KG
11366
109

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20

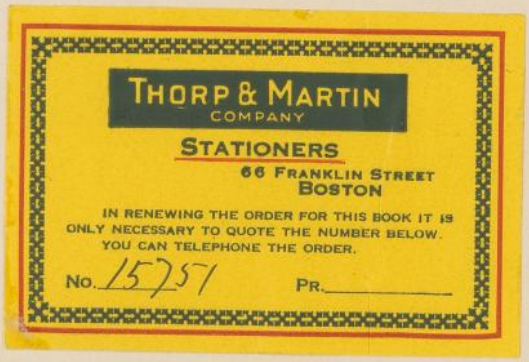
Apertured

Mira
α Cygni
α Persei C18601

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KE 11366 .109



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Plate	Star	Prisms	Page
C 18561	Mira	1	1
18590	α Cyg		12
"	Mira		22
18601	α Persei		30
~ 18678	α Orionis		176

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KQ 113666.109

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Mira

C 18561 ; 2 prisms.

For reduction curve and scale, see Bk. 14, p. 8

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Mira. c 18561 2 prisms.

No.	λ	n	m+n	[n]	[m+n]	Δm
5		10	2	271	420	-149
10		-1	4	-	360	-
11		0	5	-	340	-
12		2	6	420	325	95
13		3	6	380	325	55
14		3	6	380	325	55
16		3	6	380	325	55
17		3	7	380	311	69
18		4	7	360	311	49
19		3	7	380	311	69
20		3	7	380	311	69
21		4	7	360	311	49
22		7	8	311	296	15
23		6	8	325	296	29
24		8	8	-	296	-
26		4	8	360	296	64
27		5	8	340	296	44
28		5	8	340	296	44
29		6	9	325	283	42
30		7	9	311	283	28
31		6	9	325	283	42
32		5	9	340	283	57
34		5	10	340	271	69
35		4	10	360	271	89
36		9	11	283	264	19
37		8	11	296	264	32
38		8	11	296	264	32
39		6	11	325	264	61
40		6	11	325	264	61

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2

C 18561. Reduction table

0	-		
1	-		
2	420		
3	380		
4	360		
5	340		
6	325		
7	311		
8	296		
9	283		
10	271		
11	264		
12	257		
13	252		
14	246		
15	238		
16	234		
17	230		
18	225		
19	220		
20	216		
21	210		
22	206		
23	202		
24	198		
25	193		
26	188		
27	184		
28	180		
29	176		
30	173		
		31	168
		32	166
		33	162
		34	158
		35	155
		36	150
		37	147
		38	144
		39	140
		40	137
		41	134
		42	131
		43	127
		44	124
		45	121
		46	118
		47	115
		48	112
		49	109
		50	105
		51	100
		52	96
		53	92
		54	87
		55	80
		56	75
		57	68
		58	60
		59	51
		60	41
		61	32
		62	20
		63	0

38		8	11	296	264	32
39		6	11	325	264	61
40		6	11	325	264	61

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No.	λ	n	m+n	[n]	[m+n]	Δm
41		9	11	283	264	19
42		7	11	311	264	47
43		7	11	311	264	47
44		6	12	325	257	68
45		9	12	283	257	28
46		11	12	264	257	07
47		8	12	296	257	39
48		6	12	325	257	68
49		9	13	283	252	31
50		11	13	264	252	12
51		10	13	271	252	19
52		12	14	257	246	11
53		61	14	32	246	-214
54		13 3/4	14	252	246	06
56		7	14	311	246	65
57		8	14	296	246	50
59		11	15	264	238	26
63		11	15	264	238	26
64		12	15	257	238	19
65		12	15	257	238	19
66		10	16	271	234	37
67		11	16	264	234	30
68		9	16	283	234	49
69a		14	16	246	234	12
70		12	16	257	234	23
71		11	16	264	234	30
72		10	16	271	234	37
73		13	16	252	234	18
74		13	16	252	234	18
75		13	17	252	230	22

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No.	λ	n	m+n	[n]	[m+n]	Δm
76		13	17	252	230	22
77		15	17	238	230	08
78		16	17	234	230	04
79		15	17	238	230	08
83		11	17	264	230	34
84		13	17	252	230	22
85		13	18	252	225	27
86		14	18	246	225	21
87		14	18	246	225	21
88		11	18	264	225	39
89		13	18	252	225	27
90		12	18	257	225	32
91		14	18	246	225	21
92		14	18	246	225	21
93		13	18	252	225	27
94		11	18	264	225	39
95		13	19	252	220	32
96		12	19	257	220	37
97		14	19	246	220	26
98		15	19	238	220	18
99		14	19	246	220	26
100		10	19	271	220	51
101		10	19	271	220	51
102		11	19	264	220	44
103		8	19	296	220	76
104		4	19	360	220	140
105		12	20	257	216	41
106		12	20	257	216	41
107		14	20	246	216	30
108		18	20	225	216	09

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No.	λ	n	m+n	[n]	[m+n]	Δm
109		16	20	234	216	18
110		14	20	246	216	30
111		12	21	257	210	47
112		13	21	252	210	42
113		14	21	246	210	36
114		15	21	238	210	28
115		18	21	225	210	15
116		17	21	230	210	20
117		17	21	230	210	20
118		12	21	257	210	47
119		12	21	257	210	47
120		15	22	238	206	32
121		15	22	238	206	32
122		14	22	246	206	40
123		11	22	264	206	58
124		16	22	234	206	28
124a		12	22	257	206	51
125		12	22	257	206	51
126		14	22	246	206	40
128		13	23	252	202	50
129		14	23	246	202	44
130		13	23	252	202	50
131		14	23	246	202	44
132		15	23	238	202	36
133		15	23	238	202	36
133a		17	23	230	202	28
133b		17	23	230	202	28
134		15	23	238	202	36
135		19	24	220	198	22
136		22	24	206	198	08

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No.	λ	n	m+n	[n]	[m+n]	Δm
137		31	24	168	198	−30
138		59	24	51	198	−147
139		19	24	220	198	22
140		15	24	238	198	40
142		14	25	246	193	53
143		18	25	225	193	32
144		17	25	230	193	37
145		18	25	225	193	32
146		17	25	230	193	37
147		21	25	210	193	17
148		21	25	210	193	17
149		22	25	206	193	13
150		18	26	225	188	37
153		18	26	225	188	37
154		17	26	230	188	42
155		18	26	225	188	37
156		18	26	225	188	37
157		17	26	230	188	42
158		17	27	230	184	46
159		22	27	206	184	22
160		22	27	206	184	22
161		17	27	230	184	46
162		14	27	246	184	62
163		14	27	246	184	62
164		15	27	238	184	54
165		17	27	230	184	46
166		17	28	230	180	46
167		17	28	230	180	50
168		20	28	216	180	36
169		20	28	216	180	36

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No.	λ	n	m-m	[n]	[m-m]	Δm
170		19	28	220	180	40
171		19	28	220	180	40
172		14	28	246	180	66
173		12	28	257	180	77
174		10	28	271	180	91
175		12	29	257	176	81
176		15	29	238	176	62
177		17	29	230	176	54
178		16	29	234	176	58
179		19	29	220	176	44
180		20	29	216	176	40
181		21	29	210	176	34
182		19	29	220	176	44
183		21	30	210	173	37
184		20	30	216	173	43
185		18	30	225	173	52
186		16	30	234	173	61
187		18	30	225	173	52
188		18	30	225	173	52
189		19	30	220	173	47
190		23	30	202	173	29
191		20	30	216	173	43
192		22	30	206	173	33
193		20	31	216	168	48
194		25	31	193	168	25
195		23	31	202	168	34
196		22	31	206	168	38
197		20	31	216	168	48
198		19	31	220	168	52
199		18	31	225	168	57

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No.	λ	n	m+n	[n]	[m+n]	Δm
200		20	31	216	168	48
201		26	32	188	165	23
202		30	32	173	165	08
202a		32	32	165	165	00
203		29	32	176	165	11
204		29	32	176	165	11
205		28	32	180	165	15
206		11	32	264	165	99
208		11	32	264	165	99
209		14	32	246	165	81
210		17	32	230	165	65
211		18	32	225	165	60
212		19	32	220	165	55
213		28	32	180	165	15
213a		30	32	173	165	08
214		29	32	176	165	11
215		27	32	184	165	19
216		12	33	257	162	95
217		12	33	257	162	95
218		12	33	257	162	95
219		13	33	252	162	90
220		12	33	257	162	95
221		13	33	252	162	90
222		13	33	252	162	90
223		11	33	264	162	102
224		12	33	257	162	95
225		20	33	216	162	54
226		20	33	216	162	54
227		24	33	198	162	36
228		15	33	238	162	76

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No.	λ	n	m+n	[n]	[m+n]	Δν
229		12	33	257	162	95
230		13	33	252	162	90
231		14	33	246	162	84
232		15	33	238	162	76
233		19	33	220	162	58
234		20	33	216	162	54
235		22	33	206	162	44
236		25	33	193	162	31
237		24	33	198	162	36
238		27	33	184	162	22
239		25	33	193	162	31
240		13	34	252	158	94
241		17	34	230	158	72
242		20	34	216	158	58
243		23	34	202	158	44
244		26	34	188	158	30
245		27	34	184	158	26
246		24	34	198	158	40
248		27	34	184	188	26
250		34	34	158	158	00
251		33	34	162	158	04
252		3	34	380	158	222
253		5	34	340	158	182
254		5	33	340	162	178
255		8	33	296	162	134
256		12	33	257	162	95
257		10	33	271	162	109
258		10	33	271	162	109
259		11	33	264	162	102
260		14	33	246	162	84

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No.	λ	n	m+n	[n]	[m+n]	Δm
261		15	32	238	165	73
262		21	32	210	165	45
263		19	32	220	165	55
263a		20	32	216	165	51
264		21	32	210	165	45
265		7	32	311	165	146
266		5	32	340	165	175
267		7	31	311	168	143
268		9	31	283	168	115
269		11	31	264	168	96
270		12	31	257	168	89
271		12	31	257	168	89
272		12	31	257	168	89
273		13	31	252	168	84
274		16	31	234	168	66
275		17	30	230	173	57
278		10	30	271	173	98
279		8	30	296	173	123
280		11	29	264	176	+88
*281		27	12	184	257	−73
282		11	29	264	176	+88
283		14	29	246	176	80
285		14	28	246	180	66
286		17	28	230	180	50
287		17	28	230	180	50
288		17	28	230	180	50
289		17	28	230	180	50
290		17	28	230	180	50
291		18	28	225	180	45
292		19	28	220	180	40

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293	?	20	28	216	180	36
294		19	27	220	184	36
295		22	27	206	184	22
296		22	26	206	188	18
297		22	26	206	188	18
298		23	26	202	188	14
299		25	25	193	193	00
301		1	(25)	?	(193)	

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12 2 Cygni 1859Q

No.	λ	n	Ap. 1 m+n	Ap. 1 [n]	Ap. 1 [m+n]	Ap. 1 Δm	Ap. 3 n	Ap. 3 m+n	Ap. 3 [n]	Ap. 3 [m+n]	Ap. 3 Δm	Ap. 5 n	Ap. 5 m+n	Ap. 5 [n]
4			10											
5			11											
6			13					6					5	
7			15					7					5	
8			18					8					5	
9			21					10					6	
10			24					12					7	
11														
12			28					14					8	
13														
14														
15			32					17					9	
17														
18														
19														
20			38					21					11	
21														
22														
23														
24														
25			46					26					14	
26														
27														
28														
29														
30														
31														
32														
33			56				36						21	
34														

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2 Cygni 18590

Ap. 1 Ap. 3 Ap. 5

63 Δm n m+n [n] [V

c 18590. Reduction curve.

0	500	38	150
1	472	39	146
2	450	40	142
3	420	41	138
4	398	42	134
5	374	43	130
6	352	44 45	124 126
7	334	46	118
8	319	47	114
9	308	48	111
10	297	49	108
11	286	50	104
12	274	51	101
13	265	52	97
14	256	53	93
15	249	54	90
16	243	55	86
17	238	56	82
18	232	57	78
19	227	58	74
20	222	59	71
21	218	60	68
22	214	61	64
23	209	62	60
24	205	63	57
25	200	64	53
26	196	65	48
27	192	66	44
28	188	67	39
29	185	68	34
30	181	69	28
31	178	70	24
32	174	71	18
33	169	72	12
34	164	73	06
35	161	74	00
36	158	75	
37	154	76	

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14

32
33 56 36 21
34

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Scale readings, half millimeters

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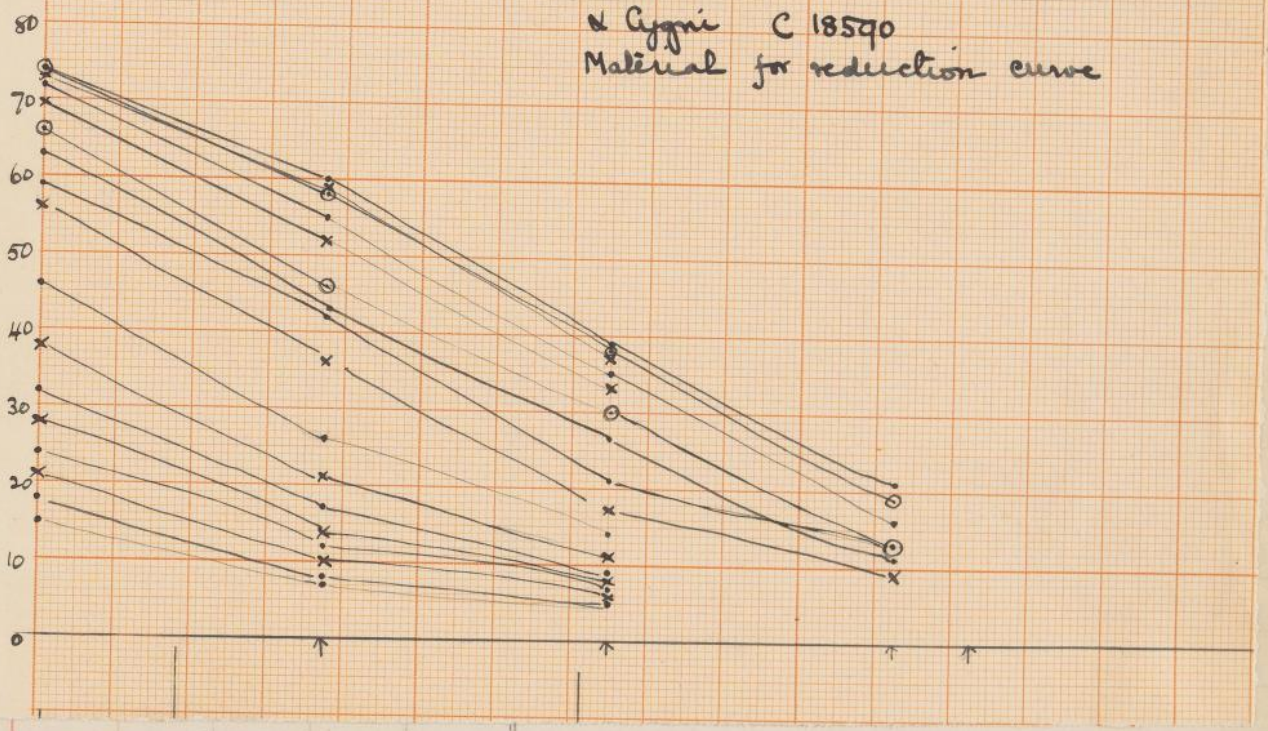
Differences of intensity, Rumford's & magnitude

α Cygni C 18590
Reduction curve

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α Cygni C 18590
Material for reduction curve



9

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		Ap. 1					Ap 3					Ap. 5			
10	a	n	m+n	[n]	[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	n	m+n	[n]	[m+
35															
36															
37															
39															
40															
41			63					43					26.5		
42															
43															
44															
45															
46			66					46					30		
47															
50															
51															
52															
53			69.5					52					33		
54															
55															
56															
57															
58															
59															
60															
61															
62			72					55					35		
63															
64															
65															
66															
67															

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Ap. 7

[m+n]	Δm	n	m+n	[n]	[m+n]	Δm
			11			
			13			
			—			
			16			

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19244mae.proj:1110P

No.	λ	Ap. 1 n	Ap. 1 m+n	Ap. 1 [n]	Ap. 1 [m+n]	Ap. 1 Δm	Ap. 3 n	Ap. 3 m+n	Ap. 3 [n]	Ap. 3 [m+n]	Ap. 3 Δm	Ap. 5 n	Ap. 5 m+n	Ap. 5 [n]	Ap. 5 Δm
68															
69															
70															
71															
72															
73															
74															
75															
76															
77															
78			73					57					36.5		
79															
80															
81															
82															
83															
84															
85															
86															
87															
88															
89															
90															
91															
92			74					58					38		
93															
94															
95															
96															
97															

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1924phae.proj.11107

tp. 7

$[m+n]\ \Delta m \quad n \quad m+n \quad [n] \quad [m+n].\ \Delta m$

17

19

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1924phae.proj.1110P

	ap. 1						ap. 3						ap. 5					
	n	m+n	[n]	[m+n]	Δm		n	m+n	[n]	[m+n]	Δm		n	m+n	[n]	[m+n]	Δm	
98																		
99																		
100																		
101																		
102																		
103																		
104		74.5						60						39				
105																		
106																		
107																		
108																		
109																		
110																		
111																		
112																		
113		74						60						39				
114																		
115																		
116																		
117																		
118																		
119		74						60						—				
120																		
121																		
122																		
123																		
124																		
125																		
126																		
127																		

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Ap. 7

$[m+n]\,.\,\Delta m \quad n \quad .m+n\,.[-n]\,[m+n]\,.\,\Delta m$

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21

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1924phae.proj.1110P

NO	λ	Ap. 1 n	m+n	[-n]	[m+n]	Δm	Ap. 3 n	m+n	[-n]	[m+n]	Δm	Ap. 5 n	m+n	[-n]	[r
128			73					59					37		
129															
130															
131			59					42					21		
132															
133															
134															

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1924phae.proj.1110?

Ap 7

[m+n]	Δm	n	m+n / n	[n]	[m+n]	Δm
			—			
			13			

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Mira C ~~1886~~ 1890

Line	λ	n	m+n	[n]	[m+n]	Δw
-18		1	4	472	398	74
-17		2	4	450	398	52
-16		2	4	450	398	52
-15		11	4	286	398	-112
-14		5	5	374	374	0
-13		3	5	420	374	46
-12		2	5	450	374	66
-11		2	6	450	352	98
-10		6	6	352	352	00
-9		11	6	286	352	-66 ~~-34~~
-8		4	6	398	352	46
-7		5	6	374	352	22
-6		5	6	374	352	22
-5		5	6	374	352	22
-4		4	7	398	334	64
-3		4	7	398	334	64
-2		2	7	450	334	116
-1		3	8	420	319	101
0		7	8	334	319	15
1		21	8	218	319	-101 ~~-99~~
a		4	8	398	319	79
b		8	9	319	308	11
c		6	9	352	308	44
e		6	10	352	297	55
f		4	10	398	297	101
g		6	10	352	~~297~~	55
h		10	11	297	286	11
i		8	11	319	286	33
j		7	11	334	286	48

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No.	λ	n	m tn	[n]	[m tn]	Δm −74
138		62	42	60	134	~~26~~
139		36	42	158	134	24
140		31	42	178	134	44
142		34	43	164	130	34
1445		36	43	158	130	28
147		39	43	146	130	16
148		41	43	138	130	08
150		39	43	146	130	16
153		38	43	150	130	20
154		34	43	164	130	34
155		36	43	158	130	28
157		35	44	161	126	35
159-60		43	44	130	126	04
161-4		29	44	185	126	59
165		32	44	174	126	48
170-1		36	45	158	122	36
172-6		25	45	200	122	78
177-8		33	45	169	122	47
179		35	46	161	118	43
180		37	46	154	118	36
181		35	46	161	118	43
184		35	46	161	118	43
186		31	46	178	118	60
188		33	46	169	118	51
189		36	46	158	118	40
191		37	46	154	118	36
193		40	47	142	114	28
195		42	47	134	114	20
199		37	47	154	114	40
201		46	47	118	114	04

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No.	λ	n	m+n	[n]	[m+n]	Δm
2		7	12	334	274	60
3		8	12	319	274	45
4		8	13	319	265	54
5		38	13	150	265	-115
6		12	13	274	265	09
7		9	14	308	256	52
8-9		8	14	319	256	63
9x		16	15	243	249	-06
a		11	15	286	249	37
b		11	15	286	249	37
c		12	16	274	243	31
d		7	17	334	238	96
e		3	17	420	238	82
10		2	17	450	238	212
a		3	18	420	232	188
b		9	18	308	232	66
c		8	19	319	227	92
d		13	19	265	227	38
e		17	20	238	222	16
f		14	20	256	222	34
g		9	20	334	222	112
11		4	21	398	218	180
12-14		16	22	243	214	29
16		18	24	232	205	27
17-19		23	24	209	205	04
20		21	24	218	205	13
21		20	25	222	200	22
22-23		23	25	209	200	09
24		25	25	200	200	00

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No.	λ	n	m+n	[n]	[m+n]	Δn
202a		48	48	111	111	00
203		48	48	111	111	00
206-8		20	48	222	111	111
213		42	48	134	111	023
213a		44	48	126	111	015
216		23	48	209	111	98
220-1		27	48	192	111	81
223-4		32	48	174	111	63
226		35	48	161	111	50
227		38	48	150	111	49
229		27	48	192	111	81
231		32	48	174	111	63
237		42	49	134	108	26
238		44	49	126	108	18
239		42	49	134	108	26
240-1		38	49	150	108	42
242-3		44	49	126	108	18
246		43	49	130	108	22
250-1		49	49	108	108	00
252-5		10	49	297	108	189
256		20	48	222	111	111
257		20	48	222	111	111
262-4		32	48	174	111	63
265-6		15	47	249	114	135
269-73		23	47	209	114	95
275		30	47	181	114	67
279-80		22	47	214	114	100
281		46	46	188	118	70
282		27	46	192	118	74

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No.	λ	n	m+n	[n]	[m+n]	Δm
26		21	26	218	196	22
27		22	26	214	196	18
29-30		25	26	200	196	04
31		25	27	200	192	08
32		23	27	209	192	17
33		27	28	192	188	04
34-5		21	28	218	188	+30
36		30	28	181	188	−07
39		23	29	209	185	+24
41		28	30	188	181	07
42		27	30	192	181	11
43		27	30	192	181	11
44		28	31	188	178	10
46		31	31	178	178	00
47		29	32	185	174	11
48		22	32	214	174	40
49		30	32	181	174	07
50-2		31	33	178	169	+09
53		74	34	00	164	−164
54		29	34	185	164	+21
55		27	34	192	164	28
57		28	34	188	164	24
63		30	35	181	161	20
66		28	35	188	161	27
67		28	35	188	161	27
68		29	35	185	161	24
69		33	35	169	161	08
71		30	36	181	158	23
73		32	36	174	158	16
75		33	36	169	158	11

No
26
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No.	λ	n	m+n	[n]	[m+n]	Δm
285		30	46	181	118	63
286		34	32	164	174	10
287-9		32	~~45~~	174	122	52
292		37	45	154	122	32
296		42	44	134	126	08
299		44	44	126	126	00
301		3	44	420	126	284

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No.	λ	ν	m+n	[n]	[m+n]	Δm
78		34	36	164	158	06
79		36	37	158	154	04
80		35	37	161	154	07
82-3		30	37	181	154	27
85-7		32	37	174	154	20
88		31	37	178	154	24
93		31	38	178	150	28
95-6		33	38	169	150	19
97-9		37	38	154	150	04
100		30	38	181	150	31
101		28	38	188	150	38
102		28	38	188	150	38
104		17	39	238	146	92
105		31	39	178	146	32
107		36	39	158	146	12
108-9		37	39	154	146	08
110		33	39	169	146	23
111		30	39	181	146	35
115-17		35	39	161	146	15
118-19		29	40	185	142	43
120-2		22	40	214	142	72
123		31	40	178	142	36
124		35	40	161	142	19
125		21	41	218	138	80
128		34	41	164	138	26
130		31	41	178	138	40
131-3		42	41	134	138	-04
134		30	41	181	138	43
135		33	41	169	138	31
136		35	41	161	138	23

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L Persei C - 18601

No	l	ap. 1 n	m+n	[n]	[m+n]	Δm	ap. 3 n	m+n	[n]	[m+n]	Δm	ap. 5 n	m+n	[n]	[m+n]
-10		9	19	408	322	86									
-9		10	24	396	300	96									
-8		9	30	408	278	130									
-7		20	35	318	262	56									
-5		23	37	304	256	48									
-4		27	38	290	254	36									
-3		21	40	314	248	66									
-2		17	41	332	244	88									
-1		27	43	290	240	50									
0		28	44	286	238	48									
1	✓	40	45	248	236	12	8	19	424	322	102	3	11	582	38
2		42	47	242	232	10	13	23	364	304	60	9	12	408	37
3		33	50	270	224	46	15	25	346	296	50	10	12	396	37
4		36	51	260	222	38	—	—	—	—	—	8	13	424	36
5	✓	19	55	322	215	107	18	27	328	290	38	9	13	406	36
6		38	57	254	211	43	16	27	338	290	48	8	13	424	36
7	✓	46	60	234	206	28	21	28	314	286	28	11	14	382	35
8		46	61	234	204	30	20	29	318	282	36	11	14	382	35
9		56	62	214	202	12	21	29	314	282	32	12	14	370	35
10	✓	53	63	218	201	17	18	31	328	276	52	10	15	396	34
11		47	72	232	186	46	19	32	328	272	50	10	15	396	34
12	✓	47	74	232	184	48	15	33	346	270	76	9	15	408	34
13		30	76	278	180	98	15	34	346	266	80	6	16	476	33
14		26	78	292	176	116	14	35	356	262	94	9	16	408	33
15	× ✓	27	80	290	174	116	10	35	396	262	134	8	17	424	33
16		48	80	228	174	54	17	36	332	260	72	8	17	424	33
17		64	81	200	172	28	26	38	292	254	38	11	18	382	32
18		67	83	194	169	25	30	39	278	250	28	15	18	346	32
19		68	85	192	166	26	29	41	282	244	38	13	19	364	32
20	/	77	88	178	161	17	34	44	266	238	28	16	20	338	31

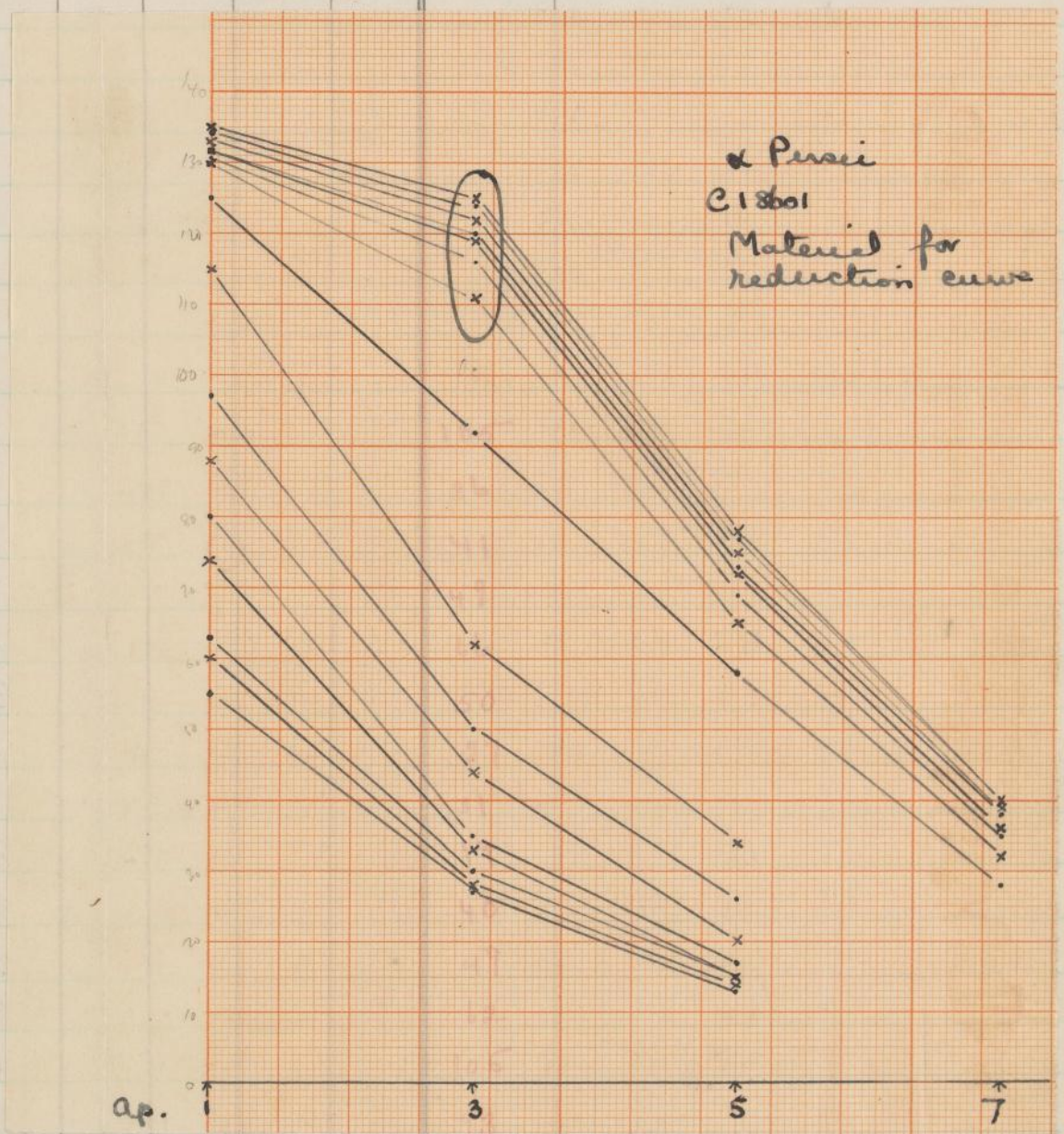
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ζ Persei C-18601

ap. 7

[m+n] Δm n m+n [-n] [m+n] Δm mean



382	20	0	1			
370	38					
370	26					
364	60					
364	44					
364	60					
356	26					
356	26					
356	14					
346	50					
346	50					
346	62					
338	138					
338	70					
332	92				114	
332	92				59	
328	54				40	
328	18				24	
322	42				35	
318	20				22	

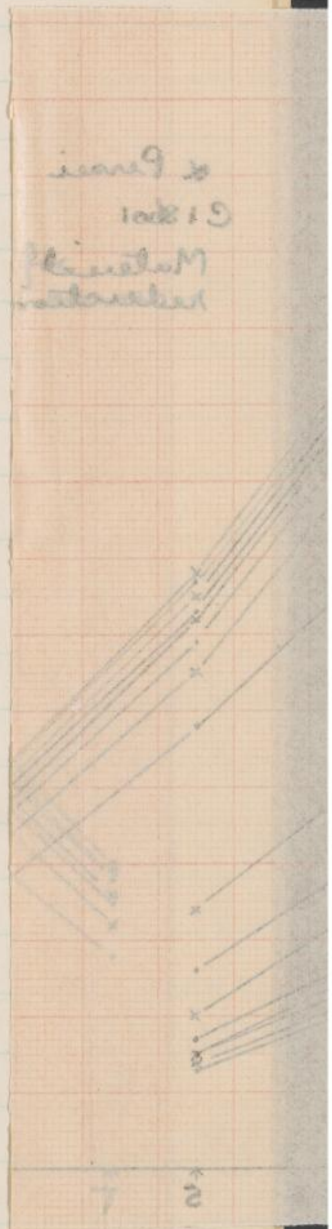
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L Persei C-18601

ap. 7

[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	Mean
352	200	1					105
370	38						36
370	26						41
364	60						49
364	44						66
364	60						50
356	26						27
356	26						31
356	14						19
346	50						40
346	50						49
346	62						62
338	138						105
338	70						93
332	92						114
332	92						59
328	54						40
328	18						24
322	42						35
318	20						22



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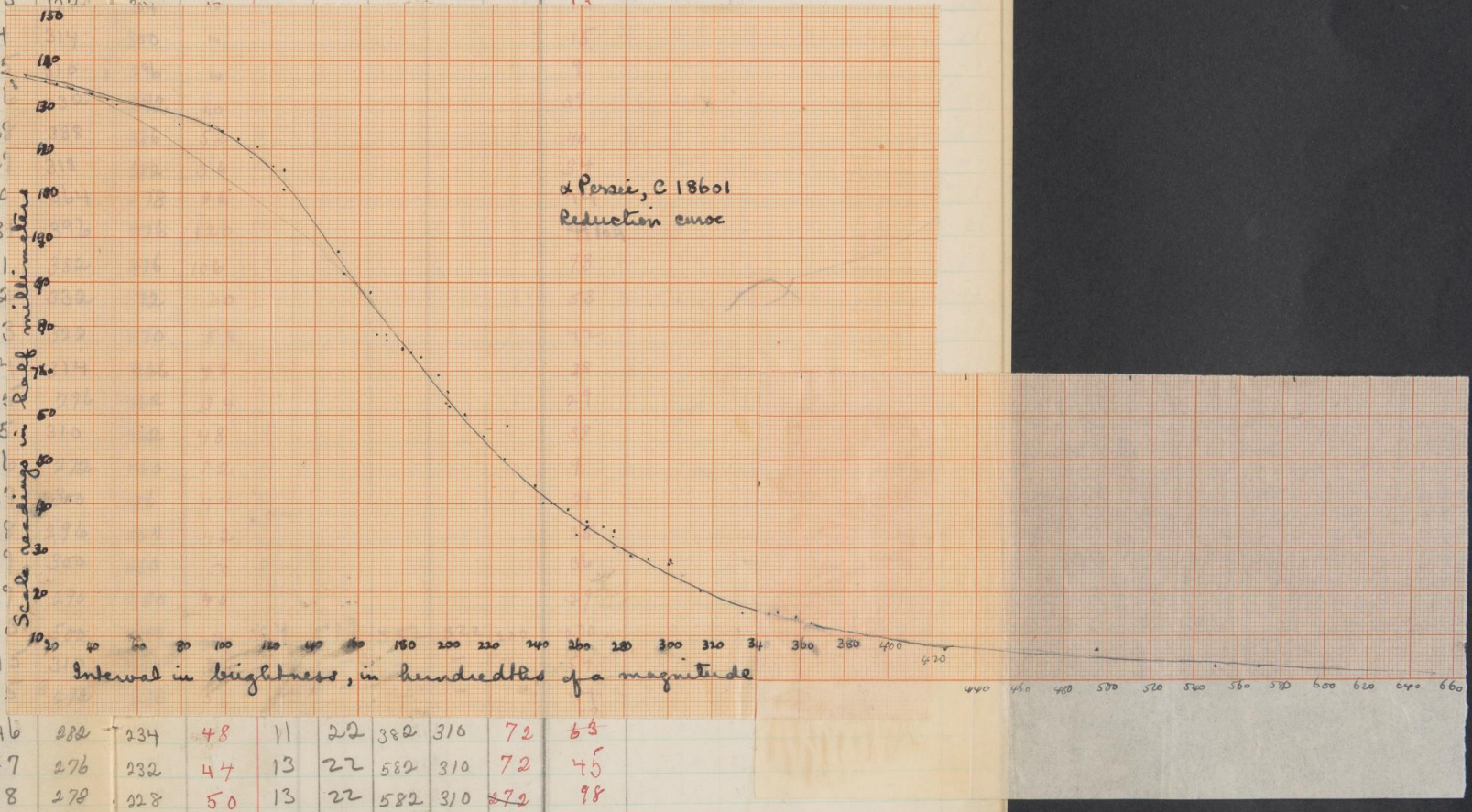
10 c 3. L Persei – C 18601

							qf. 1					qf 3															9h.5
No	L		n	m+n	[n]	[m+n]	Δm		n	m+n	[n]	[m+n]	Δm		n	m+n	[n]
21			75	90	182	158	24		33	45	270	236	34		15	22	346
22			86	92	164	155	09		41	47	244	232	12		19	23	322
23			85	94	166	152	14		41	48	244	228	16		21	24	314
24			89	95	160	151	09		51	49	222	226	4		22	25	310
25		✓	74	97	184	148	36		34	50	266	224	42		17	26	332
26			79	99	175	146	29		36	52	260	220	40		16	28	338
27			81	101	172	143	29		38	53	254	218	36		20	29	318
28			61	102	204	142	62		27	54	290	216	74		13	30	364
29			49	103	226	140	86		19	55	322	215	107		10	31	396
30			50	103	224	140	84		24	58	300	210	90		11	31	382
31			67	104	194	138	56		39	59	250	208	42		17	32	332
32			82	105	170	137	33		41	59	244	208	36		18	33	328
33		✓	85	105	166	137	29		41	60	244	206	38		21	34	314
34			86	106	164	136	28		48	62	228	202	26		25	35	296
35			85	107	166	134	32		45	63	236	201	35		22	35	310
36			105	108	137	133	04		58	64	210	200	10		32	36	272
37			93	109	154	132	22		49	65	226	198	28		24	37	300
38			92	110	155	130	25		47	67	232	194	38		25	38	296
39			95	110	151	130	21		48	68	228	192	36		24	39	300
40			99	111	146	128	18		52	69	220	191	29		27	39	290
44	3933		10	114	396	122	274		5	72	500	186	314		5	43	500
47			90	115	158	120	38		47	75	232	182	50		22	45	310
48			94	116	152	119	33		50	76	224	180	44		26	45	292
49			100	117	144	116	28		53	77	218	178	40		29	46	282
50			101	118	143	114	29		58	78	210	176	34		31	47	276
51			100	118	144	114	30		56	80	214	174	40		30	48	278
52	3970		15	120	346	108	238		6	84	476	167	309		4	50	552
55			103	122	140	104	36		60	85	206	166	40		34	52	266
56			107	122	134	104	30		66	86	196	164	32		37	53	256
57			116	123	119	100	19		75	87	182	162	20		42	54	248

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	pp.5				pp.7				
m+n	[-n]	[m+n]	Δm	n	m+n	[-n]	[m+n]	Δm	mean
22	346	310	36						31
23	308								13
46	282	234	48	11	22	382	310	72	63
47	276	232	44	13	22	582	310	72	45
48	278	228	50	13	22	582	310	272	98
50	552	224	328	5	24	500	300	200	269
52	266	220	46	16	25	838	296	42	41
53	256	218	38	19	26	332	292	40	34
54	242	216	26	20	26	318	292	26	23



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ap. 7

[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	mean
310	36						31
304	18						13
300	14						15
296	14						9
292	40						39
286	52						40
282	36						34
278	86						74
276	120						~~71~~ 104
276	106						93
272	60						53
270	58						42
266	48						38
262	34						29
262	48						38
260	12						9
256	44						31
254	42						35
250	50						36
250	40						29
240	260	4	19	552	322	230	270
236	74	—	—	—	—	—	54
236	56	—	—	—	—	—	44
234	48	11	22	382	310	72	~~63~~ 47
232	47	13	22	582	310	72	45
228	50	13	22	582	310	~~272~~	98
224	328	5	24	500	300	200	269
220	46	16	25	838	296	42	41
218	36	17	26	332	292	40	34
216	26	20	26	318	292	26	23

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No.	L	Aφ. 1 n	m+n	[n]	[m+n]	Δm	Aφ. 3 n	m+n	[n]	[m+n]	Δm	Aφ. 5 n	m+n	[n]	[m+n]
58		117	123	116	100	16	78	87	176	162	14	45	54	236	21
59		112	124	126	98	28	71	88	188	161	27	37	56	256	21
60		120	125	108	92	16	83	90	169	158	11	48	57	228	21
61		116	125	119	92	27	74	91	184	156	28	39	57	250	21
62	✓	123	125	100	92	8	88	92	161	155	6	53	58	218	21
63		121	126	106	88	18	86	92	164	155	9	52	58	220	21
64		123	126	100	88	12	86	93	164	154	10	52	59	220	20
65		124	126	98	88	10	89	94	160	152	8	55	59	215	20
66		120	126	108	88	20	82	95	170	151	19	47	60	232	20
67		117	127	116	84	32	77	96	178	150	28	43	60	240	20
68		118	127	114	84	30	81	96	172	150	22	44	60	238	20
69		125	128	92	78	14	91	97	156	148	8	55	61	215	20
70		121	128	106	78	28	84	97	168	148	20	51	62	222	20
71		121	128	106	78	28	85	98	166	147	19	49	63	226	20
72		125	128	92	78	14	92	98	155	147	8	52	63	220	20
73		122	129	104	66	38	86	99	164	146	18	51	63	222	20
74		124	129	98	66	32	90	99	158	146	12	54	64	216	20
75		124	129	98	66	32	89	100	160	144	16	54	64	216	20
76		118	129	114	66	48	75	100	182	144	38	44	65	238	19
77		128	129	78	66	12	91	101	156	143	13	59	65	208	19
78	✓	125	130	92	60	32	90	101	158	143	15	57	65	211	19
79		108	130	78	60	18	97	102	148	142	6	61	65	204	19
80		125	130	92	60	32	92	102	155	142	13	61	66	204	19
81		117	130	116	60	56	80	102	174	142	32	49	66	226	19
82	4101 ×	111	130	128	60	68	55	102	215	142	73	26	67	292	19
83		124	130	98	60	38	87	103	162	140	22	50	67	224	19
84		129	130	66	60	6	96	104	150	138	12	63	67	201	19
85		126	130	88	60	28	92	104	155	138	17	54	67	216	19
86		126	130	88	60	28	91	104	156	138	18	55	68	215	19
87		124	130	98	60	38	87	105	162	137	25	51	68	222	17

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D 2 Persei-C 18601

Ap. 7

[mtn]	Δm	n	n+n	[m]	[mtn]	Δm	mean
216	20	21	27	314	290	24	20
214	42	17	27	332	290	42	35
211	17	22	28	310	286	24	17
211	39	19	28	322	286	36	32
210	8	26	28	292	286	6	7
210	10	25	29	296	282	14	13
208	12	24	29	300	282	18	13
208	7	26	29	292	282	10	9
206	26	23	29	304	282	22	22
206	34	19	30	322	278	44	35
206	32	22	30	310	278	32	29
204	11	26	30	292	278	14	14
202	20	23	31	304	276	28	24
201	25	26	31	292	276	16	22
201	19	28	31	304	276	28	17
201	21	25	31	296	276	20	24
200	16	24	32	300	272	28	22
200	16	25	32	296	272	24	22
198	40	21	32	314	272	42	42
198	10	26	32	292	272	20	14
198	13	24	33	300	270	30	23
198	6	28	33	286	270	16	12
196	8	25	33	296	270	26	20
196	30	20	33	318	270	48	42
194	98	18	33	328	270	58	74
194	30	24	34	300	266	34	31
194	7	29	34	282	266	16	10
194	22	27	34	290	266	24	24
192	23	24	34	300	266	34	26
172	30	23	34	304	266	38	32

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2 Pettis – C 1860 I

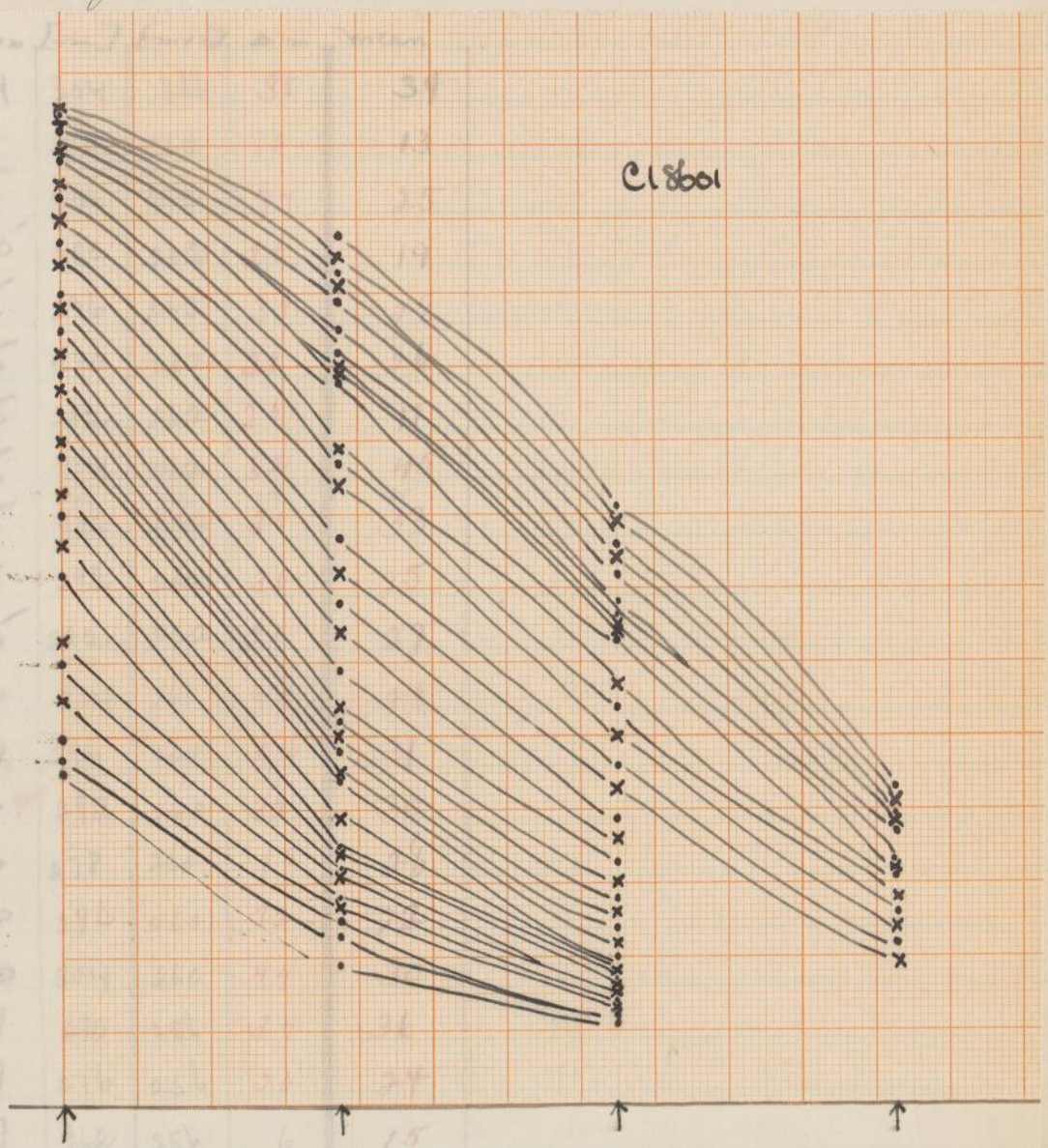
		ap. 1					ap. 3					ap. 5			
d/o	L	n	mtn	[n]	[mtn]	Δm	n	mtn	[n]	[mtn]	Δm	n	mtn	[n]	[m
88		125	130	92	60	32	89	105	160	137	23	52	68	220	19
89		128	131	78	54	24	100	106	144	136	8	62	68	202	19
90		126	131	88	54	34	92	106	155	136	19	56	68	214	19
91		128	131	78	54	24	96	106	150	136	14	59	69	208	19
92		127	131	84	54	34	92	106	155	136	17	56	69	214	19
93		128	131	78	54	24	96	106	150	136	14	57	69	211	19
94		130	131	60	54	6	100	106	144	136	8	64	69	200	19
95		122	131	104	54	50	84	106	168	136	32	45	70	236	19
96		125	131	92	54	38	88	107	161	134	27	48	70	228	19
97		128	131	78	54	24	93	107	154	134	20	55	70	215	19
98		127	131	84	54	30	93	107	154	134	20	56	70	214	19
99		129	131	66	54	12	99	107	146	134	12	60	70	206	19
100		127	132	84	46	38	91	108	156	133	23	54	71	216	18
101		127	132	84	46	38	92	108	155	133	22	56	71	215	18
102		126	132	88	46	42	92	108	155	133	22	53	71	218	18
103		129	132	66	46	20	98	108	147	133	14	59	71	208	18
104		128	132	78	46	32	96	109	150	132	18	57	72	211	18
105		125	132	92	46	46	90	109	158	132	26	49	72	226	18
106		128	132	78	46	32	95	109	151	132	19	57	72	211	18
107		129	132	66	46	20	99	109	146	132	14	60	72	206	18
108		131	132	54	46	8	101	110	143	130	13	65	73	198	18
109		128	132	78	46	32	97	110	148	130	18	59	73	208	18
110		129	133	66	40	26	101	110	143	130	13	61	73	204	18
111		130	133	60	40	20	106	110	136	130	6	66	73	196	18
112		130	133	60	40	20	101	110	143	130	13	62	73	202	18
113		133	133	40	40	0	110	110	130	130	0	72	73	186	18
114		129	133	66	40	26	99	111	146	128	18	59	74	208	18
115		130	133	60	40	20	101	111	143	128	15	62	74	202	18
116		131	188	54	40	14	104	111	138	128	10	65	74	198	18
117		129	133	66	40	26	96	111	150	128	22	55	74	215	18

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d Persei – C 18601

Cf. 7



11	32	37	272	256	16	13
17	29	38	282	254	28	20
1	34	38	266	254	12	3
24	28	38	286	254	32	25
18	31	38	276	254	22	19
14	34	38	266	254	12	12
31	27	38	290	254	36	29

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ζ Persei – C 18601

Gf. 7

[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	mean
192	28	23	34	304	266	38	34
192	10	32	35	272	262	10	13
192	12	25	35	296	262	34	25
191	17	29	35	282	262	20	19
191	23	25	35	296	262	34	28
191	20	27	35	290	262	28	26
191	9	29	35	282	262	20	11
190	46	21	35	314	262	52	45
190	38	26	35	292	262	30	33
190	25	26	35	292	262	30	25
190	24	29	35	282	262	20	27
190	16	23	36	304	266	44	21
188	28	25	36	296	260	36	31
188	27	26	36	292	260	32	30
188	30	30	36	278	260	18	28
188	20	26	36	292	260	32	22
186	25	23	36	304	260	44	30
186	40	27	37	290	256	34	36
186	25	31	37	276	256	20	24
186	28	35	37	262	256	6	15
185	13	27	37	290	256	34	17
185	23	32	37	272	256	16	22
185	19	32	37	272	256	16	18
185	11	32	37	272	256	16	13
185	17	29	38	282	254	28	20
185	1	34	38	266	254	12	3
184	24	28	38	286	254	32	25
184	18	31	38	276	254	22	19
184	14	34	38	266	254	12	12
184	31	27	38	290	254	36	29

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χ Persei - C 18601

No.		ap. 1 n	ap. 1 m+n	ap. 1 [n]	ap. 1 [m+n]	ap. 1 Δm	ap. 3 n	ap. 3 m+n	ap. 3 [n]	ap. 3 [m+n]	ap. 3 Δm	ap. 5 n	ap. 5 m+n	ap. 5 [n]	ap. 5 [m+n]
118		129	133	66	40	26	102	111	142	128	14	63	75	201	187
119	✓	127	133	84	40	44	91	112	156	126	30	52	75	220	187
120		130	133	60	40	20	101	112	143	126	17	61	75	204	182
121		129	133	66	40	26	99	112	146	126	20	58	75	210	182
122		132	133	46	40	6	105	112	137	126	11	67	76	194	180
123		131	133	54	40	14	100	112	144	126	18	60	76	206	180
124		130	134	60	34	26	102	113	142	124	18	63	76	201	180
125	×	115	134	120	34	86	68	113	192	124	68	33	77	270	178
126		131	134	54	34	20	100	113	144	124	20	60	77	206	178
127		133	134	40	34	6	108	114	133	122	11	70	77	190	178
128	✓	134	134	34	34	0	111	114	128	122	6	75	77	182	178
129		132	134	46	34	12	107	114	134	122	12	69	78	191	176
130		132	135	46	26	20	104	115	138	120	18	66	78	196	176
131	✓	131	135	54	26	28	113	115	124	120	4	71	78	188	176
132		130	135	60	26	34	98	115	147	120	27	58	78	210	176
133		134	135	34	26	8	110	115	130	120	10	71	78	188	176
134		132	135	46	26	20	104	115	138	120	18	65	79	198	175
135		133	135	40	26	14	103	115	140	120	20	62	79	202	175
136		134	135	34	26	8	110	115	130	120	10	73	79	185	175
137		132	135	46	26	20	107	115	134	120	14	70	79	190	175
138		131	135	54	26	28	100	116	144	119	25	64	79	200	175
139		—	—	—	—	—	110	116	130	119	11	71	80	188	174
140		—	—	—	—	—	109	116	132	119	13	72	80	186	174
141		—	—	—	—	—	109	116	132	119	13	71	80	188	174
142		132	135	46	26	20	104	117	138	116	22	63	80	201	174
143							107	117	134	116	18	70	80	190	174
144							108	117	138	116	17	69	81	191	174
145							107	118	134	114	20	68	81	198	175
146							115	118	120	114	6	77	81	178	175
147							109	118	132	114	18	71	81	182	172

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2 Persei - C/1860 I

[illegible]	Δm	n	mtn	[n]	[mtn]	Δm	mean
182	19	32	38	272	254	18	19
182	38	23	39	304	250	54	42
182	22	29	39	282	250	32	23
182	28	27	39	290	250	40	28
180	14	32	39	272	250	22	13
180	26	29	39	282	250	32	22
180	21	30	39	278	250	28	23
178	92	12	40	370	248	122	~~64~~ 92
178	28	27	40	290	248	42	28
178	12	32	40	272	248	24	13
178	4	37	40	256	248	8	4
176	15	33	40	270	248	22	15
176	20	30	40	278	248	30	22
176	12	35	40	262	248	14	14
176	34	27	40	290	248	42	34
176	12	36	40	260	248	12	10
175	23	30	41	278	244	34	24
175	27	31	41	276	244	32	23
175	10	33	41	270	244	26	14
175	15	33	41	270	244	26	19
175	25	29	41	282	244	38	29
174	14	34	41	266	244	22	16
174	12	35	41	262	244	18	14
174	14	34	41	266	244	22	16
174	27	31	42	276	242	34	26
174	16	32	42	272	242	30	21
172	19	32	42	272	240	32	16
172	10	32	42	272	240	32	23
172	6	38	43	254	240	14	9
172	16	32	43	270	240	30	21

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ζ Persei - C 18601

No.	ζ	n	m+n	[n]	[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	n	m+n	[n]	[m+n]
				ap.1					ap.3					ap.5	
148							111	118	128	114	14	71	82	188	
149							113	118	124	114	10	74	82	184	
150							114	119	122	112	10	76	82	180	
151							116	119	119	112	7	79	83	175	
152							114	119	122	112	10	76	83	180	
153							111	119	128	112	16	75	83	182	
154							111	119	128	112	16	72	83	186	
155							111	119	128	112	16	70	82	190	
156							112	119	126	112	14	71	82	188	
157							115	119	120	112	8	75	82	182	
158							110	119	130	112	18	70	82	190	
159							109	119	132	112	20	69	81	191	
160							113	119	124	112	12	74	81	184	
161							114	118	122	114	8	74	81	184	
162							116	118	119	114	5	77	81	178	
163							109	118	132	114	18	67	81	194	
164							113	118	124	114	10	74	81	184	
165							112	118	126	114	12	72	80	186	
166							114	118	122	114	8	75	80	182	
167							113	117	124	116	8	73	80	185	
168							114	117	122	116	6	72	79	186	
169							112	117	126	116	10	74	78	184	
170							114	117	122	116	6	75	78	182	
171							112	116	126	119	7	73	78	185	
172							112	115	126	120	6	70	77	190	
173							109	115	132	120	12	70	76	190	
174		192	135	46	26	20	106	114	136	122	14	66	76	196	
175							111	113	128	124	4	71	75	188	
176							112	113	126	124	2	71	74	188	
177							110	112	130	126	4	70	74	190	

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1924phae.proj.11107

δ Persei – C 1860 1

Aug. 7

[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	mean
170	18	33	43	270	240	30	16
170	14	37	43	256	240	16	13
170	10	37	43	256	240	16	12
169	6	40	43	248	240	8	7
169	11	38	43	254	240	14	12
169	13	38	43	254	240	14	14
169	17	35	43	262	240	22	18
170	20	33	43	270	240	30	22
170	18	34	43	266	240	26	19
170	12	37	43	256	240	16	12
170	20	35	43	262	240	22	20
172	19	32	43	272	240	32	24
172	12	35	43	262	240	22	15
172	12	36	42	260	242	18	13
172	6	38	42	254	242	12	8
172	22	31	42	276	242	34	25
172	12	37	42	256	242	14	12
174	12	37	42	256	242	14	13
174	8	39	42	250	242	8	8
174	11	34	41	266	244	22	14
175	11	35	41	262	244	18	12
176	8	35	40	262	248	14	11
176	6	37	40	256	248	8	7
176	9	35	40	262	248	14	10
178	12	35	39	262	250	12	10
180	10	32	39	272	250	22	14
180	16	30	38	278	254	24	18
182	6	34	37	266	256	10	7
184	4	34	37	266	256	10	5
184	6	34	36	266	260	6	5

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1924phae.proj.1110P

ζ Persei – C 18601

No.	l	eq. 1 n	m+n	[n]	[m+n]	Δm	eq. 3 n	m+n	[n]	[m+n]	Δm	eq. 5 n	m+n	[n]	[
178							108	112	133	126	7	68	73	192	
179							108	112	133	126	7	66	73	196	
180							106	111	136	128	8	65	72	198	
181							107	110	134	130	4	67	71	194	
182							108	110	133	130	3	67	70	194	
183							104	109	138	132	6	65	69	198	
184							104	108	138	133	5	63	68	201	
185							105	107	137	134	3	64	67	200	
186							105	106	137	136	1	64	65	200	
187							102	105	142	137	5	61	64	204	
188							97	104	148	138	10	53	63	218	
189							99	103	146	140	6	59	61	208	
190							97	101	148	143	5	55	58	215	
191							96	100	150	144	6	55	56	215	
192							93	98	154	147	7	53	55	218	
193							91	96	156	150	6	50	53	224	
194							90	94	158	152	6	49	50	226	
195		123	126	100	88	12	85	91	166	156	10	44	47	238	
196		123	125	100	92	8	84	88	168	161	7	45	47	236	
197		121	124	106	98	8	84	87	168	162	6	44	46	238	
198		114	123	122	100	22	82	85	170	166	4	41	44	244	
199		117	123	116	100	16	76	83	180	169	11	37	41	256	
200		92	121	155	106	49	47	79	232	175	57	16	37	338	
201		109	119	132	112	20	64	76	200	180	20	30	36	278	
202		110	117	130	116	14	66	74	196	184	12	31	36	276	
203		107	116	134	119	15	64	71	200	188	12	28	34	286	
204		106	115	133	120	13	63	67	201	194	7	26	33	292	
205		109	112	132	126	6	62	63	202	201	1	27	30	290	
206		104	109	138	132	6	57	60	211	206	5	24	28	307	
207		95	105	151	137	14	49	56	226	214	12	18	26	328	

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δ Persei – C 18601

[mtn]	Δm	n	mtn	[n]	[mtn]	Δm	mean
185	7	32	36	272	260	12	9
185	11	29	35	280	262	20	13
186	12	29	34	280	266	16	12
188	6	30	34	278	266	12	7
190	4	31	33	276	270	6	4
191	7	30	33	278	270	8	7
192	9	26	31	292	276	16	10
194	6	29	30	282	278	4	4
198	2	29	29	282	282	0	1
200	4	26	29	292	282	10	6
201	17	23	28	304	286	18	15
204	4	24	27	300	290	10	7
210	5	24	26	300	292	8	6
214	1	23	25	304	296	8	5
215	3	22	25	310	296	14	8
218	6	20	24	318	300	18	10
224	2	20	23	318	304	14	7
232	6	17	21	332	314	18	12
232	4	—	—	—	—	—	6
234	4	—	—	—	—	—	6
238	6	—	—	—	—	—	11
244	12	—	—	—	—	—	13
256	72	(6	16	476	338	138)	59
260	18						19
260	16						14
266	20						16
270	22						14
278	12						6
286	14						8
292	36						21

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α Persei - C 18601

		ap. 1					ap. 3					ap. 5			
no.	A	n	mtn	[n]	[mtn]	Δm	n	mtn	[n]	[mtn]	Δm	n	mtn	[n]	[r
208		95	102	151	142	9	50	57	224	211	13	20	24	.318	3
209		93	100	154	144	10	47	55	232	215	17	18	23	328	3
210		98	96	154	150	4	49	52	226	220	6	18	21	328	31
211		87	95	162	151	11	47	49	232	226	6	16	19	338	3
212		86	93	164	154	10	41	47	244	232	12	15	17	346	33
213		82	90	170	158	12	39	44	250	238	12	15	17	346	33
214		82	87	170	162	8	36	42	260	248	18	15	16	346	33
215		68	77	192	178	14	28	35	286	262	24	9	15	408	34
216		—	—	—	—	—						10	13	396	36
217		—	—	—	—	—						10	13	396	36
218		—	—	—	—	—						8	12	424	37
219		—	—	—	—	—						6	11	476	38
220		41	59	244	208	36						5	10	500	39
221												6	9	476	40
222												7	9	446	41
223												5	8	500	42
224												3	7	582	44
225												3	7	582	4

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d Persei – C 18601

af. 7

[m+n]	Δm	n	m+n	[n]	[m+n]	Δm	mean
300	18						13
304	24						17
314	14						8
322	16						11
332	14						12
332	14						13
338	8						11
346	62						33
364	32						
364	32						
370	54						
382	94						
396	104						~~76~~ 70
408	68						
408	38						
424	96						
446	136						
446	136						

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α Persei C-18601

Line No.	Reading		
10	39	3718	Hμ
-9	44	3730	Hλ
-8	52	3748	3750 HK
-7	56	3757	
-6	—		
-6	57	3759	
-4	59	3764	
-3	60	3766	
-2	62	3770	3770 Hε
-1	63	3773	
0	64	3775	
1	65	3777	
2	67	3782	
3	69	3786	
4	71	3790	
5	74	3793 3797	H8 3797
6	75	3800	
7	77	3804	
8	78	3807	
9	79	3809	
10	84	3820	
11	86	3824	
12	87	3826	
13	90	3833	
14	91	3835	
15	91	3833 3835	H8 3835
16	92	3838	
17	94	3842	
18	95	3845	
19	97	3850	

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Line No.	Reading		
20	99	3855	
21	101	3860	
22	102	3862	
23	104	3867	
24	104	3867	
25	106	3872	
26	109	3879	
27	111	3884	
28	112	3886	
29	113	3889 3889	H3
30	—		
31	—		
32	115	3894	
33	117	3898	
34	119	3902	
35	120	3905	✓
36	—	3912	
37	123	3912	
38	124	3914	
39	126	3919	
40	127	3921	
41	—	—	
42	—	—	
43	—	—	
44	132	3933 3933	
45	—	—	
46	—	—	
47	134	3938	
48	135	3941	
49	137	3946	
50	138	3950	

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1924phae.proj.1116P

No.	Reading	
51	140	3956
52	145	3970 3970
53	—	—
54	—	—
55	147	3976
56	149	3981
57	151	3987
58	152	3990
59	155	3998
60	157	4004
61	158	4007
62	159	4010
63	160	4012
64	—	—
65	162	4018
66	165	4026
67	167	4032
68	—	—
69	170	4041
70	172	4047
71	175	4055
72	176	4058
73	178	4064
74	179	4067
75	181	4072
76	183	4078
77	185	4084
78	185+	4084
79	186	4086
80	188	4092

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1924phae.proj.111CP

No.	Reading	
81	190	4098
82	191	4101 4101
83	194	4110
84	195	4114
85	197	4120
86	198	4124
87	200	4130
88	201	4133
89	202	4136
90	205	4146
91	207	4155
92	209	4158
93	210	4162
94	212	4168
95	214	4174
96	215	4178
97	217	4184
98	218	4188
99	219	4190
100	221	4196
101	221+	4196
102	223	4203
103	225	4211
104	227	4216
105	230	4227 4227
106	232	4234
107	233	4238
108	235	4244
109	236	4248
110	237	4252

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1924phae.proj.1110P

No.	Reading	
111	238	4256
112	239+	4260
113	240+	4262
114	243	4273
115	244	4276
116	246	4284
117	248	4291 ✓
118	249	4294
119	251	4302
120	252	4305
121	255	4316
122	256	4320
123	258	4326
124	259	4330
125	262	4340
126	265	4354
127	266	4358
128	268	4367
129	269	4372
130	271	4381
131	272	4386
132	274	4394
133	275	4400
134	276	4403
135	278	4413
136	278+	4413
137	280	4421
138	282	4431
139	—	—
140	—	—

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1924phae.proj.111PP

No.	Reading	
147	288	4458 4690
174	339	~~4462~~
195	370	4830
196	372	4839
197	373	4844
198	375	4852
199	375	4852
200	377	4861 4861
201	379	4870
202	380	4875
203	381	4880
204	381+	4880
205	384	4893
206	386	4902
207	388	4913
208	389	4916
209	390	4920
210	392	4930
211	393	4934
212	393	4934
213	395	4943
214	395	4943
215	398	4957
220	404	

141	286+	4452
142	288	4460
143	291	4474
144	293+	4484
145	294+	4490
146	296	4497
147	297+	4504
148	299+	4512
149	301	4520
150	302	4524
151	304	4533
152	306	4542
153	307	4547
154	309	4556
155	310	4561
156	312	4570
157	313	4575
158	314	4580
159	315	4585
160	317	4594
161	319	4603
162	320	4608
163	321	4612
164	322	4617
165	323	4622
166	325	4630
167	328	4636
168	330	4654
169	331	4658
170	332	4663

171	334	4672
172	336	4682
173	338	4690
174	339	4695
175	342	4708
176	343	4713
177	~~345~~	
178	~~346~~ 345	4722
179	~~347~~ 346	4727
180	347	4732
181	349	4740
182	350	4746
183	351	4750
184	352	4754
185	354	4764
186	354	4764+
187	356	4772
188	358	4782
189	360	4791
190	361	4796
191	362	4800
192	365	4815
193	366	4818
194	367	4823
(200	375)	

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1924phae.proj.1110P

52

α Canis Minoris C-1858 9

No.	Reading			
1	0	3708		
2	1	3710		
3	2	3712		
4	3	3714		
5	6	3719		
6	9	3725		
7	11	3729		
8	12	3731		
9	15	3738	3737	Fe
10	19	3745		
11	22	3750		
12	23	3752		
13	25	3756		
14	27	3760		
15	29	3764		
16	30	3766		
17	32	3770		
18	36	3779		
19	41	3789		
20	42	3791		
21	44	3795		
22	45	3797		
23	48	3804		
24	50	3808		
25	53	3815		
26	55	3820		
27	57	3824		
28	58	3826		
29	62	3835		
30	67	3848		

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1924phae.proj.11109

No.	Reading			
31	68	3850		
32	70	3855		
33	72	3860		
34	74	3865		
35	75	3867		
36	78	3875		
37	80	3880		
38	82	3885		
39	84	3889		
40	86	3894		
41	89	3901		
42	90	3904		
43	91	3906		
44	95	3916		
45	96	3918		
46	96-	3918		
47	97	3921		
48	102	3933	3933	Ca
49	106	3945	3944	Al Fe
50	108	3950	3945	Fe Co Fe
51	109	3953	3951	Mn
52	111	3959	3961	Al Fe
53	114	3967	3963	Ti
54	115	3970	3968. 3970	Ca H
55	120	3984	3984	Cr Fe Mn Ti
56	122	3990	3989	Fe V Cr
57	123	3993	3993	Un
58	126	4001	4005	Fe Mn
59	127	4004	4008	Ti
60	129	4010	4012	Ti +

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1924phae.proj.1110P

No.	Reading			
61	131	4015	4016	Fe
62	133	4021	4022	Fe
63	136	4029	4029	Fe
64	138	4035	4031 4034	Mn Mn
65	139	4038	4035	Mn
66	141	4043	4043	La Fe+
67	143	4049	4048	Mn Cr
68	146	4057	4056	Fe
69	147	4062	4063	Fe Mn
70	149	4065	4065	Ti Fe
71	150	4068	4069	Un Un
72	152	4074	4074	Fe
73	154	4079	4078	Sr+
74	156	4084	4084	Fe
75	160	4096	4096	Fe
76	161	4099	4098	Ca?
77	162	4101 4101	4102	H 8 Ce
78	164	4108	4107	Fe Zr
79	166	4114	4111	V
80	168	4121	4120	Fe
81	169	4125	4125	Un
82	170	4128	4129	Un
83	173	4138	4136	Zr Fe
84	174	4142	4142	Cr Un Un
85	176	4148	4150	Co
86	177	4152	4153	Un Fe
87	180	4162	4165	Cc
88	183	4172	4175	Fe Fe+
89	185	4179	4179	V
90	186	4182	4180	Un

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No	Reading			
91	188	4189	4189	Un
92	190	4195	4196	Fe
93	193	4206	4207	Fe
94	194	4210	4212	Zr
95	198	4222	4215	Fe Sr+
96	200	4229	4225	Fe
97	201	4232	4227	Fe
98	204	4243	4233	Fe+ Fe
99	205	4246	4243	Fe
100	208	4256	4250	Fe
101	211	4266	4272	Fe
102	215	4280	4282	Fe Ca Ti
103	218	4290	4291 4296	Fe Fe+
104	220	4297	4297	Un Ti Ti
105	223	4306	4306	Un
106	225	4313	4313	Ti+ Sc
107	226	4316	4317	Ti?
108	228	4324	4328	Un
109	230	4330	4330	Ti+
110	231	4334	4333	V
111	233	4340	4340.	H γ
112	236	4354	4357	Fe
113	238	4362	4360	Ti Fe Zr
114	241	4377	4376	Fe
115	243	4386	4387	Ti+
116	245	4396	4395	Ti+ V Cr
117	249+	4414	4417	Ti+ Un
118	250+	4418	4420	Zr Un
119	253	4432	4432	Cr
120	255	4440	4438	Fe

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1924phae.proj.1110P

No.	Reading			
121	258	4454	4453	Mn Ti V
122	260	4462	4460	Mn Fe
123	263	4476	4476	Ag
124	265	4486	4485	Fe
125	266	4490	4491	Fe+
126	270	4507	4508 4517	Fe+ Fe Ti
127	272	4518	4518	Un
128	273	4522	4520	Fe Ti+
129	276	4534.5	4534	Co
130	282	4562	4563	Ti +
131	284	4570	4568	Fe
132	285	4576	4576	Fe+ Cr V
133	286	4580	4580	Fe Ni
134	289	4594	4594	V
135	291	4602	4602	Fe
136	293	4612	4611	Fe Fe Ti
137	295	4620	4619	Cr Fe+ Ti
138	297	4630	4629 4646	Co Fe Cr Fe
139	301	4647	4648	Ni Ti
140	303	4656	4657	Ti+ Cr
141	304	4660	4663	Co Cr Un
142	307	4674	4673	Fe Ti
143	309	4683	4682	Fe? Co Ti
144	311	4692	4691	Fe
145	314	4706	4705	Fe
146	316	4714	4714	Ni
147	318	4723	4722	Zn
148	320	4732	4731	Un
149	321	4736	4734	Fe
150	324	4750	4752	Ni

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1924phae.proj.1110

No.	Reading			
				Cr
151	326	4758	4756	Ni
				Un
152	329	4772	4771	Fe
				Fe
153	330	4777	4779	Co
				Fl
154	335	4800	4800	Ti
				Cr
				Mn
155	339	4818	4824	Cr+
				Fe
				Ni
156	341	4826	4856	Fe
				Ti
157	346	4848	4848	Cr+
158	349	4861	4861	H β
159	351	4871		
160	353	4880		
161	354	4886		
162	356	4894		
163	359	4908		
164	362	4925		
165	365	4935		
166	368	4948		
167	370	4958		

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1924phae.proj.1110P

Probable errors of line depths from two 1-prism plates of Capella.

Range in dl / Residuals	0-10	sq.	10-20	sq.	20-30	sq.	30-40	sq.	40-50	sq.	50-75	sq.	75-100	sq.	10-20 (cont.)	
	2	4	2	4	0	0	5	25	5	25	2	4	0	0	0	0
	1	1	1	1	0	0	2	4	4	16	10	100	1	1	0	0
	0	0	2	4	1	1	5	25	0	0			2	4	0	0
	0	0	1	1	1	1	2	4	4	16			0	0	0	0
	0	0	0	0	1	1	1	1	0	0			2	4	0	0
	2	4	0	0	1	1	0	0	1	1			2	4	0	0
	0	0	0	0	1	1	5	25	2	4			1	1	0	0
	2	4	0	0	0	0	1	1	2	4	10-20 cont.		2	4	1	1
	0	0	0	0	0	0	0	0			2	4	0	0	0	0
			0	0	0	0	1	1			0	0	0	0	0	0
			2	4	5	25	1	1			1	1	2	4	0	0
			2	4	0	0	0	0			1	1	0	0	0	0
			1	1	0	0	1	1			0	0	1	1	1	1
			2	4	1	1	1	1			0	0	0	0	2	4
			0	0	2	4	1	1			2	4	0	0	2	4
			3	9	1	1	1	1			0	0	1	1	3	9
			4	16	0	0	0	0			0	0	0	0	0	0
			2	4	0	0					2	4	2	4	0	0
			1	1	0	0					2	4	0	0	0	0
			2	4	0	0					2	4	1	1	0	0
			0	0	1	1					0	0	1	1	2	4
			0	0	1	1					6	36	2	4	1	1
			1	1	2	4					1	1		34	0	0
			0	0	0	0					0	0		55	1	1
			0	0	1	1						59			0	0
			2	4	2	4						62			2	4
			0	0	2	4						29			0	0
			0	0	2	4									0	0
		13		8				91		96		150		89		6

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1924phae.proj.1110p

	0-10	10-20	20-30	30-40	40-50	50-75	
Σv^2	13	150	89	91	66	104	
n	9	72	~~89~~ 50	17	8	2	158
μ^2	1.44	2.07	1.78	5.34	8.32	52	
μ	1.20	1.44	1.33	2.31	2.88	7.21	
r	0.81	0.97	0.90	1.53	1.95	4.88	Probable errors of dl values for these depth

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1924phae.proj.1110P

Probable errors for two 1 prism plates of γ Cygni.

Range in dl	0-10		10-20		10-20		10-20	20-30		20-30		30-40		40-50		50-75		75-100	
Residuals	1	1	1	1	0	0		3	9	1	1	2	4	2	4	3	9	2	4
	1	1	2	4	2	4		0	0	2	4	1	1	3	9	2	4	1	1
			2	4	2	4		0	0	2	4	2	4	1	1				
			0	0	2	4		0	0	2	4	0	0	2	4				
			2	4	2	4		1	1	1	1	1	1	1	1				
			1	1	3	9		1	1	2	4	1	1						
			3	9	3	9		1	1	0	0	0	0						
			1	1	0	0		0	0	1	1	1	1						
			2	4	3	9		2	4	0	0	1	1						
			1	1	0	0		2	4	5	25	1	1						
			0	0		43		0	0	0	0	0	0						
			1	1		148		1	1	2	4	1	1						
			1	1		291		2	4	0	0	0	1						
			2	4				1	1	2	4	2	4						
			3	9				1	1	2	4	1	1						
			0	0				1	1	1	1	5	25						
			1	1				1	1	2	4	1	1						
			5	25				1	1	1	1	5	25						
			5	25				0	0	0	0	2	2						
			2	4				1	1	0	0	1	1						
			4	16				0	0	0	0	4	16						
			0	0				1	1	0	0	0	0						
			0	0				7	49	1	1	3	9						
			0	0				0	0	1	1								
			4	16				4	16	0	0								
			1	1				1	1	3	9								
			0	0				2	4	2	4								
			5	25				0	0	0	0								
										2	4								
	2			241				104		54		86		100		19		13	5

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1924phae.proj.1110p

	0-10	10-20	20-30	30-40	40-50	50-75	75-100	50-100
Σv^2	2	291	186	100	19	(13)	(5)	18
n	2	38	60	23	5	(2)	(2)	4
μ^2	1	7.66	3.10	4.35	3.80	(6.50)	(2.50)	4.50
μ	1	2.77	1.76	2.09	1.95	(2.55)	(1.58)	2.12
λ	0.67	1.92	1.22	~~3.06~~ 1.44	1.34			1.46

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1924phae.proj.1110P

Probable errors for two 2 prism plates of γ Cygni

C 18482
18577

Range in dl

Residuals

0-10		10-20		10-20		20-30		20-30		20-30		30-40		40-50		50-75	
9	9	1	1	3	9	9	81	0	0	2	4	3	9	1	1	6	36
		6	36	2	4	0	0	1	1	2	4	2	4	2	4	0	0
		3	9	0	0	3	9	4	16	3	9	3	9	1	1	3	9
		5	25	0	0	1	1	0	0	2	4	5	25	1	1		45
		4	16	0	0	0	0	1	1	3	9	6	36	1	1		
		1	1	2	4	2	4	1	1	3	9	1	1	1	1		
		0	0	2	4	3	9	4	16	2	4	2	4	4	16		
		1	1	1	1	1	1	0	0	1	1	1	1	1	1		
		5	25	2	4	4	16	2	4	3	9	0	0	0	0		
		1	1	3	9	0	0	1	1	1	1	1	1	2	4		
		3	9		35	0	0	2	4		54	0	0	0	0		
		1	1		174	1	1	0	0		175	1	1	1	1		
		0	0			6	36	1	1		81	3	9	2	4		
		0	0			0	0	0	0			1	1	0	0		
		1	1			2	4	2	4			0	0		41		
		1	1			2	4	2	4			0	0	30-40			
		4	16			0	0	1	1			0	0	1	1		
		1	1			1	1	1	1			1	1	1	1		
		0	0			2	4	2	4			0	0	1	1		
		0	0			1	1	0	0			2	4	3	9		
		2	4			0	0	1	1			5	25	1	1		
		1	1			0	0	1	1			0	0	0	0		
		1	1			1	1	0	0			3	9	1	1		
		2	4			0	0	1	1			1	1	5	25		
		1	1			1	1	3	9			2	4	0	0		
		4	16			1	1	2	4			2	4	1	1		
		1	1			0	0	1	1			1	1	1	1		
		1	1			0	0	2	4			2	4	1	1		
		1	1			0	0	1	1			0	0	1	1		
9				209		(175)		(81)		310		(154)		(43)		197	

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1924phae.proj.11100

	0-10	10-20	20-30	30-40	40-50	50-75
Σv^2	9	209	310	197	41	45
n	1	39	68	42	18	3
μ^2	9	5.37	4.56	4.70	2.27	15.0
μ	3.00	2.32	2.14	2.17	1.51	3.87
ν	2.05	1.56	1.44	1.46	1.02	2.60

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1924phae.proj.1110P

Probable errors of dl for 9 1-prism plates of Pleiades

10-20		20-30		30-40		40-50		50-60		30-40		30-40	
1	1	3	9	0	0	7	49	2	4	3	9	0	0
2	4	3	9	10	100	6	36	3	9	1	1	2	4
1	1	8	64	3	9	9	81	3	9	11	121	2	4
1	1	4	16	8	64	0	0	3	9	2	4	0	0
4	16	9	81		173	3	9	4	16	6	36	0	0
1	1	2	4		573	2	4	2	4	4	16	6	36
2	4	4	16		548	3	9	4	16	3	9	6	36
2	4	2	4		1294	3	9	7	49	1	1	0	0
2	4	0	0			0	0		116	2	4	6	36
2	4	2	4			2	4		675	4	16	8	64
10	100	1	1			11	121		791	8	64	2	4
13	169	7	49			2	4			6	36	2	4
3	9	0	0			1	1			8	64	11	121
0	0	1	1			3	9			2	4	2	2
1	1	1	1			0	0			2	4	9	81
4	16	1	1			6	36			0	0	3	9
1	1	8	64			4	16			1	1	0	0
1	1	7	49			6	36			7	49	2	4
1	1	2	2			5	25			9	81	3	9
2	4	10	100			0	0			2	4	9	81
1	1	7	49			2	4			7	49	1	1
1	1	2	2			2	4			7	49	5	25
3	9	11	11			0	0			1	1	7	49
11	121	2	2			11	121			1	1	1	1
6	36	6	6			3	9			1	1	2	4
1	1	0	0			6	36			2	4	10	100
4	16	3	3			6	36			4	16	4	16
6	36	0	0			4	16			4	16	11	121
										3	9	6	36
	(573)		(548)				(675)				(670)		(857)

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Data from table of means, Book 14

30-40		30-40		40-50		40-50		40-50		50-60		50-60		50-60		50-60		50-60	
1	1	1	1	0	0	3	9	6	36	1	1	10	100	1	1	2	4	1	1
1	1	5	25	0	0	6	36	13	169	1	1	2	4	4	16	6	36	3	9
4	16	2	4	6	36	4	16	6	36	9	81	3	9	1	1	2	4	1	1
6	36	6	36	1	1	8	64	5	25	3	9	2	4	3	9	3	9	0	0
5	25	2	4	8	64	3	9	4	16	5	25	3	9	0	0	8	64	7	49
4	16	5	25	1	1	2	4	1	1	0	0	5	25	1	1	2	4	4	16
19	361	2	4	5	25	6	36	4	16	4	16	3	9	2	4	10	100	1	1
5	25	14	196	1	1	6	36	8	64	2	4	3	9	1	1	6	36	6	36
2	4	12	144	1	1	5	25	1	1	2	4	0	0	1	1	4	16	0	0
6	36	0	0	0	0	8	64	1	1	1	1	1	1	0	0	2	4	1	1
3	9	5	25	1	1	13	169	2	4	1	1	3	9	5	25	8	64	1	1
3	9	6	36	2	4	2	4	5	25	2	4	8	64	4	16	8	64	1	1
3	9	12	144	9	81	4	16	3	9	3	9	4	16	5	25	2	4	0	0
9	81	4	16	1	1	5	25	1	1	4	16	16	256	4	16	3	9	6	36
15	225	0	0	9	81	4	16	0	0	2	4	2	4	1	1	5	25	4	16
3	9	3	9	7	49	5	25	1	1	3	9	2	4	2	4	2	4	2	4
3	9	2	4	4	16	2	4	0	0	4	16	1	1	1	1	0	0	0	0
1	1	2	4	0	0	2	4	1	1	1	1	3	9	3	9	4	16	2	4
16	256	2	4	1	1	0	0	1	1	3	9	3	9	4	16	2	4	2	4
1	1	0	0	8	64	2	4	1	1	0	0	0	0	3	9	8	64	3	9
4	16	0	0	2	4	3	9	3	9	2	4	5	25	0	0	4	16	2	4
3	9	4	16	11	121	5	25	0	0	4	16	3	9	0	0	0	0	6	36
3	9	3	9	4	16	2	4	0	0	1	1	5	25	3	9	2	4	2	4
4	16	12	144	3	9	2	4	1	1	8	64	0	0	1	1	7	49	1	1
4	16	19	361	10	100	10	100	0	0	2	4	3	9	1	1	2	4	3	9
4	16	9	81	2	4	0	0	4	16	8	64	1	1	5	25	2	4	1	
9	81	3	9	8	64	3	9	8	64	7	49	1	1	2	4	3	9	3	9
12	144	2	4	1	1	10	100	9	81	6	36	1	1	0	0	2	4	8	64
18	324	13	25					142											
		357						746											
		670						817											
	(6761)	1761		(746)		(817)		3705		(449)		(613)		(196)		(621)		(317)	
		4793																	

50-60	
11	1 1
49	1 1
49	3 9
24	3 9
11	4 16
39	4 16
49	1 1
1 1	0 0
1 1	2 4
16 121	1 1
9 81	4 16
2 4	1 1
1 1	5 25
6 36	2 4
6 36	0 0
2 4	3 9
1 1	3 9
3 9	6 36
3 9	6 36
8 64	2 4
0 0	8 64
1 1	12 144
1 1	16 256
7 49	8 64
4 16	2 4
1 1	2 4
3 9	1 1
0 0	0 0
1 1	9 81
4 16	13 169
11 121	2 4
3 9	6 36
0 0	5 25
4 16	2 4
1 1	4 16
1 1	0 0
3 9	9 81
3 9	4 16
7 49	14 196
0 0	2 4
7 49	5 25
2 4	2 4
3 9	6 36
0 0	1370
1 1	449
1 1	613
1 1	196
8 64	621
4 16	317
1 1	1002
0 0	4568

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Pleiades.

	10-20	20-30	30-40	40-50	50-60	
Σn^2	1294	791	4592	2605	4568	
n	60	46	~~1586~~	88	210	519
μ^2	21.6	17.2	39.8	29.6	21.7	
μ	4.65	4.15	6.31	5.44	4.66	
r	3.14	2.80	4.26	3.68	3.15	
$\sqrt{n}$	7.75	6.78	10.72	9.38	14.49	
$\frac{r}{\sqrt{n}}$	.405	.413	.398	.393	.217	

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Reduced to H+m+n = 95

H 2695 Alcyone — Taygeta

	n	m+n	L+m+n	$\bar{n}$	$\bar{m+n}$	(n)	(m+n)	ΔM	n	m+n	L+m+n	$\bar{n}$	$\bar{m+n}$	(n)	(m+n)	ΔM
π	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
o	20	22	94	20	22	2.96	2.82	.14	—	—	—	—	—	—	—	—
ζ	21	25	94	21	25	2.90	2.62	.28	—	—	—	—	—	—	—	—
ν	21	30	94	21	30	2.90	2.36	.54	5	7	95	5	7	—	—	—
μ	24	35	94	24	35	2.68	2.14	.54	8	10	95	8	10	—	—	—
λ	24	40	94	24	40	2.68	1.98	.70	7	11	95	7	11	—	—	—
κ	25	46	94	25	46	2.62	1.80	.82	8	13	95	8	13	—	3.54	—
ι	28	51	94	28	52	2.44	1.62	.82	9	16	95	9	16	—	3.24	—
θ	30	56	94	30	57	2.36	1.46	.90	10	19	95	10	19	—	302	—
η	35	60	94	35	61	2.14	1.32	.82	11	23	95	11	23	—	2.74	—
3	41	66	94	41	67	1.94	1.12	.82	14	29	95	14	29	3.44	2.40	1.04
ε	52	74	94	53	75	1.58	.78	.80	15	36	94	15	36	3.34	2.10	1.24
δ	65	82	95	65	82	1.18	48	.70	24	45	94	24	45	2.68	1.84	.84
γ	80	90	95	80	90	58	14	44	37	58	94	37	58	2.08	1.42	.66
β	71	98	96	70	77	1.00	70	30	27	43	93	27	43	2.50	1.88	.62

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H 2695

Electra

	n	m+n	L+m+n	$\overline{n}$	$\overline{m+n}$	(n)	(n+n)	Δm
	—	—	—	—	—	—	—	—
o	19	22	96	19	22	3.02	2.82	.20
ξ	20	24	96	20	24	2.96	2.68	.28
ν	20	27	96	20	27	2.96	2.50	.46
μ	20	30	96	20	30	2.96	2.36	.60
λ	19	35	96	19	35	3.02	2.14	.88
κ	22	41	96	22	41	2.82	1.94	.88
ι	23	47	96	23	47	2.74	1.78	.96
θ	26	52	96	26	51	2.56	1.66	.90
η	29	56	96	29	55	2.40	1.52	.88
ζ	36	63	95	36	63	2.10	1.26	.84
ε	43	68	95	43	68	1.88	1.08	.80
δ	50	72	95	50	72	1.68	.90	.78
γ	60	76	94	61	77	1.32	.70	.62
β	47	60	94	47	61	1.78	1.32	.46

Merope

	n	m+n	L+m+n	$\overline{n}$	$\overline{m+n}$	(n)	(n+n)	Δm
	—	—	—	—	—	—	—	—
o	8	10	95	8	10	–	–	–
ξ	8	11	95	8	11	–	–	–
ν	8	13	95	8	13	–	3.54	–
μ	9	14	95	9	14	–	3.44	–
λ	10	15	95	10	15	–	3.34	–
κ	10	17	95	10	17	–	3.18	–
ι	10	20	95	10	20	–	2.96	–
θ	9	22	95	9	22	–	2.82	–
η	12	26	95	12	26	–	2.56	–
ζ	15	31	95	15	31	3.34	2.30	1.04
ε	19	36	95	19	36	3.02	2.10	.92
δ	25	44	95	25	44	2.62	1.86	.76
γ	40	54	94	40	55	1.98	1.52	.46
β	30	37	94	30	37	2.36	2.08	28

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	Maia								Celaeno							
	n	m+n	l+m+n	$\bar{n}$	$\bar{m+n}$	(n)	(m+n)	Δm	n	m+n	l+m+n	$\bar{n}$	$\bar{m+n}$	(n)	(m+n)	Δm
π	9	11	93	9	11	—	—	—	—	—	—	—	—	—	—	—
o	9	11	93	9	11	—	—	—	—	—	—	—	—	—	—	—
ξ	9	12	93	9	12	—	—	—	—	—	—	—	—	—	—	—
ν	9	14	93	9	14	—	3.44	—	—	—	—	—	—	—	—	—
μ	9	17	93	9	17	—	3.18	—	—	—	—	—	—	—	—	—
λ	11	20	93	11	20	—	2.96	—	—	—	—	—	—	—	—	—
K	12	23	93	12	23	—	2.74	—	—	—	—	—	—	—	—	—
ι	11	27	93	11	28	—	2.44	—	—	—	—	—	—	—	—	—
Θ	12	30	93	12	31	—	2.30	—	4	10	94	4	10	—	—	—
η	14	35	93	14	36	3.44	2.10	.34	5	12	94	5	12	—	—	—
ζ	18	42	93	18	43	3.10	1.88	1.22	6	15	94	6	15	—	3.34	—
ε	24	50	93	25	51	2.62	1.66	.96	8	18	94	8	18	—	3.10	—
δ	34	57	93	35	58	2.14	1.42	.72	7	22	94	7	22	—	2.82	—
γ	49	68	93	50	69	1.68	1.04	.64	10	26	93	10	27	—	2.50	—
β	36	53	93	37	54	2.08	1.56	.52	7	14	93	7	14	—	3.44	—

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	Atlas								Pleione							
	n	m+n	l+m+n	$\bar{n}$	$\bar{m}$+n	(n)	(m+n)	Δ m	n	m+n	l+m+n	$\bar{n}$	$\bar{m}$+n	(n)	(m+n)	Δ m
π	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
o	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ξ	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ν	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
μ	9	12	94	9	12	—	—	—	—	—	—	—	—	—	—	—
λ	11	16	94	11	16	—	3.24	—	—	—	—	—	—	—	—	—
κ	10	20	94	10	20	—	2.96	—	—	—	—	—	—	—	—	—
ι	11	25	94	11	25	—	2.62	—	8	11	94	8	11	—	—	—
θ	13	30	94	13	30	3.54	2.36	1.18	9	13	94	9	13	—	3.54	—
η	15	37	94	15	37	3.34	2.08	1.26	9	16	94	9	16	—	3.24	—
ξ	21	46	95	21	46	2.90	1.80	1.10	11	18	94	11	18	—	3.10	—
ε	31	58	95	31	59	2.30	1.40	.90	9	20	94	9	20	—	2.96	—
δ	45	70	95	45	71	1.84	.96	.88	12	28	95	12	28	—	2.44	—
γ	61	79	95	62	80	1.30	.58	.72	19	38	95	19	38	3.02	2.04	.98
β	42	58	96	42	59	1.92	1.40	.52	12	21	95	12	21	—	2.90	—

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C 1885 1

Reduced to 85

Vega Ap 6 $\mu\varphi$ 748

	n	m+n	t+m+n	n̄	m+n	[n]	[m+n]	Δm
β	12	43	86	12	43	120	306	186
γ ε	20	61	84	20	62	170	379	209
δ ζ	14	55	82	15	57	139	360	221
ε η	–	–	–					
κ ξ	–	–	–					
ζ ψ	–	–	–					
η	–	–	–					

Vega Ap 6 $\mu\varphi$ 749

	n	m+n	t+m+n	n̄	m+n	[n]	[m+n]	Δm
	16	58	86	57	16	145	360	215
	7	47	86	46	7	087	320	233
	25	41	86	41	25	203	297	94
	1	27	86	27	1	42	216	174
	1	10	86	10	1	42	106	64

C 1884 4

C 1884 4 Reduced to —

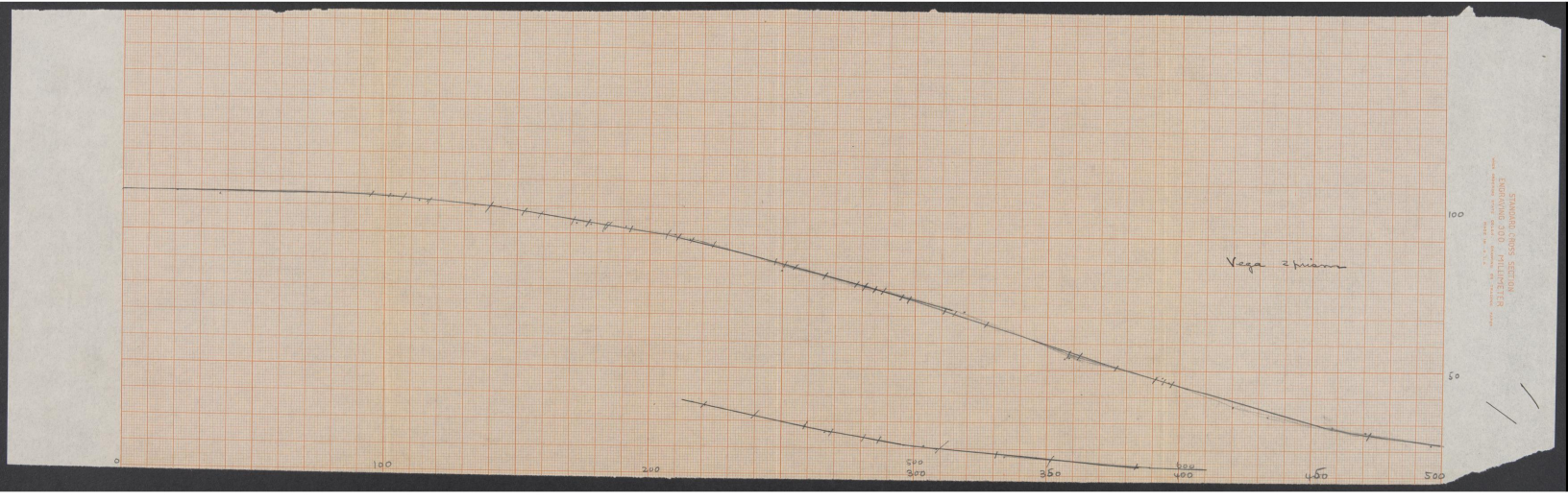
Sirius Ap 1. $\mu\varphi$ 742*

	n	m+n	t+m+n	n̄	m+n	[n]	[m+n]	Δm
β	47	5-3	5-4					
γ	46	5-1	5-2					
δ	40	5-0	5-0					
ε	–	–	–					
κ	–	–	–					
ζ	–	–	–					
η	–	–	–					
θ	–	–	–					
ν	–	–	–					
κ	–	–	–					
λ	–	–	–					

Sirius Ap 1 $\mu\varphi$ 743

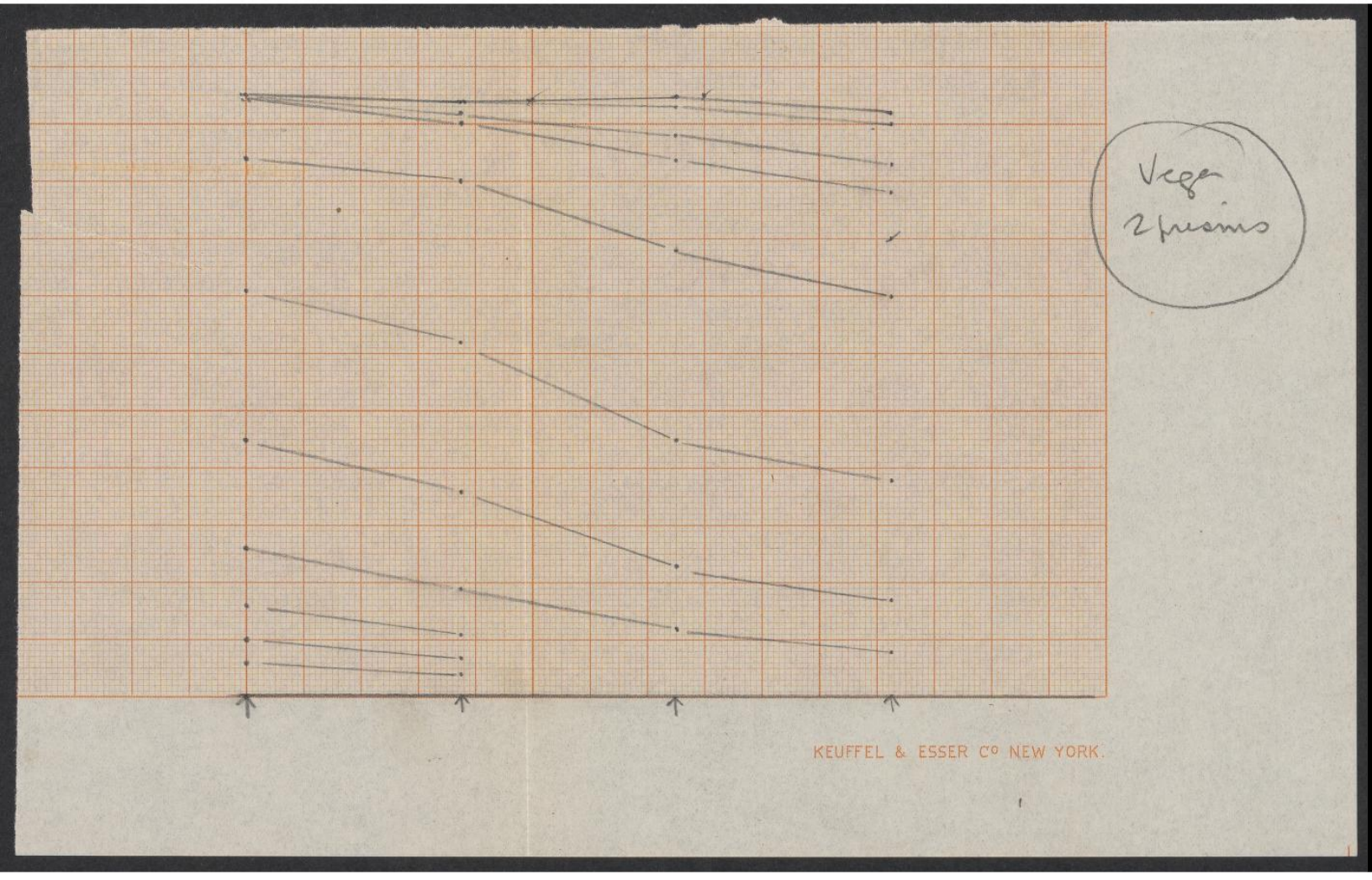
	n	m+n	t+m+n	n̄	m+n	[n]	[m+n]	Δm
	44	5-4	5-4					
	37	55	5-7					
	51	5-4	5-8					
	22	48	5-9					
	7	32	61					
	2	18	62					
	0	10	63					
	-1	7	64					
	0	4	64					

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1924



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1924phae.proj.11102

~~C 1884.5~~ C 1885.1

C 1885.1

Ap. 4

Reduced to 80'

ζ Lyrae Ap 2. μ Φ 744

	n	m+n	4m+n	π	m+n	[n]	[m+n]	Δm
β	46	71	82	48	74	328	425	197
γ	54	77	79	58	80	364	457	193
δ	47	74	77	52	82	343	485	(142)
ε	—	—	—					
κ	—	—	—					
ζ	—	—	—					
η	—	—	—					
Θ	—	—	—					
ι	—	—	—					
κ	—	—	—					
λ	—	—	—					

μ Φ 746

	n	m+n	4m+n	π	m+n	[n]	[m+n]	Δm
	23	53	82	24	55	197	354	157
	32	67	80	34	71	266	413	147
	23	61	78	25	66	204	394	190
	—	—	—					
	—	—	—					
	—	—	—					
	—	—	—					
	—	—	—					
	—	—	—					
	—	—	—					
	—	—	—					

C. 1885.1

ζ Lyrae μ Φ 747 Ap. 4

	n	m+n	4m+n	π	m+n	[n]	[m+n]	Δm
β	—	—	—					
γ	—	—	—					
δ	27	61	83	28	62	221	378	157
ε	16	55	82	28	57	221	360	139
κ	35	49	82	86	51	268	339	71
ζ	3	34	82	3	35	053	262	209
η	0	14	81	0	15	034	139	>105
Θ	-1	4	81	-1	4			
ν								
κ								
λ								
μ								

C. 1884.5

ζ Lyrae μ Φ 746 Ap. 2

	n	m+n	4m+n	π	m+n	[n]	[m+n]	Δm.
β	—	—	—					
γ	—	—	—					
δ	51	80	83	52	82	343	485	(142)
ε	38	75	83	39	77	285	438	153
κ	62	72	83	63	74	382	425	43
ζ	20	62	83	20	63	170	382	212
η	6	42	83	6	48	080	306	226
Θ	4	26	83	4	27	067	216	149
ν	2	16	83	2	16	050	145	95
κ	3	11	83	3	11	059	113	54
λ	2	9	83	2	9	050	100	50
μ	2	7	83	2	7	050	087	37

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$n \quad m+n \quad (1+m+n \quad \overline{n} \quad \overline{m+n} \quad [n] \quad [m+n] \quad \Delta m$

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1924phae.proj.11107

Reduced to 135

In reduction, discard any values of n or mtn below 5

α Orionis 1867.8 No 1 No 3

	n	mtn	ltmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	Δm	n	mtn	ltmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	Δm
1	3	6	134													
2	2	6	134													
3	2	6	134													
4	2	7	134													
5	4	7	134													
6	4	8	134													
7	3	8	134													
8	3	8														
9	5	8														
10	6	8														
11	3	9														
12	5	9														
13	6	9														
14	6	9														
15	6	10														
16	5	11														
17	8	11														
18	9	12														
19	10	12														
20	4	12														
21	9	12														
22	4	12														
23	8	13														
24	6	13														
25	8	13														
26	5	13														
27	9	14														
28	9	14														
29	7	14														
30	7	15														

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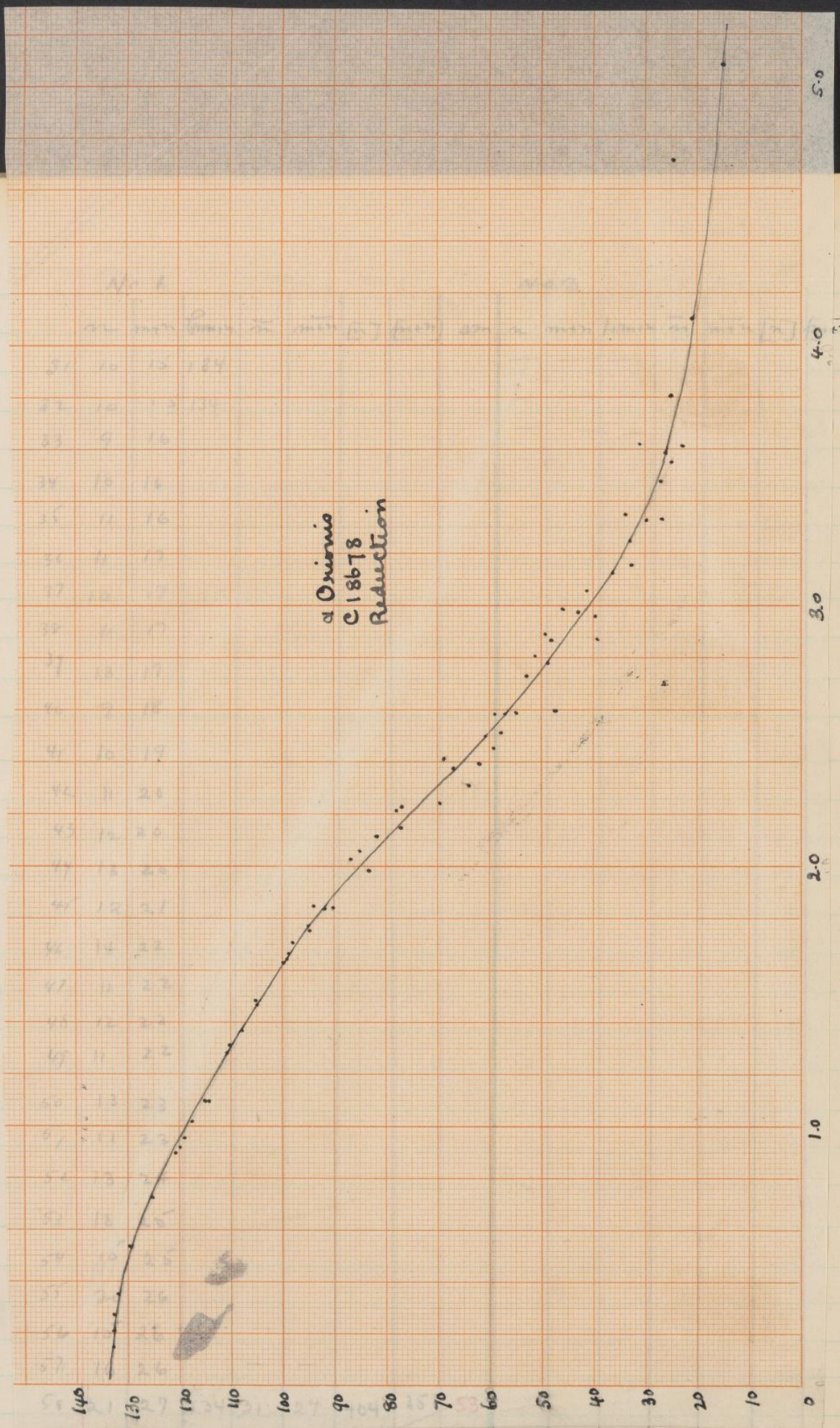
1924phae.proj.11169

No 5 No 7

	n	m+n	1+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	Dm	n	m+n	1+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	Dm
1																
2																
3																
4																
5																
6																
7																
8																
9																
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1924phae.proj.1116P



57	23	27	124	28	27	382	351	31

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1924phae.proj.1110P

	No 1.								No 3							
	n	mtn	[n]	$\bar{n}$	mtn	[n]	[mtn]	Δm	n	mtn	[n]	$\bar{n}$	mtn	[n]	[mtn]	Δm
31	10	15	134						—	—	—					
32	10	15	134						—	—	—					
33	9	16							—	—	—					
34	10	16														
35	11	16														
36	11	17														
37	10	17														
38	11	17														
39	13	17														
40	9	18														
41	10	19														
42	11	20														
43	12	20														
44	13	20														
45	12	21														
46	14	22														
47	11	22														
48	12	22														
49	11	22														
50	13	23														
51	11	23														
52	13	24														
53	18	25														
54	10	25														
55	20	26														
56	15	26		—	—											
57	16	26		—	—											
58	21	27	134	21	27	404	351	53								
59	23	27	134	23	27	382	351	31								
60	20	28	134	20	28	420	346	74								

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No 5 E.of V No. 7

	n	mtn	Ltmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm	n	mtn	Ltmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm
31	—	—	—						—	—	—					
32	—	—	—													
33	—	—	—													
34																
35																
36																
37																
38																
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41																
42																
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45																
46																
47	—															
48																
49																
50																
51																
52																
53																
54																
55																
56	15	15	135	5	15											
57	—	—	—	—	—											
58	—	—	—	—	—											
59	—	—	—	—	—											
60	—	—	—	—	—											

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Material

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1924phae.proj.1110P

	No 1.								No. 3							
	n	m+n	t+m+n	$\bar{n}$	m+n	[n]	[m+n]	Δm	n	m+n	t+m+n	$\bar{n}$	m+n	[n]	[m+n]	Δm
61	22	30	134	22	30	391	337	54								
62	22	30	"	22	30	391	337	54								
63	25	30	"	25	30	367	337	30								
64	18	32	"	18	32	—	—	—								
65	24	32	"	24	32	375	329	46								
66	25	34	"	25	34	367	321	46	—	—	—					
67	24	35	"	24	35	375	317	58	—	—	—					
68	32	36	"	22	36	329	313	16	—	—	—					
69	27	37	"	27	37	351	311	40	—	—	—					
70	32	39	134	32	39	329	305	24	14	36	134	14	31			
71	35	40	"	35	40	317	302	15	17	31	134	17	31			
72	26	42	"	26	42	359	297	62	15	32	134	15	32			
73	22	43	"	22	43	391	294	97	13	32	134	13	32			
74	17	46	"	17	46	466	286	180	12	33	134	12	33			
75	18	48	"	18	48	—	—	—	13	34	134	13	34			
76	27	50	"	27	50	351	275	76	14	34	134	14	34			
77	28	52	"	28	52	346	270	76	—	—	—	—	—			
78	35	53	"	35	53	317	267	50	17	36	134	17	36	—	—	
79	46	55	"	46	55	286	263	23	18	37	134	18	37	—	—	
80	38	58	"	38	58	308	256	52	22	39	134	22	39	391	305	86
81	30	60	"	30	60	337	251	66	19	40	134	19	40	—	—	
82	26	62	"	36	62	313	247	66	14	40	134	14	40	—	—	
83	19	64	"	19	64	(420)	(243)	(177)	13	41	134	13	41	—	—	
84	32	66	134	32	67	329	236	93	20	43	134	20	43	420	294	126
85	49	70	134	49	71	278	229	49	25	46	134	25	46	367	286	81
86	59	73	134	59	74	254	223	31	31	48	134	31	48	333	281	52
87	63	77	134	63	78	245	215	30	33	49	134	33	49	325	278	47
88	60	78	134	60	79	251	212	39	34	50	134	34	50	321	275	46
89	67	82	134	68	83	235	204	31	36	52	134	36	52	313	270	43
90	70	83	135	70	83	231	204	27	39	53	134	39	53	305	267	38

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Reduction table

20	420	50	275	80	210	110	131
21	404	51	273	81	208	111	127
22	391	52	270	82	206	112	123
23	382	53	267	83	204	113	120
24	375	54	265	84	202	114	117
25	367	55	263	85	200	115	113
26	359	56	260	86	198	116	110
27	351	57	258	87	196	117	107
28	346	58	256	88	194	118	103
29	341	59	254	89	191	119	98
30	337	60	251	90	189	120	96
31	333	61	249	91	186	121	92
32	329	62	247	92	184	122	88
33	325	63	245	93	181	123	84
34	321	64	243	94	179	124	80
35	317	65	240	95	177	125	75
36	313	66	238	96	174	126	71
37	311	67	236	97	171	127	67
38	308	68	235	98	168	128	61
39	305	69	233	99	165	129	55
40	302	70	231	100	162	130	49
41	299	71	229	101	159	131	43
42	297	72	227	102	156	132	32
43	294	73	225	103	153	133	16
44	292	74	223	104	149	134	0
45	289	75	221	105	146		
46	286	76	219	106	143		
47	283	77	217	107	140		
48	281	78	215	108	137		
49	278	79	212	109	134		

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Mean

	n	m+n	h+m+n	$\bar{n}$	m+n	[n]	[n+n]	Δm	n	m+n	h+m+n	$\bar{n}$	m+n	[n]	[n+n]	Δm	
61	—	—	—						—	—	—						
62	—	—	—														
63	—	—	—														
64	—	—	—														
65	—	—	—														
66	—	—	—														
67	—	—	—														
68	—	—	—														
69	—	—	—														40
70	—	—	—														24
71	—	—	—														15
72	—	—	—														62
73	—	—	—						—	—	—						
74	—	—	—						—	—	—						
75	9	21	135						—	—	—						
76	—	—	—						—	—							76
77	—	—	—														76
78	—	—	—														50
79	—	—	—														23
80	—	—	—														52
81	—	—	—														66
82	—	—	—														66
83	11	25	135														
84	—	—	—														93
85	—	—	—														49
86	—	—	—														42
87	—	—	—														38
88	—	—	—														42
89	—	—	—														37
90	18	27	135														32

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	No. 1								No. 3							
	n	m+n	t+m+n	$\bar{n}$	$\bar{m}+\bar{n}$	[n]	[m+n]	Δm	n	m+n	t+m+n	$\bar{n}$	$\bar{m}+\bar{n}$	[n]	[m+n]	Δm
91	72	84	135	72	84	227	202	25	39	53	134	39	53	305	267	38
92	79	87	135	79	87	212	196	16	48	55	134	48	55	281	263	18
93	72	89	135	72	89	227	191	36	42	56	134	42	56	297	260	37
✓ 94	70	90	135	70	90	231	189	42	39	57	134	39	57	305	258	47
95	65	92	135	65	92	240	184	64	37	59	134	37	59	311	254	57
96	60	93	135	60	93	251	181	70	33	60	134	33	60	325	251	74
✓ 97	81	95	130	81	95	208	177	31	49	61	134	49	61	278	249	29
98	66	96	135	66	96	238	174	64	37	63	134	37	63	311	245	66
99	82	98	135	82	98	206	168	38	46	65	134	46	65	286	240	46
100	82	98	130	82	98	206	168	38	50	66	134	50	67	275	236	39
✓ 101	74	100	130	74	100	223	162	61	43	67	134	43	68	294	235	59
102	88	100	135	88	100	~~194~~ 223	162	~~32~~ 61	~~45~~ 61	68	134	61	69	249	233	16
103	81	101	135	81	101	208	159	49	53	69	134	53	70	267	231	36
104	69	102	135	69	102	233	156	77	40	70	134	40	71	302	229	73
105	89	102	135	89	102	191	156	35	56	70	134	56	72	260	227	33
106	94	103	135	94	103	179	153	26	61	72	134	61	73	249	225	24
107	96	103	135	96	103	174	153	21	65	73	134	66	74	240	223	17
108	92	104	135	92	104	184	149	35	59	74	134	59	75	254	221	33
109	73	104	135	73	104	225	149	76	40	75	134	40	76	302	219	83
✓ 110	87	105	135	87	105	196	146	50	54	77	134	54	77	265	217	48
111	90	106	135	90	106	189	143	46	60	77	134	60	78	251	215	36
112	90	107	135	90	107	189	140	49	47	78	134	47	79	283	212	71
113	90	107	135	90	107	189	140	49	47	80	134	47	80	283	210	73
114	88	107	135	88	107	194	140	54	45	81	134	45	82	289	206	83
115	88	108	135	88	108	194	137	57	55	82	134	55	83	263	204	59
a	92	109	135	92	109	184	134	50	60	83	134	60	84	251	202	49
b	94	109	135	94	109	179	134	44	61	83	134	61	84	249	202	47
c	101	109	135	101	109	159	134	25	71	84	134	72	85	227	200	27
d	99	110	135	99	110	165	131	34	69	85	134	70	86	231	198	33
e	99	110	135	99	110	165	131	34	67	85	134	68	86	235	198	37

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	No. 5								No. 7							
	n	mtn	t-mtn	n	mtn	(n)	(mtn)	Δm	n	mtn	t-mtn	n	mtn	(n)	(mtn)	Δm
91	20	27	135′	20	27	420	351	69	—	—	—					
92	28	29	135′	23	29	382	341	41	—	—	—					
93	18	29	135′	18	29	—	—	—	—	—	—					
✓ 94	19	30	135′	19	30	—	—	—								
95	21	31	135′	21	31	404	333	71								
96	19	32	135′	19	32	—	—	—								
✓ 97	24	33	135′	24	33	375	325	50								
98	21	34	135′	21	34	404	321	83								
99	23	35	135′	23	35	382	317	65								
100	26	35	135′	26	35	359	317	42								
✓ 101	21	36	135′	21	36	404	313	91								
102	29	36	135′	29	36	341	313	28								
103	26	37	135′	26	37	359	311	48								
104	21	38	135′	21	38	404	308	96								
105	28	38	135′	28	38	346	308	38								
106	32	39	135′	32	39	329	305	24								
107	33	40	135′	33	40	325	302	23								
108	31	41	135′	31	41	333	299	34								
109	22	42	135′	22	42	391	297	94	—	—	—					
✓ 110	27	43	135′	27	43	351	294	57	—	—	—					
111	29	43	135′	29	43	341	294	47	—	—	—					
112	28	44	135′	28	44	346	292	54	—	—	—					
113	28	46	135′	28	46	346	286	60	—	—	—					
114	26	47	135′	26	47	359	283	76	—	—	—					
115′	27	48	135′	27	48	351	281	70	12	23	135′	12	23	135′	—	62
a	30	49	135′	30	49	337	278	59	—	—	—					
b	31	49	135′	31	49	833	278	55	—	—	—					
c	41	50	135′	41	50	299	275	24	—	—	—					
✓ d	38	51	136′	38	51	308	273	35	—	—	—					
e	36	51	135′	36	51	313	273	40	—	—	—					

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No 1.

	n'	mtn	tmtn	n	mtn	[n]	[mtn]	Δm
116	84	110	135	84	110	202	131	71
117	92	111	135	92	111	184	127	57
118	100	111	135	100	111	162	127	35
119	98	112	135	98	112	168	123	45
120	98	112	135	98	112	168	123	45
121	91	113	135	91	113	186	120	66
122	94	113	135	94	113	179	120	59
123	101	113	135	101	113	159	120	39
124	98	114	135	93	114	181	117	64
125	71	115	135	~~229~~ 71	~~113~~ 115	229	113	116
126	95	115	135	95	115	177	113	64
127	102	115	135	102	115	156	113	63
128	105	116	135	105	116	146	110	36
129	99	117	135	99	117	165	107	58
130	98	117	135	98	117	168	107	61
131	104	118	135	104	118	149	103	46
132	110	118	135	110	118	131	103	28
133	99	118	135	97	118	171	103	68
134	99	118	135	99	118	165	103	62
135	108	119	135	108	119	137	98	39
136	94	119	135	~~179~~ 94	~~98~~ 119	179	98	81
137	98	120	135	98	120	168	96	72
138	103	120	135	103	120	153	96	57
139	115	121	135	115	121	113	92	19
a	116	121	135	116	121	110	92	18
140	112	122	135	112	122	123	88	35
141	120	122	135	120	122	95	88	7
142	107	123	135	107	123	140	84	56
143	119	124	135	119	124	98	80	18
144	116	124	135	116	124	110	80	30

No 3

	n	mtn	tmtn	n	mtn	[n]	[mtn]	Δm
116	51	86	134	51	87	273	196	67
117	62	87	134	62	88	247	194	53
118	71	87	134	72	88	227	194	33
119	67	88	134	68	89	235	191	44
120	65	88	134	65	89	240	191	49
121	57	89	134	57	90	258	189	69
122	59	89	134	59	90	254	189	55
123	57	91	134	57	92	258	184	74
124	—	—	—	—	—	—	—	—
125	37	93	134	37	93	311	182	129
126	58	99	134	58	94	256	179	77
127	72	94	134	73	95	225	177	48
128	76	94	134	77	95	217	177	40
129	69	95	134	~~70~~ 70	96	~~189~~ 231	174	~~15~~ 57
130	65	95	134	65	96	240	174	66
131	74	96	134	75	97	221	171	50
132	—	—	134	—	—	—	—	—
133	65	97	134	65	98	240	168	72
134	—	—	134	—	—	—	—	—
135	80	97	134	81	98	208	168	40
136	58	98	134	58	99	256	165	91
137	66	99	134	66	100	238	162	76
138	71	99	134	72	100	227	162	65
139	87	100	135	87	100	196	162	34
a	92	101	135	92	101	184	159	25
140	82	101	135	82	101	206	159	47
141	95	101	135	95	101	177	159	18
142	75	102	135	75	102	221	156	65
143	94	103	135	94	103	179	153	26
144	90	103	135	90	103	189	153	36

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	No 5								No 7								
	n	mtn	Gmtn	n	mtn	[n]	[mtn]	Δm	n	mtn	Gmtn	n	mtn	[n]	[mtn]	Δm	
116	25	52	135	25	52	367	270	97	8	25	135	8	25				69
117	33	52	135	33	52	325	270	55	—	—	—	—	—	—	—	—	55
118	41	53	135	41	53	299	267	32	18	25	135	18	25				33
119	35	54	135	35	54	317	265	52	15	25	135	15	25				47
120	34	54	135	34	54	321	265	56	15	25	135	15	25				50
121	28	55	135	28	55	346	263	83	17	26	135	17	26				73
122	32	56	135	32	56	329	260	69	19	26	135	19	26				61
123	42	57	135	~~42~~	~~57~~	~~297~~	~~258~~	~~39~~ 35	16	26	135	16	26				39 76
124	28	58	135	28	58	346	256	90	15	27	135	15	27				..
125	20	59	135	~~420~~ 20	~~254~~ 59	420	254	166	12	27	135	12	27			—	122
126	21	60	135	21	60	404	251	153	15	28	135	15	28			—	70
127	29	61	135	39	61	305	249	56	18	28	135	18	28			—	59
128	43	62	135	43	62	294	247	47	22	28	135	22	28	391	346	45	41
129	35	62	135	35	62	317	247	70	20	28	135	20	28	420	346	74	62
130	34	63	135	34	63	321	245	76	17	29	135	17	29	—	—	—	68
131	28	64	135	38	64	308	243	65	20	29	135	20	29	420	341	79	54
132	55	64	135	55	64	263	243	20	24	30	135	24	30	375	337	38	24
133	35	65	135	35	65	317	240	77	17	30	135	17	30	—	337	—	72
134	38	65	135	38	65	308	240	68	17	31	135	17	31	—	—	—	65
135	46	66	135	46	66	286	238	48	24	31	135	24	31	375	333	42	42
136	30	68	136	30	67	337	236	91	15	32	135	15	32	—	—	—	88
137	35	69	136	35	68	317	235	82	16	33	135	16	33	—	—	—	77
138	38	70	136	38	69	308	233	75	19	33	135	19	33	—	—	—	66
139	53	70	136	53	69	267	233	34	23	34	136	23	34	382	321	61	29
a	58	71	136	58	70	256	231	25	28	35	136	28	35	346	317	29	23
140	48	72	136	48	71	281	229	52	22	35	136	22	35	391	317	74	45
141	61	72	136	61	71	249	229	20	31	36	136	31	36	333	313	20	15
142	40	74	136	40	73	~~302~~ ~~225~~	225	~~77~~ ~~60~~	20	37	136	20	37	420	311	109	66
143	62	74	136	62	73	~~247~~ ~~225~~	225	~~22~~ ~~8~~	29	38	136	29	38	341	308	33	25
144	55	75	136	55	74	~~263~~ ~~223~~	223	40	27	39	136	27	39	351	305	46	38

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	No 1.								No 3							
	n	mtn	tmtn	$\bar{n}$	$\bar{m}$tn	[n]	[m]tn	Δm	n	mtn	tmtn	$\bar{n}$	$\bar{m}$tn	[n]	[m]tn	Δm
145	120	124	135	120	124	96	80	16	95	104	135	95	104	177	149	28
✓ 146	121	125	135	121	125	92	75	17	99	104	135	99	104	165	149	16
147	117	125	135	117	125	107	75	32	89	105	135	89	105	191	146	45
148	112	126	135	112	126	123	71	52	82	105	135	82	105	206	146	60
149	116	126	135	116	126	110	71	39	91	106	135	91	106	186	143	43
150	121	126	135	121	126	92	71	21	97	106	135	97	106	171	143	38
151	120	126	135	120	126	96	71	25	98	107	135	98	107	168	140	28
152	112	127	135	112	127	123	67	56	82	107	135	82	107	206	140	66
153	120	127	135	120	127	96	67	29	97	108	135	97	108	171	137	34
154	120	127	135	120	127	96	67	29	97	108	135	97	108	171	137	34
155	119	128	135	119	128	98	61	37	95	108	135	95	108	177	137	40
156	118	128	135	118	128	103	61	42	93	109	135	93	109	181	134	47
157	120	129	135	120	129	96	55	41	95	109	135	95	109	177	134	43
158	118	129	135	118	129	103	55	48	95	110	135	95	110	177	131	46
159	117	129	135	117	129	107	55	52	91	110	135	91	110	186	131	55
✓ 160	120	130	135	120	130	96	49	47	96	111	135	96	111	174	127	47
161	124	130	135	124	130	80	49	31	100	112	135	100	112	162	123	39
162	125	130	135	125	130	75	49	26	105	112	135	105	112	146	123	23
163	124	131	135	124	131	80	43	37	103	113	135	103	113	153	120	33
164	128	131	135	128	131	61	43	18	110	113	135	110	113	131	120	11
165	127	131	135	127	131	67	43	24	109	113	135	109	113	134	120	14
166	127	131	135	127	131	67	43	24	107	114	135	107	114	140	117	23
167	128	132	135	128	132	61	32	29	110	114	135	110	114	131	117	14
168	124	132	135	124	132	80	32	48	103	114	135	103	114	153	117	36
169	124	132	135	124	132	80	32	48	102	114	135	102	114	156	117	39
✓ 170	128	132	135	128	132	61	32	29	110	115	135	110	115	131	113	18
171	—	—	—	—	—	—	—	—	108	116	135	108	116	137	110	27
172	—	—	—	—	—	—	—	—	107	116	135	107	116	140	110	30
173	126	132	135	126	132	71	32	39	104	116	135	104	116	149	110	39
174	129	132	135	129	132	55	32	23	111	117	135	111	117	127	107	20

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	No. 5								No. 7								M
	n	mtn	Atmtn	n	mtn	[n]	(mtn)	Δm	n	mtn	Atmtn	n	mtn	[n]	(mtn)	Δm	
145	63	76	136	63	75	245	221	24	31	39	136	31	39	333	305	28	24
146	66	78	136	66	77	238	217	21	33	40	136	33	40	325	302	23	18
147	56	78	136	56	77	260	217	43	25	41	136	25	41	367	299	68	40
148	47	79	136	47	78	283	215	68	24	42	136	24	42	375	297	78	64
149	58	80	136	58	79	256	212	44	26	42	136	26	42	359	297	62	47
150	66	80	136	66	79	238	212	26	32	43	136	32	43	329	294	35	30
151	66	81	136	66	80	238	210	28	33	43	136	33	43	325	294	31	28
152	48	81	136	48	80	281	210	71	23	44	136	23	44	382	292	90	71
153	64	82	136	64	81	243	208	35	32	45	136	32	45	329	289	40	34
154	66	83	136	66	82	238	206	32	34	45	136	34	45	321	289	32	32
155	64	84	136	64	83	243	204	39	30	46	136	30	46	337	286	51	42
156	57	84	136	57	83	258	204	54	27	46	136	27	46	351	286	65	52
157	61	85	136	61	84	249	202	47	28	47	136	28	47	346	283	63	48
158	61	86	136	61	85	249	200	49	30	48	136	30	48	337	281	56	50
159	56	87	136	56	86	260	193	67	28	49	136	28	49	346	278	68	60
160	62	87	136	62	86	247	193	54	30	49	136	30	49	337	278	59	52
161	70	88	136	69	87	233	196	37	34	50	136	34	50	321	275	46	38
162	75	89	136	74	88	223	194	29	36	51	136	35	51	313	273	40	30
163	72	90	136	71	89	229	191	38	39	52	136	39	52	305	270	65	43
164	84	90	136	83	89	204	191	13	43	52	136	43	52	294	270	24	16
165	83	91	136	82	90	206	189	17	44	53	136	44	53	292	267	25	20
166	79	91	136	78	90	215	189	26	42	53	136	42	53	297	267	30	26
167	82	92	136	81	91	208	186	22	45	54	136	45	54	289	265	24	22
168	72	92	136	71	91	229	186	43	36	54	136	36	54	313	265	48	44
169	71	93	136	70	92	231	184	47	36	55	136	36	55	313	263	50	46
170	82	94	136	81	93	208	181	27	44	55	136	44	55	292	263	29	26
171	80	94	136	79	93	212	181	31	42	56	136	42	56	297	260	37	32
172	78	94	136	77	93	217	181	36	41	56	136	41	56	299	260	39	35
173	73	95	136	72	94	227	179	48	37	56	136	37	56	311	260	51	44
174	85	95	136	84	94	202	179	23	44	57	136	44	57	292	258	34	25

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	No. 1								No. 3.							
	n	m+n	l+m+n	$\bar{n}$	$\bar{m}+n$	[n]	[m+n]	Δm	n	m+n	l+m+n	$\bar{n}$	$\bar{m}+n$	[n]	[m+n]	Δm
175	130	132	135	130	132	49	32	17	115	117	135	115	117	113	107	6
176	129	132	135	129	132	55	32	23	113	118	135	113	118	120	103	17
177	—	—	—	—	—	—	—	—	109	118	135	109	118	134	103	31
178	126	132	130	126	132	71	32	39	108	119	135	108	119	137	98	39
179	128	133	130	128	133	61	16	45	110	119	135	110	119	131	98	33
180	—	133	135	—	133	—	—	—	111	119	135	111	119	127	98	29
181	132	133	135	132	133	32	16	16	117	120	135	117	120	107	96	11
182	129	133	135	129	133	55	16	39	111	120	135	111	120	127	96	31
183	128	133	135	128	133	61	16	45	109	120	135	109	120	134	96	38
184	128	133	135	128	133	61	16	45	109	120	135	109	120	134	96	38
185	128	133	135	128	133	61	16	45	109	120	135	109	120	134	96	38
186	129	133	135	129	133	55	16	39	111	121	135	111	121	127	92	35
187	128	133	136	127	132	67	32	35	109	121	135	109	121	134	92	42
188	129	133	136	128	132	61	32	29	110	121	135	110	121	131	92	39
189	129	133	136	128	132	61	32	29	111	121	135	111	121	127	92	35
190	130	133	136	129	132	55	32	23	113	121	135	113	121	120	92	28
191	131	133	136	130	132	49	32	17	116	121	135	116	121	110	92	18
192	130	133	136	129	132	55	32	23	115	121	135	115	121	113	92	21
193	130	133	136	129	132	55	32	23	113	121	135	113	121	120	92	30
194	130	133	136	129	132	55	32	23	116	121	135	116	121	110	92	18
195	131	133	136	130	132	49	32	17	113	120	135	113	120	120	96	24
196	—	—	—	—	—	—	—	—	116	120	135	116	120	110	96	14
197	—	—	—	—	—	—	—	—	116	120	135	116	120	110	96	14
198	122	133	136	121	132	92	32	60	100	119	135	100	119	162	98	64
199	126	133	136	125	132	75	32	43	105	119	135	105	119	146	98	48
200	127	132	136	126	131	71	43	28	108	118	136	107	117	140	107	33
201	128	132	136	127	131	67	43	24	109	118	136	108	117	137	107	30
202	122	132	136	121	131	92	43	49	102	117	136	101	116	159	110	49
203	125	131	136	124	130	80	49	31	105	117	136	104	116	149	110	39
204	124	131	136	123	130	84	49	35	104	116	136	103	115	153	113	40

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	No 5								No 7								
	n	m+n	t mer	n̄	m+n	[n]	[mer]	Δm	n	m+n	t mer	n̄	m+n	[n]	[mer]	Δm	
175	90	95	136	89	94	191	179	12	51	58	136	51	58	273	256	17	13
176	86	96	136	85	95	201	177	24	47	58	136	47	58	283	256	27	23
177	81	97	136	80	96	210	174	36	43	59	136	43	59	294	254	40	36
178	79	97	136	78	96	215	174	41	40	59	136	40	59	302	254	48	42
✓ 179	83	98	137	82	97	206	171	35	42	59	136	45	59	289	254	35	37
180	—	—	137	—	—	—		—	—	—	—	—	—	—	—	—	29
181	94	98	137	93	97	181	171	10	57	60	136	57	60	258	251	07	11
182	84	99	137	83	98	204	168	36	46	60	136	46	60	286	251	35	35
183	80	99	137	79	98	212	168	44	43	61	136	43	61	294	249	45	43
184	81	99	137	80	98	210	168	42	41	61	136	41	61	299	249	50	44
185	80	99	137	79	98	212	168	44	40	61	136	40	61	302	249	53	45
186	84	99	137	83	98	204	168	36	44	61	136	44	61	292	249	43	38
187	80	99	137	79	98	212	168	44	41	62	136	41	62	299	247	52	43 46
✓ 188	84	99	137	83	98	204	168	36	45	62	136	45	62	289	247	42	36
189	83	100	137	82	99	206	165	41	46	62	136	46	62	286	247	39	36
190	87	100	137	86	99	198	165	33	47	62	136	47	62	283	247	36	30
191	93	100	137	92	99	184	165	19	53	62	136	53	62	267	247	20	18
192	89	99	137	88	98	194	168	26	50	62	136	50	62	275	247	28	24
193	89	99	137	88	98	194	168	26	48	62	136	46	62	281	247	34	28
194	93	99	137	92	98	184	168	16	55	62	136	55	62	263	247	16	18
195	88	99	137	87	98	196	168	28	46	61	136	46	61	286	249	37	26
196	91	99	137	90	98	189	168	21	51	61	136	51	61	273	249	24	20
197	—	—	137	—	—	—	—	—	54	61	136	54	61	265	249	16	15
118	67	97	137	68	96	235	174	61	30	59	137	30	58	337	256	81	66
199	74	96	137	73	95	225	177	48	36	58	137	36	57	313	256	55	48
✓ 200	77	95	137	76	94	219	179	40	42	58	137	41	57	299	258	41	36
201	82	95	137	81	94	208	179	29	41	57	137	40	56	302	260	42	31
202	69	94	137	68	93	235	181	54	31	56	137	31	55	333	263	70	55
203	74	92	137	73	91	225	186	39	35	55	137	35	54	317	265	52	40
204	72	91	137	71	90	229	189	40	36	54	137	36	53	313	267	46	40

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	No. 1.								No. 3							
	n	m+n	L+m+n	$\bar{n}$	m+n	[n]	[m+n]	Δm	n	m+n	L+m+n	$\bar{n}$	m+n	[n]	[m+n]	Δm
205	125	131	136	124	130	80	49	31	107	115	136	106	114	143	117	26
206	123	130	136	123	129	84	55	29	102	115	136	101	114	159	117	42
207	119	130	136	118	129	103	55	48	96	114	136	95	113	177	120	57
208	—	—	—	—	—	—	—		—	—	136	—	—	—	—	
209	—	—	—	—	—	—	—		102	113	136	101	112	159	123	36
210	122	129	136	121	128	92	61	31	102	112	136	101	111	159	127	32
211	123	128	136	122	127	88	67	21	101	111	136	100	110	162	131	31
212	123	128	136	122	127	88	67	21	102	100	136	101	99	159	134	25
✓ 213	123	127	136	122	126	88	71	17	102	109	136	101	108	159	137	22
214	120	126	136	119	125	98	75	23	97	108	136	96	107	174	140	34
215	120	125	136	119	124	98	80	18	98	106	136	97	105	171	146	25
216	98	123	136	97	122	171	88	83	65	100	136	64	99	243	165	78
✓ 217	97	121	136	96	120	174	86	88	65	98	136	64	97	243	171	72
218	—	—	—	—	—	—	—		—	—	136	—	—	—	—	—
219	98	118	136	97	117	171	107	64	65	91	136	64	90	243	189	54
220	—	—	—	—	—	—	—		67	88	136	66	87	238	196	42
✓ 221	93	114	136	92	113	184	120	64	55	81	136	54	80	265	210	55
222	84	110	136	83	109	204	134	70	47	75	136	46	74	286	223	63
✓ 223	88	109	136	87	108	196	137	59	49	73	136	48	72	281	227	54
224	—	—	—	—	—	—	—	—	53	72	136	52	71	270	229	41
✓ 225	83	102	136	82	101	206	159	47	46	65	136	45	64	289	243	46
226	89	98	136	88	97	194	171	23	53	60	136	52	59	270	254	16
227	85	92	136	84	91	202	186	16	48	55	136	47	54	283	265	18
✓ 228	76	86	136	75	85	221	200	21	40	50	136	39	49	305	278	27
229	76	79	136	75	78	221	215	6	40	44	136	39	43	305	294	11
230	66	75	136	65	74	240	223	17	32	39	136	32	39	329	305	24
✓ 231	60	67	136	59	66	254	238	16	27	35	136	27	35	351 ~~317~~	317	34 ~~6~~
232	—	—	—						29	32	136	29	32	341	329	12
233	—	—	—						22	29	136	23	29	382	341	41

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	No 5								No 7								
	n	mtn	t+mtn	$\bar{n}$	$\bar{m}$tn	[n]	[m+n]	Δm	n	mtn	t+mtn	$\bar{n}$	$\bar{m}$tn	[n]	[m+n]	Δm	
205	76	91	137	75	90	221	189	32	37	53	137	37	52	311	270	41	32
206	66	89	137	65	88	240	194	46	31	51	137	31	50	333	275	58	44
207	58	88	137	57	87	258	196	62	25	50	137	25	49	367	278	89	56
208	67	87	137	66	86	238	198	40	28	49	137	28	48	346	281	65	52
209	—	—	+	—	—	—	—		31	48	137	31	47	333	283	50	43
210	68	85	137	67	84	236	202	34	30	47	137	30	46	337	286	51	37
211	70	84	137	69	83	233	204	29	31	46	137	31	45	333	289	44	31
212	73	82	137	72	81	227	208	19	33	44	137	33	43	325	294	31	24
213	69	81	137	68	80	235	210	25	32	42	137	32	41	329	299	30	23
214	62	79	137	61	78	249	215	34	29	40	137	29	39	341	305	36	32
215	63	75	137	62	74	247	223	24	27	37	137	27	39	351	311	40	27
216	29	67	137	29	66	341	238	103	12	29	137	12	29	—	—		88
217	30	62	137	30	61	337	249	88	9	27	137	9	27	—	—		83
218	33	60	137	33	59	325	254	71	12	25	137	12	25	—	—		71
219	28	55	137	28	54	346	265	81	9	23	137	9	23	—	—		67
220	30	51	137	30	50	337	275	62	10	20	137	10	20	—	—		52
221	22	46	137	22	45	391	289	102	—	—	—						59
222	19	40	137	19	39	—	—	—	—	—	—						66
223	20	38	137	20	38	420	308	12	—	—	—						56
224	—	—	—	—	—	—			—	—	—						41
225	18	30	137	18	30	—	—	—	—	—	—						46
226	—	—	—	—	—	—			—	—	—						20
227	—	—	—	—	—	—			—	—	—						17
228	—	—	—						—	—	—						24
229	—	—	—						—	—	—						8
230	—	—	—						—	—	—						20
231	—	—	—						—	—	—						25
232	—	—	—						—	—	—						12
233	—	—	—						—	—	—						41

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	No 1.								No 3							
	n	m+n	136+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	Δm	n	m+n	136+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	Δn
234	46	55	136	46	55	286	263	23	18	27	136					23
235	17	45	136	17	45				7	20	136					
236	—	—	—	—	—				6	18	136					
237	19	37	136	19	37				6	14	136					
238	16	30	136	16	30				5	11	136					
239	15	23	136	15	23				3	9	136					
240	15	19	136	15	19				—	—	—					

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α Orionis C 18678

(p.3) Approximate wave lengths for Betelgeuse

	(p1)			
1	73.0	app.	Int.	*
2	71.3			
3	70.			
4	69.2			
5	68.			
6	66.9			
7	65.5			
8	64.2			
9	63.5			
10	62.2			
11	61.4			
12	60.5			
13	60			
14	59.4			
15	58.5			
16	57.0			
17	56.2			
18	55.2			
19	54.5			
20	52.9			
21	53.1			
22	52.2			
23	51.4			
24	50.7			
25	50.			
26	48.8			
27	47.8			
28	47			
29	46.			
30	45.2			

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		Appr.	Int.
31	-44.7		
32	-43.7		
33	-42.2		
34	-41.3		
35	-40.7		
36	-40.0		
37	-39.0		
38	-38.4		
39	-37.8		
40	-36.7		
41	-35.3		
42	-34.3		
43	-33.5		
44	-33.0		
45	-32.0		
46	-31.0		
47	-30.2		
48	-29.3		
49	-28.5		
50	-27.6		
51	-26.0		
52	-24.5		
53	-23.6		
54	-22.4		
55	-21.5		
56	-20.5		
57	-20		
58	-19		
59	-18		
60	-17.3		

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		Meas.	Std	approx. λ	Int.	λ	Obs.
61		-16.9		3878			
62		-16.1		3883			
63		-15.6		3885			
64		-14.7		3889			
65		-14		3892			
66		-12.8		3896			
67		-11.9		3902			
68		-11.2		3905			
69		-10.1		3910	40	3905.6	
70		-9		3915	24	3914.5	
71		-8.2		3918	15	3918.6	
72		-7.5		3922	62	3920.4 21.0	
73		-7		3925			
* 74		-5.4	3933	3933	(180)	3933.8	3933.8
75		-11.6?		~~39~~			
76		-3.2		3944	76	3944.1	3944.1
77		-2.8		3946	76	3945.2	3945.2
78		-1.7		3952	50	3953.0	3953.0
79		-.8		3957	23	3956.6	3956.6
80	0			3960	52	3961.6	3958.4
81	1			3965	66	3963.4	3961.6
82	1.8			3967	66	3964.5	3964.5
83	2.4		3970	3970	(177)	3968.6	3968.6
84	3.4			3977	93	..	3975
85	5.			3986	49	3982.0	3982
86	6.4			3994	432	3990.0	3990
87	7.7			4000	348	3994.2	3998 3998
88	8.1			4003	42	3998.8	~~4005~~
89	9.6			4008	37	4005.3	4005
90	10.2			* 4013	32	4009.9	4009

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	Meas.	Approx. λ	Int.	λ	dl
91	10.9	4017	32		4011
92	12.	4024	17		4017
93	12.5	4026	36		4020
94	13.	4028	44		4022
95	14.3	4036	60		4031
96	14.7	4039	72	40	4033
97	16.1	4046	30	4041	4041 ~~4035~~
98	16.9	4051	65	4045.9	4046
99	18.5	4059	42		4055
100	19.1	4062	40	4067.0	4058
101	20.0	4068	60	4063.7	4064
102	20.8	4072	25	4071.9	4067
103	21.7	4077	42	4077.9	4072
104	22.5	4082	75	4083.8	4077
105	23.5	4088	35	4086.8	4082
106	24.	4091	25	4090.2	4087
107	25.1	4097	20	4096.2	4093
108	25.9	4101	34	4100.9	4096
109	26.4	4103	80	4101.0	4101
110	28.3	4116	52		4113
111	29.	4120	43		4116
112	29.9	4124	58		4122
113	31.3	4132	61		4132
? 114	32.	4137	71	4143.9	4135
115	33.6	4143	62	4149	4144
116	38.6	4170	~~53~~ 69	4172	4172
117	39.2	4177	~~49~~ 55	4177	4182
118	40.	4184	~~35~~ 33	~~4187~~ 4182	4187
119	40.7	4187	47	4187	4189
120	41.2	4190	50	4192	4192

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	Ap 3	Ap 1.	Ap 5.	approx. λ	Int.	λ	dl
121	42.4			4196	73	4198	✓
122	43.			4202	61	4205	
123	44.7			4214	39	4207	
124	45.8			4220	76	4215	✓
125	46.2		4227	4227	122	4227	✓
126	47.4			4232	70	4234	✓
127	48.4			4238	59	4240	✓
128	49.7			4246	41	4247	✓
129	50.			4249	62	4251	✓
130	50.6			4254	68	4254	✓
131	51.3			4257	54	4259	✓
132	—		52.5	4265	24		
133	53.1			4269	72	4272	✓
134	—		53.5	4272	65	4275	✓
135	54.8			4278	42		
136	55.5			4284	88	4289	✓
137	57.2			4295	77	4295	✓
138	58.2			4301	66	4300	✓
139	59.3			4308	29	4305?	
140	60.8			4317	↑23	4309	✓
141	61.6			4323	↑45	4315	✓
142	62.7			4330	15 66	4326	✓
143	63.6			4337	25	4330	
144	64.4			4341	38	4337	
145	65.5			4350	24	4340	
146	66.7			4346	18	4345 ~~4337~~	
147	67.4			4352	40	4348 ~~4340~~	
148	68.6			4363	64	4358 ~~4352~~	
149	69.5			4370	47	4363	
150	70.2			4376	30	4368	✓

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	ap 3	ap 1	Approx. λ	Int	λ	dl
151	70.9		4383	48	4376	v
152	71.6		4387	71	4383	v
153	72.8		4395 ~~4398~~	34	4391	
154	73.6		4402 ~~4405~~	32	4395	
155	74.2		4410 ~~4411~~	42	4405 4408	
156	75.2		4420	52	4415	
157	76.1		~~4427~~ ~~4427~~	48	4422	
158	77.7		4444 ~~4440~~	50	4435	
159	78.4		4450 ~~4450~~	60	4442-4	
160	79.1		4460 ~~4502~~	52	4455	
161	80.7		4475 ~~4515~~	38	4467	
162	81.8		4485 ~~4525~~	30	4475	
163	82.7		4495 ~~4532~~	43	4484	
164	83.2		4502 ~~4541~~	16	4497	
165	84.		4509 ~~4546~~	20	4501	
166	84.8		4515 ~~4551~~	26	4507	
167	85.2		4522 ~~4553~~	22	4518	
168	86.4		4534 ~~4565~~	44	4528	
169	87.0		4540 ~~4570~~	46	4536	
170	87.7		4549 ~~4575~~	26	4541-4	
171	88.5		4555 ~~4583~~	22	4549	
172	88.7		4560 ~~4585~~	35	4554	
173	89.2		4565 ~~4590~~	44	4554	
174	90.4		4575 ~~4599~~	25	4572	
175	—	91.1	4584 ~~4605~~	13	4580	
176	92.2		4592 ~~4615~~	23	1 ?	
177	93.		4600 ~~4622~~	36	4596	
178	93.9		4610 ~~4629~~	42	4607	
179	94.6		4617 4635	37	4613-16	
180	95.2		4625 ~~4640~~	29	4625	

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			Approx. λ	Int	λ	dl
181	96.		4630 ~~4646~~ 4647	11	4629	
182	97.6		~~4662~~ 4655	35	4647	
183	98.3		~~4667~~ 4660	43	4657	
184	98.9		~~4672~~ 4670	44	4664	
185	99.7		~~4678~~ 4676	45	4668	
186	100.4		~~4685~~ 4687	38	4674	
187	101.6		~~4694~~ 4690	43	4682	
188	102		~~4698~~ 4705	36	4688	
189	103.3		~~4710~~ 4710	36	4703	
190	104		~~4715~~ 4725	30	4710	
191	105.1		~~4725~~	18	4728	
192	105.9		4733	24	4734	
193	106.6		4742	28	4743	
194	107.4		4746	18	4746	
195	108.		4755	26	4754	
196	108.9	TiO	4764	20	4764	✓
197	109.3		4768	15	4768	
198	111.4		4780	66	4773	
199	113.2		4800	48	4799	✓
200	113.9		4806	36	4808?	
201	114.8		4814	31	4813	
202	115.5		4820	55	4824	
203	116.2		4828	40	4829	
204	117.8		4840	40	4834	?
205	118.6		4850	32	4848	
206	119.5		4857	44	4856	
207	120.2	4861	4861	56	4861	
208	120.5		4865	52	4865	
209	121.5		4877	43	4876 4882	
210	122.2		4885	37	4885	

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			Approx. λ	Int.	λ	dl
211	123.		4890	31	4891	
212	123.9		4904	24	4904	
213	124.8		4913	23	4911	
214	125.7		4924	32	4921	
215	127.2		4940	27	4939	
216	128.8	TiO	4957	88	4957	
217	129.3		4961	83	4961	
218	130.0		4970	71	4968	
219	130.8		4976	67	4979?	
220	131.5		4985	52	4983	
221	132.6		5002	59	5000	
222	133.4		5012	66	5012-14	
223	133.9		5019	56	5019	
224	134.2		5025	41	5023	
225	135.3		5037	46	5036	
226	136.4		5050	20	5050	
227	137.7		5065	17	5065	
228	138.5		5075	24	5075	
229	139.7		5090	8	-	
230	140.8		5106	20	5107?	
231	141.8		5115	25	5113	
232	142.4		5122	12	5125?	
233	143.		5130	41	5128	
234	143.5		5135	23		
235	145		5156			
236	145.5	TiO	5167			
237	146.6		5175			
238	147.6		5186			
239	148.7		5200			
240	149.		5207			

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β Geminorum. Mean line depths from C 18788, 18789

No.	1	2	3	5	18789	Mean	dl
28	20	..	23	..	-	22	18
29	30	..	23	..	-	26	21
30	28	..	32	..	-	30	24
31	58	..	43	..	-	50	37
32	13	..	14	..	-	14	12
33	31	..	23	..	-	27	22
34	79	..	64	..	-	72	48
35	..	..	..	..	-	-	-
36	32	..	78	..	-	55	40
37	53	45	43	..	-	47	35
38	43	30	34	..	-	36	28
39	46	26	42	..	-	38	30
40	111	..	..	..	-	111	64
41	..	..	..	..	-	-	-
42	32	34	31	..	-	32	26
43	14	19	17	..	-	17	15
44	27	32	19	..	-	26	21
45	33	36	30	16	-	29	23
46	8	13	9	12	-	11	.10
47	8	9	9	12	-	10	.09
48	5	9	8	21	-	11	10
49	14	18	8	21	16	15	13
50	41	49	34	33	..	39	30
51	12	8	9	..	16	11	10
52	55	66	61	..	..	61	43
53	27	37	27	37	-	32	26
54	30	42	36	45	-	38	30
55	52	55	56	..	-	54	40
56	34	40	38	45	-	39	30
57	44	35	47	45	-	43	33
58	19	26	15	19	18	19	16

No.	1	2	3	5	Mean	Mean dl	dl dl
59	11	10	6	26	10	13	11
60	28	33	31	43	30	33	26
61	40	42	41	51	-	44	33
62	29	28	28	47	30	32	26
63	22	37	33	47	25	33	26
64	29	37	38	40	33	35	28
65	35	46	27	56	33	39	30
66	47	54	50	..	-	50	37
67	56	77	61	..	-	65	45
68	52	49	58	68	-	57	41
69	52	61	58	..	-	57	41
70	39	-	38	53	40	42	32
71	50	59	49	..	40	49	36
72	64	69	63	..	-	65	45
73	60	69	61	..	-	63	44
74	48	59	53	73	-	58	41
75	48	49	-	73	-	56	40
76	62	75	70	..	-	69	47
77	58	70	58	70	-	64	45
78	50	47	45	70	51	53	39
79	56	67	61	70	-	64	45
80	84	91	81	..	-	85	54
81	47	41	40	67	55	50	37
82	44	51	47	50	47	48	36
83	40	44	38	47	39	42	32
84	46	51	43	57	47	49	36
85	87	67	64	87	-	76	50
86	34	37	36	55	-	41	31
87	56	57	47	62	57	56	40
88	84	49	77	91	-	75	50
89	97	104	94	..	-	50	37

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dl	No.	1	2	3	5		Mean	dl
11	90	59	62	59	71	55	61	43
26	91	14	17	9	~~61~~	19	15	13
33	92	46	52	41	23	37	40	31
26	93	31	33	31	41	27	33	26
26	94	21	25	17	32	22	23	19
28	95	25	25	17	36	15	23	19
30	96	33	36	32	49	33	37	29
37	97	72	74	63	75	60	69	47
45	98	36	40	34	49	55	43	33
41	99	28	31	31	36	32	~~32~~	26
41	100	46	54	31	59	38	~~47~~ 47	35
32	101	31	32	22	40	17	28	23
36	102	26	33	23	31	20	27	22
45	103	29	33	23	43	20	~~30~~	22
44	104	26	27	19	29	16	23	19
41	105	32	36	25	39	30	32	26
40	106	~~38~~	36	29	39	30	34	27
47	107	22	25	15	28	17	21	18
45	108	20	24	17	23	17	20	17
39	109	19	24	12	19	17	18	15
45	110	25	25	16	26	51	31	25
54	111	15	15	11	13	13	13	11
37	112	29	33	23	31	26	28	23
36	113	20	18	11	17	15	16	14
32	114	20	18	15	21	15	18	15
36	115	17	~~26~~ 15	8	13	13	13	11
50	116	20	~~19~~ 26	17	26	15	21	18
31	117	17	19	13	17	18	17	14
40	118	9	19	19	17	6	14	12
50	119	19	28	18	22	14	~~20~~	17
37	120	9	15	9	13	6	10	09

No.	1	2	3	5	..	Mean	dl
121	20	~~30~~ 25	17	31	17	23	19
122	12	~~22~~ 15	19	14	8	15	13
123	15	~~18~~ 33	7	14	8	14	12
124	12	28	15	20	11	17	14
125	10	25	12	20	8	15	13
126	16	~~26~~	10	22	11	~~17~~	14
127	10	~~13~~ 19	10	22	6	12	10
128	12	~~23~~ 19	15	23	11	17	14
129	10	~~13~~ 28	10	14	16	13	11
130	10	~~10~~ 15	7	14	8	10	09
131	13	~~9~~ 30	12	17	14	13	11
132	14	~~22~~ 11	13	23	10	14	12
133	36	33	29	20	22	28	23
134	24	27	14	16	22	21	18
135	24	24	16	24	21	22	18
136	11	..	..	17		14	12
137	28	—	.	..		28	23
138	16	—	..	..		16	14
139	7	..	..	..		7	06
140	8	..	—	..		8	07
141	9	..	..	..		9	08

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Reduced to 100

Mira Ceti

C 18644 4 ♀ 310 — C 18630 4 ♀ 341

	n	m+n	L+m+n	n	m+n	[n]	[m+n]	Δm	n	m+n	L+m+n	n	m+n	[n]	[m+n]	Δm
0.0	7	8	98	7	8	—	—	—	4	9	92	4	10	—	—	—
1 ~~15~~	21	8	98	21	8	268	—	=	25	9	92	27	10	229	307	-78
See P115																
1a - 15																
2 ~~14~~	6	11	98	6	11	—	332	-	6	12	92	7	13	323	291	32
3 ~~13~~	10	11	98	10	11	340	332	8	8	13	92	9	14	312	286	26
4 ~~12~~				10	11	340	332	8	10	13	92	11	14	301	286	15
5 ~~11~~	4	11	98	4	11	—	332	-	—	—	—	—	—	—	—	—
6 ~~10~~	11	12	98	11	12	332	310	22	12	13	92	13	14	291	286	5
7 ~~9~~	9	12	98	9	12	—	310	-	10	14	92	11	15	301	280	21
8 ~~8~~	8	13	98	8	13	—	303	-	8	14	92	9	15	312	280	32
P115																
9x - e																
10a - g																
9 ~~7~~	8	13	98	8	13	—	303	-				9	15	312	280	32
10 ~~6~~	1	16	99	1	16	—	288	-	1	17	92	1	18	—	—	—
11 ~~5~~	2	19	99	2	19	—	274	-	2	23	92	2	25	—	236	—
12 ~~4~~	16	21	99	16	21	288	268	20	18	25	92	20	27	256	229	27
13 ~~3~~				16	21	288	268	20				20	27	256	229	27
~~14~~	15	22	99	15	22	293	265	28	20	26	92	22	28	248	225	23
~~15~~	19	23	99	19	23	274	262	12	23	26	92	25	28	236	225	11
~~16~~	18	23	99	18	23	279	262	17	21	27	92	23	29	244	222	22
~~17~~	—	—	—	—	—	—	—	—				26	30	233	219	14
~~18~~	—	—	—	—	—	—	—	=	24	28	92	26	30	233	219	14
~~19~~	2	23	99	2	23	—	262	-				26	30	233	219	14
~~20~~	19	24	99	19	24	274	260	14	22	29	92	24	32	240	211	29
21				19	24	274	260	14				24	32	240	211	29
22	22	25	99	22	25	293	257	36	25	30	92	27	33	229	207	22
23				22	25	293	257	36				27	33	229	207	22
24	—	—	—	—	—	—	—	=	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26	20	26	99	20	26	271	254	17	23	30	92	25	33	236	207	29
27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28	22	26	99	22	26	265	254	11	26	31	92	28	34	225	203	22
29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
30	22	27	99	22	27	265	252	13	26	32	93	28	34	225	203	22

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Δm		@ 18644								@ 18680								Δm
		n	m+n	l+m+n	n	m+n	[n]	[m+n]	Δm	n	m+n	l+m+n	n	m+n	[n]	[m+n]	Δm	
-78	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32	32	22	28	99	22	28	265	249	16	25	33	93	27	35	229	200	29	
26	33	26	28	99	26	28	254	249	5	29	33	93	31	35	215	200	15	
15	34	21	28	99	21	28	268	249	19	23	34	93	25	37	236	194	42	
—	35	19	28	99	19	28	274	249	25				25	37	236	194	42	
5	36	28	28	99	28	28	249	249	0	34	34	93	37	37	194	194	0	
21	37	23	29	99	23	29	262	247	15	30	35	93	32	38	211	191	20	
32	38	22	29	99	22	29	265	247	18	29	35	93	31	38	215	191	24	
32	39	20	30	99	20	30	271	245	26	25	30	93	27	38	229	191	38	
—	40	27	30	99	27	30	252	245	7	30	36	93	32	39	211	188	23	
—	41	25	30	99	25	30	257	245	12	29	36	93	31	39	215	188	27	
27	42	25	31	99	25	31	257	243	14	31	36	93	33	39	207	188	19	
27	43				25	31	257	243	14				33	39	207	188	19	
23	44	26	31	99	26	31	254	243	11	30	37	93	32	40	211	185	26	
11	45	29	31	99	29	31	247	243	4	—	—	—	—	—	—	—	—	
22	46				29	31	247	243	4	—	—	—	—	—	—	—	—	
14	47	29	31	99	29	31	247	243	4	33	37	93	35	40	200	185	15	
14	48	21	32	99	21	32	268	241	27	24	37	93	26	40	233	185	48	
14	49	28	32	99	28	32	249	241	8	32	38	93	34	41	208	182	21	
29	50	31	32	99	31	32	243	241	2	34	38	93	37	41	194	182	12	
29	51	28	32	99	28	32	249	241	8	32	38	93	34	41	203	182	21	
22	52	33	32	99	33	32	238	241	-3	35	38	93	38	41	191	182	9	
22	53	86	32	99	87	32	100	241	-141	85	38	93	91	41	17	182	-165	
—	54	31	33	99	31	33	243	238	5	33	38	93	35	41	200	182	18	
—	55	25	33	99	25	33	257	238	19				31	42	215	179	36	
29	56				25	33	257	238	19	29	39	93	31	42	215	179	36	
—	57				25	33	257	238	19				31	42	215	179	36	
22	58	27	33	99	27	33	252	238	14	—	—	—	—	—	—	—	—	
—	59	28	34	99	28	34	249	236	13	32	39	93	34	42	203	179	24	
22	60				28	34	249	236	13				34	42	203	179	24	

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	C 18644								C 18650							
	n	mtn	Lmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm	n	mtn	Lmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm
61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
63	24	34	99	24	34	260	236	24	35	39	93	38	42	191	179	12
64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
66	25	35	99	25	35	257	234	23	28	39	93	30	42	219	179	40
67	28	35	99	28	35	249	234	15	—	—	—	—	—	—	—	—
68	27	35	99	27	35	252	234	18	29	39	93	31	42	215	179	36
69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
69a	32	35	100	32	35	241	234	7	35	39	93	38	42	191	179	12
70	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
71	29	35	100	29	35	247	234	13	33	39	93	35	42	200	179	21
72	—	—	—	—	—	—	—	—	33	40	93	35	43	200	176	24
73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
75	32	36	100	32	36	241	231	10	34	40	93	37	43	194	176	18
76	—	—	—	—	—	—	—	—	37	40	93	40	43	186	176	9
77	—	—	—	—	—	—	—	—	38	40	93	41	43	182	176	6
78	35	36	100	35	36	234	231	3	38	40	93	41	43	182	176	6
79	34	36	100	34	36	236	231	5	38	40	93	41	43	182	176	6
80	34	36	100	34	36	236	231	5	38	40	93	41	43	182	176	6
81	32	36	100	32	36	241	231	10	27	40	93	40	43	185	176	9
82	26	37	100	26	37	254	229	25	30	40	93	32	43	211	176	35
83	27	37	100	27	37	252	229	25				32	43	211	176	35
84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
85				33	37	238	229	9	38	40	93	35	43	200	176	24
86	33	37	100	33	37	238	229	9				35	43	200	176	24
87				33	37	238	229	9				35	43	200	176	24
88	—	—	—	—	—	—	—	—	34	40	93	37	43	194	176	18
89	—	—	—	—	—	—	—	—				37	43	194	176	18
90	—	—	—	—	—	—	—	—				37	43	194	176	18

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Δm		c 18644								c 18630							
		n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n]	Δm	n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n]	Δm
—	91	31	37	100	31	37	243	229	14	34	40	93	37	43	194	176	18
—	92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12	93	28	37	100	28	37	249	229	20	34	41	93	37	44	194	173	21
—	94	31	37	100	31	37	243	229	14	35	41	93	38	44	191	173	18
—	95	29	37	100	29	37	247	229	18				36	44	200	173	27
4	96				29	37	247	229	18	33	41	93	35	44	200	173	27
—	97	31	38	100	31	38	243	226	17	35	41	93	38	44	191	173	18
36	98				31	38	243	226	17				38	44	191	173	18
—	99	32	38	100	32	38	241	226	15	36	41	93	39	44	188	173	15
12	100	29	38	100	29	38	247	226	21	32	41	93	34	44	203	173	30
—	101	25	38	100	25	38	257	226	31	27	41	93	29	44	222	173	49
21	102	24	38	100	24	38	260	226	34	28	41	93	30	44	219	173	46
24	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	104	8	38	100	8	38	[390]	226	—	11	41	93	12	44	296	173	123
—	105	28	38	100	28	38	249	226	23	34	41	93	37	44	194	173	21
18	106	32	38	100	32	38	241	226	15				37	44	194	173	21
9	107	35	39	100	35	39	234	223	11	37	41	93	40	44	185	173	12
6	108	39	39	100	39	39	223	223	0	40	42	93	43	45	176	170	6
6	109				39	39	223	223	0				43	45	176	170	6
6	110	27	39	100	27	39	252	223	29	30	42	93	32	45	211	170	41
9	111				27	39	252	223	29				32	45	211	170	41
35	112				27	39	252	223	29				35	45	200	170	30
35	113	29	39	100	29	39	247	223	24	33	42	93	35	45	200	170	30
—	114				29	39	247	223	24				35	45	200	170	30
24	115	34	39	100	34	39	236	223	13	36	42	93	39	45	188	170	18
24	116	38	39	100	38	39	226	223	3	—	—	—	—	—	—	—	—
24	117	35	40	100	35	40	234	220	14	37	42	93	40	45	185	170	15
18	118	26	40	100	26	40	254	220	34	27	43	93	29	46	222	168	54
18	119	25	40	100	25	40	257	220	37				29	46	222	168	54
18	120	32	40	100	32	40	241	220	21	38	43	93	35	46	200	168	32

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C 18644

	n	m+n	t m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	Δm
121	32	40	100	32	40	241	220	21
122				32	40	241	220	21
123	33	40	100	33	40	238	220	18
124	38	40	100	38	40	226	220	6
125	—	—	—	—	—	—	—	—
126	—	—	—	—	—	—	—	—
127	—	—	—	—	—	—	—	—
128	31	40	100	31	40	243	220	23
129	—	—	—	—	—	—	—	—
130	27	41	100	27	40	252	220	32
131				32	41	241	218	23
132	32	41	100	32	41	241	218	23
133				32	41	241	218	23
134				32	41	241	218	23
135	33	41	100	33	41	238	218	20
136	40	41	100	40	41	220	218	2
137	46	41	100	46	41	205	218	7
138	64	41	100	64	41	162	218	-56
139	36	41	100	36	41	231	218	3
140	27	42	100	27	42	252	215	37
141	30	42	100	30	42	245	215	30
142				30	42	245	215	30
143	34	42	100	34	42	236	215	21
144	33	42	100	33	42	238	215	23
145	35	42	101	35	42	234	215	19
146				35	42	234	215	19
147	—	—	—	—	—	—	—	—
148	38	42	101	38	42	226	215	11
149	—	—	—	—	—	—	—	—
150	35	43	101	35	43	234	212	22

C 18630

	n	m+n	t m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	Δm
121	33	43	93	35	46	200	168	32
122				35	46	200	168	32
123	33	43	93	35	46	200	168	32
124	37	43	93	40	46	185	168	17
125	31	43	93	33	46	207	168	39
126	—	—	—	—	—	—	—	—
127	—	—	—	—	—	—	—	—
128	32	43	93	34	46	203	168	35
129	33	44	93	35	47	200	165	35
130	29	44	93	31	47	215	165	50
131	32	44	93	34	47	203	165	38
132				34	47	203	165	38
133				34	47	203	165	38
134	34	44	93	37	47	194	165	29
135	39	44	93	42	47	179	165	14
136				42	47	179	165	14
137	47	44	93	50	47	156	165	-9
138	61	44	93	65	47	112	165	-53
139	26	44	93	29	47	188	165	23
140	29	45	93	31	48	215	162	59
141	33	45	93	35	48	200	162	38
142				35	48	200	162	38
143	34	45	93	37	48	194	162	32
144	35	45	93	38	48	191	162	29
145	40	45	93	43	48	176	162	14
146				43	48	176	162	14
147	—	—	—	—	—	—	—	—
148	43	45	93	46	48	168	162	6
149	—	—	—	—	—	—	—	—
150	38	45	93	41	48	182	162	20

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	C 18644								C 18630							
	n	m+n	t+m+n	$\bar{n}$	m+n	[m]	[m+n]	Δm	n	m+n	t+m+n	$\bar{n}$	m+n	[m]	[m+n]	Δm
151	—	—	—	—	—	—	—	—				42	48	179	162	17
152	34	43	101	34	43	236	212	24	39	45	93	42	48	179	162	17
153				34	43	236	212	24				42	48	179	162	17
154	30	43	101	30	43	245	212	33	33	46	93	35	49	200	159	41
155				30	43	245	212	33	—	—	—	—	—		—	—
156	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
157	30	43	101	30	43	245	212	33	35	46	93	38	49	191	159	32
158				30	43	245	212	33				38	49	191	159	32
159	40	43	101	40	43	220	212	8	42	46	93	45	49	170	159	11
160				40	43	220	212	8				45	49	170	159	11
161				20	44	271	210	61				27	49	229	159	70
162	20	44	101	20	44	271	210	61	25	46	93	27	49	229	159	70
163				20	44	271	210	61				27	49	229	159	70
164				20	44	271	210	61				27	49	229	159	70
165	28	44	101	28	44	249	210	39	31	46	93	33	49	207	159	48
166	24	44	101	24	44	260	210	50	28	46	93	30	49	219	159	60
167	26	44	101	26	44	254	210	44	32	46	93	34	49	203	159	44
168	30	44	101	30	44	245	210	35	35	47	93	38	50	191	156	35
169	36	44	101	36	44	231	210	21	37	47	93	40	50	185	156	29
170	34	44	101	34	44	236	210	26	37	47	93	40	50	185	156	29
171	30	44	101	30	44	245	210	35	33	47	93	35	50	200	156	44
172	18	44	101	18	44	279	210	69	22	47	93	24	50	240	156	84
173	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
174	15	45	104	15	45	293	208	85	33	47	93	35	50	200	156	44
175	14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
176	19	45	101	19	45	274	208	66	26	47	93	28	50	225	156	69
177	25	45	101	25	45	257	208	49	31	47	93	33	50	207	156	51
178	27	45	101	27	45	252	208	44				33	50	207	156	51
179	31	45	101	31	45	243	208	35	—	—	—	—	—	—	—	—
180				31	45	243	208	35	34	47	93	37	50	194	156	38

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	c 1864.4								c 1863.0							
	n	m+n	t+m+n	$\bar{n}$	m+n	$[\bar{n}]$	$[\bar{m+n}]$	Δn	n	m+n	t+m+n	$\bar{n}$	m+n	$[\bar{n}]$	$[\bar{m+n}]$	Δn
181	28	45	101	28	45	249	208	41				37	52	194	150	44
182				28	45	249	208	41	24	48	93	37	52	194	150	44
183	—	—	—	—	—	—	—	—				37	52	194	150	44
184	—	—	—	—	—	—	—	—	24	48	93	37	52	194	150	44
185	—	—	—	—	—	—	—	—				37	52	194	150	44
186				23	46	262	205	57	27	48	93	29	52	222	150	72
187	23	46	101	23	46	262	205	57	—	—	—	—	—	—	—	—
188				23	46	262	205	57	39	48	93	42	52	179	150	29
189	29	46	101	29	46	247	205	42	33	48	93	35	52	200	150	50
190	32	46	101	32	46	241	205	36	36	48	93	39	52	188	150	38
191	32	46	101	32	46	241	205	36	37	48	93	40	52	185	150	38
192	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
193	31	46	101	31	46	243	205	38	27	48	93	40	52	185	150	35
194	—	—	—	—	—	—	—	—				43	53	176	147	29
195	37	46	101	37	46	229	205	24	40	49	93	43	53	176	147	29
196	37	47	101	37	47	229	203	26				43	53	176	147	29
197	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
198	31	47	101	31	47	243	203	40	36	49	93	39	53	188	147	39
199	29	47	101	29	47	247	203	44	33	49	93	35	53	200	147	53
200				29	47	247	203	44				35	53	200	147	53
201	41	47	101	41	47	218	203	15	43	49	93	46	53	168	147	21
202	—	—	—	—	—	—	—	—	45	49	93	48	53	162	147	15
202a	46	47	101	46	47	205	203	2	49	49	93	53	53	147	147	0
203	44	47	101	44	47	210	203	7	47	49	93	50	53	156	147	9
204	47	47	101	47	47	210	203	7	47	49	93	50	53	156	147	9
205	46	47	101	46	47	205	203	2	—	—	—	—	—	—	—	—
206				8	46	—	205	—				11	53	301	147	54
207	8	47	102	8	46	—	205	—	10	49	93	11	53	301	147	54
208				8	46	—	205	—				11	53	301	147	54
209	16	47	102	16	46	288	205	83	23	49	93	25	53	236	147	89
210	22	47	102	22	46	265	205	60	26	49	93	28	53	225	147	78

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C 1864 4

Δm		n	m+n	t+m+n	$\bar{m}$	m+n	[m]	[m+n]	Δm
44	211	22	47	102	22	46	265	205	60
44	212				22	46	265	205	60
14	213	39	47	102	38	46	226	205	21
44	213a 214	—	—	—	—	—	—	—	—
44	215	40	48	102	39	47	223	203	20
72	216	13	48	102	13	47	303	203	100
—	217				13	47	303	203	100
29	218	15	48	102	15	47	293	203	90
50	219				15	47	293	203	90
38	220				18	47	279	203	76
38	221	18	48	102	18	47	279	203	76
—	222				18	47	279	203	76
35	223	24	48	102	24	47	260	203	57
29	224				24	47	260	203	57
29	225	27	48	102	26	47	254	203	51
29	226				26	47	254	203	51
—	227	31	48	102	30	47	245	203	42
39	228	19	48	102	19	47	274	203	71
53	229				19	47	274	203	71
53	230	19	49	102	19	48	274	201	73
21	231	24	49	102	24	48	260	201	59
15	232				24	48	260	201	59
9	233	28	49	102	27	48	252	201	51
9	234				27	48	252	201	51
—	235				34	48	236	201	35
54	236	35	49	102	34	48	236	201	35
54	237				34	48	236	201	35
54	238	38	49	102	37	48	229	201	28
89	239	36	49	102	35	48	234	201	33
78	240	31	49	102	30	48	245	201	44

C 1863 0

n	m+n	t+m+n	$\bar{m}$	m+n	[m]	[m+n]	Δm
26	49	93	28	53	225	147	78
			28	53	225	147	78
39	49	93	42	53	179	147	32
42	49	93	45	53	170	147	23
—	—	—	—	—	—	—	—
38	49	93	41	53	182	147	35
11	49	93	12	53	296	147	149
			12	53	296	147	149
20	49	93	22	53	248	147	101
			22	53	248	147	101
22	49	93	24	53	240	147	93
			24	53	240	147	93
			24	53	240	147	93
27	49	93	29	53	222	147	75
			29	53	222	147	75
30	49	93	32	53	211	147	64
			32	53	211	147	64
35	49	93	38	53	191	147	44
25	49	93	27	53	229	147	82
21	49	93	23	53	244	147	97
—	—	—	—	—	—	—	—
28	49	93	30	53	219	147	72
—	—	—	—	—	—	—	—
32	49	93	34	53	203	147	56
			34	53	203	147	56
—	—	—	—	—	—	—	—
38	48	93	41	52	182	150	32
			41	52	182	150	32
41	48	93	44	52	173	150	23
39	48	93	42	52	179	150	29
33	48	93	35	52	200	150	50

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	C 18644								C 18630							
	n	mtn	tmtn	$\bar{n}$	mtn	$[n]$	$[mtn]$	Δm	n	mtn	tmtn	$\bar{n}$	mtn	$[n]$	$[mtn]$	Δm
241	32	49	102	31	48	243	201	42	33	48	93	35	52	200	150	50
242	—	—	—	—	—	—	—	—	98	48	93	41	52	182	150	32
243				38	48	226	201	25				41	52	182	150	32
244	39	49	102	38	48	226	201	25	41	48	93	44	51	173	153	20
245				38	48	226	201	25	39	48	94	42	51	179	153	26
246	35	49	102	34	48	236	201	35	37	48	94	40	51	185	153	32
247	37	49	102	36	48	231	201	30	—	—	—	—	—	—	—	—
248	—	—	—	—	—	—	—	—	43	48	94	46	51	168	153	15
249	44	49	102	43	48	212	201	11	47	48	94	50	51	156	153	3
250	48	48	102	47	47	203	203	0	48	48	94	51	51	153	153	0
251				47	47	203	203	0				51	51	153	153	0
252				47	47	203	203	0	2	47	94	2	50	-	156	—
253	1	47	102	1	46	-	205	—				2	50	—	156	—
254				1	46	-	205	—				2	50	-	156	—
255	1	47	102	1	46	-	205	—	4	47	94	4	50	-	156	—
256	13	47	102	13	46	303	205	98	17	47	94	18	50	265	156	9
257				10	46	340	205	135				15	50	280	156	24
258	10	47	102	10	46	340	205	135	14	47	94	15	50	280	156	24
259				10	46	340	205	135				15	50	280	156	24
260	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
261	15	47	102	15	46	293	205	88	19	46	94	20	49	256	159	97
262	19	46	102	19	45	274	208	66				28	49	225	159	66
263				19	45	274	208	66	26	46	94	28	49	225	159	66
264	22	46	102	31	45	243	208	35				28	49	225	159	66
265	5	46	102	5	45	—	208	—	7	46	94	7	49	323	159	164
266				5	45	—	208	—				7	49	323	159	164
267	12	45	102	12	44	310	210	100	17	45	94	18	48	265	162	103
268				12	44	310	210	100				18	48	265	162	103
269				12	44	310	210	100				18	48	265	162	103
270	15	45	102	15	44	293	210	83	20	45	94	21	48	252	162	90

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C 18644

	n	m+n	t+m+n	n̄	m+n̄	[n]	[m+n]	Δm
271				15	44	293	210	83
272	15	45	102	15	44	293	210	83
273				15	44	293	210	83
274	—	—	—	—	—	—	—	—
275	21	45	102	21	44	268	210	58
276	19	44	102	19	43	274	212	62
277	15	44	103	15	43	293	212	81
278	15	44	103	15	43	293	212	81
279	11	44	103	11	43	323	212	111
280	12	44	103	12	43	310	212	98
281	18	43	103	18	42	279	215	64
282	15	43	103	15	42	293	215	78
283	—	—	—	—	—	—	—	—
284	—	—	—	—	—	—	—	—
285	20	43	103	19	42	274	215	59
286	15	43	103	15	42	293	215	78
287	—	—	—	—	—	—	—	—
288	22	42	103	21	41	268	218	50
289				21	41	268	218	50
290	25	42	103	24	41	260	218	42
291	27	42	103	26	41	254	218	36
292	30	41	103	29	40	247	220	27
293	—	—	—	—	—	—	—	—
294	30	41	103	29	40	247	220	27
295	35	41	103	34	40	236	220	16
296	36	40	103	35	39	234	223	11
297	37	40	103	36	39	231	223	8
298				36	39	231	223	8
299	40	40	103	39	39	223	223	0
300	—	—	—	—	—	—	—	—

C 18630

	n	m+n	t+m+n	n̄	m+n̄	[n]	[m+n]	Δm
271	20	45	94	21	48	252	162	90
272				21	48	252	162	90
273				21	48	252	162	90
274	—	—	—	—	—	—	—	—
275	25	45	94	27	48	229	162	67
276	—	—	—	—	—	—	—	—
277	18	44	94	19	47	260	165	95
278	18	44	94	19	47	260	165	95
279	15	17	94	16	18	275	265	10
280				16	18	275	265	10
281	20	19	94	21	20	252	256	96
282	19	22	94	20	23	256	244	12
283	—	—	—	—	—	—	—	—
284	—	—	—	—	—	—	—	—
285	24	26	94	26	28	233	225	8
286	—	—	—	—	—	—	—	—
287	—	—	—	—	—	—	—	—
288	25	30	94	27	32	229	211	18
289				27	32	229	211	18
290	—	—	—	—	—	—	—	—
291	29	32	94	30	34	219	203	16
292	29	32		30	34	219	203	16
293	29	32		30	34	219	203	16
294	29	34	94	30	36	219	197	22
295	32	35	94	34	37	203	194	9
296	37	40	94	39	43	188	176	12
297				39	43	188	176	12
298	40	41	94	43	44	176	173	3
299	41	41	94	44	44	173	173	0
300	—	—	—	—	—	—	—	—

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C 18644

	n	mtn	tmtn	$\bar{n}$	$\bar{m}$tn	[n]	[mtn]	Δm
301	-4	-4	103	-4	-4			—
302	-4	0	103	-4	0			—
303	-1	1	103	-1	1			—
304	0	2	103	0	2			—
305	—	—	—	—	—	—	—	—
306	3	3	103	3	3			—
307	—	—	—	—	—	—	—	—
308	3	4	103	3	4			—
309				3	4			—
310	3	4	103	3	4			—
311	—	—	—	—	—	—	—	—
312	—	—	—	—	—	—	—	—
313	—	—	—	—	—	—	—	—
320	—	—	—	—	—	—	—	—
319	—	—	—	—	—	—	—	—
318	—	—	—	—	—	—	—	—
317	—	—	—	—	—	—	—	—
316	—	—	—	—	—	—	—	—
-15	12	8	97	12	8			—
-14	—	—	—	—	—	—	—	—
-13	—	—	—	—	—	—	—	—
-12	—	—	—	—	—	—	—	—
-11	4	8	97	4	8			—
-10	3	8	97	3	8			—
-9	13	8	97	13	8			—
-8	8	8	97	8	8			—
-7	4	8	97	4	8			—
-6	5	8	97	5	8			—
-5	4	8	97	4	8			—
-4	4	8	97	4	8			—
-3	3	8	97	3	8			—
-2	4	8	97	4	8			—
-1	3	8	97	3	8			—

C 18630

	n	mtn	tmtn	$\bar{n}$	$\bar{m}$tn	[n]	[mtn]	Δm
301	-3	1	94	-3	1	—	—	—
302	0	2	94	0	2	—	—	—
303	2	5	94	2	5	—	—	—
304	—	—	—	—	—	—	—	—
305	—	—	—	—	—	—	—	—
306	—	—	—	—	—	—	—	—
307	7	6	94	7	6	—	—	—
308	7	6	94	7	6	—	—	—
309	7	6	94	7	6	—	—	—
310	1	7	94	1	7	—	—	—
311	1	7	94	1	7	—	—	—
312	1	7	94	1	7	—	—	—
313								
320	0	4	92	0	4	—	—	—
319	2	5	92	2	5	—	—	—
318	2	5	92	2	5	—	—	—
317	2	5	92	2	5	—	—	—
316	3	5	92	3	5	—	—	—
-15	12	6	92	13	7	291	323	-68
-14	4	6	92	4	7	—	323	—
-13	—	—	—	—	—	—	—	—
-12	3	6	92	3	7	—	323	—
-11	3	7	92	3	8	—	317	—
-10	3	7	92	3	8	—	317	—
-9	13	7	92	14	8	286	317	-69
-8	5	7	92	6	8	—	317	—
-7	2	7	92	3	8	—	317	—
-6	4	8	92	4	9	—	312	—
-5	5	8	92	5	9	—	312	—
-4	2	8	92	2	9	—	312	—
-3	3	8	92	3	9	—	312	—
-2	3	9	92	3	10	—	307	—
-1	4	9	92	4	10	—	307	—

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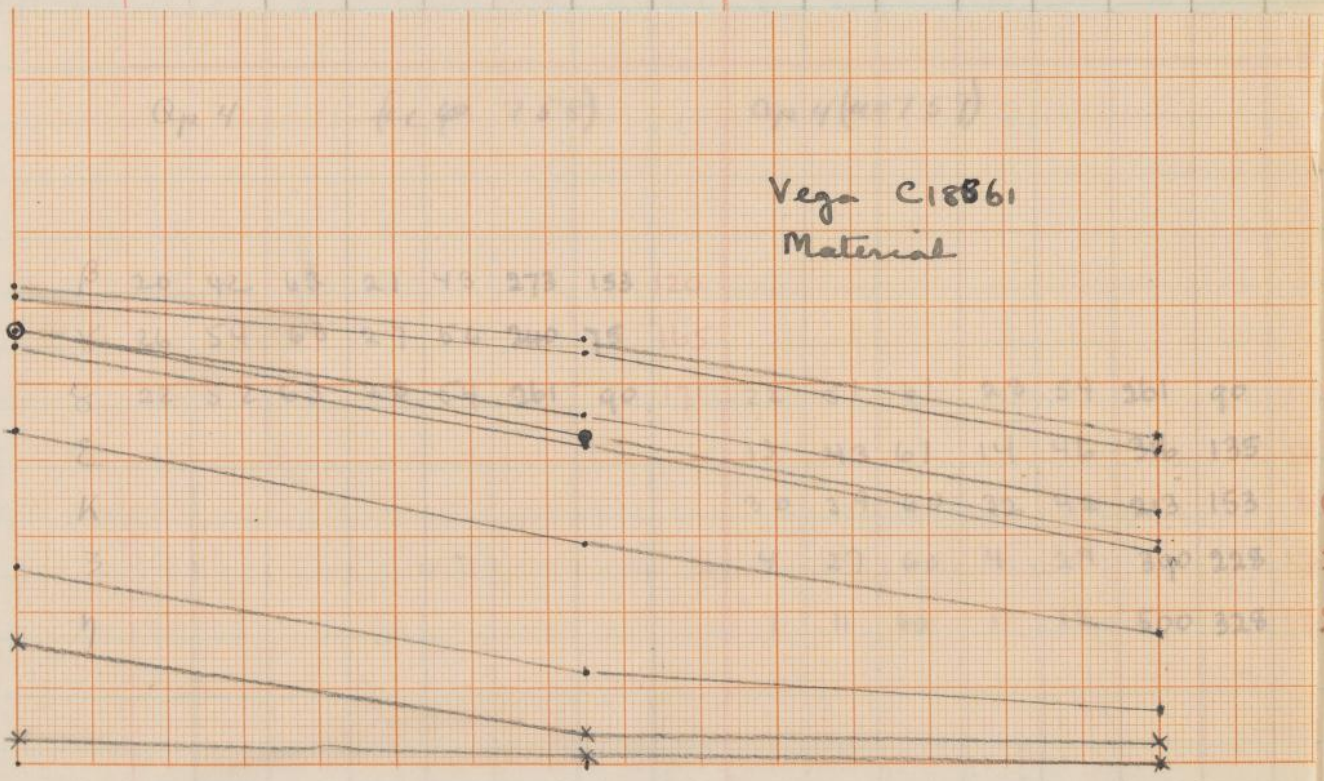
	n	mtn	ltmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm	n	mtn	ltmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm
1a	5	9	98	5	9	5	1	–	5	9	92	5	10	–	–	–
b	8	9	98	8	9			–	7	10	92	8	11	317	301	16
c	8	9	98	8	9			–	7	10	92	8	11	317	301	16
d	7	9	98	7	9			–	7	10	92	8	11	317	301	16
e	3	9	98	3	9			–	4	11	92	5	12	–	–	–
f				3	9			–	4	11	92	5	12	–	–	–
g	6	10	98	6	10			–	7	11	92	8	12	317	296	21
h	8	10	98	8	10			–	8	11	92	9	12	312	296	16
i	7	10	98	7	10			–	8	12	92	9	13	312	291	21
j	–	–	–	–	–	–	–	–				9	13	312	291	21
9x	17	13	98	17	13	283	303	−20	20	14	92	22	15	248	280	−32
a	11	13	98	11	13	323	303	20	12	15	92	13	16	291	275	16
b	10	14	98	10	14	340	298	40	12	15	92	13	16	291	275	16
c	13	14	98	13	14	303	298	5	13	15	92	14	16	286	275	11
d	8	15	98	8	15	–	293	–	8	16	92	9	17	312	270	42
e	6	15	98	6	15	–	293	–	7	16	92	8	17	317	270	47
10a	–	–	99	–	–	–	–	–	6	18	92	7	20	323	256	67
b	7	16	99	7	16	–	288	–	9	18	92	10	20	307	256	51
c	8	17	99	8	17	–	283	–	9	19	92	10	21	307	252	55
d	14	17	99	14	17	298	283	15	15	20	92	16	22	307	248	59
e	15	17	99	15	17	293	283	10	18	20	92	20	22	256	248	8
f	11	18	99	11	18	323	279	44	13	21	92	14	23	286	244	42
9g	7	19	99	7	19	–	274	–	19	22	92	21	24	252	240	12

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α Lyrae C 18861 — 44 756 — 44 757 — Reduced to 65

	ap 2 n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	Δm	ap 2 n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	Δm
β	36	55	63	37	57	186	65	121								
γ	41	60	62	48	69	153	0	153								
δ	36	57	61	38	61	180	24	156	39	60	63	40	62	169	13	156
ε									28	55	63	29	57	229	65	164
K									47	53	62	49	55	117	84	33
ζ									15	42	62	16	44	303	147	156
η									3	24	61	3	26	400	246	154



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ζ Lyrae 44 φ 756 Reduced to 65

C 18861 44 φ 757

	Apr 2 n	m+n	1+m+n	n̄	m+n	[n]	[m+n]	Δm	Apr 2 n	m+n	1+m+n	n̄	m+n	[n]	[m+n]	Δm
β	36	55	63	37	57	186	65	121								
γ	41	60	62	48	63	153	0	153								
δ	36	57	61	38	61	180	24	156	39	60	63	40	62	169	13	156
ε									28	55	63	29	57	229	65	164
K									47	53	62	49	55	117	84	33
3									15	42	62	16	44	303	147	156
η									3	24	61	3	26	400	246	154

	Apr 4			(44 φ 758)					Apr 4 (44 φ 759)							
β	20	42	63	21	43	273	153	120								
γ	26	54	63	27	56	240	75	165								
δ	22	52	63	23	54	261	90	171	22	51	61	23	54	261	90	171
ε									13	43	61	14	46	316	135	181
K									30	39	60	32	42	213	153	60
3									4	27	60	4	29	390	228	172
η									1	11	60	1	12	500	328	172

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Vega C 1866 Reduction

	m	m+h	1+m+h	h
β	8	29	64	8
γ	14	44	66	14
δ	11	42	66	11
ε				
κ				
ζ				
η				

Means. (6

β	121		120	
γ	153		165	
δ	156	156	171	171
ε	~~164~~	164		181
ζ		136		..
η		154		..
κ		33		60

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Ap 6 (760)

	n	mtn	ltmtn	n̄	mtn	[n]	[mtn]	Δm
β	8	29	64	8	29	352	~~316~~ 328	124
γ	14	44	66	14	43	316	152	164
δ	11	42	66	11	41	335	163	172
ε								
K								
ζ								
η								

Ap 6 (761)

	n	mtn	ltmtn	n̄	mtn	[n]	[mtn]	Δm
β								
γ	12	42	63	12	43	328	152	176
δ	10	40	63	10	41	341	163	178
ε	6	22	63	6	28	367	208	159
K	15	27	63	15	28	308	234	74
ζ	3	16	63	3	17	400	295	105
η	0	7	63	0	7	500	360	140

Means. (63 to 5 only)

							Σ	Mean
β	121		120		124		364	121
γ	153		165		164	176	658	164
δ	156	156	171	171	172	178	1004	167
ε	~~164~~	164		181		159	504	168
ζ		156		..		..		156
η		154		..		..		154
K		33		60		74	167	56

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α Canis Maj.

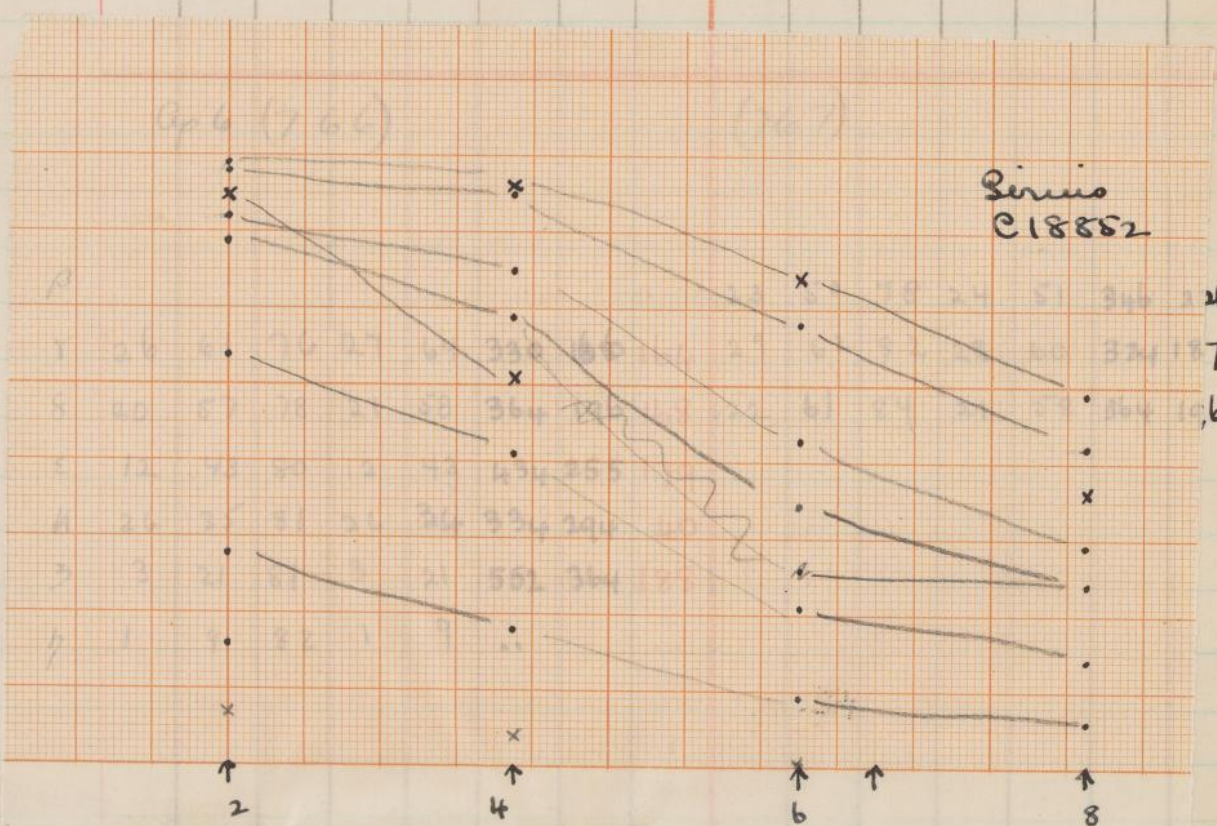
C 18852

Reduced to 80

Ap 4 (764)

	n	m+n	month	n	m+n	[n]	[m+n]	Δm	n	m+n	t.m+n	[n]	m+n	[n]	[m+n]	Δm
β																
γ	48	72	75	51	76	226	40 156	186 ~~70~~	52	79	84	49 ~~55~~	75	232 ~~209~~	85	147 ~~124~~
δ	40	73	78	41	75	263	85	188	47 Hp	72	82	46	70	244	130	114
ε	25	65	80	25	65	340	160	180								
K	51	60	81	50	59	229	192	37								
3	9	42	82	9	41	460	263	197								
η	4	19	83	4	18	552	386	166								

(765)



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1924phae.proj.1110P

α Canis Maj. C 18852 Reduced to 80

Ap 4 (764) (765)

	n	m+n	t+m+n	n̄	m+n	[n]	[m+n]	Δm	n	m+n	t+m+n	[n]	m+n	[n]	[m+n]	Δm
β																
γ	48	~~72~~ 71	75	51	~~76~~ 77	226	~~156~~ 140	~~80~~ 186	52	79	84	~~55~~ 49	75	~~209~~ 232	85	~~124~~ 147
δ	40	73	78	41	75	263	85	188	Hβ 49	72	82	46	70	244	130	114
ε	25	65	80	25	65	340	160	180								
K	51	60	81	50	59	229	192	37								
ζ	9	42	82	9	41	460	263	197								
η	4	19	83	4	18	552	386	166								

Ap 6 (766) (767)

β									23	50	78	24	51	346	226	120
γ	26	61	76	27	64	330	166	164	29	62	82	28	60	324	187	137
δ	20	57	78	21	58	364	196	168	22	61	84	21	58	364	196	168
ε	12	43	80	12	43	434	255	179								
K	26	35	81	26	34	334	294	40								
ζ	3	21	81	3	21	552	364	188	3	21	81					
η	1	9	82	1	9	..		..	1							

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1924phae.proj.111op

ap. 2 (768)

n	m+m	l+m+m	n̄	m+m	[m]	[m+m]	Δm
64	80	85	60	75	187	86	101
67	82	83	65	79	160	12 137	148 23
54	80	82	53	78	217	40 143	177

ap. 2 (769)

n	m+m	l+m+m	n̄	m+m	[m]	[m+m]	Δm
56	81	83	54	78	213	40 143	178
39	7 86	84	37	72	280	116	164
67	72	84	64	69	166	136	30
20	57	85	19	54	378	213	165
7	30	85	7	28	488	323	165
4	15	85	4	15	552	410	142

ap. 8 (770)

	n	m+m	l+m+m	n̄	m+m	[m]	[m+m]	Δm
	11	38	85	11	36	441	284	157
	15	52	86	15	49	410	232	178
	11	44	87	11	42	441	260	181
					Means (above 10)			
	2	2 4	4	4	6 6	6	8,8	Mean 8
Hβ	101			114		120	157	123
γ	148		186	147 134	164	137	178	160
δ	177	173	188		168	168	181 181	177
ε		164	180		179		181	176
κ		30	37		40		64	43
ζ		165	197		188			185
η		165	166		..			166
θ		142						142

ap. 8 (771)

n	m+m	l+m+m	n̄	m+m	[m]	[m+m]	Δm
11	43	83	11	42	441	260	181
6	30	83	6	29	500	319	181
15	24	84	15	24	410	346	64
1	14	84	1	14	..		
2	6	84	2	6	620	..	

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Reduced to 85

E Orionis C 1852

	n (762)	mtn	Atmtn	n	mtn	[n]	[mtn]	Δm	n (763)	mtn	Atmtn	n	mtn	[n]	[mtn]	Δm
1	9	15	84	9	15	460	410	50								
2	24	34	84	24	34	946	294	52								
3	45	49	84	46	50	244	228	16								
4	44	50	84	45	51	248	224	24								
5	53	55	84	54	56	212	204	8								
6	53	57	84	54	58	212	196	6								
7	44	58	84	45	59	248	192	56								
8	60	63	84	61	64	182	166	16								
9	57	65	83	58	67	196	150	46								
10	64	68	83	66	70	156	130	26								
11	67	68	83	69	70	136	130	6								
12	60	69	83	61	71	182	124	58								
13	64	69	83	66	71	156	124	32								
14	57	69	83	58	71	196	124	72								
15	63	69	83	64	71	166	124	42								
16	65	69	83	67	71	150	124	26								
17	65	69	83	67	71	150	124	26								
18	68	70	82	70	73	130	106	24								
19	69	71	82	71	74	124	96	28								
20	69	71	82	72	74	116	96	20								
21	61	71	82	63	74	172	96	76								
22	69	71	82	72	74	116	96	20								
23	70	71	82	73	74	106	96	10	71	73	84	72	74	116	96	20
24	69	72	82	72	75	116	86	30	69	73	84	70	74	130	96	34
25	70	72	81	73	76	106	74	32	72	74	84	73	75	106	86	20
26	65	72	81	68	76	142	74	68	67	74	84	68	75	142	86	56
27									73	75	83	75	77	86	58	28
28									73	75	83	75	77	86	58	28
29									73	75	83	75	77	86	58	28
30									73	75	83	75	77	86	58	28

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Reduced to 85

E Orionis C 18852

(762) (763)

Sirius C 18552

1		31	308	61	182
2	616	32	302	62	178
3	574	33	298	63	172
4	550	34	294	64	166
5	526	35	290	65	162
6	502	36	284	66	156
7	488	37	280	67	150
8	470	38	276	68	142
9	460	39	270	69	136
10	450	40	266	70	130
11	440	41	262	71	124
12	434	42	258	72	116
13	426	43	254	73	106
14	418	44	252	74	96
15	410	45	248	75	86
16	402	46	244	76	74
17	394	47	240	77	58
18	388	48	236	78	40
19	380	49	232	79	18
20	370	50	228	80	
21	364	51	224		
22	358	52	220		
23	352	53	216		
24	346	54	212		
25	340	55	208		
26	334	56	204		
27	328	57	200		
28	322	58	196		
29	318	59	192		
30	314	60	188		

22																
23	70	71	82	73	74	106	96	10	71	73	84	72	74	116	96	20
24	69	72	82	72	75	116	86	30	69	73	84	70	74	130	96	34
25	70	72	81	73	76	106	74	32	72	74	84	73	75	106	86	20
26	65	72	81	68	76	142	74	68	67	74	84	68	75	142	86	56
27									73	75	83	75	77	86	58	28
28									73	75	83	75	77	86	58	28
29									73	75	83	75	77	86	58	28
30									73	75	83	75	77	86	58	28

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Sirius 1855?
Reduction

	Δm
31	12
32	22
33	56
34	22
35	0
36	12
37	22
38	20
39	34
46	50
41	26
42	30

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(762)

(763)

	n	m+n	(t m+n)	n	m+n	[n]	(m+n)	Δm
31	73	74	83	75	76	86	74	12
32	72	74	83	74	76	96	74	22
33	68	74	83	70	76	130	74	56
34	72	74	83	74	76	96	74	22
35	73	74	82	76	77	58	58	0
36	72	73	82	75	76	86	74	12
37	71	73	82	74	76	96	74	22
38	70	72	82	73	75	106	86	20
39	68	71	82	70	74	130	96	34
40	47	55	81	49	61	232	182	50
41	39	46	81	41	48	262	236	26
42	21	25	80	22	27	358	328	30

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Mira Ceti C 1865.0

Reduced to 55

No.	n	m+n	(m+n)	$\bar{n}$	m+n	[n]	[m+n]	dm	No	h	m+n	(m+n)	$\bar{n}$	m+n	[n]	[m+n]	dm
-9	5	3	54	5	3	–	–	–	61	11	14	55	11	14	420	332	88
1	9	5	54	9	5	–	–	–	62	9	14	55	9	14	–	332	–
5	16	7	54	16	7	310	–	–	63	10	14	55	10	14	–	332	–
9x	7	8	54	7	8	–	–	–	64	–	–	–	–	–	–	–	–
10	2	8	54	2	8	–	–	–	65	–	–	–	–	–	–	–	–
12	3	10	54	3	10	–	–	–	66	11	15	55	11	15	420	320	100
37	9	13	54	9	13	–	346	–	67	–	–	–	–	–	–	–	–
38	–	–	–	–	–	–	–	–	68	–	–	–	–	–	–	–	–
39	9	13	54	9	13	–	346	–	69	–	–	–	–	–	–	–	–
40	–	–	–	–	–	–	–	–	70	–	–	–	–	–	–	–	–
41	–	–	–	–	–	–	–	–	71	12	15	55	12	15	368	320	48
42	–	–	–	–	–	–	–	–	72	–	–	–	–	–	–	–	–
43	–	–	–	–	–	–	–	–	73	–	–	–	–	–	–	–	–
44	–	–	–	–	–	–	–	–	74	–	–	–	–	–	–	–	–
45	–	–	–	–	–	–	–	–	75	–	–	–	–	–	–	–	–
46	–	–	–	–	–	–	–	–	76	–	–	–	–	–	–	–	–
47	–	–	–	–	–	–	–	–	77	–	–	–	–	–	–	–	–
48	9	14	54	9	14	–	332	–	78	–	–	–	–	–	–	–	–
49	–	–	–	–	–	–	–	–	79	–	–	–	–	–	–	–	–
50	–	–	–	–	–	–	–	–	80	–	–	–	–	–	–	–	–
51	–	–	–	–	–	–	–	–	81	–	–	–	–	–	–	–	–
52	–	–	–	–	–	–	–	–	82	11	15	55	11	15	420	320	100
53	37	14	55	37	14	168	332	-164	83	10	15	55	10	15	–	320	–
54	–	–	–	–	–	–	–	–	84	–	–	–	–	–	–	–	–
55	11	14	55	11	14	420	332	88	85	–	–	–	–	–	–	–	–
56	11	14	55	11	14	420	332	88	86	–	–	–	–	–	–	–	–
57	11	14	55	11	14	420	332	88	87	–	–	–	–	–	–	–	–
58	–	–	–	–	–	–	–	–	88	–	–	–	–	–	–	–	–
59	10	14	55	10	14	–	332	–	89	–	–	–	–	–	–	–	–
60	10	14	55	10	14	–	332	–	90	–	–	–	–	–	–	–	–

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1924phae.proj.11107

No.	n	mtn	[illegible]mtn	n	mtn	[illegible]	[illegible]mtn	Δm	No.	n	mtn	[illegible]mtn	n	mtn	[illegible]	[illegible]mtn	Δm
91	–	–	–	–	–	–	–	–	121	–	–	–	–	–	–	–	–
92	11	15	55	11	15	420	320	100	122	–	–	–	–	–	–	–	–
93	–	–	–	–	–	–	–	–	123	–	–	–	–	–	–	–	–
94	–	–	–	–	–	–	–	–	124	–	–	–	–	–	–	–	–
95	–	–	–	–	–	–	–	–	125	–	–	–	–	–	–	–	–
96	–	–	–	–	–	–	–	–	126	–	–	–	–	–	–	–	–
97	–	–	–	–	–	–	–	–	127	–	–	–	–	–	–	–	–
98	–	–	–	–	–	–	–	–	128	10	15	55	10	15	–	320	
99	–	–	–	–	–	–	–	–	129	–	–	–	–	–	–	–	–
100	–	–	–	–	–	–	–	–	130	10	15	55	10	15	–	320	–
101	–	–	–	–	–	–	–	–	131	–	–	–	–	–	–	–	–
102	9	15	55	9	15	–	320		132	–	–	–	–	–	–	–	–
103	–	–	–	–	–	–	–	–	133	–	–	–	–	–	–	–	–
104	5	15	55	5	15	–	320	–	134	–	–	–	–	–	–	–	–
105	–	–	–	–	–	–	–	–	135	–	–	–	–	–	–	–	–
106	–	–	–	–	–	–	–	–	136	–	–	–	–	–	–	–	–
107	–	–	–	–	–	–	–	–	137	–	–	–	–	–	–	–	–
108	15	15	55	15	15	320	320	0	138	23	16	55	23	16	260	310	-50
109	15	15	55	15	15	320	320	0	139	12	16	55	12	16	368	310	58
110	11	15	55	11	15	420	320	100	140	9	16	55	9	16	–	310	–
111	–	–	–	–	–	–	–	–	141	10	16	55	10	16	–	310	–
112	–	–	–	–	–	–	–	–	142	10	16	55	10	16	–	310	–
113	–	–	–	–	–	–	–	–	143	+	–	–	–	–	–	–	–
114	–	–	–	–	–	–	–	–	144	12	16	55	12	16	368	310	58
115	–	–	–	–	–	–	–	–	145	+	–	–	–	–	–	–	–
116	–	–	–	–	–	–	–	–	146	–	–	–	–	–	–	–	–
117	–	–	–	–	–	–	–	–	147	–	–	–	–	–	–	–	–
118	10	15	55	10	15	–	320		148	–	–	–	–	–	–	–	–
119	10	15	55	10	15	–	320		149	–	–	–	–	–	–	–	–
120	–	–	–	–	–	–	–	–	150	–	–	–	–	–	–	–	–

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1924phae.proj.1110P

No	m	min	tmin	h	mtn	[h]	[mtn]	Am
151	–	–	–	–	–	–	–	–
152	–	–	–	–	–	–	–	–
153	–	–	–	–	–	–	–	–
154	11	16	55	11	16	420	310	110
155	11	16	55	11	16	420	310	110
156	–	–	–	–	–	–	–	–
157	12	16	55	12	16	368	310	58
158	12	16	55	12	16	368	310	58
159	–	–	–	–	–	–	–	–
160	–	–	–	–	–	–	–	–
161	8	16	55	8	16	–	310	
162	8	16	55	8	16	–	310	
163	8	16	55	8	16	–	310	
164	8	16	55	8	16	–	310	
165	–	–	–	–	–	–	–	–
166	10	17	50	10	17	–	300	
167	–	–	–	–	–	–	–	–
168	–	–	–	–	–	–	–	–
169	–	–	–	–	–	–	–	–
170	–	–	–	–	–	–	–	–
171	–	–	–	–	–	–	–	–
172	7	17	55	7	17	–	300	
173	–	–	–	–	–	–	–	–
174	–	–	–	–	–	–	–	–
175	–	–	–	–	–	–	–	–
176	–	–	–	–	–	–	–	–
177	–	–	–	–	–	–	–	–
178	–	–	–	–	–	–	–	–
179	–	–	–	–	–	–	–	–
180	–	–	–	–	–	–	–	–

No	m	min	tmin	h	mtn	[h]	[mtn]	Am
181	–	–	–	–	–	–	–	–
182	–	–	–	–	–	–	–	–
183	–	–	–	–	–	–	–	–
184	–	–	–	–	–	–	–	–
185	–	–	–	–	–	–	–	–
186	9	17	55	9	17	–	300	–
187	9	17	55	9	17	–	300	–
188	9	17	55	9	17	–	300	–
189	–	–	–	–	–	–	–	–
190	–	–	–	–	–	–	–	–
191	–	–	–	–	–	–	–	–
192	–	–	–	–	–	–	–	–
193	–	–	–	–	–	–	–	–
194	–	–	–	–	–	–	–	–
195	–	–	–	–	–	–	–	–
196	–	–	–	–	–	–	–	–
197	–	–	–	–	–	–	–	–
198	–	–	–	–	–	–	–	–
199	11	17	55	11	17	420	300	120
200	11	17	55	11	17	420	300	120
201	–	–	–	–	–	–	–	–
202	–	–	–	–	–	–	–	–
203	–	–	–	–	–	–	–	–
204	–	–	–	–	–	–	–	–
205	–	–	–	–	–	–	–	–
206	4	17	55	4	17	–	300	–
207	4	17	55	4	17	–	300	–
208	4	17	55	4	17	–	300	–
209	–	–	–	–	–	–	–	–
210	–	–	–	–	–	–	–	–

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1924phae.proj.11107

No.	h	min	(hour)	h	min	[h]	[min]	dm	No.	h	min	(hour)	h	min	[h]	[min]	dm
211	–	–	–	–	–	–	–	–	241	11	17	55	11	17	420	300	20
212	–	–	–	–	–	–	–	–	242	–	–	–	–	–	–	–	–
213	–	–	–	–	–	–	–	–	243	–	–	–	–	–	–	–	–
214	–	–	–	–	–	–	–	–	244	–	–	–	–	–	–	–	–
215	–	–	–	–	–	–	–	–	245	–	–	–	–	–	–	–	–
216	4	17	55	4	17	–	300		246	13	17	55	13	17	346	300	46
217	4	17	55	4	17	–	300		247	–	–	–	–	–	–	–	–
218	–	–	–	–	–	–	–	–	248	–	–	–	–	–	–	–	–
219	–	–	–	–	–	–	–	–	249	–	–	–	–	–	–	–	–
220	–	–	–	–	–	–	–	–	250	17	17	55	17	17	300	300	0
221	–	–	–	–	–	–	–	–	251	17	17	55	17	17	300	300	0
222	–	–	–	–	–	–	–	–	252	2	16	55	2	16		310	–
223	–	–	–	–	–	–	–	–	253	–	–	–	–	–	–	–	–
224	–	–	–	–	–	–	–	–	254	–	–	–	–	–	–	–	–
225	–	–	–	–	–	–	–	–	255	1	16	55	1	16		310	–
226	–	–	–	–	–	–	–	–	256	1	16	55	1	16		310	–
227	–	–	–	–	–	–	–	–	257	–	–	–	–	–	–	–	–
228	8	17	55	8	17	–	300		258	–	–	–	–	–	–	–	–
229	7	17	55	7	17		300		259	–	–	–	–	–	–	–	–
230	–	–	–	–	–	–	–	–	260	–	–	–	–	–	–	–	–
231	–	–	–	–	–	–	–	–	261	–	–	–	–	–	–	–	–
232	–	–	–	–	–	–	–	–	262	–	–	–	–	–	–	–	–
233	–	–	–	–	–	–	–	–	263	–	–	–	–	–	–	–	–
234	–	–	–	–	–	–	–	–	264	–	–	–	–	–	–	–	–
235	–	–	–	–	–	–	–	–	265	–	–	–	–	–	–	–	–
236	–	–	–	–	–	–	–	–	266	–	–	–	–	–	–	–	–
239	–	–	–	–	–	–	–	–	267	–	–	–	–	–	–	–	–
238	–	–	–	–	–	–	–	–	268	–	–	–	–	–	–	–	–
239	–	–	–	–	–	–	–	–	269	–	–	–	–	–	–	–	–
240	10	17	55	10	17	?	300		270	–	–	–	–	–	–	–	–

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1924phae.proj.1110P

	N	m+n	t min	n̄	m+n	[n]	[m+n]	Δm
271	—	—	—	—	—	—	—	—
272	—	—	—	—	—	—	—	—
273	—	—	—	—	—	—	—	—
274	—	—	—	—	—	—	—	—
275	—	—	—	—	—	—	—	—
276	—	—	—	—	—	—	—	—
277	—	—	—	—	—	—	—	—
278	—	—	—	—	—	—	—	—
279	4	16	55	4	16	—	310	—
280	5	16	55	5	16	—	310	—
281	—	—	—	—	—	—	—	—
282	—	—	—	—	—	—	—	—
283	—	—	—	—	—	—	—	—
284	—	—	—	—	—	—	—	—
285	—	—	—	—	—	—	—	—
286	—	—	—	—	—	—	—	—
287	—	—	—	—	—	—	—	—
288	—	—	—	—	—	—	—	—
289	—	—	—	—	—	—	—	—
290	—	—	—	—	—	—	—	—
291	—	—	—	—	—	—	—	—
292	—	—	—	—	—	—	—	—
293	—	—	—	—	—	—	—	—
294	—	—	—	—	—	—	—	—
295	—	—	—	—	—	—	—	—
296	—	—	—	—	—	—	—	—
297	—	—	—	—	—	—	—	—
298	—	—	—	—	—	—	—	—
299	15	15	55	15	15	320	320	0
300	—	—	—	—	—	—	—	—

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1924phae.proj.1110P

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1924phae.proj.11109

ζ Lyrae C 18855 4p. Reduced to 85

Ap 2 4p 776

	n	mtn	ltmin	n̄	m̄tn	[n̄]	[m̄tn]	sm
β	28	65	85	28	65	244	102	142
γ	43	80	85	43	80	196	0	196
δ	39	77	85	39	77	208	34	174

Ap 2 4p 777

	n	mtn	ltmin	n̄	m̄tn	[n̄]	[m̄tn]	sm
δ	35	78	82	36	76	218	42	176
ε	23	69	82	24	72	256	68	188
κ	50	64	82	52	66	162	96	66
ζ	10	47	82	10	49	316	174	(142)
η	3	22	83	3	23	404	260	(144)

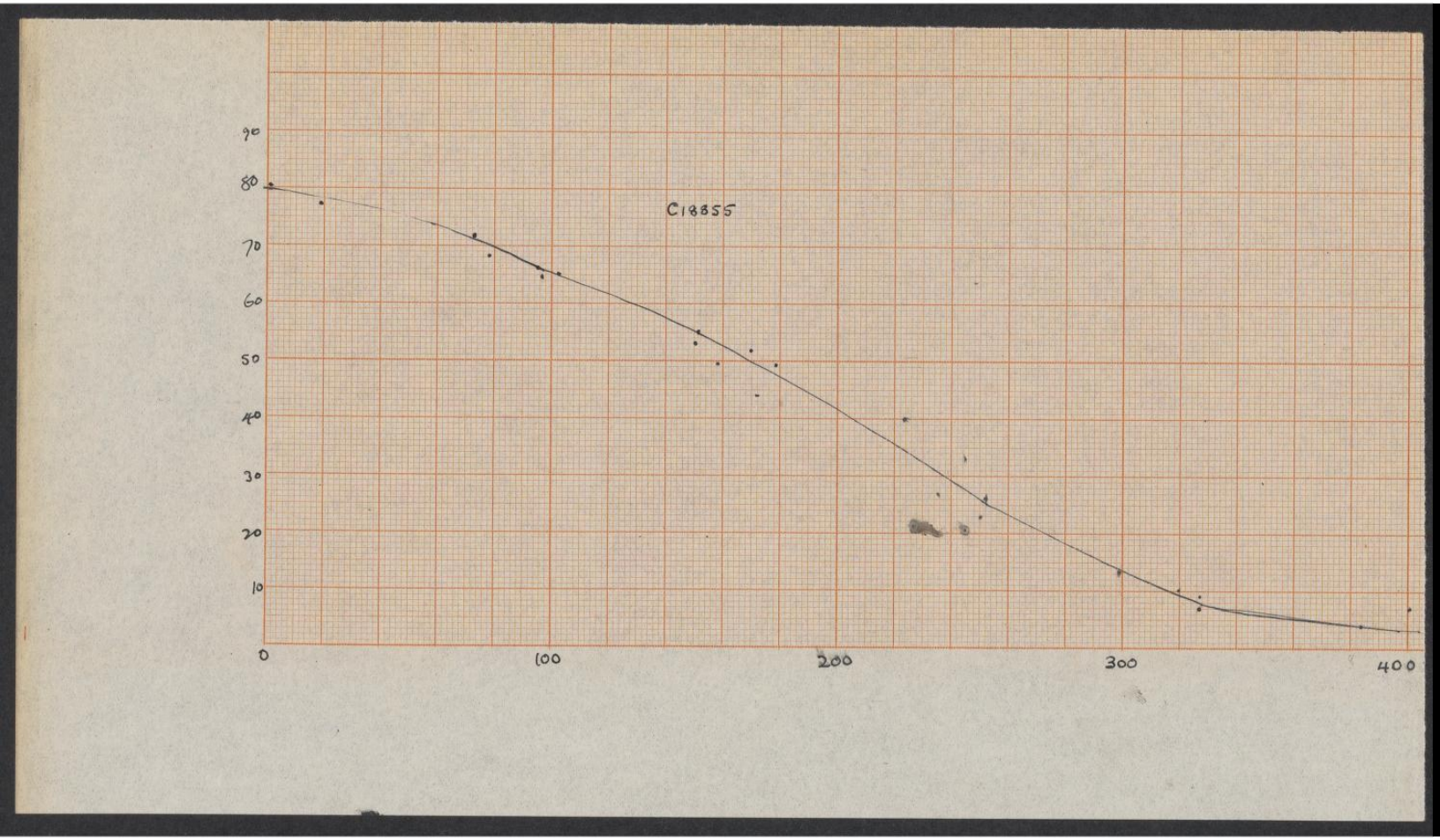
Ap 4 (774)

	n	mtn	ltmin	n̄	m̄tn	[n̄]	[m̄tn]	sm
β	15	48	83	15	49	294	174	120
γ	21	66	83	22	68	264	88	176
δ	15	61	82	16	68	290	112	178

Ap 4 (775)

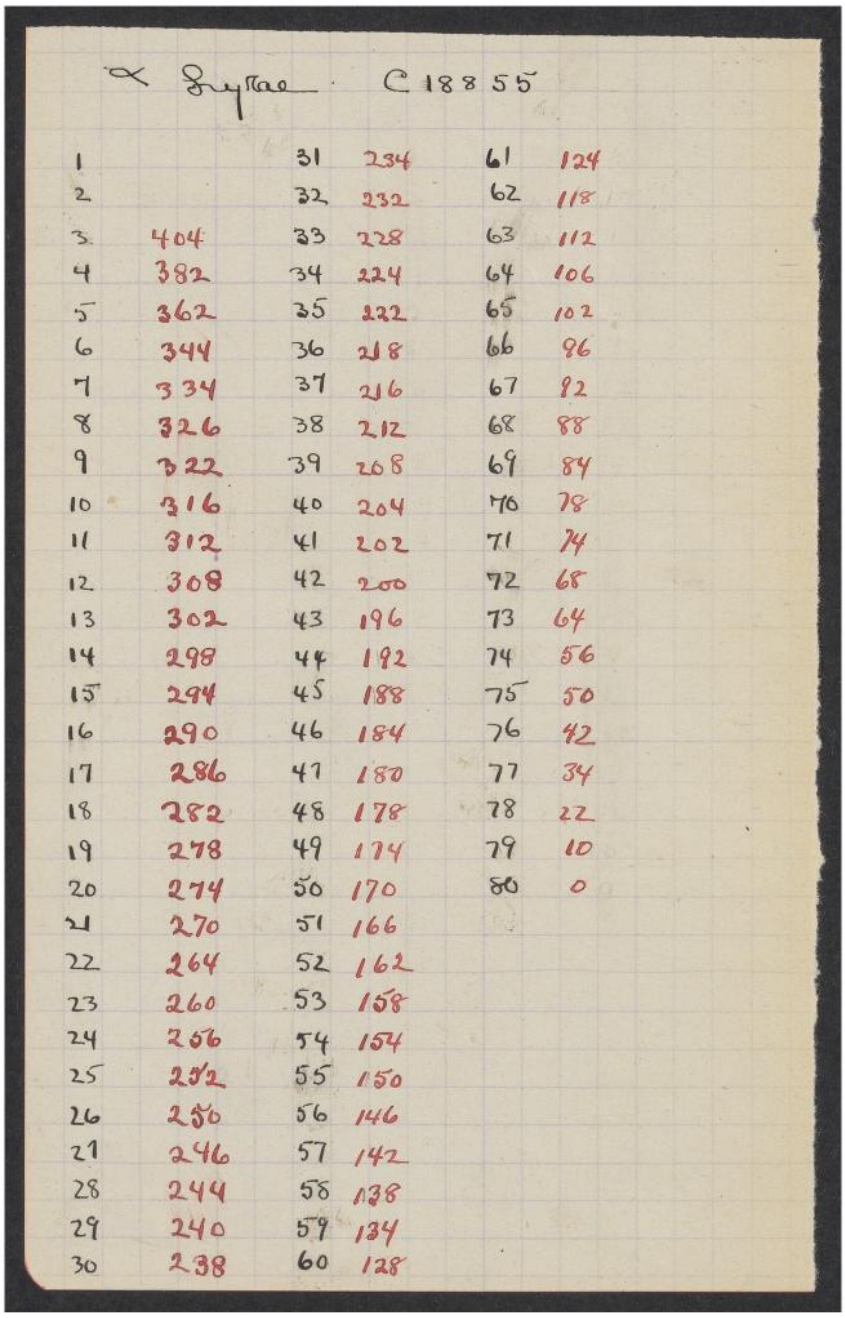
	n	mtn	ltmin	n̄	m̄tn	[n̄]	[m̄tn]	sm
δ	16	68	82	17	65	286	102	184
ε	9	52	83	9	59	322	158	164
κ	28	43	83	29	44	240	192	48
ζ	2	26	83	2	27	–	–	–
η	0	9	83	0	9	–	–	—

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1924phae.proj.1110P

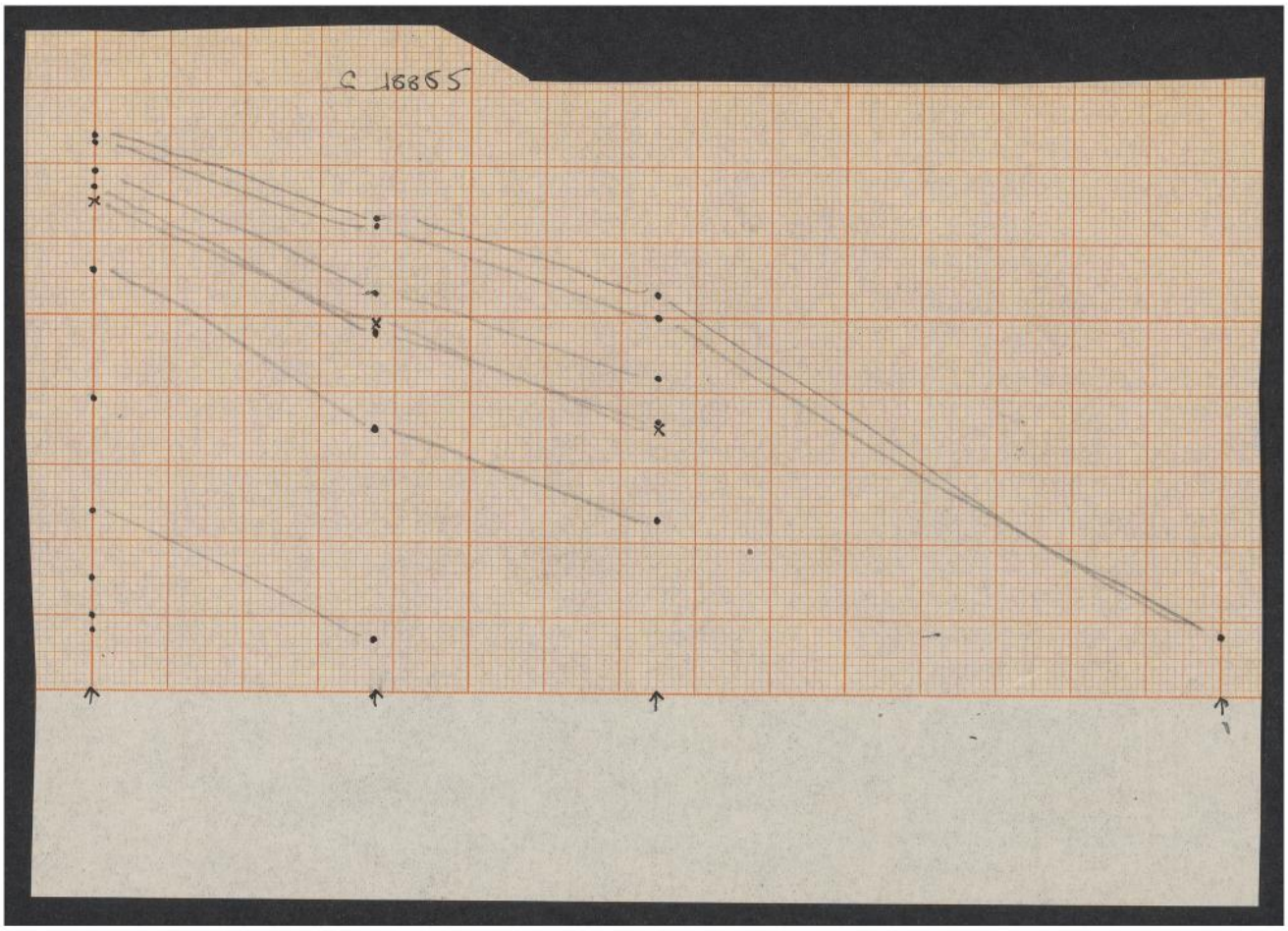


α Lyrae C 1885 5

1		31	234	61	124
2		32	232	62	118
3	404	33	228	63	112
4	382	34	224	64	106
5	362	35	222	65	102
6	344	36	218	66	96
7	334	37	216	67	92
8	326	38	212	68	88
9	322	39	208	69	84
10	316	40	204	70	78
11	312	41	202	71	74
12	308	42	200	72	68
13	302	43	196	73	64
14	298	44	192	74	56
15	294	45	188	75	50
16	290	46	184	76	42
17	286	47	180	77	34
18	282	48	178	78	22
19	278	49	174	79	10
20	274	50	170	80	0
21	270	51	166		
22	264	52	162		
23	260	53	158		
24	256	54	154		
25	252	55	150		
26	250	56	146		
27	246	57	142		
28	244	58	138		
29	240	59	134		
30	238	60	128		

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1924phae.proj.1110P



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1924phae.proj.1110P

(772) Op 6

	m	min	tmin	m	min	[N]	[min]	dm
β	4	26	84	4	26	382	250	132
γ	11	54	84	11	55	312	150	162
δ	11	51	84	11	52	312	162	150
ε								
K								
3								
η								

(773) Op 6

	m	min	tmin	m	min	[N]	[min]	dm
β								
γ								
δ	10	50	83	10	51	316	166	150
ε	6	39	83	(6)	40	344	204	(140)
K	18	32	83	18	33	282	228	54
3	3	20	82	3	21	404	270	(134)
η	0	7	82	0	7	–	–	–

Op 8 (778)

	m	min	tmin	m	min	[N]	[min]	dm
β	0	7	83	0	7	–	–	–
γ	1	20	85	1	20	–	–	–
δ								
ε								
K								
3								
η								

Op 8 (778)

	m	min	tmin	m	min	[N]	[min]	dm
β								
γ	1	20	81	1	21	–	–	–
δ	0	19	82	0	20	–	–	–
ε	0	13	83	0	13	–	–	–
K	4	10	83	4	10	382	316	66
3	0	7	84	0	7	–	–	–
η	0	4	84	0	4	–	–	–

Means

		2	2	44	66	88	Σ	Mn.
K	β	142		120	132		394	131
3	γ	196		186	162		544	181
η	δ	174	176	178 184	150 150		1012	169
	ε		188	164			352	176
	3		66	48	54	66	234	58
	η							

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1924phae.proj.1110P

α Lyrae C 1885 1

Reduced to 75

Qp 4 (785)

	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	Δm
β	23	48	78	24	49	306	186	120
γ	30	60	71	32	63	266	108	158
δ								
ε								
ζ								
η								
Θ								
ι								
κ								
λ								

Qp 4 (786)

	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	Δm
β								
γ	32	64	75	32	64	266	102	164
δ	27	62	75	27	62	290	114	176
ε	18	53	75	18	53	332	166	166
ζ	36	48	75	36	48	242	190	52
η	6	35	75	6	35	—	—	—
Θ	2	7	75	2	7	—	—	—
ι								
κ								
λ								

Qp 6 (787)

	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	Δm
β	10	34	78	10	35	364	248	116
γ	18	51	72	19	53	328	166	162
δ	13	46	72	14	48	348	190	158
ε								
ζ								
η								
Θ								
ι								
κ								
λ								

Qp 6 (788)

	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	Δm
β								
γ								
δ	15	52	76	15	51	344	174	170
ε	8	42	76	8	42	370	216	154
ζ	22	36	76	22	36	316	242	74
η	2	23	76	2	23	—	—	—
Θ								
ι								
κ								
λ								

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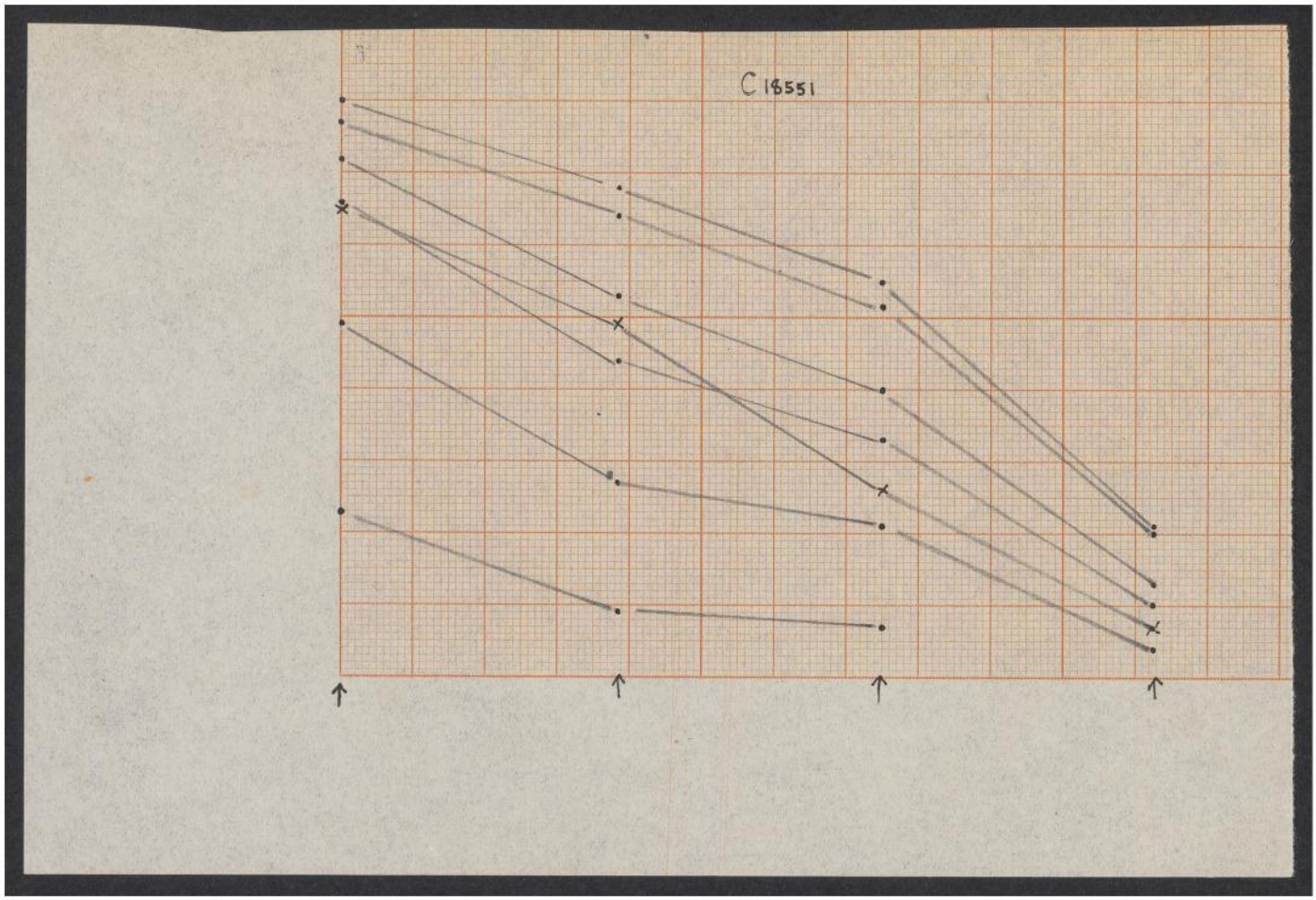
1924phae.proj.1110P

α Lyrae. C 18851

1		31	270	61	122
2		32	266	62	114
3		33	260	63	108
4		34	254	64	102
5		35	248	65	96
6		36	242	66	90
7	376	37	238	67	84
8	370	38	234	68	78
9	366	39	228	69	70
10	364	40	224	70	62
11	360	41	220	71	54
12	356	42	216	72	44
13	352	43	212	73	30
14	348	44	208	74	≥18
15	344	45	204	75	
16	340	46	198	76	
17	336	47	194	77	
18	332	48	190	78	
19	328	49	186	79	
20	324	50	180	80	
21	320	51	174		
22	316	52	170		
23	310	53	166		
24	306	54	160		
25	300	55	156		
26	296	56	150		
27	290	57	146		
28	284	58	140		
29	280	59	134		
30	274	60	128		

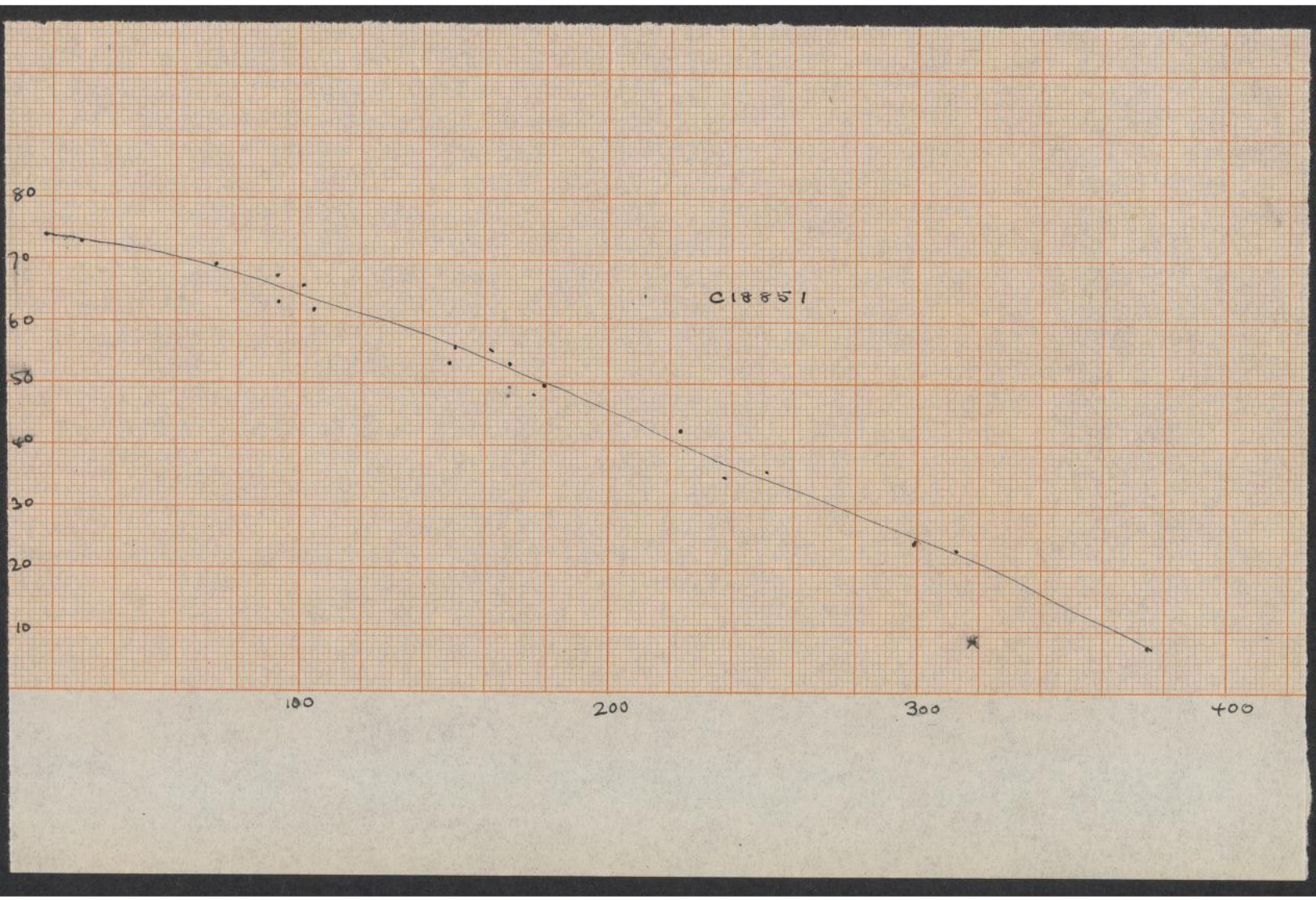
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Ap 2 (782)

	n	m+n	ltm+n	n̄	m+n̄	[n]	[m+n]	Δm
β	42	64	74	43	65	212	96	116
γ	49	69	70	52	74	170	18	152
δ	43	67	68	47	74	194	18	176
ε								
κ								
ʒ								
η								
θ								
υ								
κ								
λ								

Ap 2 (784) Reduced to 75

	n	m+n	ltm+n	n̄	m+n̄	[n]	[m+n]	Δm
β								
γ								
δ	41	70	73	48	72	190	44	146
ε	34	66	72	35	69	248	70	178
κ	55	64	72	57	67	146	84	62
ʒ	20	54	72	21	56	320	150	170
η	8	37	71	8	39	370	228	142
θ	2	23	71	2	24	—	—	—
υ	2	14	70	2	15	—	—	—
κ	3	9	70	3	10	—	—	—
λ	2	7	70	2	8	—	—	—

Ap 10 780 Reduced to 85

	n	m+n	ltm+n	n̄	m+n̄	[n]	[m+n]	Δm
β								
γ	0	8	84	0	8	—	—	—
δ	1	8	84	1	8	—	—	—
ε								
κ								
ʒ								
η								
θ								
υ								
κ								
λ								

Means

	2	2	4	4	6	6	Σ	Mn
β	116		120		116		352	117
γ	152	~~146~~	158	164	162		636	159
δ	176	~~178~~ 146		176	158	170	826	165
ε		178		166		154	498	166
κ		62		52		74	188	63
ʒ		170		—		—		170
η		142		—		—		142
θ				—		—		
υ				—		—		
κ				—		—		
λ				—		—		

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α Virginis C 18846

Reduced to 100

Qp 2 (192) – ~~197~~ (791)

	n	m+n	t m+n	w̄	m+n	[n]	[m+n]	Δm	n	m+n	t m+n	w̄	m+n	[n]	[m+n]	Δm
1																
2	2	22	105	2	21	—	—									
3	29	34	105	28	32	216	204	12								
4	32	36	105	30	34	210	198	12								
✓5	32	51	105	30	48	210	158	52								
6	56	61	105	53	58	144	128	16								
✓7	53	64	105	50	61	152	120	32								
8	63	68	106	59	64	126	112	14								
✓9	49	66	106	46	64	164	112	52	51	69	100	51	69	150	100	50
10									59	69	100	59	69	126	100	26
11									64	69	100	64	69	112	100	12
✓12									62	69	100	62	69	118	100	18
✓13									64	69	100	64	69	112	100	12
14									64	70	100	64	70	112	98	14
15									64	70	100	64	70	112	98	14
16									67	72	100	67	72	106	92	14
17									69	72	100	69	72	100	92	8
18									70	72	100	70	72	98	92	6
19									70	73	100	70	73	98	90	8
✓20									55	73	100	55	73	138	90	48
21									67	73	100	67	73	106	90	16
✓22									70	73	100	70	73	98	90	8
23									69	74	100	69	74	100	86	14
✓24									65	74	100	65	74	110	86	24
25									71	74	100	71	74	94	86	8
✓26									72	75	100	72	75	92	82	10
27									72	75	100	72	75	92	82	10
28									69	73	100	69	73	100	90	10
29									69	72	100	69	72	100	92	8
30									67	70	100	67	70	106	98	8

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~~Ap.~~ ap. 2. ~~791~~ 791

noap. ~~790~~

	n	mon	Hmtn	n̄	mtn	[n]	[mtn]	Δm	n	mon	Hmtn	n̄	mtn	[n]	[mtn]	Δm
31	65	69	100	65	69	110	100	10								
32	51	54	100	51	54	150	140	10								
33	49	52	100	49	52	156	146	10								
34	48	49	100	48	49	158	156	2								
35	28	43	100	28	43	216	172	44								
36	24	30	100	24	30	226	210	16								
37	21	25	100	21	25	236	224	12								
38																

noap. No 790 Reduced to Hel

20	81	92	103	79	89
21	89	92	103	86	89
22	89	92	103	86	89
23	90	93	103	87	90
24	88	93	103	85	90
25	–	–	–		
26	–	–	–		
27	–	–	–		
28	–	–	–		
29	–	–	–		
30	–	–	–		
31	–	–	–		
32	–	–	–		
33	–	–	–		
34	–	–	–		
35	63	77	104	60	74	122	86	36
36	57	62	104	55	60	138	122	16

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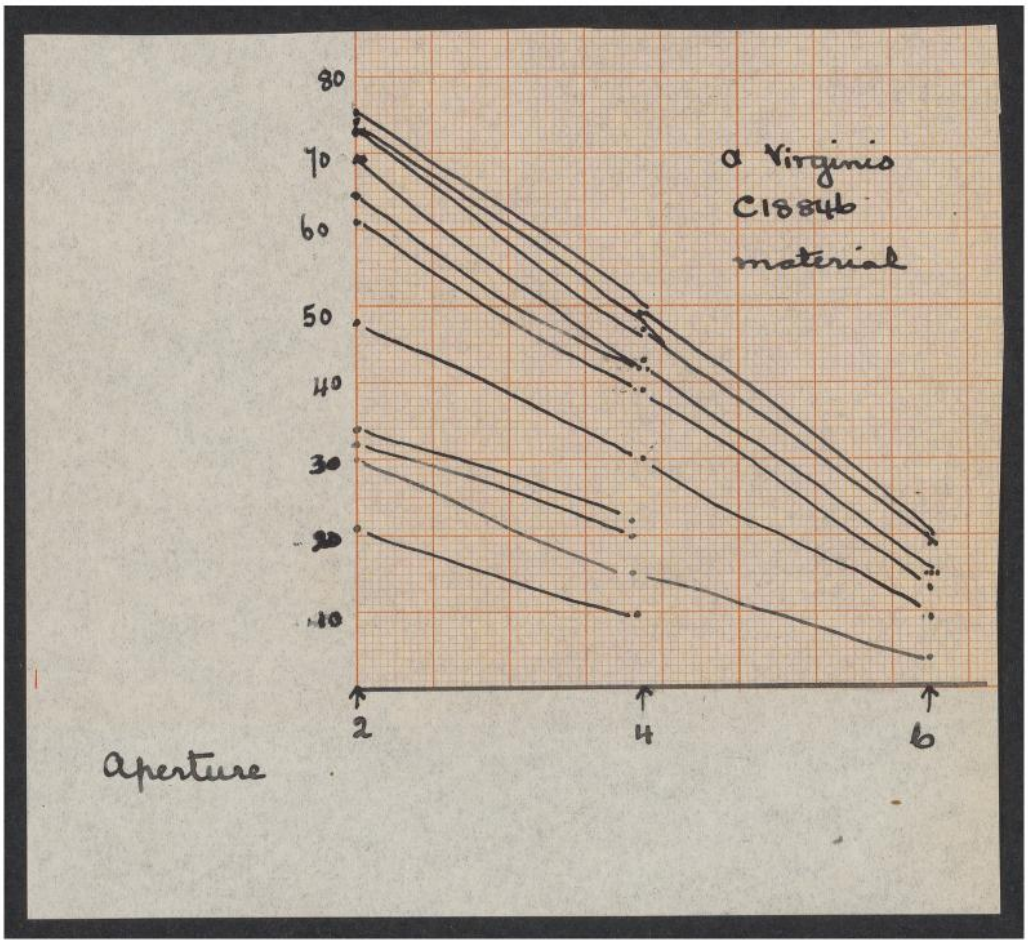
α Virginis C 18846 Reduced to 105

Cyp 6. (796) (795)

	n	m tn	l tm tn	n	m tn	[n]	[m tn]	Δm	n	m tn	l tm tn	n	m tn	[n]	[m tn]	Δm
1																
2																
3																
4																
✓ 5	4	9	104	4	9	342	294	48								
6	7	12	104	7	12	314	274	40								
✓ 7	9	13	104	9	13	294	268	26								
8	12	15	104	12	15	274	258	16								
✓ 9	7	15	103	7	15	314	258	56	7	14	102	7	14	314	264	50
10									—	—	—	—	—	—	—	—
11									—	—	—	—	—	—	—	—
12									✓ 12	15	102	12	15	274	258	16
13									11	15	102	11	15	280	258	22
14									✓ 12	15	102	12	15	274	258	16
15									12	15	102	12	15	274	258	16
16									—	—	—	—	—	—	—	—
17									—	—	—	—	—	—	—	—
18									—	—	—	—	—	—	—	—
19									15	18	102	15	18	258	244	14
20									✓ 10	19	103	10	19	286	240	46
21									15	19	103	15	19	258	240	18
22									✓ 15	19	103	15	19	258	240	18
23									14	19	103	14	19	264	240	24
24									✓ 13	20	103	13	20	268	238	30
25									17	20	103	17	20	248	238	10
26									✓ 18	20	103	18	20	244	238	6
27									18	20	103	18	20	244	238	6
28	—	—	—						—	—	—					
29	—	—	—						—	—	—					
30	—	—	—						—	—	—					

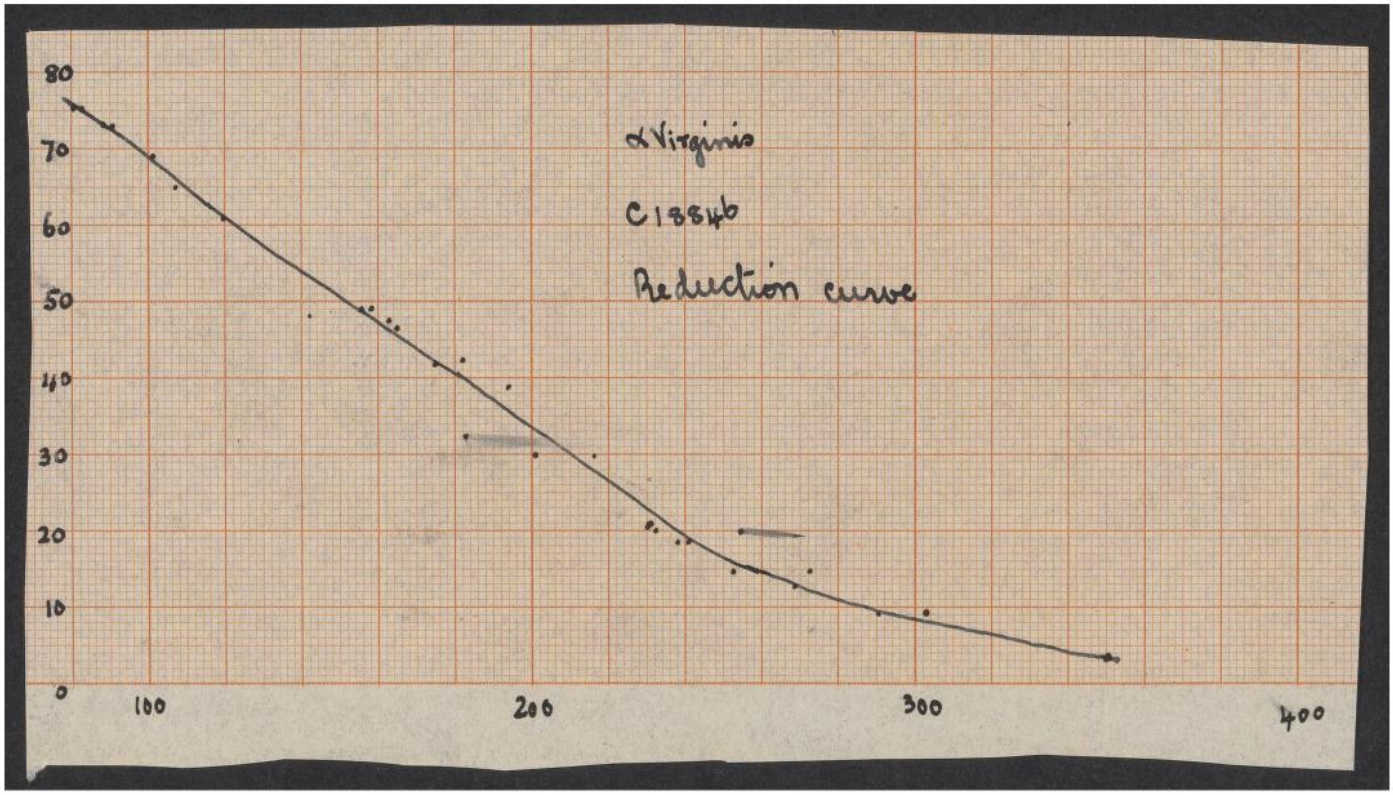
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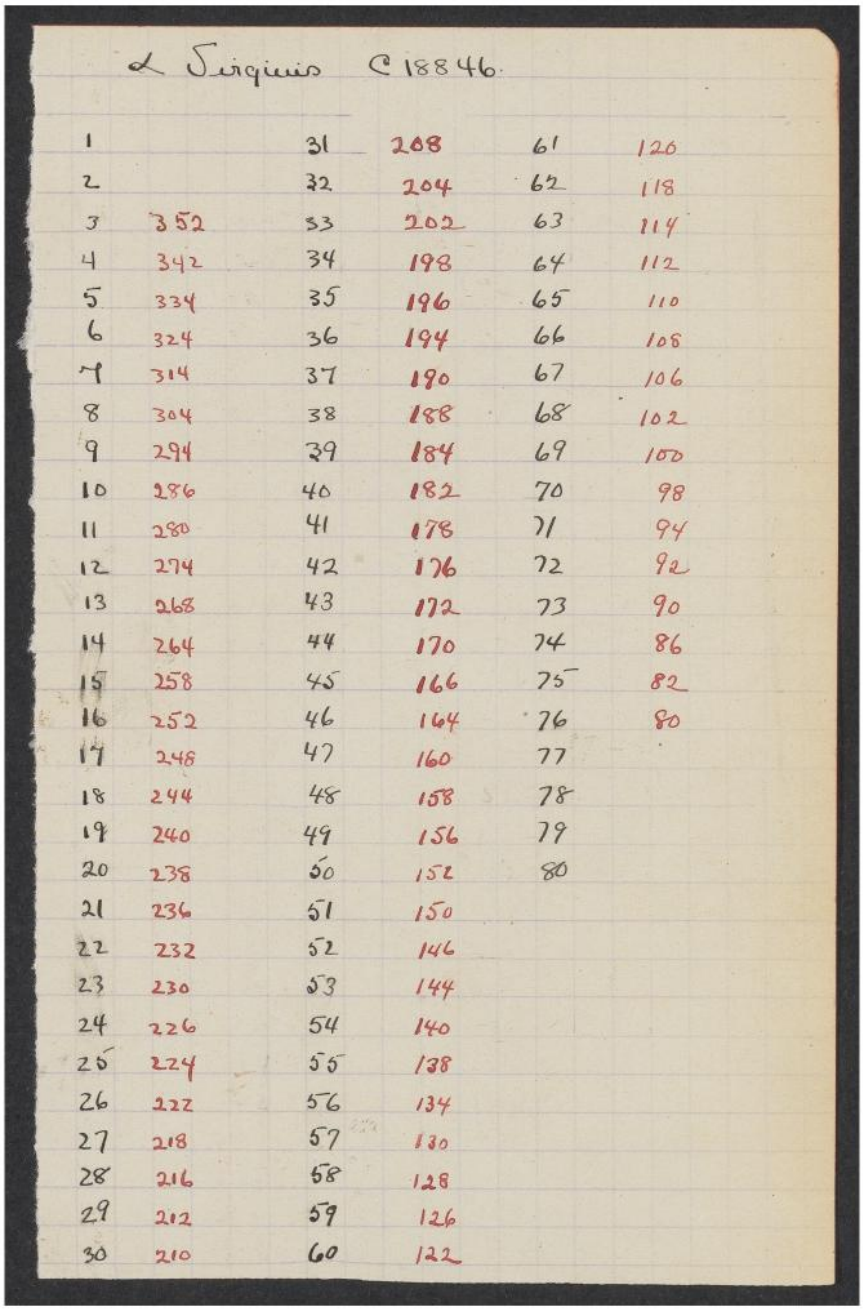
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ζ Sagittarii C 1884 6.

1		31	208	61	120
2		32	204	62	118
3	352	33	202	63	114
4	342	34	198	64	112
5	334	35	196	65	110
6	324	36	194	66	108
7	314	37	190	67	106
8	304	38	188	68	102
9	294	39	184	69	100
10	286	40	182	70	98
11	280	41	178	71	94
12	274	42	176	72	92
13	268	43	172	73	90
14	264	44	170	74	86
15	258	45	166	75	82
16	252	46	164	76	80
17	248	47	160	77	
18	244	48	158	78	
19	240	49	156	79	
20	238	50	152	80	
21	236	51	150		
22	232	52	146		
23	230	53	144		
24	226	54	140		
25	224	55	138		
26	222	56	134		
27	218	57	130		
28	216	58	128		
29	212	59	126		
30	210	60	122		

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C 18846

Ap. 4 (798) (783) Reduced to 105°

	n	mon	[illegible]	n	mon	[illegible]	[illegible]	[illegible]	Δm
1									
2	3	10	105	3	10	352	286	66	
3	16	20	105	16	20	252	238	14	
4	20	22	105	20	22	238	232	6	
✓5	15	30	106	15	30	258	210	48	
6	32	37	106	32	37	204	190	14	
✓7	30	39	106	30	39	210	184	26	
8	39	43	106	39	43	184	172	12	
✓9	28	43	106	28	43	216	172	44	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

n	mon	[illegible]	n	mon	[illegible]	[illegible]	[illegible]	Δm
26	42	108	25	41	224	178	46	
37	43	108	36	42	194	176	18	
40	43	108	39	42	184	176	8	
✓35	43	108	34	42	198	176	22	
✓39	43	108	38	42	188	176	12	
—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	—	
42	46	108	41	45	178	166	12	
43	46	108	42	45	176	166	10	
44	47	108	43	46	172	164	8	
44	48	108	43	47	172	160	12	
✓29	48	108	28	47	216	160	56	
41	49	108	40	48	182	158	24	
✓43	49	108	42	48	176	158	18	
44	50	108	43	49	172	156	16	
✓39	50	108	38	49	188	156	32	
46	50	108	45	49	166	156	10	
✓45	50	108	44	49	170	156	14	
46	49	108	45	48	166	158	8	
40	47	108	39	46	184	164	20	
41	45	108	40	44	182	170	12	
39	43	108	38	42	188	176	12	

Continued page 138

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1924phae.proj.1110P

Reduced to 108

C 18428 α Lyrae 2 prisms

	n	mn	tm / tn	n̄	m̄n̄	[n]	[m̄n̄]	Δm
Aperture 1								
β	82	102	108	82	102	240	117	123
γ	90	104	107	91	105	201	95	(106)
δ	86	103	106	88	105	216	95	(121)
	86	105	108	86	105	224	95	(129)
ε	70	103	108	70	103	285	107	178
κ	98	104	108	98	104	153	95	58
ζ	41	94	108	41	94	376	177	199
η	16	71	108	16	71	469	281	188
θ	8	45	108	8	45	531	362	169
ι	4	26	108	4	26	584	421	163
κ	4	16	108	4	16	584	469	115
λ	1	10	108	1	10	"	510	
μ	1	6	108	1	6	"	552	

	n	mn	tm / tn	n̄	m̄n̄	[n]	[m̄n̄]	Δm
Aperture 2								
β	75	100	108	75	100	266	140	126
γ	87	102	106	89	104	211	95	(116)
δ	79	100	104	82	104	240	95	(145)
	79	100	103	82	106	240	95	(145)
ε	63	98	103	66	102	298	117	181
κ	91	96	103	95	100	171	140	31
ζ	35	86	103	36	90	394	207	187
η	14	60	103	14	62	481	311	170
θ	6	35	103	6	36	552	394	158
ι	2	19	103	2	19	"		
κ	1	11	103	1	11	"		
λ	0	7	103	0	7	"		
μ	0	4	103	0	4	"	584	

	n	mn	tm / tn	n̄	m̄n̄	[n]	[m̄n̄]	Δm
Aperture 3								
β	71	95	106	72	97	278	159	119
γ	78	103	106	80	105	247	95	(152)
δ	67	102	106	69	104	288	95	(193)
	68	103	109	69	102	295	117	178
ε	46	98	108	46	98	358	153	205
κ	86	94	108	86	94	224	177	47
ζ	22	77	107	22	78	440	255	185
η	6	45	107	6	45	552	362	190
θ	1	23	107	1	23	"		
ι	2	12	106	2	12	"		
κ								
λ								
μ								

	n	mn	tm / tn	n̄	m̄n̄	[n]	[m̄n̄]	Δm
Aperture 4								
β	62	94	110	61	92	315	193 / ~~278~~	122
γ	70	103	109	69	102	288	117	171
δ	56	99	107	57	100	327	140	187
ε	35	92	107	35	93	398	184	214
κ	77	86	106	79	88	251	216	35
ζ	18	68	106	~~28~~ 18	70	459	285	174
η	13	36	105	13	37	487	391	96
θ	0	16	104	0	17	"		
ι	0	8	104	0	8	"		

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Means (all up to 104, down to 10)

	1	2	3	4	Σ	Mean
β	123	126	119	122	490	122
γ	-	-	-	171		171
δ	-	-	178	187	365	182
ε	178	181	205	214	778	194
ζ	58	31	47	35	171	43
η	199	187	185	174	746	186
θ	188	178	190		548	183
ι	(169)	(158)			327	164
κ						

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α Virginis C 18846

Reduced to 105

Gp 4

	(794) n			(783) n				
	n	m+n	l+m+n	n	m+n	[n]	[m+n]	Δm
31	38	41	108	37	40	190	182	8
32	22	27	107	22	27	232	218	14
33	—	—	—	—	—	—	—	—
34	—	—	—	—	—	—	—	—
35	10	19	107	10	19	286	240	46
36								
37								
38								
39								
40.								

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	No Ap.	Ap 2	Ap 4	Ap 6	E	Mean	dl
1	—						
2			66		66	66	46
3		12	14		26	13	11
4		12	6		18	9	08
5		52	48	48	148	49	36
6		16	14	40	70	23	19
7		32	26	26	84	28	23
8		14	12	16	42	14	12
9		51	45	53	149	50	37
10		26	18	-	44	22	18
11		12	8	-	20	10	09
12		18	22	16	56	19	16
13		12	12	22	46	15	13
14		14	-	16	30	15	13
15		14	-	16	30	15	13
16		14	12	-	26	13	11
17		8	10	-	18	9	08
18		6	8	-	14	7	06
19		8	12	14	34	11	10
20		48	56	46	150	50	37
21		16	24	18	58	19	16
22		8	18	18	44	15	13
23		14	16	24	54	18	15
24		24	32	30	86	29	23
25		8	10	10	28	9	08
26		10	14	6	30	10	09
27		10	8	6	24	8	07
28		10	20	-	30	15	13
29		8	12	-	20	10	09
30		8	12	-	20	10	09
31		10	8		18	9	08
32		10	14		24	12	10
33		10	-		10	10	09
34		2	-		2	2	02
35	36)	44	46		90	45	34
36	16)	16			16	16	14
37		12			12	12	10

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ζ Cygni C. 1886.9
(U 9 1826)

ζ Cygni C 1855.9
(U Φ 529) ap 4

	n	m+n	[m+n]	n	m+n	[m]	[m+n]	Δm	n	m+n	[m+n]	n	m+n	[m]	[m+n]	Δm
1	–								–							
2	–								–							
3	–								–							
4									–							
6									–							
6									–							
7									–							
8									–							
9									–							
10									5	20	81					
11									2	–	–					
12									–	–	–					
13									–	–	–					
14									20	24	82					
15									15	30	82					
16									27	31	82					
17									9	36	82					
18									–	–	–					
19									31	36	82					
20									–	–	–					
21									–	–	–					
22									–	–	–					
23									–	–	–					
24									–	–	–					
25									–	–	–					
26									–	–	–					
27									–	–	–					
28									–	–	–					
29									–	–	–					
30									–	–	–					

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1924phae.proj.11107

C 1885 9
(532) ap 5

C 1885 9
ap 6 (555)

Δm	n	m+n	[illegible]	n	m+n	[n]	[m+n]	Δm	n	m+n	[illegible]	n	m+n	[n]	[m+n]	Δm
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
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C 18869 Reduced to 826 — 128

C 18559 Reduced to 85 — ap 4 529

	N	mtn	btwn	N	mtn	[N]	[mtn]	Δm	N	mtn	btwn	N	mtn	[N]	[mtn]	Δm
31									17	45	82					
32									41	45	82					
33									38	45	82					
34									39	45	82					
35	73	79	123						42	46	82					
36	68	80	123						38	46	82					
37	65	80	123						35	46	82					
38	68	82	123						36	47	83					
39	76	82	123						42	47	83					
40	77	82	123						43	47	83					
41	78	83	123						44	48	83					
42	79	83	123						44	48	83					
43									45	48	83					
44	81	84	123						47	48	83					
45	80	84	123						45	48	83					
46	80	84	123						45	48	83					
47	80	84	123						44	48	83					
48	79	84	123						43	48	83					
49	76	84	123						42	49	83					
60	80	84	123						45	48	83					
51	78	84	123						42	48	83					
52	82	85	123						47	49	83					
53	81	85	123						46	49	83					
× 54	52	85	123	54	89	240	145	95	23	49	83					
55	75	86	123						40	49	83					
56	76	86	122						42	50	83					
57	83	89	122						48	50	83					
58	79	87	122						44	50	83					
59	82	87	122						47	50	83					
60	—	—	—						48	60	83					

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C 18559 Ap 5 (532)

n	mon	tues	wed	mon	[illegible]	[illegible]	11m
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

C 18559 Ap 6 (555)

n	mon	tues	wed	mon	[illegible]	[illegible]	am

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C 1886.9 (826)

	n	m+n	t+m+n	$\bar{n}$	m+n	$\bar{n}$	m+n	Δm
61	77	88	122					
62	83	85	122					
63	85	89	122					
64	85	89	122					
65	86	89	122					
66	79	89	122					
67	86	90	122					
68	85	90	122					
69	86	90	122					
20	84	90	122					
71	85	90	122					
72	83	90	122					
220 73	89	91	122					
74	86	91	122					
75	87	91	122					
76	82	91	122					
77	83	91	122					
78	86	91	122					
79	88	92	122					
80	87	92	122					
81	88	92	122					
82	80	92	122					
83	87	92	122					
84	85	91	121					
85	85	91	121					
86	86	91	121					
87	83	86	121					
88	71	76	121					
89	68	74	121					
90	66	72	121					
91	48	75	121	51	74	249	186	63

C. 1855.9 Ap. 4 (529)

n	m+n	t+m+n	$\bar{n}$	m+n	$\bar{n}$	m+n	Δm
43	50	83					
46	50	83					
48	51	83					
46	51	83					
49	51	83					
41	51	83					
48	51	83					
47	51	83					
49	51	83					
47	51	83					
48	52	83					
47	52	83					
46	52	83					
—	—	—					
48	52	83					
49	52	83					
44	52	83					
45	52	83					
47	52	83					
48	52	83					
47	52	83					
47	52	83					
43	52	83					
47	52	83					
47	52	83					
46	52	83					
47	52	83					
44	46	83					
33	37	83					
—	—	—					
29	34	83					
26	32	83					

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C 18559
αμ 5 (532)

	n	m+n	l+m+n	n	m+n	[n]	[m+n]	αm
61								
62								
63								
64								
65								
66								
67								
68								
69								
70								
71								
72								
73								
74								
75								
76								
77								
78								
79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								

C 18559
αμ 6 (555)

	n	m+n	l+m+n	[n]	[m+n]	αm
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						
81						
82						
83						
84						
85						
86						
87						
88						
89						
90						
91						

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C 1886.9
826

n	mtn	ltmtn	n	mtn	[n]	[mtn]	Am.
92	64	67	121				
93	63	66	121				
94	58	61	121				
95	49	58	121				
96	27	35	121				

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Arcturus C 18416

Reduced to 95

	Ap 1								Ap 3							
	n	min	t min	n̄	min	[n]	[min]	Δm	n	min	t min	n̄	min	[n]	[min]	Δm
Ap 1: 4 Φ 835	1	6	17	92	6	18	380	298	82							
	2	7	19	92	7	20	370	288	82							
	3	7	21	92	7	22	370	280	90							
	4	12	22	92	12	23	330	276	54							
	5	17	24	92	18	25	298	268	30							
	6	17	24	92	18	25	298	268	30							
	7	16	25	92	17	26	302	266	36							
	8	19	26	92	20	27	288	262	26	—	—	—	—	—	—	—
	9	14	27	92	15	28	312	258	54	4	11	96	4	11	398	336	62
	10	25	29	92	26	30	266	252	14	—	—	—					
	11	28	30	93	29	31	256	250	6	—	—	—					
	12	26	31	93	27	32	262	246	16	—	—	—					
	13	26	31	93	27	33	262	242	20	—	—	—					
	14	24	32	93	25	33	268	242	26	—	—	—					
	15	25	32	93	26	33	266	242	24	—	—	—					
	16	14	33	93	14	34	318	240	78	4	14	96	4	14	398	318	80
	17	16	34	93	16	35	306	236	70								
	18	19	34	93	19	35	292	236	56								
	19	9	36	93	9	37	352	230	122								
	20	2	38	93	2	39	—		—	-2	16	96	-2	16	—	—	
	21	15	42	93	15	43	312	208	104	4	18	96	4	18	398	298	100
	22	26	43	93	27	44	262	206	56	8	19	96	8	19	360	292	68
	23	30	43	93	31	44	250	206	44	11	20	96	11	20	336	288	48
	24	30	45	93	31	46	250	198	52	9	21	96	9	21	352	284	68
	25	33	46	93	34	47	240	196	54	3	22	96	3	22	—	—	—
	26	35	47	93	36	48	232	192	40	5	23	96	5	23	388	276	116
	27	14	48	93	14	49	318	188	130	0	23	96	0	23	—	—	—
	28	3	51	93	5	52	—	176	—	-1	24	96	-1	24	—	—	—
	29	35	54	93	36	55	232	166	66	13	26	96	13	26	324	266	58
	30	44	55	93	46	56	202	162	40	19	27	96	19	27	292	262	30

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Cyg 5.

	n	mtn (truth)	$\bar{n}$	mtn	$[n]$	$[m_{tn}]$	Δm	n	mtn (truth)	$\bar{n}$	mtn	$[n]$	mean 1 AM	dk.
1													82	53
2													82	53
3													90	56
4													54	39
5													30	24
6													30	24
7													36	28
8													26	21
9													58	41
10													14	12
11													6	.05
12													16	14
13													20	17
14													26	21
15													24	20
16													79	52
17													70	48
18													66	40
19													122	64
20													–	–
21													102	61
22													62	44
23													46	35
24													60	42
25													54	39
26													78	51
27													30	24
28	0	19	95	0	19	–	–	–					–	–
29	–	–	–	–	–	–	–						62	44
30	12	21	95	12	21	330	284	46					39	30

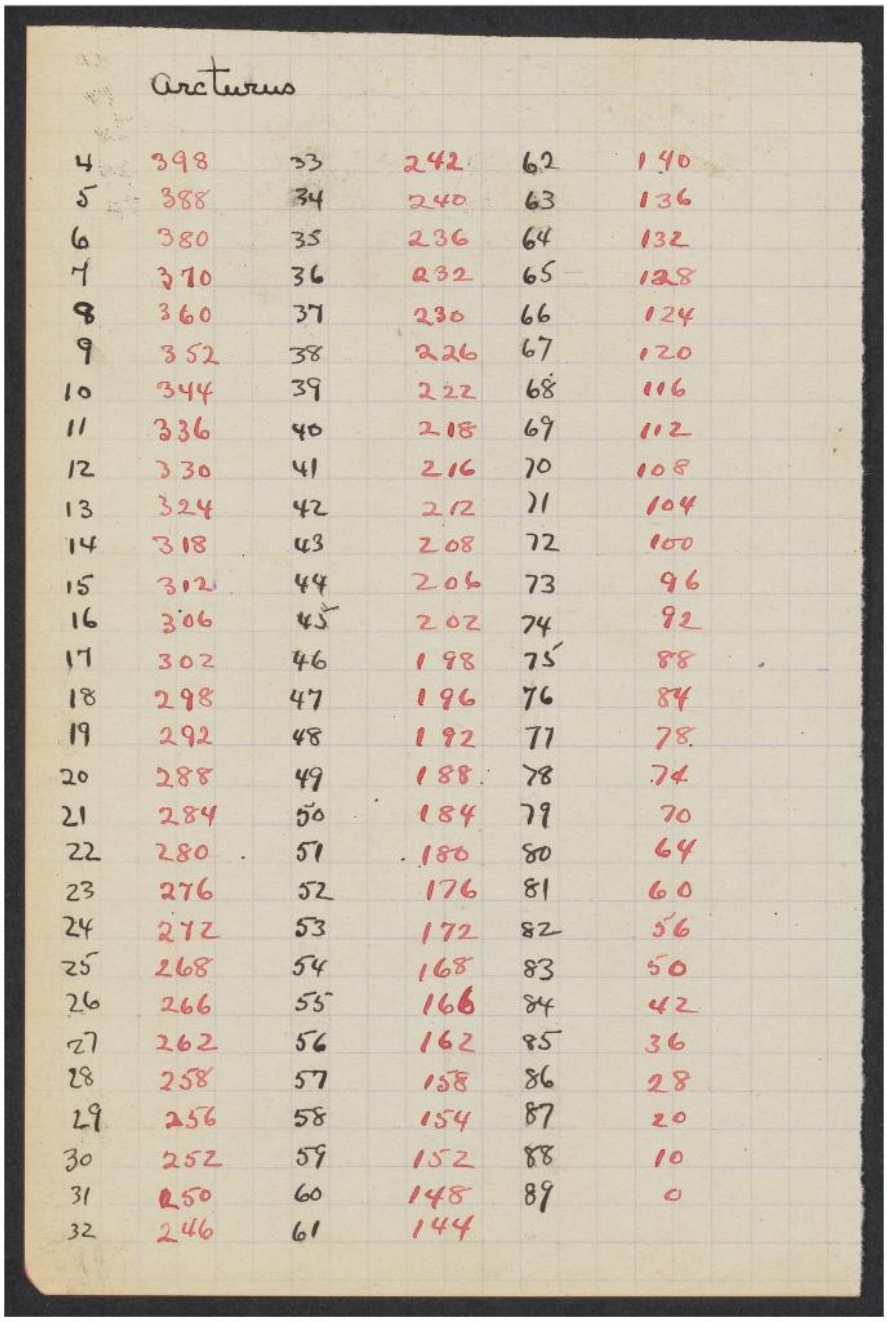
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	n	max	(max+n)	$\bar{n}$	min	[n]	[max+n]	Δn	n	max	(max+n)	$\bar{n}$	min	[n]	[max+n]	Δn
31	42	56	93	43	57	208	158	50	19	28	96	19	28	292	258	44
32	46	57	93	47	58	196	154	42	22	29	96	22	29	280	256	24
✓ 33	50	58	93	51	59	180	152	28	26	29	96	26	29	266	256	10
34	46	59	93	47	60	196	148	48	23	30	96	23	30	276	252	24
35	53	60	94	54	61	168	144	24	27	31	96	27	31	262	250	12
36	52	64	94	58	62	172	140	32	25	31	96	25	31	268	250	18
37	49	62	94	50	63	184	136	48	24	32	96	24	32	272	246	26
38	57	63	94	58	64	154	132	22	31	34	96	31	34	250	240	10
39	59	63	94	60	64	148	132	16	—	—	—	—	—	—	—	—
40	42	64	94	42	65	212	128	84	20	35	96	20	35	288	236	52
41	58	65	94	59	66	152	124	28	33	37	96	33	37	242	230	12
42	58	66	94	59	67	152	120	32	32	38	96	32	38	246	226	20
43	59	66	94	60	67	148	120	28	34	39	96	34	39	240	222	18
44	57	67	94	58	68	154	116	38	32	40	96	32	40	246	218	28
✓ 45	61	68	94	62	69	140	112	28	38	41	96	34	41	240	216	24
46	61	68	94	62	69	140	112	28	34	42	96	34	42	240	212	28
47	55	69	94	56	70	162	108	54	31	42	96	31	42	250	212	38
48	64	69	94	65	70	128	108	20	39	42	96	39	42	220	212	10
49	51	70	94	52	71	176	104	52	27	43	96	27	43	262	208	54
50	51	70	94	52	71	176	104	52	26	43	96	26	43	266	206	58
51	62	71	94	63	72	136	100	36	37	44	96	37	44	230	206	24
52	34	71	94	34	72	240	100	140	17	44	96	17	44	302	206	96
53	65	71	94	66	72	124	100	24	40	45	96	40	45	218	202	16
54	65	72	94	66	73	124	96	28	27	45	96	27	45	262	202	60
55	60	72	94	61	73	144	96	48	34	46	96	34	46	240	198	42
56	56	72	94	57	73	158	96	62	29	46	96	29	46	256	198	58
✓ 57	40	73	94	40	74	218	92	126	21	47	96	21	47	284	196	88
58	60	73	94	61	74	144	92	52	35	48	96	35	48	236	192	44
59	49	73	94	50	74	184	92	92	29	48	96	29	48	256	192	64
60	50	74	95	50	74	184	92	92	26	49	96	26	49	266	188	78

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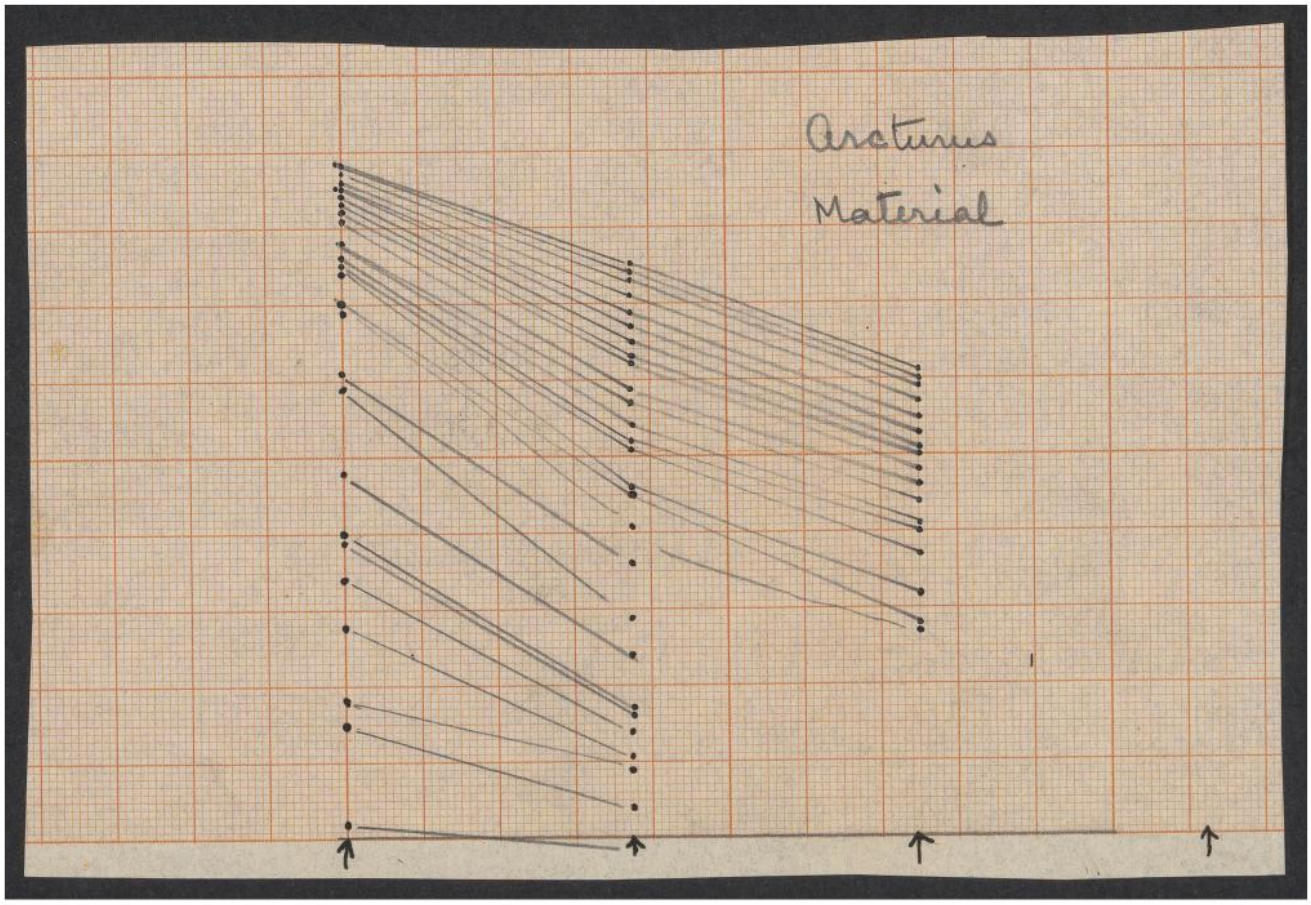


Arcturus

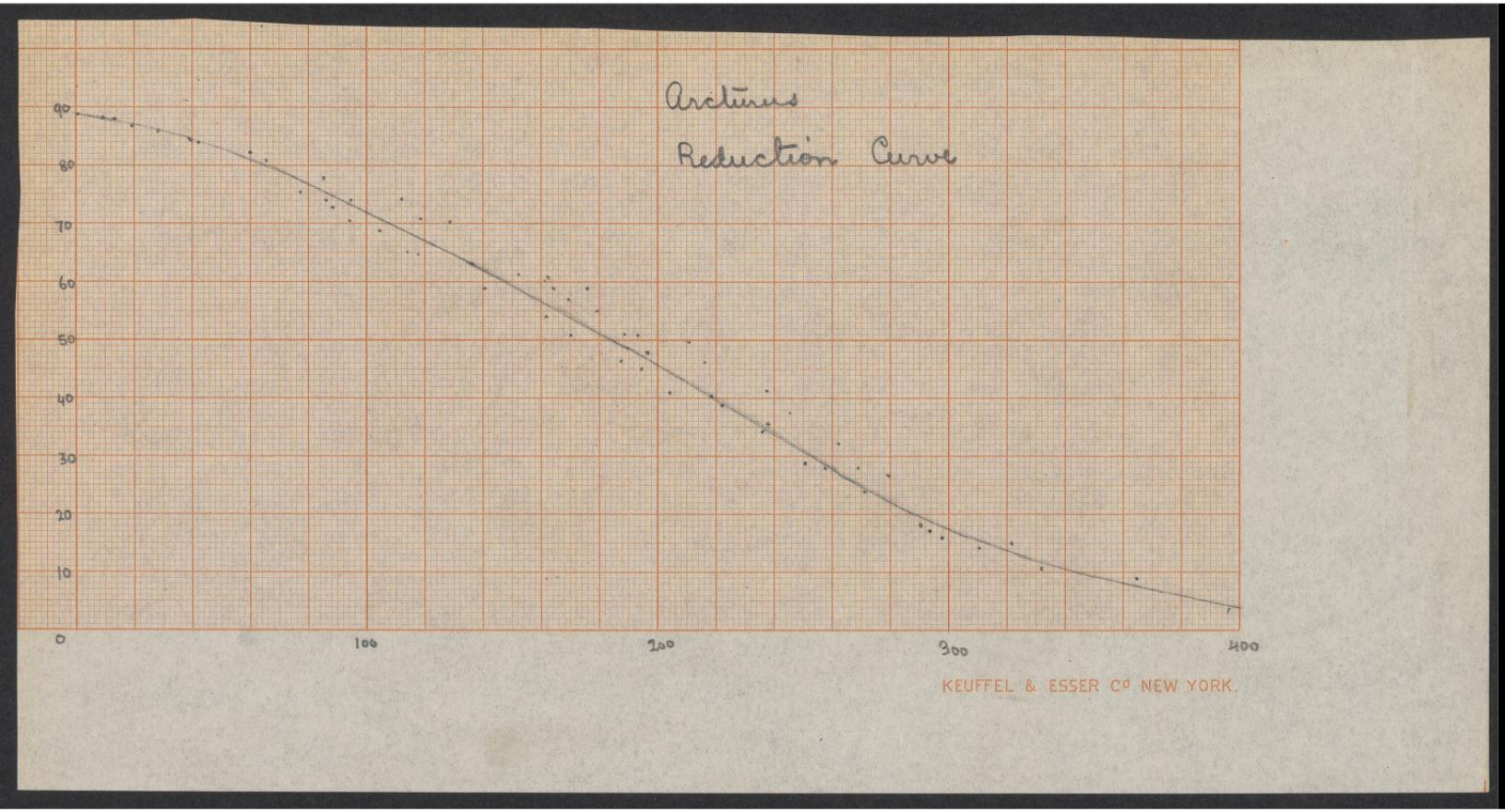
4	398	33	242	62	140
5	388	34	240	63	136
6	380	35	236	64	132
7	370	36	232	65	128
8	360	37	230	66	124
9	352	38	226	67	120
10	344	39	222	68	116
11	336	40	218	69	112
12	330	41	216	70	108
13	324	42	212	71	104
14	318	43	208	72	100
15	312	44	206	73	96
16	306	45	202	74	92
17	302	46	198	75	88
18	298	47	196	76	84
19	292	48	192	77	78
20	288	49	188	78	74
21	284	50	184	79	70
22	280	51	180	80	64
23	276	52	176	81	60
24	272	53	172	82	56
25	268	54	168	83	50
26	266	55	166	84	42
27	262	56	162	85	36
28	258	57	158	86	28
29	256	58	154	87	20
30	252	59	152	88	10
31	250	60	148	89	0
32	246	61	144		

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	n	mon	(tenth)	n	mtn	[zn]	[mtn]	47n	n	mtn	(tenth)	n	mtn	[zn]	[am]	dl
31															57	41
32															34	27
33	26														19	16
34															36	28
35															18	15
36															25	21
37															37	29
38															16	14
39															16	14
40	10	25	95	10	25	344	268	76							71	48
41	17	25	95	17	25	302	268	34							25	21
42	18	25	95	18	25	298	268	30							27	22
43	18	26	95	18	26	298	266	32							26	21
44	18	26	95	18	26	298	266	32							33	26
45	19	27	95	19	27	292	262	30							27	22
46	18	27	95	18	27	298	262	36							31	25
47	17	27	95	17	27	302	262	40							44	83
48	23	28	95	23	28	276	258	16							15	13
49	15	28	95	15	28	312	258	54							53	39
50	15	29	95	15	29	312	256	56							55	40
51	22	29	95	22	29	280	256	24							28	23
52	11	30	95	11	30	336	252	84							107	68
53	26	31	95	26	31	266	250	16							19	16
54	22	31	95	22	31	280	250	30							39	30
55	20	31	95	20	31	288	250	38							43	33
56	17	32	95	17	32	302	246	56							59	42
57	14	32	95	14	32	318	246	72							95	58
58	21	33	95	21	33	284	242	42							46	35
59	19	33	95	19	33	292	242	50							69	47
60	16	34	95	16	34	306	240	66							79	52

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	n	mtn		n	mtn			Δm	n	mtn		n	mtn			Δm
61	65	74	95	65	74	128	92	36	40	50	96	40	50	218	184	34
62	66	74	95	66	74	124	92	32	40	50	96	40	60	218	184	34
63	71	74	95	71	74	104	92	12	47	51	96	47	50	196	184	12
64	66	75	95	66	75	124	88	36	44	51	96	44	50	206	184	22
65	59	75	95	59	75	152	88	64	30	52	96	30	51	252	180	72
66	53	75	95	53	75	172	88	84	30	52	96	30	51	252	180	72
67	63	75	95	63	75	136	88	48	39	52	96	39	51	222	180	42
68	70	76	95	70	76	108	84	24	44	52	96	44	51	206	180	26
69	64	76	95	64	76	132	84	48	39	52	96	39	51	222	180	42
70	61	76	95	61	76	144	84	60	36	52	96	36	51	232	180	52
71	68	76	95	68	76	116	84	32	43	52	96	43	51	208	180	28
72	59	76	95	59	76	152	84	68	34	52	96	34	51	240	180	60
73	66	76	95	66	76	124	84	40	—	—	—	—	—	—	—	—
74	64	76	95	64	76	132	84	48	39	53	96	37	52	230	176	54
75	70	76	95	70	76	108	84	24	42	53	96	42	52	212	176	36
76	65	76	95	65	76	128	84	44	39	53	96	39	52	222	176	46
77	62	76	95	62	76	140	84	56	37	53	96	37	52	230	176	54
78	55	76	95	55	76	166	84	82	32	54	96	32	53	246	172	74
79	59	77	95	59	77	152	78	74	33	54	96	33	53	243	172	71
80	66	77	95	66	77	124	78	46	42	54	96	42	53	212	172	40
81	41	77	95	41	77	216	78	138	20	54	96	20	53	288	172	116
82	62	77	95	62	77	140	78	62	34	55	96	34	54	240	168	72
83	63	77	95	63	77	136	78	58	36	55	96	37	54	230	168	62
84	63	77	95	63	77	136	78	58	37	55	96	38	54	226	168	58
85	62	78	95	62	78	140	74	66	36	55	96	37	54	230	168	62
86	68	78	95	68	78	116	74	42	40	55	96	40	54	218	168	50
87	64	78	95	64	78	132	74	58	39	56	96	39	55	222	166	56
88	62	78	95	62	78	140	74	66	37	56	96	37	55	230	166	64
89	67	78	95	67	78	120	74	46	—	—	—	—	—	—		—
90	51	78	95	51	78	180	74	106	28	56	96	28	55	258	166	92

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	n	min	t max	n	m t₀	[m]	[m t₀]	Δm	n	m t₀	t max	n	m t₀	[m]	mean Δm	dl.
61	24	35	95	24	35	272	236	36							35	28
62	27	35	95	27	35	262	236	26							31	25
63	29	36	95	29	36	256	232	24							16	14
64	22	37	95	22	37	280	230	50							36	28
65	19	37	95	19	37	292	230	62							66	46
66	25	37	95	25	37	268	230	38							65	45
67	30	37	95	30	37	252	230	22							37	29
68	24	38	95	24	38	274	226	48							33	26
69	23	38	95	23	38	276	226	50							47	35
70	24	38	95	24	38	272	226	50							54	39
71	38	39	95	38	39	226	222	4							21	18
72	23	39	95	23	39	276	222	54							61	48
73	27	39	95	27	39	262	222	40							40	31
74	25	39	95	25	39	268	222	46							49	36
75	30	40	95	30	40	252	218	34							31	25
76	24	40	95	24	40	272	218	54							46	35
77	23	40	95	23		276	218	58							56	40
78	18	40	95	18		298	218	80							79	52
79	23	40	95	23		276	218	58							68	47
80	28	40	95	28		258	218	40							42	32
81	15	40	95	15		312	218	94							16	14
82	23	41	95	23		276	218	58							64	45
83	22	41	95	22		280	218	62							61	43
84	22	41	95	23		276	218	58							58	41
85	23	41	95	23	41	276	216	60							63	44
86	27	42	95	27		262	216	46							46	35
87	25	42	95	25		268	216	52							55	40
88	23	42	95	23		276	216	60							63	44
89	—	—	—	—		—	216	—							46	35
90	19	42	95	19		292	216	76							91	57

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	n	mtn	trunk	n	mtn	[n]	[mtn]	Δm	n	mtn	trunk	n	mtn	[n]	[mtn]	Δm
91	61	78	95	61	78	144	74	70	36	56	96	36	55	232	166	66
92	63	78	95	63	78	136	74	62	37	57	96	37	56	230	162	68
93	60	79	95	60	78	148	74	74	35	57	96	35	56	236	162	74
94	63	79	96	62	78	140	74	66	37	57	96	37	56	230	162	68
95	60	79	96	59	78	152	74	78	34	58	96	34	57	240	158	82
96	58	79	96	57	78	158	74	84	33	58	96	33	57	242	158	84
97	68	79	96	64	78	120	74	46	32	58	96	32	57	246	158	88
98	63	79	96	62	78	140	74	66	37	58	96	37	57	230	158	72
99	69	79	96	68	78	116	74	42	43	58	96	43	57	208	158	50
100	67	79	96	66	78	124	74	50	40	59	96	40	58	218	154	64
~~Opt~~ ~~u Ψ 834~~ 101	50	79	96	50	78	184	74	110	32	59	96	32	58	246	154	92
102	75	80	96	74	79	92	70	22	49	59	96	49	58	188	154	34
103	23	80	96	23	79	276	70	206	10	59	96	10	58	344	154	190
104	72	80	96	71	79	104	70	34	47	59	96	46	58	198	154	44
Opt. u Ψ 834. 105	67	80	94	68	81	116	60	56	42	60	96	42	59	212	152	60
106	63	80	94	64	81	132	60	72	40	60	96	40	59	218	152	66
107	69	80	94	70	81	108	60	48	44	60	96	44	59	206	152	54
108	71	80	94	72	81	100	60	40	47	60	96	47	59	196	152	44
109	71	80	94	72	81	100	60	40	44	61	96	44	60	206	148	58
110	62	80	94	63	81	136	60	76	40	61	96	40	60	218	148	70
111	63	80	94	64	81	132	60	72	89	61	96	39	60	222	148	74
112	68	81	94	69	82	112	56	56	40	62	96	40	61	218	144	74
113	61	81	94	62	82	140	56	84	38	62	96	38	61	226	144	82
114	77	81	94	78	82	74	56	18	54	62	96	54	61	168	144	24
115	71	81	94	72	82	100	56	44	49	62	95	49	62	188	140	48
116	48	81	94	48	82	192	56	136	31	62	95	31	62	250	140	110
117	61	81	94	62	82	140	56	84	37	62	95	37	62	230	140	90
118	75	81	94	76	82	84	56	28	—	—	—	—	—	—	—	—
119	67	82	94	68	83	116	50	66	42	62	95	42	62	212	140	72
120	71	82	94	72	83	100	50	50	50	63	95	50	63	184	136	48

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	n	mon	Lmuka	$\bar{n}$	$\overline{mon}$	[n]	[mon]	Δm	n	mon	Lmuka	$\bar{n}$	$\overline{mon}$	[n]	mean [Δm]	dlo
91	23	42	95	23	42	276	212	64							67	46
92	23	43	95	23	43	276	208	68							66	46
93	23	43	95	23	43	276	208	68							72	48
94	24	43	95	24	43	272	208	64							66	46
95	22	44	95	22	44	280	206	74							78	51
96	21	44	95	21	44	284	206	78							82	53
97	21	44	95	21	44	284	206	78							71	48
98	27	44	95	27	44	262	206	56							65	45
99	28	44	95	28	44	258	206	52							48	36
100	28	45	95	28	45	258	202	52							55	40
101	24	45	95	24	45	272	202	70							91	57
102	35	45	95	35	45	268	202	66							41	31
103	10	45	95	10	45	344	202	142							179	81
104	34	46	95	34	46	240	198	42							40	31
105	30	46	95	30	46	252	198	54							57	41
106	27	46	95	27	46	262	198	64							67	46
107	31	46	95	31	46	250	198	52							51	37
108	34	46	95	34	46	240	198	42							42	32
109	30	47	95	30	46	252	198	54							51	37
110	29	47	95	29	46	256	198	68							68	47
111	29	47	95	29	47	256	196	60							69	47
112	—	—	—	—	—	—	—	—							65	45
113	28	47	95	28	47	258	196	62							76	50
114	40	48	95	40	48	218	192	36							26	21
115	33	48	95	33	48	242	192	50							47	35
116	22	48	95	22	48	280	192	88							111	64
117	27	48	95	27	48	262	192	70							81	53
118	—	—	—	—	—	—	—	—							28	23
119	32	49	95	32	49	246	188	58							65	45
120	35	39	95	35	49	236	188	48							49	36

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	n	meter	(meter)	n	meter	[n]	[meter]	diff	n	meter	(meter)	n	meter	[n]	[meter]	diff
121	68	82	94	69	83	112	50	62	44	63	95	44	63	206	136	70
122	56	82	94	57	83	158	50	108	37	63	95	37	63	230	136	94
123	68	82	94	69	83	112	50	62	—	—	—	—	—	—	—	—
124	70	82	94	71	83	104	50	54	46	63	95	48	63	192	136	56
125	55	82	94	56	83	162	50	112	31	63	95	31	63	250	136	114
126	62	82	94	63	83	136	50	86	37	64	95	37	64	230	132	98
127	61	82	94	62	83	140	50	90	—	—	—	—	—	—	—	—
128	50	82	94	50	83	184	50	134	29	64	95	29	64	256	132	124
129	59	82	94	60	83	148	50	98	—	—	—	—	—	—	—	—
130	69	83	94	70	84	108	42	66	42	64	95	42	64	212	132	80
131	70	83	94	71	84	104	42	62	47	64	95	47	64	196	132	64
132	81	83	94	82	84	56	42	14	61	64	95	61	64	144	132	12
133	77	83	94	78	84	74	42	32	56	65	95	56	65	162	128	34
134	70	83	94	71	84	104	42	62	—	—	—	—	—	—	—	—
135	56	83	94	57	84	158	42	116	33	65	95	33	65	242	128	114
136	77	83	94	78	84	74	42	32	55	65	95	55	65	166	128	38
137	80	83	94	81	84	60	42	18	59	65	95	59	65	152	128	24
138	71	83	94	72	84	100	42	58	48	66	95	48	66	192	124	68
139	67	83	94	68	84	116	42	74	43	66	95	43	66	208	124	84
140	78	83	94	79	84	70	42	28	56	66	95	56	66	162	124	38
141	79	83	94	80	84	64	42	22	57	66	95	57	66	158	124	34
142	69	83	94	70	84	108	42	66	46	66	95	46	66	198	124	74
143	78	84	94	79	85	70	36	34	54	66	95	54	66	168	124	44
144	76	84	94	77	85	78	36	42	53	66	95	53	66	172	124	48
145	80	84	94	81	85	60	36	24	59	67	95	59	67	152	120	32
146	77	84	94	78	85	74	36	38	54	67	95	54	67	168	120	48
147	80	84	94	81	85	60	36	24	58	67	95	58	67	154	120	34
148	72	84	94	73	85	96	36	60	49	67	95	49	67	188	120	68
149	79	84	94	80	85	64	36	28	57	68	95	57	68	158	116	42
150	51	84	94	51	85	180	36	144	30	68	95	30	68	252	116	136

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Δm		n	mm	hours	n	mm	[n]	[mm]	Δm	n	mm	hours	n	mm	[n]	mean Δm	dl.
70	121	33	49	95	33	49	242	188	54							62	44
94	122	25	49	95	25	49	268	188	80							94	58
–	123	–	–	–	–	–	–	–	–							62	44
56	124	34	49	95	34	49	240	188	52							54	39
114	125	21	50	95	21	50	284	184	100							109	69
98	126	26	50	95	26	50	266	184	82							92	57
–	127	22	50	95	22	50	280	184	96							93	58
124	128	19	50	95	19	50	292	184	108							122	67
–	129	25	50	95	25	50	268	184	84							91	57
80	130	30	50	95	30	50	252	184	68							71	48
64	131	–	–	95	–	–	–	–	–							63	44
12	132	47	50	95	47	50	196	184	12							13	11
34	133	43	50	95	43	50	208	184	24							30	24
–	134	41	50	95	41	50	216	184	32							47	35
14	135	25	51	95	25	51	268	180	88							106	62
38	136	42	51	95	42	51	212	180	32							34	27
24	137	45	51	95	45	51	202	180	22							21	18
68	138	35	51	95	35	51	236	180	56							61	43
84	139	32	52	95	32	52	246	176	70							76	50
38	140	44	52	95	44	52	206	176	30							32	26
34	141	43	52	95	43	52	208	176	32							29	23
74	142	34	52	95	34	52	240	176	64							68	47
44	143	42	52	95	42	52	212	176	36							38	30
48	144	40	52	95	40	52	218	176	42							44	33
32	145	44	53	95	44	53	206	172	34							30	24
48	146	42	53	95	42	53	212	172	40							42	32
34	147	44	53	95	44	53	206	172	34							31	25
08	148	37	53	95	37	53	230	172	58							62	44
42	149	44	53	95	44	53	206	172	34							35	28
136	150	23	54	95	23	54	276	168	108							129	70

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	n			n				Δm	n			n				Δm
151	79	84	94	79	85	70	36	34	57	68	95	57	68	158	116	42
152	75	84	94	76	85	84	36	48	52	68	95	52	68	176	116	60
153	76	84	94	77	85	78	36	42	53	68	95	53	68	172	116	56
154	76	84	94	77	85	78	36	42	55	69	95	55	69	166	112	54
155	65	84	94	66	85	124	36	88	43	69	95	43	69	208	112	96
156	74	84	94	75	85	88	36	52	53	69	95	53	69	172	112	60
157	82	84	94	83	85	50	36	14	64	69	95	64	69	132	112	20
158	74	84	94	75	85	88	36	52	52	69	95	52	69	176	112	64
159	80	84	94	81	85	60	36	24	60	70	95	60	70	148	108	40
160	79	85	94	80	86	64	28	36	57	70	95	67	70	158	108	50
161	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
162	—	—	—	—	—	—	—	—	60	70	95	60	70	148	108	40
163	78	85	94	79	86	70	28	42	57	70	95	57	70	158	108	50
164	76	85	94	77	86	78	28	50	53	70	95	53	70	172	108	64
165	79	85	94	80	86	64	28	36	57	71	95	57	71	158	104	54
166	82	85	94	84	86	42	28	14	65	71	95	65	71	128	104	24
167	81	85	94	82	86	56	28	28	64	71	95	64	71	132	104	28
168	78	85	94	79	86	70	28	42	59	71	95	59	71	152	104	48
169	80	85	94	81	86	60	28	32	59	72	95	59	72	152	100	52
170	77	85	94	78	86	74	28	46	56	72	95	56	72	162	100	62
171	82	85	94	83	86	50	28	22	65	72	95	65	72	128	100	28
172	81	85	93	83	87	50	20	30	62	72	95	62	72	140	100	40
173	84	85	93	86	87	28	20	8	68	72	95	68	72	116	100	16
174	82	84	93	84	88	42	10	32	63	73	95	63	73	136	96	40
175	82	86	93	84	88	42	10	32	64	73	95	64	73	132	96	36
176	81	86	93	83	88	50	10	40	63	73	95	63	73	136	96	40
177	82	86	93	84	88	42	10	32	63	73	95	63	73	136	96	40
178	83	86	93	85	88	36	10	26	67	73	95	67	73	120	96	24
179	86	86	93	87	88	20	10	10	71	74	95	71	74	104	96	8
180	85	86	93	87	88	20	10	10	68	74	95	68	74	116	96	20

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Δm		n	minute	hour	n	minute	[n]	[minute]	Δm	n	minute	hour	n	minute	[n]	mean Δm	dl
42	151	—	—	—	—	—	—	—								38	30
60	152	42	54	95	42	54	212	168	44							51	37
56	153	42	54	95	42	54	212	168	44							47	35
54	154	41	54	95	41	54	216	168	48							48	36
96	155	33	55	95	33	55	242	166	76							87	55
60	156	41	55	95	41	55	216	166	50							54	39
20	157	—	—	—	—	—	—	—	—							17	14
64	158	40	55	95	40	55	48	166	52							56	40
40	159	—	—	—	—	—	—	—	—							32	26
50	160	45	55	95	45	55	202	166	36							41	31
—	161	47	56	95	47	56	196	162	34							34	27
40	162	47	56	95	47	56	196	162	34							37	29
50	163	45	56	95	45	56	202	162	40							44	33
64	164	43	56	95	43	56	208	162	46							53	39
54	165	43	57	95	43	57	208	158	50							47	35
24	166	51	57	95	61	57	180	158	22							20	17
28	167	50	57	95	50	57	184	158	26							27	22
48	168	45	57	95	45	57	202	158	44							45	34
52	169	44	57	95	44	57	206	158	48							44	33
62	120	42	58	95	42	58	212	154	58							55	40
28	171	49	58	95	49	58	186	154	34							28	23
40	172	47	56	95	47	58	196	154	42							37	29
16	173	54	58	95	54	58	168	154	14							13	11
40	174	50	58	95	50	58	184	154	30							34	27
36	175	50	59	95	50	59	184	152	32							33	26
40	176	48	54	95	48	59	192	152	40							40	31
40	177	—	—	—	—	—	—	—	—							36	28
24	178	54	59	95	54	59	168	152	16							22	18
8	179	57	60	95	57	60	158	148	10							9	08
20	180	55	60	95	55	60	166	148	18							16	14

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181	83	86	93	85	88	36	10	26	67	74	95	67	74	120	92	28
182	84	86	93	86	88	28	10	18	69	74		69	74	112	92	20
183	82	86	93	84	88	42	10	32	62	74		62	74	140	92	48
184	83	86	93	85	88	36	10	26	63	74		63	74	136	92	44
185	81	86	93	83	88	50	10	40	62	74	95	62	74	140	92	48
186	83	86	93	85	88	36	10	26	67	74		67	74	120	92	28
187	84	86	93	86	88	28	10	18	67	74		67	74	120	92	28
188	83	86	93	85	88	36	10	26	69	74		69	74	112	92	20
189	84	86	93	86	88	28	10	18	70	74		70	74	108	92	16
190	83	86	93	85	88	36	10	26	68	74		68	74	116	92	24
191	85	86	93	87	88	20	10	10	72	74		72	74	100	92	8
192	84	86	93	86	88	28	10	18	65	74		65	74	128	92	36
193	83	86	93	85	88	36	10	26	69	74		69	74	112	92	20
194	85	86	93	87	88	20	10	10	72	74		72	74	100	92	8
195	82	86	93	84	88	42	10	32	67	75	95	67	75	120	88	32
196	83	86	93	85	88	36	10	26	70	75		70	75	108	88	20
197	84	86	93	86	88	28	10	18	70	75		70	75	108	88	20
198	84	86	93	86	88	28	10	18	69	75		69	75	112	88	24
199	83	86	93	85	88	36	10	26	70	75		70	75	108	88	20
200	84	86	93	86	88	28	10	18	71	75		71	75	104	88	16
201	85	86	93	87	88	20	10	10	72	75		72	75	100	88	12
202	84	86	93	86	88	28	10	18	72	75		72	75	100	88	12
203	85	86	93	87	88	20	10	10	73	75		73	75	96	88	8
204	85	86	93	87	88	20	10	10	74	75		74	75	92	88	4
205	85	86	93	87	88	20	10	10	73	75	95	73	75	96	88	8
206	84	86	93	86	88	28	10	18	72	75		72	75	100	88	12
207	84	86	93	86	88	28	10	18	70	75		70	75	108	88	20
208	82	86	93	84	88	42	10	32	66	75		68	75	116	88	28
209	86	85	93	87	87	20	20	0	—	—	—	—	—	—	—	—
210	83	85	93	85	87	36	20	16	70	76		70	76	108	84	24

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	n	mean	Greenw.	n	mean	[n]	[mean]	Δm.	n	mean	Greenw.	[n]	mean	[n]	mean Δm.	dh.
181	55	60	95	55	60	166	148	18							24	20
182	55	60	95	55	60	166	148	18							19	16
183	48	60	95	48	60	192	148	44							41	31
184	50	60	95	50	60	184	148	36							35	28
185	49	60	95	49	60	188	148	40							43	33
186	54	60	95	54	60	168	148	20							25	21
187	56	60	95	56	60	162	148	14							20	17
188	54	60	95	54	60	168	148	20							22	18
189	53	61	95	53	61	172	144	28							21	18
190	—	—	—	—	—	—	—	—							25	21
191	—	—	—	—	—	—	—	—							9	08
192	53	61	95	53	61	172	144	28							27	22
193	55	61	95	55	61	166	144	22							23	19
194	57	61	95	57	61	158	144	14							11	10
195	54	61	95	54	61	168	144	24							29	23
196	55	61	95	55	61	166	144	22							23	19
197	55	61	95	55	61	166	144	22							20	17
198	56	61	95	56	61	162	144	18							20	17
199	55	61	95	55	61	166	144	22							22	18
200	56	62	95	56	62	162	140	22							19	16
201	59	62	95	59	62	152	140	12							11	10
202	59	62	95	59	62	152	140	12							14	12
203	60	62	95	60	62	148	140	8							9	08
204	59	62	95	59	62	152	140	12							9	08
205	56	62	95	56	62	162	140	22							13	11
206	55	62	95	55	62	166	140	26							19	16
207	56	62	95	56	62	162	140	22							20	17
208	53	62	95	53	62	172	140	32							31	25
209	59	62	95	59	62	152	140	12							6	05
210	55	62	95	55	62	166	140	26							22	18

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211	84	85	93	86	87	28	20	8	71	75	95	71	75	104	88	16
212	81	85	93	83	87	50	20	30	65	75	95	65	75	128	88	40
213	84	85	93	86	87	28	20	8	71	75	95	71	75	104	88	16
214	83	85	93	85	87	36	20	16	69	74	95	69	74	112	92	20
215	84	85	93	86	87	28	20	8	70	74	95	70	74	108	92	16
216	—	—	—	—	—	—	—	—	70	74	95	70	74	108	92	16
217	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
218	82	85	93	84	87	42	20	22	—	—	—		—	—	—	—
219	83	85	93	86	87	36	20	16	—	—	—	—	—	—	—	—
220	82	85	93	83	87	50	20	30	67	73		67	73	120	96	24
221	83	85	93	85	87	36	20	16	67	73		67	73	120	96	24
222	83	85	93	85	87	36	20	16	69	73		69	73	112	96	16
223	84	85	93	86	87	28	20	8	71	73		71	73	104	96	8
224	81	84	93	83	87	50	20	30	66	73		66	73	124	96	28
225	83	84	92	86	87	28	20	8	70	72	95	70	72	108	100	8
226	83	84	92	86	87	28	20	8	70	72		70	72	108	100	8
227	83	84	92	86	87	28	20	8	68	72		68	72	116	100	16
228	83	84	92	86	87	28	20	8	69	72		69	72	112	100	12
229	82	84	92	85	87	36	20	16	72	72		62	72	140	100	40
230	82	84	92	85	87	36	20	16	68	72		68	72	116	100	16
231	81	84	92	84	87	42	20	22	68	71		68	71	116	104	12
232	82	83	92	85	86	36	28	8	65	71		65	71	128	104	24
233	81	83	92	84	86	42	28	14	68	70		68	70	116	108	8
234	81	83	92	84	86	42	28	14	67	70		67	70	120	108	12
235	80	83	92	83	86	50	28	22	62	70	95	62	70	140	108	32
236	80	83	92	83	86	50	28	22	65	69		65	69	128	112	16
237	—	—	—	—	—	—	—	—	64	69		64	69	132	112	20
238	—	—	—	—	—	—	—	—	65	68		65	68	128	116	12
239	80	82	92	83	86	50	28	22	65	68		64	68	132	116	16
240	80	82	92	83	86	50	28	22	64	67	94	65	68	128	116	12

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	n	min	h	n	min	[n]	[min]	Δ	n	min	h	n	min	[n]	[min]	Δ	mean Δ	dl
211	56	62	95	56	62	162	140	22									15	13
212	49	61	95	49	61	188	144	44									38	30
213	56	61	95	56	61	162	144	18									14	12
214	54	61	95	54	61	168	144	24									20	17
215	56	60	95	56	60	162	148	14									13	11
216	55	60	95	55	60	166	148	18									17	14
217	—	—	—	—	—	—	—	—									—	—
218	52	60	95	52	60	176	148	28									25	21
219	54	59	95	54	59	168	152	16									16	14
220	53	59	95	53	59	172	152	20									25	21
221	55	59	95	55	59	166	152	14									18	15
222	55	59	95	55	59	166	152	14									15	13
223	57	59	95	57	59	158	152	6									7	6
224	50	58	95	50	58	184	154	30									19	16
225	53	58	95	53	58	172	154	18									11	10
226	53	58	95	53	58	172	154	18									11	10
227	53	58	95	53	58	172	154	18									14	12
228	—	—	—	—	—	—	—	—									10	09
229	—	—	—	—	—	—	—	—									28	23
230	53	57	95	53	57	172	158	14									15	13
231	51	57	95	51	57	180	158	22									19	16
232	50	57	95	50	57	184	158	26									19	16
233	53	56	95	53	56	172	162	10									11	10
234	50	56	95	50	56	184	162	22									16	14
235	49	56	95	49	56	188	162	26									27	22
236	50	56	95	50	56	184	162	22									20	17
237	52	55	95	52	55	176	166	10									15	13
238	50	54	95	50	54	184	168	16									14	12
239	50	53	95	50	53	184	172	12									17	14
240	46	52	95	46	52	198	176	22									19	16

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241	79	81	92	82	84	56	42	14	62	66	94	63	67	136	120	6
242	78	81	92	80	84	64	142	22	60	65	94	61	66	144	124	20
243	79	80	92	82	83	56	50	6	60	64	94	61	65	144	128	16
244	77	80	92	79	83	70	50	20	57	64	94	58	65	154	128	26
245	72	80	92	74	83	92	50	42	50	63	94	50	64	184	132	52
246	75	79	92	77	82	78	56	22	—	—	—	—	—	—	—	—
247	76	79	92	78	82	74	56	18	—	—	—	—	—	—	—	—
248	75	78	92	77	80	78	64	14	—	—	—	—	—	—	—	—
249	74	78	92	76	80	84	64	20	—	—	—	—	—	—	—	—
250	73	77	92	75	79	88	70	18	52	59	94	53	60	172	148	24
251	75	77	92	77	79	78	70	8	56	58	94	57	59	158	152	6
252	75	77	92	77	79	78	70	8	55	57	94	56	58	162	154	8
253	72	76	92	74	78	92	74	18	50	56	94	51	57	180	158	22
254	67	75	92	69	79	112	78	34	44	54	94	44	55	206	166	40
255	70	75	92	72	77	100	78	22	47	53	94	48	54	192	168	24
256	70	74	92	72	76	108	84	16	46	52	94	47	53	196	172	24
257	66	73	92	68	75	116	88	28	44	51	94	44	52	206	176	30
258	70	72	92	72	74	100	92	8	45	49	94	45	50	202	184	18
259	63	70	92	65	72	128	100	28	41	47	94	41	48	216	192	24
260	62	68	92	64	70	132	108	24	41	45	94	41	45	216	202	14
261	60	65	92	62	69	140	112	28	38	42	94	38	42	226	212	14
262	57	64	92	59	66	152	124	28	35	40	94	35	40	236	218	18
263	59	62	92	61	64	144	132	12	35	39	94	35	39	236	222	14
264	59	61	92	61	63	144	136	8	34	37	94	34	37	240	230	10
265	55	59	92	57	61	158	144	14	31	36	94	31	36	250	232	18
266	52	57	92	54	59	168	152	16	31	35	94	31	35	250	236	14
267	49	55	92	51	57	180	158	22	27	33	94	27	33	262	242	20
268	49	54	92	51	56	180	162	18	25	31	94	25	31	268	250	18
269	49	52	92	51	54	180	168	12	26	30	94	26	30	266	252	14
270	40	49	92	41	51	216	180	36	19	27	94	19	27	292	262	30

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	n	meter	fraction	n	meter	[n]	[meter]	Δn	n	meter	fraction	n	meter	[n]	[meter]	mean Δn	dl
241	45	52	95	45	52	202	176	26								19	16
242	45	51	95	45	51	202	180	22								21	18
243	45	50	95	45	50	202	184	18								13	11
244	43	49	95	43	49	208	188	20								22	18
245	36	49	95	36	49	232	188	44								46	35
246	38	47	95	38	47	226	196	30								26	21
247	39	47	95	39	47	222	196	26								22	18
248	38	46	95	38	46	226	198	28								21	18
249	38	45	95	38	45	226	202	24								22	18
250	38	45	95	38	45	226	202	24								22	18
251	36	43	95	36	43	232	208	24								13	11
252	38	43	95	38	43	226	208	18								11	10
253	35	42	95	35	42	236	212	24								21	18
254	29	40	95	29	40	256	218	38								37	29
255	31	39	95	31	39	250	222	28								25	21
256	30	37	95	30	37	252	230	22								21	18
257	24	35	95	28	35	258	236	22								27	22
258	32	34	95	32	34	246	240	6								11	10
259	27	30	95	27	30	262	252	10								21	18
260	26	28	95	26	28	266	258	8								12	10
261								-								21	18
262								-								23	19
263								-								13	11
264								-								9	08
265								-								16	14
266								-								15	13
267								-								11	10
268								-								18	15
269								-								13	11
270								-								38	26

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	n			ū		[ū]		Δuu	u			ū		[ū]		Δuu
271	42	46	92	43	48	208	192	16	22	25	94	22	25	280	268	12
272	43	44	92	44	45	206	202	4	21	23	94	21	23	284	276	8
273	37	42	92	38	39	226	222	4	18	21	94	18	21	298	284	14
274	37	40	92	38	39	226	222	4	—	—	—	—	—	—	—	—
275	31	38	91	32	40	246	218	28	13	17	94	13	17	324	302	22
276	35	37	91	36	39	232	222	10	—	—	—	—	—	—	—	—
277	35	36	91	36	38	232	226	6	—	—	—	—	—	—	—	—
278	30	34	91	31	36	250	232	18	—	—	—	—	—	—	—	—
279	28	32	91	29	33	256	242	14	—	—	—	—	—	—	—	—
280	24	31	91	25	32	268	246	22	11	14	94	11	14	336	318	18
281	22	28	91	23	29	276	256	20	—	—	—	—	—	—	—	—
282	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
283	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
284	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
285	18	23	91	19	24	292	272	20	6	10	94	6	10	380	344	36
286	15	20	91	16	21	306	284	22	—	—	—	—	—	—	—	—
287	15	19	91	16	20	306	288	18	—	—	—	—	—	—	—	—
288	8	17	91	8	18	360	298	62	6	9	94	6	9	380	352	28
289	7	14	91	7	15	370	312	58								—
290	9	12	91	9	13	352	324	28								—
291	9	12	91	9	13	352	324	28								—
292	7	11	91	7	11	370	336	34								—
293	6	10	91	6	10	380	344	36								—
294	5	9	91	5	9	388	352	36								—
295								—								—
296								—								—
297								—								—
298								—								—
299								—								—
300								—								—

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	n	[illegible]	[illegible]	$\bar{n}$	[illegible]	[illegible]	am	n	[illegible]	[illegible]	$\bar{n}$	[illegible]	[illegible]	mean Ahe	dl
271							–							14	12
272							–							6	05
273							–							9	08
274							–							4	04
275							–							25	21
276							–							10	9
277							–							6	.05
278							–							18	15
279							–							14	12
280							–							20	17
281							–							20	17
282							–							–	–
283							–							–	–
284							–							–	–
285							–							28	23
286							–							22	18
287							–							18	15
288							–							45	34
289							–							58	41
290							–							28	23
291							–							28	23
292							–							34	27
293							–							36	28
294							–							36	28
295							–								
296							–								
297							–								
298							–								
299							–								
300							–								

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Vega, C 1886q . 3 prisms Reduced to 128

Aperture 2

β	52	74	125	54	76
γ	58	108	126	60	110
δ	48	102	126	49	104
	49	104	128	49	104
ε	~~33~~	93	128	33	93
κ	65	84	128	65	84
ζ	12	64	128	12	64
η	4	34	128	4	34
θ	1	15	126	1	15
ι	1	8	128	1	8

Aperture 4

19	61	127	19	61
27	81	128	27	81
21	76	129	21	75
21	76	128	21	76
10	59	128	10	59
34	50	128	34	50
3	29	128	3	29
1	11	128	1	11

Aperture 8

β				
2	17	127	2	17
-	32	127	-	32
γ				
2	33	128	2	33
δ				
-	28	127		
2	27	128	1	28
			2	27
ε				
1	19	127	1	19
κ				
5	8	128	5	8
ζ				
1	9	128	1	9
η				
-	4	128	-	4
θ				
ι				

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α Canis Majoris C – 18605 Reduced to 85

Cp 1 μ p 899

	n	min	Mean	n	Mean	[μ]	[Mean]	Δ μ
								×2
β	79	83	84	80	84	92	66	52
γ	82	83	84	83	84	74	66	(16)
δ	80	84	84	81	85	86	54	(64)
ε	74	83	83	76	85	108	54	108
κ	82	83	83	84	85	66	54	24
ζ	62	81	83	63	88	136	74	124
η	48	76	83	49	78	162	102	120
θ	38	68	83	39	70	178	122	112
ι	34	60	83	35	61	186	140	92
κ	33	52	83	34	59	186	154	64
λ	32	46	83	33	47	190	164	52

Cp 2 μ Q 902

	n	Mean	Mean	n	Mean	[μ]	[Mean]	Δ μ
								×2
β	61	77	85	61	77	140	104	72
γ	75	84	85	75	84	110	66	88
δ	69	84	85	69	84	122	66	112
ε	54	81	85	54	81	152	86	132
κ	77	79	84	78	80	102	92	20
ζ	40	78	84	40	74	176	112	128
η	26	61	84	26	62	202	138	128
θ	18	47	84	18	48	222	164	116
ι	14	37	84	14	37	234	182	104
κ	13	29	84	13	29	236	196	80
λ	12	23	84	12	23	240	208	64

Cp 3 μ Q 901

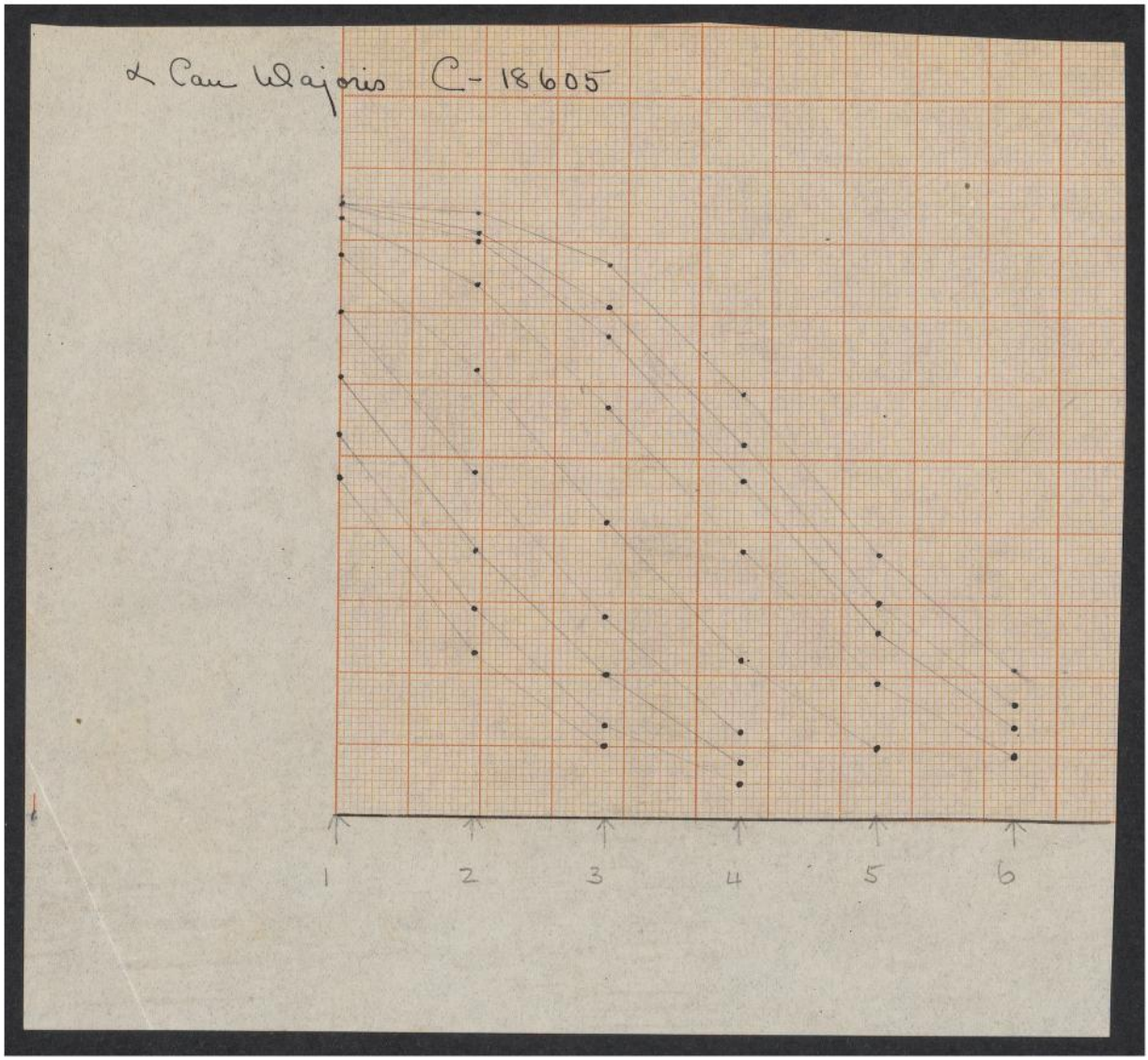
	n	min	Mean	n	Mean	[μ]	[Mean]	Δ μ
β	35	58	84	35	59	186	142	88
γ	53	78	84	54	79	152	98	108
δ	45	76	83	46	77	166	104	124
ε	32	69	83	33	71	190	120	140
κ	60	65	83	61	67	140	128	24
ζ	21	56	83	22	57	212	146	132
η	13	40	83	13	41	236	176	120
θ	8	27	82	8	28	254	198	112
ι	7	19	82	7	20	258	216	84
κ	6	13	82	6	13	262	237 ~~196~~	50 ~~132~~
λ	4	10	82	4	10	–	246	

Cp 4 μ Q 902

	n	Mean	Mean	n	Mean	[μ]	[Mean]	Δ μ
β	17	36	84	17	36	225	184	82
γ	32	63	83	33	65	189	132	114
δ	25	58	83	26	59	202	143	118
ε	17	50	82	18	52	222	156	132
κ	40	45	82	42	47	174	165	18
ζ	10	36	82	10	37	247	182	130
η	4	21	82	4	22	–	–	
θ	3	12	82	3	12	–	–	
ι	3	8	82	3	8	–	–	
κ	3	5	82	3	5	–	–	
λ	–	–	–	–	–			

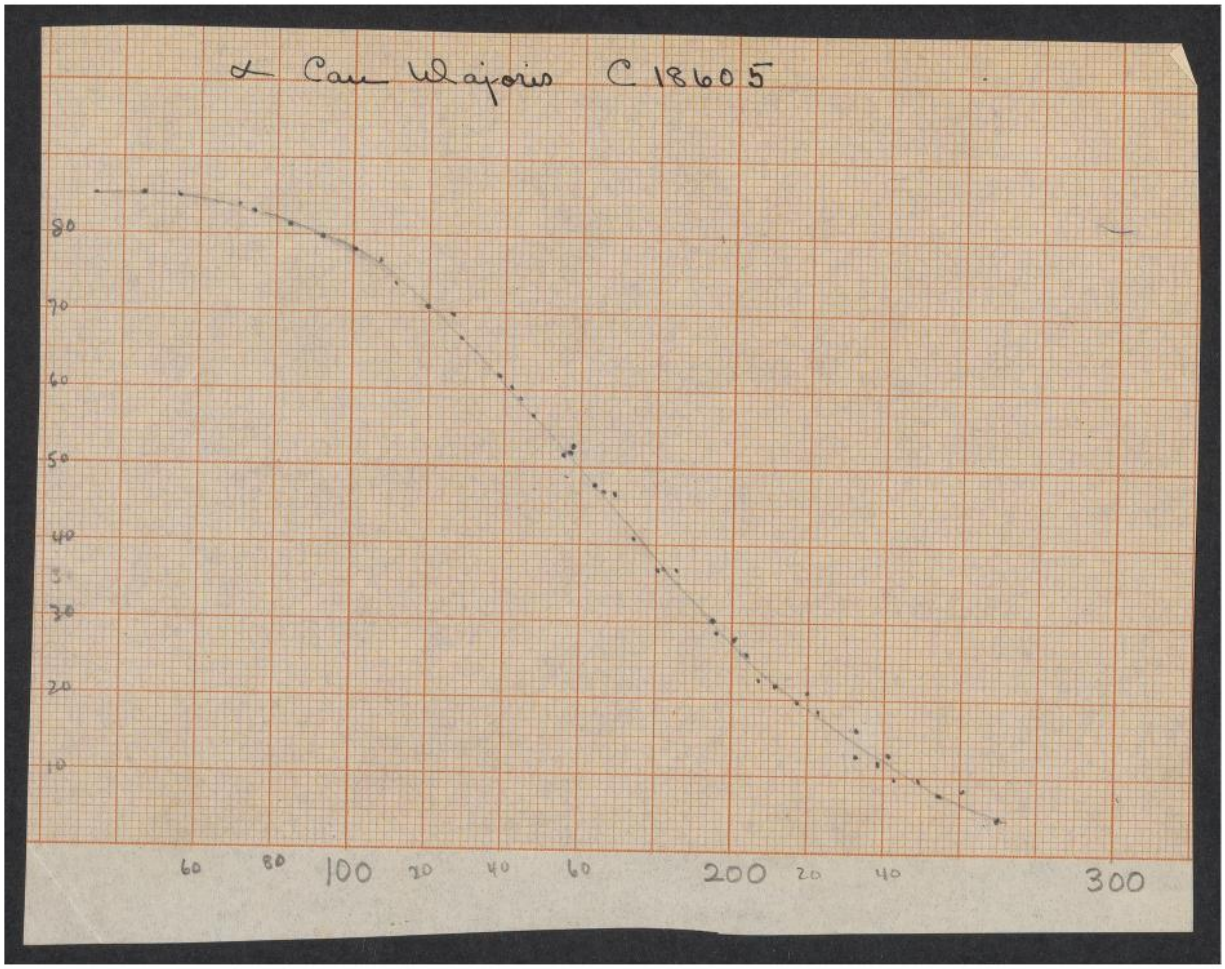
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Ap 5 — μ Ψ 903

Ap 6.
μ Ψ 904

	μ			ū		[u]		Δu	μ			ū		[u]		Δu
β	6	17	83	6	17	263	225	76	1	8	83	1	8	-	-	
γ	15	39	83	15	40	230	177	106	6	22	82	6	23	263	208	110
δ	11	36	82	11	37	244	182	124	7	20	81	7	21	258	214	88
ε	6	29	81	6	30	263	195	136	2	15	80	2	16	-	-	
κ	20	25	81	21	26	214	202	24	10	12	80	11	13	244	237	14
ζ	3	18	81	3	19	-	-		1	8	80	1	9	-	-	
η	1	10	81	1	10	-	-									
θ																
ι																
κ																
λ																

Means

	1	2	3	4	5	6	Σ	Mean	dl
β		72	88	82	76		318	80	52
γ			108	114	106	110	438	110	64
δ			124	118	124	88	454	114	65
ε			140	132	136		408	136	71
κ	(24)	(20)	24	18	24	14	80	20	17
ζ	-	128	132	130			390	130	70
η	120	128	120				368	123	68
θ	112	116	112				340	113	65
ι	92	104	84				280	93	58
κ	64	80	50				194	65	45
λ	52	64					116	58	41

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Reduced plates of Sirius

		18852	~~18604~~	18844	dl 18852	dl 18844	Mean dl
	β	123		119	68	67	68
	γ	160		174	77	80	78
	δ	177		176	80	80	80
3 prism	ε	176		170	80	78	79
	K	43		52	33	38	36
	ζ	185		..	81	..	81
	η	166		..	78	..	78
	θ	142		..	73	..	73

386

		C 18604	H 2699	dl A2699	dl 18604	ap. Rated 1 prism	H
	β	87	139	(72)	55	59	53
	γ	116	160	(77)	66	72	62
1 prism	δ	140	182	(81)	72	74	67
	ε	147	208	(85)	74	74	69
	K	31	32	(26)	25	26	26
	ζ	136	176	(80)	71	76	74
	η	..	162	(76)			
	θ	..	132	(70)			
			108	(63)			
			96	(59)			
			94				
			66				

		IR 8293	IR 8298	dl 8293	dl 8298	Mean	Mean
	β	106	96	62	59	60	101
	γ	164	130	78	70	74	147
yerkes	δ	155	146	76	74	75	150
	ε	122	145	67	74	70	134
	K	55	54	40	39	40	54
	ζ	127	..	66	..	66	127
	η	..		..			

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Reduced Plates of Vega

		18861	18851	18855	dl	18861	18851	18855	ε	Mean
	β	121	117	131		67	66	70		
	γ	164	159	181		78	77	81		
	δ	167	165	169		79	78	79		
3 prism	ε	168	166	176		79	78	80		
	K	56	63	58		40	44	41		
	J	156	170	..		76	78	..		
	η	154	142	..		76	73	..		
	θ									

		@ 18428 dm	dl
	β	122	67
2 prism	γ	171	73
	δ	182	81
	ε	194	83
	K	43	33
	J	188	82
	η	183	81
	θ	164	78

Sun, Hβ − Hδ

	3 pr.	1 pr.	1 pr. refl.	Yerkes.
Sirius	386	338	325 (or 355)	345
K	36	25	26, 26	40

$\frac{3\text{ pr}}{1\text{ pr}} = 1.142$

K line, $\frac{3\text{ pr}}{1\text{ pr}} = 1.44$

Vega

	3 pr.	2 pr.
	382	386
K	42	33

$\frac{3\text{ pr}}{2\text{ pr}} = 1.00$

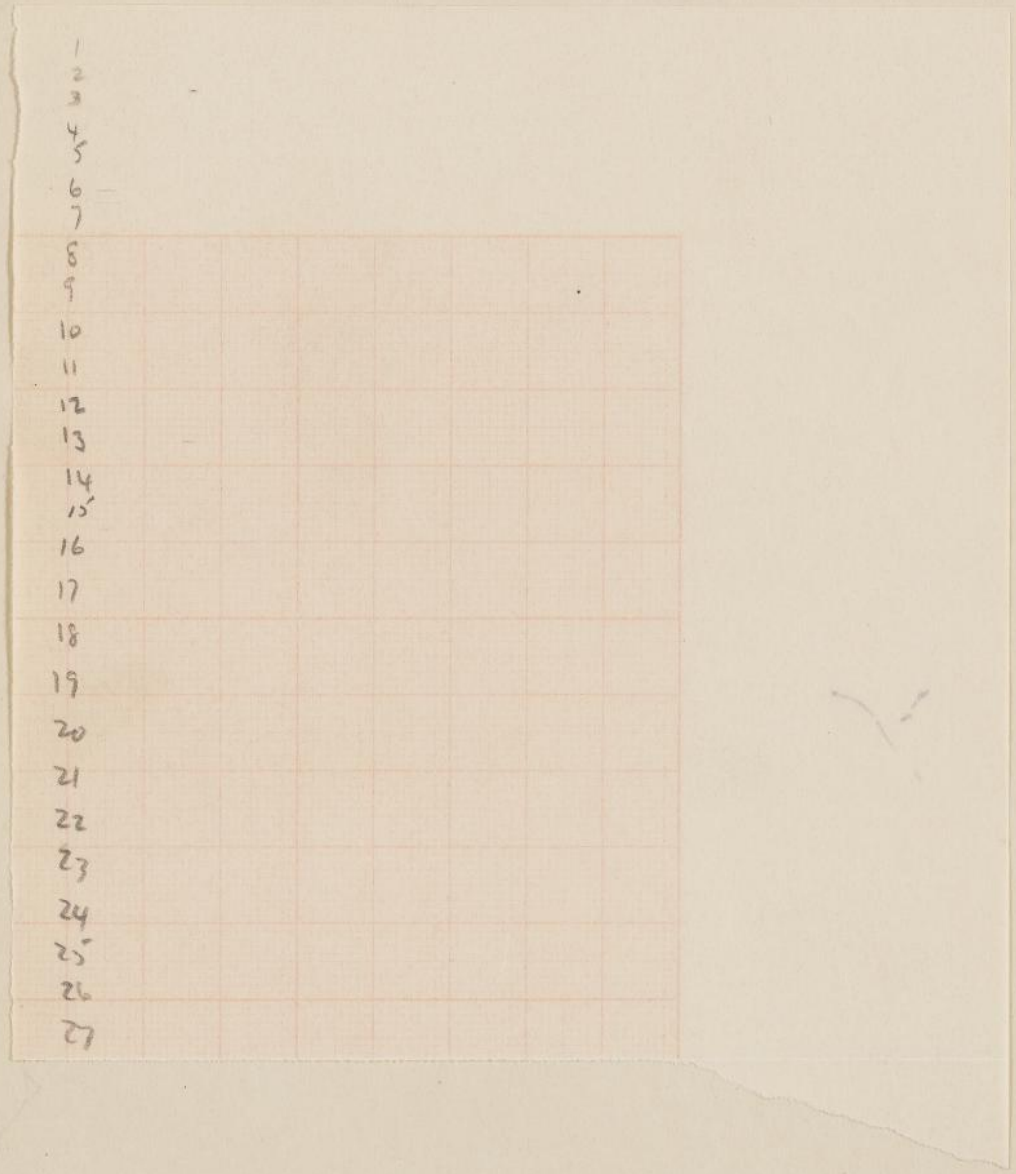
K line, 1.3

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