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Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23

Extracted on Dec-02-2022 11:16:40

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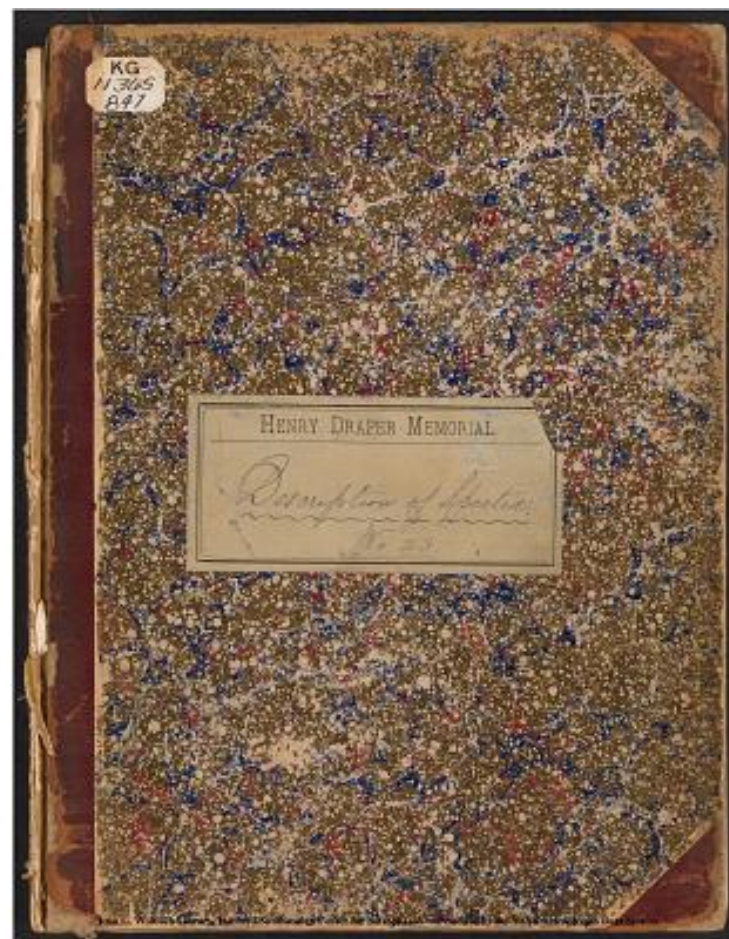
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[[front page]]

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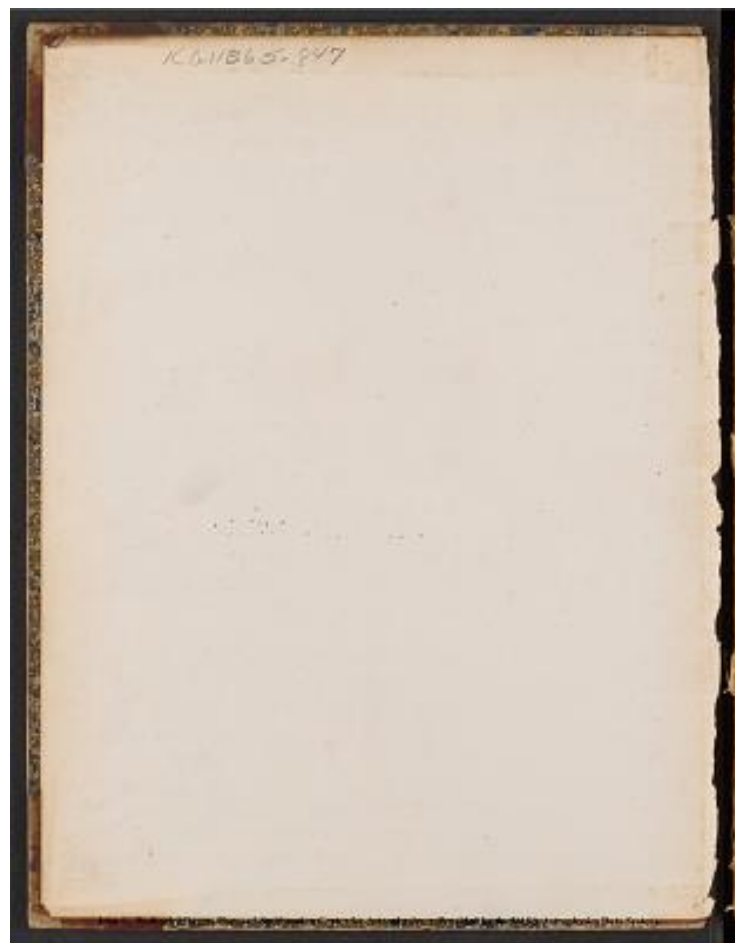
HENRY DRAPER MEMORIAL
Description of Spectra
No. 23

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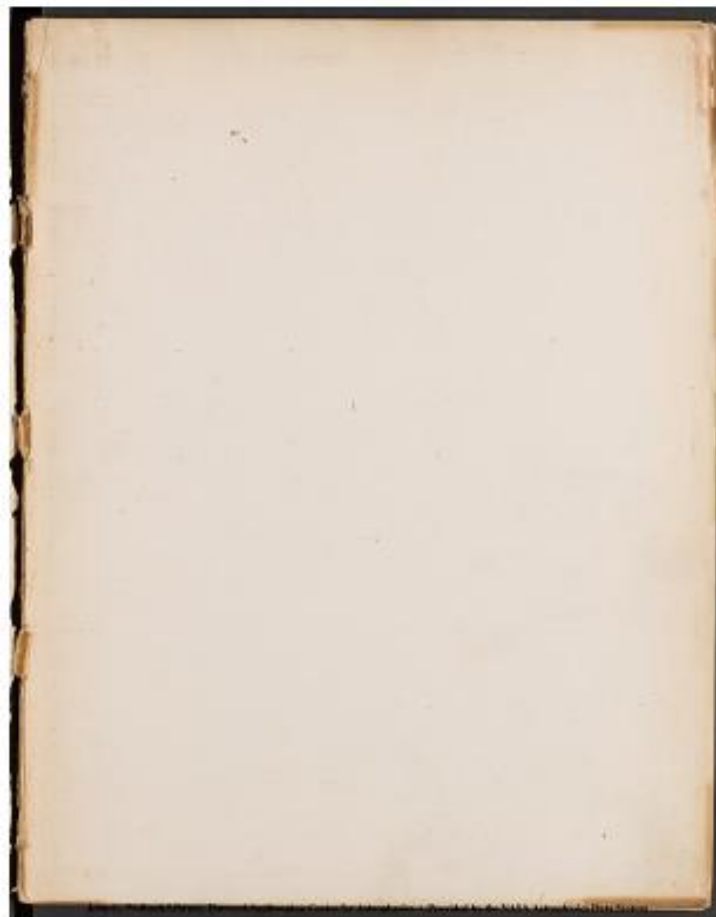


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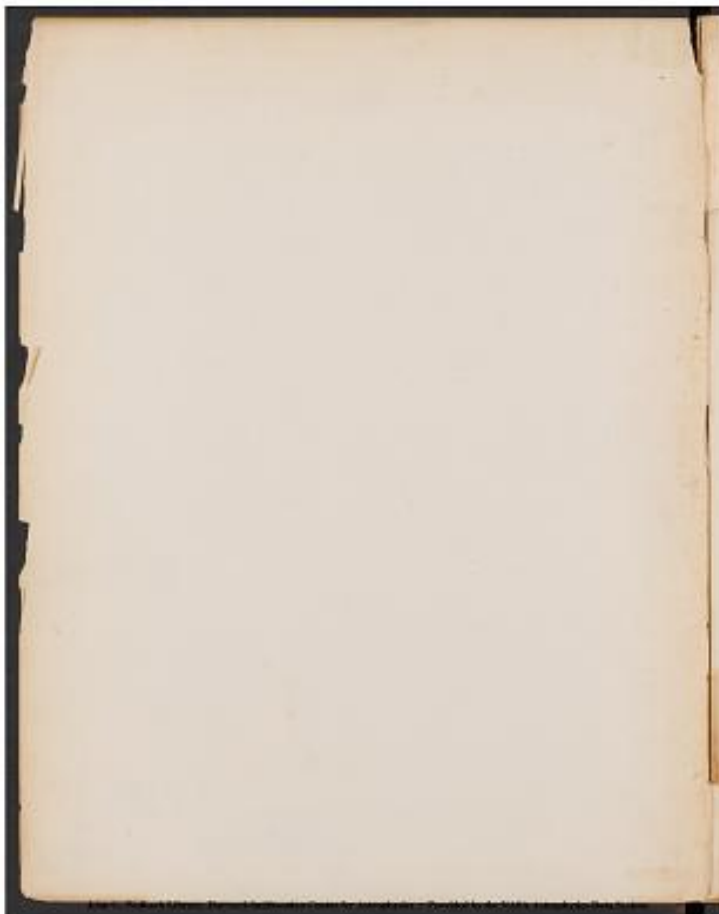


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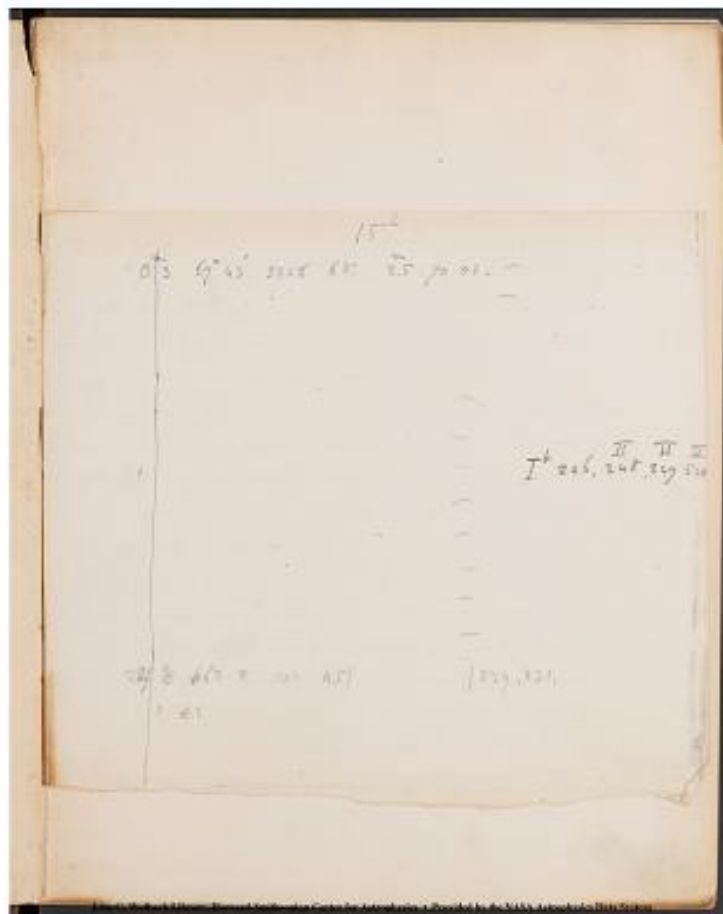
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[[graph]]
15h

0 3 69° 43' 3256 6.8. 2.5m 70 02

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lb 246.248.369.528

248 652 8 102 4.5]
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1
Index

No. Book | Letter | Plate | Page | No. Book | Letter | Plate | Page |

3	E	196	4	3	E	628	26
		284	4			682	28
		186	6			742	28
		173	8			693	28
		161	8			770	30
		258	8			800	30
		217	10			696	30
		275	10			803	30
		341	10			720	32
		165	10			753	32
		185	12			774	34
		166	12			795	34
		446	14			787	36
		458	14			928	38
		441	16			834	42
		495	16			738	44
		435	18				
		508	18				
		500	20				
		546	20				
		509	20				
		536	20				
		550	22				
		555	22				
		560	24				
		587	24				
		601	24				
		617	26				

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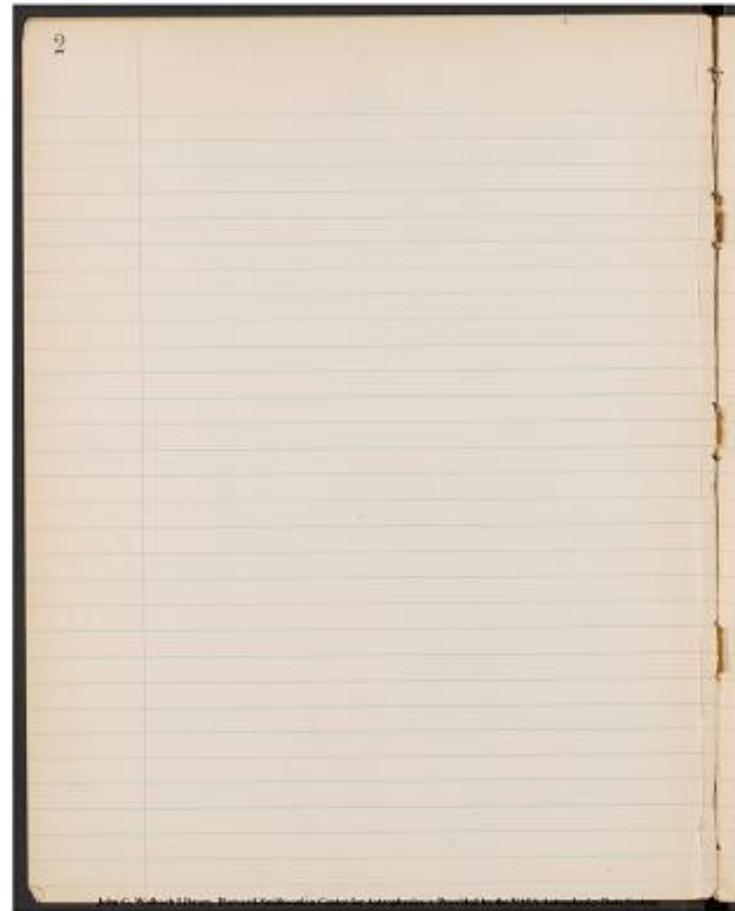
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Index

No. Book	Letter	Plate	Page	No. Book	Letter	Plate	Page
3	E	196	4	3	E	628	26
		284	4			682	28
		186	6			742	28
		173	8			693	28
		161	8			770	30
		258	8			800	30
		217	10			696	30
		275	10			803	30
		341	10			720	32
		165	10			753	32
		185	12			774	34
		166	12			795	34
		446	14			787	36
		458	14			928	38
		441	16			834	42
		495	16			738	44
		435	18				
		508	18				
		500	20				
		546	20				
		509	20				
		536	20				
		550	22				
		555	22				
		560	24				
		587	24				
		601	24				
		617	26				

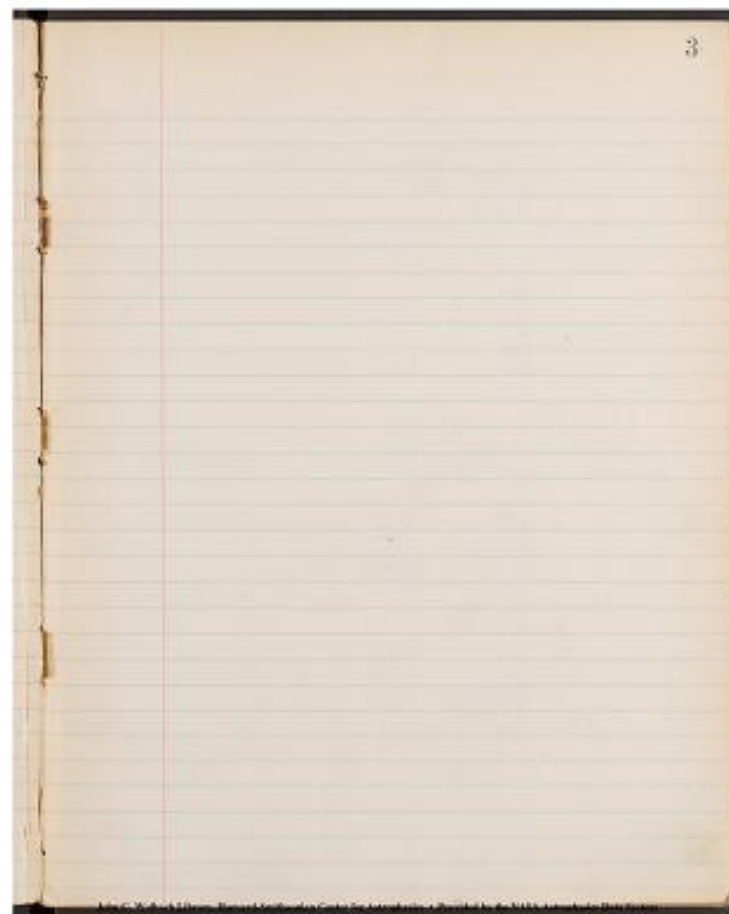
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Plate 196 October 21, 1887

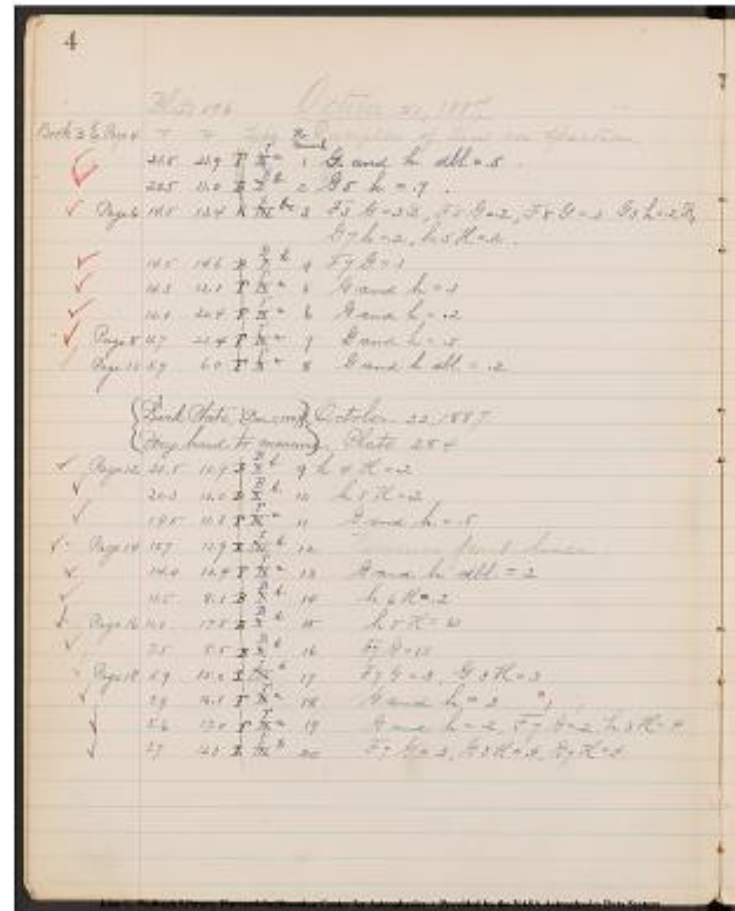
| Book 3E. Page 4 | v | H | Type | [[No. Rework]] | Description of Lines on Spectra. |

| 21.5 | 21.9 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F | 1 | G and h all = .5 |
| 20.5 | 11.0 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B | 2 | G_5 h = .7 |
| Page 6 | 14.5 | 13.4 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ K | 3 | F_3 G =
.3 B, F_5 G = .2, F_8 G = .3 G_3 h = .2 B, G_7 h = .2, h_5 H = .2 |
14.5	14.6	~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B	4	F_7 G = .1
14.3	12.1	~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F	5	G and h = .1
12.0	20.4	~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F	6	G and h = .2
Page 8	11.7	22.4	~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F	7
.5				
Page 10	5.9	6.0	~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F	8
= .2 |

{ Dark Plate, {Dec. 5, 1887} Very hard to measure }

October 22, 1887. Plate 284

| Page 12 | 20.5 | 10.9 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B | 9 | h_4 H =
.2 |
| 20.3 | 10.0 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B | 10 | h_5 H = .2 |
| 19.5 | 11.3 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F | 11 | G and h = .5 |
| Page 14 | 15.7 | 12.9 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ I | 12 | ~~[[?]]~~ faint
lines. |
| 14.0 | 10.4 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F | 13 | G and h all = .2 |
| 11.5 | 8.1 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B | 14 | h_6 H = .2 |
| Page 16 | 11.0 | 17.8 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B | 15 | h_5 H =
1.0 |
| 7.5 | 8.5 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ B | 16 | F_7 G = 1.0 |
| Page 18 | 5.9 | 15.0 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ I | 17 | F_7 G =
.3, G_3 H = .3 |
| 5.9 | 16.1 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F | 18 | G and h = .3 |
| 5.6 | 17.0 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ F | 19 | G and h = .2, F_7
G = .2, h_3 H = .4 |
| 3.7 | 13.3 | ~~[[strikethrough]]~~ ~~[[strikethrough]]~~ I | 20 | F_7 G = .3, G_3 H
= .4, G_7 H = .4 |



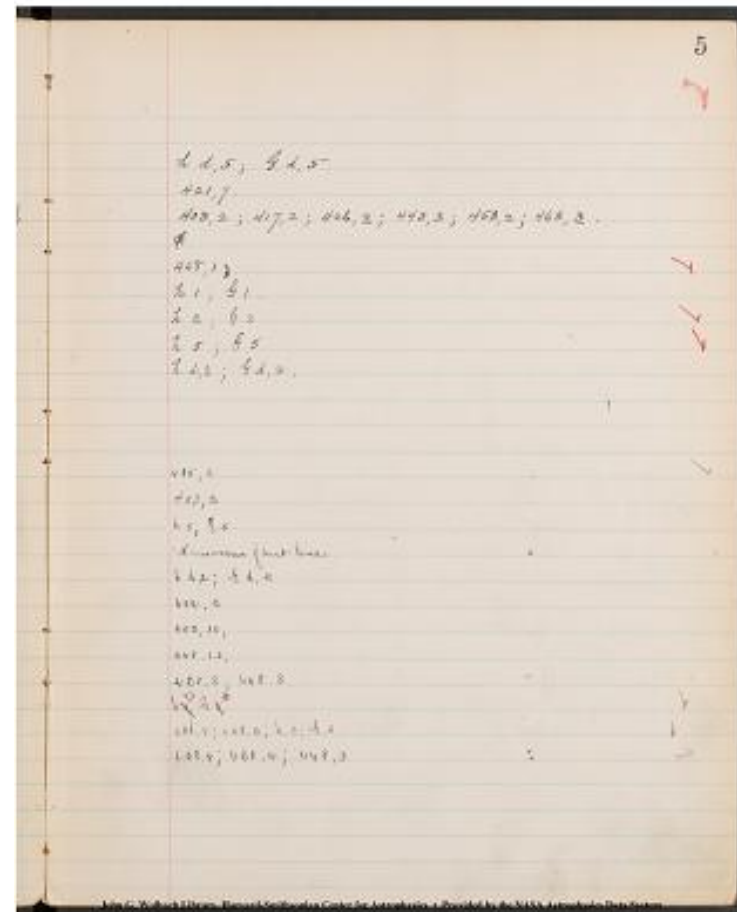
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5

h d, 5; G d, 5
 421, 7.
 403, 2; 417, 2; 426, 2; 443, 3; 458, 2; 468, 3.
~~[[strikethrough]]2[[/strikethrough]]~~
 448, 1
 h 1; G 1.
 h 2; G 2.
 h 5; G 5
 h d, 2; g d, 2.

405, 2
 403, 2
 h 5; G. 5
 Numerous faint lines
 h d, 2; G d, 2
 402, 2
 403, 1.0,
 448, 1.0,
 421.3; 448.3
 h ~~[[strikethrough]]5[[/strikethrough]]~~3; G
~~[[strikethrough]]5[[/strikethrough]]~~3
 406, 4; 448, 2; h, 2; G, 2
 408, 4; 421, 4; 448, 3

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October, 24, 1887.
Plate 186.

[6 columned table]

Book 3 Page 20|V|H|Type|No. Remark|Description of lines on Spectra.|

||21.0|11.1|B|~~[[a]]~~||21|F 5 G = .4, h dbl.,
h 5 H = .2|

||20.8|6.2|F|~~[[a]]~~||22|G & h = .2|

||18.1|7.5|B|~~[[a]]~~||23|G dbl.|

||19.3|16.8|F|~~[[a]]~~||24|G and h = .5
several lines below K|

|Page 22|13.8|8.1|K|~~[[b.c]]~~||25|F 3 G
= .5B, F 5 G = .5B., F 8 G = .2, F 9 G = .5 B., Several faint lines between G
and h; h B? several lines below K.|

||13.1|17.4|L|~~[[a]]~~||26|G and h = .5|

||13.6|21.0|B|~~[[a]]~~||27|h 5 H = .4|

||12.4|20.7|G|~~[[b.c]]~~||25|F 7 G = .2, F 8
G = .2B.|

||11.9|19.5|K|~~[[b.c]]~~||29|F 3 G = .3B.,
F 4 G = .2, F 6 G = .3, F 7 G = .1, F 8 G = .3, F 5 G = .2 B, G 7 H = .3B.
several lines below K|

|Page 24|11.0|6.2|F|~~[[a]]~~||30|G and h
= .2|

||10.6|17.5|F|~~[[a]]~~||31|G and h = .5|

||10.5|17.9|F|~~[[a]]~~||32|G and h = .5|

||9.2|7.9|F|~~[[a]]~~||33|G and h = .2|

||8.5|9.1|F|~~[[a]]~~||34|G and h = .3|

||9.2|16.7|F|~~[[a]]~~||35|G and h = .4
several lines below K.|

||8.3|7.8|F|~~[[a]]~~||36|G and h = .2|

||7.1|14.8|B|~~[[b]]~~||37|h 6 H = .3|

||5.1|18.5|F|~~[[a]]~~||38|G and h = .5|

|Page 26|2.3|7.6|F|~~[[a]]~~||39|G and h
= .8|

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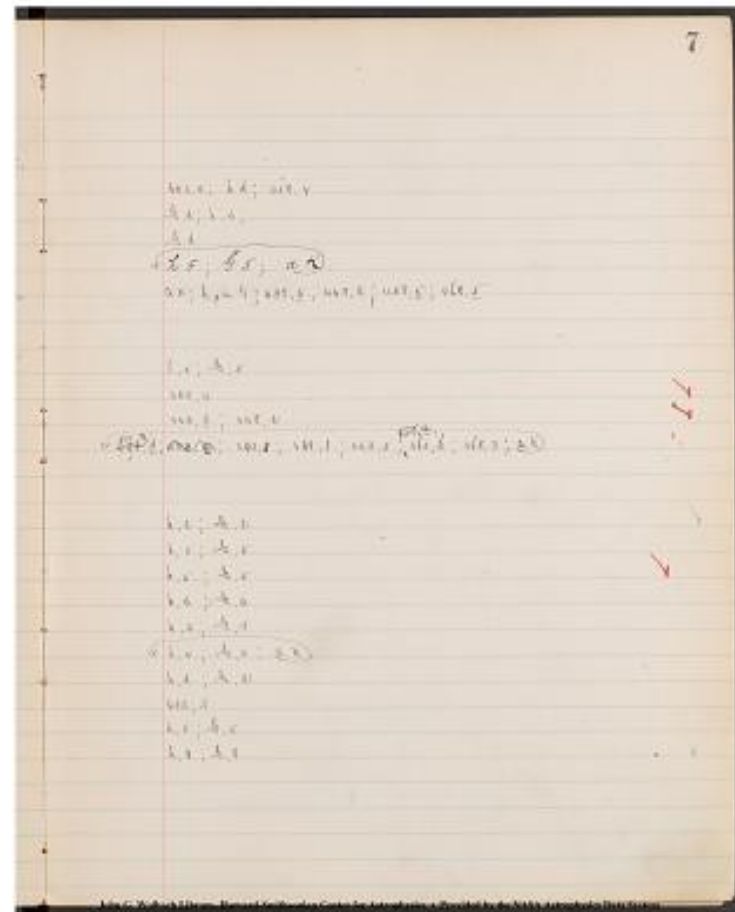
October, 24, 1887.
Plate 186.

Book 3 Page 20|V|H|Type|No. Remark|Description of lines on Spectra.|

✓	21.0	11.1	B	[[a]]	21	F 5 G = .4, h dbl., h 5 H = .2
✓	20.8	6.2	F	[[a]]	22	G & h = .2
✓	18.1	7.5	B	[[a]]	23	G dbl.
✓	19.3	16.8	F	[[a]]	24	G and h = .5 several lines below K
✓	13.8	8.1	K	[[b.c]]	25	F 3 G = .5B, F 5 G = .5B., F 8 G = .2, F 9 G = .5 B., Several faint lines between G and h; h B? several lines below K.
✓	13.1	17.4	L	[[a]]	26	G and h = .5
✓	13.6	21.0	B	[[a]]	27	h 5 H = .4
✓	12.4	20.7	G	[[b.c]]	25	F 7 G = .2, F 8 G = .2B.
✓	11.9	19.5	K	[[b.c]]	29	F 3 G = .3B., F 4 G = .2, F 6 G = .3, F 7 G = .1, F 8 G = .3, F 5 G = .2 B, G 7 H = .3B. several lines below K
✓	11.0	6.2	F	[[a]]	30	G and h = .2
✓	10.6	17.5	F	[[a]]	31	G and h = .5
✓	10.5	17.9	F	[[a]]	32	G and h = .5
✓	9.2	7.9	F	[[a]]	33	G and h = .2
✓	8.5	9.1	F	[[a]]	34	G and h = .3
✓	9.2	16.7	F	[[a]]	35	G and h = .4 several lines below K.
✓	8.3	7.8	F	[[a]]	36	G and h = .2
✓	7.1	14.8	B	[[b]]	37	h 6 H = .3
✓	5.1	18.5	F	[[a]]	38	G and h = .5
✓	2.3	7.6	F	[[a]]	39	G and h = .8

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7
 403,2; hd; 438,4
 g,2; h,2;
 gd
 h5;G5;aK [[arrow to front of line]]
 ak;h[[?]]ag;438,5;443,2;458,5;468,5
 h,5;g,5
 403,4
 443,2;448,2
 448[[strikethrough]],3[[strikethrough]] 417,3; 458[[strikethrough]],
 2[[strikethrough]]; 443,3;448,1;453,3;458,2;463,2;468,3;ak[[arrow to front
 of line]]
 h,2;g,2
 h,5;g,5
 h,5;g,5
 h,2;g,2
 h,3;g,3
 h,4;g,4;ak[[arrow to front of line]]
 h,2;g,2
 402,3
 h,5;g,5
 h,8;g,8
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October 25, 1887
Plate 173.

[6 columned table]

Book 3 Page 26|H|Type|No. Remarks.|Description of lines on Spectra.

-----|-----|-----|-----|-----|-----|

| 16.4|15.7|F ~~II^a[a]~~ ~~40~~|G and h =.5|
| 15.5|22.7|F ~~II^a[a]~~ ~~41~~|G and h =.3|

(G&h =.3)

|Page. 28|12.5|7.1|F ~~II^a[a]~~ ~~42~~|G and h
dbl. =.5 Lines below K

| 10.5|12.1|I ~~III^b[b]~~ ~~43~~|F 7 G =.2, G 7
H =.2|

| 8.6|20.9|F ~~II^a[a]~~ ~~44~~|G and h dbl. =.5|
| 6.3|13.1|I ~~II^a[b]~~ ~~45~~|F 7 G =.2|

| 4.1|18.7|K ~~II^a[bc]~~ ~~46~~|F 3 G =.2B., F
5 G =.2B, F 7 G =.3, F 8½ G =.2, G 7 h =.3, h 5 H =.4|

Plate 161

[6 columned table]

|Page. 32|20.9|12.8|F ~~II^a[a]~~ ~~47~~|G and h
=.2|

| 19.3|9.8 |F ~~II^a[a]~~ ~~48~~|G and h =.3, G
dbl. lines below K

| 14.8|14.1|K ~~II^a[bc]~~ ~~49~~|F 2 G =.2B, F
4 G =.2, F 5 G =.1B, F 7 G =.2, F 8 G =.1B, G 3 h to G 8 h band of faint
lines, h 3 H =.5.

| 13.0|10.0|I ~~II^a[b]~~ ~~50~~|F 7 G =.2

|Page. 34|9.2 |14.3|F ~~II^a[a]~~ ~~51~~|G and h
=.5

| 3.6 |8.7 |F ~~II^a[a]~~ ~~52~~|G and h =.3

| 3.6 |13.1|F ~~II^a[a]~~ ~~53~~|G and h =.5, G
dbl.

October, 28, 1887

Plate 258

[6 columned table]

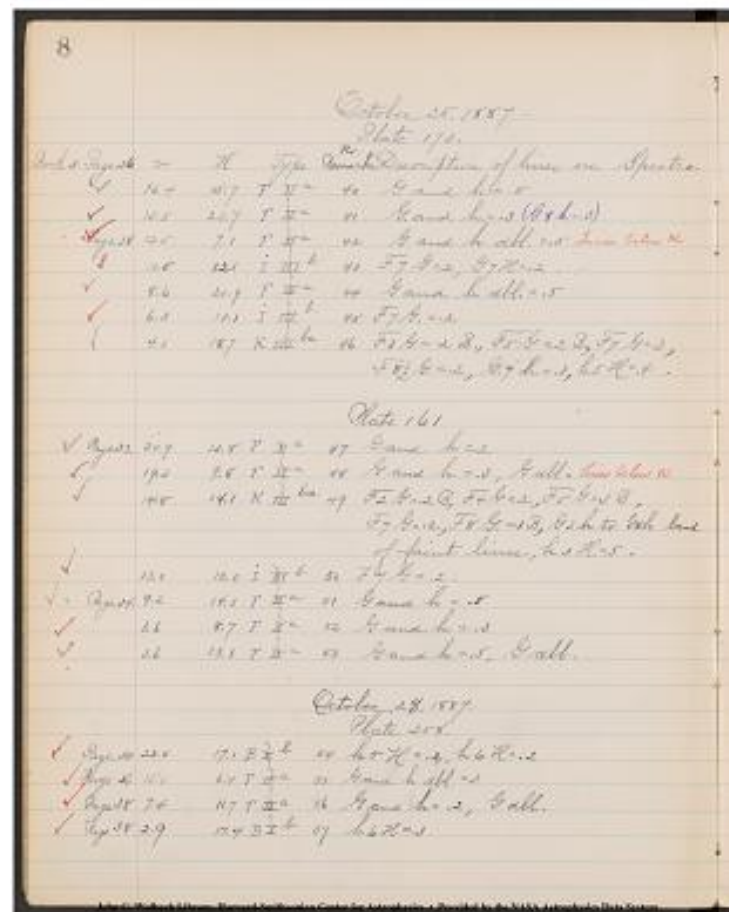
|Page. 34|22.0|17.1|B ~~II^a[b]~~ ~~54~~|h 5 H
=.2, h 6 H =.2|

|Page 36|15.0|6.4 |F ~~II^a[a]~~ ~~55~~|G and h
dbl =.3|

|Page 38|7.4|11.7|F ~~II^a[a]~~ ~~56~~|G and h
=.2, G dbl.|

|Page 38|2.9|17.4|B ~~II^a[b]~~ ~~57~~|h 6 H =.3|

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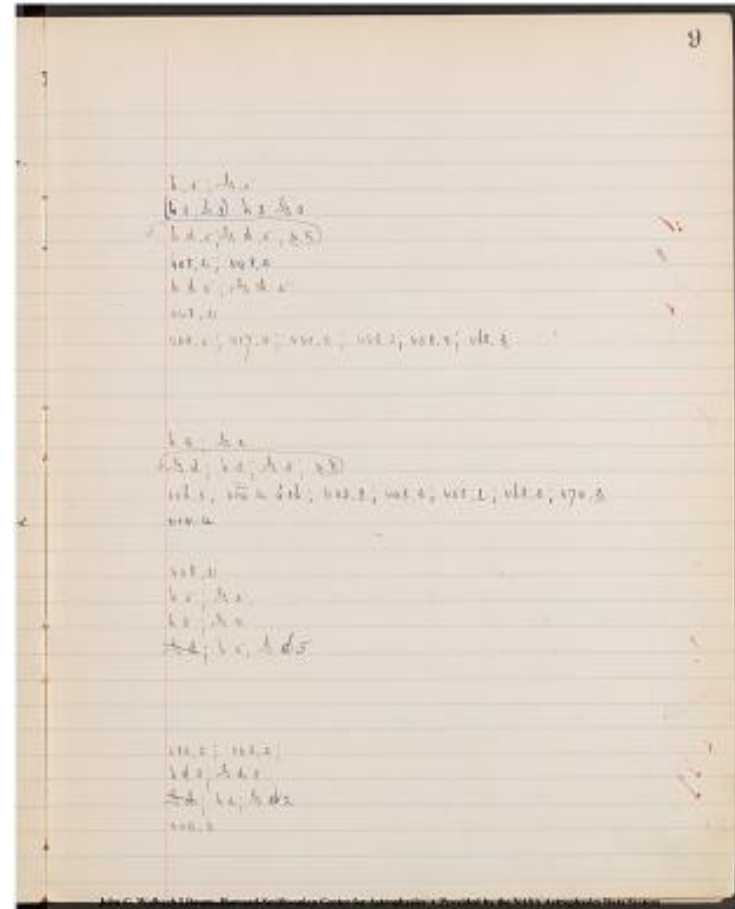
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9
 h,5;G,5
 (h3;G3)h3G3
 hd,5;Gd,5;ak [[arrow under and over ak to the front of the line]]
 408.2;448.2
 hd5;Gd5
 448.2
 403.4;417.3;441.2;448.3;458.2;468.2

 h2;G2
 Gd;h3;G3;ak [[arrow under and over ak to the front of the line]]
 406.5;414[^][[2]]a
 4[^][[1]]0b;443. [[underline]]1[[/underline]];448.2;458. [[underline]]1[[/underline]]
 ne]],463.2;474. [[underline]]2[[/underline]]

 448.2
 h5;G5
 h3;G3
 [[strikethrough]]Gd[[/strikethrough]];h5;Gd5

 402.2;403.2;
 hd3;Gd3
 [[strikethrough]]Gd[[/strikethrough]];h2;Gd2
 402.3



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October 28, 1887.

Plate 217

[6 columned table]

Book 3 Page. 40|14.2|15.9|F ~~II^a[a]~~58|G and h=.3|

42|8.7|9.0|F ~~II^a[a]~~59|G and h=.2|

42|3.6|9.2|F ~~II^a[a]~~60|G and h=.5|

several lines below K.
40|22.4|199|F ~~II^a[a]~~61|G and h=.5 G. dbl.

October, 29, 1887

Plate 275.

[6 columned table]

Book 3 Page. 44|16.6|13.1|F ~~II^a[a]~~62|G and h=.2 G dbl. lines below K.

44|14.5|12.5|L ~~III^a[c]~~63|H5G=.3B, H8G=.2B.

13.9|19.4|F ~~II^a[a]~~64|G and h=.4 G dbl. lines below K.

13.4|13.1|G ~~II^a[b]~~65|G dbl =.2|

13.1|6.1|F ~~II^a[a]~~66|G and h dbl =.2|

3.5|15.1|D ~~I^a[a]~~66^a[a]|additional lines|

October, 29, 1887.

Plate 341.

[6 columned table]

Book 3 Page.

48|220|18.3|B ~~II^a[b]~~67|G5h=.4, h3H=.4.

48|12.0|20.0|F ~~II^a[a]~~68|G and H=.2|

48|8.8|15.4|F ~~II^a[a]~~69|G and h dbl =.2|

50|7.0|16.1|F ~~II^a[a]~~70|G and h=.2 G dbl. lines below K.

4.8|8.7|F ~~II^a[a]~~71|G and h=.1|

3.0|21.9|F ~~II^a[a]~~72|G and h =.2|

October 29, 1887

Plate 165

[6 columned table]

Book 3 Page 52|17.5|19.6|F ~~II^a[a]~~73|G and h=.2 G dbl.

16.0|12.1|F ~~II^a[a]~~73|G and h dbl=.2|

13.5|21.0|F ~~II^a[b]~~75|F7G=.4|

9.7|10.8|F ~~II^a[b]~~76|G3H=1.0|

not found on plate. ~~II^a[a]~~77|G and H=.4|

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October 28, 1887

Plate 217

Book Page	W. Type	W. Type	W. Type	Description of lines on Spectra
40	14.2	15.9	F	58. Same h=3
42	8.7	9.0	F	59. Same h=2
42	3.6	9.2	F	60. Same h=5 several lines below K.
40	22.4	199	F	61. Same h=.5 G. dbl.

October 29, 1887

Plate 275.

44	16.6	13.1	F	62. Same h=.2 G. all. lines below K.
44	14.5	12.5	L	63. H5G=.3B, H8G=.2B.
13.9	19.4	F	64. Same h=.4 G. dbl. lines below K.	
13.4	13.1	G	65. G. all =.2	
13.1	6.1	F	66. Same h and h dbl =.2	
3.5	15.1	D	66 ^a . additional lines	

October 29, 1887

Plate 341.

48	220	18.3	B	67. Same h=.4, h3H=.4.
48	12.0	20.0	F	68. Same h=.2
48	8.8	15.4	F	69. Same h and h dbl =.2
50	7.0	16.1	F	70. Same h=.2 G. all. lines below K.
4.8	8.7	F	71. Same h=.1	
3.0	21.9	F	72. Same h =.2	

October 29, 1887

Plate 165

52	17.5	19.6	F	73. Same h=.2 G. dbl.
16.0	12.1	F	73. Same h and h dbl=.2	
13.5	21.0	F	75. F7G=.4	
9.7	10.8	F	76. G3H=1.0	
not found on plate.				77. G and H=.4

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~~h~~
~~d 5~~; G ~~3~~
~~3~~

h 2; G 2

h 5; G 5; \rightarrow a k \leftarrow

~~G d~~; h 5; G d 5

~~Gd~~; h 2; Gd 2; \rightarrow ak \leftarrow
 405. ~~2~~; 413. ~~3~~
~~Gd~~; h 4; Gd 4; \rightarrow ak \leftarrow

Gd 2

hd 2; Gd 2

spectrum of faint A star superposed?

406.4; 421.4

H 2; G 2

hd 2; Gd 2

~~Gd~~; h 2; Gd 2; \rightarrow ak \leftarrow

h 1; G 1

h 2; G 2

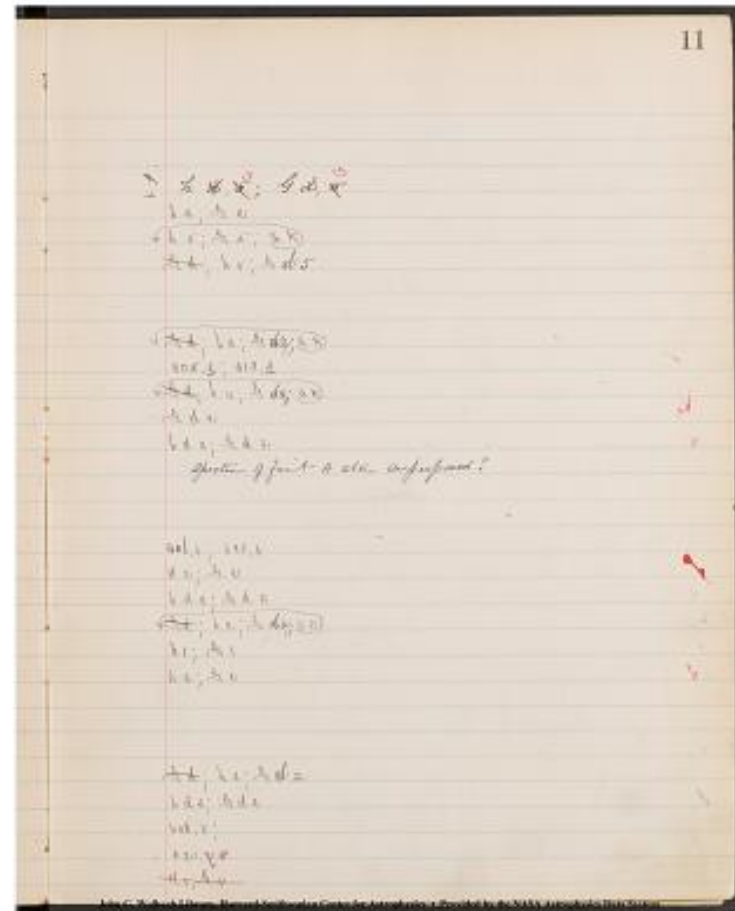
~~Gd~~; h 2; Gd 2

hd 2; Gd 2

448.4;

421. ~~4~~¹⁰

~~H, 4; G 4~~



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October, 29, 1887.

Plate 165

[6 columned table]

Book 3 Page 52|v.|H.|Type.|No. Remark|Description of Line on Spectra.]

|7.8|10.2|F ~~II^a~~ 78|G and h=.4|

|Page 54|6.0|20.0|F ~~II^a~~ 79|G and h=.5|

|54|4.9|14.5|F ~~II^a~~ 80|G and h=.5|

October, 29, 1887.

Plate 185.

|21.0|11.7|I ~~III^b~~ 81 73|G=.4, f5G=.4, f7G=.4|

|Page 56|17.1|21.8|F ~~II^a~~ 82|G and h all =.2|

|16.5|14.2|F ~~II^a~~ 83|G and h=.2, G all lines below K|

|15.0|22.7|F ~~II^a~~ 84|G and h=.3|

|"58|10.1|12.3|L ~~II^ab~~ 85|F3G=.3, F4G=.3, F5G=.3, G3H=.5|

|8.4|13.7|F ~~II^a~~ 86|G and h=.5|

November, 3, 1887.

Plate 166

|" " 58|13.4|16.8|F ~~II^a~~ 87|G and h=.5|

|" " 11.2|15.8|I ~~III^b~~ 88|F4G=.2, F7G=.2|

November, 3, 1887

Plate 353.

|" " 62|15.8|19.3|F ~~II^a~~ G and h=.2|

|" " 11.3|7.7|F ~~II^a~~ 90|G and h=.2|

|"5.4|10.7|F ~~II^a~~ 91|G and h all =.5|

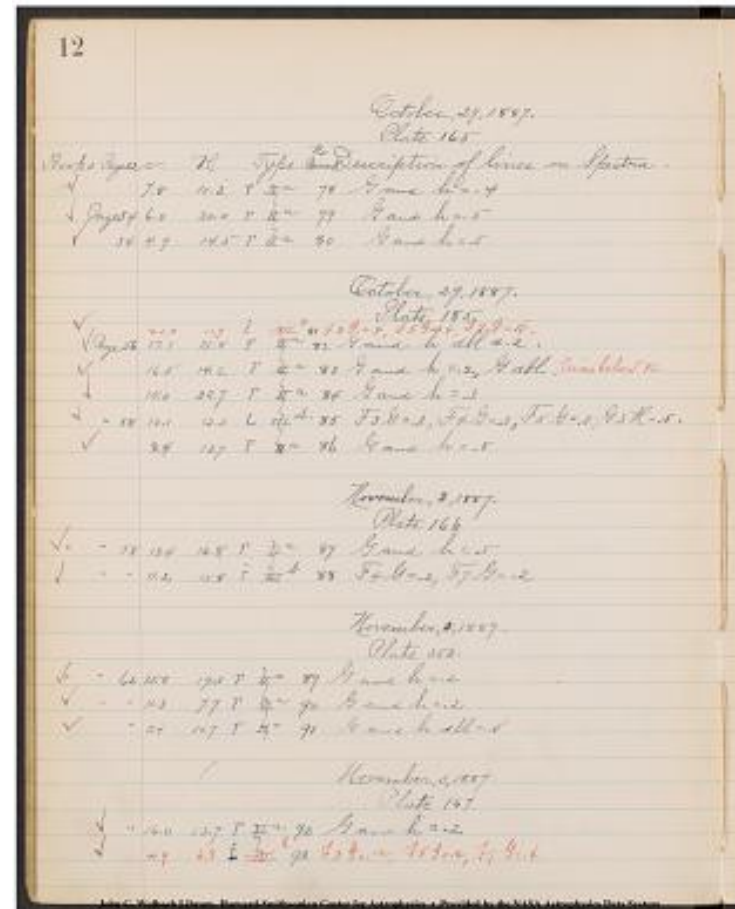
November, 3, 1887

Plate 167.

|"16.0|13.7|F ~~II^a~~ 92|G and h=.2|

|11.9|6.8|L ~~III^b~~ 93|f3G=.2, f5G=.2, f7G=.4|

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13

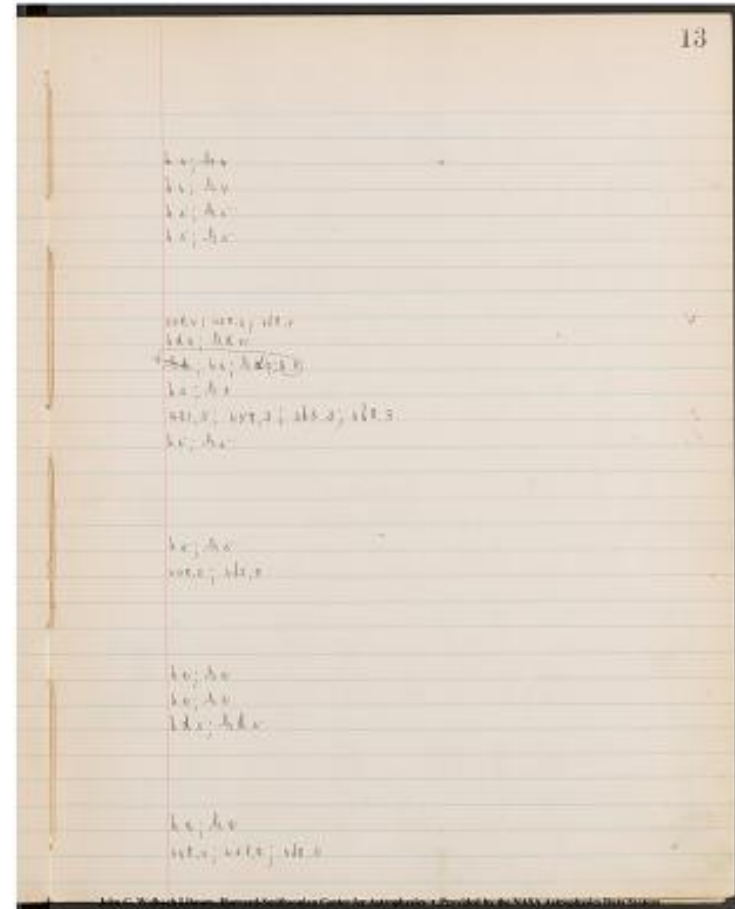
~~h 4; G 4~~
h 4; G 4
h 3-; G 3-
h 3-; G 3-

448.4; 438.4; 468.4
hd2; Gd2
~~^a~~ Gd~~h2; Gd2; k~~
h3; G3
421.5; 458.3; 463.3; 468.3
h3-; G3-

h3-; G3-
448.2; 463.2

h2; G2
h2; G2
hd5; Gd3-

h2; G2
448.4; 4 zeta-8.2; 468.2



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November, 3, 1887

Plate 446.

[6 columned table]

Book 3 Page 66. |V|H|Type|No. Remarks. |Description of lines on Spectra.

|---|---|---|---|

| 22.6|9.5|I |~~II~~[^]~~[[b]]~~~~[[/del]]~~94|F3G=.2, G7h=.2,
h3H=.2.| 16.1|19.8|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~95|G and h=.5|| 15.0|16.6|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~96|G and h=.5|| 14.0|8.3|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~97|G and h=.2|| 13.0|13.7|I |~~II~~[^]~~[[b]]~~~~[[/del]]~~98|F7G=.3,

h5H=.2|

| 68|10.0|16.3|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~99|G and h=.3|| 68|9.6|22.6|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~100|F3G=.2B,
F5G=.2B., F7G=.3, G3h=.3, h3H=.2|| 68|7.6|14.0|I |~~II~~[^]~~[[b]]~~~~[[/del]]~~101|F7G=.2,
G7h=.3, h3H=.2.| 68|3.0|9.4|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~102|F5G=.4B.,
F7G=.2, G7h=.2|| 68|4.2|22.3|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~103|G and h=.2|

November, 5, 1887

Plate 458.

[6 columned table]

Book 3 Page 70|19.9|11.5|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~104|G and h=.3|| 19.0|13.1|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~105|F3G=.1B,
F4G=.2, F7G=.4|| 18.6|23.3|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~106|G and h
dbl=.5|| 16.5|14.6|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~107|G and h
dbl=.2|| 14.0|7.9|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~108|F5G=.2B.,
F8G=.1, hB?, h2H=.1.| 13.1|20.3|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~109|^{several}
lines below K| F3G=.3B, F5G=.4B, F7G=.1, G5h=.1| 11.6|12.2|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~110|F3G=.5B,
F4½G=.2, F5G=.4B, F6G=.2, F8G=.2, F9G=.2B, G3h=.1B, G4h=.2.| 11.5|9.6|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~111|G and h=.2|| 72|9.4|8.8|F |~~II~~[^]~~[[a]]~~~~[[/del]]~~112|G and h dbl=.2|| 9.0|20.9|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~113|F3G=.2B,
F4G=.1, F5G=.2B, F7G=.2|| 7.5|10.8|D |~~II~~[^]~~[[bc]]~~~~[[/del]]~~114|F5G=.2B,
F6G=.1, F7G=.1B, G3h=.1B, G4.5h=.1, G6h=.2, G9h=.2, h6H=.1B.

Spectra superposed?

| 6.0|17.6|K |~~II~~[^]~~[[bc]]~~~~[[/del]]~~115|F3G=.1B,
F4G=.2, F5G=.1B, F6G=.1, F8G=.4, Several lines between G and H.John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics.
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November, 3, 1887.
Plate 446.

Wavelength	Type	Description of lines on spectrum
22.6	I	94 F3G=.2, G7h=.2, h3H=.2.
16.1	F	95 G and h=.5.
15.0	F	96 G and h=.5.
14.0	F	97 G and h=.2.
13.0	I	98 F7G=.3, h5H=.2.
68	F	99 G and h=.3.
68	K	100 F3G=.2B, F5G=.2B., F7G=.3, G3h=.3, h3H=.2.
68	I	101 F7G=.2, G7h=.3, h3H=.2.
68	K	102 F5G=.4B., F7G=.2, G7h=.2.
68	F	103 G and h=.2.

November, 5, 1887.
Plate 458.

Wavelength	Type	Description of lines on spectrum
19.9	F	104 G and h=.3.
19.0	K	105 F3G=.1B, F4G=.2, F7G=.4.
18.6	F	106 G and h dbl=.5.
16.5	F	107 G and h dbl=.2.
14.0	K	108 F5G=.2B., F8G=.1, hB?, h2H=.1.
13.1	K	109 several lines below K, F3G=.3B, F5G=.4B, F7G=.1, G5h=.1.
11.6	K	110 F3G=.5B, F4½G=.2, F5G=.4B, F6G=.2, F8G=.2, F9G=.2B, G3h=.1B, G4h=.2.
11.5	F	111 G and h=.2.
72	F	112 G and h dbl=.2.
9.0	K	113 F3G=.2B, F4G=.1, F5G=.2B, F7G=.2.
7.5	D	114 F5G=.2B, F6G=.1, F7G=.1B, G3h=.1B, G4.5h=.1, G6h=.2, G9h=.2, h6H=.1B.
6.0	K	115 F3G=.1B, F4G=.2, F5G=.1B, F6G=.1, F8G=.4, Several lines between G and H.

15

406, 2; 427, 2; 468, 2

h 5; G 5

h 5; G 5

h 2; G 2

403, 2; 448, 3

h 3; G 3

406, 2; 426 3; 448, 3; 458, 2; 468, 2

406, 2; 417, 3; 448, 2

417, 2; 448, 2; 458, 4

h 2; G 2

h 3; G 3

448, 4; 463, 2; 468 1

h d 5; G d 5

h d 2; G d 2

407, 1; h B ? 443, 1; 428, 2

421, 1; 448, 1; 458, 4; 468

3; a k

424, 2; 426, 1; 438,

2; 443, 2; 453, 2; 458,

4; 461, 2; 468, 5

h 2; G 2;

h d 2; G d 2

448, 2; 458, 2; 463, 1; 468,

2

~~4~~¹⁹02, 1;

412, 2; 419, 2; 423, 1; 426, 1; 448,

1; 453, 1; 458, 2
spectra of faint A star superposed

H a G; 443, 4; 453, 1; 458, 1; 463, 2; 468, 1

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16

November, 5, 1887.

Plate 441.

Book 3 Page 74 | V. | H. | Type. | No. Remark. | Description of line on Spectia.

[check] | 21.0 | 16.7 | F ~~II^a~~ | 116 | G and h = .2

[check] | 20.6 | 11.6 | F ~~II^a~~ | 117 | G and h = .2, G all, lines below K.

[check] | 19.6 | 12.7 | F ~~II^a~~ | 118 | G and h = .1

[check] | 19.5 | 11.4 | I ~~III^a~~ | 119 | F7 G = .2, G7 h = .2, h5 H = .1 | 18.0 | 12.7 | F ~~II^a~~ | 120 | G and h = .5, lines below K.

[check] | 16.5 | 9.5 | F ~~II^a~~ | 121 | G and h = .5

[check] | 76 | 14.9 | 11.6 | F ~~II^a~~ | 122 | G and h = .2, G all.

[check] | 14.0 | 10.0 | F ~~II^a~~ | 123 | G and h = .2

[check] | 9.9 | 17.0 | F ~~II^a~~ | 124 | G and h = .2 G all.

[check] | 7.9 | 17.0 | F ~~II^a~~ | 125 | G and h all = .3 lines below K.

[check] | 7.4 | 17.6 | F ~~II^a~~ | 126 | G and h = .5

[check] | 5.7 | 22.4 | F ~~II^a~~ | 127 | G and h = .2

[check] | 4.6 | 12.6 | L ~~III^a~~ | 128 | G = .4 and h = .1

[check] | 1.6 | 13.4 | I ~~III^a~~ | 129 | F4 G = .2, F7 G = .3, Several lines between

| - | - | - | - | G and H.

November, 7, 1887.

Plate, 495

[check] | 80 | 22.8 | 11.7 | B ~~II^a~~ | 130 | G5 h = .1, h5 H = .1, H5 a = .1,

[check] | 21.9 | 8.9 | F ~~II^a~~ | 131 | G and h = .5

[check] | 19.7 | 7.9 | F ~~II^a~~ | 132 | G and h all = .5

[check] | 12.2 | 19.4 | F ~~II^a~~ | 133 | G and h = .5

[check] | 11.7 | 17.3 | K ~~III^a~~ | 134 | F3 G = .4 B, F4 1/2 G = .2, F5 G = .3 B, F7 G = .2,

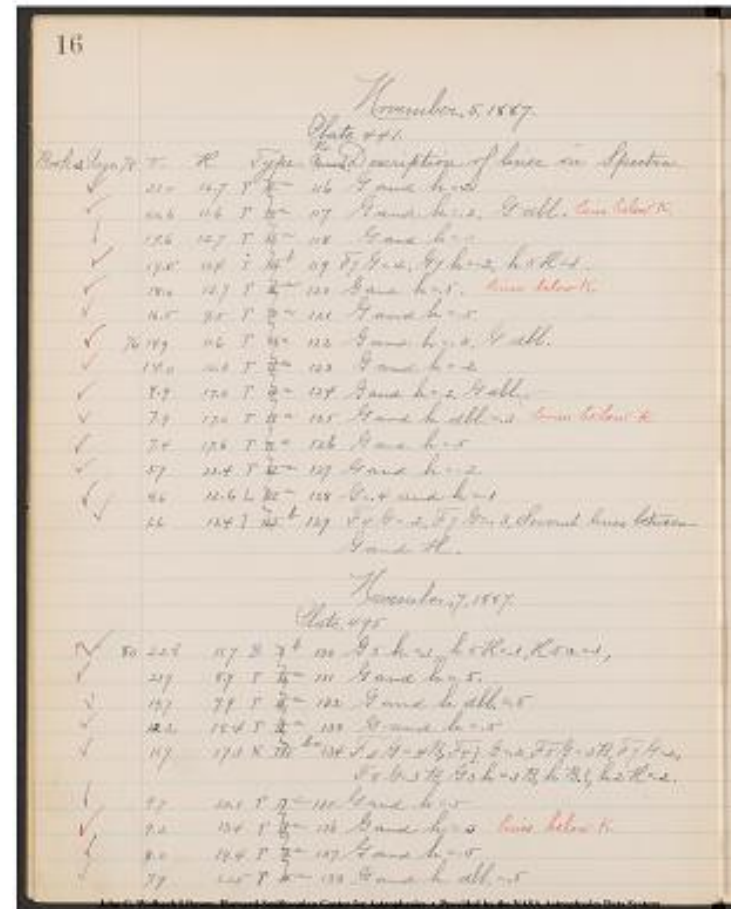
-- | - | - | - | - |

[check] | 9.7 | 20.1 | F ~~II^a~~ | 135 | G and h = .5

[check] | 9.2 | 13.4 | F ~~II^a~~ | 136 | G and h = .3 lines below K.

[check] | 8.0 | 19.4 | F ~~II^a~~ | 137 | G and h = .5

[check] | 7.9 | 23.5 | F ~~II^a~~ | 138 | G and h all = .5



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h2; G2
~~Gd~~; ~~h2~~; Gd2; a k
 h1; G1
 403,1; 417,2; 448,2
 h3-; G3-; a k
 h3-; G3-
~~Gd~~; ~~h2~~; Gd2
 h2; G2
~~Gd~~; ~~h2~~; Gd2
 hd3; Gd3; a k
 h5; G5
 h2; G2
 h1; G4
 HaG; 448,3; 463,2

393,1; 403 1; 421,1
 h5; G5
 hd5; Gd5
 h5; G5
 407,2; hB?; 426,1;
 443,3; 448,2; 458,3; 461,2;
 468,4

h5; G5
 h3; G3, a k
 h5; G5
 hd5; Gd5



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November 7, 1887

Plate, 495.

[6 columned table]

Book 3 Page 82. V|H|Type|No. Remark. |Description of lines on Spectra. |

---|---|---|---|

|6.0|17.6|F |~~II^a[a]~~|~~139~~|G and h = .5|

November 7, 1887

Plate, 435.

[6 columned table]

|22.0|11.1|I |~~III^a[b]~~|~~140~~|F5G=.2,

F7G=.2, G5h=.2, h5H=.2|

|Book 3 Page 84|6.0|18.2|F

|~~II^a[a]~~|~~141~~|G and h =.5 several lines
below K.||13.7|11.8|F |~~II^a[a]~~|~~142~~|G and h =.2||12.0|17.0|L |~~III^a[a]~~|~~143~~|G and h =.5||11.5|17.0|K |~~III^a[b.c.]~~|~~144~~|F3G=.3B,F4| $G=.1$, F5G=.2B, F7G=.2, F8G=.2B, G3h=.2, hB.2, h3H=.1||9.5|18.1|K |~~III^a[bc]~~|~~145~~|F5G=.1B,F5| $G=.1$, F7G=.2, G3h=.2B.||9.5|19.3|F |~~II^a[a]~~|~~146~~|G and h =.2||8.5|15.7|I |~~III^a[b]~~|~~147~~|F3G=.3, F8G=.2,
G7h=.2, h5H=.2.||8.0|12.9|F |~~II^a[a]~~|~~148~~|G and h =.5||7.9|18.7|F |~~II^a[a]~~|~~149~~|G and h =.5|Same as 149. |~~86~~|8.0|18.7|F |~~II^a[a]~~||~~150~~|G and h =.5 |~~151~~|G and h =.5||5.6|17.5|F |~~II^a[a]~~|~~151~~|G and h =.5||4.1|19.0|F |~~II^a[a]~~|~~152~~|G and h =.2, G
all||2.6|11.1|I |~~III^a[b]~~|~~153~~|F5G=.2, F8G=.2,
G5h=.2|

November, 7. 1887.

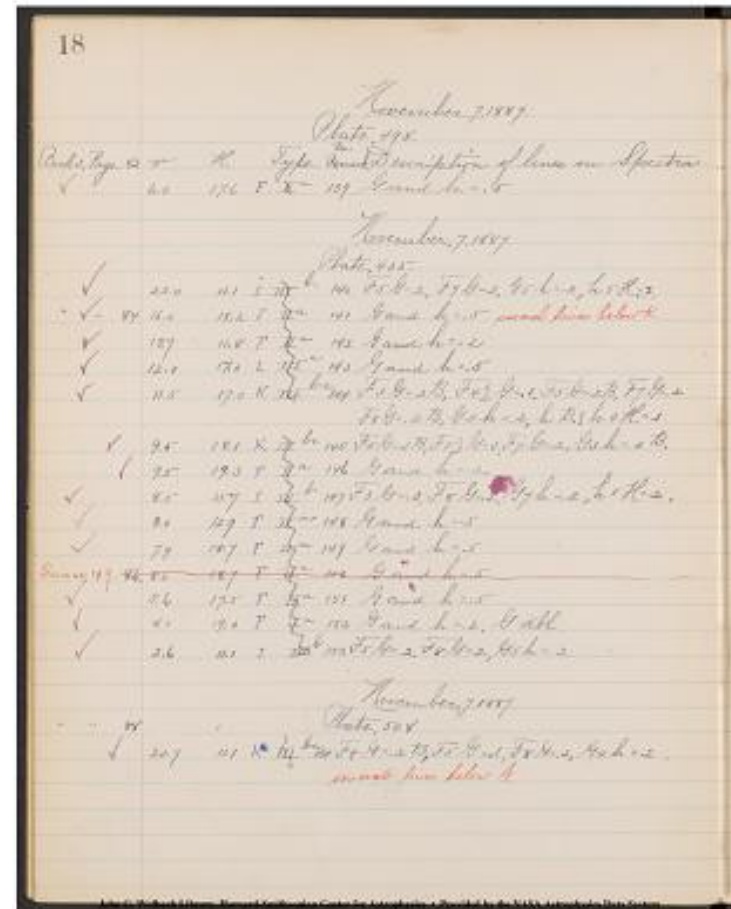
Books, Page 88 Plate, 508

[6 columned table]

|20.7|11.1|K |~~III^a[bc.]~~|~~154~~|F4G=.2B,

F5G=.1, F8G=.2, G4h=.2 .|

several lines below G



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November, 7, 1887.

Plate, 500.

[6 columned table]

Book 3 Page 90|V.|H.|Type.|No. Remark|Description of lines on Spectra.

|---|---|---|---|---|

|20.5|12.6|K|~~III~~^A~~[[b.c.]]~~~~[[/del]]~~155|F3G = .3B, F4½G = .1, F5G = .3B, F8G = .2|

|Several lines between G and h, hB?,

|h2H = .2, h4H = .2. Lines below K.|

|17.1|20.6|F|~~III~~^A~~[[a]]~~~~[[/del]]~~156|G and h = .2.|

|13.0|17.9|K|~~III~~^A~~[[b.c.]]~~~~[[/del]]~~157|F4G = .1B, F5½G = .1, F7G = .2.|

|12.3|21.2|F|~~III~~^A~~[[a]]~~~~[[/del]]~~158|G and h = .2 |

Book 3 Page 92|5.0|8.6|K|~~III~~^A~~[[b.c.]]~~~~[[/del]]~~

~~[[/del]]~~159|F3G = .1B, F5G = .4, F5½G = .1B.|

Nov. 7, 1887.

Plate 546

Book 3 Page 92

Nov. 8, 1887.

Plate 509

[6 columned table]

Book 3 Page 92|20.8|9.7|L|~~III~~^A~~[[a]]~~~~[[/del]]~~

~~[[/del]]~~160|G and h = .5|

|16.5|16.6|F|~~III~~^A~~[[a]]~~~~[[/del]]~~161|G and h = .2|

|15.0|21.0|F|~~III~~^A~~[[a]]~~~~[[/del]]~~162|G and h all. = .5|

|94|5.3|21.1|I|~~III~~^A~~[[b]]~~~~[[/del]]~~163|F5G = .2,

F7G = .3|

|4.7|10.2|B|~~I~~^A~~[[b]]~~~~[[/del]]~~164|G5h = .1, H5a = .1|

Nov. 8, 1887.

Plate 536.

[6 columned table]

Book 3 Page 96|17.3|19.7|F|~~III~~^A~~[[a]]~~~~[[/del]]~~

~~[[/del]]~~165|G and h = .2|

|15.5|14.1|F|~~III~~^A~~[[a]]~~~~[[/del]]~~166|G and h = .2|

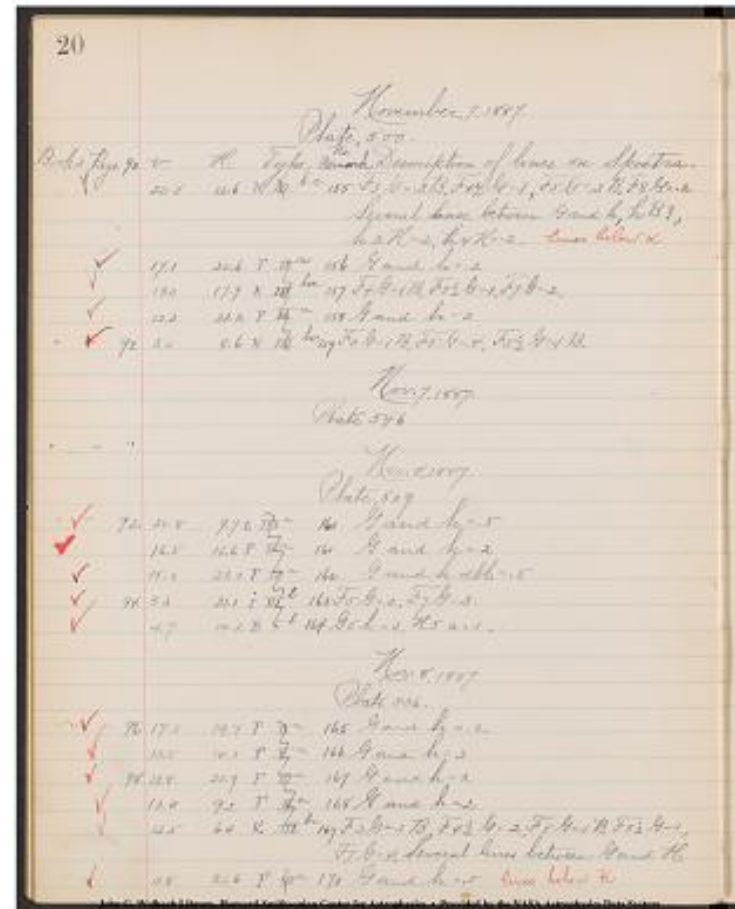
|98|13.8|23.9|F|~~III~~^A~~[[a]]~~~~[[/del]]~~167|G and h = .2|

|13.0|9.2|F|~~III~~^A~~[[a]]~~~~[[/del]]~~168|G and h = .2|

|12.5|6.4|K|~~III~~^A~~[[bc]]~~~~[[/del]]~~169|F3G = .1B,

F4[[equation]]G=.2, F5G=.1B, F5[[equation]]G=.1, F7G=.4, several lines between G and H|

|11.8|21.6|F|~~III~~^A~~[[a]]~~~~[[/del]]~~170|G and h = .5 lines below K|



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Plate 536

[[6 columned table]]

Book 3 Page 98|V|H|Type|No. Remarks| Description of lines on Spectra|

|---|---|---|---|---|

|9.5|9.3|K|~~III^[[b.c.]]~~|171|F3G = .2B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .2, F7G = .4, several lines between G&H.||9.5|22.9|L|~~III^[[a]]~~|172|G and h = .2|
|8.9|12.2|K|~~III^[[b.c.]]~~|173|F3G = .2B, F4[[equation]]G = .1, F5G = .2B, F5[[equation]]G = .1, F7G = .4 Several lines between G&H, G dbl?|Book 3 Page 100|8.0|11.0|F|~~II^[[a]]~~|

|174|G and h = .5|

|7.8|13.8|I|~~III^[[b]]~~|175|F4½G = .1 F5½G = .2, F7G = .3, F8½G = .2||3.9|18.2|F|~~II^[[a]]~~|176|G and h = .5||3.5|23.7|F|~~II^[[a]]~~|177|G and h = .5, h dbl|

Nov. 8, 1887

Plate 550

[[6 columned table]]

Book 3 Page 100|6.1|7.7|K|~~III^[[b.c.]]~~|

|178|F3G = .3B, F5G = .4, F7G = .3B, Several lines between G and H|

Nov. 8, 1887

Plate 555

[[6 columned table]]

Book 3 Page 100|21.0|20.9|F|~~III^[[a]]~~|

|179|G and h dbl = .2|

|Book 3 Page 102|16.8|13.3|K|~~III^[[b.c.]]~~|

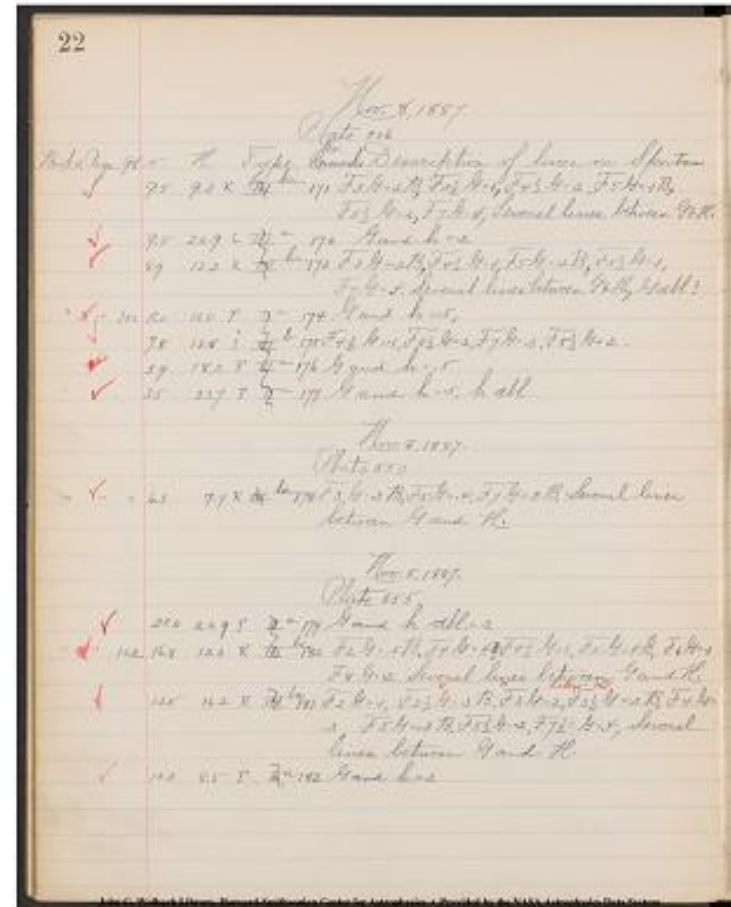
|180|F2G = .5B, F4G = .4B, F4½G = .1, F5G = .4B, F6G = .1, F8G = .2, Several lines between G and H.|

|Book 3 Page 102|13.5|16.2|K|~~III^[[b.c.]]~~|

|181|F2G = .1, F2½G = .3B, F3G = .2, F3½G = .2B, F4G = .3, F5G = .3B, F5½G = .2, F7½G = .4, Several lines between G and H.|

|Book 3 Page 102|10.3|8.5|F|~~II^[[a]]~~|

|182|G and h dbl = .2|

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23

H a G; 448, 4; 456, 2; 458, 1; 461, 2; 466, 1;
468, 2

h 2; G 2

H a G; Gd?; 448, 4; 456, 1; 458, 2; 461, 1;
468, 2

h 5; G 5

441, 2; 448, 3; 456, 2; 461, 1

h 5; G 5

~~hd~~; h [^][d] 5; G5

H a G; 448, 3; 458, 4; 468, 3

h d 2; G d 2

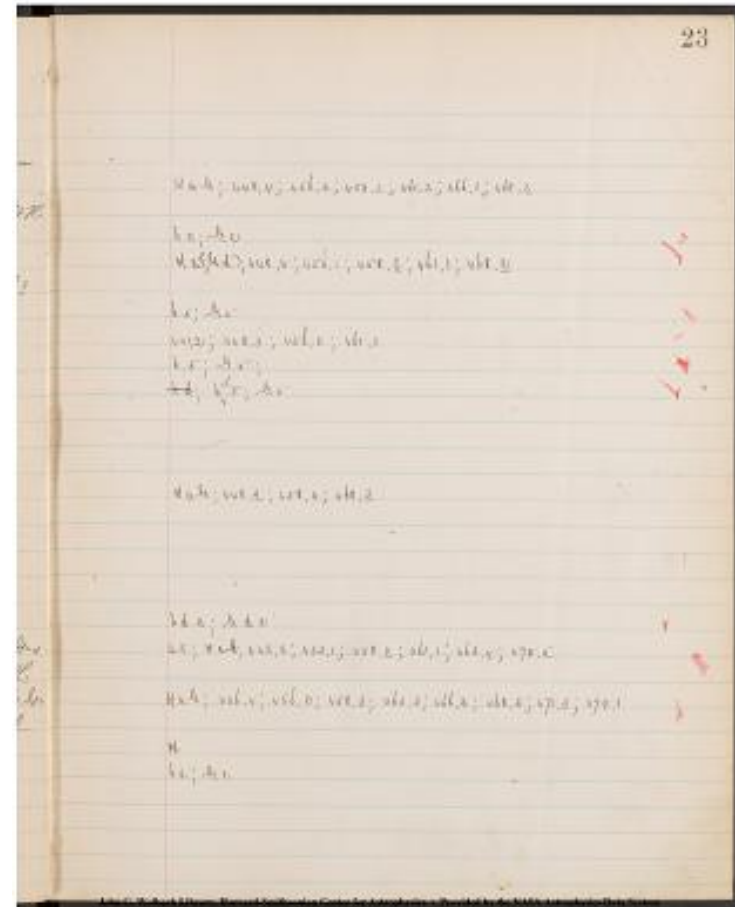
a k; H a G; 443, 2; 453, 1; 458, 4; 461, 1;
463, 4; 474, 5

H a G; 446, 4; 456, 2; 458, 3; 463, 3; 466,
2; 468, 2; 471, 3;
474, 1

~~H~~

h 2, G 2

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Plate 560.

Book 3 Page 104 | nu. | H. | Type. | No. | Description of lines on Spectra.

[[symbol - check]] | 22.6 | 20.7 | I^A[[Alt 0149]] [[strikethrough]] III
 [[strikethrough]] ^[[I]] | 183 | F^A[[4]]G=.2, F^A[[7]]G=.4.
 [[symbol - check]] | 20.3 | 12.9 | I^A[[Alt 0149]] [[strikethrough]] III
 [[strikethrough]] ^[[I]] | 184 | F^A[[4]]G=.2, F^A[[6]]G=.3, F^A[[7]]G=.4.
 [[symbol - check]] | 20.2 | 16.0 | F [[strikethrough]] II [[strikethrough]]
 ^[[a]] | 185 | G and h [[abl.]]=.2
 [[symbol - check]] | 18.5 | 21.7 | I^A[[Alt 0149]] [[strikethrough]] III
 [[strikethrough]] ^[[I]] | 186 | F^A[[3]]G=.2, F^A[[7]]G=.4
 [[symbol - check]] | 17.4 | 14.3 | K [[strikethrough]] II [[strikethrough]]
 ^[[I.c.]] | 187 | F^A[[3]]G=.4B, F^A[[4 1/2]]G=.1, F^A[[5]]G=.5B, F^A[[8]]G=.4.
 Several
 lines between G and H
 [[symbol - check]] | 15.1 | 12.2 | F [[strikethrough]] II [[strikethrough]]
 ^[[a]] | 188 | G and h=.2
 [[symbol - check]] | 11.5 | 15.0 | K [[strikethrough]] II [[strikethrough]]
 ^[[I.c.]] | 189 | F^A[[2]]G=.1B, F^A[[3]]G=.2, F^A[[4]]G=.1, F^A[[5]]G=.1B,
 F^A[[7]]G=.4.
 [[symbol - check]] ^[[F1 106]] | 8.0 | 12.0 | F [[strikethrough]] II
 [[strikethrough]] ^[[a]] | 190 | G and h=.5
 [[symbol - check]] | 6.6 | 18.3 | K [[strikethrough]] II [[strikethrough]]
 ^[[I.c.]] | 191 | F^A[[3]]G=.2B, F^A[[4 1/2]]G=.1 F^A[[5]]G=.2B, F^A[[5
 1/2]]G=.1, ^[[K.]] F^A[[6]]G=.1 F^A[[7]]G=.3, G [[abl]] ? Lines Betw. G.H. 2
 [[hines below]]
 [[symbol - check]] | 2.9 | 20.6 | I^A[[Alt 0149]] [[strikethrough]] III
 [[strikethrough]] ^[[I]] | 192 | F^A[[4]]G=.2, F^A[[6]]G=.2, F^A[[7]]G=.3

November, 8, 1887.

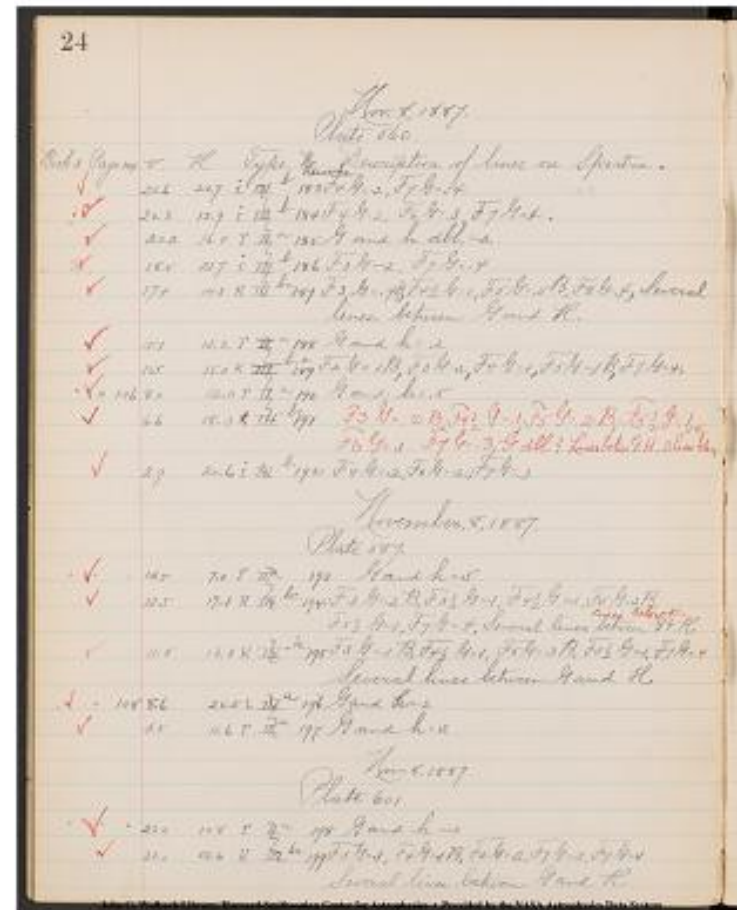
Plate 587

[[symbol - check]] | 14.5 | 7.0 | F [[strikethrough]] II [[strikethrough]] ^[[a]]
 | 193 | G and h=.5
 [[symbol - check]] | 12.5 | 19.1 | K [[strikethrough]] III [[strikethrough]]
 ^[[I.c.]] | 194 | F^A[[3]]G=.2B, F^A[[3 1/2]]G=.1, F^A[[4 1/2]]G=.1,
 F^A[[5]]G=.2B, F^A[[5 1/2]]G=.1, F^A[[7]]G=.4 Several lines between G & H.
 ^[[lines below K.]]

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Plate 601

[[symbol - check]] | 21.0 | 10.8 | F [[strikethrough]] II
 [[strikethrough]] ^[[2]] | 198 | G and H=.5
 [[symbol - check]] | 21.0 | 12.6 | K [[strikethrough]] II [[strikethrough]]
 ^[[bc]] | 199F₃ G=.1, F₄ G=.1
 F₅ G=.1B, F₅ G=.2, F₇ G=.1
 F₉ G=.3, F₉ G=.1
 Several lines between G and H.



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448.4; 463.2
448.4; 453.3; 463.2
h d 2; G d 2
448.4; 468.2
H a G; 443.4; 458.5; 461.1; 468.4

h 2; G 2
448.4; 458.1; 463.1; 468.2;
474.1
h 5; G 5.

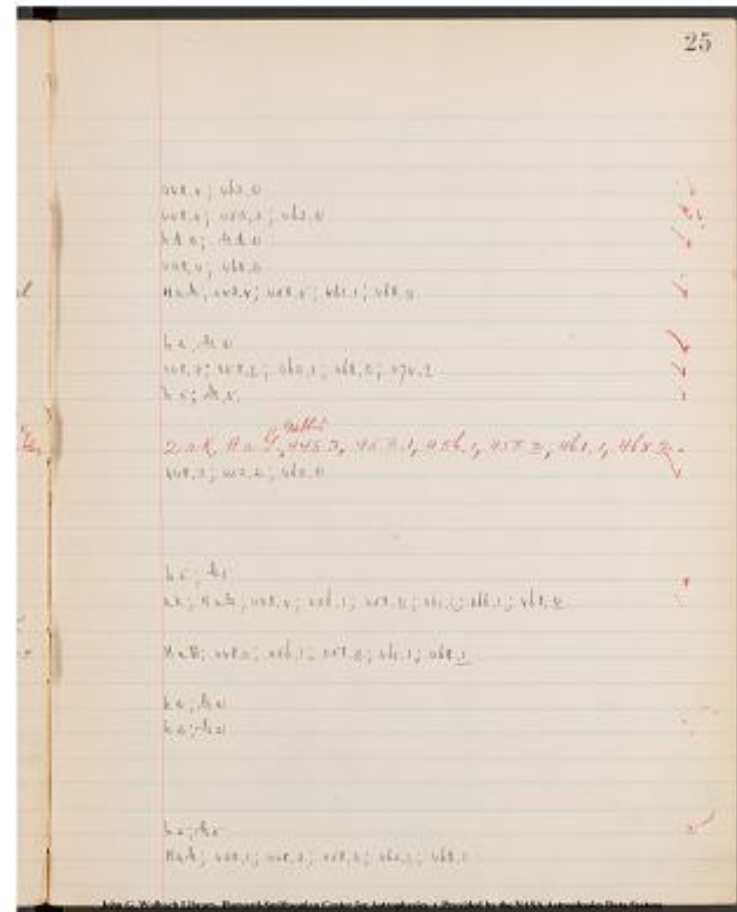
448.3; 453.2; 463.2[^]2 aK, H a G Gall 2, 448.3, 453.1,
456.1, 458.2, 461.1, 468.2
1.]
448.3; 453.2; 463.2

h 5; G 5
aK; H a G; 448.4; 456.1; 458.2; 461.1; 466.1;
468.2

H a G; 448.4; 456.1; 458.3; 461.1;
468.1

h 2; G 2
h 2; G 2

h 5; G 5
H a G; 438.1; 448.3; 458.2; 463.1; 468.1

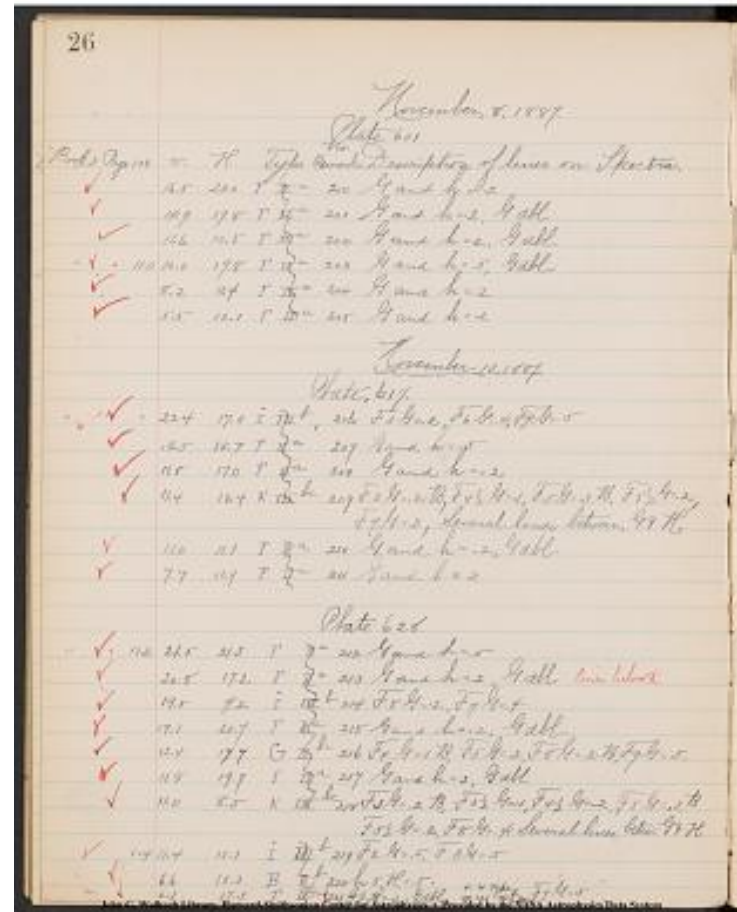


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Plate 601

Book 3 page 108 | v. H. Type remark Description of lines on Spectra. |
 [[check mark]]|16.5|20.0|F[[strike through]]II^a[[a]] |[[/strike through]]|200|
 G and h=.2|
 [[check mark]]|14.9|19.8|F[[strike through]]II^a[[a]] |[[/strike through]]|201|
 G and h=.2, Gabl|
 [[check mark]]|11.6|10.5|F[[strike through]]II^a[[a]] |[[/strike through]]|202|
 G and h=.2, Gabl|
 [[check mark]]|11.0|10.0|17.8|F[[strike through]]II^a[[a]] |[[/strike through]]|
 through]]|203| G and h=.5, Gabl|
 [[check mark]]|8.2|11.4|F[[strike through]]II^a[[a]] |[[/strike through]]|204|
 G and h=.2|
 [[check mark]]|5.5|10.1|F[[strike through]]II^a[[a]] |[[/strike through]]|205|
 G and h=.2|
 November, 10, 1887
 Plate, 617.
 [[check mark]]|22.4|17.3|I[[strike through]]III^a[[b]] |[[/strike through]]|
 ,206| F3G=.2, F6G=.4, F9G=.5|
 [[check mark]]|18.5|18.7|F[[strike through]]II^a[[a]] |[[/strike through]]|207|
 G and h=.5|
 [[check mark]]|11.8|17.0|F[[strike through]]II^a[[a]] |[[/strike through]]|208|
 G and h=.2|
 [[check mark]]|11.4|18.4|K[[strike through]]III^a[[bc]] |[[/strike through]]|
 through]]|209| F3 G=.2 B, F4 1/2 G=.1, F5 G=.3 B, F5 1/2 G=.2, F7
 G=.3, Several lines between, [[?]]H.|
 [[check mark]]|11.0|11.1|F[[strike through]]II^a[[a]] |[[/strike through]]|210|
 G and h=.2, Gabl|
 [[check mark]]|7.7|11.9|F[[strike through]]II^a[[a]] |[[/strike through]]|211|G
 and h=.2|
 Plate 628
 [[check mark]]|11.2|21.5|21.3|F[[strike through]] II^a[[a]] |[[/strike through]]|
 through]]|212| G and h=.5|
 [[check mark]]|20.8|17.2|F[[strike through]]II^a[[a]] |[[/strike through]]|213|
 G and h=.2, Gable| lines below K|
 [[check mark]]|19.5|9.2|I[[strike through]]III^a[[b]] |[[/strike through]]|214|
 F5 G=.2, F7 G=.4|
 [[check mark]]|17.1|20.7|F[[strike through]]II^a[[a]] |[[/strike through]]|215|
 G and h=.2, Gabl|
 [[check mark]]|12.4|17.7|G[[strike through]]II^a[[bc]] |[[/strike through]]|
 through]]|216|F4 G=.1 B, F5 G=.2, F8 G=.2 B, F9G=.5.|
 [[check mark]]|11.8|19.7|F[[strike through]]II^a[[a]] |[[/strike through]]|
 through]]|217|G and h=.2, Gabl|



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27

h 2; G 2

~~G d;~~ h 2; G ^{[[d]]} 2

~~G d;~~ h 2; G ^{[[d]]} 2

~~G d;~~ h 5; G ^{[[d]]} 5

h 2; G 2

h 2; G 2

438, 5; 453, 4; 468, 2

h 5; G 5

h 2; G 2

HaG; 448, 3; 456, 2; 458, 3; 461, 1; 468, 2

~~G d;~~ h 2; G ^{[[d]]} 2

h 2; G 2

h 5; G 5

a k; ~~G d;~~ h 2; G ^{[[d]]} 2

448, 4; 458, 2

~~G d;~~ h 2; G ^{[[d]]} 2

438, 5; 443, 2; 458, 2; 463,

1

~~G d;~~ h 2; G ^{[[d]]} 2

H a G; 443, 4; 456, 2; 458, 3; 461, 2; 446, 1; 468, 2

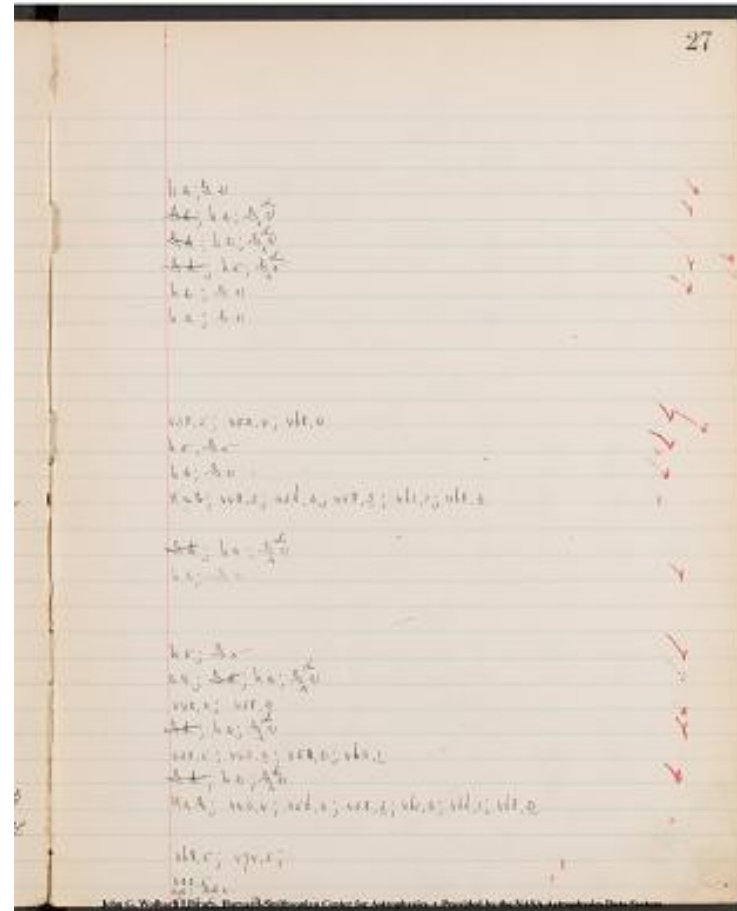
468, 5; 474, 5;

403, 5

h 2; G d 2

448, 5

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Nov. 11, 1887.

Plate 682.

[6 columned table]

Book 3 Page 116|V.|H.|Type.|No. Remarks|Description of line on Spectra.

|---|---|---|---|---|

[[symbol-check]]20.9|15.4|K

[[strikethrough]]|[[bc]]|[[strikethrough]]|223|F 3 G = .3B, F 3 ½ G = .2, F 4 ½ G = .3, F 5 G = .4B, F 5 ½ G = .3, F 7 G = .5, Several lines between G & H

[[symbol-check]]17.0|11.7|I

[[strikethrough]]|[[strikethrough]]^[[b]]|224|F 7 G = .5|

|15.8|11.7|[[strikethrough]]|[[strikethrough]]^[[b]]|225|F4 G = .2 F6 G = .2 F8 G = .2

[[symbol-check]]15.0|19.9|F|[[strikethrough]]|[[strikethrough]]^[[a]]|226|G and h = .2|

[[symbol-check]]9.8|14.1|[[strikethrough]]|[[strikethrough]]^[[b]]|227|F3 G = .3, F4 ½ G = .2, F7 G = .5|

[[symbol-check]]9.5|22.2|F|[[strikethrough]]|[[strikethrough]]^[[a]]|228|G and h = .2, G all.

Plate 742.

|---|---|---|---|---|

[[symbol-check]]118|13.3|11.7|F|[[strikethrough]]|[[strikethrough]]^[[a]]|229|G and h = .2|

[[symbol-check]]11.9|17.8|B|[[strikethrough]]|[[strikethrough]]^[[b]]|230|h 6 H = .2|

[[symbol-check]]11.4|14.6|I|[[strikethrough]]|[[strikethrough]]^[[b]]|231|F5G = .2, F8G = .5|

[[symbol-check]]10.5|24.1|K|[[strikethrough]]|[[strikethrough]]^[[b.c.]]|232|F2G = .3B, F6G = .5B, G.B|

[[symbol-check]]120|7.3|19.8|K|[[strikethrough]]|[[strikethrough]]^[[bc]]|233|F6G = .2, F7G = .5|

[[symbol-check]]6.5|17.0|K|[[strikethrough]]|[[strikethrough]]^[[b.c.]]|234|F7G = .3 B, F4 ½ G = .2, F5G = .3B, F5 ½ G = .2, F7G = .3, F8 ½ G = .2, Several lines betw. G+H.

Plate 693.

|---|---|---|---|---|

[[symbol-check]]20.4|13.9|F|

[[strikethrough]]|[[strikethrough]]^[[a]]|235|G and H = .5|

[[symbol-check]]19.5|20.5|I|

[[strikethrough]]|[[strikethrough]]^[[b]]|236|F6G = .2, F8G = .5|

[[symbol-check]]14.1|14.0|F|

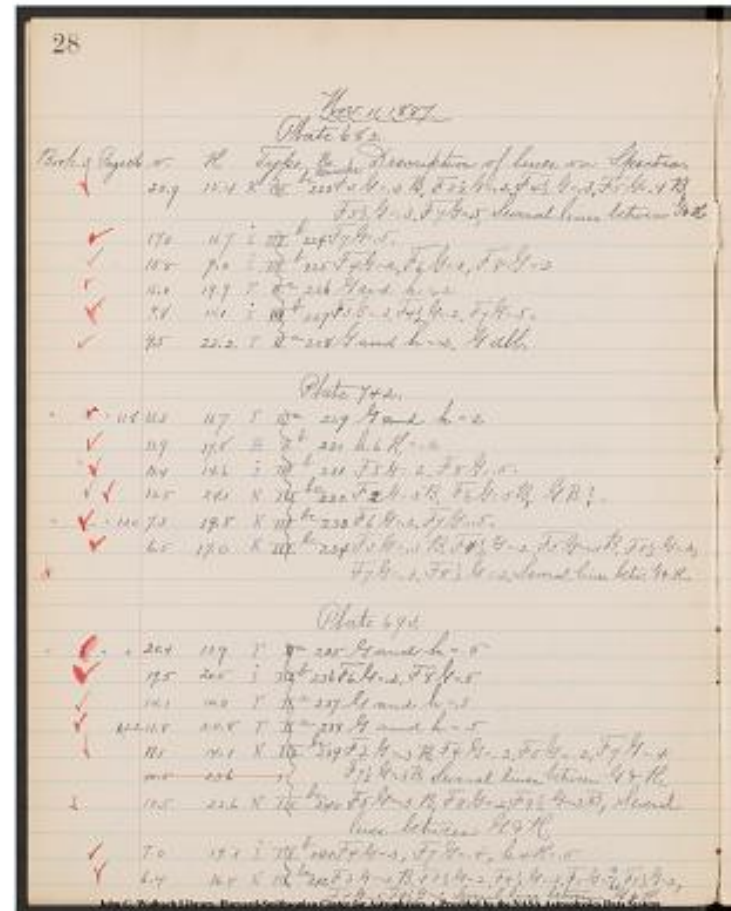
[[strikethrough]]|[[strikethrough]]^[[a]]|237|G and H = .5|

[[symbol-check]]122|11.8|20.8|F|

[[strikethrough]]|[[strikethrough]]^[[a]]|238|G and H = .5|

[[symbol-check]]11.1|14.1|K|

[[strikethrough]]|[[strikethrough]]^[[b]]|239|F2G = .3B, F4G = .2, F5G



=.2, F7G =.4|
 |---|~~10.5|23.6|~~---|~~10.5|23.6|~~|F71/3G =.3B.
 Several lines between G+H.|
~~10.5|23.6|~~|
~~10.5|23.6|~~|
~~10.5|23.6|~~|
 =.2B, Several lines between G+H.|
 7.0|19.3|
~~10.5|23.6|~~|
~~10.5|23.6|~~|
~~10.5|23.6|~~|
 =.2B, F31/2G =.2,
 F41/2G =.3, F5G ^.3B, F51/2G =.2, F7G =.5, F81/2G =.2 Several lines
 between G+H.|

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29

H a G; 448,5; 456,3; 458,[[underline]] 4 [[/underline]]; 461,3; 466,2;
468,[[underline]] 3 [[/underline]]

448,5
443,2; 453,2; 463,2
h,2; G2
448,5; 461,2; 468,3
[[strikethrough]] Gd [[/strikethrough]]; h2; Gd2

h2; G2
402,2
443,5; 458,21
[[underline]] G [[/underline]]? [[strikethrough]] G [[/strikethrough]]
453,[[underline]] 5 [[/underline]]; 474,[[underline]] 3 [[/underline]]
448,5; 453,21
H.aG; 441,21; 448,3; 456,2; 458,[[underline]] 3 [[/underline]]; 461,2;
468,[[underline]] 3 [[/underline]]

h, 5; G 5
443,5; 453,2
h 5, G 5
h 5, G 5
HaG; 446,[[underline]] 3 [[/underline]]; 448,4; 458,2; 463,2;
474,[[underline]] 3 [[/underline]]

HaG;
436,[[underline]]2[[/underline]];443,2;458,[[underline]]3[[/underline]]
403,5;448,4;463,3
HaG;441,2;448,5;456,2;458,[[underline]]3[[/underline]];461,3;466,2;468,[[underline]]2[[/underline]]



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Plate No. 770

Book 3& Page 188

N. | H. | Type | Remarks | Description of lines on Spectra.

19.5 | 20.7 | I ~~III~~ ~~b~~ | 243 | F3G=.2,
F5G=.2, F7G=.4 |
~~12.0 | 17.4 | B~~ ~~I~~ ~~b~~ |
243a | F6G=.2, h 6 16 -.2. | ~~I~~
11.5 | 14.2 | I ~~III~~ ~~b~~ | 244 | F3G=.2,
F5G=.2, F7G=.5. |
10.5 | 23.8 | K ~~III~~ ~~bc~~ | 245 | F3G=.2B,
F5G=.3B, F51/2G=.1, F7G=.4. |
6.6 | 16.6 | K ~~III~~ ~~b.c.~~ | 246 | F3G=.2 B,
F41/2G=.2, F5G=.3B, F51/2G=.2
F7G=.4, Several lines between G&H. |

Plate 800. Nov. 12, 1887.

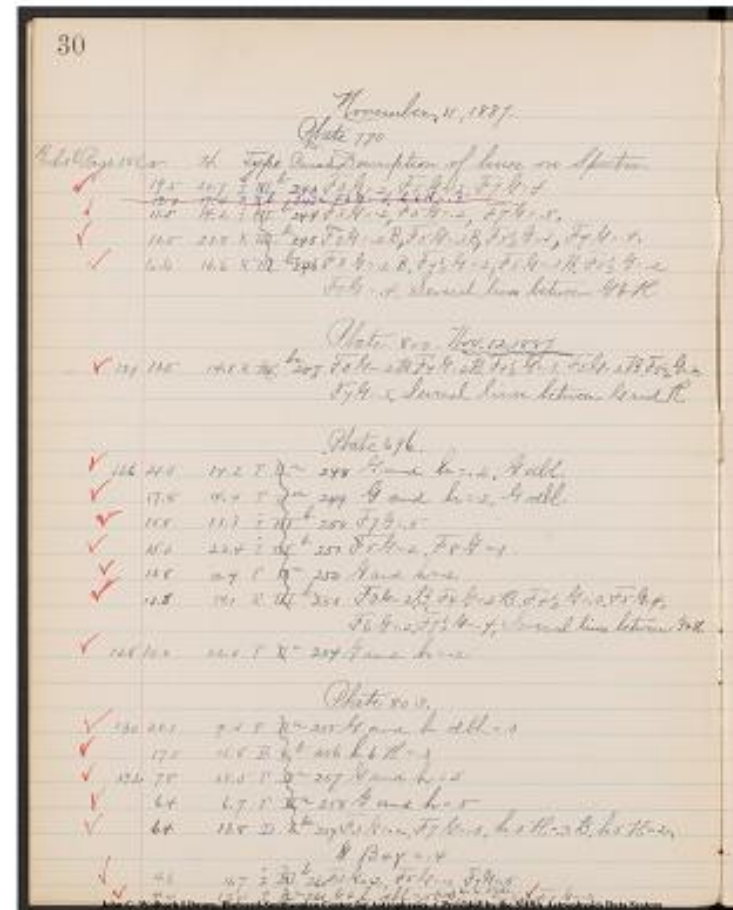
124 | 13.5 | 14.1 | K ~~III~~ ~~b.c.~~ | 247, |
F3G=.2B, F4G=.2B, F41/2G=.3, F5G=.3B, F51/2G=.2,
F7G=.5, Several lines between G and H. |

Plate 696.

126 | 21.5 | 14.2 | F ~~II~~ ~~a~~ | 248 | G and
h=.2, G dll. |
17.8 | 14.4 | F ~~II~~ ~~a~~ | 249 | G and h=.2,
G dll. |
15.8 | 13.3 | I ~~III~~ ~~b~~ | 250 | F7G=.5 |
15.0 | 23.4 | I ~~III~~ ~~b~~ | 251 | F5G=.2,
F8G=.1. |
13.8 | 10.4 | F ~~II~~ ~~a~~ | 252 | G and h=.2 |
13.3 | 14.1 | K ~~III~~ ~~b.c.~~ | 253 | F3G=.2,
B, F4G=.2B, F4.1/2G=.3, F5G=.4,
F6G=.2, F71/2G=.4, Several lines between G&H. |
128 | 12.0 | 22.0 | F ~~II~~ ~~a~~ | 254 | G and
h=.2 |

Plate 803.

130 | 20.1 | 9.3 | F ~~II~~ ~~a~~ | 255 | G and h
dll.=.3 |
17.5 | 15.8 | B ~~I~~ ~~b~~ | 256 | h 6 H=.3 |
132. | 7.8 | 18.5 | F ~~II~~ ~~a~~ | 257 | G and
h=.5 |
6.4 | 6.7 | F ~~II~~ ~~a~~ | 258 | G and h=.5 |
6.4 | 13.8 | D ~~I~~



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448,4; 458,2; 468,2]
~~453,2; 402,2;~~
 448,5; 458,2; 468,2]
 448,4; 456,1; 458,3; 468,2]
~~448,4; 456,2; 4~~58,3; 461,2; 468,2]

HaG; 448,5; 456,2; 458,3; 461,3; 463,2; 468,2]

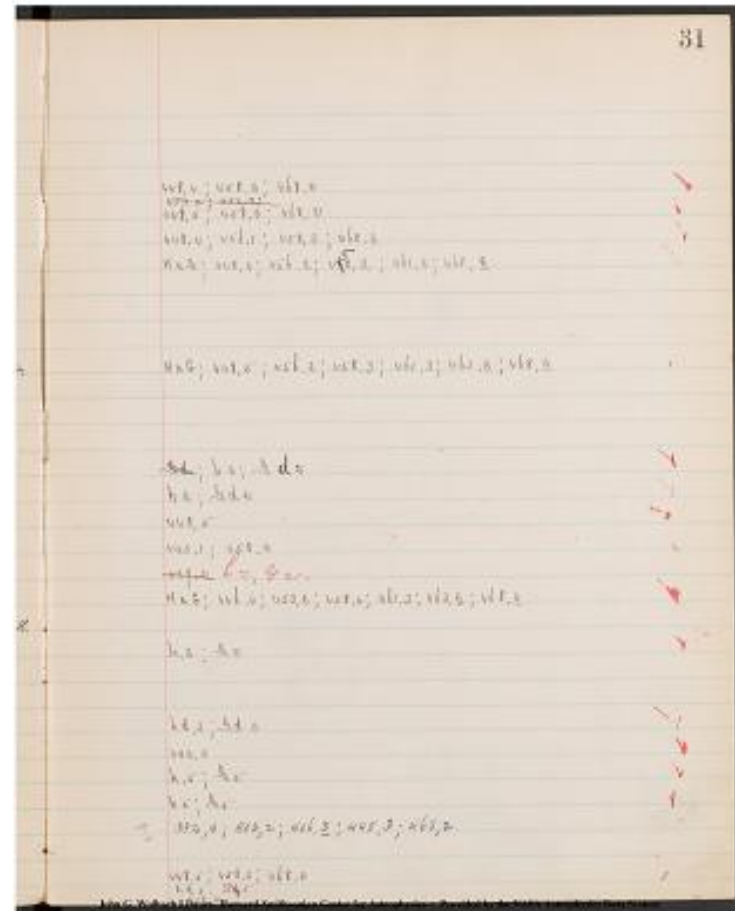
~~h2; [[?]]d2~~
 448,5]
 443,1; 458,2]
~~429,4~~ hz, yz.
 HaG; 446,4; 453,2; 458,4; 461,3; 463,2; 468,4]

~~GD~~ h2; Gd2]
 448,5]
 443,1; 458,2]
~~429,2~~ L2, G2.
 HaG; 446,4; 453,2; 458,4; 461,3; 463,2; 468,2]

h,2; G2]

hd,3; Gd3]
 402,3]
 h,5; G5]
 h5; G5]
 382,4; 403,2; 406,3; 448,3; 468,2]

448,5; 458,2; 468,2]
 hd5; G ~~d~~ 5
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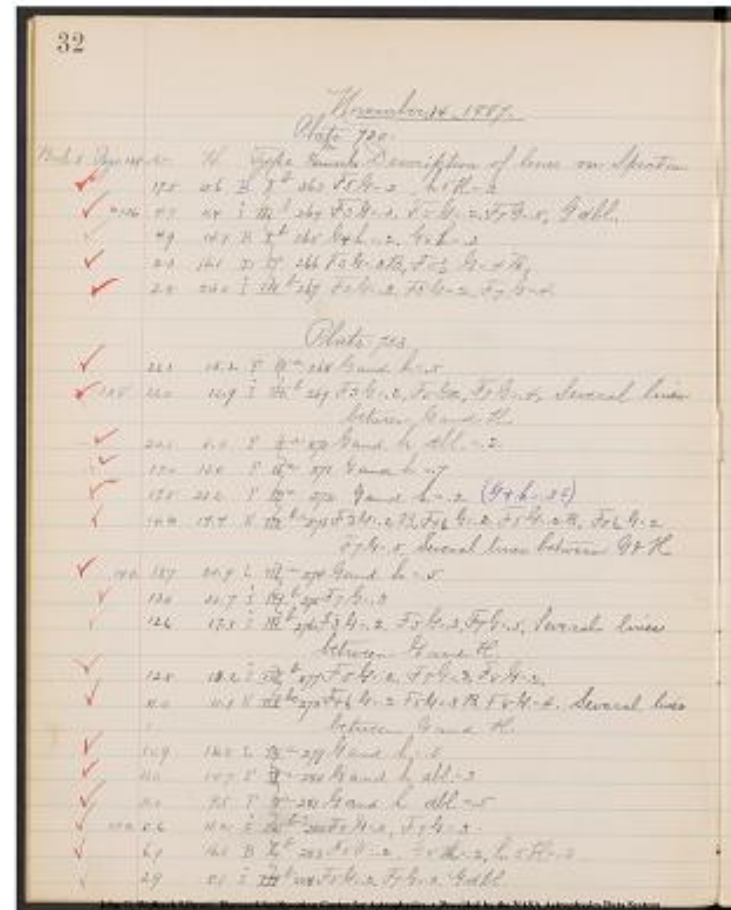
Plate 720.

Book 3 Page 134 | V. | H. | Type | Remarks | Description of lines on Spectrum.

17.5	15.6	B II b	263	F5G = .2, h5H = 2	
136	4.7	11.4	III b	264	F3G = .2, F5G = .2, F7G = .5, G all.
4.9	14.7	B I b	265	G4h = .2, G6h = .2	
2.3	16.1	D I a	266	F3G = .2B, F5 1/2 G = .4B,	
2.8	24.0	III b	267	F3H = .2, F5G = .2, F7G = .4.	

Plate 753

21.1	15.2	F II a	268	G and h = .5	
138	21.	12.9	III b	269	F3G = .3, F5G = .2, F7G = .4, Several lines between G and H.
20.1	8.0	F II a	270	G and h all = .2	
17.0	13.0	F II a	271	G and h = .7	
17.5	21.2	F II a	272	G and h = .2 (G + h = .3?)	
14.6	17.7	K III b.c	273	F3G = .2B, F4 1/2 G = .2, F5G = .2B, F5 1/2 G = .2, F7G = .5, Several lines between G & H	
140	13.7	20.9	III a	274	G and h = .5
13.0	20.7	III b	275	F7G = .2	
12.6	17.3	III b	276	F3G = .2, F5G = .3, F7G = .5, Several lines between G and H.	
12.8	13.2	III b	277	F5G = .2, F7G = .3, F8G = .2	
11.0	11.1	K III bc	278	F4 1/2 G = .2, F5G = .3B, F8G = .4. Several lines between G and H.	
10.9	12.8	L III a	279	G and h = .5	
11.0	14.7	F II a	280	G and h all. = .3	
10.0	9.5	F II a	281	G and h all. = .5	
142	8.6	11.2	III b?	282	F5G = .2, F7G = .3
6.9	16.1	B I b	283	F5G = .2, G5h = .2, h5H = .3	
2.9	8.1	III b	284	F5G = .2, F7G = .3, G all.	



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403,2; 458,2
Gd; 448,5; 458,2; 468,2
419,2; 424,2
456,4; 468,2
448,4; 458,2; 468,2

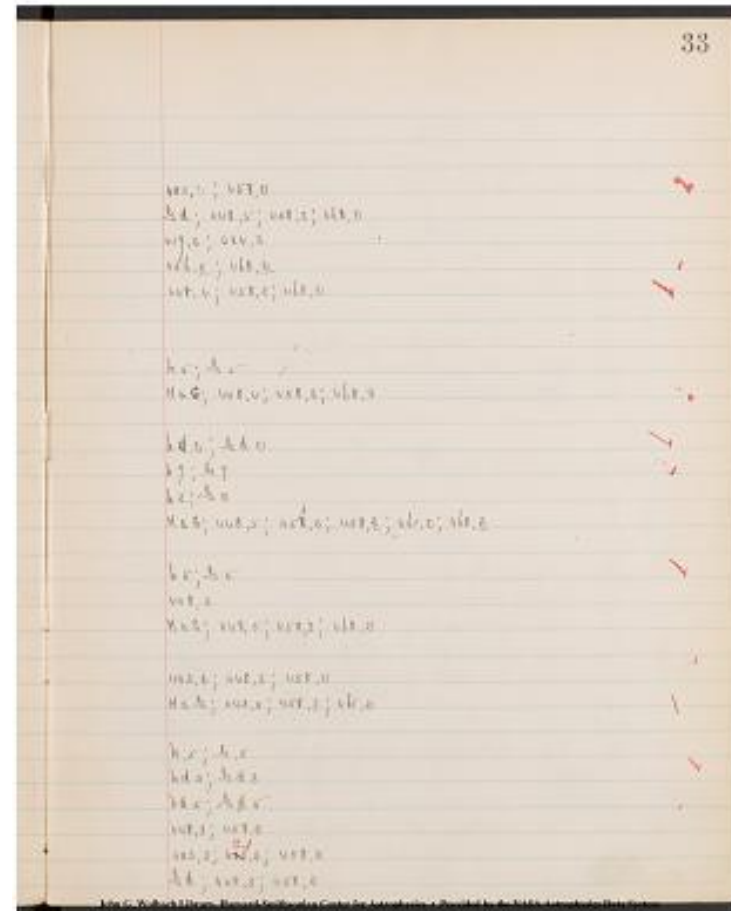
h4; G5
HaG; 448,4; 458,2; 468,3

hd,2; Gd2
h7; G7
h2; G2
HaG; 448,5; 45~~8~~6,2;
458,2; 461,2; 468,
2

h5; G5
448,3
HaG; 448,5; 458,3; 468,2

443,2; 448,3; 458,2
HaG; 443,4; 458,3; 461,2

h,5; G,5
hd3; Gd3
hd5; Gd5
448,3; 458,2
403,3; 4~~4~~03~~3~~21,2; 458,2
Gd; 448,3; 458,2



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Plate 774

[[6 columned table]]

Book 3, Page 142. | V. | H. | Type. | Remarks. | Description of lines on Spectra. |

| --- | --- | --- | --- | --- | --- |

| 21.0 | 13.0 | ~~III bc.~~ | ~~K~~ | 285 | F3G = .2B, F3½G = .3, F5G = .2, F7G = .3, F8G = .2B. || 20.5 | 8.1 | ~~II a~~ | ~~F~~ | 286 | G and h = .2| 144 | 14.8 | 19.8 | ~~III b~~ | ~~I~~ | 287 | F3G = .2, F5G = .2, F7G = .5 || 13.0 | 13.3 | ~~III b~~ | ~~F~~ | 288 | F3G = .2,

F5G = .2, F7G = .4 |

| 12.8 | 17.3 | ~~III b~~ | ~~F~~ | 289 | F3G = .2,

F5G = .2, F7G = .4 |

| 11.1 | 11.2 | ~~III b~~ | ~~F~~ | 290 | F3G = .2,

F5G = .2, F7G = .4. |

| 11.4 | 14.8 | ~~II a~~ | ~~F~~ | 291 | G and h = .5, G dbl. || 8.8 | 11.3 | ~~III bc.~~ | ~~K~~ | 292 | F3G = .2B, F3½G = .2, F4½G = .3, F5G = .2B, F5½G = .2, F7G = .5, F8½G = .2

Several lines between G and H. |

| 146 | 3.0 | 8.2 | ~~III b~~ | ~~F~~ | 293 | F3G = .2B, F5G = .2B, F7G = .4 |November, 15, 1887.

Plate 795

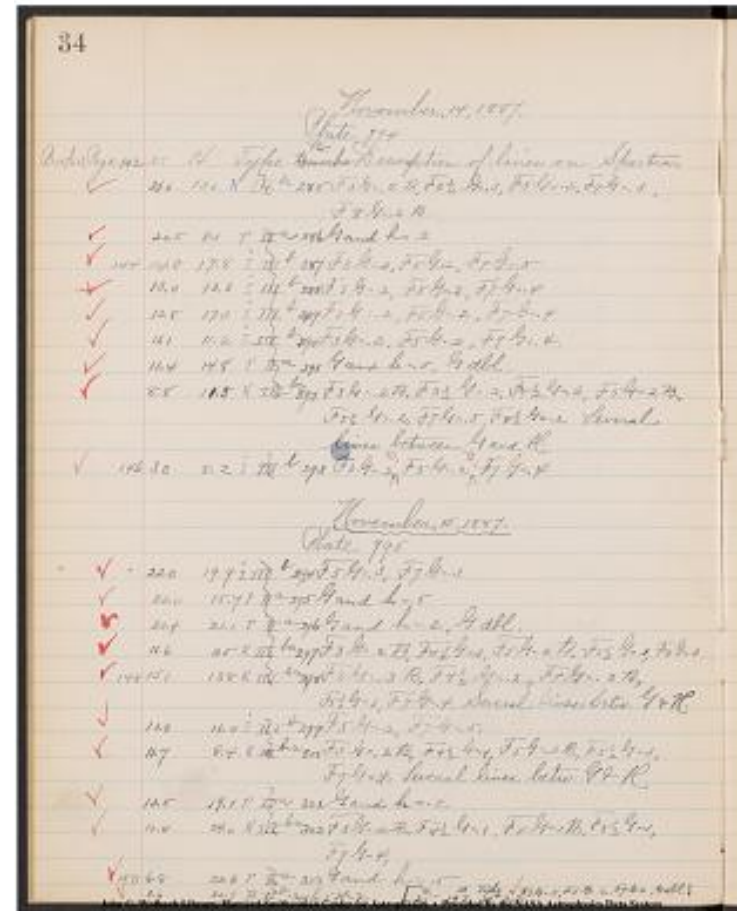
[[6 columned table]]

[[ditto for ?]] | 22.0 | 19.9 | ~~III b~~ | ~~F~~ | 294 | F5G = .3, F7G = .3 || 20.0 | 15.7 | ~~II a~~ | ~~F~~ | 295 | G and h = .5 || 20.4 | 21.1 | ~~II a~~ | ~~F~~ | 296 | G and h = .2, G dbl. || 16.6 | 11.5 | ~~III bc.~~ | ~~K~~ | 297 | F3G = .2B, F4½G = .1, F5G = .2B, F5½G = .1, F8G = .3 || 148 | 15.1 | 13.8 | ~~III b.c.~~ | ~~K~~ | 298 | F3G = .3B, F4½G = .2, F5G = .3B., F5½G = .1, F7G = .4. Several lines betw. G & H. || 13.0 | 11.0 | ~~III b~~ | ~~F~~ | 299 | F5G = .2, F7G = .5. || 11.7 | 8.4 | ~~III b.c.~~ | ~~F~~ | 300 | F3G = .2B, F4½G = .1, F5G = .3B., F5½G = .1, F7G = .4. Several lines betw. G & H. || 10.5 | 19.1 | ~~II a~~ | ~~F~~ | 301 | G and h = .2 || 10.4 | 24.0 | ~~III b.c.~~ | ~~K~~ | 302 | F3G = .2B., F4½G = .1, F5G = .1B, F5½G = .1, F7G = .4. || 150 | 6.8 | 20.3 | ~~II a~~ | ~~F~~ | 303 | G and h = .5 || 3.6 | 20.9 | ~~II b~~ | ~~B~~ | 304 | h5H = .2 |

[[5 columned table]]

V. | H. | Type | | |

| --- | --- | --- | --- | --- |

| 2.5 | 19.7 | ~~III b~~ | ~~F~~ | 305 | F3G = .5, F5G = .2, F7G = .2, G all. ? |

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|443,2]; 448,3; 458,2; 466,3; 468,2]
[2]

|h 2; G 2|

448,5; 458,2; 468,2|

448,4; 458,2; 468,2|

448,4; 458,2; 468,2|

[[~~h 2; G 2~~]] Gd [[~~h 2; G 2~~]]; h5; Gd5|

|HaG; 441,2; 448,5; 456,2; 458,2]; 461,3;
466,2; 468,2]2]

|448,4; 458,2]; 468,2]2]

|448,3; 458,3|

|h 5; G 5|

[[~~h 5; G 5~~]] Gd [[~~h 5; G 5~~]]; h2; Gd2|

|443,3; 456,1; 458,2]; 461,1; 468,2]2]

|HaG; 448,4; 456,1; 458,3]; 461,2;
468,3]3]

|448,5; 458,2|

|HaG; 448,4; 456,1; 458,3]; 461,1;
468,2]2]

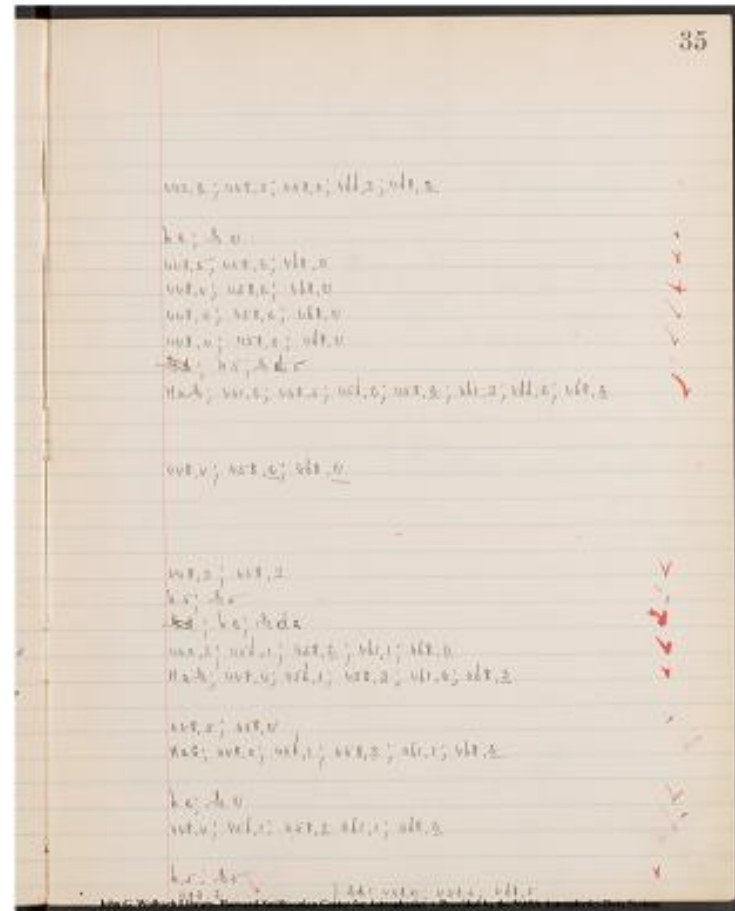
|h 2; G 2|

|448,4; 456,1; 458,1]; 461,1; 468,2]2]

|h 5; G 5|

403,2| Gd? 448,2; 458,2; 468,5|

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November, 15, 1887.

Plate no. 787.

Book 3 Page v. 14. Type Description of lines on Spectrum.

150.22.5 19.7 I II 306 F5G=.5B4, F3G=.5B, F7G=.5B, F7G=4 Several lines

20.1 15.6 F IIa 307 between G and H

G and h=.5, G all

20.4 20.9 F IIa 308 G and H all=.5

152 15.2 13.6 K III b.c. 309 F3 G=.2B, F4 1/2G=.3, F5 G=.2B, F5 1/2G=.1

F7 G=.4, Several lines betw. G & H.

11.7 8.4 K III bc. 310 F3 G=.3B., F3 1/2G=.2, F4 1/2G=.2, F5 G=.4 B,

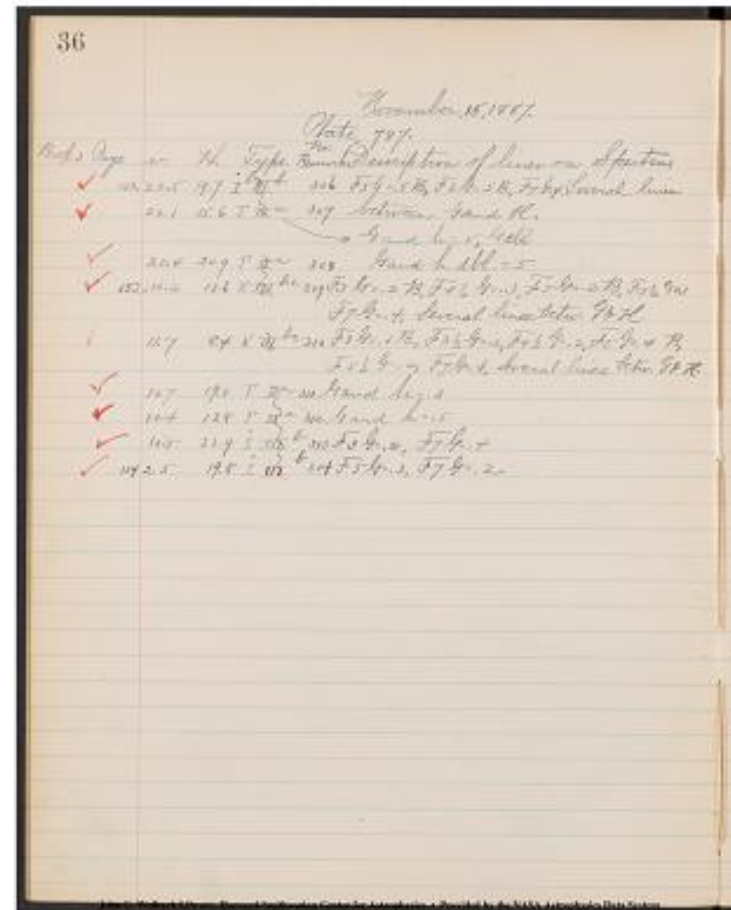
F5 1/2G=.2, F7 G=.4, Several lines betw. G & H.

10.7 19.0 F IIa 311 G and h=.3

10.4 13.8 F IIa 312 G and h=.5

10.5 23.9 I IIIb 313 F3 G=.2, F7 G=.4

154 2.5 19.8 I IIIb 314 F5 G=.3, F7 G=.2



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37

HaG; 448,4; 468, 5; 458, 5

h 5; Gd5

hd5; Gd5

HaG; 448, 4; 456, 1; 458, 2; 461, 3; 468, 2

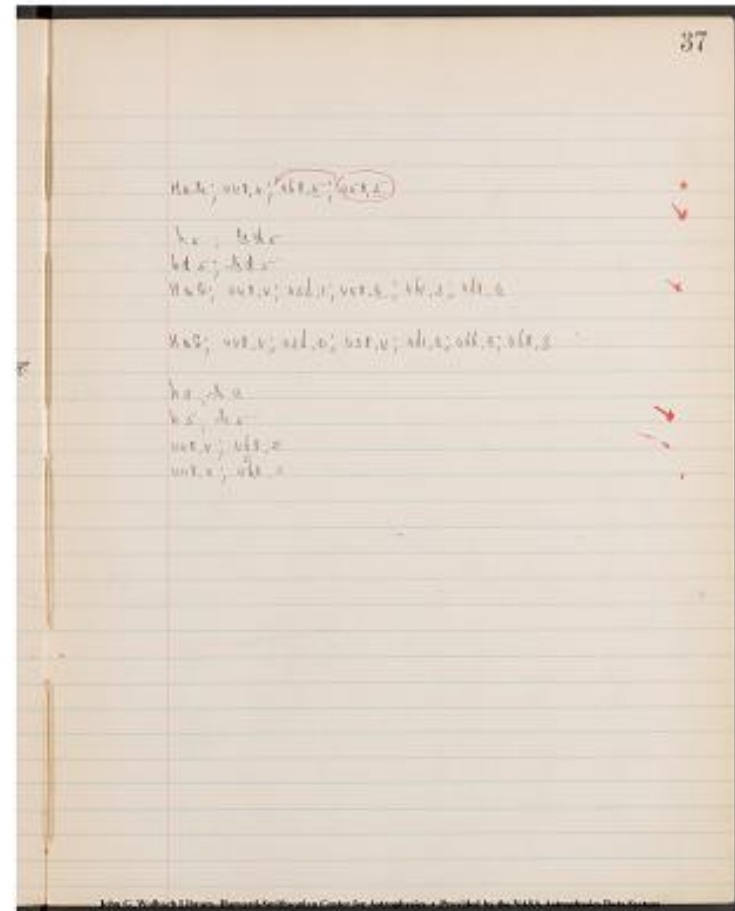
HaG; 448, 4; 456, 2; 458, 4; 461, 2; 466, 2; 468, 3

h3, G3

h5, G5

448, 4; 468, 2

448, 4; 4 ~~6~~ 58, 3



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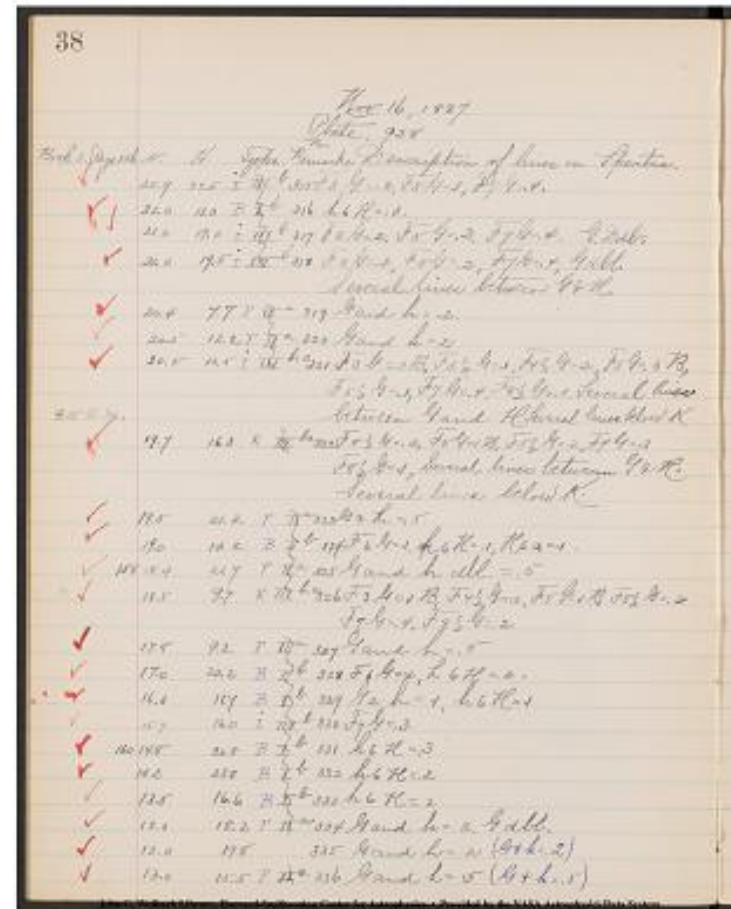
Nov. 16, 1887.
Plate. 928

[6 columned table]

B 3. p 156|V|H|Type|No. Rem.|Description of Lines on Spectra.]

---|---|---|---|---|---|
 ||22.9|22.5||~~[[[b]]]~~||~~[[[b]]]~~||315|F3G=.2,
 F5G=.1, F7G=.4.
 ||22.0|11.0|B ~~[[[b]]]~~||~~[[[b]]]~~||316|h6H=.3.
 ||21.2|19.0||~~[[[b]]]~~||~~[[[b]]]~~||317|F3G=.2.
 F5G=.2, F7G=.4. G dbl
 ||21.0|19.5||~~[[[b]]]~~||~~[[[b]]]~~||318|F3G=.2, F5G=.2,
 F7G=.4, G. dbl. Several lines between G&H.
 ||20.4|7.7|F ~~[[[a]]]~~||~~[[[a]]]~~||319|G and h=.2.
 ||20.5|12.2|F ~~[[[a]]]~~||~~[[[a]]]~~||320|G and h=.2
 ||20.5|13.5||~~[[[b.c.]]]~~||~~[[[b.c.]]]~~||321|F3G=.3B.,
 F3½G=.1, F4½G=.2, F5G=.3B, F5½G=.1, F7G=.4, F8½G=.1. Several
 lines
 |9.15 a.m.| | | |between G and H. Several lines below K|
 ||19.7|16.3|K ~~[[[b.c.]]]~~||~~[[[b.c.]]]~~||322|F4½G=.2,
 F5G=.1B, F5½G=.2, F7G=.3, F8½G=.1, Several lines between G & H.
 Several lines below K.
 ||19.5|21.2|F ~~[[[a]]]~~||~~[[[a]]]~~||323|G & h=.5|
 ||19.0|14.2|B ~~[[[b]]]~~||~~[[[b]]]~~||324|F6G=.1, h6H=.1,
 h6a=.1.
 ||15.8|14.2|21.7|F ~~[[[a]]]~~||~~[[[a]]]~~||325|G and h
 dbl.=.5|
 ||18.5|9.7|K ~~[[[b.c.]]]~~||~~[[[b.c.]]]~~||326|F3G=.1B,
 F4½G=.2, F5G=.1B, F5½G=.2, F7G=.4, F½G=.2.
 ||17.8|9.2|F ~~[[[a]]]~~||~~[[[a]]]~~||327|G and h=.5|
 ||17.0|20.2|B ~~[[[b]]]~~||~~[[[b]]]~~||328|F6G=.2,
 h6H=.2.
 ||16.3|11.7|B ~~[[[b]]]~~||~~[[[b]]]~~||329|G2h=.1, h6H=.1,
 h6H=.1|
	15.7	16.0		~~[[[b]]]~~		~~[[[b]]]~~		330	F7G=.3
	16.0	14.8	20.8	B ~~[[[b]]]~~		~~[[[b]]]~~		331	h6H=.3
	14.2	23.8	B ~~[[[b]]]~~		~~[[[b]]]~~		332	h6H=.2	
	13.5	16.6	B ~~[[[b]]]~~		~~[[[b]]]~~		333	h6H=.2	
	13.0	18.2	F ~~[[[a]]]~~		~~[[[a]]]~~		334	G and h=.2 G	
dbl.									
	13.0	19.8		335	G and h=.2 (G & h=.2)				
	13.0	15.5	F ~~[[[a]]]~~		~~[[[a]]]~~		336	G and h=.5 (G &	
 h=.5)|

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|448,4; 458,1; 468,2|
 402,3|
 |Gd; 448,4; 458,2; 468,2|
 |HaG; Gd; 448,4; 458,2; 468,2|

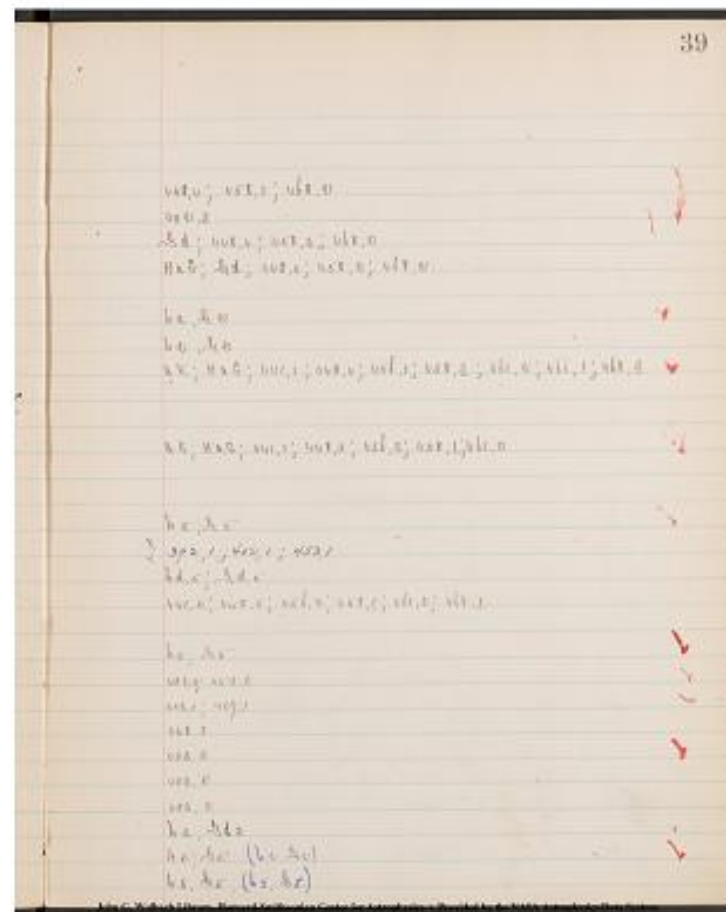
|h2, G2|
 |h2, G2|
 |aK; HaG; 441,1; 448,4; 456,1; 458,[[underline]] 3 [[/underline]]; 461,2;
 466,1; 468,[[underline]] 3 [[/underline]]|

|aK; HaG; 441,1; 448,3; 456,2; 458,[[underline]] 1 [[/underline]]; 461,4|

|h5; G5|
 392,1; 402,1; 453,1|
 |hd,5; Gd5|
 |441,2; 448,4; 456,2; 458,[[underline]] 1 [[/underline]]; 461,2;
 468,[[underline]] 1 [[/underline]]|

|h5; G5|
 402,2; 453,2|
 402,1; 429,1|
 448,3|
 402,3|
 402,2|
 402,2|
 |h2, Gd2|
 |h2; G2 (h2 G2)|
 |h5; G5 (h5 G5)|

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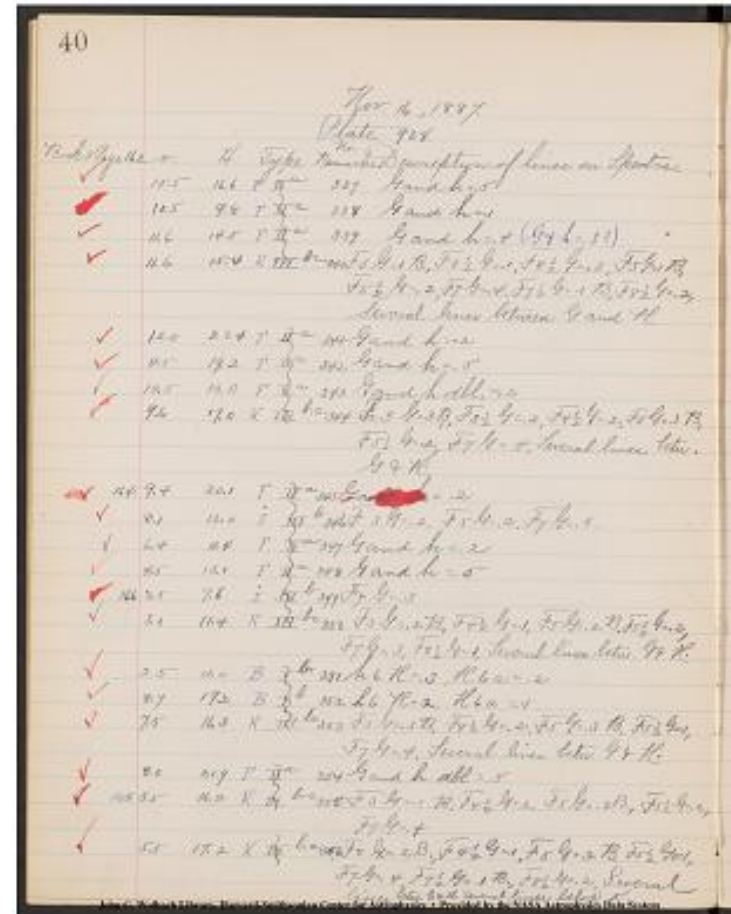
Nov 16, 1887.

Plate 928.

Book 3 Page 162 | N. H. Type Remarks Description of lines in Spectra

15.5	16.6	F	II ^a	337	G and h=.5	
11.5	9.8	F	II ^a	338	G and h=.1	
11.6	14.5	F	II ^a	339	G and h=.4 (G + h=.3?)	
11.6	15.4	K	III ^a c.	340	F3 G=.1 B.1, F3 1/2 G=.1, F4 1/2 G=.3, F3 G=.1 B, F5 1/2 G=.2, F7 G=.4, F7 1/2 G=.1 B, F8 1/2 G=.2, Several lines between G and H	
12.0	23.4	F	II ^a	341	G and h=.2	
11.5	19.2	F	II ^a	342	G and h=.5	
10.5	10.0	F	II ^a	343	G and h all. =.2	
9.6	17.0	K	III ^a c.	344	F3 G=.3 B, F 3 1/2 G=.2, F 4 1/2 G=.2, F5 G=.3 B, F5 1/2 G=.2, F7 G=.4, several lines betw. G + H.	
16.4	9.4	20.1	F	II ^a	345	G and h=.2
8.1	13.0	I	II ^a	346	F3 G=.2, F5 G=.2, F7 G=.5	
6.4	11.4	F	II ^a	347	G and h=.2	
4.5	13.1	F	II ^a	348	G and h=.5	
116	3.5	7.6	I	III ^a	349	F7 G=.3
3.0	11.4	K	III ^a c	350	F3 G=.2 B, F4 1/2 G=.1, F5 G=.2 B, F5 1/2 G=.2, F7 G=.3, F8 1/2 G=.1, several lines between. G + H.	
2.5	11.0	B	I ^a .	351	h6 H=.3, H6 a=.2	
8.7	19.2	B	I ^a .	352	h6 H=.2, H6 a=.1	
7.5	16.3	K	III ^a c.	353	F3 G=.3 B, F4 1/2 G=.2, F5 G=.3 B, F5 1/2 G=.1, F7 G=.4, several lines betw. G + H	
8.0	21.9	F	II ^a	354	G and h all.=.5	
168	5.5	16.2	K	III ^a c	355	F3 G=.1 B, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.2, F7 G=.4
5.5	17.2	K	III ^a c.	356	F3 G=.2 B, F4 1/2 G=.1, F5 G=.2 B, F5 1/2 G=.1, F7 G=.4, F7 1/2 G=.1 B, F8 1/2 G=.2, several lines betw. G + H., Several lines below K.	

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41

|h5; G5|
|h1; G1|
|(h3?, G3?) h4, G4|
|HaG; 441,2; 446~~[[strikethrough]]~~ 451 ~~[[/strikethrough]]~~ 1 |
[[underline]]; 448,4; 456,2; 458, [[underline]] 1 [[/underline]]; 461,3; 466,1;
468, [[underline]] 1 [[underline]]]

|h2; G2|
|h5; G5|
|hd2; Gd2|
|HaG; 448,4; 456,2; 458, [[underline]] 3 [[underline]]; 461,2; 466,2;
468, [[underline]] 3 [[underline]]]

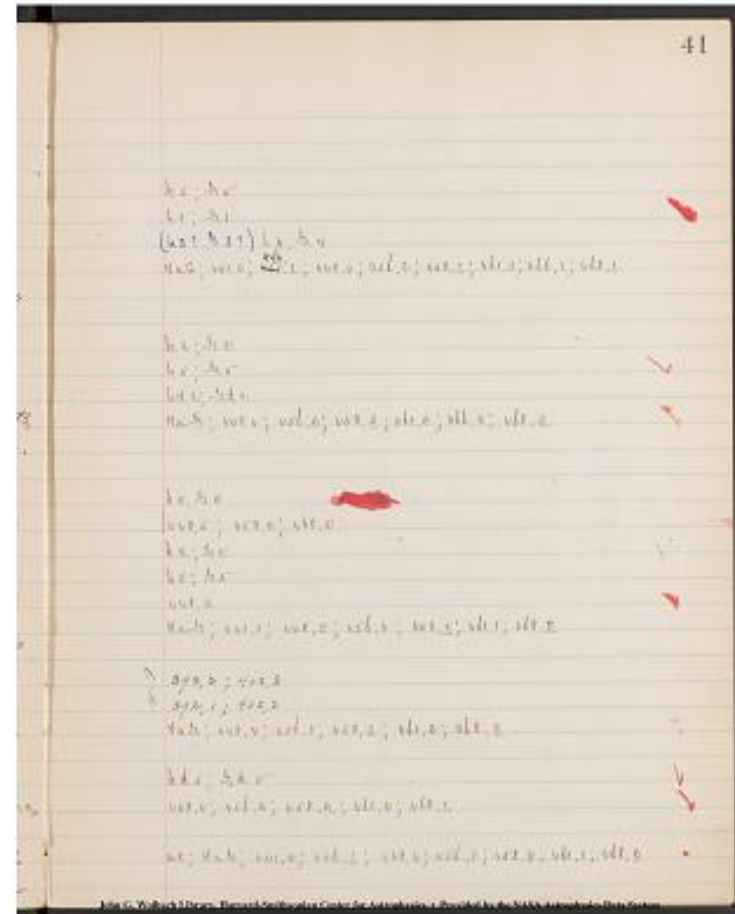
|h2; G2|
448,5; 458,2; 468,2|
|h2; G2|
|h5; G5|
448,3|
|HaG; 441,1; 448,3; 456,2; 458, [[underline]] 2 [[underline]]; 461,1;
468, [[underline]] 2 [[underline]]]

|392,2; 402,3|
392,1; 402,2|
|HaG; 448,4; 456,1; 458, [[underline]] 3 [[underline]]; 461,2;
468, [[underline]] 3 [[underline]]]

|hd5; Gd5|
448,4; 456,2; 458, [[underline]] 2 [[underline]]; 461,2; 468, [[underline]] 1
[[/underline]]]

|aK; HaG; 441,2; 446, [[underline]] 1 [[underline]]; 448,4; 456,1;
458, [[underline]] 2 [[underline]]; 461,1; 468, [[underline]] 2 [[underline]]]

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Nov. 16, 1887.

Plate 928.

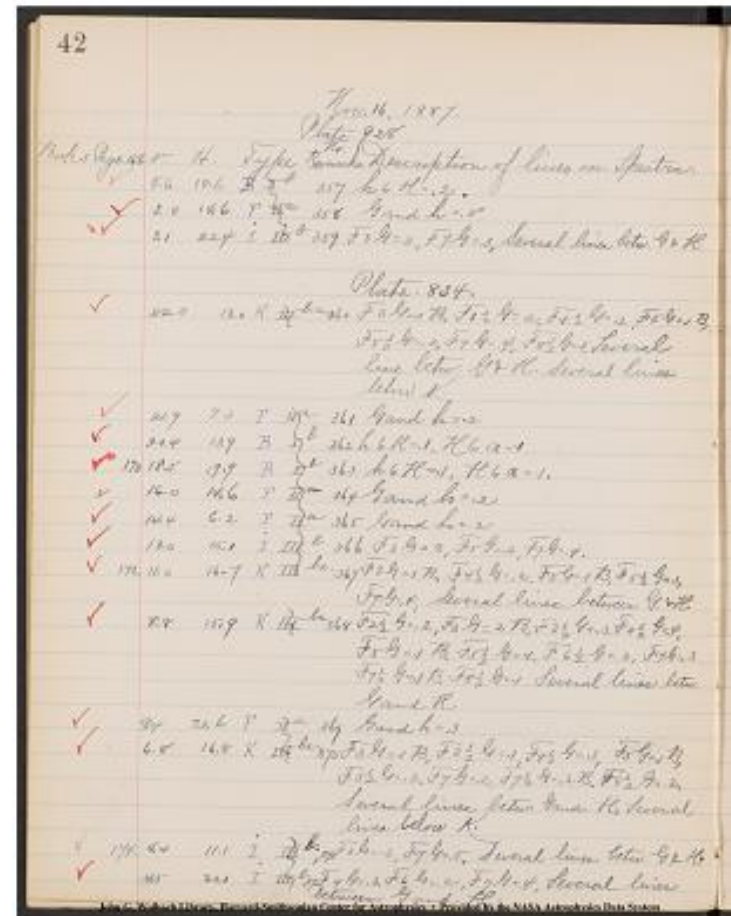
Book 3 Page 168 | N. 74. Type Remarks Description of Lines on Spectra

5.6 | 18.6 | B | I^A | 357 | h6 H=.2.
 3.0 | 14.6 | F | II^A | 358 | G and h=.5
 3.1 | 22.4 | I | III^A | 359 | F3 G=.2, F7 G=.3, Several lines betw. G + H.

Plate. 834.

22.0 | 13.0 | K | III^A.c. | 360 | F3 G=.1 B, F 3 1/2 G=.2, F4 1/2 G=.2, F5 G=.1 B, F5 1/2 G=.2, F4 G=.4, F8 1/2 G=.1, several line betw. G + H.
 Several lines below K.

21.9 | 7.3 | F | II^A | 361 | G and h=.2
 20.4 | 13.9 | B | I^A | 362 | h6 H=.1, H6 a=.1
 170 | 18.5 | 19.9 | B | I^A | 363 | h6 H=.1, H6 a=.1.
 16.0 | 14.6 | F | II^A | 364 | G and h=.2
 14.4 | 6.2 | F | II^A | 365 | G and h=.2
 13.0 | 15.1 | I | III^A | 366 | F3 G=.2, F5 G=.2, F7 G=.4.
 172 | 11.0 | 16.7 | K | III^A.c. | 367 | F3 G=.1 B, F4 1/2 G=.2, F5 G=.1 B, F5 1/2 G=.1, F7 G=.4, several lines between G + H.
 8.8 | 15.9 | K | III^A.c. | 368 | F2 1/2 G=.2, F3 G=.2 B, F3 1/2 G=.3, F4 1/2 G=.4, F5 G=.1 B, F5 1/2 G=.1, F6 1/2 G=.2, F7 G=.3, F7 1/2 G=.1 B, F8 1/2 G=.1. Several lines betw. G and H.
 9.4 | 21.6 | F | II^A | 369 | G and h=.3
 6.8 | 16.8 | K | III^A.bc | 370 | F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.3, F5 G=.1 B, F5 1/2 G=.2, F7 G=.2, F7 1/2 G=.2 B, F8 1/2 G=.2, Several lines betw. G and H, several lines below K.
 174. | 4.4 | 11.1 | I | III^A.b. | 371 | F3 G=.2, F7 G=.5, Several lines betw. G & H.
 4.5 | 22.1 | I | III^A.b. | 372 | F4 G=.3, F6 G=.2, F7 G=.4, | Several lines between G and H.



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43

|402,2|
|h5; G5|
|HaG; 448,3; 468,2|

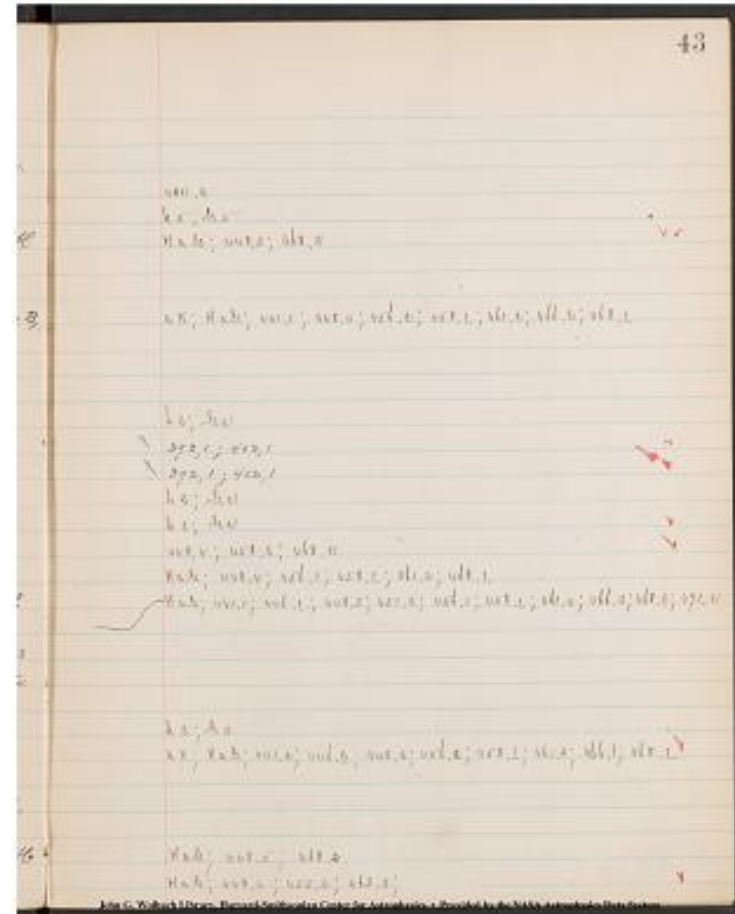
|aK; HaG; 441,1; 448,4; 456,2; 458,[[underline]] 1 [[/underline]]; 461,2;
466,2; 468,[[underline]] 1 [[/underline]]|

|h2; G2|
[[strikethrough]] ? [[/strikethrough]]|392,1; 402,1|
[[strikethrough]] ? [[/strikethrough]]|392,1; 402,1|
|h2; G2|
|h2; G2|
448,4; 458,2; 468,2|
|HaG; 448,4; 456,1; 458,[[underline]] 1 [[/underline]]; 461,2;
468,[[underline]] 1 [[/underline]]|
|HaG; 441,1; 446,[[underline]] 1 [[/underline]]; 448,3; 451,2; 456,1;
458,[[underline]] 1 [[/underline]]; 461,4; 466,3; 468,[[underline]] 2
[[/underline]]; 471,2|

|h3; G3|
|aK; HaG; 441,2; 446,[[underline]] 2 [[/underline]]; 448,2; 456,2;
458,[[underline]] 1 [[/underline]]; 461,3; 466,1; 468,[[underline]] 1
[[/underline]]|

|HaG; 448,5; 468,2|
|HaG; 448,4; 453,2; 463,3;|

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Nov. 16, 1887.

Plate 834,

Book 3, Page 174 V. 14. Type No. Remarks Description of lines on Spectra.

[checkmark] 2.4 13.0 I III b.c. 373 F3G=.3B, F3 1/2 G=.2, F4 G=.1B, F4 1/2 G=.3, F5 G=.3B, F5 1/2 G=.2, F7 G=.5, F8 1/2 G=.1, Several lines betw. G and H, Several lines below K.

Nov. 17, 1887

Plate, 738

[22.6 | 10.8 | F? | IIa? | 373a | g+h=.5

176 [22.6 | 12.3 | F | IIIa | 374 | G and h=.5

[11.4 | 12.9 | F? | IIa? | 374a | g+h=.2, 1 line below K.

178 [5.8 | 9.6 | K | III^bc. | 375 | F4 1/2 G=.1, F5 G=.2 B, F5 1/2 G=.1 F7 G=.5,

[5.5 | 11.3 | F? | IIa? | 375a | G+h=.2?

[4.2 | 11.3 | K | III^b.c | 376 | F2 1/2 G=.1, F3 G=.2B, F3 1/2, F 3 1/2 G=.1, F4 1/2 G=.1,

F5 G=.2 B., F5 1/2 G=.1, F7 G=.4, F 8 1/2 G=.1,

180 [2.9 | 12.3 | F | II^a | 377 | G+h dbl.=.3

[2.4 | 12.0 | F | III^a | 378 | G+h=.2

[22.8 | 13.8 | II | III^b | 379 | F7 G=.4,

[20.6 | 18.6 | II | III^b | 380 | F5 G=.2, F7 G=.4

[19.4 | 20.5 | K | III^b.c | 381 | F2 1/2 G=.1, F3 G=.2B., F4 1/2 G=.2, F5 G=.3B,

F5 1/2 G=.2, F7 G=.4, F8 G=.2, F9 G=.1 B. Several lines between G and H.

[17.2 | 14.6 | K | III^bc. | 382 | F2 1/2 G=.1, F3G=.1B, F3 1/2G=.1, F4 1/2 G=.3, F5G=.1B, F5 1/2 G=.2, F7G=.4

[17.1 | 22.4 | F | II^a | 383 | G and h=.5

182 [15.3 | 20.2 | F | II^a | 384 | G and h=.5

[14.1 | 14.1 | F | II^a | 385 | G and h=.3 Hdbl. (G+h=.2)

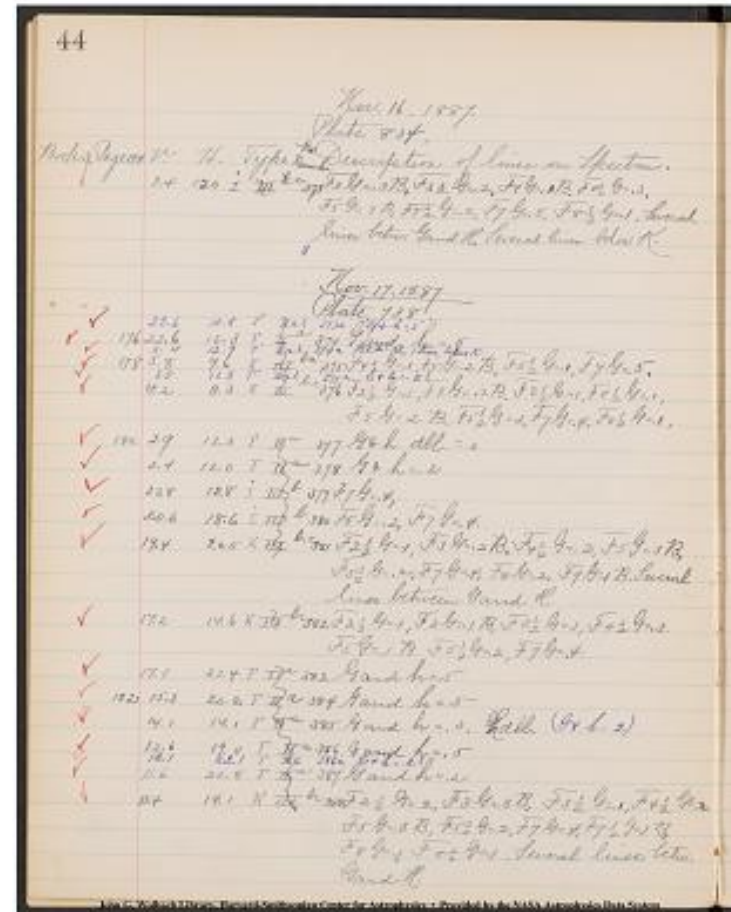
[12.6 | 19.0 | F | II^a | 386 | G and h=.5

[12.1 | 22.1 | F | IIa | 386a | G and h=.2?

[11.6 | 20.8 | F | II^a | 387 | G and h=.2

[11.4 | 14.1 | K | III^bc | 388 | F2 1/2 G=.2, F3 G=.3 B, F3 1/2 G=.1, F4 1/2 G=.2 F5 G=.3 B, F5 1/2 G=.2, F7 G=.4, F7 1/2 G=.1 B, F 8 G=.1, F8 1/2 G=.1 Several lines betw. G and H.

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45

|aK; 441,1; 448,5; 456,2; 458,[[underline]] 3 [[/underline]]; 461,3;
463,[[underline]] 1 [[/underline]]; 466,2; 468,[[underline]] 3 [[/underline]]|

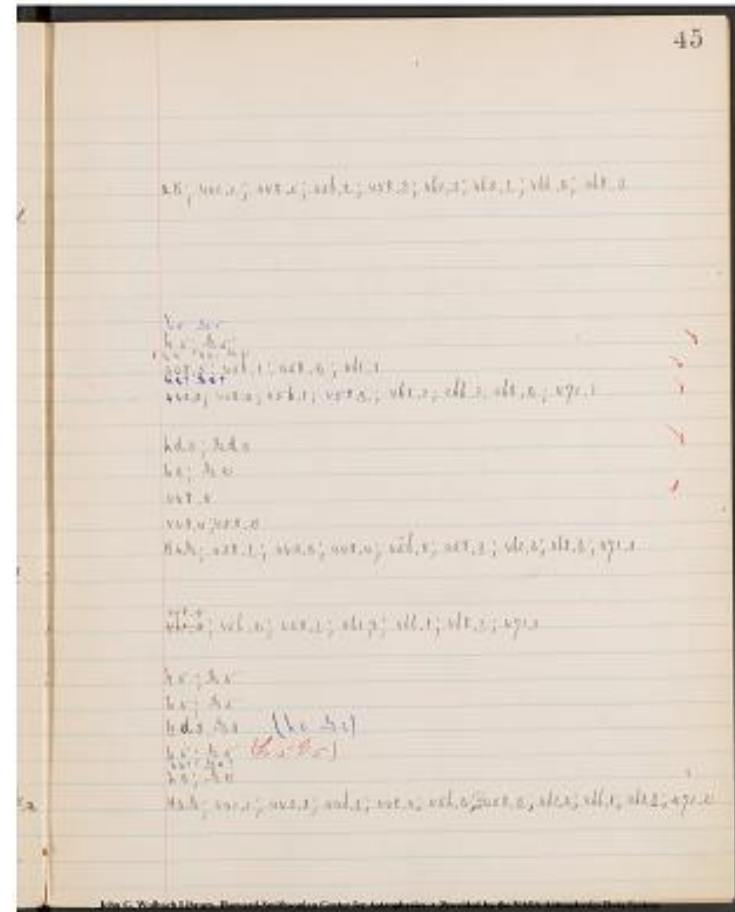
|h5 G5|
|h5; G5|
|aK h2; G2|
448,5; 456,1; 458,[[underline]] 2 [[/underline]]; 461,1|
|h2? G2?|
441,1; 448,4; 456,1; 458,[[underline]] 2 [[/underline]]; 461,1; 466,1;
468,[[underline]] 2 [[/underline]]; 471,1|

|hd3; Gd3|
|h2; G2|
448,4|
448,4; 458,2|
|HaG; 438,[[underline]] 1 [[/underline]]; 443,2; 448,4; 456,2;
458,[[underline]] 3 [[/underline]]; 461,2; 468,[[underline]] 2 [[/underline]]|
471,1|

|448,4[[strikethrough]] 461,3 [[/strikethrough]]; 456,2; 458,[[underline]] 1
[[/underline]]; 461,3; 466,1; 468,[[underline]] 1 [[/underline]]; 471,1|

|h5; G5|
|h5; G5|
|[[underline]] h [[/underline]]d3, G3 (h2 G2)|
|h5; G5 (h5G5)|
|h2? G2?|
|h2; G2|
|HaG; 441,1; 443,1; 446,[[underline]] 1 [[/underline]]; 448,4; 456,2;
458,[[underline]] 3 [[/underline]]; 461,2; 466,1; 468,[[underline]] 3
[[/underline]]; 471,2|

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Nov. 17, 1887.

Plate 738.

[[6 columned table]]

Book 3 Page | v. | H. | Type. | No. Remark | Description of lines on spectral
 Book 3 Page 184 | 10.1 | 16.9 | F | ~~II^a~~ | ~~389~~ | G and h = .5 |

10.5 | 23.6 | G | ~~II^bc~~ | ~~390~~ | F3G = .3 B,
 F5G = .3 | ~~B~~ | F7 1/2 G = .2, hB? |

Several lines below K. |

9.8 | 22.4 | F | ~~II^a~~ | ~~391~~ | G and h all = .3 |

9.6 | 23.3 | I | ~~II^b~~ | ~~392~~ | F3G = .2, F5G = .2,
 F7G = .2 |

9.2 | 16.4 | K | ~~III^bc~~ | ~~393~~ | F3G = .1 B, F4 1.2
 G = .2, F5G = .1 B, F7G = .4 |

7.3 | 19.3 | I | ~~II^b~~ | ~~393a~~ | F4 1/2G = .1, F5
 1/2G = .1, F7G = .3. Lines between G & h, Lines below K. |

6.5 | 16.4 | K | ~~III^b.c~~ | ~~394~~ | F2 1/2G = .1, F3G = .3 B, F3 1/2G = .1, F4 1/2G = .1, |

F5G = .3B, F5 1/2G = .1, F7G = .3, F8G = .2 B, |

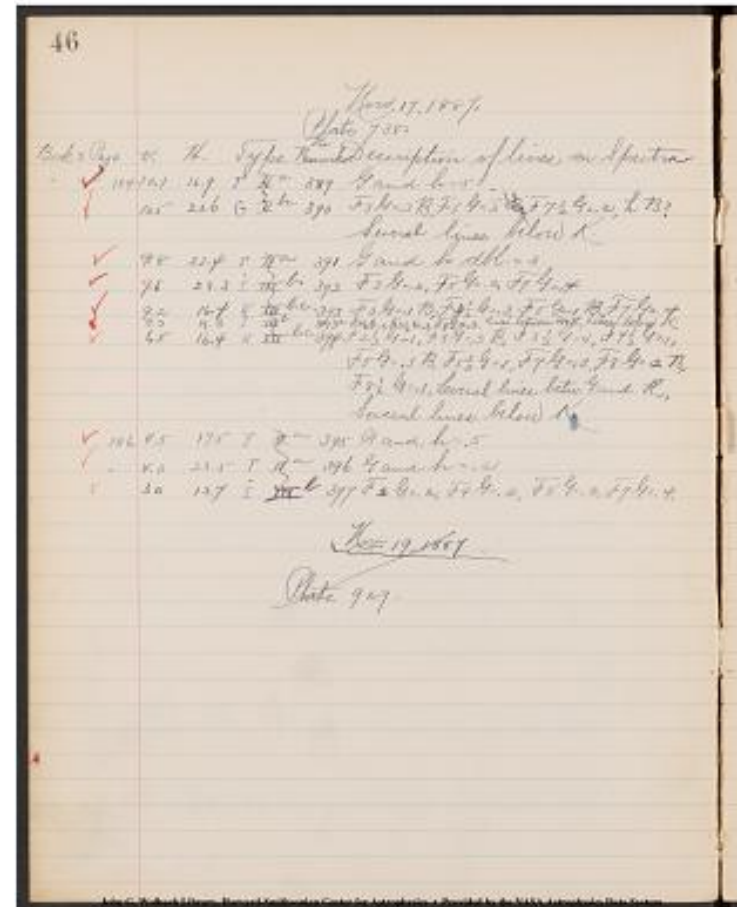
F8 1/2G = .1, Several Lines between G and H, |

Several lines below K. |

186 | 4.5 | 17.5 | F | ~~II^a~~ | ~~395~~ | G and h = .5 |

4.0 | 23.5 | F | ~~II^a~~ | ~~396~~ | G and h = .2 |

3.0 | 13.7 | I | ~~II^b~~ | ~~397~~ | F2G = .2, F4G = .2,
 F5G = .2, F7G = .4. |

[[~~Nov. 19, 1887~~]]Plate 929. [[~~Nov. 19, 1887~~]]

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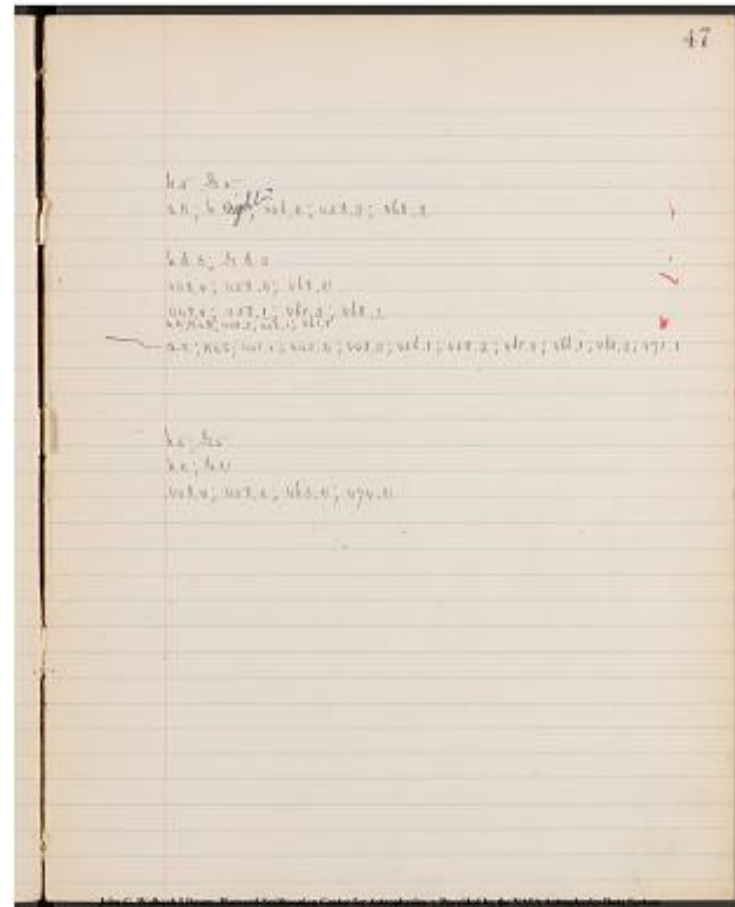
47

|h5 G5|
|aK; h B right-?, 446,2; 458,[[underline]] 3 [[/underline]]; 468,[[underline]]
3 [[/underline]]|

|hd3; Gd3|
448,4; 458,2; 468,2|
448,4; 458,[[underline]] 1 [[/underline]]; 461,3; 468,[[underline]] 1
[[/underline]]|
|aK; HaG; 448,3; 456,1; 461,1|
|aK; HaG; 441,1; 443,[[underline]] 2 [[/underline]]; 448,3; 456,1;
458,[[underline]] 3 [[/underline]]; 461,1; 466,1; 468,[[underline]] 3
[[/underline]]; 471,1|

|h5; G5|
|h2; G2|
448,4; 458,2; 463,2; 474,2|

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49

|aK; HaG; 443,[[underline]] 1 [[/underline]]; 448,2; 458,[[underline]] 1
[[/underline]]; 461,1; 466,1; 468,[[underline]] 3 [[/underline]]; 471.1|

|402,2|
|419,3|
|h5; G5|
|h5; G5|
|aK; h2; G5|
|h5; G5|
|h5; G5|
|aK; HaG; 443,[[underline]] 1 [[/underline]]; 448,3; 456,1; 458,3; 461.1;
468,[[underline]] 2 [[/underline]]|

|HaG; 448,2; 458,1; 468,1|

|h5; G5|
|h5; G5|
|aK; h5; G5|
|448,4; 458,2; 468,2|
|448,3; 458,1; 468,2|
|448,2; 456,1; 458,[[underline]] 1 [[/underline]]; 461,1; 466,1;
468,[[underline]] 1 [[/underline]]|

|h5; G5|
|h5; G5|
|h3; G3|
|448,4|
|hd5; Gd5|
|h4; G4|

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Nov. 19, 1887.

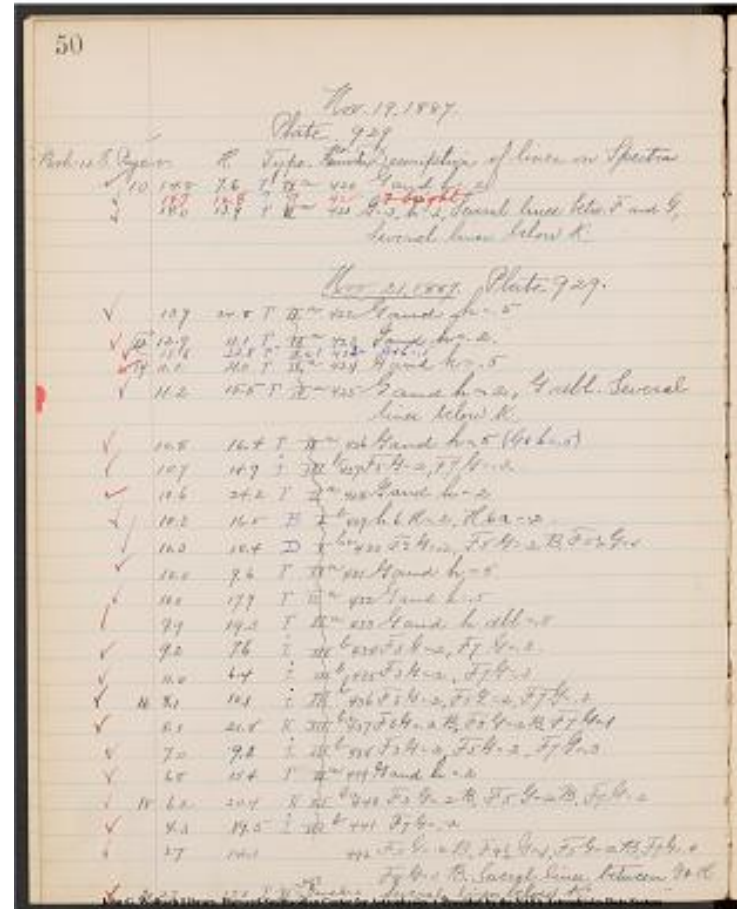
Plate. 929

Book 12 E Page | v. | H. | Type no Remark | Description of lines on Spectra

10 | 14.8 | F | III | a | 420 | Sand h=2
 15.7 | 12.8 | ? | ? | 420 | 7 bright
 14.0 | 13.9 | F | III | a | 421 | S=3 | h=2 | Several lines betw. F and S
 Several lines below K

Nov. 21, 1887 Plate 929

13.9 | 20.8 | F | III | a | 422 | Sand h=5
 12 | 12.9 | 11.1 | F | III | a | 423 | Sand h=2
 13.6 | 22.8 | F? | III | a? | 422a | S+h=5
 14 | 11.2 | 21.0 | F | IIIa | 424 | Sand h=5
 11.2 | 15.5 | F | IIIa | 425 | Sand h=2 | S all | Several line below K.
 10.8 | 16.4 | F | IIIa | 426 | Sand h=5 | S + h=5
 10.7 | 14.9 | II | IIIII | 427 | F5 | S=2 | F7 | S=3
 10.6 | 14.9 | F | IIIa | 428 | Sand h=2
 10.3 | 16.5 | B | III | 429 | h6 | H=2 | H6 | a=2
 10.3 | 18.4 | D | IIc | 430 | F3 | S=2 | F5 | S=2 B | F 5 1/2 | S=1
 10.0 | 9.6 | F | IIIa | 431 | Sand h=5
 10.0 | 17.9 | F | IIIa | 432 | Sand h=5
 9.9 | 19.3 | F | IIIa | 433 | Sand h all=5 | 9.2 | 7.6 | II | IIIII | 434 | F3 | S=2 | F7 | S=3
 11.0 | 6.4 | II | IIIII | 435 | F3 | S=2 | F7 | S=3
 16 | 8.1 | 10.1 | II | IIIII | 436 | F3 | S=2 | F7 | S=3
 8.1 | 21.8 | K | IIIII | 437 | F3 | S=2 B | F5 | S=2 B | F7 | S=3
 7.0 | 9.3 | II | IIIII | 438 | F3 | S=2 | F5 | S=2 | F7 | S=3
 6.8 | 15.4 | F | IIIa | 439 | Sand h=2
 18 | 6.2 | 20.4 | K | III | c | 440 | F3 | S=2 B | F5 | S=2 B | F 7 | S=2
 4.3 | 19.5 | II | IIIII | 441 | F7 | S=2
 3.7 | 14.3 | 442 | F3 | S=2 B | F 4 1/2 | S=1 | F5 | S=2 B | F7 | S=4
 F8 | S=1 B | Several lines between S + H
 20 | 3.7 | 14.3 | F | F | IIIa | 443 | G and h=2 | Several lines below K.



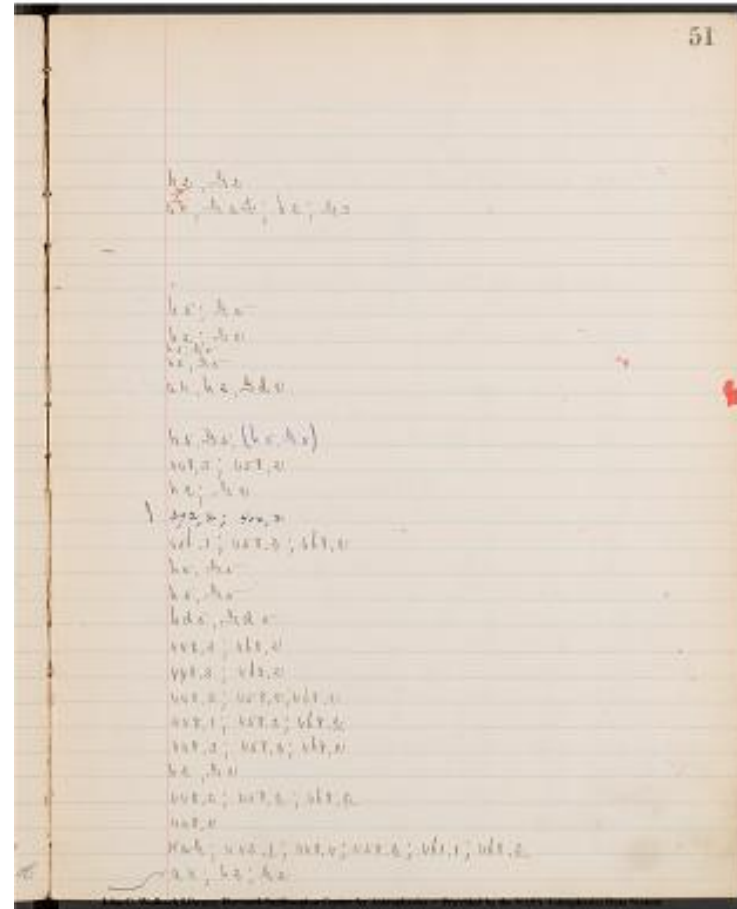
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|h2, G2|
|^[7]| aK, Gaf, h2; G3|

|h5; G5|
|h2; G2|
|^[h5; G5]| h5, G5|
|aK, h2, Gd2|

|h5, G5, (h5, G5)|
448,3; 458,2|
h2; G2|
[[~~h5, G5~~]] ? [[~~h5, G5~~]] 392,2; 402,2|
456,1; 458,[[h5, G5]] 2 [[h5, G5]]; 468,2|
h5, G5|
h5, G5|
hd5, Gd5|
448,3; 468,2|
448,3; 468,2|
448,3; 458,2; 468,2|
448,1; 458,2; 468,[[h5, G5]] 2 [[h5, G5]]|
448,3; 458,2; 468,2|
h2, G2|
448,2; 458,[[h5, G5]] 2 [[h5, G5]]; 468,[[h5, G5]] 2 [[h5, G5]]|
448,2|
|HaG; 443,[[h5, G5]] 1 [[h5, G5]]; 448,4; 458,2; 461,1;|
468,[[h5, G5]] 2 [[h5, G5]]|
|aK; h2; G2|

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Nov 21, 1887

Plate 829

[[6 columned table]]

Book 12 Page 22|V|H|Type|No. Remarks.|Description of lines on Spectra.]

|---|---|---|---|---|

||19.9|11.7|B|~~[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|~~]]]]]]]]]]|444|F7 G=0.2, h6

H=0.2, H6 a=0.1?

Nov. 22. 1887

Plate 829.

||14.6|10.9|K|~~[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|~~]]]]]]]]]]|445|F3 G=0.3 B,

F4 1/2 G=0.1, F5 G=0.2 B, F5 1/2 G=0.2, F7 G=0.4, Several lines betw. G and H.

||24|12.1|19.4|K|~~[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|~~]]]]]]]]]]|446|F3 G=0.3 B,

F4 1/2 G=0.1, F5 G=0.2 B, F5 1/2 G=0.1, F7 G=0.4, Several Lines Between G and H

||12.0|8.8|L|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|447|G=0.4 and h=0.1

Several lines below K.

||9.4|19.0|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|448|G and h=0.3,

Several lines below K.

||7.9|13.6|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|449|G and h=0.3

Plate 843.

||26|21.5|9.7|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|450|G and h=0.3||20.5|15.1|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|451|G and h=0.2||19.0|15.7|B|~~[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|~~]]]]]]]]|452|h7 H=0.3||28|17.7|8.9|B|~~[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|~~]]]]]]]]|453|h7 H=0.2||16.6|17.1|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|454|hG and

h=0.2(G+h=0.2, 2 lines before K.)

||16.6|23.2|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|455|G and h=0.5||15.9|15.2|I|~~[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|~~]]]]]]]]|456|F3 G=0.3, F7

G=0.2.

||15.3|15.3|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|457|G and

h=0.5(G+h=0.5)

||30|14.6|16.7|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|458|G and

h=0.5(G+h=0.5)

||13.8|11.6|I|~~[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|~~]]]]]]]]|459|F6 G=0.2, F8

G=0.2.

||13.0|17.7|G|~~[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|[[[b]]|~~]]]]]]]]|460|F3 G=0.1, F5

G=0.1, F7 G=0.1

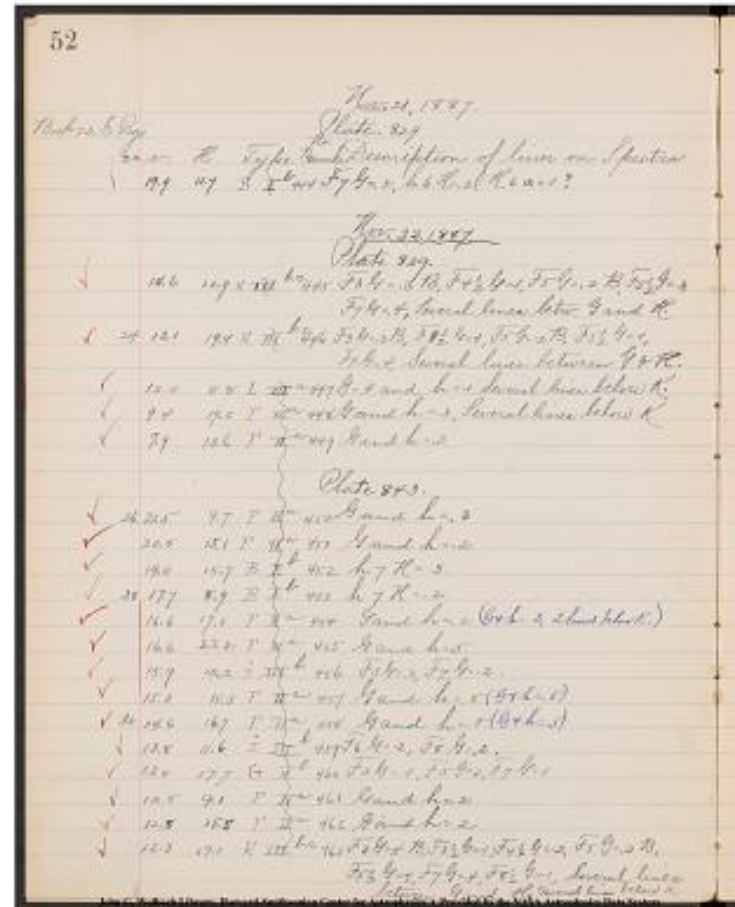
||12.5|9.1|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|461|G and h=0.2||12.8|15.8|F|~~[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|[[[a]]|~~]]]]]]]]|462|G and h=0.2||12.3|17.1|K|~~[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|[[[b.c.]|~~]]]]]]]]]]|463|F3 G=0.4

B, F3 1/2 G=0.1, F4 1/2 G=0.2, F5 G=0.2 B, F5 1/2 G=0.1, F7 G=0.4, F8

1/2 G=0.1, Several Lines between G and H. Several lines below K.

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53

392,1;402,2;448,2

HaY;448,4;456,2;458,[[underline]]2[[/underline]];461,1;468,[[underline]]3[[/underline]]

HaY;448,4;456,1;458,[[underline]]2[[/underline]];461,1;468,[[underline]]3[[/underline]]

ak;h1;y4

ak,h3;y3

h3,y3

h3;y3

h2;y2

401,3;

401,2

h2,y2(2ak;h2;y2)

h5,y5[[strikethrough]](ak;h2;y2)[[strikethrough]]

448,2;468,3

h5,y5,(h5,y5)

h5,y5,(h5,y5)

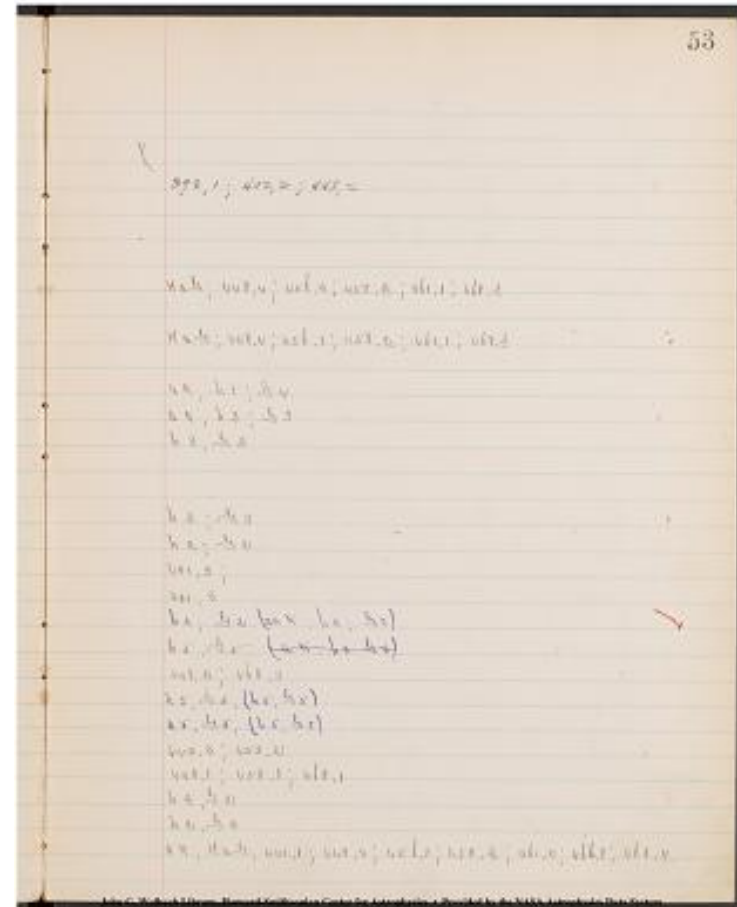
443,2;453,2

448,1;458,1;468,1

h2,y2

h2,y2

ak,HaY,441,1;448,4;456,1;458,2;461,2;466,1;468,4



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54

Nov. 22, 1887.

Plate. 843.

[[? columned table]]

Book 12. 6. |Page |V |H |Type. |No. Remark. |Description of lines on Spectra. |

|30|11.5|9.8|F|a|464|G and h=.5

|32|10.6|19.6|I|b|465|F3G=.2, F5G=.2, F7G=.3

|8.7|13.6|B|b|466|[[?]]6H=.8 H7a=.8

|8.4|18.1|F|a|467|G and h=.5

|34|7.2|8.3|L|a|468|G and h=.5

|5.8|7.3|F|a|469|G and h=.5

|5.3|8.7|F|a|470|G and h=.5

|36|3.6|7.6|F|a|471|G and h=.5

54

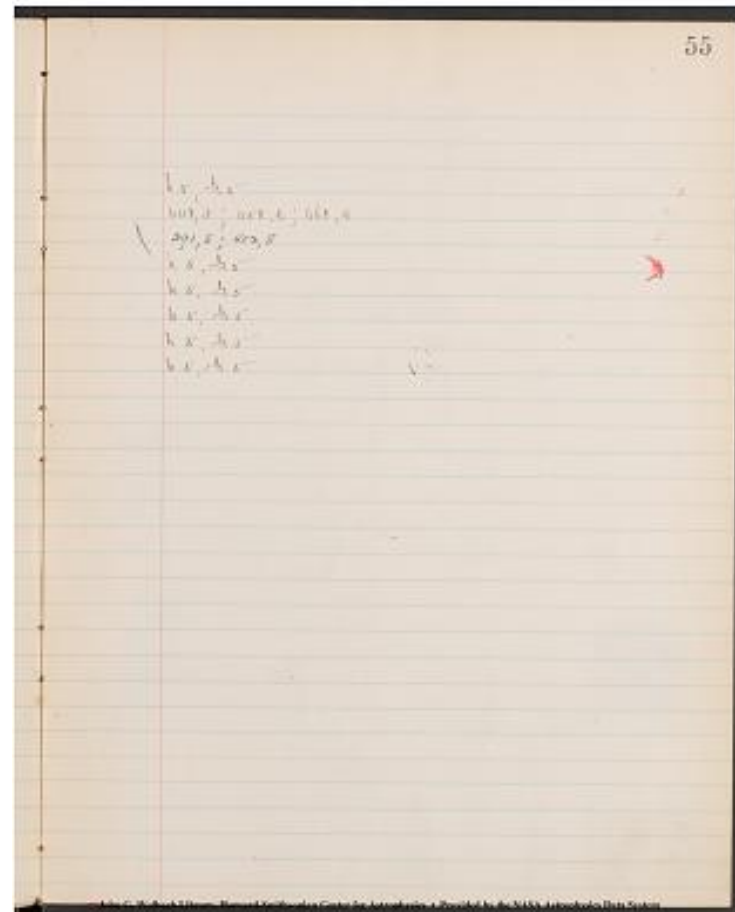
Nov. 22, 1887.
Plate 843.

Book 12. 6.	Page	V	H	Type.	No. Remark.	Description of lines on Spectra.	
✓	30	11.5	9.8	F	a	464	G and h=.5
✓	32	10.6	19.6	I	b	465	F3G=.2, F5G=.2, F7G=.3
✓	8.7	13.6	B	b	466	[[?]]	6H=.8 H7a=.8
✓	8.4	18.1	F	a	467	G and h=.5	
✓	34	7.2	8.3	L	a	468	G and h=.5
✓	5.8	7.3	F	a	469	G and h=.5	
✓	5.3	8.7	F	a	470	G and h=.5	
✓	36	3.6	7.6	F	a	471	G and h=.5

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h5, G5
 448,3 ; 458,2 ; 468,2
 391,8 ; 402,8
 h5, G5
 h5, G5
 h5, G5
 h5, G5
 h5, G5

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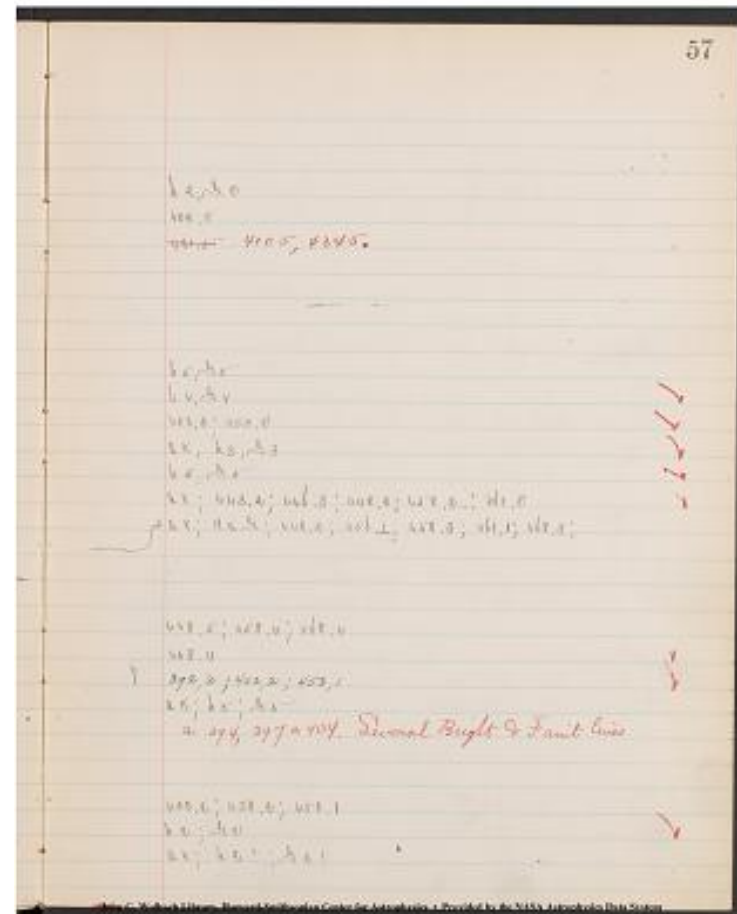
57

h2, g2
402,2
[[~~421,5~~]] 4105, 4345.

h5, g5
h4, g4
402,2; 453,2
ak, h3, g3
h5, g5
ak; 443,2; 446,3; 448,2; 458,2; 461,2
ak; [[?]]ag; 448,2; 456,1; 458,3; 461,1; 468,3;

448,5; 458,4; 468,4
448,4
392,2; 402,2; 453,1
ak; h5; g5
a 394, 397 a 434. Several Bright & Faint lines.

402,2; 438,2; 458,1
h2; g2
ak; h2?; g2?



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November, 29, 1887.

Plate. 835

[[6 columned table]]

| Book 12 E. Page. | V. | H. | Type. | No. Remarks. | Description of lines in Spectra. |

| --- | --- | --- | --- | --- | --- |

| 46 | 21.6 | 14.3 | ~~II a~~ ~~F~~ | 490 | G = .5, h = .2, Lines below K. || 21.0 | 21.6 | ~~III b~~ ~~I~~ | 491 | F $\frac{1}{2}$ G = .3, F5G = .4, F6G = .3, F7 $\frac{1}{2}$ G = .4. Lines between G and H... || 48 | 15.0 | 10.7 | ~~III a~~ ~~L~~ | 492 | G and h = .2 || 15.1 | 13.3 | ~~II a~~ ~~F~~ | 493 | G and h = .2, G dbl. || 14.0 | 10.5 | ~~II a~~ ~~F~~ | 494 | G and h = .3 || 50 | 12.5 | 15.0 | ~~III b~~ | 495 | F3G = .2, F7G = .3 || 12.6 | 18.4 | ~~II a~~ ~~F~~ | 496 | G and h = .5 || 11.6 | 17.8 | ~~I b~~ ~~B~~ | 497 | F3G = .1, F6G = .2, F7G = .2 || 9.1 | 14.0 | ~~II a~~ ~~F~~ | 498 | G and h = .5, Lines below K. || 52. | 7.9 | 21.5 | ~~II a~~ | 499 | G and h = .5 || 5.0 | 13.9 | ~~III bc.~~ | 500 | [F $\frac{1}{2}$ G = .1, F3G = .2B, F4 $\frac{1}{2}$ G = .1, F5G = .2B, F7G = .3. ?] |

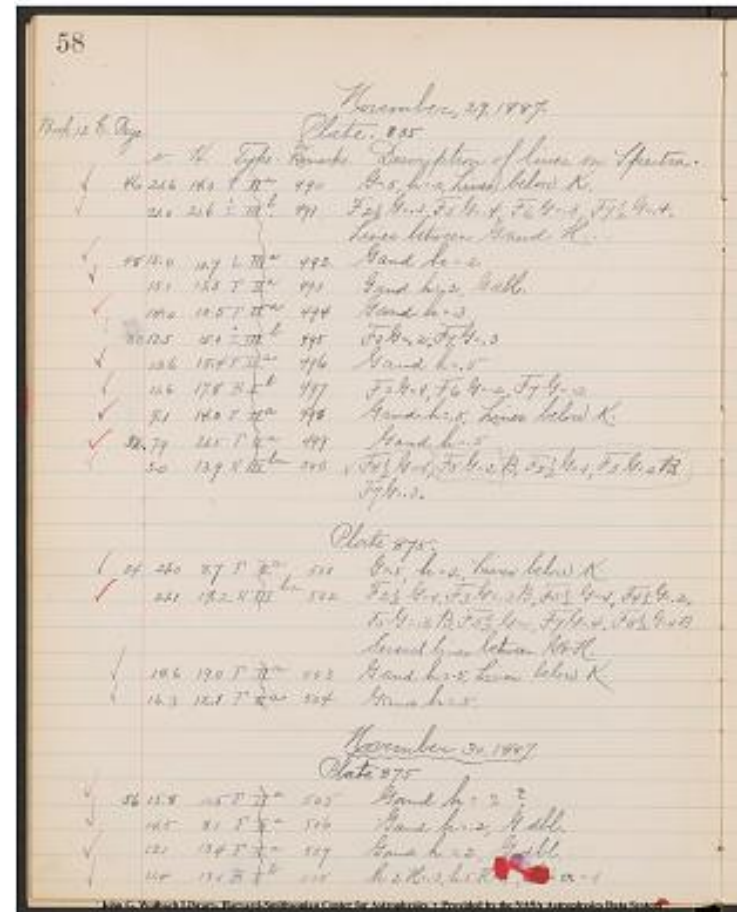
Plate 875.

[[6 columned table]]

| 54 | 21.0 | 8.7 | ~~II a~~ ~~F~~ | 501 | G = .5, h = .2, Lines below K. || 21.1 | 19.2 | ~~III b.c.~~ ~~K~~ | 502 | F $\frac{1}{2}$ G = .1, F3G = .3B, F3 $\frac{1}{2}$ G = .1, F4 $\frac{1}{2}$ G = .2, F5G = .3B, F5 $\frac{1}{2}$ G = .1, F7G = .4, F8 $\frac{1}{2}$ G = .1B. Several lines between G & H. || 18.6 | 19.0 | ~~II a~~ ~~F~~ | 503 | G and h = .5, Lines below K. || 16.3 | 12.1 | ~~II a~~ ~~F~~ | 504 | G and h = .5. |November 30. 1887

Plate 875

[[6 columned table]]

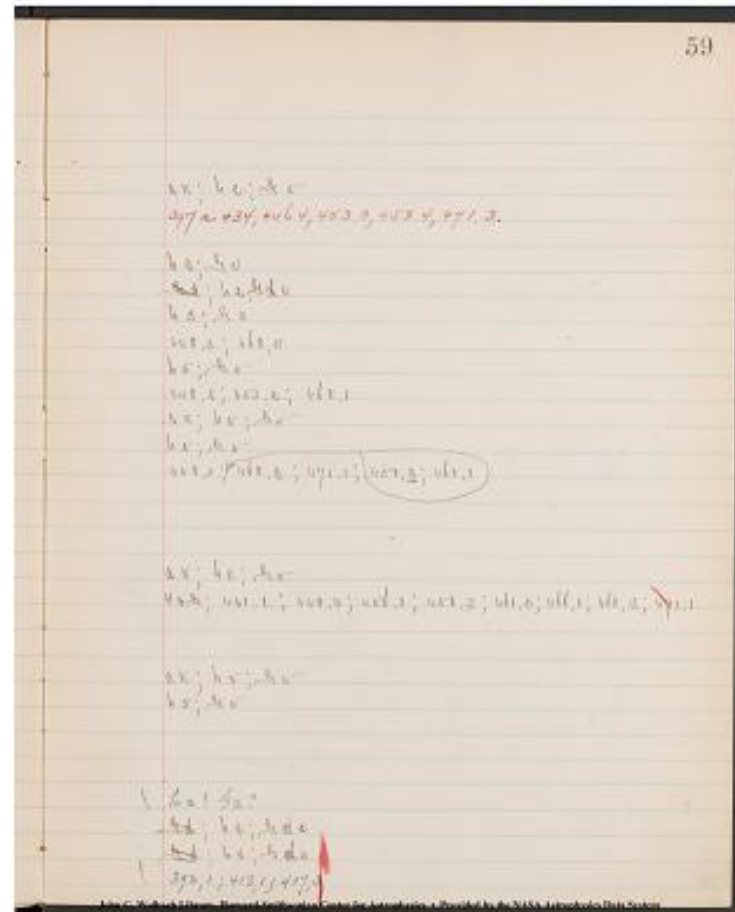
| 56 | 15.8 | 11.5 | ~~II a~~ ~~F~~ | 505 | G and h = 2 ~~?~~ || 14.5 | 8.1 | ~~II a~~ ~~F~~ | 506 | G and h = .2, G dbl. || 12.1 | 13.4 | ~~II a~~ ~~F~~ | 507 | G and h = .2, G dbl. || 11.4 | 13.1 | ~~I b~~ ~~B~~ | 508 | h2H = .3, h5H = [.4, H6x ?] = .1

59
 ak; h2; g5
 397a 434, 4464, 453.3, 4584, 471, 3.
 h2; g2
~~gd~~ h2,gd2
 h3; g3
 448,3; 468,2
 h5; g5
 .448, 2; 453,2; 468.1
 .ak; h5; g5
 h5; g5
 448,3; 468,2; 471,1; 458,2; 461,1

 ak; h2; g5
 hag; 441, 1; 448,4; 456,1; 458,3; 461,2; 466,1; 468,3; 471,1

 ak; h5; g5
 h5; g5

~~h2? g2?~~
~~gd~~ h2; g ~~gd~~ 2
~~d2~~
~~gd~~ h2; g ~~gd~~ 2
~~d2~~
~~h2? g2?~~ 392,1; 403,1; 407,3



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November, 30, 1887.
Plate 875.

| Book 12 E. Page. | N. | H. | Type | No. Remarks. | Description of lines on Spectra.

--- | --- | --- | --- | --- | --- |
58 | 9.6 | 19.8 | K III^{bc} | 509 | F3 G=.3 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.3 B, F5 1/2 G=.1 |
| | | ~~[[[strikethrough]]]~~ 7.6 | 18.6 | III^{bc} | 510 | ~~[[[strikethrough]]]~~ | F7 G=.4
Several lines between G and H. |
| | | 7.6 | 18.6 | I III^b | 510 | F2 1/2 G=.1, F3 G=.3 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.3 B, F5 1/2 G=.1, F7 G=.4, F8 G=.1 B, Lines between G and H. |
| | | 4.6 | 12.8 | K III^{b.c} | 511 | F3 G=.3 B, F4 1/2 G=.1, F5 G=.3 B, F5 1/2 G=.1, F7 G=.3, F8 G=.1 B, Several lines betw. G and H. |

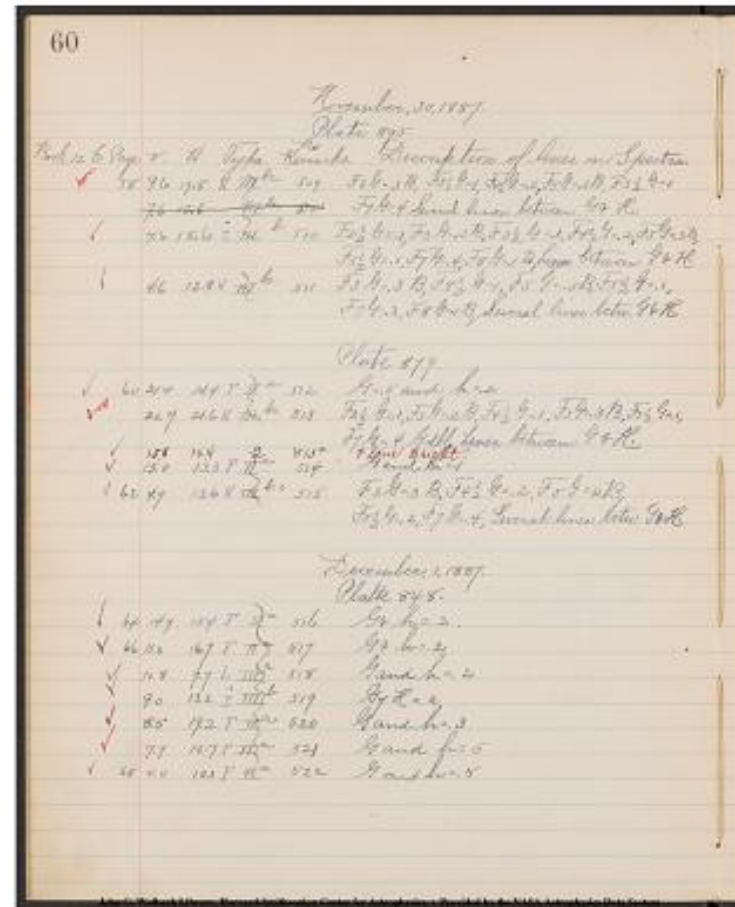
Plate 879.

--- | --- | --- | --- | --- | --- |
60 | 21.4 | 14.4 | F II^a | 512 | G=.5 and h=.2 |
| | | 20.9 | 21.6 | K III^{b.c} | 513 | F2 1/2 G=.1, F3 G=.2 B, F4 1/2 G=.1, F5 G=.3 B, F5 1/2 G=.1, F7 G=.4 | Lines between G and H. |
| | | 15.8 | 12.4 | 2 | 513 | 7 line Bright. |

December 1, 1887.

Plate 848.

64 | 14.9 | 15.4 | F | II^a | 516 | Gh=.2. |
66 | 11.0 | 16.7 | F | II^a | 517 | Gh=.2. |
--- | 10.8 | 9.7 | L | III^a | 518 | G and h=.2. |
--- | 9.0 | 13.2 | I | III^a | 519 | Gh=.2. |
--- | 8.5 | 19.2 | F | II^a | 520 | G and h=.3. |
--- | 7.7 | 10.7 | F | II^a | 521 | G and h=.5. |
68 | 4.0 | 10.1 | F | II^a | 522 | G and h=.5. |



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61

HaY; 448,4; 456,1; 458,3; 461,2; 466,1; 468,3

HaY; Y 4; [[?]]. 4

HaY; 443,1; 448,4; 456,1; 458,3; 461,2; 466,1; 468,3; 471,1

HaY; 443,1; 448,3; 456,1; 458,3; 461,1; 468,3

h2; Y5

HaY; Yd; 448,4; 456,1; 458,3; 461,1; 468,2; 471,1

h1; Y1

HaY; 448,4; 456,2; 458,2; 461,2; 468,3

h2; Y2

h2; Y2

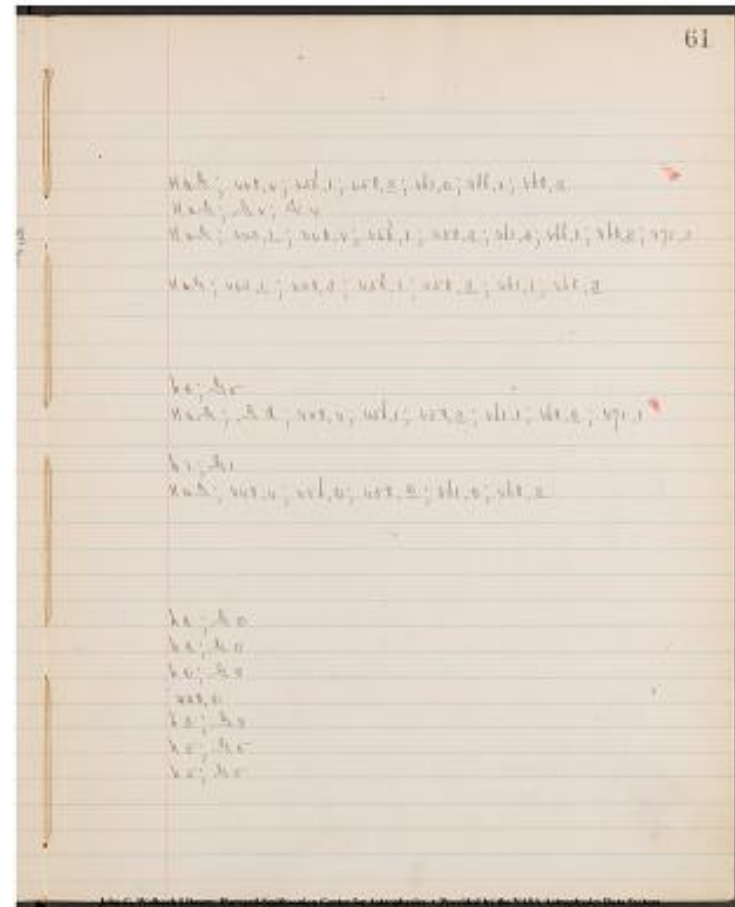
h2; Y2

408,2

h3; Y3

h5; Y5

h5; Y5



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December, 1, 1887.
Plate, 876.
No.

[[6-columned table]]

Book 12. E. Page. | V. | 74. | Type. | Remarks. | Description of lines on Spectra. |

[[checkmark]] 70|16.5|7.9|B |[[strickethrough]]I[^][[b]]|523|h6H = .5|
[[checkmark]] 12.4|10.5 F |[[strickethrough]]I[^][[a]]|524 G and h =.5|
[[checkmark]] 11.2|13.2 F |[[strickethrough]]I[^][[a]]|525|G and h =.5|
[[checkmark]] 11.0|15.0|I|[[strickethrough]]I[^][[b]]|526|F3G=.3, F5G=.2, F7G=.4.|

{Dark Plate. {Dec. 3, '87}Plate 914

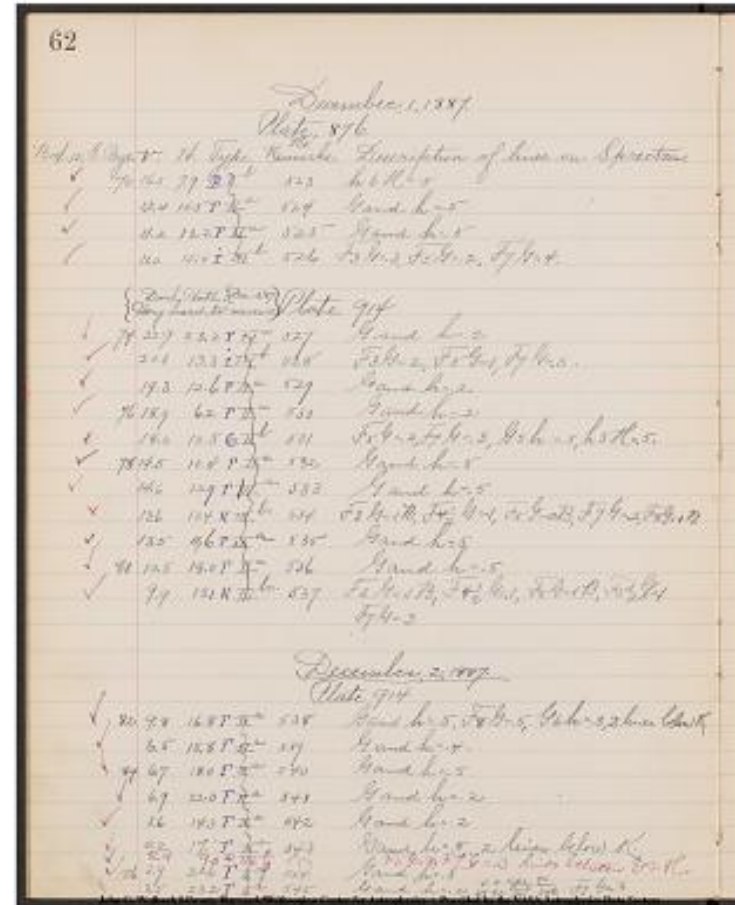
Very hard to measure}

[[checkmark]] 74|22.9|23.2 F|[[strickethrough]]I[^][[a]]|527|G and h=.2|
[[checkmark]] 20.0|13.3|I|[[strickethrough]]I[^][[b]]|528|F3G=.2, F5G=.1, F7G=.3|
[[checkmark]] 19.3|12.6F|[[strickethrough]]I[^][[a]]|529|G and h=.2|
[[checkmark]] 76|18.9|6.2F|[[strickethrough]]I[^][[a]]|530|G and h=.2|
[[checkmark]] 18.0|10.5G|[[strickethrough]]I[^][[b]]|531|F5G=.2, F7G=.3, G5h=.5, h5H=.5|
[[checkmark]] 78|14.5|10.4F|[[strickethrough]]I[^][[a]]|532|G and h=.5|
[[checkmark]] 14.6|12.9F|[[strickethrough]]I[^][[a]]|533|G and h=.5|
[[checkmark]] 13.6|10.4K|[[strickethrough]]I[^][[bc]]|534|F3G=.1B, F4½G=.1, F5G=.2B, F7G=.2, F8G=.1B|
[[checkmark]] 13.5|10.4K|[[strickethrough]]I[^][[a]]|535|G and h=.5|
[[checkmark]] 80|10.5|18.0F|[[strickethrough]]I[^][[a]]|536|G and h=.5|
[[checkmark]] 9.9|15.1K|[[strickethrough]]I[^][[bc]]|537|F5G=.1B, F4½G=.1, F5G=.1B, F5½G=.1 F7G=.3|

[[underlined]]December, 2, 1887.

Plate 914

[[checkmark]] 82|9.8|16.8F|[[strickethrough]]I[^][[a]]|538|G and h=.5, F8G=.5, G6h=.3, 2 lines below K|
[[checkmark]] 6.5|15.8F|[[strickethrough]]I[^][[a]]|539|G and h=.4|
[[checkmark]] 84|6.7|18.0F|[[strickethrough]]I[^][[a]]|540|G and h=.5|
[[checkmark]] 6.9|22.0F|[[strickethrough]]I[^][[a]]|541|G and h=.2|
[[checkmark]] 5.6|14.3F|[[strickethrough]]I[^][[a]]|542|G and h=.2|
[[checkmark]] 5.2|17.F|[[strickethrough]]I[^][[a]]|543|G and h=.5, 2 lines below K|
[[checkmark]] 2.4|90.0|[[strickethrough]]I[^][[b]]|546|F5G=.2, F7G=.3 Lines between G + H|
[[checkmark]] 86|3.9|20.6F|[[strickethrough]]I[^][[ab]]|544|G and h=.5|
[[checkmark]] 3.5|23.2F|[[strickethrough]]I[^][[a]]|545|G and h=.2 V.H. [[Tupe?]]. No Rem. 2.4 9.0 I[^][[b]] 546 F7G=.3|

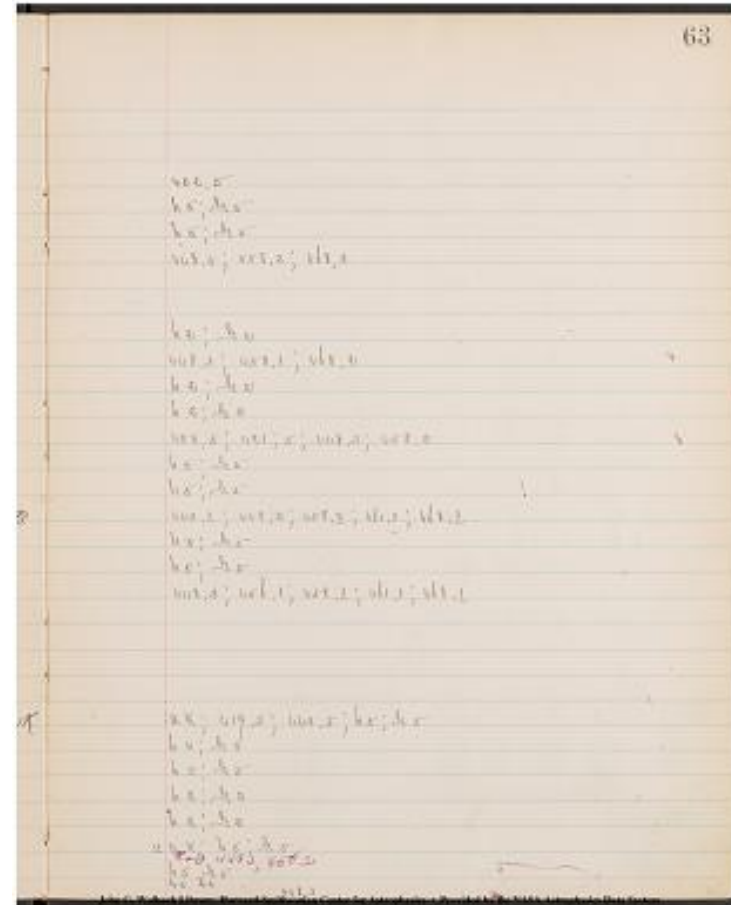


63

402, 5
h5; Y5
h5; Y5
448,4; 458,2; 468,3

h2; Y2
448,3; 458,1; 468,2
h2; Y2
h2; Y2
403,5; 421, 5; 448,3; 458,2
h5; Y5
h5; Y5
443,1; 448,2; 458,2; 461,1; 468,1
h5; Y5
h5; Y5
448,3; 456,1; 458,1; 461,1; 468,1

aK; 419,3; 443,5; h5; Y5
h4; Y4
h5; Y5
h2; Y2
h2; Y2
[left margin 2] aK; h5; Y5
h5, Y5 ^[HaY 448 3, 456.2]
h2; Y2
448,3



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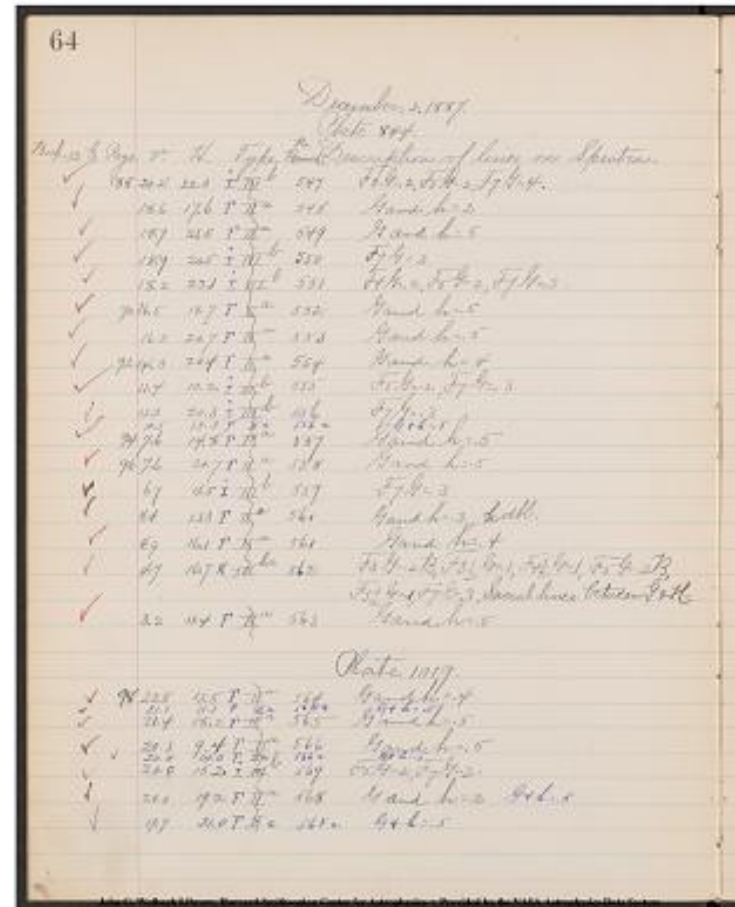
Plate 884

Book 12 & Page IV. | H. | Type. | No. Remarks. | Description of lines in Spectra. |

88 | 20.2 | 22.3 | || III | 547 | F3G = .2, F5G = .2, F7G = .4. |
18.6	17.6	F II a	549	G and h = .2		
18.7	21.5	F II a	549	G and h = .5		
18.9	20.5			III b	550	F7G = .3
18.2	23.1			III b	551	F4G = .2, F5G = .2, F7G = .3
90	16.5	10.7	F II a	552	G and h = .5	
16.3	20.7	F II a	553	G and h = .5		
92	14.3	20.4	F II a	554	G and h = .4	
11.4	10.2			III b	555	F5G = .2, F7G = .3
11.3	20.3			III b	556	F7G = .3
10.5	13.3	F II a	556 a	G + h = .5		
94	7.6	14.8	F II a	557	G and h = .5	
96	7.6	20.7	F II a	558	G and h = .5	
6.7	11.5			III b	559	F7G = .3
4.4	13.3	F II a	560	G and h = .3, h abl.		
4.9	16.1	F II a	561	G and h = .4		
4.7	16.7	K III b.a.	562	F3G = .2B. F3 1/2 G = .1, F4 1/2 G = .1, F5G = .2B		
					F5 1/2 G = .1, F7G = .3, Several lines between G & h	
3.2	11.4	F II a	563	G and h = .5		

Plate 1019

98 | 22.8 | 13.5 | F II a | 564 | G and h = 0.4 |
21.1	11.1	F II a	564a	G + h = .5		
21.4	18.2	F II a	565	G and h = .5		
20.3	9.4	F II a	566	G and h = .5		
20.4	14.0	F II a	566a	G + h = .5		
20.0	15.2			III b	567	F5G = .2, F7G = .2
20.0	19.2	F II a	568	G and h = .2 G + h = .5		
19.7	21.0	F II a	568a	G + h = .5		



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65

448,4; 458,2; 468,2

h2; Y2

h5; Y5

448,3

448,3; 458,2; 463,2

h5; Y5

h5; Y5

h4; Y4

448,3; 458,2

448,3

h5; Y5^h[h,5; Y5]

h5; Y5

448,3

hd3, Y3

h4; Y4

HaY; 448,3; 456,1; 458,2; 461,1; 466,1; 468,2

~~HaY~~ ~~HaY~~

h5; Y5

h4; Y4

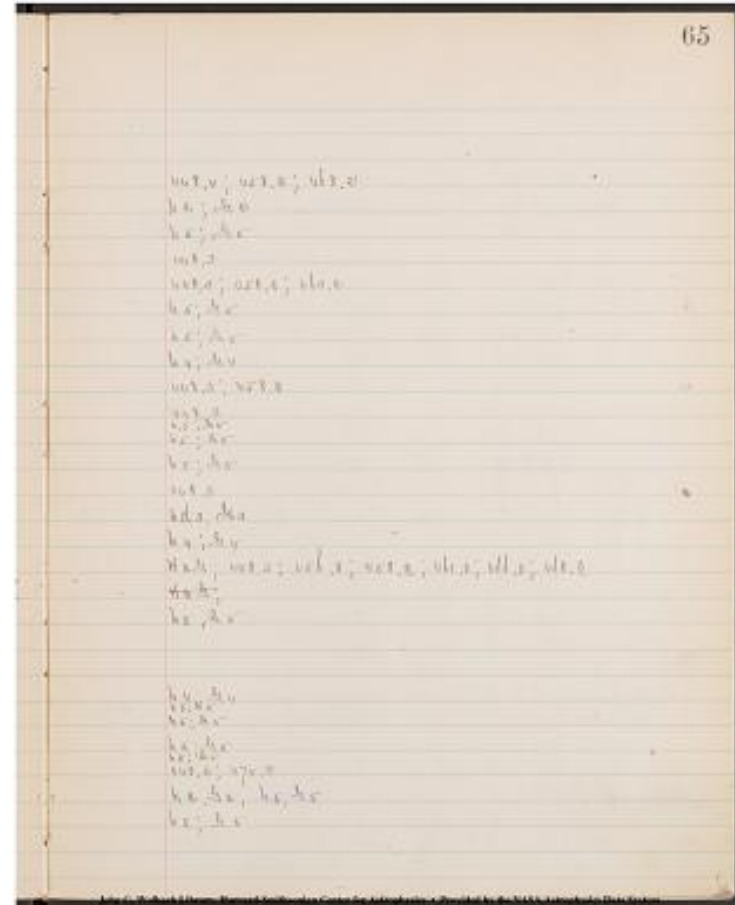
h5; Y5^h[h5; Y5]

h5; Y5

448,2^h[h5; Y5]; 474,2

h2, Y2, h5, Y5

h5; Y5



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December, 3, 1887.
Plate 1019

[[6 columned table]]

Book 12 & Page V|H|Type|No. Remarks|Description of lines on Spectra|

-----|-----|-----|-----|-----|

[[check]] 100|18.7|9.7|F [[/check]]^{II}[[a]]^{II}[[/check]]|569|G and h = .5|

[[check]] 118.6|15.2|F [[/check]]^{II}[[a]]^{II}[[/check]]|570|G and h = .5 (G & h = .5)|

[[check]] 102|18.9|22.5|I [[/check]]^{III}[[b]]^{III}[[/check]]|571|F3 G = .2, F5G = .1 F7G = .4, Lines betw. G & H.

| | | | 2 lines below K.|

[[check]] 17.3|6.9|F [[/check]]^{II}[[a]]^{II}[[/check]]|572|G and h = .5|

[[check]] 16.3|9.5|I [[/check]]^{III}[[b]]^{III}[[/check]]|573|F3G = .2, F7G = .3|

[[check]] 16.4|21.0|F [[/check]]^{II}[[a]]^{II}[[/check]]|574|G and h = .5 (G+h=.5)|

[[check]] 104|15.5|19.2|F [[/check]]^{II}[[a]]^{II}[[/check]]|575|G and h = .5, Lines below K.|

[[check]] 14.1|10.4|F [[/check]]^{II}[[a]]^{II}[[/check]]|576|G and h = .5 (G+h=.5)|

[[check]] 106|14.0|20.2|F [[/check]]^{II}[[a]]^{II}[[/check]]|577|G and h = .5, Lines below K.|

[[check]] 14.9|21.0|F [[/check]]^{II}[[a]]^{II}[[/check]]|578|G and h = .2|

[[check]] 13.4|15.4|F [[/check]]^{II}[[a]]^{II}[[/check]]|579|G and h = .5|

[[check]] 12.0|9.0|F [[/check]]^{II}[[a]]^{II}[[/check]]|579^a[[a]]|G and h = .5|

[[check]] 12.7|11.9|I [[/check]]^{III}[[b]]^{III}[[/check]]|580|F5G = .2, F7G = .3|

[[check]] 108|11.8|5.4|F [[/check]]^{II}[[a]]^{II}[[/check]]|581|G and h all = .5, Lines below K.|

[[check]] 11.0|17.6|B [[/check]]^{II}[[b]]^{II}[[/check]]|582|G3h = .3, h3H = .3|

[[check]] 10.7|11.7|F? [[/check]]^{II}[[a]]^{II}[[/check]]|582^a[[a]]|G and h = .5?|

[[check]] 10.7|19.7|F [[/check]]^{II}[[a]]^{II}[[/check]]|583|G and h = .2|

[[check]] 9.4|8.6|F? [[/check]]^{II}[[a]]^{II}[[/check]]|583^a[[a]]|G and h = .5|

[[check]] 9.8|13.1|F [[/check]]^{II}[[a]]^{II}[[/check]]|583^a[[b]]|G and h = .5?|

[[check]] 110|9.7|19.0|I

[[/check]]^{III}[[b]]^{III}[[/check]]|584|F5G = .2, F7G = .3|

[[check]] 9.9|20.4|F [[/check]]^{II}[[a]]^{II}[[/check]]|585|G and h = .2, Lines below K.|

[[check]] 8.1|19.3|I [[/check]]^{III}[[b]]^{III}[[/check]]|586|F7G = .2|

[[check]] 112|7.9|14.1|I

[[/check]]^{III}[[b]]^{III}[[/check]]|587|F3G = .2, F7G = .3|

[[check]] 6.8|15.1|B [[/check]]^{II}[[b]]^{II}[[/check]]|588|h6H = .2, H6a = .2|

[[check]] 114|5.5|11.2|I

[[/check]]^{III}[[b]]^{III}[[/check]]|589|F3G = .1, F5G = .2, F7G = .3|

[[check]] 5.9|18.9|F [[/check]]^{II}[[a]]^{II}[[/check]]|590|G and h all = .5|

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December 3, 1887

Plate 1019

Book 12 & Page	V	H	Type	No.	Remarks	Description of lines on Spectra
✓	100	18.7	9.7	F	II ^a II ^a	569 Band h = .5
✓	118.6	15.2	F	II ^a II ^a	570 Band h = .5 (G & h = .5)	
✓	102	18.9	22.5	I	III ^b III ^b	571 F3 G = .2, F5 G = .1, F7 G = .4, Lines betw. G & H. 2 lines below K.
✓	17.3	6.9	F	II ^a II ^a	572 Band h = .5	
✓	16.3	9.5	I	III ^b III ^b	573 F3 G = .2, F7 G = .3	
✓	16.4	21.0	F	II ^a II ^a	574 Band h = .5 (G & h = .5)	
✓	104	15.5	19.2	F	II ^a II ^a	575 Band h = .5, Lines below K.
✓	14.1	10.4	F	II ^a II ^a	576 Band h = .5 (G & h = .5)	
✓	106	14.0	20.2	F	II ^a II ^a	577 Band h = .5, Lines below K.
✓	14.9	21.0	F	II ^a II ^a	578 Band h = .2	
✓	13.4	15.4	F	II ^a II ^a	579 Band h = .5	
✓	12.0	9.0	F	II ^a II ^a	579 ^a Band h = .5	
✓	12.7	11.9	I	III ^b III ^b	580 F5 G = .2, F7 G = .3	
✓	108	11.8	5.4	F	II ^a II ^a	581 Band h all = .5, Lines below K.
✓	11.0	17.6	B	II ^b II ^b	582 F3 h = .3, h3 H = .3	
✓	10.7	11.7	F?	II ^a II ^a	582 ^a Band h = .5?	
✓	10.7	19.7	F	II ^a II ^a	583 Band h = .2	
✓	9.4	8.6	F?	II ^a II ^a	583 ^a Band h = .5	
✓	9.8	13.1	F	II ^a II ^a	583 ^b Band h = .5?	
✓	110	9.7	19.0	I		
✓	9.9	20.4	F	II ^a II ^a	584 F5 G = .2, F7 G = .3	
✓	8.1	19.3	I	III ^b III ^b	585 Band h = .2, Lines below K.	
✓	112	7.9	14.1	I		
✓	114	5.5	11.2	I		
✓	6.8	15.1	B	II ^b II ^b	586 F3 G = .2, F7 G = .3	
✓	116	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	587 h6 H = .2, H6 a = .2	
✓	118	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	588 F3 G = .1, F5 G = .2, F7 G = .3	
✓	120	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	589 Band h all = .5	
✓	122	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	590 Band h = .5 (G & h = .5)	
✓	124	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	591 Band h = .2	
✓	126	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	592 Band h = .2	
✓	128	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	593 Band h = .2	
✓	130	5.5	11.2	I		
✓	5.9	18.9	F	II ^a II ^a	594 F3 G = .2, F5 G = .1, F7 G = .4, Lines below K.	

~~II^a~~591|G and h =
 .5 (G + h=.5)|
~~II^a~~592|G and h =
 .2|
~~II^a~~593|G and h =
 .3|
~~II^{b.c}~~594|F3G=.1B, F3.5G=.1,
 F4.5G=.1, F5G=.1B, F5.5G=.1, F7G=.3, Lines between G & H|

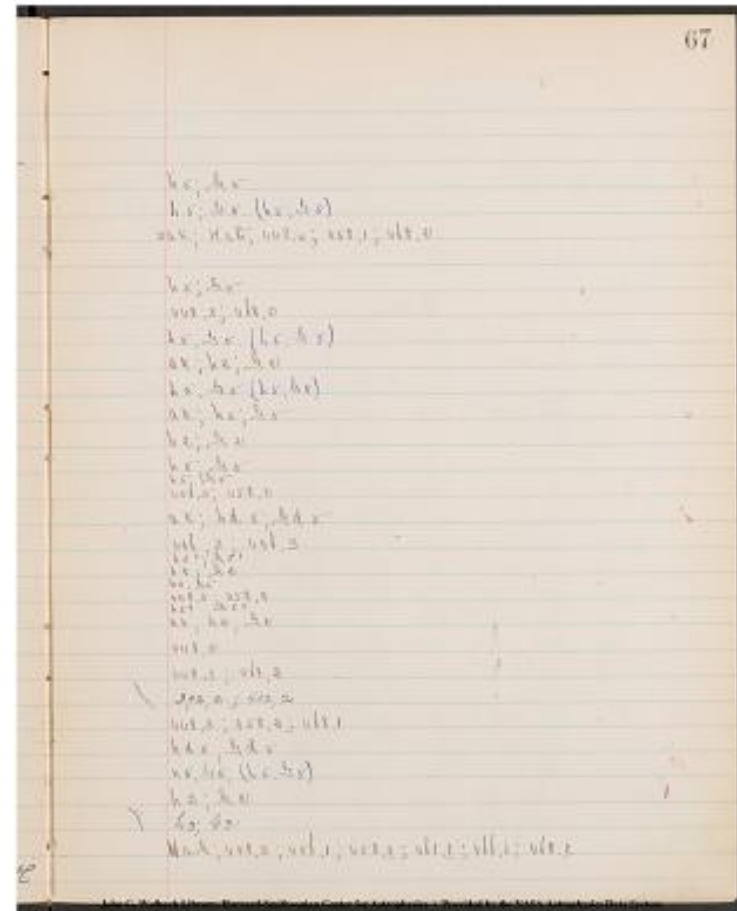
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67

h5; G5
h5; G5 (h5, G5)
2ak; HaG; 448, 4; 458, 1; 468, 2

h5; G5
448, 3; 468, 2
h5, G5 (h5, G5)
ak; h2; G2
h5, G5 (h5, G5)
ak; h5; G5
h2; G2
h5; G5
h5; G5
448, 3; 458, 2
ak; hd 5; Gd5
406, 3; 426, 3
h5 ?; G3 ?
h2; G2
h5, G5
448, 3; 458, 2
h5? G5?
ak, h2, G2
448, 2
448, 3; 4b8, 2
[[~~h5~~]]?[[~~h5~~]]392, 2; 402, 2
448, 3; 458, 2; 468, 1
h d 5, G d 5
h5, G5, (h5, G5)
h2; G2
[[~~h5~~]]?[[~~h5~~]]h3; G3
H[[~~h5~~]]aG; 448, 3; 456, 1; 458, [[1]] ; 461,
[[1]] ; 466, 1; 468, [[1]]
[[1]]

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ak, HaY

448.3; 456.1; 45~~6~~~~8~~3;
ne]; 461.1; 466.1; 468.3]

448.3; 458.2

~~448.2~~; 406.2; 409.2; 448.3; 468.3

ak, h4, yd4

458.3; 468.1 on
spectrum of faint- A star?448.2; 456.1; 458.1; 461.2; 468.1]

ak; h5; yd5

ak; h2; y2

448.3; 458.1

h5, y5, (h5, y5)

ak; h2; y2; yd?

Hay; 448.3; 456.2; 458.2; 4~~23~~~~61~~; 468.2; 471.1~~h5, y5~~

h5, y5

Hay, 443.4; 458.2

h5; y5

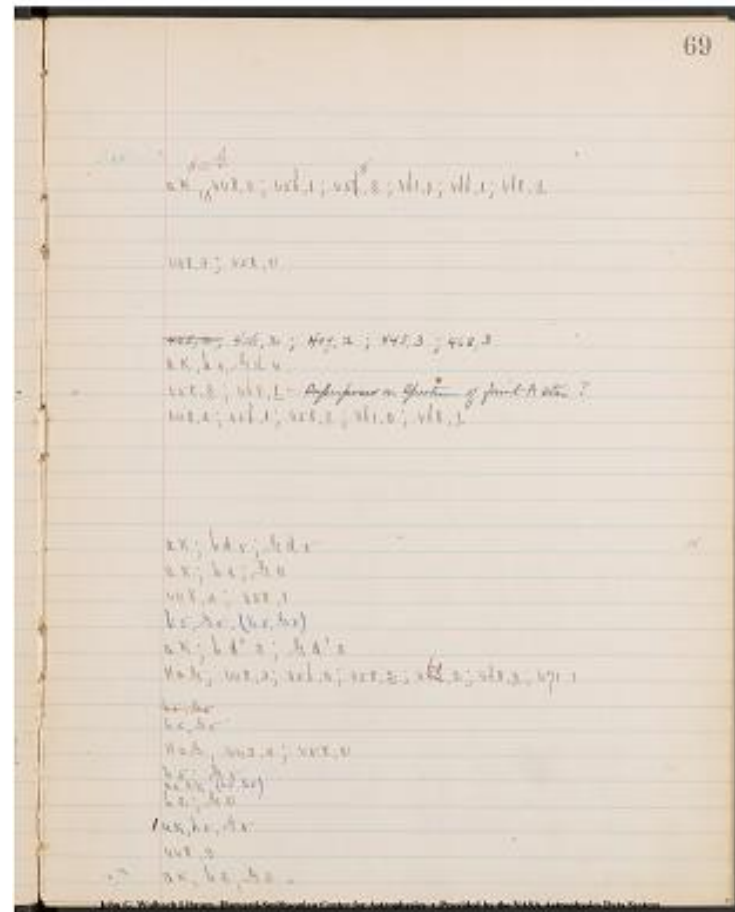
h5, y5, (h5, y5)

h2; y2

ak, h5, y5

448.3

ak, h2, y2



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70

December, 5, 1887.

Plate 939.

Book 12 E Page. | V. | H. | Type. | No. Remarke. | Description of lines on Spectia.

[check] 130. | 7.0 | 19.1 | F ~~II^a[a]~~ | 613 | G and h = .4

[check] 132 | 4.8 | 15.7 | F ~~II^a[a]~~ | 614 | G and h = .5 (G+h=.5)

[check] | 3.3 | 9.0 | F ~~II^a[a]~~ | 615 | G and h = .6, Lines below K

[check] | 2.9 | 13.7 | F ~~II^a[a]~~ | 616 | G and h = .3 Lines below K.

December, 5, 1887.

Plate 884

[check] 138 | 5.7 | 16.2 | B ~~I^a[I]~~ | 617 | F6 G = .2, h6H = .2.

[check] | 3.6 | 13.7 | L ~~III^a[a]~~ | 618 | G and h = .5

[check] | 3.2 | 19.2 | I ~~III^a[I]~~ | 619 | F5 G = .2, F7 G = .3.

December, 5, 1887.

Plate 898.

[check] | 22.3 | 19.3 | F ~~II^a[a]~~ | 620 | G and h = .5

[check] | 20.8 | 14.5 | F ~~II^a[a]~~ | 621 | G and h = .3 (G+h=.5)

[check] 140 | 18.9 | 15.4 | B ~~I^a[I]~~ | 622 | F7 G = .2.

[check] | 16.9 | 8.8 | I ~~III^a[I]~~ | 623 | F7 G = .2

[check] 142 | 15.0 | 12.7 | F ~~II^a[a]~~ | 624 | G and h = .3, Lines below K

[check] | 14.4 | 11.4 | K ~~III^a[Ic]~~ | 625 | F3 G = .2 B, F5 G = .2 B, F5 1/2 G = .1, F7 G = .4, Lines between G and H.

[check] | 13.0 | 9.2 | K ~~III^a[Ic]~~ | 626 | F3 G = .1 B, F4 1/2 G = .4, F5 G = .2 B, F5 1/2 G = .1, F7 G = .3, F8 G = .1 B, Lines between G + H.

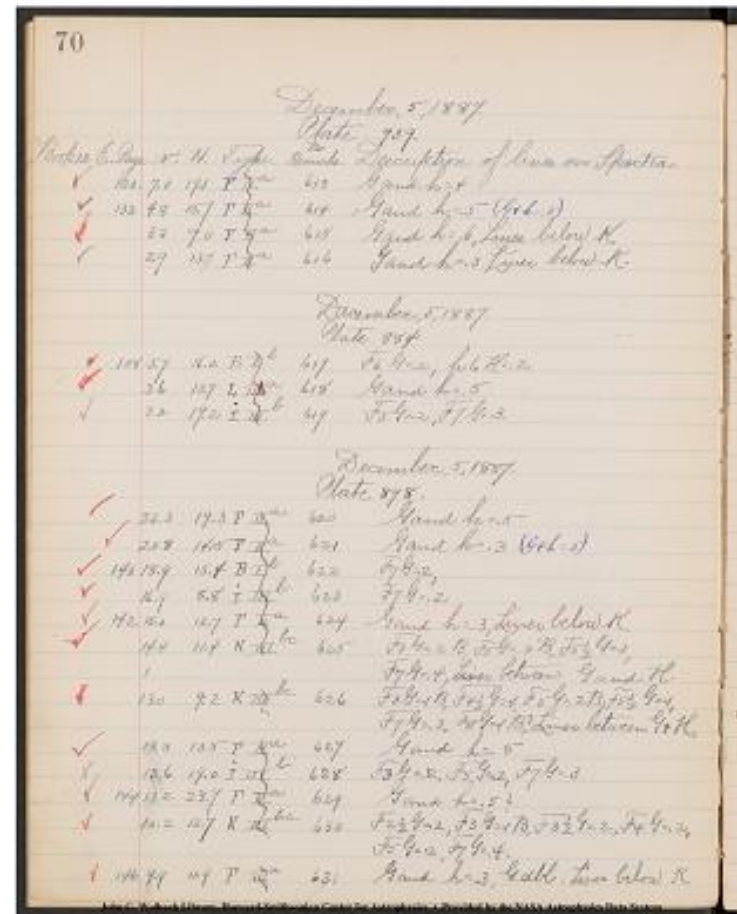
[check] | 13.3 | 13.5 | F ~~II^a[a]~~ | 627 | G and h = .5

[check] | 13.6 | 19.0 | I ~~III^a[I]~~ | 628 | F3 G = .2, F5 G = .2, F7 G = .3

[check] 144 | 13.2 | 23.7 | F ~~II^a[a]~~ | 629 | G and h = .5^a[2]

[check] | 10.2 | 12.7 | K ~~III^a[Ic]~~ | 630 | F2 1/2 G = .2, F3 G = .1 B, F3 1/2 G = .2, F4 G = .2, F5 G = .2, F7 G = .4

[check] 146 | 9.9 | 11.9 | F ~~II^a[a]~~ | 631 | G and h = .3, G all. Lines below K



71

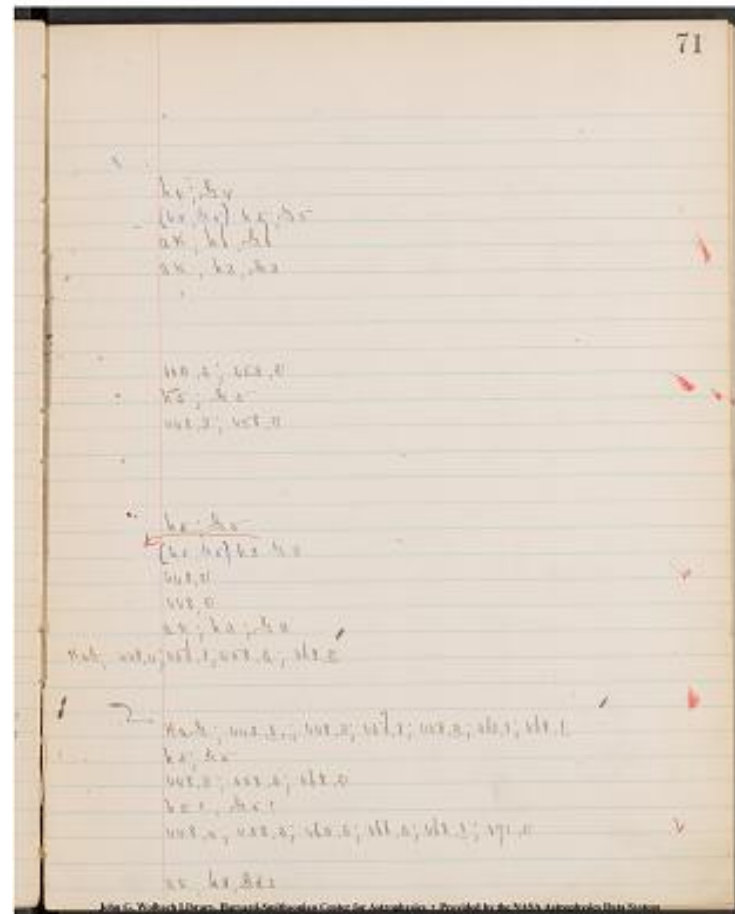
h4; Gy
(h5,G5) h5, G5
ak, h6, G6
ak, h3, G3

402,2; 453,2
h5; G5
448,3; 458,2

h5; G5
(h5,G5) h3 G3
448,2
448,2
ak; h3; G3
HaG; 448,4; 456,1; 458,2; 468,2

HaG; 443,1; 448,3; 456,1; 458,2; 461,1; 468,1
h5; G5
448,3; 458,2; 468,2
h5?, G5?
448,4; 458,2; 463,2; 466,2; 468,1; 471,2

aK, h3, Gd3



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December, 5, 1887.

Plate 898

[6 columned table]

Book 12, E. Page | V. | H | Type. | No. Remarks. | Description of lines on Spectra. |

|---|---|---|---|---|

| 146 | 9.6 | 12.4 | K | ~~[[[b.c]]]~~ | 632 | F3G=.2B, F4½G=.1, F5G=.2B, F 5½G=.1, F7G=.3, F8G=.1B, Lines between G and H. || 9.0 | 19.9 | ~~[[[b]]]~~ | 633 | F5G=.2, F7G=.3 || 8.0 | 6.9 | F | ~~[[[a]]]~~ | 634 | G and h=.5 || 7.1 | 15.8 | K | ~~[[[b.c]]]~~ | 635 | F3G=.2B,

F5G=.2B, F5½G=.1, F7G=.3, |

| 5.6 | 11.5 | ~~[[[b]]]~~ | 636 | F3G=.2, F4G=.2, F5G=.2, F6G=.2, F7G=.3, F8½G=.1. || 5.4 | 13.5 | F | ~~[[[a]]]~~ | 637 | G and h=.3, G dbl. || 148 | 5.6 | 17.5 | B | ~~[[[b]]]~~ | 638 | F6G=.2, h6H=.2, H6a=.2 || 3.5 | 14.8 | F | ~~[[[a]]]~~ | 639 | G and h=.2 Lines below K || 3.1 | 20.3 | K | ~~[[[bc]]]~~ | 640 | F3G=.2B, F5G=.2B, F7G=.3, F8G=.2B, Lines between G & H, Line below K. |

December 6, 1887,

Plate 954.

Dark Plate- Very hard to measure

[6 columned table]

| 150 | 19.7 | 21.3 | F | ~~[[[a]]]~~ | 641 | G and h=.2 || 18.3 | 15.5 | F | ~~[[[a]]]~~ | 642 | G and h=.2 || 152 | 18.5 | 20.6 | ~~[[[b]]]~~ | 643 | F5G=.1, F7G=.2 || 16.5 | 21.7 | F | ~~[[[a]]]~~ | 644 | G and h dbl=.2 || 15.0 | 15.8 | F | ~~[[[a]]]~~ | 645 | G and h dbl=.4 || 154 | 15.3 | 16.6 | F | ~~[[[a]]]~~ | 646 | G and h=.2 || 14.2 | 19.5 | K | ~~[[[b.c]]]~~ | 647 | F2½G=.1, F3G=.2B, F3½G=.2, F4½G=.2 F5G=.2B, F5½G=.1, F7G=.3 || 14.3 | 21.8 | B | ~~[[[b]]]~~ | 648 | h6H=.2 || 11.9 | 11.4 | F | ~~[[[a]]]~~ | 649 | G and h=.3, G dbl., 3 Lines below K. || 156 | 10.8 | 20.0 | F | ~~[[[a]]]~~ | 650 | G and h=.5. Lines below K. |John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics.
Provided by the NASA Astrophysics Data Systems

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December 5, 1887

Plate 898

Book 12, E. Page | V. | H | Type. | No. Remarks. | Description of lines on Spectra. |

|---|---|---|---|---|

| 146 | 9.6 | 12.4 | K | ~~[[[b.c]]]~~ | 632 | F3G=.2B, F4½G=.1, F5G=.2B, F 5½G=.1, F7G=.3, F8G=.1B, Lines between G and H. |

| 9.0 | 19.9 | ~~[[[b]]]~~ | 633 | F5G=.2, F7G=.3 |

| 8.0 | 6.9 | F | ~~[[[a]]]~~ | 634 | G and h=.5 |

| 7.1 | 15.8 | K | ~~[[[b.c]]]~~ | 635 | F3G=.2B, F5G=.2B, F5½G=.1, F7G=.3, |

| 5.6 | 11.5 | ~~[[[b]]]~~ | 636 | F3G=.2, F4G=.2, F5G=.2, F6G=.2, F7G=.3, F8½G=.1. |

| 5.4 | 13.5 | F | ~~[[[a]]]~~ | 637 | G and h=.3, G dbl. |

| 148 | 5.6 | 17.5 | B | ~~[[[b]]]~~ | 638 | F6G=.2, h6H=.2, H6a=.2 |

| 3.5 | 14.8 | F | ~~[[[a]]]~~ | 639 | G and h=.2 Lines below K |

| 3.1 | 20.3 | K | ~~[[[bc]]]~~ | 640 | F3G=.2B, F5G=.2B, F7G=.3, F8G=.2B, Lines between G & H, Line below K. |

December 6, 1887.

Plate 954.

Dark Plate- Very hard to measure

| 150 | 19.7 | 21.3 | F | ~~[[[a]]]~~ | 641 | G and h=.2 |

| 18.3 | 15.5 | F | ~~[[[a]]]~~ | 642 | G and h=.2 |

| 152 | 18.5 | 20.6 | ~~[[[b]]]~~ | 643 | F5G=.1, F7G=.2 |

| 16.5 | 21.7 | F | ~~[[[a]]]~~ | 644 | G and h dbl=.2 |

| 15.0 | 15.8 | F | ~~[[[a]]]~~ | 645 | G and h dbl=.4 |

| 154 | 15.3 | 16.6 | F | ~~[[[a]]]~~ | 646 | G and h=.2 |

| 14.2 | 19.5 | K | ~~[[[b.c]]]~~ | 647 | F2½G=.1, F3G=.2B, F3½G=.2, F4½G=.2 F5G=.2B, F5½G=.1, F7G=.3 |

| 14.3 | 21.8 | B | ~~[[[b]]]~~ | 648 | h6H=.2 |

| 11.9 | 11.4 | F | ~~[[[a]]]~~ | 649 | G and h=.3, G dbl., 3 Lines below K. |

| 156 | 10.8 | 20.0 | F | ~~[[[a]]]~~ | 650 | G and h=.5. Lines below K. |

73

HaG;443.1;448.3;456.1;458.2
erline];461.1;468.2

448.3;458.2

h5,y5

448.3;456.1;458.2;468.2

441.4;448.3;453.2;458.2;463.2;468.2

h3,yd3

392.2;402.2;453.2

ak;h2,y2

ak;HaG;443.2

448.3,458.2;468.2

h2,y2

h2,y2

448.2;458.1

hd2,yd2

hd4,yd4

h2,y2

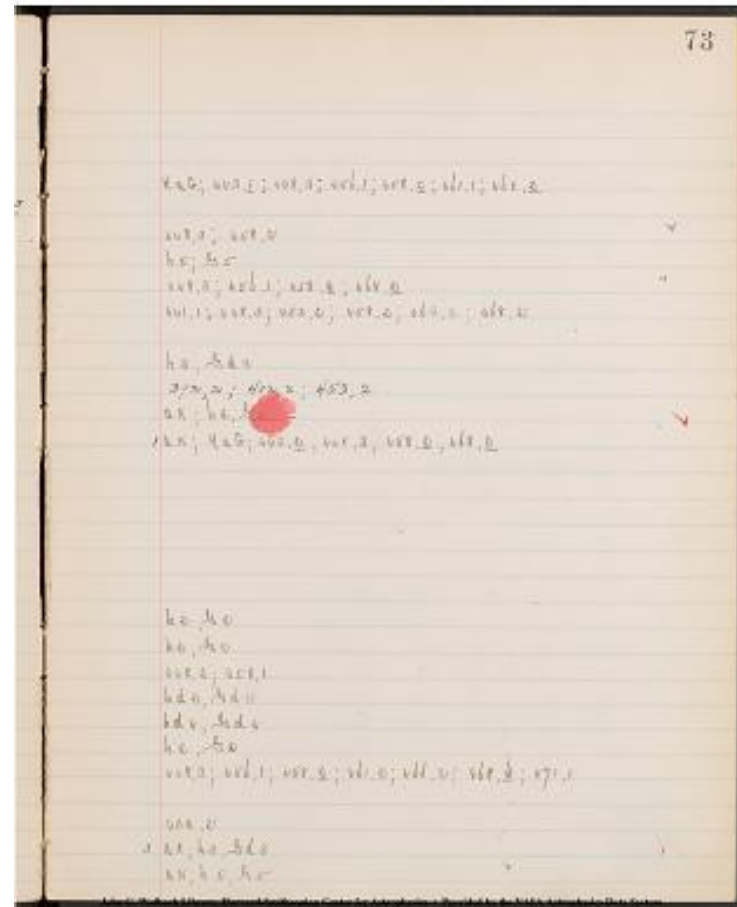
448.3;456.1;458.2;461.2;466.2;468.2
2];471.1

402.2

3 ak,h3,yd3

ak,h5,y5

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74

December 6, 1887.

Plate, 954

Book 15 E. Page. V. 74. Type. Remark.^[No.] Description of lines on Spectra.

[[symbol - check mark]] 158 7.5 7.8 F [[strickethrough]]III[[/strickethrough]]
^a 651 Gand h =.4, h all.

[[symbol - check mark]] 7.3 16.6 F [[strickethrough]]III[[/strickethrough]] ^a
652 Gand h =.6, Lines below K.

[[symbol - check mark]] 7.6 17.1 F [[strickethrough]]III[[/strickethrough]] ^a
653 Gand h =.2

[[symbol - check mark]] 6.0 8.9 F [[strickethrough]]III[[/strickethrough]] ^a
654 Gand h =.2, Lines below K.

[[symbol - check mark]] 160 6.0 15.9 B

[[strickethrough]]III[[/strickethrough]] ^b 655 G6H = 2

[[symbol - check mark]] 4.8 8.4 F [[strickethrough]]III[[/strickethrough]] ^a
656 Gand h =.5

[[symbol - check mark]] 4.3 15.6 F [[strickethrough]]III[[/strickethrough]] ^a
657 Gand h =.3, Lines below K.

[[symbol - check mark]] 3.9 14.3 K [[strickethrough]]III[[/strickethrough]]

^b.c. 658 F2 1/2 G=.1, F3 G=.2B, F3 1/2 G=.1, F4 1/2 G=.1, F5 G=.1b,
F5 1/2 G=.2, F7 G=.3 Lurie between Gand H.

[[symbol - check mark]] 3.6 15.8 [[strickethrough]]III[[/strickethrough]] ^a
659 G and h =.5

[[strickethrough]] 18.8 [[strickethrough]]III[[/strickethrough]] ^b.c 660

[[strickethrough]]
[[symbol - check mark]] 2.8 11.8 K [[strickethrough]]III[[/strickethrough]]

^b.c. 660 F2 1/2 G=.1, F3 G=.2b, F4 1/2 G=.2, F3 G=.2B, F5 1/2 G=.1, F17
G=.3.

December, 6, 1887.

Plate 1057.

[[symbol - check mark]] 21.4 15.1 F [[strickethrough]]III[[/strickethrough]]
^a 660a G&H=.5

[[symbol - check mark]] 162 20.2 12.0 F

[[strickethrough]]III[[/strickethrough]] ^a 661 G and h =.5

[[symbol - check mark]] 20.0 16.8 F [[strickethrough]]III[[/strickethrough]]
^a 662 G and h=.3

[[symbol - check mark]] 20.5 19.7 F [[strickethrough]]III[[/strickethrough]]
^a 663 G and h=.5 (G&h=.5)

[[symbol - check mark]] 18.6 9.5 F [[strickethrough]]III[[/strickethrough]] ^a
664 G and h=.3

continued on next page.

74

December 6, 1887.
Plate 954

Wavelength	Type	Remarks	Description of lines on Spectra
158	7.5 7.8 F	[[strickethrough]]III[[/strickethrough]]	Gand h =.4, h all.
7.3	16.6 F	[[strickethrough]]III[[/strickethrough]]	^a 652 Gand h =.6, Lines below K.
7.6	17.1 F	[[strickethrough]]III[[/strickethrough]]	^a 653 Gand h =.2
6.0	8.9 F	[[strickethrough]]III[[/strickethrough]]	^a 654 Gand h =.2, Lines below K.
160	6.0 15.9 B	[[strickethrough]]III[[/strickethrough]]	^b 655 G6H = 2
4.8	8.4 F	[[strickethrough]]III[[/strickethrough]]	^a 656 Gand h =.5
4.3	15.6 F	[[strickethrough]]III[[/strickethrough]]	^a 657 Gand h =.3, Lines below K.
3.9	14.3 K	[[strickethrough]]III[[/strickethrough]]	
3.6	15.8	[[strickethrough]]III[[/strickethrough]]	^a 659 G and h =.5
18.8		[[strickethrough]]III[[/strickethrough]]	^b.c 660
2.8	11.8 K	[[strickethrough]]III[[/strickethrough]]	
21.4	15.1 F	[[strickethrough]]III[[/strickethrough]]	^a 660a G&H=.5
162	20.2 12.0 F	[[strickethrough]]III[[/strickethrough]]	^a 661 G and h =.5
20.0	16.8 F	[[strickethrough]]III[[/strickethrough]]	^a 662 G and h=.3
20.5	19.7 F	[[strickethrough]]III[[/strickethrough]]	^a 663 G and h=.5 (G&h=.5)
18.6	9.5 F	[[strickethrough]]III[[/strickethrough]]	^a 664 G and h=.3

continued on next page

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75

hd4;Gd4

ak;hb,Gb

h2;G2

ak,h2,G2

410.2

h5,G5

ak;h3,G3

HaG;448.3;456.2;458.1;461.1;466.1;468.2;471.1

h5;G5

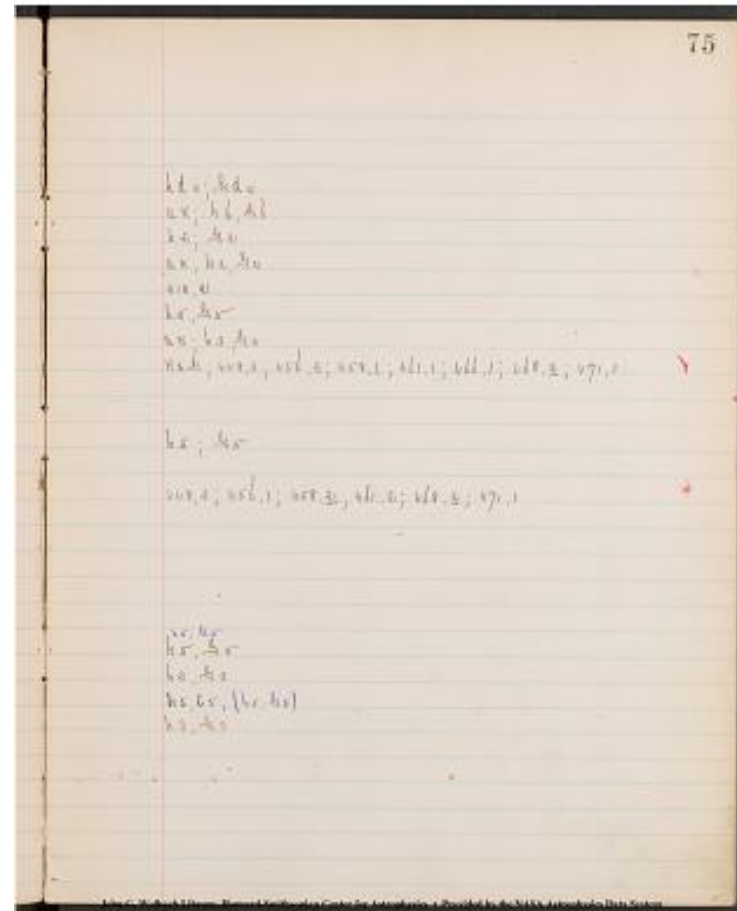
448.3;456.1;458.2;461.2;468.2;471.1

h5,G5^{h5,G5}

h3,G3

h3,G5,(h5,G5)

h3, G3



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[[symbol - check mark]] 178 15.0 14.6 F
~~[[symbol - check mark]] 178 15.0 14.6 F~~
~~[[symbol - check mark]] 178 15.0 14.6 F~~
 ^a 683 G and h =.5 (G+h=.5, lines
 below K.)
 [[symbol - down arrow]] 15.3 19.9 F ~~[[symbol - down arrow]] 15.3 19.9 F~~
 ^a 684 G and h =.3
 [[symbol - check mark]] 14.8 9.0 F ~~[[symbol - check mark]] 14.8 9.0 F~~
 684a G+h=.5
 [[symbol - check mark]] 180 12.6 13.0 F
~~[[symbol - check mark]] 180 12.6 13.0 F~~
~~[[symbol - check mark]] 180 12.6 13.0 F~~
 ^a 685 G and h =.3
 [[symbol - check mark]] [[syblow- curved arrow indicating below 14.8]]
 13.5 11.4 F ~~[[symbol - check mark]] 13.5 11.4 F~~
 ^a 684b G+h=.5
 [[symbol - check mark]] 11.9 20.9 F ~~[[symbol - check mark]] 11.9 20.9 F~~
 ^a 686 G and h =.2, G dbl., Lines below K.
 [[symbol - check mark]] 11.4 21.0 F ~~[[symbol - check mark]] 11.4 21.0 F~~
 ^a 68 G and h =.2 G dbl., Lines below K.

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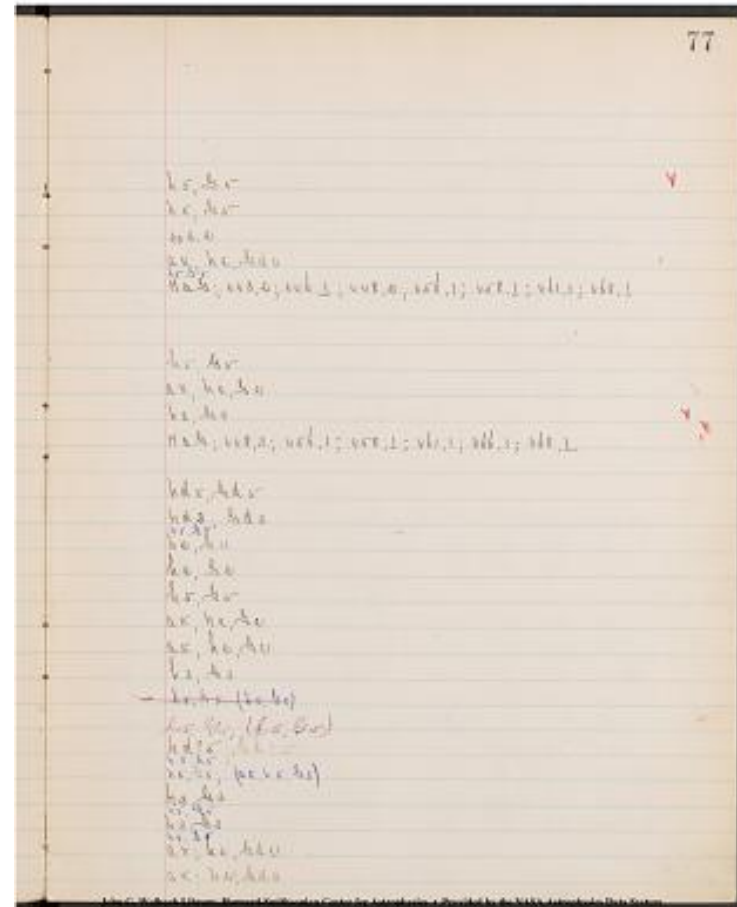
77

h5,y5
h5,y5
402.2
ak,h2,yd2
h5,y5
Hay; 443.2; 446.1; 448.2; 456.1;
458.1; 461.1; 468.1

h5,y5
ak,h2,y2
h3,y3
Hay; 448.3; 456.1; 458.1; 461.1; 466.1;
468.1

hd5,yd5
hd3,yd3
h5,y5
h2,y2
h2,y2
h5,y5
ak,h2,y2
ak,h2,y2
h3,y3
~~h5,y5 (h5,y5)~~
h5,y5,(h5,y5)
hd?5 : yd?5
h5,y5
h5,y5; (ak,h5,y5)
h3,y3
h5,y5
h3,y3
h5,y5
ak,h2,yd2
ak,h2,yd2

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December, 7, 1887

Plate 1069

Book 12 G Page V. 14. Type Remarks. Description of lives on Spectra.

[[symbol - check mark]] 180 9.4 6.0 I ~~[[strickethrough]]III[[/strickethrough]]~~
^b 688 F3G=.2, F5G=.2, F7G=.4, Lives between G & H.

[[symbol - check mark]] 182 8.7 15.0 F

~~[[strickethrough]]III[[/strickethrough]]~~ ^a 689 G and h =.5[[symbol - check mark]] 8.9 16.0 F ~~[[strickethrough]]III[[/strickethrough]]~~ ^a 690 G and h =.6[[symbol - check mark]] 7.1 16.5 F ~~[[strickethrough]]III[[/strickethrough]]~~ ^a 691 G and h =.2, G dbl., Lines below K.[[symbol - check mark]] 5.1 9.1 F ~~[[strickethrough]]III[[/strickethrough]]~~ ^a 692 G and h dbl.=.3

[[symbol - check mark]] 184 5.8 10.8 F

~~[[strickethrough]]III[[/strickethrough]]~~ ^a 693 G and h =.2[[symbol - check mark]] 6.3 23.5 F ~~[[strickethrough]]III[[/strickethrough]]~~ ^a 694 G and h dbl.=.5[[symbol - check mark]] 4.4 22. K ~~[[strickethrough]]III[[/strickethrough]]~~

^b.c. 695 F2 1/2 G=.1, F3 G=.1B, F4 1/2 G=.3, F5 G=.1B, F6 G=.1, F7 G=.5, Lines below G & H.

[[symbol - check mark]] 3.3 20.9 I ~~[[strickethrough]]III[[/strickethrough]]~~ ^B 697 F5 G=.2, F7 G=.4.

Plate 1035.

186. Lower part dark, very hard to measure.

[[symbol - check mark]] 21.3 7.6 F ~~[[strickethrough]]III[[/strickethrough]]~~ ^a 698 G and h =.5[[symbol - check mark]] 20.0 9.9 I ~~[[strickethrough]]III[[/strickethrough]]~~ ^b 699 F3 G=.2, F4 G=.1, F5 G=.3, F7 G=.5, Lines between G and H.[[symbol - check mark]] 18.5 12.4 I ~~[[strickethrough]]III[[/strickethrough]]~~
^b 700 F5 G=.2, F7 G=.4[[symbol - check mark]] 18.4 22.1 F ~~[[strickethrough]]III[[/strickethrough]]~~
^a 701 G and h =.4

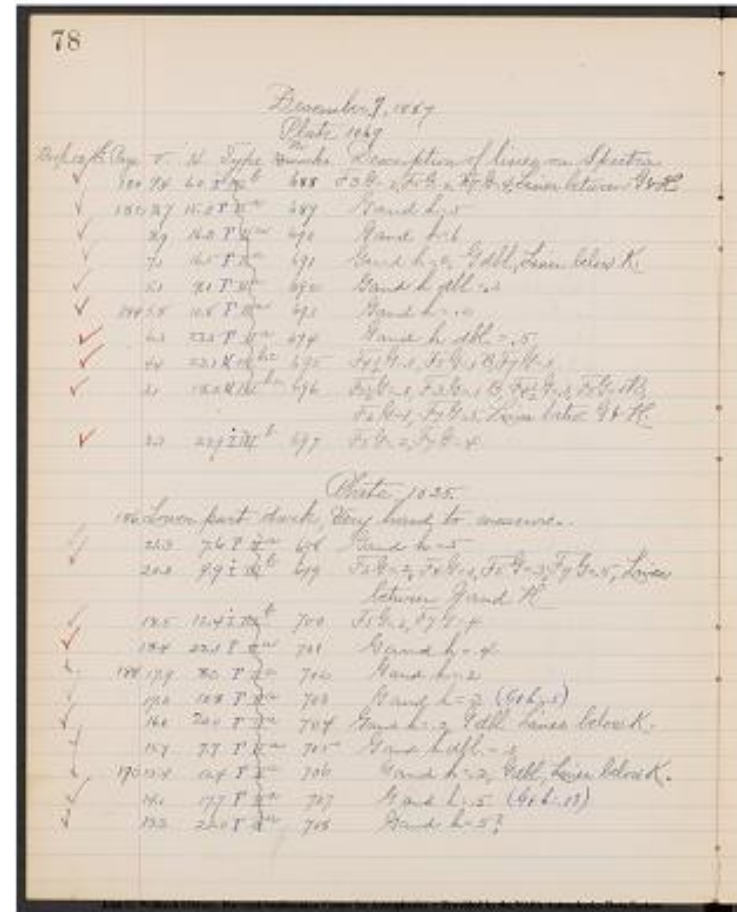
[[symbol - check mark]] 188 17.9 8.0 F

~~[[strickethrough]]III[[/strickethrough]]~~ ^a 702 G and h =.2[[symbol - check mark]] 17.3 10.8 F ~~[[strickethrough]]III[[/strickethrough]]~~

^a 703 G and h =.2 (G+h=.5)

[[symbol - check mark]] 16.0 20.0 F ~~[[strickethrough]]III[[/strickethrough]]~~
^a 704 G and h =.2 Gdbl. Lines below K.[[symbol - check mark]] 15.7 7.7 F ~~[[strickethrough]]III[[/strickethrough]]~~ ^a 705 G and h =.3

[[symbol - check mark]] 190 15.4 12.4 F

~~[[strickethrough]]III[[/strickethrough]]~~ ^a 706 G and h =.2, Gdbl. Lines below K.[[symbol - check mark]] 14.1 17.7 F ~~[[strickethrough]]III[[/strickethrough]]~~
^a 707 G and h =.5 (G+h=.3?)[[symbol - check mark]] 13.3 22.0 F ~~[[strickethrough]]III[[/strickethrough]]~~
^a 708 G and h =.5?

79

HaG; 448.4; 458.2, 468.2

h5, G5

hb, Gb

ak; h2, Gd2

hd3, Gd3

h2, G2

hd5, Gd5

448.1; 458.1; 461.1

HaG; 448.5; 453.1; 458.1; 461.3;

468.1; 471.1

448.4; 458.2

h5, G5

HaG, 448.5; 458.3; 463.1; 468.2

448.4; 458.2

h4, G4

h2, G2

h2, G2, (h5, G5)

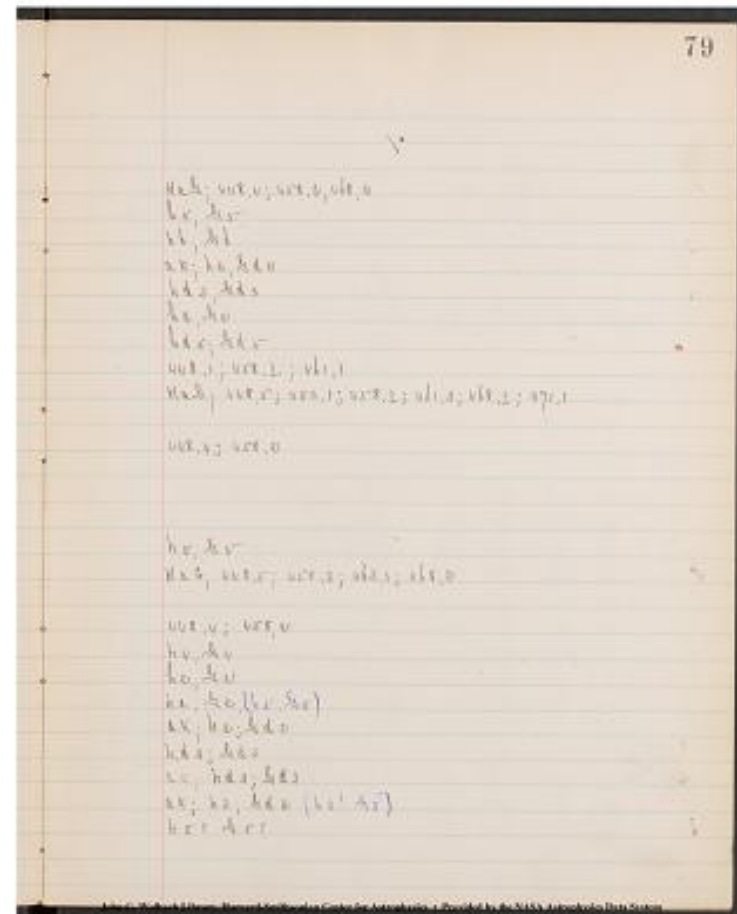
ak; h2; Gd2

hd3; Gd3

ak; hd3; Gd3

ak; h2; Gd2 (h3?, G3?)

h5?, G5?



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December 8, 1897.

Plate 1835

Bridges, E. G. v. 4. ²² *Remarks Description of Lines on Spectra.*

$\sqrt{170} \approx 13$, $\sqrt{85} \approx 9.2$, $\sqrt{42.5} \approx 6.5$, $\sqrt{21.25} \approx 4.6$

[illegible]

✓ 167-227 K¹⁰ 70 The Br. & F. 2. 7. 1882, same between

Grand H.

[illegible]

[Faint handwritten notes at the bottom of the page]

$\frac{1}{2}$ za n6 r q m Kana hza

69 1727 Σ^n pp. 4 and 5

Photo. 1000

Plate 1011
F. 6

✓	196-265	17.1 I.D.	30	For the 1st time, 1st time.
✓	196-265	17.1 I.D.	30	For the 1st time, 1st time.

✓	189	2.3	FX ²	716	Band has
✓	177	2.32	FX ²	707	Band has Gull.

✓	7/7	27/1	7/7	Land 1st
✓	7/8	27/1	7/8	Land 1st

78 44 160 F 79 *Quercus* 44

185 167 F 18 720 Sand hwy, 4000
185 168 F 18 720 Sand hwy, 4000

2	1st 1st F. 20	721	Band 4-2, 1st. 1st. 1st. 1st.
1	1st 1st F. 20	722	Band 4-2, 1st. 1st. 1st. 1st.

11-0 147 N 112 E 723 524 6-5 75 N 151 E 40-4-5 74-5 B,

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

1 2092 100 B 86 724 1740-9, several lines between V & H.
1740-9, 1740-9

✓	70	14.3 T ₉₀	725	Sand h-5
---	----	----------------------	-----	----------

✓ *ac. agilis* var. *fulva*, *fulva*, *fulva*, *fulva*

Between Hand R.
S. H. 17. 18. 19. 20. 21. 22.

028-64721-9.2 2V-3B 7014-1
P2 504 7744-2 B 7015 9/9/1944

100

Smithsonian Institution Transcription Center, Harvard-Smithsonian Center for Astrophysics

81

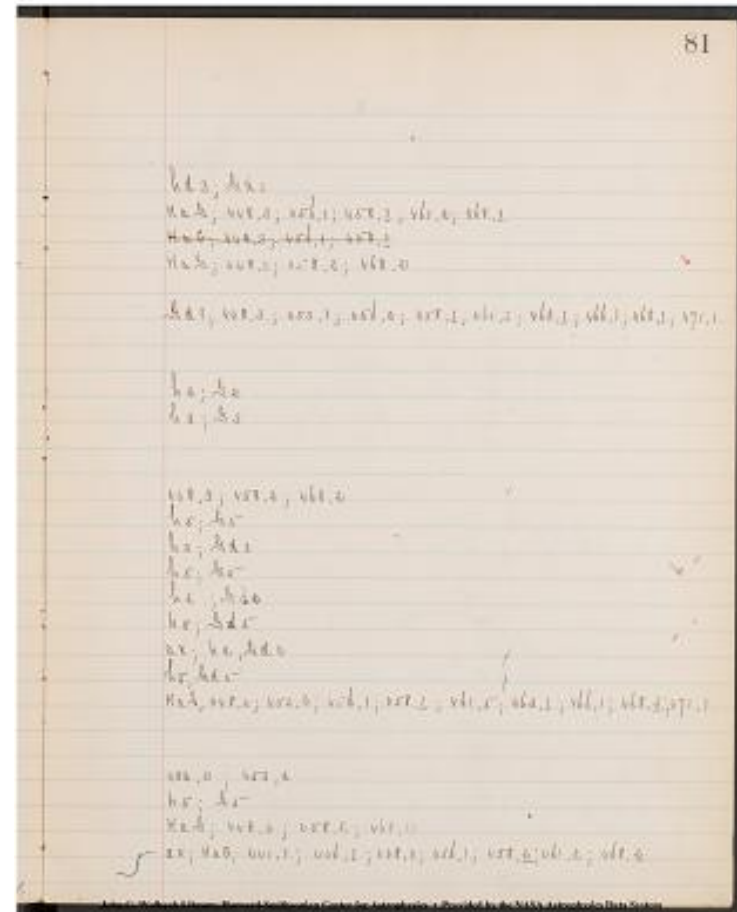
hd3; yd3
 4ay; 448,3; 456,1; 458,1; 461,2; 468,1
~~[[[?]]]; 448,3; 456,1; 458,1~~
 4ay; 448,3; 458,2; 468,2

yd?; 448,3; 453,1; 456,2; 458,1; 461,3; 463,1; 466,1; 468,1; 471,1

h2; y2
 h3; y3

448,3; 458,2; 468,2
 h5; y5
 h3; yd3
 h5; y5
 h2; yd2
 h5; dy5
 ak; h2, yd2
 h5, yd5
 4ay, 448,4; 453,2; 456,1; 458,1; 461,5; 463,1; 466,1; 468,3; 471,1

402,2; 453,2
 h5; y3
 4ay; 448,4; 458,2; 468,2
 ak; 4aG; 441,1; 446,1; 448,4; 456,1; 458,2; 461,2; 468,2



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82

December, 8, 1887.

Plate 1071

Book 12 E. Page | V. | H. | Type. | No. Remarks. | Description of lines on Spectra.

[check] 200 | 8.6 | 20.6 | I III^h[I.] | 728 | F7 G = .4, G all.
 [check] 7.4 | 8.2 | I III^h[I.] | 729 | F7 G = .3, G all.
 [check] 7.3 | 11.6 | F II^h[a] | 730 | G and h = .5 ?
 [check] 202 | 7.6 | 21.8 | F II^h[a] | 731 | G and h = .2
 [check] 7.0 | 23.9 | F II^h[a] | 732 | G and h all. = .5
 [check] 6.2 | 14.8 | F II^h[a] | 733 | G and h = .5, G all.,
 [check] 6.0 | 16.1 | F II^h[I.] | 734 | G and h = .2, G all., lines below K.
 [check] 6.7 | 24.0 | I III^h[I.] | 735 | F7 G = .2, G all. ?
 [check] 5.4 | 9.0 | I III^h[a] | 736 | F7 G = .4
 [check] 5.2 | 23.8 | F II^h[a] | 737 | G and h = .2 G all? lines below K.
 [check] 4.2 | 18.3 | F II^h[I.] | 738 | G and h = .5

Plate. 1097

Very poor plate.

[check] 204 | 15.9 | 7.4 | F II^h[a] | 739 | G and h = .5

[check] 15.2 | 19.0 | I III^h[I.] | 740 | F5 G = .2, F7 G = .3

Plate 1119

206 | Poor plate.

[check] 20.0 | 18.7 | K III^h[I.c.] | 741 | F3 G = .1 B, F4 G = .3, F4 1/2 G = .1 B, F5 G = .2, F7 G = .3.

[check] 17.1 | 23.3 | G II^h[I.] | 742 | F4 G = .3, F7 G = .2, lines between GaH.

[check] 15.5 | 6.8 | F II^h[a] | 743 | G and h = .5

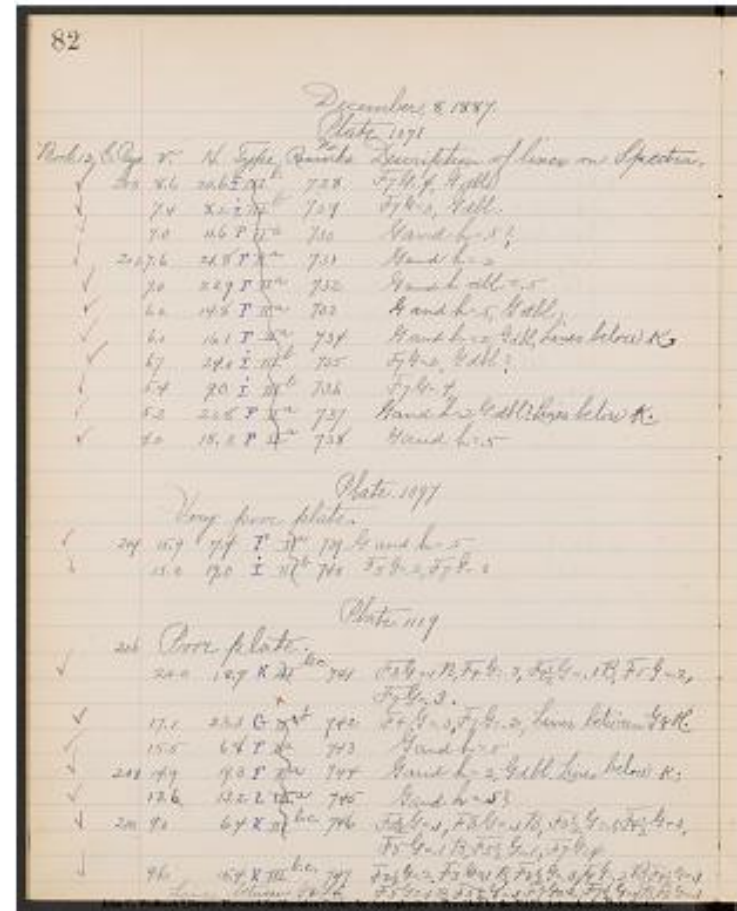
[check] 208 | 14.9 | 19.3 | F II^h[a] | 744 | G and h = .2, G all. lines below K.

[check] 13.6 | 13.2 | L III^h[a] | 745 | G and h = .5?

[check] 210 | 9.0 | 6.4 | K III^h[I.c.] | 746 | F2 1/2 G = .1, f3 G = .1 B, F3 1/2 G = .1, F4 1/2 G = .1, F5 G = .1 B, F5 1/2 G = .1, F7 G = .4

[check] 9.6 | 15.4 | K III^h[I.c.] | 747 | F2 1/2 G = .2, F3 G = .1 B, F3 1/2 G = .3, F4 G = .2 B, F4 1/2 G = .1

Lines between GaH. F5 G = .1 B, F5 1/2 G = .1 F7 G = .1, F7 1/2 G = .1 B, F8 G = .1



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83

Gd,444.4
Gd,448.3
h5? G5?
h2,G2
hd?5;Gd?5
h5;Gd5
ak;h2;Gd2
Gd? 448.2
448.4
ak;h2;Gd2
h5;G5

h5,G5
448.3;458.2

448.3;458.2;461.1;463.3;468.1

HaG;448.2;463.3

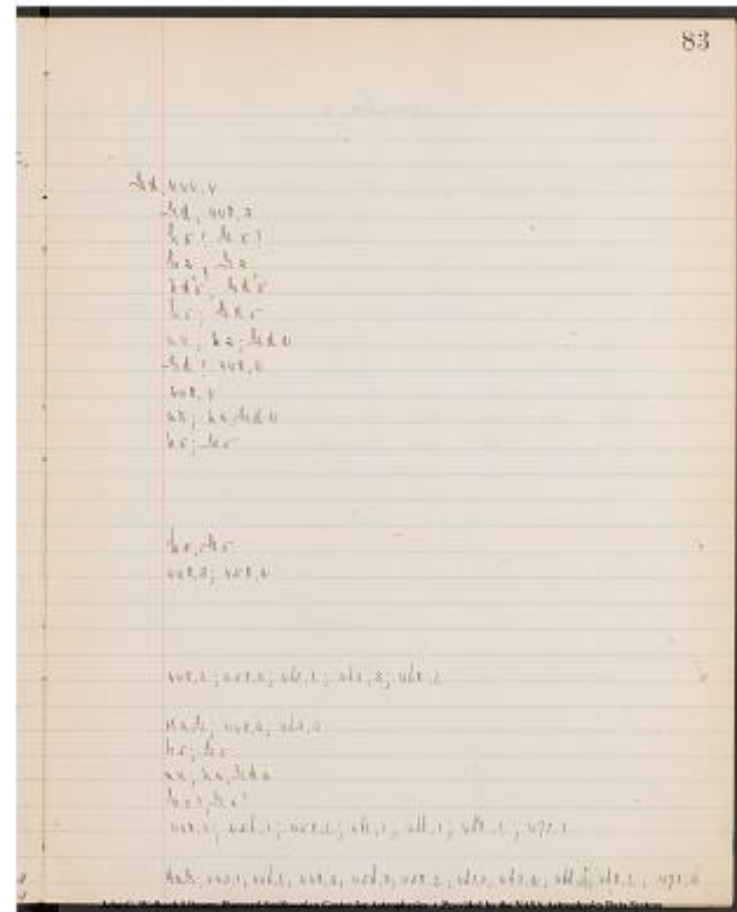
h5;G5

ak;h2;Gd2

h5?,G5?

448.4;456.1;458.1;461.1;466.1;468.1

HaG;443.1;446.1;448.2;456.1;458.1
461.1;463.2;466.3;468.1
471.2



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84

December, 8, 1887

Plate. 1229.

Book, 12, E. Page. | V. | H. | Type. | No. Remarks. | Description of lines on Spectra.

[check] 212 | 20.5 | 18.3 | K III^h[I.c] | 748 | F2 1/2 G = .1, F3 G = .1 B, F3 1/2 G = .1, F4 1/2 G = .3, F5 G = .1 B, F5 1/2 G = .1, F7 G = .4, Lines between GaH.

Dec. 9. 1887.

Plate 1229.

[check] 212 | 19.7 | 19.2 | F III^h[a] | 749 | G and h = .5

[check] | 18.2 | 20.1 | I III^h[I] | 750 | F7 G = .4

[check] 214 | 16.0 | 6.5 | F II^h[a] | 751 | G and h all. = .5

[check] | 15.3 | 19.0 | F II^h[a] | 752 | G and h = .2, G all., Lines below K

[check] | 14.0 | 12.9 | F II^h[a] | 753 | G and h = .3.

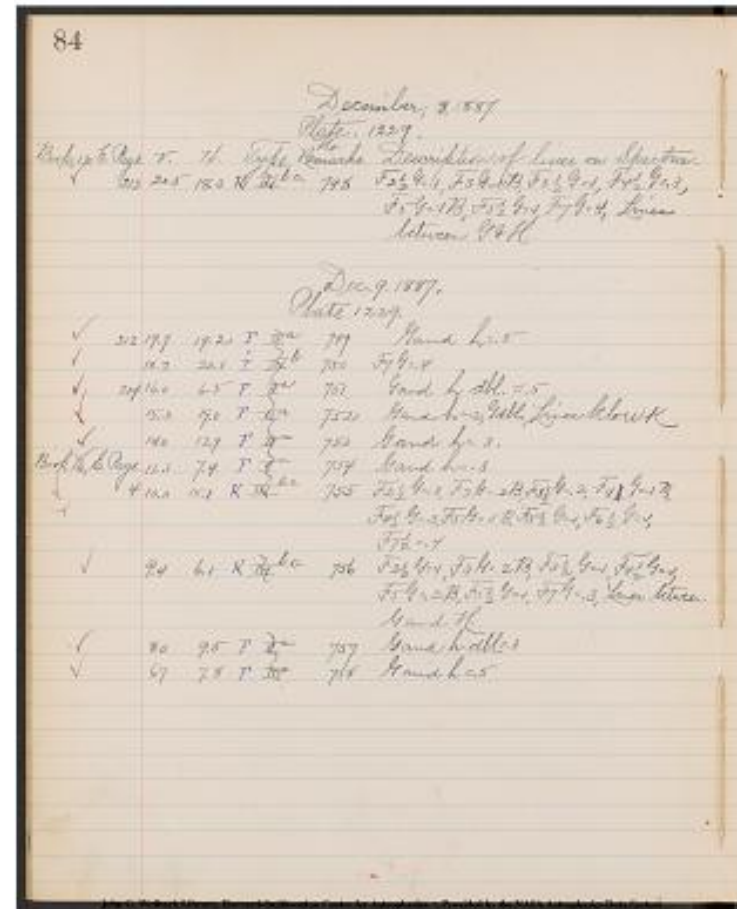
Book 16, E. Page. | 11.3 | 7.4 | F II^h[a] | 754 | G and h = .3.

[check] 4 | 10.0 | 15.1 | K III^h[I.c] | 755 | F2 1/2 G = .3, F3 G = .2 B, F3 1/2 G = .2, F4 ~~1/2 G = .1~~ 1/2 ~~G = .1~~ G = .1 B, F4 1/2 G = .3, F5 G = .1 B, F5 1/2 G = .1, F6 1/2 G = .1, F7 1/2 = .4

[check] | 9.4 | 6.1 | K III^h[I.c] | 756 | F2 1/2 G = .1, F3 G = .2 B, F3 1/2 G = .1, F4 1/2 G = .1, F5 G = .2 B, F5 1/2 G = .1, F7 G = .3, lines between G and H.

[check] | 8.0 | 9.5 | F II^h[a] | 757 | G and h all = .3

[check] | 6.7 | 7.8 | F III^h[a] | 758 | G and h = .5



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85

HaG;448.4;456.1;458.1;461.3;466.1;468.1;471.1

h5;G5

448.4

hd5,Gd5

ak;h2,Gd2

h3,G3

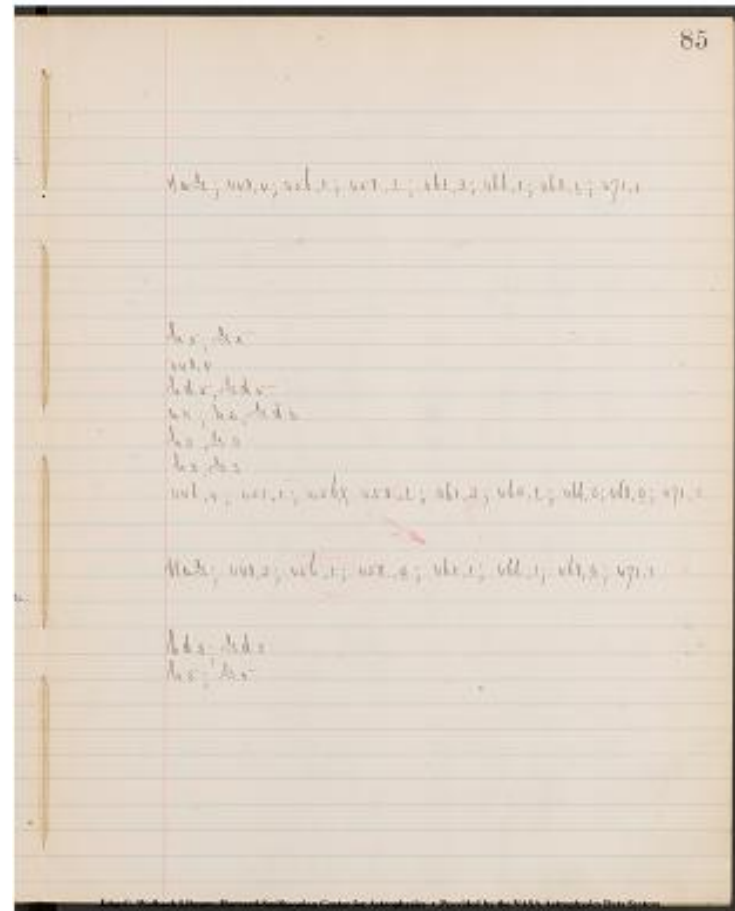
h3,G3

441.1;451.1;456.1;458.1;461.3;463.1;466.2;468.2;471.3

HaG;448.3;456.1;458.2;461.1;466.1;468.1;471.1

hd3;Gd3

h5;G5



Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23
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December 10, 1887

Plate 1072

Handwritten: Vol. 6 Page 7. H. Eight Numbers Description of Birds in Spectra

Love Photo

V 6 224 m + 107^l 169 F₁¹, F₂¹, F₃¹, F₄¹, F₅¹, F₆¹, F₇¹, F₈¹, F₉¹, F₁₀¹, F₁₁¹, F₁₂¹, F₁₃¹, F₁₄¹, F₁₅¹, F₁₆¹, F₁₇¹, F₁₈¹, F₁₉¹, F₂₀¹, F₂₁¹, F₂₂¹, F₂₃¹, F₂₄¹, F₂₅¹, F₂₆¹, F₂₇¹, F₂₈¹, F₂₉¹, F₃₀¹, F₃₁¹, F₃₂¹, F₃₃¹, F₃₄¹, F₃₅¹, F₃₆¹, F₃₇¹, F₃₈¹, F₃₉¹, F₄₀¹, F₄₁¹, F₄₂¹, F₄₃¹, F₄₄¹, F₄₅¹, F₄₆¹, F₄₇¹, F₄₈¹, F₄₉¹, F₅₀¹, F₅₁¹, F₅₂¹, F₅₃¹, F₅₄¹, F₅₅¹, F₅₆¹, F₅₇¹, F₅₈¹, F₅₉¹, F₆₀¹, F₆₁¹, F₆₂¹, F₆₃¹, F₆₄¹, F₆₅¹, F₆₆¹, F₆₇¹, F₆₈¹, F₆₉¹, F₇₀¹, F₇₁¹, F₇₂¹, F₇₃¹, F₇₄¹, F₇₅¹, F₇₆¹, F₇₇¹, F₇₈¹, F₇₉¹, F₈₀¹, F₈₁¹, F₈₂¹, F₈₃¹, F₈₄¹, F₈₅¹, F₈₆¹, F₈₇¹, F₈₈¹, F₈₉¹, F₉₀¹, F₉₁¹, F₉₂¹, F₉₃¹, F₉₄¹, F₉₅¹, F₉₆¹, F₉₇¹, F₉₈¹, F₉₉¹, F₁₀₀¹, F₁₀₁¹, F₁₀₂¹, F₁₀₃¹, F₁₀₄¹, F₁₀₅¹, F₁₀₆¹, F₁₀₇¹, F₁₀₈¹, F₁₀₉¹, F₁₁₀¹, F₁₁₁¹, F₁₁₂¹, F₁₁₃¹, F₁₁₄¹, F₁₁₅¹, F₁₁₆¹, F₁₁₇¹, F₁₁₈¹, F₁₁₉¹, F₁₂₀¹, F₁₂₁¹, F₁₂₂¹, F₁₂₃¹, F₁₂₄¹, F₁₂₅¹, F₁₂₆¹, F₁₂₇¹, F₁₂₈¹, F₁₂₉¹, F₁₃₀¹, F₁₃₁¹, F₁₃₂¹, F₁₃₃¹, F₁₃₄¹, F₁₃₅¹, F₁₃₆¹, F₁₃₇¹, F₁₃₈¹, F₁₃₉¹, F₁₄₀¹, F₁₄₁¹, F₁₄₂¹, F₁₄₃¹, F₁₄₄¹, F₁₄₅¹, F₁₄₆¹, F₁₄₇¹, F₁₄₈¹, F₁₄₉¹, F₁₅₀¹, F₁₅₁¹, F₁₅₂¹, F₁₅₃¹, F₁₅₄¹, F₁₅₅¹, F₁₅₆¹, F₁₅₇¹, F₁₅₈¹, F₁₅₉¹, F₁₆₀¹, F₁₆₁¹, F₁₆₂¹, F₁₆₃¹, F₁₆₄¹, F₁₆₅¹, F₁₆₆¹, F₁₆₇¹, F₁₆₈¹, F₁₆₉¹, F₁₇₀¹, F₁₇₁¹, F₁₇₂¹, F₁₇₃¹, F₁₇₄¹, F₁₇₅¹, F₁₇₆¹, F₁₇₇¹, F₁₇₈¹, F₁₇₉¹, F₁₈₀¹, F₁₈₁¹, F₁₈₂¹, F₁₈₃¹, F₁₈₄¹, F₁₈₅¹, F₁₈₆¹, F₁₈₇¹, F₁₈₈¹, F₁₈₉¹, F₁₉₀¹, F₁₉₁¹, F₁₉₂¹, F₁₉₃¹, F₁₉₄¹, F₁₉₅¹, F₁₉₆¹, F₁₉₇¹, F₁₉₈¹, F₁₉₉¹, F₂₀₀¹, F₂₀₁¹, F₂₀₂¹, F₂₀₃¹, F₂₀₄¹, F₂₀₅¹, F₂₀₆¹, F₂₀₇¹, F₂₀₈¹, F₂₀₉¹, F₂₁₀¹, F₂₁₁¹, F₂₁₂¹, F₂₁₃¹, F₂₁₄¹, F₂₁₅¹, F₂₁₆¹, F₂₁₇¹, F₂₁₈¹, F₂₁₉¹, F₂₂₀¹, F₂₂₁¹, F₂₂₂¹, F₂₂₃¹, F₂₂₄¹, F₂₂₅¹, F₂₂₆¹, F₂₂₇¹, F₂₂₈¹, F₂₂₉¹, F₂₃₀¹, F₂₃₁¹, F₂₃₂¹, F₂₃₃¹, F₂₃₄¹, F₂₃₅¹, F₂₃₆¹, F₂₃₇¹, F₂₃₈¹, F₂₃₉¹, F₂₄₀¹, F₂₄₁¹, F₂₄₂¹, F₂₄₃¹, F₂₄₄¹, F₂₄₅¹, F₂₄₆¹, F₂₄₇¹, F₂₄₈¹, F₂₄₉¹, F₂₅₀¹, F₂₅₁¹, F₂₅₂¹, F₂₅₃¹, F₂₅₄¹, F₂₅₅¹, F₂₅₆¹, F₂₅₇¹, F₂₅₈¹, F₂₅₉¹, F₂₆₀¹, F₂₆₁¹, F

$\sqrt{179}$ 169 r II^a 780 Hand H. voss Blois
Hand L. S. Gall.

✓ 189 12th 1st 761 Grand L-5?
✓ 189 10th 1st 762 B.L. 2 F.B. 2

✓	sch. 2nd 2. 1880	763	4. 1880
✓	sch. 2nd 2. 1880	764	4. 1880

1	12.0	17.3	P. 11	760	Land 11.3
2	13.5	16.2	P. 11	765	Land 11.5
3	15.0	15.0	P. 11	770	Land 11.5

4 1177 17.12 km 787 Sand hilled
92 11.10 m b 628 Feltz Feltz Feltz

27 May 1879 Hand h. dbb - w.

22	171 F 2 nd	770	Hand 1-2
23	233 F 2 nd	771	Hand 2-2

✓ 2.0 10.3.2.34⁶ 772 *Trifolium, Trifolium, Trifolium, Trifolium, Trifolium*
Trifolium, Trifolium, Trifolium, Trifolium, Trifolium

✓ 4 225 105 R 302 ^{1/2} 773 254.1 254.2 254.3 254.4 254.5

✓ 100 and R.T. 700

19.2 124 P 82² 775 Hand 1-3

170	72 I. M ²	776	Hill, lower (Chap. Pond St.
171	122 B I ⁶	777	hill.

✓ 16 dy 481 st 716 57 4.3.
✓ 03 481 st 716 57 4.3.

Plate 1112

✓ 4 225 105 R 312 ¹² 773 $\frac{1}{2} 4_1 + \frac{1}{2} 4_2 + \frac{1}{2} 4_3 + \frac{1}{2} 4_4$
 $\frac{1}{2} 4_1 + \frac{1}{2} 4_2 + \frac{1}{2} 4_3 + \frac{1}{2} 4_4$

✓ 247 226 B I V 174 108 91

19.2 1st P. 87 775 Hand 2-3
19.0 2nd P. 87 776 Half, 1/2 in. 1st P. 87

✓ 190 127 B I 6 777 h' all.
✓ 18 190 127 B I 6 777 h' all.

✓	03	91X	779	Fyke, R. Fyke, 2. Fyke, 3.
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W. 1 N. 2 P. 27 J. 10. Sand h. 15, 2 lines below N.

1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 26

87

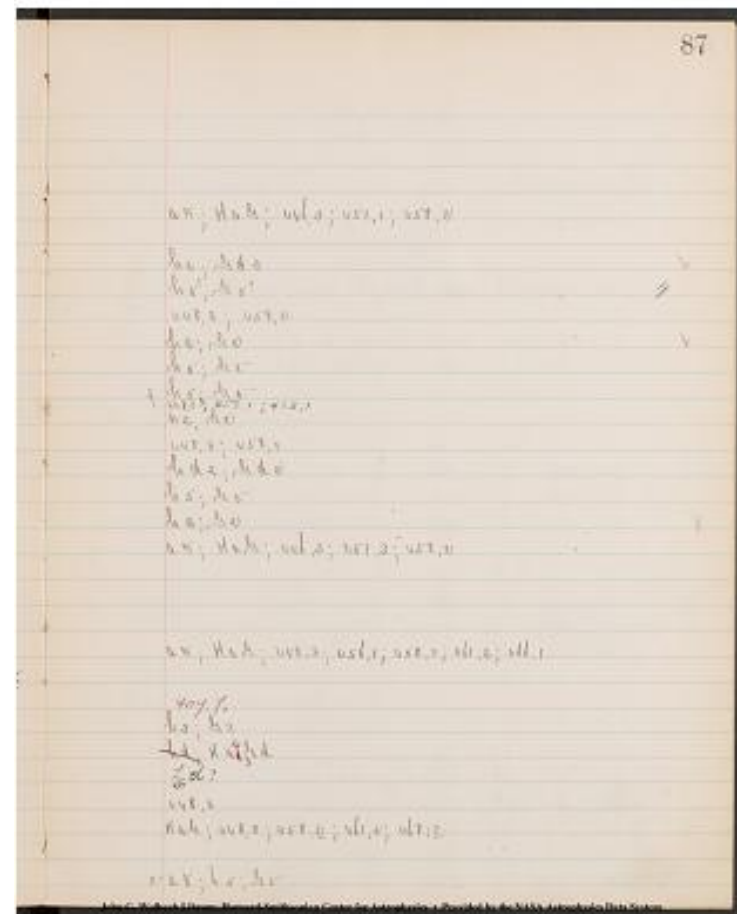
aK; HaG; 446,3; 451,1; 458,2

h2; Gd2
h5; G5
448,2; 458,2
h2; G2
h5; G5
h5; G5
h2, G2⁴[448,3; 458,1; 468,1]
448,3; 458,1
hd2; Gd2
h5; G5
h2; G2
aK; HaG; 446,3; 451,3; 458,2

aK; HaG; 448,3; 456,1; 458,1; 461,2; 466,1

407,7,
h3; G3
[[~~hd~~]] hd; [[~~HaG~~]] HaG; Gd
hd?
448,3
HaG; 448,2; 458,2; 461,2; 468,1

[left margin 2] aK; h5; G5



Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23
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December, 10, 1887

Plate, 1112

Book, 16. E. Page | V. | H. | Type. | No. Remarks. | Description of lines on Spectra.

[check] 16 | 15.9 | 20.9 | F II^a[a] | |

December 12, 1887.

Plate 1112

[check] 18 | 13.2 | 20.3 | I III^a[I] | 782 | One of a group of three, additional lines hard to measure

[check] | 12.7 | 15.3 | F II^a[a] | 783 | G and h = .5? (Gah = .5)

[check] 20 | 10.9 | 24.0 | B II^a[I] | 784 | F8 G = .2, G8 h = .1

[check] | 9.2 | 23.3 | K III^a[I.c.] | 785 | F3 G = .1 B, F3 1/2 G = .1, F7 G = .3, Lines between G and H.

[check] | 8.6 | 11.6 | F II^a[a] | 786 | G and h = .2

[check] | 7.5 | 10.7 | F II^a[a] | 787 | G and h = .3

[check] | 7.6 | 15.0 | K III^a[I.c.] | 788 | F3 G = .1 B, F4 1/2 G = .1, F5 G = .1 B, F5 1/2 G = .1, F7 G = .3.

[check] 22 | 7.9 | 19.6 | F II^a[a] | 789 | G and h = .3

[check] | 6.4 | 17.6 | F II^a[a] | 790 | G and h = .5

[check] 24 | 3.8 | 16.7 | I III^a[I] | 791 | F5 G = .1, F7 G = .2

[check] | 3.9 | 23.0 | F II^a[a] | 792 | G and h = .2

[check] | 2.9 | 10.5 | K III^a[I.c.] | 793 | F3 G = .1 B, F4 1/2 G = .1, F5 G = .3 B, F5 1/2 G = .1, F7 G = .3, Lines between G and H Lines below K.

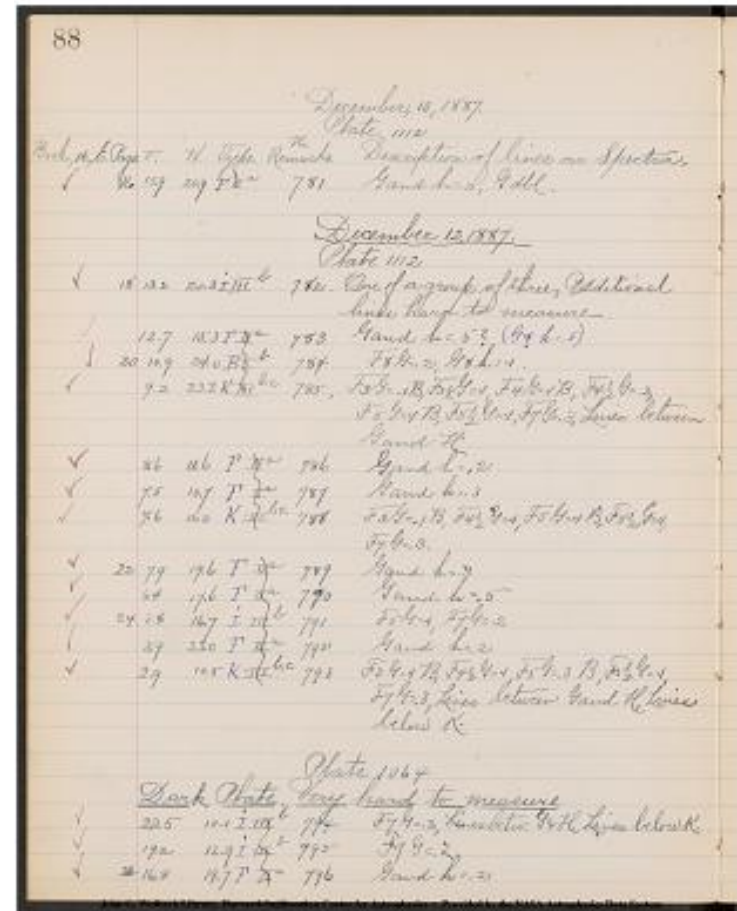
Plate 1064

Dark Plate Very hard to measure

[check] | 22.5 | 10.1 | I III^a[I] | 794 | F7 G = .2, Lines below GaH. Lines below K.

[check] | 19.2 | 12.9 | I III^a[I] | 795 | F7 G = .2

[check] | 16.8 | 19.7 | F II^a[a] | 796 | G and h = .2



Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23

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h,2;y2

One of a group of three additional lines hard to measure.

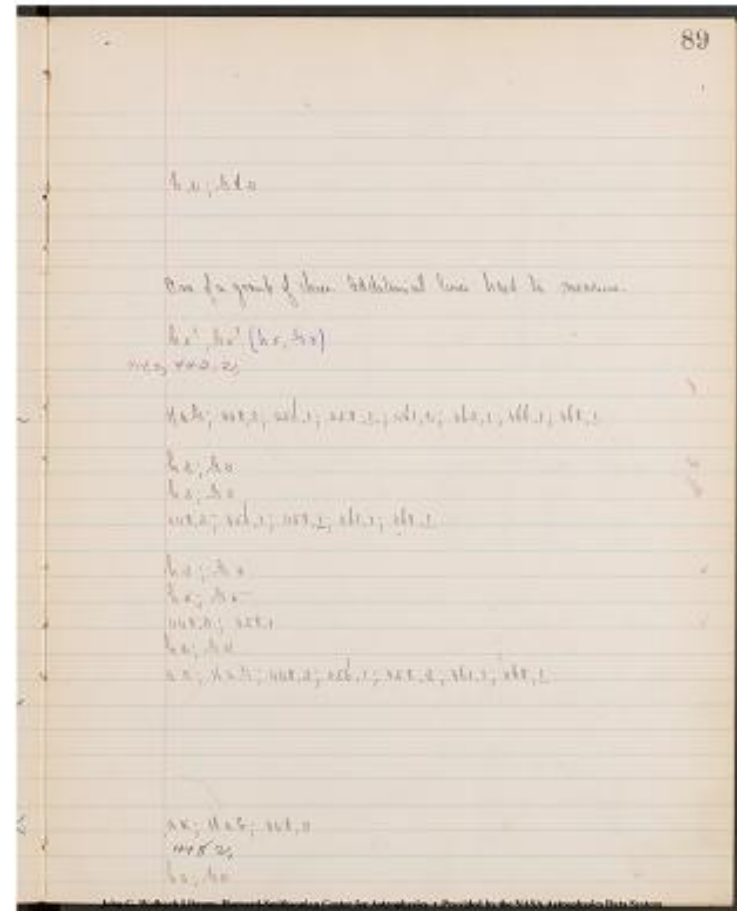
h5?,y5?(h5,y5)
414,2,443,2,

Hay;448,3;456,1;458,1;461,2;463,1;466,1;468,1

h2;y2
h3;y3
448,3;456,1;458,1;461,1;468,1

h3;y3
h3;y5
448,2;458,1
h2;y2
ak;Hay;448,3;456,1;458,3;461,1;468,1

ak;HaG;448,2
448,2,
h2;y2



Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23
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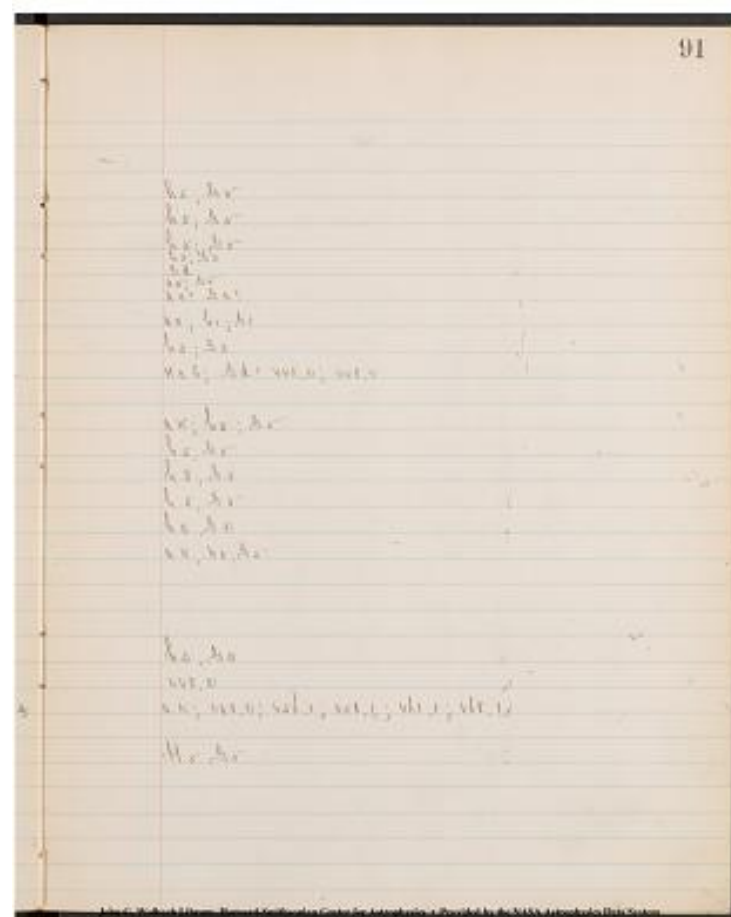
h5; G5
 h5; G5
 h5; G5
 h3; G3
 Gd
 h2? G2?
 ak; h1; G1
 h3; G3
 HaG Gd? 443, 2; 448, 2

ak; h5; G5
 h5; G5
 h3; G3
 h5; G5
 h2; G2
 ak, h5, G5

h2, G2
 448, 2
 ak; 448, 2; 456, 1; 458, 1; 461, 1; 468, 1;

H5 G5

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 • Provided by the NASA Astrophysics Data System



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December, 13, 1887.

Plate, 1113

[6 columned table]

Book 16, E. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra.

|---|---|---|---|---|

| 48 | 21.5 | 17.5 | F ~~II^a~~ | 815 | G and h=.5 || 21.0 | 18.4 | F ~~II^a~~ | 816 | G=.5, h=.2 || 20.6 | 13.8 | F ~~II^a~~ | 817 | G and h=.2, G all. Lines below K. || 19.4 | 13.1 | I ~~III^l~~ | 818 | F3 G=.2, F5 G=.2, F7 G=.3, Lines between G&H, 2 Lines below K. || 19.5 | 14.4 | F ~~II^a~~ | 819 | G+h=.2, G all, Lines below K. || 50 | 18.0 | 11.9 | F ~~II^a~~ | 820 | G and h=.5 (G+h=.5) || 18.7 | 19.3 | F ~~II^a~~ | 820^a | G+h=.5 || 17.9 | 14.6 | F ~~II^a~~ | 821 | G and h=.5, Lines below K. || 16.5 | 11.4 | F ~~II^a~~ | 822 | G and h=.5, Lines below K. || 16.9 | 19.0 | D ~~I^a~~ | 823 | F6 G=.2 B, h7 H=.1 B. || 52 | 14.4 | 7.2 | F ~~II^a~~ | 824 | G&h=.5 || 13.9 | 11.9 | F ~~II^a~~ | 825 | G&h=.5, 2 Lines below K. || 13.5 | 14.4 | F ~~II^a~~ | 826 | G and h=.5 || 12.6 | 14.9 | F ~~II^a~~ | 827 | G and h=.5, 1 Line below K. || 54 | 11.5 | 7.3 | K ~~III^l.c.~~ | 828 | F4 1/2 G=.1, F5 G=.1 B, F5 1/2 G=.2, Lines between G and H, 1 Line below K. || 11.6 | 15.0 | F ~~II^a~~ | 829 | G and h=.2 || 56 | 9.7 | 18.7 | F ~~II^a~~ | 830 | G and h=.2, G all., Lines below K. || 8.4 | 7.5 | F ~~II^a~~ | 831 | G and h=.2 || 8.6 | 20.1 | K ~~III^l.c.~~ | 832 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.3, F5 G=.1 B, F5 1/2 G=.1, F7 G=.3, G all?, Lines between G and H. || 7.9 | 13.7 | I ~~III^l.~~ | 833 | F3 G=.1, F5 G=.1, F7 G=.3. || 7.7 | 18.4 | F ~~II^a~~ | 834 | G and h=.5, 2 lines below K. || 58 | 5.6 | 12.9 | I ~~III^l~~ | 835 | F3 G=.1, F5 G=.1, F7 G=.2, Lines between G&H. || 4.5 | 14.3 | K ~~III^l.c.~~ | 836 | F3 G=.1 B, F3 1/2 G=.1, F4 G=.1 B, F4 1/2 G=.3, F5 G=.2 B, F5 1/2 G=.1, F7 G=.3, F7 1/2 G=.1 B, F8 1/2 G=.1, Lines below G and H. Lines below K. || 3.5 | 13.7 | F ~~II^a~~ | 837 | G and h all.=.3 |

December, 13, 1887

Plate, 1113

Book 16, E. Page.	V.	H.	Type.	No.	Remark.	Description of lines on Spectra.
✓ 48	21.5	17.5	F	815		G and h=.5
✓ 21.0	18.4		F	816		G=.5, h=.2
✓ 20.6	13.8		F	817		G and h=.2, G all. Lines below K.
✓ 19.4	13.1		I	818		F3 G=.2, F5 G=.2, F7 G=.3, Lines between G&H, 2 Lines below K.
✓ 19.5	14.4		F	819		G+h=.2, G all, Lines below K.
✓ 50	18.0	11.9	F	820		G and h=.5 (G+h=.5)
✓ 18.7	19.3		F	820^a		G+h=.5
✓ 17.9	14.6		F	821		G and h=.5, Lines below K.
✓ 16.5	11.4		F	822		G and h=.5, Lines below K.
✓ 16.9	19.0		D	823		F6 G=.2 B, h7 H=.1 B.
✓ 52	14.4	7.2	F	824		G&h=.5
✓ 13.9	11.9		F	825		G&h=.5, 2 Lines below K.
✓ 13.5	14.4		F	826		G and h=.5
✓ 12.6	14.9		F	827		G and h=.5, 1 Line below K.
✓ 54	11.5	7.3	K	828		F4 1/2 G=.1, F5 G=.1 B, F5 1/2 G=.2, Lines between G and H, 1 Line below K.
✓ 11.6	15.0		F	829		G and h=.2
✓ 56	9.7	18.7	F	830		G and h=.2, G all., Lines below K.
✓ 8.4	7.5		F	831		G and h=.2
✓ 8.6	20.1		K	832		F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.3, F5 G=.1 B, F5 1/2 G=.1, F7 G=.3, G all?, Lines between G and H.
✓ 7.9	13.7		I	833		F3 G=.1, F5 G=.1, F7 G=.3.
✓ 7.7	18.4		F	834		G and h=.5, 2 lines below K.
✓ 58	5.6	12.9	I	835		F3 G=.1, F5 G=.1, F7 G=.2, Lines between G&H.
✓ 4.5	14.3		K	836		F3 G=.1 B, F3 1/2 G=.1, F4 G=.1 B, F4 1/2 G=.3, F5 G=.2 B, F5 1/2 G=.1, F7 G=.3, F7 1/2 G=.1 B, F8 1/2 G=.1, Lines below G and H. Lines below K.
✓ 3.5	13.7		F	837		G and h all.=.3

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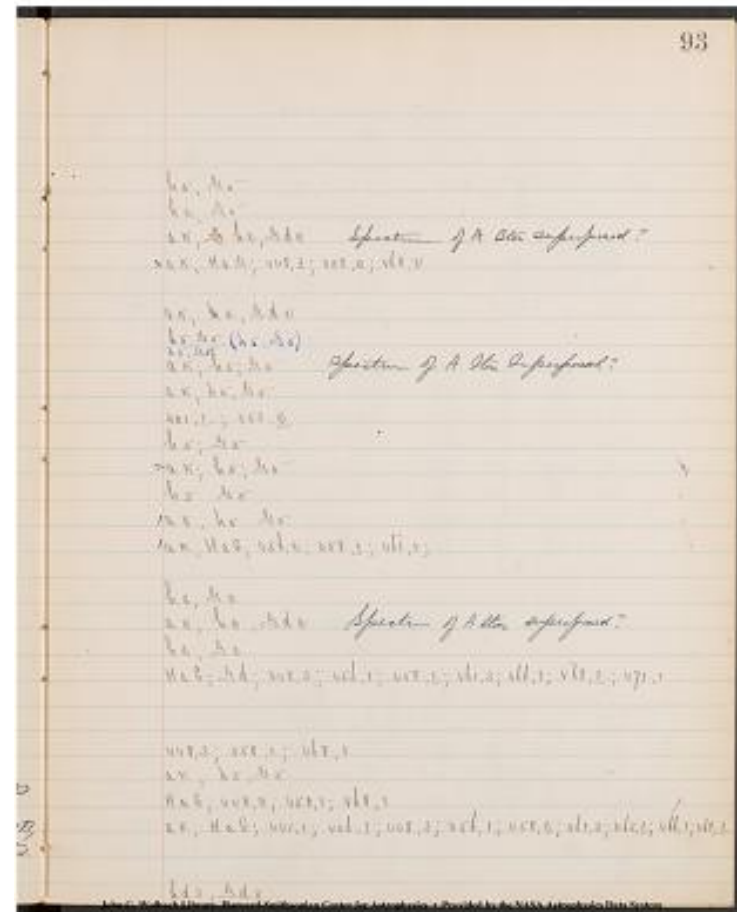
h5, G5
h2, G5
ak; ~~G~~h2, Gd2 Spectrum of A star
superposed?
2ak, HaG; 448,3; 458,2; 468,2

ak, h2, Gd2
h5, G5, (h5, G5)
h5, G5
ak; h5; G5 Spectrum of A star superposed?
ak, h5, G5
401,1; 453,2
h5; G5
2ak; h5; G3
h5 G5
1ak, h5 G5
1ak, HaG; 456,2; 458,1; 461,1;

h2, Gy2
ak, h2, Gd2 Spectrum of A star superposed?
h2, G2
HaG; Gd; 448,3; 456,1; 458,1; 461,3; 466,1; 468,1; 471,1

448,3; 458,1; 468,1
ak, h5, G5
HaG, 448,2; 458,1; 468,1
ak; HaG; 441,1; 446,1; 448,3; 456,1; 458,2; 461,3; 463,1; 466,1; 468,1

hd3, Gd3



Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23
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December, 13, 1887.

Plate, 1113

[[6 columned table]]

Book 16. E. Page|V|H| Type| No. Remarks | Description of lines on Spectra|

|---|---|---|---|---|

|5.8|3.5|13.7|F|[[strikethrough]]|[[strikethrough]]^[[a]]|838|G & h=0.5|
|2.2|23.1|I|[[strikethrough]]|[[strikethrough]]^[[b]]|839|F5G=.1, F7G=.2|Dark Plate. Very hard to measure. Plate 1065.

[[6 columned table]]

|34|22.0|20.3|F|[[strikethrough]]|[[strikethrough]]^[[a]]|840|G&H
dbl?=.3, 2 Lines below K.|
|36|21.6|19.5|I|[[strikethrough]]|[[strikethrough]]^[[b]]|841|F3G=.2,
F5G=.2, F7G=.3, lines between G and H, 2 lines below K.|
|20.0|17.9|F|[[strikethrough]]|[[strikethrough]]^[[a]]|843|G and h=.5
|19.0|12.7|I|[[strikethrough]]|[[strikethrough]]^[[b]]|843|F7G=.3
|19.0|22.5|F|[[strikethrough]]|[[strikethrough]]^[[a]]|844|G and h dbl.=.2,
Lines below K.
|18.4|23.1|F|I|[[strikethrough]]|a|[[strikethrough]]?|844^[[a]]|G&h=.3|
|38|17.8|23.8|I|[[strikethrough]]|[[strikethrough]]^[[b]]|845|F5G=.2,
F7G=.2
|16.0|12.1|F|[[strikethrough]]|[[strikethrough]]^[[a]]|846|G and h=.5|
|16.0|14.5|F|[[strikethrough]]|[[strikethrough]]^[[a]]|847|G and h=.5,
Lines below K.|
|16.0|15.8|F|[[strikethrough]]|[[strikethrough]]^[[a]]|848|G and h=.5|
|16.8|16.6|F|[[strikethrough]]|[[strikethrough]]^[[a]]|849|G and h=.5|
|16.9|20.3|F|[[strikethrough]]|[[strikethrough]]^[[a]]|850|G and h
dbl.?=.3, Lines below K.|December, 14, 1887.

Plate 1065

[[6 columned table]]

|40|15.5|16.2|I|[[strikethrough]]|[[strikethrough]]^[[b]]|851|F5G=.2,
F7G=.2
|14.6|17.2|F|[[strikethrough]]|[[strikethrough]]^[[a]]|852|G and h dbl=.5|
|14.3|17.5|I|[[strikethrough]]|[[strikethrough]]^[[b]]|853|F3G=.1,
F5G=.1, F7G=.2.|
|13.4|16.8|F|[[strikethrough]]|[[strikethrough]]^[[a]]|854|G and h=.2|
|13.4|17.3|F|[[strikethrough]]|[[strikethrough]]^[[a]]|855|G and h=.5|
|12.0|18.2|F|[[strikethrough]]|[[strikethrough]]^[[a]]|856|G and h=.2, Line
below K.
|11.3|16.1|K|[[strikethrough]]|[[strikethrough]]^[[b.c.]]|857|F3G=.2B,
F3½G=.1, F4G=.2B, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.2,
F7½G=.1B, Lines between G and H., Lines below K|John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics.
Provided by the NASA Astrophysics Data Systems

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December, 13, 1887
Plate 1113

Book 16. E. Page. No. Remarks. Description of lines on Spectra

✓	5.8	3.5	13.7	F	838	G and h=0.5
✓	2.2	23.1	I	839	F5G=.1, F7G=.2	

Dark Plate.
Very hard to measure. Plate 1065

✓	34	22.0	20.3	F	840	G&H dbl?=.3, 2 lines below K.
✓	36	21.6	19.5	I	841	F3G=.2, F5G=.2, F7G=.3, lines between G and H, 2 lines below K.
✓	20.0	17.9	F	843	G and h=.5	
✓	19.0	12.7	I	843	F7G=.3	
✓	19.0	22.5	F	844	G and h dbl.=.2, Lines below K.	
✓	18.4	23.1	F	844	G&h=.3	
✓	38	17.8	23.8	I	845	F5G=.2, F7G=.2
✓	16.0	12.1	F	846	G and h=.5	
✓	16.0	14.5	F	847	G and h=.5, Lines below K.	
✓	16.0	15.8	F	848	G and h=.5	
✓	16.8	16.6	F	849	G and h=.5	
✓	16.9	20.3	F	850	G and h dbl.?=.3, Lines below K.	

December, 14, 1887
Plate 1065

✓	40	15.5	16.2	I	851	F5G=.2, F7G=.2
✓	14.6	17.2	F	852	G and h dbl=.5	
✓	14.3	17.5	I	853	F3G=.1, F5G=.1, F7G=.2.	
✓	13.4	16.8	F	854	G and h=.2	
✓	13.4	17.3	F	855	G and h=.5	
✓	12.0	18.2	F	856	G and h=.2, Line below K.	
✓	11.3	16.1	K	857	F3G=.2B, F3½G=.1, F4G=.2B, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.2, F7½G=.1B, Lines between G and H., Lines below K.	

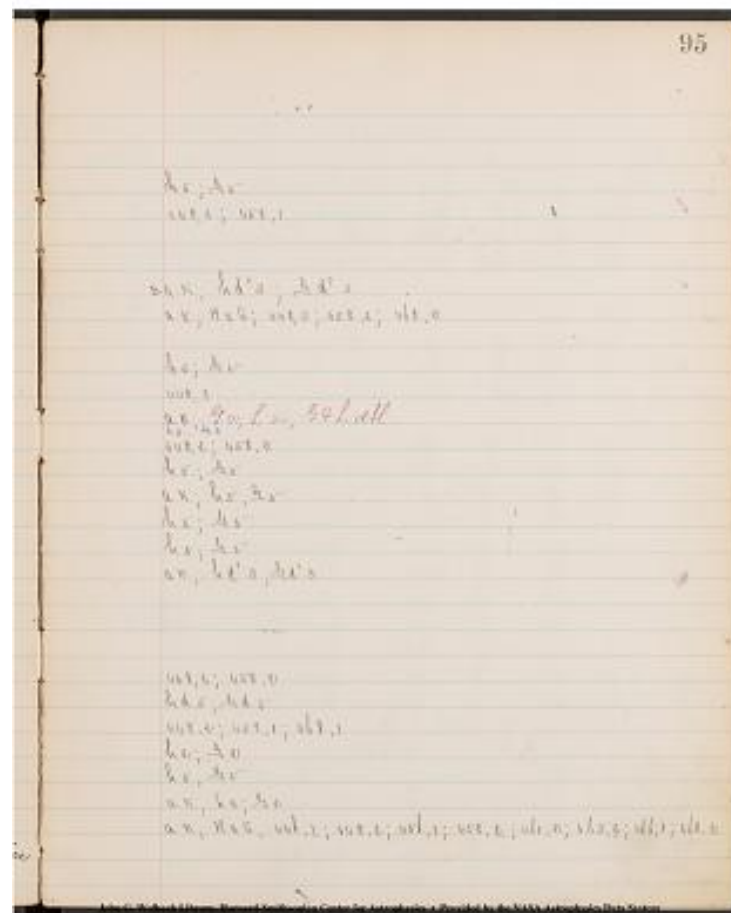
Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23
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h5;y5
448,2;458,1

ak;hd?3;yd?3
ak;HaG; 448,3;458,2;468,e

h5;y5
448,3
ak;y2h2,y[?]hall
h3,y3
448,2; 458,2
h5;y5
ak;h5,y5
h5;y5
h5;y5
ak;hd?3;yd?3

448,2;458,2
hd5,yd5
448,2;458,1;468,1
h2;y2
h5;y5
ak,h2;y2
ak;HaG,446,1;448,2;456,1;458,2;461,2;463,2;466,1;468,2



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December, 14, 1887.

Plate. 1065

[[Table]]

| Book, 16. E. | Page | V | 74. | Type | Remarks | Description of lines row Spectra |

| [[symbol-checkmark]] | 42 | 10.4 | 16.4 | F II [^][[a]] | 858 | G and h dbl = .5 |

| [[symbol-checkmark]] | | 10.6 | 23.2 | F II [^][[a]] | 859 | G and h = .2, Lines below K. |

| [[symbol-checkmark]] | | 9.5 | 12.1 | F II [^][[a]] | 860 | G and h dbl. = .5 |

| [[symbol-checkmark]] | | 9.5 | 16.0 | K III [^][[c.]] | 861 | F3G=.1B, F3[[1/2]]G=.1. F5G=.1B, F5[[1/2]]G=.1 |

F7 G = .1 |

| [[symbol-checkmark]] | | 9.8 | 16.9 | F II [^][[a]] | 862 | G and h = .5 |

| [[symbol-checkmark]] | | 9.5 | 17.2 | F II [^][[a]] | 863 | G and h = .2 G dbl., Lines below K. |

| [[symbol-checkmark]] | | 9.0 | 21.8 | F? II [^][[a?]] | 863a | G+h = .5 |

| [[symbol-checkmark]] | | 8.6 | 12.5 | F II [^][[a]] | 864 | G and h = .3, Lines below K. |

| [[symbol-checkmark]] | | 8.2 | 13.7 | I III [^][[b]] | 865 | F3G=.1, F5G=.1, F7=.2, Lines below

g and H.

| [[symbol-checkmark]] | 44 | 8.5 | 16.5 | F II [^][[a]] | 866 | G and h = .3 |

| [[symbol-checkmark]] | | 8.0 | 18.9 | F II [^][[a]] | 867 | G and h = .3, Lines below K. |

| [[symbol-checkmark]] | | 7.6 | 10.9 | F II [^][[a]] | 868 | G and h dbl? = .5 |

| [[symbol-checkmark]] | | 6.8 | 15.6 | F II [^][[a]] | 869 | G and h dbl. = .5 |

| [[symbol-checkmark]] | | 6.5 | 17.1 | F II [^][[a]] | 870 | G and H dbl. = .5 |

| [[symbol-checkmark]] | 46 | 5.6 | 8.9 | F II [^][[a]] | 871 | G and h dbl. = .5 |

| [[symbol-checkmark]] | | 5.3 | 16.6 | F II [^][[a]] | 872 | G and h dbl. = .3 |

| [[symbol-checkmark]] | | 5.5 | 17.0 | F II [^][[a]] | 873 | G and h = .5, Lines below K. |

| [[symbol-checkmark]] | | 4.3 | 15.0 | F II [^][[a]] | 874 | G and h = .5 |

| [[symbol-checkmark]] | | 4.8 | 15.7 | F II [^][[a]] | 875 | G and h dbl? = .3, Lines below K. |

| [[symbol-checkmark]] | | 4.8 | 15.9 | F II [^][[a]] | 876 | G and h dbl? = .3 |

Plate 1073.

[[Table]]

| [[symbol-checkmark]] | 60 | 21.1 | 9.1 | F II [^][[a]] | 877 | G=.3, h=.1, 2 Lines below K. |

| [[symbol-checkmark]] | | 21.1 | 22.1 | F II [^][[a]] | 878 | G=.3, h=.1 |

| [[symbol-checkmark]] | | 19.0 | 8.0 | F II [^][[a]] | 879 | G and h = .4, G dbl., Lines below K. |

| [[symbol-checkmark]] | 62 | 15.5 | 19.6 | F II [^][[a]] | 880 | G and h = .5 |

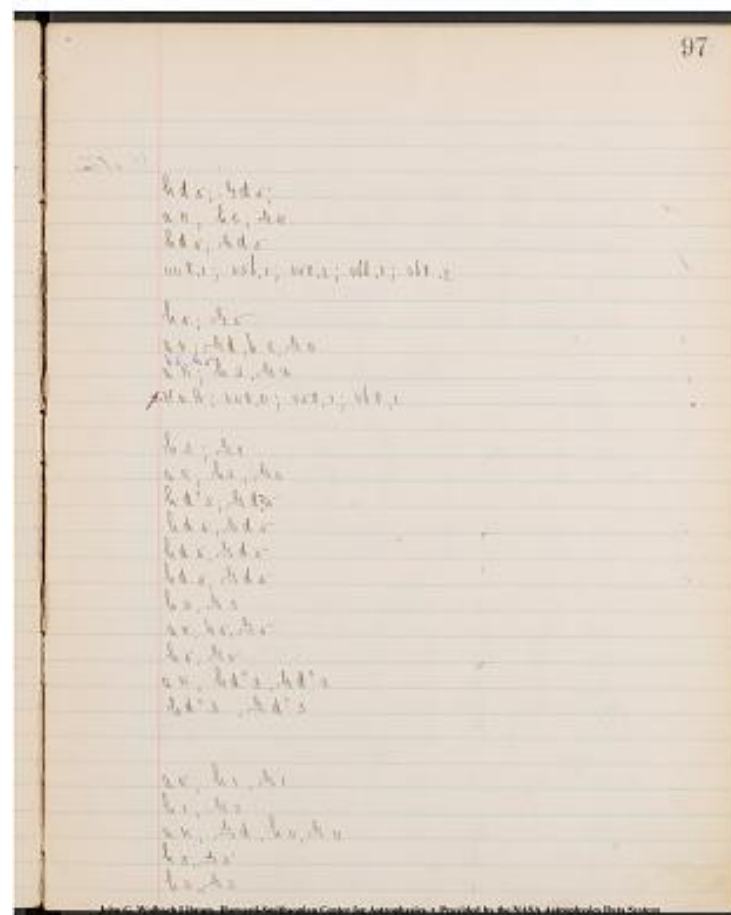
| [[symbol-checkmark]] | | 15.8 | 22.3 | F II [^][[a]] | 881 | G and h = .3 |

hd5,yd5;
ak;h2,y2
hd5,yd5
448,1; 45b,1; 458,1; 466,1; 468,1

h5,y5
ak,yd,h2,y2
h5,y5
ak;h3,y3
[?]HaA; 448,2; 458,1; 468,1

h3,y3
ak,h3,y3
hd?5,yd25
hd5,yd5
hd5,yd5
hd5,yd5
h3,y3
ak,h5,y5
h5,y5
ak,hd?3,yd?3
hd?3,yd?3

ak,h1,y1
h1,y3
ak,yd,h4,y4
h5,y5
h3,y3



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December, 14, 1887.

Plate. 1073

Book, 16, E. Page | V. | H. | Type. | No. Remarks. | Description of lines on Spectra.

[check] 62 | 13.0 | 9.1 | I III^h[I] | 882 | F5 G = .2, F7 G = .3
 [check] | 12.2 | 8.4 | F II^h[a] | 883 | G and h = .2
 [check] | 12.8 | 22.8 | F II^h[a] | 884 | G and h = .5
 [check] 64 | 11.7 | 21.0 | I III^h[I. ?] | 885 | F7 G = .2, Lines below K.
 [check] | 10.8 | 12.0 | F II^h[a] | 886 | G & h all = .5
 [check] | 10.6 | 13.9 | F II^h[a] | 887 | G and h = .3? (G+h = .5)

December, 16, 1887

Plate 1073.

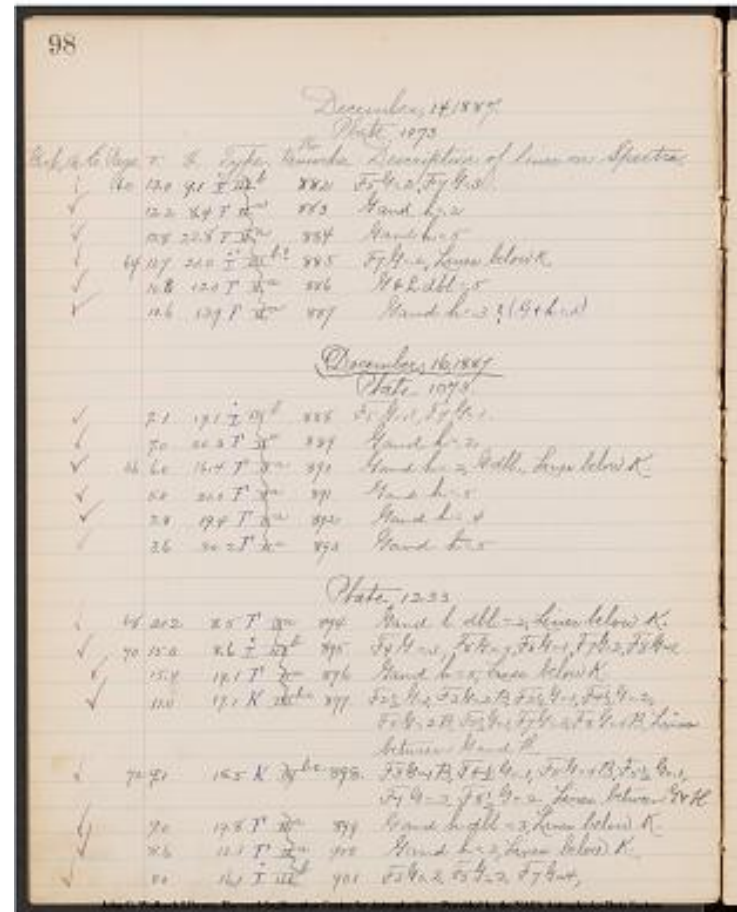
[check] | 7.1 | 19.1 | I III^h[I.] | 888 | F5 G = .1, F7 G = .1
 [check] | 7.0 | 20.3 | F II^h[a] | 889 | G and h = .2
 [check] 66 | 6.0 | 16.4 | F II^h[a] | 890 | G and h = .2, G all., Lines below K.
 [check] | 5.0 | 21.0 | F II^h[a] | 891 | G and h = .5
 [check] | 3.8 | 19.4 | F II^h[a] | 892 | G and h = .4
 [check] | 3.6 | 20.2 | F II^h[a] | 893 | G and h = .5

Plate 1233

[check] 68 | 21.2 | 8.5 | F II^h[a] | 894 | G and h all. = .2, Lines below K.
 [check] 70 | 15.0 | 8.6 | I III^h[I] | 895 | F4 G = .3, F5 G = .1, F6 G = .1, F7 G = .2, F8 G = .1,
 [check] | 15.4 | 19.1 | F II^h[a] | 896 | G and h = .5, Lines below K
 [check] | 11.0 | 17.1 | K III^h[I.c.] | 897 | F2 1/2 G = .1, F3 G = .2 B, F3 1/2 G = .1, F4 1/2 G = .2, F5 G = .2 B, F5 1/2 G = .1, F7 G = .3, F8 G = .1 B, Lines between G and H

[check] 72 | 9.1 | 18.5 | K III^h[I.c.] | 898 | F3 G = .1 B, F4 1/2 G = .1, F5 G = .1 B, F5 1/2 G = .1, F7 G = .3, F8 1/2 G = .2, Lines between G & H.

[check] | 9.0 | 19.8 | F II^h[a] | 899 | G and h all = .3, Lines below K.
 [check] | 8.6 | 13.3 | F II^h[a] | 900 | G and h = .3, Lines below K.
 [check] | 8.0 | 16.1 | I III^h[I] | 901 | F3 G = .2, F5 G = .2, F7 G = .4,



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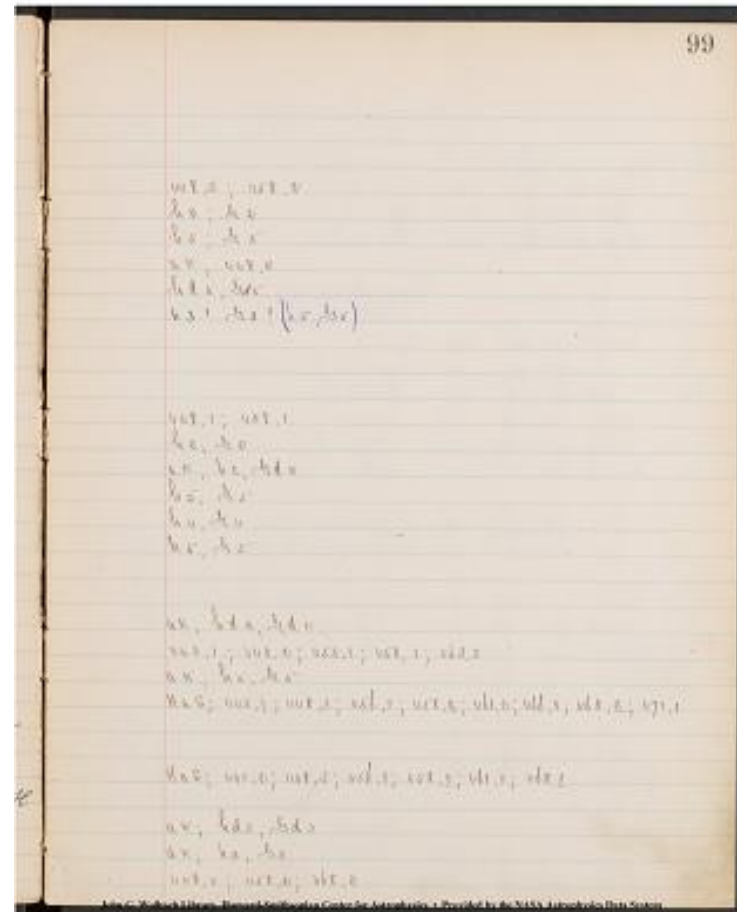
448,3; 458,2
h2; Y2
h5; Y5
aK, 448,2
hd5, Yd5
h3^[2] Y3^[2] (h5, Y5)

448,1; 458,1
h2, Y2
aK, h2, Yd2
h5, Y5
h4, Y4
h5, Y5

aK, hd2, Yd2
443,1; 448,2; 453,1; 458,1; 463,3
aK; h5, Y5
HaG; 443,1; 448,3; 456,1; 458,2; 466,1; 468,2; 471,1

HaG; 441,2; 448,3; 456,1; 458,1; 461,1; 468,1

aK; hd3, Yd3
aK; h3, Y3
448,4; 458,2; 468,2



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December, 16, 1887.

Plate 1233

Book, 16. E.

[6 columned table]

Page. | V. | H. | Type | No. Remarks. | Description of lines on Spectra |
 [check] | 72 | 7.8 | 16.7 | F ~~II^a~~ | 902 | G
 and h = .5.
 [check] | 7.7 | 18.9 | F ~~II^a~~ | 903 | G and
 h = .5 |
 [check] | 74 | 3.6 | 19.7 | F ~~II^a~~ | 904 | G
 and h = .5 |

December 17, 1887.

Plate 1074

[check] | 76 | 22.5 | 16.5 | I ~~III^b~~ | 905 |
 F7 G = .3 |
 [check] | 22.0 | 19.4 | F ~~II^a~~ | 906 | G
 and h = .2. Line below K. |
 [check] | 19.3 | 14.5 | F ~~II^a~~ | 907 | G
 and h = .5 |
 [check] | 78 | 19.5 | 22.0 | F ~~II^a~~ | 908 | G
 and h = .5 |
 [check] | 18.5 | 13.7 | F ~~II^a~~ | 909 | G
 and h = .4. 2 lines below K. |
 [check] | 80 | 16.0 | 15.7 | I ~~III^b~~ | 910 |
 F3 G = .2, F5 G = .2, F7 G = .3, Lines between G and H. |
 [check] | 15.4 | 12.3 | F? ~~II^a~~ | 910a |
 G + h = .5 |
 [check] | 15.5 | 13.8 | I ~~III^b~~ | 911 | F7
 G = .3, Lines between G and H. |
 [arrow to above previous row]
 [check] | 15.6 | 23.2 | F? ~~II^a~~ | 910b |
 G + h = .5? |
 [check] | 14.7 | 7.2 | K ~~III^b~~ | 912 |
 F3 G = .1 B, F3 1/2 G = .1, F4 1/2 G = .4, F5 G = .1 B, F5 1/2 G = .2, F7
 G = .3, Lines between G and H. |
 [check] | 82 | 14.2 | 11.5 | F ~~II^a~~ | 913 | G
 and h = .5 (G + h = .5) |
 [check] | 13.8 | 17.0 | E ~~III~~ | 914 | 3
 Lines below K. |
 [check] | 13.8 | 23.2 | F ~~II^a~~ | 915 | G
 and h = .5? |
 [check] | 12.4 | 7.6 | F ~~II^a~~ | 916 | G
 and h abl. = .5 |
 [check] | 12.4 | 10.6 | F ~~II^a~~ | 916a | G
 + h = .5 |
 [check] | 84 | 11.5 | 6.3 | F ~~II^a~~ | 917 | G
 and h = .2 |
 [check] | 11.5 | 9.4 | I ~~III^b~~ | 918 | F3 G
 = .2, F5 G = .2, F7 G = .3 |
 [check] | 10.6 | 10.9 | F ~~II^a~~ | 919 | G
 and h = .5?, Lines below K. |
 [check] | 10.8 | 20.2 | K ~~III^b~~ | 920 |
 F3 G = .1 B, F4 1/2 G = .2, F5 G = .1 B, F5 1/2 G = .1, F7 G = .2, Lines
 between G and H, 3 Lines below K. |

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December, 16, 1887.
Plate 1233

Book, 16. E.

Page	V	H	Type	No.	Remarks	Description of lines on Spectra
72	7.8	16.7	F	902		G and h = .5.
7.7	18.9		F	903		G and h = .5.
74	3.6	19.7	F	904		G and h = .5.

December 17, 1887.
Plate 1074

76	22.5	16.5	I	905		F7 G = .3
22.0	19.4		F	906		G and h = .2. Line below K.
19.3	14.5		F	907		G and h = .5.
78	19.5	22.0	F	908		G and h = .5.
18.5	13.7		F	909		G and h = .4. 2 lines below K.
80	16.0	15.7	I	910		F3 G = .2, F5 G = .2, F7 G = .3, Lines between G and H.
15.4	12.3		F?	910a		G + h = .5.
15.5	13.8		I	911		F7 G = .3, Lines between G and H.
15.6	23.2		F?	910b		G + h = .5?
14.7	7.2		K	912		F3 G = .1 B, F3 1/2 G = .1, F4 1/2 G = .4, F5 G = .1 B, F5 1/2 G = .2, F7 G = .3, Lines between G and H.
82	14.2	11.5	F	913		G and h = .5 (G + h = .5).
13.8	17.0		E	914		3 Lines below K.
13.8	23.2		F	915		G and h = .5?
12.4	7.6		F	916		G and h abl. = .5.
12.4	10.6		F	916a		G + h = .5.
84	11.5	6.3	F	917		G and h = .2.
11.5	9.4		I	918		F3 G = .2, F5 G = .2, F7 G = .3.
10.6	10.9		F	919		G and h = .5?, Lines below K.
10.8	20.2		K	920		F3 G = .1 B, F4 1/2 G = .2, F5 G = .1 B, F5 1/2 G = .1, F7 G = .2, Lines between G and H, 3 Lines below K.

[check] | | 10.9 | 22.4 | F ~~II^a~~ | 921 | G
and h = .3 |
[check] | 86 | 7.8 | 19.3 | F ~~II^a~~ | 922 | G
and h = .2 |

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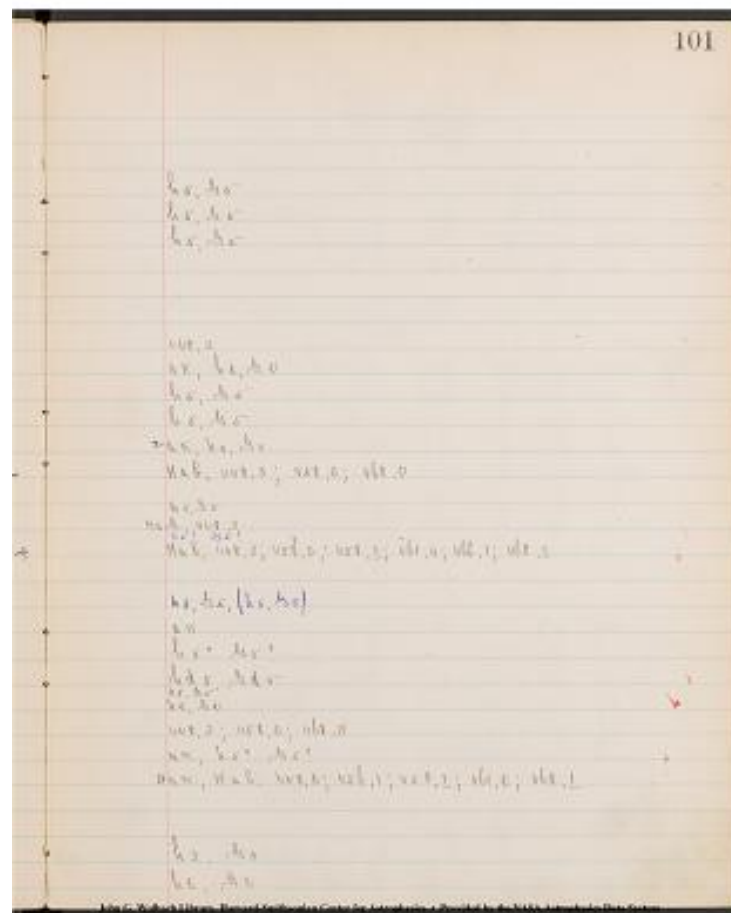
h5,y5
h4,y5
h5,y5

448,3
ak,h2,y2
h5,y5
h5,y5
2ak,h4,y4
HaG,448,3;458,2;468,2

h5,y5
Hay,448,3
h5? y5?
HaG,448,3;456,2;458,1;461,4;466,1;468,1

h5,y5,(h5,y5)
ak
h5? y5?
hd5 yd5
h5,y5
h2,y2
448,3;458,2;468,2
ak,h5? y5?
3ak,HaG,448,2;456,1;458,1;461,2;468,1

h3,y3
h2,y2



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December, 17, 1887.

Plate 1074.

[6 columned table]

Book 16, E Page. | V. | H. | Type. | Remarks. | Description of lines on Spectra. |

--- | --- | --- | --- | --- | --- |
 88 | 6.6 | 14.3 | ~~III b~~ | 923 | F7G = .3 |
 5.0 | 19.6 | ~~II a~~ | 924 | G and h dbl.
 = .5. Lines below K. |
 90. | 2.6 | 12.2 | ~~II a~~ | 925 | G and h
 = .2 |
 2.8 | 15.9 | ~~III b~~ | 926 | F7G = .4 |

December, 19, 1887.

Plate 1208.

[6 columned table]

92 | 20.0 | 12.1 | ~~III b~~ | 927 | Several
 lines below K. |
 19.0 | 6.2 | ~~II a~~ | 928 | G and h = .2
 | 17.6 | 17.9 | ~~II a~~ | 929 | G and h
 dbl. = .5 |
 16.9 | 22.9 | ~~III b~~ | 930 | F3G = .2,
 F7G = .2, F5G = .2. |
 94 | 14.7 | 6.7 | ~~II a~~ | 931 | G and h
 = .2. |
 14.5 | 14.4 | ~~III b~~ | 932 | F7G = .3. |
 13.4 | 11.9 | ~~II a~~ | 932 a | G & h
 = .5 |
 96 | 12.1 | 17.0 | ~~III b~~ | 933 | F5G =
 .2, F7G = .2, Lines between G & H. |
 12.1 | 17.3 | ~~III b.c.~~ | 934 | F2½G =
 .1, F3G = .2B, F3½G = .1, F4½G = .1, F5G = .2B, F5½G = .1, F7G = .3,
 Lines between G and H; Lines below K. |
 11.5 | 20.8 | ~~II a~~ | 935 | G and h =
 .2, G dbl., Lines below K. |
 10.7 | 19.1 | ~~II a~~ | 936 | G and h
 dbl. = .5 |
 98. | 9.9 | 16.4 | ~~II a~~ | 937 | G and h
 dbl. = .5 |
 100 | 6.8 | 16.9 | ~~III b~~ | 938 | F3G =
 .2, F5G = .2, F7G = .3. |
 5.6 | 9.8 | ~~II a~~ | 939 | G and h = .5
 (G & h = .5) |
 5.2 | 15.0 | ~~III b~~ | 940 | F7G = .3 |
 5.6 | 16.6 | ~~III b.c.~~ | 941 | F3G =
 .2B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .3. |
 4.4 | 8.1 | ~~III b.c.~~ | 942 | F2½G =
 .1, F3G = .1B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .2,
 Lines between G and H. |
 2.0 | 8.3 | ~~II a~~ | 943 | G and d = .3 |

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December, 17, 1887

Plate 1074.

Book & Page	V	H	Type	Remarks	Description of lines on Spectra	
88	6.6	14.3	III b	923	F7G = .3	
5.0	19.6	II a	924	G and h dbl. = .5	Lines below K	
90	2.6	12.2	II a	925	G and h = .2	
2.8	15.9	III b	926	F7G = .4		

December, 19, 1887

Plate 1208.

92	20.0	12.1	III b	927	Several lines below K.	
19.0	6.2	II a	928	G and h = .2		
17.6	17.9	II a	929	G and h dbl. = .5		
16.9	22.9	III b	930	F3G = .2, F7G = .2, F5G = .2.		
94	14.7	6.7	II a	931	G and h = .2.	
14.5	14.4	III b	932	F7G = .3.		
13.4	11.9	II a	932 a	G & h = .5		
96	12.1	17.0	III b	933	F5G = .2, F7G = .2, Lines between G & H.	
12.1	17.3	III b.c.	934	F2½G = .1, F3G = .2B, F3½G = .1, F4½G = .1, F5G = .2B, F5½G = .1, F7G = .3, Lines between G and H; Lines below K.		
11.5	20.8	II a	935	G and h = .2, G dbl., Lines below K.		
10.7	19.1	II a	936	G and h dbl. = .5		
98	9.9	16.4	II a	937	G and h dbl. = .5	
100	6.8	16.9	III b	938	F3G = .2, F5G = .2, F7G = .3.	
5.6	9.8	II a	939	G and h = .5 (G & h = .5)		
5.2	15.0	III b	940	F7G = .3		
5.6	16.6	III b.c.	941	F3G = .2B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .3.		
4.4	8.1	III b.c.	942	F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .2, Lines between G and H.		
2.0	8.3	II a	943	G and d = .3		

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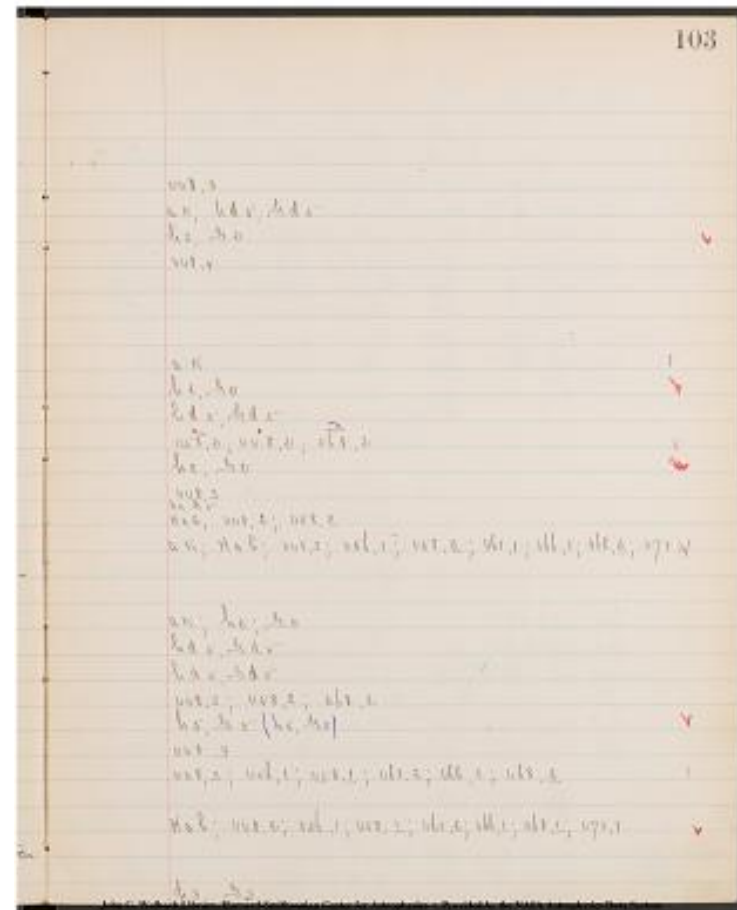
448,3
aK, hd5, Yd5
h2, Y2
448,4

aK
h2, Y2
hd5, Yd5
458^[2],2; 448,2; 468^[3],2
h2, Y2
448,3
HaG^[h5, Y5], 448,2; 458,2
aK; HaG; 448,3; 456,1; 458,2; 461,1; 466,1; 468,2; 471,1

aK; h2; Y2
hd5, Yd5
hd5, Yd5
448,3; 458,2; 468,2
h5, Y5(h5, Y5)
448,3
448,3; 456,1; 458,1; 461,2; 466,1; 468,2

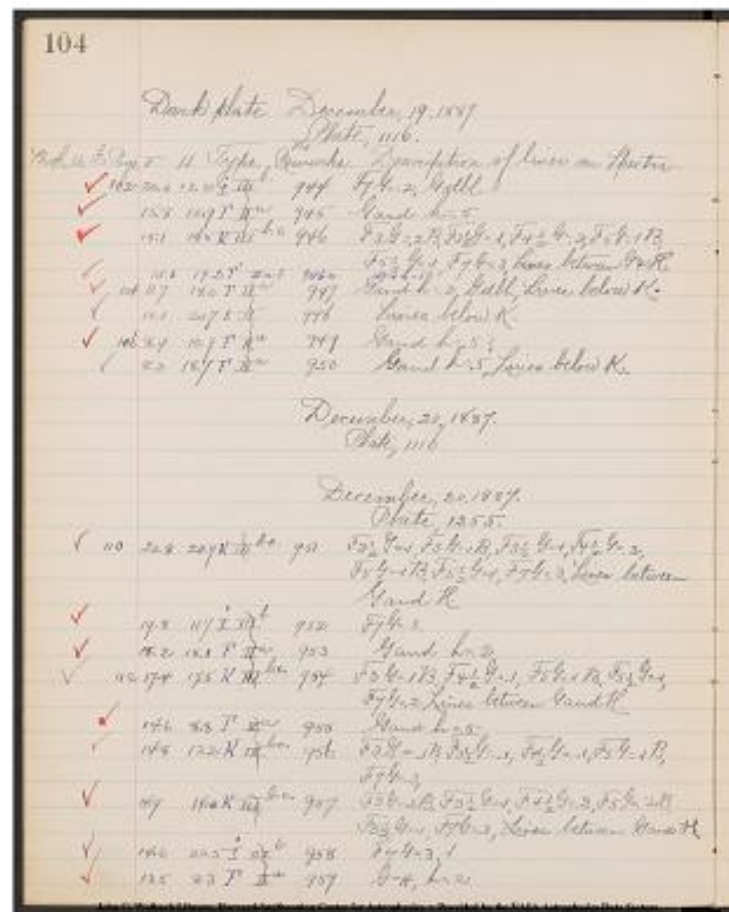
HaG; 448,2; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

h3, Y3



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Yd, 448,2
h5, Y5
HaG; 443,3; 456,1; 458,1; 461,2; 466,1; 468,2

aK^[h5,Y5]; h2, Yd2
aK
h5? Y5?
aK; h5; Y5

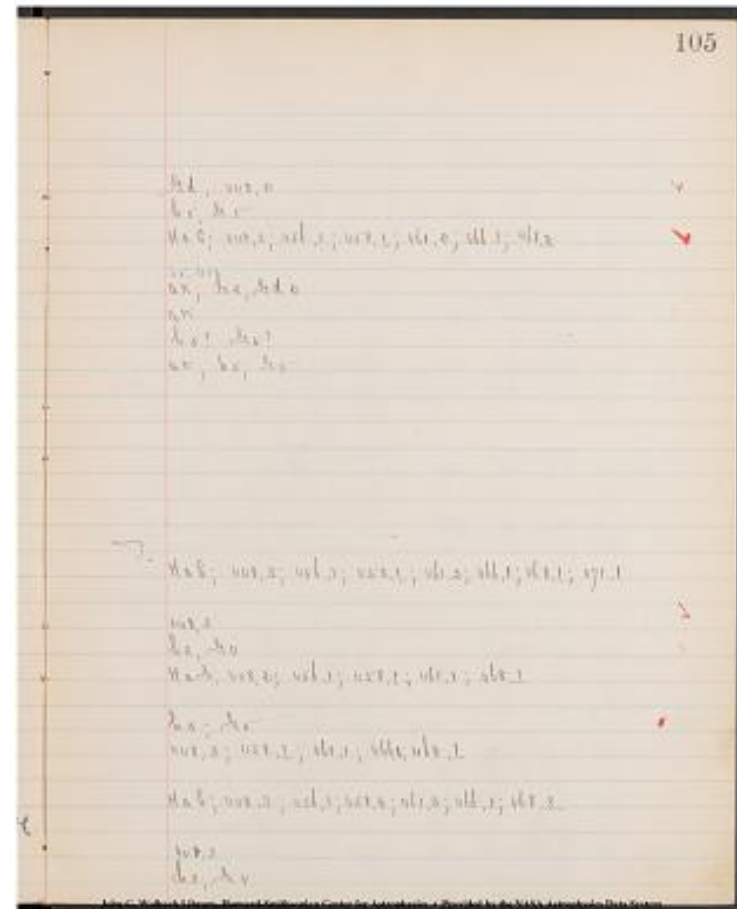
HaG; 448,3; 456,1; 461,2; 466,1; 468,1; 471,1

448,3
h2,Y2
HaY; 448,2; 456,1; 458,1; 461,1; 468,1

h5; Y5
448,3; 458,1; 461,1; 466,1; 468,1

HaG; 448,3; 456,1; 458,2; 461,2; 466,1; 468,3

448,3
h2,Y4



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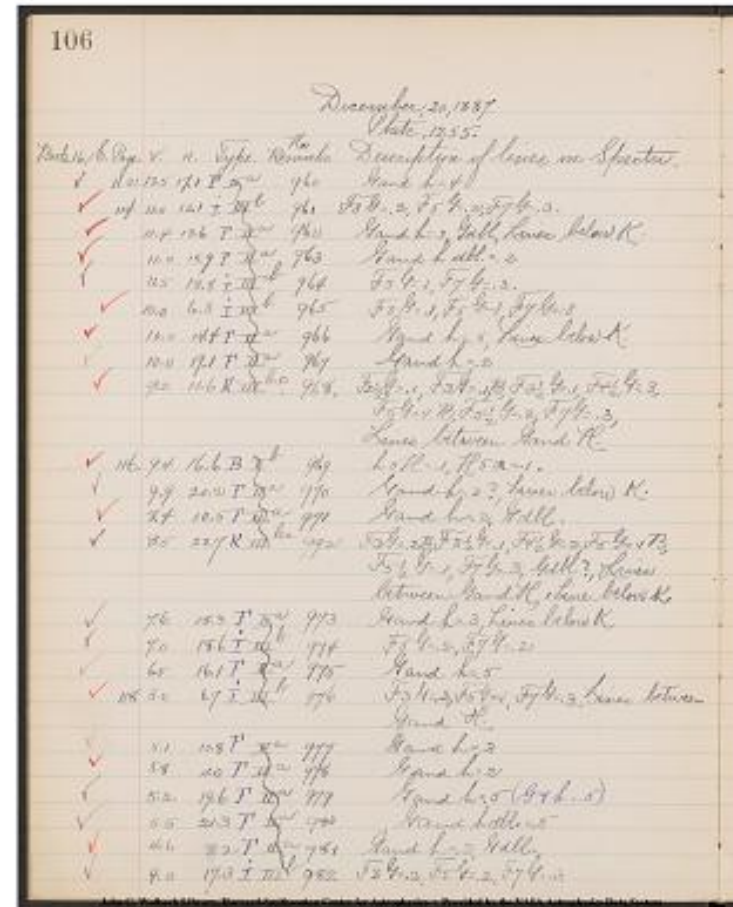
December, 20, 1887.

Plate, 1255.

[6 columned table]

| Book. 16. E. Page. | V. | H. | Type. | No. Remarks. | Description of lines on Spectra. |

Book.	E.	Page.	V.	H.	Type.	No.	Remarks.	Description of lines on Spectra.
112	13.5	17.1	[[/strickethrough]]	II a	[[/strickethrough]]	F	960	G and h = .4
114	11.0	12.1	[[/strickethrough]]	III b	[[/strickethrough]]		961	F3G = .2, F5G = .2, F7G = .3.
114	11.4	13.6	[[/strickethrough]]	II a	[[/strickethrough]]	F	962	G and h = .3, G dbl., Lines below K.
110	15.9	[[/strickethrough]]	II a	[[/strickethrough]]	F	963	G and h dbl. = .2	
115	18.8	[[/strickethrough]]	III b	[[/strickethrough]]		964	F5G = .1, F7G = .3.	
100	6.3	[[/strickethrough]]	III b	[[/strickethrough]]		965	F3G = .1, F5G = .1, F7G = .3.	
100	14.4	[[/strickethrough]]	II a	[[/strickethrough]]	F	966	G and h = .5, Lines below K.	
100	19.1	[[/strickethrough]]	II a	[[/strickethrough]]	F	967	H and h = .2	
92	11.6	[[/strickethrough]]	III b.c	[[/strickethrough]]	K	968	F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .3, F5G = .1B, F5½G = .2, F7G = .3, Lines between G and H.	
116	9.4	16.6	[[/strickethrough]]	I b	[[/strickethrough]]	B	969	h5H = .1, H5x = .1.
99	20.2	[[/strickethrough]]	II a	[[/strickethrough]]	F	970	G and h = .2, Lines below K.	
84	10.5	[[/strickethrough]]	II a	[[/strickethrough]]	F	971	G and h = .2, G dbl.	
85	22.7	[[/strickethrough]]	III b.c	[[/strickethrough]]	K	972	F3G = .2B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .3, G dbl. ?, Lines between G and H, 1 Lines below K.	
76	18.3	[[/strickethrough]]	II a	[[/strickethrough]]	F	973	G and h = .3, Lines below K	
70	18.6	[[/strickethrough]]	III b	[[/strickethrough]]		974	F5G = .2, F7G = .2	
65	16.1	[[/strickethrough]]	II a	[[/strickethrough]]	F	975	G and h = .5	
118	5.0	6.7	[[/strickethrough]]	III b	[[/strickethrough]]		976	F3G = .2, F5G = .1, F7G = .3, Lines between G and H.
51	10.8	[[/strickethrough]]	II a	[[/strickethrough]]	F	977	G and h = .3	
58	11.0	[[/strickethrough]]	II a	[[/strickethrough]]	F	978	G and h = .2	
52	19.6	[[/strickethrough]]	II a	[[/strickethrough]]	F	979	G and h = .5 (G & h = .5)	
55	21.3	[[/strickethrough]]	II a	[[/strickethrough]]	F	980	G and h dbl. = .5	
46	8.2	[[/strickethrough]]	II a	[[/strickethrough]]	F	981	G and h = .3, G dbl.	
40	17.3	[[/strickethrough]]	III b	[[/strickethrough]]		982	F3G = .1, F5G = .2, F7G = .3	



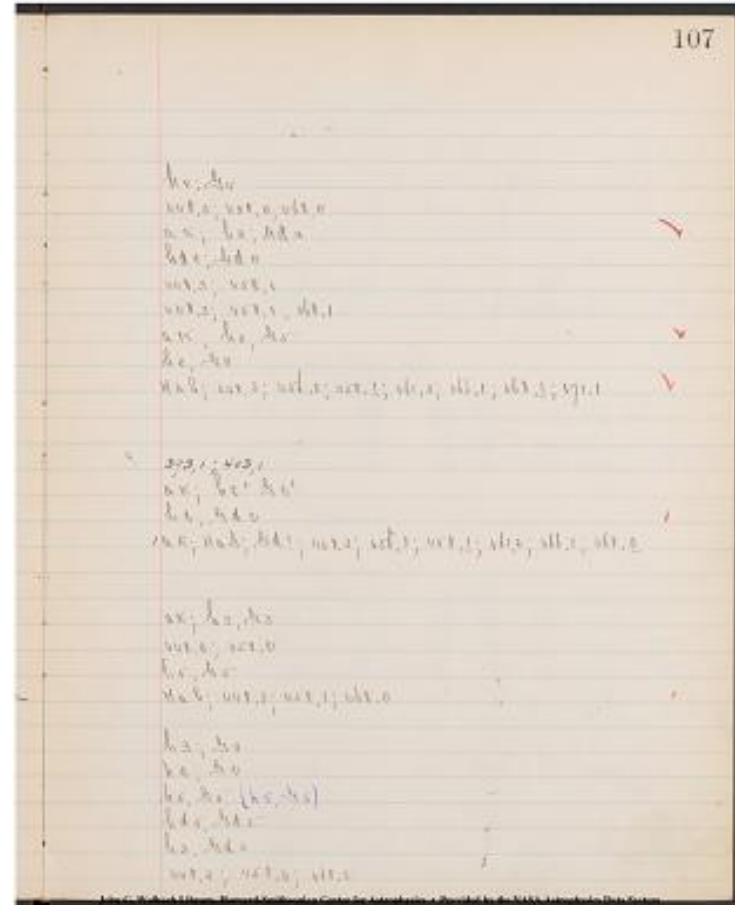
107

h4; Y4
 448,3; 458,2; 468,2
 aK; h3; Yd3
 hd2; Yd2
 448,3; 458,1
 448,3; 458,1; 468,1
 aK; h5, Y5
 h2; Y2
 HaG; 448,3; 456,2; 458,1; 461,3; 466,1; 468,1; 471,1

 393,1; 403,1
 aK; h2? Y2?
 h2; Yd2
 aK; HaY; Yd?; 448,3; 456,1; 458,1; 461,2; 466,1; 468,2

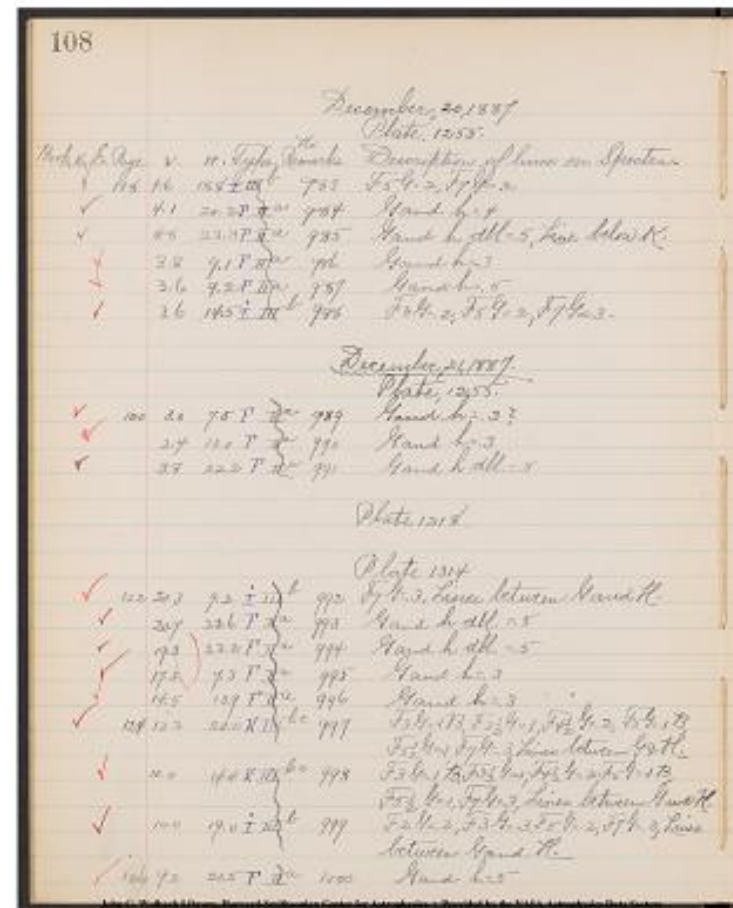
 aK; h3, Y3
 448,2; 458,2
 8, 5, Y5
 HaG; 448,3; 458,1; 468,2

 h3; Y3
 h2; Y2
 h5, Y5(h5, Y5)
 hd5, Yd5
 h3, Yd3
 448,3; 458,2; 468,2



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108
 December 20, 1887
 Plate 1255
 [[6 columned table]]
 | Book. 16.E. Page | V. | H. | Type. | No. Remarks. | Description of lines
 on Spectra |
 |-----|-----|-----|-----|-----|-----|
 | 118 | 4.6 | 18.8 | III | b | 983 | F1 5 H = .2, F1 7 H = .2 |
 | 4.1 | 20.2 F II | a | 984 | G and h = 4 |
 | 4.8 | 23.3 F II | a | 985 | G and h all = .5, five below K. |
 | 3.8 | 9.1 F II | a | 986 | G and h = .3 |
 | 3.6 | 9.2 F II | a | 987 | G and h = .5 |
 | 3.6 | 14.5 I III | b | 988 | F1 3 G = .2, F1 5 G = .2, F1 7 G = .3 - |
 December, 21, 1887.
 [[6 columned table]]
120	3.0	7.5 F II	a	989	G and h = .3 2
2.4	10.0 F II	a	990	G and h = .3	
2.8	22.2 F II	a	991	G and h all = .5	
Plate 1218.					
Plate 1314					
[[6 columned table]]					
122	20.3	9.2 I III	^[[b]]	992	F1 7 G = .3, Lines between G and H.
20.7	22.6 F II	^[[a]]	993	G and h all = .5	
19.3	23.2 F II	^[[a]]	994	G and h all = .5	
17.3	7.3 F II	^[[a]]	995	G and h = .3	
14.5	13.9 F II	^[[a]]	996	G and h = .3	
124	12.2	20.0 K III	^[[b. c.]]	997	F1 3 G = .1 B, F1 3½ G = .1, F1
4½ G = .2, F1 5 G = .1 B, F1 5½ G = .1 F1 7 G = .3, Lines between G &					
H					
10.0	14.4 K III	^[[b. c.]]	998	F1 3 G = .1 B, F1 3½ G = .1 F1 4½	
G = .2 F1 5 G = .1 B, F1 5½ G = .1, F1 7 G = .3, Lines between G and					
H.					
10.0	19.0 I III	^[[b]]	999	F1 2 G = .2, F1 3 G = .3, F1 5 G = .2, F1	
7 G = .3, Lines between G and H.					
126	9.2	21.5 F II	^[[a]]	1000	G and h = .5
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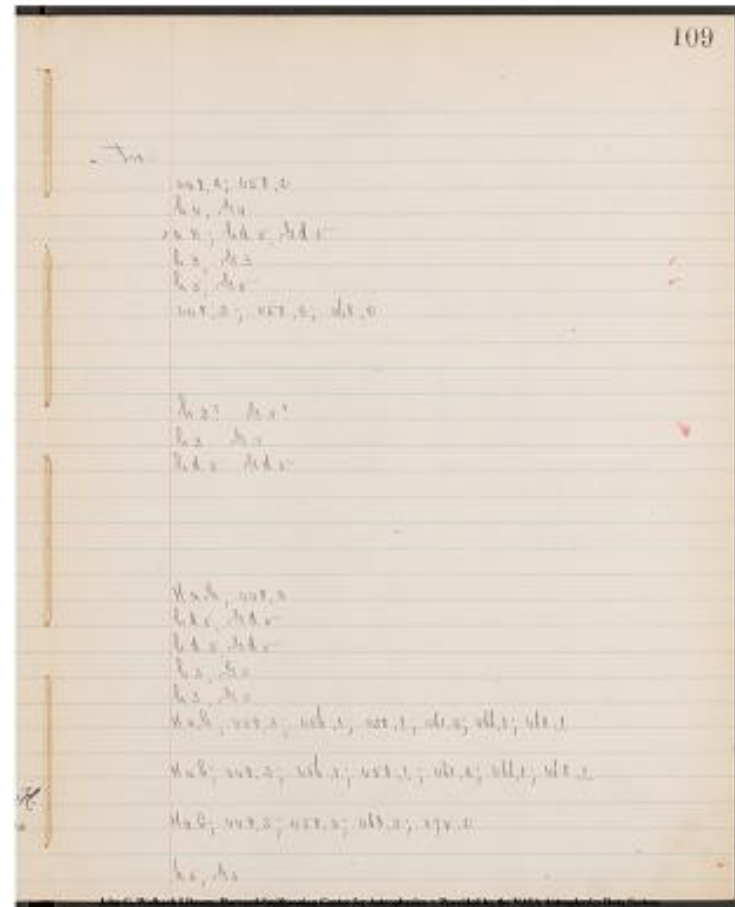
109
448.;458.2
h4; G4
ak; hd5; Gd5
h3;G3
h5;G5
448.3; 458.2; 468.2

h3;G3
h3;G3
hd5 Gd5

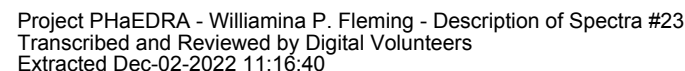
hd5 Gd5
HaG 448.3
hd5 Gd5
hd5 Gd5
h3;G3
h3;G3
HaG; 448.3; 456.1; 458.1; 461.2;466.1,468.1

HaG1 448.3;458.2; 468.3;474.2

h5; G5



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111

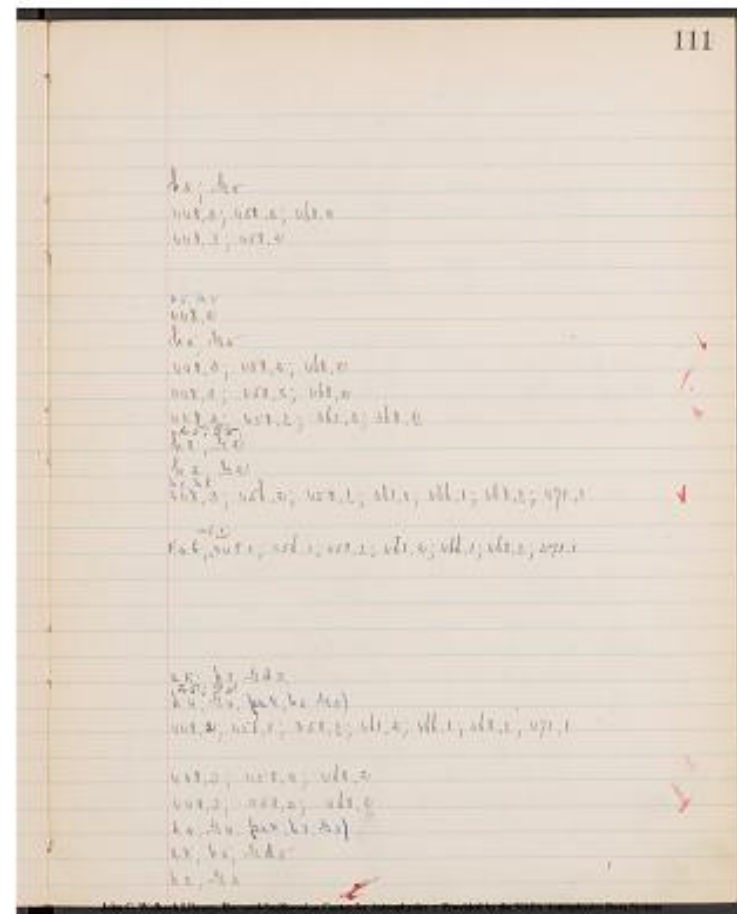
h5; y5
448,3; 458,2; 468,2
448,3; 458,2

h5; y5
448,2
h5 y5
448,3; 458,2; 468,2
448,3; 458,2; 468,2
448,3; 458,1; 463,2; 468,2
h5; y5
h2, y2
h2, y2
h5, y5
448,3; 456,2; 458,1; 461,1; 466,1; 468,1; 471,1

HaG; ^[[446,y,]] 448,1; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

ak; h3, yd3
h5; y5
h4, y4, (2ak, h5, y5)
448,2; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3; 458,2; 468,2
448,3; 458,2; 468,2
h4, y4, (2ak, h3, y3)
ak, h5, yd5
h2, y2



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December 22, 1887

Plate 1256

[[6 columned table]]

Book, 16, E, Page. | V | H | Type. | No. Remarks. | Description of lines on Spectra. |

|---|---|---|---|---|

138|5.6|12.9|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1021|G and h=.3|
 151|22.1|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1022|G and h=.5|
 140|3.1|7.0|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1023|G and h=.5?2|
 13.9|19.6|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1024|G and h dbl=.3|
 || | |1025|G and h=.1, Lines below K.

Plate 1162.

[[6 columned table]]

|---|---|---|---|---|

142|21.3|21.2|I ~~III~~[^]~~[[b]]~~~~[[/del]]~~1026|F7G=.3|
 144|14.9|13.5|I ~~III~~[^]~~[[b]]~~~~[[/del]]~~1027|F3G=.2B,
 F5G=.1, F7G=.3,|
 14.9|14.4|K ~~III~~[^]~~[[b.c.]]~~~~[[/del]]~~1028|F2½G=.1
 F3G=.2B, F3½G=.1, F4½G=.3,
 F5G=.1B, F5½G=.1, F6G=.1, F6½G=.1, F7G=.3,
 Lines between G and H.

14.5|22.9|I ~~III~~[^]~~[[b]]~~~~[[/del]]~~1029|F7G=.3|
 13.0|10.7|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1030|G and h=.5|
 13.2|20.8|I ~~III~~[^]~~[[a]]~~~~[[/del]]~~1031|F5G=.2,
 F7G=.3|

11.5|14.1|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1032|G and h=.2, G
 dbl., Lines below K.

9.5|16.8|B ~~II~~[^]~~[[b]]~~~~[[/del]]~~1033|h5H=.3|
 9.9|20.7|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1034|G and h=.2 ?
 Lines below K|

146|8.1|18.3|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1035|G and h=.4|
 13.9|9.3|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1036|G and h=.5, h
 dbl.

Plate 1242.

148|14.2|9.6|I ~~III~~[^]~~[[b]]~~~~[[/del]]~~1037|F3G=.2,
 F5G=.2, F7G=.3

14.4|14.8|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1138|G and h=.3, G
 dbl.

150|11.4|7.2|K ~~III~~[^]~~[[b.c.]]~~~~[[/del]]~~1039|F2½G=.1,
 F3G=.2B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F7G=.3, Several
 lines between G and H.

10.6|22.2|F ~~II~~[^]~~[[a]]~~~~[[/del]]~~1040|G and h dbl.=.5,
 Lines below K.

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December 22, 1887

Date, 1256

Book, 16, E, Page. V. H. Type. No. Remarks. Description of lines on Spectra.

✓	138 5.6 12.9 F	1021	G and h=.3
✓	51 22.1 F	1022	G and h=.5
✓	140 3.1 7.0 F	1023	G and h=.5?
✓	13 19.6 F	1024	G and h dbl=.3
		1025	G and h=.1, lines below K.

Plate 1162.

✓	142 21.3 21.2 I	1026	F7G=.3
✓	144 14.9 13.5 I	1027	F3G=.2B, F5G=.1, F7G=.3
✓	14.9 14.4 K	1028	F2½G=.1, F3G=.2B, F3½G=.1, F4½G=.3, F5G=.1B, F5½G=.1, F6G=.1, F6½G=.1, F7G=.3, Lines between G and H.
✓	14.5 22.9 I	1029	F7G=.3
✓	13.0 10.7 F	1030	G and h=.5
✓	13.2 20.8 I	1031	F5G=.2, F7G=.3
✓	11.5 14.1 F	1032	G and h=.2, G dbl., Lines below K.
✓	9.5 16.8 B	1033	h5H=.3
✓	9.9 20.7 F	1034	G and h=.2 ? Lines below K.
✓	146 8.1 18.3 F	1035	G and h=.4
✓	13.9 9.3 F	1036	G and h=.5, h dbl.

Plate 1242.

✓	148 14.2 9.6 I	1037	F3G=.2, F5G=.2, F7G=.3
✓	14.4 14.8 F	1138	G and h=.3, G dbl.
✓	150 11.4 7.2 K	1039	F2½G=.1, F3G=.2B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F7G=.3, Several lines between G and H.
✓	10.6 22.2 F	1040	G and h dbl=.5, Lines below K.

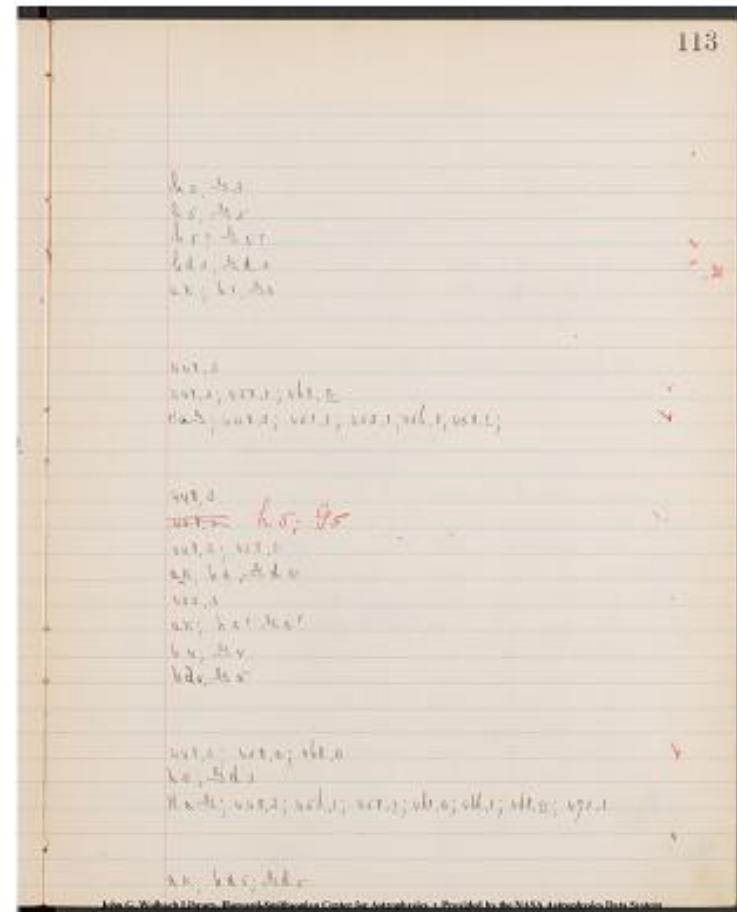
113

h3, y3
h5, y5
h5 3, y5 ?
hd3, yd3
ak; h1, y1

448, 3
[[~~458,3~~]] h5:y5
4483; 458,2
ak, h2, yd2
4D3, 3
ak; h2? y2?
h4, y4
hd5, h3

448,3; 458,2; 468,3
h3, yd3
4ay; 4483; 456,1; 458,1; 461, 2; 466,1; 468,2; 471,1

ak; hd5; yd5



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December, 22, 1887

Book, 16, E, Page Plate 1242.

[[6 columned table]]

| V. | H. | Type | No. | Remark | Description of Lines on Spectra |

|-----|-----|-----|-----|-----|-----|

| 150 | 8.3 | 10 | K |

| ~~151~~ | ~~22.1~~ | ~~11.9~~ | ~~K~~ | | ~~1045~~ | ~~F₃G = 1B, F₃½G = 1,~~
~~F₃½G = 1, F₄½G = 2, F₅G = 2B, F₅½G = 2, F₇G = 2.~~ Lines between G and H. || 7.6 | 12.9 | | | ~~1042~~ | ~~F₃G = 2,~~
~~F₅G = 2, F₇G = 3.~~ || 8.1 | 235 | | | ~~1043~~ | ~~F₇G = 2.~~ || 8.2 | 237 | F | | ~~1044~~ | ~~G and h = 5.~~ |[[Very poor plate.]] Plate 1221

December, 23, 1887.

Plate, 1245.

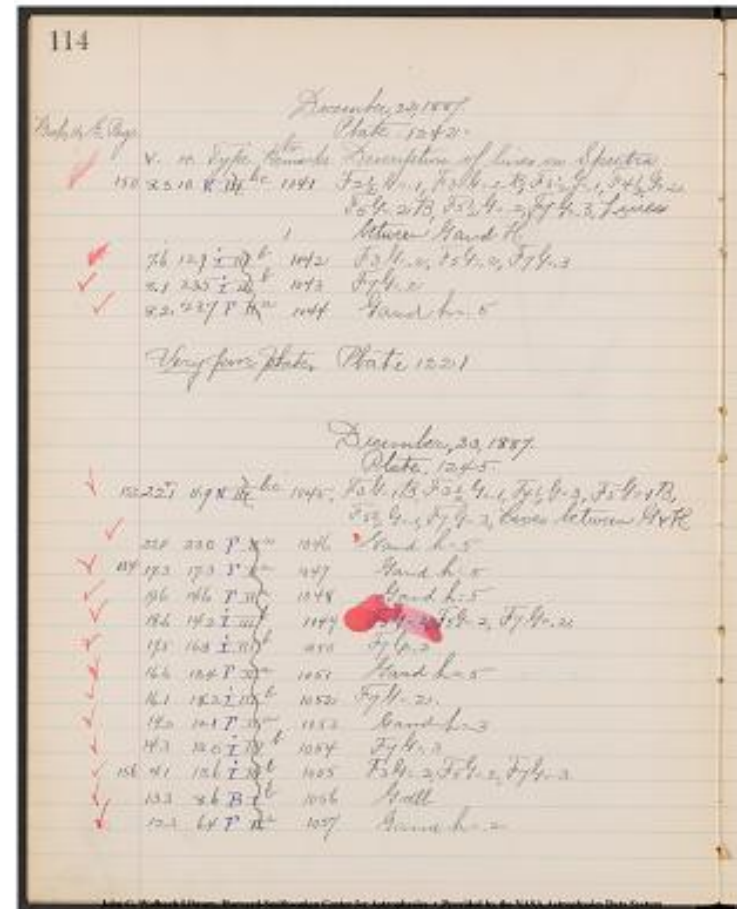
[[6 columned table]]

| 152 | 22.1 | 11.9 | K |

| ~~1045~~ | ~~F₃G = 1B, F₃½G = 1,~~
~~F₄½G = 3, F₅G = 1B.~~ || 22.4 | 23.0 | F | | ~~1046~~ | ~~G and h = 5.~~ || 154 | 19.3 | 17.3 | F | | ~~1047~~ | ~~G and h = 5.~~ || 19.6 | 14.6 | F | | ~~1048~~ | ~~G and h = 5.~~ || 18.6 | 14.2 | F | | ~~1049~~ | ~~F₃G = 2,~~
~~F₅G = 2, F₇G = 2.~~ || 17.5 | 16.8 | | | ~~1050~~ | ~~F₇G = 2.~~ || 16.6 | 12.4 | F | | ~~1051~~ | ~~G and h = 5.~~ || 16.1 | 18.2 | | | ~~1052~~ | ~~F₇G = 2.~~ || 14.2 | 10.1 | F | | ~~1053~~ | ~~G and h = 3.~~ || 14.3 | 12.0 | | | ~~1054~~ | ~~F₇G = 3.~~ || 156 | 14.1 | 13.6 | | | ~~1055~~ | ~~F₃G = 2,~~
~~F₅G = 2, F₇G = 3.~~ || 13.3 | 8.6 | B | | ~~1056~~ | ~~G dbl.~~ || 12.3 | 6.4 | F | | ~~1057~~ | ~~G and h = 2.~~ |

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115

HaG; 448,3; 456,2; 458,2; 461,2; 466,1; 468,2; 471,1

448,3; 458,2; 468,2

448,2;

h5, y5

HaG; 448,3; 456,1; 458,1; 461,3; 466,1; 468,1

h5, y5

h5, y5

h5, y5

448,2; 458,2; 468,2

448,2

h5, y5

448,2

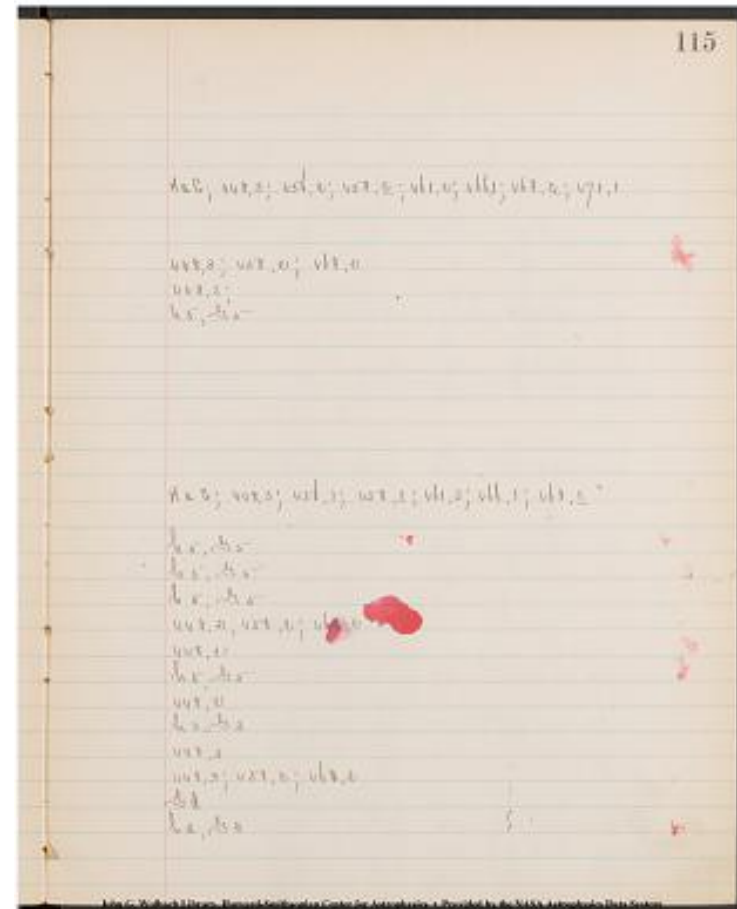
h3, y3

448,3

448,3; 458,2; 468,2

yd

h2, y2



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116
December, 24, 1887.
Plate, 1245.

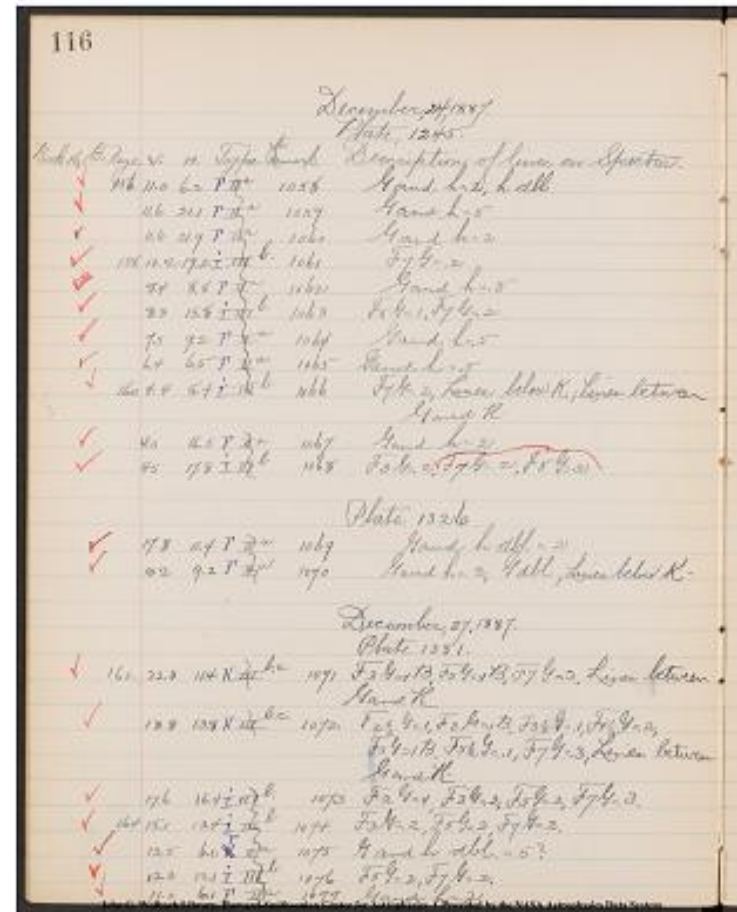
[6 columned table]
Book 16, E. Page.	V.	H.	Type	No Remark.	Description of line on Spectra.
156|11.0|6.2|F|~~II~~^a~~[[a]]~~1058|G and h=.2,
h dbl.
111.6|21.1|F|~~II~~^a~~[[a]]~~1059|G and h=.5|
111.6|21.9|F|~~II~~^a~~[[a]]~~1060|G and h=.2|
158|10.2|19.2|I|~~II~~^b~~[[b]]~~1061|F 7 G=.2|
18.4|8.8|F|~~II~~^a~~[[a]]~~1062|G and h=.5|
18.3|15.8|I|~~II~~^b~~[[b]]~~1063|F 5 G=.1, F 7
G=.2|
17.5|9.2|F|~~II~~^a~~[[a]]~~1064|G and h=.5|
16.4|6.5|F|~~II~~^a~~[[a]]~~1065|G and h=.5|
160|4.4|8.4|I|~~II~~^b~~[[b]]~~1066|F 7 G=.2,
Lines below K; lines between G and H.|
14.0|16.5|F|~~II~~^a~~[[a]]~~1067|G and H=.2|
14.5|17.8|I|~~II~~^b~~[[b]]~~1068|F 3 G=.2, F 5
G=.2 F 7 G=.2|

Plate 1326
[6 columned table]
117.8|11.4|F|~~II~~^a~~[[a]]~~1069|G and H
dbl=.2|
110.2|9.2|F|~~II~~^a~~[[a]]~~1070|G and h=.2, G
dbl; Lines below K.|

December 27, 1887.
Plate 1351.

[6 columned table]
162|22.3|11.4|K|~~II~~^a~~[[a]]~~1071|F 3
G=.1B, F 5 G=.1B, F 7 G=.3 Lines between G and H.|
118.8|13.8|K|~~II~~^a~~[[a]]~~1072|F 2½ G=.1, F
3 G=.1B, F 3½ G=.1, F 4½ G=.2, F 5 G=.1B, F 5½ G=.1, F 7 G=.3,
Lines between G and H.|
117.6|16.4|I|~~II~~^b~~[[b]]~~1073|F 2 G=.1, F 3
G=.2, F 5 G=.2, F 7 G=.3.|
164|15.1|13.4|I|~~II~~^b~~[[b]]~~1074|F 3 G=.2, F
5 G=.2, F 7 G=.2|
112.5|6.0|F|~~II~~^a~~[[a]]~~1075|G and h
dbl=.5?|
112.3|12.1|I|~~II~~^b~~[[b]]~~1076|F 5 G=.2, F 7
G=.2.|
111.0|6.1|F|~~II~~^a~~[[a]]~~1077|G and h=.2|

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117

h d 2, G d 2
h 5, G 5
h 2, G 2
448, 2
h 5, G 5
448, 2; 458, 1
h 5, G 5
h 5, G 5
a k H a G; 448, 2

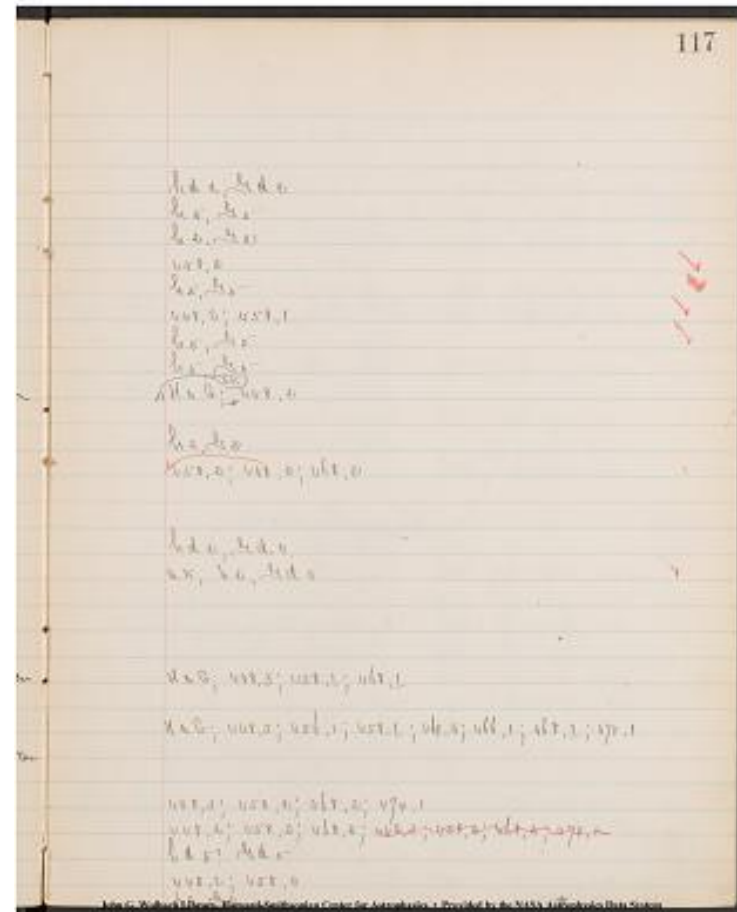
h 2, G 2
448, 2; 458, 2; 468, 2

h d 2, G d 2
a k, h 2, G d 2

H a G; 448, 3; 458, 1; 468,
1

HaG; 448, 3; 456, 1; 458, 1; 461, 2; 466, 1;
468, 1; 471, 1

448, 3; 458, 2; 468, 2; 474, 1
448, 2; 458, 2; 468, 2; ~~448, 3; 458, 2; 468, 2; 474,~~
~~1~~
h d 5? G d 5
448, 2; 458 2
h 2, G 2



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119

448.3; 458.2; 468.2
h5, Y3
HaG; 448.3; 458.2; 468.2

h5, Y5
ak, HaG, 448.3; 458.1

HaG; 448.3; 456.2; 461.3; 466.1; 474.2

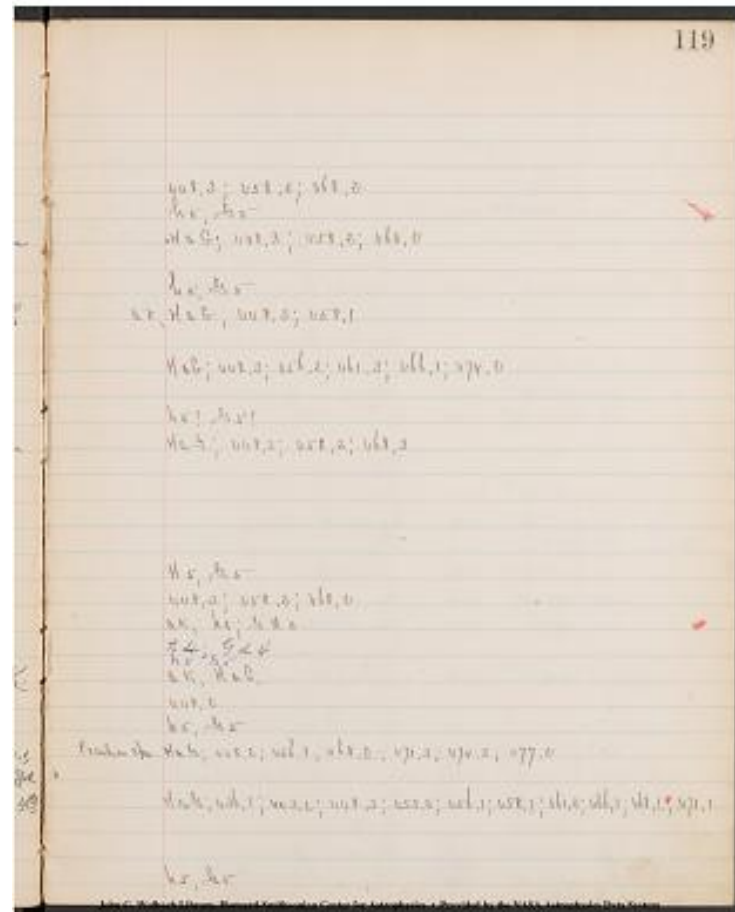
h5? Y5?
HaY; 448.3; 458.2; 468.3

H5, Y5
448.3; 458.2; 468.2
ak, h2; Yd2
hH; Yd4
h5 Y5
ak, HaG
448.2
h5, Y5
Peculiar spec HaY; 448.2; 456.1; 468.22; 471.3;
474.2; 477.2

HaY; 436.1; 443.11; 448.3; 453.2; 456.1;
458.11; 461.2; 466.1;
468.11; 471.1

h5, Y5

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Plate, 1340

[6 columned table]

Book, 16, & Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra.

|---|---|---|---|---|

|9.2|9.0|F |~~II^a[a]~~|1096|G and h=.2 G dbl.|9.1|9.0|K |~~III^a[b.c.]~~|1097|F $2\frac{1}{2}$ G=.1, F $3\frac{1}{2}$ G=.1B, F $3\frac{1}{2}$ G=.1 F $4\frac{1}{2}$ G=.3, F $5\frac{1}{2}$ G=.1B, F $5\frac{1}{2}$ G=.1, F $7\frac{1}{2}$ G=.3, Lines between G and H.

|172|8.7|17.9|K

|~~II^a[b.c.]~~|1098|F $2\frac{1}{2}$ G=.1, F $3\frac{1}{2}$ G=.1 B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1 B, F $5\frac{1}{2}$ G=.1, F $7\frac{1}{2}$ G=.3, F $8\frac{1}{2}$ G=.1B, F $9\frac{1}{2}$ G=.1, Several lines between G & H|7.1|20.4|I |~~III^a[b]~~|1099|F $7\frac{1}{2}$ G=.3||4.6|14.7|F |~~II^a[a]~~|1100|G and h=.5 (G & h=.5)||4.9|20.2|I |~~III^a[b]~~|1101|F $5\frac{1}{2}$ G=.2, F $7\frac{1}{2}$ G=.3|

Plate 1260

[6 columned table]

|174|19.9|9.4|I |~~III^a[b]~~|1102|F $3\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.2 F $7\frac{1}{2}$ G=.3||19.6|14.3|F |~~II^a[a]~~|1103|G and h=.4||19.7|21.4|F |~~II^a[a]~~|1104|G and h=.2, G dbl.?|16.9|9.7|F |~~II^a[a]~~|1105|G and h=.5?||16.8|18.0|F |~~II^a[a]~~|1106|G and h=.2, G dbl.

|15.6|13.6|K

|~~III^a[b.c.]~~|1107|~~FG=.~~|Several lines between G and H, Several lines below K.

Bright lines|

|176|12.5|16.4

K|~~III^a[b.c.]~~|1108|F $2\frac{1}{2}$ G=.1, F $3\frac{1}{2}$ G=.1B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1 B, F $5\frac{1}{2}$ G=.1, F $6\frac{1}{2}$ G=.2 F $7\frac{1}{2}$ G=.3, F $8\frac{1}{2}$ G=.1 B, F $9\frac{1}{2}$ G=.1, Lines between G and H.|12.6|17.0|F |~~II^a[a]~~|1109|G and h=.5||11.6|12.1|I |~~III^a[b]~~|1110|F $2\frac{1}{2}$ G=.2, F $3\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1, F $7\frac{1}{2}$ G=.3||9.5|8.5|F |~~II^a[a]~~|1111|G and h=.5 (G & h=.5)||9.6|18.0|F |~~II^a[a]~~|1112|G and h=.5||9.9|23.0|F |~~II^a[a]~~|1113|G and h=.5||8.5|8.9|F |~~II^a[a]~~|1114|G and h=.2, G dbl.John G. Wolbach Library Harvard-Smithsonian Center for Astrophysics .
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Book, 16, & Page.	V.	H.	Type.	No.	Remark.	Description of lines on Spectra.
✓	72	72	F	1096		Band h=2, G dbl.
✓	71	72	F	1097		F $2\frac{1}{2}$ G=.1, F $3\frac{1}{2}$ G=.1B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.3, F $5\frac{1}{2}$ G=.1B, F $5\frac{1}{2}$ G=.1, F $7\frac{1}{2}$ G=.3, Lines between G and H.
✓	172	8.7	17.9	1098		F $2\frac{1}{2}$ G=.1, F $3\frac{1}{2}$ G=.1 B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1 B, F $5\frac{1}{2}$ G=.1, F $7\frac{1}{2}$ G=.3, F $8\frac{1}{2}$ G=.1B, F $9\frac{1}{2}$ G=.1, Several lines between G & H.
✓	71	20.4	I	1099		F $7\frac{1}{2}$ G=.3
✓	4.6	14.7	F	1100		G and h=.5 (G & h=.5)
✓	4.9	20.2	I	1101		F $5\frac{1}{2}$ G=.2, F $7\frac{1}{2}$ G=.3

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✓	174	19.9	9.4	1102		F $3\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.2, F $7\frac{1}{2}$ G=.3
✓	19.6	14.3	F	1103		G and h=.4
✓	19.7	21.4	F	1104		G and h=.2, G dbl.?
✓	16.9	9.7	F	1105		G and h=.5?
✓	16.8	18.0	F	1106		G and h=.2, G dbl.
✓	15.6	13.6	K	1107		FG=.
✓	176	12.5	16.4	1108		F $2\frac{1}{2}$ G=.1, F $3\frac{1}{2}$ G=.1B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1 B, F $5\frac{1}{2}$ G=.1, F $6\frac{1}{2}$ G=.2 F $7\frac{1}{2}$ G=.3, F $8\frac{1}{2}$ G=.1 B, F $9\frac{1}{2}$ G=.1, Lines between G and H.
✓	12.6	17.0	F	1109		G and h=.5
✓	11.6	12.1	I	1110		F $2\frac{1}{2}$ G=.2, F $3\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1, F $7\frac{1}{2}$ G=.3
✓	9.5	8.5	F	1111		G and h=.5 (G & h=.5)
✓	9.6	18.0	F	1112		G and h=.5
✓	9.9	23.0	F	1113		G and h=.5
✓	8.5	8.9	F	1114		G and h=.2, G dbl.

h5, G5
 5pilon 5pilon 8, 3; 5pilon 58, 1; 5pilon 68, 2; 5pilon 71, 2
 h5, G5 (h5 G5)
 h5, G5
 h5, G5
 h2, Gd2
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[6 columned table]

Book 16. E. | Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

|---|---|---|---|---|

[check] | 176 | 8.8 | 9.1 | I | ~~III^a[b]~~ | 1115 | F3G=.2, F5G=.2, F7G=.2, F7½G=.2, G dbl.?[check] | 8.5 | 18.0 | K | ~~III^a[b.c.]~~ | 1116 | F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F6½G=.1, F7G=.3, F8G=.1, F9½G=.2, Lines between G and H.[check] | 178 | 6.8 | 15.9 | F | ~~II^a[a]~~ | 1117 | G and h=.5[check] | 5.3 | 21.6 | F | ~~II^a[a]~~ | 1118 | G and h=.2[check] | 3.5 | 9.4 | F | ~~II^a[a]~~ | 1119 | G and h=.5?

Plate 1328

[6 columned table]

|---|---|---|---|---|

[check] | 180 | 21.9 | 21.1 | K | ~~III^a[b.c.]~~ | 1120 | F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2,

F5G=.1B, F5½G=.1, F6½G=.1, F7G=.3, F8G=.1B, F9½G=.1, Lines between G + H.

[check] | 19.6 | 13.4 | I | ~~III^a[b.]~~ | 1121 | F3G=.2, F4G=.1, F5G=.3, F6G=.2, F7G=.4, G dbl.?[check] | 19.5 | 16.5 | F | ~~II^a[a]~~ | 1122 | G and h=.2, G dbl., Lines below K.[check] | 18.0 | 5.8 | F | ~~II^a[a]~~ | 1123 | G and h=.3[check] | 17.6 | 17.3 | I | ~~III^a[b]~~ | 1124 | F7G=.2, G dbl.?[check] | 17.8 | 22.1 | K | ~~III^a[b.c.]~~ | 1125 | F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1,

F6½G=.1, F7G=.3, F8G=.1B, F9½G=.1, Lines between G and H.

[check] | 16.8 | 5.4 | F | ~~II^a[a]~~ | 1126 | G and h=.2, G dbl.[check] | 16.6 | 9.4 | F | ~~II^a[a]~~ | 1127 | G and h=.2.[check] | 16.6 | 15.0 | K | ~~III^a[b.c.]~~ | 1128 | F3G=.2B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, Lines between G and H, 2 lines below K.[check] | 182 | 16.5 | 19.8 | F | ~~II^a[a]~~ | 1129 | G and h=.5[check] | 15.5 | 7.1 | I | ~~III^a[b]~~ | 1130 | F7G=.3

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Book 16. E. | Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra.

176 8.8 9.1 I ~~III^a[b]~~ 1115 F3G=.2, F5G=.2, F7G=.2, F7½G=.2, G dbl.?

8.5 18.0 K ~~III^a[b.c.]~~ 1116 F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F6½G=.1, F7G=.3, F8G=.1, F9½G=.2, Lines between G and H.

178 6.8 15.9 F ~~II^a[a]~~ 1117 G and h=.5

5.3 21.6 F ~~II^a[a]~~ 1118 G and h=.2

3.5 9.4 F ~~II^a[a]~~ 1119 G and h=.5?

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180 21.9 21.1 K ~~III^a[b.c.]~~ 1120 F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F6½G=.1, F7G=.3, F8G=.1B, F9½G=.1, Lines between G + H.

19.6 13.4 I ~~III^a[b.]~~ 1121 F3G=.2, F4G=.1, F5G=.3, F6G=.2, F7G=.4, G dbl.?

19.5 16.5 F ~~II^a[a]~~ 1122 G and h=.2, G dbl., Lines below K.

18.0 5.8 F ~~II^a[a]~~ 1123 G and h=.3

17.6 17.3 I ~~III^a[b]~~ 1124 F7G=.2, G dbl.?

17.8 22.1 K ~~III^a[b.c.]~~ 1125 F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F6½G=.1, F7G=.3, F8G=.1B, F9½G=.1, Lines between G and H.

16.8 5.4 F ~~II^a[a]~~ 1126 G and h=.2, G dbl.

16.6 9.4 F ~~II^a[a]~~ 1127 G and h=.2.

16.6 15.0 K ~~III^a[b.c.]~~ 1128 F3G=.2B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, Lines between G and H, 2 lines below K.

182 16.5 19.8 F ~~II^a[a]~~ 1129 G and h=.5

15.5 7.1 I ~~III^a[b]~~ 1130 F7G=.3

123

yd ? 446.2; 448.2; 458.2; 468.2

HaG;436.2;443.1;448.3;451.1;456.1;458.1;461.2;466.1;468.1;471.1

h5;y5
h2;y2
h5? y5?

HaG;436.1;443.1;448.3;451.1;456.1;458.1;461.2;466.1;468.1;471.1

yd? 448.4 ; 453.2; 458.3; 463.1; 468.2

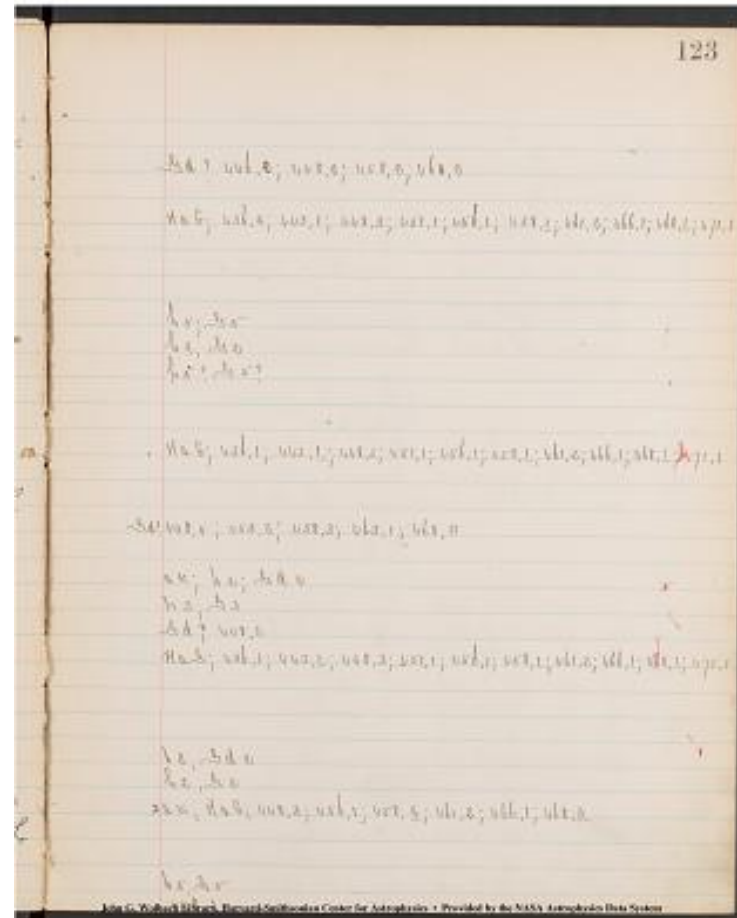
ak;h2;yd2
h3;y3
yd? 448.2

Hay;436.1;443.1;448.3;451.1;456.1;458.1;461.2;466.1;468.1;471.1

h2,yd2
h2,y2
2ak,HaG,448.3;456.1;458.1;461.2;466.1;468.1;471.1

h5,y5
448.3

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[6 columned table]

Book, 16, E. Page 182 | V. | H. | Type. | No. Remark. | Description of lines on Spectra |

| --- | --- | --- | --- | --- |

| 15.8 | 12.3 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1131 | F3 G=.2,

F5 G=.2, F7 G=.3. |

| 15.5 | 22.8 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1132 | G and h=.5 || 15.6 | 24.2 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1133 | F7 G=.3 || 14.0 | 8.2 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1134 | G and h=.2,

G all. |

| 14.3 | 22.8 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1135 | F7 G=.3 || 13.4 | 10.8 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1135^a | G +

h=.5 |

| 13.2 | 13.1 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1136 | F5 G=.2,

F7 G=.3. |

| 13.5 | 13.7 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | G | 1137 | Numerous

faint lines. |

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| 184 | 12.1 | 18.3 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1138 | F5 G=.1, F7 G=.3. || 11.9 | 15.6 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1139 | G and h=.5 (G + h=.5) || 10.8 | 15.6 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | K | 1140 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F6 G=.2, F6 1/2 G=.1, F7 G=.3, F8 G=.1 B, F9 1/2 G=.1, Lines between G and H. || 9.5 | 8.4 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1141 | G=.3, h=.2, Lines below K. || 186 | 9.9 | 13.6 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1142 | G and h=.5, Lines below K. || 9.2 | 16.1 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1143 | Numerous faint lines || 8.0 | 18.6 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1144 | G and h=.5| 7.8 | 8.8 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1145 | G and h=.3 || 7.5 | 14.8 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1146 | G and h=.5| 7.6 | 20.1 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | K | 1147 | F2 1/2

G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F7 G=.2, F8 G=.1 B, G all? Lines between GaH, Line below K. |

| 6.1 | 13.5 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1148 | F3 G=.2, F5 G=.2, F7 G=.3. || 188 | 6.0 | 18.9 | ~~[[[strikethrough]]III^I][[/strikethrough]]~~ | 1149 |

Numerous faint lines, Lines below K. |

| 4.8 | 20.2 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1150 | G and h=.3| 3.4 | 15.1 | ~~[[[strikethrough]]II^a][[/strikethrough]]~~ | F | 1151 | G and h=.5

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Book, 16, E. Page 182 | V. | H. | Type. | No. Remark. | Description of lines on Spectra |

| --- | --- | --- | --- | --- |

✓ 15.8 12.3 ~~III^I~~ 1131 F3 G=.2, F5 G=.2, F7 G=.3.

✓ 15.5 22.8 ~~II^a~~ 1132 G and h=.5

✓ 15.6 24.2 ~~III^I~~ 1133 F7 G=.3

✓ 14.0 8.2 ~~II^a~~ 1134 G and h=.2, G all.

✓ 14.3 22.8 ~~III^I~~ 1135 F7 G=.3

✓ 13.4 10.8 ~~II^a~~ 1135^a G + h=.5

✓ 13.2 13.1 ~~III^I~~ 1136 F5 G=.2, F7 G=.3.

✓ 13.5 13.7 ~~III^I~~ 1137 Numerous faint lines.

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✓ 184 12.1 18.3 ~~III^I~~ 1138 F5 G=.1, F7 G=.3.

✓ 11.9 15.6 ~~II^a~~ 1139 G and h=.5 (G + h=.5)

✓ 10.8 15.6 ~~III^I~~ 1140 F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F6 G=.2, F6 1/2 G=.1, F7 G=.3, F8 G=.1 B, F9 1/2 G=.1, Lines between G and H.

✓ 9.5 8.4 ~~II^a~~ 1141 G=.3, h=.2, Lines below K.

✓ 186 9.9 13.6 ~~II^a~~ 1142 G and h=.5, Lines below K.

✓ 9.2 16.1 ~~III^I~~ 1143 Numerous faint lines

✓ 8.0 18.6 ~~II^a~~ 1144 G and h=.5

✓ 7.8 8.8 ~~II^a~~ 1145 G and h=.3

✓ 7.5 14.8 ~~II^a~~ 1146 G and h=.5

✓ 7.6 20.1 ~~III^I~~ 1147 F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F7 G=.2, F8 G=.1 B, G all? Lines between GaH, Line below K.

✓ 6.1 13.5 ~~III^I~~ 1148 F3 G=.2, F5 G=.2, F7 G=.3.

✓ 188 6.0 18.9 ~~III^I~~ 1149 Numerous faint lines, Lines below K.

✓ 4.8 20.2 ~~II^a~~ 1150 G and h=.3

✓ 3.4 15.1 ~~II^a~~ 1151 G and h=.5

125

upsilon upsilon 8, 3; upsilon 5 8, 2; upsilon 6 8, 2

h 5, G 5

upsilon upsilon 8, 3

h 2, G d 2

upsilon upsilon 8, 3

h 5; G 5 (h 5, G 5)

upsilon upsilon 8, 3; upsilon 5 8, 2

Numerous faint-lines

upsilon upsilon 8, 3; upsilon 5 8, 1

h 5, G 5 (h 5 G 5)

H a G; upsilon 3 6, 1; upsilon upsilon 3, 1 1;

upsilon upsilon 8, 3; upsilon 5 1, 1; upsilon 5 3, 2; upsilon 5 6, 1; upsilon

5 8, 2 2; upsilon 6 1, 2; upsilon 6 6,

1 1 upsilon 6 8, 1 1;

upsilon 7 1, 1

a K; h 2, G 3

a K, h 5, G 5

Numerous faint lines

h 5, G 5

h 3, G 3

h 5, G ~~3~~ ~~5~~

1 a K; H a G; G d ?; upsilon upsilon 4, 1 1;

upsilon upsilon 8, 2; upsilon 5 6, 1; upsilon 5 8, 2

2; upsilon 6 1, 2; upsilon 6 6, 1; upsilon 6 8, 1

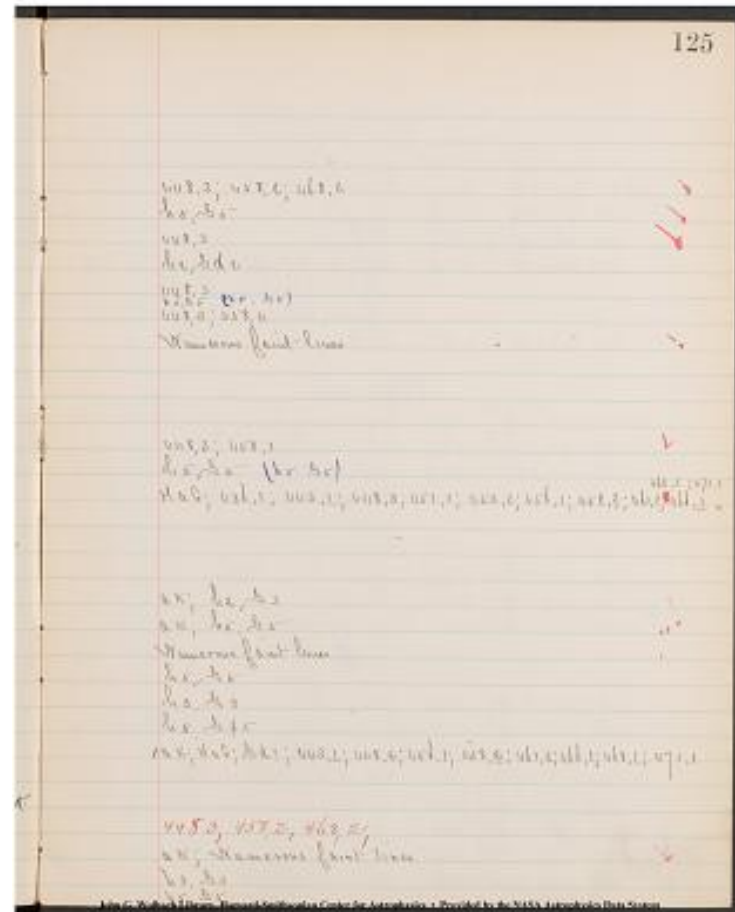
1;

4483, 458.2, 468.2,

a K; Numerous faint lines

h 3, G 3

h 5, G 5



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[6 columned table]

| Book, 16, E. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra |

| --- | --- | --- | --- | --- | --- |

| 188 | 3.3 | 19.4 | ~~II a~~ ~~F~~ | 1152 | G and h = .5 || 2.6 | 18.5 | ~~II a~~ ~~F~~ | 115 || ~~4~~ ~~G and h = .5~~ || 2.5 | 15.6 | ~~III b~~ | 1153 | F7G = .3 || 2.2 | 21.2 | ~~III b~~ | 1154 | F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .3, Lines between G and H. || 2.4 | 20.3 | ~~III b~~ | 1156 | F3G = .2, F5G = .2, F7G = .3. |

Plate, 1343.

[6 columned table]

| 190 | 21.3 | 9.8 | ~~III b~~ | 1157 |

Numerous faint lines, Lines below K. |

| 19.7 | 21.1 | ~~III b~~ | 1158 | F3G = .2, F5G = .2, F7G = .3 || 18.4 | 5.3 | ~~I b~~ ~~B~~ | 1159 | F8G = 1.0, G8h = 1.0, h8H = 1.0 (Two stars photographed together cause the additional lines) || 18.0 | 11.5 | ~~II a~~ ~~F~~ | 1160 | G and h = .5 || 17.8 | 13.9 | ~~II a~~ ~~F~~ | 1161 | G and h = .3, G dbl. ? || 16.5 | 19.8 | ~~II a~~ ~~F~~ | 1162 | G and h = .5 || 192 | 14.9 | 6.5 | ~~III b.c~~ ~~K~~ | 1163 | F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .1, F5G = .1B, F5½G = .2, F7G = .3, Several lines between G and H. || 14.9 | 6.8 | ~~II a~~ ~~F~~ | 1164 | G and h = .3 || 14.2 | 23.6 | ~~III b.c~~ ~~K~~ | 1165 | Numerous faint lines, 1 Bright line, 1 lines below K. || 12.8 | 12.2 | ~~II a~~ ~~F~~ | 1166 | G and h = .5, Lines below K. || 12.9 | 13.3 | ~~III b~~ | 1167 | F7G = .5 || 12.8 | 18.0 | ~~III b~~ | 1168 | F7G = .3 || 10.2 | 12.6 | ~~III b~~ | 1169 | F7G = .3 (F7G = .3) || 9.0 | 9.5 | ~~II a~~ ~~F~~ | 1170 | G and h dbl. = .5, |

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December, 29, 1887

Book 16, E. Page

Plate 1328

Description of lines on Spectra

✓	188	3.3	19.4	II a	F	1152	G and h = .5
✓	2.6	18.5	II a	F	115		
✓	2.5	15.6	III b		1153	F7G = .3	
✓	2.2	21.2	III b		1154	F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .1, F7G = .3, Lines between G and H.	
✓	2.4	20.3	III b		1156	F3G = .2, F5G = .2, F7G = .3.	

Plate 1343

✓	190	21.3	9.8	III b		1157	Numerous faint lines, Lines below K.
✓	19.7	21.1	III b		1158	F3G = .2, F5G = .2, F7G = .3	
✓	18.4	5.3	I b	B	1159	F8G = 1.0, G8h = 1.0, h8H = 1.0 (Two stars photographed together cause the additional lines)	
✓	18.0	11.5	II a	F	1160	G and h = .5	
✓	17.8	13.9	II a	F	1161	G and h = .3, G dbl. ?	
✓	16.5	19.8	II a	F	1162	G and h = .5	
✓	192	14.9	6.5	III b.c	K	1163	F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .1, F5G = .1B, F5½G = .2, F7G = .3, Several lines between G and H.
✓	14.9	6.8	II a	F	1164	G and h = .3	
✓	14.2	23.6	III b.c	K	1165	Numerous faint lines, 1 Bright line, 1 lines below K.	
✓	12.8	12.2	II a	F	1166	G and h = .5, Lines below K.	
✓	12.9	13.3	III b		1167	F7G = .5	
✓	12.8	18.0	III b		1168	F7G = .3	
✓	10.2	12.6	III b		1169	F7G = .3 (F7G = .3)	
✓	9.0	9.5	II a	F	1170	G and h dbl. = .5,	

127

h5; y5

h5; y5

448,3

HaG; 448,3; 456,1; 458,[[underline]]1[[/underline]]; 461,2; 466,1;

468,[[underline]]1[[/underline]]; 471,1

448,3; 458,2; 468,2

ak; Numerous faint lines

448,3; 458,2; 468,2

400,10; 414,10; 443,10; (Two stars photographed together earned the additional lines).

h5; y5

h3; yd^[[?]]3

h5; y5

HaG; 448,3; 456,2; 458,[[underline]]1[[/underline]]; 461,1; 466,1;

468,[[underline]]1[[/underline]]; 471,1

h3; y3

1ak; 1 bright line; Numerous faint lines

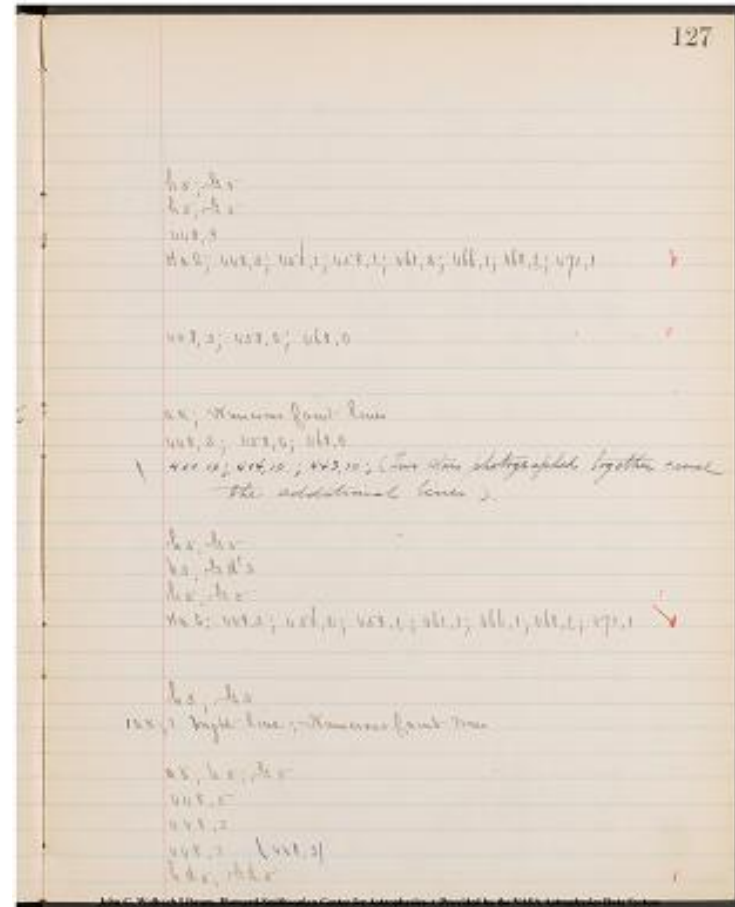
ak; h5; y5

448,5

448,3

448,3 (448,3)

hd5; yd5



Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23

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Plate -1343.-

December, 29, 1887

[6 columned table]

| Book 16. E. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

194 | 9.3 | 17.2 | K ~~[[[b.c.]]]~~ | 1171 |
 $F2\frac{1}{2}G=.1$, $F3G=.1B$, $F3\frac{1}{2}G=.1$, $F4\frac{1}{2}G=.3$, $F5G=.2B$, $F5\frac{1}{2}G=.1$, $F6G=.1$,
 $F7G=.3$, $F8G=.1B$, $F9\frac{1}{2}G=.1$, Several lines between G and H |
 | 8.7 | 23.6 | F ~~[[[a]]]~~ | 1172 | G and
 $h=.2$, Lines below K. |
 | 7.7 | 15.2 | F ~~[[[a]]]~~ | 1173 | G and
 $h=.2$, G dbl., Lines below K. |
 | 6.4 | 10.4 | I' ~~[[[b]]]~~ | 1174 | $F7G=.4$ |
 | 196 | 5.7 | 18.7 | I' ~~[[[b]]]~~ | 1175 |
 $F7G=.4$ |
 | 5.9 | 24.6 | I' ~~[[[b]]]~~ | 1176 | $F3G=.1$,
 $F5G=.1$, $F7G=.3$, Lines between G and H. |
 | 3.2 | 16.4 | F ~~[[[a]]]~~ | 1177 | G and
 $h=.5$ |

December, 30, 1887.

Plate, 1354.

198 | 19.8 | 6.2 | F ~~[[[a]]]~~ | 1178 | G
 and $h=.3$, G dbl., Lines below K. |
 | 19.5 | 13.6 | F ~~[[[a]]]~~ | 1179 | G and
 $h=.3$, G dbl., Lines below K. |
 | 18.5 | 21.3 | K ~~[[[b.c.]]]~~ | 1180 |
 $F2\frac{1}{2}G=.1$, $F3G=.1B$, $F3\frac{1}{2}G=.1$, $F4\frac{1}{2}G=.2$, $F5G=.1B$, $F5\frac{1}{2}G=.1$, $F6G=.1$,
 $F7G=.3$, $F8G=.1B$, Lines between G and H. |
 | 16.8 | 14.1 | I' ~~[[[b]]]~~ | 1181 | $F7G=.3$ |
 | 16.2 | 17.8 | I' ~~[[[b]]]~~ | 1182 |
 $F3G=.2$, $F5G=.2$, $F7G=.3$, Lines between G and H. |
 | 200 | 14.2 | 10.4 | I' ~~[[[b]]]~~ | 1183 |
 $F3G=.3$, $F5G=.2$, $F7G=.4$ |
 | 13.8 | 6.9 | F ~~[[[a]]]~~ | 1184 | G and
 $h=.3$, G dbl., Lines below K. F line dbl. ? |
 | 13.0 | 12.4 | I' ~~[[[b]]]~~ | 1185 |
 $F7G=.3$ |
 | 12.9 | 6.6 | F ~~[[[a]]]~~ | 1186 | G and h
 $dbl.=.5$. |
 | 12.2 | 8.6 | F? ~~[[[a]]]~~ | 1186a | G +
 $h=.5$ |
 | 12.7 | 19.4 | F ~~[[[a]]]~~ | 1187 | G=.5,
 $h=.2$. |
 | 11.5 | 19.1 | I' ~~[[[b]]]~~ | 1188 | Several
 faint lines, Lines below K. |
 | 10.8 | 13.2 | I' ~~[[[b]]]~~ | 1189 | Several
 faint lines, Lines below K. |

128		December, 29, 1887		Description of lines on Spectra.	
✓	194 9.3 17.2	K	1171	F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.3, F5G=.2B, F5½G=.1, F6G=.1, F7G=.3, F8G=.1B, F9½G=.1, Several lines between G and H	
✓	194 8.7 23.6	F	1172	G and h=.2, Lines below K.	
✓	194 7.7 15.2	F	1173	G and h=.2, G dbl., Lines below K.	
✓	194 6.4 10.4	I'	1174	F7G=.4	
✓	194 196 5.7 18.7	I'	1175	F7G=.4	
✓	194 5.9 24.6	I'	1176	F3G=.1, F5G=.1, F7G=.3, Lines between G and H.	
✓	194 3.2 16.4	F	1177	G and h=.5	
128		December, 30, 1887		Description of lines on Spectra.	
✓	198 19.8 6.2	F	1178	G and h=.3, G dbl., Lines below K.	
✓	198 19.5 13.6	F	1179	G and h=.3, G dbl., Lines below K.	
✓	198 18.5 21.3	K	1180	F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.1B, F5½G=.1, F6G=.1, F7G=.3, F8G=.1B, Lines between G and H.	
✓	198 16.8 14.1	I'	1181	F7G=.3	
✓	198 16.2 17.8	I'	1182	F3G=.2, F5G=.2, F7G=.3, Lines between G and H.	
✓	198 200 14.2 10.4	I'	1183	F3G=.3, F5G=.2, F7G=.4	
✓	198 13.8 6.9	F	1184	G and h=.3, G dbl., Lines below K. F line dbl. ?	
✓	198 13.0 12.4	I'	1185	F7G=.3	
✓	198 12.9 6.6	F	1186	G and h dbl.=.5.	
✓	198 12.2 8.6	F?	1186a	G + h=.5	
✓	198 12.7 19.4	F	1187	G=.5, h=.2.	
✓	198 11.5 19.1	I'	1188	Several faint lines, Lines below K.	
✓	198 10.8 13.2	I'	1189	Several faint lines, Lines below K.	

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H a G; 436, 1; 443, 1; 448, 3; 453, 1; 456, 1;
458, 2; 461, 3; 466, 1; 468,
1; 471,

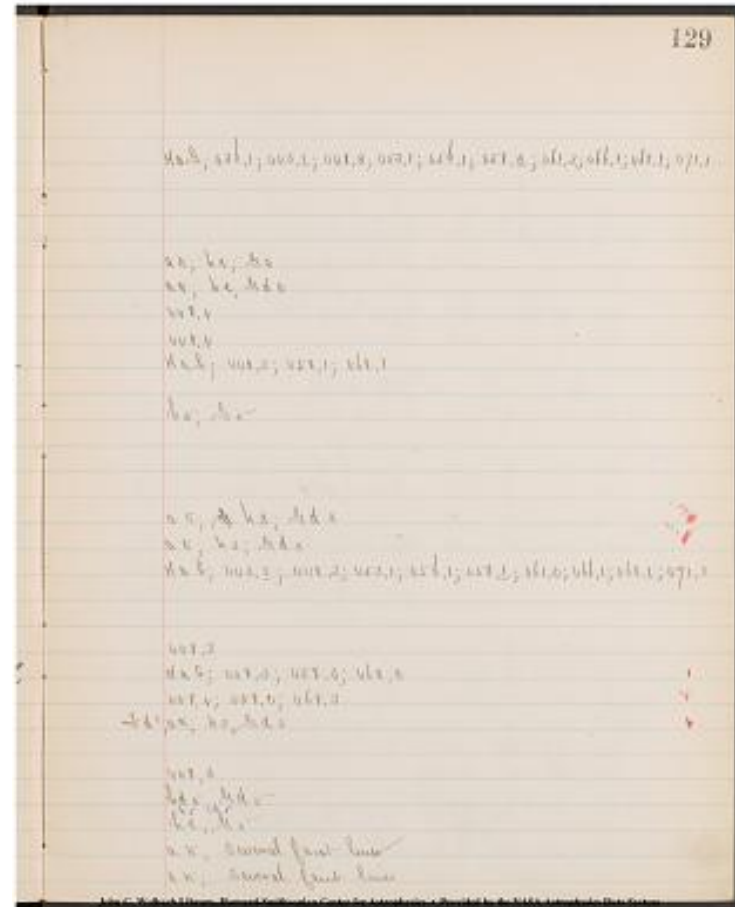
a k; h 2; G 2
a k; h 2, G d 2
448, 4
448, 4
H a G; 448, 3; 458, 1; 468, 1

h 5; G 5

a k; ~~G~~ h 3; G d 3
a k; h 3; G d 3
H a G; 443, 1; 448, 3; 453, 1; 456, 1; 458,
1; 461, 2; 466, 1; 468,
1; 471, 1

448, 3
H a G; 448, 3; 458, 2; 468, 2
448, 4; 458, 2; 468, 3
[[?]] d?; a k; h 3, G d 3

448, 3
h d 5, G d 5
h 5 G 5
h 2, G 5
a k, several faint lines
a k, several faint lines



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Plate 1354

[6 columned table]

Book 16, E. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra |

|---|---|---|---|---|

| 202|9.2|18.1|F ~~II^a[a]~~ 1190|G=.5, h=.2,
2 lines below K.| 7.8|20.3|F ~~II^a[a]~~ 1191|G=.3, h=.2,
Lines below K.

| 204|5.7|14.9|K

| ~~III^a[b.b.]~~ 1192|F $2\frac{1}{2}$ G=.1, F3G=.1B,
F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F5G=.2B, F $5\frac{1}{2}$ G=.1, F6G=.1, F7G=.3, F8G=.1B,
F $9\frac{1}{2}$ G=.1, Lines between G & H.| 4.6|11.7|F ~~II^a[a]~~ 1193|G and h=.5 G
dbl. Lines below K, G6h=.1?| 3.4|10.9|F ~~II^a[a]~~ 1194|G and h=.5]

Plate 1333

[6 columned table]

| 206|21.4|5.4| ~~III^a[b]~~ 1195|F3G=.2,
F6G=.2, F7G=.2, Lines between G and H.| 20.0|9.5|F ~~II^a[a]~~ 1196|G and h dbl.=.5,
Lines below K.| 20.0|11.6|F ~~II^a[a]~~ 1197|G and h
dbl.=.5, Lines below K.| 20.9|12.3|F ~~II^a[a]~~ 1198|G=.3, h=.2, G
dbl.| 20.3|13.6|K ~~III^a[b.c.]~~ 1199|F $2\frac{1}{2}$ G=.1,
F3G=.1B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F5G=.2B, F $5\frac{1}{2}$ G=.1, F7G=.3,
F8G=.1B, F9G=.1, Lines between G&H, Lines below K| 19.4|12.3| ~~III^a[b]~~ 1200|F7G=.3,| 18.0|5.9|F ~~II^a[a]~~ 1201|G and h=.2,
Lines below K.| 208|15.5|17.9|F ~~II^a[a]~~ 1202|G and
h=.3]| 15.3|18.3|F ~~II^a[a]~~ 1203|G and h=.3?| 15.5|20.8|F ~~II^a[a]~~ 1204|G and h=.3, G
dbl., Lines below K.| 14.6|13.1|A ~~II^a[a]~~ 1205|Spectra

superposed on plate . Measure

| 210|14.6|13.2|A ~~II^a[a]~~ 1206|of br. combined
light of both.]| 14.0|16.5|F ~~II^a[a]~~ 1206a|G & h=.3]| 14.1|20.6|F ~~II^a[a]~~ 1207|G and h=.3, G
dbl., Lines below K.| 14.6|24.0| ~~III^a[b]~~ 1208|F5G=.2,
F7G=.3]| 13.8|10.3| ~~II^a[b]~~ 1209|F3G=.1,
F5G=.1, F7G=.3.]John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics
• Provided by the NASA Astrophysics Data System

December, 30, 1887

Plate 1354

Book 16, E. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra |

|---|---|---|---|---|

| 202|9.2|18.1|F ~~II^a[a]~~ 1190|G=.5, h=.2,
2 lines below K.

| 7.8|20.3|F ~~II^a[a]~~ 1191|G=.3, h=.2,
Lines below K.

| 204|5.7|14.9|K

| ~~III^a[b.b.]~~ 1192|F $2\frac{1}{2}$ G=.1, F3G=.1B,
F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F5G=.2B, F $5\frac{1}{2}$ G=.1, F6G=.1, F7G=.3, F8G=.1B,
F $9\frac{1}{2}$ G=.1, Lines between G & H.

| 4.6|11.7|F ~~II^a[a]~~ 1193|G and h=.5 G
dbl. Lines below K, G6h=.1?

| 3.4|10.9|F ~~II^a[a]~~ 1194|G and h=.5]

Plate 1333

| 206|21.4|5.4| ~~III^a[b]~~ 1195|F3G=.2,
F6G=.2, F7G=.2, Lines between G and H.

| 20.0|9.5|F ~~II^a[a]~~ 1196|G and h dbl.=.5,
Lines below K.

| 20.0|11.6|F ~~II^a[a]~~ 1197|G and h
dbl.=.5, Lines below K.

| 20.9|12.3|F ~~II^a[a]~~ 1198|G=.3, h=.2, G
dbl.

| 20.3|13.6|K ~~III^a[b.c.]~~ 1199|F $2\frac{1}{2}$ G=.1,
F3G=.1B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F5G=.2B, F $5\frac{1}{2}$ G=.1, F7G=.3,
F8G=.1B, F9G=.1, Lines between G&H, Lines below K

| 19.4|12.3| ~~III^a[b]~~ 1200|F7G=.3,

| 18.0|5.9|F ~~II^a[a]~~ 1201|G and h=.2,
Lines below K.

| 208|15.5|17.9|F ~~II^a[a]~~ 1202|G and
h=.3]

| 15.3|18.3|F ~~II^a[a]~~ 1203|G and h=.3?

| 15.5|20.8|F ~~II^a[a]~~ 1204|G and h=.3, G
dbl., Lines below K.

| 14.6|13.1|A ~~II^a[a]~~ 1205|Spectra

| 210|14.6|13.2|A ~~II^a[a]~~ 1206|of br. combined
light of both.]

| 14.0|16.5|F ~~II^a[a]~~ 1206a|G & h=.3]

| 14.1|20.6|F ~~II^a[a]~~ 1207|G and h=.3, G
dbl., Lines below K.

| 14.6|24.0| ~~III^a[b]~~ 1208|F5G=.2,
F7G=.3]

| 13.8|10.3| ~~II^a[b]~~ 1209|F3G=.1,
F5G=.1, F7G=.3.]

131

ak;h2,G5
ak;h2,G3

HaG;436.1;443.1;448.3;453.1;456.1;451[^][[8]].[[
underline]]2[[/underline]];461.2;466.1;468.[[underline]]1[[/underline]];471.
1

419.1?;ak;h5;Gd5
h5,G5

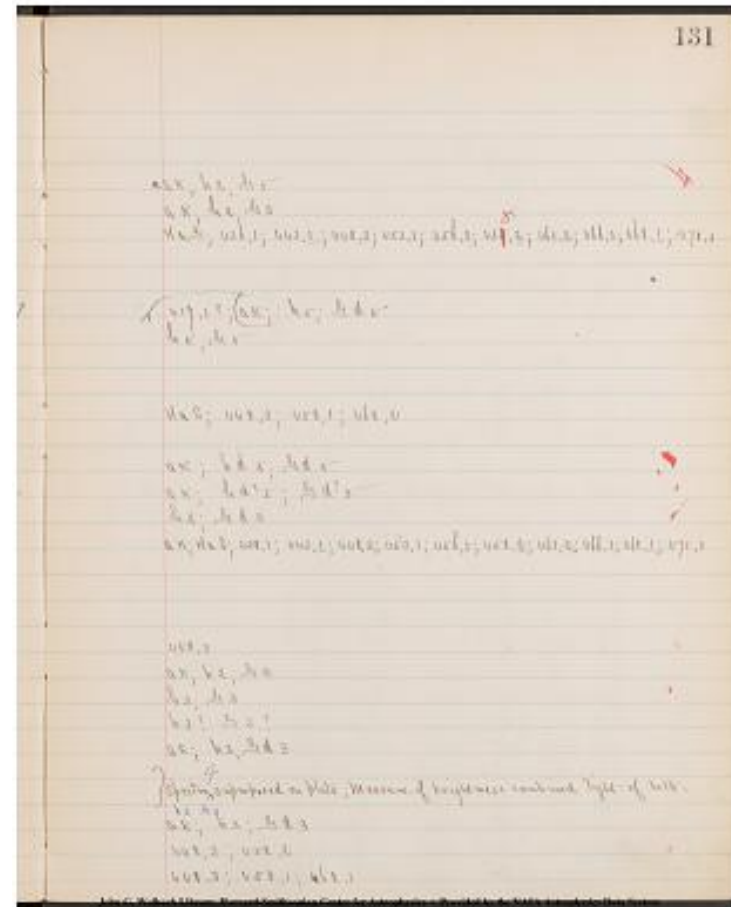
HaG;448.3;458.1;468.2

ak;hd5;Gd5
ak;hd?5;Gd?5
h2;Gd3

ak;HaG;438.1;443.1;448.3;453.1;456.1;458.[[un
derline]]2[[/underline]];461.2;466.1;468.[[underline]]1[[/underline]];471.1

448.3
ak,h2,G2
h3,G3
hs? G3?
ak;h3;Gd3

spectra[^][[of]]superposed on plate; measure of brightness combined light
of both.
h3 G3
ak;h3;Gd3
448.3;458.2
448.3;458.1;468.1



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Plate, 1333.

[[6 columned table]]

| Book 16. E. Page | V. | H. | Type | No. Remark. | Description of line on Spectra |

|---|---|---|---|---|

| 210 | 13.1 | 11.9 | I | ~~[[[b]]]~~ | 1210 |

F7G=.3 |

| 13.1 | 17.2 | F | ~~[[[a]]]~~ | 1211 | G and h=.3, Lines below K. || 12.4 | 7.1 | F | ~~[[[a]]]~~ | 1212 | G and h=.5 (G&h=.5) || 12.5 | 23.1 | I | ~~[[[b]]]~~ | 1213 | F7G=.3 || 212 | 10.9 | 7.3 | K | ~~[[[b.c]]]~~ | 1214 |

F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F6G=.1, F7G=.3, F8G=.1B, Lines between G&H., 1 line below K. |

| 10.5 | 11.3 | F | ~~[[[a]]]~~ | 1215 | G and h=.3, G dbl., Lines below K. || 10.4 | 14.5 | I | ~~[[[b]]]~~ | 1216 | F7G=.3 || 9.4 | 14.3 | F | ~~[[[a]]]~~ | 1216a | G&h=.5 || 9.0 | 18.5 | F | ~~[[[a]]]~~ | 1217 | G and h=.3, Lines below K || 8.5 | 7.1 | I | ~~[[[b]]]~~ | 1218 | F3G=.1, F5G=.1, F7G=.3, Lines between G and H. || 214 | 8.7 | 13.2 | K | ~~[[[b.c]]]~~ | 1219 |

F2½G=.1, F3G=.1B, F3½G=.1B, F4½G=.2, F5G=.2B, F5½G=.1, F6G=.1, F7G=.3, F8G=.1, Lines between G and H., 1 Line below K. |

| 8.3 | 19.2 | F | ~~[[[a]]]~~ | 1220 | G and h=.2 || 7.9 | 6.4 | F | ~~[[[a]]]~~ | 1221 | G and h=.5 || 7.8 | 11.5 | I | ~~[[[b]]]~~ | 1222 | F3G=.2, F5G=.2, F7G=.3. || 7.5 | 12.3 | F | ~~[[[a]]]~~ | 1223 | G and h=.5, Lines below K. || 6.6 | 11.7 | F | ~~[[[a]]]~~ | 1224 | G and h=.5 || 6.0 | 12.8 | F | ~~[[[a]]]~~ | 1225 | G and h=.5 || 6.1 | 18.5 | I | ~~[[[b]]]~~ | 1226 | F3G=.1, F5G=.1, F7G=.3 || 6.3 | 19.0 | F | ~~[[[a]]]~~ | 1227 | G and h=.5 || 5.8 | 11.7 | F | ~~[[[a]]]~~ | 1228 | G and h=.5 || 5.9 | 12.3 | F | ~~[[[a]]]~~ | 1229 | G and h=.4 |

| Book 18, E. Page 4 | 4.4 | 10.9 | F |

| ~~[[[a]]]~~ | 1230 | G and h=.5, G dbl., Lines below K. || 4.2 | 14.4 | I | ~~[[[b]]]~~ | 1231 | F3G=.2, F5G=.1, F7G=.3, Lines between G&H. |

Amnt. of Fog due to moon & clouds. 7.3

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December, 30, 1887
Plate, 1333.

Book 16. E. Page	V.	H.	Type	No.	Remark	Description of line on Spectra
✓ 210.13.1	11.9	13.2	I	1210		F7G=.3
✓ 12.4	7.1	17.2	F	1211		G and h=.3, Lines below K.
✓ 12.5	23.1	7.3	I	1213		F7G=.3
✓ 212.10.9	7.3	13.2	K	1214		F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F6G=.1, F7G=.3, F8G=.1B, Lines between G&H., 1 line below K.
✓ 10.5	11.3	8.3	F	1215		G and h=.3, G dbl., Lines below K.
✓ 10.4	14.5	8.5	I	1216		F7G=.3
✓ 9.4	14.3	8.5	F	1216a		G&h=.5
✓ 9.0	18.5	8.5	F	1217		G and h=.3, Lines below K
✓ 8.5	7.1	8.5	I	1218		F3G=.1, F5G=.1, F7G=.3, Lines between G and H.
✓ 214.8.7	13.2	8.3	K	1219		F2½G=.1, F3G=.1B, F3½G=.1B, F4½G=.2, F5G=.2B, F5½G=.1, F6G=.1, F7G=.3, F8G=.1, Lines between G and H., 1 Line below K.
✓ 8.3	19.2	8.3	F	1220		G and h=.2
✓ 7.9	6.4	7.9	F	1221		G and h=.5
✓ 7.8	11.5	7.8	I	1222		F3G=.2, F5G=.2, F7G=.3.
✓ 7.5	12.3	7.5	F	1223		G and h=.5, Lines below K.
✓ 6.6	11.7	6.6	F	1224		G and h=.5
✓ 6.0	12.8	6.0	F	1225		G and h=.5
✓ 6.1	18.5	6.1	I	1226		F3G=.1, F5G=.1, F7G=.3
✓ 6.3	19.0	6.3	F	1227		G and h=.5
✓ 5.8	11.7	5.8	F	1228		G and h=.5
✓ 5.9	12.3	5.9	F	1229		G and h=.4
✓ 4.4	10.9	4.4	F	1230		G and h=.5, G dbl., Lines below K.
✓ 4.2	14.4	4.2	I	1231		F3G=.2, F5G=.1, F7G=.3, Lines between G&H.

Amnt. of Fog due to moon & clouds. 7.3

Amnt. of Fog due to chemicals 7.5

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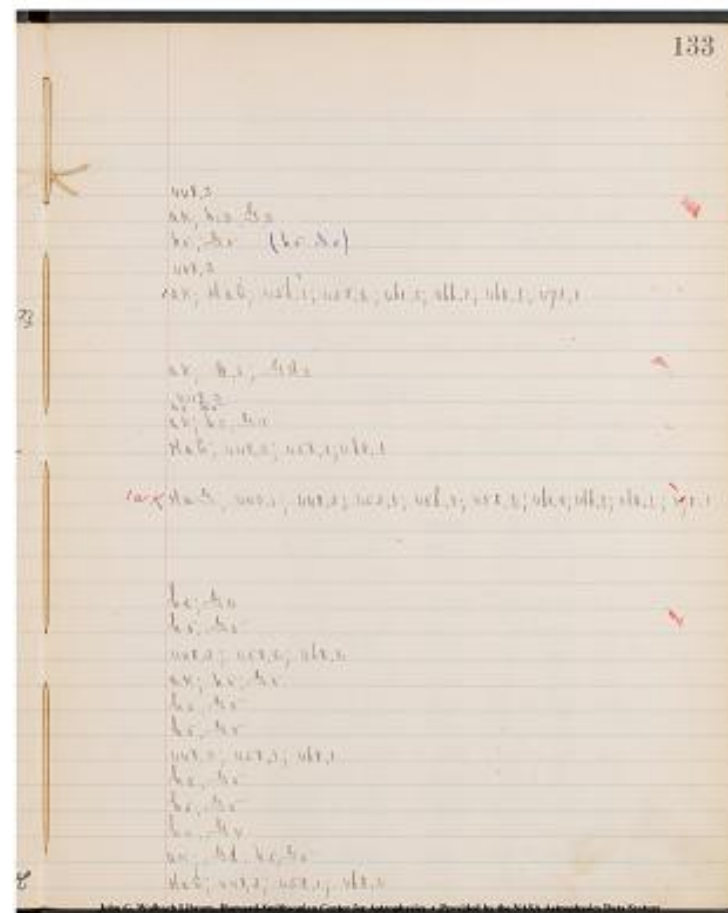
133

448,3
ak; h:3 .g3
h5; g5 (h5 g5)
448,3
'ak; MaG; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

ak; k3; gd3
448,3
h5 g5
ak; h3, g3
Mag; 448,3; 458,1; 468,1

1ak Hag; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1; 491,1

h2; g2
h5; g5
448,3; 458,2; 468,2
ak; h5; g5
h5; g5
448,3; 458,1; 468,1
h5, g5
h5, g5
h4, g4
ak; gd; h5, g5
HaG; 448,3; 458,1; 468,2
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[[Dark?]] Plate. December, 31, 1887.

Very hard to measure. Plate, 1395

[[6 columned table]]

Book 18. E Page[V.][H.][Type.][No. Remark.][Description of Lines on Spectra]

| 6|21.0|7.8|F [[~~II~~^a[[~~/~~]]]]1232|G and h=.1|

|21.2|15.8|F [[~~II~~^a[[~~/~~]]]]1233|G and h=.2, Lines below K.|

|21.4|18.4|K [[~~III~~^b.c.]]1234|t2 1/2G=.1, t3G=.1B, t3 1/2G=.1, t4 1/2G=.2,|

|||||||t5G=.1B, t5 1/2G=.1, t7G=.3, t8G=.1B,|

|||||||Lines between G and H.|

|20.0|11.5|I [[~~III~~^b]]1235|t7G=.3|

(Days too dark to measure Brightness on plate)

Plate 1459

| 14|21.2|15.1|f [[~~II~~^a]]1236|G and h=.3, G all, Lines below K.|

|21.4|17.2|K [[~~III~~^b.c.]]1237|t2

1/2G=.1, t3G=.1B, t3 1/2G=.1, t4 1/2G=.2,|

|||||||t5G=.2Bt5 1.2G=.1, t6G=.1, t7G=.3,|

|||||||t8G=.1B, t9G=.1, Lines between G & H|

|20.8|6.7|F [[~~II~~^a]]1238|G and h=.1|

|20.4|7.5|F [[~~II~~^a]]1239|G and h=.5|

|20.0|10.7|I [[~~III~~^b]]1240|t7G=.3,|

|18.6|19.7|I [[~~III~~^b]]1241|t7G=.3|

|18.6|22.0|F [[~~II~~^a]]1242|G and h=.5 G all., 2 lines below K.|

|17.2|6.3|F [[~~II~~^a]]1242a|G & h=.5|

|16|17.5|18.7|F [[~~II~~^a]]1243|G and h=.3, Lines below K.|

|15.4|13.7|F [[~~II~~^a]]1244|G and h=.3, G all, Lines below K.|

|15.8|18.5|B [[~~III~~^b]]1254|t7G=.3|

|14.4|10.1|F [[~~II~~^a]]1250|G & h=.5?|

|18|14.6|17.1|I [[~~III~~^b]]1246|t3G=.2, t5G=.2, t7G=.2,|

|13.5|5.9|F [[~~II~~^a]]1247|G and h=.5|

|12.1|5.7|I [[~~III~~^b]]1248|t7G=.3|

|12.3|11.3|F [[~~II~~^a]]1249|G and h=.5|

|12.4|13.2|F [[~~II~~^a]]1250|G and h=.3|

|20|11.3|15.0|F [[~~II~~^a]]1251|g and h=.7|

|10.8|17.0|F [[~~II~~^a]]1252|G and h=.3, Lines below K|

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134

Dark Plate

December, 31, 1887

Very hard to measure. Plate, 1395

Book 18. E Page	V. H. Type. No. Remark.	Description of Lines on Spectra	
✓	6	21.0 7.8 F II ^a	1232 G and h=.1
✓	21.2	15.8 F II ^a	1233 G and h=.2, Lines below K.
✓	21.4	18.4 K III ^{b.c.}	1234 t2 1/2G=.1, t3G=.1B, t3 1/2G=.1, t4 1/2G=.2, t5G=.1B, t5 1/2G=.1, t7G=.3, t8G=.1B, Lines between G and H.
✓	20.0	11.5 I III ^b	1235 t7G=.3

(Days too dark to measure Brightness on plate)

Plate 1459

✓	14	21.2 15.1 f	II ^a 1236 G and h=.3 G all, Lines below K.
✓	21.4	17.2 K III ^{b.c.}	1237 t2 1/2G=.1, t3G=.1B, t3 1/2G=.1, t4 1/2G=.2, t5G=.2B, t5 1.2G=.1, t6G=.1, t7G=.3, t8G=.1B, t9G=.1, Lines between G & H
✓	20.8	6.7 F II ^a	1238 G and h=.1
✓	20.4	7.5 F II ^a	1239 G and h=.5
✓	20.0	10.7 I III ^b	1240 t7G=.3,
✓	18.6	19.7 I III ^b	1241 t7G=.3
✓	18.6	22.0 F II ^a	1242 G and h=.5 G all., 2 lines below K.
✓	17.2	6.3 F II ^a	1242a G & h=.5
✓	16	17.5 18.7 F II ^a	1243 G and h=.3, Lines below K.
✓	15.4	13.7 F II ^a	1244 G and h=.3, G all, Lines below K.
✓	15.8	18.5 B III ^b	1254 t7G=.3
✓	14.4	10.1 F II ^a	1250 G & h=.5?
✓	18	14.6 17.1 I III ^b	1246 t3G=.2, t5G=.2, t7G=.2,
✓	13.5	5.9 F II ^a	1247 G and h=.5
✓	12.1	5.7 I III ^b	1248 t7G=.3
✓	12.3	11.3 F II ^a	1249 G and h=.5
✓	12.4	13.2 F II ^a	1250 G and h=.3
✓	20	11.3 15.0 F II ^a	1251 G and h=.7
✓	10.8	17.0 F II ^a	1252 G and h=.3, Lines below K.

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135

h1; g1

ak; h2, g2

HaG; 443,1; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3

ak; h3; gd3

HaG; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1;
471,1

h1; g1

h5; g5

448,3

448,3

2ak; h5; gd5

h5; g5

ak; h3; g3

ak; h3; gd3

h5; g5

448,3

448,2; 458,2; 468,2

h5; g5

448,3

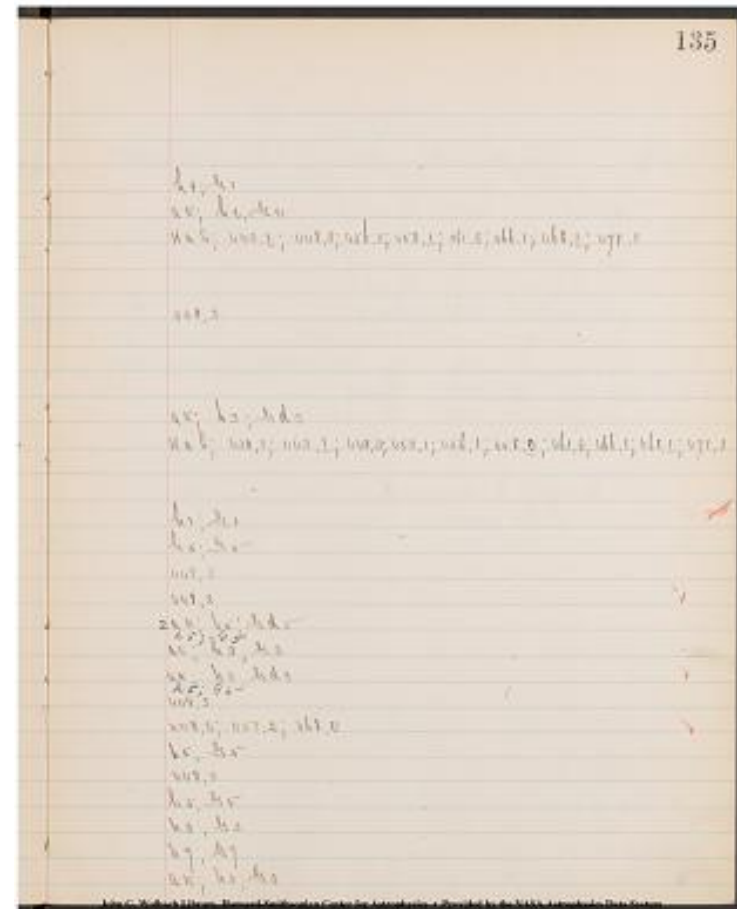
h5; g5

h3; g3

h7; g7

ak; h3; g3

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December, 31, 1887.

Plate 1450

[[6 columned table]]

Book 18. E. Page|V|H|Type|No Remark.|Description of lines on Spectra.

|---|---|---|---|---|

|20|10.1|17.6|I|~~[[[a]]]~~1253|F5G=.2,
F7G=.3.|10.9|20.9|F|~~[[[a]]]~~1254|G and h=.1.|9.9|11.2|F|~~[[[a]]]~~1255|G and h=.2,
lines below K.|9.5|17.5|F|~~[[[a]]]~~1256|G and h=.5||22|7.6|19.2|F|~~[[[a]]]~~1257|G and h=.3||7.4|22.8|F|~~[[[a]]]~~1258|G and h=.3||6.9|7.9|I|~~[[[b]]]~~1259|F5G=.2F7G=.3||6.7|11.9|F|~~[[[a]]]~~1260|G and h=.5, G
dbl., lines below K.|24|5.9|20.2|F|~~[[[a]]]~~1261|G and h=.5||4.8|7.4|F|~~[[[a]]]~~1262|G and h=.5||4.2|9.4|I|~~[[[b]]]~~1263|F7G=.3|

[[2 columned table]]

Amt. of Fog. due to moon & clouds|Amt of Fog. due chemicals|

|7.4|7.6|

136

December, 31, 1887/
Plate 1450

Book 18. E. Page. V. H. Type. No Remark. Description of lines on Spectra.

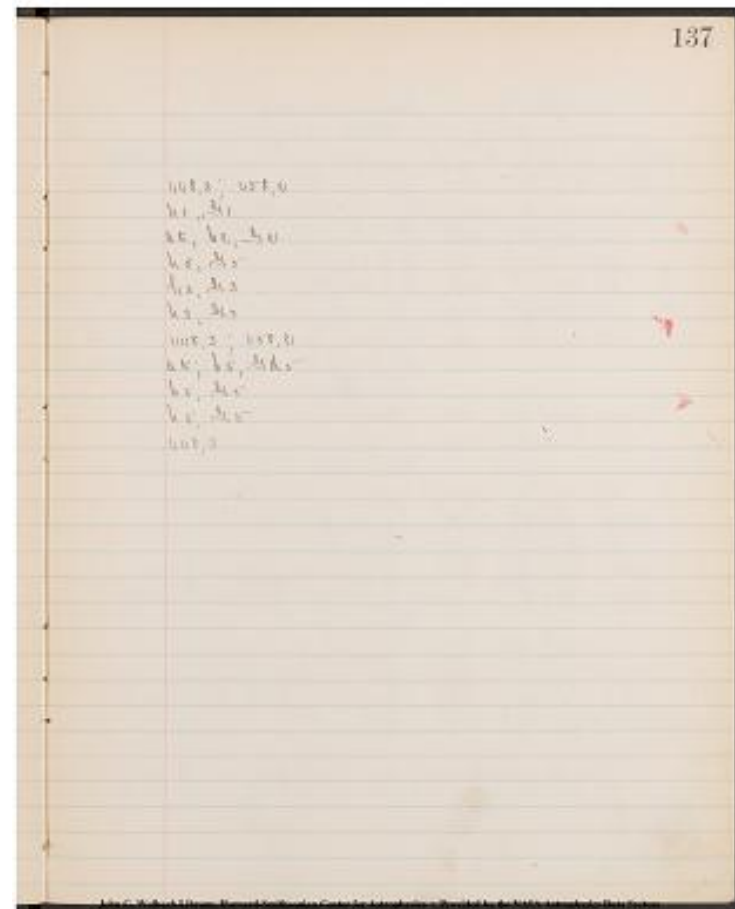
✓	20.1	17.6	I	1253	F5G=.2, F7G=.3.
✓	10.9	20.9	F	1254	G and h=.1.
✓	9.9	11.2	F	1255	G and h=.2, lines below K.
✓	9.5	17.5	F	1256	G and h=.5.
✓	22.8	7.4	F	1257	G and h=.3.
✓	7.4	22.8	F	1258	G and h=.3.
✓	6.9	7.9	I	1259	F5G=.2, F7G=.3.
✓	6.7	11.9	F	1260	G and h=.5, G dbl., lines below K.
✓	24.0	5.9	F	1261	G and h=.5.
✓	4.8	7.4	F	1262	G and h=.5.
✓	4.2	9.4	I	1263	F7G=.3.

Cont. of Fog due to moon & clouds. Cont. of Fog due chemicals.
7.4 7.6

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137

448,3 ; 458,2
h1, y1
ak, h2, y2
h5, y5
h3, y3
h3, y3
448,3; 458,2
ak; h5, yd5
h5, y5
h5, y5
448,3



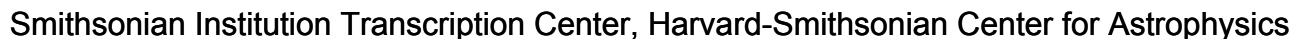
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Plate. 1384.

[6 columned table]

Book.	18.	E.	Page.	V.	H.	Type.	No.	Remark.	Description of lines on Spectra.
									----- ----- -----
									20.8 9.9 F [[[a]]] [[[a]]] 1263a G&h=.5
									28 20.0 16.9 L [[[a]]] [[[a]]] 1264 G and h=.5,
									G dbl. Lines below K.
									20.7 20.9 F [[[a]]] [[[a]]] 1265 G and h=.5,
									Lines below K.
									20.0 22.8 L [[[a]]] [[[a]]] 1266 G and h=.5,
									Lines below K.
									19.7 12.0 I [[[b]]] [[[b]]] 1267 F5G=.2,
									F7G=.3
									19.6 13.5 B [[[b]]] [[[b]]] 1268 F7G=3,
									h7H=.3
									18.2 8.6 F [[[a]]] [[[a]]] 1269 G and h=.5, G
									dbl.
									18.7 9.0 K [[[b.c.]]] [[[b.c.]]] 1270 F2½G=.1,
									F3G=.1B, F3½G=.1 F4½G=.2 F5G=.1B, F5½G=.1, F7H=.3, F8G=.1B,
									Lines between G and [[[h]]] H.
									30 17.7 9.2 F [[[a]]] [[[a]]] 1271 G and h=.5
									17.6 13.2 K [[[b.c.]]] [[[b.c.]]] 1272 F3G=.1B,
									F5G=.1B, F5½G=.1, F7G=.3, G dbl.? Lines between G and H.]]
									16.4 20.3 F [[[a]]] [[[a]]] 1273 G and h=.3,
									Lines below K.
									15.5 9.2 F? [[[a]]] [[[a]]] 1273a G&h=.5
									14.8 16.4 F [[[a]]] [[[a]]] 1275 G and h=.5
									14.8 16.4 F [[[a]]] [[[a]]] 1275 G and h=.5
									13.1 10.4 F [[[a]]] [[[a]]] 1275a G&h=.5
									11.9 10.2 F [[[a]]] [[[a]]] 1275c G&h=.5
									34 11.1 9.4 F [[[a]]] [[[a]]] 1276 G and h=.2,
									Lines below K.
									12.2 9.5 F [[[a]]] [[[a]]] 1275b G&h=.5
									10.4 8.3 K [[[b.c.]]] [[[b.c.]]] 1277 F5G=.2B,
									F7G=.3, ^[[h bright?]], Lines between G&H, Lines below K.
									10.4 14.1 F [[[a]]] [[[a]]] 1278 G and h=.5
									10.3 17.6 F [[[a]]] [[[a]]] 1278a G&h=.5
									36 10.6 18.4 F [[[a]]] [[[a]]] 1279 G and h=.5,
									G&h=.5?
									.89 3.11 4 F? [[[a]]] [[[a]]] 1279a G&h=.5
									(G&h=.5)
									38 5.5 17.1 F [[[a]]] [[[a]]] 1280 G and h=.5,
									G dbl., Lines below K
									3.3 11.9 I [[[b]]] [[[b]]] 1281 F7G=.3

[[2 columned table]]
|Amt. Fogging due to moon & clouds.|Amt. Fogging due to chemicals|
|5.7|{6.5^|8.0|}|



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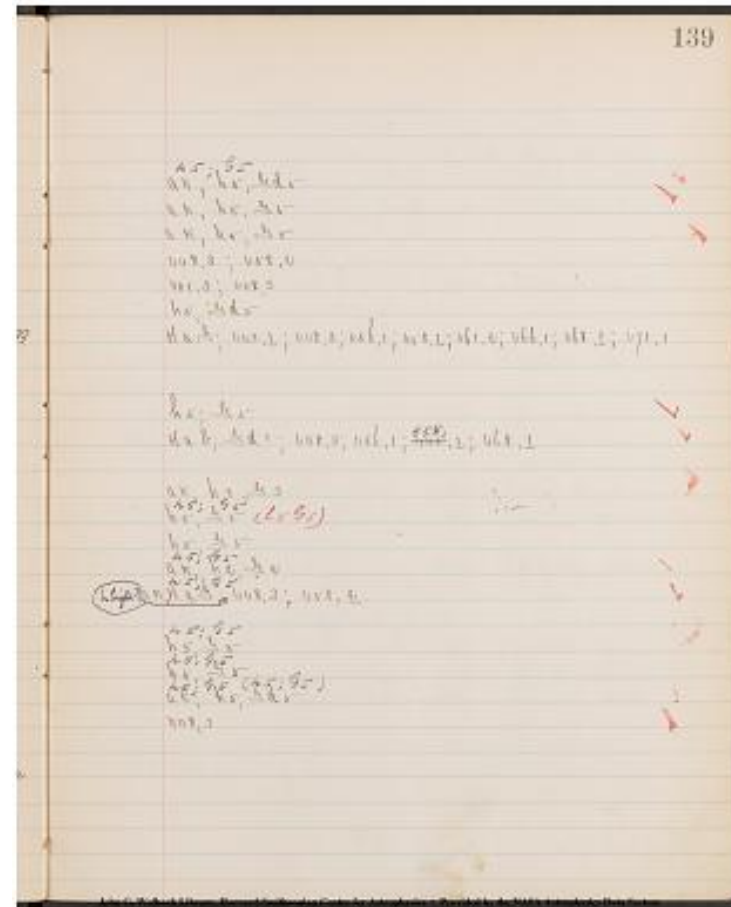
139

h5; y5
ak, h5, yd5
ak, h5, y5
ak, h5, y5
448,3; 458,2
401,3; 448,3
h5; yd5
Hay; 443,1; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

h5; y5
HaG; yd?; 448,3; 456,1; 458,1; 468,1

ak, h3, y3
h5; y5
h5, y5 (h5y5)
h5, y5
h5; y5
ak, h2, y2
h5; y5
(h bright-?)ak, Hay; 448,3; 458,2

h5; y5
h5; y5
h5; y5
h5; y5
h5; y5 (h5:y5)
ak; h5, yd3
448,3



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January 9, 1888.
Plate 1519.

[[6 columned table]]

| V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

-----|-----|-----|-----|-----|

Book. 18. E. Page. | 19.0 | 7.1 |

[[~~1282~~]] F7G=.3 |

40 | 19.8 | 16.6 | K

[[~~1283~~]] F2½G=.1, F3G=.1B,
F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, F8G=.1B, Lines
between G and H, Lines below K. |

[[15.9 | 13.0 |]] [[~~1284~~]] F3G=.1,
F5G=.2, F7G=.3, Lines between G and H. |

[[15.7 | 23.1 |]] [[~~1285~~]] F5G=.2,
F7G=.3. |

[[14.7 | 10.3 |]] K [[~~1286~~]] F3G=.1B,
F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, F8G=.1B; Lines
between G&H. |

[[13.1 | 7.1 |]] [[~~1287~~]] F7G=.3 |

[[13.8 | 20.9 |]] F [[~~1288~~]] G and h=.3, G
dbl; 2 Lines below K. |

[[12.6 | 8.8 |]] [[~~1289~~]] F3G=.2,
F5G=.2, F7G=.3. |

[[12.0 | 9.1 |]] [[~~1290~~]] F3G=.2,
F5G=.2, F7G=.3. |

[[12.4 | 18.9 |]] K [[~~1291~~]] F3G=.1B,
F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, F8G=.1B, Lines
between G and H. |

44 | 8.8 |

18.5 |

17.6 |

46 | 6.8 |

[[2 columned table]]

Amt. of Fog. due to moon & clouds | Amt. of Fog. due to chemicals |

7.5 | 7.6 |

140		January 9, 1888		Plate 1519	
V. H. Type. Remark.		No.		Description of lines on Spectra	
1282	19.8 16.6	K	1282	F7G=.3	
1283	15.9 13.0	F	1283	F3G=.1, F5G=.2, F7G=.3, F8G=.1B	Lines between G and H, Lines below K.
1284	15.7 23.1	F	1284	F5G=.2, F7G=.3	Lines between G and H.
1285	14.7 10.3	K	1285	F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, F8G=.1B	Lines between G and H, Lines below K.
1286	13.1 7.1	F	1286	F7G=.3	
1287	13.8 20.9	F	1287	G and h=.3, G dbl; 2 Lines below K.	
1288	12.6 8.8	F	1288	F3G=.2, F5G=.2, F7G=.3	
1289	12.0 9.1	F	1289	F3G=.2, F5G=.2, F7G=.3	
1290	12.4 18.9	K	1290	F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, F8G=.1B	Lines between G and H.
1291	44 8.8		1291		
18.5					
17.6					
46 6.8					
		Amt. of Fog. due to moon & clouds		Amt. of Fog. due to chemicals	
		7.5		7.6	

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141

448,3
ak; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

Hay; 448,3; 458,2; 468,1

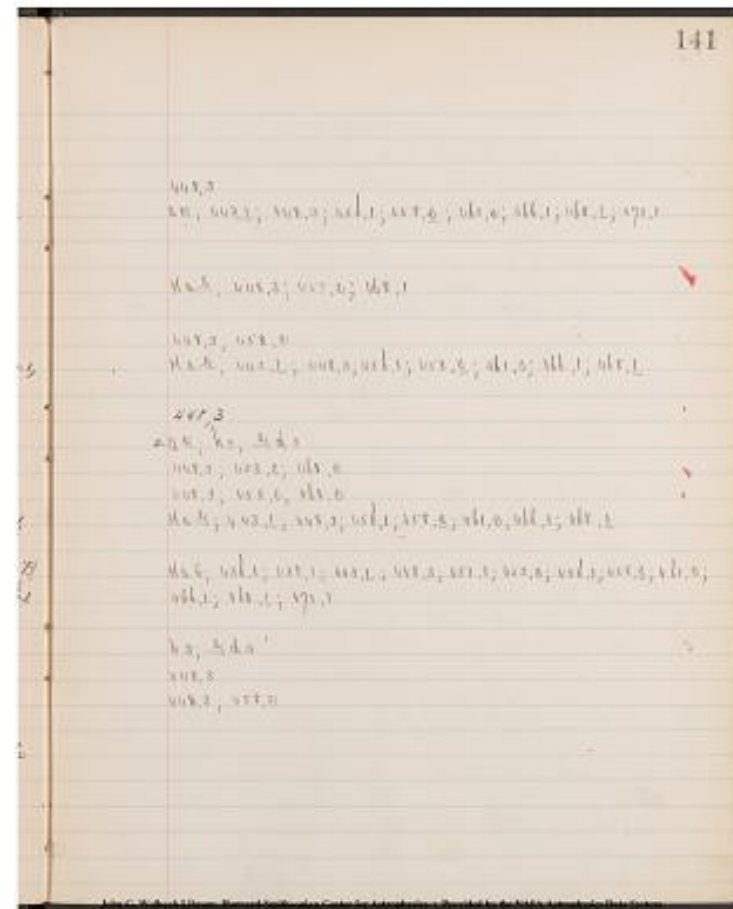
448,3; 458,2
Hay; 443,1; 448,3; 456,1; 458,2; 461,2; 468,1

448,3
2ak; h3; gd3
448,3; 458,2; 468,2
448,3; 458,2; 468,2
Hay; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

Hag; 436,1; 438,1; 443,1; 448,3; 451,1; 453,2; 456,1; 458,2; 461,2;
466,1; 468,1; 471,1

h3; yd3
448,3
448,3; 458,2

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January, 8, 1887.

Plate, 1478.

[6 columned table]

Book 18 E. Page. | V. | H. | Type | No. Remark. | Description of lines on Spectra. |

|---|---|---|---|---|

48 | 22.0 | 11.6 | ~~III[^][b.]~~ | ~~I~~ | 1296 | F7G=.3| 20.9 | 17.6 | ~~III[^][a.]~~ | ~~F~~ | 1297 | G and h=.5 || 10.9 | 11.5 | ~~III[^][a.]~~ | ~~F~~ | 1298 | G and h=.3 G dbl. || 9.8 | 19.9 | ~~III[^][b.]~~ | ~~I~~ | 1299 | F5G=.2, F7G=.3 || 5.0 | 12.9 | ~~III[^][a.]~~ | ~~F~~ | 1300 | G and h=.5 || 50 | 4.8 | 21.7 | ~~III[^][b.c.]~~ | ~~K~~ | 1301 | F3 G=.1B, F4½G=.1 F5G=.1B, F5½G=.1, F7G=.3 Lines between G and H. F3G=1B. F3½G=.1, F4½G=.2 F5G=.2B. || 2.5 | 11.7 | ~~III[^][b.c.]~~ | ~~K~~ | 1302 | F5½G=.1, F7G=.3 F8G=.1 B, Lines between G and H. |

[2 columned table]

Amt. of Fog due to moon & clouds. | Amt. of Fog due to chemicals |
| 7.7 | 7.8 |

Plate 1520.

[6 columned table]

| 21.9 | 12.0 | ~~III[^][a.]~~ | ~~F~~ | 1303 | G and h=.5. || 20.6 | 14.9 | ~~III[^][a.]~~ | ~~F~~ | 1304 | G and h=.3, G dbl. 1 Lines below K. || 19.2 | 22.3 | ~~III[^][b.]~~ | ~~I~~ | 1305 | F7G=.3 | 52 | 16.3 | 7.7 | ~~III[^][a.]~~ | ~~F~~ | 1306 | G and h=.5? || 15.3 | 15.6 | ~~III[^][a.]~~ | ~~F~~ | 1307 | G and h=.5 (G & h=.5) || 14.1 | 11.7 | ~~III[^][a.]~~ | ~~F~~ | 1308 | G and h=.5 || 14.8 | 13.8 | ~~III[^][b.c.]~~ | ~~K~~ | 1309 | F4½G=.2, F5G=.1 B, F½G=.1 F7G=.3, F8G=.1 B, Lines between G and H. || 13.6 | 15.1 | ~~III[^][b.]~~ | ~~I~~ | 1310 | F7G=.3, || 13.0 | 15.2 | ~~III[^][b.c.]~~ | ~~K~~ | 1311 | F3G=.1 B, F4½G=.2, F5G=.2 B, F5½G=.1, F7G=.3, F8G=.1 B, Lines between G and H. || 54 | 13.9 | 25.9 | ~~III[^][b.c.]~~ | ~~X~~ | 1312. | F3G=.1 B, F4½G=.1, F5G=.2 B, F5½G=.1, F7G=.3, F8Y=.1 B, Lines between G and H. || 12.4 | 5.3 | ~~III[^][b.]~~ | ~~I~~ | 1313 | F5G=.2, F7G=.3, Lines between G and H. || 12.4 | 14.8 | ~~III[^][b.c.]~~ | ~~K~~ | 1314 | F3G=.73, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1 F7G=.3. F8G=.1B, Lines between G and H. 1 Line below K. || 12.4 | 14.8 | ~~III[^][b.c.]~~ | ~~K~~ | 1314 | F3G=.73, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1 F7G=.3. F8G=.1B, Lines between G and H. 1 Line below K. |

January 9, 1887
Plate 1478

Book 18 E. Page. | V. | H. | Type | No. Remark. | Description of lines on Spectra.

|---|---|---|---|---|

48 | 22.0 | 11.6 | ~~III[^][b.]~~ | ~~I~~ | 1296 | F7G=.3

| 20.9 | 17.6 | ~~III[^][a.]~~ | ~~F~~ | 1297 | G and h=.5 |

| 10.9 | 11.5 | ~~III[^][a.]~~ | ~~F~~ | 1298 | G and h=.3 G dbl. |

| 9.8 | 19.9 | ~~III[^][b.]~~ | ~~I~~ | 1299 | F5G=.2, F7G=.3 |

| 5.0 | 12.9 | ~~III[^][a.]~~ | ~~F~~ | 1300 | G and h=.5 |

| 50 | 4.8 | 21.7 | ~~III[^][b.c.]~~ | ~~K~~ | 1301 | F3 G=.1B, F4½G=.1 F5G=.1B, F5½G=.1, F7G=.3 Lines between G and H. F3G=1B. F3½G=.1, F4½G=.2 F5G=.2B. |

| 2.5 | 11.7 | ~~III[^][b.c.]~~ | ~~K~~ | 1302 | F5½G=.1, F7G=.3 F8G=.1 B, Lines between G and H. |

[2 columned table]

Amt. of Fog due to moon & clouds. | Amt. of Fog due to chemicals |
| 7.7 | 7.8 |

Plate 1520.

[6 columned table]

| 21.9 | 12.0 | ~~III[^][a.]~~ | ~~F~~ | 1303 | G and h=.5. |

| 20.6 | 14.9 | ~~III[^][a.]~~ | ~~F~~ | 1304 | G and h=.3, G dbl. 1 Lines below K. |

| 19.2 | 22.3 | ~~III[^][b.]~~ | ~~I~~ | 1305 | F7G=.3 | 52 | 16.3 | 7.7 | ~~III[^][a.]~~ | ~~F~~ | 1306 | G and h=.5? |

| 15.3 | 15.6 | ~~III[^][a.]~~ | ~~F~~ | 1307 | G and h=.5 (G & h=.5) |

| 14.1 | 11.7 | ~~III[^][a.]~~ | ~~F~~ | 1308 | G and h=.5 |

| 14.8 | 13.8 | ~~III[^][b.c.]~~ | ~~K~~ | 1309 | F4½G=.2, F5G=.1 B, F½G=.1 F7G=.3, F8G=.1 B, Lines between G and H. |

| 13.6 | 15.1 | ~~III[^][b.]~~ | ~~I~~ | 1310 | F7G=.3, |

| 13.0 | 15.2 | ~~III[^][b.c.]~~ | ~~K~~ | 1311 | F3G=.1 B, F4½G=.2, F5G=.2 B, F5½G=.1, F7G=.3, F8G=.1 B, Lines between G and H. |

| 54 | 13.9 | 25.9 | ~~III[^][b.c.]~~ | ~~X~~ | 1312. | F3G=.1 B, F4½G=.1, F5G=.2 B, F5½G=.1, F7G=.3, F8Y=.1 B, Lines between G and H. |

| 12.4 | 5.3 | ~~III[^][b.]~~ | ~~I~~ | 1313 | F5G=.2, F7G=.3, Lines between G and H. |

| 12.4 | 14.8 | ~~III[^][b.c.]~~ | ~~K~~ | 1314 | F3G=.73, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1 F7G=.3. F8G=.1B, Lines between G and H. 1 Line below K. |

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143

448,3
h5, g5
h3, gd3
448,3;458,2
h5; g5
Hag; 448,3; 456,1; 458,1; 461,1; 468,1

Hag; 443,1; 448,3; 456,1;458,2; 461,2; 466,1; 468,1

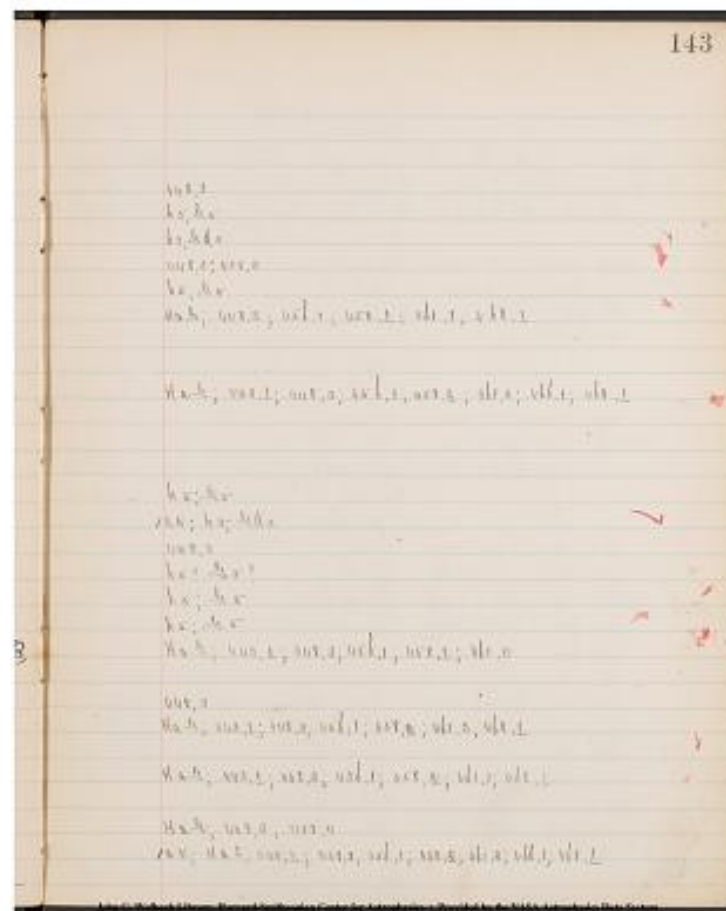
h5; g5
'ak; h3; gd3
448,3
h5? g5?
h5; g5
h5; g5
Hag; 443,1; 448,3; 456,1; 458,1; 461,2

448,3
Hag; 443,1; 448,3; 456,1; 458,2; 461,2; 468,1

Hag; 443,1; 448,3; 456,1; 458,2; 461,1; 468,1

Hag; 448,3,458,2
'ak; Hag; 443,1; 448,3; 456,1; 458,2; 461,1; 466,1; 468,1

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January, 9, 1888

Plate, 1520

[[6 columned table]]

Book, 18, E. Page|V.|H.|Type.|No. Remark.|Description of lines on Spectra.

|---|---|---|---|---|

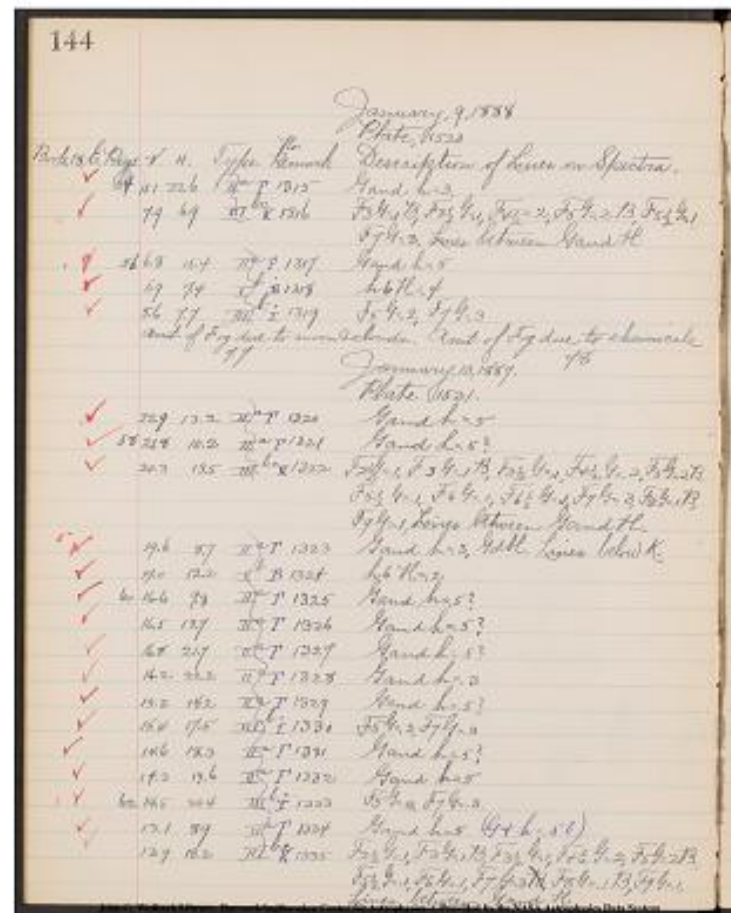
| 54| 11.1 | 22.6 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1315 | G and h=.3, || | 7.9 | 6.9 | [[/strikethrough]] III^a[b.c] [[/strikethrough]] K | 1316 | F3 G=.1 B, F3 1/2 G=.1, F4 1/2 =.2, F5 G=.2 B, F5 1/2 G=.1, F7 G=.3, Lines between G and H. || 56| 6.8 | 15.4 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1317 | G and h=.5 || | 5.9 | 7.4 | [[/strikethrough]] I^a[b] [[/strikethrough]] B | 1318 | h6 H=.4 || | 5.6 | 7.7 | [[/strikethrough]] III^a[b.] [[/strikethrough]] I | 1319 | F5 G=.2, F7 G=.3 |

Amt. of Fog. due to moon & clouds. Amt. of Fog due to chemicals

7.7 7.8

January, 10, 1887.

Plate 1521.

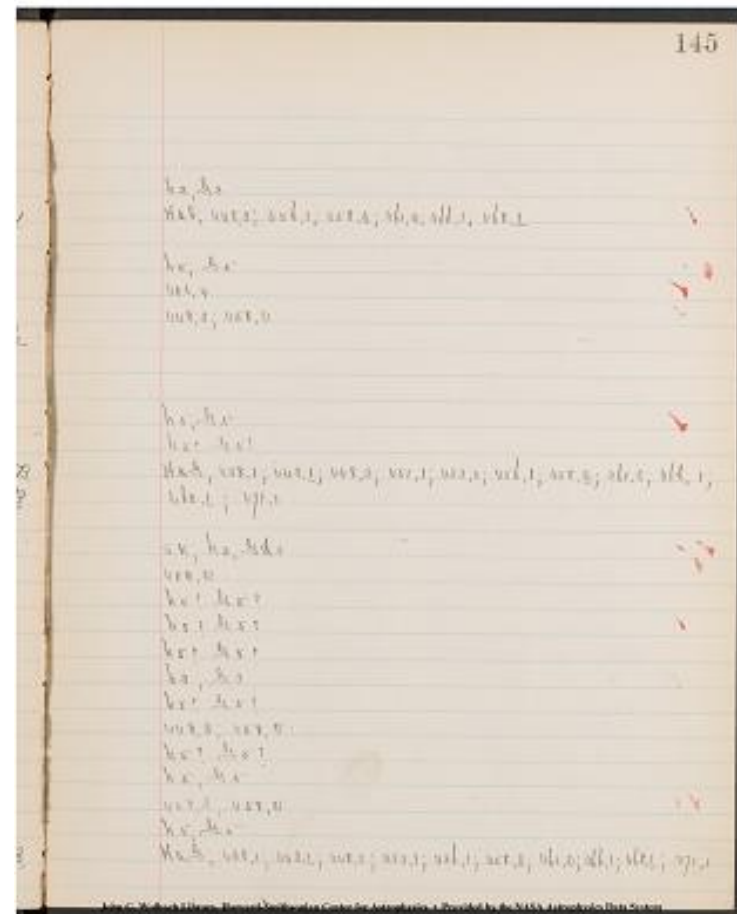
| | 22.9 | 13.2 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1320 | G and h=.5 || 58| 21.8 | 10.2 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1321 | G and h=.5? || | 20.3 | 13.5 | [[/strikethrough]] III^a[b.c] [[/strikethrough]] K | 1322 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F6 G=.1, F6 1/2 G=.1, F7 G=.3, F8 G=.1 B, F9 G=.1, Lines between G and H. || | 19.6 | 8.7 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1323 | G and h=.3, G all. Lines below K. || | 19.0 | 12.2 | [[/strikethrough]] I^a[b] [[/strikethrough]] B | 1324 | h6 H=.2 || 60| 16.6 | 9.8 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1325 | G and h=.5? || | 16.5 | 13.7 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1326 | G and h=.5? || | 16.8 | 21.7 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1327 | G and h=.5? || | 16.2 | 22.2 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1328 | G and h=.3 || | 15.2 | 14.2 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1329 | G and h=.5? || | 15.4 | 17.5 | [[/strikethrough]] III^a[b.] [[/strikethrough]] I | 1330 | F5 G=.2, F7 G=.3 || | 14.6 | 18.3 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1331 | G and h=.5? || | 14.3 | 19.6 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1332 | G and h=.5 || 62| 14.5 | 20.4 | [[/strikethrough]] III^a[b.] [[/strikethrough]] I | 1333 | F5 G=.2, F7 G=.3. || | 13.1 | 8.9 | [[/strikethrough]] II^a[a] [[/strikethrough]] F | 1334 | G and h=.5 (G+h=.5?) || | 13.9 | 18.2 | [[/strikethrough]] III^a[b.c] [[/strikethrough]] K | 1335 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F6 G=.1, F7 G=.3 [[/strikethrough]] B [[/strikethrough]], F8 G=.1 B, F9 G=.1, Lines between G and H. |

145

h3, y3
402,3
448,3; 458,2

h5; y5
h5? y5?
Hay, 438,1; 443,1; 448,3; 451,1; 453,1; 456,1; 458,2; 461,2; 466,1
468,1; 471,1

ak; h3, yd3
402,2
h5? y5?
h5? y5?
h5? y5?
h3, y3
h5? y5? 448,3; 458,2
h5? y5?
h5, y5
448,3; 458,2
h5 y5
Hay, 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1;
471,1
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January, 10, 1888

Plate, 1521.

[6 columned table]

Book, 18, E. Page|V.|H.|Type.|No. Remark.|Description of lines on Spectra.

|---|---|---|---|---|

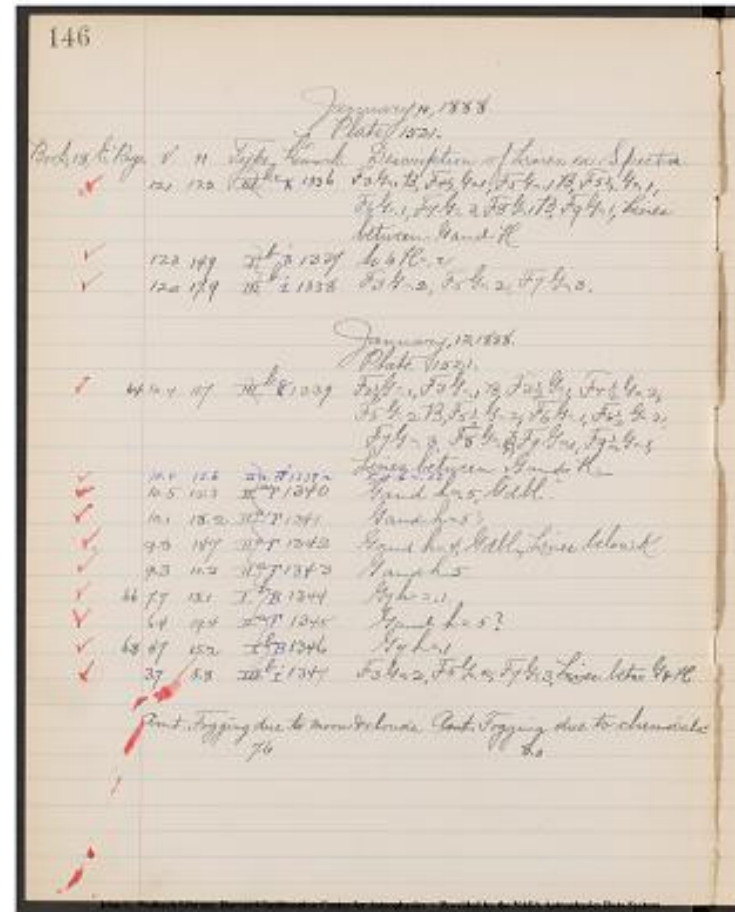
| 12.1 | 13.8 | ~~III[^][b.c]~~ ~~K~~ | 1336 | F3
 G=.1 B, F4 1/2 G=.1, F5 G=.1 B, F5 1/2 G=.1, F6 G=.1, F7 G=.3, F8
 G=.1 B, F9 G=.1, Lines between G and H. |
 | 12.3 | 14.9 | ~~I[^][b]~~ ~~B~~ | 1337 | h6 H=.2 |
 | 12.0 | 17.9 | ~~III[^][b]~~ ~~I~~ | 1338 | F3 G=.2,
 F5 G=.2, F7 G=.3. |

January, 12, 1888.

Plate 1521.

| 64 | 10.4 | 11.7 | ~~III[^][b.c]~~ ~~K~~ | 1339 | F2
 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.2,
 F6 G=.1, F6 1/2 G=.2, F7 G=.3, F8 G=.1 B, F9 G=.1, F9 1/2 G=.1, Lines
 between G and H. |
 | 10.0 | 13.6 | ~~II[^][a]~~ ~~F~~ | 1339[^][a] |
 G+h=.5? |
 | 10.5 | 15.3 | ~~II[^][a]~~ ~~F~~ | 1340 | G and
 h=.5, G all. |
 | 10.1 | 18.2 | ~~II[^][a]~~ ~~F~~ | 1341 | G and
 h=.5? |
 | 9.8 | 14.7 | ~~II[^][a]~~ ~~F~~ | 1342 | G and
 h=.4, G all., Lines below K. |
 | 9.3 | 10.2 | ~~II[^][a]~~ ~~F~~ | 1343 | G and
 h=.5 |
 | 6.6 | 7.7 | 15.1 | ~~I[^][b]~~ ~~B~~ | 1344 | G7
 h=.1 |
 | 6.4 | 19.4 | ~~II[^][a]~~ ~~F~~ | 1345 | G and
 h=.5? |
 | 6.8 | 4.7 | 15.2 | ~~I[^][b]~~ ~~B~~ | 1346 | G7
 h=.1 |
 | 3.7 | 5.8 | ~~III[^][b]~~ ~~I~~ | 1347 | F3 G=.2,
 F5 G=.2, F7 G=.3, Lines betw. G&H. |

Amt. Fogging due to moon & clouds. Amt. Fogging due to chemicals
 7.6 8.0



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147

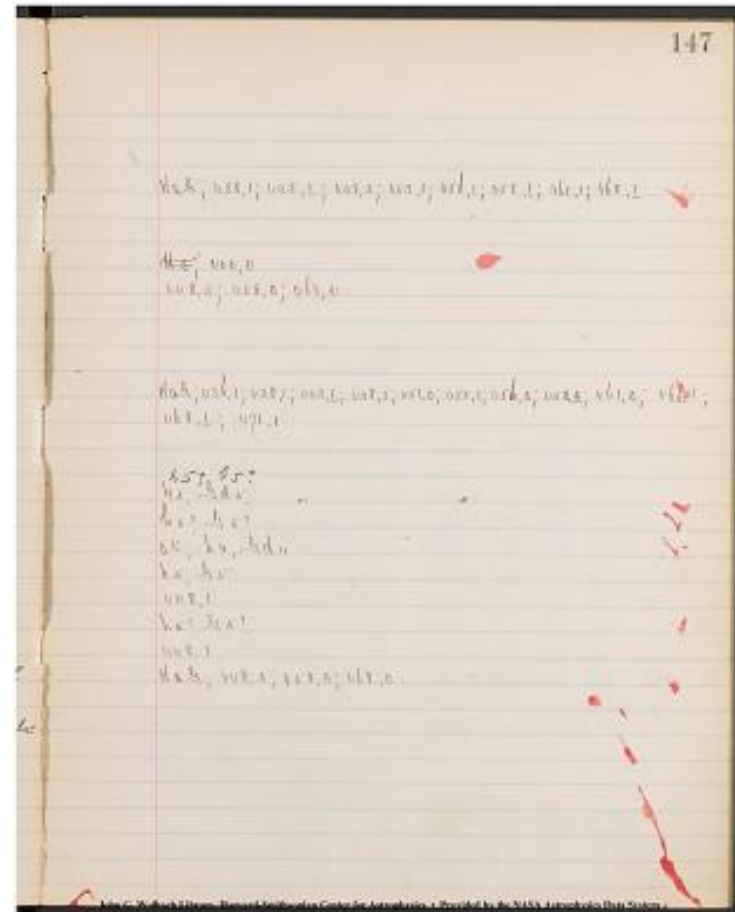
hay; 438,1; 443,1; 448,3; 453,1; 456,1; 458,1; 461,1; 468,1

402,2
448,3; 458,2; 468,2

Hay; 436,1; 438,1; 448,3; 451,2; 453,1; 456,2; 458,2; 461,2; 466,1;
468,1; 471,1

h5? y5?
h5, yd5
h5? y5?
ak; h4, yd4
h5, y5
448,1
h5? y5?
448,1
Hay; 448,3; 458,2; 468,2

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January, 12, 1888.

Plate, 1570

[6 columned table]

Book, 18, E. Page | V. | H. | Type | No. Remark. | Description of lines on Spectra. |

| --- | --- | --- | --- | --- | --- |

| 72 | ~~6.5~~ | 17.7 | I b | 1348 | F7G = .3, H7h = .3, h6H = .3, || 6.3 | 19.9 | ~~II a~~ | F | 1348 | G and h = .5, G dbl. |

Amt. of Fog. due to moon & clouds. 7.1

Amt. of Fog. due to chemicals 7.4

January, 13, 1888.

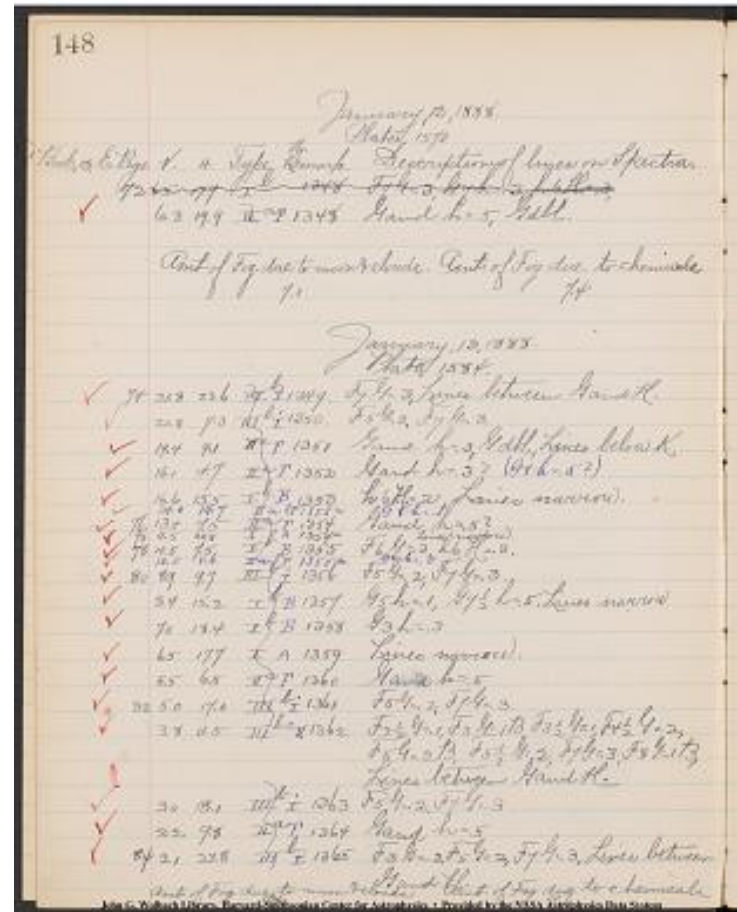
Plate 1584.

[6 columned table]

| 74 | 21.8 | 23.6 | ~~III b~~ | 1349. | F7G = .3, Lines between G and H. || 20.8 | 7.3 | ~~III b~~ | 1350. | F5G = .2, F7G = .3. || 19.4 | 9.1 | ~~II a~~ | F | 1351 | G and h = .3, G dbl., Lines below K. || 16.1 | 14.7 | ~~II a~~ | F | 1352 | G and h = .3 ? (G & h = .5 ?) || 16.6 | 15.5 | ~~I b~~ | B | 1353 | h6H = .2, Lines narrow. || 14.0 | 14.7 | ~~II a ?~~ | F | 1353 a | G & h = .5 || 76 | 13.4 | 7.5 | ~~II a~~ | F | 1354 | G and h = .5 ? || 78 | 11.5 | 10.8 | ~~I~~ | A | 1354 a | Lines narrow || 78 | 10.5 | 7.5 | ~~I b~~ | B | 1355 | F6G = .3, h6H = .3. || 10.5 | 8.6 | ~~II a~~ | F | 1355 a | G & h = .5 || 80 | 8.9 | 9.7 | ~~III b~~ | 1356 | F5G = .2, F7G = .3. || 8.4 | 15.2 | ~~I b~~ | B | 1357 | G5h = .1, G7h = .5. Lines narrow || 7.0 | 18.4 | ~~I b~~ | B | 1358 | G3h = .3 || 6.5 | 17.7 | ~~I~~ | A | 1359 | Lines narrow. || 5.5 | 6.5 | ~~II a~~ | F | 1360 | G and h = .5 || 82 | 5.0 | 17.0 | ~~III b~~ | 1361 | G and h = .5 || 3.8 | 11.5 | ~~III b.c.~~ | K | 1362 | F2½G = .1, F3G = .1B, F3½G = .1, F4½G = .2, F5G = .2B, F5½G = .2, F7G = .3, F8G = .1B, Lines between G and H. || 3.0 | 18.1 | ~~III b.~~ | 1363 | F5G = .2, F7G = .3 || 2.2 | 9.8 | ~~II a~~ | F | 1364 | G and h = .5 || 84 | 2.1 | 23.8 | ~~III b~~ | 1365 | F3G = .2, F5G = .2, F7G = .3, Lines between G and H. |

Amt. of Fog. due to moon & clouds. 7.4

Amt. of Fog. due to chemicals 7.6



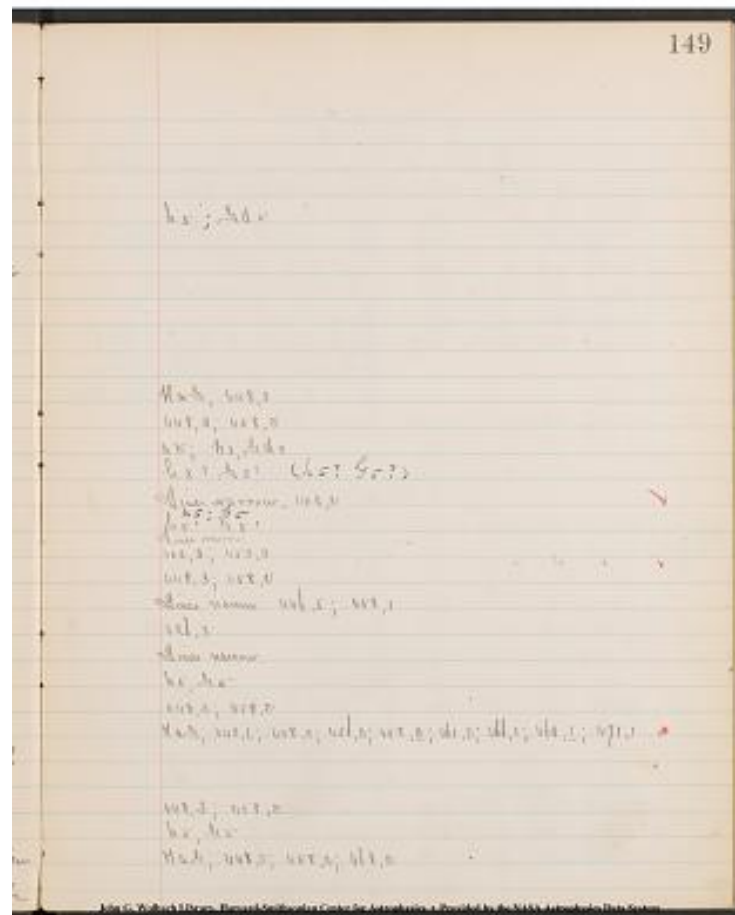
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h5; Yd5

Hay; 448,3
448,3; 458,2
ak; h3, yd3
h3? y3?
Lines narrow, 1102, 2
h5; y5
h5? y5?
Lines narrow
402,3; 453,3
448,3; 458,2
Lines narrow. 446,5; 458,1
426,3
Lines narrow.
h5, y5
448,3; 458,2
Hay; 443, 1 ; 448,3; 456,2; 458,
2 ; 461,2; 466,1; 468, 1
471,1

448,3; 458,2
h5, y5
Hay; 448,3; 458,2; 468,2

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[[6 columned table]]

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I|1366|F3G=.2, F5G=.2, F7G=.3 .

||18.7|15.6|~~[[[strikethrough]]I^a[[[a]]]/[strikethrough]]~~ F|1368|G' and h dbl.

|86|18.8|20.8|[[~~II~~]^a]~~F~~|1369|G and h=.5,

115.8|8.4|~~[[[a]]?[/del]] F 1369a|G & h=.5~~
 88|15.1|1.1|1.1|~~[[[a]]?[/del]] F 1370|E3G=.2~~

F8½G=.2, Lines between G&H.
 U15.2121.61[~~U15.2121.61~~] F143741G and h= 52

||14 7|12 7|[[[trikethrough]]|U|[[b o]]]|[[[trikethrough]] K|1232|E31/C= 1

F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2 B, F5½G=.2, F6G=.1, F7G=.3.
F8G= 1B, F9G= 1. Lines between G&H

||14.1|23.2|[[strike through]]|F|1375|G and H=5
(G&h= 5)

[[13.4] 1.7 [[/[striketrough]]] - [[a]]? [[/[striketrough]]] F? | 13/3a|G&I=-3]

January 14, 1888

[[6 columned table]]

$$|12.6|10.9|[\text{strikethrough}]|^{\wedge}[\text{b}]|[\text{strikethrough}] \text{ G}|1375|\text{F8G}=3,$$

||12.6|11.0|~~[[b]]~~||1376|F7G=.3|

 $(F2\frac{1}{2}G=.2, F7G=.3)|$

Lines below K. |

11.1|13.2|~~[[a]]~~ F|1380|G and h=.3|

[92.10.6|8.3|~~[[[b]]|~~1381~~]]~~ F5 G=.2, F7

$$110.4 \text{ } 8.5 \text{ } \left[\frac{\text{b.c.}}{\text{K}} \right] \text{ } 1382 \text{ } F2\frac{1}{2}G=.1, F3G=1B, F3\frac{1}{2}G=1, F4\frac{1}{2}G=3, F5G=3B, F5\frac{1}{2}G=1, F6G=1, F7G=3, F$$

G=.1B, F9 G=.1, Lines between G&H,
 U10 0113 81[[~~U1A~~]]~~E11382~~/C and b= 3 1

Line below K.
 U10 3115 0[[~~U10~~][a]]~~U10~~ F11384IG and b= 3

[[9.6]19.0][~~]]~~^[[a b c]]/~~]]~~ G1385|Peculiar

Spectrum, G and n=3, 1 5G=0.2B, 1 6G=0.1, 1 7G=0.5, 1 8 1/2G=0.2, Other lines

L.L. COWIE, J.H. LEE, H. LOHMEIJER, G. AUSTIN

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151

448,3; 458,2; 468,2

448,3

ak, hd5, yd5

h5, yd5

h4; y5

Hay; 441,2; 448,3

h5? y5? (h5? y5?)

Hay; 438,1; 443,1; 448,3; 453,1; 456,2; 458,2; 461,2; 466,1; 463,1;
471,1

h5; y5 (h5; y5)

h5; y5

448,3

421,3; 443,3

448,3

448,2 (448,3; 471,2)

ak; h5, y5

h2, y2

h3, y3

h5; y5

Hay; 448,3; 458,2

Hay; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1;
471,1

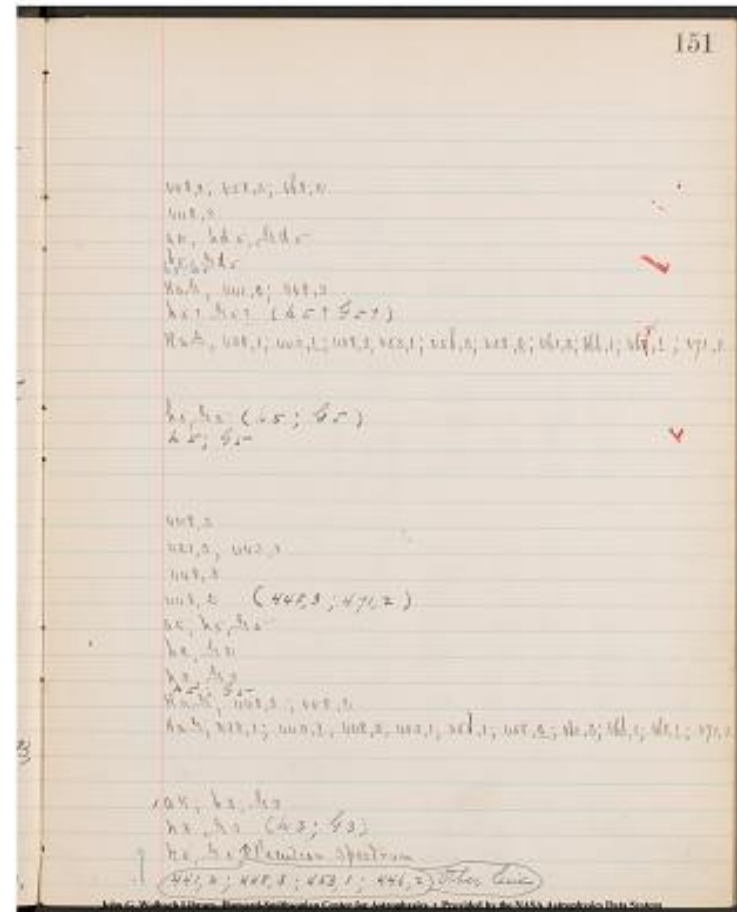
'ak; h3; y3

h3, y3 (h3; y3)

h5; y5, 441,2; 448,3; 453,1; 446,2 then lines Peculiar Spectrum

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January, 14, 1888

Plate 1576

[6 columned table]

| Book 18 E Pages | V. | H. | Type. | No. Remarks | Description of lines
on Spectra |

|---|---|---|---|---|

| 91.1|20.3|II^a[[a]]? P?|1385a|G7h=.5 (G&h=.5)|| 92|9.5|23.8|III^{b.c}. K|1386|F3G=.B, F3½G=.1, F4½G=.2, F5G=.B,
F5½G=.1, F7G=.3, F8G=.1, Lines between G and H.| 94|7.7|9.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|B|1387|h6H=.2.|| 5.6|10.4|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1388|G and h =.5|| 5.6|17.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|I|1389|F7G=.3|

Amt. of Fog. due to moon & clouds. 7.4

Amt. of Fog due to chemicals. 7.8

Plate 1564

[6 columned table]

| 98|22.5|11.1|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1390|G and h=.5.|| 22.1|22.7|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1391|G and h=.5|| 21.0|7.8|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1392|G and h=.5|| 21.1|13.6|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|K|1393|F3G=.1B,
F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.2, F7G=.3, F8G=.1B, Lines
betw. G and H, Lines below K.| 20.1|15.9|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1394|G and h=.5|| 20.5|21.4|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1395|G and h=.5|| 19.0|10.0|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|I|1396|F7G=.3|| 100|19.8|19.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1397|G and h
=.5|| 18.9|6.3|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1398|G and h=.5?|| 18.1|17.9|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]?F?|1398a|G & h=.5|| 17.0|14.8|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1399|G and h=.5

(G&h=.5)|

| 17.5|20.2|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|A|1400|Lines narrow|| 102|16.4|13.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1401|G and h =
.5|| 16.8|14.8|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1402|G and h=.5|| 16.8|20.1|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1403|G and h=.5|| 15.2|13.1|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1404|G and h=.5|| 15.3|20.9|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1405|G and h=.5?|| 104|14.3|15.2|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1406|G and h =
.5|| 13.8|7.4|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1407|G and h=.5|John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics.
Provided by the NASA Astrophysics Data Systems

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January, 14, 1888.
Plate 1576

Book 18 E Pages | V. | H. | Type. | No. Remarks | Description of lines on Spectra

91.1|20.3|II^a[[a]]? P?|1385a|G7h=.5 (G&h=.5)|

92|9.5|23.8|III^{b.c}. K|1386|F3G=.B, F3½G=.1, F4½G=.2, F5G=.B,
F5½G=.1, F7G=.3, F8G=.1, Lines between G and H.

94|7.7|9.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|B|1387|h6H=.2.|

5.6|10.4|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1388|G and h =.5|

5.6|17.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|I|1389|F7G=.3|

Amt. of Fog. due to moon & clouds. 7.4

Amt. of Fog due to chemicals. 7.8

Plate 1564

98|22.5|11.1|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1390|G and h=.5.|

22.1|22.7|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1391|G and h=.5|

21.0|7.8|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1392|G and h=.5|

21.1|13.6|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|K|1393|F3G=.1B,
F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.2, F7G=.3, F8G=.1B, Lines
betw. G and H, Lines below K.

20.1|15.9|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1394|G and h=.5|

20.5|21.4|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1395|G and h=.5|

19.0|10.0|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|I|1396|F7G=.3|

100|19.8|19.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1397|G and h
=.5|

18.9|6.3|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1398|G and h=.5?|

18.1|17.9|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]?F?|1398a|G & h=.5|

17.0|14.8|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1399|G and h=.5

(G&h=.5)|

17.5|20.2|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|A|1400|Lines narrow|

102|16.4|13.5|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1401|G and h =
.5|

16.8|14.8|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1402|G and h=.5|

16.8|20.1|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1403|G and h=.5|

15.2|13.1|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1404|G and h=.5|

15.3|20.9|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1405|G and h=.5?|

104|14.3|15.2|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1406|G and h =
.5|

13.8|7.4|[[~~II^a[[a]]~~][[~~III^b[[b]]~~]]|F|1407|G and h=.5|

153

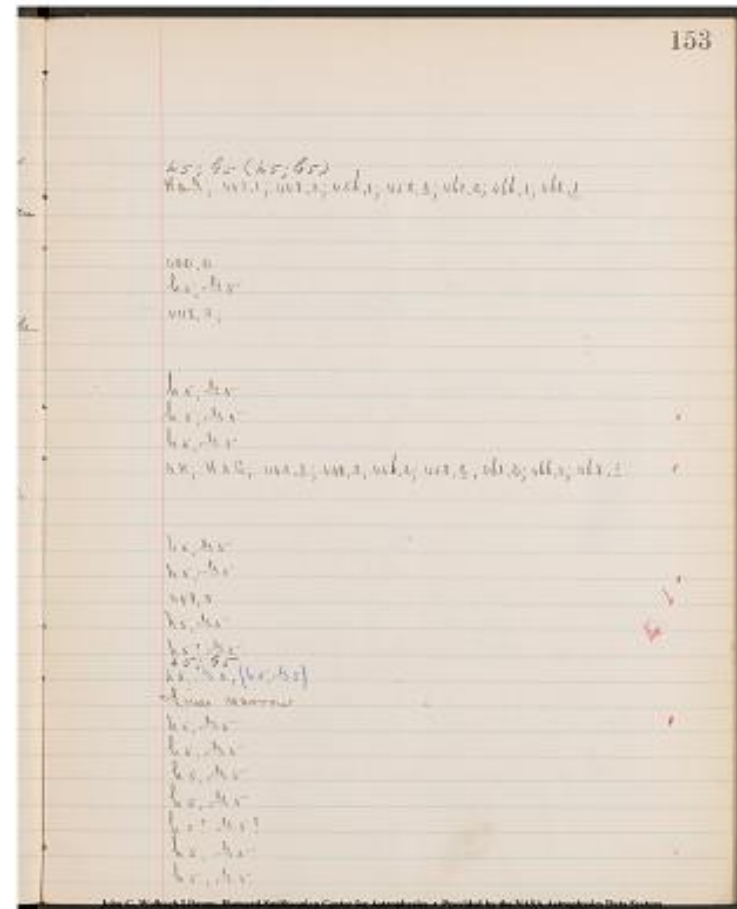
h5; y5 (h5; y5)
Hay; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

402,2
h5, y5
448,3

h5, y5
h5, y5
h5, y5
ak, HaG; 443,1; 448,3; 456,2; 458,2; 461,2; 466,1; 468,1

h5, y5
h5, y5
448,3
h5, y5
h5? y5
h5; y5
h5, y5, (h5, y5)
Lines narrow
h5, y5
h5, y5
h5, y5
h5, y5
h5? y5?
h5, y5
h5, y5

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January, 14, 1888

Plate, 1564

[6 columned table]

Book, 18, E. Page | V. | H. | Type. | No. Remark. | Description of lines on Spectra.

|---|---|---|---|---|

| 104 | 12.3 | 12.4 | ~~II^a[a]~~ ~~[[/del]~~ F | 1408 | G and h=.2 || 106 | 12.0 | 19.3 | ~~II^a[a]~~ ~~[[/del]~~ F | 1409 | G and h=.3 || 10.7 | 5.4 | ~~II^a[a]~~ ~~[[/del]~~ F | 1410 | G and h=.5 || 10.9 | 10.2 | ~~II^a[a]~~ ~~[[/del]~~ F | 1411 | G and h=.2 || 10.2 | 17.2 | ~~III^a[b.c]~~ ~~[[/del]~~ K | 1412 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.2, F6 G=.1, F7 G=.3, F8 G=.1 B, F9 G=.1 B, Lines between G and H. || 108 | 8.0 | 16.5 | ~~III^a[b.c]~~ ~~[[/del]~~ K | 1413 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.2, F7 G=.3, F8 G=.1 B, Lines between G and H. || 8.6 | 19.8 | ~~II^a[a]~~ ~~[[/del]~~ F | 1414 | G and h=.5 || 8.6 | 22.1 | ~~II^a[a]~~ ~~[[/del]~~ F | 1415 | G and h=.3, Lines below K. |

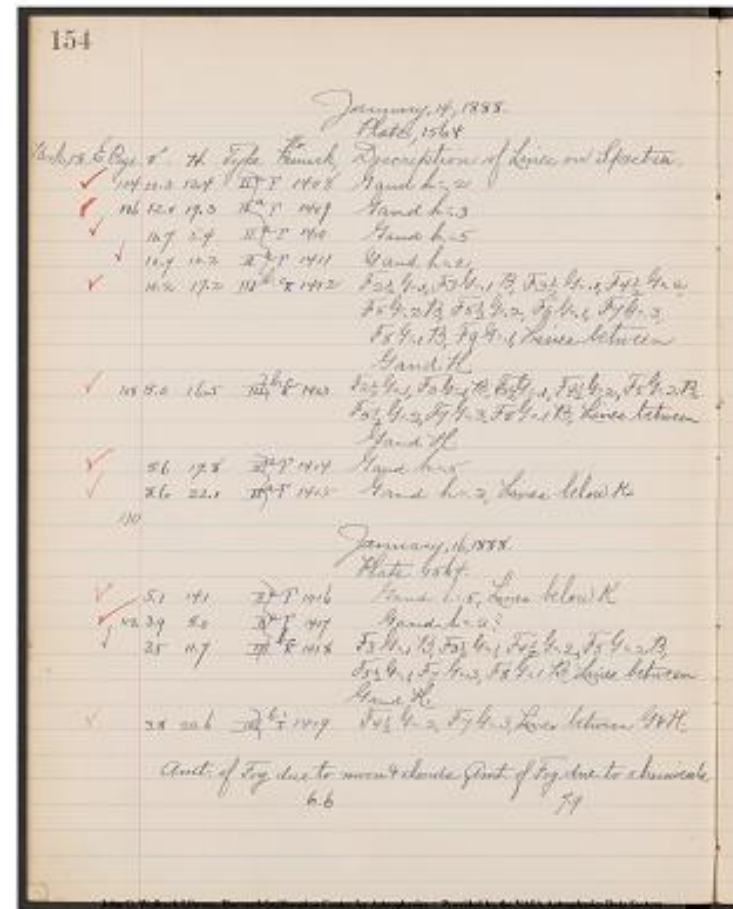
110

January, 16, 1888.

Plate 1564.

| 5.1 | 14.1 | ~~II^a[a]~~ ~~[[/del]~~ F | 1416 | G and h=.5, Lines below K || 112 | 3.9 | 8.0 | ~~II^a[a]~~ ~~[[/del]~~ F | 1417 | G and h=.3? || 3.5 | 11.7 | ~~III^a[b.c]~~ ~~[[/del]~~ K | 1418 | F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H. || 3.8 | 22.6 | ~~III^a[b.c]~~ ~~[[/del]~~ I | 1419 | F4 1/2 G=.2, F7 G=.3, Lines between G&H. |

Amt. of Fog due to moon & clouds. Amt. of Fog. due to chemicals
 6.6 7.9



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h2, y2

h3, y3

h5, y3

h2, y2

HaG, 438,1; 443,1; 448,3; 453,1; 456,2; 458,2; 466,1; 468,1; 471,1

HaG; 443,1; 448,3; 456,2; 458,2; 461,2; 466,1; 468,1; 471,1

h5; y5

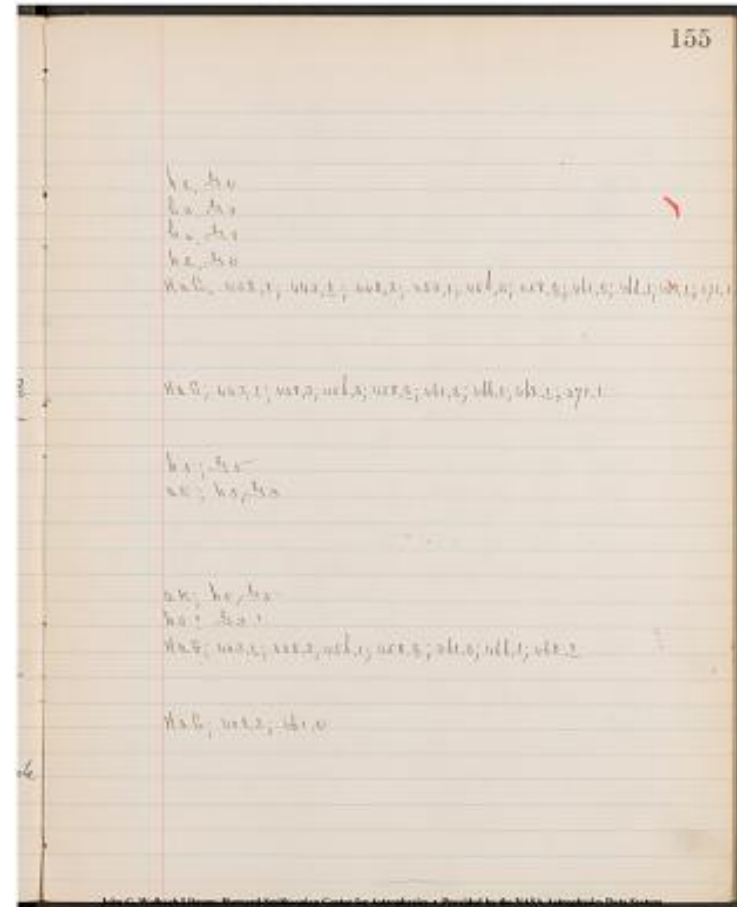
ak; h3, y3

ak; h5, y3

h3? y3?

HaG; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

HaG; 448,3; 461,2



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Dark. plate.

Very hard to measure January, 16, 1888.

Plate, 1395

[6 columned table]

Book, 18, E. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

6	19.7	10.7	[[II^a]]	[[F]]	1420	G and h=5
18.4	20.7	[[III^a]]	[[I]]	1421	F5 G=2, F7 G=3, Lines between G&H.	
18.5	22.8	[[II^a]]	[[F]]	1422	G and h all?=3	
17.2	13.1	[[II^a]]	[[F]]	1423	G and h=3	
17.4	19.6	[[II^a]]	[[F]]	1424	G and h all.=4, Lines below K.	
18	16.5	15.5	[[II^a]]	[[F]]	1425	G and h=5?
15.2	10.5	[[II^a]]	[[F]]	1426	G and h, all.=5? Lines below K	
15.4	14.5	[[II^a]]	[[F]]	1427	G and h=3, G all., Lines below K.	
14.5	17.8	[[III^a]]	[[I]]	1428	F7 G=3	
12.2	6.6	[[III^a]]	[[I]]	1429	F5 G=2, F7 G=3	
12.3	13.9	[[II^a]]	[[F]]	1430	G and h=5	
11.2	6.9	[[II^a]]	[[F]]	1431	G and h=5	
11.3	15.8	[[II^a]]	[[F]]	1432	G and h=5, Lines below K.	
10.0	12.0	[[II^a]]	[[F]]	1433	G and h=3, G all., Lines below K	
10	10.8	17.8	[[II^a]]	[[F]]	1434	G and h=3, Lines below K.
10.3	19.1	[[III^a]]	[[I.c]]	1435	F5 G=2 B, F7 G=2, Lines between G and H, Lines below K.	
10.9	22.0	[[II^a]]	[[F]]	1436	G and h=2	
6.8	13.0	[[II^a]]	[[F]]	1437	G and h=5?	
6.2	16.0	[[II^a]]	[[F]]	1438	G and h=5?	
12	3.5	22.2	[[II^a]]	[[F]]	1439	G and h=5?

Amt. of Fog. due to moon & clouds. Amt. of Fog. due to chemicals
5.3 7.0

156

Dark plate

Very hard to measure January 16, 1888.
Plate 1395

Dark	Exp.	1. 21	Type	Time	Description of lines on Spectrum
✓	19.7	10.7	II ^a F	1420	Hand h. 2.5
✓	18.4	20.7	III ^a I	1421	h. 1.2, h. 1.3, space between G & H
✓	18.5	22.8	II ^a T	1422	Hand h. 1.1, 1.3
✓	17.2	13.1	II ^a T	1423	Hand h. 3
✓	17.4	19.6	II ^a F	1424	h. 2, h. 3, h. 4 - 4 lower below K
✓	16.5	15.5	II ^a T	1425	Hand h. 3.5
✓	15.2	10.5	II ^a T	1426	Hand h. 1, 1.1, 1.2, 1.3, space below K
✓	14.4	14.5	II ^a T	1427	Hand h. 3, 1.1, 1.2, space below K
✓	14.5	17.8	III ^a I	1428	h. 4.5
✓	12.2	6.6	III ^a I	1429	h. 1.2, h. 1.3, 1.4, 1.5
✓	12.3	13.9	II ^a F	1430	Hand h. 5
✓	11.2	6.9	II ^a F	1431	Hand h. 5
✓	11.3	15.8	II ^a T	1432	Hand h. 5, lower below K
✓	10.0	12.0	II ^a T	1433	Hand h. 2, 1.1, lower below K
✓	10	10.8	II ^a T	1434	Hand h. 2, lower below K
✓	10.3	19.1	III ^a I.c	1435	h. 1.2, h. 1.3, 1.4, space between G & H
✓	10.9	22.0	II ^a T	1436	Hand h. 2
✓	6.8	13.0	II ^a F	1437	Hand h. 5.5
✓	6.2	16.0	II ^a T	1438	Hand h. 5.5
✓	12.5	22.2	II ^a T	1439	Hand h. 5.5

Amount of fog due to moon & clouds. Amount of fog due to chemicals
5.3 7.0

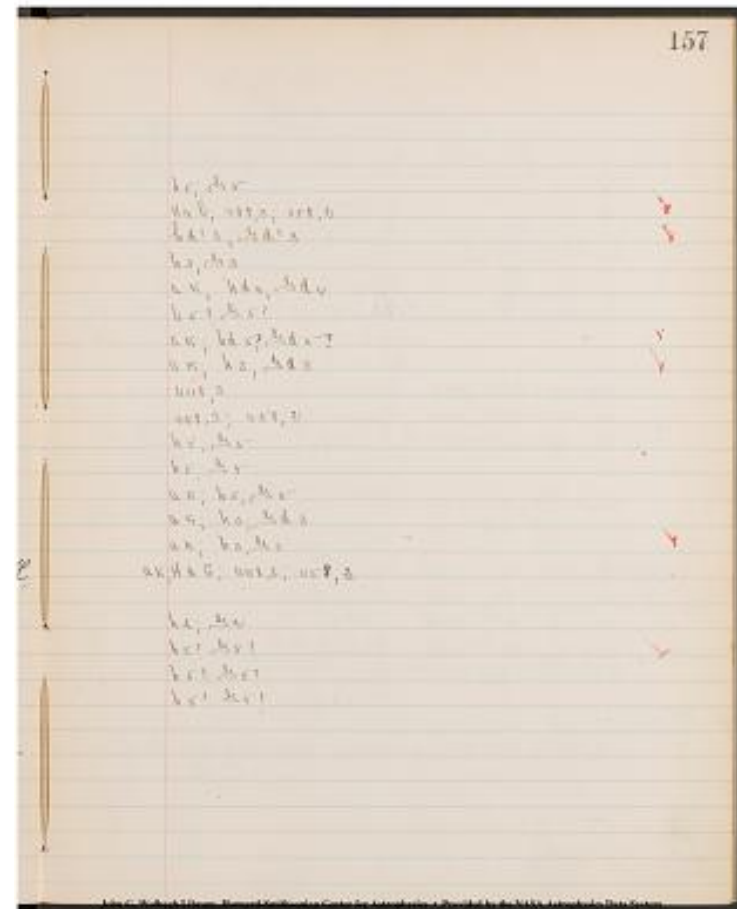
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h5; y5
 HaG; 448,3; 458,2
 hd?3; yd?3
 h3, y3
 ak, hd4, yd4
 h5? y5?
 ak; hd5?, yd5?
 ak; h3, yd3
 448,3
 448,3; 458,2
 h5, y5
 h5, y5
 ak; h5, y5
 ak; h3; yd3
 ak; h3, y3
 ak; MaG; 448,3; 458,2

h2; y2
 h5? y5?
 h5? y5?
 h5? y5?

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Plate 175.

January, 17, 1888.

Plate, 1395

[6 columned table]

Book, 4, F. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

| 34 | 5.4 | 11.2 | ~~II^a~~ | ~~F~~ | 1440 | G and h=.5, Lines below K. |

Amt. Fog. due to moon & clouds. Amt. of Fog due to chemicals

7.0 7.7

-Plate 170-

| 11.1 | 10.9 | ~~II^a~~ | ~~F~~ | 1441 | G and h=.5 |

Amt. Fog. due to moon & clouds. Amt. of Fog due to chemicals

7.7 7.8

Plate 177

| 140 | 15.9 | 12.9 | ~~III^a~~ | ~~I.c.~~ | ~~K~~ | 1442 | F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H |

| 142 | 15.4 | 23.1 | ~~II^a~~ | ~~F~~ | 1443 | G and h=.5 |

| 14.2 | 10.3 | ~~II^a~~ | ~~F~~ | 1444 | G and h=.5 |

| 144 | 4.5 | 13.9 | ~~III^a~~ | ~~I.c.~~ | ~~K~~ | 1445 | F3 G=.2 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.3 B, F5 1/2 G=.1, F7 G=.3, F8 G=.1 B, Lines between G&H. 1 Line below K. |

Amt. Fog. due to moon & clouds. Amt. of Fog due to chemicals

6.5 7.0

Plate 905

| 180 | 13.9 | 14.0 | ~~II^a~~ | ~~F~~ | 1446 | G and h=.2 |

| 182 | 5.8 | 12.2 | ~~II^a~~ | ~~F~~ | 1447 | G and h=.3 |

| 4.6 | 15.4 | ~~III^a~~ | ~~I~~ | 1448 | F7 G=.3 |

| 4.5 | 18.4 | ~~III^a~~ | ~~I~~ | 1449 | F4 1/2 G=.2, F6 G=.1, F7 G=.3. |

Amt. Fog. due to moon & clouds. Amt. of Fog due to chemicals

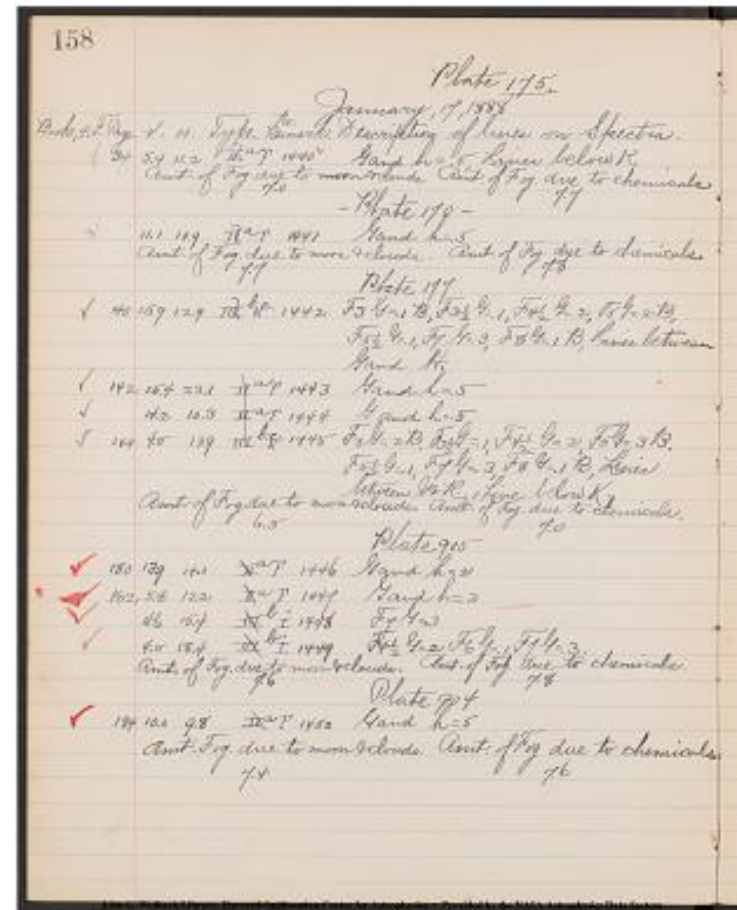
7.6 7.8

Plate 904

| 184 | 10.0 | 9.8 | ~~II^a~~ | ~~F~~ | 1450 | G and h=.5 |

Amt. Fog. due to moon & clouds. Amt. of Fog due to chemicals

7.4 7.6



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159

ak; h5; y5

h5; y5

HaG; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

h5, y5

h5, y5

'ak; HaG; 443,1; 448,3; 456,1; 458,3; 461,2; 466,1; 468,2

h2; y2

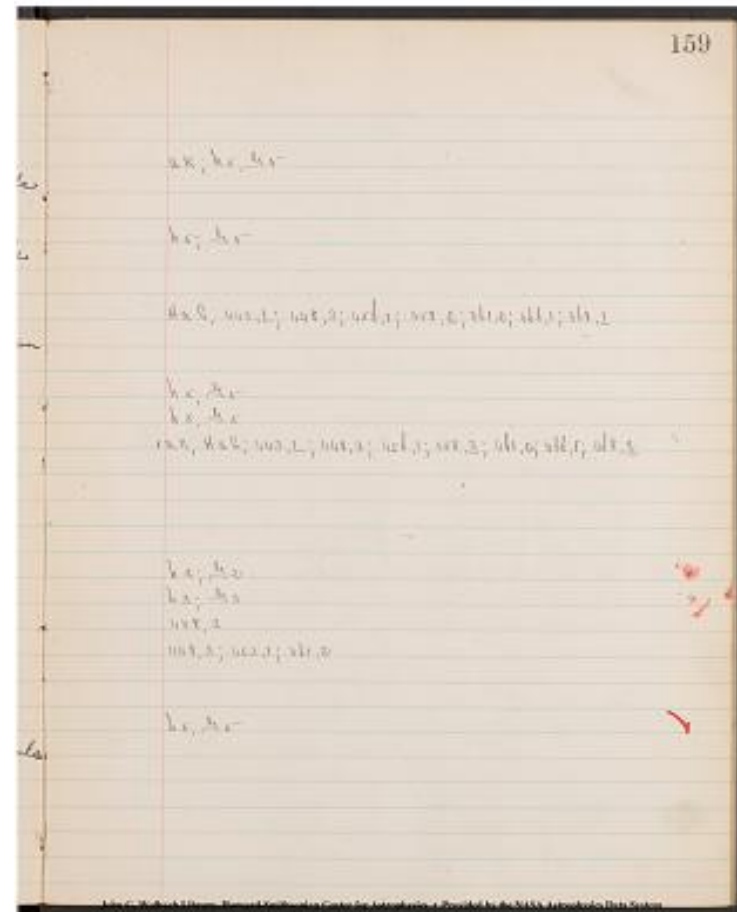
h3; y3

448,3

448,3; 453,1; 461,2

h5, y5

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January, 18, 1888.

Plate, 893.

[[6 columned table]]

Book 6, G. Page V. H. | Type. | No. Remark. | Description of lines on Spectra.

|---|---|---|---|

| 42 | 14.3 | 14.0 | ~~II^a~~ | ~~F~~ | 1451 | G and h=.5 || 12.2 | 11.4 | ~~II^a~~ | ~~F~~ | 1452 | G and h=.5 || 6.0 | 11.6 | ~~I^a~~ | ~~B~~ | 1453 | h5 H=.3 || 6.1 | 12.2 | ~~II^a~~ | ~~F~~ | 1454 | G and h=.3, G all., 2 Lines below K. || 44 | 5.1 | 7.0 | ~~II^a~~ | ~~F~~ | 1455 | G and h=.5 || 4.7 | 18.4 | ~~III^i~~ | ~~I~~ | 1456 | F4 1/2 G=.2, F5 1/2 G=.2, F7 G=.3, Lines between G and H. || 4.0 | 14.9 | ~~I^a~~ | ~~B~~ | 1457 | h6 H=.3 |

Book 1, G. Page Plate 176

| 9 | 18.2 | 17.0 | ~~II^a~~ | ~~F~~ | 1458 | G and h all.=.3, 2 Lines below K. || 13.8 | 22.8 | ~~II^a~~ | ~~F~~ | 1459 | G and h all.=.3, Lines below K. || 10 | 11.3 | 12.2 | ~~III^i~~ | ~~I~~ | 1460 | F7 G=.2 || 11.1 | 14.2 | ~~II^a~~ | ~~F~~ | 1461 | G and h=.5 || 7.1 | 8.5 | ~~II^a~~ | ~~F~~ | 1462 | G and h=.5 (G and h=.3) || 11 | 5.8 | 15.4 | ~~III^i~~ | ~~K~~ | 1463 | F3 G=.1 B, F4 1/2 G=.2, F5 G=.1 B, F7 G=.3, F8 G=.1, Lines between G&H. || 5.5 | 12.8 | ~~I~~ | ~~F2 1/2~~ | 1464 | F2 1/2 G=.1, F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.2 B, F5 1/2 G=.1, F6 G=.1, F7 G=.3, Lines between G&H. || 4.0 | 9.8 | ~~III^i~~ | ~~I~~ | 1465 | F7 G=.3 |

Amt. Fog. due to moon & cloude Amt. Fog due to chemicals

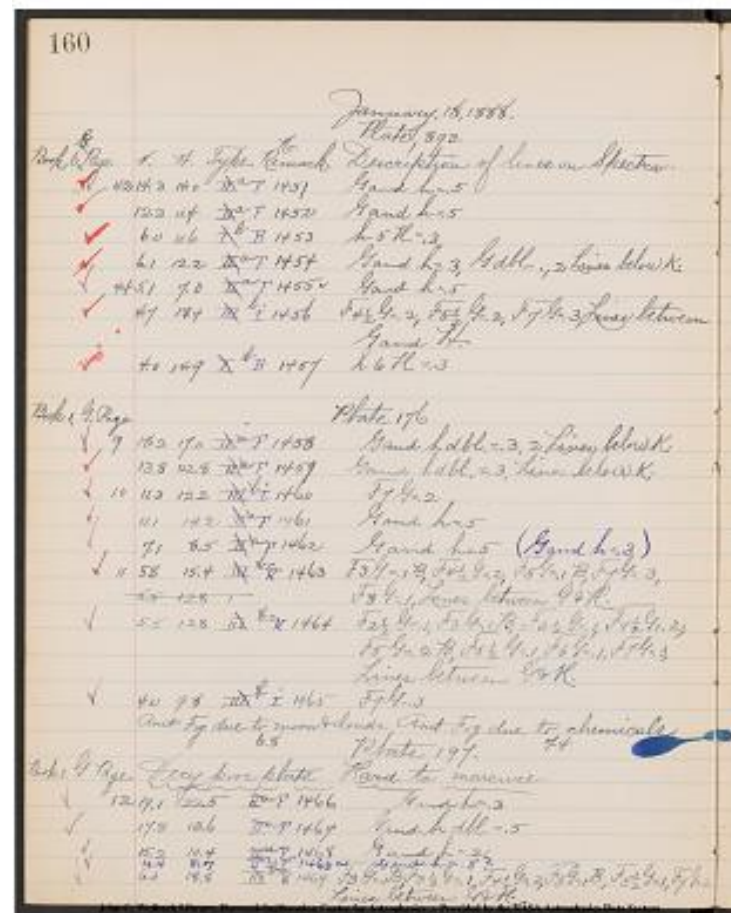
6.8 7.4

Plate 197.

Book 1, G. Page. Very poor plate Hard to measure

| 12 | 19.1 | 22.5 | ~~II^a~~ | ~~F~~ | 1466 | G and h=.3 || 17.8 | 13.6 | ~~II^a~~ | ~~F~~ | 1467 | G and h all=.5 || 15.2 | 10.4 | ~~II^a~~ | ~~F~~ | 1468 | G and h=.2 || 16.4 | 8.7 | ~~II^a~~ | ~~F~~ | 1468^a | G and h=.5? || 6.0 | 18.8 | ~~III^i~~ | ~~K~~ | 1469 | F3 G=.1 B, F3 1/2 G=.1, F4 1/2 G=.2, F5 G=.1 B, F5 1/2 G=.1, F7 G=.3

Lines between G&H. |



161

h5, y5
h5, y5
403,3
2ak; h3; yd3
h5, y5
Hay; 448,3; 456,2; 461,2

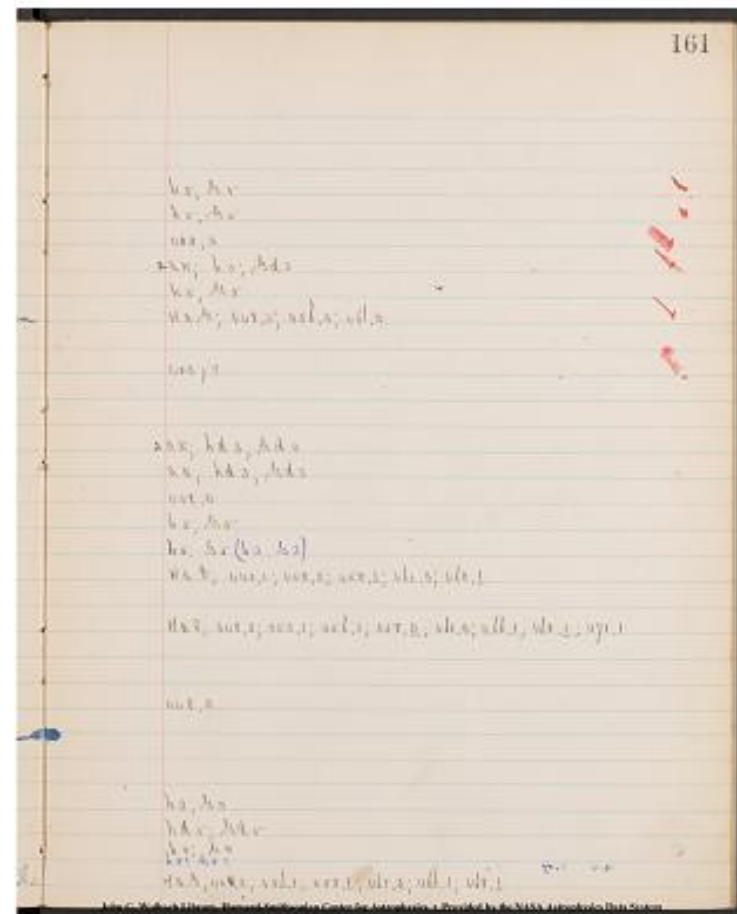
402,3

2ak; hd3; yd3
ak; hd3; yd3
448,2
h5, y5
h5, y5 (h3, y3)
HaG: 443,1; 448,3; 456,1; 461,2; 468,1

HaG: 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

448,3

h3, y3
hd5; yd5
h2; y2
h5? y5?
Hay; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1
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January, 18, 1888.

Plate 197.

[[6 columned table]]

Book 1, G. Page. | V. | H. | Type | No. Remark. | Description of lines on Spectra. |

| --- | --- | --- | --- | --- | --- |

| 12 | 4.2 | 7.2 | ~~III b.c.~~ | ~~K~~ | 1470. | F3G = .2B, F5G = .3B, F7G = .3, Lines between G and H. 2 Lines below K. |

Amt. of Fog. due to moon & clouds. 6.2

Amt of fog due to chemicals 6.5

January, 19, 1888.

Book 6, G. Page. Plate 863.

[[6 columned table]]

| 16 | 6.0 | 17.8 | ~~II a~~ | ~~F~~ | 1471 | G and h = .2 |

Amt of Fog due to moon & clouds. 7.5

Amt of Fog. due to chemicals. 7.8

Plate 157.

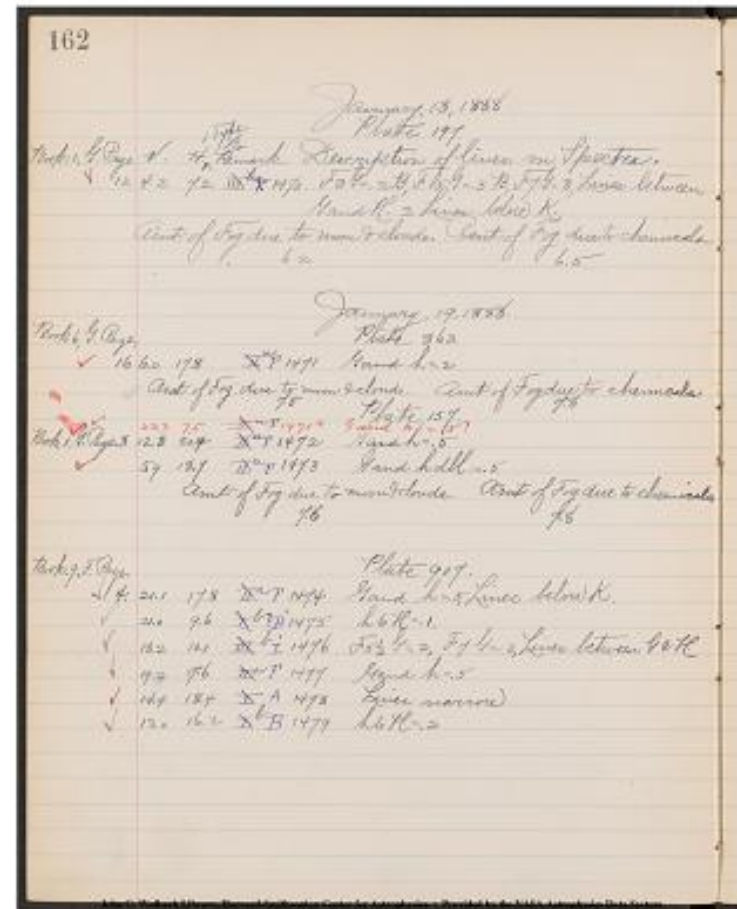
[[6 columned table]]

| 22.3 | 7.5 | ~~II a~~ | ~~F~~ | 1471a | G and h = .5 ? || Book. 1, G. Page. 8 | 12.8 | 20.4 | ~~II a~~ | ~~F~~ | 1472 | G and h = .5 || 5.9 | 18.7 | ~~II a~~ | ~~F~~ | 1473 | G and h dbl = .5 |

Amt of Fog. due to moon & clouds. 7.6

Amt of Fog. due to chemicals. 7.8

Book. 9, F. Page. Plate 907.

| 4. | 21.1 | 17.8 | ~~II a~~ | ~~F~~ | 1474 | G and h = .5, Lines below K. || 21.0 | 9.6 | ~~I b ?~~ | ~~B ?~~ | 1475 | h6H = .1. || 18.2 | 10.1 | ~~III b~~ | ~~F~~ | 1476 | F5½G = .2, F7G = .3, Lines between G & H. || 19.2 | 17.6 | ~~II a~~ | ~~F~~ | 1477 | G and h = .5 || 14.4 | 18.4 | ~~I~~ | ~~A~~ | 1478 | Lines narrow || 13.0 | 16.2 | ~~I b~~ | ~~B~~ | 1479 | h6H = .2 |

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163

ak; Hay; 448,3; 458,3; 468,2

h2; y2

h5? y5?

h5; y5

hd5; yd5

ak; h5; y5

402,1

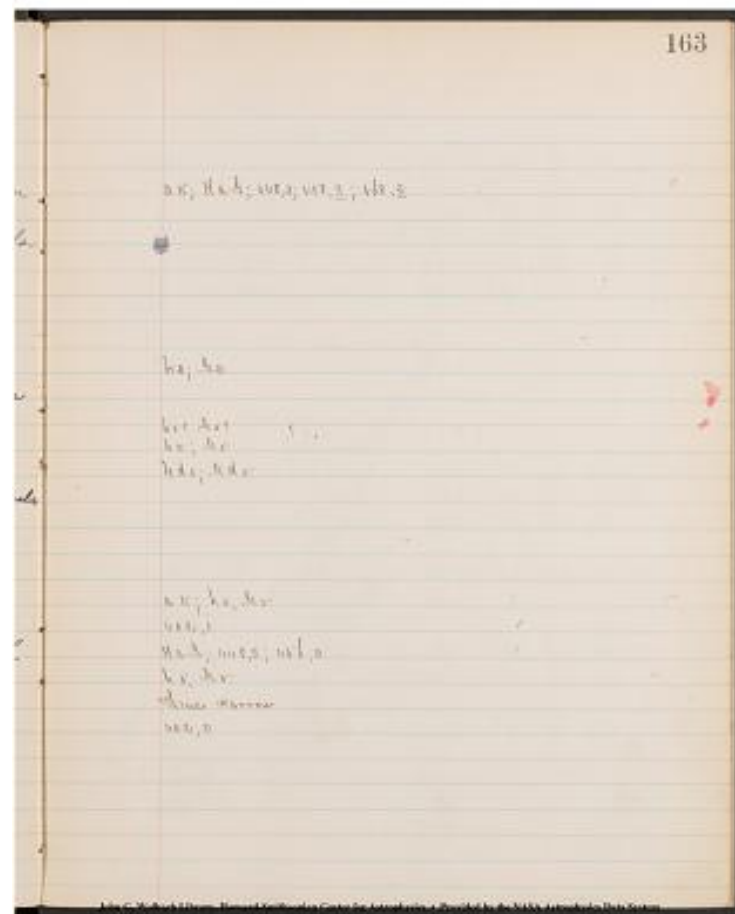
Hay; 448,3; 456,2

h5; y5

Lines narrow

402,2

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165

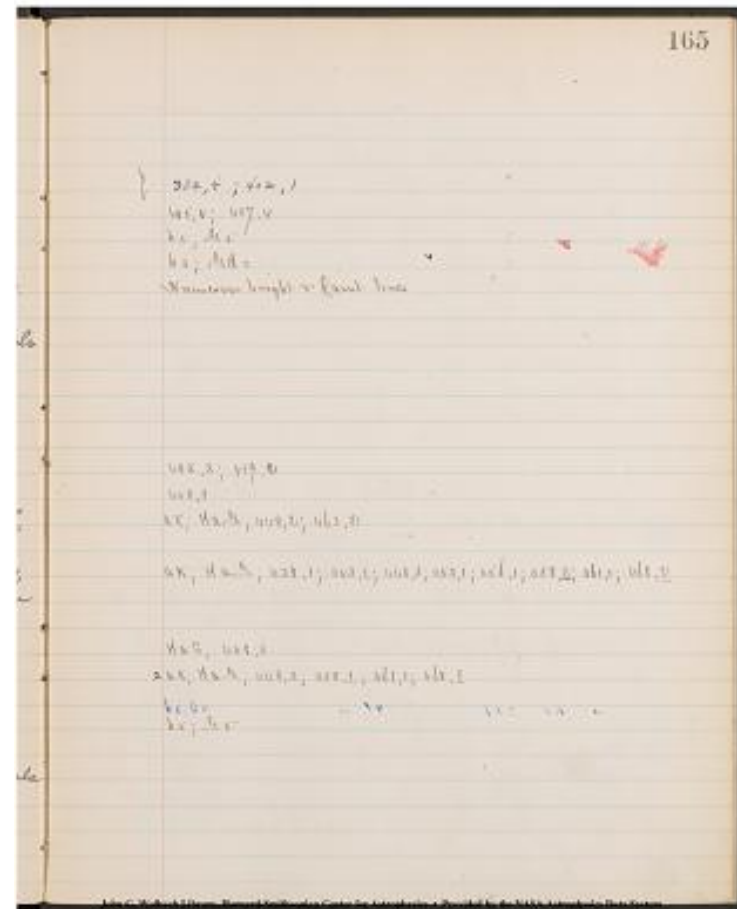
382,4; 402,1
405,4; 417,4
h5; y5
h3; yd3
Numerous bright or faint lines

405,3; 419,2
448,3
ak; Hay; 448,2; 463,2

ak; Hay; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,1; 468,2

HaG; 448,3
2ak; Hay; 448,3; 458,1; 461,1; 468,1
h5; G5
h5; y5

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January, 20, 1888.

Plate, 910

[[6 columned table]]

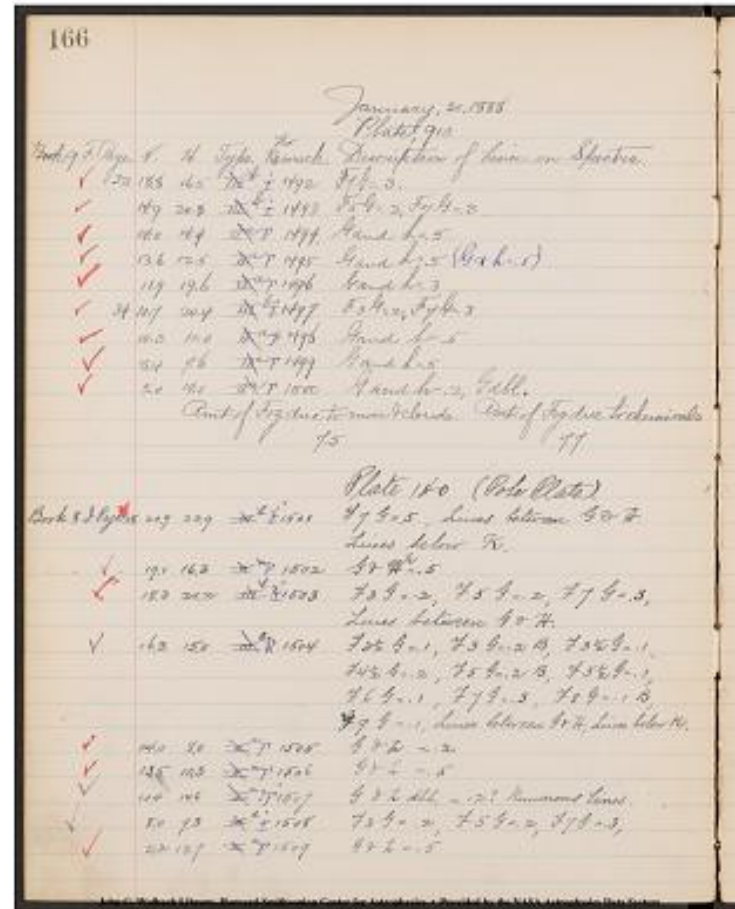
Book 9. F. Page | V. | H. | Type. | No. Remark. | Description of lines on Spectra.

|---|---|---|---|---|

| 32 | 18.8 | 16.5 | ~~III^a~~ | ~~I~~ | 1492 | F7
 G=3. |
 | 14.9 | 20.8 | ~~III^a~~ | ~~I~~ | 1493 | F5 G=2,
 F7 G=3 |
 | 14.0 | 14.4 | ~~II^a~~ | ~~F~~ | 1494 | G and
 h=5 |
 | 13.6 | 12.5 | ~~II^a~~ | ~~F~~ | 1495 | G and
 h=5 (G&h=5) |
 | 11.9 | 19.6 | ~~II^a~~ | ~~F~~ | 1496 | G and
 h=3 |
 | 34 | 10.7 | 20.4 | ~~III^a~~ | ~~I~~ | 1497 | F3
 G=2, F7 G=3 |
 | 10.3 | 10.0 | ~~II^a~~ | ~~F~~ | 1498 | G and
 h=5 |
 | 8.4 | 7.8 | ~~II^a~~ | ~~F~~ | 1499 | G and h=5
 |
 | 5.0 | 14.0 | ~~II^a~~ | ~~F~~ | 1500 | G and
 h=2, G all. |
 Amt. of Fog. due to moon & clouds. 7.5 Amt. of Fog. due to chemicals 7.7

Plate 140 (Pale Plate).

Book 8 l. Page 24. | 20.9 | 22.9 | ~~III^a~~ | ~~I~~ | 1501 | Y7 G=5, Lines between G & H. Lines below K. |
 | 19.1 | 16.3 | ~~II^a~~ | ~~F~~ | 1502 |
 G & ~~H~~ | ~~h=5~~ |
 | 18.3 | 21.2 | ~~III^a~~ | ~~I~~ | 1503 | Y3
 G=2, Y5 G=2, Y7 G=3, Lines between G & H. |
 | 16.3 | 15.0 | ~~III^a~~ | ~~K~~ | 1504 | Y2 1/2
 G=1, Y3 G=2 B, Y3 1/2 G=1, Y4 1/2 G=2, Y5 G=2 B, Y5 1/2 G=1, Y6
 G=1, Y7 G=3, Y8 G=1 B, ~~G~~ | ~~g~~ G=1,
 Lines between G&H, Lines below K. |
 | 14.0 | 8.0 | ~~II^a~~ | ~~F~~ | 1505 | G & h=2 |
 | 13.5 | 10.3 | ~~II^a~~ | ~~F~~ | 1506 | G & h=5
 |
 | 10.4 | 14.6 | ~~II^a~~ | ~~?F~~ | 1507 | G & h
 all.=2? Numerous lines. |
 | 8.0 | 9.3 | ~~III^a~~ | ~~I~~ | 1508 | Y3 G=2, Y5
 G=2, Y7 G=3, |
 | 2.2 | 13.7 | ~~II^a~~ | ~~F~~ | 1509 | G & h=5 |



167

448,3
448,3; 458,2
h5, y5
h5, y5 (h5, y5)
h3; y3
448,3; 468,2
h5, y5
h5; y5
h2; yd2

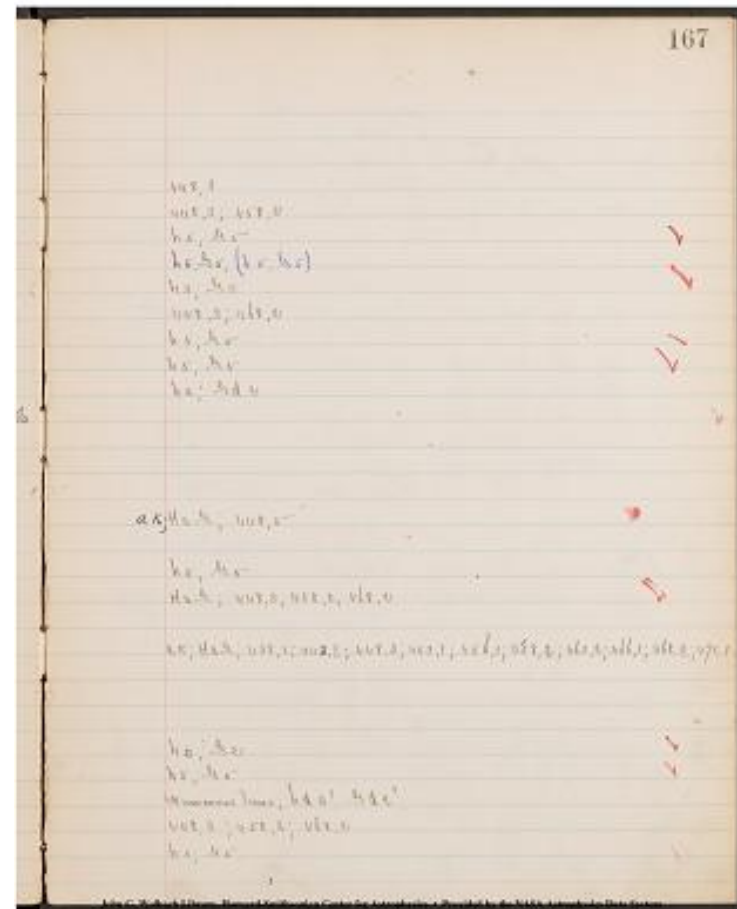
ak; Hay; 448,5

h5; y5
Hay; 448,3 458,2; 468,2

ak; Hay; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,2;
471,1

h2; y2
h5, y5
Numerous lines; hd2? yd2?
448,3; 458,2; 468,2
h5; y5

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January, 21, 1888.

Plate, 960.

[[6 columned table]]

| Book, 9, F, Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

| --- | --- | --- | --- | --- | --- |

| 60 | 21.5 | 17.2 | ~~[[b]]~~ B | 1510 | G6h = .3 || 20.7 | 18.9 | ~~[[a]]~~ F | 1511 | G and h = .5 |

January, 23, 1888

Plate, 960.

[[6 columned table]]

| 14.2 | 14.1 | ~~[[a]]~~ F | 1512 | G and h = .5, Lines below K. || 13.5 | 19.1 | ~~[[a]]~~ ? F? | 1512a | G and h = .5 |

| 62 | 12.5 | 14.7 |

| ~~[[a]]~~ F | 1513 | G and h = .5 (G and h = .2?) || 9.8 | 9.8 | ~~[[a]]~~ F | 1514 | G and h = .5, G dbl., Lines below K. || 8.4 | 10.8 | ~~[[a]]~~ F | 1515 | G and h = .5 || 8.1 | 18.0 | ~~[[a]]~~ F | 1516 | G and h = .5 || 6.5 | 13.3 | ~~[[a]]~~ F | 1517 | G and h = .5 |

Amt. of F due to moon & clouds 6.3

Amt. of Fog due to chemicals 6.4

Plate 974

[[6 columned table]]

| 64 | 14.0 | 13.8 |

| ~~[[a]]~~ F | 1518 | G and h = .5, Lines below K || 10.2 | 9.3 | ~~[[a]]~~ F | 1519 | G and h = .5, G dbl. |

Amt. of Fog due to moon & clouds. 6.6

Amt. of Fog due to chemicals. 6.7

Plate 973.

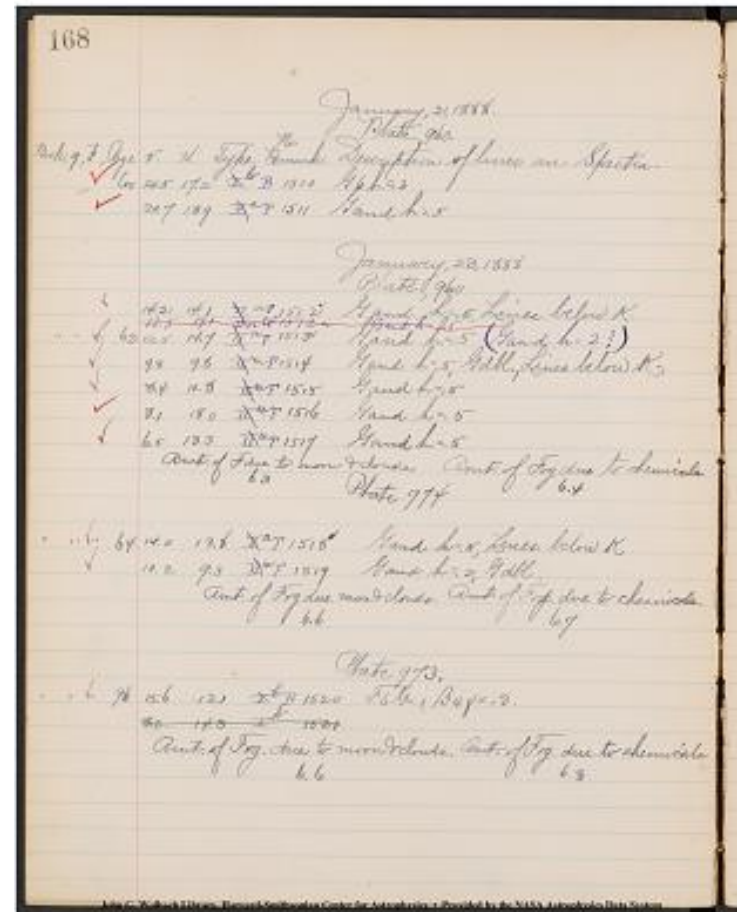
[[6 columned table]]

| 96 | 15.6 | 12.1 |

| ~~[[b]]~~ B | 1520 | F6G=.1, B4 = .3. || 8.0 | 14.3 | ~~[[b]]~~ | 1521 |

Amt. of Fog. due to moon & clouds. 6.6

Amt. of Fog. due to chemicals 6.8



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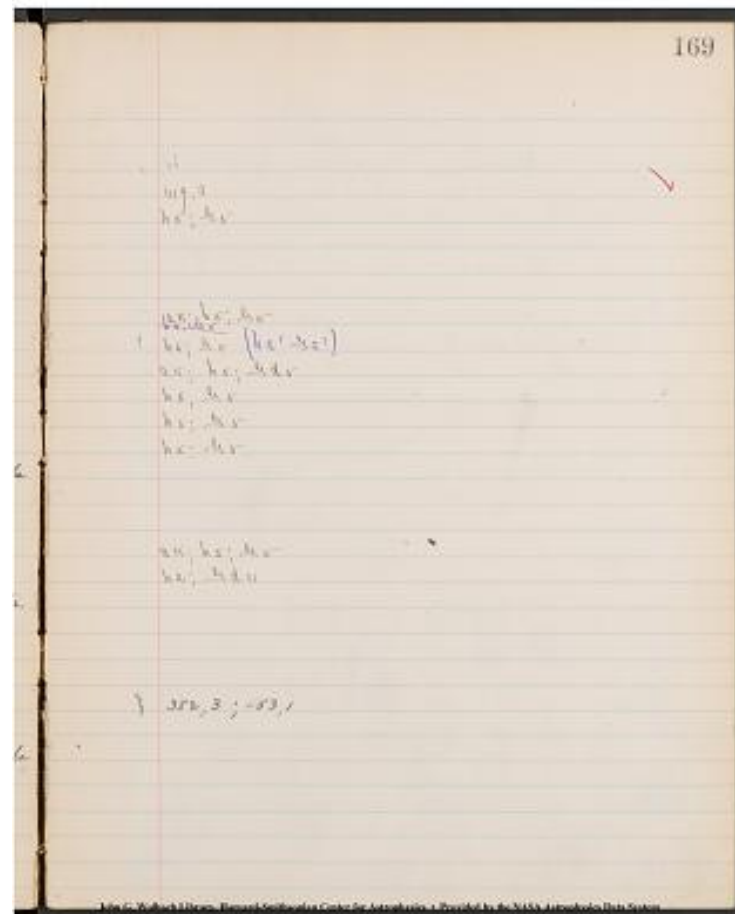
419,3
h5, y5

ak; h5; y5
h5, y5
h5; y5 (h2? y2?)
ak; h5; yd5
h5; y5
h5; y5
h5; y5

ak; h5; y5
h2; yd2

382,3; 453,1

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January, 23, 1888.

Plate, 959.

[[6 columned table]]

Book. 9, F Page | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

| 108 | 8.2 | 22.9 | ~~[[[a]]]~~ F | 1521 | G
and h=.5, Lines below K. |
| | 5.8 | 11.8 | ~~[[[b]]]~~ | 1522 |
F4½G=.2, F7G=.3, |

Amt. of Fog due to moon & clouds. 6.3

Amt. of Fog due to chem. 6.4

Book. 17. G. Page. Plate, 1709.

Book. 17. G. Page 150

Amt. of Fog. due to moon & clouds. 7.2

Amt. of Fog due to chemicals 7.2

Standard Light 5.7

Book. 17. G. Page 150 Plate 1715

Amt. of Fog. due to moon & clouds. 7.0

Amt. of Fog due to chemicals 7.1

Standard Light.

Plate 1563

[[6 columned table]]

Book 17. G. Page. 150 | 22.6 | 15.2

~~[[[a]]]~~ F | 1523 | G and h=.5 |152 | 13.6 | 11.8 | ~~[[[b]]]~~ P? | 1523a |

Peculiar spectrum. G bright ? |

| 152 | 13.4 | 14.4 | ~~[[[a]]]~~ F | 1524 | G
and h=.2 || | 11.5 | 18.6 | ~~[[[a]]]~~ F | 1525 | G and
h=.5 || | 8.1 | 22.1 | ~~[[[a]]]~~ F | 1526 | G and
h=.5 || 154 | 5.2 | 11.9 | ~~[[[b]]]~~ B | 1527 |

h6H=.2, H6a=.2 |

| | 5.3 | 12.4 | ~~[[[a]]]~~ F | 1528 | G and
h=.2 || | 4.4 | 7.3 | ~~[[[a]]]~~ F | 1529 | G and
h=.5 || | 3.9 | 15.7 | ~~[[[b]]]~~ | 1530 | G and
h=.5 || | 3.8 | 18.7 | ~~[[[b]]]~~ | 1531 |

F4½G=.2, F5½G=.2, F7G=.3 |

Amt. of Fog. due to moon & clouds. 6.3

Amt. of Fog due to chemicals 6.5

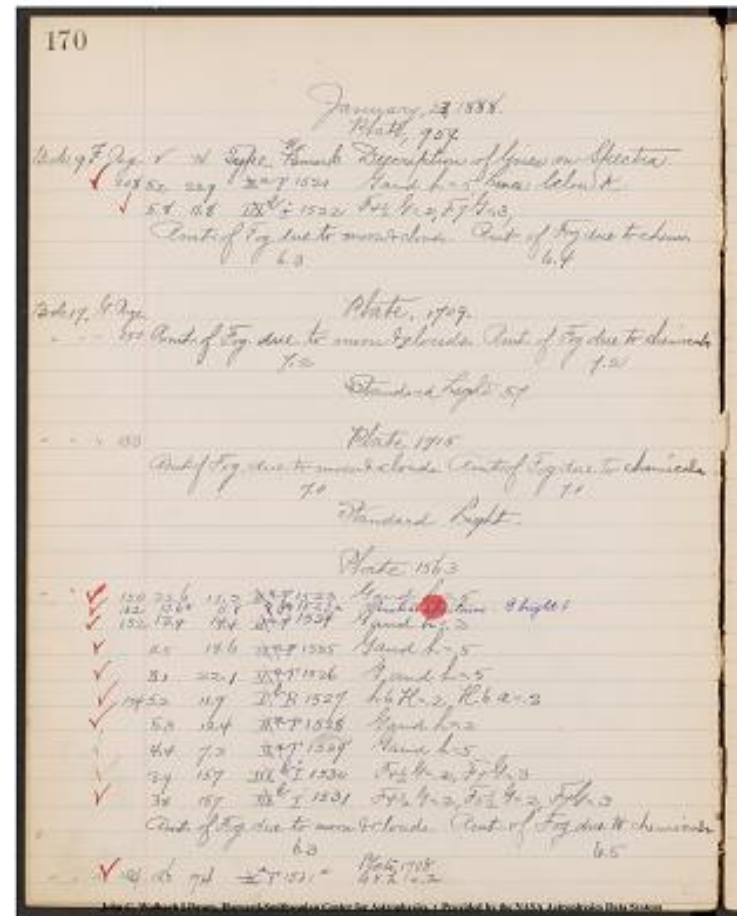


Plate 1708
[[6 columned table]]
| Book 17, G. Page. 154 | 18.6 | 17.4
|~~[[a]]~~ F | 1531^{[[a]]} | G&h=.2 |

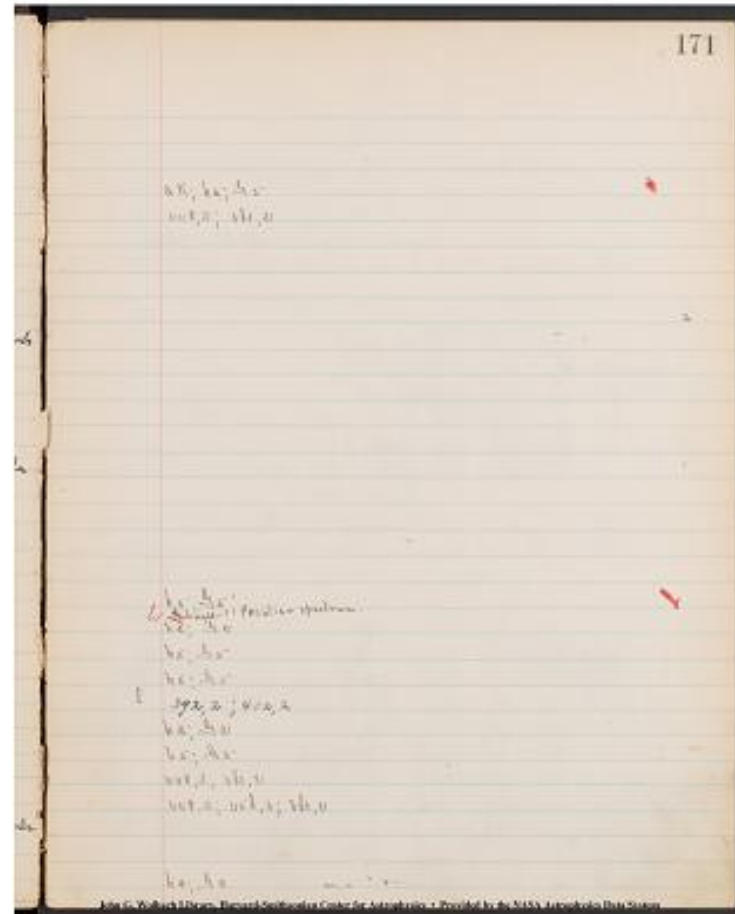
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171

ak; h5; y5
448,3; 461,2

h5; y5
h ~~y~~ ~~bright-?~~, Peculiar spectrum.
h2; y2
h5; y5
h5; y5
392,2; 402,2
h2; y2
h5; y5
448,3; 461,2
448,3; 456,2; 461,2

h2; y2
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Book 10, G. Page.

January, 24, ~~th~~ 1888.

32 Plate 864

[6 columned table]

| v. | H. | Type. | No Remark. | Description of lines on Spectra. |

| 13.5 | 6.7 | ~~III^a[bc]~~ K | 1532 |F3G=.1B, F4½G=.1, F5G=.2B, F5½G=.1, ~~K=1.2H~~, F line
Bright and Level. ~~F7G=.3, F8G=.1B, Lines between G~~
and H || 7.3 | 21.0 | ~~I^a[b]~~ B | 1533, | F6G=.2,
h6H=.2, H6=.2, B6V=.2? |

Amt of fog due to moon & clouds 7.2

Amt of fog due to Chemicals 7.2

Plate 949

Book 10, G. Page. | 42 | 21.7 | 22.5

~~I^a[a]~~ F | 1534 | G and h=.5 || 17.5 | 16.4 | ~~III^a[b]~~ I | 1535 | G and h || 12.6 | 19.3 | ~~I^a[a]~~ F | 1536 | G&h=.3,
Lines below K. || 9.3 | 17.7 | ~~I^a[a]~~ F | 1537 | G&h=.5 || 3.9 | 9.4 | ~~III^a[bc]~~ K | 1538 |

F2½G=.1, F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3,

| 4.0 | 23.1 | ~~I^a[a]~~ F | 1539 | G&h
double=.5, Lines below K. |

Amt of Fog due to moon & clouds. 5.8

Amt of fog due to chemicals 5.9

Plate 894

Book 10. G. Page. | 48 | 23.3 | 6.4

~~I^a[a]~~ F | 1540 | G&h=.5, || 21.6 | 14.2 | ~~I^a[a]~~ F | 1540a |

G&h=.5 |

| 21.5 | 13.5 | ~~I^a[a]~~ F? | 1540b |

G&h=.5? |

| 20.3 | 10.6 | ~~I^a[a]~~ F | 1541 | G&h=.3,

Lines below K |

| 19.8 | 9.6 | ~~I^a[a]~~ F | 1542 | G&h=.3,

Lines below K |

| 19.6 | 14.7 | ~~I^a[a]~~ F | 1543 | G&h=.5,

Lines below K |

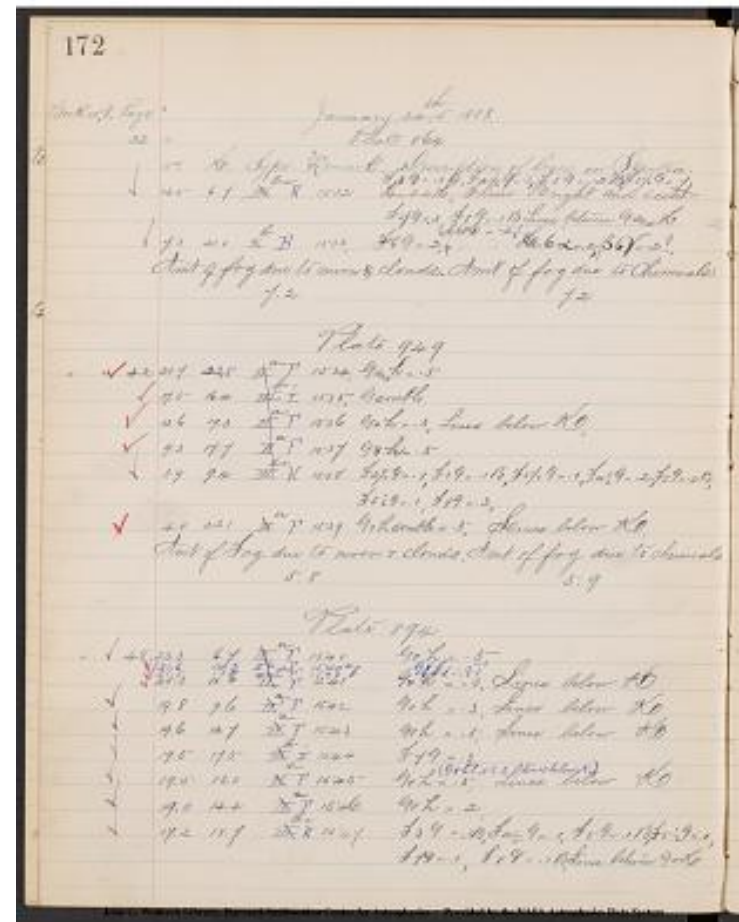
| 19.5 | 17.5 | ~~III^a[b]~~ I | 1544 | F7G=.3,| 19.5 | 13.0 | ~~I^a[a]~~ F | 1545 |

(G&h=.5? 2 lines below K) G&h=.5, Lines below K |

| 19.0 | 14.2 | ~~I^a[a]~~ F | 1546 | G&h=.2,| 17.2 | 18.7 | ~~III^a[bc]~~ K | 1547 |

F3G=.1B, F4½G=.1, F5G=.1B, F5½G=.1,

F7G=.1, F8G=.1B, Lines below G & H |



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173

Hay; 443,1; 448,3; 456,1; 458,2; 461,1; 468,1

[[~~381,2~~]]?[[~~392,1~~]] 402,2; 453,2

h5;y5

yd

ak; h3; y3

h5; y5

448,3; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

ak; hd5; yd5

h5', y5

h5, y5

h5? y5?

ak; h3; y3

ak; h3; y3

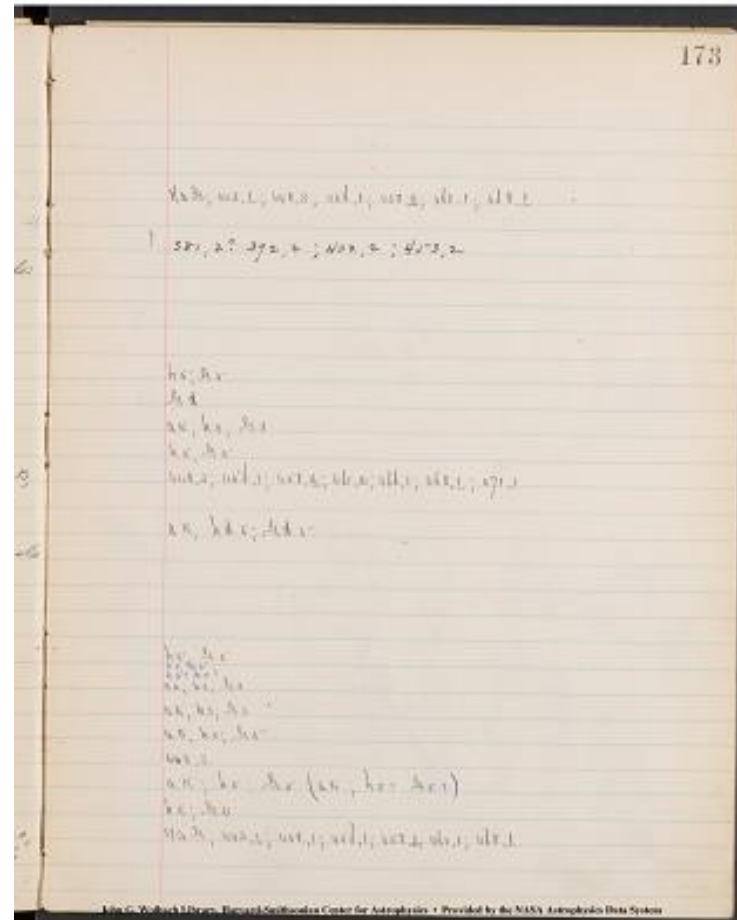
ak; h5; y5

448,3

ak; h5; y5 (ak; h5? y5?)

h2; y2

Hay; 443,1; 448,1; 456,1; 458,1; 461,1; 468,1



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Book 10 G. Page January, 24, 1888.

50 Plate 894

[[6 columned table]]

---[V. H. Type. | No Rosmark. | Description of Lines on Spectra.]

-----[-----]

| 16.3 | 12.6 | ~~II?~~^a | ~~F?~~ | 1548 |

G+h=.5 (G+h=.5)

| 15.5 | 7.1 | ~~III?~~^a | ~~I?~~ | 1549 | F5 1/2

G=.2, F7 G=.3, Lines between G+A

| 13.7 | 21.3 | ~~II?~~^a | ~~F~~ | 1550 |

G+h=.5, Lines below K.

| 52 | 12.4 | 11.2 | ~~II?~~^a | ~~F~~ | 1551 |

G+h=.5,

| 11.8 | 19.3 | ~~II?~~^a | ~~F~~ | 1552 |

G+h=.5, (G+h=.5)

| 10.4 | 22.6 | ~~II?~~^a | ~~F~~ | 1553 | G+h=.5

Lines below K.

| 10.7 | 10.6 | ~~II?~~^a | ~~F~~ | 1553^a |

G+h=.5

| 9.7 | 13.2 | ~~II?~~^a | ~~F~~ | 1554 | G+h=.3,

(G+h=.5)

| 9.2 | 13.5 | ~~II?~~^a | ~~F~~ | 1555 | G+h=.3,

|

| 6.6 | 10.7 | ~~II?~~^a | ~~F~~ | 1556 | G+h=.2

Lines below K

Amt. of Fog due to moon + clouds Amt. of Fog due to Chem

7.3

7.7

January, 25, 1888

Plate 918

|Book 9, F, Page 14| 15.5 | 18.8 | ~~II?~~ | ~~E~~ |

1557 | 3 Lines below K. |

| 14.9 | 10.9 | ~~II?~~^a | ~~F?~~ | 1557^a |

G+h=.5 |

| 16 | 14.6 | 5.6 | ~~III?~~^a | ~~K~~ | 1558 | F5

G=.1 B, F5 1/2 G=.1, F7 G=.3, Lines between G and H, Lines below K. |

| 14.6 | 9.5 | ~~II?~~^a | ~~F~~ | 1559 | G and

h=.5 |

| 14.5 | 20.6 | ~~II?~~^a | ~~F~~ | 1559^a |

G+h=.5 |

| 18 | 11.4 | 9.4 | ~~II?~~^a | ~~F~~ | 1560 | G and

h=.5 |

| 18 | 14.4 | 11.1 | ~~F~~ | 1560^a | G and h=.5 || 20 | 10.7 | 9.2 | ~~II?~~^a | ~~F~~ | 1561 | G and

h=.5 |

| 9.8 | 15.7 | ~~I?~~^a | ~~B~~ | 1562 | G6 h=.1?,

B4 j=.3 |

| 9.3 | 21.4 | ~~II?~~^a | ~~F~~ | 1562^a |

G+h=.5 |

| 8.5 | 20.5 | ~~II?~~^a | ~~F?~~ | 1563 | G&h

all=.5, Lines below K(G+h=.5?) |

| 8.5 | 16.9 | ~~II?~~^a | ~~F~~ | 1564 | G and

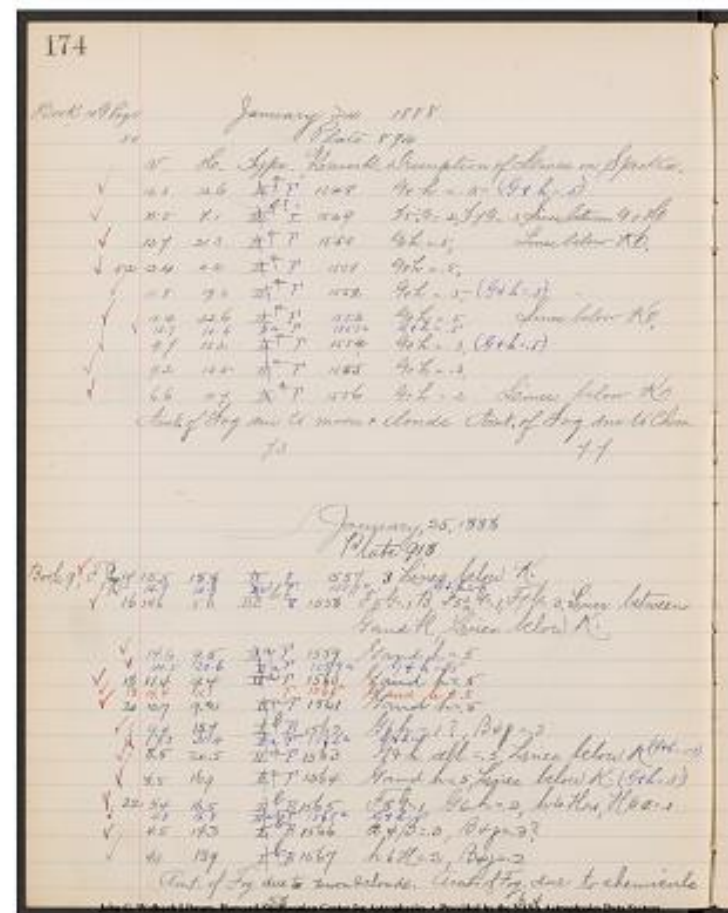
h=.5, Lines below K(G+h=.5) |

| 22 | 5.4 | 16.5 | ~~I?~~^a | ~~B~~ | 1565 | F8

G=.1, G6 h=.2, h6 Hg a=.1 |

| 4.8 | 16.8 | ~~II?~~^a | ~~F~~ | 1565^a | G +

h=.5 |

| 4.5 | 14.3 | ~~I?~~^a | ~~B~~ | 1566 | a4 B=.3,

B4 j=.3? |
| | 4.1 | 13.9 | ~~I?~~ ~~B~~ | 1567 | h6 H=.2,
B4 j=.2 |
Amt. of Fog. due to moon & clouds. Amt. of Fog. due to chemicals
5.8 6.4

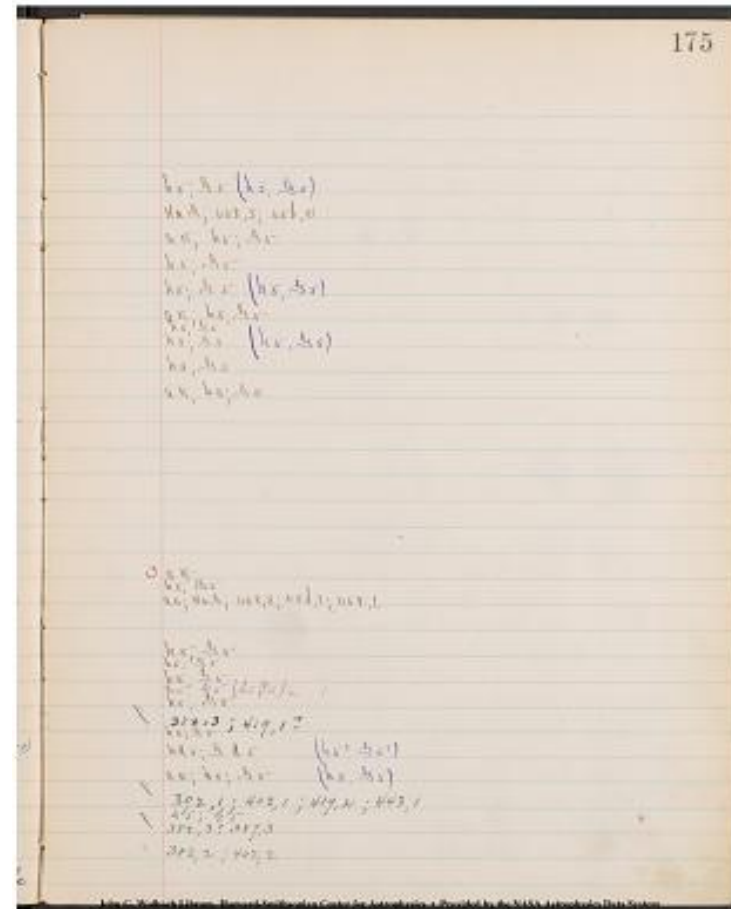
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175

h5; y5 (h5, y5)
 Hay; 448,3; 456,2
 ak; h5; y5
 h5; y5
 h5; y5 (h5, y5)
 ak; h5, y5
 h5, y5
 h3; y3 (h5, y5)
 h3; y3
 ak; h2; y2

3ak;
 h5; y5
 ak; Hay; 448,3; 456,1; 458,[[1]]

h5; y5
 h5; y5
 h5; y5
 h5, y5 (h5 y5)
 h5; y5
~~382,3; 419,1?~~
 h5; y5
 hd5; yd5 (h5? y5?)
 ak; h5; y5 (h5, y5)
~~392,1; 402,1; 419,2; 443,1~~
 h5; y5
~~382,3? 387,3~~
 ? 382,2; 402,2



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Hard to Measure

January, 26, 1888

Plate 298

[6-columned table]

Book, 4, F, Page | V. | H. | Type | No. Remark. | Description of lines on Spectra. |

| 4|21.1|11.1|~~I~~ G~~[[/del]]~~B|1568|F6 H=.2, H6[?] h=?=.1, h6 H=.2, H6a=.1|| 20.9|17.7|~~I~~ I~~[[/del]]~~F|1569|H=.4, h=.2|| 18.2|9.0|~~I~~ G~~[[/del]]~~B|1570|H6h=.6, h5H=.6.|| 17.6|16.6|~~I~~ G~~[[/del]]~~B|1571|h6 H=.1, H6 a=.1,|| 17.4|14.7|~~I~~ G~~[[/del]]~~B|1572|F6 H=.2, h6 H=.2, H6 a=.2|| 16.9|12.4|~~I~~ I~~[[/del]]~~F|1573|H and h=.5, Lines below K.|

January, 27, 1888

Plate 298.

Book.4 ^[] F.

Page. | 14.5|18.5|~~I~~ I~~[[/del]]~~G~~[[/del]]~~I|1574|F4 1/2 H=.2, F5 1/2 H=.2, F7 H=.3.|| 6|13.5|23.8|~~I~~ I~~[[/del]]~~F|1575|H and h=.2, H[?], Lines below K.|| 13.1|11.2|~~I~~ G~~[[/del]]~~B|1576|F6 H=.1, h6 H=.1|| 12.7|11.8|~~I~~ G~~[[/del]]~~B|1577|h6 H=.1, alpha4beta=.4|| 12.5|14.6|~~I~~ I~~[[/del]]~~G~~[[/del]]~~I|1578|F7 H=.3|| 12.7|19.3|~~I~~ A|1579|Lines [?]|| 8|9.5|18.3|~~I~~ G~~[[/del]]~~B|1580|additional lines|| 6.7|15.8|~~I~~ I~~[[/del]]~~G~~[[/del]]~~I|1581|F4 1/2 [?]=.2, F7 H=.3.|| 6.7|16.4|~~I~~ I~~[[/del]]~~F|1582|H and h=.2, H & [?]H., Lines below K.|

amt. of fog. due to moon & clouds. 6.2

amt. of fog. due to chemicals. 7.1

Plate 277

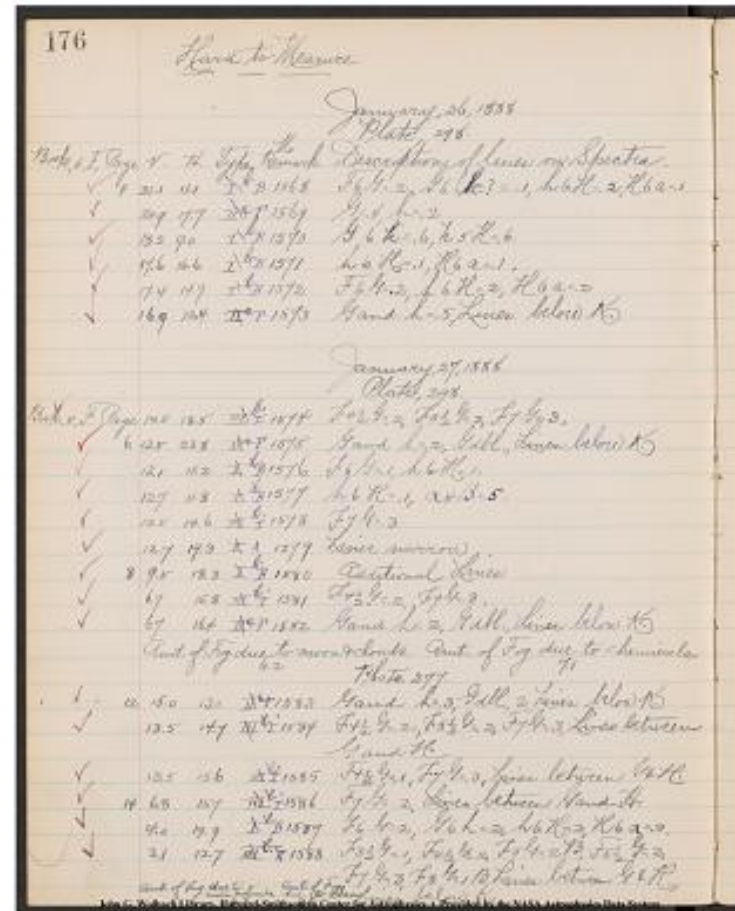
| 12|15.0|13.0|~~I~~ I~~[[/del]]~~F|1583|H and h=.3, H [?], 2 Lines below K.|| 13.5|14.7|~~I~~ I~~[[/del]]~~G~~[[/del]]~~I|1584|F4 1/2 H=.2, F5 1/2 H=.2, F7 H=.3, Lines between

G and H|

| 13.5|15.6|~~I~~ I~~[[/del]]~~G~~[[/del]]~~I|1585|F4 1/2 G=.1, F7 G=.3, Lines between G & H.|| 14|6.8|15.7|~~I~~ I~~[[/del]]~~G~~[[/del]]~~I|1586|F7 H=.2, Lines between G and H.|| 4.0|19.9|~~I~~ G~~[[/del]]~~B|1587|F6 H=.2, H6 h=.2, h6 H=.2, H6 alpha=.2|

| F7 H=.3, F8G=.1B, Lines between G & H,

amt. of fog due to moon & clouds. 6.3 Amt of Fog. due to chem of skies below K. 6m5



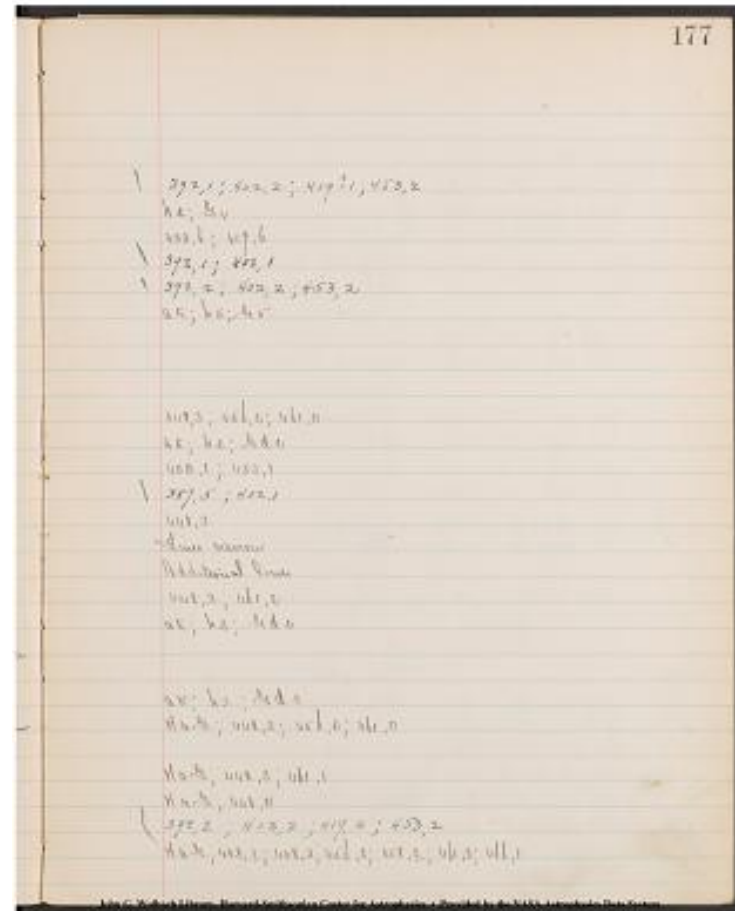
177

~~392,1; 402,2; 419? 1; 453,2~~
h2; y2
403,6; 419,6
~~392,1; 402,1~~
~~392,2; 402,2; 453,2~~
ak; h5; y5

448,3; 456,2; 461,2
ak; h2; yd2
402,1; 453,1
~~387,5; 402,1~~
448,3
Lines narrow
Additional lines
448,3; 461,2
ak; h2; yd2

ak; h3; yd3
Hay; 448,3; 456,2; 461,2

Hay; 448,3; 461,1
Hay; 448,2
~~392,2; 402,2; 419,2; 453,2~~
Hay; 443,1; 448,3; 456,2;
458,2; 461,2; 466,1



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January, 27, 1888.

Plate, 310

[[6 columned table]]

| Book, 4, F Page | V. | H. | Type. | No. Remark. | Description of lines on Spectra |

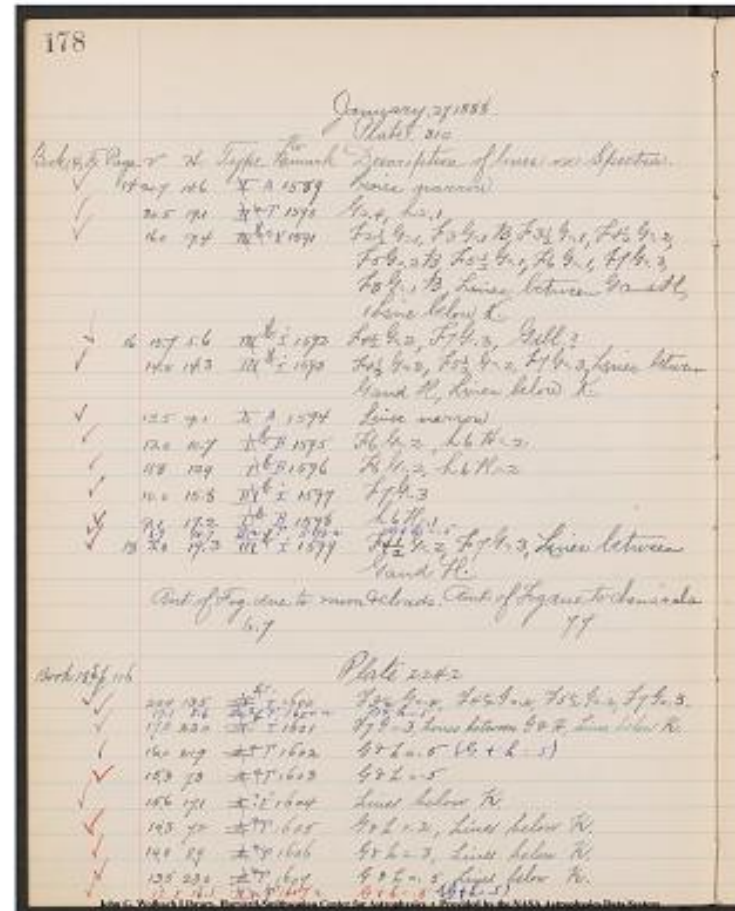
| 14|20.7|14.6|~~[[/del]]~~|~~[[/del]]~~|A 1589|Lines narrow||20.5|19.1|~~[[/del]]~~|~~[[/del]]~~|F 1590|G=.4, h=.1||16.0|9.4|~~[[/del]]~~|~~[[/del]]~~|K 1591|f2 1/2G=.1, f3G=.1B, f3 1/2G=.1, f4 1/2G=.2||~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|f5G=.1B, Lines between G and H,||~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|1 Line below K.||16|15.7|5.6|~~[[/del]]~~|~~[[/del]]~~|1592|f4 1/2G=.2, f7G=.2, G all. ?||14.5|14.3|~~[[/del]]~~|~~[[/del]]~~|1593|f4 1/2G=.2, f5 1/2G=.2, f7G=.2, Lines between||~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|G and H, Lines below K.||13.5|9.1|~~[[/del]]~~|~~[[/del]]~~|A 1594|Lines narrow||13.0|10.7|~~[[/del]]~~|~~[[/del]]~~|B 1595|t6G=.2, h6H=.2||11.8|12.9|~~[[/del]]~~|~~[[/del]]~~|B 1596|f6G=.2, h6H=.2||10.0|15.8|~~[[/del]]~~|~~[[/del]]~~|1598|h6H=.1||9.1|17.2|~~[[/del]]~~|~~[[/del]]~~|B 1598|h6H=.1||6.9|10.7|~~[[/del]]~~|~~[[/del]]~~|F 1598a|G&h=.5||18|3.0|19.3|~~[[/del]]~~|~~[[/del]]~~|1599|f4 1/2G=.2, f7G=.3, Lines between||~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|~~[[/del]]~~|G and H.|

Amt. of Fog. due to moon & clouds. 6.7

Amt. of Fog due to chemicals 7.7

Book 18, E.6. 116

Plate 2242

|20.0|13.5|~~[[/del]]~~|~~[[/del]]~~|1600|f3 1/2G=.2, f4 1/2G=.2, f5 1/2G=.2, f7G=.3.||17.1|8.6|~~[[/del]]~~|~~[[/del]]~~|F? 1600a|G&h=.5||17.0|23.0|~~[[/del]]~~|~~[[/del]]~~|1601|f7G=.3, Lines between G & H, Lines below K.||16.0|21.9|~~[[/del]]~~|~~[[/del]]~~|F 1602|G&h=.5(G&h=.5)||15.3|7.3|~~[[/del]]~~|~~[[/del]]~~|F 1603|G&h=.5||15.6|17.1|~~[[/del]]~~|~~[[/del]]~~|E? 1604|Lines below K.||14.3|7.2|~~[[/del]]~~|~~[[/del]]~~|F 1605|G&h=.2, Lines below K.||14.0|8.9|~~[[/del]]~~|~~[[/del]]~~|F 1606|G&h=.3, Lines below K.||13.5|23.0|~~[[/del]]~~|~~[[/del]]~~|F 1607|G&h=.5 Lines below K||12.5|16.1|~~[[/del]]~~|~~[[/del]]~~|F? 1607a|G&h=.5 (G&h=.5)|

179

Lines narrow

h1, y4

ak; Hay; 443,1; 448,3; 453,1; 456,1;

458,2; 461,2; 466,1;

468,1; 471,1

yd? 448,3; 461,2

ak; Hay; 448,3; 456,2; 461,2

Lines narrow

402,2; 453,2

402,2; 453,2

448,3

402,1

h5; y5

Hay; 448,3; 461,2

448,3; 456,2; 461,2; 466,2

h5; y5

ak; Hay; 448,3

h,5; y5 (h5, y5

h5; y5

ak

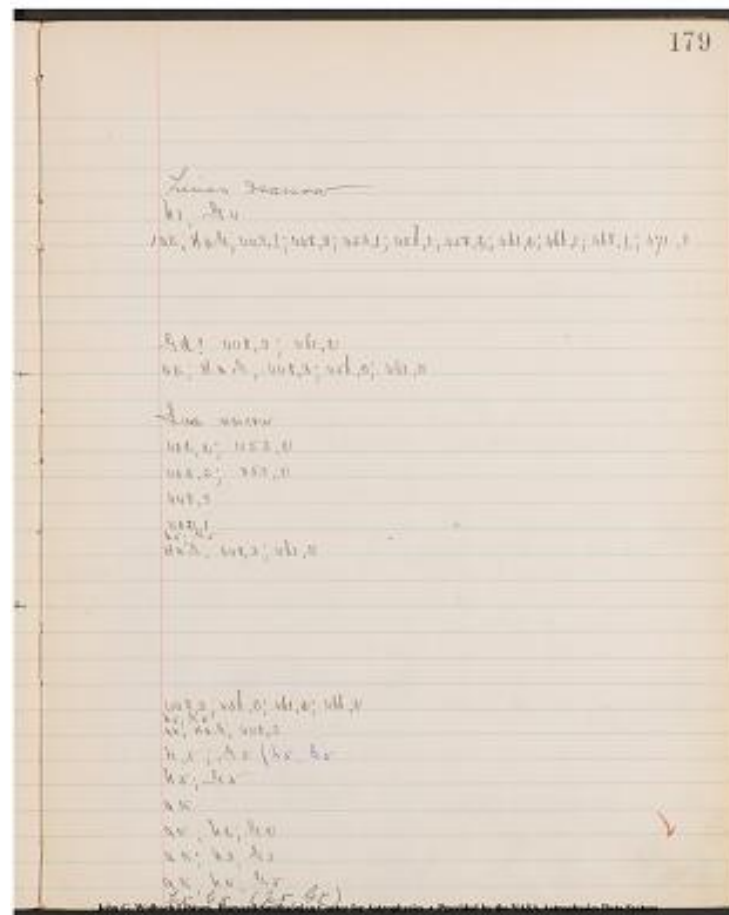
ak; h2; y2

ak; h3; y3

ak; h5; y5

h5, y5 (h5, y5)

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January, 27, 1888.

Plate, 2242.

[[6 columned table]]

| Book, 18 E. p.120 | V. | H. | Type. | No. Remark. | Description of Lines on Spectra. |

10.6	8.6	[[/strikethrough]]	II a	[[/strikethrough]]	F	1608	G & h = .5
8.6	14.4	[[/strikethrough]]	II a	[[/strikethrough]]	F	1609	G & h = .5

6.5	21.2	[[/strikethrough]]	II a	[[/strikethrough]]	F	1610	G & h = .3
4.0	16.4	[[/strikethrough]]	II a	[[/strikethrough]]	F	1611	G & h = .5

St. Lt. (5.3, 5.8)

Amt. of fogging due to moon & clouds. 5.5

Amt. of fogging due to chemicals. 7.5

January, 28, 1888.

Plate 300

[[6 columned table]]

| Book, 4, F. Page | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

18	20.1	7.4	[[/strikethrough]]	III b.c.	[[/strikethrough]]	K	1612	F $2\frac{1}{2}$ G = .2, F3G = .1B, F3 $\frac{1}{2}$ G = .1, F4 $\frac{1}{2}$ G = .2, F5G = .3B, F5 $\frac{1}{2}$ G = .2, F6G = .1, F7G = .3, F8G = .1B, F9G = .1, Lines between G and H.
15.1	12.7	[[/strikethrough]]	II a	[[/strikethrough]]	F	1613	G and h = .4, 1 Lines below K.	

20	12.5	21.0	[[/strikethrough]]	II a	[[/strikethrough]]	F	1614	G and h = .2, 2 Lines below K.
----	------	------	--------------------	------	--------------------	---	------	--------------------------------

11.8	20.1	[[/strikethrough]]	III b	[[/strikethrough]]		1615	F4 $\frac{1}{2}$ G = .1, F5 $\frac{1}{2}$ G = .1, F7G = .3, Lines between G and H, 2 Lines below K.
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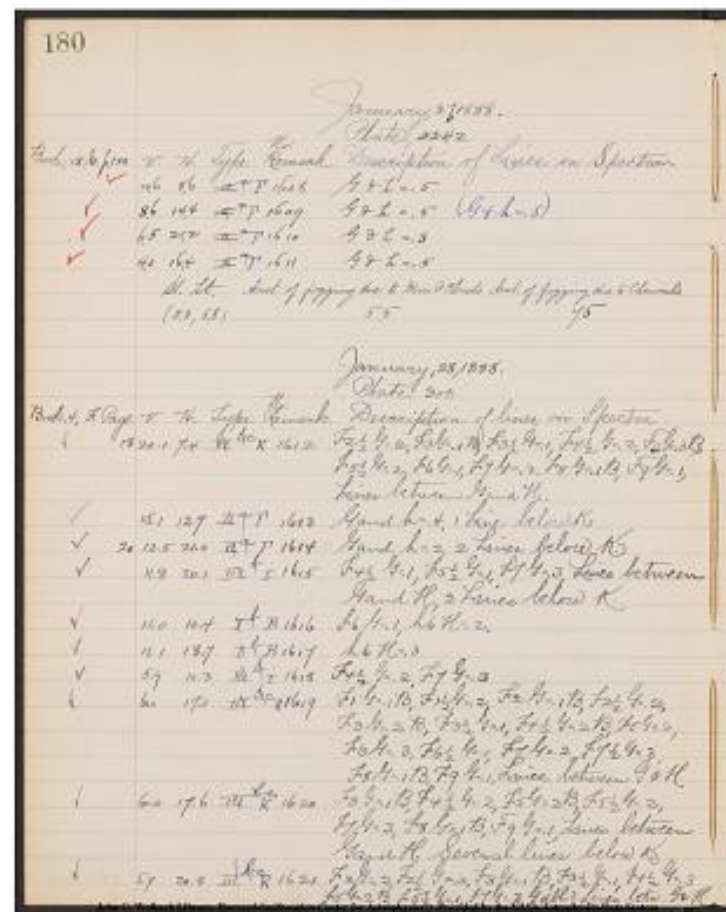
11.0	10.4	[[/strikethrough]]	I b	[[/strikethrough]]	B	1616	F6G = .1, h6H = .2.
------	------	--------------------	-----	--------------------	---	------	---------------------

11.1	18.7	[[/strikethrough]]	I b	[[/strikethrough]]	B	1617	h6H = .3
5.9	10.3	[[/strikethrough]]	III b	[[/strikethrough]]		1618	F4 $\frac{1}{2}$ G = .2, F7G = .3

6.0	17.0	[[/strikethrough]]	III b.c.	[[/strikethrough]]	K	1619	F1G = .1B, F1 $\frac{1}{2}$ G = .2, F2G = .1B, F2 $\frac{1}{2}$ G = .2, F3G = .2B, F3 $\frac{1}{2}$ G = .1, F4 $\frac{1}{2}$ G = .2B, F5G = .2, F6G = .3, F6 $\frac{1}{2}$ G = .1, F7G = .2, F7 $\frac{1}{2}$ G = .3, F8G = .1B, F9G = .1, Lines between G & H.
-----	------	--------------------	----------	--------------------	---	------	---

6.0	17.6	[[/strikethrough]]	III b.c.	[[/strikethrough]]	K	1620	F3G = .1B, F4 $\frac{1}{2}$ G = .2, F5G = .2B, F5 $\frac{1}{2}$ G = .2, F7G = .3, F8G = .1B, F9G = .1, Lines between G and H. Several lines below K.
-----	------	--------------------	----------	--------------------	---	------	--

5.9	20.8	[[/strikethrough]]	III b.c.	[[/strikethrough]]	K	1621	F2G = .2, F2 $\frac{1}{2}$ G = .3, F3G = .1B, G = .1, F4 $\frac{1}{2}$ G = .3 F5G = .2B, F5 $\frac{1}{2}$ G = .1, F7G = .3, G dbl ? Lines betw. G and H.
-----	------	--------------------	----------	--------------------	---	------	--



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181

h5; y5
h5; y5 (h5,y5)
h3; y3
h5, y5

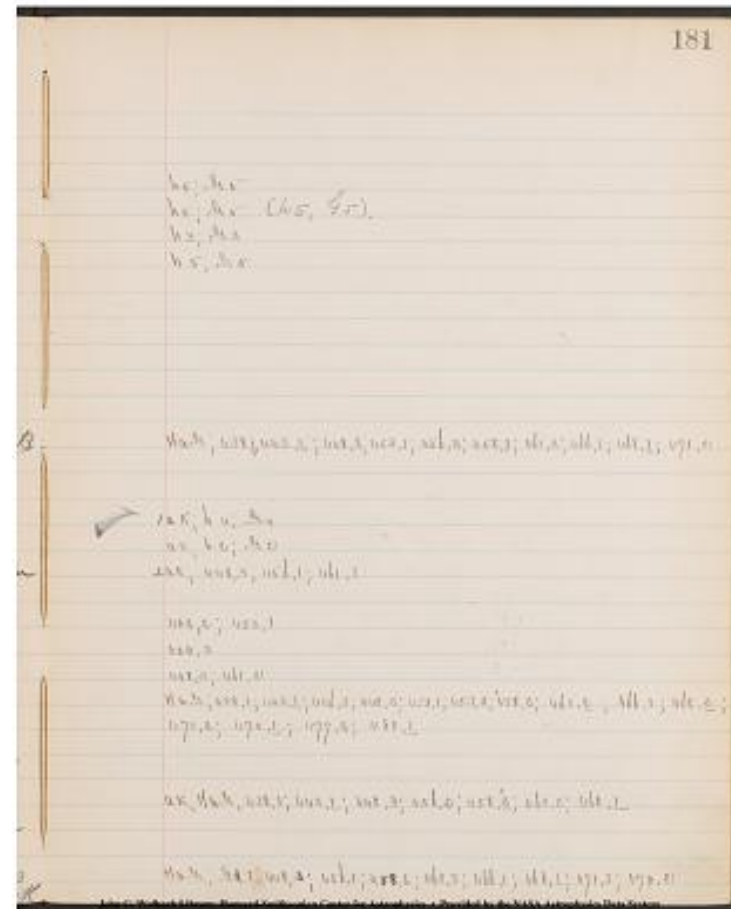
Hay; 438,1; 443,1; 448,3; 453,1; 456,2; 458,1; 461,2; 466,1; 468,1;
471,2

/ak; h4; y4
ak; h2; y2
2ak; 448,3; 456,1; 461,1

402,2; 453,1
402,3
448,3; 461,2
Hay; 438,1; 443,1; 446,3; 448,2; 451,1; 453,3; 458,2; 461,2; 466,1;
468,2;
471,2; 474,1; 477,2; 480,1

ak; Hay; 438,1; 443,1 448,3; 456,2; 461,2; 468,1

Hay; yd? 448,3; 458,2; 461,3; 466,1; 468,1; 471,3; 474,2



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183

Hay; 448,3; 458,2; 468,2

448,2.

402,2

402,1

2ak; h5; y5

402,1

ak; ~~429.21~~ h2? G2?

2ak; h5; yd5

403,3?

448,3

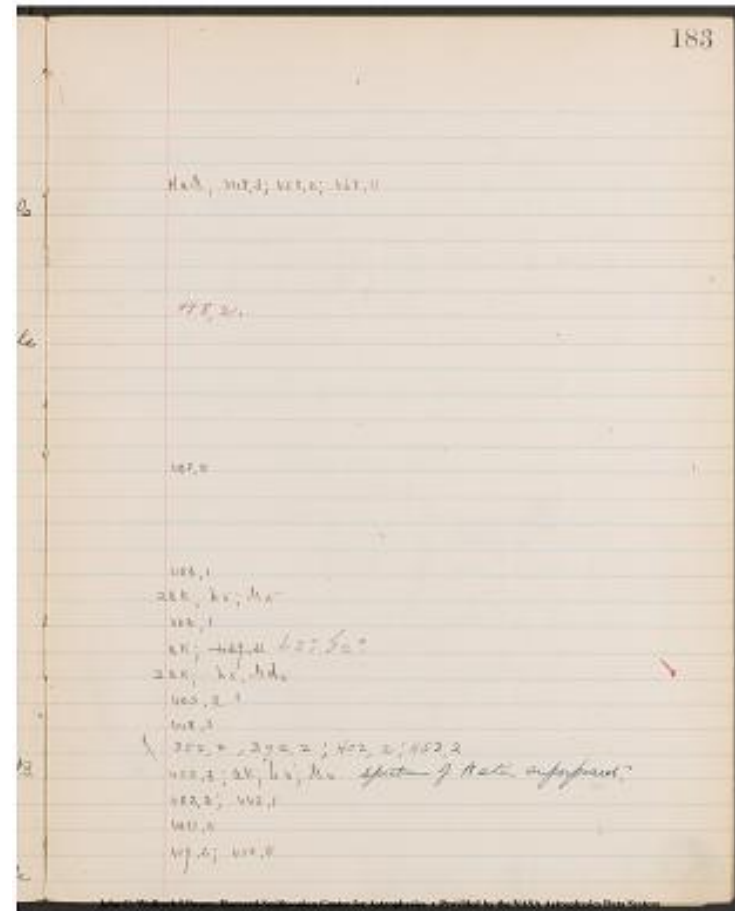
~~382,2; 392,2; 402,2; 453,2~~

453,2; ak; h4; y4 spectrum of Aston superposed?

402,2; 443,1

402,2

419,2; 453,2



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January, 30, 1888.

Plate, 201

[6 columned table]

[Book. 4, Page | V. | H. | Type. | No. Remark. | Description of Lines on Spectra |

| 30|17.0|7.7|~~II^b~~ B|1637|h6 H=.2|
| 15.4|5.7|~~II^a~~ F|1638|G and h dbl.=.5, 2
lines below K.| 11.8|6.2|~~II^a~~ F|1639|G and h dbl.=.5, 2
lines below K.| 32|7.7|23.5|~~III^b.c.~~ K|1640|F3 G=.1B,
F4½ G=.1, F5 G=.2B F5½ G=.1.| | | | | F7 G=.3, F8 G=.1B, F9 G=.1, Lines between|
| | | | | G and H, Lines below K.| 5.5|24.1|~~III~~ I|1641|F7 G=.3, Lines
between G&H, 2 lines below K.

Amt. of Fog due to moon & clouds. 6.3

Amt. of Fog due to chemicals 6.5

January, 30, 1888

Plate, 315.

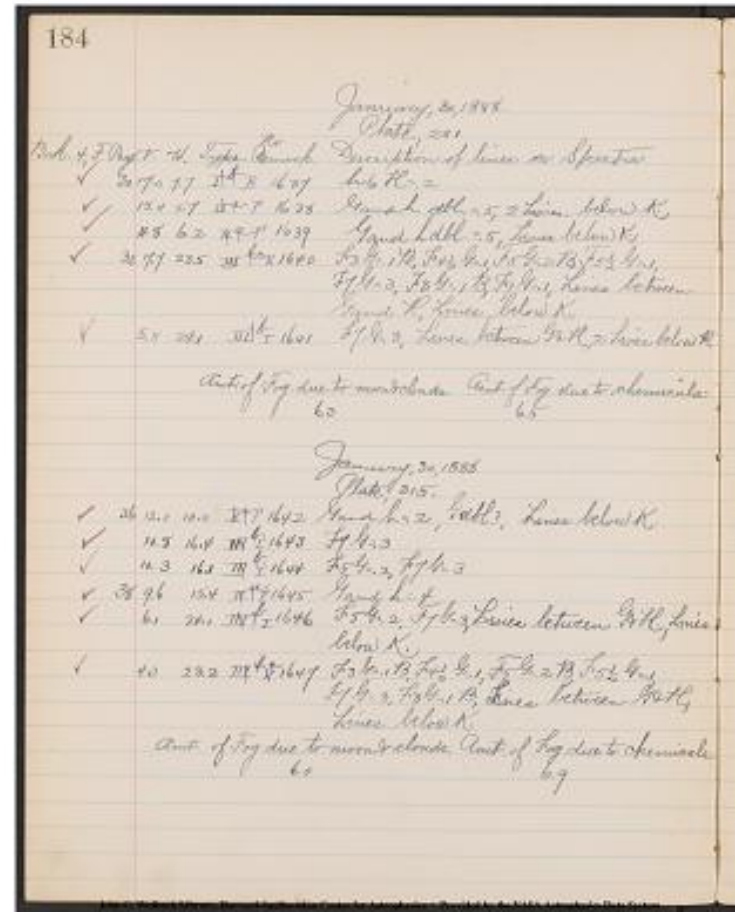
| 36|12.1|10.0|~~II^a~~ F|1642|G and h=.2, G
dbl.?, Lines below K.| 10.8|16.4|~~III^b~~ F|1643|F7 G=.3|| 10.3|16.1|~~III^b~~ F|1644|F5 G=.2, F7
G=.3|| 38|9.6|15.4|~~II^a~~ F|1645|G and h=.4|| 6.1|24.1|~~III^b~~ F|1646|F5 G=.2, F7 G=.3,
Lines between G&H, Lines

| | | | | Lines Below K.

| 4.0|23.2|~~III^b.c.~~ K|1647|F3 G=.1B, F4½
G=.1, F5 G=.2B, F5½ G=.1|| | | | | F7 G=.3, F8 G=.1B, Lines between G & H,
| | | | | Lines below K.

Amt. of Fog due to moon & clouds, 6.0

Amt. of Fog due to chemicals 6.9



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185

402,2

ak; hd5; yd5

ak; hd5; yd5

ak; hay; 438,1; 443,1; 448,3; 456,1;

458,5; 461,1; 468,1

2ak; Hay; 448,3

ak; h2; yd2

448,3

448,3; 458,2

h4; y4

ak; Hay; 448,3; 458,2

ak; Hay; 443,1; 448,3; 456,1;

458,2; 461,1; 468,1



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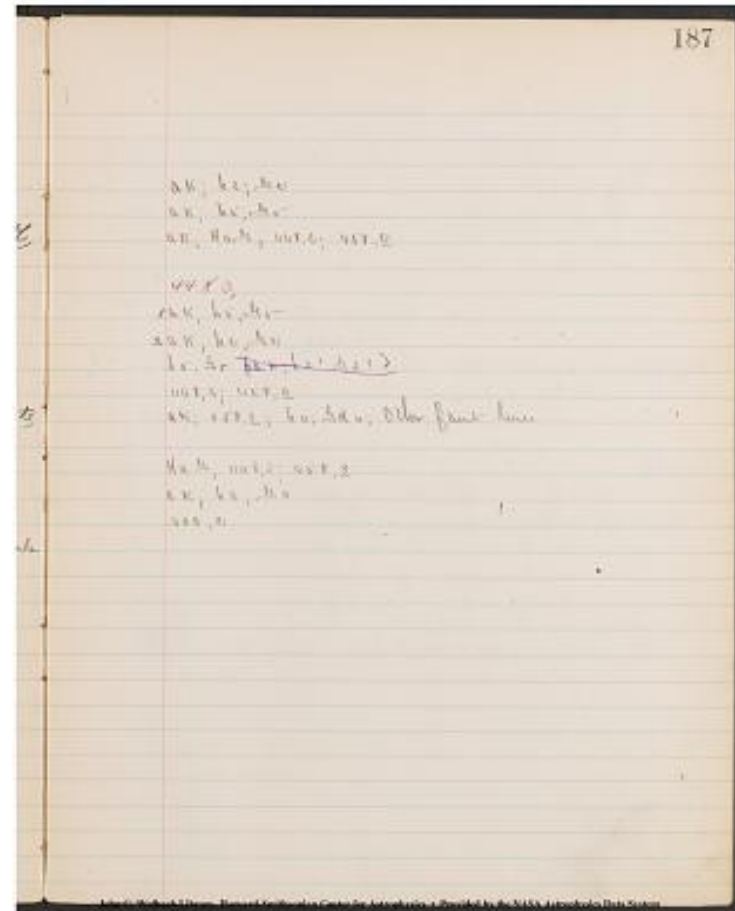
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187

ak; h2; y2
ak; h5; y5
ak; Hay; 448,2; 458,22

448,3,
1ak; h5, y5
2ak; h5, y2
h5, y5 ~~(2ak; 52? y2?)~~
448,2; 458,22
ak; 458,11; h4; yd4; Other faint lines

Hay; 448,3; 458,33
ak; h3; y3
402,2



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Very dark Plate February, 6, 1888

Hard to measure Plate 919.

[6 columned table]

Book. 10, G. Page V. | H. | Type. | No. Remark. | Description of lines on Spectra.

---|---|---|---|---|

4 | 17.7 | 6.5 | ~~II^a[a]~~ | ~~F~~ | 1660 | G and h=.2, 3 Lines below K. |

12.1 | 15.0 | ~~II^a[a]~~ | ~~F~~ | 1661 | G and h=.2, 2 Lines below K. |

11.0 | 21.5 | ~~II^a[a]~~ | ~~F~~ | 1662 | G and h=.5 |

11.4 | 13.9 | ~~II^a[a]~~ | ~~F~~ | 1663 | G and h=.5? |

February, 8, 1888.

Plate, 919.

[6 columned table]

~~Book. 19, F. Page~~ | ~~Book. 10, G. Page~~ |
2.4 | 16.4 | ~~III~~ | ~~H~~ | 1664 | Lines below K. |

[2 columned table]

Amt. of Fog. due to moon & clouds. | Amt. of Fog. due to chemicals. |
5.3 | 8.0 |

Plate, 1562.

[6 columned table]

Book 19, F.

Page. | 22.2 | 15.5 | ~~II^a[a?]~~ | ~~F?~~ | 1664^a | G&h=.5 |

210 | 19.5 | 22.5 | ~~II^a[a]~~ | ~~F~~ | 1665 | G and h=.5? |

16.6 | 21.6 | ~~II^a[a?]~~ | ~~F?~~ | 1665^a | G&h=.5 |

212 | 14.3 | 11.9 | ~~II^a[a]~~ | ~~F~~ | 1666 | G and h=.2 |

12.5 | 23.4 | ~~II^a[a?]~~ | ~~F?~~ | 1666^a | G&h=.5 |

214 | 10.1 | 16.1 | ~~II^a[a]~~ | ~~F~~ | 1667 | G and h=.5? (G&h=.5) |

11.0 | 20.1 | ~~II^a[a]~~ | ~~F~~ | 1668 | G and h=.5. Dbl.? |

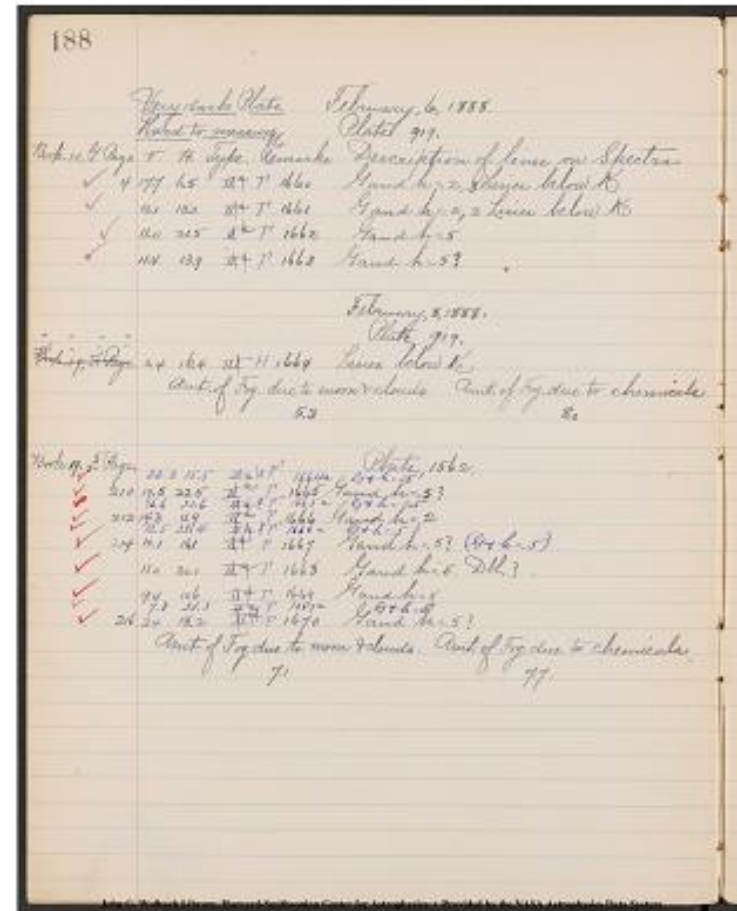
9.4 | 10.6 | ~~II^a[a]~~ | ~~F~~ | 1669 | G and h=.5 |

7.8 | 21.3 | ~~II^a[a]~~ | ~~F~~ | 1669^a | G&h=.5 |

216 | 3.4 | 18.2 | ~~II^a[a]~~ | ~~F~~ | 1670 | G and h=.5? |

[2 columned table]

Amt of Fog. due to moon & clouds. | Amt. of Fog. due to chemicals. |
7.1 | 7.7 |



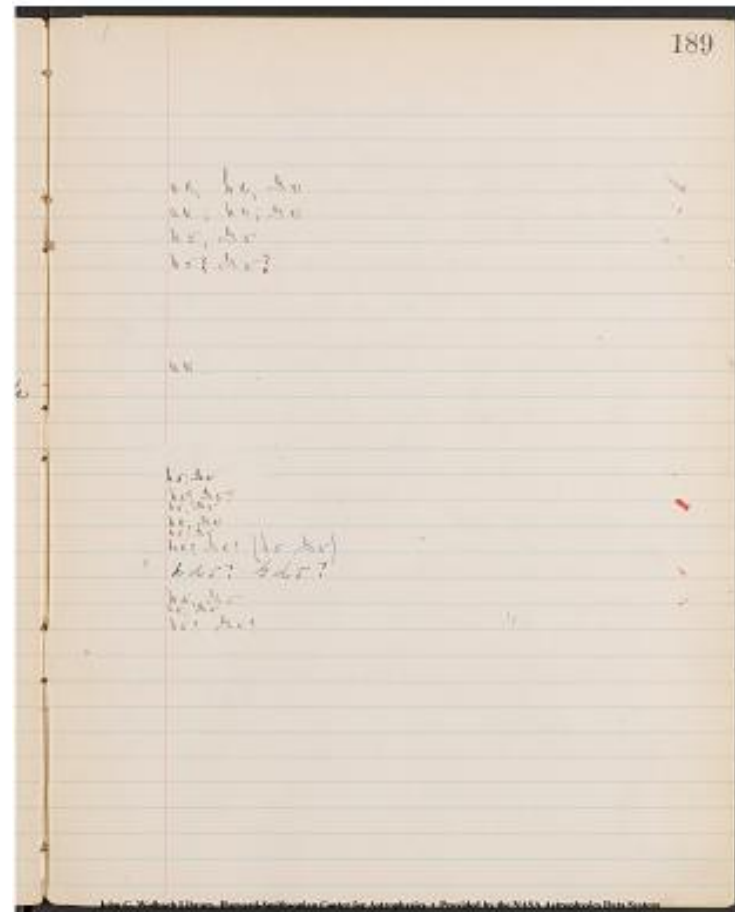
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189

ak; h2; G2
ak; h2; G2
h5, G5
h5? G5?

ak

h5; G5
h5?; G5?
h5, G5
h2, G2
h5; G5
h5? G5? (h5, G5)
hd5? Gd5?
h5, G5
h5, G5
h5? G5?



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February, 9. 1888.

Plate, 932.

[6 columned table]

[Book, 10, G. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra.]

|---|---|---|---|---|

| | 18.7 | 17.9 | ~~II^a[a]~~ ~~F?~~ | 1670^a[a] |
G&h=.5?| | 12. | 15.9 | 24.2 | ~~II^a[a]~~ ~~F~~ | 1671 | G
and h=.5 || | 13.6 | 7.3 | ~~II^a[a]~~ ~~F~~ | 1672 | G and
h=.2. (G&h=.3?) || | 12.2 | 8.4 | ~~II^a[b.c.]~~ ~~G~~ | 1673 | Several lines
including bright line between F and G; Several lines including bright line
which equal 1.0 between G and H. Several lines below K, including
bright line mean K. Peculiar Spectrum. || | 11.0 | 11.7 | ~~II^a[a]~~ ~~F~~ | 1674 | G and
h=.3, 2 lines below K. || | 14 | 9.1 | 12.5 | ~~II^a[a]~~ ~~F~~ | 1675 | G and
h=.3 Lines below K. || | 8.6 | 11.7 | ~~III^a[b.]~~ ~~I~~ | 1676 |
F⁴/₂G=.1, F⁵G=.1, F⁷G=.3, G⁴H=.1, G⁷H=.1, 3 Lines below K. || | 8.3 | 17.7 | ~~III^a[b.c.]~~ ~~K~~ | 1677 |
F²/₂G=.1, F³G=.1 B, F⁴G=.2, F⁵G=.2, F⁵/₂G=.1, F⁷G=.3, Lines
between G & H. || | 6.9 | 16.3 | ~~II^a[a]~~ ~~F~~ | 1678 | G and
h=.2 || | 6.3 | 12.4 | ~~II^a[a]~~ ~~F~~ | 1679 | g and
h=.3 || | 7.0 | 22.2 | ~~III^a[b.c.]~~ ~~K~~ | 1680 |
F⁴/₂G=.1, F⁵G=.1 B, F⁷G=.3, Lines between G and H. 1 Line below K. || | 2.6 | 9.1 | ~~II^a[a]~~ ~~F~~ | 1681 | G and h=.5

[2 columned table]

[Amt. of fog. due to moon & clouds. | Amt. of fog due to chemicals]

[7.5 | 8.6]

190					
February, 9. 1888					
Plate, 932					
Book, 10, G. Page.	V.	H.	Type.	No.	Description of lines on Spectra.
✓ 18.7	17.9	24.2	II ^a [a]	F?	1670 ^a [a] G&h=.5
✓ 12.	15.9	24.2	II ^a [a]	F	1671 G and h=.5
✓ 13.6	7.3	12.5	II ^a [a]	F	1672 G and h=.2. (G&h=.3?)
✓ 12.2	8.4	12.2	II ^a [b.c.]	G	1673 Several lines including bright line between F and G; Several lines including bright line which equal 1.0 between G and H. Several lines below K, including bright line mean K. Peculiar Spectrum.
✓ 11.0	11.7	11.7	II ^a [a]	F	1674 G and h=.3, 2 lines below K.
✓ 14	9.1	12.5	II ^a [a]	F	1675 G and h=.3 Lines below K.
✓ 8.6	11.7	11.7	III ^a [b.]	I	1676 F ⁴ / ₂ G=.1, F ⁵ G=.1, F ⁷ G=.3, G ⁴ H=.1, G ⁷ H=.1, 3 Lines below K.
✓ 8.3	17.7	17.7	III ^a [b.c.]	K	1677 F ² / ₂ G=.1, F ³ G=.1 B, F ⁴ G=.2, F ⁵ G=.2, F ⁵ / ₂ G=.1, F ⁷ G=.3, Lines between G & H.
✓ 6.9	16.3	16.3	II ^a [a]	F	1678 G and h=.2
✓ 6.3	12.4	12.4	II ^a [a]	F	1679 g and h=.3
✓ 7.0	22.2	22.2	III ^a [b.c.]	K	1680 F ⁴ / ₂ G=.1, F ⁵ G=.1 B, F ⁷ G=.3, Lines between G and H. 1 Line below K.
✓ 2.6	9.1	9.1	II ^a [a]	F	1681 G and h=.5
End of fog due to moon & clouds. Part of fog due to chemicals					
7.5					
8.6					

Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23

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191

h 5? G 5?

h 5; G 5

h 2; G 2 (h 3? G 3?)

Peculiar Spectrum. Several bright lines including bright line between F&G. Several lines including bright line which equals 1.0 between G&H. Several lines below K including bright line near K. = Br. lines a K, Br. Lines H a G, Br. lines G a F. Br. line near K. Br. Line between H&G = 1.0

2 a k; h 3; G 3:

a k; h 3; G 3

3 a k; 408, 1; 424[^][[?]], 1; 448, 3; 458, 3; 461, 1

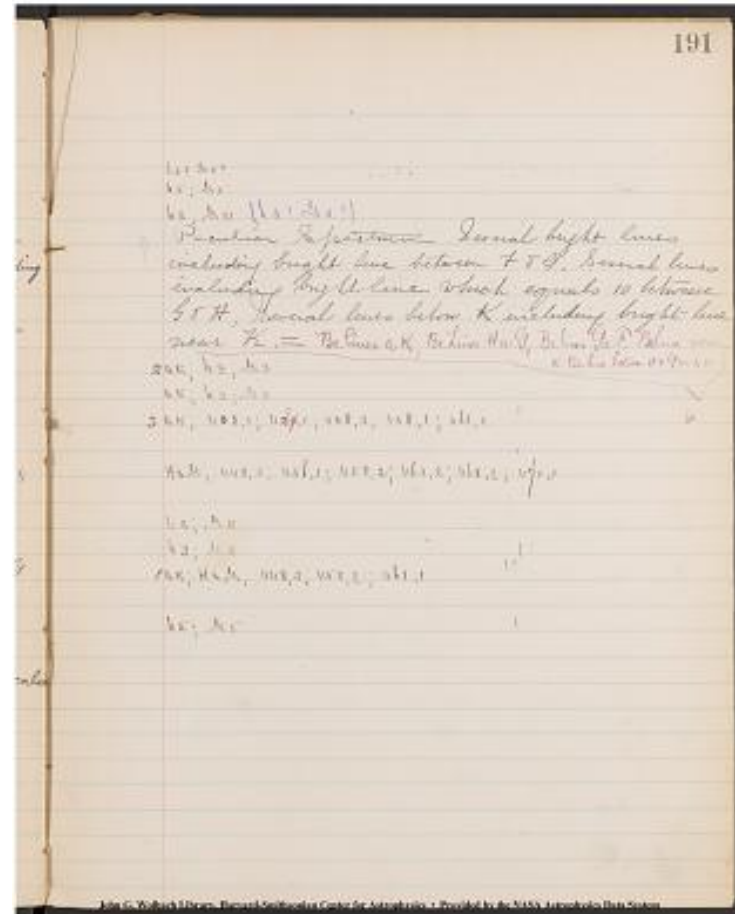
H a G; 448, 3; 456, 1; 458, 2; 463, 2; 468, 1;

h 2; G 2

h 3; G 3

a k; H a G; 448, 3; 458, 1; 461, 1

h 5; G 5



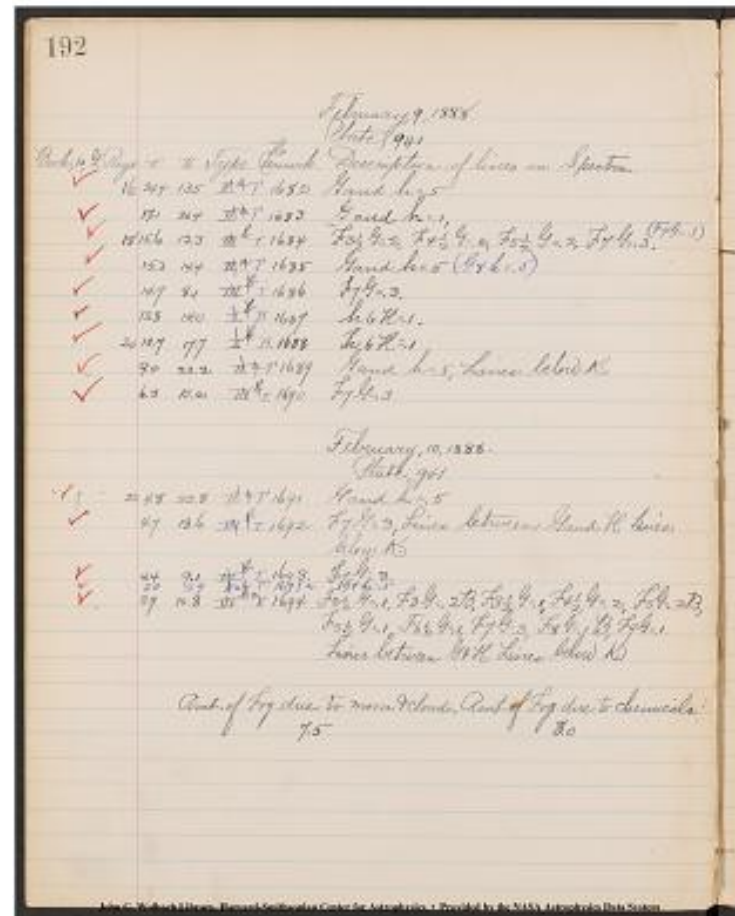
Project PHaEDRA - Williamina P. Fleming - Description of Spectra #23
Transcribed and Reviewed by Digital Volunteers
Extracted Dec-02-2022 11:16:40

192
February 9, 1888
Plate 941

6 columned table
Book, 10, G. Page. | V. | H. | Type | No. Remark. | Description of lines on Spectra
16 | 21.4 | 13.5 | ~~IIa~~ | ~~F~~ | 1682 | G and h = 5
17.1 | 21.4 | ~~IIa~~ | ~~F~~ | 1683 | G and h = 1
18 | 15.6 | 12.3 | ~~IIb~~ | ~~F~~ | 1684 | F 3 1/2 G = 2 F 4
1/2 G = 2 F 5 1/2 G = 2 F 7 G = 3 (F 7G = 3)
15.3 | 14.4 | ~~IIa~~ | ~~F~~ | 1685 | G and h = 5
(G & H = 5)
14.7 | 8.1 | ~~III~~ | ~~F~~ | 1686 | F7G = 3
12.8 | 14.0 | ~~IB~~ | ~~B~~ | 1687 | h6H = 1
20 | 10.7 | 17.7 | ~~IB~~ | ~~B~~ | 1688 | h6H = 1
9.4 | 22.2 | ~~IIa~~ | ~~F~~ | 1689 | F and h = 5, lines
below K

February, 10, 1888
Plate, 941
22 | 4.8 | 22.8 | III | a | F | 1691 | Sand h = 5
4.7 | 18.6 | III | F7 | S-3, lines between Sand H. lines below K.
4.4 | 9.1 | III | F7 | S=3 |
3.0 | 11.9 | III | a | F? | 1693 | a | S+h=5 |
2.9 | 10.8 | III | K | F 2 1/2 | S=1 | F3 | S=2B | F 3 1/2 | S=1 | F 4 1/2 | S=2 | F 5
S=2 B |
F 5 1/2 | S=1 | F 6 1/2 | S=1 | F7 | S=3 | F 8 | S=1 | B | FgS=1 |
Lines between SqH lines below K.

Amt. of fog due to moon & clouds 7.5
Amt. of fog due to chemicals 8.0



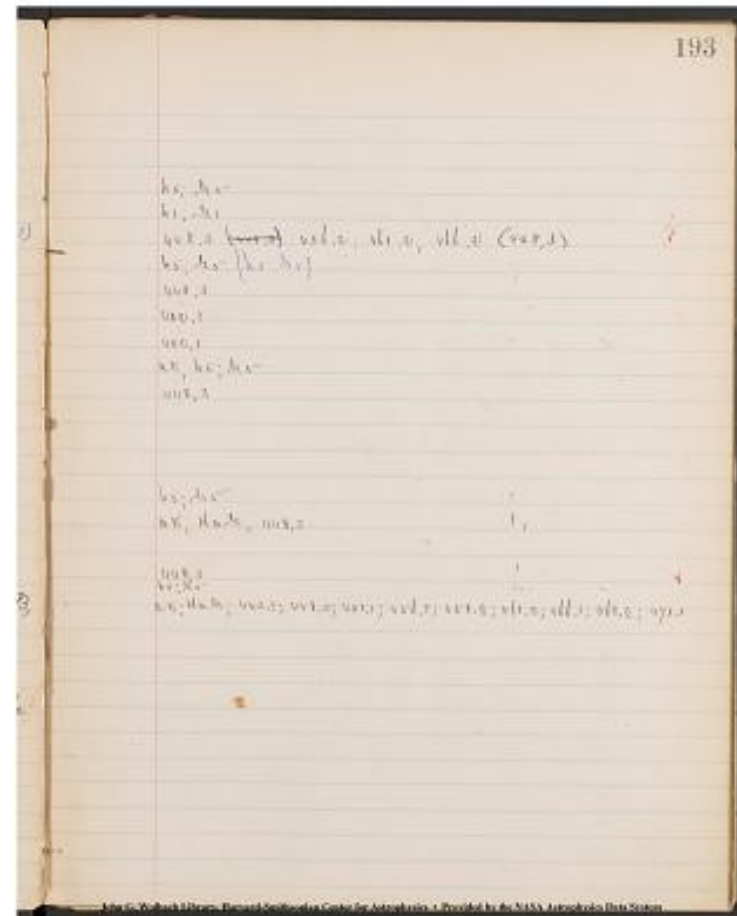
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Extracted Dec-02-2022 11:16:40

193

h5; y5
h1; y1
448,3 ~~(448,3)~~ 456,2; 461,2; 466,2
(448,3)
h5; y5 (h5, y5)
448,3
402,1
402,1
ak; h5; y5
448,3

h5; y5
ak; Hay; 448,3

448,3
h5; y5
ak; Hay; 443,1; 448,3; 451,1; 456,1;
458,2; 461,2; 466,1;
468,2; 471,1



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February, 10, 1888
Plate, 909.

[[6 columned table]]

| Book, 10, F. Page. | V. | H. | Type. | No. Remark. | Description of lines
on Spectra. |

| 216 | 13.3 | 13.9 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1695. | G & h=.2, 3 lines below K. |

| | 10.4 | 8.1 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1696. | G and h=.3? |

| 28 | 9.5 | 15.9 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1697. | G and h=.5 |

| | 8.6 | 11.0 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | 1698. | G and h=.5 |

| | 8.1 | 14.9 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | E 1699. | Lines below K. |

| | 6.7 | 7.9 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1700 | G & h=.5, Lines below K. |

| | 6.6 | 9.7 | ~~III~~ | ^b |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | 1701 | F7 G=.3 |

| 30 | 4.5 | 22.4 | ~~III~~ | ^b |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | 1702 | F5 G=.2, F7 G=.3, Lines between
G & H, |

|---|---|---|---| Lines below K |

| | 3.2 | 22.1 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1702 a | G & h=.5? |

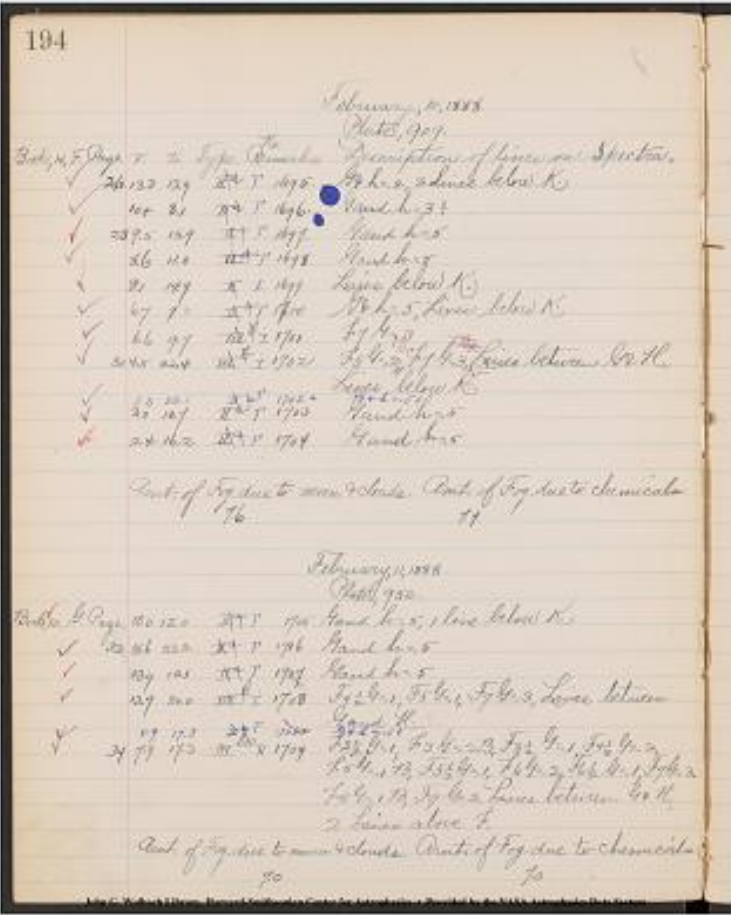
| | 3.0 | 10.7 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1703 | G and h=.5 |

| | 2.4 | 16.2 | ~~II~~ | ^a |
| ~~[[superscript]]~~ | ~~[[/superscript]]~~ | F 1704 | G and h=.5 |

Amt. of Fog due to moon & clouds 7.6
Amt. of Fog due to chemicals 7.9

February, 11, 1888
Plate, 952.

| Book. 10. G. Page. | 18.0 | 12.0 | ~~II~~ | ^a |



~~[[superscript]]~~ | 1705 | G and h=.5, 1 line below K. |

| 32 | 18.6 | 22.2 | ~~[[superscript]]~~ II ~~[[superscript]]~~ a
~~[[superscript]]~~ | F 1706 | G and h=.5 |

| | 13.9 | 10.1 | ~~[[superscript]]~~ II ~~[[superscript]]~~ a
~~[[superscript]]~~ | F 1707 | G and h=.5 |

| | 13.7 | 20.0 | ~~[[superscript]]~~ III ~~[[superscript]]~~ b
~~[[superscript]]~~ | I 1708 | F4 1/2G=.1, F5 G=.1, F7 G=.3,
Lines between
|---|---|---|---| G and H. |

| | 8.9 | 17.3 | ~~[[superscript]]~~ II ~~[[superscript]]~~ a
~~[[superscript]]~~ | F 1708a | G & h=.5? |

| 34 | 7.9 | 17.3 | ~~[[superscript]]~~ III ~~[[superscript]]~~ b.c
~~[[superscript]]~~ | K 1709 | F2 1/2G=.1, F3 G=.2B, F3 1/2
G=.1 F4 1/2 G=.2,
|---|---|---|---| F.5 G=.1 B, F5 1/2G=.1, F6 G=.2 F6 1/2 G=.1 F7 G=.3,
|---|---|---|---| F.8G=.1 B, F9 G=.2. Lines between G & H,
|---|---|---|---| 2 Lines above F. |

Amt. of Fog. due to moon & clouds. 7.0
Amt. of Fog. due to chemicals 7.0

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195

3ak; h2; y2

h3? y3?

h5; y5

h5; y5

ak

ak; h5; y5

448,3

ak; Hay; 448,3; 458,2

h5? y5?

h5; y5

h5; y5

ak; h5; y5

h5; y5

h5; y5

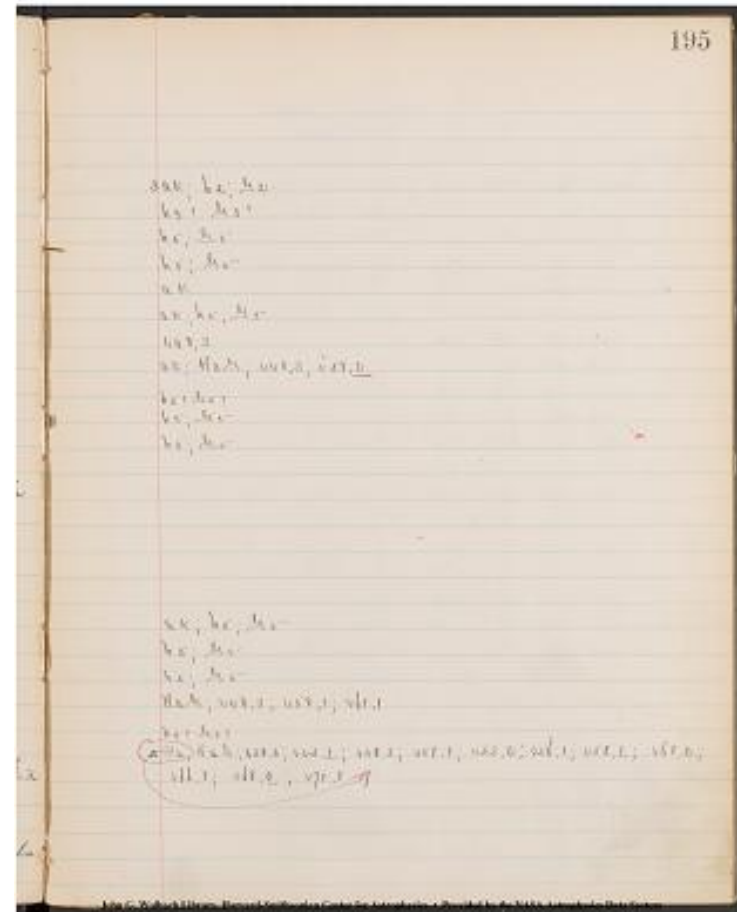
Hay; 448,3; 458,1; 461,1

h5? y5?

2T'a; Hay; 438,2; 443,1; 448,3; 451,1; 453,2;

456,1; 458,1; 461,2; 466,1;

482,2; 471,1



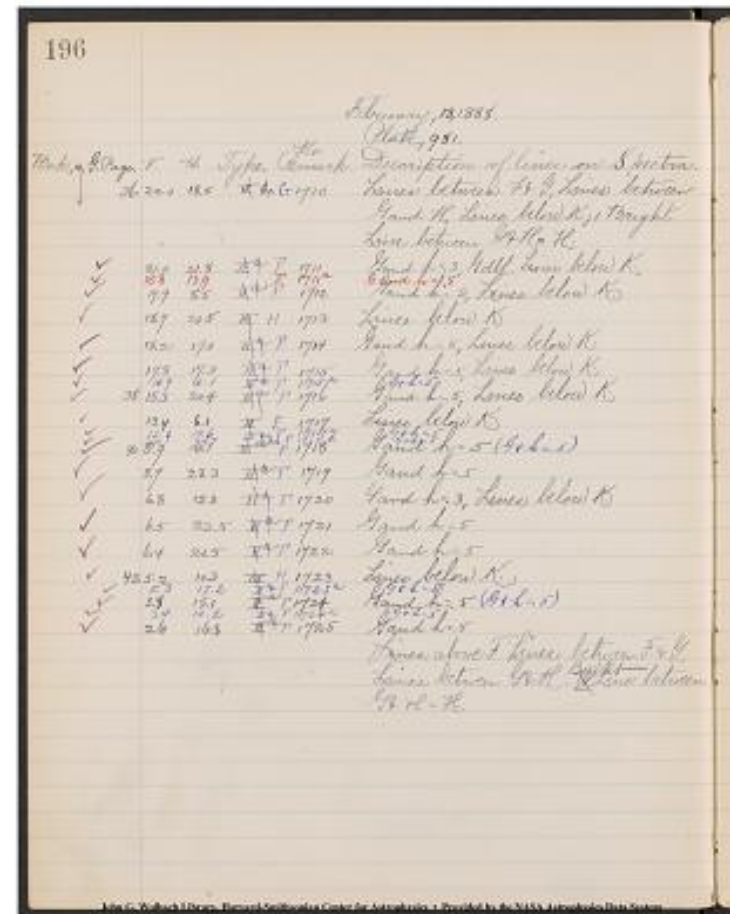
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196
 February, 13, 1888
 Plate, 981.
 Book, 10, G. Page. IV. 14. Type. No. Remark. Description of lines on Spectra

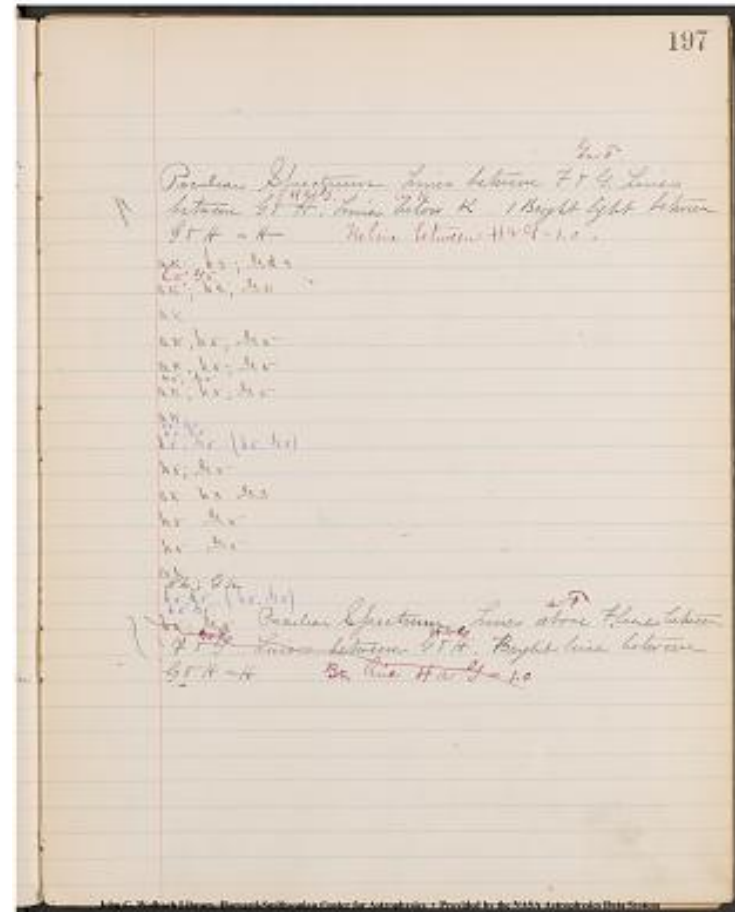
[[symbol - checkmark]]	36 22.0 18.5	[[strikethrough]]II	be	[[strikethrough]]G 1710	Lines between F+G, Lines between G and H, Lines below K, -1 Bright Line between G+H=H
[[symbol - checkmark]]	21.0 21.8	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1711	G and L=.3, G dlt. Lines below K	
[[symbol - checkmark]]	18.8 13.9	F 1711^[[a]]	G and h=.5		
[[symbol - checkmark]]	19.9 8.5	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1712	G and h=.2, Lines below K	
[[symbol - checkmark]]	18.7 21.5	[[strikethrough]]III	[[strikethrough]]H 1713	Lines below K	
[[symbol - checkmark]]	18.2 17.0	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1714	G and h=.5, Lines below K	
[[symbol - checkmark]]	17.8 17.2	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1715	G and h=.5, Lines below K	
[[symbol - checkmark]]	16.9 6.1	II^[[a]]F 1715^[[a]]	G+h=.5		
[[symbol - checkmark]]	38 15.3 20.4	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1716	G and h=.5, Lines below K	
[[symbol - checkmark]]	13.4 6.1	[[strikethrough]]II	[[strikethrough]]E 1717	Lines below K	
[[symbol - checkmark]]	12.6 19.6	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1717^[[a]]	G+h=.5	
[[symbol - checkmark]]	11.1 19.7	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1717^[[b]]	G+h=.5	
[[symbol - checkmark]]	40 8.9 16.1	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1718	G and h=.5 (G+h=.5)	
[[symbol - checkmark]]	8.7 23.3	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1719	G and h=.5	
[[symbol - checkmark]]	6.8 12.3	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1720	G and h=.3, Lines below K	
[[symbol - checkmark]]	6.5 22.5	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1721	G and h=.5	
[[symbol - checkmark]]	6.4 21.5	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1722	G and h=.5	
[[symbol - checkmark]]	42 5.2 10.3	[[strikethrough]]III	[[strikethrough]]H 1723	Lines below K	
[[symbol - checkmark]]	5.3 17.2	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1723^[[a]]	G+h=.5	
[[symbol - checkmark]]	3.8 15.1	II^[[a]]F 1724	G and h=.5 (G+h=.5)		
[[symbol - checkmark]]	3.4 10.2	[[strikethrough]]II^[[a]]	[[strikethrough]]F 1724^[[a]]	G+h=.5	



[[symbol -
checkmark]]|2.6|16.8|[[strikethrough]]II^a[[/strikethrough]]F|1725|G
and h=.5, Lines above J, Lines between F+G, Lines between G+H.
[[strikethrough]]F[[/strikethrough]]^{Bright} Lines between G+H=H.

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Peculiar Spectrum Lines between $t + y^{[y + f]}$. Lines between $y + h^{[Hay]}$. Lines below $^{[ak]}$ K. 1 Bright light between $y + H = H$ Br line between $H + y = 1.0$.
 ak; h3; yd3
 h5; y5
 ak; h2; y2
 ak
 ak; h5; y5
 ak; h5; y5
 h5; y5
 ak; h5; y5
 ak
 h5, y5
 h5, y5
 h5; y5 (h5, y5)
 h5; y5
 ak h3 y3
 h5 y5
 h5 y5
 ak
 5h; yh
 h5; y5 (h5, y5)
 h5 y5
~~h5; y5~~ Peculiar Spectrum Lines above $^{[aF]}$ t. Lines between $t + y^{[yaF]}$. Lines between $y + H^{[Hay]}$. Bright line between $y + H = H$. Br. line Hay = 1.0



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February, 14, 1888.

Plate, 975.

[6 columned table]

| Book. 10, G. Page | V. | H. | Type. | No. Remark. | Description of lines
on Spectra. |

| --- | --- | --- | --- | --- | --- |

| 46 | 22.0 | 17.2 | ~~III b.c.~~ ~~K~~ | 1726 |F3G = .1B, F3½G = .1, F4½G = .2, F5G = .2B, F5½G = .1, F7G = .3,
Lines between G & H, Lines below K. || 13.4 | 21.5 | ~~II a~~ ~~F~~ | 1727 | G and h =
.3. || 11.3 | 14.7 | ~~III b.~~ ~~F7G~~ = .3 | 1728 || 7.6 | 14.0 | ~~II a~~ ~~F~~ | 1729 | G and h =
.5 || 2.4 | 17.2 | ~~III b.c.~~ ~~K~~ | 1730 | F3G =
.1B, F4½G = .2, F5G = .1B, F5½G = .2, F7G = .3, Lines between G & H.
Lines below K. |

54 Amt. of Fog. due to moon & clouds. 7..8

Amt. of Fog. due to chemicals 7.9.

Plate 883.

Amt. of Fog. due to moon & clouds. 7.5

Amt. of Fog. due to chemicals 7.7

Plate 890.

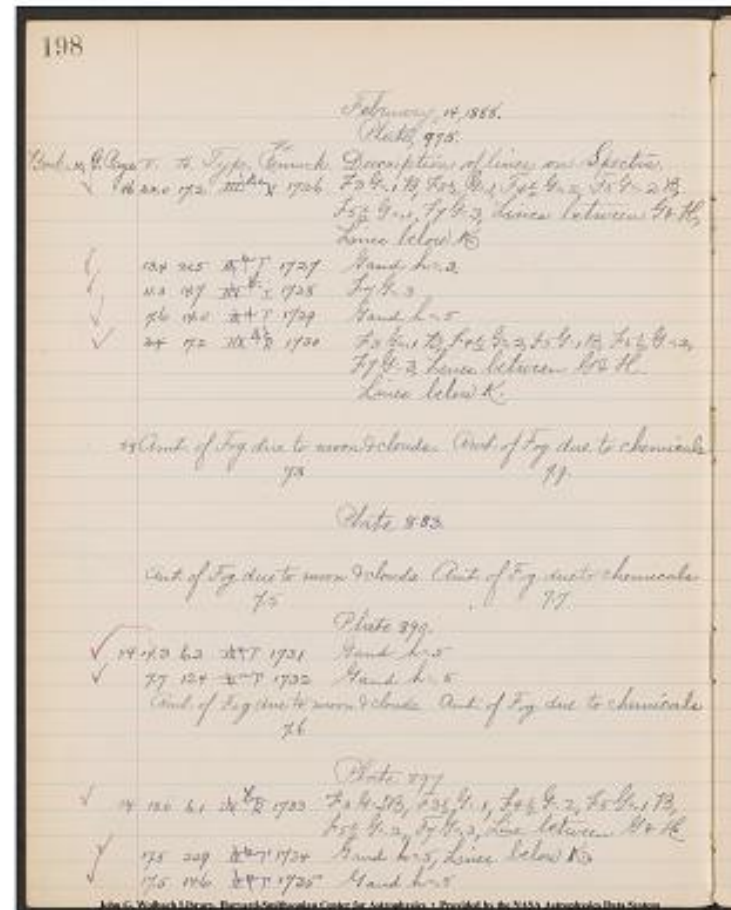
[6 columned table]

| 54 | 14.3 | 6.3 | ~~II a~~ ~~F~~ | 1731 | G and h =
.5 || 7.7 | 12.4 | ~~II a~~ ~~F~~ | 1732 | G and h =
.5 |

Amt. of Fog due to moon and clouds. 7.6

Amt. of Fog. due to chemicals

Plate 897

| 54 | 18.6 | 6.1 | ~~III b.c.~~ ~~K~~ | 1733 | F3G =
.1B, F3½G = .1, F4½G = .2, F5G = .1B, F5½G = .2, F7G = .3, Line
between G & H. || 17.5 | 20.9 | ~~II a~~ ~~F~~ | 1734 | G and h =
.5, Lines below K. || 17.5 | 14.6 | ~~II a~~ ~~F~~ | 1735 | G and h =
.5 |

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109

a k; H a G, 448, 3; 456, 1; 458, 2; 466, 1;
468, 1

h 3 G 3

448, 3

h 5 G 5

a k; H a G; 448, 3; 456, 2; 458, 1; 461, 2; 468, 1

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h5; g5

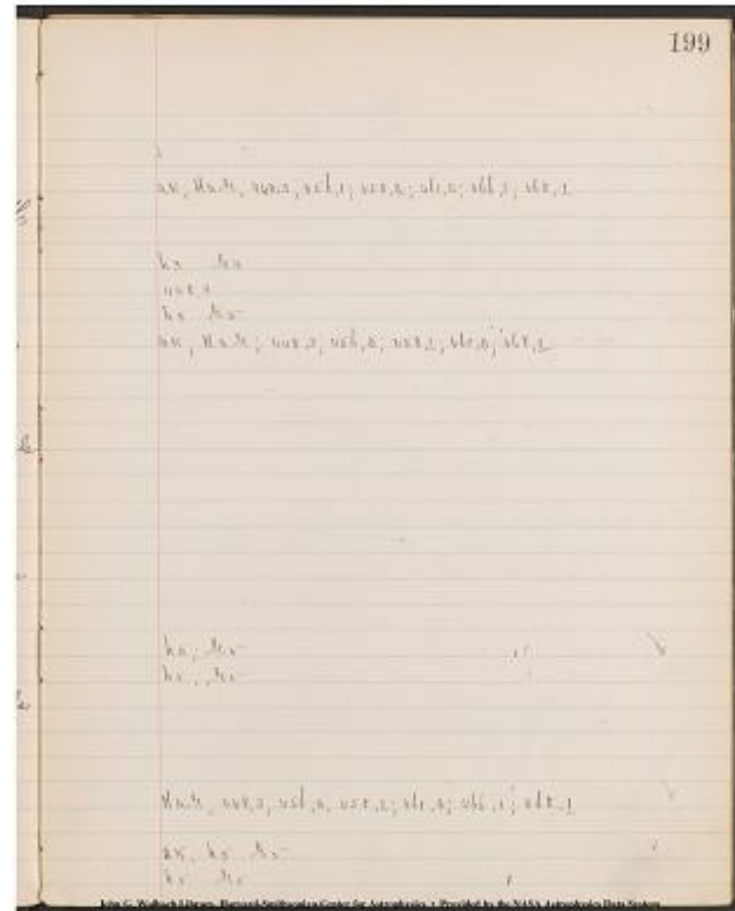
h5; g5

Harts; 448,3; 456,2; 458,1; 461,2; 466,1; 468,1

ak; h5 g5

h5 g5

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200

February, 14, 1888

Plate 897
[[6-columned table]]

| Book. 10, G., Page. | V. | H. | Type. | No. Remark. | Description of Lines on Spectra. |

| 56 | 11.0 | 17.3 | ~~II~~ ^{alpha} ^{alpha} ~~II~~ | 1736 | G and h=.4, Lines below K. |

| 8.6 | 16.5 | ~~II~~ ^{alpha} ^{alpha} ~~II~~ | 1737 | G and h=.5 |

| 6.7 | 7.9 | ~~II~~ ^{alpha} ^{alpha} ~~II~~ | 1738 | G and h=.5 |

| 6.6 | 17.4 | ~~I~~ ^{zeta} ^{zeta} ~~I~~ | 1739 | F6 G=.2, h6H=.1, H6a=.1 |

| 58 | 5.0 | 9.0 | ~~III~~ ^{zeta} ^{zeta} ~~III~~ | 1740 | F5 1/2 G=.1, F7 G=.3, Lines between G&H. |

| 4.1 | 14.6 | ~~II~~ ^{alpha} ^{alpha} ~~II~~ | 1741 | G and h=.5 |

amt. of fog. due to moon & clouds. 7.7
amt. of fog. due to chemicals. 7.8

February, 15, 1888.
Plate, 830.

| 58 | 20.4 | 22.6 | ~~II~~ ^{alpha} ^{alpha} ~~II~~ | 1742 | G and h=.5 |

| 18.6 | 13.2 | ~~II~~ ^{alpha} ^{alpha} ~~II~~ | 1743 | G and h=.5? |

| 18.0 | 12.3 | ~~III~~ ^{zeta} ^{zeta} ~~III~~ | 1744 | F4 1/2 G=.2, F7G=.3, |

| 11.1 | 11.2 | ~~III~~ ^{zeta} ^{zeta} ~~III~~ | 1745 | F5 G=.2, F5 1/2 G=.2, GdII? |

| 60 | 6.8 | 21.8 | ~~III~~ ^{zeta} ^{zeta} ~~III~~ | 1746 | F7 G=.2 |

amt. of fog. due to moon & clouds. 7.2
amt. of fog. due to chemicals. 7.5

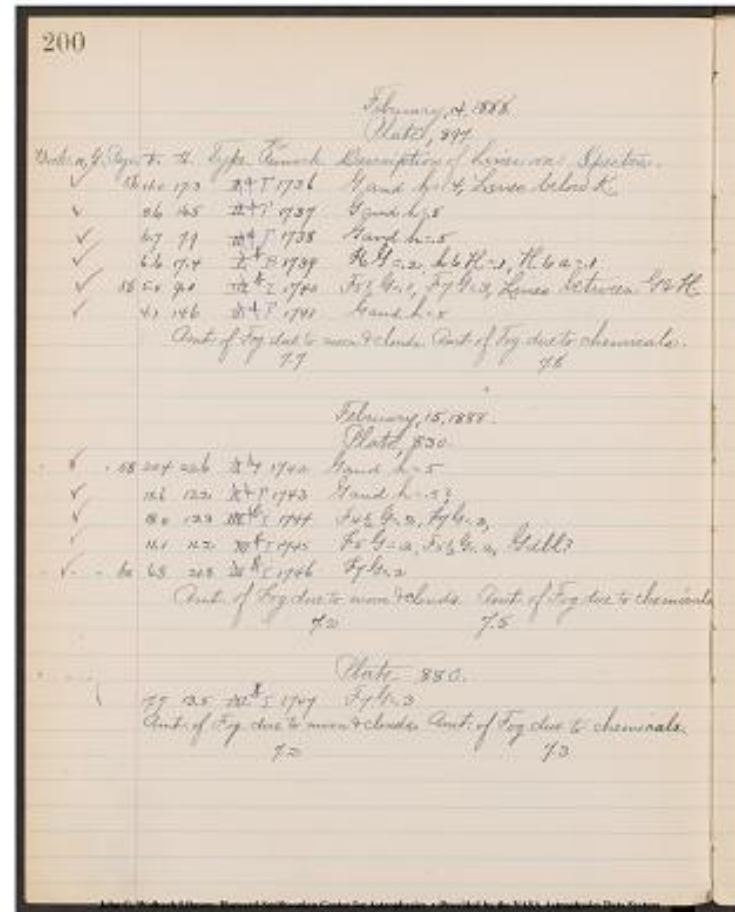


Plate 880

|---| 17.7 | 13.5 | ~~III~~ ^{zeta} |
~~[[superscript]]~~ | 1747 | F7 G=.3 |

amt. of fog. due to moon & clouds. 7.2

amt. of fog. due to chemicals. 7.3

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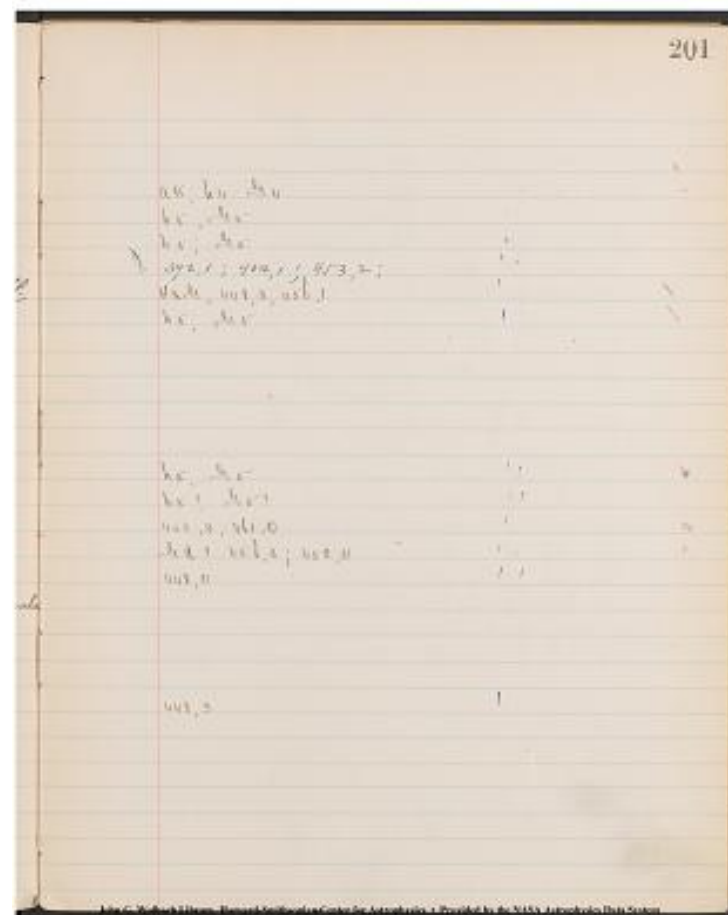
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201

ak; h4; G4
h5, G5
h5; G5
392,1; 402,1; 453,2;
HaG, 448,3; 456,1
h5; G5

h5, G5
h5? G5?
448,3; 461,2
Gd? 456,2; 458,2
448,2

448,3



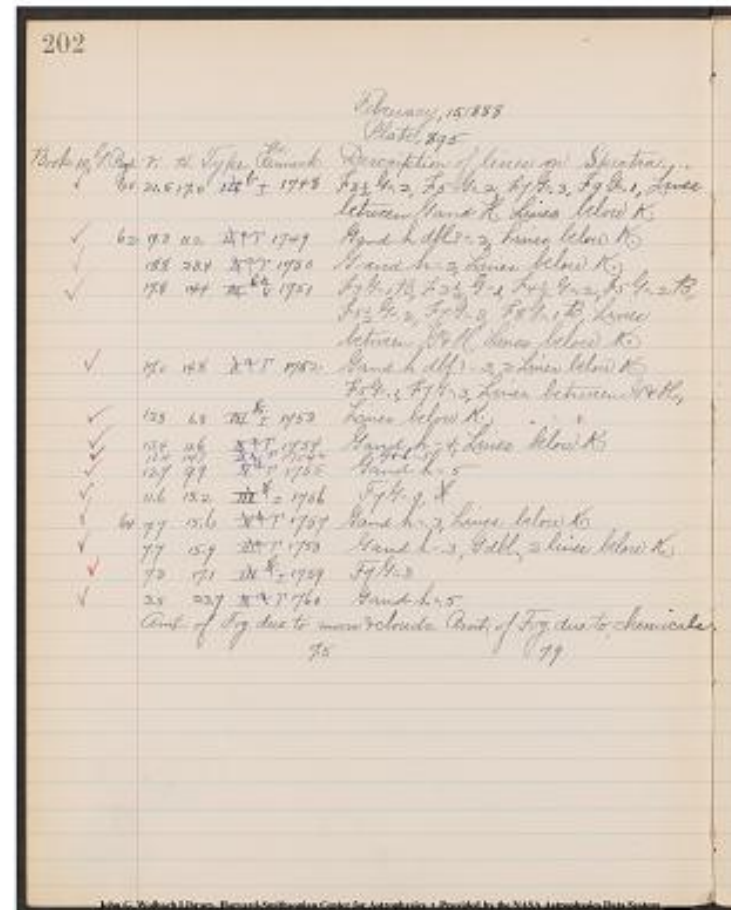
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202
February, 15 1888
Plate, 895

[[6 columned table]]
Book 10 G. Page	F.	H.	Type.	No. Remark	Description of lines on Spectra	
60	21.5	17.0	~~III^a[b]~~	I	1748	F3½ G=.2, F5 G=.2, F7 G=.3, F9 G=.1, Lines between G and H. Lines below K.
62	19.3	11.2	~~II^a[a]~~	F	1749	G and h dbl?=.2, Lines below K.
	18.8	23.4	~~II^a[a]~~	F	1750	G and h=.2, Lines below K.
	17.8	14.4	~~IIb.c.~~	K	1751	F3 G=.2 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F7 G=.3 F8 G=.1 B, Lines between G&H Lines below K.
	17.0	14.8	~~II^a[a]~~	F	1752	G and h dbl?=.3, 2 Lines below K.
	13.8	6.8	~~III^a[b]~~	I	1753	Lines below K.
	13.4	11.6	~~II^a[a]~~	F	1754	G and h=.4, Lines below K.
	13.4	14.7	~~II^a[a]~~	F	1754a	G&h=.5
	12.7	9.9	~~II^a[a]~~	F	1755	G and h=.5
	11.6	15.2	~~III^a[b]~~	I	1756	F7 G=.3, ~~F~~
64	7.7	15.6	~~II^a[a]~~	F	1757	G and h=.3, Lines below K.
	7.7	15.9	~~II^a[a]~~	F	1758	G and h=.3, G dbl., 2 lines below K.
	7.3	17.1	~~III^a[b]~~	I	1759	F7 G=.3
	3.5	23.7	~~II^a[a]~~	F	1760	G and h=.5

[[2 columned table]]
| Amt. of Fog. due to moon & clouds. | Amt. of Fog. due to chemicals |
| 7.5 | 7.9 |

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203

ak; Hay; 438,1; 448,3; 458,2; 466,2

ak; hd?2; yd?2

ak; h2 y2

ak; Hay; 443,1; 448,3; 456,2; 461,2; 466,1; 468,1

zak; hd?3 yd?3

~~ak; Hay; 448,3; 458,1~~

ak.

ak; h4; y4

h5, y5

h5 y5

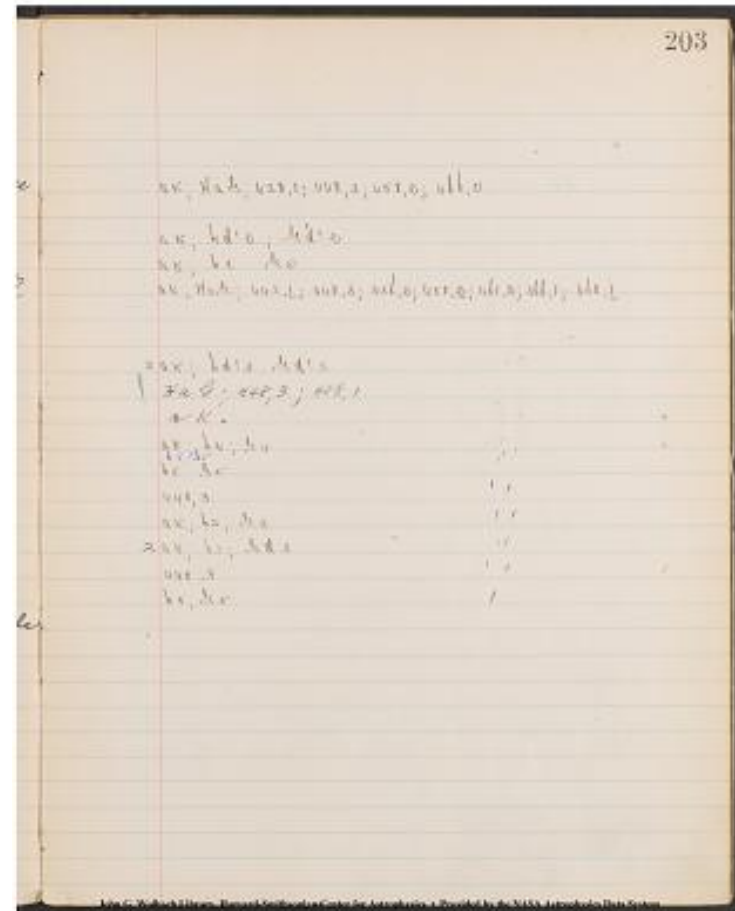
448,3

ak; h3; h3

2ak; h3; yd3

448,3

h5, y5



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February, 16, 1888

Plate, 986

[6 columned table]

Book. 10, H. Page. | V. | H. | Type. | No. Remark. | Description of lines on Spectra. |

|---|---|---|---|---|

| 64 | 22.1 | 16.5 | ~~III^a[b.c.]~~ | ~~K~~ | 1761 | F3G=.1B, F4½G=.2, F5G=.1B, F7G=.3, Lines between G and H, lines below K. || 18.0 | 11.8 | ~~II^a[a]~~ | ~~F~~ | 1761a | G&h=.5? || 17.9 | 9.1 | ~~II^a[a]~~ | ~~F~~ | 1761b | G&h=.5? || 15.7 | 19.4 | ~~II^a[a]~~ | ~~F~~ | 1762 | G and h=.2, 2 Lines below K. || 14.2 | 12.4 | ~~II^a[b]~~ | ~~I?~~ | 1762a | F7G=.3 || 66 | 10.2 | 16.0 | ~~II^a[a]~~ | ~~F~~ | 1763 | G and h=.5, Lines below K. || 12.1 | 15.7 | ~~II^a[a]~~ | ~~F~~ | 1762b | G&h=.3 || 9.9 | 22.6 | ~~II^a[a]~~ | ~~F~~ | 1764 | G and h=.5 || 19.4 | 12.8 | ~~II^a[a]~~ | ~~F~~ | 1762c | G&h=.5 (G&h=.5) || 68 | 8.8 | 12.0 | ~~II^a[b]~~ | ~~I~~ | 1765 | F7G=.3 || 7.6 | 17.8 | ~~II^a[a]~~ | ~~F~~ | 1766 | G and h=.5 || 7.7 | 13.4 | ~~II^a[a]~~ | ~~F~~ | 1767 | H and h=.2, Lines below K. || 7.4 | 21.7 | ~~II^a[a]~~ | ~~F~~ | 1768 | G and h=.3? 2 lines below K. || 19.4 | 12.8 | ~~II^a[a]~~ | ~~I~~ | 1768a | G&h=.5 (G&h=.5) || 5.8 | 15.9 | ~~II^a[a]~~ | ~~F~~ | 1769 | G and h=.4 (G&h=.5) || 3.5 | 6.5 | ~~II^a[b]~~ | ~~B~~ | 1770 | G6h=.2. |

| 2.4 | 16.6 | 1771 | F3G=.1B, F4½G=.2, F5G=.1B, F5½G=.2, F7G=.2, Lines between G & H. |

Amt. of fog. due to moon & clouds. 6.8

Amt. of fog. due to chemicals. 7.9

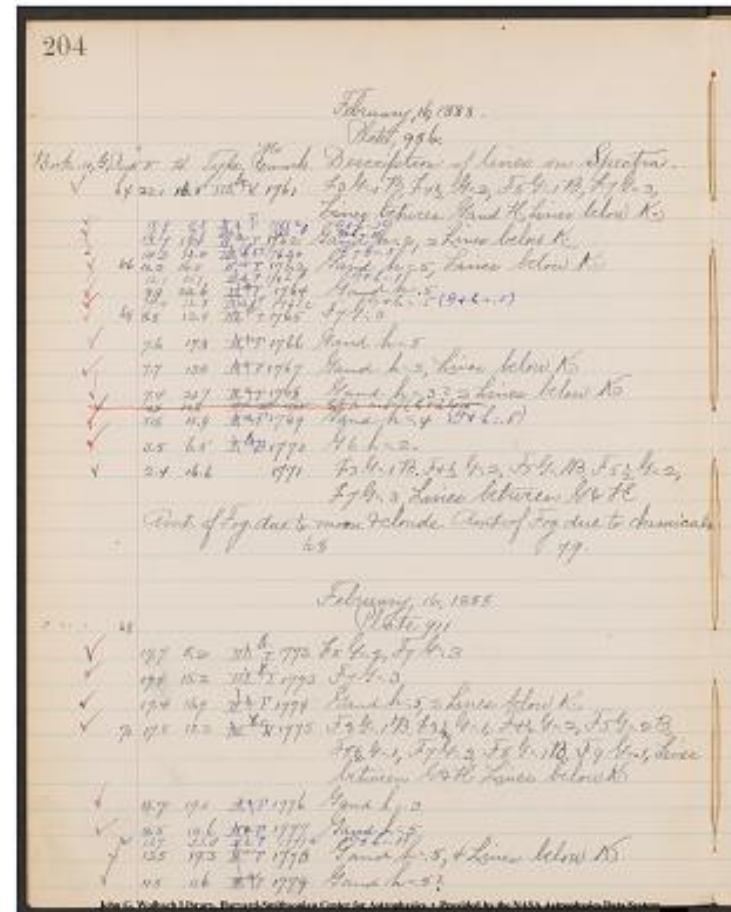
February, 16, 1888

Plate 911

[6 columned table]

| 68 | | | | |

|---|---|---|---|---|

| 19.7 | 8.2 | ~~III^a[b]~~ | ~~I~~ | 1772 | F5G=.2, F7G=.3 || 19.4 | 15.2 | ~~III^a[b]~~ | ~~I~~ | 1773 | F7G=.3 || 19.4 | 16.9 | ~~II^a[a]~~ | ~~F~~ | 1774 | G and h=.5, 2 lines below K. || 70 | 17.5 | 12.2 | ~~III^a[b.c.]~~ | ~~K~~ | 1775 | F3G=.1B, F3½G=.1, F4½G=.2, F5G=.2B, F5½G=.1, F7G=.3, F8G=.1B, F9G=.1, Lines between G & H. Lines below K. || 15.7 | 19.0 | ~~II^a[a]~~ | ~~F~~ | 1776 | G and h=.3 || 15.5 | 12.6 | ~~II^a[a]~~ | ~~F~~ | 1777 | G and h=.5 || 13.7 | 23.0 | ~~II^a[a]~~ | ~~F~~ | 1777a | G&h=.5? || 13.5 | 19.3 | ~~II^a[a]~~ | ~~F~~ | 1770 | G and h=.5, 4 Lines below K. || 11.5 | 11.6 | ~~II^a[a]~~ | ~~F~~ | 1779 | G and h=.5? |John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics.
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205

ak; Hay; 448,3; 458,1; 461,2; 468,1

h5? y5?
h5? y5?
2 ak; h2 y2
448,2
ak; h5 y5
h3; y3
h5 y5
h5; y5 (h5,y5)
448,3
h5 y5
ak h2 y2
2 ak h3? y3?
[[~~h5~~]; G5(h5;G5),y[[~~h5~~]]
h4 y4 (h5, h5)
419,2
Hay; 448,3; 456,2; 458,1; 461,2; 468,1

448,3; 458,2

448,3

ak; h5 y5

ak; Hay; 438,1; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

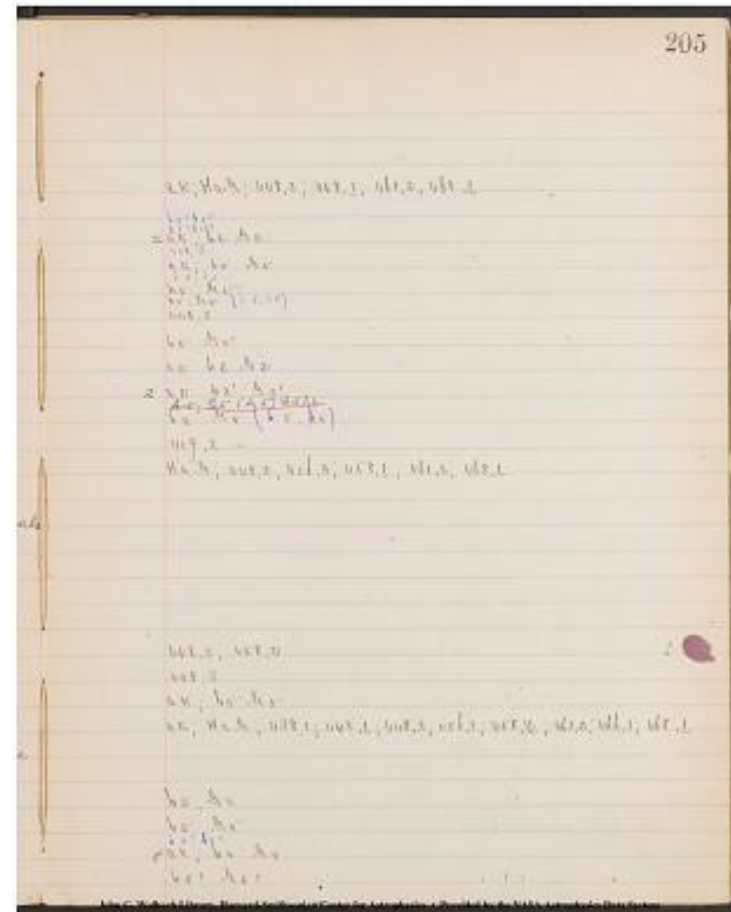
h3, y3

h5 y5

h5? y5?

4 ak; h4 y4

h5? y5?



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206

February, 16, 1888.

Plate, 911

[6 columned table]

| Book, 10, G, Page. | V. | H. | Type. | No. Remark, | Description of lines
on Spectra |

|---|---|---|---|---|

|70|11.4|11.2|~~III[^][b]~~|1780|F 4½ G = .2,
F 7 G = .3, Lines between G & H, 2 Lines before K.

|11.0|15.0|~~III[^][a]~~|1781|G and h = .5 (G
& h = .5)

|10.4|12.8|~~III[^][a]~~|1782|G and h = .5
(G & h = .5)

|72|9.8|15.7|~~III[^][b.c.]~~|1783|F 4½ G =
.1, F 5 G = .2 B, F 5½ G = .1, F 7 G = .3, Lines between G and H. lines
below K.

|8.5|14.9|~~III[^][b]~~|1784|F 7 G = .3. (F 7
G = .3)

|7.0|17.2|~~III[^][b]~~|1785|F 7 G = .3, Lines
between G & H.

|4.5|16.6|~~III[^][b]~~|1786|F 4 ½ G = .2, F 7
G = .3, Lines between G & H.

Amt. of fog. due to moon & clouds. 7.4

Amt. of fog. due to chemicals. 7.9

February, 17, 1888.

Plate, 988

[6 columned table]

|74|22.5|15.8|~~III[^][b]~~|1787|F7G=.3,
Lines between G & H, Lines below K

|21.9|20.7|~~III[^][a]~~|1788|G and h=.5,
Lines below K.

|20.0|15.1|~~III[^][a]~~|1788a|G & h=.5?
|18.3|22.6|~~III[^][a]~~|1788t|G & h=.5?

|18.2|6.1|~~III[^][a]~~|1789|G and h=.2,
Lines below K

|17.4|13.0|~~III[^][a]~~|1789a|G & h=.5 (G &
h=.5)

|76|14.7|23.7|~~III[^][a]~~|1790|G and h=.2,
Lines below K.

|12.5|14.5|~~III[^][a]~~|1791|G and h=.5,
Lines below K.

|11.7|13.5|~~III[^][a]~~|1792|G and h=.5,
Lines below K

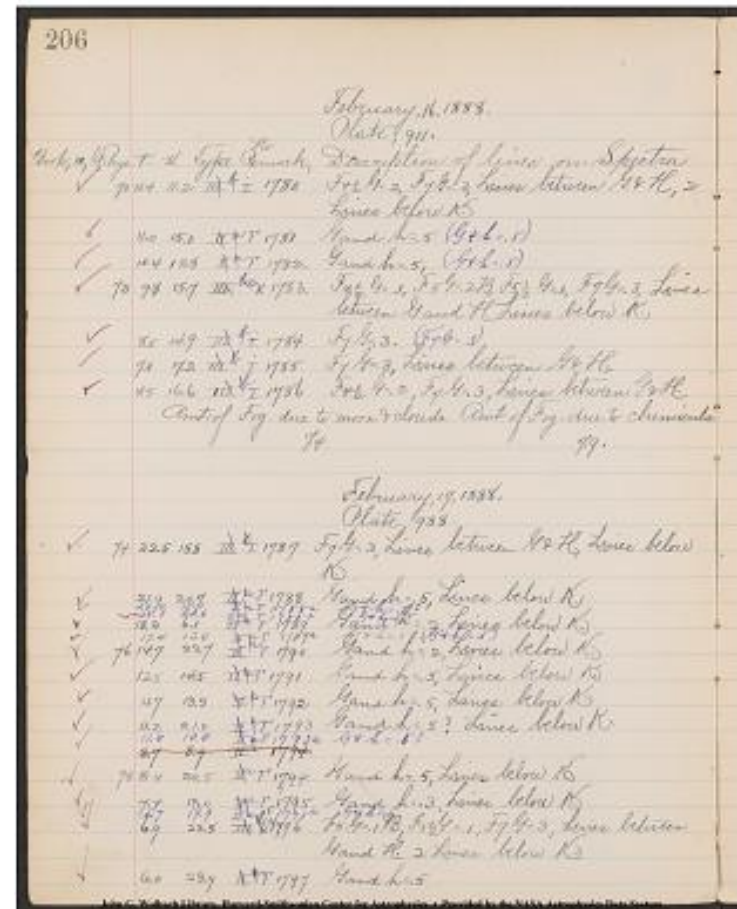
|11.2|21.0|~~III[^][a]~~|1793|G and h=.5?
Lines below K

|11.0|10.0|~~III[^][a]~~|1793a|G & h=.5?
|~~III[^][a]~~|8.7|8.9|~~III[^][a]~~|1794|

|78|8.4|20.5|~~III[^][a]~~|1794.|G and h=.5,
Lines below K

|7.4|18.0|~~III[^][a]~~|1795|G and h=.3,
Lines below K

|6.7|19.9|~~III[^][a]~~|1795a|G & h=.5|



||6.9|23.5|~~III^b~~| K|1796|F5G = .1B,
F5½G=.1, F7G=.3, Lines between G and H. 2 Lines below K|
||6.0|23.9|~~II^a~~| F|1797|G and h=.5|

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h5 y5

[illegible]

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207

aK; Hay ww8.3; wb1.2

h5; y5 (y5, h5)

h5; y5 (y5, h5)

aK; Hay; ww8.3; w5b.1; w58.3; wb1.1

448.3 (448.3)

Hay; 448.3

Hay; 448.3;

[[Inserted Paper]]

7.6 7.3 7.9

-[[underlined]]3[[underlined]] +3

[[Inserted Paper]]

aK; Hay; 44

aK; h5; y5;

h5? y5?

h5? y5?

aK; h2; y21

h5; y5; (h5; y5)

aK; h2; y21

aK h5 y5

ak h5 y5

ak h5 y5

h5? y5?

aK h5 y5

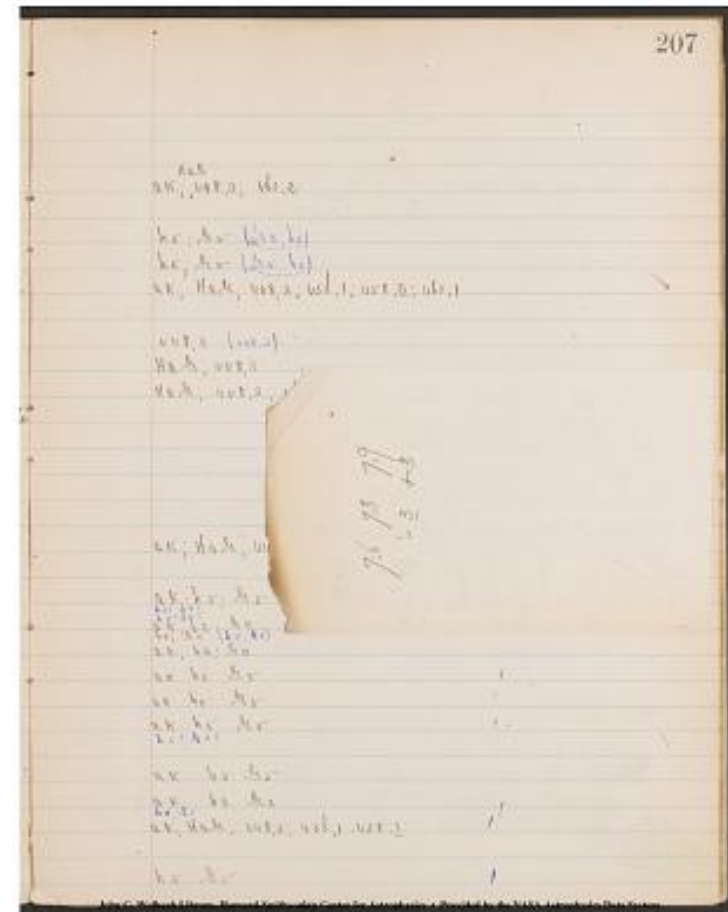
aK h3 y3

h5; y5

aK; Hay; 448.3; 45b.1 458.1[[underlined]]1[[underlined]]

h5 y5

h5 y5



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207

ak, HaG 448,3; 461,2

h5; G5 (G5, h5)

h5; G5 (G5, h5)

ak; Hag; 448,3; 456,1; 458,21; 461,1

448,3 (448,3)

HaG; 448,3

HaG; 448,3; 461,2

ak; HaG; 448,3

ak; h5; G5

h5? G5?

h5? G5?

ak; h2; G2

h5; G5 (h5, G5)

ak; h2; G2

al h5 G5

ak h5 G5

ak h5 G5

h5? G5?

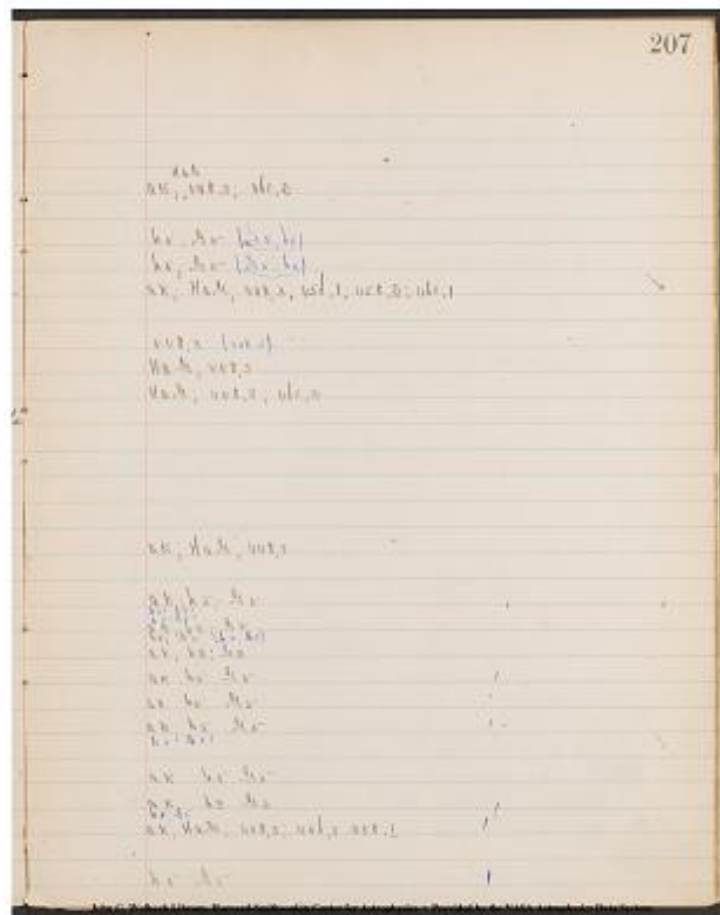
ak h5 G5

ak h3 G3

h5; G5

ak, HaG, 448,3; 456,1 458,11

h5 G5



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February, 17, 1888.
Plate, 988.

[[6 column table]]

Book, 10, G., Page.	V.	H.	Type.	No. Remarks.	Description of lines on Spectra.
78	2.9	15.8	~~III^a[b]~~	1798	F 4 1/2 G = .2, F 7 G = .3, Lines between G & H, Lines below K.
	2.4	20.7	~~II^a[a]~~	1799	G and h = .5

[[2 column table]]

Amt. of Fog. due to moon & clouds. | Amt of Fog. due to chemicals.
5.8 | 7.7

Plate 1002.

[[6 column table]]

Book, 10, G., 80	20.3	17.1	~~III^a[b]~~	1800	F 7 G = .3, Lines between G & H. 2 Lines below K.	
	19.5	23.9	~~II^a[a]~~	1801	G and h = .5?	
	17.4	23.4	~~II^a[a]~~	1802	G and h = .5	
	16.6	14.3	~~III^a[bc]~~	1803	F 3 G = .1 B, F 3 1/2 G = .1, F 4 1/2 G = .2, F 5 G = .2 B, F 5 1/2 G = .1, F 7 G = .3, F 8 G = .1 B, F 9 G = .1, Lines between G and H, 2 Lines below K.	
	12.6	6.7	~~III^a[b]~~	1804	F 7 G = .3, Lines between G and H.	
	12.1	11.5	~~II^a[a]~~	1805	G and h = .5^a[2], 2 Lines below K.	
	82	6.6	15.7	~~II^a[a]~~	1806	G and h = .5
	2.4	23.8	~~II^a[a]~~	1807	G and h = .5	

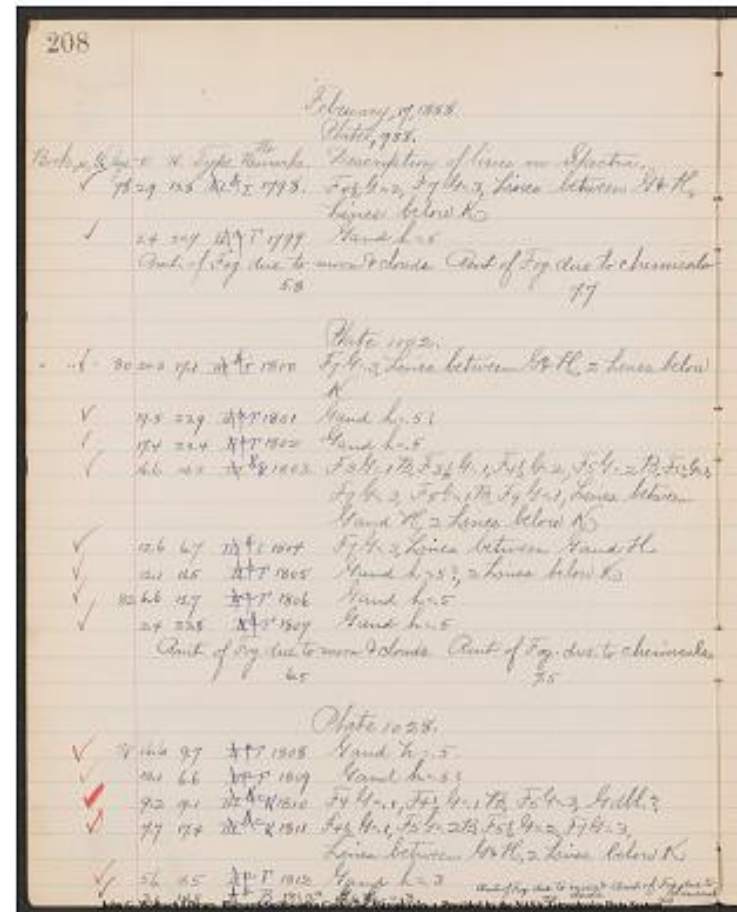
[[2 column table]]

Amt. of Fog. due to moon & clouds. | Amt. of Fog due to chemicals.
6.5 | 7.5

Plate 1028.

[[6 column table]]

84	16.6	9.7	~~II^a[a]~~	1808	G and h = .5
	12.1	6.6	~~II^a[a]~~	1809	G and h = .5
	9.2	19.1	~~III^a[bc]~~	1810	F 4 G = .1, F 4 1/2 G = .1 B, F 5 G = .3, G dbl. ?
	7.7	17.4	~~III^a[bc]~~	1811	F 4 1/2 G = .1, F 5 G = .2 B, F 5 1/2 G = .2, F 7 G = .3, Lines between G & H, 2 Lines below K.
	5.6	11.5	~~II^a[a]~~	1812	G and h = .3
	3.1	14.8	~~I^a[b]~~	1812^a[a]	G 6 H = .3



[[2 column table]]

Amt. of Fog. due to moon & clouds. | Amt of Fog. due to chemicals.

7.5 | 7.9

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209

a K; H a G; 448, 3; 461, 2
h 5; G 5

2 a K; H a G, 448, 3
h 5? G 5?
h 5; G 5

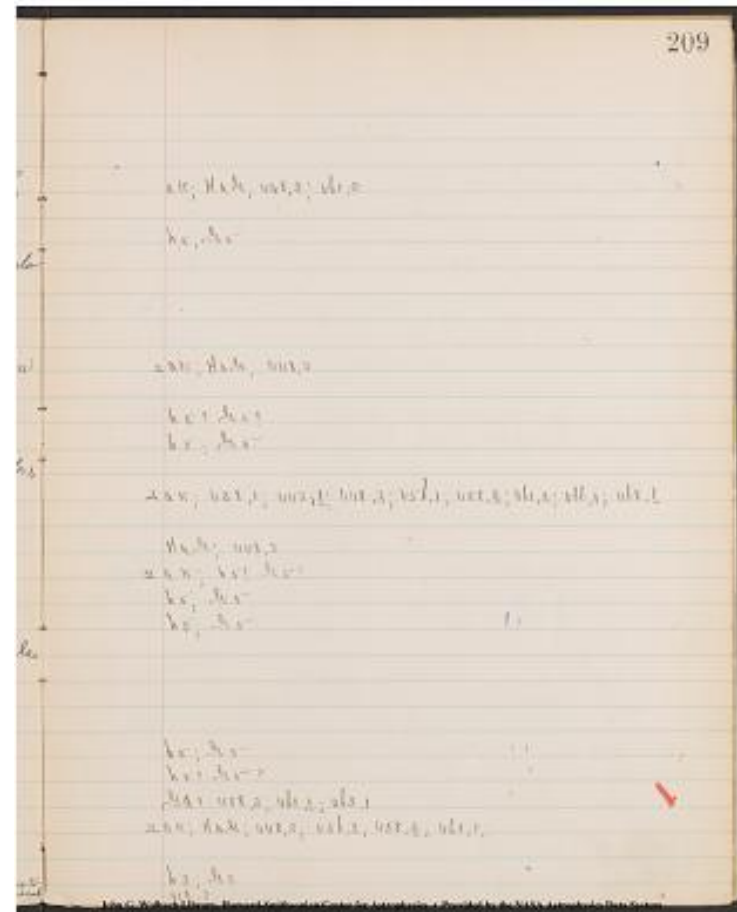
2 a K; 438, 1; 443, 1; 448, 3; 456, 1; 458,
2; 461, 2; 468, 1

H a G; 448, 3
2 a K; h 5? G 5?
h 5; G 5
h 5; G 5

h 5; G 5
h 5? G 5?
G alpha? 458, 3; 461, 1; 463, 1
2 a K; H a G; 448, 3; 456, 2, 458, 2; 461, 1;

h 3; G 3
419, 3

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February, 18, 1888.

Plate, 1054

[[6 columned table]]

| Book, 10, G Page | v. | H. | Type. | No Remark | Description of lines on Spectra |
 | 86 | 12.7 | 19.2 | ~~III b.c.~~ | ~~K~~ | 1813 | F4½
 G=.2, F5 G=.1 B, F5½ G=.2, F7 G=.3 |
 | | 7.8 | 10.9 | ~~II b.~~ | ~~B~~ | 1814 | h6 H=.1,
 H6 a=.2. ? |

[[2 columned table]]

| Amt. of Fog due to moon & clouds | Amt. of Fog due to chemicals |
 | 7.5 | 8.0 |

Plate, 1054

[[6 columned table]]

| Book 10, G Page | 20.2 | 12.1 | ~~II b.~~ | ~~B~~ |
 1815 | F6 G=.2, F8 G=.2, G3 h=.2, G8 h=.2, h6 H=.2, H6 a=.2, B4 j?=4 |
 | 86 | 19.5 | 8.3 | ~~II b.~~ | ~~B~~ | 1816 | h6 H=.1 |
 | | 14.0 | 13.7 | ~~II b.~~ | ~~B~~ | 1817 | F6 G=.2,
 h6 H=.2, H6 a=.1, B4 j?=2 |
 | | 14.0 | 19.7 | ~~III b.~~ | ~~I~~ | 1818 | F5 G=.1
 B?, F5½ G=.1, F7 G=.3, Lines between G and H |
 | 88 | 11.9 | 16.3 | ~~II b.~~ | ~~B~~ | 1819 | F6 G=.2
 B?, h6 H=.1, H6 a=.2 |
 | | 11.4 | 14.4 | ~~II ac~~ | ~~G?~~ | 1820 | F6
 G=.1 B, G1½ h=.3, G2 h=.1 B, G and h=.5, Lines below K. [a spectrum
 of jemist A star?] |
 | | 10.0 | 6.9 | ~~III b.~~ | ~~I~~ | 1821 | F2½ G=.2,
 F4½ G=.2, F5½ G=.1, F7 G=.3 |

[[2 columned table]]

| Amt. of Fog due to moon & clouds | Amt. of Fog due to chemicals |
 | 7.6 | 7.8 |

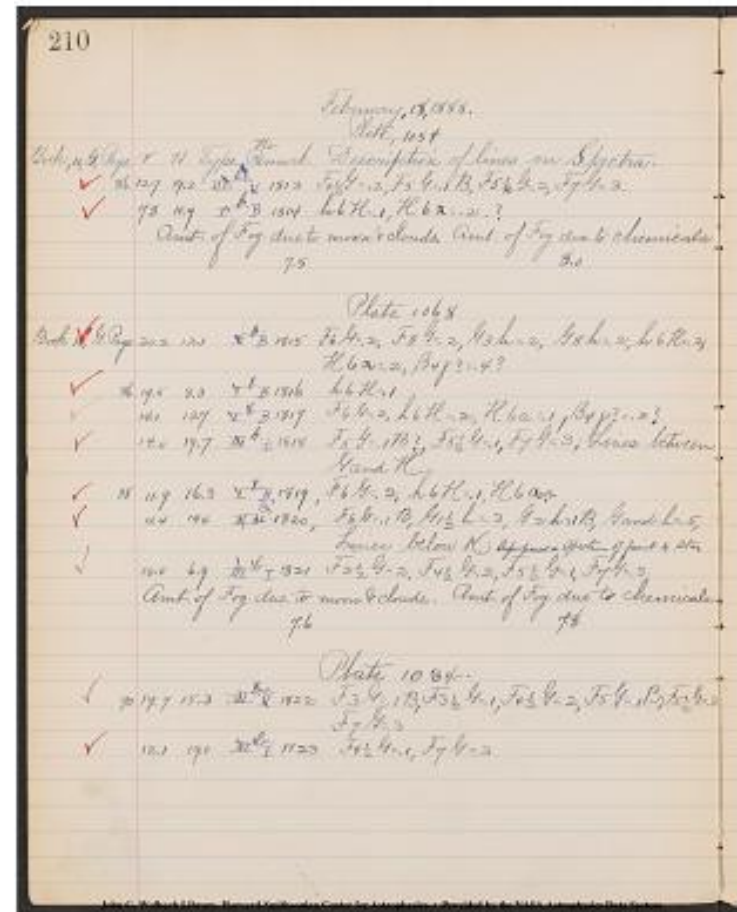
Plate, 1054

[[6 columned table]]

| 90 | 19.9 | 15.3 | ~~III b.c.~~ | ~~K~~ | 1822 | F3
 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.2, F7 G=.3 |
 | | 12.1 | 19.0 | ~~III b.~~ | ~~I~~ | 1823 | F4½
 G=.1, F7 G=.3 |

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211

448,3; 456,2; 458,1; 461,21

~~392,2; 402,1~~

~~382,4? 392,2; 402,2; 414,2; 426,2;~~
443,2; 453,2
402,1

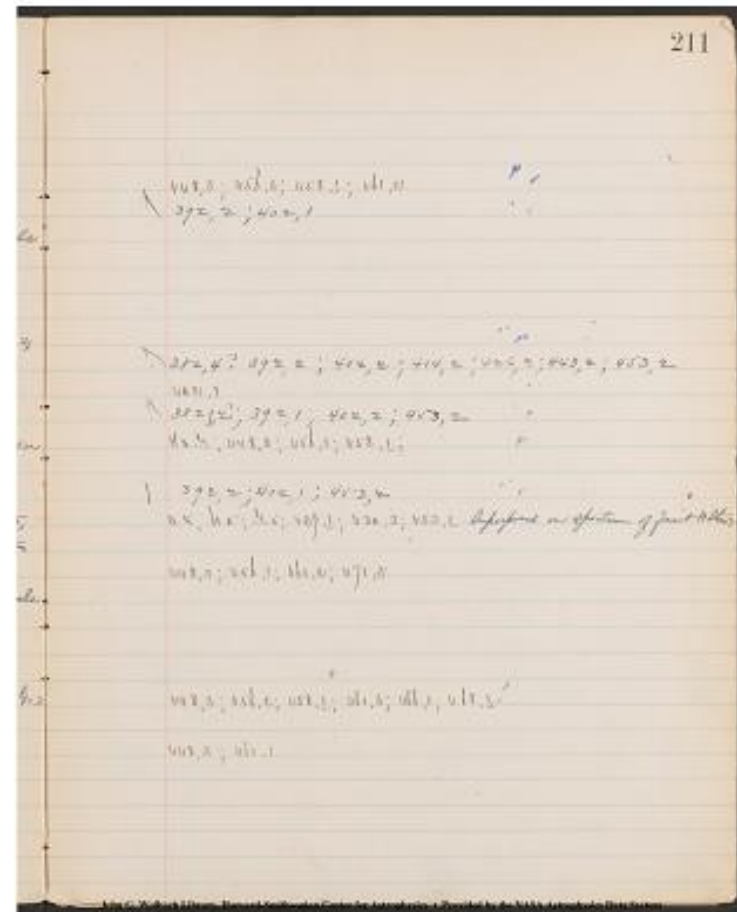
~~382,,2?; 392,1; 402,2; 453,2~~
Hay; 448,3; 456,1; 458,1?

~~392,2; 402,1; 453,2~~
ak; H5; y5; 429,1; 430,3; 453,1 Superpsed on spectrum of joint
Adon?

448,3; 456,1; 461,2; 471,2

448,3; 456,2; 458,1; 461,2; 466,1; 468,1

448,3; 461,1



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February, 20, 1888.
Plate 1034

[[6 column table]]

| Book, 10, G., Page. | V. | H. | Type. | No Remark. | Description of lines on Spectra. |
| | 10.0 | 17.5 | ~~[[/del]]~~ I b ~~[[/del]]~~ B | 1824 | F 6 G = .2, h 6 H = .2, H 6 = .2 |
| | 9.8 | 11.8 | ~~[[/del]]~~ III b ~~[[/del]]~~ I? | 1825 | F 4 1/2 G = .1, F 7 G = .3, lines between G and H ~~[[/del]]~~ large, ~~[[/del]]~~

[[2 column table]]

Amt. of Fog. due to moon & Clouds. | Amt. of Fog. due to chemicals.
7.5 | 7.6

[[right margin]]

V H

15.8 11.1

15.8 11.2 have peculiar spectrum

[[/right margin]]

Plate 1092. February 23, 1888.

[[6 column table]]

	20.4	12.2	~~[[/del]]~~ II a ~~[[/del]]~~ F	1826	G & h = .4, lines below K.
	19.5	12.7	~~[[/del]]~~ I b ~~[[/del]]~~ B	1827	F 6 G = .2, F 8 G = .2, h 6 H = .1, H 6 = .1
	18.7	15.4	~~[[/del]]~~ I b ~~[[/del]]~~ B	1828	h 6 H = .2
	15.8	11.1	~~[[/del]]~~ I b ~~[[/del]]~~ B	1829	h 6 H = .1, F 6 G = .1
	14.6	11.1	~~[[/del]]~~ I b ~~[[/del]]~~ B	1830	F 6 G = .2, h 6 H = .1
	~~[[/del]]~~ 12.6	6.1	II a F	1830^a	G + h = .5 ~~[[/del]]~~
	9.8	6.8	~~[[/del]]~~ II a ~~[[/del]]~~ F	1831	G h dbl. = .2, lines below K.
	9.9	16.5	~~[[/del]]~~ I b ~~[[/del]]~~ B	1832	F 6 G = .2, h 6 H = .1, 4 = .4
	8.6	16.5	~~[[/del]]~~ I b ~~[[/del]]~~ B	1833	G 8 h = .2
	6.6	14.4	~~[[/del]]~~ III bc ~~[[/del]]~~ K	1834	F 3 G = .1 B, F 3 1/2 G = .1, F 4 1/2 = .2, F 5 G = .2 B, F 5 G = .2 B, F 5 1/2 G = .2, F 7 G = .3, F 8 G = .1 B, F 9 G = .1, lines bet. G & H, large, lines below K.
	6.0	11.6	~~[[/del]]~~ I b ~~[[/del]]~~ B	1835	F 6 G = .1, h 6 H = .1
	2.4	10.7	~~[[/del]]~~ I b ~~[[/del]]~~ B	1836	F 6 G = .1, h 6 H = .1
	2.4	21.0	~~[[/del]]~~ I b ~~[[/del]]~~ B	1837	G 6 h = .3

[[2 column table]]

Amt. of Fog. due to moon & Clouds. | Amt. of Fog. due to chemicals.
7.5 | 7.6

February 27, 1888

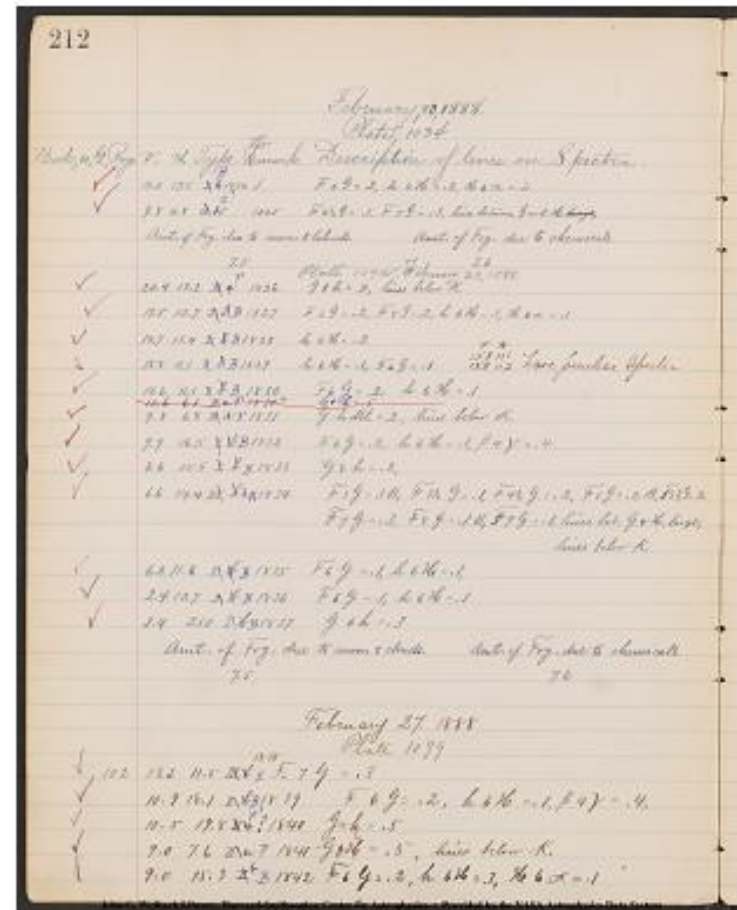


Plate 1099

[[6 column table]]

| 102 | 13.2 | 11.5 | ~~l b~~ | 1838 | F 7 G
= .3 |

| 10.9 | 18.1 | ~~l b~~ B | 1839 | F 6 G =
.2, h 6 H = .1, 4 = .4 |

| 10.5 | 19.8 | ~~l a~~ F? | 1840 | G & h =
.5 |

| 9.0 | 7.6 | ~~l a~~ F | 1841 | G &
~~H~~ h = .5, lines below K. |

| 9.0 | 15.3 | ~~l^a b~~ B | 1842 | F 6 G =
.2, h 6 H = .3, H 6 = .1 |

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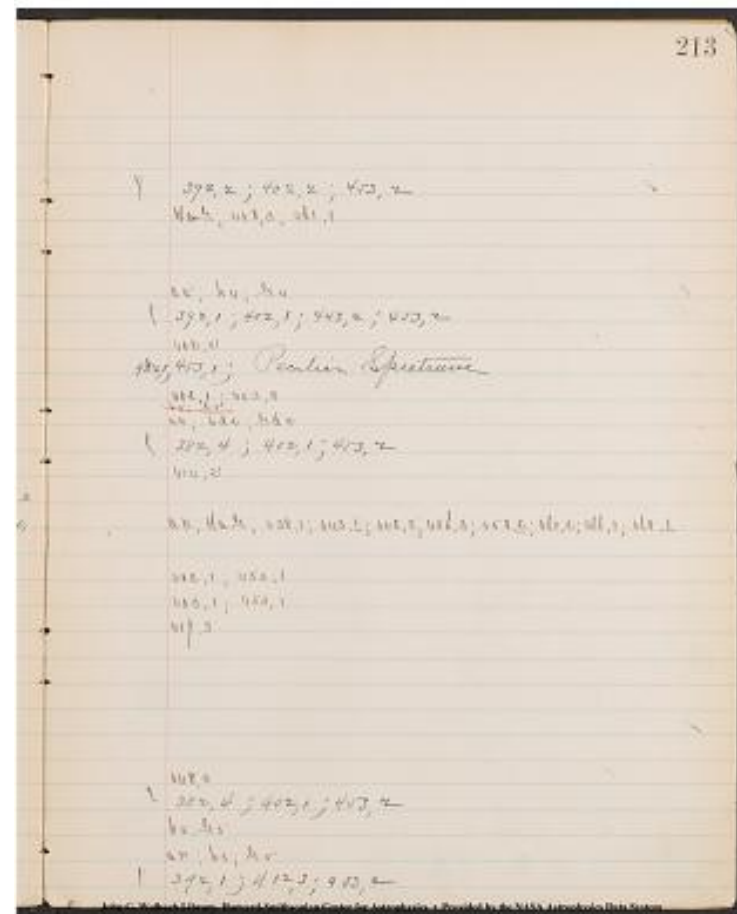
~~392,2; 402,2; 453,2~~
Hay; 448,3; 461,1

ak; h4; y4
~~392,1; 402,1; 443,2; 453,2~~
402,2
482,1; 453,1; Peculiar Spectrum
402,1; 453,2
~~h5; y5~~ ak; hd2; yd2
~~382,4; 402,1; 453,2~~
414,2

ak; Hay; 438,1; 443,1; 448,3; 456,2; 458,2; 461,2; 466,1; 468,1

402,1; 453,1
402,1; 453,1
419,3

448,3
~~382,4; 402,1; 453,2~~
h5, y5
ak; h5; y5
~~392,1; 402,3; 453,2~~



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February, 27, 1888.

Plate, 1099

[6 columned table]

Book, 10, G, Page. | V. | H. | Type. | No. Remarks. | Description of Lines on Spectra |

|---|---|---|---|---|

| 102 | 4.4 | 15.8 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F1843 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5, lines below K.
 | 104 | 2.6 | 23.8 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F1844 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5 |

[2 columned table]

Amt. of Fog. due to moon & clouds. | Amt. of Fog. due to chemicals. |
 | 7.4 | 7.6 |

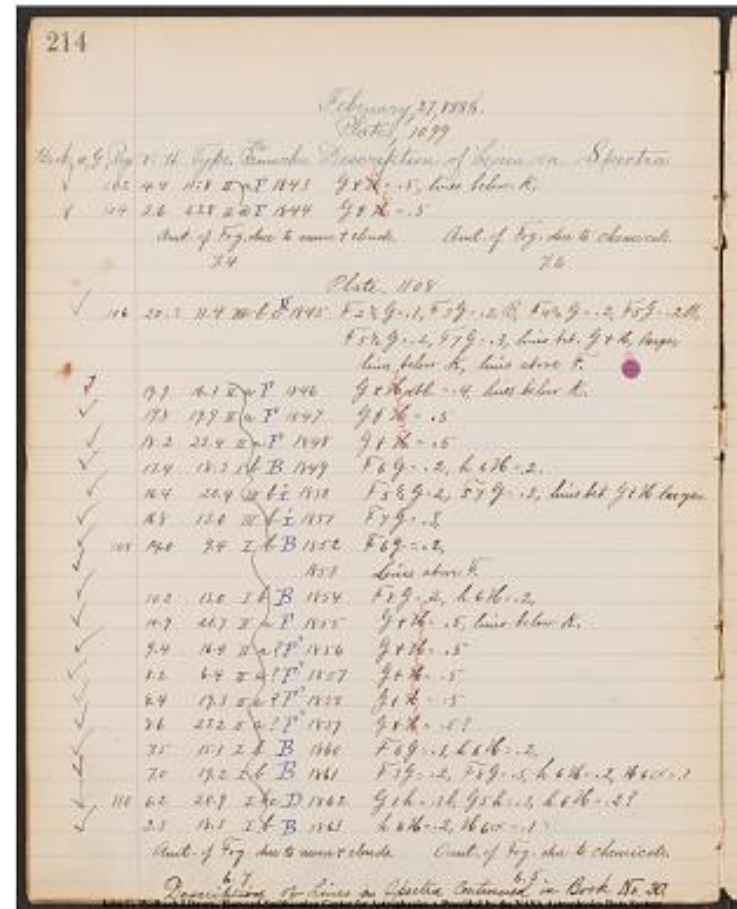
Plate, 1108

[6 columned table]

| 106 | 20.3 | 11.4 | ~~III~~^A | ~~[[bc]]~~ | ~~[[/del]]~~
 K1845 | F2½G = .1, F3G = .2 B, F4½G = .2, F5G = .2 B, F5½G = .3,
 lines bet. G & H. ~~[[strikethrough]]~~ large ~~[[/del]]~~, lines below K,
 lines above F.
 | 19.9 | 16.1 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F1846 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ L all = .4, lines below K.
 | 19.8 | 19.9 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F1847 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5
 | 18.2 | 22.4 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F1848 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5
 | 17.4 | 18.3 | ~~II~~^A | ~~[[b]]~~ | ~~[[/del]]~~ B1849 | F6G = .2,
 h6H = .2.
 | 16.4 | 20.4 | ~~III~~^A | ~~[[b]]~~ | ~~[[/del]]~~ | 1850 | F5½G = 2,
 F7G = .2, lines bet. G & H ~~[[strikethrough]]~~ large. ~~[[/del]]~~
 | 16.8 | 13.0 | ~~III~~^A | ~~[[b]]~~ | ~~[[/del]]~~ | 1851 | F7G = .3,
 | 108 | 14.0 | 9.4 | ~~II~~^A | ~~[[b]]~~ | ~~[[/del]]~~ B1852 | F6G = .2,
 | | | 1853 | Lines above F.
 | 10.2 | 13.0 | ~~II~~^A | ~~[[b]]~~ | ~~[[/del]]~~ B1854 | F8G = .2,
 h6H = .2.
 | 10.9 | 21.7 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F1855 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5, lines below K.
 | 9.4 | 16.4 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F?1856 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5
 | 8.2 | 6.4 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F?1857 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5
 | 8.4 | 19.3 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F?1858 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5
 | 8.6 | 23.2 | ~~II~~^A | ~~[[a]]~~ | ~~[[/del]]~~
 F?1859 | G & ~~[[strikethrough]]~~ H | ~~[[/del]]~~ h = .5?
 | 7.5 | 15.1 | ~~II~~^A | ~~[[b]]~~ | ~~[[/del]]~~ B1860 | F6G = .1, h6H = .2
 | 7.0 | 19.2 | ~~II~~^A | ~~[[b]]~~ | ~~[[/del]]~~ B1861 | F3G = .2, F8G = .5,
 h6H = .2, H6 = .1
 | 110 | 6.2 | 20.9 | ~~II~~^A | ~~[[bc]]~~ | ~~[[/del]]~~ D1862 | G1h = .3b,
 G5h = .3, h6H = .2?
 | 12.3 | 18.3 | ~~II~~^A | ~~[[b]]~~ | ~~[[/del]]~~ B1863 | h6H = .2, H6 = .1 |

[2 columned table]

Amt. of Fog. due to moon & clouds. | Amt. of Fog. due to chemicals. |
 | 6.7 | 6.5 |



Description of Lines in Spectra Continued in Book No. 30.

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ak; h5, y5
h5, y5

T'a; ak; Hay; 448,3; 456,2; 458,2; 461,2;
468,2; 471,1

4ak; hd4, yd4
h5 y5
h5 y5
402,2; 453,2
Hay; 448,2; 456,2
448,3
453,2

~~?~~ ~~T'a~~

402,2; 443,2

ak, h5, y5

h5; y5

h5; y5

h5; y5

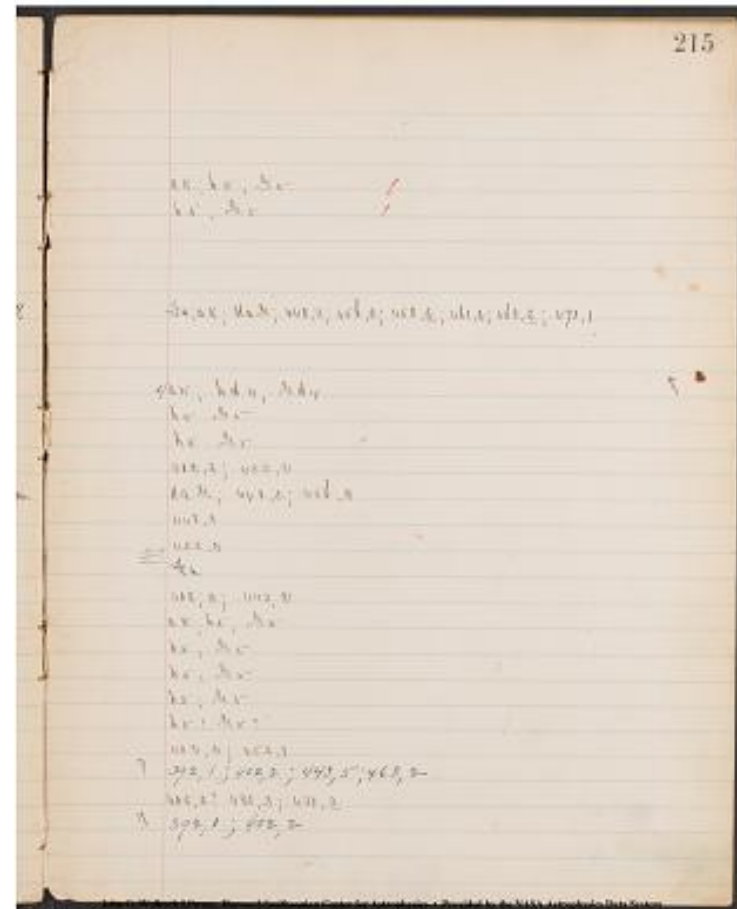
h5? y5?

402,2; 453,1

? 392,1; 402,2; 443,5; 468,2

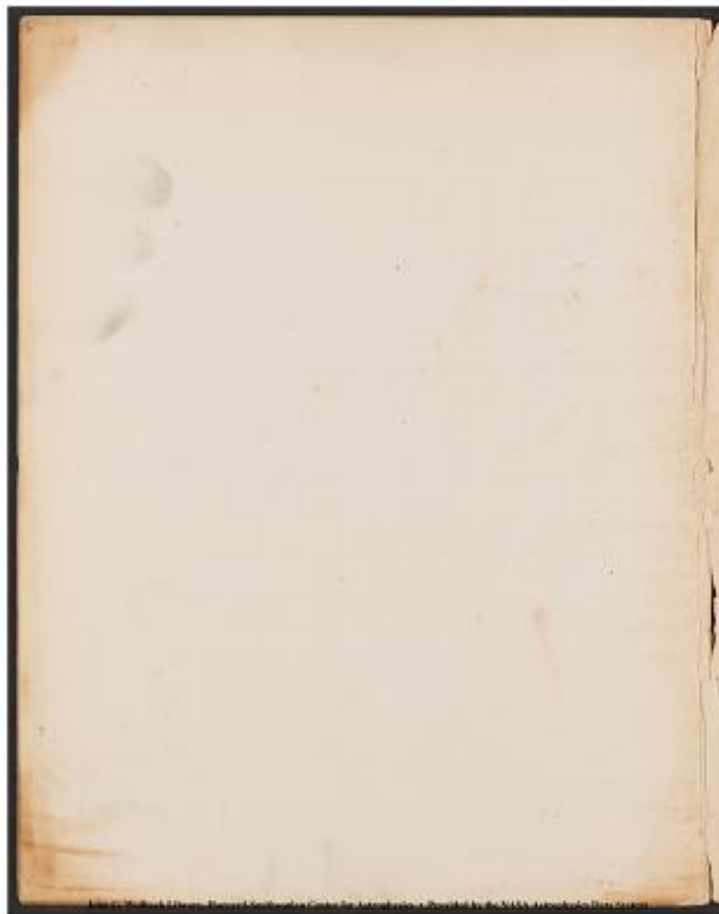
402,2? 421,3; 431,3

? 392,1; 402,2



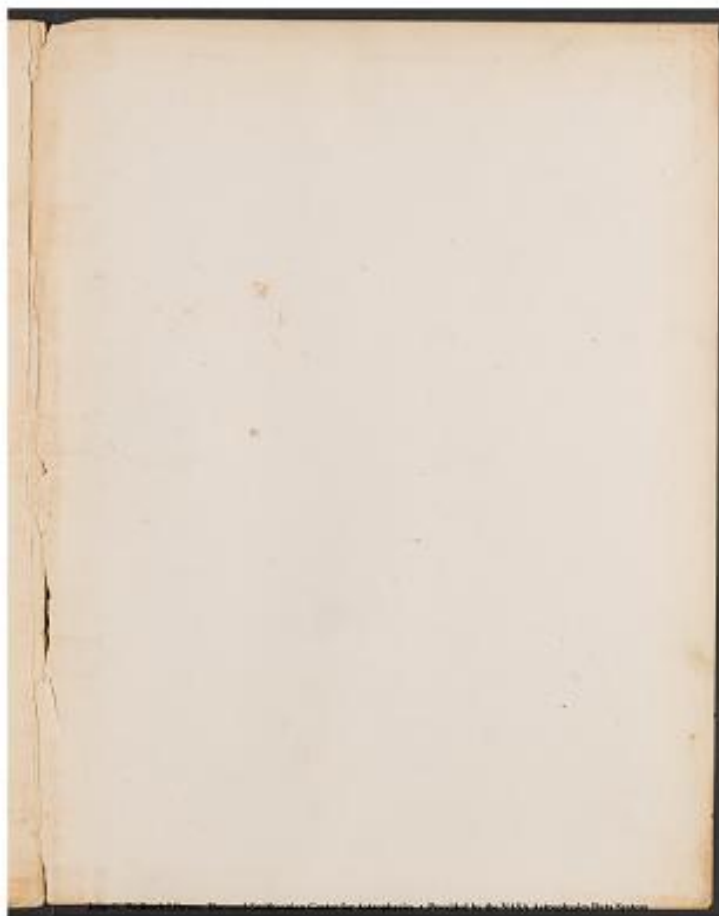
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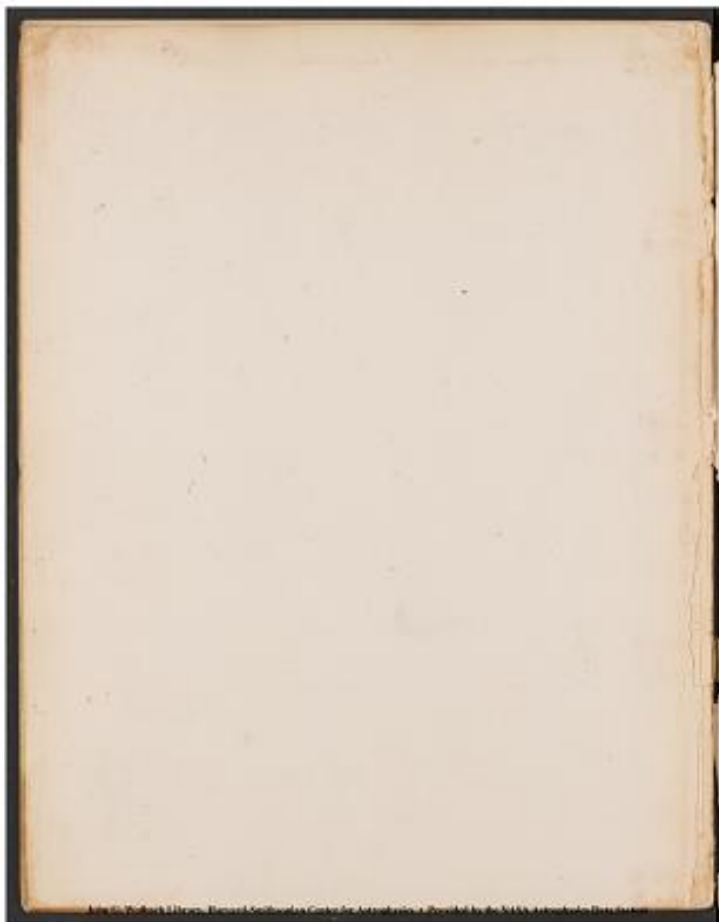
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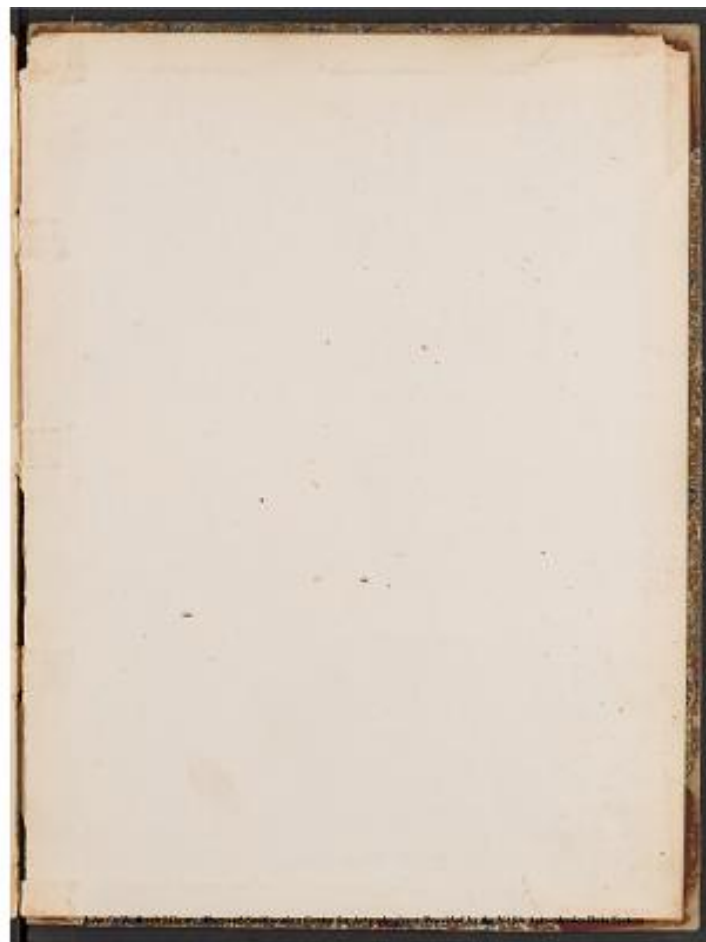
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[[back cover]]

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