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1887phae.proj..843F

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Description of Spectra.

No. 23.

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1887phae..proj...1a1r

15h

0h 3 69° 43' 3258 6.8. 2.5m 70 02.

1

I h 246, II 248, II 349 II 528

24 8 ~~682~~ 8 102 4.5 | 829, 831,

1 ~~45~~

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Plate 196 October 21, 1887.

Book 3 E. Page 4

	+	+	Type		No. Remark	Description of lines on Spectra.
	21.5	21.9	I	F A a	1	G. and h dbl. = .5 .
	20.5	11.0	B	B I b.	2	G 5 h = .7 .
Page 6	14.5	13.4	K	K N bc.	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	B	B A b.	4	F 7 G. = .1
	14.3	12.1	F	F A a	5	G and h = .1
	12.0	20.4	F	F A a	6	G and h = .2
Page 8	11.7	22.4	F	F A a	7	G and h = .5
Page 10	5.9	6.0	F	F A a	8	G and h dbl. = .2

{Dark Plate, {Dec. 5, 1887} October 22, 1887.
Very hard to measure. Plate 284

Page 12	20.5	10.9	B	B A b.	9	h 4 H = .2
	20.3	10.0	B	B A b.	10	h 5 H = .2
	19.5	11.3	F	F A a	11	G and h = .5
Page 14	15.7	12.9	I	I N b	12	Numerous faint lines.
	14.0	10.4	F	F A a	13	G and h dbl. = .2
	11.5	8.1	B	B A b.	14	h 6 H = .2
Page 16	11.0	17.8	B	B A b	15	h 5 H = 1.0
	7.5	8.5	B	B A b	16	F 7 G = 1.0
Page 18	5.9	15.0	I	I N b	17	F 7 G = .3, G 3 H = .3
	5.9	16.1	F	F A a	18	G and h = .3
	5.6	17.0	F	F A a	19	G and h = .2, F 7 G = .2, h 3 H = .4
	3.7	13.3	I	I N b	20	F 7 G = .3, G 3 H = .4, G 7 H = .4

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1887phae.proj..848

h d, 5 ; G d, 5

421, 1.

403, 2 ; 417, 2 ; 426, 2 ; 443, 3 ; 458, 2 ; 468, 3 .

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, 10,

448, 10,

421, 3 ; 448. 3

h 3 ; G. 3

406, 4 ; 448, 2 ; h, 3 ; G, 3

408, 4 ; 421, 4 ; 448, 3

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1887phae.proj..848F

October, 24, 1887.

Plate 186.

Book 3 Page 20	V	H.	Type	No. Remark	Description of lines on Spectra.
	21.0	11.1	B $\frac{I}{II}$ b.	21.	F 5 G =.4, h dbl.; h 5 H =.2
	20.8	6.2	F $\frac{II}{III}$ a	22	G. & h =.2
	18.1	7.5	B $\frac{I}{II}$ b	23	G dbl.
	19.3	16.8	F $\frac{II}{III}$ a	24	G and h = .5 several lines below K
Page 22	13.8	8.1	K $\frac{III}{}$ b,c	25	F 3 G =.5 B, F 5 G =.5 B, 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 $\frac{III}{}$ a	26	G and h =.5
	13.6	21.0	B $\frac{I}{II}$ b.	27	h 5 H =.4
	12.4	20.7	G $\frac{II}{III}$ bc	28	F 7 G =.2, F 8 G =.2 B,
	11.9	19.5	K $\frac{III}{}$ bc.	29	F 3 G =.3 B., F 4 G =.2, F 6 G =.3, F 7 G =.1, F 8 G =.3, F 5 G =.2 B, G 7 H =.3 B. several lines below K.
Page 24	11.0	6.2	F $\frac{II}{III}$ a.	30	G and h =.2
	10.6	17.5	F $\frac{II}{III}$ a	31	G and h =.5
	10.5	17.9	F $\frac{II}{III}$ a	32	G and h =.5
	9.2	7.9	F $\frac{II}{III}$ a	33	G and h =.2
	8.5	9.1	F $\frac{II}{III}$ a	34	G and h =.3
	9.2	16.7	F $\frac{II}{III}$ a	35	G and h =.4 several lines below K.
	8.3	7.8	F $\frac{II}{III}$ a	36	G and h =.2
	7.1	14.8	B $\frac{I}{II}$ b	37	h 6 H =.3
	5.1	18.5	F $\frac{II}{III}$ a	38	G and h =.5
Page 26	2.3	7.6	F $\frac{II}{III}$ a	39	G and h =.8

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1887phae.proj...848F

403,2 ; h d ; 438, 4

h, 2 ; h, 2 ;

h d

h 5 ; h 5 ; a k

a k ; h, a h ; 438, 5 ; 443, 2 ; 458, 5 ; 468, 5

h, 5 ; h, 5

403, 4

443, 2 ; 448, 2

~~417 438, 3~~ ; ~~438, 2~~ ; 443, 3 ; 448, 1 ; 453, 3 ; 458, 2 ; 463, 2 ; 468, 3 ; a k

h, 2 ; h, 2

h, 5 ; h, 5

h, 5 ; h, 5

h, 2 ; h, 2

h, 3 ; h, 3

h, 4 ; h, 4 ; a k

h, 2 ; h, 2

402, 3

h, 5 ; h, 5

h, 8 ; h, 8

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1887phae.proj..848F

October 25, 1887.

Plate 173.

Book 3 Page 26	V	H	Type	No. Remarks.	Description of lines on Spectra.
✓	16.4	15.7	F II^a	40	G and h = .5
✓	15.5	22.7	F II^a	41	G and h = .3 (G & h = .3)
" Page 28	12.5	7.1	F II^a	42	G and h dbl. = .5 Lines below K
✓	10.5	12.1	I III^b	43	F 7 G = .2, G 7 H = .2 .
✓	8.6	20.9	F II^a	44	G and h dbl. = .5
✓	6.3	13.1	I III^b	45	F 7 G = .2
✓	4.1	18.7	K III^{ba}	46	F 3 G = .2 B., F 5 G = .2 B, F 7 G = .3, F 8½ G = .2, G 7 h = .3, h 5 H = .4 .

Plate 161

✓ Page 32	20.9	12.8	F II^a	47	G and h = .2
✓	19.3	9.8	F II^a	48	G and h = .3, G dbl. Lines below K
✓	14.8	14.1	K III^{bc}	49	F 2 G = .2 B, F 4 G = .2, F 5 G = .1 B, F 7 G = .2, F 8 G = .1 B, G 3 h to G 8 h band of faint lines, h 3 H = .5 .
✓	13.0	10.0	I III^b	50	F 4 G = .2 .
✓ " Page 34	9.2	14.3	F II^a	51	G and h = .5
✓	3.6	8.7	F II^a	52	G and h = .3
✓	3.6	13.1	F II^a	53	G and h = .5, G dbl.

October 28, 1887.

Plate 208.

✓ Page 34	22.0	17.1	B I^b	54	h 5 H = .2, h 6 H = .2
✓ Page 36	15.0	6.4	F II^a	55	G and h dbl = .3
✓ Page 38	7.4	11.7	F II^a	56	G and h = .2, G dbl.
✓ Page 38	2.9	17.4	B I^b	57	h 6 H = .3

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1887phae.proj..848F

h, 5 ; ♀, 5

(h 3, ♀ 3) h 3 ♀ 3

h d, 5 ; ♀ d, 5 ; a K

408, 2 ; 448, 2

h d 5 ; ♀ d 5

448, 2

403, 4 ; 417, 3 ; 441, 2 ; 448, 3 ; 458, 2 ; 468, 2

h 2 ; ♀ 2

♀ d ; h 3 ; ♀ 3 ; a K

406, 5 ; 414 a 406 ; 443, 1 ; 448, 2 ; 458, 1 ; 463, 2 ; 474, 2

~~414 a~~

448, 2

h 5 ; ♀ 5

h 3 ; ♀ 3

~~♀ d~~ ; h 5 ; ♀ d 5

402, 2 ; 403, 2 ;

h d 3 ; ♀ d 3

~~♀ d~~ ; h 2 ; ♀ d 2

402, 3

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1887phae.proj..848f

October 28, 1887.
Plate 217

Book & Page	v.	H.	Type		No	Remarks	Description of lines on Spectra.
" " 40	14.2	15.9	F	IIa	58		G and h = .3
42	8.7	9.0	F	IIa	59		G and h = .2
42	3.6	9.2	F	IIa	60		G and h = .5 several lines below K.
40	22.4	19.9	F	IIa	61		G and h = .5 G dbl.

October, 29, 1887.
Plate 275.

" Page. 44	16.6	13.1	F	IIa	62		G and h = .2 G dbl. lines below K.
44	14.5	12.5	L	IIIc	63		H 5 G = .3 B, H 8 G = .2 B.
	13.9	19.4	F	IIa	64		G and h = .4 G dbl. lines below K
	13.4	13.1	G	IIb	65		G dbl = .2
	13.1	6.1	F	IIa	66		G and h dbl = .2
	3.5	15.1	D	Ia	66a		additional lines.

October, 29, 1887.
Plate 341.

Page. 48	22.0	18.3	B	Ib	67		G 5 h = .4, h 3 H = .4.
" "	12.0	20.0	F	IIa	68		G and H = .2
" "	8.8	15.4	F	IIa	69		G and h dbl = .2
" 55	7.0	16.1	F	IIa	70		G and h = .2 G dbl. lines below K.
	4.8	8.7	F	IIa	71		G and h = .1
	3.0	21.9	F	IIa	72		G and h = .2

October 29, 1887
Plate 165

" Page 52	17.5	19.6	F	IIa	73		G and h = .2 G dbl.
	16.0	12.1	F	IIa	74		G and h dbl = .2
	13.5	21.0	I	IIIb	75		F 7 G = .4
	9.7	10.8	I	IIIb	76		G 3 H = 1.0
Not found on plate.	7.9	8.3	F	IIa	77		~~G and H = .4~~

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1887phae.proj..848f

1 h ~~d~~, ~~5~~ 3; G d, ~~5~~ 3

h 2; G 2

h 3; G 3; a K

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

~~G d~~; h 2; G ~~d~~ 2; a K

405, 2; 413, 3

~~G d~~; h 4; G ~~d~~ 4; a K

G d 2

h d 2; G d 2

Spectrum of faint A star superposed?

406, 4; 421, 4

H 2; G 2

h d 2; G d 2

~~G d~~; h 2; G d 2; a K

h 1; G 1

h 2; G 2

~~G d~~; h 2; G ~~d~~ 2

h d 2; G d 2

408, 4;

421, 4/10

~~H, 4; G 4~~

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1887phae.proj..848f

October, 29, 1887.
Plate 165

Book & Page	v.	H.	Type	No. Remark	Description of lines on Spectra.
	7.8	10.2	F IIa	78	G and h = .4
Page 54	6.0	20.0	F IIa	79	G and h = .5
54	4.9	14.5	F IIa	80	G and h = .5

October, 29, 1887.
Plate 185.

	21.0	11.7	i IIIc	81	F3 G = .4, F5 G = .4, F7 G = .4.
Page 56	17.1	21.8	F IIa	82	G and h dbl = .2.
	16.5	14.2	F IIa	83	G and h = .2, G dbl. lines below K
	15.0	22.7	F IIa	84	G and h = .3
" 58	10.1	12.3	L IIIab.	85	F3 G = .3, F4 G = .3, F5 G = .3, G3 H = .5.
	8.4	13.7	F IIa	86	G and h = .5

November, 3, 1887.
Plate 166

" " 58	13.4	16.8	F IIa	87	G and h = .5
" "	11.2	15.8	i IIIb	88	F4 G = .2, F7 G = .2

November, 3, 1887.
Plate 353.

" " 62	15.8	19.3	F IIa	89	G and h = .2
" "	11.3	7.7	F IIIa	90	G and h = .2
"	5.4	10.7	F IVa	91	G and h dbl = .5

November, 3, 1887.
Plate 167.

"	16.0	13.7	F IIa	92	G and h = .2
	11.9	6.8	i IIIb	93	F3 G = .2, F5 G = .2, F7 G = .4.

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1887phae.proj..848F

h 4 ; g 4

h 4 ; g 4

h 3 ; g 3

h 3 ; g 3

448,4 ; 458,4 ; 468,4

h d 2 ; g d 2

~~g d~~ ; h 2 ; g ~~d z~~ ; g K

h 3 ; g 3

431,5 ; 458,3 ; 463,3 ; 468,3

h 3 ; g 3

h 3 ; g 3

448,2 ; 463,2

h 2 ; g 2

h 2 ; g 2

h d 5 ; g d 3

h 2 ; g 2

448,4 ; 458,2 ; 468,2

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1887phae.proj..848F

November, 3, 1887.

Plate 446.

Book 3. Page 66.	V	H.	Type.	No.	Remarks. Description of lines on Spectra.
✓	22.6	9.5	I IIIa-b	94	F3 G=.2, G7 h=.2, h 3 H=.2.
✓	16.1	19.8	F IIIa	95	G and h=.5
✓	15.0	16.6	F IIIa	96	G and h=.5
✓	14.0	8.3	F IIIa	97	G and h=.2
✓	13.0	13.7	I IIIa-b	98	F7 G=.3, h 5 H=.2
✓ 68	10.0	16.3	F IIIa	99	G and h=.3
✓ "	9.6	22.6	K IIIbc	100	F3 G=.2 B, F5 G=.2 B, F7 G=.3, G3 h=.3, h 3 H=.2
✓ "	7.6	14.0	I IIIa-b	101	F7 G=.2, G7 h=.3, h 3 H=.2.
✓ "	3.0	9.4	K IIIbc	102	F5 G=.4 B, F7 G=.2, G7 h=.2
✓	4.2	22.3	F IIIa	103	G and h=.2

November, 5, 1887.

Plate 458.

✓ " 70	19.9	11.5	F IIIa	104	G and h=.3
✓	19.0	13.1	K IIIbc	105	F3 G=.1 B, F4 G=.2, F7 G=.4
✓	18.6	23.3	F IIIa	106	G and h dbl.=.5
✓	16.5	14.6	F IIIa	107	G and h dbl.=.2
✓	14.0	7.9	K IIIbc	108	F5 G=.2 B, F8 G=.1, h B?, h 2 H=.1.
✓	13.1	20.3	K IIIbc	109	F3 G=.3 B, F5 G=.4 B, F7 G=.1, G5 h=.1. several lines below K
✓	11.6	12.2	K IIIbc	110	F3 G=.5 B, F4½ G=.2, F5 G=.4 B, F6 G=.2, F8 G=.2, F9 G=.2 B, G3 h=.1 B, G4 h=.2.
✓	11.5	9.6	F IIIa	111	G and h=.2
✓ 72	9.4	8.8	F IIIa	112	G and h dbl.=.2
✓	9.0	20.9	K IIIbc	113	F3 G=.2 B, F4 G=.1, F5 G=.2 B, F7 G=.2
✓	7.5	10.8	D IIIbc	114	F5 G=.2 B, F6 G=.1, F7 G=.1 B, G3 h=.1 B, G4½ h=.1 G6 h=.2, G9 h=.2, h 6 H=.1 B. Spectra superposed?
✓	6.0	17.6	K IIIbc	115	F3 G=.1 B, F4 G=.2, F5 G=.1 B, F6 G=.1, F8 G=.4, Several lines between G and H.

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1887phae.proj..848

406, 2; 429, 2; 468, 2

h 3; K 3

h 3; K 3

h 2; K 2

403, 2; 448, 3

h 3; K 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; K 2

h 3; K 3

448, 4; 463, 2; 468 1

h d 3; K d 3

h d 2; K d 2

407.1; h B? 443, 1; 458, 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; K 2;

h d 2; K d 2

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

429, 1; 412, 2; 419, 2; 423, 1; 426, 1; 448, 1; 453, 1; 458, 2 spectra of faint A star superposed.

Ha: 443, 4; 453, 1; 458, 1; 463, 2; 468, 1

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1887phae.proj..848F

November, 5, 1887.

Plate 441.

Book 3, Page 74	V.	H.	Type.	Remark.	No.	Description of lines on Spectra.
✓	21.0	16.7	F	IIIa	116	G and h = .2
✓	20.6	11.6	F	IIIa	117	G and h = .2, G dbl. lines below K.
✓	19.6	12.7	F	IIIa	118	G and h = .1
✓	19.5	11.4	I	IIIb	119	F 7 G = .2, G 7 h = .2, h 5 H = .1.
✓	18.0	12.7	F	IIIa	120	G and h = .5, lines below K
✓	16.5	9.5	F	IIIa	121	G and h = .5
✓ 76	14.9	11.6	F	IIIa	122	G and h = .2, G dbl.
✓	14.0	10.0	F	IIIa	123	G and h = .2
✓	9.9	17.0	F	IIIa	124	G and h = .2, G dbl.
✓	7.9	17.0	F	IIIa	125	G and h dbl. = .3 lines below K.
✓	7.4	17.6	F	IIIa	126	G and h = .5
✓	5.7	22.4	F	IIIa	127	G and h = .2
✓ ✓	4.6	12.6	L	IIIa	128	G = .4 and h = .1
✓	1.6	13.4	I	IIIb	129	F 4 G = .2, F 7 G = .3, Several lines between G and H.

November, 7, 1887.

Plate, 495

✓ 80	22.8	11.7	B	IIIb	130	G 5 h = .1, h 5 H = .1, H 5 a = .1,
✓	21.9	8.9	F	IIIa	131	G and h = .5.
✓	19.7	7.9	F	IIIa	132	G and h dbl. = .5
✓	12.2	19.4	F	IIIa	133	G and h = .5
✓	11.7	17.3	K	IIIb.c.	134	F 3 G = .4 B, F 4½ G = .2, F 5 G = .3 B, F 7 G = .2, F 8 G = .3 B, G 3 h = .1 B, h B.?, h 2 H = .2.
✓	9.7	20.1	F	IIIa	135	G and h = .5
✓	9.2	13.4	F	IIIa	136	G and h = .3 lines below K.
✓	8.0	19.4	F	IIIa	137	G and h = .5
✓	7.9	23.5	F	IIIa	138	G and h dbl. = .5

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1887phae.proj..848F

h 2 ; k 2

~~k d~~ ; h 2 ; k d 2 ; a K

h 1 ; k 1

403,1 ; 417,2 ; 448,2

h 3 ; k 3 ; a K

h 3 ; k 3

~~k d~~ ; h 2 ; k d 2

h 2 ; k 2

~~k d~~ ; h 2 ; k d 2

h d 3 ; k d 3 ; a K

h 3 ; k 3

h 2 ; k 2

h 1 ; k 4

Hals ; 448,3 ; 463,2

R 393,1 ; 403 ; 421,1

h 3 ; k 3

h d 3 ; k d 3

h 3 ; k 3

407,2 ; h B 3 ; 426,1 ; 443,3 ; 448,2 ; 458,3 ; 461,2 ; 468,4

h 3 ; k 3

h 3 ; k 3 , a K

h 3 ; k 3

h d 3 ; k d 3

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1887phae.proj..848F

November 7, 1887.

Plate, 495.

Book 3, Page 82	V.	H.	Type.	No. Remark.	Description of lines on Spectra
✓	6.0	17.6	F II^a	139	G and h = .5

November, 7, 1887.

Plate, 435.

✓	22.0	11.1	I III	b.	140	F5 G=.2, F7 G=.2, G5 h=.2, h5 K=.2,
" ✓ " 84	16.0	18.2	F II^a		141	G and h = .5 several lines below K.
✓	13.7	11.8	F II^a		142	G and h = .2
✓	12.0	17.0	L III^a		143	G and h = .5
✓	11.5	17.0	K III	b.c	144	F3 G=.3 B, F4½ G=.1, F5 G=.2 B, F7 G=.2 F8 G=.2 B, G3 h=.2, h B.; h 3 K=.1
✓	9.5	18.1	K III	bc	145	F5 G=.1 B, F5½ G=.1, F7 G=.2, G3 h=.2 B.
✓	9.5	19.3	F II^a		146	G and h = .2
✓	8.5	15.7	I III	b	147	F3 G=.3, F8 G=.2, G7 h=.2, h5 K=.2.
✓	8.0	12.9	F II^a		148	G and h = .5
✓	7.9	18.7	F II^a		149	G and h = .5
Same as 149. ~~86.~~	~~8.0~~	~~18.7~~	~~F II^a~~		~~150~~	~~G and h = .5~~
✓	5.6	17.5	F II^a		151	G and h = .5
✓	4.1	19.0	F II^a		152	G and h = .2, G dbl.
✓	2.6	11.1	I III	b	153	F5 G=.2, F8 G=.2, G5 h=.2

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" " 88 Plate, 508

✓	20.7	11.1	K III$_2$	bc	154	F4 G=.2 B, F5 G=.1, F8 G=.2, G4 h=.2. several lines below G.

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h 3⁻; h 3⁻

403, 2; 421, 2; 448, 2; 458, 2;
h 5; h 5; (a K)
h 2; h 2
h 3⁻; h 3⁻
406, 1; h ?; 426, 2; 443, 2; 448, 2; 458, 2; 461, 1; 468, 3

426, 2; 448, 2; 456 1; 458, 1
h 2; h 2
403, 2; 417, 2; 443, 2; 468, 3
h 5; h 3⁻
h 3⁻; h 3⁻
~~h 3⁻; h 3⁻~~
h 3⁻; h 3⁻
~~h d~~; h 2; h d 2
421, 2; 443, 2; 458, 2

426, 2; 443, 2; 458, 1; 463, 2; h K

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Plate, 500.

Book 3 Page 90	V.	H.	Type.	Remark	No.	Description of lines on Spectra.
	20.5	12.6	K IV	b.c.	155	F3 G=.3 B, F4½ G=.1, F5 G=.3 B, F8 G=.2. Several lines between G and h, h B?, h 2 H=.2, h 4 H=.2. lines below K.
	17.1	20.6	F II	a	156	G and h=.2
	13.0	17.9	K III	b.c.	157	F4 G=.1 B, F5½ G=.1, F7 G=.2,
	12.3	21.2	F II	a	158	G and h=.2
"	92	5.0	8.6	K III	b.c.	159 F3 G=.1 B, F5 G=.4, F5½ G=.1 B.

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Plate 546

" " "

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Plate, 509

"	92	20.8	9.7	L III	a	160 G and h=.5
		16.5	16.6	F II	a	161 G and h=.2
		15.0	21.0	F II	a	162 G and h dbl.=.5
	94	5.3	21.1	I III	b	163 F5 G=.2, F7 G=.3.
		4.7	10.2	B ½	b	164 G5 h=.1, H5 a=.1,

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Plate 536.

"	96	17.3	19.7	F II	a	165 G and h=.2
		15.5	14.1	F II	a	166 G and h=.2
	98	13.8	23.9	F II	a	167 G and h=.2
		13.0	9.2	F II	a	168 G and h=.2
		12.5	6.4	K III	b.c.	169 F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.4, Several lines between G and H.
		11.8	21.6	F ½ II	a	170 G and h=.5 lines below K

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a K ; 405,2 ; 407,2 ; h 1 a G ; 443,2 ; 458,3 ; 461,1 ; 468 3 ;

h,2 ; G 2
448,2 ; 456,1 ; 463,1
h,2 ; G 2
456,1 ; 458,4 ; 468,1

h,5⁻ ; G 5⁻
h 2 ; G 2
h d 5 ; G d 5⁻
448,3 ; 458,2
393,1 ; 421,1

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

h 5⁻ ; G 5⁻ ; a K

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Plate 536

Book 3, Page 98	V.	H.	Type	No.	Remarks	Description of lines on Spectra
✓	9.5	9.3	K	IIIb.c.	171	F 3 G = .2 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .1 B, F 5½ G = .2, F 7 G = .4, Several lines between G & H.
✓	9.5	22.9	L	IIIa	172	G and h = .2
✓	8.9	12.2	K	IIIb.c.	173	F 3 G = .2 B, F 4½ G = .1, F 5 G = .2 B, F 5½ G = .1, F 7 G = .4. Several lines between G & H, G dbl?
" ✓ "	100	8.0	11.0	F	IIIa	174 G and h = .5,
✓		7.8	13.8	I	IIIb	175 F 4½ G = .1, F 5½ G = .2, F 7 G = .3, F 8½ G = .2.
✓		3.9	18.2	F	IIIa	176 G and h = .5
✓		3.5	23.7	F	IIIa	177 G and h = .5, h dbl.

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Plate 550.

" ✓ "	6.1	7.7	K	IIIb.c.	178	F 3 G = .3 B, F 5 G = .4, F 7 G = .3 B, Several lines between G and H.

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Plate 555.

✓	21.0	20.9	F	IIIa	179	G and h dbl. = .2
" ✓ "	102.	16.8	13.3	K	IIIb.c.	180 F 2 G = .5 B, F 4 G = .4 B, F 4½ G = .1, F 5 G = .4 B, F 6 G = .1 F 8 G = .2, Several lines between G and H.
✓		13.5	16.2	K	IIIb.c.	181 F 2 G = .1, F 2½ G = .3 B, F 3 G = .2, F 3½ G = .2 B, F 4 G = .3 F 5 G = .3 B, F 5½ G = .2, F 7½ G = .4, Several lines between G and H.
✓		10.3	8.5	F	IIIa	182 G and h = .2

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Ha δ; 448,4; 456,2; 458,1; 461,2; 466,1; 468,2

h 2; δ 2

Ha δ, δ d; 448,4; 456,1; 458,3; 461,1; 468,2

h 5; δ 5

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

h,5; δ 5;

~~h d~~; $h^{d}_{\wedge}$,5; δ 5

Ha δ; 448,3; 458,4; 468,3

h d 2; δ d 2

aK; Ha δ; 443,2; 453,1; 458,4; 461,1; 463,4; 474,5

Ha δ; 446,4; 456,2; 458,3; 463,3; 466,2; 468,2; 471,3; 474,1

#

h 2; δ 2

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Plate 560.

Book 3 Page 104	V.	H.	Type	Remarks	Description of lines on Spectra.
✓	22.6	20.7	i IIIa	b	183 F4 G=.2, F7 G=.4.
✓	20.3	12.9	i IIIa	b	184 F4 G=.2, F6 G=.3, F7 G=.4.
✓	20.2	16.0	F IIa	a	185 G and h dbl. =.2
✓	18.5	21.7	i IIIa	b	186 F3 G=.2, F7 G=.4
✓	17.4	14.3	K IIIa	b.c.	187 F3 G=.4B, F4½ G=.1, F5 G=.5B, F8 G=.4, Several lines between G and H.
✓	15.1	12.2	F IIIa	a	188 G and h=.2
✓	11.5	15.0	K IIIa	b.c.	189 F2 G=.1B, F3 G=.2, F4 G=.1, F5 G=.1B, F7 G=.4.
" ✓ "	106 8.0	12.0	F IIa	a	190 G and h=.5
✓	6.6	18.3	K IIIa	b.c.	191 F3 G=.2B, F4½ G=.1, F5 G=.2B, F5½ G=.1, K. F6 G=.1 F7 G=.3, G dbl? Lines betw. G.H. 2 lines below
✓	2.9	20.6	i IIIa	b.	192 F4 G=.2, F6 G=.2, F7 G=.3

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Plate 587.

" ✓ "	" 14.5	7.0	F IIa	a	193 G and h=.5
✓	12.5	19.1	K IIIa	b.c.	194 F3 G=.2B, F3½ G=.1, F4½ G=.1, F5 G=.2B, F5½ G=.1, F7 G=.4, Several lines between G & H. lines below K.
✓	11.5	13.3	K IIIa	b.c.	195 F3 G=.1B, F4½ G=.1, F6 G=.3B, F5½ G=.1, F7 G=.4 Several lines between G and H.
✓ "	108 8.6	20.5	L IIIa	a	196 G and h=.2
✓	5.5	11.6	F IIa	a	197 G and h=.2

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Plate 601

✓ "	" 21.0	10.8	F IIa	a	198 G and h=.5
✓	21.0	12.6	K IIIa	b.c.	199 F3 G=.1, F4 G=.1B, F5 G=.2, F7 G=.3, F9 G=.4 Several lines between G and H.

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448.4 ; 463.2

448.4 ; 453.3 ; 463.2

hd 2 ; Hd 2

448.4 ; 468.2

Ha ; 443.4 ; 458.5 ; 461.1 ; 468.4

h 2 , H 2

448.4 ; 458.1 ; 463.1 ; 468.2 ; 474.1

h 5 ; H 5

2 aK, Ha G. Galt 2 4483, 453.1, 456.1, 458 2, 461.1, 468 2.

448.3 ; 453.2 ; 463.2

h 5 ; H 5

aK ; Ha ; 448.4 ; 456.1 ; 458.2 ; 461.1 ; 466.1 ; 468.2

HaG ; 448.4 ; 456.1 ; 458.3 ; 461.1 ; 468.1

h 2 ; H 2

h 2 ; H 2

h 5 ; H 5

Ha ; 438.1 ; 448.3 ; 458.2 ; 463.1 ; 468.1

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Plate 601

Book 3 Page 108	v.	H.	Type	Remarks	No.	Description of lines on Spectra.
✓	16.5	20.0	F	IIa	200	G and h = .2
✓	14.9	19.8	F	IIa	201	G and h = .2, G dbl
✓	11.6	10.5	F	IIIa	202	G and h = .2, G dbl.
" ✓ " 110	10.0	17.8	F	IIa	203	G and h = .5, G dbl
✓	8.2	11.4	F	IIa	204	G and h = .2
✓	5.5	10.1	F	IIa	205	G and h = .2

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Plate, 617.

" ✓ "	22.4	17.3	I	IIIb	206	F 3 G = .2, F 6 G = .4, F 9 G = .5
✓	18.5	18.7	F	IIa	207	G and h = .5
✓	11.8	17.0	F	IIa	208	G and h = .2
✓	11.4	18.4	K	IVbc	209	F 3 G = .2 B, F 4½ G = .1, F 5 G = .3 B, F 5½ G = .2, F 7 G = .3, Several lines between G & H.
✓	11.0	11.1	F	IIa	210	G and h = .2, G dbl.
✓	7.7	11.9	F	IIa	211	G and h = .2

Plate 628.

" ✓ " 112	21.5	21.3	F	IIa	212	G and h = .5
✓	20.8	17.2	F	IIa	213	G and h = .2, G dbl lines below K
✓	19.5	9.2	I	IIIb	214	F 5 G = .2, F 7 G = .4
✓	17.1	20.7	F	IIa	215	G and h = .2, G dbl.
✓	12.4	17.7	G	IVbc	216	F 4 G = .1 B, F 5 G = .2, F 8 G = .2 B, F 9 G = .5.
✓	11.8	19.7	I	IIIa	217	G and h = .2, G dbl.
✓	11.0	8.5	K	IVbc	218	F 3 G = .2 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .3, B F 5½ G = .2, F 8 G = .4. Several lines betw. G & H.
✓ 114	11.4	15.1	I	IIIb	219	F 2 G = .5, F 8 G = .5
✓	6.6	13.3	B	IIb	220	h 5 H = .5.
	6.1	17.3	F	IIa	221	G & K = .2, G dbl. v. H Type 4.0 12.1 III ✓ 2.2 F 7 G = .5

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h 2; k 2

~~k d~~; h 2; k d 2

~~k d~~; h 2; k d 2

~~k d~~; h 5; k d 5

h 2; k 2

h 2; k 2

438,5; 453,4; 468,2

h 5, k 5

h 2; k 2

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

~~k d~~; h 2; k d 2

h 2; k 2

h 5; k 5

ak; ~~k d~~; h 2; k d 2

448,4; 458,2

~~k d~~; h 2; k d 2

438,5; 443,2; 458,2; 463,1

~~k d~~; h 2; k d 2

HaK; 443,4; 456,2; 458,3; 461,2; 466,1; 468,2

468,5; 474,5;

503,5

hp; kd 2.

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Plate 682.

Book 3 Page 116	V.	H.	Type.	No.	Remarks	Description of lines on Spectra.
✓	20.9	15.4	K	III/I	bc	223 F3 G=.3 B, F3½ G=.2, F4½ G=.3, F5 G=.4 B, F5½ G=.3, F7 G=.5, Several lines between G & K
✓	17.0	11.7	I	III	b	224 F7 G=.5.
✓	15.8	9.0	I	III	b	225 F4 G=.2, F6 G=.2, F8 G=.2
✓	15.0	19.9	F	II	a	226 G and h=.2
✓	9.8	14.1	I	III	b	227 F3 G=.3, F4½ G=.2, F7 G=.5.
✓	9.5	22.2	F	II	a	228 G and h=.2, G dbl.

Plate 742.

" " " 118	13.3	11.7	F	II	a	229 G and h=.2
✓	11.9	17.8	B	I	b	230 h & H=.2
✓	11.4	14.6	I	III	b	231 F5 G=.2, F8 G=.5.
✓ ✓	10.5	24.1	K	III/I	bc	232 F2 G=.3 B, F6 G=.5 B, G B ?.
" ✓ " 120	7.3	19.8	K	III	bc	233 F6 G=.2, F7 G=.5.
✓	6.5	17.0	K	III/I	bc	234 F3 G=.3 B, F4½ G=.2, F5 G=.3 B, F5½ G=.2, F7 G=.3, F8½ G=.2, Several lines betw. G & H.

Plate 693.

" ✓ " "	20.4	13.9	F	II	a	235 G and h=.5
✓	19.5	20.5	I	III	b	236 F6 G=.2, F8 G=.5.
✓	14.1	14.0	F	II	a	237 G and h=.5
✓	122 11.8	20.8	F	II	a	238 G and h=.5
✓	11.1	14.1	K	III/I	bc	239 F2 G=.3 B, F4 G=.2, F5 G=.2, F7 G=.4 F7½ G=.3 B. Several lines between G & H.
~~10.5~~	~~23.6~~	~~+~~				
↓	10.5	23.6	K	III/I	bc	240 F5 G=.3 B, F8 G=.2, F9½ G=.2 B, Several lines between G & H.
✓	7.0	19.3	I	III	b	241 F4 G=.3, F7 G=.4, h & H=.5
✓	6.4	16.4	K	III/I	bc	242 F3 G=.2 B, F3½ G=.2, F4½ G=.3, F5 G=.3 B, F5½ G=.2, F7 G=.5 F8½ G=.2 Several lines between G & H.

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Hδ; 448,5; 456,3; 458,4; 461,3; 466,2; 468,3

448,5

443,2; 453,2; 463,2

h,2; δ 2

448,5; 461,3; 468,3

δ d; h 2; δ d 2

h 2; δ 2

402,2

443,5; 458,2

G? G 453,5; 474,3

448,5; 453,2

Hα; 441,2; 448,3; 456,2; 458,3; 461,2; 468,3

h,5; δ 5

443,5; 453,2

h 5, δ 5

h 5, δ 5

Hδ; 446,3; 448,4; 458,2; 463,2; 474,3

HαG; 436,2; 443,2; 458,3

403,5; 448,4; 463,3

HαG; 441,2; 448,5; 456,2; 458,3; 461,3; 466,2; 468,2

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Plate 770

Book 3 & Page 188

No.	V.	H.	Type	Remarks	Description of lines on Spectra.
	19.5	20.7	I IV	b	243 F3 G=.2, F5 G=.2, F7 G=.4
~~12~~	~~12.0~~	~~17.4~~	~~B~~	~~b~~	~~243a F6 G=.2, h 6 K=.2~~
	11.5	14.2	I III	b	244 F3 G=.2, F5 G=.2, F7 G=.5.
	10.5	23.8	K III	bc	245 F3 G=.2 B, F5 G=.3 B, F5½ G=.1, F7 G=.4.
	6.6	16.6	K III	bc	246 F3 G=.2 B, F4½ G=.2, F5 G=.3 B, F5½ G=.2 F7 G=.4, Several lines between G & K.

Plate 800. Nov. 12, 1887.

124	13.5	14.1	K	bc	247 F3 G=.2 B, F4 G=.2 B, F4½ G=.3, F5 G=.3 B, F5½ G=.2, F7 G=.5, Several lines between G and K.

Plate 696.

126	21.5	14.2	F	a	248 G and h=.2, G dbl.
	17.8	14.4	F	a	249 G and h=.2, G dbl.
	15.8	13.3	I	b	250 F7 G=.5
	15.0	23.4	I	b	251 F5 G=.2, F8 G=.1.
	13.8	10.4	F	a	252 G and h=.2
	13.3	14.1	K	bc	253 F3 G=.2 B, F4 G=.2 B, F4½ G=.3, F5 G=.4, F6 G=.2, F7½ G=.4, Several lines between G & K.
128	12.0	22.0	F	a	254 G and h=.2

Plate 803.

130	20.1	9.3	F	a	255 G and h dbl.=.3
	17.5	15.8	B	b	256 h 6 H=.3
132	7.8	18.3	F	a	257 G and h=.5
	6.4	6.7	F	a	258 G and h=.5
	6.4	13.8	D	bc	259 F3 G=.2, F7 G=.3, h 3 H=.3 B, h 5 H=.2, & β 4 γ=.4
	4.6	11.7	I	b	260 F3 G=.2, F5 G=.2 F7 G=.5
	4.4	17.4	F	a	261 G & h dbl.=.5 (134) Nov. 14. F7 ha F7 G=.2

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

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

~~Hd~~ ; h 2 ; g d 2
h 2 ; g d 2
448,5
443,1 ; 458,2
~~429,2~~ h 2, g 2.
HaG ; 446,4 ; 453,2 ; 458,4 ; 461,3 ; 463,2 ; 468,2

h,2 ; g 2

hd,3 ; gd 3
402,3
h,5 ; g 5
h 5 ; g 5
382,4 ; 403,2 ; 406,3 ; 448,3 ; 468,2

448,5 ; 458,2 ; 468,2
hd 5 ; g 5
448,2

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Plate 720.

Book 3 Page 134	No.	H.	Type.	Remarks. Description of lines on Spectra.
	17.5	15.6	B I^b	263 F5 G=.2, h 5 H=.2
4/136	4.7	11.4	i III^b	264 F3 G=.2, F5 G=.2, F7 G=.5, G dbl.
	4.9	14.7	B I^b	265 G4 h=.2, G6 h=.2
	2.3	16.1	D I^a	266 F3 G=.2 B, F5½ G=.4 B,
	2.8	24.0	i III^b	267 F3 G=.2, F5 G=.2, F7 G=.4.

Plate 753.

	21.1	15.2	F II^a	268 G and h=.5
138	21.0	12.9	I III^b	269 F3 G=.3, F5 G=.2, F7 G=.4, Several lines between G and H.
	20.1	8.0	F I^a	270 G and h dbl.=.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 F3 G=.2 B, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F7 G=.5, Several lines between G & H.
140.	13.7	20.9	L II^a	274 G and h=.5
	13.0	20.7	i III^b	275 F7 G=.3
	12.6	17.3	i III^b	276 F3 G=.2, F5 G=.3, F7 G=.5, Several lines between G and H.
	12.8	13.2	i III^b	277 F5 G=.2, F7 G=.3, F8 G=.2,
	11.0	11.1	K III^{bc}	278 F4½ G=.2 F5 G=.3 B, F8 G=.4. Several lines between G and H.
	10.9	12.8	L II^a	279 G and h=.5
	11.0	14.7	F II^a	280 G and h dbl.=.3
	10.0	9.5	F II^a	281 G and h dbl.=.5
142	8.6	11.2	i III^b	282 F5 G=.2, F7 G=.3
	6.9	16.1	B I^b	283 F5 G=.2, G 5 H=.2, h 5 H=.3.
	2.9	8.1	i III^b	284 F5 G=.2, F7 G=.3, G dbl.

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1887phae.proj..848

4B3,2 ; 458,2

Hd ; 448,3 ; 458,2 ; 468,2

419,2 ; 424,2

456,4 ; 468,2

448,4 ; 458,2 ; 468,2

h 3 ; H 3

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

hd,2 ; Hd 2

h 7 ; H 7

h 2 ; H 2

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

h 3 ; H 3

448,3

HaG ; 448,3 ; 458,3 ; 468,2

443,2 ; 448,3 ; 458,2

Ha H ; 443,4 ; 458,3 ; 461,2

h,3 ; H,3

hd 3 ; Hd 3

hd 3 ; Hd 3

448,3 ; 458,2

403,3 ; 403,2 ; 438,2

Hd ; 448,3 ; 438,2

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November, 14, 1887.

Plate 774

Book 3, Page		V.	H.	Type	Remarks: Description of lines on Spectra.
	✓	21.0	13.0	K IV	bc 285 F3 G=.2 B, F3½ G=.3, F5 G=.2, F7 G=.3, F8 G=.2 B.
	✓	20.5	8.1	F IV	a 286 G and h=.2
144	✓	14.8	17.8	I III	b 287 F3 G=.2, F5 G=.2, F7 G=.5
	✓	13.0	13.3	I III	b 288 F3 G=.2, F5 G=.2, F7 G=.4
	✓	12.8	17.3	I III	b 289 F3 G=.2, F5 G=.2, F7 G=.4
	✓	11.1	11.2	I III	b 290 F3 G=.2, F5 G=.2, F7 G=.4.
	✓	11.4	14.8	F IV	a 291 G and h=.5, G dbl.
	✓	8.8	11.3	K III	bc 292 F3 G=.2 B, F3½ G=.2, F4½ G=.3, F5 G=.2 B., F5½ G=.2, F7 G=.5, F8½ G=.2 Several lines between G and H.
146	✓	3.0	8.2	I III	b 293 F3 G=.2 B, F5 G=.2 B, F7 G=.4

November, 15, 1887.

Plate 795

"	✓	"	22.0	19.9 I III	b 294 F5 G=.3, F7 G=.3
	✓		20.0	15.7 F II	a 295 G and h=.5
	✓		20.4	21.1 F II	a 296 G and h=.2, G dbl.
	✓		16.6	11.5 K III	bc 297 F3 G=.2 B, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F8 G=.3
148	✓		15.1	13.8 K III	bc 298 F3 G=.3 B, F4½ G=.2, F5 G=.3 B., F5½ G=.1, F7 G=.4. Several lines betw. G & H.
	✓		13.0	11.0 I III	b 299 F5 G=.2, F7 G=.5.
	✓		11.7	8.4 K III	bc 300 F3 G=.2 B, F4½ G=.1, F5 G=.3 B, F5½ G=.1, F7 G=.4. Several lines betw. G & H.
	✓		10.5	19.1 F III	a 301 G and h=.2
	✓		10.4	24.0 K III	bc 302 F3 G=.2 B., F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.4,
150	✓		6.8	20.3 F IV	a 303 G and h=.5
	✓		3.6	20.9 B II	b 304 h & H=.2

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443,2 ; 448,3 ; 458,2 ; 466,3 ; 468, 2

h 3 ; h 2

448,5 ; 458,3 ; 468,2

448,4 ; 458,2 ; 468,2

448,4 ; 458,2 ; 468,2

448,4 ; 458,3 ; 468,2

~~Ba~~ ; h 5 ; h ~~d~~ 5

Ha h ; 441,2 ; 448,5 ; 456,2 ; 458,2 ; 461,3 ; 466,2 ; 468,2

448,4 ; 458,2 ; 468,2

448,3 ; 458,3

h 5 ; h 3

~~Ba~~ ; h 2 ; h ~~d~~ 2

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

Ha h ; 448,4 ; 456,1 ; 458,3 ; 461,2 ; 468,3

448,5 ; 458,2

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

h 2 ; h 2

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

h 5 ; h 3

403,2

h d ? 448,2 ; 458,2 ; 468,5

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November, 15, 1887.

Plate, 787.

Book 3 Page	v.	H.	Type.		No.	Remarks Description of lines on Spectra.
✓ 150,	22.5	19.7	I	IIIb	306	F5 G=.5 B, F3 G=.5 B, F7 G=.4, Several lines
✓	20.1	15.6	F	IIIa	307	between G and H.
						→ G and h=.5, G dbl.
✓	20.4	20.9	F	IIa	308	G and h dbl. =.5
✓ 152,	15.2	13.6	K	IIIb.c	309	F3 G=.2 B, F4½ G=.3, F5 G=.2 B, F5½ G=.1
						F7 G=.4, Several lines betw. G & H.
✓	11.7	8.4	K	IIIb.c	310	F3 G=.3 B, F3½ G=.2, F4½ G=.2, F5 G=.4 B,
						F5½ G=.2, F7 G=.4, Several lines betw. G & H.
✓	10.7	19.0	F	IIIa	311	G and h=.3
✓	10.4	13.8	F	IIa	312	G and h=.5
✓	10.3	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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Ha G; 448,4; 468,5; 458,5

h 5 ; G d 5

hd 5; G d 5

Ha G; 448,4; 456,1; 458,2; 461,3; 468,3

Ha G; 448,4; 456,2; 458,4; 461,2; 466,2; 468,3

h 3 ; G 3

h 5 ; G 5

448,4; 468,21

448,4; 468,3

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Plate. 928

Book 3. Page 156	No.	H.	Type.	Remarks.	Description of lines on Spectra.
	22.9	22.5	I IIIa	b 315	F3 G=.2, F5 G=.1, F7 G=.4.
	22.0	11.0	B I	b 316	h 6 H=.3.
	21.2	19.0	I IIIa	b 317	F3 G=.2. F5 G=.2, F7 G=.4. G dbl.
	21.0	19.5	I IIIa	b 318	F3 G=.2, F5 G=.2, F7 G=.4, G dbl. Several lines between G & H.
	20.4	7.7	F II	a 319	G and h=.2.
	20.3	12.2	F II	a 320	G and h=.2
	20.5	13.5	I IIIa	b. c 321	F3 G=.3 B, F3½ G=.1, F4½ G=.2, F5 G=.3 B, F5½ G=.1, F7 G=.4, F8½ G=.1. Several lines between G and H. Several lines below K
9.15 a.m.					
	19.7	16.3	K IIIa	ba 322	F4½ G=.2, F5 G=1 B, F5½ G=.2, F7 G=.3 F8½ G=.1, Several lines between G & H. Several lines below K.
	19.5	21.2	F II	a 323	G & h=.5
	19.0	14.2	B I	b 324	F6 G=.1, h 6 H=.1, H 6 a=.1.
158	18.4	21.7	F II	a 325	G and h dbl. =.6
	18.5	9.7	K IIIa	b. c 326	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.2 F7 G=.4, F8½ G=.2.
	17.8	9.2	F II	a 327	G and h=.5
	17.0	20.2	B I	b 328	F6 G=.2, h 6 H=.2.
	16.3	11.7	B I	b 329	G2 h=.1, h 6 H=.1
	15.7	16.0	I IIIa	b 330	F7 G=.3.
160	14.8	20.8	B I	b 331	h 6 H=.3
	14.2	23.8	B I	b 332	h 6 H=.2
	13.5	16.6	B I	b 333	h 6 H=.2
	13.0	18.2	F II	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 II	a 336	G and h=.5 (G+h=.5)

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448,4 ; 458,1 ; 468,2

4032,3

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 ; 458,3 ; 461,2 ; 466,1 ; 468,3

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

h5 ; g5

392,1 ; 402,1 ; 453,1

hd,5 ; gd5

441,2 ; 448,4 ; 456,2 ; 458,1 ; 461,2 ; 468,1

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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Plate 928.

Book 3 Page 162	v.	H.	Type	Remarks	No.	Description of lines on Spectra.
✓	15.5	16.6	F III^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^{bc}		340	F3 G =.1 B., F3½ G =.1, F4½ G =.3, F5 G =.1 B, F5½ G =.2, F7 G =.4. F7½ G =.1 B, F8½ 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 dbl. =.2
✓	9.6	17.0	K III^{bc}		344	F3 G =.3 B, F3½ G =.2, F4½ G =.2, F5 G =.3 B, F5½ G =.2, F7 G =.4, Several lines betw. G & H.
✓	9.4	20.1	F II^a		345	G a [illegible] =.2
✓	8.1	13.0	I III^b		346	F 3 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
✓	3.5	7.6	I III^b		349	F7 G =.3
✓	3.0	11.4	K III^{bc}		350	F3 G =.2 B, F4½ G =.1, F5 G =.2 B, F5½ G =.2, F7 G =.3, F8½ G =.1, Several lines betw. G & H.
✓	2.5	11.0	B I^b		351	h 6 H =.3, H 6 a =.2
✓	8.7	19.2	B I^b		352	h 6 H =.2, H 6 a =.1
✓	7.5	16.3	K III^{bc}		353	F3 G =.3 B, F4½ G =.2, F5 G =.3 B, F5½ G =.1, F7 G =.4, Several lines betw. G & H.
✓	8.0	21.9	F II^a		354	G and h dbl. =.5
✓	5.5	16.2	K III^{bc}		355	F3 G =.1 B, F4½ G =.2, F5 G =.2 B., F5½ G =.2, F7 G =.4
✓	5.5	17.2	K III^{bc}		356	F3 G =.2 B., F4½ G =.1, F5 G =.2 B, F5½ G =.1, F7 G =.4 F7½ G =.1 B., F8½ G =.2, Several lines betw. G & H, Several lines below K.

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h 5 ; H 5

h 1 ; H 1

(h 3 ? ; H 3 ?) h 4 , H 4

HαG ; 441.2 ; ~~445~~ 446 .1 ; 448.4 ; 456 .2 ; 458 .1 ; 461.3 ; 466 .1 ; 468 .1

h 2 ; H 2

h 5 ; H 5

hd 2 ; Hd 2

Hα H ; 448.4 ; 456 .2 ; 458 .3 ; 461.2 ; 466 .2 ; 468 .3

h 2 , H 2

448.5 ; 458 .2 ; 468 .2

h 2 ; H 2

h 5 ; H 5

448.3

HαH ; 441.1 ; 448 .3 ; 456 .2 ; 458 .2 ; 461.1 ; 468 .2

392 .2 ; 402 .3

392 .1 ; 402 .2

HαH ; 448.4 ; 456 .1 ; 458 .3 ; 461.2 ; 468 .3

hd 5 ; Hd 5

448.4 ; 456 .2 ; 458 .2 ; 461.2 ; 468 .1

ak ; HαH ; 441.2 ; 446 .1 ; 448.4 ; 456 .1 ; 458 .2 ; 461.1 ; 468 .2

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Book 3 Page 168

	V.	H.	Type			No.	Remarks. Description of lines on Spectra.
✓	5.6	18.6	B	I	b	357	h 6 H = .2.
✓	3.0	14.6	F	II	a	358	G and h = .5
✓	3.1	22.4	I	III	b	359	F 3 G = .2, F 7 G = .3, Several lines betw. G & H.

Plate. 834.

✓	22.0	13.0	K	III	b.c.	360	F 3 G = .1 B, F 3½ G = .2, F 4½ G = .2, F 5 G = .1 B, F 5½ G = .2, F 7 G = .4, F 8½ 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	b	362	h 6 H = .1, H 6 a = .1
✓	17.0 18.5	19.9	B	I	b	363	h 6 H = .1, H 6 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	b	366	F 3 G = .2, F 5 G = .2, F 7 G = .4.
✓	17.2 11.0	16.7	K	III	b.c.	367	F 3 G = .1 B, F 4½ G = .2, F 5 G = .1 B, F 5½ G = .1, F 7 G = .4, Several lines between G & H.
✓	8.8	15.9	K	III	bc	368	F 2½ G = .2, F 3 G = .2 B, F 3½ G = .3, F 4½ G = .4, F 5 G = .1 B, F 5½ G = .1, F 6½ G = .2, F 7 G = .3 F 7½ G = .1 B, F 8½ 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	bc	370	F 3 G = .1 B, F 3½ G = .1, F 4½ G = .3, F 5 G = .1 B, F 5½ G = .2, F 7 G = .2, F 7½ G = .2 B, F 8½ G = .2, Several lines betw. G and H; Several lines below K.
✓	17.4 4.4	11.1	I	III	b.	371	F 3 G = .2, F 7 G = .5, Several lines betw. G & H.
✓	4.5	22.1	I	III	b	372	F 4 G = .3, F 6 G = .2, F 7 G = .4, Several lines between G and H.

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402,2

h 5; 2 5

Ha 2; 448,3; 468,2

aK; Ha 2; 441,1; 448,4; 456,2; 458,1; 461,2; 466,2; 468,1

h 2; 2 2

392,1; 402,1

392,1; 402,1

h 2; 2 2

h 2; 2 2

448,4; 458,2; 468,2

Ha 2; 448,4; 456,1; 458,1; 461,2; 468,1

Ha 2; 441,1; 446,1; 448,3; 451,2; 456,1; 458,1; 461,4; 466,3; 468,2; 471,2

h 3; 2 3

aK; Ha 2; 441,2; 446,2; 448,2; 456,2; 458,1; 461,3; 466,1; 468,1

Ha 2; 448,5; 468,2

Ha 2; 448,4; 453,2; 463,3;

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Plate 834,

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

2.4 13.0 I III b.c 373 F3 G=.3 B, F3½ G=.2, F4 G=.3 B, F4½ G=.3, F5 G=.3 B, F5½ G=.2, F7 G=.5, F8½ G=.1. Several lines betw. G and H, Several lines below K.

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Plate 738

" " "

22.6 10.8 F II a? 373a G+h=.5?

176 22.6 12.3 F II a 374 G and h=.5

11.4 12.9 F II a? 374a G+h=.2, 1 line below K.

178 5.8 9.6 K III bc 375 F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.5,

5.5 11.3 F IIIa? b.c 375a G+h=.2?

4.2 11.3 K III b.c 376 F2½ G=.1, F3 G=.2 B, F3½ G=.1, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.4, F8½ G=.1,

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

2.4 12.0 F II a 378 G+h=.2

22.8 13.8 I III b 379 F7 G=.4,

20.6 18.6 I III b 380 F5 G=.2, F7 G=.4.

19.4 20.5 K III b.c 381 F2½ G=.1, F3 G=.2 B, F4½ G=.2, F5 G=.3 B, F5½ 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 F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.3. F5 G=.1 B. F5½ G=.2, F7 G=.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. H dbl. (G+h=.2)

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

12.1 22.1 F II a 386a G+h=.2?

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

11.4 14.1 K III bc 388 F2½ G=.2, F3 G=.3 B, F3½ G=.1, F4½ G=.2 F5 G=.3 B, F5½ G=.2, F7 G=.4, F7½ G=.1 B, F8 G=.1, F8½ G=.1. Several lines betw. G and H.

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aK; 441,1; 448,5; 456,2; 458,3; 461,3; 463,1; 466,2; 468,3

h5 g5

h5; g5

aK h2; g2

448,5; 456,1; 458,2; 461,1

h2? g2?

441,1; 448,4; 456,1; 458,2; 461,1; 466,1; 468,2; 471,1

hd3; gd3

h2; g2

448,4

448,4; 458,2

Ha; 438,1; 443,2; 448,4; 456,2; 458,3; 461,2; 468,2; 471,1

448,4

~~461,3~~; 456,2; 458,1; 461,3; 466,1; 468,1; 471,1

h5; g5

h5; g5

hd3, g3 (h2 g2)

h5; g5 (h5 g5)

h2? g2?

h2; g2

Ha; 441,1; 443,1; 446,1; 448,4; 456,2; 458,3; 461,2; 466,1; 468,3; 471,2

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Plate 738.

Book	Page	V.	H.	Type	No.	Remarks	Description of lines on Spectra
"	"	184	10.1	16.9	F	II a	389	G and h = .5
			10.5	23.6	G	II bc.	390	F 3 G = .3 B, F 5 G = .3 B, F 7½ G = .2, h B.? Several lines below K.
			9.8	22.4	F	II a	391	G and h dbl. = .3
			9.6	23.3	I	III b.	392	F 3 G = .2, F 5 G = .2, F 7 G = .4
			9.2	16.4	K	III b.c.	393	F 3 G = .1 B, F 4½ G = .3, F 5 G = .1 B, F 7 G = .4
			9.3	19.3	I	III b	393a	F 4½ G = .1, F 5½ G = .1, F 7 G = .3. Lines between G & H, Lines below K.
			6.5	16.4	K	III b.c	394	F 2½ G = .1, F 3 G = .3 B, F 3½ G = .1, F 4½ G = .1, F 5 G = .3 B, F 5½ G = .1, F 7 G = .3, F 8 G = .2 B, F 8½ G = .1, Several lines betw. 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	III b	397	F 2 G = .2, F 4 G = .2, F 6 G = .2, F 7 G = .4.

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h 5 ; L 5

aK ; h Bright? ; 448.2 ; 458.3 ; 468.3

hd 3 ; L d 3

448.4 ; 458.2 ; 468.2

448.4 ; 458.1 ; 461.3 ; 468.1

aK ; HaS ; 448.3 ; 456.1 ; 461.1

aK ; HaG ; 441.1 ; 443.2 ; 448.3 ; 456.1 ; 458.3 ; 461.1 ; 466.1 ; 468.3 ; 471.1

h 5 ; L 5

h 2 ; L 2

448.4 ; 458.2 ; 463.2 ; 474.2

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1887phae.proj..848f

Nov. 19, 1887.

Plate 929.

Book 12 E. Page.	V.	H.	Type	No. Remarks	Description of lines on Spectra.
✓ 4	23.0	17.1	K III	bc 398	$F2\frac{1}{2}$ G=.1, F3 G=.3 B, $F3\frac{1}{2}$ G=.1, $F4\frac{1}{2}$ G=.1, F5 G=.1 B, F7 G=.2, F8 G=.1 B, Several lines betw. G and H, Several lines below K.
✓	22.7	18.2	B II	b 399	h 6 H=.2
✓	22.4	21.0	B I	b 400	G 6 K=.3
✓	21.9	5.7	F II	a 401	G and h=.5
✓	20.5	11.5	F II	a 402	G and h=.5
✓	20.4	14.7	F II	a 403	G=.5, h=.2, Several lines below K.
✓	20.1	10.2	F II	a 404	G and h=.5
✓	20.0	21.0	F II	a 405	G and h=.5
✓ 6	19.8	22.2	K III	bc 406	F3 G=.2 B, $F4\frac{1}{2}$ G=.1, F5 G=.3 B, $F5\frac{1}{2}$ G=.1, F7 G=.3, F8 G=.1 B, Several lines betw. G and H, Several lines below K.
✓	19.1	7.9	I III	b 407	F3 G=.1, F5 G=.1, F7 G=.2, Several lines between G and H.
✓	19.2	19.1	F II	a 408	G and h=.5
✓	18.9	5.7	F II	a 409	G and h=.5
✓	19.0	6.5	F II	a 410	G and h=.5, Several lines below K.
✓	18.7	7.2	I III	b 411	F3 G=.2, F5 G=.2, F7 G=.4
✓	18.0	13.2	I III	b 412	F3 G=.2, F5 G=.1, F7 G=.3
✓	17.7	12.8	K III	bc 413	F3 G=.1 B, $F3\frac{1}{2}$ G=.1, $F4\frac{1}{2}$ G=.1, F5 G=.1 B, $F5\frac{1}{2}$ G=.1, F7 G=.2.
✓	17.3	15.2	F II	a 414	G and h=.5
✓	17.2	6.6	F II	a 415	G and h=.5
✓ 8	16.0	12.5	F II	a 416	G and h=.3
✓	15.9	13.1	I III	b 417	F7 G=.4
✓	15.9	7.6	F II	a 418	G + K dbl. =.5
✓ 10	15.0	13.9	F II	a 419	G and h=.4

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1987phaa.proj..049f

aK ; HaG; 443.1 ; 448.2; 458.1; 461.1; 466.1; 468.3; 471.1

403.2
419.3
hs⁻; ls⁻
hs⁻; ls⁻
aK; h2; ls⁻
hs⁻; ls⁻
hs⁻; ls⁻
aK; Hals; 443.1; 448.3; 456.1; 458.3; 461.1; 468.2

HaG; 448.2; 458.1; 468.1

hs⁻; ls⁻
hs⁻; ls⁻
aK; hs⁻; ls⁻
448.4; 458.2; 468.2
448.3; 458.1; 468.2
448.2; 456.1; 458.1; 461.1; 466.1; 468.1

hs⁻; ls⁻
hs⁻; ls⁻
h3; l3
448.4
hds⁻; ldls⁻
h4; l4

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1887phae.proj..848f

Nov. 19, 1887.

Plate. 929

Book 12 E. Page cr.		R	Type	Remarks		Description of lines on Spectra
✓	10 14.8	7.6	F	II a	420	G and h=.2
✓	14.7	12.8	?	?	420a	G? bright
✓	14.0	13.9	F	II a	421	G=.3, h=.2, Several lines betw. F and G, Several lines below K.

Nov. 21, 1887. Plate 929.

✓	13.9	20.8	F	II a	422	G and h=.5
✓	12 12.9	11.1	F	II a	423	G and h=.2.
✓	13.6	22.8	F	II a?	422a	G+h=.5
✓	14 11.2	21.0	F	II a	424	G and h=.5
✓	11.2	15.5	F	II a	425	G and h=.2, G dbl. Several lines below K.
✓	10.8	16.4	F	II a	426	G and h=.5 (G+h=.0)
✓	10.7	14.9	I	III b	427	F5 G=.2, F7 G=.3.
✓	10.6	24.2	F	II a	428	G and h=.2
✓	10.3	16.5	B	I b	429	h & K=.2, K 6a=.2.
✓	10.3	18.4	D	I b.c	430	F3 G=.2, F5 G=.2 B, F5½ G=.1
✓	10.0	9.6	F	II a	431	G and h=.5
✓	10.0	17.9	F	II a	432	G and h=.5
✓	9.9	19.3	F	II a	433	G and h dbl=.5
✓	9.2	7.6	I	III b	434	F3 G=.2, F7 G=.3.
✓	11.0	6.4	I	III b	435	F3 G=.2, F7 G=.3
✓	16 8.1	10.1	I	III b	436	F3 G=.2, F5 G=.2, F7 G=.3.
✓	8.1	21.8	K	III b.c	437	F3 G=.2 B, F5 G=.2 B, F7 G=.1
✓	7.0	9.3	I	III b	438	F3 G=.2, F5 G=.2, F7 G=.3
✓	6.8	15.4	F	II a	439	G and h=.2
✓	18 6.2	20.4	K	III b.a	440	F3 G=.2 B, F5 G=.2 B. F7 G=.2
✓	4.3	19.5	I	III b	441	F7 G=.2
✓	3.7	14.3			442	F3 G=.2 B, F4½ G=.1, F5 G=.2 B, F7 G=.4 F8 G=.1 B. Several lines between G & H. Several lines below K.
✓	20 2.7	17.3	F	II a	443	G and h=.2

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1887phae.proj..84pf

h 2 , g 2
ak , g a 4 ; h 2 ; g 3

h 5 ; g 5
h 2 ; g 2
h 5 ; g 5
h 5 , g 5
ak , h 2 , g d 2

h 5 , g 5 , (h 5 , g 5)
448,3 ; 458,2
h 2 ; g 2
392,2 ; 402,2
456,1 ; 458,2 ; 468,2
h 5 , g 5
h 5 , g 5
hd 5 , gd 5
448,3 ; 468,2
448,3 ; 468,2
448,3 ; 458,2 ; 468,2
448,1 ; 458,2 ; 468,2
448,3 ; 458,2 ; 468,2
h 2 , g 2
448,2 ; 458,2 ; 468,2
448,2
Hag ; 443,1 ; 448,4 ; 458,2 ; 461,1 ; 468,2
ak ; h 2 ; g 2

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1887phae.proj..848F

Nov. 21, 1887.

Book 12 E. Page

Plate. 829

	No.						Description of lines on Spectra
	22	v.	H	Type	Remarks		
✓		19.9	11.7	B	I b	444	F 7 G=.2, h 6 H=.2, H 6 a=.1 ?

Nov. 22. 1887.

Plate 829.

✓		14.6	10.9	K	III b.c	445	F 3 G=.3 B, F 4½ G=.1, F 5 G=.2 B, F 5½ G=.3, F 7 G=.4, Several lines betw. G and H.
✓	24	12.1	19.4	K	III b.c	446	F 3 G=.3 B, F 4½ G=.1, F 5 G=.2 B, F 5½ G=.1, F 7 G=.4, Several lines between G & H.
✓		12.0	8.8	L	III a	447	G=.4 and h=.1 Several lines below K.
✓		9.4	19.0	F	III a	448	G and h=.3, Several lines below K.
✓		7.9	13.6	F	II a	449	G and h=.3

Plate 843.

✓	26.	21.5	9.7	F	II a	450	G and h=.3
✓		20.5	15.1	F	II a	451	G and h=.2
✓		19.0	15.7	B	I b	452	h 7 H=.3
✓	28	17.7	8.9	B	I b	453	h 7 H=.2
✓		16.6	17.1	F	II a	454	G and h=.2 (G+h=.2, 2 lines below K.)
✓		16.6	23.2	F	II a	455	G and h=.5
✓		15.9	15.2	±	III b	456	F 3 G=.3, F 7 G=.2.
✓		15.3	15.3	F	II a	457	G and h=.5 (G+h=.5)
✓	30	14.6	16.7	F	II a	458	G and h=.5 (G+h=.5)
✓		13.8	11.6	±	III b	459	F 6 G=.2, F 8 G=.2.
✓		13.0	17.7	G	II b	460	F 3 G=.1, F 5 G=.1, F 7 G=.1
✓		12.5	9.1	F	II a	461	G and h=.2
✓		12.8	15.8	F	II a	462	G and h=.2
✓		12.3	17.1	K	III b.c	463	F 3 G=.4 B, F 3½ G=.1, F 4½ G=.2, F 5 G=.2 B, F 5½ G=.1, F 7 G=.4, F 8½ G=.1, Several lines between G and H. Several lines below K.

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1887phae.proj..848f

392, 1 ; 402, 2 ; 448, 2

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

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

aK, h 1 ; 4
aK, h 3 ; 3
h 3, 3

h 3 ; 3
h 2 ; 2
401, 3 ;
401, 2
h 2 ; 2 (2aK ; 1e ; 2)
h 3, 3 ~~(aK, he 3)~~
448, 2 ; 468, 3
h 5, 5, (h 5, 5)
h 5, 5, (h 5, 5)
443, 2 ; 453, 2
448, 1 ; 458, 1 ; 468, 1
h 2, 2
h 2, 2
aK, Ha, 441, 1 ; 448, 4 ; 456, 1 ; 458, 2 ; 461, 2 ; 466, 1 ; 468, 4

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Nov. 22, 1887.

Plate No. 843.

Book 12, E. Page	v	H.	Type	Remarks	Description of lines on Spectra.
✓ 30	11.5	9.8	F II^a	464	G and h = .5
✓ 32	10.6	19.6	I III^b	465	F 3 G = .2, F 5 G = .2, F 7 G = .3.
✓	8.7	13.6	B II^b	466	H 6 H = .8, H 7 a = .8
✓	8.4	18.1	F II^a	467	G and h = .5
✓ 34	7.2	8.3	L III^a	468	G and h = .5
✓	5.8	7.3	F II^a	469	G and h = .5
✓	5.3	8.7	F II^a	470	G and h = .5
✓ 36	3.6	7.6	F II^a	471	G and h = .5

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1887phae.proj..848f

h 5 ; k 5

448,3 ; 458,2 ; 468,2

391,8 ; 402,8

h 5 , k 5

h 5 , k 5

h 5 , k 5

h 5 , k 5

h 5 , k 5

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1887phae.proj..848F

Nov. 26 1887.

Plate. 950

Book 12. E. Page	v.	H.	Type.	No.	Description of lines on Spectra.
✓ 38	21.5	19.3	F II a	472	G and h = .2
✓	20.1	9.2	B I b	473	h 6 H = .2.
✓	19.5	22.3	F II a	474	G and h = .5

Nov. 29. 1887.

Plate 950

" " " Page				~~475~~	
✓ 40	14.4	13.9	F II a	475	G and h = .5
✓	14.2	15.9	F II a	476	G and h = .4
✓	14.8	17.4	B I b	477	F 6 G = .2, h 6 H = .2
✓	14.8	17.9	F III a	478	G and h = .3. Lines below K.
✓	14.5	18.2	F III a	479	G and h = .5
✓	14.6	22.2	K III b.c	480	F 4½ G = .2, F 5 G = .2 B., F 7 G = .2, F 7½ G = .3 B. F 8 G = .2 Lines below K.
✓	12.9	6.0	K III bc.	481	F 3 G = .3 B, F 4½ G = .1, F 5 G = .3 B, F 5½ G = .1 B K F 7 G = .2, Several lines between G and H. Lines below K.
✓ 42	12.3	12.2	B I b	482	F 3 G = .4, F 5 G = .4, F 7 G = .5.
✓	12.0	15.4	I III b	483	F 7 G = .4
✓	12.6	19.0	B I b	484	F 6 G = .1, h 6 H = .2, H 6 a = .2.
✓	11.1	16.4	F II a	485	G and h = .5, Lines below K.
✓	11.0	17.7	E III	486	a K Hab, Several Bright & faint lines.
✓	9.3	15.6	B I b	487.	F 5 G = .1, F 9 G = .2, h 6 H = .2.
✓ 44	9.2	23.9	F II a	488	G and h = .2
✓	8.2	14.6	F II a	489	G and h = .2 ? Several lines below K.

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1887phae.proj..848f

h 2, H 2)
400, 2)
~~401, 5~~ 4105, 4345.

h 5, H 5
h 4, H 4
402, 3; 453, 2)
aK, h 3, H 3
h 5, H 5
aK; 443, 2; 446, 3; 448, 2; 458, 2; 461, 2)
aK; Hα H; 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; h 5; H 5
a 394, 397 a 434. Several Bright & Faint lines.

402, 2; 438, 2; 458, 1
h 2; H 2)
aK; h 2?; H 2?

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November, 29, 1887.

Book 12 E. Page.

Plate. 835

		V.	H.	Type.		No. Remarks.	Description of lines on Spectra.
✓	46	21.6	14.3	F	II^a	490	G=.5, h=.2, Lines below K.
✓		21.0	21.6	I	III^b	491	F2½ G=.3, F5 G=.4, F6 G=.3, F7½ G=.4, Lines between G and H.
✓	48	15.0	10.7	L	III^a	492.	G and h=.2
✓		15.1	13.3	F	II^a	493	G and h=.2, G dbl.
✓		14.0	10.5	F	II^a	494	G and h=.3
	50	12.5	15.0	I	III^b	495	F3 G=.2, F7 G=.3
✓		12.6	18.4	F	II^a	496	G and h=.5
✓		11.6	17.8	B	I^b	497	F3 G=.1, F6 G=.2, F7 G=.2
✓		9.1	14.0	F	II^a	498	G and h=.5, Lines below K.
✓	52.	7.9	21.5	F	I^a	499	G and h=.5
✓		5.0	13.9	K	III^{bc}	500	F4½ G=.1, F5 G=.2 B, F2½ G=.1, F3 G=.2 B, F7 G=.3.

Plate 875.

✓	54	21.0	8.7	F	II^a	501	G=.5 h=.2, Lines below K.
✓		21.1	19.2	K	III$^{b.c.}$	502	F2½ G=.1, F3 G=.3 B, F3½ G=.1, F4½ G=.2, F5 G=.3 B, F5½ G=.1, F7 G=.4, F8½ G=.1 B, Several lines between G & H.
✓		18.6	19.0	F	II^a	503	G and h=.5, Lines below K.
✓		16.3	12.1	F	I^a	504	G and h=.5.

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Plate 875

✓	56	15.8	11.5	F	II^a	505	G and h = 2 2
✓		14.5	8.1	F	I^a	506	G and h=.2, G dbl.
✓		12.1	13.4	F	I^a	507	G and h=.2, G dbl.
✓		11.4	13.1	B	I^b	508	h 2 H=.3, h 5 H=.1, [illegible] α=.1

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1887phae.proj..848f

aK ; h 2 ; g 5

397 a 434, 4464, 463.3, 4584, 471, 3.

h 2 ; g 2

~~d~~ ; h 2 g d 2

h 3 ; g 3

448, 3 ; 468, 2

h 5 ; g 5

448, 2 ; 453, 2 ; 468, 1

aK ; h 5 ; g 5

h 5 ; g 5

448, 3 ; 468, 2 ; 471, 1 ; 458, 2 ; 461, 1

aK ; h 2 ; g 5

Ha g ; 441, 1 ; 448, 4 ; 456, 1 ; 458, 3 ; 461, 2 ; 466, 1 ; 468, 3 ; 471, 1

aK ; h 5 ; g 5

h 5 ; g 5

? h 2 ? g 2 ?

~~g d~~ ; h 2 ; g d 2

~~d~~ ; h 2 ; g d 2

392, 1 ; 403, 1 ; 407, 3

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November, 30, 1887.

Plate 875.

Book 12 & Page	V.	H.	Type.	Remarks.	Description of lines on Spectra.
✓ 58	9.6	19.8	K III bc.	509	F3 G=.3 B, F3½ G=.1, F4½ G=.2, F5 G=.3 B, F5½ G=.1
	~~7.6~~	~~18.6~~	~~III bc.~~	~~510~~	F7 G=.4 Several lines between G & H.
✓	7.6	18.6	I III b	510	F2½ G=.1, F3 G=.3 B, F3½ G=.1, F4½ G=.2, F5 G=.3 B, F5½ G=.1, F7 G=.4, F8 G=.1 B, Lines between G & H.
✓	4.6	12.8	K III bc.	511	F3 G=.3 B, F4½ G=.1, F5 G=.3 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Several lines betw. G & H.

Plate 879.

✓ 60	21.4	14.4	F II a	512	G=.5 and h=.2
✓	20.9	21.6	K III bc.	513	F2½ G=.1, F3 G=.2 B, F4½ G=.1, F5 G=.3 B, F5½ G=.1, F7 G=.4 Gdbl Lines between G & H.
✓	15.8	12.4	2	513a	7 Line Bright.
✓	15.0	13.3	F II a	514	G and h=.1
✓ 62	4.9	13.6	K III b.c	515	F3 G=.3 B, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F7 G=.4, Several lines betw. G & H.

December, 1, 1887.

Platte 878.

✓ 64	14.9	15.4	F II a	516.	G & h=.2.
✓ 66	11.0	16.7	F II a	517	G & h=.2
✓	10.8	9.7	L III a	518	G and h=.2
✓	9.0	13.2	I III b	519	G & H=.2
✓	8.5	19.2	F III 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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1887phae.proj..848f

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

Hγ; hγ; d.4

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

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

hγ; hγ

Hγ; hγ; 448,4; 456,1; 458,3; 461,1; 468,3; 471,1

h1; h1

Hγ; 448,4; 456,2; 458,2; 461,2; 468,3

h2; h2

h2; h2

h2; h2

408,2

h3; h3

h5; h5

h5; h5

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1887phae.proj..848F

December, 1, 1887.

Plate, 876.

Book 12. E. Page	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
✓ 70	16.5	7.9	B I^b		523	h 6 H = .5
✓	12.4	10.5	F II^a		524	G and h = .5
✓	11.2	13.2	F II^a		525	G and h = .5
✓	11.0	15.0	I III^b		526	F 3 G = .3, F 5 G = .2, F 7 G = .4.

{Dark Plate. Dec. 3. '87. Very hard to measure} Plate 914

✓ 74	22.9	23.2	F II^a		527	G and h = .2
✓	20.0	13.3	I III^b		528	F 3 G = .2, F 5 G = .1, F 7 G = .3.
✓	19.3	12.6	F II^a		529	G and h = .2
✓ 76	18.9	6.2	F II^a		530	G and h = .2
✓	18.0	10.5	G II^b		531	F 5 G = .2, F 7 G = .3, G 5 h = .5, h 5 H = .5.
✓ 78	14.5	10.4	F II^a		532	G and h = .5
✓	14.6	12.9	F II^a		533	G and h = .5
✓	13.6	10.4	K III^{bc}		534	F 3 G = .1 B, F 4½ G = .1, F 5 G = .2 B, F 7 G = .2, F 8 G = .4 B.
✓	13.5	11.6	F II^a		535	G and h = .5
✓ 80	10.5	18.0	F II^a		536	G and h = .5
✓	9.9	15.1	K III^{bc}		537	F 3 G = .1 B, F 4½ G = .1, F 5 G = .1 B, F 5½ G = .1 F 7 G = .3

December, 2, 1887.

Plate 914

✓ 82	9.8	16.8	F II^a		538	G and h = .5, F 8 G = .5, G 6 h = .3, 2 lines below K.
✓	6.5	15.8	F II^a		539	G and h = .4.
✓ 84	6.7	18.0	F II^a		540	G and h = .5
✓	6.9	22.0	F II^a		541	G and h = .2
✓	5.6	14.3	F II^a		542	G and h = .2
✓	5.2	17.	F II^a		543	G and h = .5, 2 lines below K.
✓	2.4	9.0	III^b		544	F 5 G = .2 F 7 G = .3 Lines between G & H.
✓ 86	3.9	20.6	F II^a		544	G and h = .5
	3.5	23.2	F II^a		545	G and h = .2 V. 3.4 H. 9.0 Type III^b No. 546 F 7 G = .3

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1887phae.proj..848f

402, 5
h 5; h 5
h 5; h 5
448, 4; 458, 2; 468, 3

h 2; h 2
448, 3; 458, 1; 468, 2
h 2; h 2
h 2; h 2
403, 5; 421; 5; 448, 3; 458, 2
h 5; h 5
h 5; h 5
443, 1; 448, 2; 458, 3; 461, 1; 468, 1
h 5; h 5
h 5; h 5
448, 3; 456, 1; 458, 1; 461, 1; 468, 1

aK; 419, 3; 443, 5; h 5; h 5
h 4; h 4
h 5; h 5
h 2; h 2
h 2; h 2
2 aK; h 5; h 5
~~aK 4483, 456.2~~
h 5 h 5
h 2; h 2

448, 3

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1887phae.proj..848f

December, 2, 1887.

Plate 844.

Book 12. E. Page.	V.	H.	Type.	No. Remarks.	Description of lines or Spectra.
88	20.2	22.3	I III b	547	F3 G=.2, F5 G=.2, F7 G=.4.
	18.6	17.6	F II a	548	G and h=.2
	18.7	21.5	F II a	549	G and h=.5
	18.9	20.5	I III b	550	F7 G=.3
	18.2	23.1	I III b	551	F4 G=.2, F5 G=.2, F7 G=.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	I III b	555	F5 G=.2, F7 G=.3
	11.3	20.3	I III b	556	F7 G=.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	I III b	559	F7 G=.3
	4.4	13.3	F II a	560	G and h=.3, h dbl.
	4.9	16.1	F II a	561	G and h=.4
	4.7	16.7	K III b.c.	562	F3 G=.2 B, F3½ G=.1, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.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=.4
	21.1	11.1	F II a	564 a	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 b	566 a	G+h=.5
	20.0	15.2	I III b	567	F5 G=.2, F7 G=.2.
	20.0	19.2	F II a	568	G and h=.2 G+h=.5
	19.7	21.0	F II a	568 a	G+h=.5

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1887phae.proj..848f

4488,4 ; 4358,2 ; 4684,2)
h 2 ; h 2)
h 5 ; h 5
4488,3
4488,3 ; 4358,2 ; 4683,2)
h 5 ; h 5
h 5 ; h 5
h 4 ; h 4
4488,3 ; 4358,2)
4488,3
h 5 ; h 5
h 5 ; h 5
h 5 ; h 5
4488,3
h 3 ; h 3
h 4 ; h 4
Hal ; 4488,3 ; 4356,1 ; 4358,2 ; 4681,1 ; 4686,1 ; 4688,2
~~Hal~~ ;
h 5 ; h 5

h 4 ; h 4
h 5 ; h 5
h 5 ; h 5
h 5 ; h 5
h 5 ; h 5
4488,2 ; 4744,2)
h 2 ; h 2 , h 5 ; h 5
h 5 ; h 5

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1887phae.proj..848f

December 3, 1887.

Plate 1019

Book 12 E. Page	V.	H.	Type	No.	Remarks, Description of lines on Spectra
✓ 100	18.7	9.7	F II a	569	G and h = .5.
✓	18.6	15.2	F II a	570	G and h = .5 (G + h = .5)
✓ 102	18.9	22.5	I III b	571	F 3 G = .2, F 5 G = .1, F 7 G = .4, Lines betw. G & H. 2 lines below K.
✓	17.3	6.9	F II a	572	G and h = .5
✓	16.3	9.5	I III b	573	F 3 G = .2, F 7 G = .3.
✓	16.4	21.0	F II a	574	G and h = .5 (G + h = .5)
✓ 104	15.5	19.2	F II a	575	G and h = .2, Lines below K.
✓	14.1	10.4	F II a	576	G and h = .5 (G + h = .5)
✓ 106	14.0	20.2	F II a	577	G and h = .5. Lines below K.
✓	14.9	21.0	F II a	578	G and h = .2.
✓	13.4	15.4	F II a	579	G and h = .5
✓	12.0	9.0	F II a	579 a	G + h = .5
✓	12.7	11.9	I III b	580	F 5 G = .2, F 7 G = .3.
✓ 108	11.8	5.4	F II a	581	G and h dbl. = .5. Lines below K.
✓	11.0	17.6	B I b	582	G 3 h = .3 h 3 H = .3.
✓	10.7	11.7	F II a?	582 a	G + h = .5?
✓	10.7	19.7	F II a	583	G and h = .2
✓	9.4	8.6	F II a? b	583 a	G + h = .5
✓ (110)	9.7	19.0	I III	584	F 5 G = .2, F 7 G = .3.
✓	9.8	13.1	F II a	583 b	G + h = .5?
✓	9.9	20.4	F II a	585	G and h = .2, Lines below K.
✓	8.1	19.3	I III b	586	F 7 G = .2
✓ 112	7.9	14.1	I III b	587	F 3 G = .2, F 7 G = .3
✓	6.8	15.1	B I b	588	h 6 H = .2, H 6 a = .2
✓ 114	5.5	11.2	I III b	589	F 3 G = .1, F 5 G = .2, F 7 G = .3.
✓	5.9	18.9	F II a	590	G and h dbl. = .5.
✓	4.7	12.8	F II a	591	G and h = .5 (G + h = .5)
✓	3.1	9.5	F II a	592	G and h = .2
✓	3.4	13.5	F II a	593	G and h = .3
✓	3.8	15.1	K III b c	594	F 3 G = .1 B, F 3 ½ G = .1, F 4 ½ G = .1, F 5 G = .1 B, F 5 ½ G = .1, F 7 G = .3, Lines between G & H.

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1887phae.proj..848F

h 5 ; g 5

h 5 ; g 5 (h 5 , g 5)

2aK ; HaG ; 448,4 ; 458,1 ; 468,2

h 5 ; g 5

448,3 ; 468,2

h 5 , g 5 . (h 5 , g 5)

aK ; h 2 ; g 2

h 5 , g 5 (h 5 , g 5)

aK ; h 5 ; g 5

h 2 ; g 2

h 5 ; g 5

h 5 ; g 5

448,3 ; 458,2

aK ; hd 5 ; gd 5

406,3 ; 426,3

h 5 ? ; g 5 ?

h 2 ; g 2

h 5 , g 5

448,3 ; 458,2

h 5 ? g 5 ?

aK , h 2 , g 2

448,2

448,3 ; 468,2

392,2 ; 402,2

448,3 ; 458,2 ; 468,1

hd 5 , gd 5

h 5 , g 5 , (h 5 , g 5)

h 2 ; g 2

h 3 ; g 3 :

HaK ; 448,3 ; 456,1 ; 458,1 ; 461,1 ; 466,1 ; 468,1

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1887phae.proj..848F

December, 3, 1887.

Plate 1019

Book 12 E. Page	V.	H.	Type.	No.	Remarks. Description of lines on Spectra.
✓ 116.	3.4	16.7	K III b.c.	595.	F3 G=.3 B, F3½ G=.1, F4½ G=.1, F5 G=.3 B, F5½ G=.1, F7 G=.3, Lines betw. G & H. Lines below K.
✓	3.6	23.3	i III b	596	F5 G=.2, F7 G=.3

Plate 877.

✓ 118	21.2	12.5	i III b	597	F3 G=.3, F7 G=.3, G6 H=.2, G7 H=.2,
✓	19.6	9.3	G II a.c	598	G and h=.4, G dbl. Lines below K, F3 G=.1 B, F5 G=.3 B. Superposed on spectrum of faint A star?
✓	15.1	13.6	K III b.c.	599	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.2

December, 5, 1887.

Plate 939.

✓ 122.	22.5	13.6	F II a	600	G and h dbl. =.5, Lines below K
✓	20.1	13.6	F II a	601	G and h =.2, Lines below K.
✓	20.0	16.8	i III b	602	F5 G=.1, F7 G=.3.
✓	19.5	7.6	F II a	603	G and h =.5 (G+h=.5)
✓	18.6	10.5	F II a	604	G and h dbl.? =.3, Lines below K.
✓ 126	14.0	14.8	K III b.c.	605	F2½ G=.1, F3 G=.2 B, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F7 G=.3, Lines between G & H.
~~14.5~~	~~20.3~~	~~F II a?~~		~~605a~~	~~G+h=.5~~
✓	13.6	23.6	F II a	606	G and h=.5
✓	12.2	10.7	i III b	607	F5 G=.2, F8 G=.4, Lines between G and H.
✓ 128	11.0	8.0	F II a	608	G and h=.5
✓	9.8	7.1	F II a	608a	G+h=.5 (G+h=.5)
✓	9.6	17.2	F II a	609	G and h=.2
✓	9.1	17.7	F II a	610	G and h=.5, 1 Line below K.
✓	9.6	20.1	i III b	611	F7 G=.3,
✓ 130	8.2	14.8	F II a	612	G and h=.2, Lines below K.

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1887phae.proj..848f

Ha G.

aK, 448,3 ; 456,1 ; 458,3 ; 461,1 ; 466,1 ; 468,3

448,3 ; 458,2

~~448,2~~ ; 406,2 ; 409,2 ; 448,3 ; 468,3
aK, h 4, G d 4.
458,3 ; 468,1 ~ Superposed on Spectrum of faint A star ?
448,2 ; 456,1 ; 458,1 ; 461,2 ; 468,1

aK ; h d 5 ; G d 5
aK ; h 2 ; G 2
448,3 ; 458,1
h 5, G 5, (h 5, G 5)
aK ; h d? 3 ; G d? 3
Ha G ; 448,3 ; 456,2 ; 458,2 ; 463,2 ; 468,2 ; 471,1

~~h 5, G 5~~
h 5, G 5.
Ha G, 443,4 ; 458,2
h 5 ; G 5
h 5, G 5, (h 5, G 5)
h 2 ; G 2
aK, h 5, G 5
448,3
aK, h 2, G 2.

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1887phae.proj..848F

December, 5, 1887.
Plate 939.

Book 12 E... Page ...	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
✓	130. 7.0	19.1	F II	a	613	G and h=.4
✓	132 4.8	15.7	F II	a	614	G and h=.5 (G+h=.5)
✓	3.3	9.0	F II	a	615	G and h=.6, Lines below K
✓	2.9	13.7	F II	a	616	G and h=.3 Lines below K.

December, 5, 1887.
Plate 884

✓	138 5.7	16.2	B I	b	617	F6 G=.2, h 6 H=.2.
✓	3.6	13.7	I III	a	618	G and h=.5
✓	3.2	19.2	I III	b	619	F5 G=.2, F7 G=.3.

December, 5, 1887.
Plate 898.

✓	22.3	19.3	F IV	a	620	G and h=.5
✓	20.8	14.5	F II	a	621	G and h=.3 (G+h=.5)
✓	146 18.9	15.4	B I	b	622	F7 G=.2,
✓	16.9	8.8	I IV	b	623	F7 G=.2
✓	142 15.0	12.7	F II	a	624	G and h=.3, Lines below K
✓	14.4	11.4	K III	bc.	625	F3 G=.2 B, F5 G=.2 B, F5½ G=.1, F7 G=.4, Lines between G and H.
✓	130	9.2	K III	bc.	626	F3 G=.1 B, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.3, F8 G=.1 B?, Lines between G+H.
✓	13.3	13.5	F IV	a	627	G and h=.5
✓	13.6	19.0	I III	b	628	F3 G=.2, F5 G=.2, F7 G=.3
✓	144 13.2	23.7	F II	a	629	G and h=.5?
✓	10.2	12.7	K III	bc.	630	F2½ G=.2, F3 G=.1 B, F3½ G=.2, F4 G=.2, F5 G=.2, F7 G=.4.
✓	146 9.9	11.9	F II	a	631	G and h=.3, Gabl. Lines below K

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1887phae.proj..848f

h 4 ; g 4
(h 5 , g 5) h 5 , g 5
ak , h 6 , g 6
ak , h 3 , g 3

402 , 2 ; 453 , 2
h 5 ; g 5
448 , 3 ; 458 , 2

h 5 ; g 5
(h 5 , g 5) h 3 g 3
448 , 2
448 , 2
ak ; h 3 ; g 3
Hal ; 448 , 4 ; 456 , 1 ; 458 , 2 ; 468 , 2

Hal ; 443 , 1 ; 448 , 3 ; 456 , 1 ; 458 , 2 ; 461 , 1 ; 468 , 1
h 5 ; g 5
448 , 3 ; 458 , 2 ; 468 , 2
h 5 ? , g 5 ?
448 , 4 ; 458 , 2 ; 463 , 2 ; 466 , 2 ; 468 , 1 ; 471 , 2

ak , h 3 , gd 3

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1887phae.proj..848f

December, 5, 1887.
Plate 898

Book 12, E. Page	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
✓ 146	9.6	12.4	K IV	b.c	632	F3 G=.2 B, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and K.
✓	9.0	19.9	I III	b	633	F5 G=.2, F7 G=.3
✓	8.0	6.9	F II	a	634	G and h=.5
✓	7.1	15.6	K IV	b.c	635	F3 G=.2 B, F5 G=.2 B, F5½ G=.1, F7 G=.3,
✓	5.6	11.5	I IV	b	636	F3 G=.2, F4 G=.2, F6 G=.2, F6 G=.2, F7 G=.3, F8½ G=.1.
✓	5.4	13.5	F III	a	637	G and h=.3, G dbl.
✓ 148	5.6	17.5	B II	b	638	F6 G=.2, h6 H=.2, H6 a=.2
✓	3.5	14.8	F III	a	639	G and h=.2 Lines below K.
✓	3.1	20.3	K IV	b.c.	640	F3 G=.2 B, F5 G=.2 B, F7 G=.3, F8 G=.2 B. Lines between G & H, 1 Line below K.

December, 6, 1887.
Plate 954.

Dark Plate – Very hard to measure

150						
✓	19.7	21.3	F II	a	641	G and h=.2
✓	18.3	15.5	F II	a	642	G and h=.2
✓ 152	18.5	20.6	I III	b	643	F5 G=.1, F7 G=.2
✓	16.5	21.7	F I	a	644	G and h dbl.=.2
✓	15.0	15.8	F II	a	645	G and h dbl.=.4
✓ 154	15.3	16.6	F II	a	646	G and h=.2
✓	14.2	19.5	K III	b.c.	647	F2½ G=.1, F3 G=.2 B, F3½ G=.2, F4½ G=.2 F5 G=.2 B, F5½ G=.1, F7 G=.3.
✓	14.3	21.8	B II	b	648	h6 H=.2
✓	11.9	11.4	F II	a	649	G and h=.3, G dbl., 3 Lines below K.
✓ 156	10.8	20.0	F II	a	650	G and h=.5, Lines below K.

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1887phacr.proj..0405

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

448.3; 458.2
h5; g5
448.3; 456.1; 458.2; 468.2
441.1; 448.3; 453.2; 458.2; 463.2; 468.2

h3, gd3
392.2; 402.2; 453.2
aK; h2, g2
aK; HaG; 443.2, 448.3, 458.2, 468.2

h2, g2
h2, g2
448.2; 458.1
hd2, gd2
hd4, gd4
h2, g2
448.3; 456.1; 458.2; 461.2; 466.2; 468.2; 471.1

402.2
3 aK, h3, gd3
aK, h5, g5

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1887phae.proj..848F

December, 6, 1887.
Plate, 954

Book 12 E. Page	V.	H.	Type	No. Remarks	Description of lines on Spectra.
158	7.5	7.8	F II a	651	G and h = .4, h dbl.
	7.3	16.6	F II a	652	G and h = .6, Lines below K.
	7.6	17.1	F II a	653	G and h = .2
	6.0	8.9	F II a	654	G and h = .2, Lines below K.
160	6.0	15.9	B I b	655	G 6 H = .2
	4.8	8.4	F III a	656	G and h = .5
	4.3	15.6	F III a	657	G and h = .3, Lines below K.
	3.9	14.3	K IIIa b.c.	658	$F 2\frac{1}{2}$ G = .1, F 3 G = .2 B, $F 3\frac{1}{2}$ G = .1, $F 4\frac{1}{2}$ G = .1, $F 5$ G = .1 B, $F 5\frac{1}{2}$ G = .2, F 7 G = .3, Lines between G and H.
	3.6	15.8	F II a	659	G and h = .5
	~~3.7~~	~~18.8~~	~~I b~~	~~660~~	
	2.8	11.8	K III b.c.	660	$F 2\frac{1}{2}$ G = .1, F 3 G = .2 B, $F 4\frac{1}{2}$ G = .2, F 5 G = .2 B, $F 5\frac{1}{2}$ G = .1, F 7 G = .3.

December, 6, 1887.
Plate 1057.

21.4	15.1	F	II a	660a	G + h = .5
162 20.2	12.9	F	II a	661	G and h = .5
20.0	16.8	F	II a	662	G and h = .3
20.5	19.7	F	II a	663	G and h = .5 (G + h = .5)
18.6	9.5	F	II a	664	G and h = .3

continued on next page.

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1887phae.proj..849f

hd 4 ; Hd 4
aK ; h6 , H6
h2 ; H2
aK , h2 , H2
410 , 2
h5 , H5
aK ; h3 , H3
Ha H ; 448,3 ; 456 , 2 ; 458 , 1 ; 461 , 1 ; 466 , 1 ; 468 , 2 ; 471 , 1

h5 ; H5

448,3 ; 456 , 1 ; 458 . 2 , 461 . 2 ; 468 . 2 ; 471 . 1

h5 , H5
H5 , H5
h3 , H3
h5 , G5 , (h5 , H5)
h3 , H3

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1887phae.proj..848F

December 7, 1887.

Plate 1057

Book 12 E Page	V.	H.	Type		No.	Remarks.	Description of lines on Spectra.
	18.4	19.9	F	II a	665		G and h=.5
	17.1	6.1	F	II a	666		G and h=.5
	17.3	14.1	B	I b	667		h & K=.2
	16.7	13.8	F	II a	668		G and h=.2, G dbl. Lines below K.
	16.9	17.2	F	II a	668a	G+h=.5	
166	14.4	14.8	K	III b.c.	669		F3 G=.1 B, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.2, F7½ G=.1 B, F8 G=.2, Lines between G and H.
168	14.7	21.2	F	II a	670		G and h=.5
	13.8	6.7	F	II a	671		G and h=.2, Lines below K
	13.1	15.2	F	II a	672		G and h=.3
	13.0	15.9	K	III b.c.	673		F3 G=.1 B, F3½ G=.1, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G & H.
	~~13.6~~	~~19.9~~	~~H~~				
	13.6	19.9	F	II a	674		G and h dbl. =.5
170	9.0	12.4	F	II a	675		G and h=.3, dbl.
	8.3	10.2	F:	II a	675a	G+h=.5	
172	8.8	16.2	F	II a	676		G and h=.2.
	8.7	20.3	F	II a	677		G and h=.2.
	6.3	10.9	F	II a	678		G and h=.5
	5.5	13.7	F	II a	679		G and h=.2, Lines below K.
174	4.4	17.0	F	II a	680		G and h=.2, Lines below K
	2.0	17.5	F	II a	681		G and h=.3
	~~17.8~~	~~16.7~~	~~F:~~	~~II a?~~	~~681a~~		~~G+h=.5~~ (G+h=.5)

Plate 1069 (G & h=.5)

	17.8	11.7	F?	II a?	681a	G+h=.5	
176	16.4	6.4	F	II a	682		G and h dbl.? =.5
	16.0	18.7	F:	II a	682a	G+h=.5	
178	15.0	14.6	F	II a	683		G and h=.5 (G+h=.5, 2 lines below K.)
	15.3	19.9	F	II a	684		G and h=.3
	14.8	9.10	F	II a	684a	G+h=.5	
180	12.6	13.0	F	II a	685		G and h=.3
	12.5	11.4	F	II a	684b	G+h=.5	
	11.9	20.9	F	II a	686		G and h=.2, G dbl, Lines below K.
	11.4	21.0	F	II a	687		G and h=.2 G dbl. Lines below K.

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1887phae.proj..848F

h 5⁻, g 5⁻

h 5⁻, g 5⁻

402, 2

ak, h 2, gd 2

h5⁻, g5⁻

Ha g; 443, 2; 446, 1; 448, 2; 456, 1; 458, 1; 461, 1; 468, 1

h 5⁻, g 5⁻

ak, h 2, g 2

h 3, g 3

Ha g; 448, 3; 456, 1; 458, 1; 461, 1; 466, 1; 468, 1

hd 5⁻, gd 5⁻

hd 3, gd 3

h5⁻, g5⁻

h 2, g 2

h 2, g 2

h 5⁻, g 5⁻

ak, h 2, g 2

ak, h 2, g 2

h 3, g 3

~~h 5⁻, g 5⁻ (h 5⁻, g 5⁻)~~

h 5⁻, g 5⁻, (h 5⁻, g 5⁻)

hd ? 5⁻, gd ? 5⁻

h.5⁻, g5⁻

h 5⁻, g 5⁻; (ak, h 5⁻, g 5⁻)

h 3 g 3

h5⁻, g5⁻

h 3 g 3

h5⁻, g5⁻

ak; h 2, gd 2

ak; h 2, gd 2

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1887phae.proj..848F

December 7, 1887.

Plate 1069

Book 12 E. Page	V.	H.	Type	No. Remarks.	Description of lines, or Spectra.
✓ 180	9.4	6.0	I IV b	688	F3 G=.2, F5 G=.2, F7 G=.4, Lines between G & H.
✓ 182	8.7	15.0	F II a	689	G and h=.5
✓	8.9	16.0	F II a	690	G and h=.6
✓	7.1	16.5	F II a	691	G and h=.2, G dbl.; Lines below K.
✓	5.1	9.1	F II a	692	G and h dbl.=.3
✓ 184	5.8	10.6	F III a	693	G and h=.2
✓	6.3	23.5	F II a	694	G and h dbl.=.5
✓	4.4	22.1	K III b.c	695	F4½ G=.1, F5 G=.1 B, F7 G=.1.
✓	3.1	18.2	K I II b.c.	696	F2½ G=.1, F3 G=.1 B, F4½ G=.3, F5 G=.1 B, F6 G=.1, F7 G=.5, Lines betw. G & H.
✓	3.3	20.9	I III b	697	F5 G=.2, F7 G=.4.

Plate 1035.

186. Lower part dark, Very hard to measure.

✓	21.3	7.6	F II a	698	G and h=.5
✓	20.0	9.9	I III b	699	F3 G=.2, F4 G=.1, F5 G=.3, F7 G=.5, Lines between G and H.
✓	18.5	12.4	I III b	700	F5 G=.2, F7 G=.4
✓	18.4	22.1	F II a	701	G and h=.4
✓ 188	17.9	8.0	F II a.	702	G and h=.2
✓	17.3	10.8	F II a	703	G and h=.2 (G+h=.5)
✓	16.0	20.0	F II a	704	G and h=.2, G dbl. Lines below K.
✓	15.7	7.7	F II a	705	G and h dbl.=.3
✓ 190	15.4	12.4	F II a	706	G and h=.2, G dbl, Lines below K.
✓	14.1	17.7	F II a	707	G and h=.5. (G+h=.3?)
✓	13.3	22.0	F II a	708	G and h=.5?

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1887phae.proj..848F

Ha h; 448,4; 458,2; 468,2
h 5, h 5
h b, h b
a K; h 2, h d 2
h d 3, h d 3
h 2, h 2
h d 5; h d 5
448,1; 458,1; 461,1
Ha h; 448,5; 453,1; 458,1; 461,3; 468,1; 471,1

448,4; 458,2

h 5, h 5
Ha G, 448,5; 458,3; 463,1; 468,2

448,4; 458,2
h 4, h 4
h 2, h 2
h 2, h 2, (h 5, h 5)
a K; h 2; h d 2
h d 3; h d 3
a K; h d 3; h d 3
a K; h 2; h d 2 (h 3? h 3?)
h 5? h 5?

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December, 8, 1887.

Plate. 1035

Book, 12, E. Page	V.	H.	Type	No. Remarks.	Description of lines on Spectra.
192	11.3	8.3	F II a	709	G and h dbl. =.3
	11.9	20.9	K III b.c.	710	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G & H.
	11.7	23.7	K III b.c.	711.	F3 G=.2, F5 G=.2, F7 G=.3, Lines between G and K.
194	9.0	10.6	K III b.c	712	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4 G=.1 B, F4½ G=.3, F5 G=.1 B, F5½ G=.2, F6 G=.1, F7 G=.3, G dbl.
	7.2	11.6	F II a	713	G and h=.2
	6.9	19.2	F II a	714	G and h=.3

Plate 1071

196	21.5	17.1	I III b	715	F3 G=.2, F5 G=.2, F7 G=.3,
	19.9	20.3	F II a	716	G and h=.5
	17.7	23.9	F II a	717	G and h=.3, G dbl.
	16.3	21.9	F II a	718	G and h=.5
198	4.4	14.0	F II a	719	G and h=.2, G dbl.
	14.5	14.7	F II a	720	G and h=.5, G dbl.
	13.5	16.0	F II a	721	G and h=.2, G dbl. Lines below K
	12.0	19.3	F II a	722	G and h=.5, G dbl.
	11.0	14.7	K III b.c.	723	F2½ G=.1, F3 G=.3 B, F3½ G=.1 F4 G=.1 B, F4½ G=.5, F5 G=.1 B, F5½ G=.1, F6 G=.2, F7 G=.4, Several lines between G & H.
200	9.9	15.4	B II b	724	F6 G=.2, h6 H=.2,
	9.0	15.3	F II a	725	G and h=.5
	9.1	16.7	I III b	726	F3 G=.2, F5 G=.2, F7 G=.4, Lines between G and H.
	8.8	13.7	K III b.c	727	F3 G=.2 B, F4½ G=.2, F6 G=.2 B, F5½ G=.1 F7 G=.4, F7½ G=.1 B, F8½ G=.4, Lines betw. G & H. below K.

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hd 3; Ld 3

Ha L; 448,3; 456,1; 458,1; 461,2; 468,1

~~Ha G; 448,3; 456,1; 458,1~~

Ha L; 448,3; 458,2; 468,2

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

h 2; L 2

h 3; L 3

448,3; 458,2; 468,2

h 5; L 5

h 3; Ld 3

h 5; L 5

h 2; Ld 2

h 5; Ld 5

ak; h 2, Ld 2

h 5, Ld 5

Ha L, 448,4; 453,2; 456,1; 458,1; 461,5; 463,1; 466,1; 468,3; 471,1

402,2; 453,2

h 5; L 5

Ha L; 448,4; 458,2; 468,2

ak; Ha G; 441,1; 446,1; 448,4; 456,1; 458,2; 461,2; 468,2

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December, 8, 1887.

Plate 1071

Book 12, E. Page	V.	H.	Type	Remarks.	No.	Description of lines on Spectra.
200	8.6	20.6	I IV b.		728	F 7 G=.4, G dbl.
	7.4	8.2	I IV b		729	F 7 G=.3, G dbl.
	7.3	11.6	F II a		730	G and h=.5?
202	7.6	21.8	F II a		731	G and h=.2
	7.0	23.9	F II a		732	G and h dbl.=.5
	6.2	14.8	F II a		733	G and h=.5, G dbl.
	6.0	16.1	F II a		734	G and h=.2, G dbl, Lines below K.
	6.7	24.0	I III b		735	F 7 G=.2, G dbl.?
	5.4	9.0	I III b		736	F 7 G=.4,
	5.2	23.8	F II a		737	G and h=.2 G dbl? Lines below K.
	4.2	18.3	F II a		738	G and h=.5

Plate 1097

Very poor plate.

204	15.9	7.4	F II a		739	G and h=.5
	15.2	19.0	I II b		740	F 5 G=.2, F 7 G=.3

Plate 1119

206		Poor plate.				
	20.0	18.7	K III	b.c.	741	F 3 G=.1 B, F 4 G=.3, F 4½ G=.1 B, F 5 G=.2, F 7 G=.3.
	17.1	23.3	G II	b	742	F 4 G=.3, F 7 G=.2, Lines between G & K.
	15.5	6.8	F II a		743	G and h=.5
208	14.9	19.3	F II a		744	G and h=.2, G dbl. Lines below K.
	13.6	13.2	L III a		745	G and h=.5?
210	9.0	6.4	K II	b.c.	746	F 2½ G=.1, F 3 G=.1 B, F 3½ G=.1, F 4½ G=.1, F 5 G=.1 B, F 5½ G=.1, F 7 G=.4
	9.6	15.4	K III	b.c.	747	F 2½ G=.2, F 3 G=.1 B, F 3½ G=.3, F 4 G=.2 B, F 4½ G=.1 Lines between G & K. F 5 G=.1 B, F 5½ G=.1, F 7 G=.2, F 7½ G=.1 B, F 8 G=.1

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1887phae.proj..848F

Gd, 444, 4
Gd, 448, 3
h 5? G 5?
h 2, G 2
hd?5; Gd?5
h 5; Gd 5
aK; h 2; Gd 2
Gd? 448, 2
448, 4
aK; h 2, Gd 2
h 5; G 5

h 5, G 5
448, 3; 458, 2

448, 3; 458, 2; 461, 1; 463, 3; 468, 1

Ha G; 448, 2; 463, 3
h 5; G 5
aK; h 2; Gd 2
h 5? G 5?
448, 4; 456, 1; 458, 1; 461, 1; 466, 1; 468, 1; 471, 1

Ha G; 443, 1; 446, 1; 448, 3; 456, 1; 458, 1; 461, 1; 463, 2; 466, 3; 468, 1; 471, 2

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December, 8, 1887.
Plate. 1229.

Book, 12, E. Page.	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
✓ 212	20.5	18.3	K IIIa	b.c.	748	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.3, F5 G=.1 B, F5½ G=.1 F7 G=.4, Lines between G & H.

Dec. 9. 1887.
Plate 1229.

✓	212	19.7	19.2	F IIIa	749	G and h=.5
✓		18.2	20.1	I IIIb	750	F7 G=.4
✓	214	16.0	6.5	F IIa	751	G and h dbl. =.5
✓		15.3	19.0	F IIa	752	G and h=.2, G dbl, Lines below K
✓		14.0	12.9	F IIIa	753	G and h=.3.
Book 16, E. Page. 4		11.3	7.4	F IIa	754	G and h=.3
		10.0	15.1	K IIIa	b.c. 755	F2½ G=.3, F3 G=.2 B, F3½ G=.2, F4½ G=.1 B, F4½ G=.3, F5 G=.1 B, F5½ G=.1, F6½ G=.1, F7½=.4
✓		9.4	6.1	K IIIa	b.c. 756	F2½ G=.1, F3 G=.2 B, F3½ G=.1, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.3, Lines between G and H.
✓		8.0	9.5	F IIa	757	G and h dbl=.3
✓		6.7	7.8	F IIIa	758	G and h=.5

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1887phae.proj..848F

Ha h; 448,4; 456,1; 458,1; 461,3; 466,1; 468,1; 471,1

h 5 : h 5

448,4

h d 5 , h d 5

a 5 : h 2 , h d 3

h 3 , h 3

h 3 , h 3

448,4; 451,1; 456,1; 458,1; 461,3; 463,1; 466,2; 468,2; 471,3

Ha h; 448,3; 456,1; 458,2; 461,1; 466,1; 468,2; 471,1

h d 3 : h d 3

h 5 : h 5

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1887phae.proj..848F

December, 10, 1887.

Plate 1072

Book 16, E. Page V. 14. Type No. Remarks. Description of lines on Spectra.

Poor Plate.

✓	6	22.4	10.3	I IV	b	75.9	F5 G=.2, F6½ G=.1, F7½ G=.3, Lines betw. G and H, Lines below K.
✓	8	17.9	16.9	F II	a	760	G and h=.2, G dbl.
✓		16.9	12.0	F II	a	761	G and h=.5?
✓		15.1	8.8	I IV	b	762	F5 G=.2, F7 G=.2
✓		15.6	20.6	F III	a	763	G and h=.2
✓		14.6	17.3	F II	a	764	G and h=.5
✓		13.5	15.2	F II	a	765	G and h=.5
✓		12.7	14.5	I III	b	766	F3 G=.1, F5 G=.1, F7 G=.3.
✓	10	9.7	17.1	F II	a	767	G and h=.2
✓		9.3	23.3	I III	b	768	F3 G=.2, F5 G=.1, F7 G=.3.
✓		8.7	12.4	F II	a	769	G and h dbl.=.2
✓		6.2	17.4	F II	a	770	G and h=.5
✓	12	4.0	23.1	F II	a	771	G and h=.2
✓		2.3	10.3	I III	b	772	F5 G=.2, F6½ G=.3, F7½ G=.3, Lines between G and H. Lines below K.

Plate 1112

✓	14	22.5	10.5	K III	b.c.	773	F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G & H. Lines below K.
✓		22.9	23.6	B I	b	774	h 2 H=.7
✓		19.2	13.4	F II	a	775	G and h=.3
✓		17.0	7.0	I III	b	776	G dbl, Lines betw. G and H.
✓		17.0	12.4	B I	b	777	h dbl.
✓	16	16.4	16.8	I III	b	778	F7 G=.3.
✓		15.3	9.0	K III	b.c.	779	F3 G=.1 B, F4½ G=.2, F5 G=.2 B, F7 G=.2, Lines between G and H.
✓		15.1	13.0	F II	a	780	G and h=.5, 2 Lines below K.

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1887phae.proj..848F

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

h 2 ; 2 d 2
h 3 ; 2 3
448,2 ; 458,2
h 2 ; 2 2
h 3 ; 2 3
h 3 ; 2 3
448,3 ; 458,1 ; 468,1
h 2 ; 2 2
448,3 ; 458,1
h d 2 ; 2 d 2
h 3 ; 2 3
h 2 ; 2 2
aK ; Ha ; 446,3 ; 451,3 ; 458,2

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

407,7,
h 3 ; 2 3
~~h d~~ ; H a ; 2 d
h d ?
448,3
Ha ; 448,2 ; 458,2 ; 461,2 ; 468 ; 1

aK ; h 3 ; 2 3

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December, 10, 1887.
Plate, 1112

Book, 16, E. Page	V.	H.	Type.	No. Remarks.	Description of lines on Spectra.
✓	V6	15.9	20.9 F II	a 781	G and h=.2, G dbl.

December 12, 1887.
Plate 1112

✓	18	13.2	20.3 I III	b 782.	One of a group of three, Additional lines hard to measure.
✓		12.7	15.3 F II	a 783	G and h=.5? (G & h=.5)
✓	20	10.9	24.0 B I	b 784	F8 G=.2, G8 h=.1.
✓		9.2	23.3 K III	b.c 785,	F3 G=.1 B, F3½ G=.1, F4 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G and H.
✓		8.6	11.6 F II	a 786	G and h=.2
✓		7.5	10.7 F II	a 787	G and h=.3
✓		7.6	15.0 K II	b.c. 788	F3 G=.1 B, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.3.
✓	22	7.9	19.6 F II	a 789	G and h=.3
✓		6.4	17.6 F II	a 790	G and h=.5
✓	24	3.8	16.7 I III	b 791	F5 G=.1, F7 G=.2
✓		3.9	23.0 F II	a 792	G and h=.2
✓		2.9	10.5 K II	b.c 793	F3 G=.1 B, F4½ G=.1, F5 G=.3 B, F5½ G=.1, F7 G=.3, Lines between G and H, Lines below K.

Plate 1064
Dark Plate. Very hard to measure

✓		22.5	10.1 I III	b 794	F7 G=.2, Lines betw. G & H. Lines below K.
✓		19.2	12.9 I III	b 795	F7 G=.2,
✓	26	16.8	19.7 F II	a 796	G and h=.2

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1887phae.proj..848F

h, 2 ; Hd 2

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

h 5? , H 5? (h 5, H 5)

414, 2, 443, 2,

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

h 2; H 2
h 3; H 3
448, 3; 456, 1; 458, 1; 461, 1; 468, 1

h 3; H 3
h 5; H 5
448, 2; 458, 1
h 2; H 2
a K; Ha H; 448, 3; 456, 1; 458, 3; 461, 1; 468, 1

a K; Ha G; 448, 2
448 2,
h 2; H 2

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1887phae.proj..848F

December, 12, 1887.
Plate. 1064

Book. 16, & Page	V.	H.	Type.	Rem.	Description of lines on Spectra.
✓ 28	15.3	17.4	F II a	797	G and h=.5
✓	14.6	17.1	F II a	798	G and h=.5
✓	13.6	15.0	F II a	799	G and h=.5
✓	13.6	17.8	F III a b	799 a	G+h=.3
✓	13.0	19.9	± III b	800	G dbl.
✓	13.9	16.5	F III a?	799 b	G+h=.5
✓ 30	12.8	6.1	F II a	801	G and h=.2 2/1
✓	12.7	14.2	F II a	802	G and h=.1, Lines below K.
✓	12.5	19.1	F 4 a	803	G and h=.3
✓	9.3	23.1	± III b	804	F7 G=.2, F8 G=.2, G dbl.? Lines between G and H.
✓	8.7	12.2	F II a	805	G and h=.5, Lines below K.
✓	8.7	16.2	F II a	806	G and h=.5
✓ 32	7.5	10.5	F III a	807	G and h=.3
✓	6.8	8.8	F III a	808	G and h=.5
✓	6.5	12.7	F II a	809	G and h=.2
✓	6.3	17.1	F II a	810	G and h=.5, Lines below K.

December, 13, 1887.
Plate 1064.

34					
✓	4.0	22.9	F II a	811	G and h=.2
✓	3.9	16.5	± III b.	812	F7 G=.2
✓	2.8	10.1	K III b.c.	813	F3 G=1 B, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.2, Lines between G & H, Lines below K.
✓	2.2	17.7	F II a	814	G & H=.5

Plate 1065.

See page 94

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h 5 ; H 5

h 5 ; H 5

h 5 ; H 5

h 3 ; H 3

H d

h 5 ; H 5

h 2 ? H 2 ?

a K ; h 1 ; H 1

h 3 ; H 3

H a G ; H d ? 443,2 ; 448,2

a K ; h 5 ; H 5

h 5 , H 5

h 3 , H 3

h 5 , H 5

h 2 , H 2

a K , h 5 , H 5

h 2 , H 2

448,2

a K ; 448,2 ; 456,1 ; 458,1 ; 461,1 ; 468,1

H 5 H 5

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December, 13, 1887.
Plate 1113

Book 16. K. Page	V.	H.	Type.	Remark.	Description of lines or 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, Gdbl, Lines below K.
✓	19.4	13.1	I III	b 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, Gdbl, Lines below K.
✓ 50	18.0	11.9	F II	a 820	G and h=.5 (G+h=.5)
✓	18.7	19.3	F III	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, Line below K.
✓	16.9	19.0	D I	c 823	F6 G=.2 B, h 7 H=.1 B.
✓ 52	14.4	7.2	F III	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	b.c 828	F4½ G=.1, F5 G=.1 B, F5½ 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, Gdbl, Lines below K.
✓	8.4	7.5	F II	a 831	G and h=.2
✓	8.6	20.1	K III	b.c. 832	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.3, F5 G=.1 B, F5½ G=.1, F7 G=.3, Gdbl?, Lines between G and H.
✓	7.9	13.7	I III	b. 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	b 835	F3 G=.1, F5 G=.1, F7 G=.2 Lines between G & H.
✓	4.5	14.3	K III	b.c. 836	F3 G=.1 B, F3½ G=.1, F4 G=.1 B, F4½ G=.3, F5 G=.2 B, F5½ G=.1, F7 G=.3, F7½ G=.1 B, F8½ G=.1, Lines betw. G and H. Lines below K.
✓	3.5	13.7	F II	a 837	G and h dbl.=.3

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h 5, g 5

h 2, g 5

a K, h 2, g d 2 Spectrum of A star superposed?

2 a K, H a G; 448,3; 458,2; 468,2

a K, h 2, g d 2

h 5, g 5 (h 5, g 5)

h 5, g 5

a K, h 5, g 5 Spectrum of A star superposed?

a K, h 5, g 5

401,1; 453,2

h 5; g 5

2 a K; h 5; g 5

h 5 g 5

1 a K, h 5 g 5

1 a K, H a G; 456,2; 458,1; 461,1;

h 2, g 2

a K, h 2, g d 2 Spectrum of A star superposed?

h 2, g 2

H a G; g d; 448,3; 456,1; 458,1; 461,3; 466,1; 468,1; 471,1

448,3; 458,1; 468,1

a K, h 5, g 5

H a G, 448,3; 458,1; 468,1

a K; H a G; 441,1; 446,1; 448,3; 456,1; 458,2; 461,3; 463,1; 466,1; 468,1

h d 3, g d 3

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December, 13, 1887.

Plate, 1113

Book, 16, E. Page	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra
✓	5.8	3.5	13.7 F II a		838	G and h = .5
✓		2.2	23.1 I III b		839	F5 G = 1, F7 G = .2

Dark Plate.
Very hard to measure. Plate 1065.

✓	34	22.0	20.3 F II a		840	G & h dbl.? = .3, 2 Lines below K.
✓	36	21.6	9.5 I III b		841	F3 G = .2, F5 G = .2, F7 G = .3, Lines between G and H, 2 lines below K.
✓		20.0	17.9 F II a		842	G and h = .5
✓		19.0	12.7 I III b		843	F7 G = .3
✓		19.0	22.5 F II a		844	G and h dbl. = .2, Lines below K.
✓		18.4	23.1 F II a? b		844a	F5 G & h = .3
	38	17.8	23.8 I III		845	F5 G = .2, F7 G = .2
✓		16.0	12.1 F II a		846	G and h = .5
✓		16.0	14.5 F II a		847	G and h = .5, Lines below K.
✓		16.0	15.8 F II a		848	G and h = .5
✓		16.8	16.6 F II a		849	G and h = .5
✓		16.9	20.3 F II a		850	G and h dbl.? = .3, Lines below K.

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Plate 1065

✓	48	15.5	16.2 I III b		851	F5 G = .2, F7 G = .2,
✓		14.6	17.2 F II a		852	G and h dbl = .5
✓		14.3	17.5 I III b		853	F3 G = .1, F5 G = .1, F7 G = .2.
✓		13.4	16.8 F II a		854	G and h = .2
✓		13.4	17.3 F II a		855	G and h = .5
✓		12.0	18.2 F II a		856	G and h = .2, Lines below K.
✓		11.3	16.1 K III	bkn	857	F3 G = .2 B, F3½ G = .1, F4 G = .2 B, F4½ G = .2, F5 G = .2 B, F5½ G = .1, F7 G = .2, F7½ G = .1 B, Lines between G and H, Lines below K.

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1887phaen.proj...0001f

h 5 ; h 5

448,2 ; 458,1

2 a K ; h d? 3 ; h d? 3

a K ; H a G ; 448,3 ; 458,2 ; 468,2

h 5 ; h 5

448,3

a K ; h 2, h 2, h d d.

448,2 ; 458,2

h 5 ; h 5

a K ; h 5 , h 5

h 5 ; h 5

h 5 ; h 5

a K , h d? 3 , h d? 3

448,2 ; 458,2

h d 5 ; h d 5

448,2 ; 458,1 ; 468,1

h 2 ; h 2

h 5 , h 5

a K , h 2 ; h 2

a K ; H a G , 446,1 ; 448,2 ; 456,1 ; 458,2 ; 461,2 ; 463,2 ; 466,1 ; 468,2

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1887phae.proj..848F

December, 14, 1887.

Plate. 1065

Book, 16.	E.	Page	V.	H.	Type.		No. Remarks.	Description of lines on Spectra.
✓		42	10.4	16.4	F	II a	858	G and h dbl. =.5
✓			10.6	23.2	F	II a	859	G and h =.2, Lines below K.
✓			9.5	12.1	F	II a	860	G and h dbl. =.5
✓			9.5	16.0	K	III bc.	861	F_3 G=.1 B, $F_3\frac{1}{2}$ G=.1, F_5 G=.1 B, $F_5\frac{1}{2}$ G=.1, F_7 G=.1
✓			9.8	16.9	F	II a	862	G and h =.5
✓			9.5	17.2	F	III a	863	G and h =.2, G dbl., Lines below K.
✓			9.0	21.8	F	II a ?	863 a	G and h =.5
✓			8.6	12.5	F	II a	864	G and h =.3, Lines below K.
✓			8.2	13.7	I	III b	865	F_3 G=.1, F_5 G=.1, F_7 G=.2, Lines betw. G and H.
✓		44	8.5	16.5	F	II a	866	G and h =.3
✓			8.0	18.9	F	II a	867	G and h =.3, Lines below K.
✓			7.6	10.9	F	II a	868	G and h dbl.? =.5
✓			6.8	15.6	F	II a	869	G and h dbl. =.5
✓			6.5	17.1	F	II a	870	G and h dbl. =.5
✓		46	5.6	8.9	F	II a	871	G and h dbl. =.5.
✓			5.3	16.6	F	II a	872	G and h =.3
✓			5.5	17.0	F	II a	873	G and h =.5, Lines below K.
✓			4.3	15.0	F	II a	874	G and h =.5
✓			4.8	15.7	F	II a	875	G and h dbl.? =.3, Lines below K.
✓			4.1	15.9	F	II a	876	G and h dbl.? =.3

Plate 1073.

✓		60	21.2	9.1	F	II a	877	G=.3, h=.1, 2 Lines below K.
✓			21.1	22.1	F	II a	878	G=.3, h=.1,
✓			19.0	8.0	F	II a	879	G and h=.4, G dbl., Lines below K.
✓		62	15.5	19.6	F	II a	880	G and h =.5
✓			15.8	22.3	F	II a	881	G and h =.3

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1887phae.proj...849r

h d 5; g d 5;
a K; h 2; g 2
h d 5; g d 5
44 8,1; 45 6,1; 45 8,1; 46 6,1; 46 8,1

h 5; g 5
a K; g d, h 2, g 2
a K; h 3, g 3
H a B; 44 8,2; 45 8,1; 46 8,1

h 3; g 3
a K, h 3, g 3
h d° 5; g d° 5
h d 5, g d 5
h d 5, g d 5
h d 5, g d 5
h 3, g 3
a K, h 5, g 5
h 5, g 5
a K, h d° 3, g d° 3
h d° 3, g d° 3

a K, h 1, g 1
h 1, g 3
a K, g d, h 4, g 4
h 5, g 5
h 3, g 3

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1887phae.proj..848F

December, 14, 1887.

Plate 1073

Book, 16, E. Page	V.	H.	Type	Remarks.	Description of lines or Spectra.
62	13.0	9.1	I III b	882	F5 G=.2, F7 G=.3.
	12.2	8.4	F II a	883	G and h=.2
	12.8	22.8	F II a	884	G and h=.5
64	11.7	21.0	I III b.?	885	F7 G=.2, Lines below K.
	10.8	12.0	F II a	886	G & h dbl=.5
	10.6	13.9	F II a	887	G and h=.3 ? (G+h=.5)

December, 16, 1887

Plate 1073.

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

Plate 1233

68	21.2	8.5	F III a	894	G and h dbl.=.2, Lines below K.
70	15.0	8.6	I III b	895	F4 G=.3, F5 G=.1, F6 G=.1, F7 G=.2, F8 G=.1,
	15.4	19.1	F II a	896	G and h=.5, Lines below K.
	11.0	17.1	K III b.c	897.	F2½ G=.1, F3 G=.2 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H.
72	9.1	16.5	K IV b.c.	898.	F3 G=.1 B, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.3, F8½ G=.2, Lines between G & H.
	9.0	19.8	F III a	899	G and h dbl.=.3, Lines below K.
	8.6	13.3	F II a	900	G and h=.3, Lines below K.
	8.0	16.1	I III b	901	F3 G=.2, F5 G=.2, F7 G=.4,

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1887phae..proj..84R

448,3 ; 458,2
h 2 ; g 2
h 5 ; g 5
ak , 448,2
hd 5 , gd 5
h 3 ? g 3 ? (h 5 , g 5)

448,1 ; 458,1
h 2 , g 2
ak , h 2 , gd 2
h 5 , g 5
h 4 , g 4
h 5 , g 5

ak , hd 2 , gd 2
443,1 ; 448,2 ; 453,1 ; 458,1 ; 463,3
ak , h 5 , g 5
HaG ; 443,1 ; 448,3 ; 456,1 ; 458,2 ; 461,2 ; 466,1 ; 468,2 ; 471,1

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

ak ; hd 3 , gd 3
ak , h 3 , g 3
448,4 ; 458,2 ; 468,2

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1887phae.proj..848F

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 II a	902	Gand h=.5.
✓		7.7	18.9	F II a	903	Gand h=.5
✓	74	3.6	19.7	F II a	904	Gand h=.5

December, 17, 1887.
Plate 1074

✓	76	22.5	16.5	I III b	905	F7 G=.3
✓		22.0	19.4	F II a	906	Gand h=.2, Line below K.
✓		19.3	14.5	F II a	907	Gand h=.5
✓	78	19.5	22.0	F II a	908	Gand h=.5
✓		18.5	13.7	F II a	909	Gand h=.4, 2 lines below K.
✓	80	16.0	15.7	I III b	910	F3 G=.2, F5 G=.2, F7 G=.3, Lines between G and H.
✓		15.4	12.3	F? II a?	910a	G+h=.5
✓		15.5	13.8	I III b	911	F7 G=.3 Lines between Gand H.
✓		15.6	23.2	F II a?	910b	G+h=.5?
		14.7	7.2	K III b.c.	912	F3 G=.1 B, F3½ G=.1, F4½ G=.4, F5 G=.1 B, F5½ G=.2, F7 G=.3, Lines between G and H.
✓	82	14.2	11.5	F II a	913	Gand h=.5 (G+h=.5)
✓		13.8	17.1	E III	914	3 Lines below K.
✓		13.8	23.2	F II a	915	Gand h=.5?
✓		12.7	7.6	F II a	916	Gand h dbl. =.5
✓		12.4	10.6	F III a	916a	G+h=.5
✓	84	11.5	6.3	F II a	917	Gand h=.2.
✓		11.5	9.4	I III b	918	F3 G=.2, F5 G=.2, F7 G=.3.
✓		10.6	10.9	F II a	919	Gand h=.5?, Lines below K.
✓		10.8	20.2	K III b.c.	920	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.2, Lines between G & H, 3 Lines below K.
✓		10.9	22.4	F II a	921	Gand h=.3
✓	86	7.8	19.3	F II a	922	Gand h=.2

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1887phae.proj..848f

h 5, H 5
h 5, H 5
h 5, H 5

448, 3
ak, h 2, H 2
h 5, H 5
h 5, H 5
2 ak, h 4, H 4
Hab, 448, 3; 458, 2; 468, 2

h 5, H 5
Hab, 448, 3
h 5? H 5?
Hab, 448, 3; 456, 2; 458, 1; 461, 4; 466, 1; 468, 1

h 5, H 5, (h 5, H 5)
ak
h 5? H 5?
h d 5 H d 5
h 5, H 5
h 2, H 2
448, 3; 458, 2; 468, 2
ak, h 5? H 5?
3 ak, Hab, 448, 2; 456, 1; 458, 1; 461, 2; 468, 1

h 3, H 3
h 2, H 2

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1887phae.proj..848f

December, 17, 1887.
Plate 1074.

Book 16, E. Page.	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
	88	6.6	14.3 I III b		923	F7 G=.3
		5.0	19.6 F II a		924	G and h dbl.=.5, Lines below K.
	90.	2.6	12.2 F II a		925	G and h=.2
		2.8	15.9 I III b		926	F7 G=.4.

December, 19, 1887.
Plate. 1208.

	92	20.0	12.1 I III b		927	Several lines below K.
		19.0	6.2 F II a		928	G and h=.2
		17.6	17.9 F II a		929	G and h dbl.=.5
		16.9	22.9 I III b		930	F3 G=.2, F7 G=.2, F5 G=.2.
	94	14.7	6.7 F II a		931	G and h=.2.
		14.5	14.4 I III b		932	F7 G=.3
		13.4	11.9 F II a?		932a	G+h=.5
	96	12.1	17.0 I III b		933	F5 G=.2, F7 G=.2, Lines between G & H.
		12.1	17.3 K III b.c.		934	F2½ G=.1, F3 G=.2 B, F3½ G=.1, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.3, Lines between G and H, Lines below K.
		11.5	20.8 F II a		935	G and h=.2, G dbl., Lines below K.
		10.7	19.1 F II a		936	G and h dbl.=.5
	98.	9.9	16.4 F II a		937	G and h dbl.=.5
	100	6.8	16.9 I III b		938	F3 G=.2, F5 G=.2, F7 G=.3.
		5.6	9.8 F II a		939	G and h=.5 (G+h=.5)
		5.2	15.0 I III b		940	F7 G=.3
		5.6	16.6 K III b.c.		941	F3 G=.2 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3.
		4.4	8.1 K III b.c.		942	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.2, Lines between G and H.
		2.0	8.3 F II a		943	G and h=.3

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1887phae.proj..848F

4488,3

aK; hd5; gd5

h2; g2

4488,4

aK

h2, g2

hd5; gd5

4582,2; 4488,2; 4682,2

h2, g2

4488,3

h5, g5

HaG, 4488,2; 4582,2

aK; HaG; 4488,3; 4561,1; 4582,2; 4611,1; 4661,1; 4682,2; 4711,1

aK; h2; g2

hd5; gd5

hd5; gd5

4488,3; 4582,2; 4682,2

h5; g5 (h5, g5)

4488,3

4488,3; 4561,1; 4581,2; 4611,2; 4661,1; 4682,2

HaB; 4488,2; 4561,1; 4581,2; 4611,2; 4661,1; 4682,1; 4711,1

h3, g3

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1887phae.proj..848F

Dark plate December, 19, 1887
No. Plate, 1116.

Book, 16, E. Page	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
✓ 102	20.0	12.2	$\frac{I}{I}$ III	b.	944	F7 G=.2, G dbl.
✓	15.8	10.9	F II	a	945	G and h=.5
✓	15.1	14.5	K III	b.c.	946	F3 G=.2 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G & H.
✓	15.6	19.2	F II	a?	946a	G+h=5
✓ 104	11.7	14.0	F II	a	947	G and h=.2, G dbl., Lines below K.
✓	10.1	20.7	E II		948	Lines below K.
✓ 106	8.4	12.9	F II	a	949	G and h=.5?
✓	8.2	18.7	F II	a	950	G and h=.5, Lines below K.

December, 20, 1887.
Plate, 1116.

December, 20, 1887.
Plate, 1255.

✓ 110	20.8	20.9	K III	b.c.	951	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G and H.
✓	19.8	11.7	$\frac{I}{I}$ III	b	952	F7 G=.3.
✓	18.2	15.1	F II	a	953	G and h=.2
✓ 112	17.4	17.5	K III	b.c.	954	F3 G=.1 B, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.2, Lines between G and H.
✓	14.6	8.8	F II	a	955	G and h=.5
✓	14.8	13.2	K III	b.c.	956	F3 G=.1 B, F3½ G=.1, F4½ G=.1, F5 G=.1 B, F7 G=.3,
✓	14.9	14.0	K III	b.c.	957	F3 G=.3 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3, Lines between G and H.
✓	14.6	22.5	$\frac{I}{I}$ III	b	958	F7 G=.3, ✓
✓	13.5	8.3	F II	a	959	G=.4, h=.2

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1887phae.proj..848F

Gd, 448,2
h5; G5
HaG; 448,3; 456,1; 458,1; 461,2; 466,1; 468,2

h5, G5
aK; h2, Gd2
aK
G5? G5?
aK; h5; G5

HaG; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3
h2, G2
HaG; 448,2; 456,1; 458,1; 461,1; 468,1

h5; G5
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; G4

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December, 20, 1887.
Plate, 1255.

Bork, 16, E. Page.	V.	H.	Type.	No. Remarks.	Description of lines in Spectra.
✓ 112	13.5	17.1	F II a	960	G and h = .4
✓ 114	11.0	12.1	I III b	961	F3 G = .2, F5 G = .2, F7 G = .3.
✓	11.4	13.6	F II a	962	G and h = .3, G dbl, Lines below K.
✓	11.0	15.9	F II a	963	G and h dbl. = .2
✓	11.5	18.8	I III b	964	F5 G = .1, F7 G = .3.
✓	10.0	6.3	I III b	965	F3 G = .1, F5 G = .1, F7 G = .3
✓	10.0	14.4	F II a	966	G and h = .5, Lines below K.
✓	10.0	19.1	F II a	967	G and h = .2
✓	9.2	11.6	K III b.c.	968.	F2½ G = .1, F3 G = .1 B, F3½ G = .1, F4½ G = .3, F5 G = .1 B, F5½ G = .2, F7 G = .3, Lines between G and H.
✓ 116.	9.4	16.6	B I b.	969	h 5 H = .1, H 5 a = .1.
✓	9.9	20.2	F II a	970	G and h = .2 ?, Lines below K.
✓	8.4	10.5	F II a	971	G and h = .2, G dbl.
✓	8.5	22.7	K III b.c.	972	F3 G = .2 B, F3½ G = .1, F4½ G = .2, F5 G = .1 B, F5½ G = .1, F7 G = .3, G dbl. ?, Lines between G and H, 1 Line below K.
✓	7.6	18.3	F II a	973	G and h = .3, Lines below K
✓	7.0	18.6	I III b	974	F5 G = .2, F7 G = .2
✓	6.5	16.1	F II a	975	G and h = .5
✓ 118	5.0	6.7	I III b	976	F3 G = .2, F5 G = .1, F7 G = .3. Lines between G and H.
✓	5.1	10.8	F II a	977	G and h = .3
✓	5.8	11.0	F II a	978	G and h = .2
✓	5.2	19.6	F II a	979	G and h = .5 (G + h = .5)
✓	5.5	21.3	F II a	980	G and h dbl. = .5
✓	4.6	8.2	F II a	981	G and h = .3 G dbl.
✓	4.0	17.3	I III b	982	F3 G = .2, F5 G = .2, F7 G = .3

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1887phae.proj..848

h 4 ; g 4

4448,3 ; 4358,2 ; 4268,2

a K ; h 3 ; g d 3

h d e ; g d 2

4448,3 ; 4358,1

4448,3 ; 4358,1 ; 4268,1

a K ; h 5 ; g 5

h 2 , g 2

H a β ; 4448,3 ; 4356,2 ; 4358,1 ; 4261,3 ; 4265,1 ; 4268,1 ; 4271,1

393,1 ; 403,1

a K ; h 2 ? g 2 ?

h 2 , g d 2

1 a K ; H a g ; g d 3 ; 4448,3 ; 4356,1 ; 4358,1 ; 4261,2 ; 4266,1 ; 4268,2

a K ; h 3 , g 3

4448,2 ; 4358,2

h 5 , g 5

H a β ; 4448,3 ; 4358,1 ; 4268,2

h 3 ; g 3

h 2 , g 2

h 5 , g 5 (h 5 , g 5)

h d 5 , g d 5

h 3 , g d 3

4448,3 ; 4358,2 ; 4268,2

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1887phae.proj..848f

December, 20, 1887.
Plate, 1255.

Book, 16, E. Page	V.	H.	Type.	No. Remarks.	Descriptions of lines on Spectra.
118	4.6	18.8	I III b	983	F5 G=.2, F7 G=.2
	4.1	20.2	F II a	984	G and h=.4
	4.8	23.3	F II a	985	G and h dbl=.5, Line 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	F3 G=.2, F5 G=.2, F7 G=.3.

December, 21, 1887.
Plate, 1255.

120	3.0	7.5	F III a	989	G and h=.3?
	2.4	10.0	F II a	990	G and h=.3
	2.8	22.2	F II a	991	G and h dbl.=.5

Plate 1218.

Plate 1314

122	20.3	9.2	I III b	992	F7 G=.3, Lines between G and H.
	20.7	22.6	F II a	993	G and h dbl.=.5
	19.3	23.2	F II a	994	G and h dbl.=.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 IV b.c.	997	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1 F7 G=.3 Lines between G & H.
	10.0	14.4	K III b.c.	998	F3 G=.1 B, F3½ G=.1, F4½ G=.2 F5 G=.1 B F5½ G=.1, F7 G=.3, Lines between G and H.
	10.0	19.0	I III b	999	F2 G=.2; F3 G=.3. F5 G=.2, F7 G=.3, Lines between G and H.
126	9.2	21.5	F II a	1000	G and h=.5

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1887phae.proj..848F

4488,2; 4588,2
h4, H4
/ a K; hd5, Hd5
h3, H3
h5, H5
4488,3; 4588,2; 4688,2

h3? H3?
h3 H3
hd5 Hd5

HaH; 4488,3
hd5, Hd5
hd5, Hd5
h3, H3
h3, H3
HaG; 4488,3; 456,1; 4588,1; 4612,2; 4661,; 4681

HaG; 4488,3; 456,1; 4588,1; 4612,2; 4661,; 4681

HaG; 4488,3; 4588,2; 4683; 4742

h5, H5

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December, 21, 1887.

Plate 1314

Book, 16, E. Page.	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
	126 8.6	18.9	F II a		1001	G and h = .5
	4.9	19.7	I II b		1002	F3 G = .2, F5 G = .2, F7 G = .3.
	3.6	9.5	I III b		1003	F5 G = .2, F7 G = .3.

Plate 1256

	21.4	15.4	F II a	b.	1003a	G + h = .5
	128 20.0	12.3	I III b		1004	F7 G = .2
	20.5	19.8	F II a		1005	G and h = .5.
	19.7	14.7	I III b		1006	F3 G = .2, F5 G = .2, F7 G = .3
	19.0	19.3	I III b		1007	F3 G = .2, F5 G = .2, F7 G = .3.
	130 16.8	6.0	K III b	b.c	1008	F3 G = .2 B, F4 G = .2, F5 G = .1, B, F7 G = .3.
	15.8	11.9	F? II a?		1008a	G + h = .5
	15.0	15.5	F II a		1009	G and h = .2
	132 15.3	22.2	F II a		1010	G and h = .2
	14.3	16.6	F? II a?	b.c.	1010a	G + h = .5
	14.9	17.7	K III b	b.c.	1011	F2½ G = .1, F3 G = .1 B, F3½ G = .1, F4½ G = .1, F5 G = .1 B, F5½ G = .2, F7 G = .3.
	13.4	16.8	K III b	b.c.	1012	F2½ G = .1, F3 G = .1 B, F3½ G = .1, F4½ G = .2, F5 G = .1 B, F5½ G = .1, F7 G = .1, F7½ G = .1 B, Lines between G and H.

Plate 1256 – Dec. 22, 1887.

	134 12.9	14.6	F II a		1013	G and h = .3, G dbl, Lines below K.
	11.9	13.1	F? II a?		1013a	G + h = .5
	11.9	13.1	F II a		1014	G and h = .4 (G + h = .5, 2 lines below K.)
	136 9.9	17.1	K III b	b.c.	1015	F2½ G = .1, F3 G = .1 B, F3½ G = .1, F4½ G = .2, F5 G = .1 B, F5½ G = .1, F7 G = .2.
	8.3	8.9	I III b		1016	F3 G = .2, F5 G = .2, F7 G = .3.
	138 7.6	11.1	I III b		1017	F3 G = .2, F5 G = .2, F7 G = .3
	7.6	14.1	F II a		1018	G and h = .4 (G + h = .3, 2 lines below K.)
	6.2	11.7	F II a		1019	G and h = .5, G dbl, Lines below K.
	6.3	15.0	F II a		1020	G and h = .2

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1887phae.proj..848F

h 5 ; g 5

448, 3 ; 458, 2 ; 468, 2

448, 3 ; 458, 2

h 5, g 5

448, 2

h 5 g 5

448, 3 ; 458, 2 ; 468, 2

448, 3 ; 458, 2 ; 468, 2

448, 3 ; 458, 1 ; 463, 2 ; 468, 2

h 5 ; g 5

h 2 , g 2

h 2 , g 2

h 5 g 5

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

446, 1

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

ak ; h 3 g d 3

h 5 ; g 5

h 4, g 4, (ak, h 5, g 5)

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

h 4, g 4, (ak, h 3, g 3)

ak, h 5, g d 5

h 2, g 2

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December, 22, 1887.

Plate, 1256.

Book, 16, E, Page.	V.	H.	Type.	Remarks.	No.	Description of lines on Spectra.
✓	138	5.6	12.9 F II	a	1021	G and h =.3
✓		5.1	22.1 F III	a	1022	G and h =.5
✓	140	3.1	7.0 F II	a	1023	G and h =.5?
✓		3.9	19.6 F II	a	1024	G and h dbl. =.3
✓					1025	G and h =.1, Lines below K.

Plate 1162.

✓	142	21.3	21.2 I III	b	1026	F7 G=.3
✓	144	14.9	13.5 I III	b	1027	F3 G=.2 B F5 G=.1, F7 G=.3,
✓		14.9	14.4 K III	b.c.	1028	F2½ G=.1, F3 G=.2 B, F3½ G=.1, F4½ G=.3, F5 G=.1 B, F5½ G=.1, F6 G=.1, F6½ G=.1, F7 G=.3, Lines between G and H.
✓		14.5	22.9 I III	b	1029	F7 G=.3
✓		13.0	10.7 F II	a	1030	G and h=.5
✓		13.2	20.8 I III	b	1031	F5 G=.2, F7 G=.3
✓		11.5	14.1 F II	a	1032	G and h=.2, G dbl., Lines below K.
✓		9.5	16.8 B I	b	1033	h 5 H=.3
✓		9.9	20.7 F II	a	1034	G and h=.2? Lines below K
✓	146	8.1	18.3 F II	a	1035	G and h=.4
✓		3.9	9.3 F II	a	1036	G and h=.5, h dbl.

Plate 1342.

✓	148	14.2	19.6 I III	b	1037	F3 G=.2, F5 G=.2, F7 G=.3
✓		14.4	14.8 F II	a	1038	G and h =.3, G dbl.
✓	150	11.4	7.2 K III	b.c.	1039	F2½ G=.1, F3 G=.2 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Several lines between G and H.
✓		10.6	22.2 F II	a	1040	G and h dbl.=.5, Lines below K.

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1887phae.proj..848

h 3, g 3
h 5, g 5
h 5 ? g 5 ?
h d 3, g d 3
a K ; h 1, g 1

4448,3
4448,3 ; 4458,1 ; 4468, 2
Ha g ; 4448.3 ; 4451.1 ; 4453.1 ; 4456.1 ; 4458.1 ;

4448.3
~~4458,3~~ h 5; g 5
4448,3 ; 4458,2
a K, h 2, g d 2
4003,3
a K ; h 2 ? g 2 ?
h 4, g 4
h d 5, g 5

4448,3 ; 4458,2 ; 4468,2
h 3, g d 3
Ha g ; 4448,3 ; 4456,1 ; 4458,1 ; 4461,2 ; 4466,1 ; 4468,2 ; 4471,1

a K ; h d 5 ; g d 5

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1887phae.proj..848F

December, 22, 1887.

Book, 16, E. Page.

Plate. 1242.

	V.	H.	Type		Remarks	Description of lines on Spectra.
	150	8.3	10	K IIIL	b.c. 1041	F 2½ G=.1, F 3 G=.2 B, F 3½ G=.1, F 4½ G=.2 F 5 G=.2 B, F 5½ G=.2, F 7 G=.3, Lines between G and H.
		7.6	12.9	I III	b 1042	F 3 G=.2, F 5 G=.2, F 7 G=.3
		8.1	23.5	I III	b 1043	F 7 G=.2
		8.2	23.7	F II	a 1044	Gand h=.5

Very poor plate. Plate 1221

December, 23, 1887.

Plate, 1245.

	152	22.1	11.9	K IIIL	b.c. 1045	F 3 G=.1 B, F 3½ G=.1, F 4½ G=.3, F 5 G=.1 B, F 5½ G=.1, F 7 G=.3, Lines between G & H.
		22.4	23.0	F II	a 1046	Gand h=.5
	154	19.3	17.3	F II	a 1047	Gand h=.5
		19.6	14.6	F II	a 1048	Gand h=.5
		18.6	14.2	I III	1049	F 3 G=.2, F 5 G=.2, F 7 G=.2.
		17.5	16.8	I III	b 1050	F 7 G=.2
		16.6	12.4	F II	a 1051	Gand h=.5
		16.1	18.2	I III	b 1052	F 7 G=.2.
		14.2	10.1	F II	a 1053	Gand h=.3
		14.3	12.0	I III	b 1054	F 7 G=.3
	156	14.1	13.6	I III	b 1055	F 3 G=.2, F 5 G=.2, F 7 G=.3.
		13.3	8.6	B I	b 1056	Gdll.
		12.3	6.4	F II	a 1057	Gand h=.2

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1887phae.proj..848

HaG; 448,3; 456,2; 458,2; 461,2; 466,1; 468,2; 471,1

448,3; 458,2; 468,2
448,2;
h 5, Li 5

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

h 5, Li 5
h 5, Li 5
h 5, Li 5
448,2, 458,2; 468,2
448,2
h 5, Li 5
448,2
h 3, Li 3
448,3
448,3; 458,2; 468,2
Li d
h 2, Li 2

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December, 24, 1887.
Plate, 1245.

Book 16, E. Page	V.	H.	Type	Remark.	Description of lines on Spectra.
156.	11.0	6.2	F II a	1058	G and h=.2, h dbl.
	11.6	21.1	F II a	1059	G and h=.5
	11.6	21.9	F II a	1060	G and h=.2
158	10.2	19.2	I III b.	1061	F7 G=.2
	8.4	8.8	F II a	1062	G and h=.5
	8.3	15.8	I III b.	1063	F5 G=.1, F7 G=.2.
	7.5	9.2	F II a	1064	G and h=.5
	6.4	6.5	F II a	1065	G and h=.5
160	4.4	8.4	I III b.	1066	F7 G=.2, Lines below K; Lines between G and H.
	4.0	16.5	F II a	1067	G and h=.2
	4.5	17.8	I III b	1068	F3 G=.2, F7 G=.2, F5 G=.2

Plate 1326

	17.8	11.4	F III a	1069	G and h dbl. =.2
	10.2	9.2	F II a	1070	G and h=.2, G dbl., Lines beloid K.

December, 27, 1887.
Plate 1351.

162	22.3	11.4	K III b.c.	1071	F3 G=.1 B, F5 G=.1 B, F7 G=.3, Lines between G and K.
	18.8	13.8	K III b.c.	1072	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, Lines between G and H.
	17.6	16.4	I III b.	1073	F2 G=.4 F3 G=.2, F5 G=.2, F7 G=.3.
164	15.1	13.4	I III b	1074	F3 G=.2, F5 G=.2, F7 G=.2.
	12.5	6.0	F II a	1075	G and h dbl. =.5?
	12.3	12.1	I III b	1076	F5 G=.2, F7 G=.2.
	11.0	6.1	F II a	1077	G and h=.2

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1887phae.proj..848r

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
aK
H a G; 448, 2

h 2, g 2
458, 2; 448, 2; 468, 2

h d 2, g d 2,
aK, h 2, g d 2

H a G; 448, 3; 458, 1; 468, 1

H a G; 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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1887phae.proj..848F

December, 27, 1887.
Plate, 1351.

Book, 16, E. Page.	V.	H.	Type.	Remark.	No.	Description of lines on Spectra.
164	11.2	18.9	I III	b.	1078	F 3 G=.2, F 5 G=.2, F 7 G=.3
166	8.6	8.4	F II	a	1079	G and h=.5
	8.5	15.4	I III	b.	1080	F 3 G=.2, F 5 G=.2, F 7 G=.3, Lines between G and H.
	7.5	9.1	F II	a	1081	G and h=.5
	5.4	8.2	I III	b.	1082	F 5 G=.1, F 7 G=.3, Lines between G and H. Lines below K.
	4.6	17.7	I III	b.	1083	F 2 G=.2, F 2½ G=.1, F 4½ G=.3, F 5½ G=.2, F 7 G=.3, Lines between G and H.
	3.9	22.9	F II	a	1084	G and h=.5?
	2.6	11.6	I III	b.	1085	F 3 G=.3, F 5 G=.2, F 7 G=.3 Lines between G and H.

December, 28, 1887.
Plate 1340

168	21.1	14.2	F II	a	1086	G and H=.5
	20.1	9.3	I III	b	1087	F 3 G=.2 F 5 G=.2, F 7 G=.3.
	20.0	21.5	F II	a	1088	G and h=.2 Gdbl. Lines below K.
	17.6	17.9	F II	a	1089	G and h=.4, Gdbl.
	16.4	22.2	F II	a b	1089 a	G+h=.5
	15.9	13.5	I III	b	1090	Lines between G and H, Lines below K.
	14.8	9.3	I III	b	1091	F 7 G=.2
170	13.2	17.1	F II	a	1092	G and h=.5
	12.3	12.2	K III	b.c.	1093	F 1½ G=.2, F 2 G=.3, F 2½ G=.3, F 3 G=.2 B, F 5 G=.1, F 7 G=.2, Lines between G and H. Peculiar Spectrum
	12.8	16.3	K III	b.c.	1094	F 2½ G=.1 F 3 G=.1 B, F 3½ G=.1, F 4½ G=.2, F 5 G=.1 B, F 5½ G=.1, F 6 G=.2, F 7 G=.3, F 9½ G=.1, Lines between G and H.
	10.0	23.2	F II	a	1095	G and h=.5

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1887phae.proj..848f

448,3; 458,2; 468,2
h 5, g 5

HaG; 448,3; 458,2; 468,2

h 5, g 5

aK, HaG, 448,3; 458,1

HaG; 448,3; 456,2; 461,3; 466,1; 474,2

h 5? g 5?

HaG; 448,3; 458,2; 468,3

H 5, g 5

448,3; 458,2; 468,2

aK, h 2; g d 2

h 4; g d 4

aK, HaG,

448,2

h 5, g 5

Peculiar spec. HaG; 448,2; 456,1; 468,2; 471,3; 474,3; 477,2

HaG, 436,1; 443,1; 448,3; 453,2; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

h 5, g 5

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December 28, 1887.

Plate 1340

Book, 16, Page	V.	H.	Type.	Remark.	No.	Description of lines on Spectra.
	9.2	9.0	F II	a	1096	G and h = .2, G dbl.
	9.1	9.0	K I II	b.c.	1097	F 2½ G = .1, F 3 G = .1 B, F 3½ G = .1, F 4½ G = .3, F 5 G = .1 B, F 5½ G = .1, F 7 G = .3, Lines between G and H.
	17.2	8.7	17.9 K I II	b.c.	1098	F 2½ G = .1, F 3 G = .1 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .1 B, F 5½ G = .1, F 7 G = .3, F 8 G = .1 B, F 9½ G = .1, Several lines between G & H
		7.1	20.4 I I III	b	1099	F 7 G = .3
		4.6	14.7 F II	a	1100	G and h = .5 (G & h = .5)
		4.9	20.2 I III	b.	1101	F 5 G = .2, F 7 G = .3.

Plate 1260

	17.4	19.9	9.4 I III	b	1102	F 3 G = .2, F 5 G = .2, F 7 G = .3.
		19.6	14.3 F II	a	1103	G and h = .4
		19.7	21.4 F II	a	1104	G and h = .2, G dbl.?
		16.9	9.7 F II	a	1105	G and h = .5 ?
		16.8	18.0 F II	a	1106	G and h = .2, G dbl.
		15.6	13.6 K III	b.c.	1107	~~F G~~ = . Several lines between G and H, Several lines below K. Bright lines.
	17.6	12.5	16.4 K I II	b.c	1108	F 2½ G = .1, F 3 G = .1 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .1 B, F 5½ G = .1, F 6½ G = .2, F 7 G = .3, F 8 G = .1 B, F 9½ G = .1, Lines between G and H.
		12.6	17.0 F II	a	1109	G and h = .5
		11.6	12.1 I III	b	1110	F 2½ G = .2, F 3 G = .2, F 5 G = .1, F 7 G = .3.
		9.5	8.5 F II	a	1111	G and h = .5 (G + h = .5)
		9.6	18.0 F II	a	1112	G and h = .5
		9.9	23.0 F II	a	1113	G and h = .5
		8.5	8.9 F II	a	1114	G and h = .2, G dbl.

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1887phae.proj..848

h, 2 ; γ d 2
HaG; 448,3; 456,1; 458,1; 461,3; 466,1; 468,1; 471,1

HaG; 436,1; 443,1; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3
h 5, γ 5 (h 5 γ 5)
448,3 ; 458,2

448,3 ; 458,2 ; 468,2
h 4, γ 4
h 2, γ d? 2
h 5? γ 5?
h 2, γ d 2
ak ; Ha γ ; Bright lines

HaG, 436,1; 443,1; 448,3; 451,2; 456,1; 458,1; 461,2; 466,1; 468,1 471,1

h 5, γ 5
448,3 ; 458,1 ; 468,2 ; 471,2
h 5, γ 5 (h 5 γ 5)
h 5, γ 5
h 5, γ 5
h 2, γ d 2

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December, 28, 1887.

Plate 1260

Book 16 E, Page	V.	H.	Type	Remark		Description of lines on Spectra.
✓	17.6	8.8	9.1 I IIIa	b	1115	F3 G=.2, F5 G=.2, F7 G=.2, F7½ G=.2, Gdbl.?
✓		8.5	18.0 K IIIa	b.c	1116	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F6½ G=.1, F7 G=.3, F8 G=.1, F9½ G=.2, Lines between G and H.
✓	17.8	6.8	15.9 F II	a	1117	G and h=.5
✓		5.3	21.6 F II	a	1118	G and h=.2
✓		3.5	9.4 F II	a	1119	G and h=.5 ?

Plate 1328.

✓	18.0	21.9	21.1 K IIIa	b.c.	1120	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F6½ G=.1, F7 G=.3, F8 G=.1 B, F9½ G=.1, Lines between G & H.
✓		19.6	13.4 I IIIa	b.	1121	F3 G=.2, F4 G=.1, F5 G=.3, F6 G=.2, F7 G=.4, G dbl.?
✓		19.5	16.5 F II	a	1122	G and h=.2, G dbl., Lines below K.
✓		18.0	5.8 F II	a	1123	G and h=.3
✓		17.6	17.3 I IIIa	b	1124	F7 G=.2, G dbl.?
✓		17.8	22.1 K IIIa	b.c.	1125	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F6½ G=.1, F7 G=.3, F8 G=.1 B, F9½ G=.1, Lines between G and H.
✓		16.8	5.4 F II	a	1126	G and h=.2, G dbl.
✓		16.6	9.4 F II	a	1127	G and h=.2.
✓		16.6	15.0 K IIIa	b.c	1128	F3 G=.2 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3, Lines between G and H, 2 lines below K.
✓	18.2	16.5	19.8 F II	a	1129	G and h=.5
✓		15.5	7.1 I IIIa	b	1130	F7 G=.3

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1887phae.proj..848F

Hd? 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; H5
h2, H2
h5? H5?

HaG; 436,1; 443,1; 448,3; 451,1; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

Hd? 448,4; 453,2; 458,3; 463,1; 468,2

aK; h2; Hd2
h3, H3
Hd; 448,2
HaG; 436,1; 443,1; 448,3; 451,1; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

h2, Hd2
h2, H2
2aK, HaG; 448,3; 456,1; 458,2; 461,2; 466,1; 468,2

h5, H5

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December, 28, 1887.

Books, 16, E. Page

Plate, 1328

	1875 V.	H.	Type.	Remark, No.	Description of lines on Spectra
✓	15.8	12.3	IIIb	I 1131	F_3 G=.2, F_5 G=.2, F_7 G=.3.
✓	15.5	22.8	IIa	F 1132	G and h=.5
✓	15.6	24.2	IIIb	I 1133	F_7 G=.3
✓	14.0	8.2	IIa	F 1134	G and h=.2, G dbl.
✓	14.3	22.8	IIIb	I 1135	F_7 G=.3
✓	13.4	10.8	IIa	F 1135 a	G+h=.5 (G+h=.5)
✓	13.2	13.1	IV	I 1136	F_5 G=.2, F_7 G=.3,
✓	13.5	13.7	IIIb	G 1137	Numerous faint lines.

December, 29, 1887.

Plate, 1328.

✓	184	12.1	18.3	IVb I 1138	F_5 G=.1, F_7 G=.3.
✓		11.9	15.6	IIa F 1139	G and h=.5 (G+h=.5)
✓		10.8	15.6	IIIb K 1140	$F_{2\frac{1}{2}}$ G=.1, F_3 G=.1 B, $F_{3\frac{1}{2}}$ G=.1, $F_{4\frac{1}{2}}$ G=.2, F_5 G=.2 B, $F_{5\frac{1}{2}}$ G=.1, F_6 G=.2, $F_{6\frac{1}{2}}$ G=.1, F_7 G=.3, F_8 G=.1 B, $F_{9\frac{1}{2}}$ G=.1, Lines between G and H.
✓		9.5	8.4	IIa F 1141	G=.3, h=.2, Lines below K.
✓	186	9.9	13.6	IIa F 1142	G and h=.5, Lines below K.
✓		9.2	16.1	IVb I 1143	Numerous faint lines
✓		8.0	18.6	IIa F 1144	G and h=0.5
✓		7.8	8.8	IIa F 1145	G and h=.3
✓		7.5	14.8	IIa F 1146	G and h=.5
✓		7.6	20.1	IIIb K 1147	$F_{2\frac{1}{2}}$ G=.1, F_3 G=.1 B, $F_{3\frac{1}{2}}$ G=.1, $F_{4\frac{1}{2}}$ G=.2, F_5 G=.2 B, $F_{5\frac{1}{2}}$ G=.1, F_7 G=.2, F_8 G=.1 B, G dbl. ? Lines between G & H, 1 line below K.
✓		6.1	13.5	IIIb I 1148	F_3 G=.2, F_5 G=.2, F_7 G=.3.
✓	188	6.0	18.9	IVb I 1149	Numerous faint lines, Lines below K.
✓		4.8	20.2	IIa F 1150	G and h=.3
✓		3.4	15.1	IIa F 1151	G and h=.5

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4488,3; 4588,2; 4688,2
h5, g5

4488,3
h2, gd2

4488,3
h5, g5 (h5, g5)
4488,3; 4588,2
Numerous faint-lines

4488,3; 4588,1
h5, g5 (h5 g5)
HaG; 4536,1; 4483,1; 4488,3; 4531,1; 4553,2; 4556,1; 4588,2; 4612; 4661; 4681; 4711

aK; h2, g3
aK, h5, g5
Numerous faint-lines
h5, g5
h3, g3
h5, g5
aK; HaG; gd2; 4483,1; 4488,2; 4556,1; 4588,2; 4612; 4661; 4681; 4711

4483, 4582, 4682
aK; Numerous faint-lines
h3, g3
h5, g5

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December, 29, 1887.

Book. 16, E. Page.

Plate 1328.

	V.	H.	Type.	No. Remark.	Description of lines on Spectra
✓	158	3.3	19.4 F II a	1152	G and h = .5
✓		2.6	18.5 F II a	1155	G and h = .5
✓		2.5	15.6 I III b	1153	F7 G = .3
✓		2.2	21.2 I III b	1154	F2½ G = .1, F3 G = .3, F3½ G = .1, F4½ G = .2, F5 G = .3, F5½ G = .1, F7 G = .3, Lines between G and H.
✓		2.4	20.3 I III b	1156	F3 G = .2, F5 G = .2, F7 G = .3.

Plate, 1343.

✓	190	21.3	9.8 I III b	1157	Numerous faint lines, Lines below K.
✓		19.7	21.1 I III b.	1158	F3 G = .2, F5 G = .2, F7 G = .3
✓		18.4	5.3 B 1 b	1159	F8 G = 1.0, G & h = 1.0, h & H = 1.0, (Two stars photographed together cause the additional lines)
✓		18.0	11.5 F II a	1160	G and h = .5
✓		17.8	13.9 F II a	1161	G and h = .3, G dbl. ?.
✓		16.5	19.8 F III a	1162	G and h = .5
✓	192	14.9	6.5 K III b.c	1163	F2½ G = .1, F3 G = .1 B, F3½ G = .1, F4½ G = .1, F5 G = .1 B, F5½ G = .2, F7 G = .3, Several lines between G and H.
✓		14.9	6.8 F II a	1164	G and h = .3
✓		14.2	23.6 K 1 b.c.	1165	Numerous faint lines, 1 Bright line, 1 line below K.
✓		12.8	12.2 F III a	1166	G and h = .5, Lines below K.
✓		12.9	13.3 I III b	1167	F7 G = .5
✓		12.8	18.0 I III b	1168	F7 G = .3
✓		10.2	12.6 I III b	1169	F7 G = .3 (F7 G = .3)
✓		9.0	9.5 F III a	1170	G and h dbl. = .5,

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h1 5⁻; H 5⁻
h1 5⁻; H 5⁻
448,3
HaG; 448,3; 458,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3; 458,2; 468,2

aK; Numerous faint lines
448,3; 458,2; 468,2
400 1.0; 414, 1.0; 443, 1.0; (Two stars photographed together cause the additional lines).

h5, H 5⁻
h3, H d? 3
h1 5⁻, H 5⁻
HaG; 448.3; 458,2; 458,1; 461,1; 466,1; 468,1; 471,1

h3; H 3
1aK; 1 bright line; Numerous faint lines

aK; h 5; H 5⁻
448, 5⁻
448, 3
448, 3 (448, 3)
hd 5⁻, Hd 5⁻

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Plate -1343.- December, 29, 1887.

Book, 16, E. Page.	V	H	Type.	Remark.	Description of lines on Spectra.
✓	194	9.3	17.2 K III/IV	b.c. 1171	F 2½ G=.1, F 3 G=.1 B, F 3½ G=.1, F 4½ G=.3, F 5 G=.2 B, F 5½ G=.1, F 6 G=.1, F 7 G=.3, F 8 G=.1 B, F 9½ G=.1, Several lines between G and H.
✓		8.7	23.6 F II	a 1172	G and h=.2, Lines below K.
✓		7.7	15.2 F II	a 1173	G and h=.2, G dbl., Lines below K.
✓		6.4	10.4 I III	b 1174	F 7 G=.4
✓	196	5.7	18.7 I III	b 1175	F 7 G=.4
✓		5.9	24.6 I III	b 1176	F 3 G=.1, F 5 G=.1, F 7 G=.3, Lines between G and H.
✓		3.2	16.4 F II	a 1177	G and h=.5

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Plate, 1354.

✓	198	19.8	6.2 F III	a 1178	G and h=.3, G dbl., Lines below K.
✓		19.5	13.6 F II	a 1179	G and h=.3, G dbl., Lines below K.
✓		18.5	21.3 K III	b.c 1180	F 2½ G=.1, F 3 G=.1 B, F 3½ G=.1, F 4½ G=.2, F 5 G=.1 B, F 5½ G=.1, F 6 G=.1, F 7 G=.3, F 8 G=.1 B, Lines between G and H.
✓		16.8	14.1 I III	b 1181	F 7 G=.3
✓		16.2	17.8 I III	b 1182	F 3 G=.2, F 5 G=.2, F 7 G=.3, Lines between G & H.
✓	200	14.2	10.4 I IV	b 1183	F 3 G=.3, F 5 G=.2, F 7 G=.4
✓		13.8	6.9 F IV	a 1184	G and h=.3, G dbl., Lines below K. F line dbl.?
✓		13.0	12.4 I III/IV	b. 1185	F 7 G=.3
✓		12.9	6.6 F II	a 1186	G and h dbl. =.5.
✓		12.2	8.6 F II	a? 1186a	G+h=1.5
✓		12.7	19.4 F II	a 1187	G=.5, h=.2.
✓		11.5	19.1 I III	b 1188	Several faint lines, Lines below K.
✓		10.8	13.2 I III	b 1189	Several faint lines, Lines below K.

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Ha δ; 436,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,3; 466,1; 468,1; 471,1

aK; h2; δ2
aK; h2, δd2
448,4
448,4
Haδ; 448,3; 458,1; 468,1

h3; δ3

aK; h3; δd3
aK; h3; δd3
Ha δ; 443,1; 448,3; 453,1; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3
Ha G; 448,3; 458,2; 468,2
448,4; 458,2; 468,3
Vd?; aK; h3, δd3

448,3
hd5, δd5
h5 h2 δ5
aK, Several faint lines
aK, Several faint lines

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Plate 1354

Book 16, E. Page	V.	H.	Type.	Remark.	Description of lines on Spectra.
202	9.2	18.1	F II	a 1190	G=.5, h=.2, 2 lines below K.
	7.8	20.3	F II	a 1191	G=.3, h=.2, Lines below K.
204	5.7	14.9	K III	b.c 1192	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F6 G=.1, F7 G=.3, F8 G=.1 B, F9½ G=.1, Lines between G & H.
	4.6	11.7	F II	a 1193	G and h=.5 G dbl., Lines below K, G6h=.1?
	3.4	10.9	F II	a 1194	G and h=.5

Plate 1333

206	21.4	5.4	I III	b 1195	F3 G=.2, F5 G=.1, F7 G=.3, Lines between G and H.
	20.0	9.5	F II	a 1196	G and h dbl.=.5, Lines below K
	20.0	11.6	F II	a 1197	G and h dbl.?=.5, Lines below K.
	20.9	12.3	F II	a 1198	G=.3, h=.2, G dbl.
	20.3	13.6	K III	b.c. 1199	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1 F6 G=.1, F7 G=.3 F8 G=.1 B, F9 G=.1, Lines between G & H, Lines below K
	19.4	12.3	I III	b 1200	F7 G=.3,
	18.0	5.9	F II	a 1201	G and h=.2, Lines below K.
208	15.5	17.9	F II	a 1202	G and h=.3
	15.3	18.3	F II	a 1203	G and h=.3?
	15.5	20.8	F II	a 1204	G and h=.3, G dbl., Lines below K.
	14.6	13.1	A	~~1205~~	Spectra superposed on plate. Measure
210	14.6	13.2	A	~~1206~~	Solar, combined light of both.
	14.0	16.6	F II	a 1206a	G & h=.3
	14.1	20.6	F II	a 1207	G and h=.3, G dbl., Lines below K.
	14.6	24.0	I III	b 1208	F5 G=.2, F7 G=.3
	13.8	10.3	I III	b 1209	F3 G=.1, F5 G=.1, F7 G=.3.

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aK; h2; ℓ5

aK; h2; ℓ3

HaG; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

419,1?; aK; h5; ℓd5

h5; ℓ3

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

aK; hd5; ℓd5

aK; hd?5; ℓd?3

h2; ℓd3

aK; HaG; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

448,3

aK; h2; ℓ2

h3; ℓ3

h3?; ℓ3?

aK; h3; ℓd3

Spectra superposed on plate; Measure of brightness combined light of both.

h3 ℓ3

aK; h3; ℓd3

448,3; 458,2

448,3; 458,1; 468,1

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December, 30, 1887.
Plate, 1333.

Book 16, E. Page	V:	H.	Type.	No.	Remark.	Description of lines on Spectra
	210 13.1	11.9	I IIIb	1210		$F_7 G = .3$
	13.7	17.2	F IIa	1211		G and h = .3, Lines below K.
	12.4	7.1	F IIa	1212		G and h = .5 (G + h = .5)
	12.5	23.1	I IIIb	1213		$F_7 G = .3$
	"212 10.9	7.3	K IIIb.c.	1214		$F 2\frac{1}{2} G = .1$, $F 3 G = 1$ B, $F 3\frac{1}{2} G = .1$, $F 4\frac{1}{2} G = .2$, $F 5 G = .2$ B, $F 5\frac{1}{2} G = .1$, $F 6 G = .1$, $F 7 G = .3$, $F 8 G = .1$ B, Lines between G & H., 1 Line below K.
	10.5	11.3	F IIa	1215		G and h = .3, Gdbl, Lines below K.
	10.4	14.5	I IIIb	1216		$F_7 G = .3$
	9.4	14.3	F IIa	1216a		G + h = .5
	9.0	18.5	F IIa	1217		G and h = .3, Lines below K
	8.5	7.1	I IIIb.	1218		$F_3 G = .1$, $F_5 G = .1$, $F_7 G = .3$, Lines between G and H.
	214 8.7	13.2	K IIIb.c	1219		$F 2\frac{1}{2} G = .1$, $F 3 G = .1$ B, $F 3\frac{1}{2} G = .1$ B, $F 4\frac{1}{2} G = .2$, $F 5 G = .2$ B, $F 5\frac{1}{2} G = .1$, $F 6 G = .1$, $F 7 G = .3$, $F 8 G = .1$, Lines between G and H., 1 Line below K.
	8.3	19.2	F IIa	1220		G and h = .2
	7.9	6.4	F IIa	1221		G and h = .5
	7.8	11.5	I IIIb	1222		$F_3 G = .2$, $F_5 G = .2$ $F_7 G = .3$.
	7.5	12.3	F IIa	1223		G and h = .5 Lines below K.
	6.6	11.7	F IIa	1224		G and h = .5
	6.0	12.8	F IIa	1225		G and h = 5
	6.1	18.5	I IIIb	1226		$F_3 G = .1$, $F_5 G = .1$, $F_7 G = .3$
	6.3	19.0	F IIa	1227		G and h = .5
	5.8	11.7	F IIa	1228		G and h = .5
	5.9	12.3	F IIa	1229		G and h = .4
Book 18, E. Page 4	4.4	10.9	F IIa	1230		G and h = .5, Gdbl, Lines below K.
	4.2	14.4	I IIIb	1231		$F_3 G = .2$, $F_5 G = .1$, $F_7 G = .3$, Lines between G & H

Amt of Fog due to moon & clouds. 4.3 Amt. of Fog due to chemicals 2.5

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4448,3
aK; h=3 g 3
h5; g5 (h5 g5)

448,3
aK; HaG; 4556,1; 4558,2; 4561,2; 4566,1; 4568,1; 4571,1

aK; H,3; gd3

4448,3
h5 g5
aK; h3, g3
HaG; 4448,3; 4558,1; 4568,1

aK HaG; 4443,1; 4448,3; 4553,1; 4556,1; 4558,2; 4561,2; 4566,1; 4568,1; 4571,1

h2; g2
h5; g5
4448,3; 4558,2; 4568,2
aK; h5; g5
h5, g5
h5; g5
4448,3; 4558,1; 4568,1
h5, g5
h5; g5
h4, g4
aK; gd, h5, g5
HaG; 4448,3; 4558,1; 4568,2

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1887phae.proj..848F

Dark Plate. December, 31, 1887.
Very hard to measure. Plate, 1395

Book 18, E Page	V.	H.	Type.	Remarks.	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	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H.
	20.0	11.5	I III b	1235	F7 G=.3

(Day two dark to measure Brightness on plate)

Plate 1459

14	21.2	15.1	F II a	1236	G and h=.3, G dbl., Lines below K.
	21.4	17.2	K III b.c.	1237	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F6 G=.1, F7 G=.3, F8 G=.1 B, F9 G=.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	F7 G=.3.
	18.6	19.7	I III b	1241	F7 G=.3
	18.6	22.0	F II a	1242	G and h=.5, G dbl., 2 lines below K.
	17.2	6.3	F II a	1242 a	G and 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 dbl., Lines below K.
	15.8	18.5	B II b	1245	F7 G=.3
	14.4	10.1	F II ab.	1245 a	G and h=.5
18	14.6	17.1	I III	1246	F3 G=.2, F5 G=.2, F7 G=.2.
	13.5	5.9	F II a	1247	G and h=.5
	12.1	5.7	I III b	1248	F7 G=.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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1887phae.proj..848F

h1; g1

ak; he, gv

Ha G; 443,1; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1; 471,1

448,3

ak; h3; gd3

Ha G; 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

2 ak; 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

Book.	18.	E.	Page.	V.	H.	Type.	No. Remark.	Description of lines on Spectra.
✓		20	10.1	17.6	I III	b.	1253	F5 G=.2, F7 G=.3.
✓			10.9	20.9	F IV	a	1254	G and h=.1.
✓			9.9	11.2	F II	a	1255	G and h=.2, Lines below K.
✓			9.5	17.5	F II	a	1256	G and h=.5
✓		22	7.6	19.2	F II	a	1257	G and h=.3
✓			7.4	22.8	F II	a	1258	G and h=.3
✓			6.9	7.9	I III	b	1259	F5 G=.2, F7 G=.3
✓			6.7	11.9	F II	a	1260	G and h=.5, G dbl., Lines below K.
✓		24	5.9	20.2	F II	a	1261	G and h=.5
✓			4.8	7.4	F II	a	1262	G and h=.5
✓			4.2	9.4	I III	b	1263	F7 G=.3

Amt. of Fog. due to moon & clouds. 7.4
Amt. of Fog. due chemicals. 7.6

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1887phae.proj..848F

448,3 ; 45-8,2)
h1, g1
ak, h2, g2)
h5-, g5-
h3, g3
h3, g3
448,3 ; 45-8,2)
ak; h5-, gd5-
h5-, g5-
h5-, g5-
448,3

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1887phae.proj..848F

Dark plate. Very hard to measure. January, 6., 1887. Plate . 1384.

Book, 18, Page	No.	V.	H.	Type.		Remark.	Description of lines on Spectra.
		20.8	9.9	F	IIa	1263a	G+h=.5
	28	20.0	16.9	L	III	1264	G and h=.5, Gdbl. Lines below K.
		20.7	20.9	F	IIa	1265	G and h=.5, Lines below K.
		20.0	22.8	L	IIIa	1266	G and h=.5, Lines below K.
		19.7	12.0	I	IIIb	1267	F5 G=.2, F7 G=.3
		19.6	13.5	B	I	1268	F7 G=.3, h7 H=.3
		18.2	8.6	F	IIa	1269	G and h=.5, G dbl.
		18.7	9.0	K	IIIb.c.	1270	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1B, F5½ G=.1, F7 G=.3, F8 G=.1B, Lines between G and H.
	30	17.7	9.2	F	IIa	1271	G and h=.5.
		17.6	13.2	K	IIIb.c.	1272	F3 G=.1 B, F5 G=.1 B, F5½ G=.1, F7 G=.3, G dbl.? Lines between G and H.
		16.4	20.3	F	IIa	1273	G and h=.3, Lines below K.
		15.5	9.2	F:	IIa?	1273a	G+h=.5
	32	14.8	7.4	F	IIa	1274	G and h=.5 (G+h=.5)
		14.8	16.4	F	IIa	1275	G and h=.5
		13.1	10.4	F:	IIa?	1275a	G+h=.5
	34	11.1	19.4	F	IIa	1276	G and h=.2, Lines below K.
		12.2	9.5	F	IIa?	1275b	G+h=.5
		10.4	8.3	K	IIIb.c.	1277	F5 G=.2 B, F7 G=.3 h bright?, Lines between G & H,
		11.9	10.2	F	IIa?		Lines below K.
						1275c	G+h=.5
		10.4	14.1	F	IIa	1278	G and h=.5
		10.3	17.6	F	IIa	1278a	G+h=.5
	36	10.6	18.4	F	IIa	1279	G and h=.5 G/h=.5?
		8.9	11.4	F:	IIa?	1279a	G+h=.5 (G+h=.5)
	38	5.5	17.1	F	IIIa	1280	G and h=.5 G dbl., Lines below K
		3.3	11.9	I	IIIb.	1281	F7 G=.3

Ant. Fogging due to moon & clouds. Ant. Fogging due to chemicals

5.7 {8.0 6.5

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1887phae.proj..848f

h 5 ; g 5

aK, h 5, g d 5

aK, h 5, g 5

aK, h 5, g 5

448, 3 ; 458, 2

401, 3 ; 448, 3

h 5, g d 5

Ha g ; 443, 1 ; 448, 3 ; 456, 1 ; 458, 1 ; 461, 2 ; 466, 1 ; 468, 1 ; 471, 1

h 5 ; g 5

Ha b ; g d ? ; 448, 3 ; 456, 1 ; ~~458,~~ 1 ; 468, 1

aK, h 3, g 3

h 5 ; g 5

h 5, g 5 (h 5 g 5)

h 5 g 5

h 5 ; g 5

aK, h 2, g 2

h 5, g 5

h bright? aK, Ha g 448, 3 ; 458, 2

h 5 ; g 5

h 5, g 5

h 5 ; g 5

h 5, g 5

h 5 ; g 5 (h 5 ; g 5)

aK, h 5, g d 3

448, 3

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January, 9, 1888.

Plate 1519.

	V.	H.	Type.	Remark.	No.	Description of lines on Spectra.
Book 18, E, Page.	19.0	7.1	I III	b	1282	$F_7 G = .3$
40	19.8	16.6	K III	b.c	1283	$F_2\frac{1}{2} G = .1$, $F_3 G = .1$ B, $F_3\frac{1}{2} G = .1$, $F_4\frac{1}{2} G = .2$, $F_5 G = .2$ B, $F_5\frac{1}{2} G = .1$, $F_7 G = .3$, $F_8 G = .1$ B, Lines between G and K, Lines below K.
42	15.9	13.0	I III	b.	1284	$F_3 G = .1$, $F_5 G = .2$, $F_7 G = .3$, Lines between G and H.
	15.7	23.1	I III	b.	1285	$F_5 G = .2$, $F_7 G = .3$.
	14.7	10.3	K III	b.c.	1286	$F_3 G = .1$ B, $F_3\frac{1}{2} G = .1$, $F_4\frac{1}{2} G = .2$, $F_5 G = .2$ B, $F_5\frac{1}{2} G = .1$, $F_7 G = .3$, $F_8 G = .1$ B, Lines between G & H.
	13.1	7.1	I III	b.	1287	$F_7 G = .3$
	13.8	20.9	F II	a	1288	G and h = .3, G dbl. 2 Lines below K.
	12.6	8.8	I III	b	1289	$F_3 G = .2$, $F_5 G = .2$, $F_7 G = .3$.
	12.0	9.1	I III	b	1290	$F_3 G = .2$, $F_5 G = .2$, $F_7 G = .3$.
	12.4	18.9	K III	b.c	1291	$F_3 G = .1$ B, $F_3\frac{1}{2} G = .1$, $F_4\frac{1}{2} G = .2$, $F_5 G = .2$ B, $F_5\frac{1}{2} G = .1$, $F_7 G = .3$, $F_8 G = .1$ B, Lines between G and K.
44	8.8	15.3	K III	b.c.	1292	$F_2\frac{1}{2} G = .1$, $F_3 G = .1$ B, $F_3\frac{1}{2} G = .1$, $F_4\frac{1}{2} G = .2$, $F_5 G = .2$ B, $F_5\frac{1}{2} G = .1$, $F_6 G = .2$, $F_6\frac{1}{2} G = .1$, $F_7 G = .3$, $F_8 G = .1$ B, $F_9 G = .1$, $F_9\frac{1}{2} G = .1$, Lines between G and H.
	8.5	23.4	F II	a	1293	G and h = .3, G dbl.
	7.6	23.8	I III	b.	1294	$F_7 G = .3$
46	6.8	19.3	I III	b.	1295	$F_5 G = .2$, $F_7 G = .3$.

Amt. of Fog. due to moon & clouds 7.5

Amt. of Fog. due to chemicals 7.6

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1887phae.proj..848F

448,3

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

HaK; 448,3; 458,2; 468,1

448,3; 458,2

HaK; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

448,3

aK; h3; Kd3

448,3; 458,2; 468,2

448,3; 458,2; 468,2

HaK; 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; Kd3

448,3

448,3; 458,2

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1887phae.proj..848F

January 9, 1887.

Plate 1478.

Book 18 E Page	V.	H.	Type.	No. Remark.	Description of lines on Spectra.
48	22.0	11.6	IIIb	I 1296	F7 G=.3
	20.9	17.6	IIIa	F 1297	G and h=.5
	10.9	11.5	IIIa	F 1298	G and h=.3 Gdbl.
	9.8	19.9	IIIb	I 1299	F5 G=.2, F7 G=.3.
	5.0	12.9	IIIa	F 1300.	G and h=.5
50	4.8	21.7	IIIb.c.	K 1301	F3 G=.1 B, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F7 G=.3 Lines between G & H. F3 G=.1 B, F3½ G=.1, F4½ G=.2, F6 G=.2 B,
	2.5	11.7	IIIb.c.	K 1302	F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H.

Amt. of Fog due to moon & clouds. 7.7

Amt. of Fog. due to chemicals 7.8

Plate 1520.

	21.9	12.0	IIIa	F 1303	G and h=.5,
	20.6	14.9	IIIa	F 1304	G and h=.3, Gdbl. 1 Line below K.
	19.2	22.3	IIIb.	I 1305	F7 G=.3
52	16.3	7.7	IIIa	F 1306	G and h=.5?
	15.3	15.6	IIIa	F 1307	G and h=.5 (G+h=.5)
	14.1	11.7	IIIa	F 1308	G and h=.5
	14.8	13.6	IIIb.c.	K 1309	F4½ G=.2, F5 G=.1 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H.
	13.6	15.1	IIIb.	I 1310	F7 G=.3,
	13.0	15.2	IIIb.c.	K 1311	F3 G=.1 B, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3. F8 G=.1 B, Lines between G & H.
54	13.9	23.9	IIIb.c.	K 1312.	F3 G=.1 B, F4½ G=.1, F5 G=.2 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G & H.
	12.4	5.3	IIIb.	I 1313	F5 G=.2, F7 G=.3 Lines between G & H.
	12.4	14.8	IIIb.c.	K 1314	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H. 1 Line below K.

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1887phae.proj..848F

4481,3
h5; H5
h3; Hd3
4481,3; 4581,2
h5; H5
Ha H; 4481,3; 456 b,1; 4581,1; 4611,1; 4681,1

Ha H; 4431,1; 4481,3; 456 b,1; 4582,2; 4612,2; 4661,1; 4681,1

h5; H5
/ak; h3; Hd3
4481,3
h5? H5?
h5; H5
h5; H5
Ha H; 4431,1; 4481,3; 456 b,1; 4581,1; 4611,2

4481,3
Ha H; 4431,1; 4481,3; 456 b,1; 4582,2; 4612,2; 4681,1

Ha H; 4431,1; 4481,3; 456 b,1; 4582,2; 4611,1; 4681,1

Ha H; 4481,3; 4581,2
/ak; Ha G; 4431,1; 4481,3; 456 b,1; 4582,2; 4612,2; 4661,1; 4681,1

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January, 9, 1888

Plate, 1520

Book 18, C. Page	V.	H.	Type	No.	Remark.	Description of Lines on Spectra.
✓	64	11.1	22.6	IIa	F 1315	G and h=.3,
✓		7.9	6.9	IIIb.c	K 1316	F3 G=.1 B, F3½ G=.1, F4½=.2, F5 G=.2 B, F5½ G=.1 F7 G=.3, Lines between G and H.
✓	56	6.8	15.4	IIIa	F 1317	G and h=.5
✓		5.9	7.4	I	B 1318	h 6 H=.4
✓		5.6	7.7	IIIb.	I 1319	F5 G=.2, F7 G=.3

Amt. of Fog due to moon & clouds. 7.7 Amt. of Fog due to chemicals 7.8

January, 10, 1887.

Plate 1521.

✓		22.9	13.2	IIa	F 1320	G and h=.5
✓	58	21.8	10.2	IIIa	F 1321	G and h=.5?
✓		20.3	13.5	IIIb.c	K 1322	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B F5½ G=.1, F6 G=.1, F6½ G=.1, F7 G=.3, F8 G=.1 B, F9 G=.1, Lines between G and H.
✓		19.6	8.7	IIa	F 1323	G and h=.3, G dbl. Lines below K.
✓		19.0	12.2	I	B 1324	h 6 H=.2
✓	60	16.6	9.8	IIIa	F 1325	G and h=.5?
✓		16.5	13.7	IIa	F 1326	G and h=.5?
✓		16.8	21.7	IIa	F 1327	G and h=.5?
✓		16.2	22.2	IIa	F 1328	G and h=.3
✓		15.2	14.2	IIa	F 1329	G and h=.5?
✓		15.4	17.5	IIIb.	I 1330	F5 G=.2, F7 G=.3
✓		14.6	18.3	IIa	F 1331	G and h=.5?
✓		14.3	19.6	IIa	F 1332	G and h=.5
✓	62	14.5	20.4	IIIb.	I 1333	F5 G=.2, F7 G=.3.
✓		13.1	8.9	IIa	F 1334	G and h=.5 (G + h=.5?)
✓		13.9	18.2	IIIb.c	K 1335	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F6 G=.1, F7 G=.3 B, F8 G=.1 B, F9 G=.1, Lines between G and H

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1887phae.proj..848F

h3, k3
HaG; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

h5; k5
402,4
448,3; 458,2

h5, k5
h5? k5?
HaK, 438,1; 443,1; 448,3; 451,1; 453,1; 456,1; 458,2; 461,2; 466,1;
468,1; 471,1

aK; h3, kd3
402,2
h5? k5?
h5? k5?
h5? k5?
h3, k3
h5? k5?
448,3; 458,2
h5? k5?
h5, k5
448,3; 458,2
h5 k5
HaK; 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.

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, F4½ G=.1, F5 G=.1 B, F5½ G=.1, F6 G=.1, F7 G=.3, F8 G=.1 B, F9 G=.1, Lines between G and H.
✓		12.3	14.9	II b	B 1337		h 6 H=.2
✓		12.0	17.9	III b	I 1338		F3 G=.2; F6 G=.2, F7 G=.3.

January, 12, 1888.
Plate 1521.

✓	64	10.4	11.7	III b.c	K 1339		F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F6 G=.1, F6½ G=.2, F7 G=.3, F8 G=.1 B, F9 G=.1, F9½ G=.1, Lines between G and H.
✓		10.0	13.6	II a	F 1339 a		G & h=.5?
✓		10.5	15.3	III a	F 1340		G and h=.5, G dbl.
✓		10.1	16.2	II a	F 1341		G and h=.5?
✓		9.6	14.7	II a	F 1342		G and h=.4, G dbl., Lines below K.
✓		9.3	10.2	II a	F 1343		G and h.5.
✓	66	7.7	15.1	I b	B 1344		G & h=.1.
✓		6.4	19.4	II a	F 1345		G and h=.5?
✓	68	4.7	15.2	I b	B 1346		G & 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. 7.6 Amt. Fogging due to chemicals. 8.0

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Ha4; 438,1; 443,1; 448,3; 453,1; 456,1; 458,1; 461,1; 468,1

~~H5~~; 402,2
448,3; 458,2; 468,2

Ha4; 436,1; 438,1; 443,1; 448,3; 451,2; 453,1; 456,2; 458,2; 461,2; 466,1;
468,1; 471,1

h5? g5?
h5; gd5
h5? g5?
ak; h4, gd4
h5, g5
448,1
h5? g5?
448,1
Ha4; 448,3; 458,2; 468,2

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1887phae.proj..848F

January, 12, 1888.
Plates, 1570

Book, 15, E. Page	V.	H.	Type	No.	Remark.	Descriptions of lines on Spectra.
5/2 ~~6.5~~	~~17.7~~		~~I~~	~~b~~	~~1348~~	~~F7 h=.3, G7 h=.3 h6 H=.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.
Plates 1584.

✓	74	21.8	23.6	III	b.c	I 1349.	F7 G=.3, Lines between G and H.
✓		20.8	7.3	III	b.c	I 1350.	F5 G=.2, F7 G=.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 ? (G7 h=.5 ?)
✓		16.6	15.5	I	b.	B 1353	h6 H=.2, Lines narrow.
✓		14.0	14.7	II	a	F 1358 a	G7 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 1355	F6 G=.3, h6 H=.3.
✓		10.5	8.6	II	a	F 1355 a	G7 h=.5
✓	80	8.9	9.7	III	b.c	I 1356	F5 G=.2, F7 G=.3.
✓		8.4	15.2	I	b.	B 1357	G5 h=.1, G7½ h=.5. Lines narrow
✓		7.0	18.4	I	b.	B 1358	G3 h=.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.c	I 1361	F5 G=.2, F7 G=.3.
✓		3.8	11.5	III	b.c	K 1362	F2½ G=.1, F3 G=.1 B F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F7 G=.3, F8 G=.1 B, Lines between G and H.
✓		3.0	18.1	III	b.c	I 1363	F5 G=.2, F7 G=.3
✓		2.2	9.8	II	a	F 1364	G and h=.5
✓	84	2.1	23.8	III	b.c	I 1365	F3 G=.2, F5 G=.2, F7 G=.3, Lines between G and H.

Amt. of Fog. due to moon & clouds 2.6 Amt. of Fog. due to chemicals 2.6

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1887phae.proj..842f

h 5 ; Gd 5

Hαβ, 448,3
448,3; 458,2
αK; H3, βd3
h3? β3? (h5? G5?)
Lines narrow, 402,2)
h5; G5
h5? β5?
Lines narrow
402,3; 453,3
448,3; 458,2)
Lines narrow. 446,5; 458,1
426,3
Lines narrow.
h5, β5
448,3; 458,2)
Hαβ; 443,1; 448,3; 450,2; 458,2; 461,3; 466,1; 468,1; 471,1

448,3; 458,2)
h5, β5
Hαβ; 448,3; 458,2; 468,2)

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1887phae.proj..848F

January, 13, 1888.
Plate. 1576.

	No.	V.	H.	Type.		Remarks.	Description of lines or Spectra.
Book, 18, C, Page		21.5	21.6	IIIb	i	1366	F3 G=.2, F5 G=.2, F7 G=.3.
✓	84	20.7	19.6	IIIb	i	1367	F7 G=.3
✓		18.7	15.6	IIa	F	1368	G and h dbl. =.5 Lines below K.
✓	86	18.8	20.8	IIa	F	1369	G and h=.5, G dbl.
		15.8	8.4	IIa?	F	1369a	G+h=.5
✓	88	15.1	11.4	III	i	1370	F7 G=.3, F8½ G=.2, Lines between G & H.
✓		15.2	21.6	IIa	F	1371	G and h=.5? (G+h=.5?)
✓		14.7	13.7	IIIb.c	K	1372	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.2, F6 G=.1, F7 G=.3 F8 G=.1 B, F9 G=.1, Lines between G & H.
✓		14.1	23.2	IIa	F	1373	G and h=.5 (G+h=.5)
✓		13.4	11.7	IIa?	F?	1373a	G+h=.5

January, 14, 1888.
Plate, 1576

✓	90	12.0	7.5	IIIb	i	1374	F7 G=.3
✓		12.6	10.9	IIb	G	1375	F8 G=.3, G3 H=.3.
✓		12.6	11.0	IIIb	i	1376	F7 H=.3
✓		12.9	16.6	IIIb	i	1377	F7 h=.2 (F2½ G=.2, F7 G=.3)
✓		12.8	17.3	IIa	F	1378	G and h=.5, Lines below K.
✓		12.1	23.9	IIa	F	1379	G and h=.2
✓		11.1	13.2	IIa	F	1380	G and h=.3
✓		11.4	15.6	IIa?	F	1380a	G+h=.5
✓	92.	10.6	8.3	IIIb	i	1381	F5 G=.2, F7 G=.3, Lines between G & H.
✓		10.4	8.5	IIIb.c	K	1382	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F6 G=.1, F7 G=.3, F8 G=.1 B, F9 G=.1, Lines between G & H
✓		10.0	13.8	IIIa	F	1383	G and h=.3, 1 Line below K
✓		10.3	15.0	IIa	F	1384	G and h=.3. (G+h=.3)
✓		9.6	19.0	IIa.b.c	G	1385	Peculiar Spectrum, G and h=.5, F5 G=.2 B, F6 G=.1, F7 G=.3, F8½ G=.2, Other lines

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1887phae.proj..848F

448,3; 458,2; 468,2

448,3

ak, hd 5, gd 5

h5, g5 d5

Ha g; 441,2; 448,3

h5? g5? (h5? G5?)

Ha g; 438,1; 443,1; 448,3; 453,1; 456,2; 458,2; 461,2; 466,1; 468,1; 471,1

h5, g5 (h5; G5)

h5; G5

448,3

421,3; 443,3

448,3

448,2 (448,3; 471,2)

ak; h5, g5

h2, g2

h3, g3

h5; G5

Ha g; 448,3; 458,2

Ha g; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

ak; h3; g3

h3, g3 (h3; G3)

H5, g5 Peculiar Spectrum

441,2; 448,3; 453,1; 446,2 Other lines

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January, 14, 1888.

Plate 1576

Book 18, E. Page	No.	V.	H.	Type.	Remarks	Description of lines on Spectrum
✓		9.1	20.3	II a? F	1385 a	G+h=.5 (G+h=1.5)
✓	92	9.5	23.8	III b.c K	1386	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3, F8 G=.1, Lines between G and H.
✓	94	7.7	9.5	I b B	1387	h6 H=.2.
✓		5.6	10.4	II a F	1388	G and h=.5
✓		5.6	17.5	III b: I	1389	F7 G=.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 F	1390	G and h=.5,
✓		22.1	22.7	II a F	1391	G and h=.5
✓		21.0	7.8	III a F	1392	G and h=.5
✓		21.1	13.6	III b.c K	1393	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B., F5½ G=.2, F7 G=.3, F8 G=.1 B. Lines betw. G and H., Lines below K.
✓		20.1	15.9	II a F	1394	G and h=.5
✓		20.5	21.4	II a F	1395	G and h=.5
✓		19.0	10.0	III b: I	1396	F7 G=.3
✓	100	19.8	19.5	II a F	1397	G and h=.5
✓		18.9	6.3	II a F	1398	G and h=.5?
✓		18.1	17.9	II a F	1398 a	G+h=.5
✓		17.0	14.8	II a F	1399	G and h=.5 (G+h=.5)
✓		17.5	20.2	I A	1400	Lines narrow
✓	102	16.4	13.5	II a F	1401	G and h=.5
✓		16.8	14.8	II a F	1402	G and h=.5
✓		16.8	20.1	II a F	1403	G and h=.5
✓		15.2	13.1	II a F	1404	G and h=.5
✓		15.3	20.9	II a F	1405	G and h=.5?
✓	104	14.3	15.2	II a F	1406	G and h=.5
✓		13.8	7.4	II a F	1407	G and h=.5

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h 5 ; G 5 (h 5 ; G 5)
HaG ; 443,1 ; 448,3 ; 456,1 ; 458,2 ; 461,2 ; 466,1 ; 468,1

4102,2
h 5 ; G 5
4418,3 ;

h 5 , G 5
h 5 , G 5
h 5 , G 5
aK ; HaG ; 443,1 ; 448,3 ; 456,2 ; 458,2 ; 461,2 ; 466,1 ; 468,1

h 5 , G 5
h 5 , G 5
4148,3
h 5 , G 5
h 5 ? G 5
h 5 ; G 5
h 5 , G 5 , (h 5 , G 5)
Lines narrow
h 5 , G 5
h 5 , G 5
h 5 , G 5
h 5 , G 5
h 5 ? G 5 ?
h 5 , G 5
h 5 , G 5

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January, 14, 1888.
Plate, 1564

Book, 18. E. Page.	V.	H.	Type.	Remark.	Description of Lines on Spectra.
✓ 104	12.3	12.4	IIIa	F 1408	G and h=.2
✓ 106	12.0	19.3	IIIa	F 1409	G and h=.3
✓	10.7	5.4	IIIa	F 1410	G and h.=.5
✓	10.9	10.2	IIIa	F 1411	G and h=.2
✓	10.2	17.2	IIIb.	K 1412	$F2\frac{1}{2}$ G=.1, F3 G=.1 B, $F3\frac{1}{2}$ G=.1, $F4\frac{1}{2}$ G=.2, F5 G=.2 B, $F5\frac{1}{2}$ G=.2, F6 G=.1, F7 G=.3, F8 G=.1 B, F9 G=.1, Lines between G and H.
✓ 108	8.0	16.5	IIIb.	K 1413	$F2\frac{1}{2}$ G=.1, F3 G=.1 B, $F3\frac{1}{2}$ G=.1, $F4\frac{1}{2}$ G=.2, F5 G=.2 B, $F5\frac{1}{2}$ G=.2, F7 G=.3, F8 G=.1 B, Lines between G and H.
✓	8.6	19.8	IIIa	F 1414	G and h=.5
✓	8.6	22.1	IIIa	F 1415	G and h=.3, Lines below K.
110					

January, 16, 1888.
Plate 1564.

✓	5.1	14.1	IIIa	F 1416	G and h.=.5, Lines below K
✓ 112	3.9	8.0	IIIa	F 1417	G and h=.3?
✓	3.5	11.7	IIIb.	K 1418	F3 G=.1 B, $F3\frac{1}{2}$ G=.1, $F4\frac{1}{2}$ G=.2, F5 G=.2 B, $F5\frac{1}{2}$ G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H.
✓	3.8	22.6	IIIb	I 1419	$F4\frac{1}{2}$ G=.2, F7 G=.3, Lines between G & H.

Amt. of Fog. due to moon & clouds 6.6 Amt. of Fog. due to chemicals 7.9

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1887phae.proj..848F

h 2, H 2
h 3, H 3
h 5, H 3
h 2, H 2
HaG; 438,1; 443,1; 448,3; 453,1; 456,2; 458,2; 461,2; 466,1; 468,1; 471,1

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

h 5; H 5
aK; h 3, H 3

aK; h 5, H 5
h 3 ? H 3 ?
HaG; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

HaG; 448,3; 461,2

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1887phae.proj..848F

Dark plate.

Very hard to measure January 16, 1888.

Plate, 1395

Book, 18, C. Page	No.	V.	H.	Type.	Remarks.	Description of lines on Spectra.
✓	6	19.7	10.7	II^a	F 1420	G and h = .5.
✓		18.4	20.7	III^b	I 1421	F_5 G = .2, F_7 G = .3, Lines between G & H.
✓		18.5	22.8	II^a	F 1422	G and h dbl.? = .3.
✓		17.2	13.1	II^a	F 1423	G and h = .3.
✓		17.4	19.6	II^a	F 1424	G and h dbl. = .4, Lines below K.
✓	8	16.5	15.5	II^a	F 1425	G and h = .5?
✓		15.2	10.5	II^a	F 1426	G and h, dbl. = .5? Lines below K
✓		16.4	14.5	II^a	F 1427	G and h = .3, G dbl., Lines below K.
✓		14.5	17.8	III^b	I 1428	F_7 G = .3
✓		12.2	6.6	III^b	I 1429	F_5 G = .2, F_7 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 dbl., Lines below K
✓	10	10.5	17.8	II^a	F 1434	G and h = .3, Lines below K.
✓		10.3	19.1	III^b	K 1435.	F_5 G = .2 B, F_7 G = .2, Lines between G and H, Lines below K.
		10.				
✓		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. 5.3

Amt. of Fog. due to chemicals 7.0

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1887phae.proj..848f

h 5; g 5

Ha b; 448,3; 458,2

hd? 3; gd? 3

h 3, g 3

a K; hd 4, gd 4

h 5? g 5?

a K; hd 5? gd 5?

a K; h 3; gd 3

448,3

448,3; 458,2

h 5, g 5

h 5, g 5

a K; h 5, g 5

a K; h 3; gd 3

a K; h 3, g 3

aK; Ha G; 448,2; 458,2

h 2; g 2

h 5? g 5?

h 5? g 5?

h 5? g 5?

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1887phae.proj..848F

Plate 175.

January, 17, 1888

Book, H. F. Page. V. H. Type. Remarks. Description of lines on Spectra.

✓ 34 5.4 11.2 IIa F 1440 G and h = .5, Lines below K.
Amt. of Fog. due to moon & clouds. 7.0 Amt. of Fog. due to chemicals 7.7

– Plate 179 –

✓ 11.1 10.9 IIa F 1441 G and h = .5
Amt. of Fog. due to moon & clouds. 7.7 Amt. of Fog. dye to chemicals. 7.8

Plate 177

✓ 140 15.9 12.9 IIb K 1442 F3 G = .1 B, F3½ G = .1, F4½ G = .2, F5 G = .2 B, F5½ G = .1, F7 G = .3, F8 G = .1 B, Lines between G and H.

✓ 142 15.4 23.1 IIa F 1443 G and h = .5

✓ 14.2 10.3 IIa F 1444 G and h = .5

✓ 144 4.5 13.9 IIIb.c K 1445 F3 G = .2 B, F3½ G = .1, F4½ G = .2, F5 G = .3 B, F5½ G = .1, F7 G = .3, F8 G = .1 B, Lines between G & H, 1 line below K.
Amt. of Fog. due to moon & clouds. 6.5 Amt. of Fog. due to chemicals. 7.0

Plate 905

✓ 180 13.9 14.0 IIa F 1446 G and h = 2

✓ 182 5.8 12.2 IIa F 1447 G and h = 3

✓ 14.6 15.4 IIIb I 1448 F7 G = 3

✓ 4.5 18.4 IIIb I 1449 F4½ G = .2 F6 G = .1 F7 G = .3.
Amt. of Fog. due to moon & clouds. 7.6 Amt. of Fog. due to chemicals. 7.8

Plate 904

✓ 184 10.0 9.8 IIa F 1450 G and h = .5
Amt. Fog. due to moon & clouds. 7.4 Amt. of Fog due to chemicals. 7.6

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1887phae.proj..848F

aK; h 5, g 5

h 5; g 5

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

h 5, g 5
h 5, g 5
aK; HaG; 443,1; 448,3; 456,1; 458,3; 461,2; 466,5; 468,2

h 2; g 2
h 3; g 3
448, 3
448, 3; 453,1; 461,2

h 5, g 5

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1887phae.proj..848F

January, 18, 1888.

Plate 193.

Book G, Page	h.	H.	Type.	Remark.	No.	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 b	B	1453	h 5 H = .3
	6.1	12.2	II a	F	1454	G and h = .3, G dbl., 2 Lines below K.
44	5.1	7.0	II a	F	1455	G and h = .5
	4.7	18.4	III b	I	1456	F 4½ G = .2, F 5½ G = .2, F 7 G = .3 Lines between G and H.
	4.0	14.9	I b	B	1457	h 6 H = .3

Book 1, G, Page

Plate 176

9	16.2	17.0	II a	F	1458	G and h dbl. = .3, 2 Lines below K.
	13.8	22.8	II a	F	1459	G and h dbl. = .3, Lines below K.
10	11.3	12.2	III b	I	1460	F 7 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 b c	K	1463	F 3 G = .1 B, F 4½ G = .2, F 5 G = .1 B, F 7 G = .3, F 8 G = .1, Lines between G & H.
	~~5.5~~	~~12.8~~	~~I~~			
	5.5	12.8	III b c	K	1464	F 2½ G = .1, F 3 G = .1 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .2 B, F 5½ G = .1, F 6 G = .1, F 7 G = .3, Lines between G & H.
	4.0	9.8	III b	I	1465	F 7 G = .3

Amt. Fog. due to moon & clouds 6.8 Amt. Fog. due to chemicals 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 dbl. = .5
	15.2	10.4	II a	F	1468	G and h = .2½
	16.4	8.7	II a	F	1468 a	G and h = .5
	6.0	18.6	III b c	K	1469	F 3 G = .1 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .1 B, F 5½ G = .1, F 7 G = .3. Lines between G & H.

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1887phae.proj..848F

h 5; h 5

h 5; h 5

403, 3

2 aK; h 3; h d 3

h 5; h 5

Ha h; 448,3; 456,2; 461,2

402; 3

2 aK; hd 3; hd 3

aK; hd 3; hd 3

448,2

h 5; h 5

h 5; h 5 (h 3, h 3)

Ha G; 443,1; 448,3; 458,1; 461,2; 468,1

Ha G; 448,3; 453,1; 456,1; 458,2; 461,2; 466,1; 468,1; 471,1

448,3

h 3, h 3

hd 5; hd 5

h 2; h 2

h 5?; h 5?

Ha h; 448,3; 456,1; 458,1; 461,2; 466,1; 468,1

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1887phae.proj..848F

January, 18, 1888.

Plate 197.

Book 1, G. Page	V.	Int.	Remark. Description of lines on Spectra.
12	4.2	7.2	~~III~~ ~~b~~ K 1470. F 3 G=.2 B, F 5 G=.3 B, F 7 G=.3, Lines between G and K. 2 Lines below K.

Amt. of Fog. due to moon & clouds. 6.2 Amt of Fog due to chemicals 6.5

January, 19, 1888.

Plate 863.

Book 6, G. Page				
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.

Book 1, G. Page 8				
	22.3	7.5	~~II~~ ~~a~~ F 1471 a	G and h) = .5?
	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

Plate 907.

Book 9, F. Page				
4.	21.1	17.8	~~II~~ ~~a~~ F 1474	G and h=.5, Lines below K.
	21.0	9.6	~~I~~ ~~b?~~ B 1475	h 6 H=.1.
	18.2	10.1	~~III~~ ~~b~~ I 1476	F 5½ G=.2, F 7 G=.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	h 6 H=.2

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1887phae.proj..848f

aK; Ha k; 448,3; 458,3; 468,2



H2; k2

h5? k5?
h5; k5
Hd5; kd5

aK; h5, k5
3D2,1
Ha k; 448,3; 458,2
h5; k5
Lines narrow
4D2,2

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1887phae.proj..848F

January, 19, 1888.
Plate, 907.

Book, 9, F.	Page	V.	H.	Type.	No.	Remarks.	Description of Lines or Spectra.
✓	6	9.5	12.5	~~I~~ b.	B	1480	h 6 H = 1, B 4 y = .4.
✓		6.5	10.0	~~I~~ b	B	1481	G y h = .4 h 4 H = .4.
✓	8	5.4	23.9	~~IX~~ a	F	1482	G and h = .5
✓		5.1	21.3	~~IX~~ a	F	1483	G and h = .3, G dbl.
✓		4.3	11.7	~~III~~ b, c.	K	1484	Numerous bright and faint lines.

Amt. of Fog due to clouds & moon 7.6. Amt. of Fog. due to chemicals 7.7

January, 20, 1888.
Plate, 906.

Book, 9, F.	Page	V.	H.	Type.	No.	Remarks.	Description of Lines or Spectra.
✓		21.7	13.2	~~I~~ b	B	1485.	G 6 h = .2, h 4 H = .3
✓	8	21.2	15.3	~~II~~ b	I	1486	F 7 G = .3
✓		18.5	10.6	~~III~~ b	I	1487	F 4 G = .2, F 7 G = .2, Lines between G & H, Lines below K.
✓		15.4	10.4	~~III~~ b, c	K	1488	F 3 G = .2 B, F 4 1/2 G = .1, F 5 G = .2 B, F 5 1/2 G = .1, F 6 G = .1, F 7 G = .3, F 8 G = .1 B, F 9 G = .1, Lines between G and H. Line below K.
✓	10	14.2	9.8	~~II~~ b	I	1489	F 7 G = .3, Lines between G & H.
✓		8.5	6.5	~~III~~ b, c	K	1490	F 3 G = .1 B, F 4 1/2 G = .1, F 5 G = .1 B, F 7 G = .3, Lines between G & H, 2 Lines below K.
✓		7.8	18.0	~~II~~ a, 2	F'	1490 a	G + h = .5
✓		7.2	15.8	~~II~~ a	F	1491	G and h = .5

Amt. of Fog due to moon & clouds. 7.4 Amt. of Fog due to chemicals 7.8

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P. 382,4 ; 402,1
405,4; 417.4
h5; G5
h3; Gd3
Numerous bright or faint lines

405,3; 419.2
418,3
aK; HaG; 448,2; 463,2

aK; HaG; 438,1; 443,1; 448,3; 453,1; 456,1; 458,2; 461,1; 468,2

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

h5, G5
h5; G5

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1887phae.proj..848f

January, 20, 1888

Plate 910

Book 9. F. Page.	V.	H.	Type.	No. Remark.	Description of Lines on Spectra.
✓ 32	18.8	16.5	~~III~~ b I	1492	F 7 G = .3.
✓	14.9	20.8	~~III~~ b I	1493	F 5 G = .2, F 7 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~~ b I	1497	F 3 G = .2, F 7 G = .3
✓	10.3	10.0	~~II~~ a F	1498	G and h = .5
✓	8.4	7.6	~~II~~ a F	1499	G and h = .5
✓	5.0	14.0	~~II~~ a F	1500	G and h = .2, G dbl.

Amt. of Fog. due to moon & clouds. 7.5 Amt. of Fog. due to chemicals 7.7

Plate 140 (Pole Plate).

Book 8 J. Page 24	20.9	22.9	~~III~~ b ? I	1501	F 7 G = .5, Lines between G & H. Lines below K.
✓	19.1	16.3	~~II~~ a F	1502	G & ~~III~~ h = .5
✓	18.3	21.2	~~III~~ b ? I	1503	F 3 G = .2, F 5 G = .2, F 7 G = .3, Lines between G & H.
✓	16.3	15.0	~~III~~ bez K	1504	F 2½ G = .1, F 3 G = .2 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .2 B, F 5½ G = .1, F 6 G = .1, F 7 G = .3, F 8 G = .1 B, F 9 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 dbl. = .2? Numerous lines.
✓	8.0	9.3	~~II~~ b ? I	1508	F 3 G = .2, F 5 G = .2, F 7 G = .3,
✓	2.2	13.7	~~II~~ a F	1509	G & h = .5

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1997phae.proj...84G

448, 3

448, 3; 458, 2

h 5, g 5

h 5, g 5, (h 5, g 5)

h 3; g 3

448, 3; 468, 2

h 5, g 5

h 5; g 5

h 2; g d 2

aK; Ha g; 448, 3

h 5; g 5

Ha g; 448, 3; 458, 2; 468, 2

aK; Ha g; 438, 1; 443, 1; 448, 3; 453, 1; 456, 1; 458, 2; 461, 2; 466, 1; 468, 2; 471, 1

h 2; g 2

h 5, g 5

Numerous lines; h d 2? g d 2?

448, 3; 458, 2; 468, 2

h 5; g 5

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1887phae.proj..848F

January, 21, 1888.
Plate 960.

Book, 9, F, Page	V.	H.	Type.	No. Remarks.	Description of lines on Spectra.
60	21.5	17.2	~~I~~ b	B 1510	G 6 h=.3
	20.7	18.9	~~II~~ a	F 1511	Gand h=.5

January, 23, 1888
Plate 960.

	14.2	14.1	~~II~~ a	F 1512	Gand h=.5, Lines below K.
	~~13.5~~	~~19.1~~	~~II a~~	~~F 1512 a~~	~~Gand h=.5~~
62	12.5	14.7	~~II~~ a	F 1513	Gand h=.5 (Gand h=.2?)
	9.8	9.6	~~II~~ a	F 1514	Gand h=.5, Gdbl., Lines below K.
	8.4	10.8	~~II~~ a	F 1515	Gand h=.5
	8.1	18.0	~~II~~ a	F 1516	Gand h=.5
	6.5	13.3	~~II~~ a	F 1517	Gand h=.5

Amt. of F due to moon & clouds 6.3 Amt. of Fog due to chemicals 6.4

Plate 974

64	14.0	13.8	~~II~~ a	F 1518	Gand h=.5, Lines below K
	10.2	9.3	~~II~~ a	F 1519	Gand h=.2, Gdbl.

Amt. of Fog due moon & clouds. 6.6 Amt. of Fog. due to chemicals. 6.7

Plate 973.

96	15.6	12.1	~~I~~ b	B 1520	F 6 G=.1, B 4 γ=.3.
	~~8.0~~	~~14.3~~	~~I~~ b	~~1521~~	

Amt. of Fog. due to moon & clouds. 6.6 Amt. of Fog. due to chemicals 6.8

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1887phae.proj..849E

419,3
h 5 ; k 5⁻

aK ; h 5 ; k 5⁻
~~h 5 ; k 5⁻~~
h 5 ; k 5⁻ (h 2 ? ; k 2 ?)
aK ; h 5 ; k d 5⁻
h 5 ; k 5⁻
h 5 ; k 5⁻
h 5 ; k 5⁻

aK ; h 5 ; k 5⁻
h 2 ; k d 2

} 382,3 ; 453,1

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1887phae.proj..848F

January, 23, 1888.

Plate, 959.

Book.	Page	V.	H.	Type.	No.	Remarks. Description of Lines on Spectra.
✓	108	5.2	22.9	IIIa F	1521	G and h = .5 Lines below K.
✓		5.8	11.8	IIIb I	1522	F 4½ G = .2, F 7 G = .3,

Amt. of Fog due to moon & clouds. 6.3 Amt. of Fog due to chem. 6.4

Book. 17, G. Page.

Plate, 1709.

" " " 150 Amt. of Fog. due to moon & clouds. 7.2 Amt. of Fog due to chemicals 7.2

Standard Light 5.7

Plate 1715

" " " 150 Amt of Fog. due to moon & clouds. 7.0 Amt. of Fog. due to chemicals 7.1

Standard Light.

Plate 1563

" " ✓	150	22.6	15.2	IIIa F	1523	G and h = .5
✓	152	13.6	11.8	? P?	1523a	Peculiar spectrum. G bright ?
✓	152	13.4	14.4	IIIa F	1524	G and h = .2
✓		11.5	18.6	IIIa F	1525	G and h = .5
✓		8.1	22.1	IIIa F	1526	G and h = .5
✓	154	5.2	11.9	Ib B	1527	h 6 H = .2, H 6 a = .2
✓		5.3	12.4	IIIa F	1528	G and h = .2
✓		4.4	7.3	IIIa F	1529	G and h = .5
✓		3.9	15.7	III b I	1530	F 4½ G = .2, F 7 G = 3
✓		38	18.7	III b I	1531	F 4½ G = .2, F 5½ G = .2, F 7 G = .3

Amt. of Fog. due to moon & clouds. 6.3 Amt. of Fog. due to chemicals 6.5

" " " ✓ 154 18.6 17.4 IIIa F 1531a Plate 1708 G & h = .2

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1887phae.proj..849F

aK; h5; g5

448,3; 461,2

h5 g5;
bright?; Peculiar spectrum.
h2; g2
h5; g5
h5; g5

392,2; 402,2
h2; g2
h5; g5
448,3; 461,2
448,3; 45b,2; 461,2

h2; g2

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1887phae.proj...848F

Book 10, 9. Page 32

January 24th 1888.

Plate 864

v.	H.	Type.	Remark.	Description of lines on Spectra.
13.5	6.7	IX bc	K	15-32 $\mathcal{F}_3 g = .1B$, $\mathcal{F}_{4\frac{1}{2}} g = .1$, $\mathcal{F}_5 g = .2B$, $\mathcal{F}_{5\frac{1}{2}} g = .1$, $\mathcal{D} = 1.2H$, H line bright and Lucid
				$\mathcal{F}_1 g = .3$, $\mathcal{F}_8 g = .1B$ Lines between G and H
7.3	21.0	X b	B	15-33, $\mathcal{F}_6 g = .2$, $h\beta 20 = .2$, $H_2.6 = .2$, $B6V = .2$?

Amt of fog due to moon & clouds. .2 Amt of fog due to Chemicals .2

Plate 949

42	21.7	22.5	IX a	F	15-34, G and h = .5
	17.5	16.4	III b	I	15-35 G amble
	12.6	19.3	II a	F	15-36 G + h = .3, Lines below K
	9.3	17.7	II a	F	15-37 G + h = .5
	3.9	9.4	III bc	K	15-38 $\mathcal{F}_{2\frac{1}{2}} g = .1$, $\mathcal{F}_3 g = .1B$, $\mathcal{F}_{3\frac{1}{2}} g = .1$, $\mathcal{F}_{4\frac{1}{2}} g = .2$, $\mathcal{F}_5 g = .2B$, $\mathcal{F}_{5\frac{1}{2}} g = .1$, $\mathcal{F}_1 g = .3$,
	4.0	23.1	X a	F	15-39 G + h amble = .5, Lines below K

Amt of Fog due to moon & clouds .8 Amt of fog due to chemicals .9

Plate 894

48	23.3	6.7	IX a	F	15-40 G + h = .5
	21.6	14.2	II a	F	15-40 a b G + h = .5
	20.3	10.6	II a	F	15-41 G + h = .3, Lines below K
	19.8	9.6	IX a	F	15-42 G + h = .3, Lines below K
	19.6	14.7	IX a	F	15-43 G + h = .5, Lines below K
	19.5	17.5	III b	I	15-44 $\mathcal{F}_1 g = .3$
	19.5	13.0	IX a	F	15-45 G + h = .5, (G + h = .5? 2 lines below K.) Lines below K
	19.0	14.2	IX a	F	15-46 G + h = .2
	17.2	18.7	III bc	K	15-47 $\mathcal{F}_3 g = .1B$, $\mathcal{F}_{4\frac{1}{2}} g = .1$, $\mathcal{F}_5 g = .1B$, $\mathcal{F}_{5\frac{1}{2}} g = .1$, $\mathcal{F}_1 g = .1$, $\mathcal{F}_8 g = .1B$, Lines between G & H

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1887phae.proj..848

Ha h; 443,1; 448,3; 456,1; 458,2; 461,1; 468,1

381,2? 392,2; 402,2; 453,2

h5; h5

hd

aK; h3; h3

h5; h5

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

aK; hd5; hd5

h5; h5

h5; h5

h5? h5?

aK; h3; h3

aK; h3; h3

aK; h5; h5

448,3

aK; h5; h5 (aK; h5? h5?)

h2; h2

Ha h; 443,1; 448,1; 456,1; 458,1; 461,1; 468,1

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1887phae.proj..848f

Book 10 Page 3-0

January 24 1888

Plate 8 94

V.	H.	Type.	Remark.	Description of Lines on Spectra.
	16.3	12.6	IV$^{a?}$ F$^{?}$	1548	G + h = .5 – (G + h = .5)
	15.5-	7.1	III$^{b?}$ I$^{?}$	1549	F5-½G = .2, F + G = .3, Lines between G + H
	13.7	21.3	IV^{a} F	1550	G + h = .5, Lines below K.
	8-2 12.4	11.2	IV^{a} F	1551	G + h = .5,
	11.8	19.3	III^{a} F	1552	G + h = .5, – (G + h = .5)
	10.4	22.6	IV^{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	IV^{a} F	1554	G + h = .3, (G + h = .5)
	9.2	13.5-	III^{a} F	1555	G + h = .3,
	6.6	10.7	IV^{a} F	1556	G + h = .2 Lines below K

Amt. of Fog due to moon + clouds 7.3 Amt. of Fog due to Chem 7.7

January, 25, 1888

Plate 918

Book 9, F Page 14	15.5	18.8	III E	1557	3 Lines below K.
	14.9	10.9	II$^{a.1}$ F'	1557 a	G + h = .5
16	14.6	5.6	III$^{b.c}$ K	1558	F5-G = .1 B, F5½-G = .1, F + 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^{b} B	1562	G 6 h = .1 ?, B + y = .3
	9.3	21.4	II^{a} F'	1562 a	G + h = .5
	8.5	20.5	II^{a} F	1563	G + h dbl. = .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^{b} B	1565	F 8 G = .1, G 6 h = .2, h 6 H = .1, H 6 a = .1
	4.8	16.8	II$^{a.b}$ F'	1565 a	G + h = .5
	4.5	14.3	I^{b} B	1566	a + B = .3, B + y = .3?
	4.1	13.9	I^{b} B	1567	h 6 H = .2, B + y = .2

Amt. of Fog. due to moon & clouds. 5.8 Amt of Fog. due to chemicals 6.4

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1887phae.proj..848f

h 5 ; g 5 (h 5, g 5)
Ha g ; 448,3 ; 458,2)
a K ; h 5 ; g 5
h 5 ; g 5
h 5 ; g 5 (h 5, g 5)
a K ; h 5, g 5
h 5 ; g 5
h 3 ; g 3 (h 5, g 5)
h 3 ; g 3
a K ; h 2 ; g 2)

3 a K.
h 5 ; g 5
a K ; Ha g ; 448,3 ; 458,1 ; 458,1

h 5 ; g 5
h 5 ; g 5
h 5 ; g 5
h 5 ; g 5 (h 5 g 5) c.
h 5 ; g 5
382,3 ; 419,1 ?
h 5 ; g 5
hd 5 ; g d 5 (h 5 ? g 5 ?)
a K ; h 5 ; g 5 (h 5, g 5)
392,1 ; 402,1 ; 419,2 ; 443,1
h 5 ; g 5
382,3 ? 387,3
382,2 ; 402,2

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1887phae.proj..848f

Hard to Measure

January, 26, 1888.
Plate, 298.

Book, 4, F, Page	No.	V.	H.	Type	Remark.	Description of Lines on Spectra.
✓	4	21.1	11.1	I b B	1568	F 6 G = .2, G 6 [illegible] = .1, h 6 H = .2, H 6 a = .1.
✓		20.9	17.7	II a F	1569	G = .4 h = .2
✓		18.2	9.0	I b B	1570	G 6 h = .6, h 5 H = .6.
✓		17.6	16.6	I b B	1571	h 6 H = .1, H 6 a = .1.
✓		17.4	14.7	I b B	1572	F 6 G = .2, h 6 H = .2, H 6 a = .2
✓		16.9	12.4	II a F	1573	G and h = .5, Lines below K.

January, 27, 1888.
Plate, 298.

Book, 4, F, Page						
✓		14.5	18.5	II b I	1574	F 4½ G = .2, F 5½ G = .2, F 7 G = .3.
✓	6	13.5	23.8	II a F	1575	G and h = .2, G dbl., Lines below K.
✓		13.1	11.2	I b B	1576	F 6 G = .1, h 6 H = .1.
✓		12.7	11.8	I b B	1577	h 6 H = .1, α 4 β = .5.
✓		12.5	14.6	II b I	1578	F 7 G = .3
✓		12.7	19.3	I A	1579	Lines narrow.
✓	8	9.5	18.3	I b B	1580	Additional Lines
✓		6.7	15.8	II b I	1581	F 4½ G = .2, F 7 G = .3.
✓		6.7	16.4	II a F	1582	G and h = .2, G dbl., Lines below K.

Amt. of Fog. due to moon & clouds. 6.2 Amt. of Fog. due to chemicals. 7.1

Plate. 297.

" ✓ "	12	15.0	13.0	II a F	1583	G and h = .3, G dbl., 2 Lines below K.
✓		13.5	14.7	II b I	1584	F 4½ G = .2, F 5½ G = .2, F 7 G = .3, Lines between G and H.
✓		13.5	15.6	II b I	1585	F 4½ G = .1, F 7 G = .3, Lines between G & H.
✓	14	6.8	15.7	II b I	1586	F 7 G = .2, Lines between G and H.
✓		4.0	19.9	I b B	1587	F 6 G = .2, G 6 h = .2, h 6 H = .2, H 6 a = .2.
✓		3.1	12.7	II b R	1588	F 3½ G = .1, F 4½ G = .2, F 5 G = .2 B, F 5½ G = .2, F 7 G = .3, F 8 G = .1 B, Lines between G & H,

Amt. of Fog. due to moon & clouds 6.3 Amt. of Fog. due to Chem. [illegible] lines below K.

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1887phae.proj..848f

1 392,1 ; 402,2 ; 419?1 ; 453,2
h2 ; H4
403,6 ; 419,6
1 392,1 ; 402,1
1 392,2 ; 402,2 ; 453,2
aK ; h5 ; H5

448,3 ; 456,2 ; 461,2
aK ; h2 ; Hd2
402,1 ; 453,1
1 387,5 ; 402,1
448,3
Lines narrow
Additional lines
448,3 ; 461,2
aK ; h2 ; Hd2

aK ; h3 ; Hd3
Hall ; 448,3 ; 456,2 ; 461,2

Hall ; 448,3 ; 461,1
Hall ; 448,2
392,2 ; 402,2 ; 419,2 ; 453,2
Hall ; 443,1 ; 448,3 ; 456,2 ; 458,2 ; 461,2 ; 466,1

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1887phae.proj..848f

January, 27 1888.

Plate 310

Book, 4, Fr.	Page.	V.	H.	Type	No.	Remark.	Description of lines on Spectra.
✓	14	20.7	14.6	I	A	1589	Lines narrow
✓		20.5	19.1	II & III	F	1590	G=.4, h=.1
✓		16.0	9.4	III & IV	K	1591	F2½ G=.1, F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F6 G=.1, F7 G=.3, F8 G=.1 B, Lines between G and H, 1 Line below K.
✓	16	15.7	5.6	III & IV	I	1592	F4½ G=.2, F7 G=.3, Gdbl.?
✓		14.5	14.3	III & IV	I	1593	F4½ G=.2, F5½ G=.2, F7 G=.3, Lines between G and H, Lines below K.
✓		13.5	9.1	I	A	1594	Lines narrow
✓		13.0	10.7	I & II	B	1595	F6 G=.2, h6 H=.2
✓		11.8	12.9	I & II	B	1596	F6 G=.2, h6 H=.2
✓		10.0	15.8	III & IV	I	1597	F7 G=.3
✓		9.1	17.2	I & II	B	1598	h6 H=.1
✓		6.9	10.7	II a & III	F	1598 a	G+h=.5
✓	18	3.0	19.3	III & IV	I	1599	F4½ G=.2, F7 G=.3, Lines between G and H.

Ant. of Fog. due to mun & clouds. 6.7

Ant. of Fog due to chemicals 7.7

Book 18, Fr. 116

Plate 2242

✓		20.0	13.5	II & III	I	1600	F3½ G=.2, F4½ G=.2, F5½ G=.2, F7 G=.3.
✓		17.1	8.6	II a & III	F	1600 a	G+h=.5
✓		17.0	23.0	III & IV	I	1601	F7 G=.3, Lines between G & H, Lines below K.
✓		16.0	21.9	II & III	F	1602	G & h=.5 (G+h=.5)
✓		15.3	7.3	II & III	F	1603	G & h=.5
✓		15.6	17.1	II & III	E	1604	Lines below K.
✓		14.3	7.2	II & III	F	1605	G & h=.2, Lines below K.
✓		14.0	8.9	II & III	F	1606	G & h=.3, Lines below K.
✓		13.5	23.0	II & III	F	1607	G & h=.5 Lines below K.
✓		12.5	16.1	II a & III	F	1607 a	G+h=.5 (G+h=.5)

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1887phae.proj..848f

Lines narrow

h1 ; g4

1aK ; Ha g , 443,1 ; 448,3 ; 453,1 ; 456,1 ; 458,2 ; 461,2 ; 466,1 ; 468,1 ; 471,1

gd ? 448,3 ; 461,2

aK ; Ha g , 448,3 ; 456,2 ; 461,2

Lines narrow

402,2 ; 453,2

402,2 ; 453,2

448,3

402,1

h5 ; g5

Ha g , 448,3 ; 461,2

448,3 ; 456,2 ; 461,2 ; 466,2

h5 ; g5

aK ; Ha g , 448,3

H,5 ; g5 (h5 , g5

h5 ; g5

aK

aK ; h2 ; g2

aK ; h3 ; g3

aK h5 ; g5

h5 , g5 (h5 , g5)

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1887phae.proj..848F

January 27/1888.
Plate 2242.

Book, 18/6. p. 120	V.	H.	Type	No. Remark.	Description of Lines on Spectra.
✓	10.6	8.6	II^a F	1608	G & h = .5
✓	8.6	14.4	II^a F	1609	G & h = .5 (G + h = .5)
✓	6.5	21.2	II^a F	1610	G & h = .3
✓	4.0	16.4	II^a F	1611	G & h = .5

Sl. Lt. (5.3, 5.8) | Amt. of fogging due to Moon & Clouds. 5.5 | Amt. of fogging due to Chemicals. 4.5

January, 28, 1888.
Plate 300.

Book 4, P. Page	V.	H.	Type	No. Remark.	Description of lines on Spectra.
✓ 18	20.1	7.4	IV^vc K	1612	F 2½ G=.2, F3 G=.1 B, F 3½ G=.1, F 4½ G=.2, F 5 G=.3 B, F 5½ G=.2, F 6 G=.1, F 7 G=.3, F 8 G=.1 B, F 9 G=.1, Lines between G and H.
✓	16.1	12.7	II^a F	1613	G and h=.4, 1 Line below K
✓ 20	12.5	21.0	II^a F	1614	G and h=.2, 2 Lines below K.
✓	11.8	20.1	IV I	1615	F 4½ G=.1, F 5½ G=.1, F 7 G=.3 Lines between G and H, 2 Lines below K.
✓	11.0	10.4	I B	1616	F 6 G=.1, h 6 H=.2,
✓	11.1	18.7	I B	1617	h 6 H=.3
✓	5.9	10.3	III I	1618	F 4½ G=.2, F 7 G=.3
✓	6.0	17.0	IV vc K	1619	F 1 G=.1 B, F 1½ G=.2, F 2 G=.1 B, F 2½ G=.2, F 3 G=.2 B, F 3½ G=.1, F 4½ G=.2 B, F 5 G=.2, F 6 G=.3, F 6½ G=.1, F 7 G=.2, F 7½ G=.3 F 8 G=.1 B, F 9 G=.1, Lines between G & H.
✓	6.0	17.6	IV vc K	1620	F 3 G=.1 B, F 4½ G=.2, F 5 G=.2 B, F 5½ G=.2, F 7 G=.3, F 8 G=.1 B, F 9 G=.1, Lines between G and H. Several lines below K.
✓	5.9	20.8	III vc K	1621	F 2 G=.2 F 2½ G=.3, F 3 G=.1 B, F 3½ G=.1, F 4½ G=.3 F 5 G=.2 B, F 5½ G=.1, F 7 G=.3 G dbl 2 Lines betw. G & H.

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1887phae.proj..848F

h5; G5

h5; G5 (h5, G5).

h3; G3

h5, G5

Ha; 438; 443,1; 448,3; 453,1; 456,2; 458,3; 461,2; 466,1; 468,1; 471,2

1aK; h4; G4

aK; h2; G2

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

402,2; 453,1

402,3

448,3; 461,2

Ha; 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, Ha; 438,1; 443,1; 448,3; 456,2; 458,2; 461,2; 468,1

Ha; Gd? 448,3; 456,1; 458,2; 461,3; 466,1; 468,1; 471,3; 474,2

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January, 28, 1888.

Plate 330

Book, H. F. Page	V.	H.	Type	No. Remark.	Description of lines on Spectra.
✓ 22	1.7	22.9	IIIb I	1622	F3 G=.2, F5 G=.2, F7 G=.3, Lines betw. G & H

Amt. of Fog. due to moon & clouds. 7.3 Amt. of Fog. due to chemicals 7.5

Plate 332.

✓ 24	14.5	14.7	IIIb I	1623	F7 G=.2.

Amt. of Fog. due to moon & clouds. 6.9 Amt. of Fog. due to chemicals 7.0

Plate 203.

Hard to measure.

✓ 26.	20.5	8.6	Ib B	1624	h 6 H=.2

January, 30, 1888.

Plate 203

✓	20.0	19.4	Ib B	1625	h 6 H=.1
✓	17.9	7.1	IIa T	1626	G and h=.5, 2 lines below K.
✓	17.5	21.6	Ib B	1627	h 6 H=.1
✓	16.5	23.2	IIa P	1628	G and h=.2?, Lines below K.
✓	15.0	12.9	IIa T	1629	G and h=.5, G dbl., 2 lines below K.
✓	12.6	12.9	Ia D	1630	h 5 H=.3 B?
✓	12.0	7.7	IIIb I	1631	F7 G=.3
✓	11.9	17.1	Ia B	1632	F6 G=.2, h 6 H=.2, H 6 a=.2, B4 γ=.2
✓	11.5	16.6	IIa T	1633	G and h=.4 Lines below K, F6 G=.2 B.
✓ 28	8.7	17.8	Ib B	1634	F8 G=.1, h 6 H=.2
✓	6.4	12.1	Ia B	1635	h 6 H=.2,
✓ 30	5.5	14.5	Ib B	1636	F6 G=.2, G 6 h=.2

Amt. of Fog. due to moon & clouds. 5.9 Amt. of Fog. due to chemicals 6.1

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1887phae.proj..848F

Ha 2 ; 448,3; 458,2; 468,2

448, 2.

402, 2

402, 1
2aK; h5; 25
402, 1
aK; ~~429,2~~ h2; G2?
2aK; h5, 2d5
403, 3 ?
448, 3
382, 2 ; 392, 2 ; 402, 2 ; 453, 2
453, 2 ; aK; h4; 24 Spectrum of A star superposed?
402, 2 ; 443, 1
402, 2
419, 2 ; 453, 2

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January, 30, 1888.
Plate, 201

Book.	H.	F.	Page.	V.	H.	Type.	No. Remark.		Description of lines on Spectra.
✓		30	17.0	7.7	I/II	B		1637	h 6 K = .2
✓			15.4	5.7	II/I	F		1638	G and h dbl. = .5, 2 Lines below K.
✓			11.8	6.2	IV/I	F		1639	G and h dbl. = .5, Lines below K.
✓		32	7.7	23.5	III	F.C.	K	1640	F3 G = .1 B, F4½ G = .1, F5 G = .2 B, F5½ G = .1, F7 G = .3, F8 G = .1 B, F9 G = .1, Lines between G and K, Lines below K.
✓			5.5	24.1	III/I	B		1641	F7 G = .3, Lines between G & K, 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	IV/I	F		1642	G and h = .2, G dbl.?, Lines below K.
✓			10.8	16.4	IV/I	F		1643	F7 G = .3
✓			10.3	16.1	IV/I	F		1644	F5 G = .2, F7 G = .3
✓		38	9.6	15.4	IV/I	F		1645	G and h = .4
✓			6.1	24.1	IV/I	F		1646	F5 G = .2, F7 G = .3, Lines between G & K, Lines below K.
✓			4.0	23.2	IV/I	F	K	1647	F3 G = .1 B, F4½ G = .1, F5 G = .2 B, F5½ G = .1, F7 G = .3, F8 G = .1 B, Lines between G & K, Lines below K.

Amt. of Fog. due to moon & clouds. 6.0 Amt. of Fog. due to chemicals. 6.9

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1887phae.proj..848F

402, 2)
aK; hd$_5$; gd$_5$
aK; hd$_5$; gd$_5$
aK; Hγ; 438,1; 443,1; 448,3; 456,1; 458,2; 461,1; 468,1

2aK; Hγ; 448,3

aK; h$_2$; gd$_2$
448,3
448,3; 458,2)
nν; gν
aK; Hγ; 448,3; 458,2)

aK; Hγ; 443,1; 448,3; 456,1; 458,2; 461,1; 468,1

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1887phae.proj..848F

Hard to measure January, 30, 1888
Plated 286.

Book, 4, F. Page	V.	H.	Type	Remark.	Description of Lines on Spectra.
✓	38 20.8	16.1	II a	F 1648	G and h=.2, Lines below K.
✓	19.5	9.4	II a	F 1649	G and h=.5, Lines below K.
✓	40 11.5	6.2	II/I	b.c. K 1650	F5 G=.2 B, F7 G=.2, Lines between G & H, Lines below K.
✓	11.4	12.5	III	b I 1651	F7 G=.3,
✓	42 10.5	22.0	II a	F 1652	G and h=.5, 1 Line below K.
✓	8.7	11.8	II b	F 1653	G and h=.2, 2 lines below K.
✓	44 4.1	18.3	II a	F 1654	G and h=.5 ~~(G & h=.2? 2 lines below K)~~
✓	3.7	7.2	III	b.c. K 1655	F5 G=.2 B?, F7 G=.2.
✓	3.1	15.1	II/I	b.c. G 1656	G and h=.4, G dbl., Lines below K, F5 G=.1 B, Other faint lines.
✓	2.7	14.2	II	b.c. K 1657	F5 G=.1 B, F7 G=.3 Lines between G & H.
✓	2.0	7.1	II a	F 1658	G & h=.3, Lines below K.
✓	2.3	16.8	I	B 1659	h & H=.2

Amt. of Fog. due to moon & clouds. 5.7 Amt. of Fog. due to chemicals 6.0

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1887phae.proj..848F

aK; h2; ℓ2

aK; h5; ℓ5

aK; Haℓ; 448.2; 458.2

4483

1 aK; h5, ℓ5

2 aK; h2, ℓ2

h5, ℓ5 ~~(aK, h2? ℓ2?)~~

448,2; 458,2

aK; 458.1; Hγ; ℓdγ; Other faint lines

Haℓ; 448,3; 458,3

aK; h3; ℓ3

402,2

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1887phae.proj..848F

Very dark Plate February, 6, 1888.
Hard to measure. Plate 919.

Book. 10, G. Page	V.	H.	Type.	Remarks.	Description of lines on Spectra.
✓ 4	17.7	6.5	IIIa F	1660	G and h=.2, 3 Lines below K.
✓	12.1	15.0	IIIa F	1661	G and h=.2, 2 Lines below K.
✓	11.0	21.5	IIIa F	1662	G and h=.5
✓	11.4	13.9	IIIa F	1663	G and h=.5?

February, 8, 1888.
Plate 919.

~~Book 19, F. Page.~~ " " " "	2.4	16.4	IIIa H	1664	Lines below K.

Amt. of Fog. due to moon & clouds. 5.3 Amt. of Fog. due to chemicals 8.0

Book 19. F. Page. Plate, 1562.

✓	22.2	15.5	IIIa/2 F?	1664a	G+h=.5
✓ 210	19.5	22.5	IIIa F	1665	G and h=.5?
✓	16.6	21.6	IIIa/2 F?	1665a	G+h=.5
✓ 212	14.3	11.9	IIIa F	1666	G and h=.2
✓	12.5	23.4	IIIa/2 F?	1666a	G+h=.5
✓ 214	10.1	16.1	IIIa F	1667	G and h=.5? (G+h=.5)
✓	11.0	20.1	IIIa F	1668	G and h=.5. Dbl.?
✓	9.4	10.6	IIIa F	1669	G and h=.5
✓	7.8	21.3	IIIa F	1669a	G+h=.5
✓ 216	3.4	18.2	IIIa F	1670	G and h=.5?

Amt of Fog. due to moon & clouds. 7.1 Amt. of Fog. due to chemicals 7.7.

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1887phae.proj..848f

aK; h_2; g_2

aK; h_2; g_2

h_{5^-}, g_{5^-}

h_{5^-}? g_{5^-}?

aK.

h_5; g_{5^-}

h_{5^-}; g_{5^-}?

h_{5^-}, g_{5^-}

h_2; g_2

h_{5^-}; g_{5^-}

h_5? g_5? (h_{5^-}, g_{5^-})

$h\,d\,5^-$? $G\,d\,5^-$?

h_{5^-}, g_{5^-}

h_{5^-}, g_{5^-}

h_{5^-}? g_{5^-}?

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1887phae.proj..848f

February, 9. 1888.

Plate, 932.

Book, 10, G. Page.	V.	H.	Type	Remarks	Description of lines on Spectra.
✓	18.7	17.9	IIa|4F 1670 a.?	G+h=1.5?	
✓ 12.	15.9	24.2	IIa F 1671		G and h=.5
✓	13.6	7.3	II|4 F 1672		G and h=.2. (G+h=.3?)
✓	12.2	8.4	II|4c G 1673		Several lines including bright line between F and G; Several lines including bright line which equals 1.0 between G and H, Several lines below K including bright line near K. Peculiar Spectrum.
✓	11.0	11.7	II|4 F 1674		G and h=.3 2 lines below K.
✓ 14	9.1	12.5	II|4 F 1675		G and h=.3 Lines below K.
✓	8.6	11.7	III|4 I 1676		F4½ G=.1, F5 G=.1, F7 G=.3, G4 H=.1, G7 H=.1,3 Lines below K.
✓	8.3	17.7	III|4c K 1677		F2½ G=.1, F3 G=.1 B, F4 G=.2, F6 G=.2, F5½ G=.1, F7 G=.3, Lines between G & H.
✓	6.9	16.3	II|4 F 1678		G and h=.2
✓	6.3	12.4	II|4 F 1679		G and h=.3
✓	7.0	22.2	III|4c K 1680		F4½ G=.1, F5 G=.1 B, F7 G=.3, Lines between G and H. 1 Line below K.
✓	2.6	9.1	II|4 F 1681		G and h=.5

Amt. of Fog. due to moon & clouds. 7.5

Amt. of Fog due to chemicals. 8.6

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1887phae.proj..848f

h5? L5?
h5; L5
h2; L2 (h3? L3?)
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 Ha G, Br. Lines Ga F. Bline near K. Br. Line between H & G = 1.0
2aK; h3; L3
aK; h3; L3
3aK; 408,1; 427,1; 448,3; 458,1; 461,1

HaL; 448,3; 456,1; 458,2; 463,2; 468,1; 471,1

h2; L2
h3; L3
1aK; HaL; 448,3; 458,1; 461,1

h5; L5

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1887phae.proj..848F

February, 9, 1888
Plate, 941

Book, 10, G.	Page.	V.	H.	Type.	Remark.	Description of lines on Spectra.
✓	16	21.4	13.5	II & T	1682	G and h = .5
✓		17.1	21.4	II & T	1683	G and h = .1,
✓	18	15.6	12.3	III & I	1684	F 3½ G = .2, F 4½ G = .2, F 5½ G = .2, F 7 G = .3. (F 7 G = .3)
✓		15.3	14.4	II & T	1685	G and h = .5 (G & h = .5)
✓		14.7	8.1	III & I	1686	F 7 G = .3.
✓		12.8	14.0	I & B	1687	h 6 H = .1.
✓	20	10.7	17.7	I & B.	1688	h 6 H = .1
✓		9.4	22.2	II & T	1689	G and h = .5, Lines below K.
✓		6.3	15.2	III & I	1690	F 7 G = .3

February, 10, 1888.
Plate, 941

✓	22	4.8	22.8	II & T	1691	G and h = .5
✓		4.7	18.6	III & I	1692	F 7 G = .3, Lines between G and H. Lines below K.
✓		4.4	9.1	III & I	1693.	F 7 G = .3.
✓		8.0	11.9	[illegible]	F. 1693 a	G & h = .5
✓		2.9	10.8	III b.c	K 1694	F 2½ G = .1, F 3 G = .2 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .2 B, F 5½ G = .1, F 6½ G = .1, F 7 G = .3, F 8 G = .1 B, F 9 G = .1. Lines between G & H. Lines below K.

Amt. of Fog. due to moon & clouds. 7.5

Amt. of Fog. due to chemicals 8.0

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1887phae.proj..84P

h5; g5

h1; g1

448,3 ~~(448,3)~~ 456,2; 461,2; 466,2 (448,3)

h5; g5 (h5 g5)

448,3

402,1

402,1

aK; h5; g5

448,3

h5; g5

aK; Hα; 448,3

448,3
h5; g5

aK; Hα; 443,1; 448,3; 451,1; 456,1; 458,2; 461,2; 466,1; 468,2; 471,1

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1887phae.proj..848f

February, 10, 1888.

Plate, 909.

Book, 10, F.	Page.	V.	H.	Type.	No.	Remarks.	Description of lines on Spectra.
✓	26	13.3	13.9	II a	F	1695.	G & h = .2, 3 Lines below K.
✓		10.4	8.1	II a	F	1696.	G and h = .3 ?
✓	28	9.5	15.9	II a	F	1697.	G and h = .5
✓		8.6	11.0	II a	F	1698.	G and h = .5
✓		8.1	14.9	II	E	1699.	Lines below K.
✓		6.7	7.9	II a	F	1700	G & h = .5, Lines below K.
✓		6.6	9.7	III b	I	1701	F 7 G = 3
✓	30	4.5	22.4	III b	I	1702	F 5 G = .2 F 7 G = .3, Lines between G & H, Lines below K.
✓		3.2	22.1	II a	F	1702 a	G + h = .5 ?
✓		3.0	10.7	II a	F	1703	G and h = .5
✓		2.4	16.2	II a	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	F	1705	G and h = .5, 1 line below K.
✓	32	18.6	22.2	II a	F	1706	G and h = .5
✓		13.9	10.1	II a	F	1707	G and h = .5
✓		13.7	20.0	III b	I	1708	F 4 1/2 G = .1, F 5 G = .1, F 7 G = .3, Lines between G and H.
✓		8.9	17.3	II a	F	1708 a	G + h = .5 ?
✓	34	7.9	17.3	III	K	1709	F 2 1/2 G = .1, F 3 G = .2 B, F 3 1/2 G = .1, F 4 1/2 G = .2, F 5 G = .1 B, F 5 1/2 G = .1, F 6 G = .2, F 6 1/2 G = .1, F 7 G = .3, F 8 G = .1 B, F 9 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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1887phae.proj..848f

3aK; h2; l2
h3 ? l3 ?
h5; l5
h5; l5
aK
aK; h5; l5
448,3
aK; Hal; 448,3; 458,2
h5 ? l5 ?
h5; l5
h5; l5

aK; h5; l5
h5; l5
h5; l5
Hal; 448,3; 458,1; 461,1
h5 ? l5 ?
2 Na; Hal; 438,2; 443,1; 448,3; 451,1; 453,2; 456,1; 458,1; 461,2; 466,1; 468,2; 471,1

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1887phae.proj..848f

February, 13, 1888.
Plate, 981.

Book, 10, G. Page.	V.	H.	Type.	Remark.	No.	Description of Lines on Spectra.
36	22.0	18.5	II/Ac	G	1710	Lines between F & G, Lines between G and H, Lines below K; 1 Bright Line between G & H = H.
	21.0	21.8	II/a	F	1711	G and h = .3, 1 dbl. Lines below K.
	18.8	13.9	I	F	1711a	G and h = .5
	19.9	8.5	II/a	F	1712	G and h = .2, Lines below K.
	18.7	21.5	III/	H	1713	Lines below K.
	18.2	17.0	II/a	F	1714	G and h = .5, Lines below K.
	17.8	17.2	II/a	F	1715	G and h = .5 Lines below K.
	16.9	6.1	IV/a	F	1715a	G+h = .5
38	15.3	20.4	II/a	F	1716	G and h = .5, Lines below K.
	13.4	6.1	IV	F	1717	Lines below K.
	12.6	19.6	IV/a	F	1717a	G+h = .5
	11.1	18.7	IV/a	F	1717a	G+h = .5
40	8.9	16.1	II/a	F	1718	G and h = .5 (G+h = .5)
	8.7	23.3	II/a	F	1719	G and h = .5
	6.8	12.3	II/a	F	1720	G and h = .3, Lines below K.
	6.5	22.5	IV/a	F	1721	G and h = .5
	6.4	21.5	IV/a	F	1722	G and h = .5
42	5.2	10.3	III/	H	1723	Lines below K.
	5.3	17.2	IV/a	F	1723a	G+h = .5
	3.8	15.1	II/a	F	1724	G and h = .5 (G+h = .5)
	3.4	10.2	IV/a	F	1724a	G+h = .5
	2.6	16.8	II/a	F	1725	G and h = .5

Lines above F. Lines between F & G. Lines between G & H. 3 Bright Line between G & h = H.

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1887phae.proj..848f

Ga F.

Peculiar Spectrum. Lines between F & G. Lines between G & H. Hγδ. Lines below K. aK. 1 Bright light between G & H = H Br. line between Hγ & δ = 1.0.

aK; h3; ld3
h5; g5.
aK; h2; l2
aK
aK; h5; l5
aK; h5; l5
h5; l5
aK; h5; l5
aK
h5; g5
h5; g5
h5; l5 (h5, l5)
h5; l5
aK h3 l3
h5 l5
h5 l5
aK
5h; Gh
h5; g5 (h5, l5)
h5; g5
h5; l5 Peculiar Spectrum. Lines above F. Lines between F & G. Lines between G & H. Bright line between G & H = H

a F
Hγδ
Br. line Hγδ 1.0

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1887phae.proj..848f

February, 14, 1888.

Plate 975.

Book. 10, G. Page	V.	H.	Type.	No. Remarks.	Description of lines on Spectra.
46	22.0	17.2	III d.c. K	1726	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3, Lines between G & H, Lines below K.
	13.4	21.5	II d F	1727	G and h=.3,
	11.3	14.7	III V. I	1728	F7 G=.3
	7.6	14.0	II d F	1729	G and h=.5
	2.4	17.2	III d. c. K	1730	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.2, F7 G=.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.

54	14.3	6.3	II d F	1731	G and h=.5
	7.7	12.4	II d F	1732	G and h=.5

Amt. of Fog due to moon & clouds. 7.6 Amt. of Fog. due to chemicals

Plate 897

54	18.6	6.1	II d. c. K	1733	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.1 B, F5½ G=.2, F7 G=.3, Line between G & H.
	17.5	20.9	II d F	1734	G and h=.5, Lines below K.
	17.5	14.6	II d F	1735	G and h=.5

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1887phae.proj...848

aK; Hδ, 448.3; 456,1; 458,2; 461,2; 466,1; 468,1

h3 δ3
448,3
h5 δ5
aK; Hδ; 448,3; 456,2; 458,1; 461,2; 468,1

h5; δ5
h5; δ5

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

aK; h5 δ5
h5 δ5

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1887phae.proj..848F

February, 14, 1888.

Plate, 897.

Book. 10, G., Page.	No.	V.	H.	Type.	Remark.	Description of Lines on Spectra.
✓	56	11.0	17.3	II 4 F	1736	G and h=.4, Lines below K.
✓		8.6	16.5	II 4 F	1737	G and h=.5
✓		6.7	7.9	II 4 F	1738	G and h=.5
✓		6.6	17.4	I 6 B	1739	H6 G=.2, h6 H=.1, H6 a=.1
✓	58	5.0	9.0	III 6 I	1740	F5½ G=.1, F7 G=.3, Lines between G & H.
✓		4.1	14.6	II 4 F	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	IX 6 F	1742	G and h=.5
✓		18.6	13.2	IX 4 F	1743	G and h=.5?
✓		18.0	12.3	III 6 I	1744	F4½ G=.2, F7 G=.3,
✓		11.1	11.2	XII 6 I	1745	F5 G=.2, F5½ G=.2, G dbl.?
" ✓ "	60	6.8	21.8	III 6 I	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	IX 6 I	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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1887phae.proj..848P

aK; h4 l4
h5; l5
h5; l5
392,1; 402,1; 453,2;
Hδ; 448,3; 456,1
h5; l5

h5; l5
h5? l5?
448,3; 461,2)
lδ? 456,2; 458,2)
448,2)

448,3

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1887phae.proj..848f

February, 15, 1888.

Plate, 895.

Book 10,	G. Page	Y.	M.	Type.	Mo. Remark.	Description of lines on Spectra.
✓	60	21.5	17.0	IIIa	b I 1748	F 3½ G=.2, F 5 G=.2, F 7 G=.3, F 9 G=.1, Lines between G and H. Lines below K.
✓	62	19.3	11.2	IIa	q I 1749	G and h dbl.?=.2, Lines below K.
✓		18.8	23.4	IIa	q I 1750	G and h=.2, Lines below K.
✓		17.8	14.4	IIIa	K. c. K 1751	F 3 G=.1 B, F 3½ G=.1, F 4½ G=.2, F 5 G=.2 B, F 5½ G=.2, F 7 G=.3 F 8 G=.1 B, Lines between G & H. Lines below K.
✓		17.0	14.8	IIa	q I 1752	G and h dbl.?=.3, 2 Lines below K. F 5 G=.1, F 7 G=.3, Lines between G & H,
✓		13.8	6.8	IIIa	K. I 1753	Lines below K.
✓		13.4	11.6	IIa	q I 1754	G and h=.4, Lines below K.
✓		13.4	14.7	IIa	q I 1754a	G+h=.5
✓		12.7	9.9	IIa	q I 1755	G and h=.5
✓		11.6	15.2	IIIa	K I 1756	F 7 G=.3, K
✓	64	7.7	15.6	IIa	q I 1757	G and h=.3, Lines below K.
✓		7.7	15.9	IIa	q I 1758	G and h=.3, G dbl., 2 lines below K.
✓		7.3	17.1	IIIa	K. I 1759	F 7 G=.3
✓		3.5	23.7	IIa	q I 1760	G and h=.5

Amt. of Fog. due to moon & clouds. 7.5 Amt. of Fog. due to chemicals. 7.9

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1887phae.proj..848f

aK; Ha; 438,1; 448,3; 458,2; 466,2

aK; hd? 2 ; ld? 2

aK; h2 l2

aK; Ha; 443,1; 448,3; 456,2; 458,2; 461,2; 466,1; 468,1

2 aK; hd? 3 ld? 3

Ha G; 448,3; 458,1

aK.

aK; h4; l4

h5; l5

h5 l5

448,3

aK; h3, l3

2 aK; h3; ld 3

448,3

h5, l5

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1887phae.proj..848f

February, 16 1888.
Plate, 986.

Book. 10, G, Page.	V.	H.	Type.	No. Remarks.	Description of lines on Spectra.
64	22.1	16.5	III^{bc} K	1761	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F7 G=.3, Lines between G and H, Lines below K.
	18.0	11.8	I^{a} F	1761 a b	G+h=.5
	15.7	19.4	II^{a} F	1762	G+h=.5 G and h=.2, 2 Lines below K.
	14.2	12.4	III^{b} I	1762 a	F7 G=.3
66	10.2	16.0	II^{a} F	1763	G and h=.5, Lines below K.
	12.1	15.7	II^{a} F	1762 b	G+h=.3
	9.9	22.6	II^{a} F	1764	G and h=.5
	19.4	12.8	II^{a} F	1762 c	G+h=.5 (G+h=.5)
68	8.8	12.0	III I	1765	F7 G=.3
	7.6	17.8	II^{a} F	1766	G and h=.5
	7.7	13.4	II F	1767	G and h=.2, Lines below K.
	7.4	21.7	II F	1768	G and h=.3? 2 Lines below K.
~~4.4~~	~~12.8~~	~~II^{a}~~	~~F~~	~~1768 a~~	~~G+h=.5~~ (G+h=.5)
	5.8	15.9	II^{a} F	1769	G and h=.4 (G+h=.5)
	3.5	6.5	I B	1770	G6 h=.2.
	2.4	16.6		1771	F3 G=.1 B, F4½ G=.2, F5 G=.1 B, F5½ G=.2, F7 G=.3 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

68					
	19.7	8.2	III I^{k}	1772	F5 G=.2, F7 G=.3
	19.4	15.2	III I^{k}	1773	F7 G=.3
	19.4	16.9	II F	1774	G and h=.5, 2 Lines below K.
70	17.5	12.2	IV K$^{k.c}$	1775	F3 G=.1 B, F3½ G=.1, F4½ G=.2, F5 G=.2 B, F5½ G=.1, F7 G=.3 F8 G=.1 B, F9 G=.1, Lines between G & H. Lines below K.
	15.7	19.0	II F	1776	G and h=.3.
	18.5	12.6	II^{a} F	1777	G and h=.5
	13.7	23.0	II^{a} F	1777 a	G & h=.5?
	13.5	19.3	II^{a} F	1776	G and h=.5, 4 Lines below K.
	11.5	11.6	II F	1779	G and h=.5?

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1887phae.proj..848F

aK; Hα; 448,3; 458,1; 461,2; 468,1

h5? g5?
h5? g5?
2 aK; h2 g2
448,3
aK; h5 g5
h3; g3
h5 g5
h5; g5 (h5; g5)
448,3

h5 g5

aK h2 g2

2 aK h3? g3?
~~h5, g5 (h5; g5)~~
h4 g4 (h5, h5)

419,2
Hα; 448,3; 456,2; 458,1; 461,2; 468,1

als

448,3; 458,2 !

448,3
aK; h5 g5
aK; Hα; 438,1; 443,1; 448,3; 456,1; 458,2; 461,2; 466,1; 468,1

e

h3, g3
h5 g5
h5? g5?
aK; h4 g4
h5? g5?

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1887phae.proj..848f

February, 16, 1888.
Plate, 911.

Book, 10, Page	T.	H.	Type.	No. Remark,	Description of Lines on Spectra.
✓ 70	11.4	11.2	IIIa F I	1780	$F_{4\frac{1}{2}}$ G=.2, F7 G=.3, Lines between G & H, 2 Lines below K.
✓	11.0	15.0	IIa F	1781	G and h=.5 (G+h=.5)
✓	10.4	12.8	IIa F	1782.	G and h=.5, (G+h=.5)
✓ 72	9.8	15.7	IIIa K	1783.	$F_{4\frac{1}{2}}$ G=.1, F5 G=.2B, $F_{5\frac{1}{2}}$ G=.1, F7 G=.3, Lines between G and H. Lines below K.
✓	8.5	14.9	IIIa F I	1784	F7 G=.3. (F7 G=.3)
✓	7.0	17.2	IIIa F I	1785	F7 G=.3, Lines between G & H.
✓	4.5	16.6	IIIa F I	1786	$F_{4\frac{1}{2}}$ G=.2, F7 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.

✓ 74	22.5	15.8	IIIa F I	1787	F7 G=.3, Lines between G & H, Lines below K.
✓	21.9	20.7	IIa F	1788	G and h=.5, Lines below K.
✓	20.0	18.1	IIa F	1788a	G+h=.5?
✓	18.3	22.6	IIa F	1788b	G+h=.5?
✓	18.2	6.1	IIa F	1789	G and h=.2, Lines below K.
✓	17.4	13.0	IIa F	1789a	G+h=.5 (G+h=.5)
✓ 76	14.7	23.7	IIa F	1790	G and h=.2, Lines below K.
✓	12.5	14.5	IIa F	1791	G and h=.5, Lines below K.
✓	11.7	13.5	IIa F	1792	G and h=.5, Lines below K.
✓	11.2	21.0	IIa F	1793	G and h=.5? Lines below K.
✓	11.0	10.0	IIa F	1793a	G+h=.5?
	~~8.7~~	~~8.9~~	~~IIa~~	~~1794~~	
✓ 78	8.4	20.5	IIIa F	1794.	G and h=.5, Lines below K.
✓	7.4	18.0	IIa F	1795	G and h=.3, Lines below K.
✓	6.7	19.9	IIa F	1795a	G+h=.5
✓	6.9	23.5	IIa K	1796	F5 G=.1B, $F_{5\frac{1}{2}}$ G=.1, F7 G=.3, Lines between G and H. 2 Lines below K.
✓	6.0	23.9	IIa F	1797	G and h=.5

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1887phae.proj..848f

Hα
aK; 448,3; 461,2

h5; k5 (k5, h5)
h5; k5 (k5, h5)
aK; Hα; 448,3; 456,1; 458,2; 461,1

448,3 (448,3)
Hα; 448,3
Hα; 448,

1 and 2 greater than 5
3 to 7 greater than 2
Unless already confirmed by
second measure of same
plate

R Dorado
V Carina
R Coronae
R Lyncis
3637
657
61 J
33
6.48
6.10
6.64
6.78

aK; Hα;

aK; h5; k5
h5? less? k5?
h5? k5?
h5; k2; k2 (h5; k5)
aK; h2; k2
aK h5 k5
aK h5 k5
aK h5 k5
h5? k5?

aK h5 k5
aK h3 k3
h5 k5
aK, Hα, 448,3; 456,1 458,1

h5 k5

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1887phae.proj..848F

Hαλ
αK ; 448,3 ; 461,2

h5 ; l5 (l5 , h5)
h5 ; l5 (l5 , h5)
αK ; Hαλ ; 448,3 ; 456,1 ; 458,2 ; 461,1

448,3 (448,3)
Hαλ ; 448,3
Hαλ ; 448,3 ;

αK ; Hαλ ; 44

αK . h5 ; l5
h5? l5?
αK ; h2 ; l2
h5 ; l5 (h5 ; l5)
αK ; h2 ; l2
αK h5 l5
αK h5 l5
αK h5 l5
h5? l5?

αK h5 l5
αK h3 l3
h5 ; l5
αK , Hαλ , 448,3 ; 456,1 458,1

h5 l5

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1887phae.proj..848F

Hα
aK; 448,3; 461,2

h5; ζ5 (ζ5, h5)
h5; ζ5 (ζ5, h5)
aK; Hα; 448,3; 456,1; 458,2; 461,1

448,3 (448,3)
Hα; 448,3
Hα; 448,3; 461,2

aK; Hα; 448,3

aK; h5; ζ5
h5? h5? beta? ζ5?
h5; h2; ζ2 (h5; ζ5)
aK; h2; ζ2
aK h5 ζ5
aK h5 ζ5
aK h5 ζ5
h5? ζ5?

aK h5 ζ5
aK h3 ζ3
h5 ζ5
aK, Hα, 448,3; 456,1 458,1

h5 ζ5

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1887phae.proj..848f

February, 17, 1888.

Plate, 988.

Book, 10, G. Page.	V.	H.	Type.	No. Remarks.	Description of lines on Spectra.
✓ 78	2.9	15.8	II & I	1798.	F 4½ G=.2, F 7 G=.3, Lines between G & H, Lines below K.
✓	2.4	20.7	II & F	1799	G and h=.5

Amt. of Fog. due to moon & clouds. 5.8 Amt of Fog. due to chemicals 7.7

Plate 1002.

" " ✓ " 80	20.3	17.1	II & I	1800	F 7 G=.3, Lines between G & H. 2 Lines below K.
✓	19.5	23.9	II & F	1801	G and h=.5?
✓	17.4	23.4	II & F	1802	G and h=.5
✓	16.6	14.3	II & K	1803.	F 3 G=.1 B, F 3½ G=.1, F 4½ G=.2, F 5 G=.2 B, F 5½ 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	II & I	1804	F 7 G=.3, Lines between G and H.
✓	12.1	11.5	II & F	1805	G and h=.5?, 2 Lines below K.
✓ 82	6.6	15.7	II & F	1806	G and h=.5
✓	2.4	23.8	II & F	1807	G and h=.5

Amt. of Fog. due to moon & clouds. 6.5 Amt. of Fog. due to chemicals. 7.5

Plate 1028.

✓ 84	16.6	9.7	II & F	1808	G and h=.5.
✓	12.1	6.6	II & F	1809	G and h=.5?
✓	9.2	19.1	III & K	1810	F 4 G=.1, F 4½ G=.1 B, F 5 G=.3, G dbl.?
✓	7.7	17.4	III & K	1811	F 4½ G=.1, F 5 G=.2 B, F 5½ G=.2, F 7 G=.3, Lines between G & H, 2 Lines below K
✓	5.6	11.5	II & F	1812	G and h=.3
✓	3.6	14.8	I & B	1812a	G & K=.3

Amt. of Fog. due to moon & clouds. 7.5 Amt. of Fog due to chemicals 7.9

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1887phae.proj...848f

aK; Hδ; 448,3; 461,2)

h5, δ5

2 aK; Hδ; 448,3

h5? δ5?
h5: δ5

2 aK; 438,1; 443,1; 448,3; 455,1; 458,2; 461,2; 466,1; 468,1

Hδ; 448,3
2 aK; h5? δ5?
h5; δ5
h5; δ5

h5; δ5
h5? δ5?
δd? 458,3; 461,1; 463,1
2 aK; Hδ; 448,3; 455,2; 458,2; 461,1;

h3; δ3
419,3

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1887phae.proj..848f

February, 18, 1888.

Plate, 1054

Book, 10, G. Page.	r.	H.	Type.	No. Remark.		Description of lines on Spectra.
✓	86	12.7	19.2	III a.b.c. K	1813	$F4\frac{1}{2}$ G=.2, F5 G=.1 B, $F5\frac{1}{2}$ G=.2, F7 G=.3.
✓		7.8	10.9	I a.b. B	1814	h 6 H=.1, H 6 α=.2. ?

Amt. of Fog. due to moon & clouds. 7.5 Amt. of Fog due to chemicals 8.0

Plate 1068

Book 10, G. Page.						
✓		20.2	12.1	I a.b. B	1815	F6 G=.2, F8 G=.2, G3 h=.2, G8 h=.2, h 6 H=.2, H 6 α=.2, β4 γ? =.4?
✓	86.	19.5	8.3	I a.b. B	1816	h 6 H=.1
✓		14.0	13.7	I a.b. B	1817	F6 G=.2, h 6 H=.2, H 6 α=.1, β4 γ? =.2?
✓		14.0	19.7	IV a. I	1818	F5 G=.1 B?, $F5\frac{1}{2}$ G=.1, F7 G=.3; Lines between G and H.
✓	88	11.9	16.3	I a.b. B G?	1819,	F6 G=.2, h 6 H=.1, H 6 α=.2
✓		11.4	14.4	IV a.b.	1820,	F6 G=.1 B, G1 $\frac{1}{2}$ h=.3, G 2 h=.1 B, G and h=.5, Lines below K. Supposed a Spectrum of faint A Star
✓		10.0	6.9	III a.b. I	1821	F $2\frac{1}{2}$ G=.2, F $4\frac{1}{2}$ G=.2, F $5\frac{1}{2}$ G=.1, F7 G=.3.

Amt. of Fog. due to moon & clouds. 7.6 Amt. of Fog. due to chemicals 7.8

Plate 1034.

✓	90	19.9	15.3	IV a.b.c. K	1822	F3 G=.1 B, F $3\frac{1}{2}$ G=.1, F $4\frac{1}{2}$ G=.2, F5 G=.1 B, F $5\frac{1}{2}$ G=.2 F7 G=.3
✓		12.1	19.0	III a.b. I	1823	F $4\frac{1}{2}$ G=.1, F7 G=.3

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1887phae.proj..848F

448,3 ; 456,2; 458,1; 461,2
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
Hδ; 448,3; 456,1; 458,1?

392,2; 402,1; 453,2
aK; Hδ; δ5; 429,1; 430,3; 453,1 Superposed on spectrum of Zeta Aurigae

448,3; 456,1; 461,2; 471,2

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

448,3; 461,1

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1887phae.proj..848F

February 20, 1888.
Plate 1034

Book, 10, G. Page. V. T4. Type. Remark. Description of lines on Spectra.

10.0 17.5 A B 1824 J F 6 G = .2, h 6 H = .2, H 6 α = .2

9.8 11.8 III A I? 1825 F 4½ G = .1, F 7 G = .3, lines between G and H. ~~large~~,

Aust. of Fog. due to moon & Clouds. Aust. of Fog. due to chemicals.

7.5 7.6

Plate 1092. February 23, 1888.

20.4 12.2 A F 1826 G & h = .4, lines below K.

19.5 12.7 A AB 1827 F 6 G = .2, F 8 G = .2, h 6 H = .1, H 6 α = .1

18.7 15.4 A B 1828 h 6 H = .2

F H
15.8 11.1
15.8 11.2
15.8 11.1 have peculiar Spectra

15.8 11.1 A B 1829 h 6 H = .1, F 6 G = .1.

14.6 11.1 A B 1830 F 6 G = .2 h 6 H = .1

~~12.6 6.1 III a F 1830 a G + h = .5~~

9.8 6.8 III a F 1831 G h dbl. = .2, lines below K.

9.9 16.5 A B 1832 F 6 G = .2, h 6 H = .1, β 4 γ = .4.

8.6 15.5 A B 1833 G & h = .2,

6.6 14.4 III A K 1834 F 3 G = .1 B, F 3½ G = .1, F 4½ G = .2, F 5 G = .2 B, F 5½ 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 I A B 1835 F 6 G = .1, h 6 H = .1,

2.4 10.7 A B 1836 F 6 G = .1, h 6 H = .1

2.4 21.0 I B 1837 G 6 h = .3

Aust. of Fog. due to moon & clouds. Aust. of Fog. due to chemicals.

7.5 7.6

February 27. 1888
Plate 1099

1838
102 13.2 11.5 III I F. 7 G = .3

10.9 18.1 I B 1839 F 6 G = .2, h 6 H = .1, β 4 γ = .4,

10.5 19.8 A F? 1840 G & h = .5

N
9.0 7.6 III a F 1841 G & H = .5, lines below K.

9.0 15.3 A B 1842 F 6 G = .2, h 6 H = .3, H 6 α = .1

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1887phae.proj..848f

P 392, 2 ; 402, 2 ; 453, 2
Hδ, 4 ; 448, 3 ; 461, 1

aK ; h4 ; l4
1 392, 1 ; 402, 1 ; 443, 2 ; 453, 2
403, 2)
482, 1 ; 453, 1 ; Peculiar Spectrum
402, 1 ; 453, 2)
h5 ; l5)
aK ; hd2 ; ld2
(382, 4 ; 402, 1 ; 453, 2
414, 2)

aK ; Hδ ; 438, 1 ; 443, 1 ; 448, 3 ; 458, 2 ; 458, 2 ; 461, 2 ; 466, 1 ; 468, 1

403, 1 ; 453, 1
403, 1 ; 453, 1
419, 3

448, 3
? 382, 4 ; 402, 1 ; 453, 2
h5, l5
aK ; h5 ; l5
P 392, 1 ; 402, 3 ; 453, 2

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1887phae.proj..848f

February 27, 1888.

Plate, 1099

Book, 10, G, Pag.	V.	H.	Type.	No.	Remarks.	Description of Lines on Spectra.
102	4.4	15.8	II a	F	1843	G + h = .5, lines below K.
104	2.6	23.8	II a	F	1844	G + h = .5
						Amt. of Fog. due to mum + clouds. 7.4 — Amt. of Fog. due to chemicals. 7.6

Plate, 1108

106	20.3	11.4	III b	K	1845	F 2½ G = .1, F 3 G = .2 B, F 4½ G = .2, F 5 G = .2 B, F 5½ G = .2, F 7 G = .3, lines bet. G + h, large, lines below K, lines above F.
	19.9	16.1	II a	F	1846	G + h dbl. = .4, lines below K.
	19.8	19.9	II a	F	1847	G + h = .5
	18.2	22.4	II a	F	1848	G + h = .5
	17.4	18.3	I b	B	1849	F 6 G = .2, h 6 H = .2,
	16.4	20.4	III b	i	1850	F 5½ G = .2, F 7 G = .2, lines bet. G + H large.
	16.8	13.0	III b	i	1851	F 7 G = .3,
108	14.0	9.4	I b	B	1852	F 6 G = .2,
					1853	Lines above F.
	10.2	13.0	I b	B	1854	F 8 G = .2, h 6 H = .2,
	10.9	21.7	II a	F	1855	G + h = .5, lines below K.
	9.4	16.4	II a	F?	1856	G + h = .5
	8.2	6.4	II a	F?	1857	G + h = .5
	8.4	19.3	II a	F?	1858	G + h = .5
	8.6	23.2	II a	F?	1859	G + h = .5?
	7.5	15.1	I b	B	1860	F 6 G = .1, h 6 H = .2,
	7.0	19.2	I b	B	1861	F 3 G = .2, F 8 G = .5, h 6 H = .2, H 6 K = .1
110	6.2	20.9	I bc	D	1862	G 1 h = .3 b, G 5 h = .3, h 6 H = .2?
	2.3	18.3	I b	B	1863	h 6 H = .2, H 6 K = .1
						Amt. of Fog. due to mum + clouds. 6.7 — Amt. of Fog. due to chemicals. 6.5

Description of Lines in Spectra Continued in Book No. 30.

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aK ; h 5⁻ , l 5⁻
h 5⁻ , l 5⁻

Ha ; aK ; Ha l ; 448,3 ; 455 b ,2 ; 458 ,2 ; 461,2 ; 468 ,2 ; 471 ,1

aK ; h d 4 , l d 4
h 5⁻ l 5⁻
h 5⁻ l 5⁻
402 ,2 ; 453 ,2
Ha l ; 448 ,2 ; 455 b ,2
448 ,3
453 ,2
Ha
402 ; 2 ; 443 ,2
aK , h 5⁻ , l 5⁻
h 5⁻ ; l 5⁻
h 5⁻ ; l 5⁻
h 5⁻ ; l 5⁻
h 5⁻ ? l 5⁻ ?
402 ,2 ; 453 ,1
392 ,1 ; 402 ,2 ; 443 ,5⁻ ; 468 ,2
402 ,2 ? 431 ,3 ; 431 ,3
392 ,1 ; 402 ,2

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