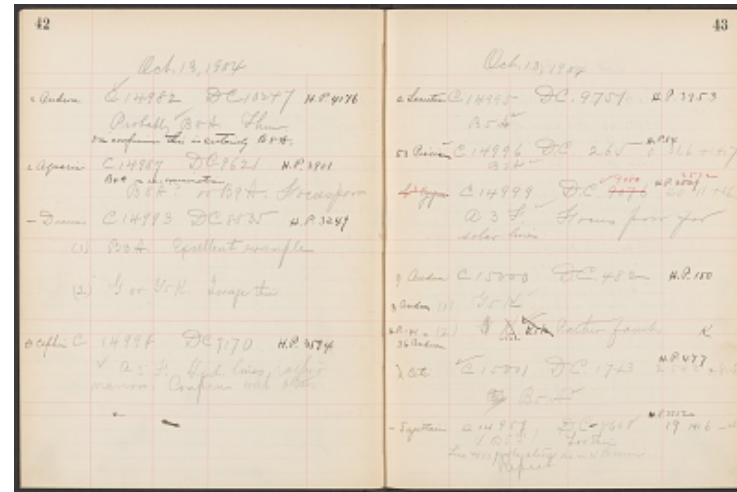
53 Piscium C 14996 DC 265 H.P. 84 0 31.6 +14.7
B3A

~~b³ Cygni C 14999 DC~~
~~9076 9080 H.P. 3529~~
~~3532~~
20 11 +56.3
A3F Focus poor for solar lines.

eta Androm. C 15000 DC 482 H.P. 150
(1) eta Androm. G5K
(2) H.P. 141 = 36 Androm. ~~K K5M~~
Rather faint. K

lambda Ceti C 15001 DC 1713 H.P. 477 2 54.3 +8.5
B5A

-Sagittarii C 14959 DC 8668 H.P. 3312 19 14.6 -22.6
A5F ? Too thin
Line 4017 quite strong as in alpha Circini
Repeat.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 44 [[/preprinted]]

Oct. 13, 1904

57 Aquilae -8 degrees 5154
C 14972 D.C. 8932 H.P. 3441

Two spectra superposed. The brighter star shows the Orion lines 4026 and 4471.

-8 degrees 5155 The fainter shows only the hydrogen lines with a suspicion of 4471. Hyd. lines very hazy in this star.

H beta appears to have a bright thread through centre and more photography should be taken to see whether this fainter component really has H beta bright.

Trace of a bright line also seen superposed on H gamma dark, not centrally but toward the red.

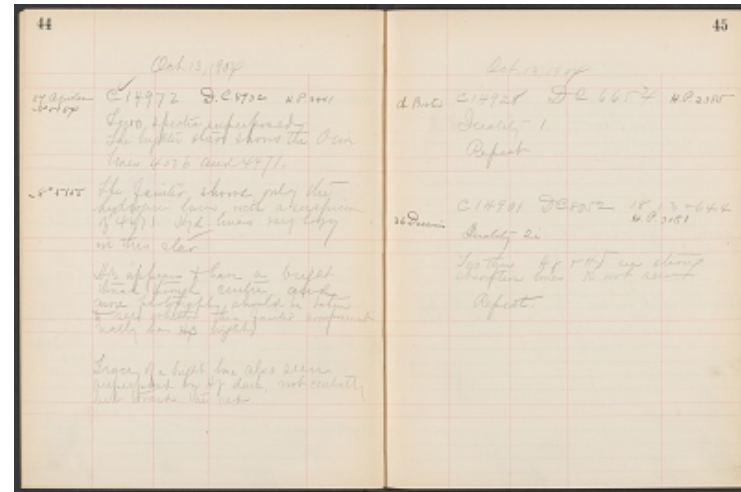
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[[preprinted]] 45 [[/preprinted]]

Oct. 13, 1904

d Bootis C 14928 DC 6654 H.P. 2385
Quality 1
Repeat

36 Draconis C 14901 DC 8052 H.P. 3081 18 1.3 +64.4
Quality 2i
Too thin. H gamma & H delta are strong absorption lines. K not seen.
Repeat.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 46 [[/preprinted]]

[[underlined]] Oct. 14, 1904 [[/underlined]]

C 14998 DC 7595 H.P. 2928 Too poor
A3F?
repeat

C 14985 DC 8932
H.P. 3441 DM -8 degrees 5154 Two spectra superposed. The brighter
star is [^][[probably]] B3A. [^][[3819]], 4099, 4026, 41 ~~20~~
~~44, 4387 and 4471 all being seen.~~

-8 degrees 5155 The fainter star shows only the hyd. lines. They are
very wide and hazy. This is probably due to the superposition.

-8 degrees 5150 Sp. K. faint

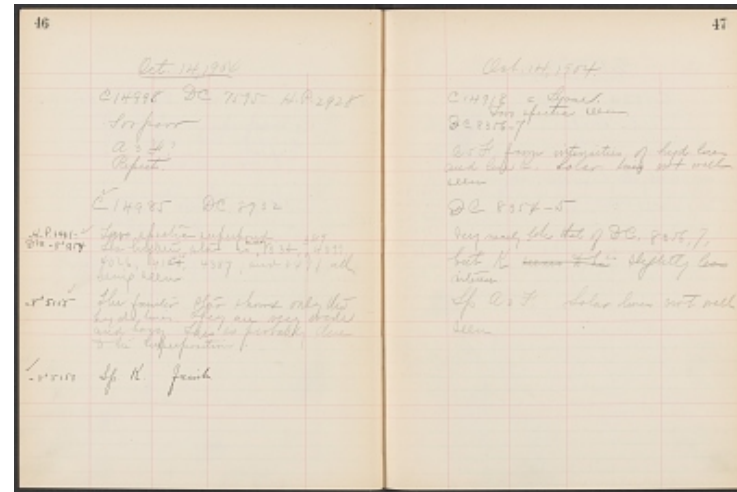
[[end page]]
[[start page]]

[[preprinted]] 47 [[/preprinted]]

Oct. 14, 1904.

C 14918 epsilon Lyrae.
Two spectra seen.
DC 8356-7
A5F from intensities of hyd. lines and line K. Solar lines not well seen.

DC 8354-5
Very nearly like that of DC 8356, 7, but K ~~seems to be~~
~~is slightly less intense.~~
Sp. A3F. Solar lines not seen.



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[[preprinted]] 48 [[/preprinted]]

[[underlined]] Oct. 15, 1904 [[/underlined]]

C 15045 ϵ Sag.

Type of spectrum is just the same as C 13857 (see p. 14) only the lines narrow in C 15045.

[[end page]]

[[start page]]

[[preprinted]] 49 [[/preprinted]]

[[underlined]] Wednesday, Oct. 25 [[/underlined]] 21h

Two peculiar objects on this plate.

[[margin]] D.C. 9848 DM +38 degrees 4808 clearly double on I 18449.

Both components bright. The other one is brighter H.P. 3997 = 8

Lacertae [[/margin]]

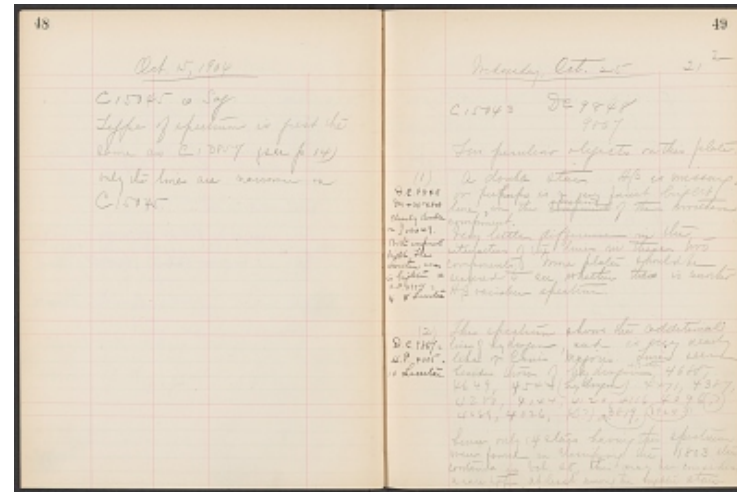
(1) A double star. H beta is missing or perhaps is a very faint bright line, in the ~~component~~ spectrum of the other component.

Very little difference in the intensities of the lines in these two components. More plates should be secured to see whether this is another H beta variation.

[[margin]] D.C. 9867 = H.P. 4005 = 10 Lacertae [[/margin]]

This spectrum shows the additional lines of hydrogen and is very nearly like tau Canis Majoris. Lines seen besides those of hydrogen ^([H beta etc]), 4685, 4649, 4542 (hydrogen), 4471, 4387, 4200, 4144, 4120, 4116, 4096 ?, 4089, 4026, K (?) 3924?, 3819

Since only 14 stars having this spectrum were found in classifying the 1803 stars contained in Vol. 28, this may be considered a rare type, at least among the brighter stars.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 50 [[/preprinted]]

Oct. 25, 1904

C 15052 DC 972 = H.P. 272
G5K

C 15058 DC 263
B3A or B5A. The sp. is too dense and it is difficult to judge of the relative intensities.
Except for the intensity of 4128-4131, which is equal to that of B5A, the sp. is ~~like~~ of B3A.

C 15059 DC 1350 = H.P. 377
Sp. F K = ~~H delta~~ or ~~1.1 H~~
~~delta~~ ~~epsilon~~.

C 15065 DC 803
Sp. F.
K = ~~1.1 H delta~~ ~~1.1 H epsilon~~

C 15066 DC 1579
(1) also = H.P. 436 eta Ceti B5A
(2) -15 degrees 478 F5G
-15 degrees 473 also on plate Sp. F.

[[end page]]
[[start page]]

[[preprinted]] 51 [[/preprinted]]

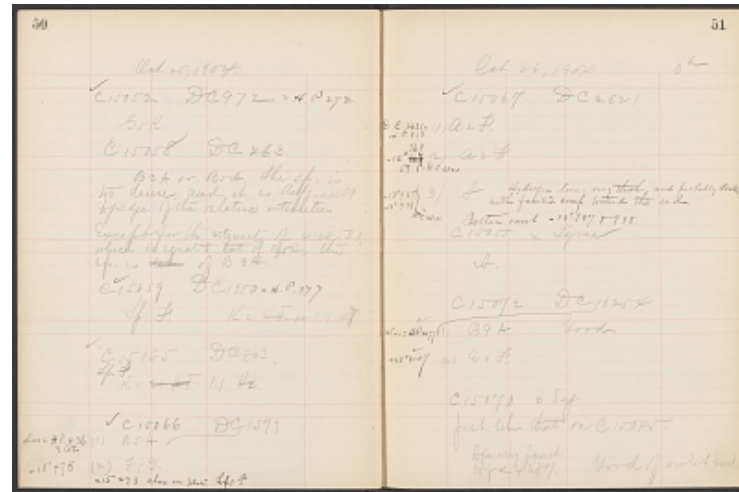
Oct. 26, 1904 0h

C 15067 DC 2621
(1) D.C. 2621 = H.P. 813 A2F
(2) -12 degrees ~~967~~ ~~969~~ = D.C. 2640 A2F
(3) -13 degrees 937 13 degrees 938 = D.C. 2614 A
Hydrogen lines very thick and probably double with fainter comp. towards the red.
Better omit -13 degrees 937 & 938

C 15055 alpha Lyrae
A.

C 15072
(1) DC 10254 also = HP 4177 B9A. Good
(2) + 48 degrees 4127 A3F

C 15070 epsilon Sag.
Just like that on C 15045
H beta very faint
H gamma < 4387. Good of violet end.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 52 [[/preprinted]]

Oct. 26, 1904

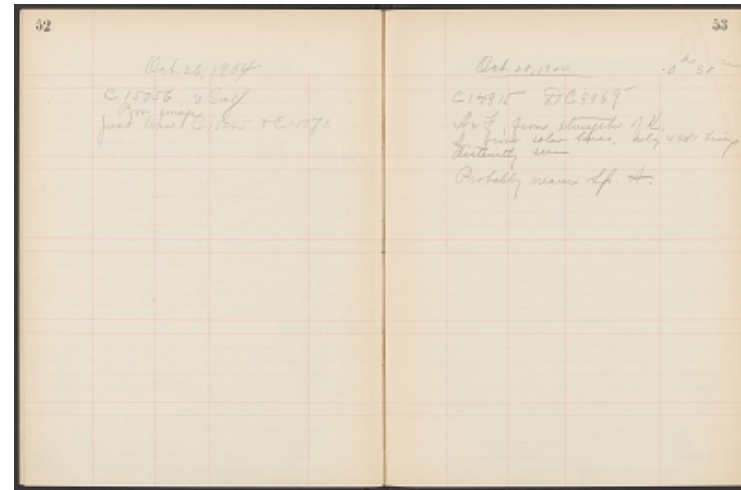
C 15056 ϵ Sag.
Poor image.
Just like C 15045 & C 15070

[[end page]]
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[[preprinted]] 53 [[/preprinted]]

[[underline]] Oct. 28, 1904 [[/underline]] 0h 30m

C 14915 DC 9969
A2F from strength of K.
A from solar lines, only 4481 being distinctly seen.
Probably Sp. A.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 54 [[/preprinted]]

[[underlined]] Saturday, Oct. 28, 1904 [[/underlined]] 22h

X 10798 kappa [^][[1,2]] Apodis
Images narrow and dense. Lines burned out.

X 10799 epsilon Cap.
H beta very faint and hazy.
4922 also faint and hazy.
The two lines look alike. No hydrogen seen ay H beta.
All lines broader than on 10790.

X 10880 pi Scorpii
Lines double. Fainter component to red.
Focus poor and lines blurred but the fainter lines are seen at 4387 and 4471.

X 10809 kappa [^][[1,2]] Apodis
Quality 2
Very poor. H beta seen in kappa [^][[2]]
H beta not seen in kappa [^][[1]]

[[end page]]
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[[preprinted]] 55 [[/preprinted]]

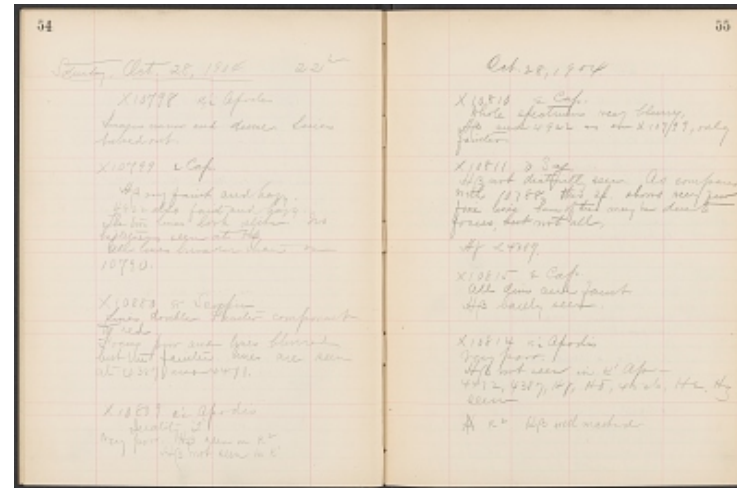
Oct. 28, 1904

X 10810 epsilon Cap.
Whole spectrum very blurry. H beta and 4922 as on X 10799, only fainter.

X 10811 upsilon Sag.
H beta not dostinctly seen. As comparison with 10788, this sp. shows very few fine lines. Some of this may be due to focus, but not all.
H gamma < 4387

X 10815 epsilon Cap.
All dim and faint.
H beta barely seen.

X 10814 kappa [^][[1,2]] Apodis
Very poor
Hbeta not seen in kappa [^][[1]] Ap.
4472, 4387, H gamma, 4026, H epsilon, H zeta seen.
[[/strikethrough]] H [[/strikethrough]] kappa [^][[2]] H beta well marked.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 56 [[/preprinted]]

Oct. 28, 1904

X 10816 ϵ Sag.

Except as to intensities of hydrogen lines, this spectrum is like X 10357 and shows few of the faint lines. In the intensity of the hydrogen lines, it resembles X 10788. Additional plates seem to complicate instead of simplify the peculiarities of this spectrum.

X 10819 $\kappa^{[1,2]}$ Apodis

Narrow.

A very faint trace of H beta.

Images too poor to do much with.

X 10820 ϵ Capricorni

Lines broad and hazy.

H beta = 4922 both ft. & hazy.

X 10821 ϵ Sag.

H beta a very fine dark line, barely visible.

H gamma < 4922

In other respects, its spectrum is almost exactly like that in 10357.

[[end page]]

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[[preprinted]] 57 [[/preprinted]]

Oct. 28, 1904.

X 10824 $\kappa^{[1,2]}$ Apodis

$\kappa^{[1]}$ H gamma and H delta are very fine dark lines.

H beta is invisible

The Orion lines are very broad and faint.

It does not seem possible that the hydrogen and helium lines in this spectrum proceed from the same body, unless the two elements are present under entirely different conditions.

$\kappa^{[2]}$ Apodis. Lines well marked and none are narrow as in $\kappa^{[1]}$

X 10825 ϵ Capricorni

H beta and 4922 faint. A faint trace of a bright line is seen on H beta dark.

this is the best of the faint lines in epsilon of the plates examined today.

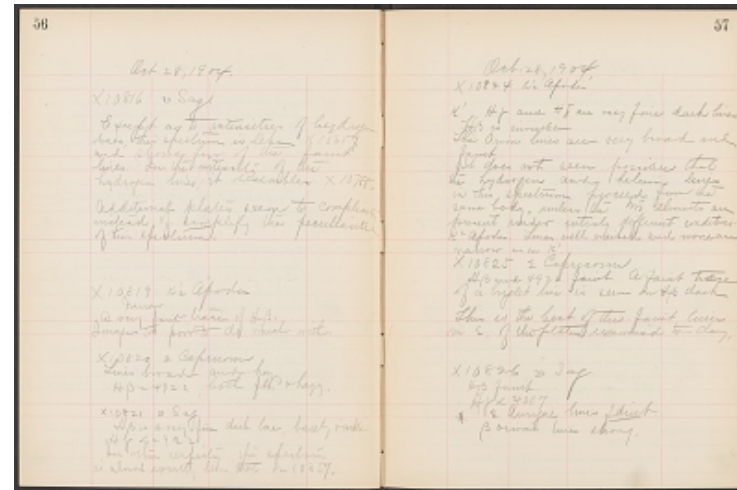
X 10826 ϵ Sag.

H beta faint

H gamma < 4387

epsilon Aurigae lines faint.

beta Orionis lines strong.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 58 [[/preprinted]]

Oct. 28, 1904

X 10829 K [^][[1,2]] Apodis June 7, 1904
Too narrow and dense

X 10831 epsilon Cap. June 7, 1904
Lines very hazy. Fine lines not seen as on 10825, taken the night before. Is this real or due to focus?

X 10832 upsilon Sag. June 7, 1904
Probably same as 10826. 4922 stands out as a strong line
Study these lines with care.

X 10840 K [^][[1,2]] Apodis
Poor spectrum left the lines H gamma and H delta are broad and not sharply defined as on 10824.

X 10841 epsilon Cap.
H beta and 4922 broad and faint.
No change.

[[end page]]
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[[preprinted]] 59 [[/preprinted]]

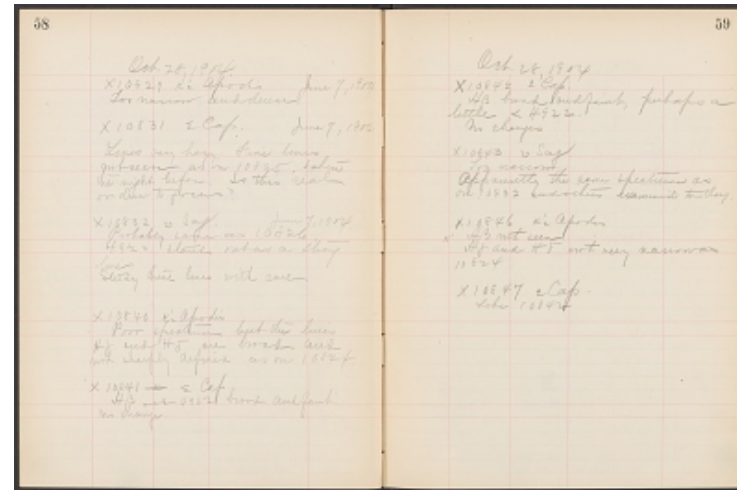
Oct 28, 1904

X 10842 epsilon Cap.
H beta broad and faint, perhaps a little < 4922.
No changes

X 10843 upsilon Sag.
Too narrow.
Apparently the same spectrum as on 10832 and others examined today.

X 10846 K [^][[1,2]] Apodis
K [^][[1]] H beta not seen
H gamma and H delta not very narrow as 10824

X 10847 epsilon Cap.
Like 10843



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 60 [[/preprinted]]

[[underlined]] October 31, 1904 [[/underlined]] 22h

X 10848 epsilon Sag.

H beta invisible.

H gamma & H delta very faint

determine the sp. is very nearly like 10357, where the hyd. lines are quite strong.

X 10851 kappa [^][[1,2]] Apodis

Image too narrow and dense

X 10852 epsilon Cap.

H beta very hazy and less than 4922.

X 10853 epsilon Sag.

Definition seems much poorer than in epsilon Cap. the preceding plate taken the same night.

Spectrum the same or nearly the same as on 10848.

X 10854 J Velorum

H beta dark with no bright line.

[[end page]]

[[start page]]

[[preprinted]] 61 [[/preprinted]]

October 31, 1904

X 10855 eta Carinae

This spectrum ~~is~~ shows numerous bright lines but does not show the dark lines as on 4709. It seems strange if those dark lines are always present, why they can not be photographed again!

The other stars on this plate show no differences from former plates and will not be recorded separately.

X 10856 kappa [^][[1,2]] Apodis

Broken. Where is plate?

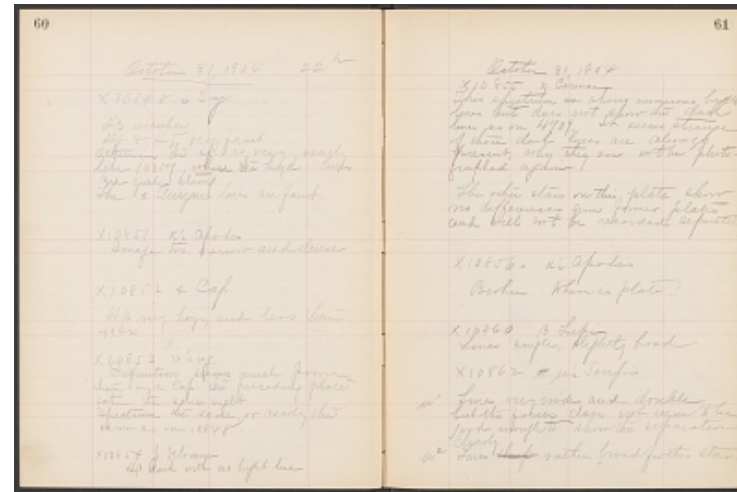
X 10860 beta Lupi

Lines single, slightly broad.

X 10862 mu [^][[1,2]] Scorpii

mu [^][[1]] Lines very wide and double but the focus does not seem to be good enough to show the separation clearly.

mu [^][[2]] Lines ~~sharp~~ rather broad for this star.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 62 [[/preprinted]]

Oct. 31, 1904

X 10872 pi Scorpii
Lines single, slightly hazy.

X 10871 eta Centauri
H gamma is quite sharp. Orion lines are very wide. H beta is a faint dark line superposed on a faint bright line.
Dark component of H beta lying towards violet is not seen, but a faint line to red is suspected.
There is no trace of the solar lines.

X 10872 mu ^{[[1,2]]} Scorpii
Lines double, stronger component to violet.

X 10881 mu ^{[[1,2]]} Scorpii
Lines single but wider and hazier than in mu ^{[[2]]} Scorpii

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[[preprinted]] 63 [[/preprinted]]

[[underlined]] November 4, 1904 [[/underlined]]

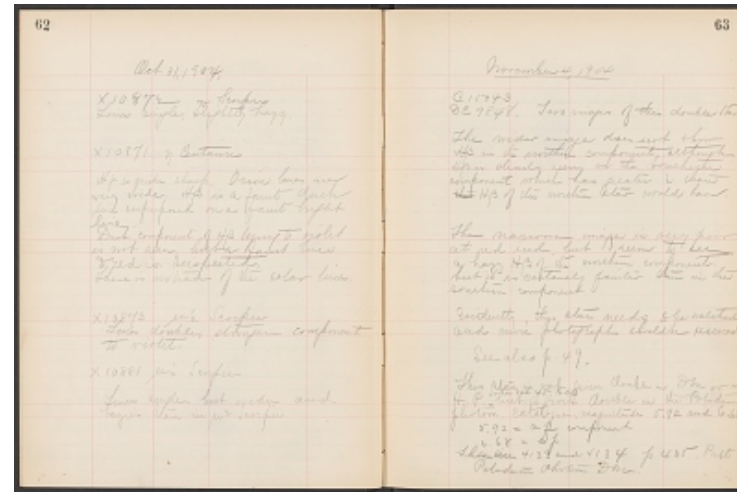
C 15043 DC 9848
Two images of this double star.
the wider image does not show H beta in the northern component, although H beta is clearly seen in the southern component which has greater lambda than H beta of the northern star would have.

The narrow image is very poor at red end, but I seem to see a hazy H beta of the northern component but it is certainly fainter than in the southern component.

Evidently, this star needs to be watched and more photographs should be secured.

See also p. 49.

This star is not given double in DM or in H.P. ^{[[or in Vol. 45 H.C.O.]]}, but is given double in Potsdam photom. catalogue, magnitudes 5.92 and 6.68
5.92 = n f component
6.68 = sp
These are 4133 and 4134 p 435 , Part II, Potsdam Photom. DM



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 64 [[/preprinted]]

Nov. 4, 1904

C 15043 (cont.)
DC 9848

[[margin]] n f = 5.92 [[/margin]]

Both components show the presence of Orion lines. The northern
^[[5.92 mag.]] component shows 4009, 4026, 4387 & 4471 with one or
two other suspected.

[[margin]] s.p. 6.68 [[/margin]]

The southern component shows 4026 certainly and several others are
suspected.

[[end page]]

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[[preprinted]] 65 [[/preprinted]]

[[underlined]] November 15, 1904 [[/underlined]]

Continuation of examination of C plate

C 15122 DC 9642
B3H

Lines (2) of shorter lambda than K are ~~well~~
~~seen clearly.~~

theta Androm. C 15123 DC 103 0 12 +38.1
= H.P. 40

A2F

rho Androm. DC 138 H.P. 49 partly on plate. Sp F5G

C 15124 DC 595 1h 02 +43.4

A ~~2~~ ~~3F~~

Fine lines are stronger than in DC 123

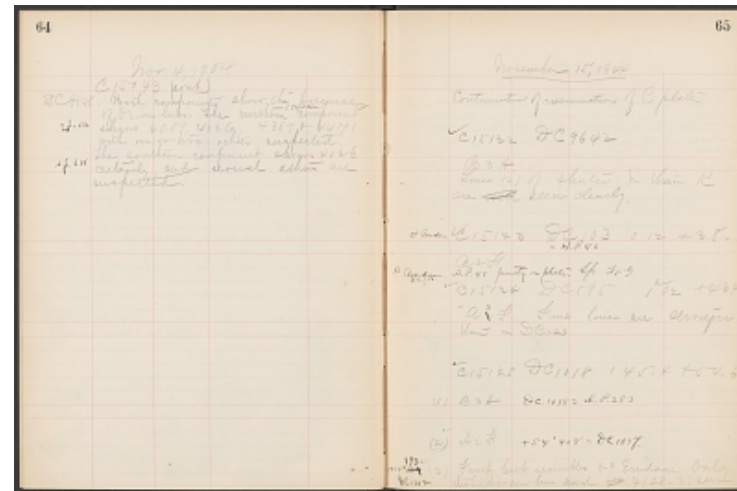
C 15125 DC 1018 1 45 +54.6

(1) B3A DC 1018 = H.P. 283

(2) A2F _54 degrees 408 = DC 1037.

+54 degrees 393 DC 1012 (3) Faint but resembles tau ^[[9]] Eridani.

Only the hydrogen lines and 4128-4131 seen.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 68 [[/preprinted]]

Nov. 15, 1904

C 15125 (cont.)

~~[[striethrough]] +54 degrees 393 = DC 1012 [[/striethrough]] DC 2448 = H.P. 735~~

(4) On plate with red end burned the other way from that of the three other stars. Prism evidently reversed before this exposure was made. Sp. B3A with line 4128-4131 clearly visible.

C 15126 ~~[[striethrough]] DC 1335 2 15.3 + 55.4 Image too thin. Repeat~~
~~[[/striethrough]] DC 1887 = +54 degrees 672~~
A2F. Very poor and thin.

C 15127 DC 9646 2 24 -28.8
A5F Only the hydrogen lines and K seen. Image very narrow.
Low altitude of the star probably makes it hard to get a good spectrum.

[[end page]]

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[[preprinted]] 67 [[/preprinted]]

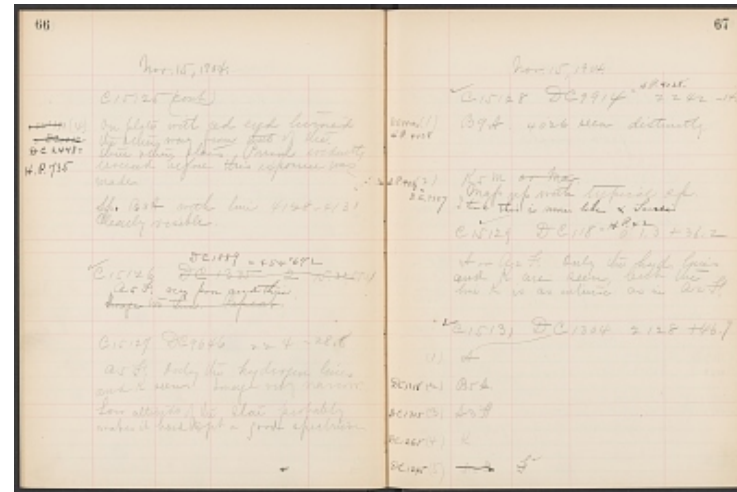
Nov. 15, 1904.

C 15128 DC 9914 = H.P. 4028 22 42 -14.6
(1) DC 9914 = H.P. 4028 B9A. 4026 seen distinctly.

(2) H.P. 403 = DC 9927 K5M ~~[[striethrough]] or Ma [[/striethrough]]~~
Map up with typical sp.
I think this is more like alpha Tauri

C 15129 DC 118 = H.P. 42 0 1.3 +36.2
A or A2F. Only the hyd. lines and K are seen, but the line K is as intense as in A2F.

C 15131 21 28 +46 .9
(1) DC 1304 A
(2) DC 1318 B5A
(3) DC 1305 A3F
(4) DC 265 K
(5) DC 1245 ~~[[striethrough]] F5G [[/striethrough]] F~~



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 68 [[/preprinted]]

Nov. 15, 1904.

C 15132 DC 1773 3 1.8 +49.2
G good example

C 15134 upsilon Sag. Nov. 2, 1904
Image very poor but sp. shows no change. 4387 > H gamma.

C 15136 DC 616 1 0.4 +68.2
A. Image hazy.

C 15141 DC 9987 22 53 +48.2
Clock irregular
(1) D.C. 9987 = H.P. 4060 B3A
(2) H.P. 4058 DC 9983 ~~Probably K5M~~
On second examination, this is classed K. The bright bands between H gamma and H beta do not agree at all with those of K5M stars.

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[[start page]]

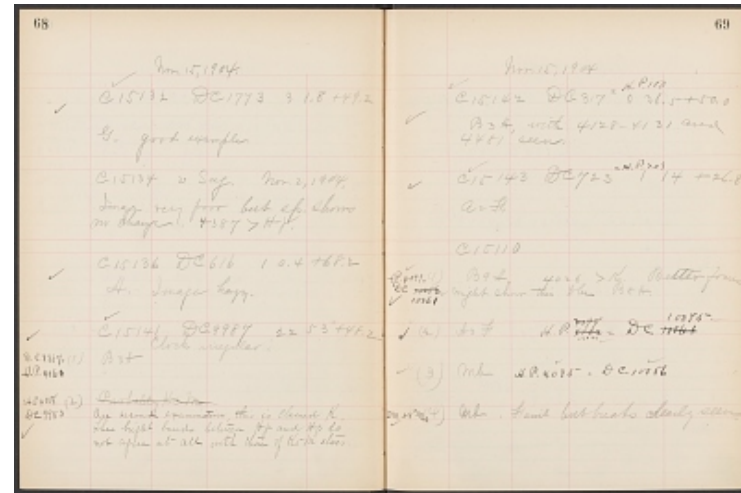
[[preprinted]] 69 [[/preprinted]]

Nov. 15, 1904

C 15142 DC 317 = H.P. 100 0 31.5 +50.0
B3A, with 4128-4131 and 4481 seen.

C 15143 DC 723 = H.P. 209 1 14 +26.8
A2F

C 15110
(1) H.P. 4099 = DC ~~10056~~ 10061 B9A
4026 > K Better focus might show this to be B8A.
(2) A3F HP ~~4097~~ 4102 DC
~~10061~~ 10075
(3) Mb H.P. 4095 = DC 10056
(4) DM +8 degrees 5020 Mb. Faint but breaks clearly seen.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 70 [[/preprinted]]

Nov. 15, 1904

C 15104 DC 1044 1 48.2 +68.2
B8A.

C 15102 DC 9703 22 10 +45.0
A
(2) +44 degrees 4083 = A3F

C 15103 DC 10336 23 43 +67.2
(1) A
(2) B3A H beta off the edge of plate

C 15112 DC 2713 4 46.9 +55.1
A poor image.

C 15113 DC 355 ~~7~~ 8 = H.P. 1168 6
10.8 +59.1
A.

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[[preprinted]] 71 [[/preprinted]]

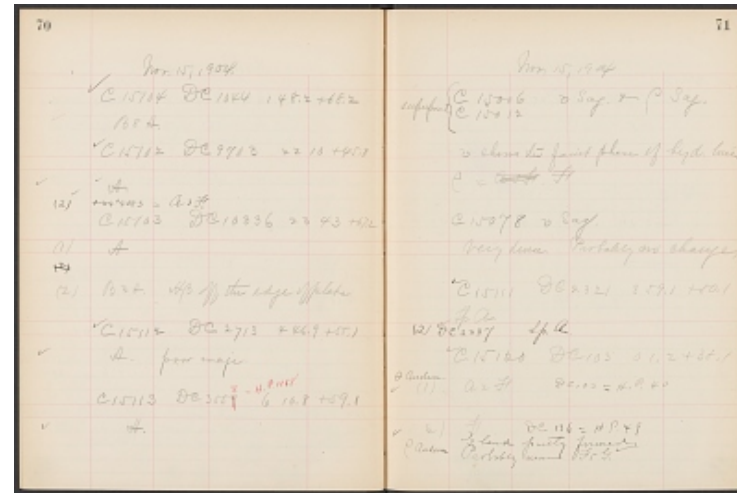
Nov. 15, 1904

superposed {C 15006 epsilon Sag. & rho Sag
{C 15012
epsilon shows the faint phase of hyd. lines
rho = ~~A5F~~ F

C 15078 epsilon Sag.
Very dense. Probably no change

C 15111 DC 2321 3 59.1 +50.1
Sp. A
(2) DC 2337 Sp. A

C 15120 DC 103 01.2 +38.1
(1) theta Androm. A2F DC 103 = H.P. 40
(2) rho Androm. F DC 136 = H.P. 49
G band partly formed
Probably nearer F5G



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 76 [[preprinted]]

[[underlined]] Nov. 15, 1904 [[/underlined]] 22h

C 15130 DC 9683 lambda Cephei

Iso

Two bright bands as in zeta Puppis but they are fainter.

Lines seen:

H beta, two bright lines, H gamma [^][[1]], 4471, a line having approx. lambda 4417, H gamma, H delta [^][[1]], H delta, H epsilon, K [^][[1]], ~~[[strikethrough]]~~ and a line of shorter lambda ~~[[strikethrough]]~~ H zeta, H zeta [^][[1]], H eta

The bright bands 4633 and 4688 do not bear the same relative intensity as in zeta Puppis. In zeta Puppis 4688 is much more intense than 4633. In lambda Cephei, 4688 is less intense than 4633, and both are hazy. These bands are more like that in A.G.C. 22748 & 22843 than they are like zeta Puppis.

K is very sharp in lambda Cephei and H zeta [^][[1]] is well marked having slightly gr. intensity than K, and is wider.

[[end page]]

[[start page]]

[[preprinted]] 77 [[/preprinted]]

Nov. 15, 1904

C 15130 (contd.)

DC 9676 = H.P. 3923 Other star on plate

G5K

C 15135 lambda Cephei

Ordinary plate.

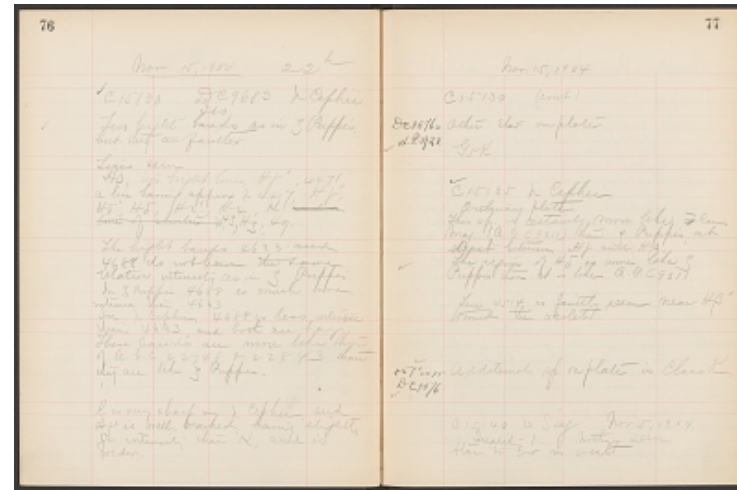
This sp. is certainly more like ~~[[strikethrough]]~~ pi ~~[[/strikethrough]]~~ -Canis Maj. (A.G.C. 9311) than zeta Puppis at least between H gamma and H beta. The region of H delta is more like zeta Puppis than it is like A.G.C. 9311.

Line 4514 is faintly see near H beta [^][[1]] towards the violet.

+57 degrees 2475 DC 9676 Additional sp. on plate is Class K.

C 15140 upsilon Sag. Nov. 5, 1904

Quality 1. Nothing seen. Star too low in west.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 78 [[/preprinted]]

[[underlined]] Monday, Nov. 21, 1904 [[/underlined]] 21h 30m

C

DC9298

This plate was brought to me by Prof. Pickering. It has a bright line star marked by Mr. King. Spectrum peculiar, H beta bright. Dark components, if visible, are very faint. H gamma bright, with strong dark component to red and fainter to violet. H delta & H epsilon bright with dark component stronger to red. H zeta looks widely double, space between faintly bright.

The Orion lines are very indistinct. There is a distinct bright line near position of 4128-4131 (silicon).

Spectrum may resemble beta Lyrae, but I can not find a good plate to compare. beta Lyrae has 4120 or 4128 bright and I think a peculiar line near H zeta is sometimes present in beta.

gamma Velorum has an intense dark line near H zeta at lambda ~~3875~~ 3875, and the H zeta component of shorter lambda may be the same in DC 9298. DM gives a ft. star 9.3m near DC 9298. Scale seems different from C 14995. Plate given to [^][[Miss Breslin for]] Mrs. Fleming.

[[end page]]
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[[preprinted]] 79 [[/preprinted]]

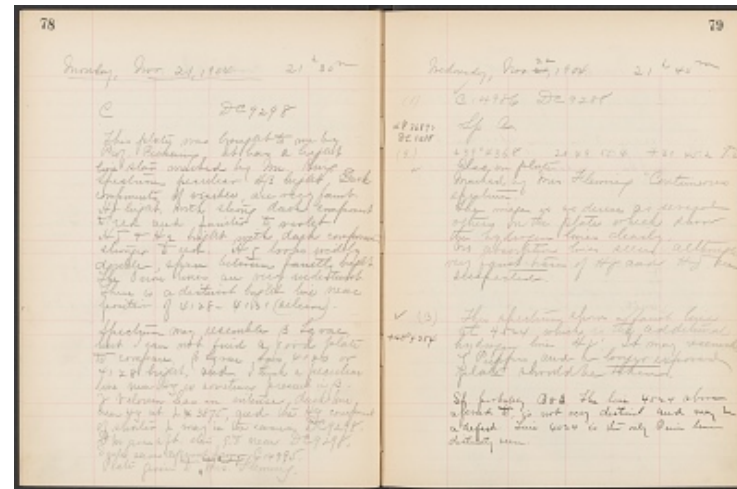
Wednesday, Nov. ~~21~~ 22, 1904 21h 40m

(1) C 14986 DC 9288
H.P. 3687 = DC 9288 Sp. A

(2) +39 degrees 4368 20 49 55.4 +39 45.2 7.2m
Also on plate.
Mrked by Mrs. Fleming "Continuous spectrum".
The image is as dense as several others on the plate which show the hydrogen lines clearly.
No absorption lines seen although very faint traces of H gamma and H delta are suspected.

(3) +40 degrees 4354 This spectrum shows a faint line at 4524 which is the additional hydrogen line H gamma [^][[1]]. It may resemble zeta Puppis and a longer exposed plate should be taken.

Sp. probably B8A. The line 4524 above referred to is not very distinct and may be a defect. Line 4026 is the only Orion line distinctly seen.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 82 [[/preprinted]]

[[striketthrough]] Oct. [[/striketthrough]] ^[[Nov.]] 22, 1904

C 15069 DC 3611 = H.P. 1196
"Bright line. E.S.K.
H beta bright W.P.F."

H beta bright = 6
H gamma very wide
Sp. B2A

H.P. 1204
Sp. K.

-11 degrees 1459
[[striketthrough]] Looks like K5M or maybe Ma. Map up. [[/striketthrough]]
On superposing this appears to be Class K.

[[end page]]
[[start page]]

[[preprinted]] 83 [[/preprinted]]

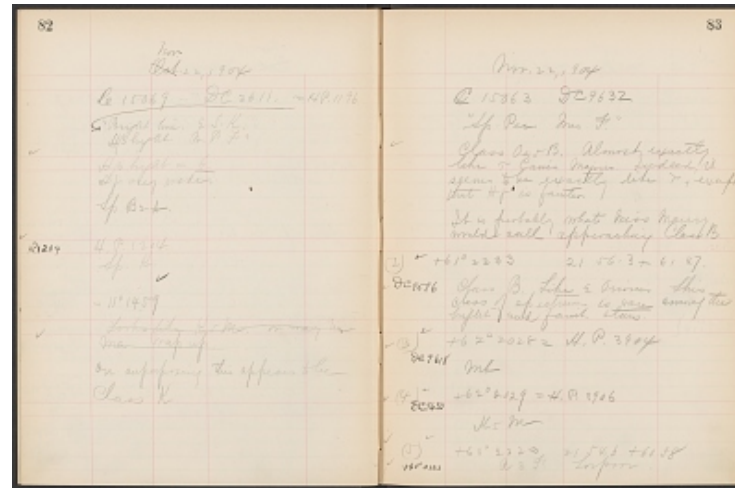
Nov. 22, 1904

C 15063 DC 9632
"Sp. Pec. Mrs. F."

Class Oe5B. Almost exactly like pi Canis Majoris. Indeed it seems to be exactly like tau ₉ except that H gamma is fainter.

It is probably what Miss Maury would call approaching Class B.

- (2) ₆₁ degrees 2233 21 56.3 +61 47
Class B. Like epsilon Orionis. This class of spectrum is rare among the bright and faint stars.
(3) DC 9618 +62 degrees 2028 = H.P. 3904
Mb
(4) DC 9630 +62 degrees 2029 = H.P. 3906
K5M
(5) +60 degrees 2323 21 54.6 +60 58
A3F Too poor.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 84 [[/preprinted]]

Nov. 22, 1904

C 15063 (cont)

(6) +60 degrees 2329 21 57.0 +60 51

Very thin and faint.

Probably B3A

4026, 4387 & 4471 seen.

(7) +62 degrees 2010 Not Identified

Sp. Mb.

(8) +61 degrees 2234 K

(9) +60 degrees 2333/2334 A2F

[[end page]]

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[[preprinted]] 85 [[/preprinted]]

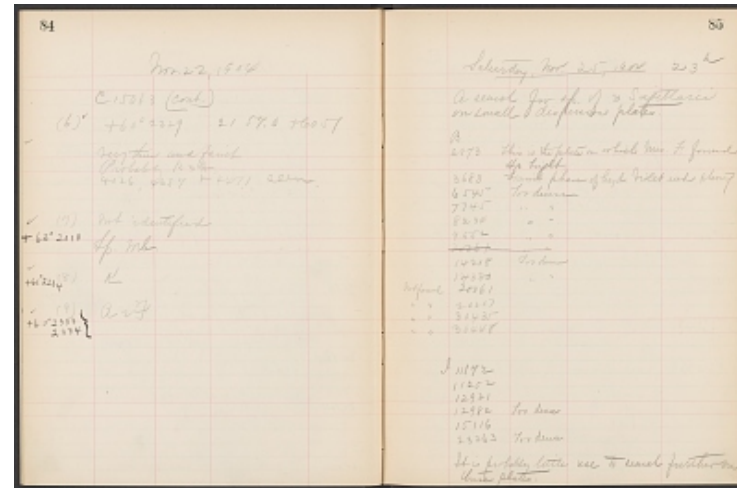
[[underlined]] Saturday, Nov. 25, 1904 [[/underlined]] 23h

A search for sp. of upsilon Sagittarii on small dispersion plates.

B	
2873	This is the plate on which Mrs. F. found H beta bright
3683	Faint phase of hyd. Violet end strong
6545	Too dense
7745	" "[ditto for Too Dense]
8234	" "[ditto for Too Dense]
9552	" "[ditto for Too Dense]
[[strikethrough]] 25061 " "[ditto for Too Dense]] [[/strikethrough]]	
14208	Too dense
14380	" "[ditto for Too Dense]
Not found 20061	
"	" "[ditto for Not Found] 20207
"	" "[ditto for Not Found] 30435
"	" "[ditto for Not Found] 30448

I 11172		
11252		
12921		
12982		Too dense
15116		
23263		Too dense

It is probably little use to search further on these plates.



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[[preprinted]] 86 [[/preprinted]]

[[underlined]] Dec. 2, 1904 [[/underlined]] 1h

C 15149 DC 3030 = H.P. 973
very narrow & poor
Sp. K.

C 15148 H.P. ~~480~~ ~~721~~ = DC 2418
G5K
Line ~~4233~~ near 4227 but of shorter
lambda is very ft. in this star. This is probably 4215-4217.

C 15155 DC 3303
Like epsilon Orionis but lines very narrow. B.

It is getting too dark to do more tonight (4P.M.)

[[end page]]
[[start page]]

[[preprinted]] 87 [[/preprinted]]

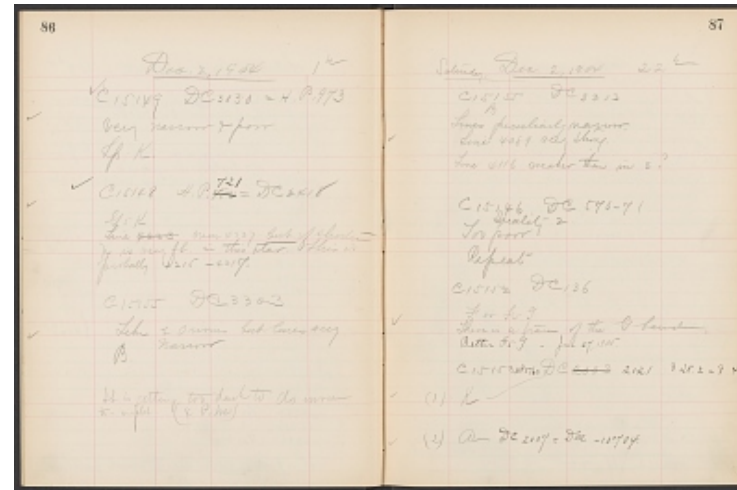
[[underlined]] Saturday, Dec. 2, 1904 [[/underlined]] 22h

C 15155 DC 3303
Lines peculiar and narrow.
Line 4089 very strong
Line 4116 weaker than in epsilon?

C 15146 DC 570-71
Quality 2
Too poor.
Repeat

C 15152 DC 136
F or F5G
There is a trace of the G band
Better F5G - Jan. 27, 1905

C 15153 H.P. 576 = DC ~~2003~~ ~~2021~~ 3
28.2 -9 48
(1) K
(2) DC 2037 = DM -10 degrees 704 A



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[[preprinted]] 88 [[/preprinted]]

Dec. 2, 1904

C 15151 DC 9872 = H.P. 4009

(1) A2F

(2) +63 degrees 1872 K very faint. Violet end not seen. Omit?

C 15150 epsilon Sag.

Very narrow & poor

Hydrogen faint.

C 15154 DC 2784 = H.P. 883

Very poor focus for ft. lines

Appears to be Sp. F.

C 15147 DC 1846 = H.P. 519

A2F but lines bet. H epsilon and H delta are stronger than normal. focus poor for fine lines and they are not seen separately. See next page.

[[end page]]

[[start page]]

[[preprinted]] 89 [[/preprinted]]

Dec. 2, 1904

C 15147 DC 1846

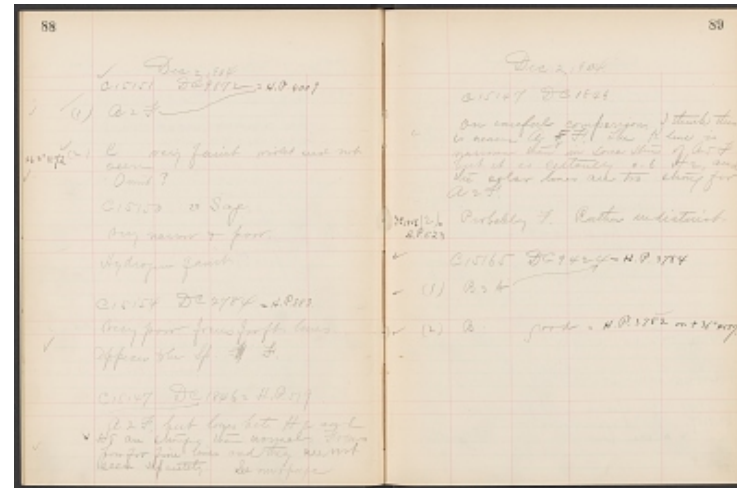
On careful comparison I think this is nearer A5F. The K line is narrower than in some star of A5F but it is certainly 0.6 H epsilon, and the solar lines are too strong for A2F.

(2) DC 1856 = H.P. 523 probably F. Rather indistinct.

C 15165 DC 9424 = H.P. 3784

(1) B3A

(2) B good = H.P. 3782 or +36 degrees 4557.



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Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 90 [[/preprinted]]

Dec. 2, 1904

[[check mark]]

C 15145 lambda Cephei

(1) Class Od Nearer like zeta Puppis than any other spectrum I have seen.

The K line is much sharper than the other lines.

4471 is almost as intense as H gamma ¹ ¹

[[check mark]]

Bright band 46 ~~88~~ 33 is more intense than 4688

4688 has a dark line on edge of greater wavelength.

(2) [[check mark]]

DC 9690 = ~~[[looks like a backwards "j" sans dot]]~~ 58 ²⁴⁰³

K ^{[[above 2403]]}

(3) [[check mark]]

DC ~~9679~~ 9676 = H.P. 3923

K ^{[[above "= H"]]}

red end off plate.

[[check mark]] (4)

[[check mark]] DC 9657 Two spectra superposed. Both are class A. Solar lines not seen distinctly.

[[end page]]

[[start page]]

[[preprinted]] 91 [[/preprinted]]

Dec 2, 1904

[[check mark]] C 15145 (cont)

[[check mark]] (5)

+58 ²³⁹³

G5K ^{[[on line above "+ 58" and below "15145"]]}

(6) [[check mark]]

[[check mark]] DC 9702 = +58 ²⁴⁰⁹

A5F ^{[[above "+58"]]}

(7) [[check mark]]

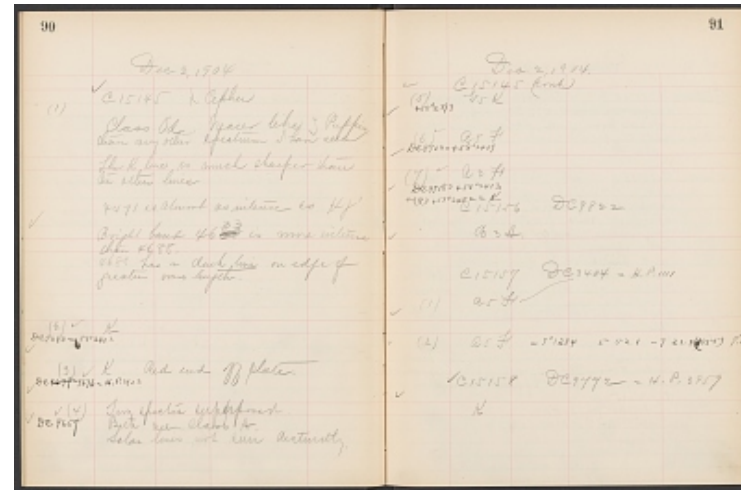
[[check mark]] DC 9718 = +58 ²⁴¹³

A2F ^{[[above "+58"]]}

[[check mark]] (8) +59 ²⁴⁸² = K

C 15156 DC 9822

[[check mark]] B3H.



C 15157 DC 3404 = H.P. 1111

[[check mark]] (1) A5F [[line leading back to "DC"]]

[[check mark]] (2) A5F -9 [[degree sign]] 1284 5 52.1 -9 23.4 (1855)
7.0m [[["m" is above 7.0]]]

[[check mark]] C 15158 DC 9772 = H.P. 3959

[[check mark]] K

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Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 92 [[/preprinted]]

Dec. 2, 1904

[[/strickethrough]] 32, -Eridani [[/strickethrough]] C 15159 DC 1686 = H.P. 463

[[/strickethrough]] H.P. 644, 645 = 1900 (3 49.2 -3 degrees 14) DM = -3 degrees 63.1 [[/strickethrough]]
Focus very poor and solar lines very indistinct.
A2F.

32 Eridani C 15160 DC 2235, 2236 = H.P. 644, 645 = DM -3 degrees 631 (3h 49.2 -3 14)

Comparable spectrum. G5K or K comp.

H gamma about equal to same in G5K stars. No Orion lines seen.
H delta widely double. K weak. H beta hazy. H gamma of ordinary strength and width.

I do not see wht H delta should be double when H gamma is single. The focus is excellent in region of H gamma.
Look up this double star on chart plate.

I 2939 shows this star double, the fainter component [[/strickethrough]] having [[/strickethrough]] being north. The prismatic companion does not appear double on this plate.

[[end page]]

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[[preprinted]] 93 [[/preprinted]]

Dec. 3, 1904

C 15161 DC 2873, 2885

(1) B2A lines blurry = DC 2885 = H.P. 917

(2) B8A = DC 2873

(3) = DC 2864 - Probably B8A. Lines indistinct but 4026 is very strong & the other Orion lines are indistinctly seen as in B8A stars.

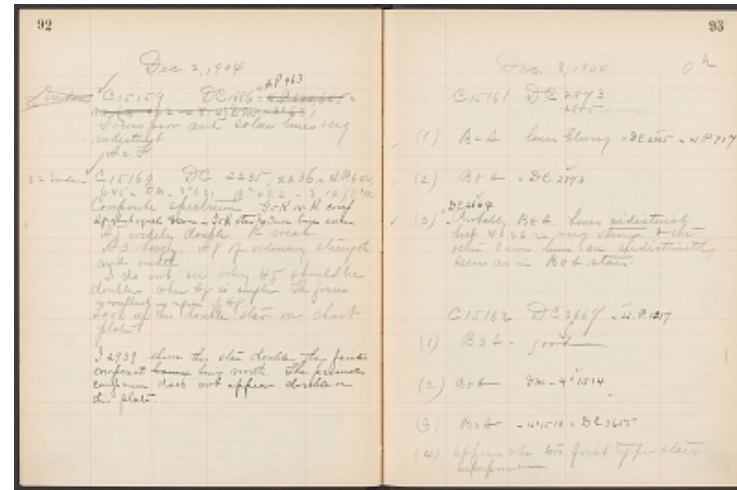
C 15162 DC 3667 = H.P. 1217

(1) B3A - good

(2) B5A DM -4degrees 1514

(3) B3A -4 degrees 1510 = DC 3655

(4) Appears to be two first type stars superposed.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 94 [[/preprinted]]

Dec. 3, 1904

C 15163 DC 4160 = H.P. -5 degrees 2089
Poor plate
(1) A5F or F.
(2) B3A or B5A. DC 4142 = -5 degrees 2080
(3) G. DC 4188 = -5 degrees 2112

C 15167 DC 9089
B9A.
K, 4026, 4128-4130, 4481 are the only fine lines well seen. K much more intense than the others.

C 15168 DC 9703 = H.P. 3936.
A.

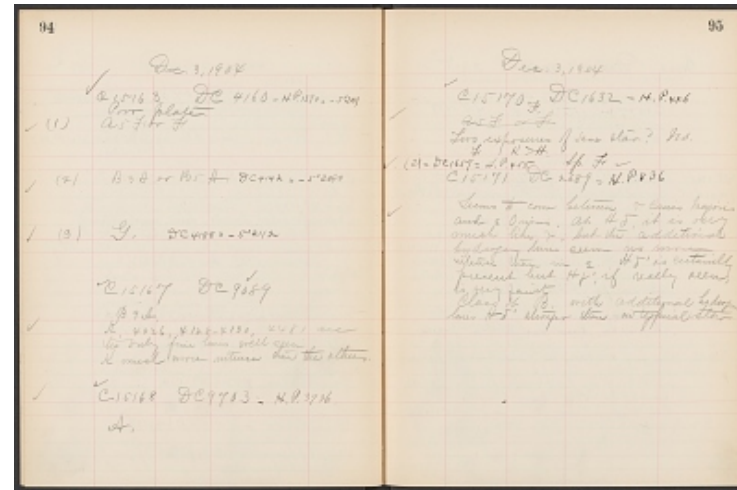
[[end page]]
[[start page]]

[[preprinted]] 95 [[/preprinted]]

Dec. 3, 1904

C 15170 DC 1632 = H.P. 446
[[striketrough]] A5F or F [[/striketrough]] Two exposures of same star?
No.
F. K > H.
(2) = DC 1657 = H.P. 455 Sp. F.

C 15171 DC 2689 = H.P. 836
Seems to come between tau Canis Majoris and epsilon Orionis. At H delta, it is very much like lambda, but the additional hydrogen lines seem no more intense than in epsilon. H delta [^][[1]] is certainly present but H gamma [^][[1]], if really seen, is very faint.
Class at B. with additional hydrogen lines H delta [^][[1]] stronger than in typical star.



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[illegible]

[[check mark]] (1) G5K [[arrow pointing to "DC12498"]]

[[check mark]] (2) G
H.P. 343 = +7 [[degree mark]] 347.

Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 98 [[/preprinted]]

Dec. 4, 1904

C 15181 DC 2797 4 56.6 -7.3

Quality 2

Too narrow.

repeat.

C 15182 DC 9300 20 58 +45.8

Quality 2

Repeat.

C 15183 DC 390 = H.P. 127 0 44 +40.5

(1) DC 390 = +40 degrees 171 B3A 4128-4131 almost as strong as in B5A.

(2) +39 degrees 198 = DC 427 G or F5G

C 15184 DC 3464 = H.P. 11333 6 1.6 -4.2

B3A but 4481 is nearly as intense as 4471.

4128-4131 is barely seen.

[[end page]]

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[[preprinted]] 99 [[/preprinted]]

Dec. 4, 1904

C 15185 DC 3977 = H.P. 1336

(1) B3A probably. ~~very~~ narrow & some anomalous fine lines appear to be seen.

(2) K -5 degrees 1943 6 57.0 -5 6.8 (1885)

C 15186 DC 4278 7 32.3 -3.9

F5G - good

C 15188 DC 8784 = H.P. 3366 19 2.8 +34.2

(1) DC 8784 = H.P. 3366 B3A. good

(2) +33 degrees 3487 DC 8776 A2F

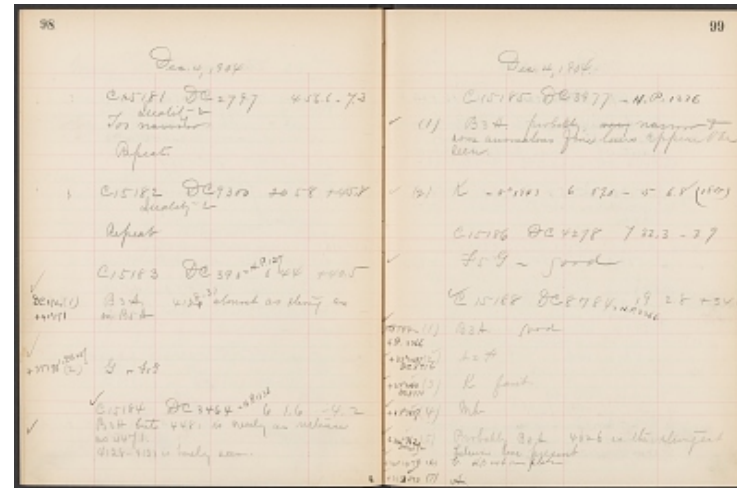
(3) +33 degrees 3480 DC 8770 K faint.

(4) +33 degrees 3507 Mb

(5) +34 degrees 3620 DC 8812 Probably B8A. 4026 is the strongest helium line present.

(6) +32 degrees 3474 G. H beta not on plate.

(7) + 33 degrees 3570 A.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 100 [[/preprinted]]

Dec. 4, 1904

C 15189 DC 10126 = H.P. 4132 23 16 +23.2

A5F. Hydrogen lines a little narrower than normal. Solar lines very indistinct. Focus probably poor.

C 15190 DC 154 = H.P. 55 0 19 +51.5
B3A

C 15191 DC 1194 = H.P. 334 2 2.5 +37.4
A5F.

C 15194 DC 9498 = H.P. 3833 21 38.6 +50.7
B3A - good

C 15196
(1) DC 379 = H.P. 121 0 43 +50.4
B9A, but focus is very poor & the lines K and 4026 are the only ones (besides hydrogen) seen clearly.

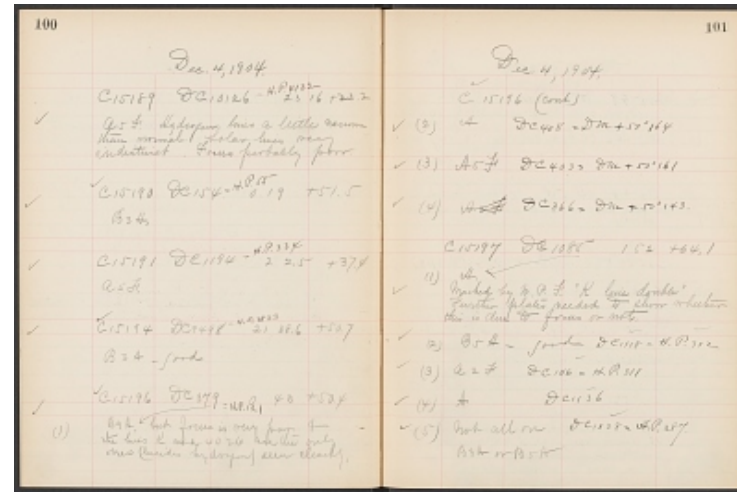
[[end page]]
[[start page]]

[[preprinted]] 101 [[/preprinted]]

Dec. 4, 1904

C 19196 (cont.)
(2) A DC 408 = DM +50 degrees 164
(3) A5F DC 403 = DM +50 degrees 161
(4) A ~~[[strikethrough]]~~ 2F ~~[[/strikethrough]]~~ DC 366 = DM +50 degrees 143

C 15197
(1) DC 1085 1 52 +64.1
A. Marked by W.P.F. "K line double" Further plates needed to show whether this is due to focus or not.
(2) B3A - good DC 1118 = H.P. 312
(3) A2F DC 1116 = H.P. 311
(4) A. DC 1136
(5) Not all on DC 1038 = H.P. 287
B3A or B5A



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 102 [[/preprinted]]

Dec. 5, 1904 0 h

C 15198 DC ~~1483~~ ~~1883~~ = H.P. 532
(1) A2F = DC 1883 H.P. 532 3 h 14.7 +43.0
(2) DC 1842 = H.P. 517 Probably B5A. Fine lines in very poor focus.

C 15208

(1) DC 9298 = H.P. 3701 Bright line Orion type.
H gamma has a dark line on side of greater wavelength only. H delta has rather faint hazy dark lines on both sides of the bright line. H epsilon has dark line on side of greater wavelength only. This is very marked.
H zeta looks triple. The centre decidedly bright and both edges like a distinct dark line. From H zeta to violet, it is too hazy.

[[end page]]

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[[preprinted]] 103 [[/preprinted]]

Dec. 5, 1904

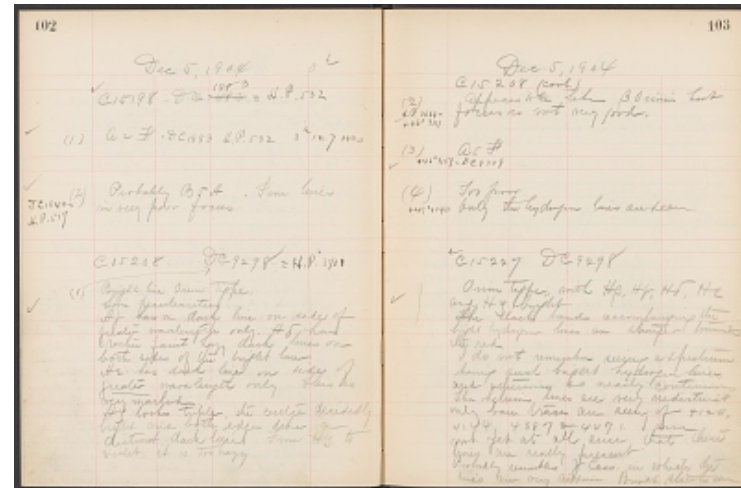
C 15208 (cont.)

(2) H.P. 3684 = +46 degrees 3111 Appears to be like beta Orionis but focus is not very good.
(3) +46 degrees 3159 = DC 9309 A5F
(4) +47 degrees 3240 Too poor. Only the hydrogen lines are seen.

C 15227 DC 9298

Orion type, with H beta, H gamma, H delta, H epsilon and H zeta bright. The dark bands accompanying the bright hydrogen lines are stronger towards the red.

I do not remember seeing a spectrum having such bright hydrogen lines and otherwise so nearly continuous. The helium lines are very indistinct, only bare traces are seen of 4120, 4144, 4387 & 4471. I am not yet at all sure that these lines are really present. Probably resembles gamma Cass. in which the lines are diffuse. Bright streaks seen.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 104 [[/preprinted]]

Dec. 5, 1904

C 15227 (cont.)
(2) DC 9277 Like beta Orionis
(3) DC 9309 A5F.

C 15215 DC 9298

- (1) Bright line Orion with dark components stronger to red. Strong bright line at lambda 4128-4131 or near. Dark lines, if really present, are certainly very faint and appear to be accompanied by bright lines.
- (2) H.P. 3684 DC 9277 This is the best so far seen of this star. Certainly like beta Orionis. Lines very sharp.
- (3) DC 9309 +46 degrees 3159 A5F.
- (4) +47 degrees 3240 B8A 4026 > K

[[end page]]
[[start page]]

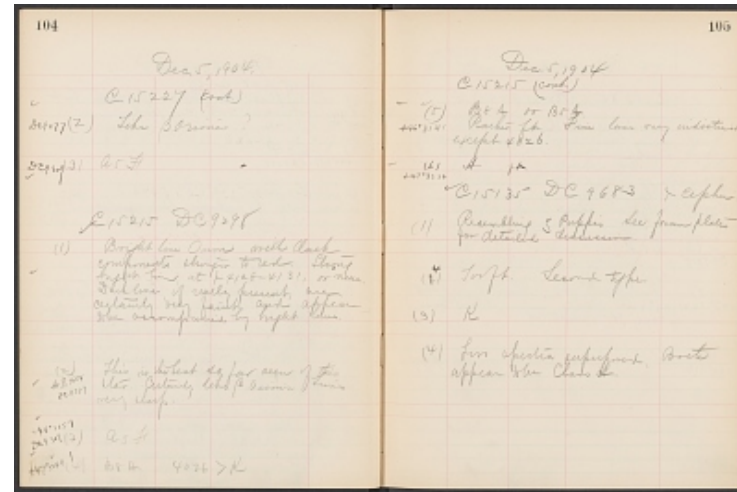
[[preprinted]] 105 [[/preprinted]]

Dec. 5, 1904

C 15215 (cont)
(5) +46 degrees 3141 B8A or B5A Rather ft. Fine lines very indistinct except 4026.
(6) A ft.

C 15135 DC 9683 lambda Cephei

- (1) Resembling zeta Puppis. See former plates for detailed discussion.
- ~~2~~ 4) Too ft. Second type.
- (3) K
- (4) Two spectra superposed. Both appear to be Class A.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 106 [[/preprinted]]

Dec. 5, 1904

C 15232 DC 9298

- (1) Very good of this bright line star. Orion lines very faint if really visible.
- (2) +46 degrees 3111 = H.P. 3684 = DC 9277 B8A. Sharp focus
- (3) DC 9309 A5F
- (4) +47 degrees 3240 Probably B8A. Helium line 4026 is very clearly seen. Other lines hazy & indistinct.
- (5) +46 degrees 3141 Probably B8A. 4026 seen [^]very strong.

[[end page]]

[[start page]]

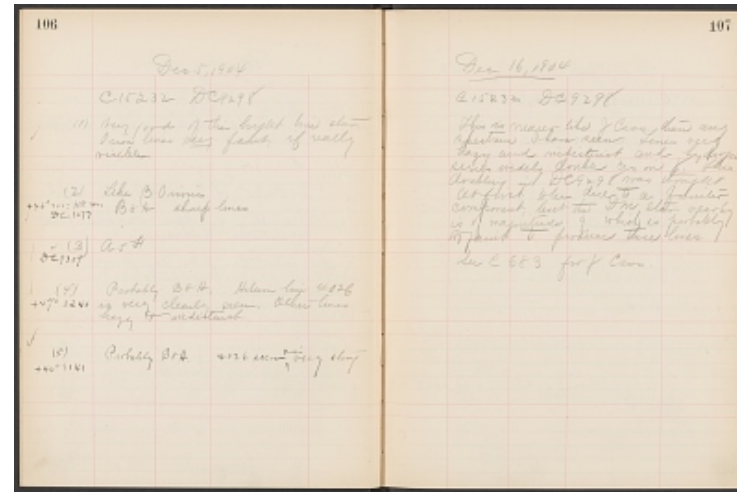
[[preprinted]] 107 [[/preprinted]]

Dec. 16, 1904

C 15232 DC 9298

This is nearer like gamma Cass. than any spectrum I have seen. Lines very hazy and indistinct and hydrogen series widely double as in gamma. This doubling in DC 9298 was thought at first to be due to a fainter component, but the DM star nearby is of magnitude 9, which is probably too faint to produce these lines.

See C 683 for gamma Cass.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 108 [[/preprinted]]

[[underlined]] Friday, Jan. 26, 1905 [[/underlined]] 23h

C 15326 DC 4467

A ~~[[strikethrough]] 5 [[/strikethrough]]~~ 3F

C 15327 DC 193

F Good

C 15329 DC 2129

B8A. Good Lines hazy.

C 15330

(1) DC 4162 = H.P. 1391 B8A.

(2) F = DM -19 degrees 1813

C 15331 DC ~~[[strikethrough]] 4777 [[/strikethrough]]~~ 4477 = H.P. 1516 =
-2 degrees 2450 G

[[end page]]

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[[preprinted]] 109 [[/preprinted]]

Jan. 26, 1905

C 15334

(1) DC 2665 = H.P. 830 = -3 degrees 876 B5A

(2) A2F = DC 2667 = -3 degrees 884

(3) A5F or F. Rather faint = -3 degrees 881
Omit. Too ft.

C 15337 DC 2634

1st type.

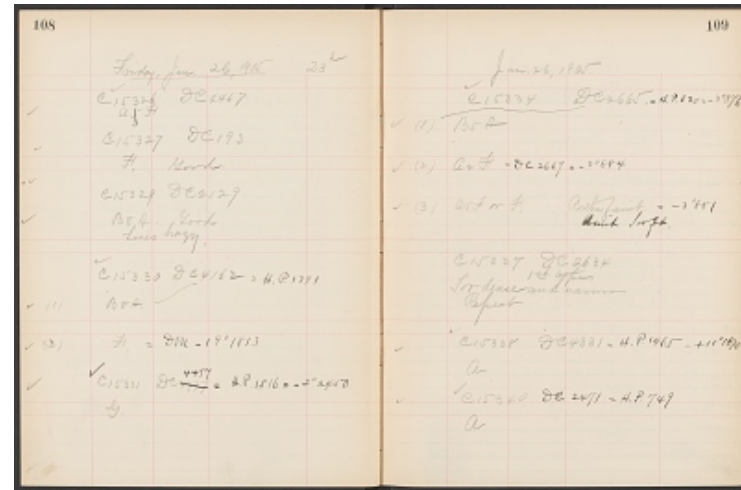
Too dense and narrow. Repeat.

C 15338 DC 4331 = H.P. 1465 = +11 degrees 1670

A

C 15340 DC 2471 = H.P. 749

A



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Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 110 [[/preprinted]]

Jan. 26, 1905

C 15341 DC 3133/40

- (1) DC ~~3133~~ ~~3140~~ B ~~1~~
~~A. Good~~
(2) DC ~~3140~~ ~~3133~~ B ~~1~~
~~2A Good.~~

The dispersion is not great enough to differentiate bet. B1A and B2A and since 4649 is not very strong it seems safer to call them B2A. 4116 is not seen.

- (3) -1 degree 949 = DC 3145 B3A.
(4) DC 3136 = -1 degree 939 B3A. Lines hazy.
(5) ~~DC 3186~~ -1 degree 913 = DC 3095
= H.P. 987 K5M Like alpha Tauri
(6) DC 3146 = -1 degree 950 K faint
(7) H.P. 1029 = epsilon Orionis B very dense
(8) -0 degrees 1009 B3A K not on plate
5 27.8 -0 49.0 (1855)

[[end page]]

[[start page]]

[[preprinted]] 111 [[/preprinted]]

Jan. 26, 1905

C 15342

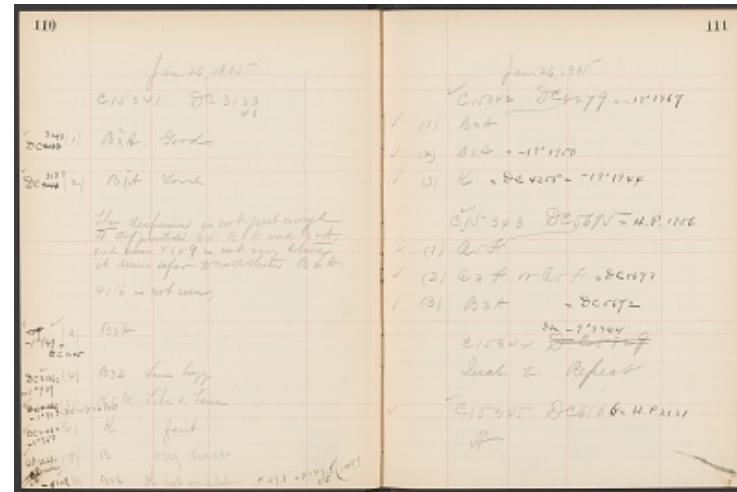
- (1) DC 4279 = -18 degrees 1967 B3A
(2) B3A = -19 degrees 1950
(3) K = DC 4255 = -19 degrees 1944

C 15343

- (1) A5F DC 5675 = H.P. 1956
(2) A3F or A5F = DC 5673
(3) B3A = DC 5672

C 15344 ~~DC 5829~~ DM -9 degrees 3344
Qual. 2. Repeat

C 15345 DC 6166 = H.P. 2131
A.



[[preprinted]] 112 [[/preprinted]]

Jan. 27, 1905

C 15352 DC 4686 = H.P. 1600
G. very good

[[margin]] See p. 114 [[/margin]]
C 15242 DC 9164 (20 27 +48.6)
(1) B3A
(2) Ma
(3) A
(4) ~~[[strickethrough]] G [[/strickethrough]] F~~
(5) B8A ? faint.

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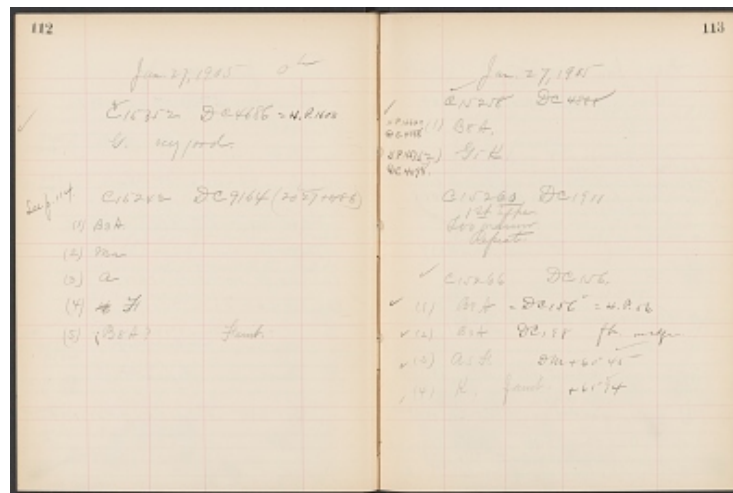
[[preprinted]] 113 [[/preprinted]]

Jan. 27, 1905

C 15258 DC 4888
(1) H.P. 1662 = DC 4888 B8A.
(2) H.P. 1667 = DC 4898 G5K.

C 15260 DC 1911
1st type
Too narrow
Repeat.

C 15266 DC 156.
(1) B9A = DC 156 = H.P. 56
(2) B3A DC 198 ft. on edge
(3) A5F DM +60 degrees 45
(4) K faint +61 degrees 94



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 116 [[/preprinted]]

Jan. 30, 1905

C 15322 DC 2603 = H.P. 803
B5A.

C 15320 DC 1557.

A. K line double. Have more photographs taken to see if it is due to focus.

[[end page]]
[[start page]]

[[preprinted]] 117 [[/preprinted]]

[[underline]] Jan. 31, 1905 [[/underline]]

C 15158

(1) DC 9772 = H.P. 3959. G5K

(2) Too poor. Sp. looks almost continuous but since another one nearby looks the same, it is probably due to poor focus.

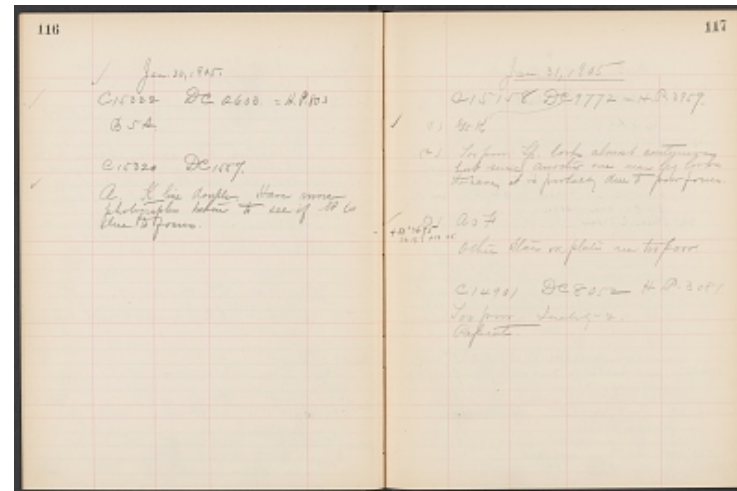
(3) +50 degrees 3695 22 17.9 +58 25 A3F

Other stars on plate are too poor

C 14901 DC 8052 H.P. 3081

Too poor. Quality = 2

Repeat.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 118 [[/preprinted]]

[[underline]] Wed., Jan. 31, 1905 [[/underline]] 22h

C 15328 DC 1219 = H.P. 340

[[check mark]] Two sets of lines.

Both spectra appear to be alike and of Class A or B9A. The K line is very faint in both and no Orion lines of any strength are seen. Lines 4128-31 and 4481 are seen.

[[stray mark]] Perhaps best to class both A.

Plates I 15973 and 24605 show that DM +38° 425 is a double star, having both components bright. The principal image and prismatic companion are both clearly double. The north following component is fainter.

[[in ink instead of pencil]]

+38° 425 is No. 353 & 354 in Potsdam ^{DM} and ^{59 Androm.} is given double = sigma 222 s.p. comp. ⁿ = 6.52 m ["m" is above 6.5; may be superscript above 6] n.f. comp. = 7.11 m ["m" is above .11; may be superscript above 7]
[[/ink]]

[[check mark]]

[[check mark]] +37° 486 Partly on plate. H beta not on plate. A2F.

[[check mark]]

[[check mark]] +38° 408 A2F very faint

[[check mark]]

[[check mark]] +38° 416 A2F " "[ditto for very faint]]

[[end page]]

[[start page]]

[[preprinted]] 119 [[/preprinted]]

Jan. 31, 1905.

C 15354 DC 5406

Quality 1.

C 15363 DC 4296 ^{[[ink]]} Wrong star. ^{[[/ink]]}

[[check mark]] A5F. Quality 2.

Repeat.

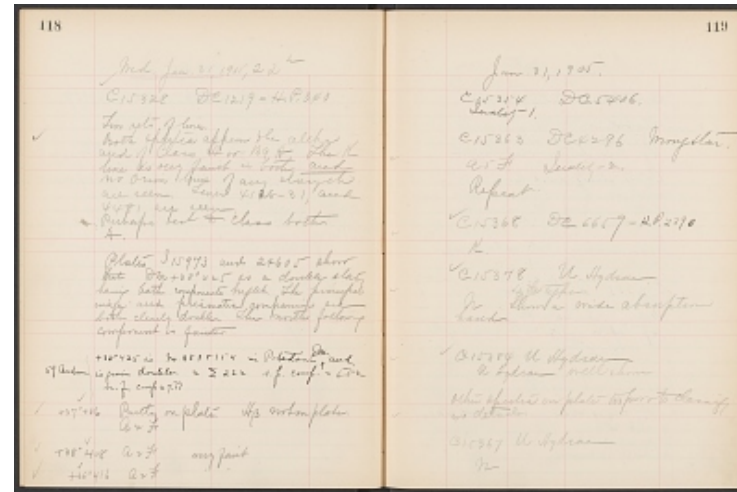
[[check mark]] C 15368 DC 6659 ^{[[ink]]} = H.P. 2390 ^{[[/ink]]}

K.

[[check mark]] C 15378 U Hydrae

[[check mark]] 4th type

N Shows a wide absorption band.



☒ ☒ C 15384 U Hydrae
U Hydrae well shown.

Other spectra on plate too poor to classify
☒ in detail.

C 15367 U Hydrae
N

Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 120 [[/preprinted]]

February 1, 1905

[[check mark]] C 15380 omicron Ceti
Good

[[check mark]] H delta very bright.
H gamma less intense, but bright.

4227 strong dark line.

[[check mark]]
C 15376 omicron Ceti
[[check mark]] Same as above, only not so good.

[[check mark]] C 15385 R Hydrae
Thin
[[check mark]] Md.
H delta bright, H gamma not seen bright, but image is thin.

C 15379 DC 6168.
[[check mark]]
G, having rather an unusually intense violet end. Map up violet end with
another star showing as much.

[[end page]]
[[start page]]

[[preprinted]] 121 [[/preprinted]]

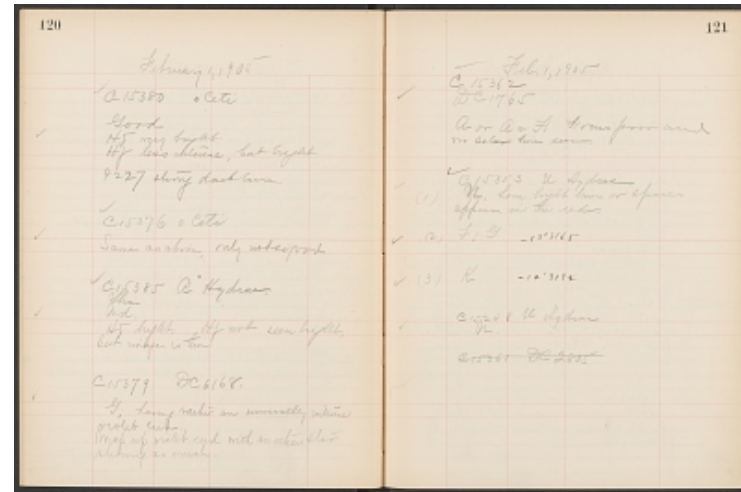
[[check mark]] Feb. 1, 1905
C 15362
[[check mark]] DC 1765
A or A2F. Focus poor and no solar lines seen.

[[check mark]]
C 15353 U Hydrae
[[check mark]] (1) N. Some bright lines or spaces appear in the red.

[[check mark]] (2) F5G -13° 3165

[[check mark]] (3) K -12° 3194

C 15248 U Hydrae
[[check mark]] N.
[[strikethrough]] C 15361 DC 2805 [[/strikethrough]]



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[[preprinted]] 122 [[/preprinted]]

Feb. 1, 1905

C 15361 DC 2808 2809

DC 2808 is of the Orion type having H beta, H gamma & H delta ^[[and H epsilon]] bright.

Lines characteristic of B3A stars are present. A line is present of gr. lambda than 4144, which is not in Orion stars. This may be due to the sp. of DC 2809.

The images of these stars in Vol. 45 are 5.41 (DC 2808) and 6.38 (2809). Unless 2809 is very red, there [[?]] to be mere trace of its sp. There is a faint edge in the fwd. side of the bright line star, which may be the sp. of 2809, but it is not distinct enough to be classified.

I ~~16631~~ ~~16500~~ examined & no trace of two spectra seen. Only one, of class A.

[[end page]]

[[start page]]

[[preprinted]] 123 [[/preprinted]]

[[underline]] March ~~8~~ ~~9~~, 1905

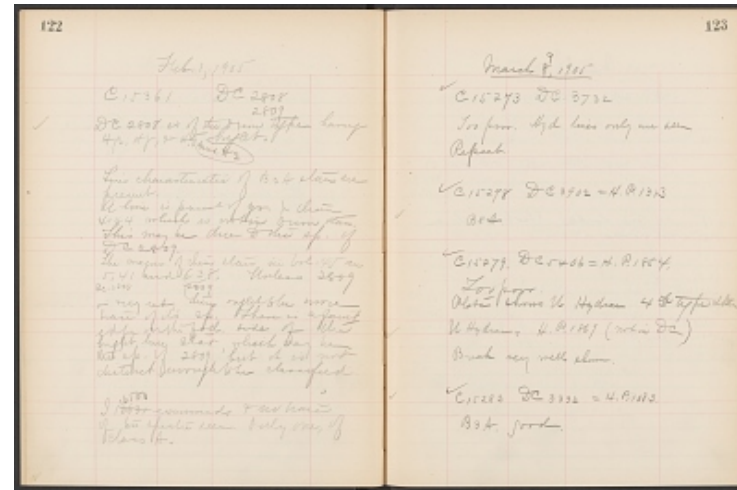
C 15273 DC 3732

Too poor. Hyd. lines only are seen. repeat.

C 15278 DC 3902 = H.P. 1313
B8A.

C 15279 DC 5406 = H.P. 1854
Too poor.
Plate shows U Hydrae 4th type star.
U Hydrae = H.P. 1869 (not in DC)
Break very well shown.

C 15283 DC 3332 = H.P. 1083
B3A. good.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 128 [[/preprinted]]

Mch. 11, 1905

C 15396 R Hydrae
H delta strongly bright
H beta & H gamma not bright.

C 15403 omicron Ceti
Ma.

C 15408 U Hydrae
N

C 15417 alpha Orionis
Ma

C 15418 U Hydrae
N

C 15419 U Hydrae
N

[[end page]]
[[start page]]

[[preprinted]] 129 [[/preprinted]]

Mch. 11, 1905

C 15424 alpha Orionis
Ma.

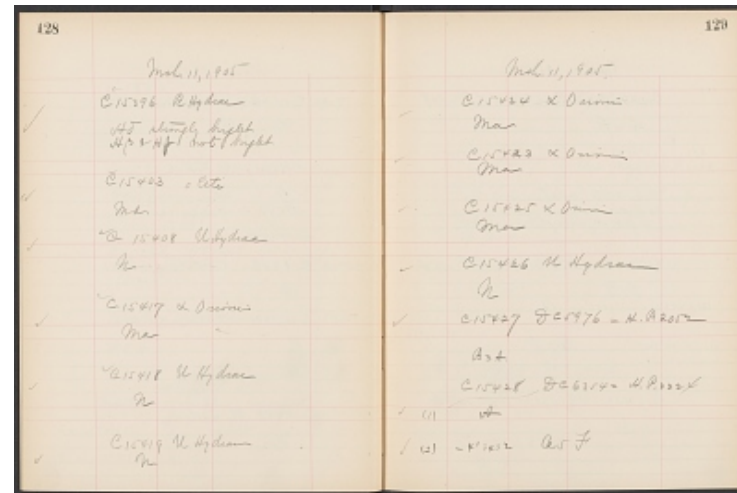
C 15423 alpha Orionis
Ma

C 15425 alpha Orionis
Ma

C 15426 U Hydrae
N

C 15427 DC 5976 = H.P. 2052
B3A.

C 15428
(1) DC 6354 = H.P. 2224 A.
(2) -4 degrees 3432 A5F.



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Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 130 [[/preprinted]]

Mch. 11, 1905

C 15429 DC 6693 = H.P. 2408
A2F

(2) -13 degrees 3873. F5G or G. Poor

C 15433 omicron Ceti
H gamma & H delta bright.

C 15438 DC 6199 = H.P. 2154
F5G

(2) = H.P. 2160 = -13 degrees 3586 A.
(3) = -12 degrees 3685 A5F.

C 15439 DC 6820 = H.P. 2474
A

[[end page]]
[[start page]]

[[preprinted]] 131 [[/preprinted]]

Mch. 11, 1905

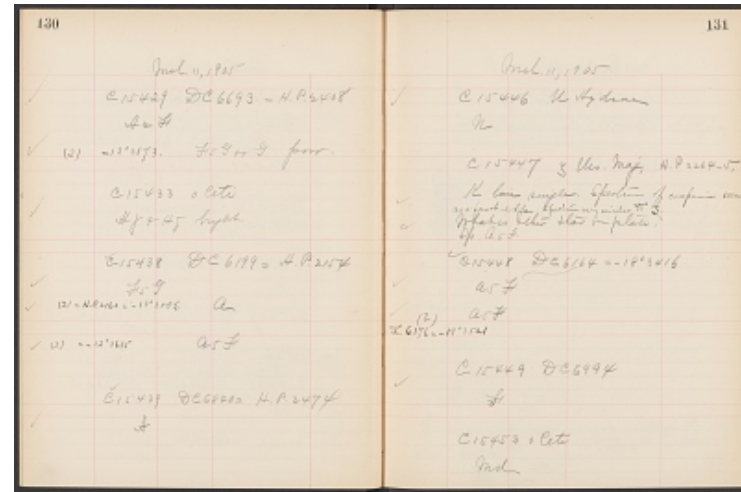
C 15446 U Hydrae
N

C 15447 zeta Urs. Maj. H.P. 2264-5.
K line single. Spectrum of companion seen as a faint edge. Spectrum
very similar to zeta. What is other star on plate?
Sp. A5F.

C 15448
DC 6164 = -18 degrees 3416 A5F.
(2) A5F DC 6176 = -19 degrees 3521

C 15449 DC 6994
F

C 15453 omicron Ceti
Md.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 132 [[/preprinted]]

Mch. 11, 1905

C 15457 zeta Urs. Maj.
A2F K line single.
other star is A3 or 5F.

[[~~132~~]] C 15437 U Hydrae [[/~~132~~]]

[[end page]]
[[start page]]

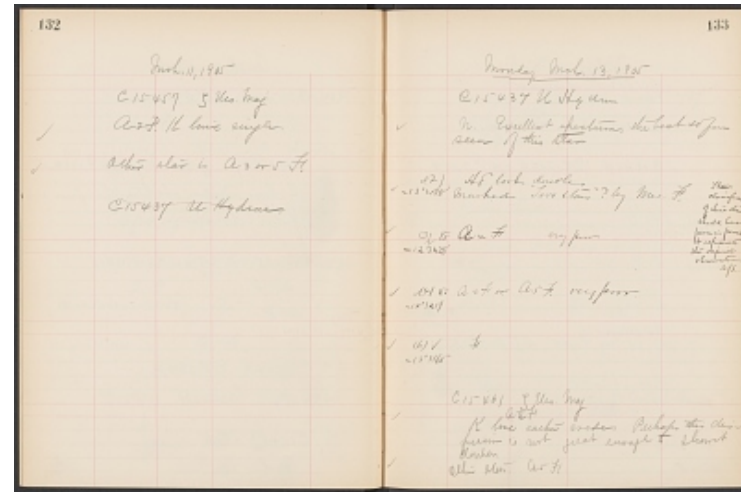
[[preprinted]] 133 [[/preprinted]]

[[Monday, Mch. 13, 1905]]

C 15437 U Hydrae
N. Excellent spectrum, the best so far seen of this star.

- (2) -13 degrees 3188 H delta looks double. Marked "Two stars?" by Mrs. F. The classification of these stars should have been in pencil. It represents the original observations. A.J.C.
(3) -12 degrees 3228 7.5m A2F very poor
(4) -12 degrees 3219 8.0m A2F or A5F. very poor.
(6) -13 degrees 3165 F

C 15461 zeta Urs. Maj.
A2F
K line rather wide. perhaps this dispersion is not just enough to show it double.
other star A5F.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 134 [[/preprinted]]

Mch. 13, 1905

C 15462 U Hydrae

N.

Not as good as ~~14~~ C 15437.

C 15464 DC 6864 = H.P. 2499

F.

(2) DC 6873 = -4 degrees 3783 F5G

(3) -3 degrees 3698 F5G

C 15467 omicron Ceti

Excellent

H gamma, H delta, H zeta bright. H delta most intense.

C 15469 omicron Ceti

Not as sharp as 15467

H & K bands are split up.

[[end page]]

[[start page]]

[[preprinted]] 135 [[/preprinted]]

Mch. 13, 1905

C 15471 DC 4278 = H.P. 1437

2nd type

Quality 2

Repeat.

C 15473 omicron Ceti

Md.

rather thin.

C 15489 DC 3314 = H.P. 1071.

B9A

(2) DC 3300 = +12 degrees 902 B5A.

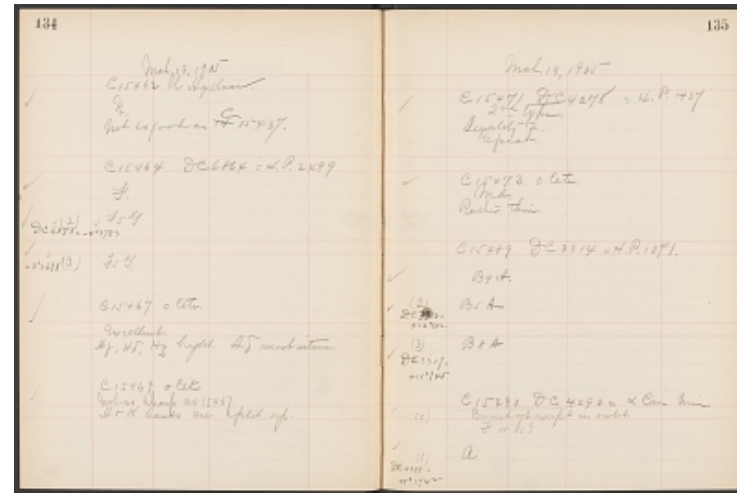
(3) DC 3309 = +11 degrees 945 B8A.

C 15490

DC 4292 = alpha Can. Min.

(2) Burned out except in violet F or F5G

(1) DC 4299 = +5 degrees 1742 A.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 136 [[/preprinted]]

Mch. 13, 1905.

C15491 DC4797 = H.P. 1639.
A5F1

C15497 omicron Ceti.
Excellent
H beta not seen.
H delta = 20
H gamma = 8 8
H epsilon not bright, may be concealed by calcium
H zeta = 4
H eta = 2
H theta = 0? Very ft. if really present
H iota = 2
H iota is much stronger than H theta.

[[end page
[[start page]]

preprinted]] 137 [[/preprinted]]

Mch. 13, 1905

C 15498 DC 3707 = H.P. 1238
B3A

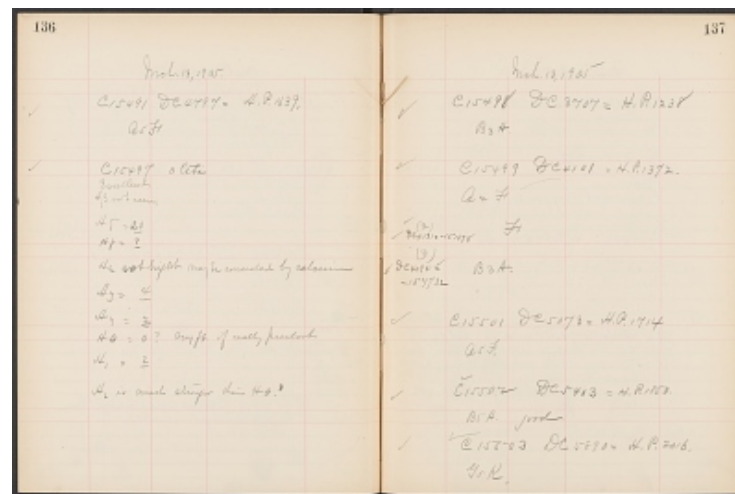
C 15499 DC 4101 = H.P. 1372
A2F

(2) DC 4131 = -16 degrees 1898 F
(3) DC 4094 = -15 degrees 1732 B3A.

C 15501 DC 5073 = H.P. 1714
A5F

C 15502 DC 5403 = H.P. 1850
B5A good

C 15503 DC 5890 = H.P. 2016
G5K



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 138 [[/preprinted]]

Mch. 13, 1905

C 15504 omicron Ceti
Quality 1

C 15518 omicron Ceti
Md.
Focus not very good.

C 15018 DC 8364, 65
(1) = 8364 = H.P. 3172 F
(2) = 8365 = H.P. 3173. Some division of 1st type. This spectrum shows as a ft. edge of DC 8364. A longer exposed plate should be taken, or one with narrower images, so as to separate the two. As the R.A. is 18h, this can not be taken for several months.

[[end page]]
[[start page]]

[[preprinted]] 139 [[/preprinted]]

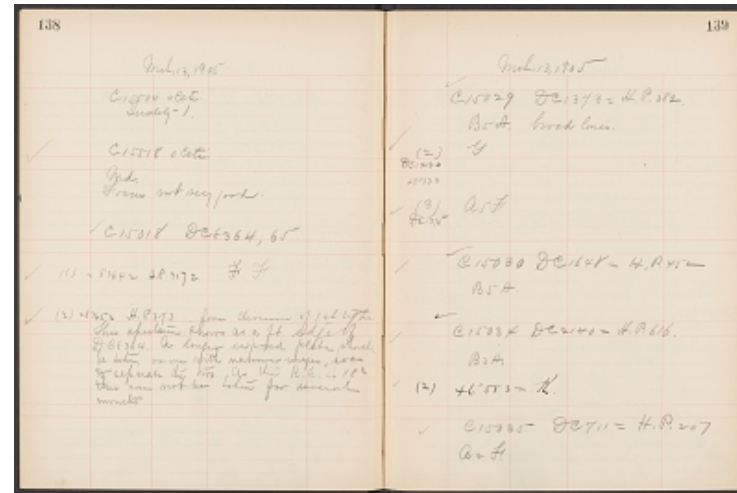
Mch. 13, 1905

C 15029 DC 1373 = H.P. 382
B5A. broad lines
(2) DC 1400 = +9 degrees 323 G
(3) DC 1395 A5F

C 15030 DC 1648 = H.P. 452
B5A

C 15034 DC 2140 = H.P. 616.
B3A.
(2) +6 degrees 583 = K

C 15035 DC 711 = H.P. 207
A2F.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 142 [[/preprinted]]

Mch. 13, 1905

C 15222 DC 3029 = H.P. 972

B3A

(3) -13 degrees 1152 A

C 15223 DC 3800 = H.P. 1278

A2F

(2) DC 3807 = H.P. 1283 No lines seen distinctly except those of hydrogen. Focus poor & spectrum is probably B8 or 9A.

(3) DC 3828 = H.P. 1291 B5A Lines very hazy & indistinct.

(4) ~~DC 3805~~ ~~DC 3805 A3 or 5F.~~

C 15231 DC 9601 = H.P. 3889

B5A. Lines very hazy. H beta has the hazy appearance of spectra in which there are bright lines. A faint bright line is suspected on H beta but not certainly seen.

[[end page]]

[[start page]]

[[preprinted]] 143 [[/preprinted]]

Mch. 13, 1905

C 15235 psi ^{[[1]]} Pisc. H.P. 169-70

Too poor. On edge

Class A or A2F?

C 15236 psi ^{[[1]]} Pisc.

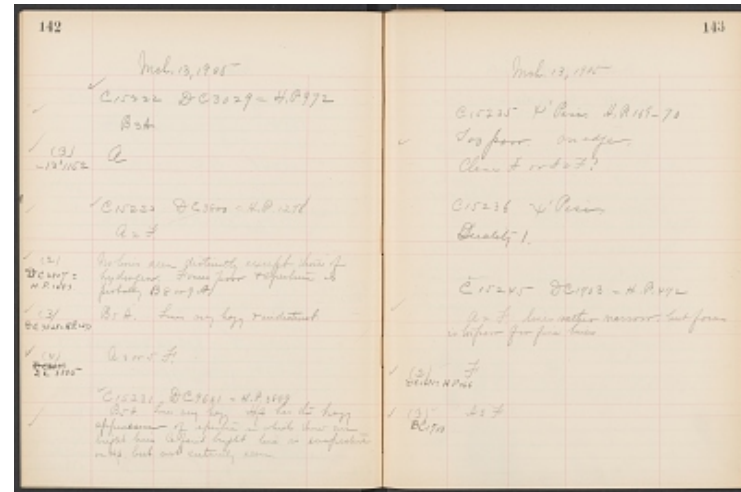
Quality 1

C 15245 DC 1703 = H.P. 472

A2F. Lines rather narrow but focus is too poor for fine lines.

(2) DC 1691 = H.P. 466 F

(3) DC 1700 A3F



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 146 [[/preprinted]]

Mch. 14, 1905

C 15277 DC 2092 = H.P. 594
B2A good
(2) DC 2075 F8G
(3) DC 2102 B3A

C 15279 DC 5406 = H.P. 1854
1st type. Too poor to see fine lines.
(3) U Hydrae on edge N.

C 15284 DC 4078 = H.P. 1366
B1A. 4649 fainter than 4471. 4089 quite strong.

[[end page]]
[[start page]]

[[preprinted]] 147 [[/preprinted]]

Mch. 14, 1905.

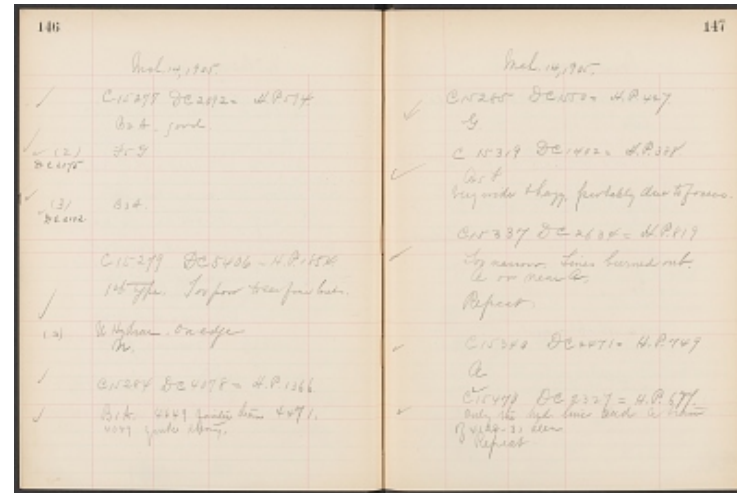
C 15285 DC 1550 = H.P. 427
G

C 15319 DC 1402 = H.P. 388
A5F.
Very wide & hazy. Probably due to focus.

C 15337 DC 2634 = H.P. 819
Too narrow. Lines burned out.
A or near A.
Repeat.

C 15340 DC 2471 = H.P. 749
A

C 15470 DC 2327 = H.P. 677.
Only the hyd. lines and a trace of 4128-4131 seen.
Repeat.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 148 [[/preprinted]]

Mch. 14, 1905

C 15479 DC 5691 = H.P. 1962
A

C 15480 DC 6155 = H.P. 2125
peculiar spectrum, very much like iota Phoenicis. A2F Pec.
Intensities of lines other than the hydrogen, in order
K
4077
4233
4128-4131

4172 which is quite intense in iota Phoenicis, is not seen in DC 6155.
Find out which substance line 4077 is due to, if known.
(2) DC 6146 = H.P. 2118 F or F5G Probably F since solar lines are not
very strong.
(3) +25 degrees 2523 A2F

[[end page]]
[[start page]]

[[preprinted]] 149 [[/preprinted]]

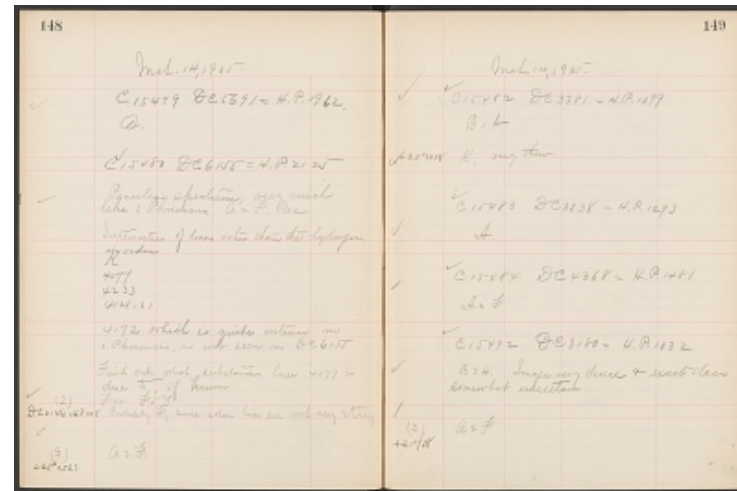
Mch. 14, 1905

C 15482 DC 3381 = H.P. 1099
B1A
+25 degrees 1058 K, very thin.

C 15483 DC 3838 = H.P. 1293
A.

C 15484 DC 4368 = H.P. 1481
A2F

C 15492 DC 3180 = H.P. 1032
B3A. Image very dense & exact class somewhat uncertain.
(2) +21 degrees 918 A2F.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 150 [[/preprinted]]

Mch. 14, 1905

C 15495 DC 5761 = H.P. 1980
A2F
(2) +39 degrees 2452 7.8m A3F
(3) +39 degrees 2450 7.8m A5F
(4) +39 degrees 2453 G5K or K - Too thin.
(5) +40 degrees 2432 K Thin.

C 15496 DC 6172 = H.P. 2136
A
(2) DC 6187 K
(3) DC 6174 K

[[end page]]
[[start page]]

[[preprinted]] 151 [[/preprinted]]

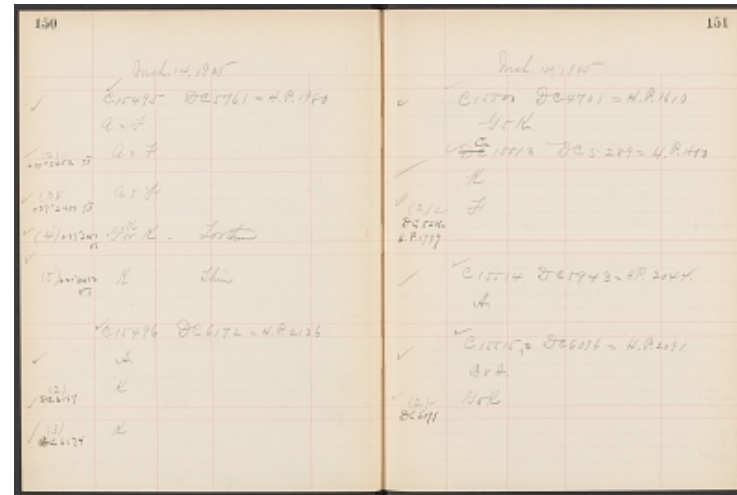
Mch. 14, 1905

C 15500 DC 4701 = H.P. 1610
G5K

~~[[striketrough]]~~ DC ~~[[/striketrough]]~~ C 15513 DC 5289 = H.P. 1800
K
(2) DC 5286 = H.P. 1799 F

C 15514 DC 5943 = H.P. 2044
A

C 15515 DC 6096 = H.P. 2091
B8A
(2) DC 6091 G5K



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 154 [[/preprinted]]

Mch. 14, 1905

C 15477 DC 4453 = H.P. 1509
A

C 15485 DC 4930 = H.P. 1675
A5F very poor

C 15486 DC 5197 = H.P. 1756
Quality 2
Too poor & broken also.
Repeat
Probably A or A2F

C 15487 DC 6525 = H.P. 2309
A2F
(2) DC 6551 = H.P. 2325 A

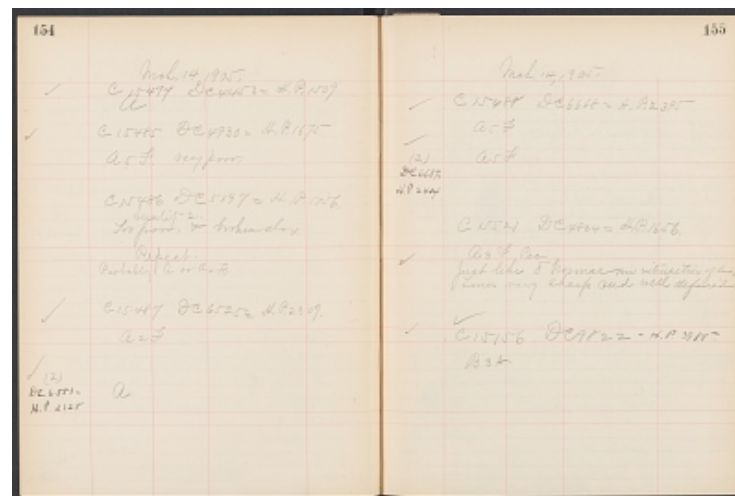
[[end page]]
[[start page]]

[[preprinted]] 153 [[/preprinted]]
Mch. 14, 1905

C 15488 DC 6668 = H.P. 2395
A5F
(2) DC 6687 = H.P. 2404 A5F

C 15521 DC 4864 = H.P. 1656
A3F Pec.
Just like delta Normae in intensities of lines. Lines very sharp and well defined.

C 15156 DC 9822 = H.P. 3985
B3A.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 156 [[/preprinted]]

[[underlined]] March 20, 1905 [[/underlined]]

C 15216 DC 9549 = H.P. 3870

Two sp. superposed

+55 degrees 2639 = DC 9548 = H.P. 3870 Brighter sp. 1 = B3A.

+55 degrees 2638 Fainter sp. shows only the hyd. lines H beta, H gamma, H delta, H epsilon, H zeta, perhaps H eta.

These lines appear as a faint edge on the prec. side of DC 9549 and also cross the sp. of the latter.

(2) +55 degrees 2641 K

(3) DC 9553 +54 degrees 2646 Probably B8A.

C 14907 DC 7866, 67.

Sp. composite. See also p. 35.

G band clearly formed. $K < H$.

Hydrogen lines strong.

Brighter component is probably Class G and not later since the bright band of K stars are not seen.

Fainter comp. is probably of Class A since no Orion lines ~~of the~~ are distinctly seen.

[[end page]]

[[start page]]

[[preprinted]] 157 [[/preprinted]]

[[underlined]] April 4, 1905 [[/underlined]]

C 15655 DC 4210

This plate was just handed to me by Mrs. Fleming. ~~It~~

~~The sp. was marked peculiar by Mr. King.~~

The central spectrum (presumably that of DC 4210) resembles the H beta bright variable stars (eta Centauri etc.)

H beta appears to be very faintly bright but almost invisible. the class not considering H beta is B2A.

This star should be followed up.

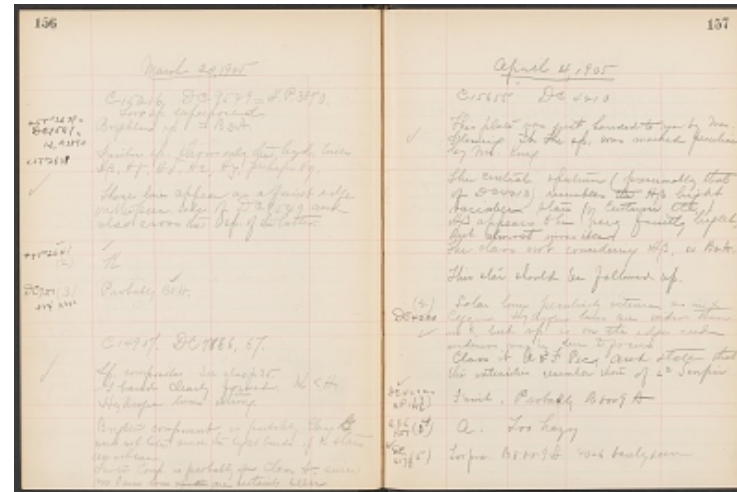
(2) DC 4220 Solar lines peculiarly intense as in alpha Cygni. Hydrogen lines are wider than in alpha, but sp. is on the edge and wideness may be due to focus.

Class it A ~~2~~ 3F Pec. and state the intensities resemble those of iota ² Scorpii.

(3) DC 4232 = H.P. 1416 Faint, probably B8 or 9A

(4) A.G.C. 9551 A. Too hazy.

(5) DC 4179 Too poor. B8 or 9A. 4026 barely seen.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 158 [[/preprinted]]

[[underlined]] April 17, 1905 [[/underlined]]

C 15335 DC 2808, 2809 H.P. 885, 886
2809 shows as a faint edge on the following side of 2808. The sp. is probably second type as no distinct hyd. lines are seen. A photograph should be taken of longer exposure with narrower images so as to show this spectrum more distinctly.

DC 2808 shows bright lines at H beta, H gamma, H delta, H epsilon and H zeta. Sp. = B3A, but numerous additional lines are present, probably belonging to the spectrum of 2809.

C 15361 DC 2808, 2809
Same as above.
DC 2809 is too faint to classify.

[[end page]]
[[start page]]

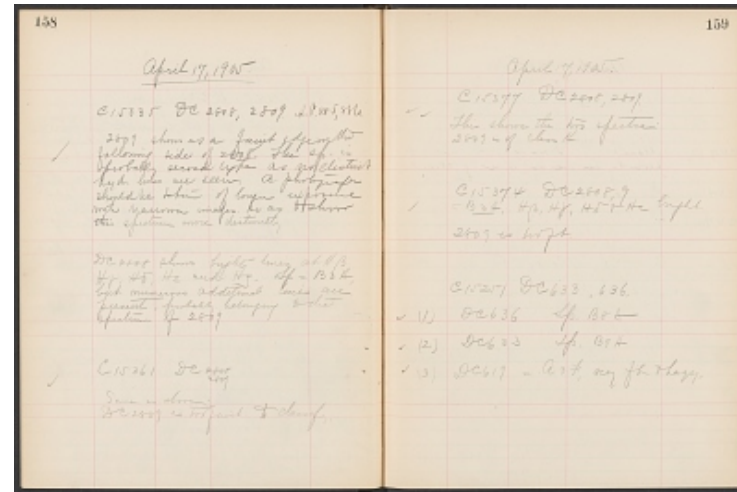
[[preprinted]] 159 [[/preprinted]]

April 17, 1905

C 15377 DC 2808, 2809
This shows the two spectra. 2809 is of Class K.

C 15374 DC 2808, 9
B3A, H beta, H gamma, H delta & H epsilon bright
2809 is too ft.

C 15251 DC 633, 636
(1) DC 636 Sp. B8A.
(2) DC 633 Sp. B9A
(3) DC 619 = A3F, very ft. & hazy.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 162 [[/preprinted]]

April 17, 1905

C 15602 zeta Urs. Maj.
A Very dense
Companion is A or A2F.
g Urs. Maj. also on plate
Sp. A3F.

C 15604 DC 6962
G
(2) +68 degrees 823 A2 or 3F

C 15610 zeta Urs. Maj.
A
Comp. seen, but image is poor
g Urs. maj. ~~[[strikethrough]]~~ A5F ~~[[/strikethrough]]~~ A3F

[[end page]]
[[start page]]

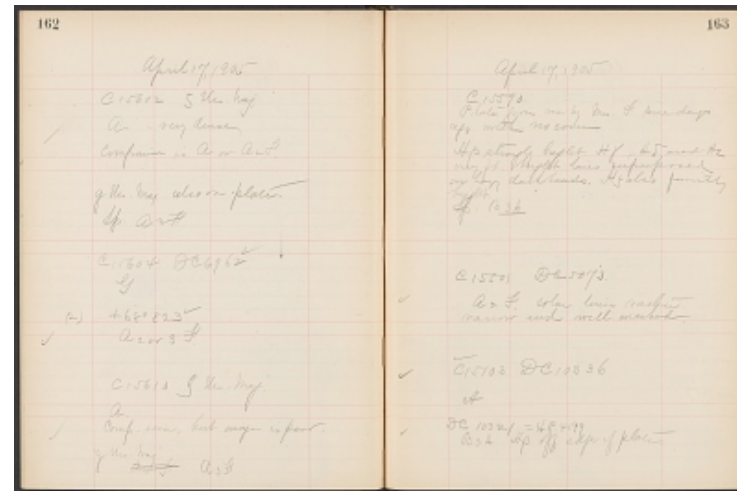
[[preprinted]] 163 [[/preprinted]]

April 17, 1905

C 15590
Plate given me by Mrs. F. some days ago with no cover.
H beta strongly bright. H gamma, H delta and H epsilon very ft. bright
lines superposed on hazy dark bands. H zeta also faintly bright.
Sp. B3A

C 15501 DC 5073
A2F. Solar lines rather narrow and well marked.

Cv 15103 DC 10336
A
DC 10321 = H.P. 4199
B3A H beta off edge of plate.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 164 [[/preprinted]]

April 17, 1905

C 15115 DC 9619 = H.P. 3903
Slightly peculiar K < H but solar lines quite strong. 4077.9 is very well marked.
Probably better class it F.
DM +63 degrees 1815
A2F

C 15555 DC 4832
A2F

C 15556 DC 5469
F very good example.
(3) +46 degrees 1658 G5K very faint.
(2) + 46 degrees 1659 B8A.

[[end page]]
[[start page]]

[[preprinted]] 165 [[/preprinted]]

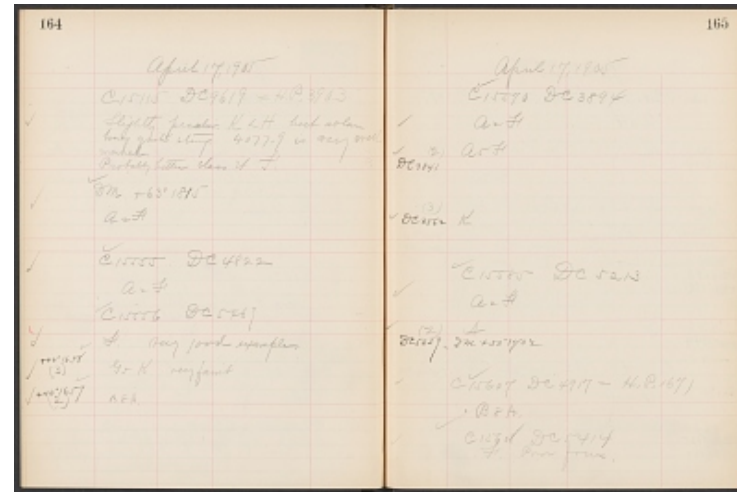
April 17, 1905

C 15570 DC 3894
A2F
(2) DC 3841 A5F
(3) DC 3862 K

C 15585 DC 5213
A2F
(2) DC 5229 = DM +50 degrees 1702 A

C 15607 DC 4917 = H.P. 1671
B8A.

C 15608 DC 5414
F Poor focus.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 170 [[/preprinted]]

April 19, 1905

C 15586 DC 5562 = H.P. 1119

F

(2) DC 5587 = H.P. 1930 A2F H beta & H gamma off the edge.

(3) +39 degrees 2413 A5F or F.

C 15593 DC 3778 = H.P. 1261.

A2F

(2) +59 degrees 1013 F or F5G Better focus might show it to be F5G since H beta, H gamma & H delta do not seem to be as intense as in F spectra.

[[end page]]

[[start page]]

[[preprinted]] 171 [[/preprinted]]

April 19, 1905

C 15595 DC 6409 = H.P. 2248

F Perfect!

(2) DC 6373 = H.P. 2241 A5F K slightly < H

(3) DC 6384 = H.P. 2237 K

(4) DC 6425 = H.P. 2255 K

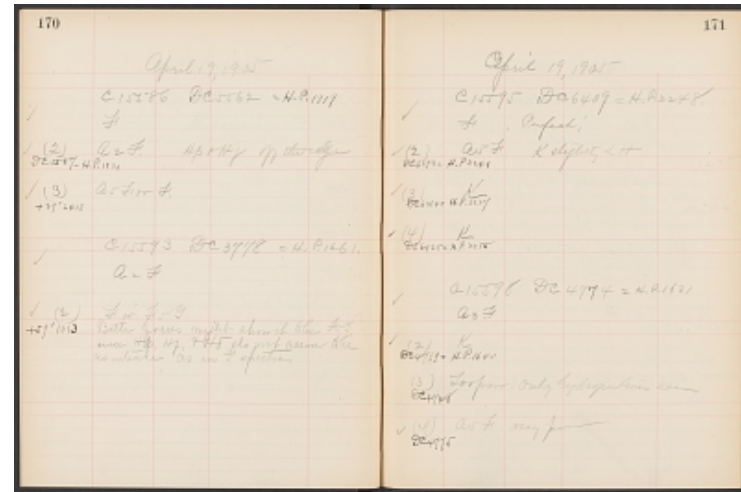
C 15598 DC 4774 = H.P. 1631

A3F

(2) DC 4799 = H.P. 1640 K

(3) DC 4748 Too poor. Only hydrogen lines seen.

(4) DC 4775 A5F very poor.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 172 [[/preprinted]]

April 19, 1905

C 15605 zeta Puppis
Od. very hazy, probably due to low altitude.

C 15609 DC 5479 = H.P. 1886.
A. Very poor.

C 15623 DC 5368 = H.P. 1834
F good
(2) DC 5354 = H.P. 1830 A3F
(3) DC 5357 = H.P. 1832

[[end page]]
[[start page]]

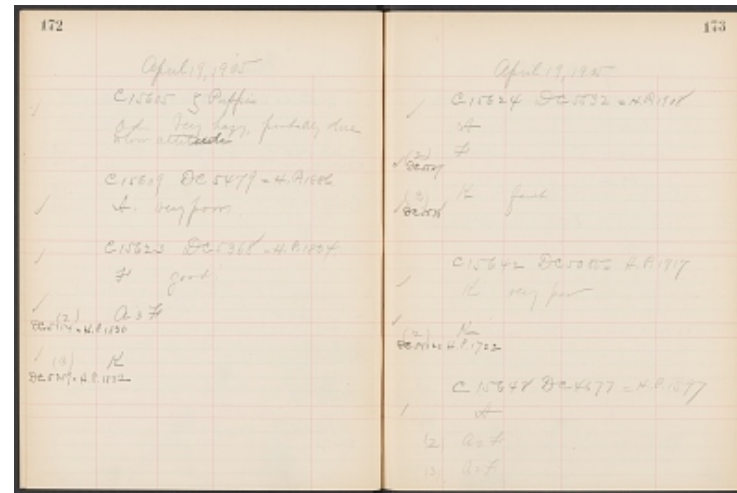
[[preprinted]] 173 [[/preprinted]]

April 19, 1905

C 15624 DC 5532 = H.P. 1908
A
(2) DC 5527 F
(3) DC 5538 K good

C 15642 DC 5085 = H.P. 1717
K very poor
(2) DC 5102 = H.P. 1722 K

C 15648 DC 4677 = H.P. 1597
A
(2) A2F
(3) A2F



Project PHaEDRA - Annie Jump Cannon 14
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Extracted Aug-29-2022 12:06:08

[[preprinted]] 178 [[/preprinted]]

[[underline]] May 2, 1905 [[/preprinted]]

C 15512 DC 3771 = H.P. 1260
A Very narrow & poor.

C 15523 DC 5647 = H.P. 1948.
A. Solar lines ft.
4026 perhaps seen.

C 15536
(1) DC 3333 = H.P. 1082 Probably B9A. K line is very faint, other lines only seen very indistinctly.
(2) H.P. 1075 On edge, focus very poor. Probably K.
(3) DC 3323 B8 or 9A. 4026 certainly seen of about same intensity as K. Other ft. lines barely seen.

[[end page]]
[[start page]]

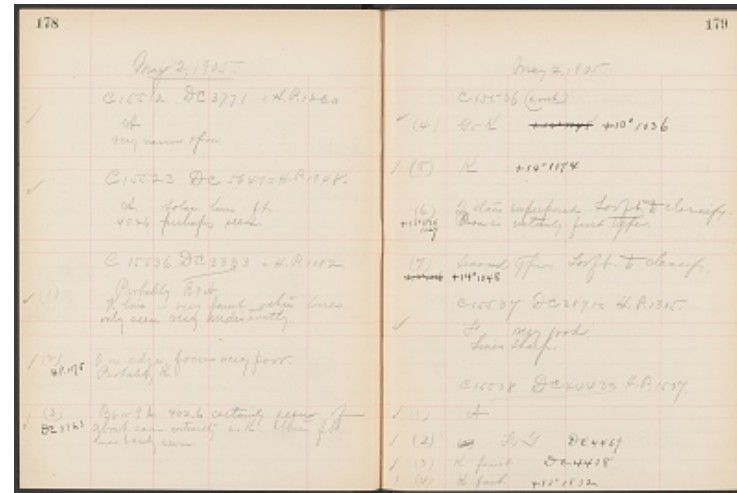
[[preprinted]] 179 [[/preprinted]]

May 2, 1905

C 15536 (cont.)
(4) G5K ~~[[/strickethrough]]~~ +14 degrees 1048 ~~[[/strickethrough]]~~ +13 degrees 1036
(5) K + 14 degrees 1074
(6) +13 degrees 1026, 1027 2 stars superposed. Too ft. to classify. One is certainly first type.
(7) ~~[[/strickethrough]]~~ +13 degrees 1036 ~~[[/strickethrough]]~~ +14 degrees 1048 Second type. Too ft. to classify.

C 15537 DC 3871 = H.P. 1305
F very good. Lines sharp.

C 15538
(1) DC 4443 = H.P. 1507 A
(2) F5G DC 4469
(3) K faint DC 4438
(4) K faint +13 degrees 1832



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 182 [[/preprinted]]

May 2, 1905

C 15517 DC 6929 = H.P. 2531

(1) A Pec. Resemble tau [^][[9]] Eridani

K very faint. 4128-31 is the strongest line except those of hydrogen. Two lines seen bet. H zeta and H eta, probably the silicon line 3556-63. These stars having silicon lines very strong seem to form a peculiar class.

(2) DC 6933 Marked by Mrs. F. "K line double" Class A3F Focus poor, lines all hazy.

C 15561 DC 6929

(1) Better plate than the above and shows more lines. 4026 seen and a line of shorter lambda than K.

this spectrum appears to be exactly like alpha Doradus.

(2) Marked by Mrs. F. "K double". fainter component towards red.

~~Other~~ ~~Hydrogen lines broad.~~

[[end page]]

[[start page]]

[[preprinted]] 183 [[/preprinted]]

May 2, 1905

C 15578 DC 6929

(1) A Pec.

(2) DC 6933 "Lines double" W.A.F. Sp. A2F

(3) -18 degrees 3997 K

(4) -19 degrees 4036 F

C 15584 DC 6929

(1) Too narrow

(2) " "[ditto for Too narrow]]

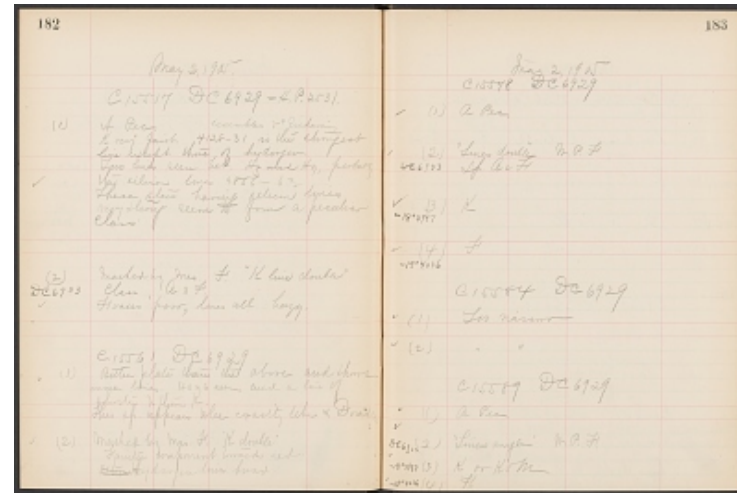
C 15589 DC 6929

(1) A Pec.

(2) DC 6913 Lines single W.A.F.

(3) -18 degrees 3997 K or K5M

(4) -19 degrees 4036 F



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 184 [[/preprinted]]

May 2, 1905

C 15603 DC 6929

- (1) A Pec.
- (2) DC 6933 Lines broad. K double. Fainter to red.
- (3) -18 degrees 3907 K faint.
- (4) -19 degrees 4036 F or F5G
- (3) & (4) Numbered incorrectly on plate?

C 15632 DC 6929

- (1) A Pec.
- (2) Lines broad

C 15 ~~6~~ 567 DC 6929

- (1) A Pec.
- (2) "Lines double" W.A.F.
- Lines broad A.J.C.

[[end page]]

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[[preprinted]] 185 [[/preprinted]]

May 2, 1905

C 15651 DC 6929 = H.P. 2531

- (1) A Pec.
- (2) DC 6933 A2F Broad lines
- (3) -19 degrees 4036 F or F5G
- (4) -18 degrees 3997 K

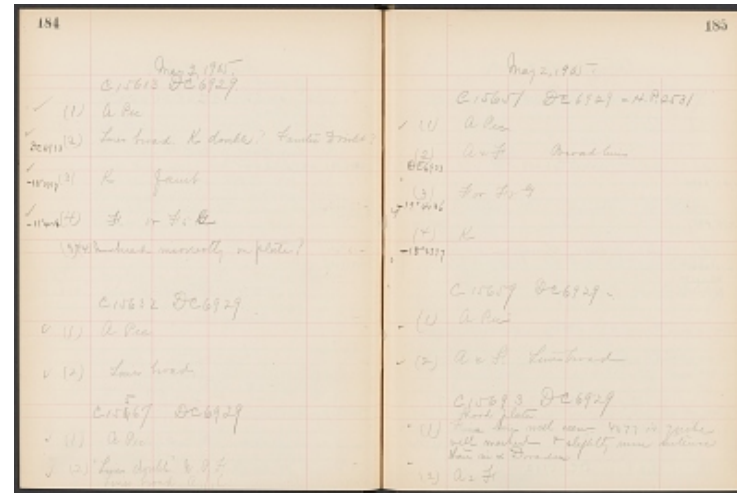
C 15659 DC 6929

- (1) A Pec.
- (2) A2F Lines broad

C 15693 DC 6929

Good plate

- (1) Fine lines well seen. 4077 is quite well marked & slightly more intense than in alpha Doradus.
- (2) A2F



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 186 [[/preprinted]]

May 2, 1905

C 15524 DC 6206 = H.P. 2157

(1) A

(2) DC 6201 +11 degrees 2484 A5F

(3) +10 degrees 2459 F

(4) +10 degrees 2468 DC 6223 = H.P. 2166 K probably showing an advance towards M! Near edge of plate.

C 15532 DC 6722 = H.P. 2423

A3F

C 15541 DC 5891 = H.P. 2017

(1) A3F

(2) DC 5902 = H.P. 2023 A2F

[[end page]]

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[[preprinted]] 187 [[/preprinted]]

May 2, 1905

C 15542 DC 6206 = H.P. 2157

(1) A

(2) DC 6201 A5F

(3) +10 degrees 2457 Probably F, faint K > H

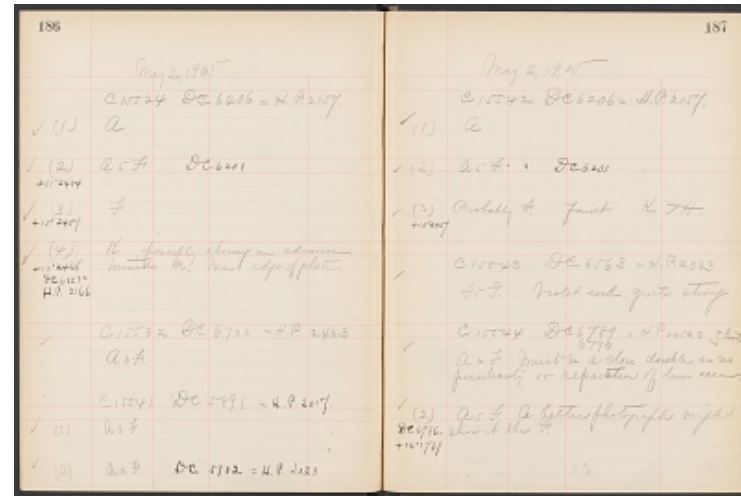
C 15543 DC 6563 = H.P. 2333

F5G. Violet end quite strong

C 15544 DC 6789/6796 = H.P. 2452, 3 zeta Bootis

A2F Must be a close double as no peculiarity or separation of lines seen.

(2) DC 6786 = +14 degrees 3789 A5F. A better photograph might show it to be F.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 188 [[/preprinted]]

May 2, 1905

C 15545 DC 5752 = H.P. 1978
K

(2) DC 5746 = H.P. 1976 = +3 degrees 2502. Probably K. very faint and poor. ~~DC 25~~ +3 degrees 2503 not seen. Image too faint to show any trace of this star.

C 15558 DC 5975 = H.P. 2051
A5F. Image narrow & lines burned out.

C 15577 DC 5967 = H.P. 2049
A

C 15579 DC 6954 = H.P. 2538
(1) A5F
(2) DC 6961 K +0 degrees 3337
(3) +1 degree 3059 K
(4) +1 degree 3052 K

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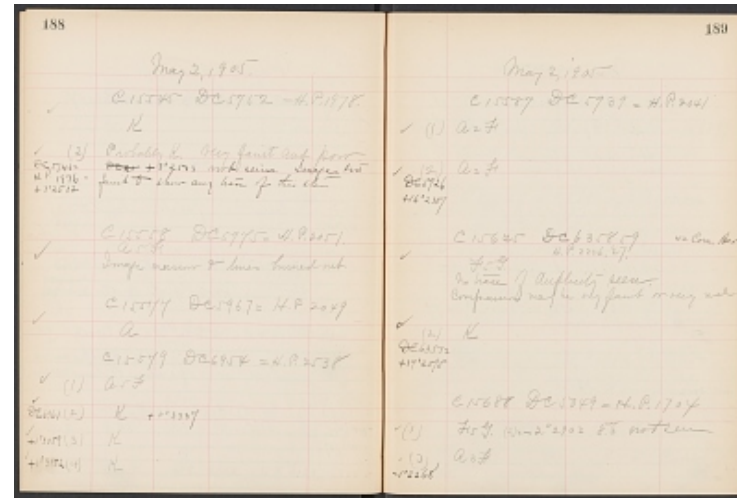
May 2, 1905

[[preprinted]] 189 [[/preprinted]]

C 15587 DC 5939 = H.P. 2041
(1) A2F
(2) DC 5926 +16 degrees 2307 A2F

C 15625 DC 6358, 59 = H.P. 2226, 27 42 Com. Ber.
F5G
No trace of duplicity seen. Companion may be very faint or very red.
(2) DC 6353 = +17 degrees 2595 K

C 15688 DC 5049 = H.P. 1704
(1) F5G
(2) -2 degrees 2902 8.3m not seen
(3) -1 degree 2268 A3F



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 190 [[/preprinted]]

May 2, 1905

C 15690 R Hydrae
Md H gamma, H delta, H zeta & H eta bright
H delta most intense
Very good spectrum.

C 15692 DC 5829 = H.P. 2002
B9A
K > 4026
4471 & 4481 about as in B8A

C 15665 DC 6059 = H.P. 2079
Narrow images
(1) A
(2) +15 degrees 2442 K very poor.

[[end page]]
[[start page]]

[[preprinted]] 191 [[/preprinted]]

[[underline]] May 5, 1905 [[/underline]]

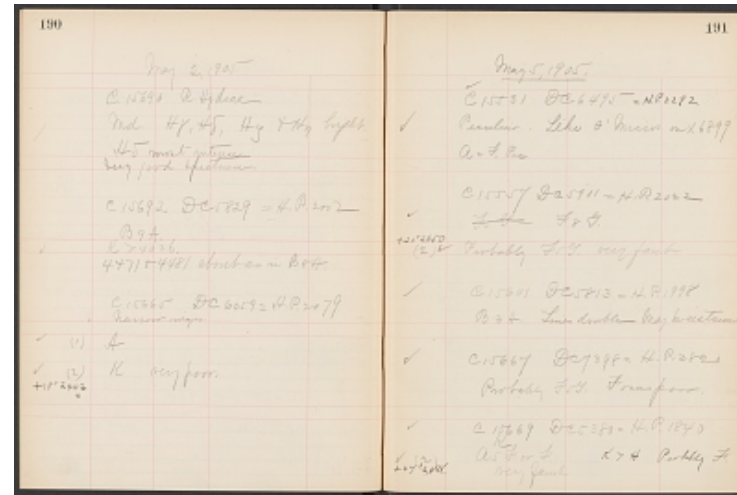
C 15531 DC 6495 = H.P. 2292
Peculiar Like theta' Micros. on X 6899
A2F Pec.

C 15557 DC 5901 = H.P. 2022
[[/strikethrough]] F5G [[/strikethrough]] F8G
(2) +20 degrees 2650 Probably F5G very faint

C 15601 DC 5813 = H.P. 1998
B3A Lines double. May be instrumental

C 15667 DC 7398 = H.P. 2820
Probably F5G. Focus poor

C 15669 DC 5380 = H.P. 1840
K
(2) +37 degrees 2088 A5F or F K > H Probably F
very faint.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 192 [[/preprinted]]

May 5, 1905

C 15670 DC 5305 = H.P. 1808
A

C 15682 DC 5691 = H.P. 1962
A2F

C 15686 DC 5197 = H.P. 1756
A2F

C 15691 DC 4782 = H.P. 1634
(1) omicron Cancr A ~~5~~ 3F K not quite
equal to K in (2). Lines quite sharp in both stars.
(2) H.P. 1635 = DC 4785 A5F K line stronger and wider than in (1)

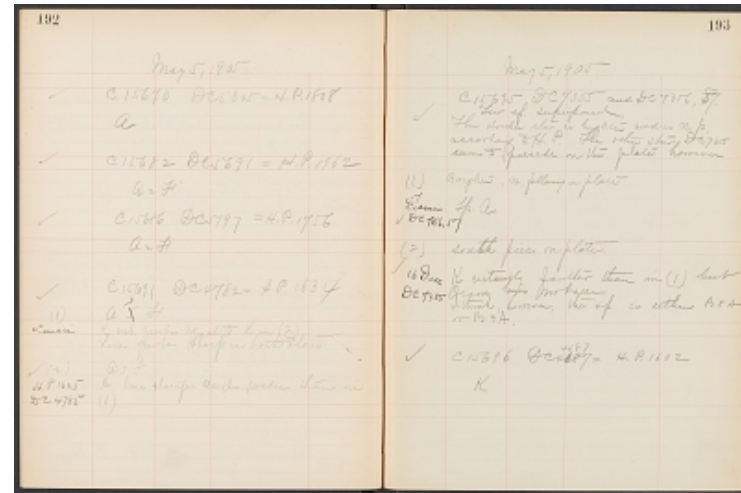
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[[preprinted]] 193 [[/preprinted]]

May 5, 1905

C 15695 DC 7355 and DC 7356, 57
Two sp. superposed
The double star is brighter and is n.p. according to H.P. The other star
DC 7355 seems to precede on the plate however.
(1) 17 Draconis DC 7356, 57 Brighter, n following on plate.
(2) 16 Drac. DC 7355 South prec. on plate
K certainly fainter than in (1) but Orion lines not seen. I think, however,
the sp. is either B8A or B9A.

C 15696 DC 4687 = H.P. 1602
K



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 194 [[/preprinted]]

[[underline]] May 7, 1905 [[/underline]]

C 15435 DC 4083 = H.P. 1368
Images very narrow & poor
H beta not seen. Image burned out.
(2) H.P. 1370 H beta not seen, image burned out.
Other stars too poor.

C 15445 H.P. 1368
H beta not seen distinctly
H.P. 1370 H beta not seen. Image dense.
(3) A.G.C. 9168 B3A

C 15474 H.P. 1368 & 1370
Very poor plate. H beta not seen in either star.

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[[preprinted]] 195 [[/preprinted]]

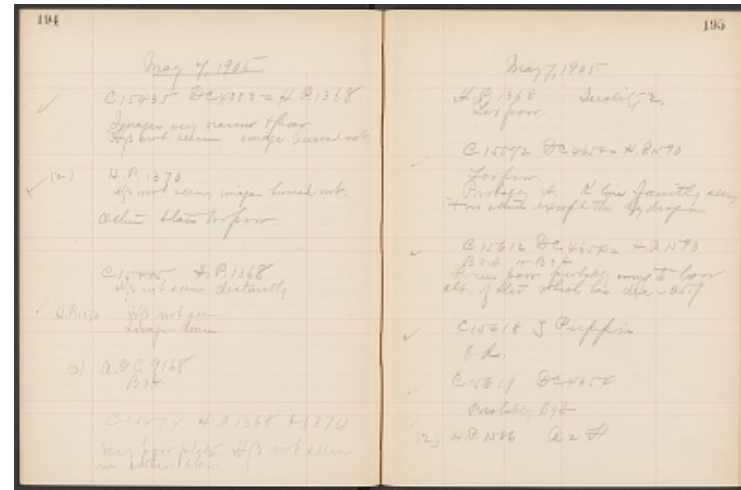
May 7, 1905

H.P. 1368 Quality 2
Too poor

C 15572 DC 4654 = H.P. 1590
Too poor. Probably A. K line faintly seen & no others except the hydrogen.

C 15612 DC 4654 = H.P. 1590
B8A or B9A
Focus poor probably owing to poor alt. of star which has dec -25.9

C 15618 zeta Puppis
Probably B9A
(2) H.P. 1586 A2F



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 196 [[/preprinted]]

May 7, 1905

C 15621 DC 4654
B9A K about as strong as in A sp. but 4026 is seen.
(2) H.P. 1586 A2F.

C 15676 DC 7408 = H.P. 2826
Slightly peculiar
4077 is very strong and fine.
resembles theta' Micros. See DC 6495 p. 191

C 15679 DC 5121 = H.P. 1727
(1) A5F
(2) DC 5153 = H.P. 1738 K

C 15689 DC 5269 = H.P. 1792
A5F

[[end page]]
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[[preprinted]] 197 [[/preprinted]]

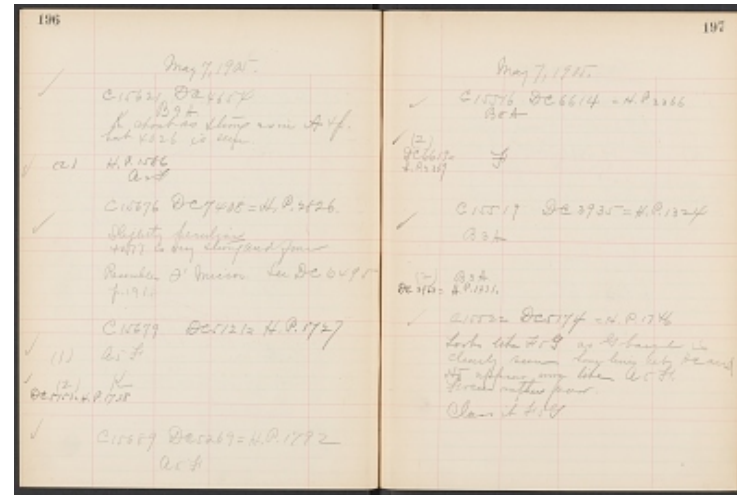
May 7, 1905

C 15516 DC 6614 = H.P. 2366
B8A
(2) DC 6619 = H.P. 2369 F

C 15519 DC 3935 = H.P. 1324
B3A
(2) DC 3968 = H.P. 1331 B3A

C 15522 DC 5174 = H.P. 1746

Looks like F5G as G band is clearly seen. Some lines bet. H epsilon and
H delta appear more like A5F. Focus rather poor.
Class it F5G.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 198 [[/preprinted]]

May 7, 1905

C 15548 DC 6909

G

(2) DC 6915 = H.P. 2523 A

(3) DC 6888 = H.P. 2511 A Pec. Like tau ^[[9]] Erid. ?

C 15560 DC 7115

A Pec. Like tau ^[[9]] Erid. ?

K very faint. 4128-31 strong

[[end page]]

[[start page]]

[[preprinted]] 199 [[/preprinted]]

[[striketrough]]

[[underline]] May 23, 1905 [[/underline]]

C 15376 omicron Ceti

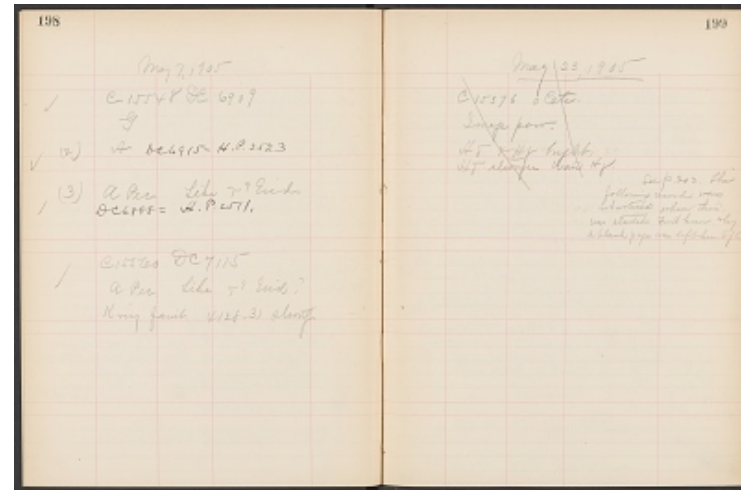
Image poor

H delta & H gamma bright.

H delta stronger than H gamma.

[[/striketrough]]

See p. 202. The following record was not noticed when this was studied.
Don't know why a blank page was left then. A.J.C.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 200 [[/preprinted]]

[[underlined]] May 13, 1905 [[/underlined]]

C 15528 DC 3853 = A.G.C. 8522
B3A. Lines hazy, probably due to low altitude. Dec. -25

C 15613 DC 5160 = H.P. 1741
"H beta bright" W.A.F.

H beta is the very faintest bright line. Int. = 1
the dark band H beta is also faint, and very wide & hazy. The Orion lines
are very faint except 4026 & 4009, 4471, 4287 & 4144 indistinctly seen.
The image is too poor to class the sp. with certainty. It may be B2A or
B3A or B5A
(2) H.P. 1743 = DC 5168 G

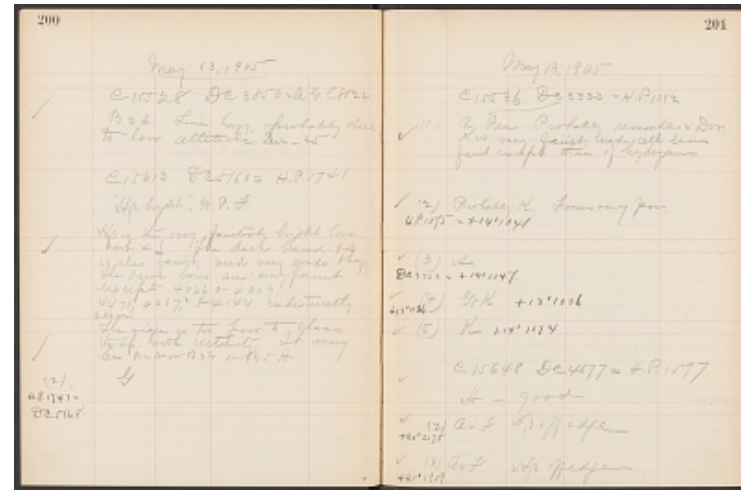
[[end page]]
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[[preprinted]] 201 [[/preprinted]]

May 13, 1905

C 15536
(1) DC 3333 = H.P. 1082 A pec. Probably resembles alpha Dor. K is
very faint and all lines faint except those of hydrogen.
(2) H.P. 1075 = +14 degrees 1041 Probably K. Focus very poor.
(3) DC 3323 = +14 degrees 1047 A
(4) +13 degrees 1036 G5K
(5) +14 degrees 1074 K

C 15648 DC 4677 = H.P. 1597
A - good
(2) +20 degrees 2178 A2F H beta off edge.
(3) +21 degrees 1909 A2F H beta off edge.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 202 [[/preprinted]]

[[underlined]] May 23, 1905 [[/underlined]]

C 15376 omicron Ceti Jan. 26, 1905

H delta & H gamma bright

H delta stronger

~~[[strikethrough]]~~ Oth ~~[[/strikethrough]]~~ Several other portions of the sp. seem to be as bright as H gamma but they may be spaces.

H & K are broad & dark. No lines seen of shorter lambda than K.

Probably if H zeta were bright, it would be visible.

C 15380 omicron Ceti Jan. 28, 1905

Very sharp at region of H & K.

H epsilon is divided into two portions, widely separated, of which the one of gr. lambda is more intense. On comparing this region with H & K in DC 3537 on C 15554, the appearance is almost the same.

H zeta is a very narrow dark line with a very slight brightness to red.

[[end page]]

[[start page]]

[[preprinted]] 203 [[/preprinted]]

May 23, 1905

C 15403 omicron Ceti Feb. 2, 1905

Image very narrow. H zeta seen as a narrow dark line bright to red.

C 15433 omicron Ceti Feb. 7, 1905.

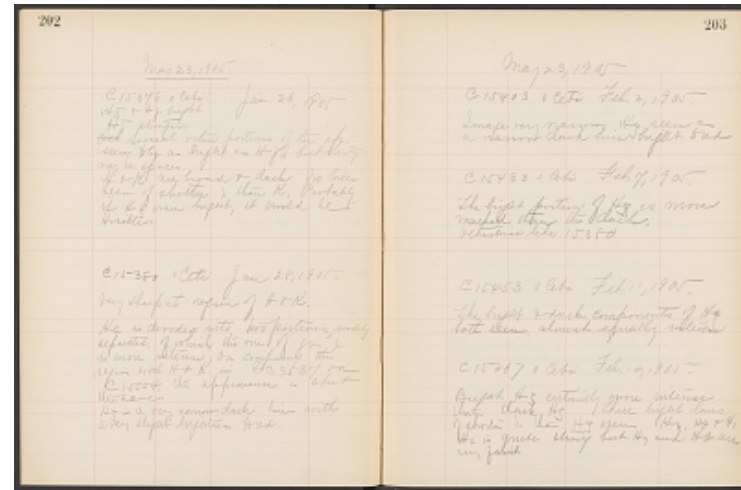
The bright portion of H zeta is more marked than the dark. otherwise like 15380.

C 15453 omicron Ceti Feb. 11, 1905

The bright & dark components of H zeta both seen, almost equally intense.

C 15467 omicron Ceti Feb. 14, 1905

Bright H zeta certainly more intense than dark H zeta. Three bright lines of shorter lambda than H zeta seen. H eta, H theta & H iota. H iota is quite strong but H eta and H theta are very faint.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 204 [[/preprinted]]

May 23, 1905

C 15469 omicron Ceti Feb. 16, 1905

Plate rather thin

Bright H zeta seems a little weaker than dark H zeta.

C 15497 omicron Ceti Feb. 25, 1905

Good plate.

Order of int. of hyd. lines

H delta, H gamma, H zeta, H iota, H eta, H theta

H theta is barely seen. The dark component of H zeta is seen very distinctly. Dark component of H eta is suspected.

[[end page]]

[[start page]]

[[preprinted]] 205 [[/preprinted]]

[[underlined]] Saturday, May 27, 1905 [[/underlined]]

C 15673 DC 6929

A Pec 4128-31 strong as in tau [^][9] Erid.

DC 6933 A2F Lines broad & hazy

C 15697 DC 5566

F Lines very sharp

C 15698 DC 6155

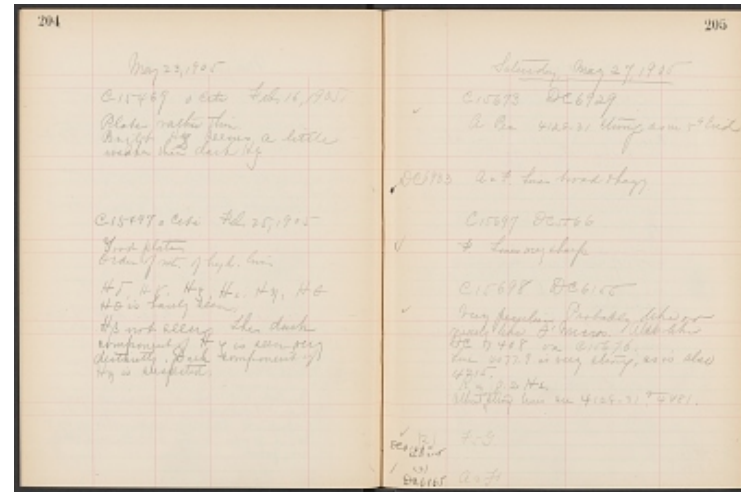
Very peculiar. Probably like or nearly like theta' Micros. Also like DC 7408 on C 15676. Line 4077.9 is very strong, as is also 4215.

K = 0.2 H epsilon

Other [^][[faint]] strong lines are 4128-31 & 4481

(2) DC 6146 = H.P. 2118 F5G

(3) DC 6165 A3F.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 206 [[/preprinted]]

May 27, '05

C 15705 DC 5479

B9A

Poor, but K & 4026 have about the proper intensity for B9A.

C 15707 DC 7395

A Pec.

K is as in sp. A

[[strikethrough]] 4471 & 4481 are as in B8A [[/strikethrough]] Sp.
probably composite but not marked enough to class it certainly
composite.

4128-31 about as in B8A. 4077 also seen and traces of many faint lines.

C 15708 DC 7545 = H.P. 2902

A or A2F. H epsilon looks double. Sp. near edge.

(2) DC 7546 = H.P. 2904 A

[[end page]]

[[start page]]

[[preprinted]] 207 [[/preprinted]]

May 27, '05

C 15709 DC 5417

A2F. Lines in poor focus.

C 15716 zeta Urs. Maj.

A2F Comp. very poor.

Alcor = A5F

C 15721 DC 5691

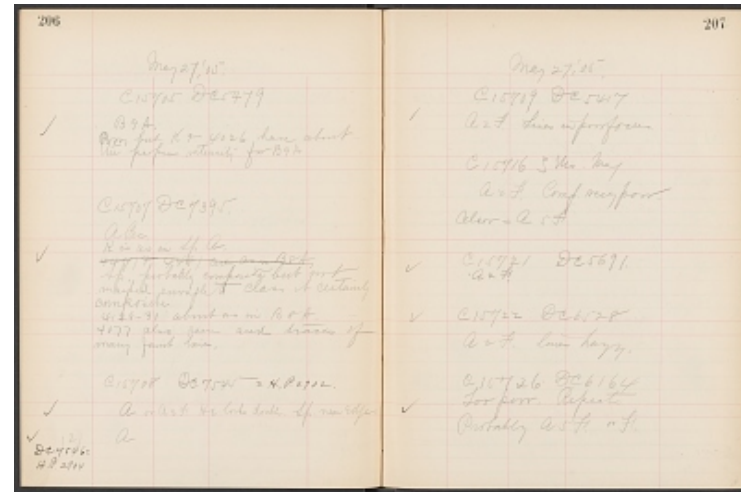
A2F.

C 15722 DC 6528

A2F. lines hazy.

C 15726 DC 6164

Too poor. Repeat.
probably A5F or F.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 208 [[/preprinted]]

May 27, '05

C 15727 DC 6670 = H.P. 2393
B9A Very poor
(2) A Pec. Lines 4128-31 strongest

C 15729 DC 7838 = H.P. 3013
F5G? May possibly be F but K is > than H. Hydrogen lines look stronger than in F5G.
Class it F.

C 15731 DC 6658
Quality 1 Nothing seen.

C 15734 DC 6658
peculiar. Like tau [^][[9]] Eridani. 4128-31 is the strongest line except the hydrogen. K extremely ft. if really present. Traces of numerous ft. lines seen.

[[end page]]
[[start page]]

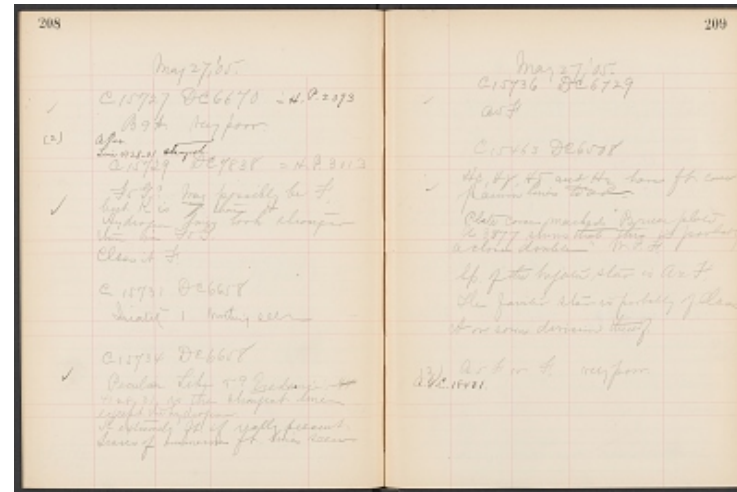
[[preprinted]] 209 [[/preprinted]]

May 27, '05

C 15736 DC 6729
A5F

C 15463 DC 6508
H beta, H gamma, H delta and H epsilon have ft. companion lines to red.
Plate cover marked "Bruce plate A 3277 shows that this is probably a close double" W.P.F.

Sp. of the brighter star is A2F.
The fainter star is probably of Class A or some division thereof.
(2) A.G.C. 18431 A5F or F. Very poor



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 210 [[/preprinted]]

[[underlined]] June 3, 1905 [[/underlined]]

C 15699 Qual. 1 Nothing on plate

C 15701 DC 6603 Very poor

A2F

(2) DC 6623 Too poor

A2F?

C 15715 DC 5057 = H.P. 1706

G

(2) ~~[[striketrough]]~~ +69 degrees 5313 ~~[[/striketrough]]~~ +69 degrees 531

9h 29.8

Sp. K

[[end page]]

[[start page]]

[[preprinted]] 211 [[/preprinted]]

[[underlined]] June 12, 1905 [[/underlined]]

C 15664 DC 6254, 6255 = H.P. 2188, 2189

Two spectra nearly superposed. The spectra are very nearly alike. The K line, however, of the northern star is slightly less intense than that of the southern.

H.P. 2188 preceding, northern

Sp. A

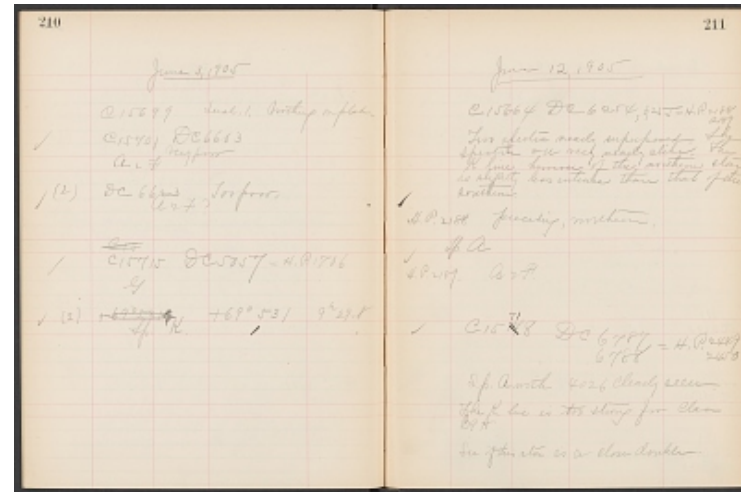
H.P. 2189 A2F

C 15 ~~[[striketrough]]~~ 17 ~~[[/striketrough]]~~ 718 DC 6787/6788 = H.P.
2449/2450

Sp. A with 4026 clearly seen.

the K line is too strong for class B9A.

See if this star is a close double.



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 212 [[/preprinted]]

[[underlined]] Tuesday, June 27, 1905 [[/underlined]]

C 15740 DC 6919
A5F or F
Very poor
other star too poor

C 15739 DC 6697
A5F or F
very poor

C 15743 DC 6843
(1) DC 6843 G5K
(2) ~~[[strikethrough]] -5 degrees 3845~~ ~~[[/strikethrough]]~~ DC 6852 = +19
degrees 2881
K ~~[[strikethrough]] 14 8.8 -5 56.5~~ ~~[[/strikethrough]]~~ 14 46.8 +19 45 (1855)
(3) DC 6826 +20 degrees 3026
B8 or 9A. Very poor focus. No lines distinctly seen except the hydrogen.

[[end page]]
[[start page]]

[[preprinted]] 213 [[/preprinted]]

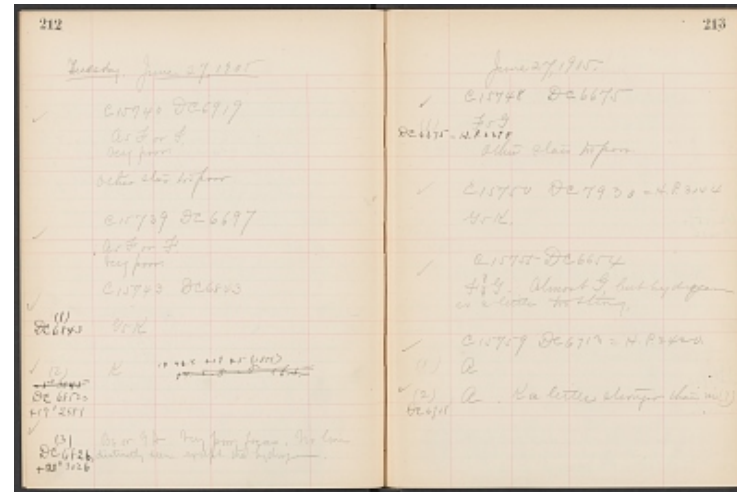
June 27, 1905

C 15748 DC 6675
(1) DC 6675 = H.P. 2378 F5G
Other stars too poor.

C 15750 DC 7930 = H.P. 3144
G5K.

C 15755 DC 6654
F ~~[[strikethrough]] 5~~ ~~[[/strikethrough]]~~ 8G. Almost G but hydrogen is a
little too strong.

C 15759 DC 6713 = H.P. 2420
(1) A
(2) DC 6718 A. K a little stronger than in (1)



Project PHaEDRA - Annie Jump Cannon 14
Transcribed and Reviewed by Digital Volunteers
Extracted Aug-29-2022 12:06:08

[[preprinted]] 214 [[/preprinted]]

June 27, 1905

C 15774 DC 7118
B8A

C 15775 DC 8849 = H.P. 3399
G
(2) DC 8859 = H.P. 3402 K

C 15782 DC 8500 = H.P. 3231
K.

C 15785 DC 8476 = H.P. 3222
B8A
(2) +2 degrees 3730 K

C 15786 DC 8612 = H.P. 3284
Too poor. B8A or B9A
No lines clearly seen except the hydrogen.

[[end page]]
[[start page]]

[[preprinted]] 215 [[/preprinted]]

June 27, 1905.

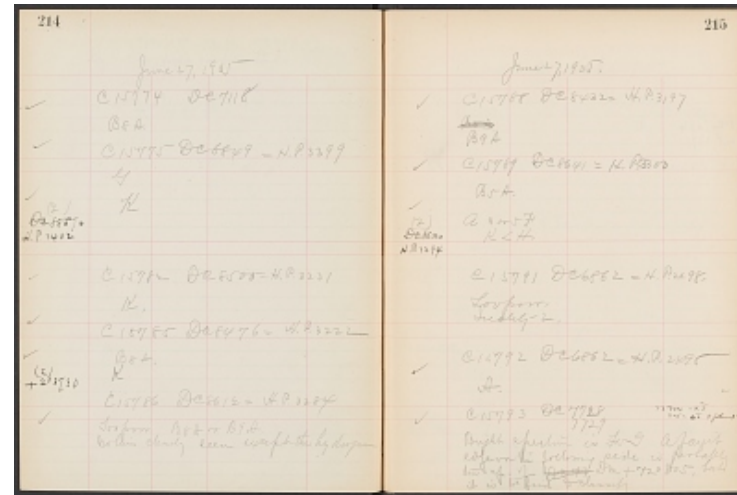
C 15788 DC 8432 = H.P. 3197
[[strikethrough]] B8A [[/strikethrough]] B9A

C 15789 DC 8641 = H.P. 3300
B5A
(2) DC 8632 = H.P. 3294 A3 or 5F K < H

C 15791 DC 6862 = H.P. 2498
Too poor
Quality 2

C 15792 DC 6862 = H.P. 2498
A

C 15793 DC 7728/7729 72 degrees 804 = 4.8m
805 = 6.2m & follows 1m
Bright spectrum is F5G. A faint edge on the following side is probably
the sp. of [[strikethrough]] DC 77 [[/strikethrough]] DM +72 degrees 805,
but it is too faint to classify.



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[[preprinted]] 216 [[/preprinted]]

June 27, 1905

C 15793
(2) DC 7693 = H.P. 2971 K

C 15794 DC 8134 = H.P. 3110
A2F

[[end page]]
[[start page]]

[[preprinted]] 217 [[/preprinted]]

[[underlined]] Wednesday, Sept. 6, 1905 [[/underlined]]

C 15797 DC 6894 = H.P. 2512
K

C 15800 DC 9023 = DM +23 degrees 3896
B3A

C 15814 DC 9199 = H.P. 3619
(1) B5A
(2) -23 degrees 4085 = G

C 15827 DC 7424 = H.P. 2832
A? Too poor
DC7435 = H.P. 2838 = K

C 15831 DC 7135
A2F

C 15832 DC 7146 = H.P. 2657
(1) A2F
(2) K5M = DC 7082 = H.P. 2616

Page	Date	Object	Notes
216	June 27, 1905	C 15793	DC 7693 = H.P. 2971 K
216		C 15794	DC 8134 = H.P. 3110 A2F
217	Wednesday, Sept. 6, 1905	C 15797	DC 6894 = H.P. 2512 K
217		C 15800	DC 9023 = DM +23 degrees 3896 B3A
217		C 15814	DC 9199 = H.P. 3619 (1) B5A (2) -23 degrees 4085 = G
217		C 15827	DC 7424 = H.P. 2832 A? Too poor DC7435 = H.P. 2838 = K
217		C 15831	DC 7135 A2F
217		C 15832	DC 7146 = H.P. 2657 (1) A2F (2) K5M = DC 7082 = H.P. 2616

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[[preprinted]] 218 [[/preprinted]]

Sept. 6, 1905

C 15833 DC 7823 = H.P. 3019
F5G

C 15834 DC 8445 = H.P. 3211
(1) A
(2) DC 8520 = +75 degrees 683 A Very poor focus

C 15835 DC 8650 = H.P. 3313
F

C 15836 DC 7757 = H.P. 2989
A

C 15837 DC 7202 = H.P. 2694
Very poor focus
B8A or B9A. K line & 4026 ~~clearly~~ certainly seen.

C 15838 DC 7487/7488 = H.P. 2865/2866
F5G
No trace of duplicity

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[[preprinted]] 219 [[/preprinted]]

Sept. 6, 1905

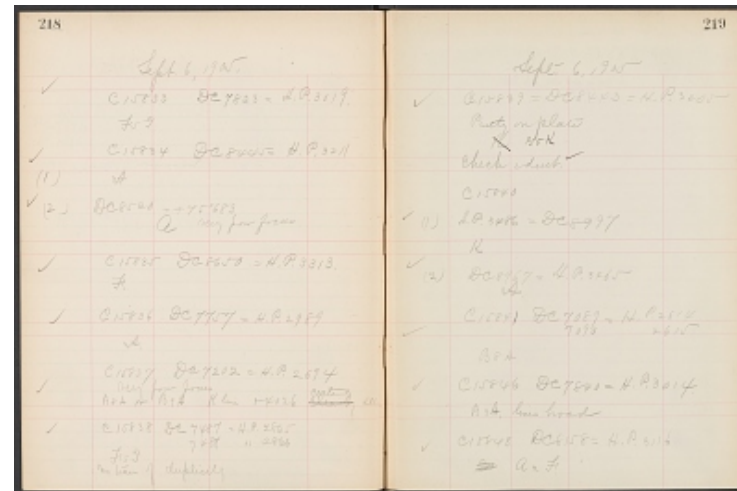
C 15839 = DC 8443 = H.P. 3205
Partly on plate
~~K~~ G5K
Check ident.

C 15840
(1) H.P. 3486 = DC 8997 K
(2) DC 8967 = H.P. 3465 A

C 15841 DC 7089/7090 = H.P. 2614/2615
B8A

C 15846 DC 7840 = H.P. 3014
B3A. lines broad

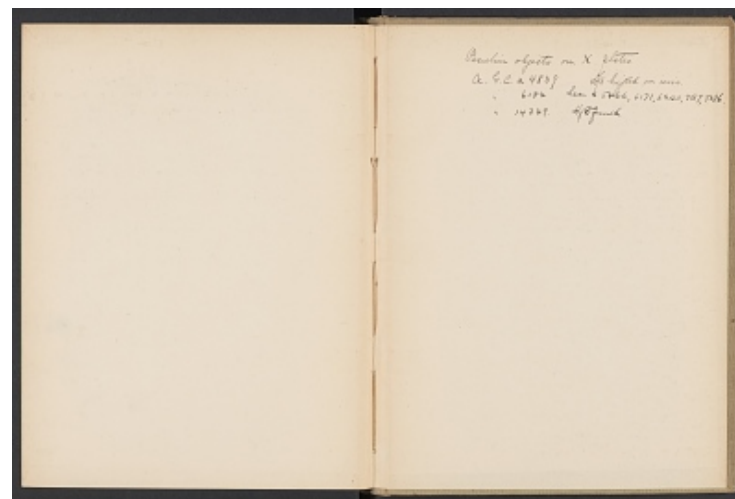
C 15848 DC 8158 = H.P. 3116
~~A~~ A2F



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Peculiar objects on X plates
A.G.C. 24839 H beta bright or invis.
"[[ditto for A.G.C.]] 6182 See X 5466, 6171, 6240, 7167, 7296
"[[ditto for A.G.C.]] 14349 H beta faint.



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