KG
113666
115

1924phae.proj.1116p

28

C stars

C 18704 J Geminorum
C 19071 δ Cephei
C 18795 J Geminorum
C 19082 δ Cephei
C 19086, δ Cep, σ And, ρ Cas, H.D. 224157, H.D. 217476
C 19080, α Lyrae and α Cygni
C 19081 α Lyrae 74
C 19102 δ Cephei, η Aql 85
X 14968 ζ Sco
C 19131 δ Cephei, Vega
C 19129 η Aquilae, S Sagittae, Vega 116
C 19136 η Aql, β Del, 41 Cyg, α Aql, Vega 120
C 19141 ν Cephei, 4 Lac, Vega
C 19140 35 Cyg, 9 Cep, σ Cyg, Vega 138
X 6405 146
C 19158 η Aquilae, Polaris, Vega 160
X 4515 a and b Velorum 168
C 12566, 1257,

C 19176
C 19189

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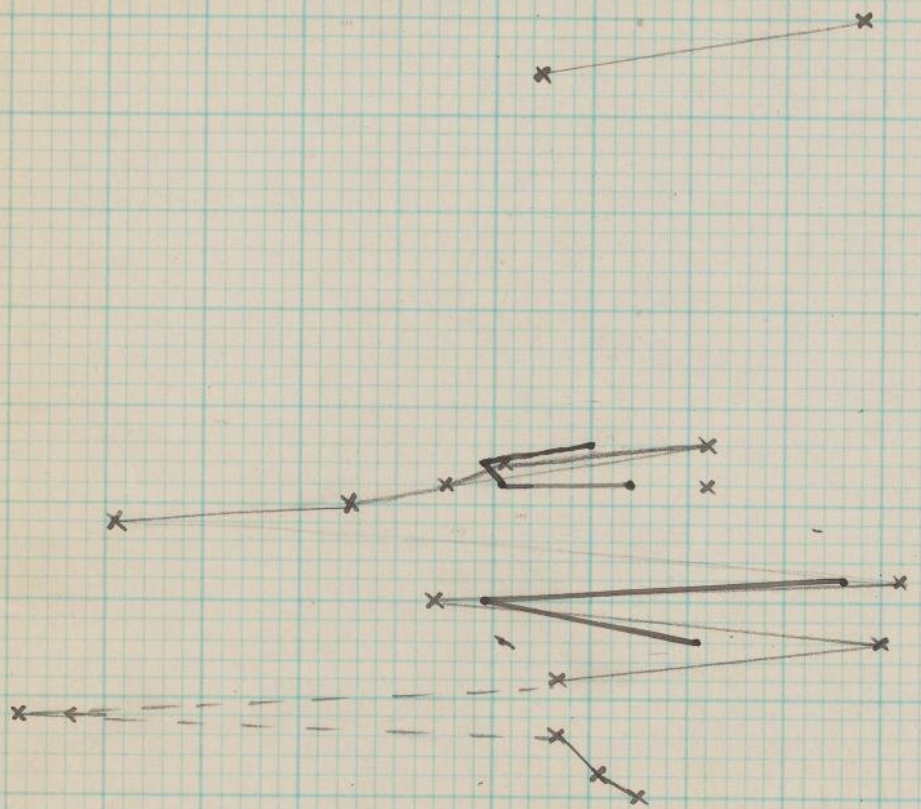
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150 160 170 180 190 200 210 220

12511
12519
12524
12529
12530
12541
12548
12550

12566
12571
12575
12580,1
12590
12591
12597
12599
12602
12605
12608
12609
12612
12619
12625,6
12630
12633
12636
12640
12641
12643



Variation of Color

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20 =	83.2
40 =	83.0
60 =	82.6
80 =	82.0
100 =	81.8
120 =	81.0
140 =	80.0
160 =	78.2
180 =	76.1
200 =	73.4
220 =	70.8
240 =	67.0
260 =	63.0
280 =	58.6
300 =	53.2

C-19086

320 =	48.4
340 =	44.0
360 =	39.6
380 =	35.5
400 =	31.9
420 =	28.0
440 =	24.8
460 =	21.3
480 =	18.9
500 =	16.0
520 =	14.0
540 =	12.9
560 =	11.6
580 =	9.7
600 =	8.4
620	7.2
640	6.8
660	5.6
680	4.6
690	4.0
700	3.0
	2.5
	2.0

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C-19071

20 = 117.2	320 = 32.9
40 = 115.3	340 = 28.4
60 = 113.5	360 = 25.0
80 = 111.0	380 = 21.9
100 = 107.0	400 = 18.6
120 = 102.2	420 = 15.3
140 = 96.6	440 = 13.0
160 = 89.5	460 = 11.3
180 = 82.0	480 = 10.0
200 = 74.1	
220 = 66.4	
240 = 58.0	
260 = 50.1	
280 = 43.8	
300 = 37.7	

11

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1924phae.proj.111cp

Mizar – Alcor

	C12566	μ Cep 2089 12580	12571	12575	12511	12519	12581	12590	12591	12597	12599	12609	12602
β	172	194	176	172						209	178	–	188
γ	186	199	164	(135)						190	179	118	173
δ	188	172	165	(156)						211	170	119	191
ε	202	202	181	175						222	194	131	220
ζ	204	201	188	179						224	181		209
η		196	203	197						242	194		224
θ		178											
	952	1164	1077	723						1298	1076	368	1205
	190	194	179	181						216	179	123	201

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β Orionis. H line of Ca+ strengthens Hε
Some unknown line strengthens Hθ (strong
Hθ evident from the tracings. Is it Si++?
The lines for 3 Geminorum are arbitrarily
numbered, same system for 3 Gem and δ Cep

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C 18704 3 Geminorum Date:
1 prism Phase:
Standardized four spectra of β Orionis
Apertures

Reduced to 130

Aperture 1

Line	n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n]	dm	dl₁	dl₂	dl₃	dl₄	Σ	Mean
β	113	118	130	113	118	170	144	26	21	25	19	20	85	21
4481	127	128	131	126	127	92	80	12	-	14	17	12	43	14
4471	127	128	131	126	127	92	80	12	-	10	14	12	36	12
γ	126	128	131	125	127	100	80	20	-	34	36	37		36
δ	126	130	132	124	128	108	64	44	-	39	39	31		36
4026	127	129	133	124	126	108	92	16	-	16	18	11		15
ε	117	127	133	114	124	166	108	[58]	-	48	41	34		41
3933 K	121	126	134	117	122	150	122	28	-	27	20	18		22
ζ	108	121	134	104	117	204	150	44	33	38	36	32		35
η	94	110	134	90	106	256	196	60	42	34	33	30		35
3819	102	105	134	98	101	228	216	12	10	13	13			12
θ	83	99	134	80	95	287	239	48	36	39	41			39
ι	78	92	134	75	89	299	260	39	30	32	33			32
κ	73	89	135	70	85	312	273	39	30	28	-			29
λ	69	84	135	66	80	322	287	35	28	26	-			27
μ	67	79	135	64	76	327	297	30	24	23	-			24
ν	65	72	135	62	69	333	315	18	15	19	-			17
ξ	59	67	135	56	64	350	327	23	19	18	-			18
ο	57	62	135	54	59	355	341	14	12	14	-			13
π	54	58	135	51	55	363	353	10	9	14	-			12
ρ	53	57	135	51	54	363	355	8	7	15	-			11

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1924phae.proj.111@P

Aperture 3

Linie	m	m+n	b+m+n	n̄	m+n̄	[n]	[m+n]	dm	dl
β	86 116	95	128	88	97	263	232	31	25
4481	~~96~~	1~~20~~ 2	128	98	1~~02~~1	~~228~~	~~212~~ 128	16	14
4471	~~97~~ 117	1~~20~~ 2	128	99	1~~02~~1	~~234~~ 150	~~212~~ 128	12	~~18~~ 22
γ	111	120	129	112	121	174	128	46	34
δ	105	118	131	104	117	204	150	54	39
4026	110	115	131	109	114	185	166	19	16
ε	90	109	131	89	108	260	189	71	48
3933	95	104	131	94	103	242	208	34	27
ζ	78	95	131	77	94	294	242	52	38
η	61	79	132	60	78	338	292	46	34
	68	74	132	67	73	320	305	15	13
θ	~~150~~	67	132	49	66	~~322~~ 375	322	53	39
ι	43	59	133	42	58	386	344	42	32
κ	39	54	133	39	53	394	358	36	28
λ	37	50	133	37	49	400	368	32	26
μ	33	43	133	33	42	414	386	28	23
ν	31	39	133	31	38	420	397	23	19
ξ	29	35	133	29	35	428	406	22	18
ο	27	31	133	27	31	436	420	16	14
π	25	29	133	25	29	445	428	17	14
ρ	22	26	133	22	26	458	440	18	15

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Aperture 5

Line	n	m+n	b+m+n	$\bar{n}$	$\bar{m+n}$	[n]	[m+n]	dm	dl
β	64	73	127	67	76	320	297	23	19
4481	99	104	128	101	106	216	196	20	17
4471	100	104	128	102	106	212	196	16	14
γ	89	102	128	91	104	252	204	48	36
δ	82	98	129	83	99	278	224	54	39
4026	88	94	129	89	95	260	239	21	18
ε	67	88	129	68	89	317	260	57	41
3933	74	83	130	74	83	302	278	24	20
ζ	55	73	130	55	73	353	305	48	36
η	38	55	130	38	55	397	353	44	33
..	43	49	130	43	49	383	368	15	13
θ	26	43	130	26	43	440	383	57	41.
ι	24	35	130	24	35	450	406	44	33
κ	19	32	130	19	32	473	447		
λ	17	28	130	17	28	484	433		
μ	15	24	130	15	24	496	450		
ν	12	20	130	12	20	526	468		
ξ	..	18	130	-	18				
ο	..	16	130	-	16				
π	..	14	130	-	14				
ρ	..	..	..						

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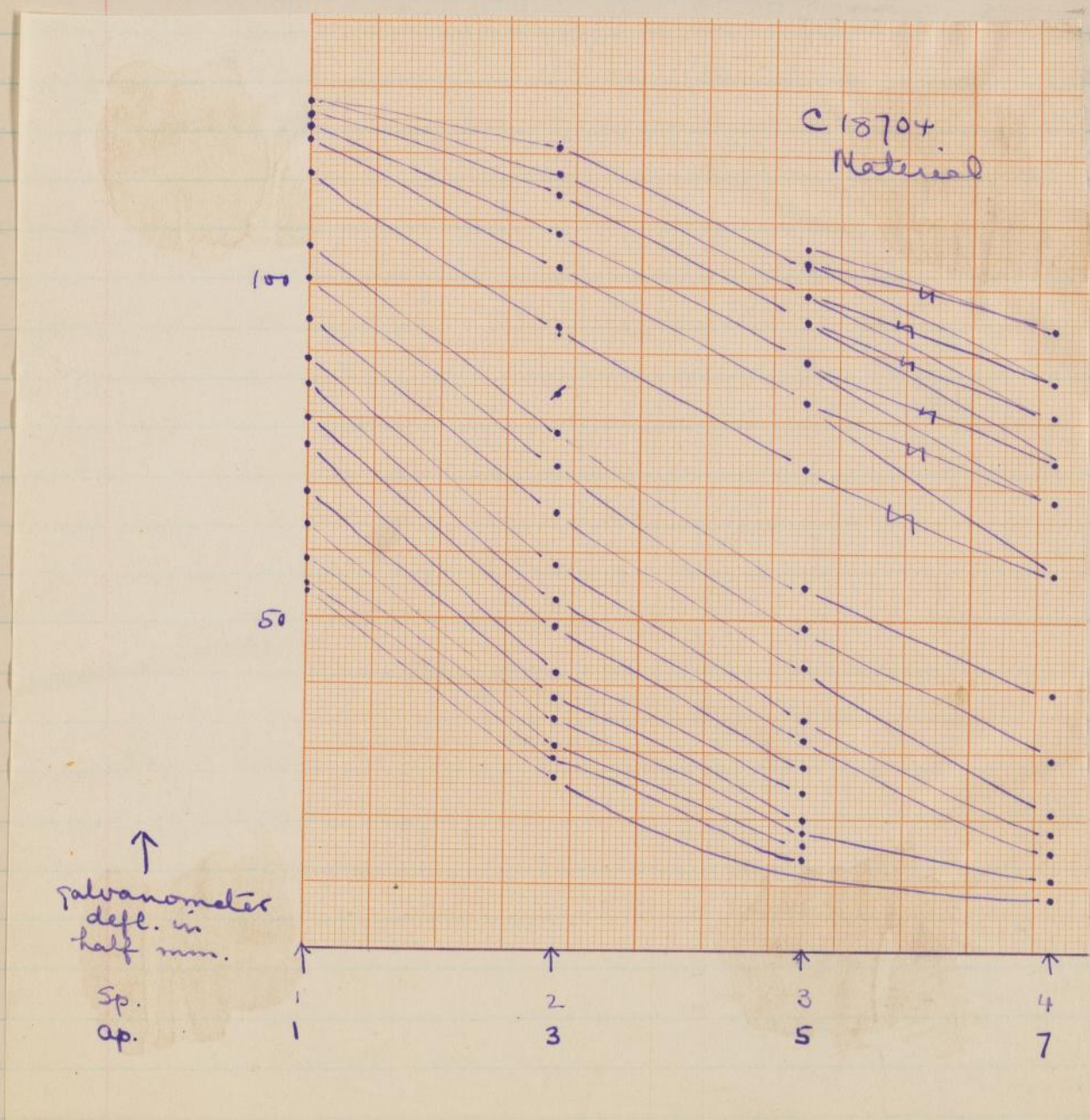
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Apertüre 7

Linie	n	mm	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl
β	51	59	126	52	61	360	336	24	20
4481	85	89	127	87	91	266	252	14	12
4471	85	89	127	87	91	266	252	14	12
γ	86	82	128	78	84	292	242	50	37
δ	70	84	128	71	86	310	270	40	31
4026	75	80	129	76	82	297	284	13	11
ε	56	73	129	57	74	347	302	45	34
3933	59	67	129	60	68	338	317	21	18
ζ	41	57	130	41	57	389	347	42	32
η	28	39	130	28	39	433	394	39	30
	..	..	..	—	—				
θ	17	29	130	17	29	484	428	56	
ι	13	11	130	13	11	514	542	72	
κ	10	18	130	10	18	554	478	76	
λ	10	15	130	10	15	554	496	58	
μ	—	—	—						
ν	—	—	—						
ξ	—	11	131		11				
ρ	—	8	131		8				

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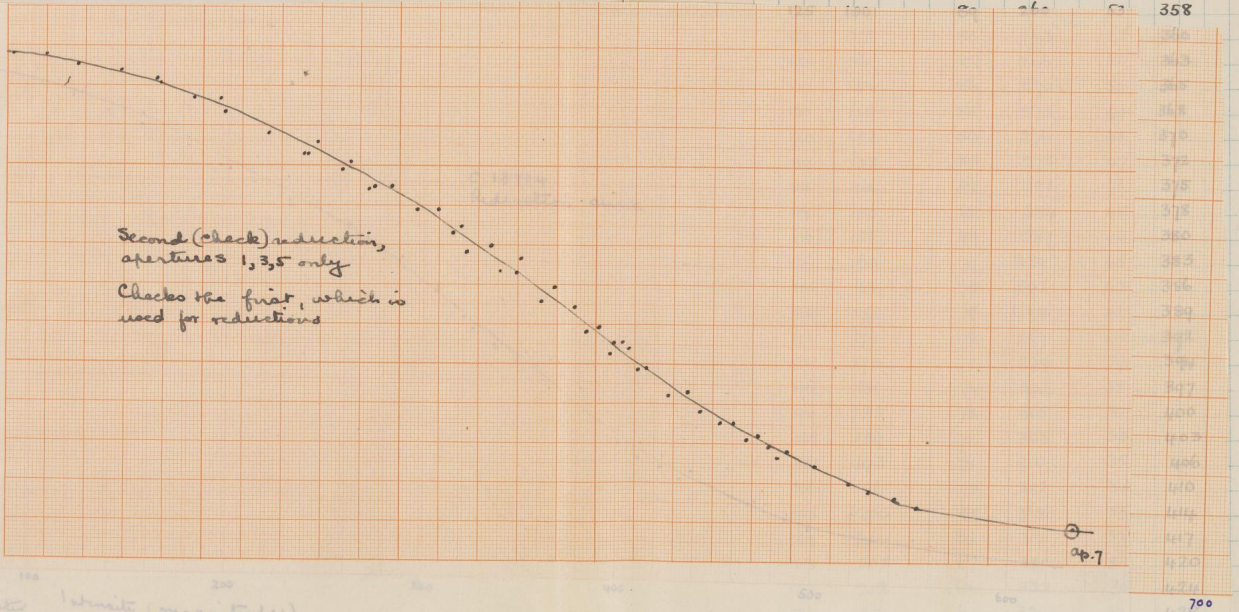
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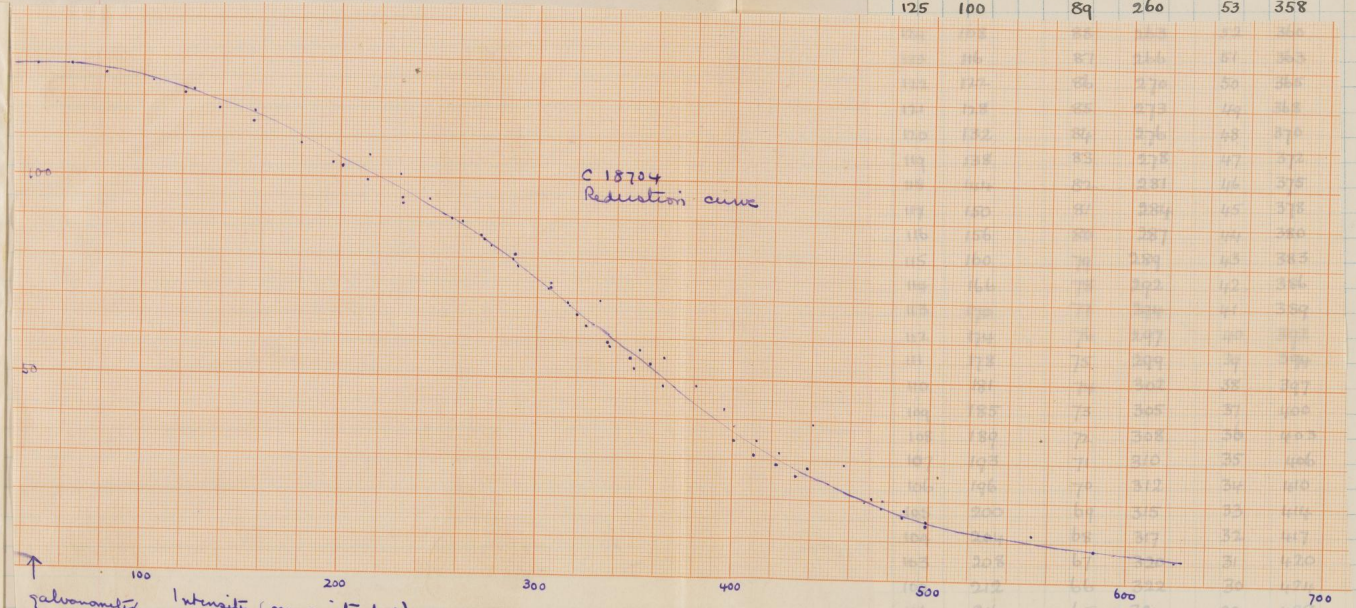
C 18704 Reduction curve

128	964	92	249	56	350	20	468
127	980	91	252	55	353	19	473
126	992	90	256	54	355	18	478
					358	17	484
						16	490
						15	496
						14	504
						13	514
						12	526
						11	542
						10	554
						9	570
						8	586
						7	608
						6	628
						5	–
						4	–
						3	–
						2	–
						1	–



97	232	61	336	25	445
96	236	60	338	24	450
95	239	59	341	23	454
94	242	58	344	22	458
93	246	57	347	21	463

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C 18704 Reduction curve

128	964	92	249	56	350	20	468
127	980	91	252	55	353	19	473
126	992	90	256	54	355	18	478
125	100	89	260	53	358	17	484
						16	490
						15	496
						14	504
						13	514
						12	526
						11	542
						10	554
						9	570
						8	586
						7	608
						6	628
						5	–
						4	–
						3	–
						2	–
						1	–
97	232	61	336	25	445		
96	236	60	338	24	450		
95	239	59	341	23	454		
94	242	58	344	22	458		
93	246	57	347	21	463		

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C 18704 Reduction curve

128	064	92	249	56	350	20	468
127	080	91	252	55	353	19	473
126	092	90	256	54	355	18	478
125	100	89	260	53	358	17	484
124	108	88	263	52	360	16	490
123	116	87	266	51	363	15	496
122	122	86	270	50	365	14	504
121	128	85	273	49	368	13	514
120	132	84	276	48	370	12	526
119	138	83	278	47	372	11	542
118	144	82	281	46	375	10	554
117	150	81	284	45	378	9	570
116	156	80	287	44	380	8	586
115	160	79	289	43	383	7	608
114	166	78	292	42	386	6	628
113	170	77	294	41	389	5	–
112	174	76	297	40	392	4	–
111	178	75	299	39	394	3	–
110	181	74	302	38	397	2	–
109	185	73	305	37	400	1	–
108	189	72	308	36	403		
107	193	71	310	35	406		
106	196	70	312	34	410		
105	200	69	315	33	414		
104	204	68	317	32	417		
103	208	67	320	31	420		
102	212	66	322	30	424		
101	216	65	324	29	428		
100	220	64	327	28	433		
99	224	63	330	27	436		
98	228	62	333	26	440		
97	232	61	336	25	445		
96	236	60	338	24	450		
95	239	59	341	23	454		
94	242	58	344	22	458		
93	246	57	347	21	463		

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ζ Geminorum, C 18704, μ ep 1514

No.	n	m+n	l+m+n	$\bar{n}$	$\bar{m}+\bar{n}$	[n]	[m+n]	dm	dl	[m+n]	[m+n]$_{\beta 01}$	Diff
1	54	61	128	55	62	353	333	20	17	333		
2	55	65	128	56	66	350	322	28	23			
3	64	67	128	65	68	324	317	07	06			
4	68	71	128	69	72	315	308	07	06			
5	67	74	128	68	75	317	299	18	15			
6	70	78	128	71	79	310	289	21	18			
β 7	60	80	128	61	81	336	284	52	38	284	148	136
8	79	84	128	80	85	287	273	14	12			
9	81	85	128	82	86	281	270	11	10			
10	83	88	128	84	89	276	260	16	14			
11	87	90	128	88	92	263	249	14	12			
12	90	94	128	92	96	249	236	13	11			
13	90	96	128	92	98	249	228	21	18			
14	95	100	128	97	102	232	212	20	17			
15	97	102	128	99	104	224	204	20	17			
16	100	102	128	102	104	212	204	08	07			
17	100	103	128	102	105	212	200	12	10			
18	100	103	128	102	105	212	200	12	10			
19	95	104	128	97	106	232	196	36	28			
20	99	104	128	101	106	216	196	20	17			
21	99	104	128	101	106	216	196	20	17			
22	101	104	128	103	106	208	196	12	10			
23	103	105	128	105	107	200	193	07	06			
24	102	105	128	104	107	204	193	11	10			
25	101	106	128	103	108	208	189	19	16			
26	100	105	128	102	107	212	193	19	16			
27	97	106	128	99	108	224	189	35	28			
28	99	106	128	101	108	216	189	27	22			
29	96	105	128	98	107	228	193	35	28			

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C 18704

	n	mtn	Lmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	dm	dl	[mtn]	[mtn]$_{Bon}$	Diff
30	86	195	128	98	107	228	193	35	28			
31	96	105	128	98	107	228	193	35	28			
32	104	105	128	106	107	196	193	03	03			
33	96	104	128	98	106	228	196	32	26			
34	97	103	128	99	105	224	200	24	20			
35	93	103	128	95	105	239	200	39	30			
36	92	103	128	94	105	242	200	42	32			
37	92	103	128	94	105	242	200	42	32			
38	91	102	128	93	104	246	204	42	32			
39	94	101	128	96	103	236	208	28	23			
40	91	100	128	93	102	246	212	34	27			
41	91	100	128	93	102	246	212	34	27			
42	90	99	128	92	101	249	216	33	26			
43	92	100	128	94	102	242	212	30	24			
44	87	99	128	88	101	263	216	47	35			
45	91	99	128	93	101	246	216	30	24			
46	93	99	128	95	101	239	216	23	26			
47	95	98	128	97	100	232	220	12	10			
48	90	98	128	92	100	249	220	29	23			
X 49	73	97	128	74	99	302	224	78	57	224	57	173
50	89	96	128	90	98	256	228	28	23			
51	91	96	128	93	98	246	228	18	15			
52	86	96	128	87	98	266	228	38	30			
53	81	95	128	82	97	281	232	49	36			
54	72	95	128	73	97	305	232	73	49			
55	79	95	128	80	97	287	232	55	40			
56	88	94	128	89	96	260	236	24	20			
57	84	94	128	85	96	273	236	37	29			
58	85	93	128	86	95	270	239	31	25			
59	83	92	128	84	94	276	242	34	27			

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1924phae.proj.11100

C 18704

	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl	[m+n]	[m+n]$_\beta$	Diff
60	82	92	128	83	94	278	242	36	28			
61	81	92	128	82	94	281	242	39	30			
62	76	91	128	77	93	294	246	48	36			
63	82	91	128	83	93	278	246	32	26			
64	76	90	128	77	92	294	249	45	34			
65	77	90	128	78	92	292	249	43	33			
66	79	89	128	80	90	287	256	31	25			
67	78	89	128	79	90	289	256	33	26			
68	73	89	128	74	90	302	256	46	34			
69	70	88	128	71	89	310	260	50	37			
70	83	88	128	84	89	276	260	16	14			
71	82	88	128	83	89	278	260	18	15			
72	79	88	128	80	89	287	260	27	22			
73	79	87	128	80	88	287	263	24	20			
74	76	87	128	77	88	294	263	31	25			
75	73	86	128	74	87	302	266	36	28			
76	72	86	128	73	87	305	266	39	30			
77	77	86	128	78	87	292	266	26	21			
78	76	85	128	77	86	294	270	24	20			
79	75	84	128	76	85	297	273	24	20			
δ 80	61	84	128	62	85	333	273	60	42	273	74	199
81	81	84	128	82	85	281	273	08	07			
82	73	83	128	74	84	302	276	26	21			
83	61	82	128	62	83	333	278	55	40			
84	75	82	128	76	83	297	278	19	16			
85	73	82	128	74	83	302	278	24	20			
86	70	82	128	71	83	310	278	32	26			
87	69	81	128	70	82	312	281	31	25			
88	67	80	128	68	81	317	284	33	26			
89	73	80	128	74	81	302	284	18	15			

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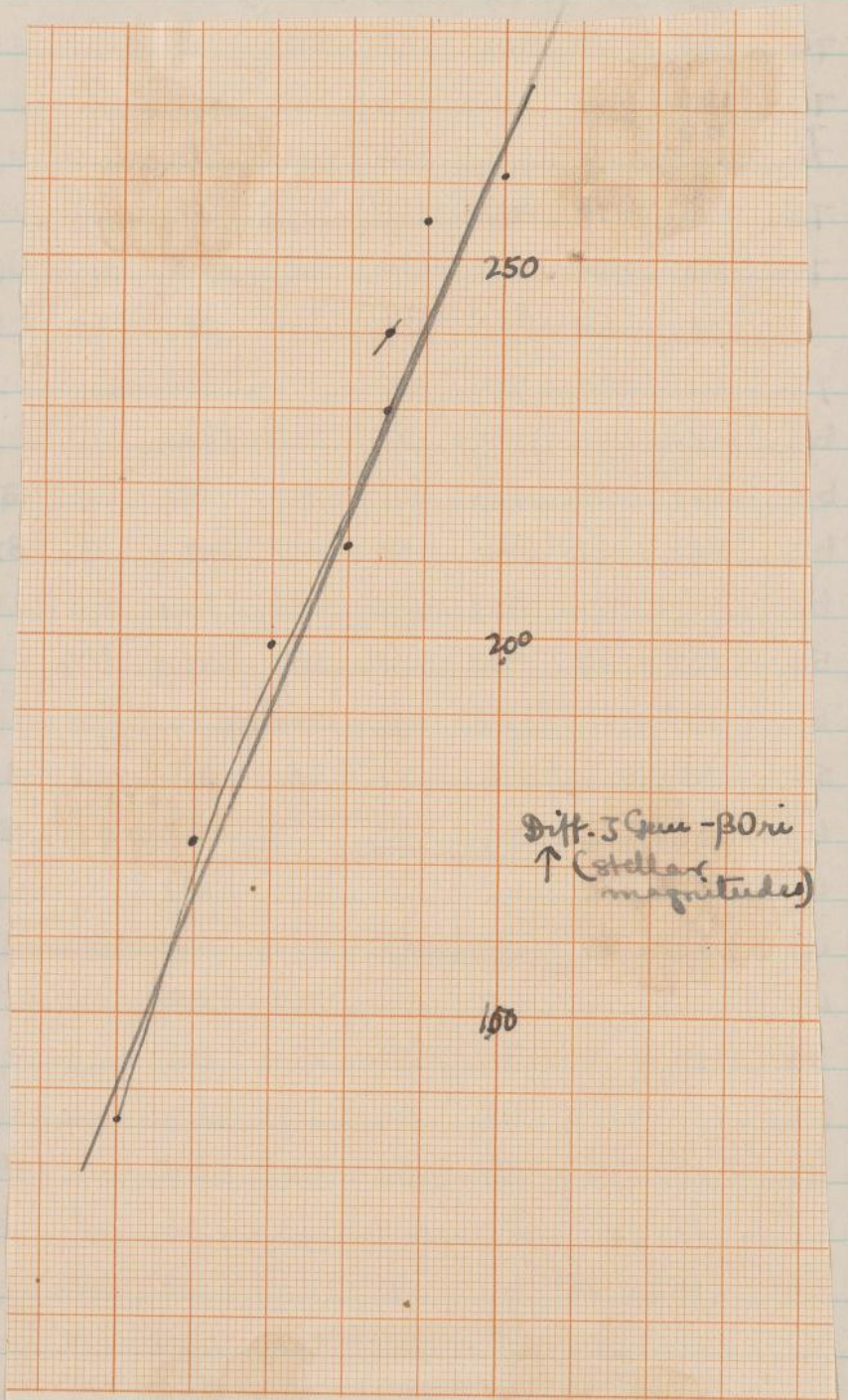
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C 18704

		n	mtn	ltmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	dm	dl	[mtn]	[mtn]$_\beta$	Diff.
	90	61	79	128	62	80	333	287	46	34			
	91	68	77	128	69	78	315	292	23	19			
	92	70/72	77/76	128	71	78	310	292	18	15			
	93	70	75	128	73	77	305	294	11	10			
	94	60	74	128	71	76	310	297	13	11			
	95				61	75	336	299	37	29			
	96	55	72	128	56	73	350	305	45	34			
	97	59	69	128	60	70	338	312	26	21			
	98	49	68	128	50	69	365	315	50	37	315		
ε	99	6.5	65	128	6.5	66	618	322	296	94	322	110	212
	100	42	60	128	43	61	383	336	47	35			
	101	38	59	128	38	60	397	338	59	42			
	102	38	57	128	38	58	397	344	53	39			
κ	103	4	52	128	4	53	700?	358	342?	96	358	128	230
	104	31	48	128	31	49	420	368	52	38	~~368~~	~~128~~	~~240~~
	105	31	47	128	31	48	420	370	50	37			
	106	32	46	128	32	46	417	375	42	32			
	107	29	42	128	29	42	428	386	42	32			
	108	31	39	128	31	39	420	394	26	21			
	109	30	38	128	30	38	424	397	27	22			
ζ	110	20	36	128	20	36	468	403	65	45	403	148	255
	111	24	33	128	24	33	450	414	36	28			
	112	25	32	128	25	32	445	417	28	23			
	113	20	30	128	20	30	468	424	44	33			
η	114	9	21	128	9	21	570	463	107	63	463	202	261
	115	10	19	128	10	19	554	473	81	53			
	116	8	17	128	8	17	586	484	102	61			
θ	117	7	15	128	7	15	608	496	112	64	496	246	250
	118	7	15	128	7	15	608	496	112	64			

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Differential energy curve of
3 Geminorum and β Orionis, C 18704

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C - 18704

β Orionis, background, C 18704

Linie	[m+m]$_1$	[m+m]$_2$	[m+m]$_3$	[m+m]$_4$	[m+m]$_1$	[m+m]$_2$	[m+m]$_3$	[m+m]$_4$	Σ	Mean
β	144	232	297	336	144	157	147 141	~~336~~ 111	445	148
4481	80	~~128~~	196	252	80	~~137~~ 53	46 57	~~252~~ 27	156	52
4471	80	~~128~~	196	252	80	~~137~~ 53	46 57	~~252~~ 27	156	52
γ	80	128	204	242	80	53	54 49	~~242~~ 17	154	51
δ	64	150	224	270	64	~~63~~	74 75	45	222	74
4026	92	166	239	284	92	91	89 89	59	269	87 90
ε	108	189	260	302	108	114	110 107	77	331	110
κ	122	208	278	317	122	133	128 122	92	383	128
~~3933~~ 3933	150	242	305	347	150	167	155 142	112	~~504~~ 445	148
η	196	292	353	394	196	217	203 199	169	~~679~~ 615	202
3819	216	305	368		216	230	218		664	221
θ	239	322	383		239	265	233		737	246
ι	260	344	406		260	267	256		783	261
κ	273	358			273	283			556	276
λ	287	368			287	293			580	290
μ	297	386			297	311			608	304
ν	315	397			315	322			637	318
ξ	327	406			327	331			658	329
ο	341	420			341	345			686	343
π	353	428			353	353			706	353
ρ	355	440			355	365			720	~~360~~ 360

evidently ap. 4 is underexposed

Corrected by +30

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C 19071

δ Cephei
α Cygni

C.

Date:

Phase:

α Cygni Aperture 1, Arbitrary numbers. Reduced to 128

		n	mm	ltmm	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl	$[m+n]_1$	$[\overline{m+n}]_2$	$[\overline{m+n}]_3$	Σ	Mean
	1	96	102	127	97	103	138	118	20	17	118	113	132	363	121
β	2	98	110	127	99	111	132	80	52	38	80	81	85	246	82
	3	117	119	127	118	120	14	-5	19	16	-5	5	9	9	3
	4	117	119	127	118	120	14	-5	19	16	-5	-3	9	1	0
	5	117	119	127	118	120	14	-5	19	16	-5	-3	6	-2	-1
	6	117	119	127	118	120	14	-5	19	16	-5	5	9	9	+3
	7	117	119	127	118	120	14	-5	19	16	-5	-8	9	1	0
	8	118	119	127	119	120	5	-5	10	09	-5	5	9	9	+3
	9	117	119	127	118	120	14	-5	19	16	-5	-3	9	1	0
	10	118	119	127	119	120	5	-5	10	09	-5	5	14	14	5
	11	117	119	127	118	120	14	-5	19	16	-5	5	14	14	5
	12	116	119	127	117	120	24	-5	29	23	-5	5	14	14	5
γ	13	109	118	128	109	118	90	14	76	50	14	10	17	41	14
	14	116	118	128	116	118	35	14	21	18	14	10	17	41	14
	15	114	118	128	114	118	86	14	42	32	14	15	20	49	16
	16	113	117	128	113	117	64	24	40	31	24	15	23	62	21
	17	113	117	128	113	117	64	24	40	31	24	15	23	62	21
	18	115	116	128	115	116	45	35	10	09	35	21	25	81	27
	19	114	116	128	114	116	56	35	21	18	35	21	28	84	28
δ	20	102	116	128	102	116	122	35	87	55	35	25	28	88	29
	21	113	115	128	113	115	64	45	19	16	45	43	41	129	43
	22	113	115	128	113	115	64	45	19	16	45	43	46	134	45
ε	23	83	113	128	83	113	178	64	114	65	64	54	59	177	59
κ	24	97	111	128	97	111	138	80	58	41	80	70	71	221	74
ζ	25	82	106	128	82	106	180	104	76	50	64	105	106	315	105
												139	138	277	138
												166	161	327	164
												206	205	411	206

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C 1907

Aperture 3

	n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n]	dm	dl	[m+n̄]
1	69	76	123	72	79	206	188	18	15	113
2	70	87	123	73	91	204	156	98	59	81
3	102	105	121	~~105~~ 108	111	96	80	16	14	5
4	102	106	121	~~110~~ 108	112	96	72	24	20	−3
5	102	106	121	~~110~~ 108	112	96	72	24	20	−3
6	101	105	121	~~109~~ 107	111	100	80	20	17	5
7	102	106	121	~~110~~ 108	112	96	72	24	20	−3
8	103	105	121	~~111~~ 109	111	90	80	10	09	5
9	101	106	121	~~109~~ 107	112	100	72	28	23	−3
10	104	105	121	110	111	86	80	06	05	5
11	101	105	121	107	111	100	80	20	17	5
12	100	105	121	106	111	104	80	24	20	5
13	85	104	121	90	110	159	85	64	44	10
14	101	104	121	107	110	100	85	15	13	10
15	96	102	120	102	109	122	90	32	26	15
16	95	102	120	101	109	155	90	35	28	15
17	96	102	120	102	109	122	90	32	26	15
18	98	101	120	104	108	113	96	17	22	21
19	96	101	120	102	108	122	96	26	21	21
20	74	~~150~~ 150	120	79	107	188	100	88	56	25
21	94	97	119	100	103	129	118	11	10	43
22	89	96	119	~~95~~ 96	103	142	118	24	20	43
23	52	93	119	~~55~~ 56	100	246	129	117	66	54
24	65	88	119	~~69~~ 70	95	211	145	66	46	70
25	42	76	118	45	82	275	180	95	58	105
26	56	64	118	~~59~~ 61	69	233	214	19	16	139
27	27	54	118	29	58	338	241	97	59	166
28	18	40	118	19	43	398	282	16	14	207

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1924phae.proj.11100

C19071

aperture 5

	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dn	dl	$[\overline{m+n}]_3$
1	33	41	123	345	43	311	282	29	23	132
2	39	57	123	41	60	288	235	53	39	85
3	80	86	123	84	90	175	159	16	14	9
4	77	86	123	821	90	184	159	25	21	9
5	81	87	123	845	91	173	156	17	14	6
6	79	86	123	843	90	178	159	19	16	9
7	79	86	123	843	90	178	159	19	16	9
8	82	86	123	876	90	170	159	11	10	9
9	79	86	123	843	90	178	159	19	16	9
10	78	84	123	82	88	180	164	16	14	14
11	78	84	123	82	88	180	164	16	14	14
12	78	84	123	82	88	180	164	16	14	14
13	56	83	123	59	87	264	167	97	59	17
14	78	83	123	82	87	180	167	13	11	17
15	73	82	123	76	86	196	170	26	21	20
16	73	81	123	76	85	196	173	23	19	23
17	72	81	123	75	85	198	173	25	21	23
18	74	80	123	77	84	194	175	19	16	25
19	73	79	123	76	83	196	178	18	15	28
20	46	79	123	48	83	267	178	89	56	28
21	71	75	123	74	78	201	191	10	09	41
22	68	73	123	71	76	209	196	13	11	46
23	27	68	123	28	71	342	209	133	71	59
24	41	63	123	43	66	282	221	61	43	71
25	25	50	123	26	52	355	256	99	66	106
26	33	39	123	35	41	311	288	23	19	138
27	15	33	123	16	35	416	311	105	62	161
28	16	25	123	17	26	410	355	55	40	205

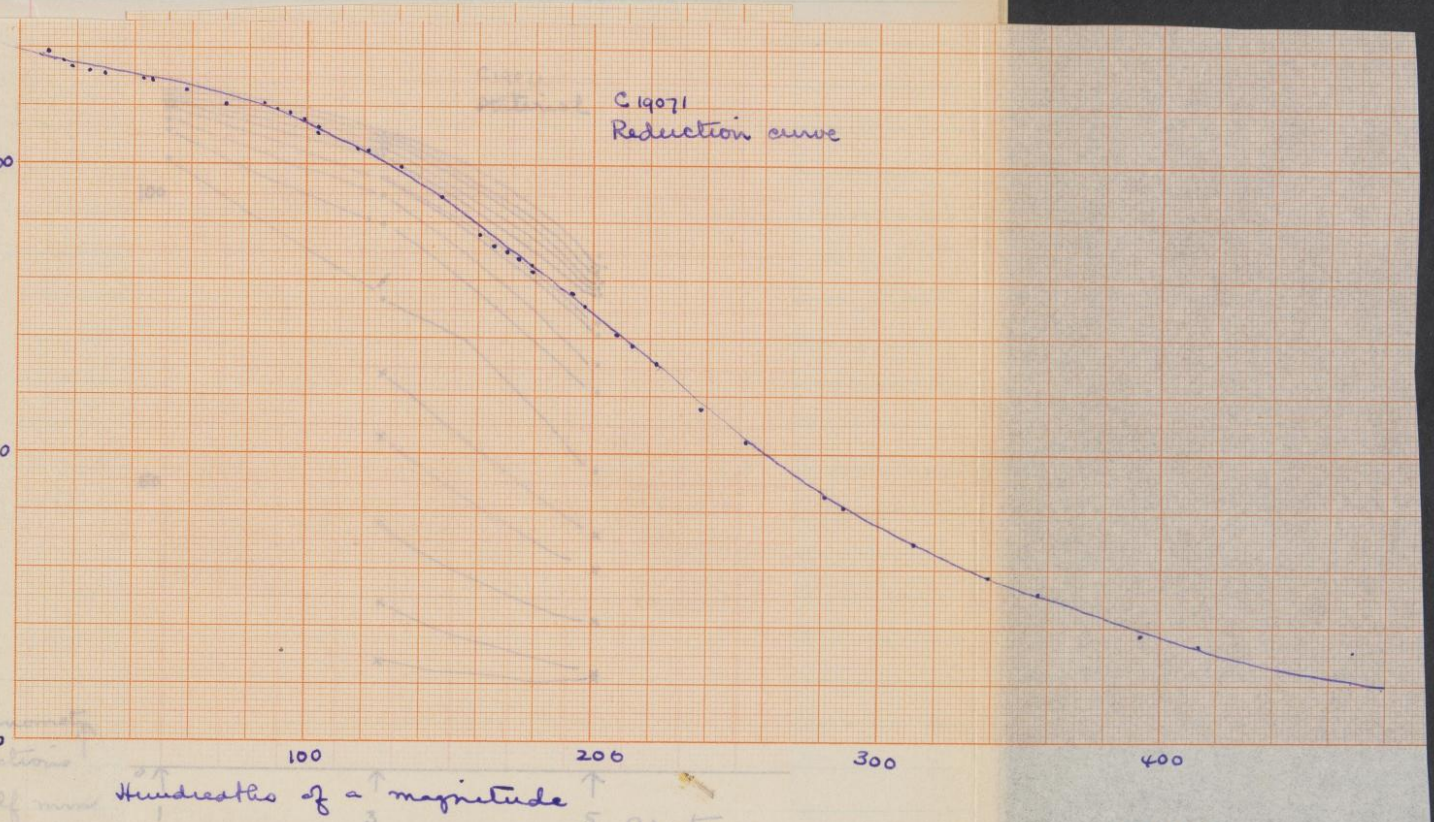
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1924phae.proj.111CP

C 19071

10	480	34	315	58	241	82	180	106	104		
11	468	35	311	59	238	83	178	107	100		
12	452	36	307	60	235	84	175	108	96		
13	443	37	303	61	233	85	173	109	90		
14	432	38	299	62	231	86	170	110	86		
15	423	39	295	63	229	87	167	111	80		
16	416	40	292	64	227	88	164	112	72		
17	410	41	288	65	224	89	162	113	64		
18	403	42	285	66	221	90	159	114	56		
19	398	43	282	67	219	91	156	115	45		
20	391	44	279	68	216	92	154	116	35		
21	385	45	275	69	214	93	151	117	24		
22	380	46	272	70	211	94	148	118	14		
23	373	47	269.	71	209	95	145	119	5		
24	368	48	267	72	206	96	142	120	-5		
25	361	49	264	73	204	97	138				
26	355	50	261	74	201	98	135				
27	349	51	258	75	198	99	132				
28	342	52	256	76	196	100	129				
29	338	53	253	77	194	101	125				
30	332	54	250	78	191	102	122				
31	328	55	248	79	188	103	118				
32	323	56	246	80	186	104	113				
33	319	57	243	81	184	105	108				

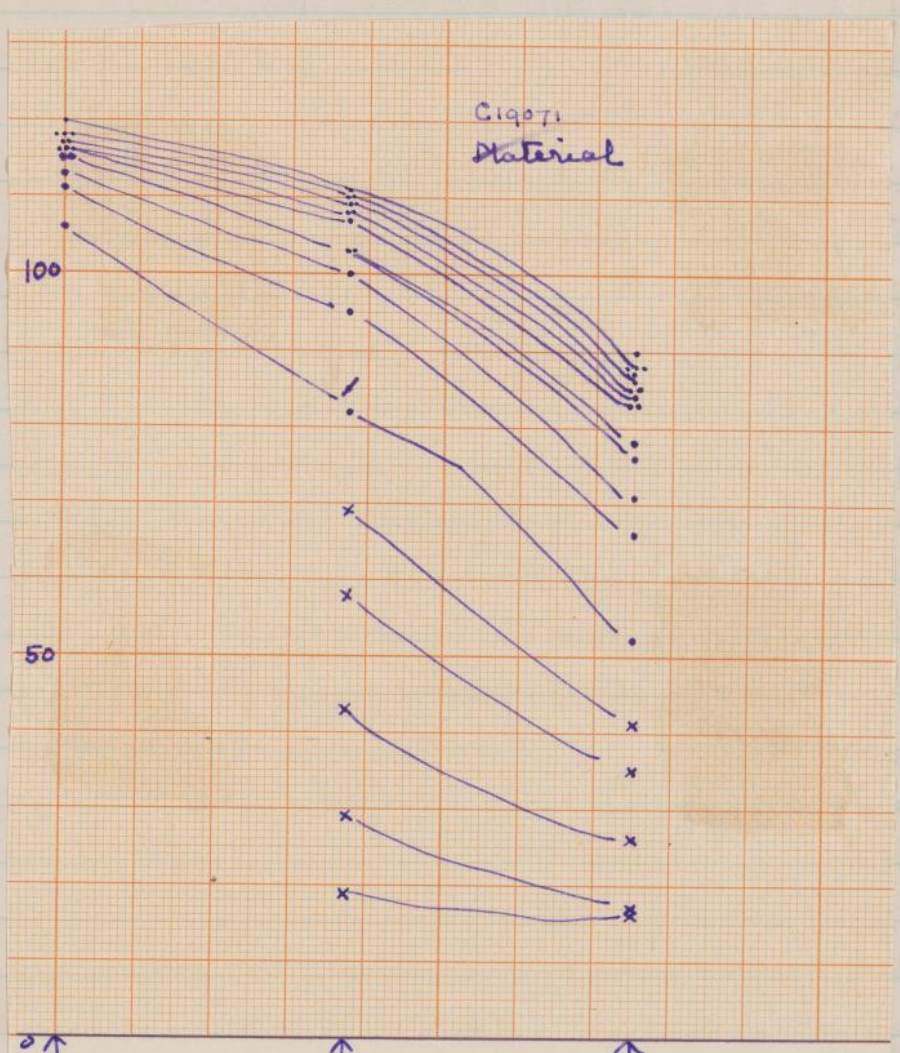
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parameter
sections
half mm

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1924phae.proj.11100

C-19071

δ Cephei

No.	n	m-n	l-m-n	ñ	m-n	[n]	[m-n]	dm	dl	[m-n]	[m-n] adjg	Diff
1	83	89	131	81	87	184	167	17	14			
2	80	93	131	78	91	191	156	35	28			
3	89	95	131	87	93	167	151	16	14			
4	94	97	131	92	95	154	145	09	08			
5	95	99	131	93	96	151	142	09	08			
6	96	102	131	94	99	148	132	16	14			
β 7	88	104	131	86	101	170	125	45	34	125	82	43
8	103	106	131	100	103	129	118	11	10			
9	105	107	131	102	104	122	113	09	08			
10	106	109	131	103	106	118	104	14	12			
11	107	110	131	104	107	113	100	13	11			
12	110	112	131	107	109	100	90	10	09			
13	109	113	131	106	110	104	85	19	16			
14	112	115	131	109	112	90	72	18	15			
15	113	115	131	110	112	85	72	13	11			
16	114	115	130	112	113	72	64	08	07			
17	114	116	130	112	114	72	56	16	14			
18	114	116	130	112	114	72	56	16	14			
19	112	116	130	110	114	85	56	29	23			
20	114	116	130	112	114	72	56	16	14			
21	114	116	130	112	114	72	56	16	14			
22	109	116	130	107	114	100	56	44	33			
23	113	116	130	111	114	80	56	24	20			
24	113	116	130	111	114	80	56	24	20			
25	114	117	130	112	115	72	45	27	22			
26	114	117	130	112	115	72	45	27	32			
27	113	117	130	111	115	80	45	35	28			
28	114	116	130	112	114	72	56	16	14			
29	113	116	130	111	114	80	56	24	20			

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1924phae.proj.11107

No.	n	m-tn	l-tn-tn	$\bar{n}$	m-tn	[n]	[m-tn]	dm	dl	[m-tn]	[m-tn] α Cyg	Diff
30	114	116	130	112	114	72	56	16	14			
31	112	116	130	110	114	85	56	29	23			
32	115	116	~~130~~ 130	113	114	64	56	08	07			
33	113	116	130	111	114	80	56	24	20			
34	113	116	130	111	114	80	56	24	20			
35	111	116	130	109	114	90	56	34	27			
36	110	116	130	108	114	96	56	40	31			
37	111	116	130	109	114	90	56	34	27			
38	111	115	130	109	113	90	64	26	28			
39	110	115	130	108	113	96	64	32	26			
40	110	114	130	108	112	96	72	24	20			
41	110	114	130	108	112	96	72	24	20			
42	109	114	130	107	112	100	72	28	30			
43	109	114	130	107	112	100	72	28	30			
44	106	114	130	104	112	113	72	41	31			
45	108	113	130	106	111	104	80	24	20			
46	111	113	130	109	111	90	80	10	09			
47	111	113	130	109	111	90	80	10	09			
48	111	113	130	109	111	90	80	10	09			
Y 49	99	113	130	97	111	138	80	58	41	80	14	66
~~8~~ 50	108	112	130	106	110	104	85	19	16			
51	109	112	130	107	110	100	85	15	21			
52	107	112	130	105	110	108	85	23	19			
53	103	112	130	101	110	125	85	40	31			
54	101	111	130	99	109	132	90	42	32			
55	104	111	130	102	109	122	90	32	26			
56	108	111	130	106	109	104	90	14	12			
57	105	111	130	103	109	118	90	28	23			
58	105	110	130	103	108	118	96	22	18			
59	105	110	130	103	108	118	96	22	18			

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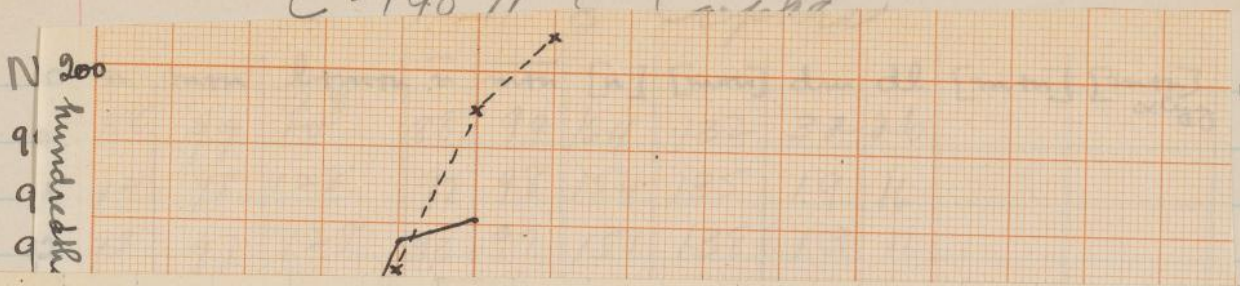
C - 1907 I

No.	n	m-n	l-m-n	$\overline{n}$	$\overline{m-n}$	[n]	[m-n]	dm	dl	[m-n]	[m-n] adopted	Diff
60	103	109	130	101	108	125	96	29	23			
61	102	109	130	100	108	129	96	33	26			
62	100	108	130	98	107	135	100	35	28			
63	103	108	130	101	107	125	100	25	21			
64	100	108	130	98	107	135	100	35	28			
65	101	107	129	100	106	129	104	25	21			
66	102	107	129	101	106	125	104	21	18			
67	101	107	129	100	106	129	104	25	21			
68	98	106	129	97	105	138	108	30	24			
69	97	106	129	96	105	142	108	34	27			
70	104	106	129	103	105	118	108	10	09			
71	103	106	129	102	105	122	108	14	12			
72	100	105	129	99	104	132	113	19	16			
73	101	105	129	100	104	129	113	16	14			
74	97	105	129	98	104	135	113	22	18			
75	92	104	129	91	103	156	118	38	30			
76	94	104	129	93	103	151	118	33	26			
77	98	104	129	97	103	138	118	20	17			
78	98	104	129	97	103	138	118	20	17			
79	98	103	129	97	102	138	122	16	14			
80	86	103	129	85	102	173	122	51	37	122	29	93
81	101	103	129	100	102	129	122	07	06			
82	96	102	129	97	101	138	125	13	11			
83	82	102	129	81	101	184	125	59	42			
84	98	102	129	97	101	138	125	13	11			
85	97	101	129	96	100	142	129	13	11			
86	94	101	129	93	100	151	129	22	18			
87	93	100	129	92	99	154	132	22	18			
88	92	100	128	92	100	154	129	25	21			
89	98	99	128	98	99	135	132	03	03			

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1924phae.proj.11:0P

C - 19071 C Cephei



Line depths

	δ Cep dl_1	δ Cep dl_2	δ Gem dl_1	δ Gem dl_2	dl_2/dl_1
β	43	33	52	38	1.15
γ	58	41	78	57	1.24
δ	51	37	60	42	1.14
ε	188	82	296	93	1.14
K	209	85	342	96	1.13
ζ	58	41	65	45	1.10
η	88	56	107	63	1.10
θ	79	52	112	64	1.23

$8 \overline{)9.23}$

1.15

Mean ratio in surface gravity = 1.15 (in favor of δ Cephei)

∴ ζ Gem the brighter by factor $(1.15)^3 = 1.63$

$= 0^m.59$

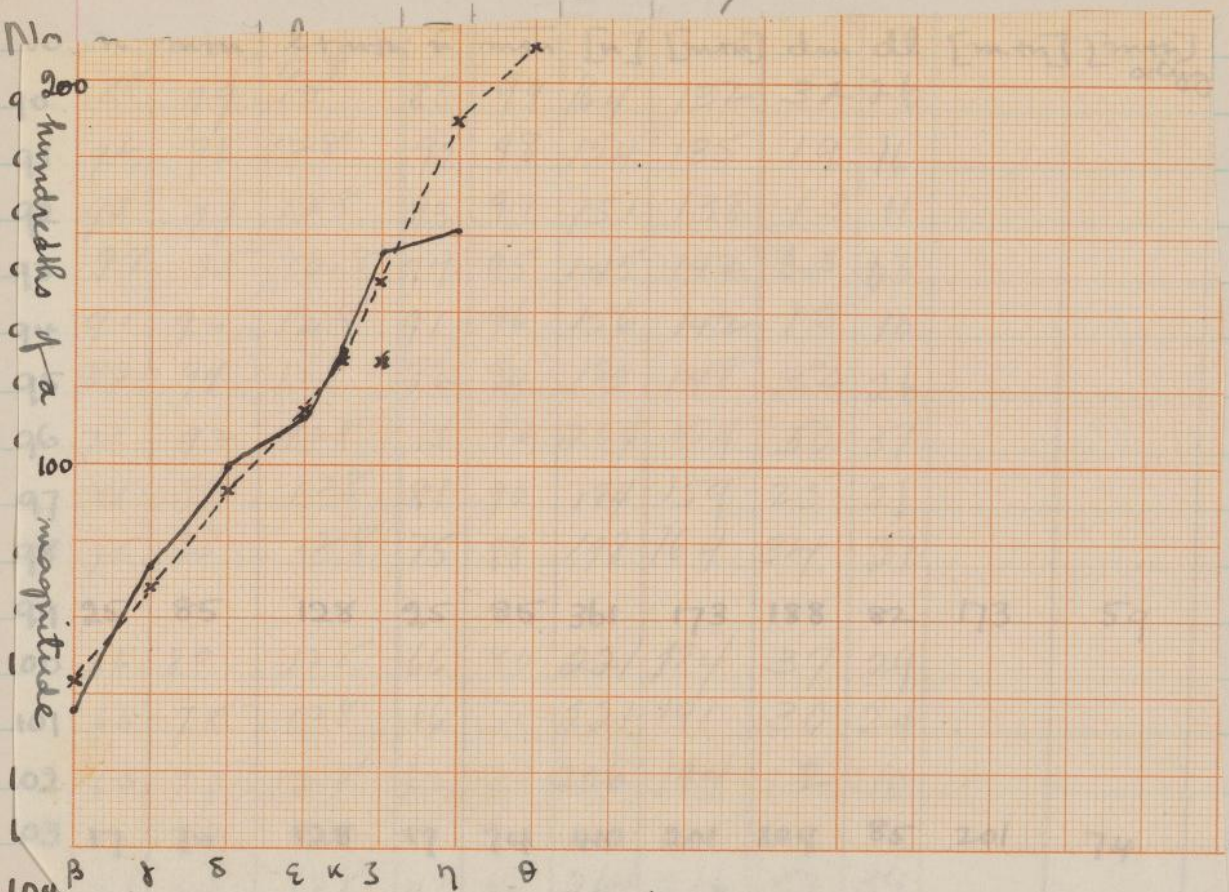
From H and K alone, ratio in brightness $= (1.135)^3 = 1.46$

$= 0^m.42$

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C - 19071 ε Cephei



•—• = ζ Gem − β Ori
x---x = β Cep − α Cyg.
ε Cephei must be considerably cooler. 2000°.

	104												
	105												
	106	49											
	107	48	6										
	108	51	57										
	109	47	56										
ζ	110	35	53	127	35	53	311	253	58	41	253	105	148
	111	43	48	127	43	48	282	267	15	13			
	112	44	47	127	44	47	279	269	10	09			
	113	37	44	127	37	44	303	279	24	20			
η	114	16	31	127	16	31	416	328	88	56	328	138	190
	115	18	27	127	18	27	403	349	54	39			
	116	18	26	127	18	26	403	355	48	36			
θ	117	12	23	127	12	23	452	373	79	52	373	164	209 ~~169~~
	118	11	22	127	11	22	468	386	88	56			

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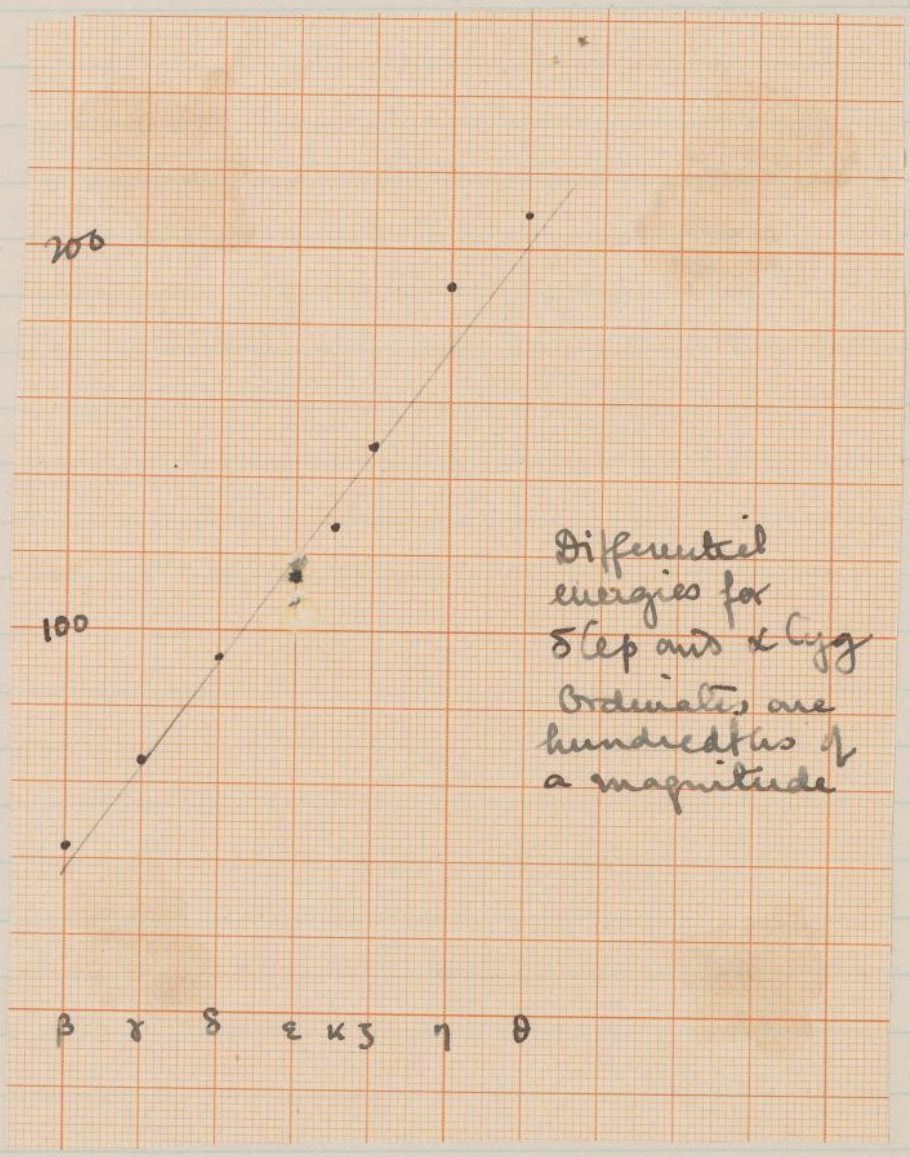
1924phae.proj.111QP

C-1907 1 & Cephei

	No.	n	mtn	ltmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	dm	dl	[mtn]	[mtn] alligg	Diff
	90	88	99	128	88	99	164	132	32	26			
	91	92	98	128	92	98	154	135	19	16			
	92	93	97	128	93	97	151	138	13	11			
	93	99	95	128	94	95	143	142	03	03			
	94	91	96	128	91	96	156	142	12	10			
	95	82	94	128	82	94	180	148	32	26			
	96	73	92	128	73	92	204	154	50	37			
	97	81	90	128	81	90	184	159	25	21			
	98	75	88	128	75	88	198	164	34	27			
ε	99	25	85	128	25	85	361	173	188	82	173	59	114
	100	66	80	128	66	80	221	184	37	29			
	101	66	78	128	66	78	221	191	30	24			
	102	62	77	128	62	77	206	194	12	10			
K	103	17	74	128	17	74	410	201	209	85	201	74	127
	104	47	68	128	47	68	269	216	53	39			
	105	47	66	128	47	66	269	221	48	36			
	106	49	65	128	49	65	264	224	40	31			
	107	48	61	128	48	61	267	233	34	27			
	108	51	57	128	51	57	258	243	15	13			
	109	47	56	128	47	58	269	241	28	23			
ζ	110	35	53	127	35	53	311	253	58	41	253	105	148
	111	43	48	127	43	48	282	267	15	13			
	112	44	47	127	44	47	279	269	10	09			
	113	37	44	127	37	44	303	279	24	20			
η	114	16	31	127	16	31	416	328	88	56	328	138	190
	115	18	27	127	18	27	403	349	54	39			
	116	18	26	127	18	26	403	355	48	36			
θ	117	12	23	127	12	23	452	373	79	52	373	164	209 ~~169~~
	118	11	22	127	11	22	468	386	88	56			

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C18795 J Geminorum Date:
1 prism Phase:
Standardized four spectra of β Orionis

Aperture 1 mp 1536 Reduced to q3

Line	n	mm	l-m-m	n̄	m-n̄	[n]	[m-m]	dm	dl	dl_1	dl_2	dl_3	dl_4	Σ Mean	
β	89	91	92	90	92	146	106	40	31	-	18	22	~~20~~ 17		
4481	-	-	-	-	-	-	-	-	-	-	-	-	~~07~~ 6		
4471	-	-	-	-	-	-	-	-	-	-	-	-	10		
γ	91	92	92	92	93	106	78	28	23	-	-	-	~~27~~ 22		
δ	90	92	92	91	93	118	78	40	31	-	-	28	~~40~~ 31		
4026	91	92	92	92	93	106	78	28	23	-	-	13	~~20~~ 17		
ε	~~88~~ 89	92	92	89	93	156	78	78	51	-	-	37	34		
3933	89	91	92	90	92	146	106	40	31	-	-	20	18		
ζ	85	90	92	86	91	184	118	66	46	-	34	28	31	34	
η	77	86	92	78	87	230	175	55	40	-	37	29	31	37	
3889	81	84	92	82	85	211	190	21	18	-	10	10	14		
θ	71	81	93	71	81	259	217	42	32	32	28	29	26		
ι	67	78	93	67	78	276	230	46	34	34	33	25	25	34	
κ	64	75	93	64	75	286	244	42	32	32	30	23	-	31	
λ	61	72	93	61	72	296	256	40	31	31	31	22	-	31	
μ	60	69	93	60	69	299	268	31	25	25	28	20	-	26	
ν	56	66	93	56	66	312	279	33	26	26	26	18	-	26	
ξ	55	63	93	55	63	316	289	27	22	22	23	-	-	22	
ο	53	59	93	53	59	322	303	19	16	16	16	-	-	16	
π	51	55	93	51	55	328	316	12	10	10	10	-	-	10	
ρ	49	52	93	49	52	334	325	09	08	08	05	-	-	6	

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C18795

Reduction curve

[n]	[n]	[n]	[n]
1	-	25 398	49 334
2	-	26 395	50 331
3	501	27 392	51 328
4	492	28 389	52 325
5	484	29 387	53 322
6	476	30 385	54 320
7	469	31 382	55 316
8	460	32 379	56 312
9	456	33 376	57 309
10	451	34 373	58 306
11	446	35 370	59 303
12	442	36 367	60 299
13	437	37 364	61 296
14	432	38 362	62 293
15	429	39 358	63 289
16	426	40 356	64 286
17	422	41 353	65 283
18	418	42 351	66 279
19	414	43 349	67 276
20	411	44 346	68 272
21	408	45 344	69 268
22	406	46 342	70 263
23	403	47 339	71 259
24	401	48 336	72 256

[n]	[n]
73	252
74	248
75	244
76	240
77	235
78	230
79	226
80	221
81	217
82	211
83	205
84	199
85	190
86	184
87	175
88	166
89	156
90	146
91	118
92	106
93	78

Mean

114
47
47
47
50
60
74
90
122
162
176
192
205
218
225
234
245
253
264
276
281

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Aperture 3 μ Ep 1537

Line	n	mm	l-m-n	$\bar{n}$	$\bar{m}$-$\bar{n}$	[n]	[m-n]	dm	db	[m-n]$_1$	[m-n]$_2$	[m-n]$_3$	[m-n]$_4$	Σ	Mean
β	81	85	94	80	84	221	199	22	18	—	124	106	111	341	114
4481	—	—	—	—	—	—	—	—	—	—	—	—	047	47	47
4471	—	—	—	—	—	—	—	—	—	—	—	—	047		47
γ	90	93	95	88	91	166	118	48	36	—	—	—	047		47
δ	88	92	95	86	90	184	146	38	30	—	—	49 ~~44~~	51	100	50
4026	80	~~92~~	95	78	~~90~~	230	146	84	54	—	—	61 ~~56~~	58	119	60
ε	83	91	95	81	89	217	156	61	43	—	—	81 ~~46~~	78	149	74
3933	86	89	95	84	87	199	175	24	20	—	—	85 ~~60~~	95	180	90
ζ	77	86	95	75	84	244	199	45	34	—	124 ~~109~~	126 ~~101~~	117	367	122
η	66	79	~~95~~	64	77	286	235	51	37	—	160 ~~111~~	166 ~~141~~	160	486	162
3819	73	76	95	71	74	259	248	11	10	—	173 ~~84~~	178 ~~163~~	176	527	176
θ	58	72	95	57	70	309	263	36	28	217 ~~81~~	188	192	195	575	192
ι	54	68	95	53	66	322	279	43	33	230 ~~78~~	204	208	204 217	616	205
κ	51	64	95	50	62	331	293	38	30	244 ~~76~~	218	220	↓ 226	655	218
π	49	62	95	48	61	336	296	40	31	256 ~~72~~	221	229	↓ ~~235~~	676	225
μ	47	59	95	46	58	342	306	36	28	268 ~~69~~	231	237	235 ~~244~~	703	234
ν	44	56	95	43	55	349	316	33	26	279 ~~66~~	241	251	244	736	245
ξ	41	52	95	40	51	356	328	28	23	289 ~~63~~	253	—	—		253
ο	40	48	95	39	47	358	339	19	16	303 ~~59~~	264	—	—		264
π	39	43	95	38	42	362	351	11	10	316 ~~55~~	276	—	—		276
ρ	39	41	95	38	40	362	356	06	05	325 ~~52~~	281	—	—		281

↑ omitting Ap. 1

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1924phae.proj.11[illegible]

C 18795

aperture 5, Sep 1540

Line	n	m+n	l+m+n	$\bar{n}$	m+n	[n]	[m+n]	dm	dl
β	68	95	96	65	72	283	256	27	22
4481	85	87	94	84	86	199	184	15	-
4471	85	87	94	84	86	199	184	15	-
γ	80	85	93	80	85	221	190	31	-
δ	76	83	92	77	84	235	199	36	28
4026	78	81	92	79	82	226	211	15	13
ε	67	79	92	68	80	272	221	51	37
3933	70	76	92	71	77	259	238	24	20
ζ	57	69	91	56	67	312	276	36	28
η	42	56	90	41	55	353	316	37	29
3819	48	52	90	47	51	339	328	11	10
θ	32	47	90	32	46	379	342	37	29
ι	28	40	90	28	39	389	358	31	25
κ	25	36	90	25	35	398	370	28	23
λ	22	33	89	22	32	406	379	27	22
μ	20	29	89	20	29	411	387	24	20
ν	17	24	89	17	24	422	401	21	18
ξ	-	-	-	-	-	-	-		
ο	-	-	-	-	-	-	-		
π	-	-	-	-	-	-	-		
ρ	-	-	-	-	-	-	-		

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C 18795

Aperture 47 , Sep 1540

Linie	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl
β	40	48	94	40	48	356	336	20	17
4481	67	69	94	66	68	279	272	07	06
4471	66	69	94	65	68	283	272	11	10
γ	60	68	93	60	68	299	272	27	22
δ	54	66	92	55	67	316	276	40	31
4026	58	63	91	59	65	303	283.	20	17
ε	42	58	91	43	59	349	303.	46	34
3933	45	53	91	46	54	342	320.	22	18
ζ	30	44	90	31	46	382	342.	40	31
η	16	29	90	16	30	426	385.	41	31
3819	18	24	90	18	24	418	401.	17	14
θ	10	18	90	10	18	451	418.	33	26
ι	8	15	90	8	15	460	429	31	25
κ	5	12	89	5	12	484	442.	42	32
λ	5	10	89	5	10	484	451.	33	26
μ	5	8	89	5	8	484	460.	24	20
ν	2	7	89	2	7	–	469.	–	
ξ	2	5	89	2	5	–	484.	–	
ο	2	4	89	2	4	–	492	–	

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1924phae.proj.111qp

-93

ζ Geminorum C18795

Line	n	m+n	l+m+n	[n]	m+n	[n]	[m+n]	dm	dl	[m+n]	[m+n] Bon	Diff
1	52	57	97	50	055	331	316	25	21			
2	53	60	97	51	57	328	309	19	16			
3	58	62	97	56	59	312	303	09	08			
4	60	63	97	57	60	309	299	10	09			
5	62	67	97	59	64	303	286	17	14			
6	65	69	97	62	66	293	279	14	11			
7	60	71	97	~~58~~ 57	~~69~~ 68	~~306~~ 309	~~268~~ 272	~~38~~ 37	~~30~~ 29	268	114	154
8	67	71	97	64	68	286	272	14	12			
9	70	73	97	67	70	276	263	13	11			
10	72	75	97	69	72	268	256	12	10			
11	72	76	97	69	73	268	252	16	14			
12	75	78	97	72	75	256	244	12	10			
13	75	79	97	72	76	256	240	16	14			
14	77	80	97	74	76	248	240	08	07			
15	79	82	97	76	78	240	230	10	09			
16	81	81	97	77	77	235	235	00	00			
17	82	83	97	78	79	230	226	04	04			
18	80	82	97	76	78	240	230	10	09			
19	76	82	97	73	78	252	230	22	18			
20	81	83	97	77	79	235	226	09	08			
21	80	83	97	76	79	240	226	14	12			
22	82	83	97	78	79	230	226	04	04			
23	83	84	97	79	80	226	221	05	04			
24	80	80	97	76	76	240	240	00	00			
25	82	83	97	78	79	230	226	04	04			
26	82	84	97	78	80	230	221	09	08			
27	80	84	97	76	80	240	221	19	16			
28	81	85	97	77	81	235	217	18	15			
29	81	84	97	77	80	235	221	14	12			

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Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl	[m+n]	[m+n] pos	Diff.
30	79	84	97	76	80	240	221	19	16			
31	78	85	97	75	81	244	217	27	22			
32	84	85	97	80	81	221	217	04	04			
33	80	84	97	76	80	240	221	19	16			
34	80	84	97	76	80	240	221	19	16			
35	77	83	97	74	79	248	226	22	18			
36	77	83	97	74	79	248	226	22	18			
37	76	85	97	73	81	252	217	35	28			
38	77	82	97	74	78	248	230	18	15			
39	76	82	97	73	78	252	230	22	18			
40	75	81	97	72	77	256	235	21	18			
41	76	82	97	73	78	252	230	22	18			
42	75	80	97	72	76	256	240	16	14			
43	75	81	97	72	77	256	235	21	18			
44	70	80	97	67	76	276	240	36	28			
45	75	79	97	72	76	256	240	16	14			
46	78	80	97	75	76	244	240	04	04			
47	74	79	97	71	76	259	240	19	16			
48	74	80	97	71	76	259	240	19	16			
49	68	79	97	~~65~~ 66	~~76~~ 77	~~283~~ 279	~~240~~ 235	~~43~~ 44	33	235	47	188
50	73	78	97	70	75	263	244	19	16			
51	72	77	97	69	74	268	248	20	17			
52	67	77	97	64	74	286	248	06	05			
53	65	76	97	61	73	296	252	44	33			
54	61	71	97	58	68	306	272	34	27			
55	65	75	97	62	72	293	256	37	29			
56	72	76	97	79	73	226	252	74	49			
57	68	75	97	65	72	283	256	27	22			
58	68	74	97	65	71	283	259	24	20			
59	67	74	97	64	71	286	259	27	22			

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C 18795

Linie	n	m-n	l-m-n	[n]	[m-n]	[n]	[m-n]	dm	dl	[m-n]	[m-n] pori	Diff
60	68	74	97	65	71	283	259	24	20			
61	66	74	97	63	71	289	259	30	24			
62	63	74	97	60	71	299	259	40	31			
63	66	73	97	63	70	289	263	26	21			
64	63	68	97	60	65	299	283	16	14			
65	60	73	97	57	70	309	263	46	34			
66	64	72	97	61	69	296	268	28	23			
67	64	72	97	61	69	296	268	28	23			
68	58	72	97	56	69	312	268	44	33			
69	55	72	97	53	69	322	268	54	39			
70	62	70	97	59	67	303	276	27	22			
71	66	71	97	63	68	289	272	17	14			
72	62	70	97	59	67	303	276	27	22			
73	61	70	97	58	67	306	276	30	24			
74	60	70	97	57	67	309	276	33	26			
75	62	70	97	59	67	303	276	27	22			
76	59	69	97	57	66	309	279	30	24			
77	63	69	97	60	66	299	279	20	17			
78	60	69	97	57	66	309	279	30	24			
79	62	69	97	59	66	303	279	24	20			
80	57	68	97	55	65 66	316	283 ~~279~~	33 37	26 29	~~279~~	50	~~229~~
81	67	68	97	64	65	286	283	03	03			
82	61	67	97	58	64	306	286	20	17			
83	50	67	97	48	64	336	286	50	37			
84	60	66	97	57	63	309	289	20	17			
85	60	66	97	57	63	309	289	20	17			
86	52	66	97	48	63	336	289	47	35			
87	52	66	97	50	63	331	289	42	32			
88	49	65	97	47	62	339	293	46	34			
89	52	65	97	50	62	331	293	38	30			

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C 18795

Line	n	mtn	ltmtn	$\overline{n}$	$\overline{mtn}$	[n]	[mtn]	dm	dl	[mtn]	[mtn]/3	Diff
90	51	65	97	47	62	339	293	36	28			
91	55	64	97	53	61	322	296	26	21			
92	59	64	97	57	61	309	296	13	11			
93	57	62	97	55	59	316	303	13	11			
94	58	65	97	56	62	312	293	19	16			
95	47	60	97	45	57	344	309	35	28			
96	45	59	97	43	57	349	309	40	31			
97	49	57	97	47	55	339	316	23	18			
98	41	55	97	39	53	358	322	36	28			
99	8	51	97	8	~~50~~ 49	460	~~331~~ 334	~~129~~ 126	69	~~129~~ 331	74	257
100	31	49	97	31	48	382	336	46	34			
101	30	47	96	29	46	387	342	45	34			
102	29	46	96	28	45	389	344	45	34			
103	7	41	96	7	40	469	356	113	65	~~113~~ 356	90	266
104	32	37	96	22	36	406	367	39	30			
105	24	36	96	24	35	401	370	31	25			
106	25	35	96	24	34	401	372	29	23			
107	21	32	96	21	31	408	382	26	21			
108	25	29	96	24	28	401	389	12	10			
109	13	25	96	13	24	437	401	36	28			
110	9	22	96	9	22	456	406	50	~~39~~ 37	406	122	274

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1924phae.proj.11rep

C 19082 δ Cephei, std Jupiter.

Aperture 7 Jupiter

Reduced to 86

No.	n	m+m	l+m+m	n̄	m̄+m	[n]	[m+m]	dm	dl	[m+m]$_1$	[m+m]$_2$	[m+m]$_3$	Σ	Mean
	1	– 1	86	–	1	–	500			500	—	—		
	2	– 4	86	–	4	–	427			427	—	—		
	3	– 7	86	–	7	–				391	—	—		
	4	– 12	86	–	12	–				356	352	—		
	5	– 20	86	–	20	–				319	325	—		
	6	– 29	86	–	29	–				283	287	290		
	7	– 45	86	–	45	–				239	230	234		
3933	8	42 63	86	42	63	247	182	065	45	182	180	178		
	9	– 71	86	–	71	–				150	137	142		
	10	– 76	86	–	76	–				118	103	108		
	11	– 77	86	–	77	–				109	92	95		
	12	– 78	86	–	78	–				98	84	86		
	13	– 79	86	–	79	–				83	75	78		
	14	– 80	86	–	80	–				68	70	69		
	15	– 80	86	–	80	–				68	58	56		
	16	– 81	86	–	81	–				42	43	42		
	17	– 82	86	–	82	–				24	23	24		
	18	– 83	86	–	83	–				8	8	17		
	19	– 83	86	–	83	–				8	8	17		
	20	– 82	86	–	82	–				24	34	24		
	21	– 81	86	–	81	–				42 132	70	51		
	22	– 74	86	–	74	–				132	141	121		
	23	– 48	86	–	48	–				231	244	234		
	24	– 9	86	–	9	–				377	405	330		
	25	– 2	86	–	2	–				480				

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C 19082

Aperture 11, Jupiter

No.	n	mtn	btmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	dm	db
1	–	–	–		–		–		
2	–	–	–		–		–		
3	–	–	–		–		–		
4	–	–	–		–		–		
5	–	–	–		–		–		
6	–	3	86		3		440		
7	–	8	86		8		384		
8	5	18	86	5	18	413	328	85	54
9	–	26	86		26		292		
10	–	38	86		38		258		
11	–	43	86		43		245		
12	–	48	87		46		236		
13	–	50	87		49		228		
14	–	53	87		52		219		
15	–	57	87		56		206		
16	–	62	88		60		192		
17	–	67	88		65		174		
18	–	69	88		67		167		
19	–	69	88		67		167		
20	–	67	88		65		174		
21	–	57	88		56		206		
22	–	34	88		33		271		
23	–	8	88		8		384		
24	–	2	88		2		480		
25	–	–	–		–		–		

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1924phae.proj.111cp

C 1908.2 Reduction

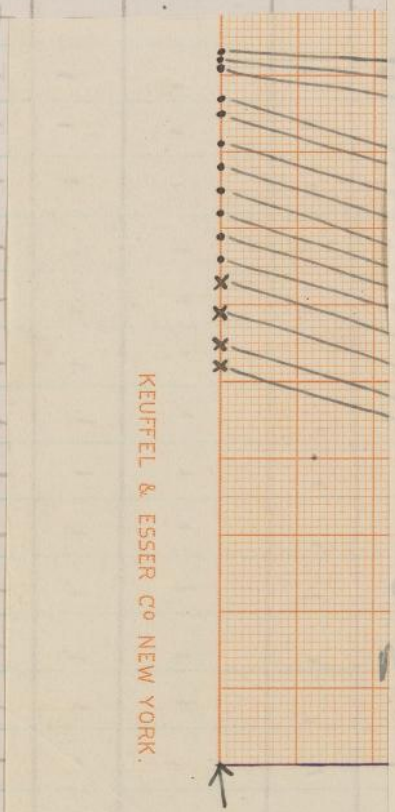
0	520	26	292	51	222	76	118
1	500	27	289	52	219	77	109
2	480	28	286	53	216	78	98
3	440	29	283	54	212	79	83
4	427	30	280	55	209	80	68
5	413	31	277	56	206	81	42
6	400	32	274	57	203	82	24
7	391	33	271	58	199	83	8
8	384	34	268	59	195	84	
9	377	35	266	60	192	85	
10	368	36	263	61	189		
11	362	37	260	62	186		
12	356	38	258	63	182		
13	352	39	255	64	178		
14	346	40	252	65	174		
15	341	41	250	66	170		
16	338	42	247	67	167		
17	333	43	245	68	163		
18	328	44	242	69	159		
19	323	45	239	70	154		
20	319	46	236	71	150		
21	315	47	233	72	145		
22	310	48	231	73	139		
23	305	49	228	74	132		
24	300	50	225	75	126		
25	296						

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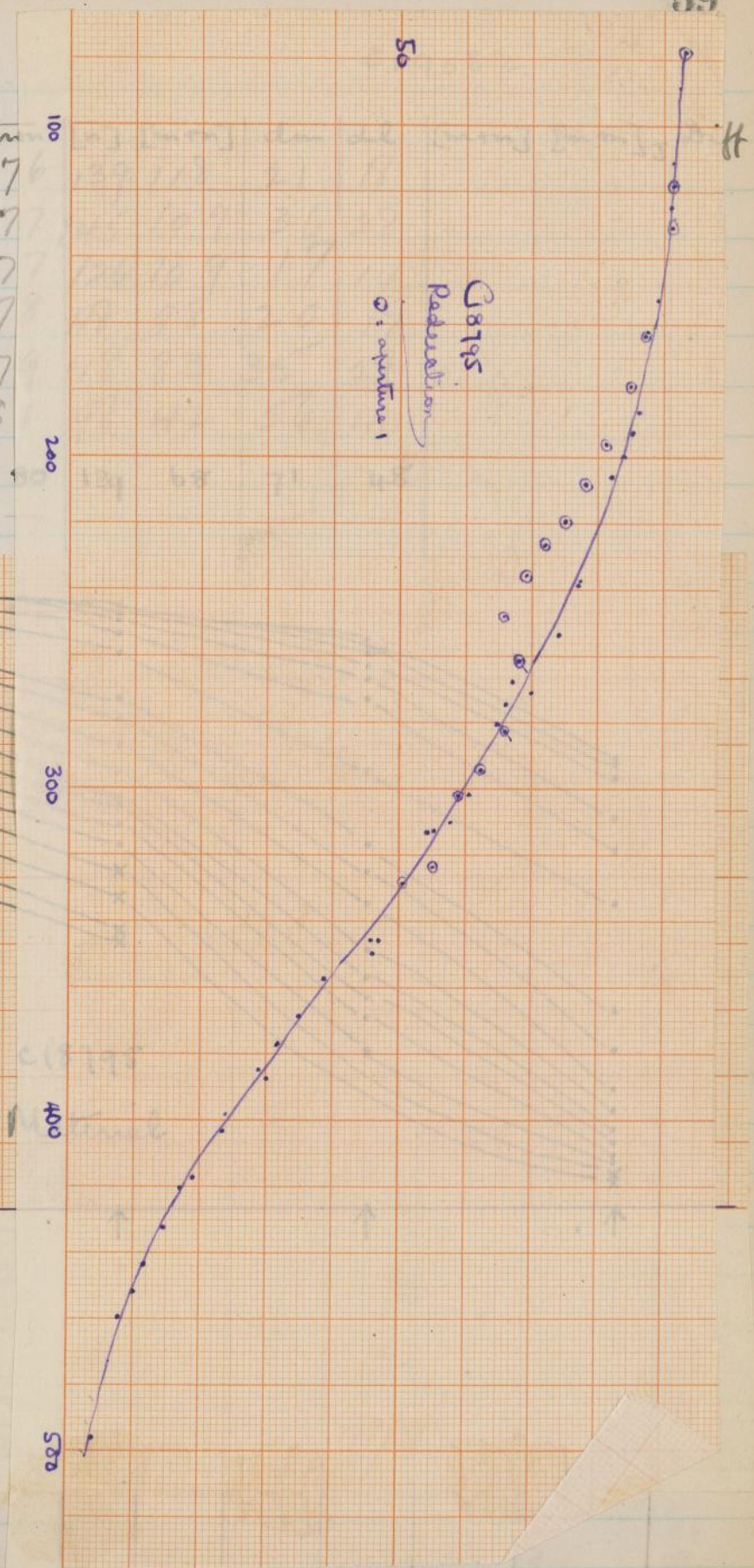
1924phae.proj.111cm

δ Cephei sep 1944

Linie	n	m+n	l+m+n	$\bar{n}$	$\bar{m}$
1	76	79	89	73	7
2	75	80	89	72	7
3	78	80	89	75	7
4	79	81	89	76	7
5	79	82	89	76	7
6	80	83	88	78	8
7	75	82	88	73	
8					
9					
10					
11					
12					
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28					
29					



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1924phae.proj.11[illegible]

aperture 9. Jupiter

C 19087

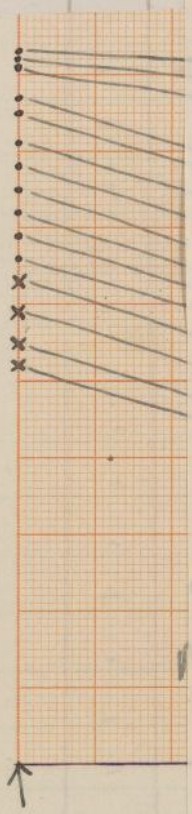
No.	n	m+n	l+m+n	$\bar{n}$	$\bar{m}+\bar{n}$	[n]	[m+n]	dm	dl
1	-	4	82		-		-		
2	-	-	82		-		-		
3	-	-	82		-		-		
4	-	4	82		4		427		
5	-	6	82		6		400		
6	-	11	83		11		362		
7	-	22	83		23		305		
8	-	38	83		39		255		
9	-	52	83		54		212		
10	-	61	83		64		178		
11	-	64	83		67		167		
12	-	66	83		69		159		
13	-	68	83		71		150		
14	-	69	83		72		145		
15	-	71	83		74		132		
16	-	73	83		76		118		
17	-	75	83		78		98		
18	-	76	83		79		83		
19	-	76	83		79		83		
20	-	74	83		77		109		
21	-	69	83		72		145		
22	-	52	84		54		216		
23	-	20	84		20		319		
24	-	2	84		2		480		
25	-	-	84		-				

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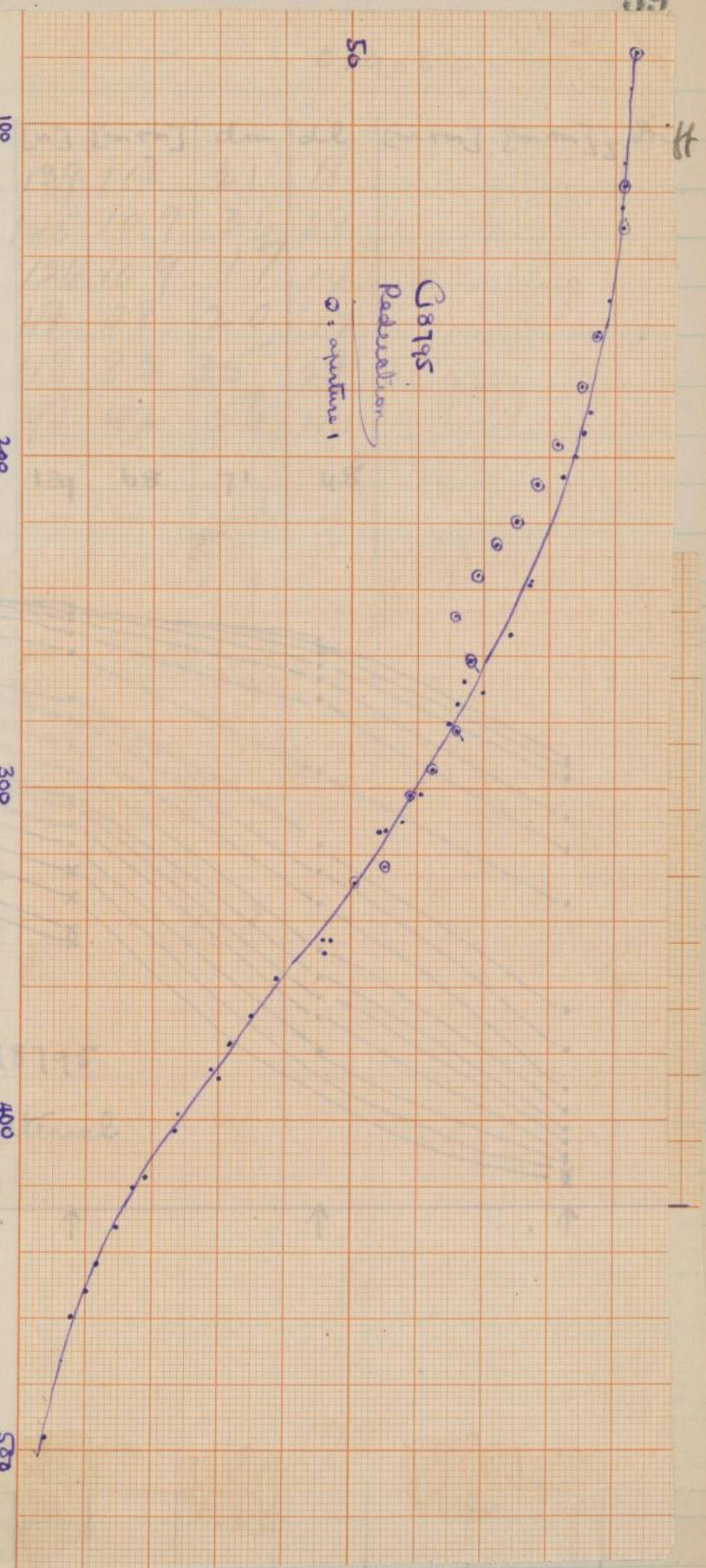
1924phae.proj.111@P

δ Cephei sup 1944

Linie	n	m+n	l+m+n	n̄	m̄
1	76	79	89	73	7
2	75	80	89	72	7
3	78	80	89	75	7
4	79	81	89	76	7
5	79	82	89	76	7
6	80	83	88	78	8
7	75	82	88	73	
8					
9					
10					
11					
12					
13					
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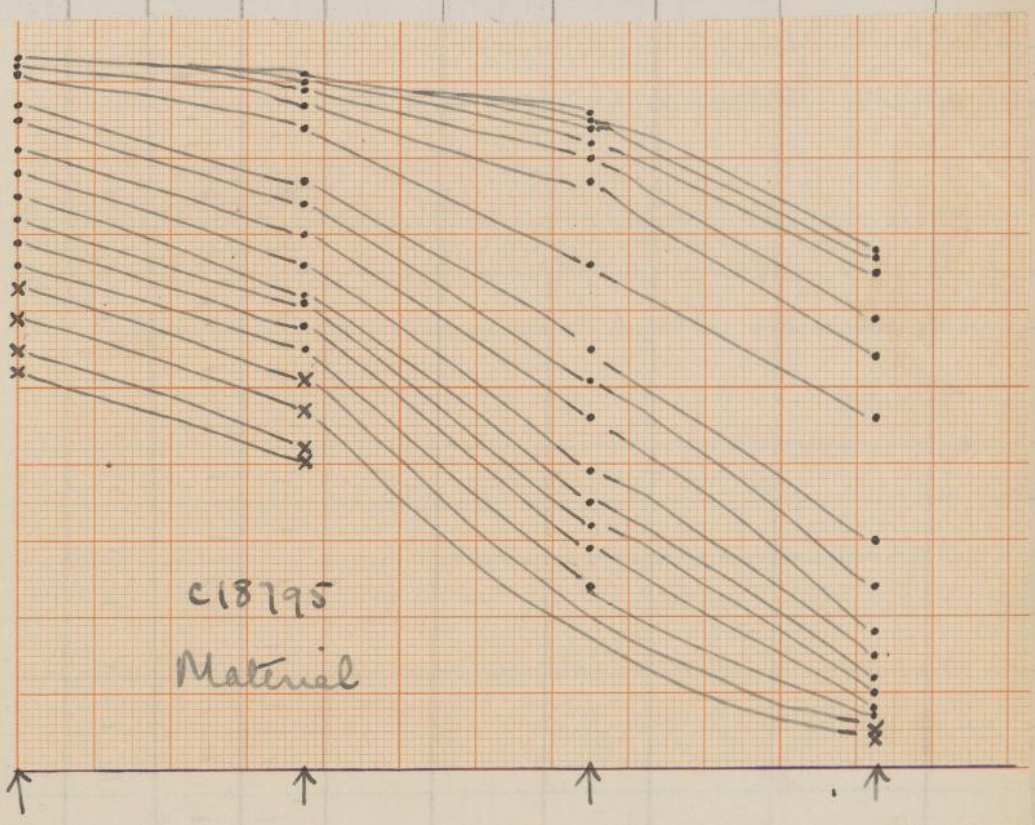
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1924phae.proj.1110P

C19082

δ Cephei gap 1544

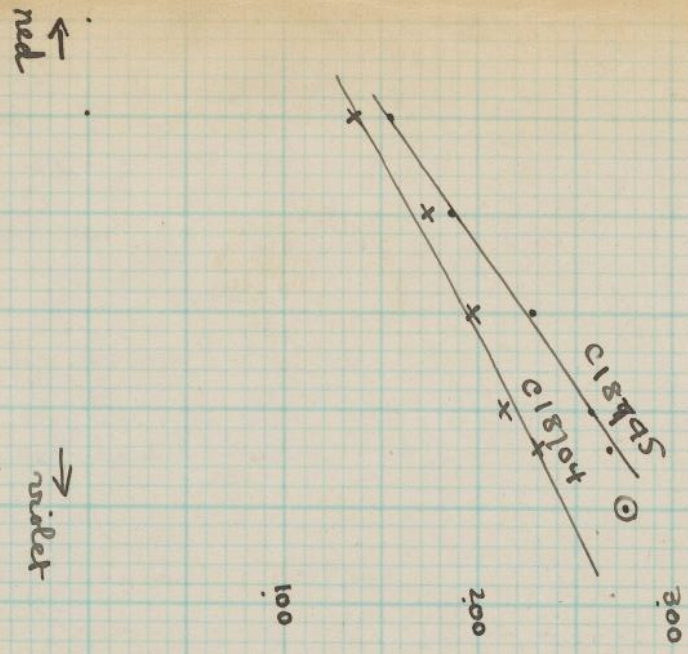
line	n	m-n	l-m-n	$\bar{n}$	m-n	[n]	[m-n]	dm	dl	[m-n]	[m-n]$_J$	Diff
1	76	79	89	73	76	139	118	21	18			
2	75	80	89	72	77	145	109	36	28			
3	78	80	89	75	77	126	109	17	14			
4	79	81	89	76	78	118	98	20	17			
5	79	82	89	76	79	118	83	35	28			
6	80	83	88	78	81	98	42	56	40			
7	75	82	88	73	80	139	68	71	48			
8												
9												
10												
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1924phae.proj.1116P



Difference, -β Ori and +J Gem, in hundredths of a magnitude

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1924phae.proj.11cep

88 C 19082

	n	mn	lmn	$\bar{n}$	$\bar{m}\bar{n}$	[n]	[mn]	dm	dl
30	–	–	–	–	–	–	–	–	
31	–	–	–	–	–	–	–	–	
32	"								
33	"								
34	"								
35	"								
36	"								
37	"								
38	"								
39	"								
40	"								
41	"								
42	"								
43	"								
44	"								
45	"								
46	"								
47	"								
48	"								
49	79	84	87	78	83	98	8	90	56
50									
51	–	–	–	–	–	–	–	–	
52	"								
53	"								
54	"								
55	"								
56	"								
57	"								
58	"								
59	"								

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1924phae.proj.11.tif

C 19082

	n	mtn	ltmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	dm	db
60	–	–	–	–	–	–	–	–	–
61	"								
62	"								
63	"								
64	"								
65	"								
66	"								
67	"								
68	"								
69	"								
70	"								
71	"								
72	"								
73	"								
74	"								
75	"								
76	"								
77	"								
78	"								
79									
80	76	83	87	85	82	126	24	102	61
81	80	82	87	79	81	83	42	41	31
82	81	82	87	80	81	68	42	26	21
83	79	83	87	78	82	98	24	74	49
84	–	–	–	–					
85	–	–	–	–	–	–	–	–	–
86	–	–	–	–	–	–	–	–	–
87	80	82	87	79	81	83	42	41	31
88	80	82	87	79	81	83	42	41	31
89	79	82	87	78	81	98	42	56	40

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1924phae.proj.11107

C 19082

Line	n	Ron	Lowtn	$\bar{n}$	mtn	[n]	[mtn]	dm	dl
90	–	–	–	–	–	–	–		
91	"								
92	"								
93	"								
94	"								
95	78	81	87	77	80	109	68	41	31
96	76	80	87	75	79	126	83	43	33
97	78	80	86	78	80	98	68	30	24
98	76	79	86	76	79	118	83	35	28
ε 99	34	78	86	34	78	268	98	170	79
100	73	77	86	73	77	139	109	30	24
101	73	76	86	73	76	139	118	21	18
102	73	76	86	73	76	139	118	21	18
κ 103	23	74	86	23	74	305	132	173	80
104	67	73	86	67	73	167	139	28	23
105	66	73	86	66	73	170	139	31	25
106	68	72	86	68	72	163	145	18	15
107	65	71	86	65	71	174	150	24	20
108	65	70	86	65	70	174	154	20	17
109	63	69	86	63	69	182	159	23	19
3 110	50	68	86	50	68	225	163	62	44
111	64	67	86	64	67	178	167	11	10
112	64	66	86	64	66	178	170	08	07
113	61	66	86	61	66	189	170	19	16
η 114	28	54	86	28	54	286	212	74	49
115	36	58	86	36	50	263	225	38	30
116	26	36	86	26	36	292	263	29	23
θ 117	20	38	86	20	38	319	258	61	43
ι 118	14	27	86	14	27	346	289	57	41
κ 119	11	20	85	11	20	362	319	43	33

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1924phae.proj.1110P

C 19082 84

Line	n	m tn	l tm tn	$\bar{n}$	$\overline{m\,tn}$	[n]	[m tn]	dm	dl
λ 120	8	16	85	384	337	47	35	→	→
μ 121	9	13	85	377	352	25	21	→	→
ν 122	–	–	–						

WP 15244

22 Andromedae, numeration arbitrary C 19082

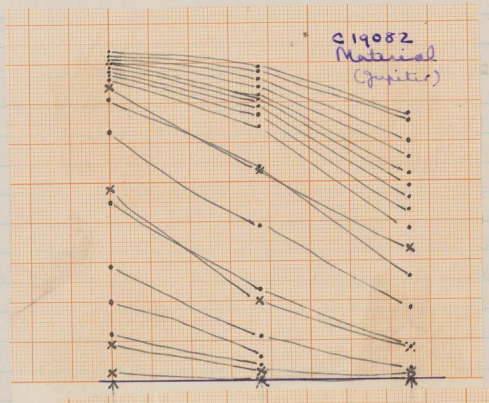
1	35	39	86	35	39	266	255	11	
2	37	41	86	37	41	260	250	10	
3	42	45	86	42	45	247	239	8	
4	44	49	86	44	49	242	228	14	
5	47	51	86	47	51	233	222	11	
6	45	53	86	45	53	239	216	23	
7	33	55	86	33	55	271	209	62	44
8	57	59	86	57	59	203	195	8	
9	58	60	86	58	60	199	192	7	
10	60	62	87	59	61	195	189	6	
11	60	63	87	59	62	195	186	9	
12	63	64	87	62	63	186	182	4	
13	62	65	87	61	64	189	178	11	
14	64	66	87	63	64	182	178	4	
15	63	66	87	62	65	186	174	12	
16	64	67	87	63	66	182	170	12	
17	66	68	87	65	67	174	167	7	
18	66	69	87	65	68	174	163	11	
19	67	71	87	66	70	170	154	16	
20	69	71	87	68	70	163	154	9	
21	70	72	87	69	71	159	156	9	
22	69	72	87	68	71	163	150	13	
23	69	72	87	68	71	163	150	13	
24	70	71	87	69	70	159	154	5	

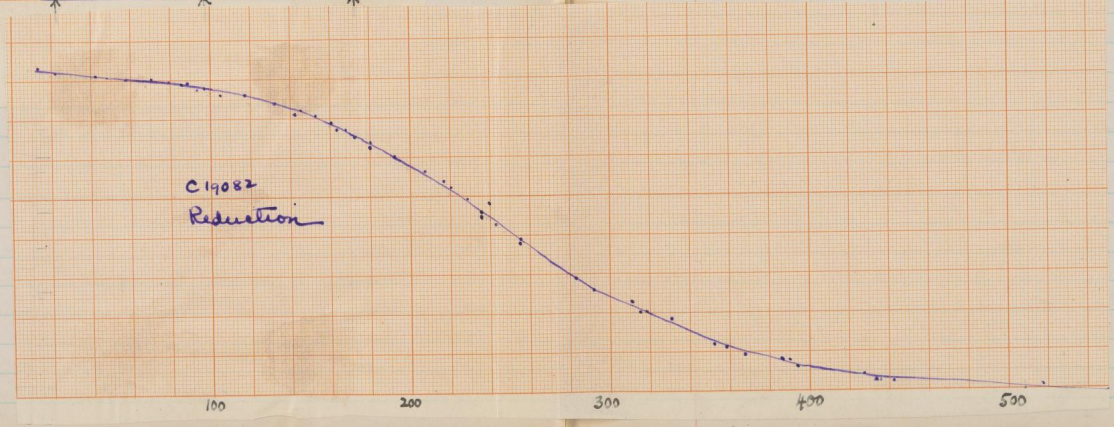
over two

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C 19082

dm	Reading				
10	(83)	220			
20	82	↓	52	420	4
30	(82)				
40	81	240	45	440	3
60	80	260	37	460	(2.5)
80	79	280	30	480	2
100	78	300	24	500	1
120	76	320	20	520	0
140	72.5	340	15		
160	68.5	360	11		
180	63.5	380	8		
200	58	400	6		





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1924phae.proj.11CP

22 And

t 19082

Line	n	mm	l-m-n	$\bar{n}$	$\overline{m-n}$	[n]	[m-n]	dm	dl
25	70	72	87	69	71	159	150	09	08
26	69	72	87	68	71	163	150	13	11
27	70	71	87	69	70	159	154	05	04
28	70	71	87	69	70	159	154	05	04
29	68	71	87	67	70	167	154	13	11
30	68	72	87	67	71	167	150	17	14
31	68	71	87	67	70	167	154	13	11
32	69	71	87	68	70	163	154	09	08
33	71	71	87	70	70	154	154	00	04
34	70	71	87	69	70	159	154	05	04
35	69	71	87	68	70	163	154	09	08
36	69	71	87	68	70	163	154	09	08
37	71	71	87	70	70	154	154	00	00
38	69	71	87	68	70	163	154	09	08
39	68	71	87	67	70	167	154	13	11
40	67	70	87	66	69	170	159	11	10
41	67	71	87	66	70	170	154	16	14
42	66	70	87	65	69	174	159	15	13
43	69	70	88	68	68	167	163	04	04
44	66	70	88	64	68	178	163	15	13
45	66	70	88	64	68	178	163	15	13
46	67	69	88	65	67	174	167	05	04
47	69	70	87	68	69	163	159	04	04
48	65	69	87	64	68	178	163	15	13
49	46	68	87	45	67	239	167	72	48
50	64	69	87	63	68	182	163	19	16
51	64	69	87	63	68	182	163	19	16
52	65	69	87	64	68	178	163	15	13
53	61	69	87	60	68	192	163	29	23
54	62	68	81	61	67	189	167	22	18

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1924phae.proj.11166

C. 19082

C 19082

Line	n	m-tn	l-m-tn	$\bar{n}$	$\bar{m}$-$\bar{t}$$\bar{n}$	[n]	[m-tn]	dm	dl
55	64	69	88	62	67	186	167	19	16
56	65	68	88	63	66	182	170	12	10
57	65	68	88	63	66	182	170	12	10
58	62	68	88	60	66	192	170	22	18
59	65	68	88	63	66	182	170	12	10
60	64	68	88	62	66	186	170	16	14
61	59	68	88	57	66	203	170	33	26
62	61	67	88	59	65	195	174	21	18
63	60	67	88	58	65	199	174	25	21
64	62	67	88	60	65	192	174	18	15
65	61	67	88	59	65	195	174	21	18
66	59	67	88	55	65	209	174	35	29
67	62	66	88	60	64	192	178	14	12
68	61	66	88	59	64	195	178	17	14
69	63	67	88	61	65	189	174	15	13
70	61	66	88	59	64	195	178	17	14
71	61	66	88	59	64	195	178	17	14
72	61	67	88	59	65	195	174	21	18
73	61	66	88	59	64	195	178	17	14
74	61	66	88	59	64	195	178	17	14
75	60	66	88	58	64	199	178	21	18
76	59	66	88	57	64	203	178	25	21
77	67	66	88	55	64	209	170	39	30
78	—	—	—	—	—	—	—	—	—
79	38	65	88	37	63	260	182	78	51
80	60	65	88	58	63	199	182	17	14
81	55	65	88	54	63	212	182	30	24
82	60	66	88	58	64	199	178	21	18
83	59	64	88	57	62	203	186	17	14
84	57	64	88	55	62	209	186	23	19

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1924phae.proj.11100

22 Andromedae C 19082

Line	n	mtn	Lmtn	$\bar{n}$	mtn	[n]	[mtn]	dm	dl
85	60	64	88	58	62	199	186	13	11
86	54	63	88	53	61	216	189	27	21
87	56	63	88	55	61	209	189	20	17
88	59	63	89	57	61	203	189	14	12
89	58	62	89	56	60	206	192	14	12
90	56	62	89	54	60	217	192	20	17
91	54	60	89	52	58	219	199	20	17
92	55	60	89	53	58	216	199	17	14
93	54	60	89	52	58	219	199	20	17
94	55	58	89	53	56	216	206	10	09
95	52	58	89	50	56	225	206	29	23
96	48	52	89	46	50	236	225	11	10
ε 97	7	54	89	7	52	391	219	172	79
98	42	53	89	41	51	250	222	28	23
99	43	51	89	42	50	247	225	22	18
100	43	51	89	42	50	247	225	22	18
101	41	50	89	40	49	252	229	44	33
K 102	6	48	89	6	46	400	236	164	78
103	25	44	89	34	43	268	245	23	19

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1924phae.proj.11[illegible]

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1924phae.proj.1116P

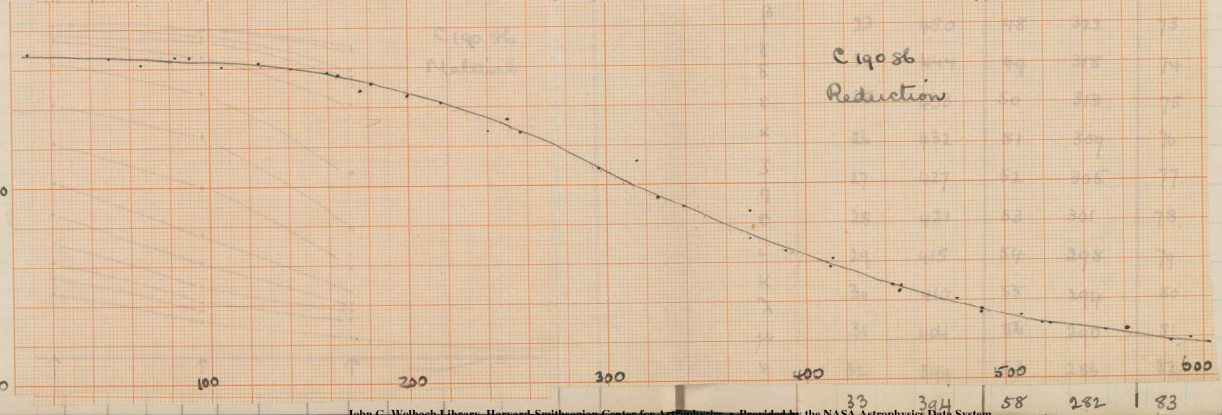
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C 19086. Three std apertures on Vega

aperture 3 μeq 1554

Reduced to 84

Line	n	mm	lmm	$\bar{n}$	$\overline{mm}$	[n]	[mm]	dm	dl	$[mm]_3$	$[mm]_7$	$[mm]_5$	Σ	Mean
β	67	79	82	69	81	229	135	94	58			149		149
γ	72	81	82	74	83	127	30	167	78			77		77
δ	68	81	82	70	83	224	30	194	83			89		89
ε	57	79	82	59	81	278	135	143	73			129		129
κ	75	78	82	77	80	173	140	033	26			143		143
ζ	42	75	83	43	76	346	182	164	78	182		181	363	182
η	28	66	83	28	67	421	241	180	81	241	272	251	764	255
θ	18	55	83	18	56	486	290	196	84	290	321	289	900	300
ι	16	42	83	16	43	501	346	255	76	346	373	376	094	365
κ	12	31	83	12	31	550	404	146	74	404	415	418	237	412
λ	11	24	83	11	24	564	444	120	67	444	452		896	448
μ	10	18	83	10	18	575	486	89	56	486	490			488
ν	9	14	83	9	14	590	524	66	116		529			529
ξ	7	12	83	8	12	[illegible]	550				545			545
ο														



C 19086

Line	n	mm	lmm	$\bar{n}$	$\overline{mm}$	[n]	[mm]	dm	dl	$[mm]_3$	$[mm]_7$	$[mm]_5$	Σ	Mean
β	67	79	82	69	81	229	135	94	58			149		149
γ	72	81	82	74	83	127	30	167	78			77		77
δ	68	81	82	70	83	224	30	194	83			89		89
ε	57	79	82	59	81	278	135	143	73			129		129
κ	75	78	82	77	80	173	140	033	26			143		143
ζ	42	75	83	43	76	346	182	164	78	182		181	363	182
η	28	66	83	28	67	421	241	180	81	241	272	251	764	255
θ	18	55	83	18	56	486	290	196	84	290	321	289	900	300
ι	16	42	83	16	43	501	346	255	76	346	373	376	094	365
κ	12	31	83	12	31	550	404	146	74	404	415	418	237	412
λ	11	24	83	11	24	564	444	120	67	444	452		896	448
μ	10	18	83	10	18	575	486	89	56	486	490			488
ν	9	14	83	9	14	590	524	66	116		529			529
ξ	7	12	83	8	12	[illegible]	550				545			545
ο														

C 19086

Line						
	9	590	34	389	59	278
	10	575	35	382	60	275
	11	564	36	377	61	270
β	12	550	37	372	62	266
γ	13	538	38	368	63	261
δ	14	524	39	362	64	256
ε	15	511	40	358	65	251
κ	16	501	41	354	66	247
ζ	17	493	42	350	67	241
η	18	486	43	346	68	235
θ	19	478	44	340	69	229
ι	20	470	45	336	70	224
κ	21	463	46	331	71	218
λ	22	457	47	326	72	211
μ						
ν						
ξ						
ο						

Mean
63
73
77
81
26
80
80
80
77
59
51
40
32
19

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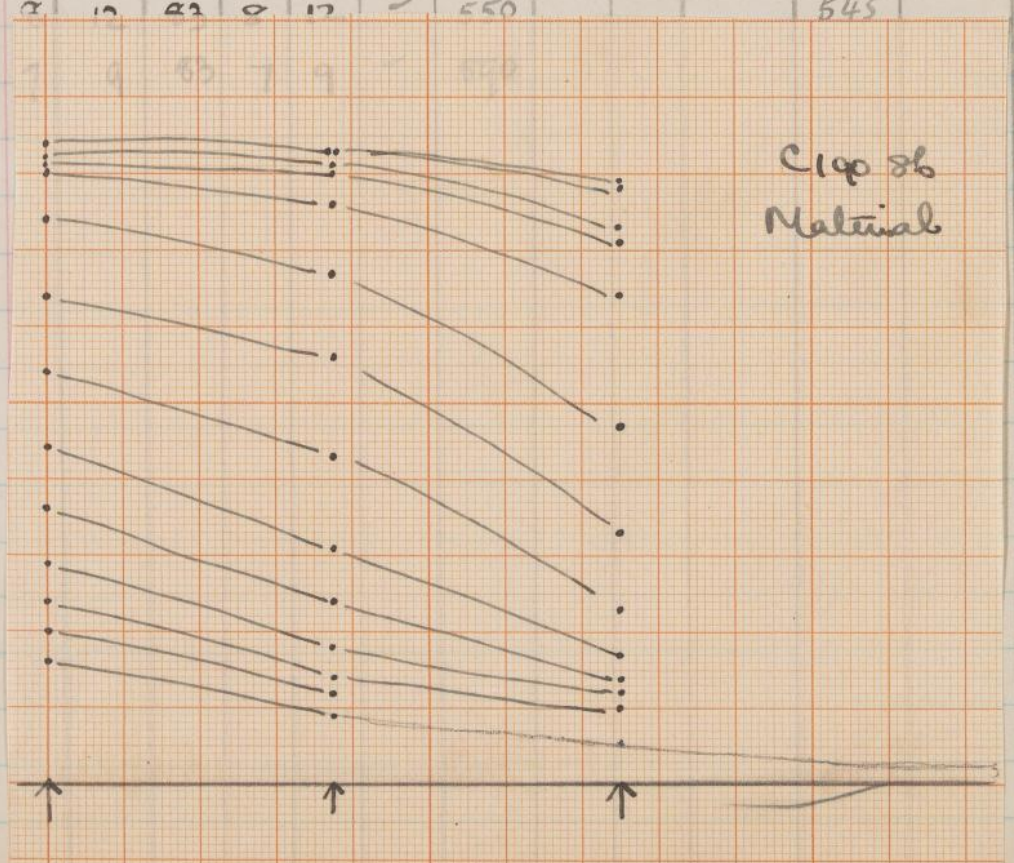
1924phae.proj.1110P

C 19086. Three std apertures on Vega

aperture 3 Sep 1554

Reduced to 84

Line	n	mm	lmm	$\bar{n}$	$\overline{mm}$	[n]	[mm]	dm	dl	$[mm]_3$	$[mm]_7$	$[mm]_5$	Σ	Mean
β	67	79	82	69	81	229	135	94	58			149		149
γ	72	81	82	74	83	197	30	167	78			77		77
δ	68	81	82	70	83	224	30	194	83			89		89
ε	57	79	82	59	81	278	135	143	73			129		129
K	75	78	82	77	80	173	140	033	26			143		143
3	42	75	83	43	76	346	182	164	78	182		181	363	182
η	28	66	83	28	67	421	241	180	81	241	272	251	764	255
θ	18	55	83	18	56	486	290	196	84	290	321	289	900	300
ι	16	42	83	16	43	501	346	255	76	346	373	375	1094	365
κ	12	31	83	12	31	550	404	146	74	404	415	418	1237	412
λ	11	24	83	11	24	564	444	120	67	444	452		896	448
μ	10	18	83	10	18	575	486	89	56	486	490			488
ν	9	14	83	9	14	590	524	66	46		529			529
ξ											545			645
ο														



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C 19086. Three std apertures on Vega

aperture 3 Sep 1554

Reduced to 84

Line	n	mm	l-mm	$\bar{n}$	$\overline{mm}$	[n]	[mm]	dm	dl	$[mm]_3$	$[mm]_7$	$[mm]_5$	Σ	Mean
β	67	79	82	69	81	229	135	94	58			149		149
γ	72	81	82	74	83	197	30	167	78			77		77
δ	68	81	82	70	83	224	30	194	83			89		89
ε	57	79	82	59	81	278	135	143	73			129		129
κ	75	78	82	77	80	173	140	033	26			143		143
ζ	42	75	83	43	76	346	182	164	78	182		181	363	182
η	28	66	83	28	67	421	241	180	81	241	272	251	764	255
θ	18	55	83	18	56	486	290	196	84	290	321	289	900	300
ι	16	42	83	16	43	501	346	255	76	346	373	376	1094	365
κ	12	31	83	12	31	550	404	146	74	404	415	418	1237	412
λ	11	24	83	11	24	564	444	120	67	444	452		896	448
μ	10	18	83	10	18	575	486	89	56	486	490			488
ν	9	14	83	9	14	590	524	66	46		529			529
ξ	8	12	83	8	12	-	550				545			645
ο	7	9	83	7	9	-	590							

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Line									Mean
	9	590	34	389	59	278			
	10	575	35	382	60	275			
	11	564	36	377	61	270			63
β	12	550	37	372	62	266			73
γ	13	538	38	368	63	261			77
δ									81
ε	14	524	39	362	64	256			26
κ								q	80
ʃ	15	511	40	358	65	251		o	80
η								50	80
θ	16	501	41	354	66	247		4	77
ι	17	493	42	350	67	241			59
κ									
λ	18	486	43	346	68	235			51
μ	19	478	44	340	69	229			40
ν									32
ξ	20	470	45	336	70	224			19
ο	21	463	46	331	71	218			
	22	457	47	326	72	211			
β	23	450	48	322	73	204			
γ									
δ	24	444	49	318	74	197			
ε	25	438	50	313	75	189			
κ	26	432	51	309	76	182			
ʃ	27	427	52	305	77	173			
η									
θ	28	421	53	301	78	164			
ι	29	415	54	298	79	152			
κ	30	410	55	294	80	140			
λ	31	404	56	290	81	135			
μ									
ν	32	399	57	286	82	80			
	33	394	58	282	83	30			

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Aperture β1 μφ 1555

Line	n	m+n	b+m+n	n̄	m+n	[n]	[m+n]	dm	dl	dl₁	dl₂	dl₃	Σ	Mean
β	76	82	83	77	83	173	30	143	73			63		63
γ	78	82	83	79	83	152	30	122	67			73		73
δ	76	83	84	77	84	173	..	..				77		77
ε	69	82	84	69	82	229	80	149	75			81		81
κ	80	81	84	80	81	140	135	05	04			26		26
ʃ	57	80	84	57	80	286	140	146	74		78	81	159	80
η	42	74	84	42	74	350	197	171	79	79	81		160	80
θ	30	64	84	30	64	410	256	154	76	76	84		160	80
ι	28	54	84	28	54	421	298	123	68	68	76		154	77
κ	25	44	84	25	44	438	340	98	59	59				59
λ	22	36	84	22	36	457	377	78	51	51				51
μ	20	29	84	20	29	470	415	55	40	40				40
ν	18	24	84	18	24	486	444	42	32	32				32
ξ	17	20	84	17	20	493	470	23	19	19				19
ο	14	16	84	14	16	524	501	23						

Aperture 5 μφ 1555

β	45	69	83	46	70	331	224	107	63					
γ	54	78	83	55	79	294	152	142	73					
δ	47	77	83	48	78	322	164	158	77					
ε	35	73	84	35	73	382	204	178	81					
κ	65	71	84	65	71	251	218	33	26					
ʃ	25	64	84	25	64	438	256	182	81					
η	13	47	84	13	47	538	326	212	86					
θ	9	33	84	9	33	590	394	196	84					
ι	9	23	84	9	23	590	450	140	72					
κ	9	17	84	9	17	590	493	97	59					
λ	7	14	84	7	14	-	524							
μ	6	12	84	6	12	-	550							
ν	5	10	84	5	10	-	575							

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1924phae.proj.11tap

C 19686

No. 4, δ Cephei

Line	n	mm	lm-m	m	m-m	[m]	[m-m]	dm	dl	[v-m]	[m-m] Vega	Diff
1	63	67	81	65	69	251	229	22	18			
2	65	69	81	67	72	241	211	20	17			
3	67	69	81	69	72	229	211	18	15			
4	69	70	81	72	73	211	204	07	06			
5	70	72	81	73	75	204	189	05	04			
6	71	73	81	74	76	197	182	15	13			
β 7	66	74	81	68	77	235	173	62	44	173	149	24
8	74	75	81	77	78	173	164	09	08			
9	74	75	81	77	78	173	164	09	08			
10	75	76	81	78	79	164	152	12	10			
11	75	77	81	78	80	164	140	24	20			
12	77	78	81	80	81	140	135	05	04			
13	74	77	81	79	80	152	140	12	10			
14	78	79	81	81	82	135	80	55	40			
15	78	78	81	81	81	135	135	0	0			
16	-	-	-	-	-							
17	-	-	-	-	-	-	-	-	-			
18	-	-	-	-	-	-	-	-	-			
19	-	-	-	-	-	-	-	-	-			
20	-	-	-	-	-	-	-	-	-			
21	-	-	-	-	-	-	-	-	-			
22	78	80	81	81	83	135	30	105	62			
23	-	-	-	-	-	-	-	-	-			
24	-	-	-	-	-	-	-	-	-			
25	-	-	-	-	-	-	-	-	-			
26	-	-	-	-	-	-	-	-	-			
27	-	-	-	-	-	-	-	-	-			
29	-	-	-	-	-	-	-	-	-			
29	-	-	-	-	-	-	-	-	-			
30	-	-	-	-	-	-	-	-	-			

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Line	n	m+n	l+m+n	$\bar{n}$	$\bar{m}+\bar{n}$	[n]	[m+n]	dm	dl	[m-n]	[m-n] vega	Diff
31	-	-	-	-	-	-	-	-	-			
32	-	-	-	-	-	-	-	-	-			
33	-	-	-	-	-	-	-	-	-			
34	-	-	-	-	-	-	-	-	-			
35	-	-	-	-	-	-	-	-	-			
36	-	-	-	-	-	-	-	-	-			
37	-	-	-	-	-	-	-	-	-			
38	-	-	-	-	-	-	-	-	-			
39	-	-	-	-	-	-	-	-	-			
40	-	-	-	-	-	-	-	-	-			
41	-	-	-	-	-	-	-	-	-			
42	-	-	-	-	-	-	-	-	-			
43	-	-	-	-	-	-	-	-	-			
44	76	79	82	78	81	164	135	29	23			
45	77	78	82	79	80	152	140	12	10			
46	77	78	82	79	80	152	140	12	10			
47	78	79	82	80	81	140	135	05	04			
48	77	79	82	79	81	152	135	07	06			
γ 49	73	79	83	74	80	197	140	57	[41]	[140]	77	63
50	76	79	83	77	80	173	140	33	26			
51	78	79	83	79	80	152	140	12	10			
52	76	79	83	77	80	173	140	33	26			
53	74	77	83	75	78	189	164	25	21			
54	72	78	83	73	79	304	152	52	38			
55	75	78	83	76	79	182	152	30	24			
56	77	78	83	78	79	164	152	12	10			
57	76	78	83	77	79	173	152	21	18			
58	76	77	83	77	78	173	164	09	08			
59	76	77	83	77	78	173	164	09	08			
60	75	77	83	76	78	182	164	19	16			

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δ Cephei

C 19086

Line	n	mm	lmm	$\bar{n}$	$\overline{mm}$	[n]	[m+m]	dm	dl	[n-m]	[m-m] Vega	Diff
61	75	77	83	76	78	182	164	18	15			
62	73	77	83	74	78	197	164	33	26			
63	75	76	83	76	77	182	173	09	08			
64	73	77	83	74	78	197	164	33	26			
65	74	76	83	75	77	189	173	16	14			
66	75	76	83	76	77	182	173	09	08			
67	70	73	83	71	74	218	197	21	18			
68	72	76	83	73	77	204	173	31	25			
69	72	77	83	73	78	204	164	40	31			
70	76	76	83	77	77	173	173	0	0			
71	75	76	83	76	77	182	173	09	08			
72	74	76	83	75	77	189	173	16	14			
73	74	75	83	75	76	189	182	07	06			
74	74	76	83	75	77	189	173	16	14			
75	73	76	83	74	77	197	173	24	20			
76	72	76	83	73	77	204	173	31	25			
77	74	76	83	75	77	189	173	16	14			
78	73	75	83	74	76	197	182	16	14			
79	73	76	83	74	77	197	173	24	20			
δ 80	65	75	83	66	76	247	182	65	[45]	182	89	93
81	73	73	83	74	74	197	197	0	0			
82	71	74	83	72	75	211	189	22	18			
83	65	75	83	66	76	247	182	65	45			
84	70	75	83	71	76	218	182	36	28			
85	71	75	83	72	76	211	182	29	23			
86	70	75	83	71	76	218	182	36	28			
87	71	75	83	72	76	211	182	29	23			
88	70	74	83	71	75	218	189	29	23			
89	73	75	83	74	76	197	182	15	13			
90	67	74	83	68	75	235	189	46	34			

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	Line	n	m+n	l+m+n	$\overline{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl	[m+n]	[m+n] Vega	Diff
	91	70	74	83	71	75	218	189	29	23			
	92	72	75	84	72	75	211	189	22	18			
	93	72	74	84	72	74	211	197	14	12			
	94	71	73	84	71	73	28	204	14	12			
	95	67	73	84	67	73	241	204	37	29			
	96	65	72	84	65	72	251	211	40	31			
	97	67	72	84	67	72	241	211	30	24			
	98	61	70	84	61	70	270	324	46	34			
ε	99	33	69	84	33	69	394	229	165	78	229	129	100
	100	55	67	84	55	67	294	241	53	39			
	101	54	67	84	54	67	298	241	57	41			
	102	50	65	84	50	65	313	251	62	44			
κ	103	25	63	84	25	63	438	261	177	80	261	143	118
	104	50	60	84	50	60	313	275	38	30			
	105	50	60	84	50	60	313	275	38	30			
	106	51	59	84	51	59	309	278	31	25			
	107	47	55	84	47	55	326	294	32	26			
	108	49	53	84	49	53	318	301	17	14			
	109	47	51	84	47	51	326	309	17	14			
ζ	110	40	50	84	40	50	358	313	45	34	313	182	131
	111	–	–	–	–	–	–	–	–	–			
	112	–	–	–	–	–	–	–	–				
	113	–	–	–	–	–	–	–	–	–			
η	114	24	34	84	24	34	444	389	55	40	389	255	134
	115	–	–	–	–	–	–	–	–	–			
	116	–	–	–	–	–	–	–	–	–			
θ	117	19	25	85	19	25	478	438	40	31	438	300	138
	118	14	19	85	14	19	524	478	46	34			
	119	10	16	85	10	16	575	501	74	49			
	120	10	14	85	10	14	575	524	51	37			

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1924phae.proj.111GP

C 19086 No. 5 μεφ 1557 H.D. 224151 Class BO

Line	n	mm	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl
β	19	26	84	19	26	478	432	46	34
1	39	44	84	39	44	362	340	22	18
2	43	47	84	43	47	346	326	20	17
3	40	46	84	40	46	358	331	27	22
4	40	45	84	40	45	358	336	22	18
5	42	45	84	42	45	350	336	14	12
γ	35	45	84	35	45	382	336	46	34
6	31	39	84	31	39	404	362	42	32
4026	31	37	85	31	37	404	372	32	26
ε	21	33	85	21	33	463	394	69	47
3	13	21	84	13	21	538	463	75	50
7	6	14	85	6	14	-	524	-	

No. 6 μεφ 1556 H.D. 217476 GOp

Line	n	mm	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl
1	32	36	81	33	37	394	372	22	18
2	27	38	81	28	39	421	362	59	42
3	36	40	81	37	41	372	354	18	15
4	38	41	81	39	42	362	350	12	10
5	37	44	81	38	45	368	336	32	26
6	36	45	81	37	46	372	331	41	31
β 7	32	46	81	33	48	394	322	72	48
8	43	48	81	44	49	340	318	22	18
9	47	50	81	49	52	318	305	13	11
10	45	51	81	47	53	326	301	25	21
11	47	53	81	49	55	318	294	24	20
12	51	54	81	53	56	301	290	11	10
13	48	56	81	50	58	313	282	31	25
14	57	57	81	59	59	301	278	23	19

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1924phae.proj.11169

C-19086

Line	n	m-n	l-m-n	$\bar{n}$	$\overline{m-n}$	[n]	[m-n]	dm	dl
15	52	58	81	54	60	298	275	23	19
16	56	57	81	58	59	282	278	04	04
17	51	53	81	53	55	301	294	07	06
18	50	53	81	52	55	305	294	11	10
19	48	58	81	50	60	313	275	38	30
20	52	58	81	54	60	298	275	23	19
21	54	58	81	56	60	290	275	15	13
22	52	57	81	54	59	298	278	20	17
23	51	57	81	53	59	301	278	23	19
24	50	58	81	52	60	305	275	30	24
25	53	56	81	55	58	294	282	12	10
26	45	56	81	47	58	326	282	44	33
27	44	56	81	46	58	331	282	49	36
@	48	55	81	50	57	313	286	27	22
28	45	55	81	47	57	326	286	40	31
29	40	55	81	41	56	354	290	64	44
30	45	54	81	47	56	326	290	36	28
31	41	53	81	42	55	350	294	56	40
32	49	52	81	51	54	309	298	11	10
33	40	51	81	41	52	354	305	49	36
34	45	53	81	47	52	326	305	21	18
35	36	50	81	37	51	372	309	63	44
36	40	49	81	41	50	354	313	41	31
37	40	40	81	41	50	354	313	~~41~~	31
38	34	48	81	35	49	389	318	71	48
39	39	47	81	40	48	358	282	76	50
40	28	46	81	29	47	415	326	89	56
41	34	46	81	35	47	389	326	63	44
42	30	46	82	31	47	404	326	78	51
43	31	45	82	32	46	399	331	68	46
44	31	44	82	32	45	399	336	63	44

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1924phae.proj.111GP

C 19086

Line	n	m+n	l+m+n	n̄	m̄+n	[n]	[m+n]	dm	dl
45	36	45	82	37	46	372	331	41	31
46	35	44	82	36	45	377	336	41	31
47	39	43	82	40	44	358	340	18	15
48	34	43	82	35	44	382	340	42	32
δ 49	23	42	82	23	43	450	346	*104	62
50	32	42	82	33	43	394	346	48	36
51	26	41	82	26	42	432	350	82	53
52	27	40	82	27	41	427	354	73	49
53	20	40	82	20	41	476	354	116	66
54	26	40	82	26	41	432	354	78	51
55	26	40	82	26	41	432	354	78	51
56	34	39	82	35	40	382	358	24	20
57	26	39	82	26	40	432	358	74	49
58	30	38	82	31	39	404	362	42	32
59	25	38	82	25	39	438	362	76	50
60	32	37	82	33	38	394	368	26	21
61	25	38	82	25	39	438	362	76	50
62	23	36	82	23	37	450	372	78	51
63	26	35	82	26	36	432	377	55	40
64	20	35	82	20	36	470	377	93	58
65	24	35	82	24	36	444	377	67	46
66	26	35	82	26	36	432	377	55	40
67	21	33	82	21	34	463	389	74	49
68	17	33	82	17	34	493	389	104	62
69	16	33	82	16	34	501	389	112	64
70	26	32	82	26	33	432	394	38	30
71	24	33	82	24	34	444	389	55	40
72	23	32	82	23	33	450	394	56	40
73	23	31	82	23	32	451	399	51	37
74	22	32	82	22	33	457	394	63	44

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1924phae.proj.11167

C 19056

Line	w	w+w	b+w+w	$\bar{w}$	w+w	[w]	[w+w]	dw	db
75	28	31	82	28	32	421	399	22	18
76	16	31	82	16	32	501	399	102	61
77	17	31	82	17	32	493	399	94	58
78	20	30	82	20	31	470	404	66	46
79	21	31	82	21	32	463	399	64	44
80	17	30	82	17	31	493	404	89	56
81	25	30	82	25	31	438	404	34	27
82	19	30	82	19	31	478	404	74	49
83	15	28	82	15	28	511	421	90	56
84	17	28	82	17	28	493	421	72	48
85	20	28	82	20	28	470	421	49	36
86	17	31	82	17	32	493	399	94	58
87	15	26	82	15	26	511	432	79	56
a	16	26	82	16	26	501	432	69	47
88	16	26	82	16	26	501	432	69	47
89	19	25	82	19	25	478	438	40	31
90	17	24	82	17	24	493	444	49	36
91	19	23	82	19	23	478	450	28	23
92	18	22	82	18	22	486	457	29	23
93	20	22	82	20	22	470	457	13	11
94	15	21	82	15	21	511	463	48	36
95	11	19	82	11	19	564	478	86	55
96	10	18	82	10	18	575	486	89	56
97	10	17	82	10	17	575	493	82	53
98	8	11	82	8	11?	-	564	-	-
99	1	14	82	1	14	-	524	-	-
100	3	12	82	3	12	-	550	-	-
101	5	12	82	5	12	-	550	-	-
102	4	11	82	4	11	-	564	-	-
103	0	10	82	0	10	-	575	-	-
104	2	9	82	2	9	-	590	-	-

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1924phae.proj.111QP

c 19086

Line	n	mtn	ltmtn	$\bar{n}$	mtn	[n]	[mtn]	dm	dl
105	4	9	82	4	9	–	590	–	
106	3	9	82	3	9	–	590	–	
107	4	8	82	4	8	–	–	–	

No. 7, o Andromedae, μ𝔓 1557 B5

	n	mtn	ltmtn	$\bar{n}$	mtn	[n]	[mtn]	dm	dl
β	58	21	85	57	70	286	224	62	44
γ	73	81	85	72	80	211	140	71	48
δ	69	80	85	68	79	235	152	83	53
ι	77	80	85	76	79	182	152	30	24
2	78	80	85	77	79	173	152	21	18
ε	66	78	85	59	77	278	173	105	62
κ	77	75	85	71	74	218	197	21	18
3	50	69	85	49	68	318	235	83	53
η	38	55	85	38	54	368	298	70	48
θ	28	45	85	28	44	421	340	81	53
ι	24	38	85	24	38	444	368	76	50
κ	34	34	86	24	34	444	389	55	40
λ	20	30	85	20	30	470	410	60	42
μ	19	24	85	19	24	478	444	34	27

No. 7a, 2 Andromedae, μ𝔓 1558

β	15	31	85	15	31	511	404	197	84
γ	22	50	85	22	49	457	318	139	72
δ	17	46	85	17	45	493	331	162	78
ε	9	38	85	9	38	590	368	222	81
κ	20	33	85	20	33	470	450	20	17
ι	6	24	85	6	24	–	438	–	
η	2	13	85	2	13	–	538	–	–
θ	1	8	85	1	8	–	–	–	–
ι	1	6	85	1	6	–	–	–	–

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1924phae.proj.11.tif

No. 8, p Cassiopeiae, Sep 1558 Reduced to 84

F8

	Line	n	m-t-n	l-t-m-t-n	$\bar{n}$	m-t-n	[n]	[m-t-n]	dm	dl
	1	41	46	85	41	45	354	336	18	15
	2	36	48	85	36	47	377	326	51	37
	3	45	50	85	44	49	340	318	22	18
	4	49	51	85	48	50	322	313	09	08
	5	47	54	85	46	53	331	301	30	24
	6	47	55	85	46	54	331	298	33	26
4861	7	44	58	85	43	57	346	286	60	42
	8	54	60	85	53	59	301	278	23	19
	9	59	62	85	58	61	282	270	12	10
	10	57	63	85	56	62	290	266	24	20
	11	60	65	85	59	64	278	256	22	18
	12	64	67	85	63	66	261	247	14	12
	13	61	69	85	60	68	275	235	40	31
	14	64	70	85	63	69	261	229	32	26
	15	66	72	85	66	71	247	218	29	23
	16	69	72	85	68	71	235	218	17	14
	17	70	72	85	69	71	229	218	11	10
	18	70	73	85	69	72	229	211	18	15
	19	64	73	85	63	72	261	211	50	37
	20	67	73	85	66	72	247	211	36	28
	21	70	72	85	69	71	229	218	11	10
	22	69	73	85	68	72	235	211	24	20
	23	67	73	86	65	71	251	218	33	26
	24	66	73	85	65	72	251	211	40	31
	25	70	72	85	69	71	229	218	11	10
	26	63	72	85	62	71	266	218	48	36
	27	61	72	85	60	71	275	218	57	41
	28	67	X	85	62	70	266	224	42	32
	29	57	71	85	56	70	290	224	66	46
	30	64	71	85	63	70	261	224	37	29

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1924phae.proj.111GP

C 19086

Line	w	m-w	b-m-w	$\bar{n}$	m-n	[n]	[m-n]	d-w	d-l
31	60	70	85	59	69	278	229	49	36
32	66	70	85	65	69	251	229	22	18
33	~~67~~ 57	69	85	~~67~~ 56	68	290	235	55	40
34	63	70	86	61	68	270	235	35	28
35	53	69	85	54	68	298	235	63	44
36	61	68	~~86~~ 89	~~59~~ 60	~~67~~ 67	275	241	34	27
37	58	68	85	57	~~62~~ 68	286	241	45	34
38	62	68	85	61	67	270	241	29	23
39	58	67	85	57	66	286	247	39	30
40	46	67	85	45	66	336	247	89	56
41	54	67	85	52	65	305	251	57	39
42	51	66	85	50	65	313	251	62	44
43	48	66	85	47	65	326	251	75	50
44	47	65	85	46	64	331	256	75	50
45	56	65	85	53	64	294	256	28	23
46	~~56~~ 56	65	85	~~53~~ 55	64	294	256	28	23
47	59	65	85	58	64	282	256	26	21
48	53	64	85	52	63	305	261	44	33
49	41	63	85	41	62	354	266	88	56
@	56	64	85	53	63	294	261	33	26
50	53	63	85	52	62	305	261	44	33
51	45	63	85	44	62	341	266	74	49
52	48	63	85	47	62	326	266	60	42
53	39	63	85	39	62	362	266	96	59
54	44	62	85	43	61	346	270	76	50
55	45	61	85	44	60	340	275	65	45
56	42	62	85	41	61	357	270	84	54
57	45	60	85	44	59	340	278	62	44
58	48	60	85	47	59	326	278	48	36
a	44	60	85	43	54	346	278	68	46
59	52	60	85	51	59	309	278	31	25
60									

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1924phae.proj.11kp

Line	n	m-n	l-m-n	$\bar{n}$	$\bar{m}$-$\bar{n}$	[n²]	[m-n²]	dm	dl
61	45	59	85	41	58	354	282	72	48
62	41	59	85	41	58	354	282	72	48
63	44	59	85	43	58	346	282	64	44
64	41	58	85	41	57	354	286	68	46
65	44	58	85	43	57	346	286	60	42
66	45	57	85	44	56	340	290	50	37
67	42	57	85	41	56	354	290	64	44
68	35	57	85	35	56	382	290	92	57
69	30	56	85	30	55	410	294	116	66
70	41	56	85	41	55	354	294	60	42
71	45	56	85	44	55	340	294	46	34
72	42	56	85	41	55	354	294	60	42
73	-	-	-	-	-	-	-	-	
74	40	55	85	40	54	358	298	60	42
75	49	55	85	48	54	322	298	24	20
76	33	55	85	33	54	394	298	96	59
77	~~40~~ 38	~~54~~ 54	~~85~~ 85	~~40~~ 38	~~53~~ 53	368	301	67	46
78	40	54	85	40	53	358	301	57	41
79	~~46~~ 46	54	85	41	53	354	301	53	39
80	38	53	85	38	52	368	305	63	44
81	~~39~~	~~54~~	~~4~~	-	-	-	-	-	
82	39	51	85	39	50	362	313	49	36
83	28	50	85	28	49	421	318	103	61
84	35	50	85	35	49	382	318	64	44
85	41	49	85	41	48	354	322	32	26
86	33	49	85	33	48	394	322	72	48
87	34	48	85	34	47	389	326	63	44
88	36	47	85	36	46	377	331	46	34
89	35	46	85	35	45	382	336	46	34
90	30	44	85	30	# 3	410	346	64	44

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1924phae.proj.111DP

C 19086

Line	n	m-m	l-m-m	$\bar{n}$	$\overline{m-m}$	[n]	[m-m]	dm	dl
91	32	43	85	32	42	399	350	49	36
92	–	–	–	–	–	–	–	–	
93	41	41	85	41	41	354	354	0	
94	33	40	85	33	40	394	358	36	28
95	29	38	85	29	38	415	368	47	35
96	26	32	84	26	32	432	399	33	26
97	27	36	85	27	36	427	377	50	37
98	21	33	85	21	33	463	394	69	47
99	1	30	85	1	30	–	410	–	
100	18	29	85	18	29	486	415	71	48
101	15	27	85	15	27	511	427	84	54
102	11	26	85	11	26	564	432	132	70
103	0	24	85	0	24	–	444	–	
104	9	23	85	9	23	540	450	140	72
105	11	23	85	11	23	564	450	114	65
106	12	22	85	12	22	550	457	93	58

No. 8a

Line	n	m-m	l-m-m	$\bar{n}$	$\overline{m-m}$	[n]	[m-m]	dm	dl
β	3	10	83	3	10	–	575	–	
γ	2	15	84	–	15	–	511	–	
δ	3	14	85	–	14	–	524	–	
ε	1	10	85	–	10	–	575	–	
κ	4	9	85	–	9	–	590	–	
ζ	2	6	86	–	+	–	–		
η	0	5	86	–	–	–	–		
θ									

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1924phae.proj.111GP

Vega No 1. ✓ C 19080 Reduced to 79

μ φ 1677

Line	n	m+n	A+m+n	n̄	m+n	[n]	[m+n]	dm	dl	[m+n]₁ 2 3	Mean
1	74	79	80	73	78 ✓✓	164	76	88	56	76 70 58	63
2	75	79	79	75	79 ✓✓	145	40	105	62	40 1 −5	12
3	76	79	79	76	79 ✓✓	125	40	85	54	40 1 14	18
4	64	77	79	64	77 ✓	231	100	131	70	100 25 58	64
5	76	77	79	76	77 ✓	155	100	25	21	100 70 81	84
6	54	75	79	54	75 ✓✓	273	145	128	69	145 104 115	130
7	40	72	79	40	72 ✓	324	172	152	75	172 175 174	174
8	30	63	78	30	64 ✓	355	231	124	68	231 229 230	230
9	24	54	78	24	55 ✓	374	268	106	62	268 270 268	269
10	23	44	78	23	45 ✓	377	307	70	48	307 305 302	305
11	17	35	78	17	35 ✓	401	339	62	44	339 337 337	338
12	15	27	78	15	27 ✓	412	364	48	36	364 371	368
13	15	20	78	15	20 ✓	412	387	25	21	387 388	388
14	12	15	78	12	15 ✓	433	412	21	18	412 397	405

No 2 Vega

1	40	70	83	38	67 ✓✓	330	208	122	~~18~~ 67	
2	39	77	82	37	75 ✓✓	333	145	188	92	
3	40	75	81	38	73 ✓✓	330	164	166	78	
4	27	70	81	26	68 ✓	367	208	159	77	
5	60	66	81	58	64 ✓	258	231	27	22	
6	13	57	80	13	56 ✓	426	265	161	77	
7	5	40	80	5	40 ✓	500	324	176	80	
8	3	22	79	3	22 ✓	—	380	—		
9	3	14	79	3	14 ✓	—	418	—		
10	1	9	79	1	9 ✓	—	452	—		
11	1	6	79	1	6 ✓	—	487	—		

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Vega No 1. C 19080 Reduced to 79

Mag 1677

Line	n	m+n	k+m+n	$\bar{n}$	m+n	[n]	[m+n]
1	74	79	80	73	78	164	76
2	75	79	79	75	79	145	40
3	76	79	79	76	79	125	40
4	64	77	79	64	77	231	100
5	76	77	79	76	77	155	100
6	54	75	79	54	75	273	145
7	40	72	79	40	72	324	172
8	30	63	78	30	64	353	231
9	24	54	78	24	55	374	268
10	23	44	78	23	45	377	307
11	17	35	78	17	35	401	339
12	15	27	78	15	27	412	364
13	15	20	78	15	20	412	387
14	12	15	78	12	15	433	412

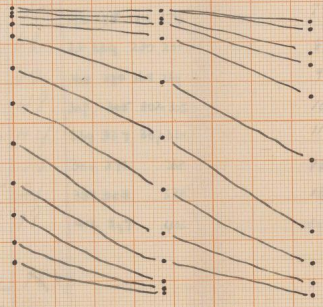
No 2 Vega

1	40	10	83	38	67	330	208
2	39	77	82	37	75	333	145
3	40	75	81	38	7[illegible]		
4	27	70	81	26	6[illegible]		
5	60	66	81	58	6[illegible]		
6	13	57	80	13	5[illegible]		
7	5	40	80	5	4[illegible]		
8	3	22	79	3	2[illegible]		
9	3	14	79	3	14		
10	1	9	79	1	9		
11	1	6	79	1	6		

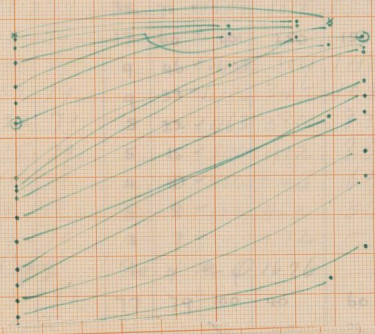
Vega No 3 C 19080

Mag 11.70

C 19080
Material external



C 19080
Material internal (position; marked green in Ba 28)



C 14080
Radiation external.



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Vega No 1. C 19080 Reduced to 79

M.P. 1677

Line	n	m+n	k+m+n	$\bar{n}$	m+n	[n]	[m+n]
1	74	79	80	73	78	164	76
2	75	79	79	75	79	145	40
3	76	79	79	76	79	125	40
4	64	77	79	64	77	231	100
5	76	77	79	76	77	135	100
6	54	75	79	54	75	273	145
7	40	72	79	40	72	324	172
8	30	63	78	30	64	355	231
9	24	54	78	24	55	374	268
10	23	44	78	23	45	377	307
11	17	35	78	17	35	401	339
12	15	27	78	15	27	412	364
13	15	20	78	15	20	412	387
14	12	15	78	12	15	433	412

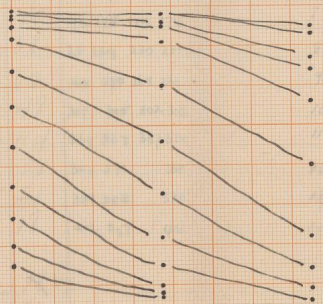
No 2 Vega

1	40	10	83	38	67	330	208
2	39	77	82	37	75	333	145
3	40	75	81	38	73		
4	27	70	81	26	68		
5	60	66	81	58	64		
6	13	57	80	13	58		
7	5	40	80	5	40		
8	3	22	79	3	22		
9	3	14	79	3	14		
10	1	9	79	1	9		
11	1	6	79	1	6		

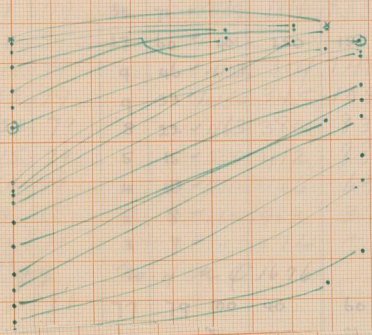
Vega No 2 C 19080

M.P. 1670

C 19080
Material external

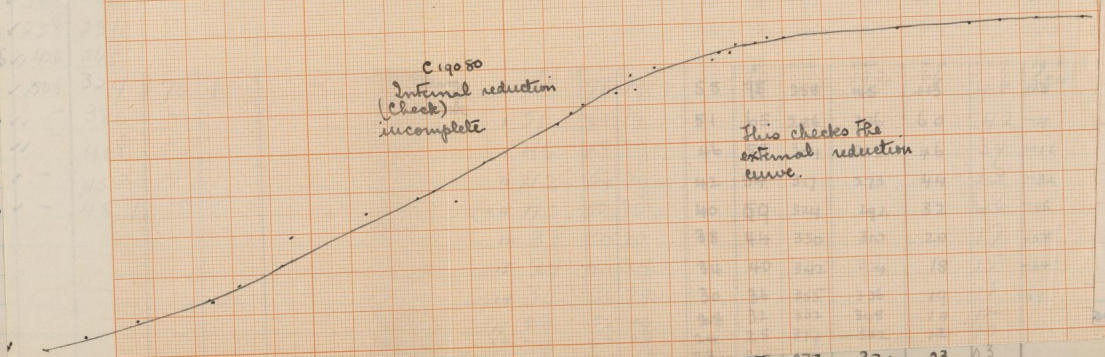


C 19080
Material internal (position; marked green in Ba 28)



C 19080
Internal reduction
(Check)
incomplete

This checks the external reduction curve.



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Vega No 1. C 19080 Reduced to 79

MP 1677

Line	n	m+n	k+m+n	$\bar{n}$	m+n	[n]	[m+n]
1	74	79	80	73	78	164	76
2	75	79	79	75	79	145	40
3	76	79	79	76	79	125	40
4	64	77	79	64	77	231	100
5	76	77	79	76	77	135	100
6	54	75	79	54	75	273	145
7	40	72	79	40	72	324	172
8	30	63	78	30	64	355	231
9	24	54	78	24	55	374	268
10	23	44	78	23	45	377	307
11	17	35	78	17	35	401	339
12	15	27	78	15	27	412	364
13	15	20	78	15	20	412	387
14	12	15	78	12	15	433	412

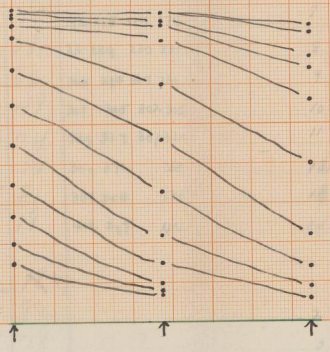
No 2 Vega

1	40	10	83	38	67	330	208
2	39	77	82	37	75	333	145
3	40	75	81	38	73	330	164
4	27	70	81	26	68	367	208
5	60	66	81	58	64	258	231
6	13	57	80	13	56	426	265
7	5	40	80	5	40	500	324
8	3	22	79	3	22	—	380
9	3	14	79	3	14	—	418
10	1	9	79	1	9	—	452
11	1	6	79	1	6	—	487

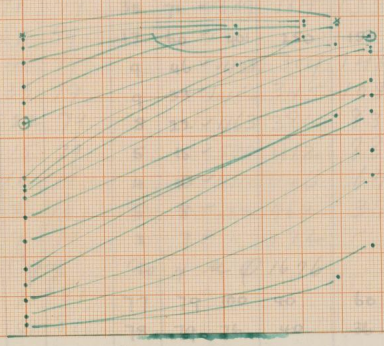
Vega No 3 C 19080

MP 1670

C 19080
Material external



C 19080
Material internal (partial; marked green in Ba28)



Please check

7	58	70	79	58	75	258	145	113	46	128
8	51	65	79	51	65	286	226	60	42	-4
9	46	58	79	46	58	304	258	46	34	-11
10	42	54	79	42	54	317	273	44	33	-32
11	40	50	80	40	50	324	292	32	26	-46
12	38	45	80	38	44	330	310	20	17	-58
13	34	40	79	34	40	342	324	18	15	-64
14	30	36	79	30	36	355	336	19	16	-64
15	28	32	79	28	32	362	348	14	12	
16	24	28	79	24	28	374	362	12	10	
17	23	24	79	23	24	377	374	03	03	

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1924phae.proj.11[illegible]

Vega Nos 1 to 1678 — C 19080

line	n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n]	due	dl	
1	61	78	81	59	76	254	125	129	70	
2	66	79	80	63	78	236	76	160	77	
3	69	78	79	69	78	200	76	124	68	
4	48	77	79	48	77	296	100	196	84	
5	72	75	79	72	75	172	145	27	22	
6	35	71	79	35	71	339	184	155	76	
7	17	60	79	17	60	401	250	151	75	
8	9	46	79	9	46	452	304	148	74	
9	9	33	79	9	33	452	345	108	63	
10	8	22	79	8	22	463	380	83	53	
11	5	15	79	5	15	500	412	88	56	
12	4	10	78	4	10	510	446	64	44	
13	5	8	78	5	8	510	463	37	29	
14	3	7	78	3	7	-	472			

α Cyg — No. 4 in 1676

1	79	81	81	77	79	100	40	60	42	23
2	80	81	81	78	79	76	40	36	28	-68
3	77	80	80	76	79	125	40	85	54	-12 -36
4	70	79	79	70	79	192	40	152	75	+124
5	75	78	79	75	78	145	76	69	47	37-8
6	69	76	80	68	75	208	145	63	44	+22 14 8
7	58	70	79	58	75	258	145	113	46	+18 128
8	51	65	79	51	65	286	226	60	42	-4
9	46	58	79	46	58	304	258	46	34	-11
10	42	54	79	42	54	317	273	44	33	-32
11	40	50	80	40	59	324	292	32	26	-46
12	38	45	80	38	44	330	310	20	17	-58
13	34	40	79	34	40	342	324	18	15	-64
14	30	36	79	30	36	355	336	19	16	-69
15	28	32	79	28	32	362	348	14	12	
16	24	28	79	24	28	374	362	12	10	
17	23	24	79	23	24	377	374	03	03	

Please check →

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1924phae.proj.111GP

α Cyg No 5 μ φ 1676 c 19080

Line		n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl	[m+n]	Diff
4861	1	78	80	81	76	78	125	76	49	36	13	
4340	2	80	81	81	78	79	76	40	36	28	18	
4101	3	78	81	81	76	79	125	40	85	54	12	
3970	4	69	80	81	67	78	214	76	138	72	12	
3933	5	75	79	81	73	77	164	100	64	44	16	
3889	6	67	76	80	66	75	220	145	65	45	22 145	0
	7	57	70	80	56	69	265	200	65	45	26 192	8 ~~55~~
	8	50	63	80	49	62	292	241	51	37	11 226	15
	9	43	57	80	42	56	317	265	52	38	−4 258	7
	10	39	52	80	39	51	327	286	41	31	−19 273	13
	11	37	47	80	37	46	333	304	29	23	−34 292	12
	12	35	41	80	35	41	339	320	19	16	−48 310	10
	13	30	36	80	30	36	355	336	19	16	−52 324	12
	14	25	33	80	25	33	371	345	26	21	−60 336	9
	15	25	28	80	25	28	371	362	09	08	348	14

α Cyg. No. 6 μ φ 1678

4861	1	71	74	76	74	77	156	100	56	40	37	
4340	2	74	76	76	77	79	100	40	60	42	18	
4101	3	72	75	76	75	78	145	76	69	47	58	
3970	4	66	75	77	67	77	214	100	114	65	46	
	5	70	74	77	72	76	172	125	47	24	11	
	6	64	72	77	66	74	220	156	64	44	33 146	11
	7	53	64	77	54	66	273	220	53	39	46 192	28 ~~46~~
	8	47	57	77	48	59	296	254	42	32	28 226	28
	9	40	52	77	41	53	320	277	43	33	8 258	19
	10	36	47	77	37	48	333	296	37	29	−9 273	23
	11	34	44	77	35	45	339	307	32	26	−31 292	15
	12	31	39	77	32	40	348	324	24	20	−44 310	14
	13	29	34	77	30	35	355	339	16	14	−49 324	15
	14	24	30	77	24	31	374	352	22	18	−63 336	16
	15	22	25	77	22	25	380	371	09	08	348	23

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1924phae.proj.11.tif

C 1908 Reduction table

4	510	28	362	52	281	76	125
5	500	29	358	53	277	77	100
6	487	30	355	54	273	78	76
7	472	31	352	55	268	79	40
8	463	32	348	56	265		
9	452	33	345	57	262		
10	446	34	342	58	258		
11	440	35	339	59	254		
12	433	36	336	60	250		
13	426	37	333	61	246		
14	418	38	330	62	241		
15	412	39	327	63	236		
16	406	40	324	64	231		
17	401	41	320	65	226		
18	396	42	317	66	220		
19	391	43	314	67	214		
20	387	44	310	68	208		
21	383	45	307	69	200		
22	380	46	304	70	192		
23	377	47	300	71	184		
24	374	48	296	72	172		
25	371	49	292	73	164		
26	367	50	289	74	156		
27	364	51	286	75	148		

19
30
~~81~~
32
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1924phae.proj.11GP

α Cyg u 41679 C 19080

Line	n	m+n	l+m+n	n̄	m+n̄	[n̄]	[m+n̄]	dn	dl.			
1	75	78	80	74	77	156	100	56	40	37		
2	77	79	80	76	78	125	76	49	36	64		
3	74	78	79	74	78	156	76	80	52	58		
4	67	77	79	67	77	214	100	114	65	46		
5	72	76	79	72	76	172	125	47	35	41		
6	65	73	79	65	73	226	164	62	44	41	145	+19
7	53	65	79	53	65	277	226	51	37	52	192 ~~145~~	+30 ~~81~~
8	45	58	79	45	58	307	258	49	36	28	226	32
9	40	52	79	40	52	324	281	43	33	12	258	23
10	36	48	78	36	49	336	292	44	33	-13	273	19
11	33	44	78	33	45	345	307	38	30	-31	292	15
12	32	40	78	32	40	348	324	24	20	-44	310	14
13	27	35	78	27	35	364	339	25	21	-49	324	15
14	25	29	78	25	29	371	358	13	11	-47	336	22
15	22	25	78	22	25	380	371	09	08		348	23
16	18	22	78	18	22	396	380	16	14			
1												

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1924phae.proj.111cp

α Cyg No 8.
m φ 1679 C 19080

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dun	dl		
1	72	75	78	73	76	164	125	39	30	52	
2	75	77	78	76	78	125	76	49	36	64	
3	74	77	78	75	78	145	76	69	47	58	
4	75	76	78	76	77	125	100	25	21	46	
5	72	75	78	73	76	164	125	39	30	41	
6	65	73	78	66	74	220	156	64	44	33 145	+11
7	53	65	78	54	66	273	220	53	39	46 192	+22
8	45	59	78	46	60	304	250	54	39	20 226	24
9	41	52	79	41	52	320	281	39	30	12 258	23
10	36	47	79	36	47	336	300	36	28	5 273	27
11	34	43	79	34	43	342	314	28	23	24 292	22
12	32	40	79	32	40	348	324	24	20	14 310	14
13	27	35	79	27	35	364	339	25	21	9 324	15
Please check → 14	23	31	79	23	35	377	~~339~~	~~38~~	21	13 336	03
15	21	27	79	21	27	383	364	19	16	348	16
16	20	23	79	20	23	387	377	10	09		

Comparison of results from six spectra

Line depths, in % background

	Sp. 4	5	6	7	8	9	Σ	Mean
β	42	36	40	40	30	40	228	38
γ	28	28	42	36	36	42	212	35
δ	54	54	47	52	47	52	306	51
ε	75	72	65	65	21	67	365	61
ζ	47	44	34	35	30	30	220	36
	44	45	44	44	44	44	265	44
η	46	45	39	37	39	37	244	41
θ	42	37	32	36	39	36	222	37
ι	44	38	33	33	30	34	202	34
κ	33	31	29	33	28	33	187	31
λ	26	23	26	30	23	30	158	26
μ	17	16	20	20	20	18	111	18
ν	15	16	14	21	21	18	105	17

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1924phae.proj.11:cp

Line	n	m+n	l+m+n	$\bar{n}$	m+$\bar{n}$	[n]	[m+$\bar{n}$]	dm	dl	[m+n]$_4$	diff
1	72	75	77	74	77	156	100	56	40	37	
2	73	75	75	77	79	100	40	60	42	18	
3	70	74	75	74	78	156	76	80	52	58	
4	62	73	75	66	77	220	100	120	67	46	
5	67	71	74	71	75	184	145	39	30	61	
6	59	68	74	63	72	236	172	64	44	59 145	+27
7	49	60	74	52	64	281	231	50	37	57 192	+39
8	41	54	74	44	57	310	262	48	36	32 226	+36
9	37	49	74	39	52	327	281	46	34	12 258	+23
10	33	45	74	35	48	339	296	43	33	-9 273	+23
11	30	41	74	32	44	348	310	38	30	-28 292	+18
12	30	37	74	32	39	348	327	21	18	-41 310	+17
13	26	32	74	27	34	364	342	22	18	-46 324	+18
14	22	29	74	23	31	377	352	25	21	-53 336	+16
15	20	25	74	21	26	383	367	16	14	348	+19

Of α Cygni

Background, difference from 4, in magnitudes at 1

	Sp. 4	5	6	7	8	9
β	—	—	—	-	-	-
γ	—	—	-	-	-	-
δ	—	—	-	-	-	-
ε	-	-	-	-	-	-
κ	-	-	-	-	-	-
ζ	0	0	11	14	11	27
η	0	8	28	30	22	39
θ	0	15	28	32	24	36
ι	0	7	19	23	23	23
κ	0	13	23	19	27	23
λ	0	12	15	15	22	18
μ	0	10	14	14	14	17
ν	0	12	15	15	15	18

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1 — C - 19081 — UCO 1693

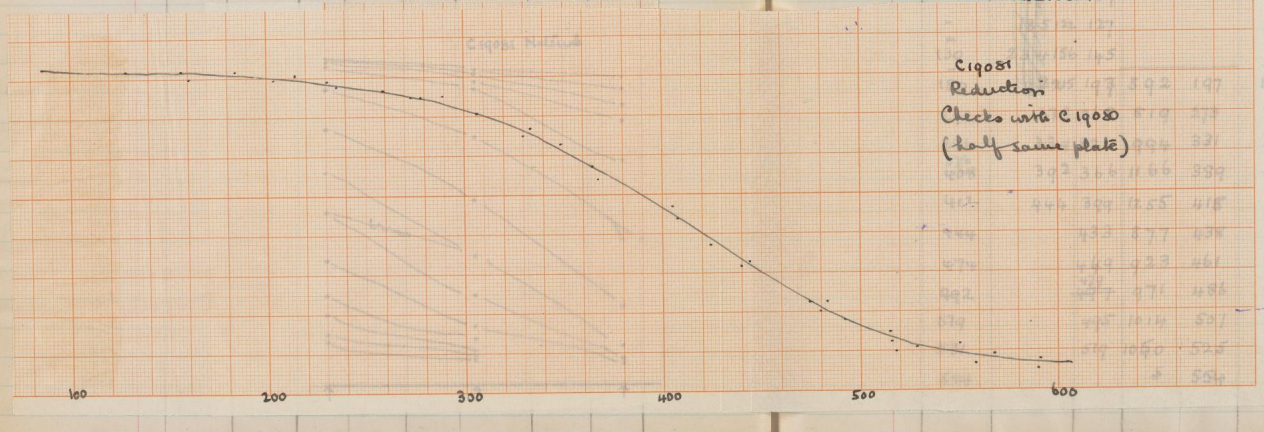
The external reduction is rather unsatisfactory owing to a scattering of points. Internal reduction does not check.

Reduced to 83

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl
1	77	84	85	75	82	✓372	130	142	32/73
2	80	84	84	79	83	✓320	-		
3	76	83	83	76	83	✓263	-		
4	68	82	83	68	82	✓322	130	192	83
5	81	83	85	56	81	✓368	180	188	82
6	56	81	85						
7	40	75	83	40	75	✓420	272	148	74
8	28	65	83	28	65	✓457	336	121	67
9	20	64	83	20	64	✓484	376	128	63
10	19	48	83	19	43	✓488	412	76	50
11	16	32	83	16	32	✓501	444	57	41
12	14	23	83	14	23	✓513	474	39	30
13	13	18	83	13	18	✓514	492	27	22
14	11	13	83	11	13	✓531	519	12	10
15	8	11	83	8	11	✓570	531	39	30
16	7	9	83	7	9	594	554	40	31

This plate must be remeasured

?



C19081
Reduction
Checks with C19080
(half same plate)

2 — C - 19081 — UCO 1693

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl
1	33	69	85	33	67	✓441	327	114	65
2	45	79	84	45	78	✓405	235	170	79
3	35	75	83	35	75	✓435	272	163	78
4	20	71	83	20	71	✓484	306	178	81
5	5	67	83						
6	10	57	83	10	57	✓542	365	177	80
7	3	37	83	3	37	✓ -	429		
8	6	20	83	6	20	✓	484		
9	-1	10	83	-1	10	✓ -	542		
10	4	7	83	4	7	✓ -	594		
11	0	6	83	0	6	-	-		

C 19081 Mean background from std

Σ Mean — Mean of 1 and 3 ↓

β	130	175		
	-	185	127	

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1924phae.proj.11100

74

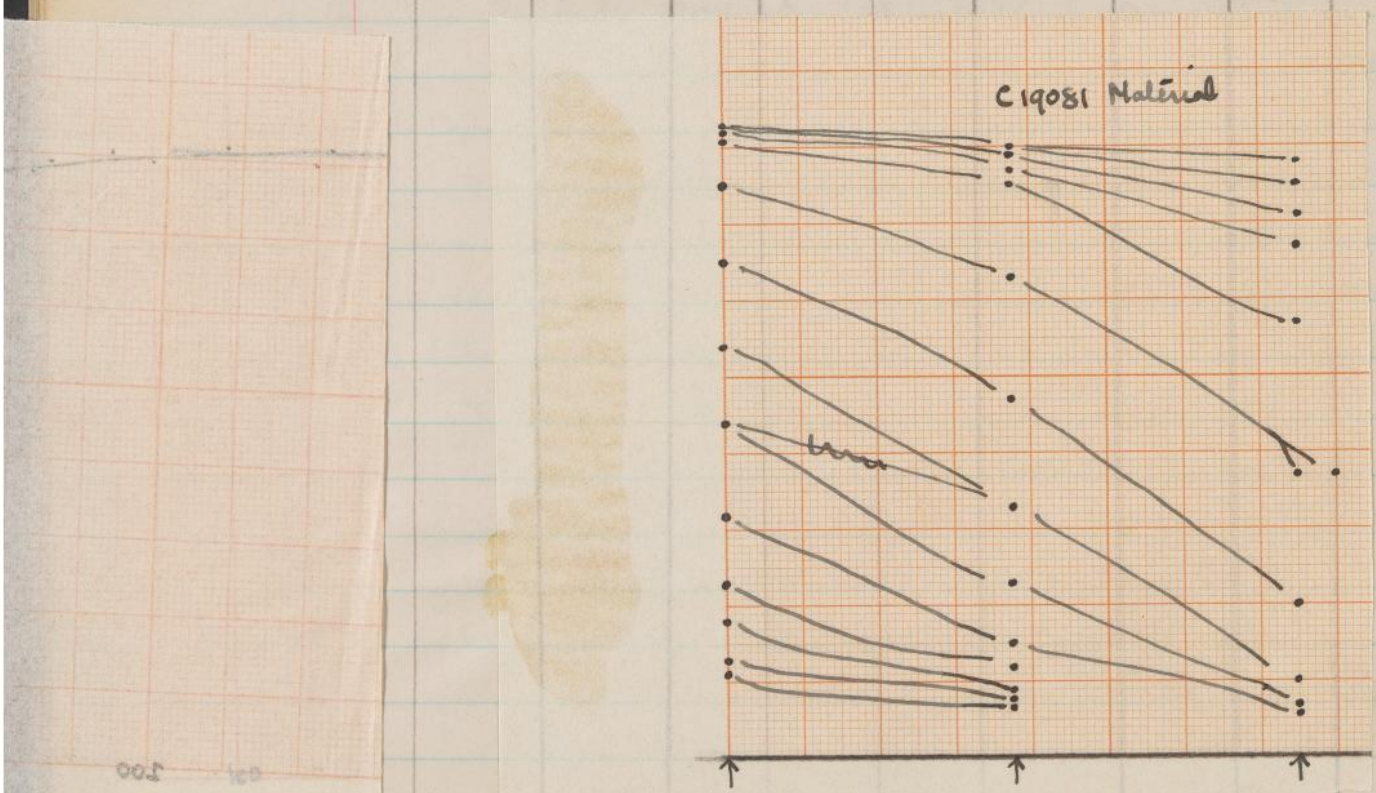
C-19081

The external reduction is rather unsatisfactory owing to a scattering of points. Internal reduction does not check.

Reduced to 83

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl
1	77	84	85	75	82	✓272	130	142	32 73
2	80	84	84	79	83	✓220	-		
3	76	83	83	76	83	✓263	-		
4	68	82	83	68	82	✓322	130	192	83
5	81	83	83						
6	56	81	83	56	81	✓368	190	188	82
7	40	75	83	40	75	✓420	272	148	74
8	28	65	83	28	65	✓457	336	121	67
? 9	20	54	83	20	54	✓484	376	108	63
10	19	43	83	19	43	✓488	412	76	50
11	16	32	83	16	32	✓501	444	57	41
12	14	23	83	14	23	✓513	474	39	30
13	13	18	83	13	18	✓519	492	27	22
14	11	13	83	11	13	✓531	519	12	10
15	8	11	83	8	11	✓570	531	39	30
16	7	9	83	7	9	594	554	40	31

This plate must be remeasured



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1924phae.proj.11.ap

u Q 1693
C - 19081
#2

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl
1	33	69	85	33	67	441	327	114	~~12~~ 65
2	45	79	84	45	78	405	235	170	79
3	35	75	83	35	75	435	272	163	78
4	20	71	83	20	71	484	306	178	81
5	58	67	83	10	57	542	365	177	90
6	10	57	83						
7	3	37	83	3	37	✓	429		
8	6	20	83	6	20	✓	484		
9	-1	10	83	-1	10	✓	542		
10	4	7	83	4	7	✓	594		
11	0	6	83	0	6				

C 19081 Mean background from std

					Σ	Mean	Mean of 1 and 3
β	130	177	175				
	-	145 185	127				
	-	185 122	127				
	m 130	234 156	145				
	- 180	205	193	592	197	188	
	272	279	268	819	273	270	
	336	334	324	994	331	338	
	376 ~~408~~	392	366	1166	389	371 ~~400~~	
	412	444	399	1255	418	406	
	444		433	877	438	438	
	474		449	923	461	462	
	492		479 ~~497~~	971	486	486	
	519		495	1014	507	507	
	531		519	1050	525	525	
	554				554	554	

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1924phae.proj..116P

Lines

7
8
9
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11
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16
1

STANDARD GROSS SECTION
ENGRAVING 300 MILLIMETER

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1924phae.proj.11CP

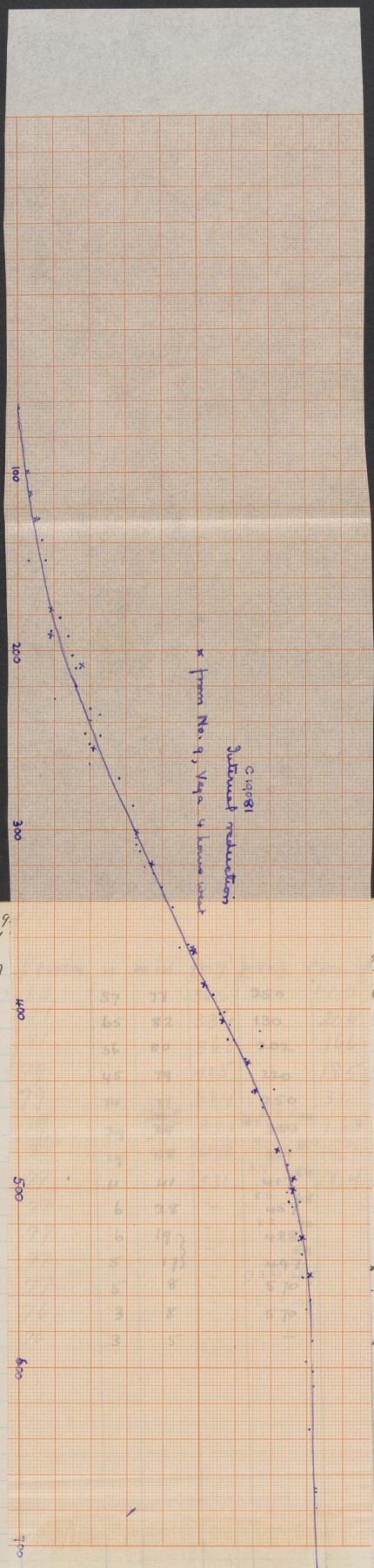
m Φ 1694
C - 19081
#3

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dw	dl
1	66	85	90	60	77	354	250	104	62
2	73	86	89	68	80	322	202	120	67
3	63	85	88	59	80	357	202	155	76
4	51	83	87	48	79	396	220	176	80
5	38	81	79				84		
6	35	78	86	34	75	438	172	166	78
							73		
7X	20	64	85	20	63	484	343	141	73
							69		
8X	9	48	85	9	47	554	399	155	76
							70		
9X	8	33	85	8	33	570	441	129	70
							68		
10X	7	23	85	7	23	594	474	120	67
							70		
11X	6	15	84	6	15		508		
							62		
12X	6	12	84	6	12		524		
							68		
13X	5	9	84	5	9		554		
							63		
14X	4	8	84	4	8		570		
							69		
15X	4	7	84	4	7		594		
							40		
16X	4	7	84	4	7		594		

76

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1924qhae.proj.1116P



77

μ Cφ 169
C-19081
#4

Line	n	m+n
1	57	77
2	64	80
3	55	78
4	43	75
5	70	73
? 6	29	69
7	19	55
8	11	39
9	6	27
10	6	19
11	5	17
12	5	8
13	3	8
14	3	5
X		
16		

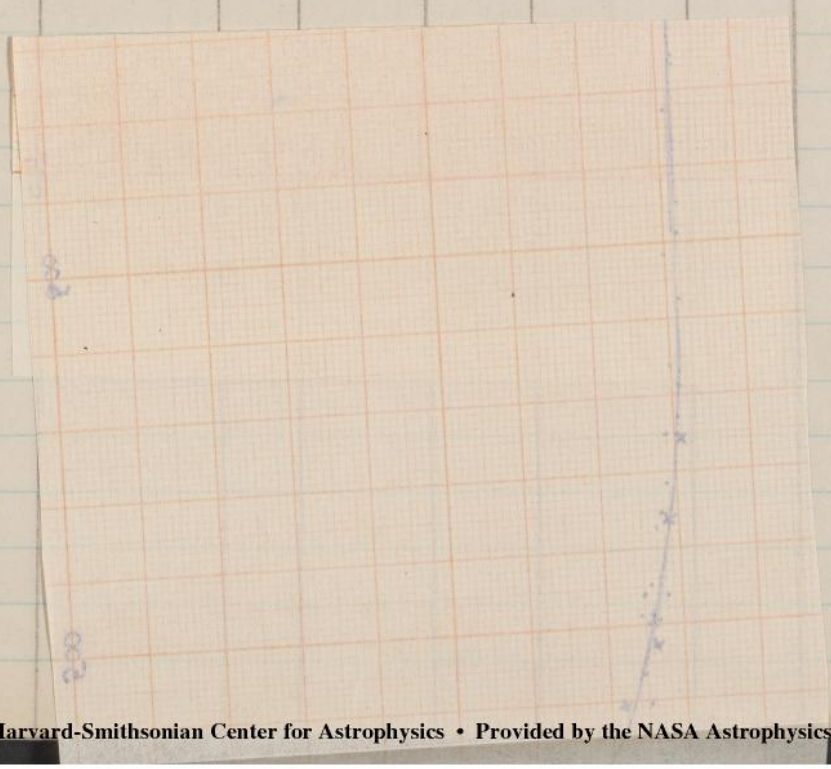
l.	[mm]$_3$	
65	250	0
69	202	72
78	202	0
82	220	0
37	(272)	+ 12
78	343	+ 18
69	399	+ 18
65	441	+ 16
	474	+ 14
	508	- 11
	524	+ 46
	554	+ 16
	570	
	594	

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1924phae.proj.11.cat

u Φ 1694
C-19081
#4

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[m+n]$	dn	dl	$[m+n]_3$
1	57	77	83	57	77	365	250	115	65	250 0
2	64	80	81	65	82	336	130	206	69	202 72
3	55	78	81	56	80	368	202	166	78	202 0
4	43	75	79	45	79	405	220	185	82	220 0
5	70	73	79	74	77	584	250	34	27	(272) + 12
? 6	29	69	79	29	~~84~~ 74?	454	193 284	163	78	343 +18
7	19	55	78	19	58	488	91 361 88	127	69	399 +18
8	11	39	77	11	41	531	87 417 86	184	65	441 +16
9	6	27	77	6	28	–	86 457 68			474 +14
10	6	19	77	6	19	–	82 488 70			508 – 11
11	5	17	77	5	17	–	~~497~~ 59			524 +46
12	5	8	77	5	8	–	(132) 570 132 104			554 +16
13	3	8	76	3	8	–	( ) 570 109			570
14	3	5	76	3	5	–	–			594
~~15~~										
~~16~~										



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1924phae.proj.111MP

u Φ 1695
C-19081
#5

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	du	dl		
1	60	80	85	59	78	357	235	122	67	250	− 15
2	70	84	84	69	83	316	−	−		202	−
3	61	82	83	61	82	350	130	220	87	202	−
4	48	80	83	48	80	396	202	194	83	220	−
5	75	79	83	75	79	272	220	52	38	−	−
6	33	74	83	33	74	441	96 87 284	157	47 ~~76~~	272	+12
7	15	59	83	15	59	508	87 84 357	151	75	343	14
8	7	42	83	7	42	594	85 84 415	179	81	399	16
9	5	31	82	5	31	−	76 58 447			441	6
10	4	20	82	4	240	−	78 66 484			474	10
11	1	15	82	1	15	−	70 70 508			508	0
12	2	10	82	2	10	−	80 81 542			524	+18
13	1	7	82	1	7	−	108 108 594			554	+40

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1924phae.proj.11109

u Φ 1695
C-19081
#6

Line	n	m+n	l+m+n	n	m+n	[n]	[m+n]	dm	dl		dl
1	62	83	87	59	79	357	220	137	250	-	72
2	70	85	87	66	81	331	180	151	202	-	75
3	60	85	86	56	81	368	180	188	202	-	82
4	50	82	86	49	79	392	220	172	220	-	79
5	78	81	86	75	78	272	235	37	-	-	29
6	35	76	86	34	73	438	103 291 94	147	272	+19	74
7	19	60	86	19	58	488	91 361 88	127	343	+18	69
8	13	47	86	13	45	519	75 405 74 ~~402~~	114	399	+~~3~~	65
9	10	29	86	10	28	542	66 457 68	85	441	+16	54
10	11	25	86	11	25	531	467 49	64	474		44
11	10	19	86	10	19	542	488 50	34	508		39
12	10	15	86	10	15	542	508 47	34	524		27
13	10	14	86	10	14	542	513 27	29	554		23
14	9	12	86	9	12	554	524 17	30	570		24
15	8	11	86	8	11	570	531 06	39	594		30
16	7	9	86	7	9	594	554 0	40			31
17									No. 6 distorted.		

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1924phae.proj.111mp

U Q 16 96
C-19081
#7

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[m+n]$	clm	dl	
1	57	78	82	58	79	361	220	141	73	250 –
2	64	81	82	65	82	336	130	206	85	202 –
3	56	79	81	57	81	365	180	185	82	202 –
4	44	76	80	45	79	405	220	185	82	220 –
5	70	75	80	73	78	291	235	56	40	– –
6	29	70	80	30	73	450	103 291 94	159	77	272 +19
7	16	55	80	16	57	501	95 365 92	136	71	343 +22
8	8	40	80	8	41	570	87 417 86	153	76	399 +18
9	7	30	80	7	31		76 447 58			441 +6
10	6	20	80	6	20		78 484 66			474 +10
11	5	15	80	5	15		70 508 70			508 0
12	4	10	80	4	10		80 542 81			524 +18
13	3	9	80	3	9		68 554 68			554 –
14	4	8	80	4	8		63 570 63			570 –
15	3	6	80	3	6					
16	1	5	79	1	5					

Internal
1
2
3
4

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1924phae.proj.111@P

u Q 1696
C 19081
#8

line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[n]$	$[m+n]$	dm	dl		
1	57	80	85	56	78	368	235	133	71	250	-
2	65	84	85	63	82	343	130	213	86	202	-
~~1~~	~~87~~	~~83~~	~~84~~	80	82		130		1	~~202~~	-
3	57	82	84	56	81	368	180	188	82	~~202~~	-
4	45	79	84	45	78	405	235	170	79	220	+15
5	73	76	84	72	75	298	272	26	21	-	-
6	30	70	84	30	69	450	316	134	71	272	+34
7	25	56	84	25	55	467	372	95	58	343	+29
8	8	41	83	8	41	570	417	53	39	399	+18
9	5	29	83	5	29	-	454			441	+13
10	5	19	83	5	19		488			474	+14
11	5	14	83	5	14	-	573			508	+5
12	4	9	83	4	9	-	554			524	+30
13	4	6	83	4	6	-					
14	4	5	83	4	5	-					

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1924phae.proj.11100

u Φ 1697
C-19081
#9.

Line	n	m+n	l+m+n	$\bar{n}$	m+n	[n]	[m+n]	dw	dl	[m+n]$_3$	
1	51	75	81	52	77	383	250	133	71	250	–
2	53	78	80	57	81	365	180	185	82	202	–
3	41	75	79	49	79	392	220	172	79	202	–
4	35	71	78	37	76	429	263	166	78	220	+43
~~5~~	~~58~~	~~69~~	~~78~~	61	73	~~356~~	291			–	–
5	62	68	78	66	72	331	298	33	26		
6	20	60	78	21	64	481	340 (152 143)	141	73	272	+68
7	9	46	77	9	49	554	392 (122 119)	162	78	343	+49
8	5	32	77	5	33	–	441 (111 110)			399	+42
✓ ? 9	4	20	77	4	20	–	484 (113 95)			441	+43
× 10	4	13 ~~18~~	76	4	13 ~~18~~	–	492 (86 74)			474	+18
11	3	9	76	3	9	–	554 (116 116)			508	+36
12	4	8	76	4	8	–	570 (108 104)			524	+43
13	1	6	76	1	6	–					

Distribution for different altitudes.

Lines ↓	3	4 low	5	6 low	7	8	9	Spectra
6	84	103	96	103	103	128	152	
7	73	91	87	91	95	102	122	
8	69	87	85	75	87	87	111	
9	70	86	76	66	76	83	~~113~~ 97	
10	68	82	78	–	78	82	86	
11	70	–	70	–	70	75		

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	Ent.	Ext.
7	594	155
8	570	166
9	554	175
10	542	184
11	531	190
12	524	198
13	519	205
14	513	210
15	508	215
16	501	220
17	497	225
18	492	230
19	488	236
20	484	241
21	481	246
22	477	252
23	474	257
24	470	262
25	467	267
26	463	272
27	460	277
28	457	282
29	454	286
30	450	290
31	447	294
32	444	298
33	441	302
34	438	308
35	435	313
36	432	317
37	429	322
38	426	326
39	423	330
40	420	335
41	417	339
42	415	343
43	412	347
44	408	351
45	405	356
46	402	360
47	399	365
48	396	370
49	392	375
50	389	379
51	386	383
52	383	386
53	379	390
54	376	394
55	372	398
56	368	403
57	365	405
58	361	409
59	357	414
60	354	418
61	350	421
62	347	425
63	343	429
64	340	433
65	336	439
66	331	443
67	327	448
68	322	453
69	316	458
70	311	462
71	306	467
72	298	472
73	291	478
74	284	484
75	272	492
76	263	501
77	250	509
78	235	519
79	220	530
80	202	542
81	180	562
82	130	640

0 - 64
1 - 83
2 - 94
3 - 110
4 - 124
5 - 136
6 - 146

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1924phae.proj.111QP

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1924phae.proj.11:0P

$\lim_{n} \frac{m+n}{l+m+n} \frac{\bar{n}}{\bar{m}+\bar{n}} \frac{[\bar{n}]}{[\bar{m}+\bar{n}]} du\, dl$

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1924phae.proj.111cp

$$\int_{-\infty}^{+\infty} u^{n} \frac{m+n}{l+m+n} \bar{u}^{n} \frac{\overline{m+n}}{} [n] [m+n] \, du \, dl$$

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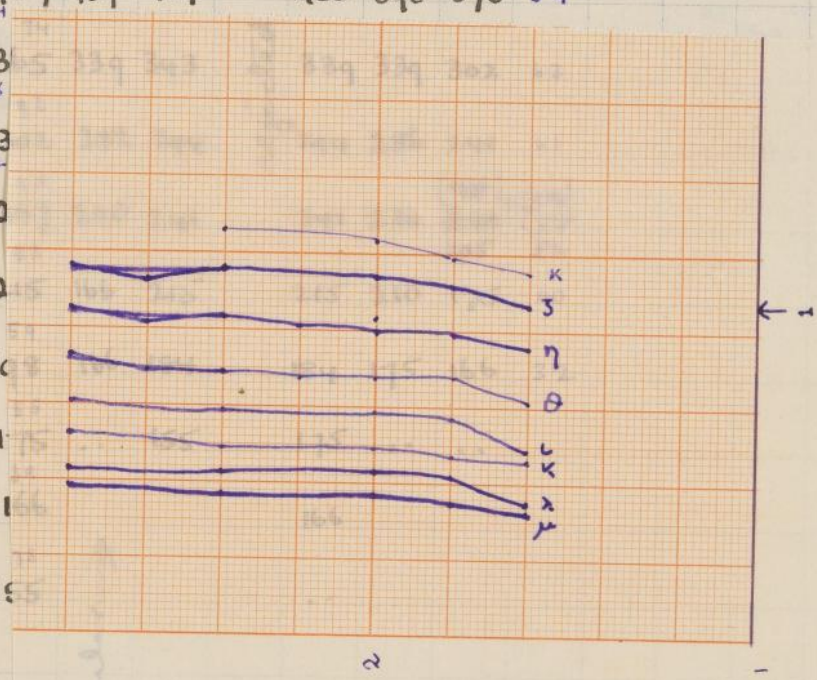
1924phae.proj.11.0P

From Bk 29 Reduced to 63

C 19081 Internal reduction

Spectrum	1 [mm]	2	3	4	5	6	7	8	9	(3)-(4) [mm]	[mm]$_2$	[mm]$_3$	Σ	Mean
Line 1	640	448 (192)	509 (61) (131)	509	519		530	519	509	0				
		..	23 ..											
2	..	519	542	640	..		640	640	562					
		..	50 ..											
3	..	492 (173)	542 (63) (110)	542	640		562	562	530					
4	640	467	530	530	542		530	519	501					
5	..	~~405~~ 448 (157) 87 505	.. ~~4~~ 70	509	530		519	492	472	..				
6	562	~~322~~ 322 (170) 93	492	478	484		478	458	433	59				
7	492	~~341~~ 429 (198) 124		409	414		405	398	375	54				
8	439	241 (210) 118	3											
9	394	184 (192) 102	3											
10	347	155	2											
11	298	..	2											
12	257		1											
13	230		1											
14	205		1											
15	190		1											
16	175													

for voltage drop



Voltage integral

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1924phae.proj.1114P

(From Bk 29) Reduced to 63

C19081 Internal reduction

Spectrum	1	2 [mm]	3	4	5	6	7	8	9	(7)-(9) [mm], [mm]$_2$ [mm]$_3$	Σ	Mean
Line 1	640	448 (192)	509 (131)	509	519		530	519	509	0		
		.. 23 ..										
2	..	519	542	640	..		640	640	562			
		.. 50 ..										
3	..	492 (173)	542 (63) (110)	542	640		562	562	530			
4	640	467	530	530	542		530	519	501			
5	..	~~448~~ 405 (157)	.. ~~4~~ 87	509	530		519	492	472	..		
		405	70									
6	562	~~322~~ (170)	492 97	478	484		478	458	433	59		
		322	93									
7	492	~~341~~ (198)	429 124 74	409	414		405	398	375	54		
8	439	241 (210)	365 118 92	339	343		339	339	302	63		
9	394	184 (192)	302 102 90	282	294		294	286	241	61		
10	347	~~155~~	257 83	230	241		241	236	~~230~~ 205 (198) ? (69) (37)	52		
11	298	..	215 59	166	215		215	210	175	40		
12	257		198 55	166	184		184	175	166	32		
13	230		175 39	..	155		175	..	..			
14	205		166 35				166					
15	190		155				..					
16	175											

rejected for voltage drop

Voltage irregular →

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From Bk 29 — Reduced to 63

C 19102 Vega (3) and δ Cep and η Aql

Lines: n m+n f+m+n n̄ m+n [n] [m+n] Dm Dm-1 dm dl

	n	m+n	f+m+n	n̄	m+n	[n]	[m+n]	Dm	Dm-1	dm	dl	Mean
β	57	61	63	59	61							
γ	59	61	62	60	62	80		85		76	73	
δ	57	62	62	58	63	40		5		10	88	
ε	53	61	62	54	62	..		45		22	34	
κ	61	61	62	62	62	40		45	+11	56	50	
ζ	46	60	62	47	61	40		65	+11 −11	76	70	
η	35	58	62	36	59	80	39	121	+10	110	116	
θ	25	52	62	25	53	140	39	179		189	184	
ι	22	45	63	22	45	217	29	246	0	246	246	
κ	20	38	63	20	38	271	34	305	−11	294		
λ	19	32	63	19	32	310	28	338	+2	340		
μ	16	27 (6)	63	16	27 (6)	344	25	369	−16	353		
ν	16	20	63	16	20	380	35	415		376		
ξ	4	17	63	14	17	413	15	428				
						430	37	467				
							273		+34			
							30		−35			
									4			

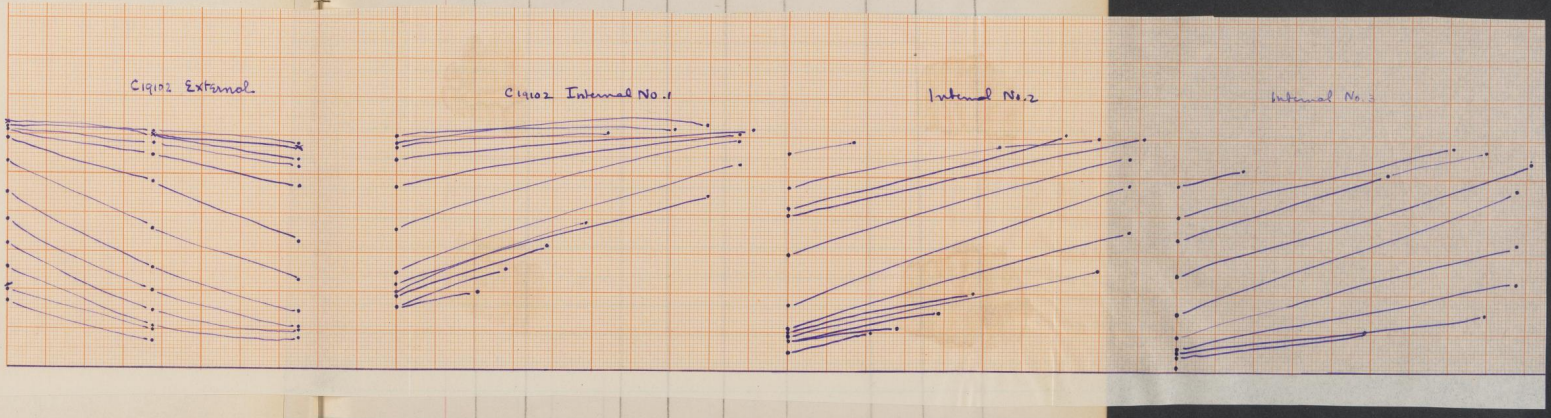
Mean 7.3 80

Perhaps the wrong aperture was used for No. 1? The ephemeris seems to be about three tenths of a magnitude too bright.

Mean interval from 2 to 3 is right.

The 2,3 external curve checks the internal curves accurately and is to be used in the reductions.

ap.3 rather streaked.



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u Q 1707
C-19102 #2 Do not reduce

Line	n	m+n	l+m+n	n̄	m+n	[n̄]	[m+n]	elim	dl
β	1	48	59	64	47	58		160	
γ	2	42	61	63	42	61		80	
δ	3	49	60	63	47	60		120	
ε	4	40	60	63	40	60		120	
κ	5	56	59	63	56	59		140	
ζ	6	30	55	63	30	55		196	
η	7	17	48	63	17	48		254	
θ	8	11	37	64	11	36		321	
ι	9	9	26	64	9	26		380	
κ	10	10	20	64	10	20		413	
λ	11	8	15	64	8	15		444	
μ	12	8	11	64	8	11		490	
ν	13	5	10	64	5	10		503	
ξ	14	4	7	64	4	7		542	

y Q 1707
C-19102 Do not r

n+n	n̄	m+n	
	34	52	
	40	58	
		57	
		54	

C 19102 External reduction
Violet – Apertures 1, 2, 3
Green, Apertures 2, 3. this checks accurately with
External curve and is to be used.

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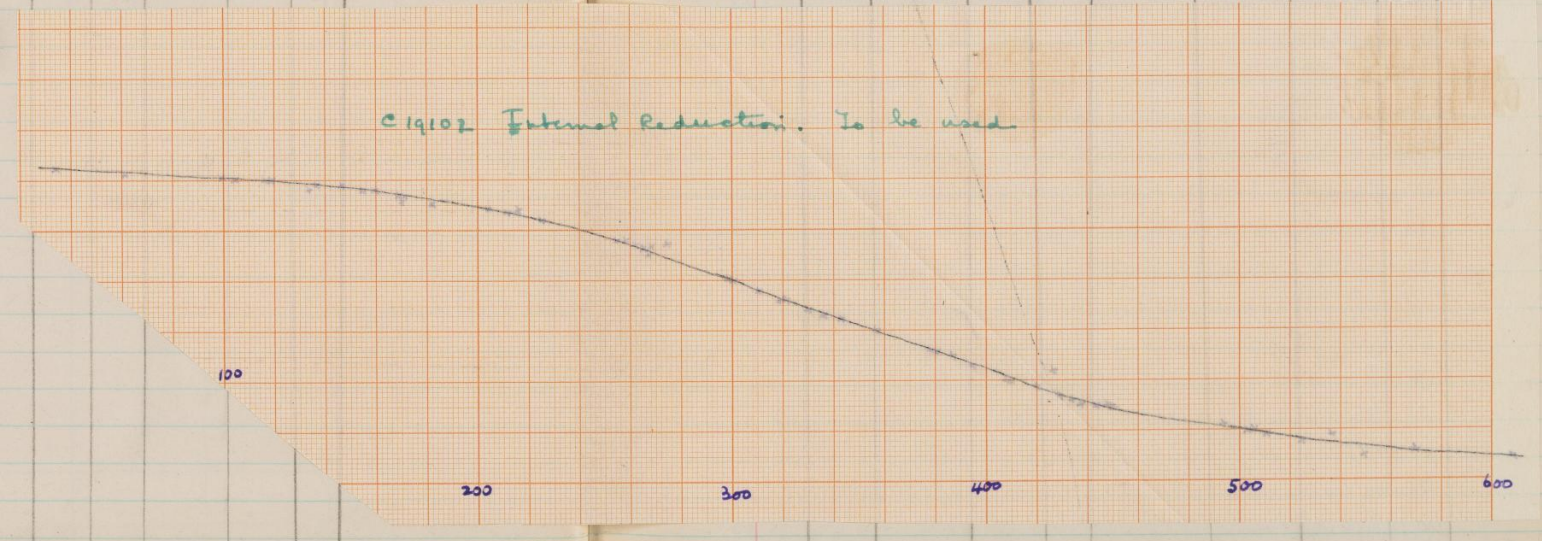
Do not reduce

n̄	m+n	[n]	[m+n]	dm	dl
7	58		160		
2	61		80		
7	60		120		
0	60		120		
6	59		140		
0	55		196		
1	48		254		
1	36		321		
9	26		380		
0	20		413		
8	15		444		
8	11		490		
5	10		503		
4	7		542		

4 of 1707
C-19102

Do not reduce

Lim	n	m+n	lt m+n	n̄	m+n	[n]	[m+n]	dm	dl
β	1	34 53	64	34	52		226		
γ	2	41 59	64	40	58		160		
δ	3	35 58	64	34	57		172		
ε	4	25 55	64	25	54		206		
κ	5	49 53	64	48	52		226		
ζ	6	15 48	64	15	47		260		
η	7	9 34	64	9	33		339		
θ	8	6 23	64	6	23		396		
ι	9	5 15	64	5	15		444		
κ	10	4 11	64	4	11		490		
λ	11	4 10	64	4	10		503		
μ	12	1 8	64	1	8		526		



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1924phae.proj.1110P

α Ø 170 9
C 19+02
η Aquilae

Line	n	m+n	l+m+n	n̄	m̄+n	[n̄]	[m̄+n̄]	dm	dl
1	115	130	320						
2	110	135	320						
3	125	140	320						
4	130	150	320						
5	140	150	320						
6	140	170	320						
7	135	175	320						
8	165	180	320						
9	170	185	320						
10	170	190	320						
11	180	190	320						
12	190	200	320						
13	190	210	320						
14	190	210	320						
15	195	220	320						
16	210	220	320						
17	210	220	320						
18	200	220	320						
19	200	220	320						
20	215	220	320						
21	205	220	320						
22	190	220	320						
23	205	220	320						
24	210	220	320						
25	210	220	320						
26	210	220	320						
27	210	220	320						
28	210	220	320						
29	200	220	320						
30	200	220	32						

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1924phae.proj.11QP

C 19102

	n	m+n	l+m+n	n̄	m+n̄	[n̄]	[m+n̄]	dm	dl
31	200	220	320						
32	190	220	320						
33	190	215	320						
34	190	210	320						
35	190	210	320						
36	180	210	320						
37	170	210	320						
38	170	210	320						
39	180	210	325						
40	170	205	325						
41	160	200	325						
42	170	210	325						
43	165	200	325						
44	150	195	325						
45	180	195	326						
46	170	195	325						
47	175	190	325						
48	160	190	325						
49	130	190	325						
50	150	180	325						
51	155	180	325						
52	140	180	325						
53	130	180	325						
54	110	180	325						
55	125	175	325						
56	150	175	325						
57	140	170	325						
58	140	170	325						
59	140	170	325						
60	140	170	325						

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1924phae.proj.1110P

Line	m	m+n	l+m+n	n̄	m+n	[n̄]	[m+n]	dm	dl
61	135	165	320						
62	115	160	325						
63	130	160	325						
64	110	155	325						
65	110	155	320						
66	120	150	325						
67	110	150	325						
68	100	150	325						
69	095	150	325						
70	125	150	325						
71	130	150	325						
72	110	145	325						
73	125	145	325						
74	110	140	325						
75	110	140	325						
76	100	140	325						
77	110	135	325						
78	110	135	325						
79	110	135	325						
80	090	130	325						
81	125	130	325						
82	100	130	325						
83	075	130	325						
84	110	125	325						
85	100	120	325						
86	095	120	330						
87	095	120	330						
88	110	120	330						
89	—	—	—						
90	080	115	330						

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1924phae.proj.11:CP

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	$d\omega\, d\phi$
91	~~070~~	~~115~~	~~330~~					
92	100	115	330					
93	100	115	~~330~~					
94								
95								
96								
97								
98								
99								
100								
101								
102								
103								

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1924phae.proj.1110P

ν Aquilae HF

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dun	dll
1	23	25	63	23	25	396	385	11	10
2	22	27	63	22	27	402	373	29	23
3	25	29	63	25	29	385	361	24	20
4	26	29	63	26	29	380	361	19	16
5	28	31	63	28	31	367	350	17	14
6	29	33	63	29	33	361	339	22	18
7	25	34	63	25	34	385	332	53	39
8	31	35	63	31	35	350	327	23	19
9	33	36	63	33	36	339	321	18	15
10	35	37	63	35	37	325	316	09	08
11	35	37	63	35	37	325	316	09	08
12	36	39	63	36	39	321	305	16	14
13	36	40	63	36	40	321	300	21	18
14	37	41	63	37	41	316	295	21	18
15	38	42	63	38	42	310	288	22	18
16	40	43	63	40	43	300	282	18	15
17	39	43	63	39	43	305	282	23	19
18	40	43	63	40	43	300	282	18	15
19	39	43	63	39	43	305	282	23	19
20	42	43	63	42	43	288	282	06	05
21	40	43	63	40	43	300	282	18	15
22	38	43	63	38	43	310	282	28	23
23	40	43	63	40	43	300	282	18	15
24	40	43	63	40	43	300	282	18	15
25	42	43	63	42	43	288	282	06	05
26	42	43	63	42	43	288	282	06	05
27	42	43	63	42	43	288	282	06	05
28	42	43	63	42	43	288	282	06	05
29	39	43	63	39	43	305	282	23	19
30	39	43	63	39	43	305	282	23	19

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1924phae.proj.11:CP

C1910 2

Time	n	m+n	l+m+n	$\bar{n}$	m+n	[m]	[m+n]	dm	dl
31	39	43	63	39	43	305	282	23	19
32	37	43	63	37	43	316	282	34	27
33	38	43	63	38	43	310	282	28	23
34	38	42	63	38	42	310	288	22	18
35	38	41	63	38	41	310	295	15	13
36	35	41	63	35	41	327	295	32	26
37	33	41	63	33	41	339	295	44	33
38	34	41	63	34	41	332	295	37	29
39	34	40	63	34	40	332	300	32	26
40	34	40	64	33	39	339	305	34	27
41	33	40	64	32	39	344	305	39	30
42	34	39	64	33	38	339	310	29	23
43	33	39	64	32	38	344	310	34	27
44	30	34	64	30	38	356	310	46	34
45	34	39	64	33	38	339	310	29	23
46	34	38	64	33	37	339	316	23	19
47	35	38	64	34	37	332	316	16	14
48	32	38	64	31	37	350	316	34	27
49	25	38	64	25	37	385	321	64	47
50	30	36	64	30	35	356	327	29	23
51	30	36	64	30	35	356	327	29	23
52	34	35	64	33	34	339	332	07	06
53	25	35	64	25	34	385	332	53	39
54	22	35	64	22	34	402	332	70	48
55	25	35	64	25	34	385	332	53	39
56	30	34	64	30	33	356	339	17	14
57	27	34	64	27	33	373	339	34	27
58	27	33	64	27	32	373	344	29	23
59	27	33	64	27	32	373	344	29	23
60	27	33	64	27	32	373	344	29	23

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1924phae.proj.11QP

C 19102

Line	n	m+n	l+m+n	$\bar{n}$	m+n	[n]	[m+n]	dec	dl
61	25	32	64	25	31	385	350	35	28
62	23	31	64	23	31	396	350	46	34
63	25	31	64	25	31	385	350	35	28
64	23	30	64	23	30	396	356	40	31
65	22	30	64	22	30	402	356	46	34
66	24	30	64	24	30	390	356	34	27
67	23	30	64	23	30	396	356	40	31
68	20	30	64	20	30	413	356	57	41
69	19	30	64	19	30	416	356	60	42
70	25	30	64	25	30	385	356	29	23
71	25	29	64	25	29	385	361	24	20
72	22	29	64	22	29	402	361	41	31
73	24	28	64	24	28	390	367	23	19
74	22	28	64	22	28	402	367	35	28
75	21	28	64	21	28	408	367	41	31
76	20	28	64	20	28	413	367	46	34
77	23	27	64	23	27	396	373	23	19
78	22	26	64	22	26	402	380	22	18
79	22	26	64	22	26	402	380	22	18
80	14	26	64	18	26	422 416	380	42 36	34 30
81	24	25	64	24	25	390	385	05	04
82	20	25	64	20	25	413	385	28	23
83	15	25	64	15	25	444	385	59	42
84	16	25	64	16	25	438	385	53	39
85	24	25	64	24	25	390	385	05	04
86	19	24	64	19	24	416	390	26	21
87	19	24	64	19	24	416	390	26	21
88	18	23	64	18	23	422	396	26	21
89	21	28	64	21	23	408	396	12	10
90	16	22	64	16	22	438	402	36	28

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1924phae.proj.1134P

C 19102

Line	n	m+n	l+m+n	n̄	m+n	[n̄]	[m+n]	dec	dl
91	19	22	64	19	22	416	402	14	12
92	19	22	64	19	22	416	402	14	12
93	20	22	64	20	22	413	402	11	10
94	19	21	64	19	21	416	408	08	07
95	15	19	64	15	19	444	416	28	23
96	15	19	64	15	19	444	416	28	23
97	15	18	64	15	18	444	422	22	18
98	12	17	64	12	17	472	430	42	32
99	02	16	64	02	16	?650	438	:912	:86
100	—	—	—	—	—	—	—	—	—
101	—	—	—	—	—	—	—	—	—
102	—	—	—	—	—	—	—	—	—
103	01	11	64	01	11	—	490	—	—

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1924phae.proj.111GP

C 1910 2. u Φ 1709
S Capture #5

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dnn	dll		
1	30	34	62	30	35	356	327	29	23		
2	30	36	62	30	37	356	316	40	31		
3	34	37	62	35	38	327	310	17	14		
4	36	39	62	37	40	316	300	16	14		
5	36	40	62	37	41	316	295	21	18		
6	39	42	62	40	43	300	282	18	15		
7	35	43	62	36	44	321	276	45	34	80	196
8	41	44	62	42	45	288	271	17	14		
9	43	45	62	43	46	282	266	16	14		
10	45	46	62	46	47	266	260	06	05		
11	45	48	62	46	49	266	247	19	16		
12	47	50	62	48	51	254	234	20	17		
13	47	50	62	48	51	254	234	20	17		
14	48	51	62	49	52	247	226	21	18		
15	49	52	62	50	53	240	217	23	19		
16	51	53	62	52	54	226	206	20	17		
17	51	53	62	52	54	226	206	20	17		
18	51	53	62	52	54	226	206	20	17		
19	50	53	62	51	54	234	206	28	23		
20	52	53	62	53	54	217	206	11	10		
21	51	53	62	52	54	226	206	20	17		
22	51	53	62	52	54	226	206	20	17		
23	51	53	62	52	54	226	206	20	17		
24	52	53	62	53	54	217	206	11	10		
25	52	53	62	53	54	217	206	11	10		
26	51	52	62	52	54	226	206	20	17		
27	50	52	62	51	54	234	206	28	23		
28	50	53	62	51	54	234	206	28	23		
29	50	53	62	51	54	234	206	28	23		
30	50	53	62	51	54	234	206	28	23		

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1924phae.proj.111cp

G 1910 2
S Leplaei

Rec	n	m+n	l+m+n	n'	m'+n'	[n]	[m'+n']	dec	dll	
31	50	53	62	51	54	234	206	28	23	
32	57	53	62	53	54	217	206	11	10	
33	50	53	62	51	54	234	206	28	23	
34	50	53	62	51	54	234	206	28	23	
35	50	53	62	51	54	234	206	28	23	
36	49	53	62	50	54	240	206	34	27	
37	48	52	62	49	53	247	217	30	24	
38	48	52	62	49	53	247	217	30	24	
39	48	52	62	49	53	247	217	30	24	
40	48	51	62	49	52	247	226	21	18	
41	49	51	62	50	52	240	226	14	12	
42	48	51	62	49	52	247	226	21	18	
43	49	51	62	50	52	240	226	14	12	
44	45	50	62	46	51	266	234	32	26	
45	48	50	62	49	51	247	234	13	11	
46	48	50	62	49	51	247	234	13	11	
47	49	50	62	50	51	240	234	06	05	
48	48	50	62	49	51	247	234	13	11	
49	42	49	62	43	50	282	240	42	32	58 232
50	46	49	62	47	50	260	240	20	17	
51	45	49	62	46	50	266	240	26	21	
52	40	49	62	41	50	295	240	55	40	
53	38	48	62	39	49	305	247	58	41	
54	35	48	62	36	49	321	247	74	49	
55	41	48	62	42	49	298	247	41	31	
56	46	48	62	47	49	260	247	13	11	
57	45	48	62	46	49	266	247	19	16	
58	45	48	62	46	49	266	247	19	16	
59	44	47	62	45	48	271	254	17	14	
60	44	47	62	44	48	276	254	22	18	

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1924phae.proj.111CP

Line	h	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	dm	dl
61	42	46	62	43	47	282	260	22	18
62	40	46	62	41	47	295	260	35	28
63	42	46	62	43	47	282	260	22	18
64	40	46	62	41	47	295	260	35	28
65	39	45	62	40	46	300	266	34	27
66	41	45	62	42	46	288	266	22	18
67	40	45	62	41	46	295	266	29	23
68	38	45	62	39	46	305	266	39	30
69	36	44	62	37	45	316	271	45	34
70	42	44	62	43	45	282	271	11	10
71	41	44	62	42	45	288	271	17	14
72	40	44	62	41	45	295	271	24	20
73	41	44	62	42	45	288	271	17	14
74	38	44	62	39	45	305	271	34	27
75	39	44	62	40	45	300	271	29	23
76	38	43	62	39	44	305	276	29	23
77	39	43	62	40	44	300	276	24	20
78	38	43	62	39	44	305	276	29	23
79	39	43	62	40	44	300	276	24	20
80	35	43	62	36	44	321	276	45	34
81	42	42	62	43	43	282	282	00	00
82	37	42	62	38	43	310	282	28	23
83	31	42	62	32	43	344	282	62	44
84	33	41	62	34	42	332	288	44	33
85	35	41	62	36	42	321	288	33	26
86	34	40	62	35	41	327	295	32	26
87	36	40	62	37	41	316	295	21	18
88	35	40	62	36	41	321	295	26	21
89	37	40	62	39	41	305	295	10	09
90	33	40	62	34	41	332	295	37	29

34 232

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1924phae.proj.11:CP

C 19102 Reduction Internal

Rmz

0	-	25	385	50	240			
1	-	26	380	51	234			
2	-	27	373	52	226			
3	-	28	367	53	217			
4	610	29	361	54	206			
5	580	30	356	55	196			
6	562	31	350	56	185			
7	542	32	344	57	172	D	282	
8	526	33	339	58	160			
9	512	34	332	59	140			
10	503	35	327	60	120	D	297	
11	490	36	321	61	80			
12	472	37	316	62	40			
13	462	38	310	63	..			
14	451	39	305					
15	444	40	300			116	314	
16	438	41	295					
17	430	42	288					
18	422	43	282					
19	416	44	276					
20	413	45	271					
21	408	46	266					
22	402	47	260					
23	396	48	254					
24	390	49	247					

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1924phae.proj.1110P

C1910 2
S Cephei

Rec	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[m]$	$[m+n]$	dec dl			
91	38	40	62	39	41	305	295	10	09		
92	36	40	62	37	41	316	295	21	18		
93	37	39	62	38	40	310	300	10	09		
94	36	38	62	37	39	316	305	11	10		
95	32	38	62	33	39	339	305	34	27		
96	30	37	62	30	38	356	310	46	34		
97	33	37	62	34	38	332	310	22	18		
98	29	35	62	29	36	361	321	40	31		
99	15	33	62	15	34	444	332	112	~~70~~ 64	50	282
100	23	32	62	23	33	396	339	57	41		
101	25	31	62	25	32	385	344	41	31		
102	23	30	62	23	30	396	356	40	31		
103	11	28	62	10	28	503	367	136	71	70	297
104	—	—	—								
105	—	—	—								
106	—	—	—								
107	—	—	—								
108	—	—	—								
109	—	—	—								
110	10	17	62	10	17	503	430	73	49	116	314

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1924phae.proj.111MP

χ 14968 α Q 1753
4, Scopiila

Reduce to 490

Line	n	m+n	l+m+n	n̄	m̄+n̄	[n̄]	[m+n̄]	dm	dl
1	120	160	490	120	160	166	136	30	24
2	160	175	490	160	175	136	126	10	09
3	170	190	490	170	190	129	118	11	10
4	170	200	490	170	200	129	112	17	14
5	170	200	490	170	200	129	112	17	14
6	170	215	490	170	215	129	104	25	21
4861 β 7	120	230	490	170	230	166	97	69	47
8	220	240	490	220	240	102	93	09	08
9	250	255	490	250	255	89	87	02	02
4824 10	240	270	490	240	270	93	80	13	11
11	270	285	490	270	285	80	74	06	05
12	265	290	490	265	290	82	72	10	09
13	290	295	490	290	295	72	70	02	02
14	~~295~~	~~300~~	~~490~~						
15	295	300	490	295	300	70	68	02	02
16	290	305	490	290	305	72	66	06	05
17	300	315	490	300	315	68	62	06	05
18	290	320	490	290	320	72	60	08	07
19	320	330	490	320	330	60	56	04	04
20	320	330	490	320	330	60	56	04	04
21	330	345	490	330	345	56	50	06	05
22	320	350	490	320	350	60	47	13	11
23	—	—	—						
24	—	—	—						
25	—	—	—						
26	—	—	—						
27	—	—	—						
28	—	—	—						
29	—	—	—						
30	—	—	—						

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1924phae.proj.11:OP

α 14968.
α Φ 1753

Line	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl
	31	—	—	—	—				
4657	32	340	370	490	340	370	49 35	14	12
4629	33	345	375	490	345	375	47	14	12
4619	34	340	375	490	340	375	49	13	12
	35	340	380	490	340	380	49 34	16	15
4584	36	320	380	490	320	380	60 34	26	21
4576	37	360	380	490	360	380	42 34	08	07
	38	350	380	490	350	380	47 34	13	11
	39	350	380	490	350	380	47 34	13	11
	40	320	380	490	320	380	60 34	26	21
4549	41	330	375	490	330	375	56 36	20	17
4541	42	360	375	490	360	375	42 36	06	05
4534	43	345	375	490	345	375	50 36	14	12
	44	350	375	490	350	375	47 36	11	10
4520	45	340	380	490	340	380	52 34	18	15
4515	46	360	380	490	360	380	42 34	18	07
4508	47	350	380	490	350	380	47 34	13	11
4501	48	350	380	490	350	380	47 34	13	11
4489 ?	49	330	380	490	330	380	56 34	22	18
4482	50	340	380	490	340	380	52 34	28	23
4469	51	320	375	490	320	375	60 36	24	20
	52	355	375	490	355	375	45 36	09	08
	53	355	375	490	355	375	45 36	09	08
	54	350	375	490	350	375	47 36	11	10
4444	55	305	375	490	305	375	66 36	30	24
	56	355	370	490	355	370	45 38	07	06
	57	340	370	490	340	370	52 38	14	12
4417	58	270	370	490	270	370	80 38	42	32
4405	59	340	370	485	345	375	50 36	14	12
4400	60	310	370	485	315	375	62 36	26	21

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1924phae.proj.111MP

α Φ 1753
χ 14968

Lwr	n	m+n	l+m+n	ū	m+n	[n]	[m+n]	dww	dl
4395	61	295	370	485	300	315	68	36	32	26
4383	62	295	370	485	290	375	72	36	36	28
4375	63	315	370	485	320	375	60	36	24	20
4367	64	340	370	485	345	375	50	36	14	12
	65	360	370	485	365	375	40	36	04	04
4352	66	315	370	485	320	375	60	36	24	20
4340 γ	67	180	365	485	180	370	123	38	85	54
	68	335	365	485	340	370	52	38	14	12
	69	310	365	485	315	370	62	38	24	20
	70	330	365	485	335	370	54	38	16	14
4315	71	270	365	485	270	310	80	38	42	32
4300	72	310	365	485	315	370	62	38	24	20
	73	270	365	485	270	370	80	38	42	32
	74	300	360	485	305	365	66	40	26	21
	75	300	360	485	305	365	66	40	26	21
	76	340	360	485	345	365	50	40	10	09
	77	340	360	485	345	365	50	40	10	09
	78	300	360	485	305	365	66	40	26	21
	79	360	360	485	365	365	40	40	00	00
4269	80	320	360	485	325	365	58	40	18	15
	81	310	360	485	315	365	62	40	22	18
	82	300	360	485	305	365	66	40	26	21
	83	325	355	485	330	360	56	42	14	12
	84	325	355	485	330	360	56	42	14	12
4233	85	290	355	485	295	360	70	42	28	23
4227	86	290	350	485	295	355	70	45	25	21
4215	87	290	350	485	295	355	70	45	25	21
	88	320	350	485	325	355	58	45	13	11
H	89	300	350	485	305	355	66	45	21	18
4201	90	300	350	485	305	355	66	45	21	18

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1924phae.proj.11:OP

m Φ 1753
χ 14968

fine	n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n̄]	dm	dl
4198	91	310	350	485	315	355	62	45	17	14
	92	310	350	485	315	355	62	45	17	14
	93	300	345	485	305	350	66	47	19	16
	94	300	345	485	305	350	66	47	19	16
4178	95	240	340	485	240	345	93	50	43	33
4173	96	240	340	485	240	345	93	50	43	33
	97	290	340	485	295	345	70	50	20	17
	98	290	340	485	295	345	70	50	20	17
	99	310	340	485	315	345	62	50	12	10
	100	305	340	485	310	345	64	50	14	12
	101	320	335	485	325	340	58	50	18	15
	102	280	335	485	285	340	74	50	24	20
4132	103	260	330	485	260	335	85	54	31	25
	104	290	330	485	295	335	70	54	16	14
	105	305	330	485	310	335	64	54	10	09
	106	285	330	485	290	335	72	54	18	15
4101	8 107	160	325	485	160	330	136	56	80	52
	108	310	320	485	315	325	62	58	14	12
	109	290	320	485	295	325	70	58	14	12
4077	110	240	320	485	240	325	93	58	35	28
4072	111	270	320	485	270	325	80	58	22	18
4067	112	280	320	485	285	325	74	58	16	14
4064	113	270	320	485	270	325	80	58	22	18
4046	114	260	310	485	260	315	85	62	23	19
	115	290	310	485	295	315	70	62	08	07
	116	270	310	485	270	315	80	62	18	15
	117	290	305	480	300	315	68	62	06	05
	118	270	300	480	270	~~310~~ 295	78	66	12	10
	119	—								
	120	250	300	480	255	~~310~~ 305	87	66	21	18

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1924phae.proj.11107

X 14468
4 Scorpii 1a

	line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	dun	dl
	121	255	300	480	260	305	85	66	19	16
	122	245	295	480	250	300	89	68	21	18
	123	260	295	480	265	300	82	68	14	12
	124	290	295	480	295	300	70	68	02	02
	125	260	290	480	265	295	82	70	12	10
	126	250	280	480	255	285	87	74	13	11
	127	270	280	480	275	285	78	74	04	04
	128	235	280	480	235	285	95	74	21	18
	129	240	280	480	245	285	91	74	17	14
	130	240	280	480	245	285	91	74	17	14
	131	260	270	480	265	275	82	78	04	04
	132	240	260	480	245	265	91	82	09	08
	133	210	255	480	215	260	104	85	19	16
3970	ε 134	30	240	480	30	245	248	91	157	76
	135	200	220	480	205	225	110	100	10	09
	136	180	215	480	180	220	123	102	21	18
	137	160	200	480	160	205	136	110	26	21
3933	κ 138	20	190	480	20	190	263	118	145	74
	139	160	180	480	160	180	136	123	13	11
	140	150	170	480	150	170	142	129	13	11
	141	130	170	480	130	170	158	129	29	23
	142	120	160	480	120	170	166	129	37	29
3903	143	100	150	480	100	150	182	142	40	31
3689	~~144~~									
	ζ 145 ~~144~~	60	130	480	50	130	221	158	63	44
	146 ~~145~~	100	120	480	100	120	182	166	16	14
	147 ~~146~~	100	120	480	100	120	182	166	16	14
	148 147	90	110	480	90	110	190	174	16	14
	149 ~~148~~	50	90	480	50	90	221	190	31	25
	150 149	10	65	480	10	60	—	212	—	
	150									

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1924phae.proj.1110P

α 1752
χ 14968
ζ Scorpii Phe.

Long	n	m+n	l+m+n	n̄	m+n	[illegible]	[illegible]	dm	dl
1	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—
3	—								
4	—								
5	—								
6	—								
7	010	0							
8	—								
9	—								
10	—								
11	—								
12	—								
13	030								
14	—								
15	—								
16	040	0							
17	—								
18	040	0							
19	—								
20	—								
21	—								
22	—								
23	—								
24	—								
25	—								
26	—								
27	—								
28	—								
29	—								
30	—								

χ 14968

5	300	105	179	205	117	305	66
10	283	110	176	210	114	310	64
15	274	115	172	215	112	315	62
20	263	120	169	220	109	320	59
25	255	125	166	225	106	325	57
30	248	130	163	230	104	330	55
35	241	135	159	235	101	335	52
40	234	140	155	240	98	340	49
45	228	145	152	245	96	345	47
50	221	150	149	250	94	350	45
55	218	155	146	255	91	355	42
60	213	160	143	260	88	360	39
65	208	165	140	265	86	365	34
70	204	170	138	270	84	370	35
75	200	175	135	275	81	375	33
80	197	180	131	280	79	380	30
85	193	185	128	285	76	385	28
90	189	190	125	290	74	390	26
95	186	195	122	295	71		
100	183	200	119	300	69		

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1924phae.proj.111@P

α 1752
χ 14968
ν Scorpii Bb.

Line	n	m+n	l+m+n	n̄	m+n	[n̄]	[m+n̄]	dm	dl
1	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—
β 7	010	030	500	10	30	—	—	—	—
8	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	—
13	030	045	500	30	45	248	227	21	
14	—	—							
15	—	—	—						
16	040	050	495	40	50	233	221	12	
17	—	—	—						
18	040	055	495	40	55	233	216	17	
19	—	—	—						
20	—	—	—						
21	—	—	—						
22	—	—	—						
23	—	—	—						
24	—	—	—						
25	—	—	—						
26	—	—	—						
27	—	—							
28	—								
29	—								
30									

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1924phae.proj.111GP

λ 14968

Time	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[\overline{m+n}]$	dec	dl
31	—	—	—						
32	—	—	—						
33	—	—	—						
34	080	100	490	80	100				
35	090	100	490	90	100				
36	—	—	—						
37	—	—	—						
38	—	—	—						
39	—	—	—						
40	—	—	—						
41	—	—	—						
42	—	—	—						
43	—	—	—						
44	—	—	—						
45	—	—	—						
46	—	—	—						
47	—	—	—						
48	—	—	—						
49	—	—	—						
50	—	—	—						
51	090	100	490	90	100				
52	—	—	—						
53	—	—	—						
54	—	—	—						
55	—	—	—						
56	—	—	—						
57	—	—	—						
58	—	—	—						
59	080	105	490	80	105				
60	—	—	—						

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1924phae.proj.11RP

φ14968

line	n	m+n	l+m+n	$\overline{n}$	$\overline{m+n}$	$[\overline{n}]$	$+[\overline{m+n}]$	dii	dl
61	—	—	—						
62	080	105	490	80	105				
63	—	—	—						
64	—	—	—						
65	090	110	490	90	110				
66	080	110	490	80	110				
67	020	105	490	20	105	263	178	85	
68	090	105	490	90	105				
69	090	105	490	90	105				
70									
71	080	100	490	80	100				
72	80	100	490	80	100				
73	—	—	—						
74	—	—	—						
75	—	—	—						
76	—	—	—						
77	—	—	—						
78	80	100	490	80	100				
79	—	—	—						
80	80	100	490	80	100				
81	—	—	—						
82	—	—	—						
83	—	—	—						
84	—	—	—						
85	—	—	—						
86	—	—	—						
87	—	—	—						
88	—	—	—						
89	—	—	—						
90	—	—	—						

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1924phae.proj.111CP

$\sum_{n=2} \binom{m+n}{l+m+n} \bar{n} \overline{m+n} \left[\begin{smallmatrix} n \\ 2 \end{smallmatrix}\right] \left[\begin{smallmatrix} m+n \\ n \end{smallmatrix}\right] du\, dl$

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$\int_{-1}^{+1} P_n \, P_{l+m+n} \, P_{l+m+n} \, \bar{n} \, \overline{m+n} \, [n^2] \, [m+n^2] \, d\mu \, d\mu$

1924phae.proj.111P

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1924phae.proj.111GP

CX. - 19131 (up 1840) δ Cephei lt mn tm. = 53

Line	n	mtn	ltmtn	m	mtn	[n]	[mtn]	dm	Δl	Corrected for companion	
7	48	51	52	49	52	469	580	111	64	117	66
49	49	52	53	49	52	469	580	111	64	117	66
54	50	52	53	50	52	492	580	78	51	84	54
55	51	52	53	51	52						
69	48	50	53	48	50						
74	49	50	53	49	50						
75	47	50	53	47	50						
76	48	50	53	48	50						
77	48	49	53	48	49						
79	48	49	53	48	49						
80	3 ~~42~~	49	53	3 ~~42~~	49	336 ~~344~~	469	123 ~~75~~	68 ~~50~~	129	70
82	48	49	53	48	49						
83	46	49	53	46	49						
84	46	49	53	46	49						
85	48	49	53	48	49						
86	47	49	53	47	49						
87	47	49	53	47	49						
88	47	48	53	47	48						
89	48	48	53	48	48						
90	45	48	53	45	48						
91	46	48	53	46	48						
95	43	47	53	43	47						
96	41	46	53	41	46						
97	43	45	53	43	45						
98	41	44	53	41	44						
99	13	42	53	13	42	232	395	163	78	170	79
100	36	41	53	36	41						
101	36	40	53	36	40						
103	9	37	53	9	37	204	363	159	77	166	78
110	~~47~~	18	53	7	18						
116	5	12	53	5	12						

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1924phae.proj.111cp

α Lyrae C-19131

Line	n	m tn	l tn m tn	n̄	m tn	[n] [m+n]	[m+n] dm ΔV
β	20	41	50	21	43 ✓		30
γ	30	49	51	31	51 ✓		46
δ	25	49	52	26	50 ✓		41
ε	15	46	53	15	46		37
K	39	43	53	39	43		
ζ	7	36	54	7	36 ✓		
η	3	24	54	3	24		
θ	2	13	54	2	13		
ι	1	8	54	1	8		
κ	2	5	54	2	5		

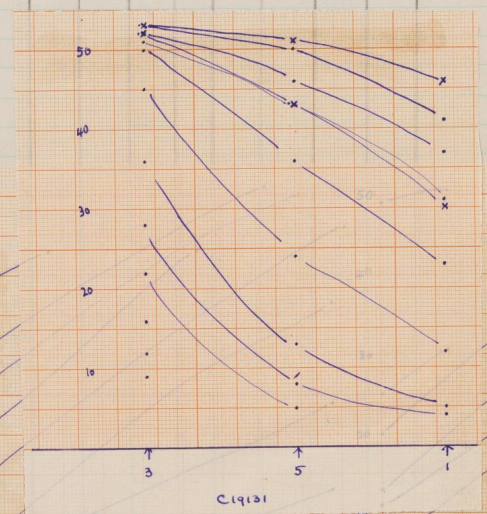
α Lyrae #3

177
55
110
165

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α Lyrae #2 C-19131

Line	n	m+n	l+m+n	n̄	m+n [n]	[n+n]	Δm	Δl
β	11	29	52	11	30			
χ	20	45	52	20	46			
δ	13	40	52	13	41			
ε	6	37	53	6	37			
κ	25	31	53	25	31			
ξ	2	23	53	2	23			
η	0	12	53	0	12			
θ	0	5	53	0	5			
ι	0	4	53	0	4			



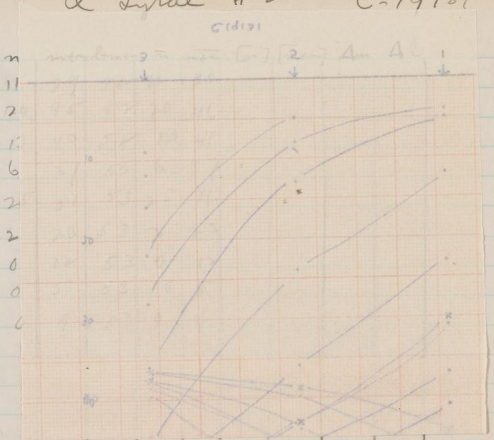
α Lyrae #1 C-19131

Line	n	m+n	l+m+n	n̄	m+n [n]	[n+n]	Δm	Δl
β	46	52	53	46	52			
γ	50	53	53	50	53			
δ	47	54	54	46	53			
ε	41	53	54	40	52			
κ	49	52	54	48	51			
ξ	31	51	54	30	50			
η	19	46	54	19	45			
θ	12	37	54	12	36			
ι	11	29	54	11	28			
κ	8	22	54	8	22			
λ	3	16	54	3	16			
μ	8	12	54	8	17			
ν	7	9	54	7	9			

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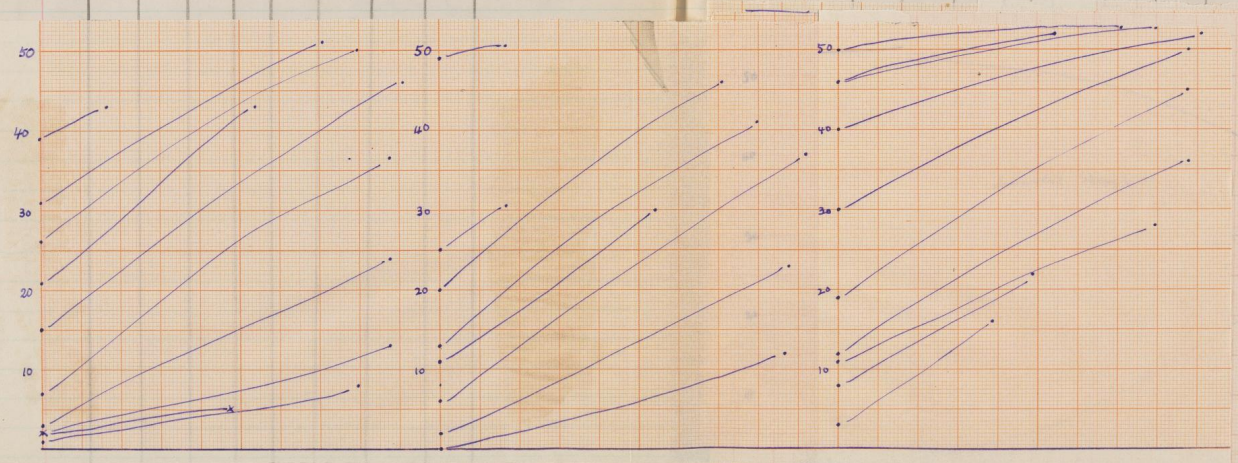
α Lyrae #2 C-19131

Line	n
β	11
γ	2
δ	1
ε	6
κ	2
ζ	2
η	0
θ	0
ι	0



α Lyrae #1 C-19131

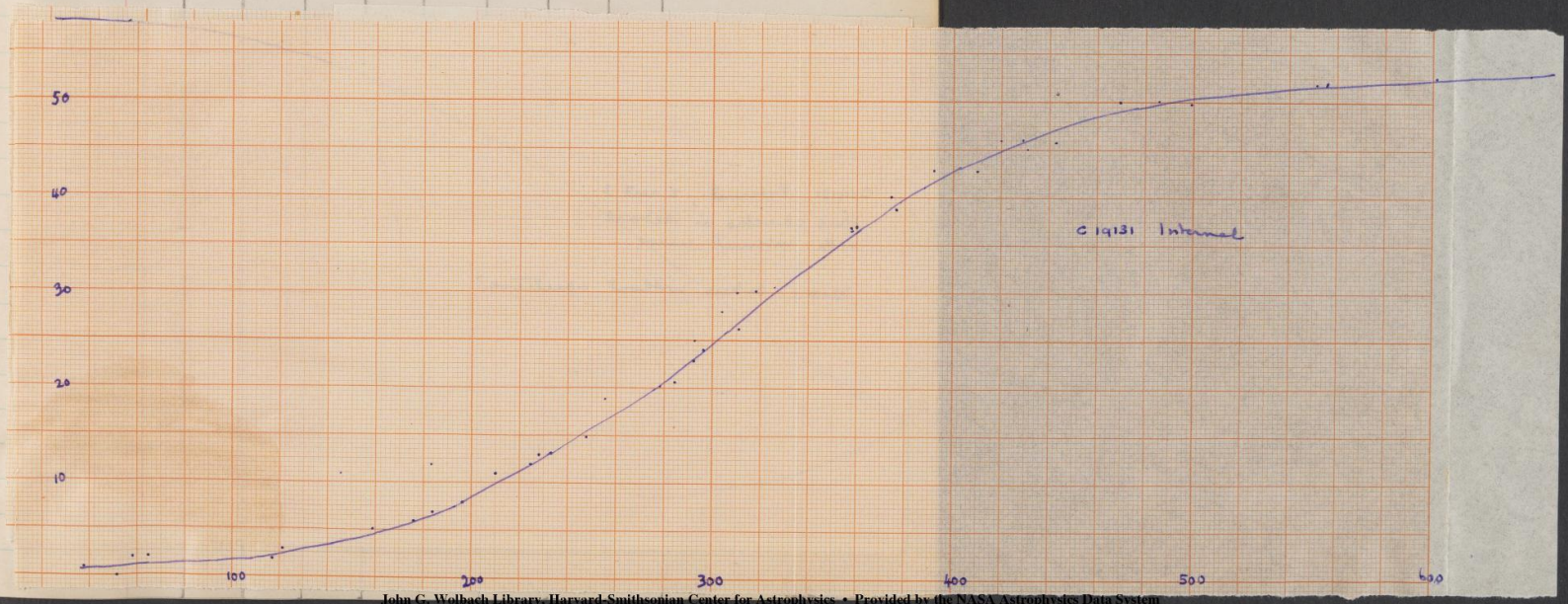
Line	n	mtn	ltmtn	$\bar{n}$	mtn	[n]	[mtn]	Δm	dl
β	48	52	53	46	52				
γ	50	51	53	50	53				
δ	47	54	54	46	53				
ε	41	53	54	40	52				
κ	49	52	54	48	51				
ζ	31	51	54	30	50				
η	19	46	54	19	45				
θ	12	37	54	12	36				
ι	11	29	54	11	28				
κ	8	22	54	8	22				
λ	3	16	54	3	16				
μ	8	12	54	8	12				
ν	7	9	54	7	9				



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α Lyrae #1 C-19131

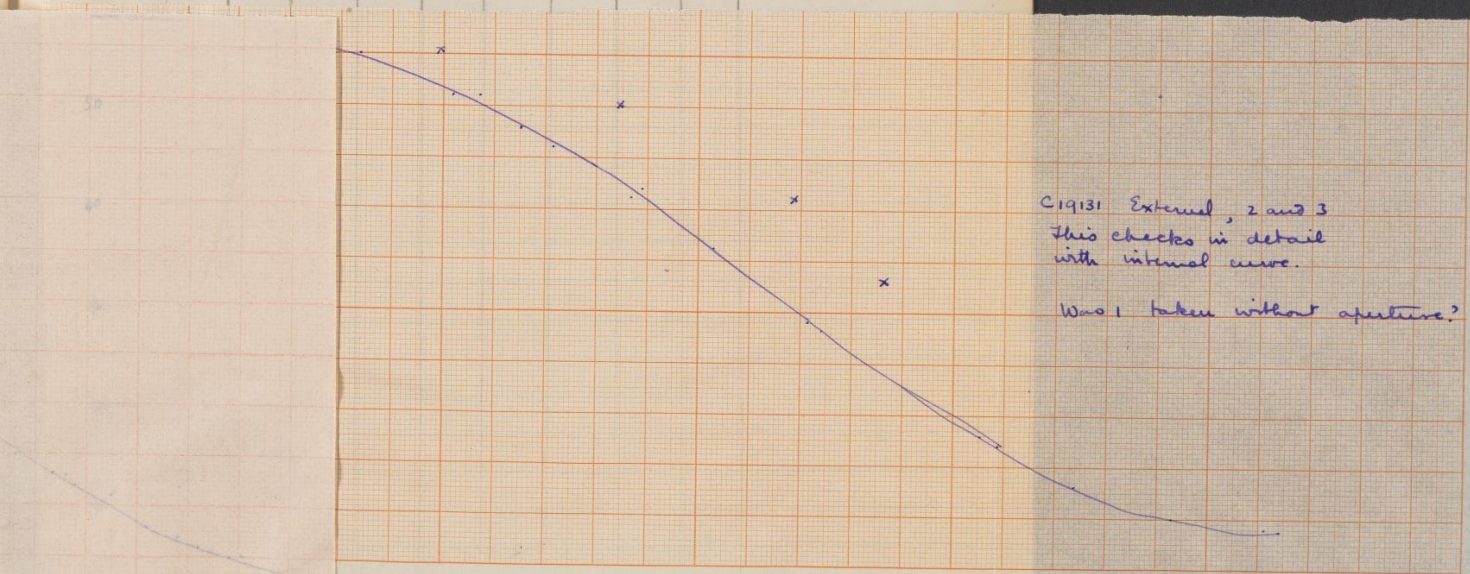
Line	n	mtn	ltmtn	π	mtn	[n]	[mtn]	Δm	dl
B	46	52	53	46	52				
γ	50	57	53	50	53				
δ	47	54	54	46	53				
ε	41	53	54	46	52				
κ	49	52	54	48	51				
ζ	31	51	54	30	50				
η	19	46	54	19	45				
θ	12	37	54	12	36				
ι	11	29	54	11	28				
κ	8	22	54	8	22				
λ	3	16	54	3	16				
μ	8	12	54	8	12				
ν	7	9	54	7	9				



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α Lyrae #1 C-19131

Line	n	m+n	l+m+n	n̄	m+n̄	[n]	[m+n]	Δm	dl
B	46	52	53	46	52				
γ	50	57	53	50	53				
δ	47	54	54	46	53				
ε	41	53	54	40	52				
κ	49	52	54	48	51				
ζ	31	51	54	30	50				
η	19	46	54	19	45				
θ	12	37	54	12	36				
ι	11	29	54	11	28				
κ	8	22	54	8	22				
λ	3	16	54	3	16				
μ	8	12	54	8	12				
ν	7	9	54	7	9				



C19131 External, 2 and 3
This checks in detail
with internal curve.

Was 1 taken without aperture?

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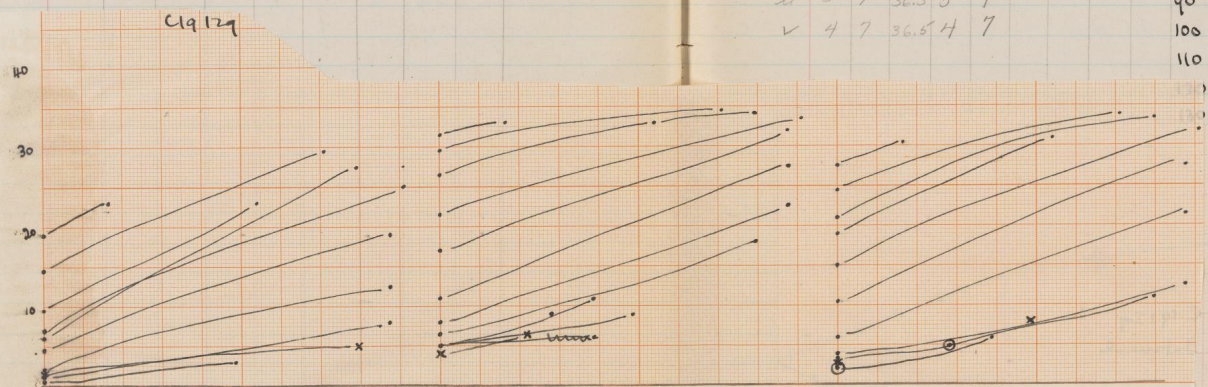
#2 C 19129

Vega

Line	m	mtn	l tmtn		
B	9.5	22	35	9.5	23
γ	14.5	29	35.5	14.5	29.5
δ	6	27.5	36	6	27.5
ε	7	25	36	7	25
K	19	23	36	19	23
ζ	4.5	19	36	4.5	19
η	2	12.5	36	2	12.5
θ	1	8	36	1	8
L	1.5	5	36	1.5	5
K	.5	3	36	.5	3

Reduced to 36

$[m_2 m]_1$	$[m_2 m]_2$	Mean
342	500	421
430	568	499
403	540	472
377	516	446



#1 C-19129

Vega

Line	m	mtn	l tmtn		
B	36.5	33	36	36.5	33
γ	29.5	34.5	36	29.5	34.5
δ	27	34.5	36.5	26.5	34
ε	22	34	36.5	21.5	33.5
K	32	34	36.5	31.5	33.5
ζ	17.5	32.5	36.5	17	32
η	11	28	36.5	11	27.5
θ	8	23	36.5	8	22.5
L	6.5	18.5	36.5	6.5	18
K	5	14	36.5	5	14
λ	5	11	36.5	5	11
μ	5	9	36.5	5	9
ν	4	7	36.5	4	7

C19129

Tenth mag. intervals

-80	0.2	140	5.0	290	15.5
0	0.6	150	5.5	300	17.0
10	1.0	160	6.0	310	18.0
20	1.5	170	6.5	320	19.5
30	1.7	180	7.0	330	20.5
40	2.0	190	7.5	340	21.5
50	2.2	200	8.0	350	22.5
60	2.5	210	9.0	360	23.5
70	2.7	220	9.5	370	24.5
80	3.0	230	10.0	380	25.5
90	3.2	240	11.0	390	26.0
100	3.5	250	11.5	400	27.0
110	3.8	260	12.0	410	28.0
	4.0	270	13.0	420	29.0
	4.5	280	14.0	430	29.5

STANDARD CROSS SECTION
ENGRAVING 300. MILLIMETER
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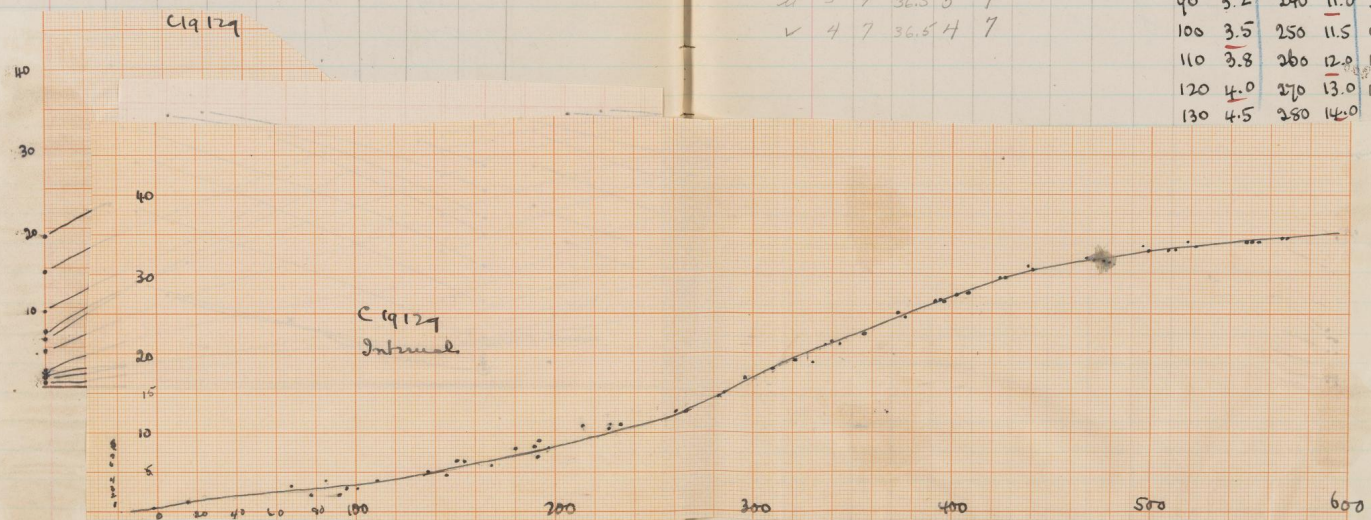
#2 C 19129

Vega

Reduced to 36

Line	n	m+n	l+m+n		
B	9.5	22	35	9.5	23
γ	14.5	29	35.5	14.5	29.5
δ	6	27.5	36	6	27.5
ε	7	25	36	7	25
K	19	23	36	19	23
ζ	4.5	19	36	4.5	19
η	2	12.5	36	2	12.5
θ	1	8	36	1	8
ι	1.5	5	36	1.5	5
κ	.5	3	36	.5	3

[m+n]	[m+n]+	Mean
342	500	421
430	568	499
403	540	472
377	516	446



#1 C-19129

Vega

Line	n	m+n	l+m+n		
B	26.5	33	36	26.5	33
γ	29.5	34.5	36	29.5	34.5
δ	27	34.5	36.5	26.5	33.4
ε	22	34	36.5	21.5	33.5
K	32	34	36.5	31.5	33.5
ζ	17.5	32.5	36.5	17	32
η	11	28	36.5	11	27.5
θ	8	23	36.5	8	22.5
ι	6.5	18.5	36.5	6.5	18.
κ	5	14	36.5	5	14
λ	5	11	36.5	5	11
μ	5	9	36.5	5	9
ν	4	7	36.5	4	7

C19129

Tenth map. intervals

-10	0.2	140	5.0	290	15.5
0	0.5	150	5.5	300	17.0
10	1.0	160	6.0	310	18.0
20	1.5	170	6.5	320	19.5
30	1.7	180	7.0	330	20.5
40	2.0	190	7.5	340	21.5
50	2.2	200	8.0	350	22.5
60	2.5	210	9.0	360	23.5
70	2.7	220	9.5	370	24.5
80	3.0	230	10.0	380	25.5
90	3.2	240	11.0	390	26.0
100	3.5	250	11.5	400	27.0
110	3.8	260	12.0	410	28.0
120	4.0	270	13.0	420	29.0
130	4.5	280	14.0	430	29.5
				440	30.5
				450	31.0
				460	31.5
				470	31.8
				480	32.0
				490	32.5
				500	33.0

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C-19129- Reduction

0.05 - 2	12. - 258	23.05 - 362	
1. - 12	12.05 - 262	24 - 368	35 - 586
1.05 - 22	13 - 268	24.05 - 374	
2 - 36	13.05 - 272	25 - 377	
2.05 - 56	14 - 278	25.05 - 382	
3 - 80	14.05 - 283	26 - 388	
3.05 - 102	15 - 286	26.05 - 394	
4 - 120	15.05 - 289	27 - 400	
4.05 - 130	16 - 292	27.05 - 403	
5 - 140	16.05 - 296	28 - 410	
5.05 - 148	17 - 300	28.05 - 414	
6 - 160	17.05 - 305	29 - 420	
6.05 - 169	18 - 310	29.05 - 426	
7 - 178	18.05 - 314	30 - 432	
7.05 - 188	19 - 316	30.05 - 440	
8 - 197	19.05 - 320	31 - 452	
8.05 - 204	20 - 325	31.05 - 464	
9 - 212	20.05 - 332	32 - 476	
9.05 - 220	21 - 336	32.05 - 489	
10 - 226	21.05 - 342	33 - 499	
10.05 - 234	22 - 346	33.05 - 520	
11 - 242	22.05 - 352	34 - 536	
11.05 - 252	23 - 358	34.05 - 565	

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1924phae.proj.118P

#3 C-19129 Vega

Line	m	m m	l m m		
β	17.5	28	33	19	31
γ	23	32.5	34	24.5	34
δ	20	32.5	35	21	33.5
ε	15	31	35	15	32
κ	27	30	35.5	27.5	30.5
ζ	10.5	27	35.5	10.5	27.5
η	6	21	35.5	6	21.5
θ	4	15	36	4	15
ι	3.5	11	36	3.5	11
K	3	8	36	3	8
λ	2	6	36	2	6
μ	2	5	36	2	5
ν	2.5	4.5	36	2.5	4.5

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1924phae.proj.119P

4. C-19129 η Aquilae

Line	n	m+n	4+m+n	n̄	m+n	[n]	[m+n]	Δw	dl
1	18.5	20.5	37	17.5	19.5	305	320	15	13
2	19.5	22	37	18.5	21	314	336	22	18
5	22	24.5	37	21	23.5	336	362	26	21
7	20	26.5	37	19	25.5	316	382	66	46
31	30	32	37.5	28.6	30.5	414	440	26	21
33	29.5	31	37.5	28	29.5	410	426	16	14
44	26.5	29.5	37.5	25.5	28	382	410	88	56
49	21.5	28.5	37.5	20	27.5	325	403	78	51
54	22	28	37.5	21	27	336	400	64	44
60	24	27	37.5	23	26	358	388	30	24
64	21.5	26	37.5	20.5	25	332	377	45	34
69	20	25.5	37.5	19	24.5	316	374	58	41
75	21	25	37.5	20	24	325	368	43	33
80	16.5	24	38	15	23.5	286	362	76	50
85	19	23	38	18	22	310	346	36	28
99	2	16	38	2	15	36	286	250	90
103	1	7	38	1	6	12	160	?148	(74)

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2 C 19136 Vega

Line	n	min	[n]	[min]	dm	
β	10	15.5	281	424	143	73
γ	13	17.5	349	523	174	80
δ	12	17	314	465	151	75
ε	9.5	17	563	465	202	84
K	15.5	16.5	408	444	36	28
ζ	7	15	206	390	184	82
η	4	12	123	314	191	83
θ	3	9	86	246	160	77
ι	3	6.5	86	194	108	63
κ	2	5	45	150	105	62

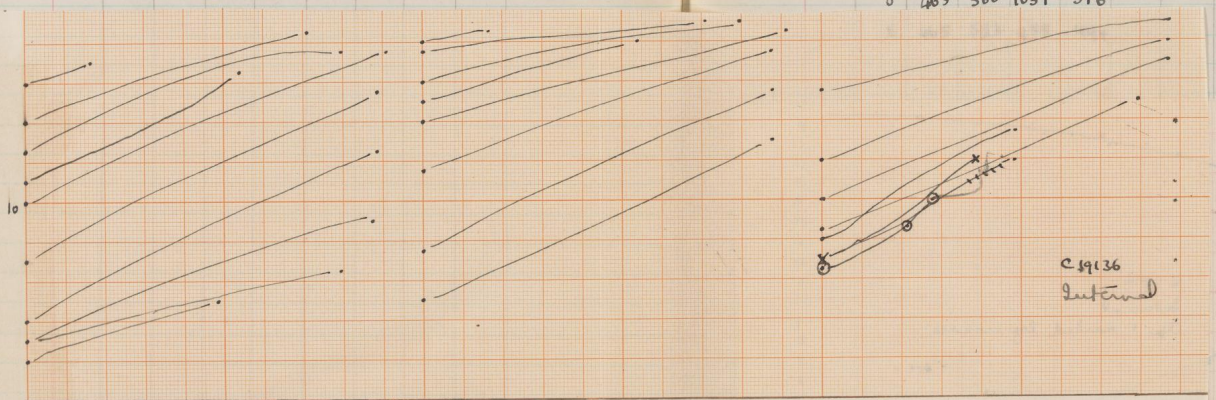
3 C 19136 Vega

Line	n	min	[n]	[min]	dm	dl
β	13.5	16	376	440	114	65
γ	16	17.5	465	566	101	61
δ	15	16	408	566	158	77
ε	13.5	18	349	523	174	80
K	17.5	18	490	523	33	26
ζ	11	17	292	465	173	80
η	7.5	15.5	217	390	173	80
θ	5	13	150	326	176	80

		Mean	Vega Sum	
β	424	490	914	457
γ	523	566	1089	544
δ	465	566	1031	516

C 19136, fifth veg. 19.1

2.0	12.0
2.5	12.8
2.8	13.6
3.5	14.3
4.0	15.2
4.3	15.8
5.2	16.4
6.0	16.8
6.8	17.4
7.5	17.8
8.5	18.1
9.8	18.4
11.0	18.6
	16.8
	19.0

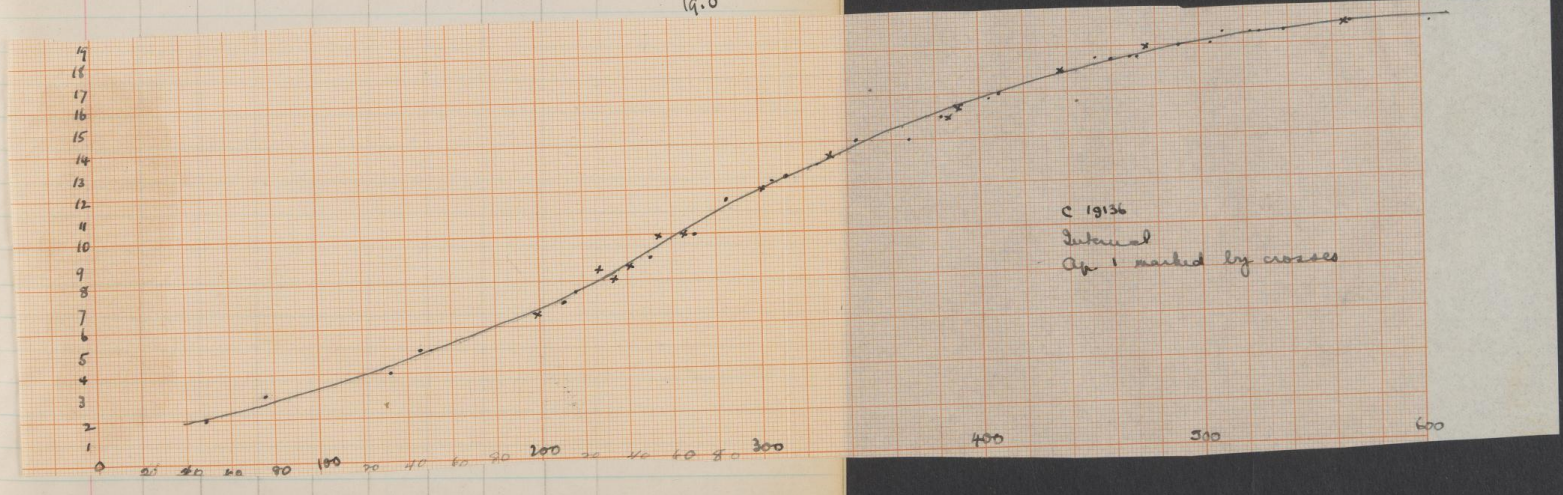


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3 C 19136 Vega

line	n	mon	lower	$\bar{n}$	$\overline{mon}$	[n]	[m+n]	diu	dl		C 19136, fifth mag.
β	13.5	16	17	15.	18	376	490	114	65	2.0	12.0	19.1
γ	16	17.5	17.5	17.5	19	465	566	101	61	2.5	12.8	
δ	15	18	18	16	19	408	566	158	77	2.8	13.6	
ε	13.5	18	18.5	14	18.5	349	523	174	80	3.5	14.3	
K	17.5	18	18.5	18	18.5	490	523	33	26	4.0	15.2	
ζ	11	17	18.5	11.5	17.5	292	465	173	80	4.3	15.8	
η	7.5	15.5	19	7.5	15.5	217	390	173	80	5.2	16.4	
θ	5	13	19	5	13	150	326	176	80	6.0	16.8	
				Mean	Vega Sum					6.8	17.4	
β	424	490		914	457					7.5	17.8	
γ	523	566		1089	544					8.5	18.1	
δ	465	566		1031	516					9.8	18.4	
ε	465	523		988	494					11.0	18.6	
											16.8	
											19.0	



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1924phae.proj.111@P

122 #6a C -1913 6

Line	n	m+n	l+m+n	$\overline{n}$	$\overline{m+n}$	[-n]	[m+n]	dur	
β	6	9	18	6	10	179	263	84	54
γ	7	13.5	18.5	7	14	206	349	143	73
δ	5.5	12.5	19	5.5	12.5	164	314	150	75
ε	3.5	10	19	3.5	10	105	263	158	77
κ	6	9.5	19	6	9.5	179	254	75	50
ζ	3	7.5	19	3	7.5	86	217	131	25
η	2	5	19	2	5	45	150	105	62

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1924phae.proj.111cP

#1- C-19136 Vega

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	
β									
r									
δ									
ε									
K									
ζ	15	18.5	18.5	15.5	19	390	566	176	80
η	12	18	19	12	18	302	490	188	82
θ	10	17	19	10	17	263	444	181	81
ι	8.5	15	19	8.5	15	238	376	138	72
κ	8	13.5	19	8	13.5	228	338	110	64
λ	7	12	19	7	12	206	302	96	59
μ	6.5	10	19	6.5	10	194	263	69	47
ν	6.5	8.5	19	6.5	8.5	194	238	44	33

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1924phae.proj.11[illegible]

124 # 7- C-19136 α Aquarii

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dev	
1									
2									
3									
4									
5									
6									
7	17	18.5	19	17	18.5	444	523	79	52
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

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1924phae.proj.111P

7- C-19136

Line	n	m+n	l+m+n	$\overline{n}$	$\overline{m+n}$	[n]	[m+n]	dm	
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54	16,5	18.5	18.5	17.3	19	444	566	122	67
55									
56									
57									
58									
59									
60									

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1924phae.proj.11100

126 #7 C-19136 α Aqr

Line	n	m+n	s+t+u+v	$\bar{n}$	$\overline{m+n}$	[n-]	[m+n]	dev	
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80	16	18	19	16	18	408	490	82	53
81									
82									
83	15	18	19						
84									
85	15	18	19	15	18	376	490	114	65
86									
87									
88									
89									
90	15	17	19	15	17	376	444	68	

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1924phae.proj.1110P

#7 C-19136 α Aqr

Seq	n	n+n	l.turn	n̄	n̄+n	[n]	[n+n]	dur	
91									
92									
93									
94									
95	14	16	19	14	16	349	408	59	
96	13.5	15	19	13.5	15	338	376	38	
97									
98									
99	5	14	19	5	14	150	349	199	84
100									
101									
102									
103	3	11.5	19	3	11.5	86	292	206	85

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1924phae.proj.11[illegible]

128 #4 C-19136 η Aquilae

Line	n	m+n	l+m+n	$\bar{n}$	m+n	[n²]	[m+n²]	dev	
1									
2									
3									
4									
5									
6									
7	13	15	18	14	15	349	376	27	22
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

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1924phae.proj.1110P

4 C-19136

Line	n	n+k	k+n+k	k	$\overline{n+n}$	[n]	[n+2]	dif	
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44	15	16.5	19	15	16.5	376	424	48	36
45									
46									
47									
48									
49	14	16	19	14	16	349	408	59	42
50									
51									
52									
53									
54	13	16	19	13	16	326	408	82	53
55									
56									
57									
58									
59									
60									

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1924phae.proj.11100

#4 C-19136

Line 21 MTH Study

Line									
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80	11.5	14	19	11.5	14	292	349	057	41
81									
82									
83	10.5	13.5	19	10.5	13.5	272	338	066	46
84									
85									
86									
87									
88									
89									
90									

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1924phae.proj.11CP

Reduction – C19136

1.9 –
2. – 45
2.2 – 55
2.4 – 64
2.6 – 72
2.8 – 78
3. – 86
3.2 – 94
3.4 – 101
3.6 – 109
3.8 – 117
4. – 123
4.2 – 127
4.4 – 134
4.6 – 140
4.8 – 147
5. – 150
5.2 – 157
5.4 – 162
5.6 – 169
5.8 – 174
6. – 179
6.2 – 184
6.4 – 190
6.6 – 196
6.8 – 202
7. – 206
7.2 – 210
7.4 – 215
7.6 – 219
7.8 – 222
8. – 228
8.2 – 232
8.4 – 236
8.6 – 239
8.8 – 242
9. – 246
9.2 – 251
9.4 – 253
9.6 – 256
9.8 – 259
10. – 263
10.2 – 266
10.4 – 270
10.6 – 274
10.8 – 278
11. – 281
11.2 – 284
11.4 – 290
11.6 – 294
11.8 – 298
12. – 302
12.2 – 306
12.4 – 312
12.6 – 316
12.8 – 321
13. – 326
13.2 – 331
13.4 – 336
13.6 – 340
13.8 – 345
14. – 349
14.2 – 354
14.4 – 358
14.6 – 364
14.8 – 371
15. – 376
15.2 – 382
15.4 – 386
15.6 – 394
15.8 – 400
16. – 408
16.2 – 412
16.4 – 420
16.6 – 428
16.8 – 436
17. – 444
17.2 – 452
17.4 – 460
17.6 – 470
17.8 – 480
18. – 490
18.2 – 504
18.4 – 514
18.6 – 532
18.8 – 550
19. – 566

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1924phae.proj.11rep

H 4 C-19136

Line										
91										
92										
93										
94										
95										
96										
97										
98										
99	2	10.5	19.5	2	10	45	263	218	87	
100										
101										
102										
103	2	8.5	19.5	2	8.5	45	238	193	83	

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1924phae.proj.111@P

5 C-19136 41 Cygni

Line	n	m+n	[m+n]	$\bar{n}$	$\overline{m+n}$	[n]	[m]	dm	dl
β	12.5	16	19	12.5	16	314	408	94	58
γ	15	18	19.5	14.6	17.5	361	465	104	62
δ	13	17.5	19.5	12.5	17.0	314	444	130	70
ε	3	16	20	3	15	86	376	290	93
κ	2.5	14.5	20	2.5	14.0	68	349	281	92
3	7	12	20	7	11.5	216	292	76	50
η	4.5	9	20	4.5	8.5	137	238	101	61
θ	4	7	20	4	7	123	206	83	53

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1924phae.proj.111CP

#6 C-19136 β Delphini

Loc	m	m+n	l max	[m]	[m min]	[m]	[mm]	dm	dl
β	12	15	19	12	15	302	376	74	49
γ	14,5	17,5	19	14.5	17.5	361	465	104	62
δ	13	16,5	19,5	12.5	16.0	314	408	94	58
ε	5,5	14	19,5	5.5	13.5	166	338	172	79
K	4,5	12	19,5	4.5	11.5	137	292	155	76
3	6	10	19,5	6	9.5	179	254	75	50
η	4	7	19,5	4	7	123	206	83	53
θ	2	5	19,5	2	5	45	150	105	62

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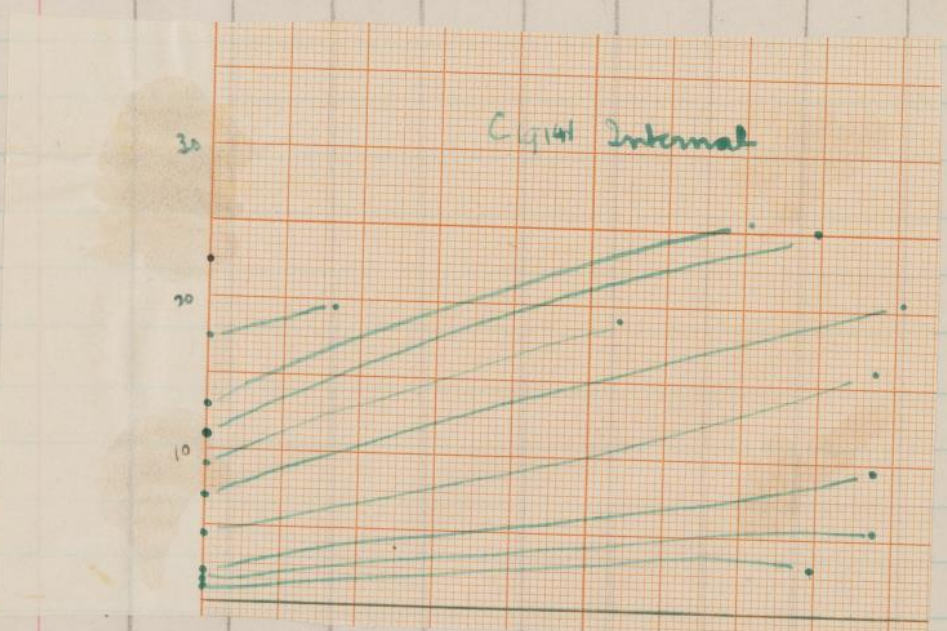
1924phae.proj.11:0P

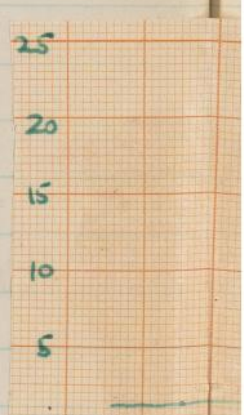
4 C 19141 ν Cephei

Reduced to 42 dm dl.

Line	n	h+n	l+m+n						
B	21	25	32.	21	25	448	503	55	40
γ	25.5	28.5	32	25.5	28.5	–	–	–	–
δ	21	27	32	21	27	448	–	–	–
ε	13.5	23.5	32	13.5	23.5	356	476	120	67
K	17.5	21.5	32	17.5	21.5	402	454	52	38
ζ	11.5	18	32	11.5	18	336	410	74	49
η	8	12.5	32	8.	12.5	300	346	46	34
Θ	5.5	9.5	32	5.5	9.5	252	318	146	74
ι	5	7.5	32	5	7.5	240	292	52	38

For check measures see Bk 29, p. 138



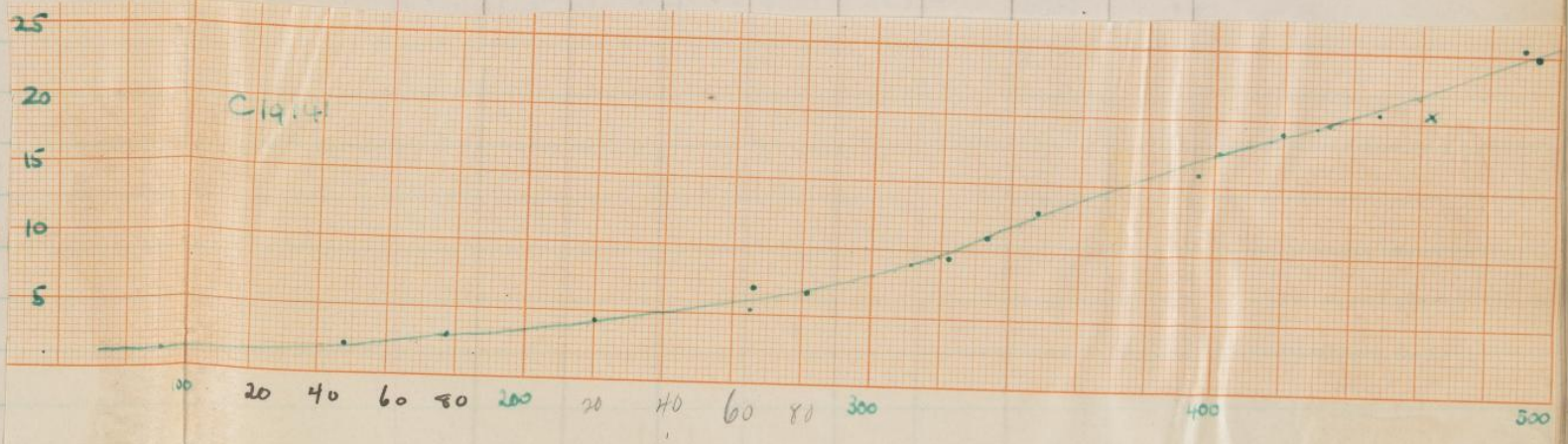


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1924pha

5 C-1941 4 Lacertae

Line	m	mT2	l+m+H						
β	16.5	30.5	32.5	16	20	384	436	52	38
γ	24	27	32	24	27	481	—		—
δ	20	26.5	32	20	26.5	436	—		—
ε	14.5	23.5	32	14.5	23.5	366	476	110	64
K	19	31.5	31.5	19.5	22	420	459	39	30
3	11	16.5	31.5	11	19	333	420	87	55
7	7.5	13.5	31.5	7.5	13.5	292	356	64	44
Θ	6	10.5	31.5	6	10.5	266	328	62	44
ι	5	8	31.5	5	8	240	300	60	42
K	4	6.5	31.5	4	6.5	216	276	60	42
λ	3.5	5.5	31.5	3.5	5.5	204	252	48	36



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1924phae.proj.111CP

H-C-19141 Vega ✓

Line	n	with Intensity								
β	9	18.5	31.5	9	19.0	312	420	108	63
γ	13	25	31.5	13	25.5	352	—	—	—
δ	11	24.5	31.5	11	25.0	333	503	170	79
ε	7	21	32	7	21	384	440	56	76
K	17.5	19.5	32	17.5	19.5	402	430	28	23
3	4.5	16	32	4.5	16	228	384	156	76
η	2	9.5	32	2	9.5	150	318	168	79
θ	1.5	5.5	32	1.5	5.5	120	252	132	70
ν	1	3	32	1	3	—	177	—	—

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1924phae.proj.111CP

Reduction – GM 41

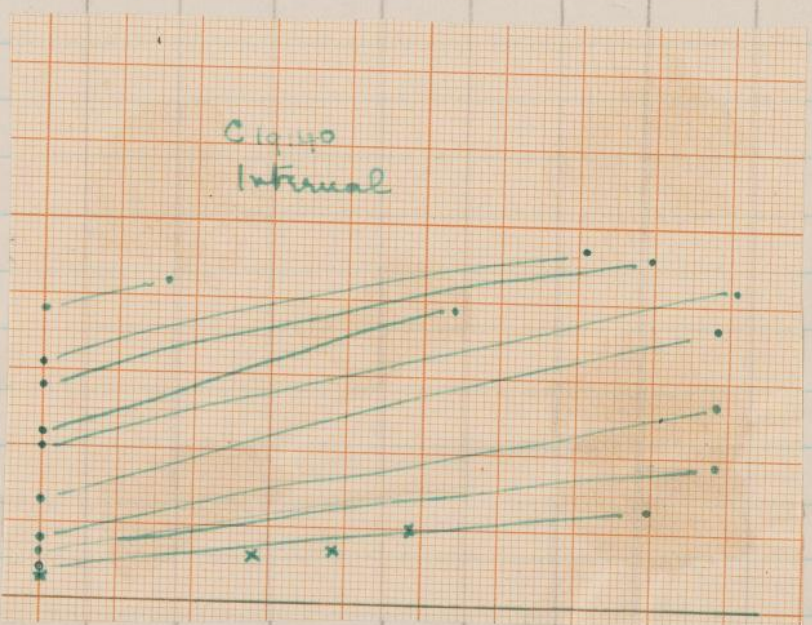
.5 –	10.5 – 328	20.5 – 440
1. –	11. – 333	21. – 448
1.5 – 120	11.5 – 336	21.5 – 454
2. – 150	12. – 342	22. – 459
2.5 – 166	12.5 – 346	22.5 – 466
3. – 177	13. – 352	23. – 470
3.5 – 204	13.5 – 356	23.5 – 476
4. – 216	14. – 360	24. – 481
4.5 – 228	14.5 – 366	24.5 – 487
5. – 240	15. – 372	25. – 503
5.5 252	15.5 – 378	
6. – 266	16. – 384	
6.5 – 276	16.5 – 390	
7. – 284	17. – 396	
7.5 – 292	17.5 – 402	
8. – 300	18. – 410	
8.5 – 306	18.5 – 416	
9. – 312	19. – 420	
9.5 – 318	19.5 – 430	
10. – 324	20 – 436	

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1924phae.proj.111@P

138 #3 C 1940 Vega to 26.5 V

Line	n	m+n	Growth	$\bar{n}$	$\overline{m+n}$	$[\bar{n}]$	$[m+n]$		
β	11	19.5	26.5	11	19.5	280	386	106	62
γ	15.5	23.5	26.5	15.5	23.5	328	470	142	73
δ	14	23	26.5	14	23	310	470	160	77
ε	10	21.5	26.5	10	21.5	270	436	166	78
κ	19	21	26.5	19	21	378	420	42	32
ζ	6.5	18.5	26.5	6.5	18.5	214	370	156	76
η	4	13.5	26	4	13.5	140	304	164	78
θ	3	9.5	26	3	9.5	114	264	150	75
ι	2	6.5	26	2	6.5	80	214	134	71
κ	1.5	5	26	1.5	5	60	170	110	64
λ	1.5	3.5	26	1.5	3.5	60	128	68	46
μ	1.5	3	26	1.5	3	60	114	54	39



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1924phae.proj..113P

4 C-19140 ~~Tc~~ 35 Cygni

Line	N	MTH	LENGTH						
1									
2									
3									
4									
5									
6									
7	7	11.5	26.5	7	11.5	220	284	64	44
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

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1924phae.proj.11[illegible]

140 A4 C-19140 35 Cygni

Line	W	Width	South	Width						
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49	9.5	15	26	9.5	15	264	320	66	46	
50										
51										
52										
53										
54	11.5	14.5	26	11	14	280	310	30	24	
55										
56										
57										
58										
59										
60										

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1924phae.proj.110P

#4-C-19140

35 Cygni

Line	w with Lmath								
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
D	7	12	26	7	12	220	288	68	46
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									

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1924phae.proj.11[illegible]P

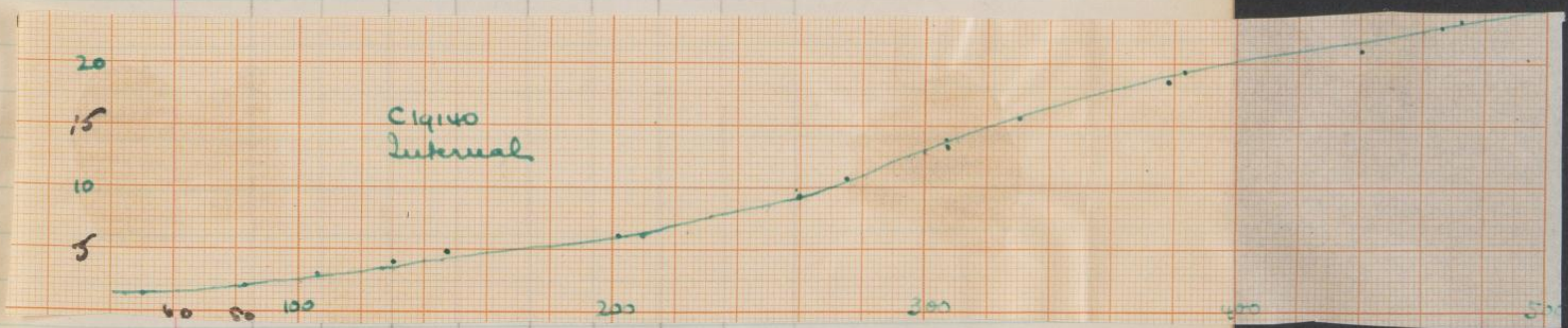
+4 C-19140 35 Cygni

Line	n	mth	l	mth				
91								
92								
93								
94								
95								
96								
97								
98								
99	.5	8.5	26	.5	8.5	–	247	– –
100								
101								
102								
103	0	7	26	8	7	–	220	

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#6 C-19140 9 Cephei

Line	m								
β	19	21.5	26.5	19	21.5	378	436	58	41
γ	22.5	24.5	26.5	22.5	24.5	459	—	—	—
δ	20.5	24	26.5	20.5	24	408	—	—	—
4026	23	24	26.5	23	24	470	—	—	—
4009	22.5	23	26	23	23.5	470	480	10	09
ε	17.5	22.5	26	18	23	364	470	106	62
κ	20	22	26	20.5	22.5	408	459	51	37
ζ	14.5	19.5	26	15	20	328	396	68	46
η	11	15	26	11	15.5	280	328	48	36
θ	8.5	12.5	26	8.5	13	247	300	53	39
ι	7.5	10.5	26	7.5	10.5	230	276	46	34
κ	7	9	26	7	9	220	256	36	28
λ	6	7.5	26	6	7.5	204	230	26	21



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1924phae.proj.111cP

#6 C-19140 σ Cygni

Line	n	mth	Growth						
4922	14	16	27.5	13	15	300	320	20	17
β	16	19	27.5	15	18	320	364	44	33
4471	22	23.5	27.5	21	22.5	420	459	39	30
4387	22	23	27.5	21	22	420	448	28	23
γ	20.5	23	27.5	19.5	22	386	448	62	44
4144	21	22	27	20.5	21.5	408	436	28	23
4009	21	22	27	20.5	21.5	408	436	28	23
δ	19	22	27	18.5	21.5	370	436	66	46
4026	19	20.5	27	18.5	20	370	396	26	21
4009	18.5	20	27	19	19.5	378	386	08	07
ε	14.5	19	27	14	18.5	310	370	60	42
K	16	17.5	27	15.5	17	328	346	18	15
ζ	11.5	15	27	11.5	14.5	284	316	32	26
η	8	10.5	27	8	10	238	270	32	26
θ	6	8	27	6	8	204	238	34	27
ν	5.	6.5	27	5	6.5	110	214	104	62
K	4.5	6	27	4.5	6	152	204	52	38

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1924phae.proj.111cP

Reduction C19140 - Interval

1.5 - 60	10. - 270	18.5 - 370
2. - 80	10.5 - 276	19. - 378
2.5 - 100	11. - 280	19.5 - 386
3. - 114	11.5 - 284	20. - 396
3.5 - 128	12. - 288	20.5 - 408
4. - 140	12.5 - 294	21. - 420
4.5 - 152	13. - 300	21.5 - 436
5. - 170	13.5 - 304	22. - 448
5.5 - 190	14. - 310	22.5 - 459
6. - 204	14.5 - 316	23 - 470
6.5 - 214	15. - 320	23.5 480
7. - 220	15.5 - 328	
7.5 - 230	16. - 334	
8. - 238	16.5 - 340	
8.5 - 247	17. - 346	
9. - 256	17.5 - 354	
9.5 - 264	18. - 364	

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1924phae.proj.111CP

X-6405 A.G.C. 11797

$8^h 39^m.0$ $-47^\circ 44'$ 5.48 B3

Line	m	m+½	ltm+r
1	.5	2	43
2	1	2.5	43
3	1.5	3	43
4	2	3.5	43
5	3	4	43
6	3	4.5	43
7	4	5	43
8	4	5	43
9	4.5	5.5	43
10	5	6	43
11	5.5	6	43
12	5.5	7	43
13	6	7.5	43
14	6	8	43
15	7.5	8.5	43
16	8	8.5	43
17	8	9	42.5
18	7.5	9	42.5
19	9	10	42.5
20	9.5	10	42.5
21	10	10.5	42.5
22	10	10.5	42.5
23	10	11	42.5
24	10.5	11	42.5
25	10.5	11.5	42.5
26	10	11.5	42.5
27	11	12	42.5
28	11	12.5	42.5
29	11.5	12.5	42.5
30	12	13	42.5

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1924phae.proj.11CP

X-6405
age. 11797

Line	w	m+2	fmt+2
31	12	13.5	42.5
32	13	14	42.5
33	12.5	14	42.5
34	12.5	14.5	42.5
35	12	14.5	42.5
36	13	14.5	42.5
37	14.5	15	42.5
38	14.5	15	42.5
39	14	15	42.5
40	14	15	42.5
41	14.5	15	42.5
42	14	15	42.5
43	14	15	42.5
44	14	15	42.5
45	11	15	42.5
46	11.5	15	42.5
47	12	15	42.5
48	14	15	42.5
49	14	15	42.5
50	13	14.5	42.5
51	13	14.5	42.5
52	13.5	14.5	42.5
53	13.5	14.5	42.5
54	14	14.5	42.5
55	11.5	14.5	42.5
56	13	14.5	42.5
57	13	15	42.5
58	12.5	15	42.5
59	8	15	42.5
60	13.5	15	42.5

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1924phae.proj.11[illegible]P

X-6405 agc. 11797

Line	n	m+n	l+m+n
61	13.5	15	42.5
62	13.5	15	42.5
63	14	15	42.5
64	13.5	15	42.5
65	14	15	42.5
66	13.5	15	42.5
67	14	15	42.5
68	14	15	42.5
69	13.5	15	42.5
70	13	15	42.5
71	13	14.5	42.5
72	12.5	14.5	42.5
73	13.5	14.5	42.5
74	13	14	42.5
75	12.5	14	42.5
76	13	14	42.5
77	12	14	42.5
78	12	14	42.5
79	13	14	42.5
80	13.5	14	42.5
81	13	14.	42.5
82	12	13.5	42.5
83	12.5	13.5	42.5
84	12.5	13.5	42.5
85	12	13.5	42.5
86	11	13.5	42.5
87	11	13.5	42.5
88	12	13	42.5
89	12.5	13	42.5
90	11	13	42.5

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1924phae.proj.11CP

χ-6405- agc. 11797

Line	n	n+n	I n+n
91	12.	13	42.5
92	6	13	42.5
93	11	13	42.5
94	11.5	12.5	42.5
95	11	12	42.5
96	10.5	12	42.5
97	11	11.5	42.5
98	11.5	11.5	42.5
99	11	11.5	42.5
100	10.5	11	42.5
101	10.5	11	42.5
102	10	11	42.5
103	7.5	10.5	42.5
104	9.5	10	42
105	9.5	10	42
106	7.	9.5	42
107	8	9	42
108	8	9	42
109	7	8	42
110	4	7.5	42
111	2.5	7	42
112	5	7	42
113	5	6.5	42
114	4.5	6	42
115	4.5	5.5	42
116	4	5	42
117	4	5	42
118	3.5	4.5	42
119	3	4	42
120	3	4	42

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1924phae.proj.11150

χ- 6405
a.G.C. 11797

Line	n	m+n	l (m+n)
121	1,5	3,5	42
122	2	3,5	42
123	2	3	42
124	2	3	42
125	2	2,5	42
126	1.5	2,5	42
127	,5	2	42
128	0	1,5	42
129	,5	1,5	42
130	,5	1	42

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1924phae.proj.1110P

X-6405

a.g.c. 11755

b Velorum, no rev. m

Line	n	m+n	l=m+n
1	6.5	8	40.5
2	1	9.5	40.5
3	0	10	40.5
4	9	11	40.5
5	9	11.5	40.5
6	10.5	12.5	40.5
7	0	14	40.5
8	12	15	40.5
9	14	15	40.5
10	14.5	16.5	40.5
11	14	17.5	40.5
12	14	18	40.5
13	15.5	19.5	40.5
14	15.5	20.5	40.5
15	17	21	40.5
16	19	21.5	40.5
17	18.5	22	40.5
18	19.5	22.5	40.5
19	18	23	40.5
20	19	23	40.5
21	21.5	23.5	40.5
22	20.5	24	41
23	19	24	41
24	22.5	24.5	41
25	23.5	24.5	41
26	9	25	41
27	22	25	41
28	21.5	25.5	41
29	19.5	25.5	41
30	24.5	26	41

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1924phae.proj.111CP

X-6405 a.g.c. 11755

Line	n	m+n	l+m+n
31	20.5	26	41
32	23.5	26	41
33	21.5	26.5	41
34	17	27	41
35	17.5	27	41
36	23.5	27	41
37	24	27	41
38	24	27.5	41
39	23	27.5	41
40	23.5	27.5	41
41	24.5	27.5	41
42	23	28	41
43	23	28	41
44	22	28	41
45	25.5	28	41
46	23	28	41
47	25	28.5	41
48	25.5	28.5	41
49	24	29	41
50	27	29	41
51	24	29	41
52	23.5	29	41
53	20	29	41
54	20.5	29.5	41
55	27	29.5	41.5
56	25.5	29.5	41.5
57	27.5	29.5	41.5
58	13.5	30	41.5
59	26	30	41.5
60	28.5	30.5	41.5

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1924phae.proj.11755

X-6405
A.G.C. 11755

Line	n	m+n	l+m+n
61	27	30.5	41.5
62	24	30.5	41.5
63	24.5	31	41.5
64	25.5	31	41.5
65	23.5	31.5	41.5
66	30.5	32	41.5
67	26.5	32	41.5
68	29.5	32	42
69	30.5	32	42
70	28	32.5	42
71	29.5	32.5	42
72	29	32.5	42
73	30.5	32.5	42
74	30.5	32.5	42
75	29	33	42
76	31	33	42
77	30.5	33	42
78	31.5	33	42
79	31	33	42
80	29	33	42
81	30.5	33	42
82	31	33	42
83	31.5	33.5	42
84	29	33.5	42
85	29.5	33.5	42
86	30.5	33.5	42
87	31	33.5	42
88	31	33.5	42
89	32	33	42
90	30.5	33	42.5

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1924phae.proj.111@P

X 6405
A.G.C. 1175-5

Line.	n	m+n	l+m+n
91	31.5	32	42.5
92	30.5	32	42.5
93	31	31.5	42.5
94	29	31	42.5
95	29.5	30.5	42.5
96	29.5	30	42.5
97	28	29.5	42.5
98	26.5	29.5	42.5
99	26	28	42.5
100	23.5	26.5	42.5
101	24	25.5	42.5
102	22	24.5	42.5
103	21	23	42.5
104	19	21	42.5
105	9.5	20	42.5
106	15	18.5	42.5
107	15	17	42.5
108	15	16	42.5
109	14.5	15	42.5
110	12.5	13.5	42.5
111	9.5	12	42.5
112	10.5	11.5	42.5
113	10.5	11	42.5
114	10	10	42.5
115	7	8	42.5
116	6	7	42.5
117	4	6	42.5
118	4	5	42.5
119	3.5	4	42.5
120			

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1924phae.proj.11?P

X 6405
aGC11770

$8^h37^m.9, -40°57', 4.81$ A3

Revised m = 5.15

Line	n	m+n	43m+n
1	.5	4	43
2	2.5	5	43
3	4	5.5	43
4	5.5	6	43
5	5.5	6.5	43
6	5.5	7	43
7	6.5	7.5	43
8	1.5	8	43
9	8	9	43
10	8.5	9.5	43
11	9	10	43
12	0	12	43
13	12.5	14	43
14	14	14.5	43
15	14	15	43
16	14	15.5	43
17	15	16	43
18	15	17	43
19	16	18	43
20	16.5	18	43
21	16.5	18.5	43
22	18.5	19	43
23	17.5	19	43
24	17.5	19.5	43
25	18	20	43
26	18.5	20	43
27	17.5	20.5	43
28	18	20.5	43
29	2.5	21	43
30	20	22	43

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1924phae.proj.111GP

γ 6.405
A.G.C. 11770

Line	n	n+n	l+m+n
31	19	22	43
32	19.5	22	43
33	21.5	22.5	43
34	20.5	22.5	43
35	21	22.5	43
36	20.5	22.5	43
37	20.5	22.5	43
38	20.5	22.5	43
39	18.5	22.5	43
40	18	23	43
41	20	23	43
42	20.5	23	43
43	20.5	23	43
44	21	23	43
45	20.5	23	43
46	20	23	43
47	21	23	43
48	21	23	43
49	21.5	23.5	43
50	20	23.5	43
51	20	23.5	43
52	22	23.5	43
53	22	23.5	43
54	21	23.5	43
55	21.5	23.5	43
56	22	24	43
57	22	24	43
58	23.5	24	43
59	23	24	43
60	22	24	43

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1924phae.proj.1130P

χ 6405
α. 3, C, 11770

Line	α	mtn	ltmtn
61.	22	24	43
62	21	24	43
63	22	24	43
64	21	24	43
65	22	24.5	43
66	20	24.5	43
67	4	24.5	43
68	23	24.5	43
69	23	25	43
70	22.5	25	43
71	21.5	25	43
72	22.5	25	43
73	22.5	25	43
74	22	25	42.5
75	21.5	25	42.5
76	24	25	42.5
77	24.5	25	42.5
78	23.5	25	42.5
79	22.5	25.5	42.5
80	24	25.5	42.5
81	23.5	25.5	42.5
82	24	25.5	42.5
83	23.5	25.5	42.5
84	23	25.5	42.5
85	23	25	42.5
86	24	25	42.5
87	23.5	25	42.5
88	24	25	42.5
89	24	25	42.5
90	23.5	25	42.5

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1924phae.proj.1110P

γ 6405
a.g.c. 11770

Line	n	mth	l+mth
91	23.5	25	42.5
92	23.5	25	42.5
93	22	25	42.5
94	22.5	25	42.5
95	24	25	42.5
96	24	25	42.5
97	22.5	24.5	42.5
98	23	24.5	42.5
99	24	24.5	42.5
100	22	24.5	42.5
101	22.5	24.5	42.5
102	22	24	42.5
103	22.5	23.5	42.5
104	21.5	23	42.5
105	20.5	23	42.5
106	21.5	22.5	42.5
107	21	22	42.5
108	20	21.5	42.5
109	20	21	42.5
110	19.5	20	42.5
111	19.5	19.5	42.5
112	18.5	19.5	42.5
113	18.5	19	42.5
114	17.5	18	42.5
115	16	17.5	42.5
116	15.5	17	42.5
117	14	15.5	42.5
118	14	14.5	42.5
119	12.5	13.5	42.5
120	12	13	42.5

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1924phae.proj.1159

V 6405
age 11770

Lines	u	uth	bthuth
121	10.5	12	42.5
122	10	11.5	42.5
123	9.5	10.5	42.5
124	1	8	42.5
125	5	7	42.5
126	4	6	42.5
127	3.5	5	42.5
128	3.5	4	42.5
129			
130			

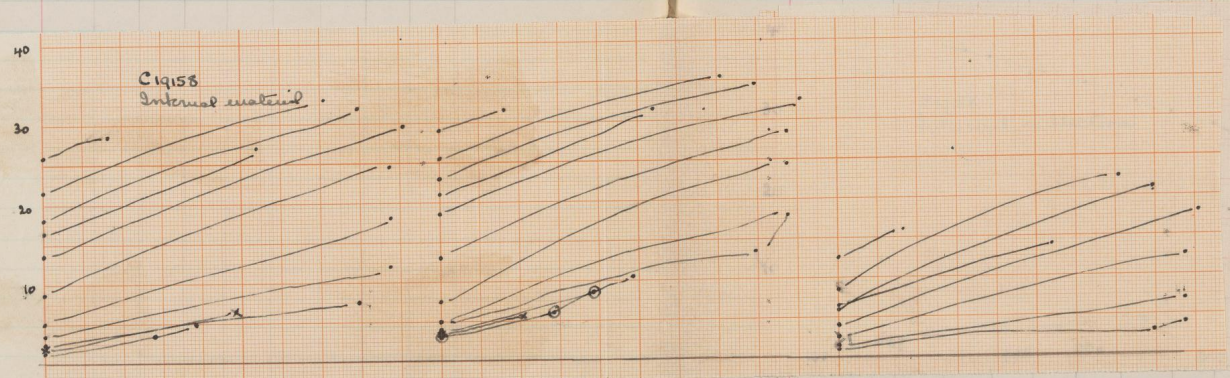
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160 #2 C-1915-8 ✓ Vega. Reduced to 41.5

Line	n	m+n	from						
β	16.5	27	41.5	16.5	27	426	541	115	65
γ	21.5	33	41.5	21.5	33	484	628	144	73
δ	18	32	41.5	18	32	446	610	164	78
ε	13.5	29.5	41.5	13.5	29.5	400	571	171	79
κ	26	28.5	41.5	26	28.5	532	559	27	22
ζ	8.5	24.5	41.5	8.5	24.5	348	516	168	79
η	5	18	41.5	5	18	292	446	154	76
θ	3.5	12	41.5	3.5	12	256	385	129	70
ι	2.5	7.5	41.5	2.5	7.5	218	336	118	66
κ	2	7	41.5	2	7	200	330	130	70
λ	1.5	5	41.5	1.5	5	146	292	146	74
μ	1.5	4	41.5	1.5	4	146	272	126	69
ν	1.5	3	41.5	1.5	3	146	239	93	58

#1 C-1915-8 Vega ✓ 161

Line	n	m+n	from	$\bar{n}$	$\overline{m+n}$	$\overline{[xy]}$	$\overline{[xx+yy]}$			Mean Vega Sirius				Mean
β	21	31.5	41.5	21	31.5	478	601	123	68	541	601	406	1548	516
γ	25.5	35.5	41.5	25.5	35.5	526	635	109	63	628	635	494	1757	586
δ	23	34.5	41.5	23	34.5	499	650	151	75	610	650	478	1738	579
ε	16.5	32.5	41.5	18.5	32.5	450	620	170	79	571	620	446	1637	546
κ	29	31.5	41.5	29	31.5	564	601	37	29					
ζ	13	28.5	41.5	13	28.5	396	559	163	78					
η	7.5	24.5	41.5	7.5	24.5	336	516	180	81					
θ	5	18	41.5	5	18	292	446	154	76					
ι	5	13.5	41.5	5	13.5	292	400	108	63					
κ	4	10.5	41.5	4	10.5	272	369	97	59					
λ	3	8.5	41.5	3	8.5	239	348	109	63					
μ	3	6	41.5	3	6	239	313	74	49					
ν	3.5	5.5	41.5	3.5	5.5	256	~~302~~ 303	46	34					

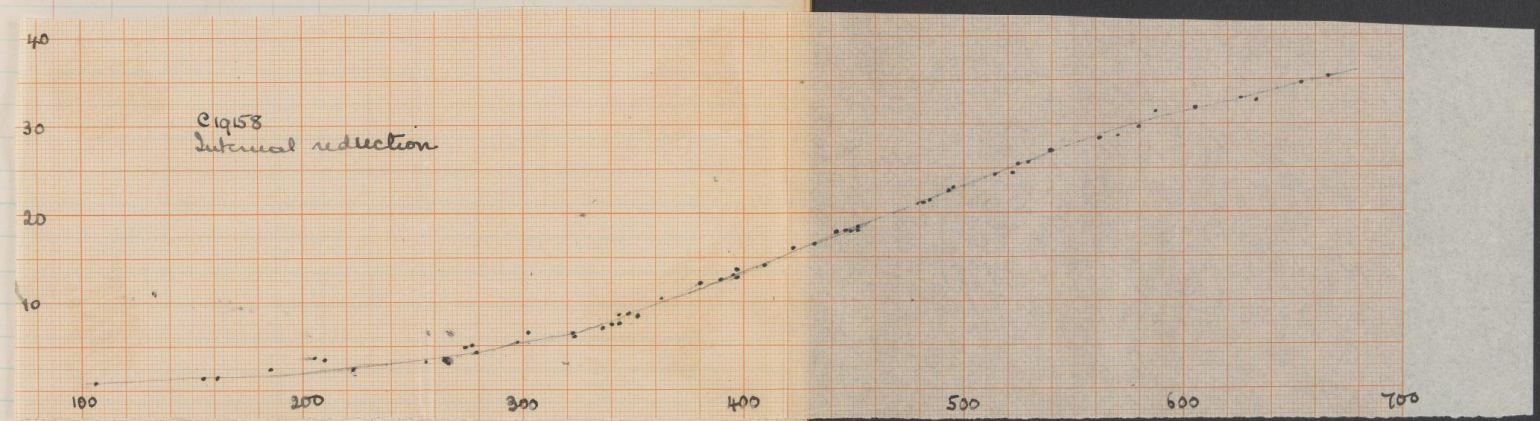


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#1 C-1958

Vega

line	n	m+n	beats	$\bar{n}$	$\overline{m+n}$	Σy	Σxy			Mean	Vega	Sum	Mean
B	21	31.5	41.5	21	31.5	478	601	123	68	541	601	406	1548	516
F	25.5	35.5	41.5	25.5	35.5	526	635	109	63	628	635	494	1757	586
S	23	34.5	41.5	23	34.5	499	650	151	75	610	650	478	1738	579
Z	18.5	32.5	41.5	18.5	32.5	450	620	170	79	571	620	446	1637	546
K	29*	31.5	41.5	29	31.5	564	601	37	29					
E	13	28.5	41.5	13	28.5	396	559	163	78					
A	7.5	24.5	41.5	7.5	24.5	336	516	180	81					
O	5	18	41.5	5	18	292	446	154	76					
D	5	13.5	41.5	5	13.5	292	400	108	63					
V	4	10.5	41.5	4	10.5	272	369	97	59					
A	3	8.5	41.5	3	8.5	239	348	109	63					
M	3	6	41.5	3	6	239	313	74	49					
K	3.5	5.5	41.5	3.5	5.5	256	~~302~~ 303	46	34					



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1924phae.proj.11cp

#2 C-19154 Vega

Line	n	m+n	Δm+n						
β	6.5	14	40.5	6.5	14	324	406	82	53
δ	8.5	22	40.5	8.5	22.5	348	494	146	74
ε	6	20.5	40.5	6	21	313	478	165	78
ζ	4	18	41	4	18	272	446	174	80
K	12.5	16	41	12.5	16	390	426	36	28
3	2.5	12.5	41	2.5	12.5	218	385	167	78
η	1.5	7	41	1.5	7	146	330	184	82
θ	1	4	41	1	4	112	272	160	77
ι	1	3	41	1	3	112	239	127	69

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1924phae.proj.11.tif

#4- C 19158

η Aquilae . Very faint 163
Tracing fogged and difficult. Low weight

Line	n	in tn	l+m+n						
7	7	10.5	40	7	10.5	332	370	38	30 dl
49	8	11	40	8	11	343	376	33	26
80	5	8	40	5	8	292	343	51	38
99	.5	4.5	40	0.5	4.5	95	286	191	83

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1924phae.proj.11GP

#5 C-19158

Polaris

Line	m	mth	[n]	[mth]		
1						
2	23	25	41.5	499	520	21 18
3	24.5	25	41.5	516	520	4 04
4	25.5	25.5	41.5	526	526	0 00
5	25.5	27	41.5	526	541	15 13
6	26	28	41.5	532	552	20 17
7	27	28.5	41.5	509	559	50 37
8	28.5	29.5	41.5	559	571	12 10
9	29	30	41.5	564	578	14 12
10	29.5	30	41.5	571	578	7 06
11	30	31	41.5	578	593	15 13
12	30.5	31.5	41.5	585	601	16 14
13	30.5	32	41.5	585	610	25 21
14	31.5	32.5	41.5	601	620	19 16
15	32	33	41.5	610	628	18 15
16						
17						
18	32.5	33	41.5	620	628	8 07
19	32	33	41.5	610	628	18 15
20						
21						
22						
23						
24						
25	32.5	33	41.5	620	628	8 07
26	32	33	41.5	610	628	18 15
27	32	33	41.5	610	628	18 15
28	32.5	33	41.5	620	628	8 07
29	32	33	41.5	610	628	18 15
30	31.5	33	41.5	601	628	27 22

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#8 - C-19158

Lick	n	m+n	Struth.	[n]	[m+n]		
31	31.5	33	41.5	601	628	27	22
32	32.5	33	41.5	620	628	8	07
33	32	33	41.5	610	628	18	15
34	31.5	32.5	41.5	601	620	19	16
35	31	32.5	41.5	593	620	27	22
36	30.5	32.5	41.5	585	620	35	28
37	31	32.5	41.5	593	620	27	22
38	31	32.5	41.5	593	620	27	22
39	31	32	41.5	593	610	17	14
40	30.5	32	41.5	585	610	25	21
41	31	32	41.5	593	610	17	14
42	30	32	41.5	578	610	32	26
43	30.5	32	41.5	585	610	25	21
44	30	31.5	41.5	578	601	23	19
45	30.5	31.5	41.5	585	601	16	14
46	31	31.5	41.5	593	601	8	07
47	31	31.5	41.5	593	601	8	07
48	30	31.5	41.5	578	601	23	19
49	27	31	41.5	541	593	52	37
50	30	31	41.5	578	593	15	13
51							
52							
53							
54	27.5	31	41.5	547	593	46	34
55	28	30.5	41.5	552	585	33	26
56							
57	29	30.5	41.5	564	585	21	18
58	29	30	41.5	564	578	14	12
59	28.5	30	41.5	559	578	19	16
60	28	30	41.5	552	578	26	21

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#5- C-19158

Line	n	mth	[mth]	m	m	[m]	[m]		
61	28	30	41.5			552	578	26	21
62	27	30	41.5			541	578	37	29
63	28.5	30	41.5			559	578	19	16
64	27	30	41.5			541	578	37	29
65	27	29.5	41.5			541	571	30	24
66	27.5	29.5	41.5			547	571	24	20
67	27	29.5	41.5			541	571	30	24
68	26	29.5	41.5			532	571	39	30
69	26	29.5	41.5			532	571	39	30
70	28.5	29.5	41.5			559	571	12	10
71	28	29.5	41.5			552	571	19	16
72	27.5	29.5	41.5			547	571	24	20
73	28	29	41.5			552	564	12	10
74	28	29	41.5			552	564	12	10
75	26.5	29	41.5			536	564	28	23
76	26.5	29	41.5			536	564	28	23
77	27	29	41.5			541	564	23	19
78	27.5	28.5	41.5			547	559	12	10
79	26.5	28.5	41.5			536	559	23	19
80	23	28.5	41.5	23	28.5	499	559	60	42
81	27.5	28	41	27.5	28.0	547	552	5	04
82	26.5	28	41	27.0	28.5	541	559	18	15
83	24.5	28	41	25.0	28.5	521	559	38	30
84	26.5	27.5	41	27.0	28.0	541	552	11	10
85	26	27.5	41	26.5	28.0	536	552	16	14
86	26	27.5	41	26.5	28.0	536	552	16	14
87	25.5	27	41	26.0	27.5	532	547	15	13
88	25	27	41	25.5	27.5	526	547	21	18
89	26	27	41	26.5	27.5	536	547	11	10
90	24.5	27	41	25.0	27.5	521	547	26	21

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#5- C-19158

C-19158

1. = 112	11.5 = 380	22 = 488	32.5 = 620
1.5 = 146	12 = 385	22.5 = 494	33 = 628
2. = 200	12.5 = 390	23 = 499	33.5 = 635
2.5 = 218	13 = 396	23.5 = 505	34 = 643
3. = 239	13.5 = 400	24 = 509	34.5 = 650
3.5 = 256	14 = 406	24.5 = 516	35 = 659
4 = 272	14.5 = 411	25 = 521	35.5 = 669
4.5 = 286	15 = 416	25.5 = 526	36 = 678
5 = 292	15.5 = 421	26 = 532	36.5 =
5.5 = 302	16 = 426	26.5 = 536	37 =
6 = 313	16.5 = 432	27 = 541	37.5 =
6.5 = 324	17 = 438	27.5 = 547	38 =
7 = 330	17.5 = 443	28 = 552	38.5 =
7.5 = 336	18 = 446	28.5 = 559	39 =
8 = 343	18.5 = 450	29 = 564	39.5 =
8.5 = 348	19 = 457	29.5 = 571	40 =
9 = 352	19.5 = 462	30 = 578	
9.5 = 358	20 = 468	30.5 = 585	
10 = 362	20.5 = 473	31 = 593	
10.5 = 369	21 = 478	31.5 = 601	
11 = 376	21.5 = 484	32 = 610	

Ω α

122 4.5 6.5 41 4.5 6.5 286324 38 30

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1924phae.proj.11100

#5- C-1915-8

91	25.5	27	41	26.0	27.5	532	547	15	13
92	25.5	26.5	41	26.0	27.0	532	541	9	08
93	24.5	26	41	25.0	26.5	521	536	15	13
94	23.5	26	41	24.0	26.5	509	536	27	22
95	22	25	41	22.5	25.5	494	526	32	26
96	23	25	41	23.5	25.5	505	526	21	18
97	22	24.5	41	22.5	25.0	494	521	37	29
98	21	24	41	21.0	24.5	478	516	38	30
99	4.5	23	41	4.5	23.5	286	505	219	87
100	18	21	41	18	21	446	478	32	26
101	17.5	21	41	17.5	21	443	478	35	28
102	17	20.5	41	17	20.5	438	473	35	28
103	3	19	41	3	19	240	458	218	87
104									
105									
106									
107									
108									
109									
110	10.5	15	41	10.5	15	369	416	45	34
111									
112									
113									
114									
115	5	10	41	5	10	292	362	70	48
116									
117									
118									
119									
120	4.5	6.5	41	4.5	6.5	286	324	38	30

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1924phae.proj.1110P

168 #1 X-4515 A.G.C 11755 b Velorum HD 74180

MP 1926

~~Reduced to 74 (23,27)~~ Reduced to 74

Line	n	m	n tm	South					
1	40	45	74	40	45	207	186	21	18
2	44	47	74	44	47	190	177	13	11
3	46	48	74	46	48	181	173	08	07
4	47	51	74	47	51	177	160	17	14
5	49	51	74	49	51	168	160	08	07
6	49	53	74	49	53	168	151	17	14
46 7	41	55	74	41	55	283	142	61	43
8	54	56	74	54	56	145	136	09	08
9	–	–	–						
10	57	59	74	57	59	129	116	13	11
11	–	–	–						
12	~~59~~ 64	61	74	59	61	116	104	12	10
13	59	62	74	59	62	116	99	17	14
14	61	62	74	61	62	104	99	05	04
15	61	62	74	61	62	104	99	05	04
16	61	63	74	61	63	104	91	13	11
17	62	63	74	62	63	99	91	08	07
18	61	64	74	61	64	104	86	18	15
19	63	64	74	63	64	91	86	05	04
20	63	65	74	63	65	91	77	14	12
21	64	65	74	64	65	86	77	09	08
22	63	66	74	63	66	91	72	19	16
23	64	66	74	64	66	86	72	14	12
24	65	66	74	65	66	77	72	05	04
25	64	66	74	64	66	86	72	14	12
26	65	67	74	65	67	77	65	12	10
27	65	67	74	65	67	77	65	12	10
28	66	67	74	66	67	72	65	12	10
29	64	67	74	64	67	86	65	21	18
30	66	67	74	66	67	72	65	07	06

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1924phae.proj.111GP

X-4515 A.G.C 11755

#1 μΦ 1926

Line	n	n+n	l+n+n			u			ob
31	67	67	74	67	67	65	65	00	00
32	65	68	74	65	68	77	58	19	16
33	65	68	74	65	68	77	58	19	16
34	65	68	74	65	68	77	58	19	16
35	65	68	74	65	68	77	58	19	16
36	64	68	74	64	68	86	58	28	23
37	66	68	74	66	68	72	58	14	12
38	66	68	74	66	68	72	58	14	12
39	66	68	74	66	68	72	58	14	12
~~4534~~ 40	64	68	74	64	68	86	58	28	23
41	65	68	74	65	68	77	58	19	16
42	65	68	74	65	68	77	58	19	16
43	66	68	74	66	68	72	58	14	12
44	66	68	74	66	68	72	58	14	12
4520 45	65	68	74	65	68	77	58	19	16
4515 46	66	68	74	66	68	72	58	14	12
4506 47	66	68	74	66	68	72	58	14	12
48	66	68	74	66	68	72	58	14	12
4459 49	65	68	74	65	68	77	58	19	16
4450 50	66	68	74	66	68	72	58	14	12
4444 51	64	68	74	64	68	86	58	28	23
52	66	68	74	66	68	72	58	14	12
53	66	68	74	66	68	72	58	14	12
54	66	67	74	66	67	72	65	07	06
4417 55	64	67	74	64	67	86	65	21	18
56	67	67	74	67	67	65	65	00	00
57	67	67	74	67	67	65	65	00	00
58	62	67	74	62	67	99	65	34	27
59	65	67	74	65	67	77	65	12	10
4405 60	63	67	74	63	67	91	65	26	21

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1924phae.proj.111QP

170 #1 χ 4515

b Velorum

	Line	n	m+q	Comp	[ms]	Int	dm	dl
	61	63	67	74	91	65	26	21
4385	62	62	67	74	99	65	34	27
	63	65	67	74	77	65	12	10
	64	65	67	74	77	65	12	10
	65	66	67	74	72	65	07	06
4352	66	65	67	74	77	65	12	10
4340	67	54	67	74	145	65	80	52
	68	65	67	74	77	65	12	10
	69	64	67	74	86	65	21	18
	70	65	67	74	77	65	12	10
	71	61	67	74	104	65	39	30
	72	64	67	74	86	65	21	18
4315	73	59	66	74	116	72	44	33
	74	62	66	74	99	72	27	22
	75	62	66	74	99	72	27	22
	76	65	66	74	77	72	05	04
	77	65	66	74	77	72	05	04
4271	78	63	66	74	91	72	19	16
	79	65	66	74	77	72	05	04
4260	80	64	66	74	86	72	14	12
	81	63	66	74	91	72	19	16
	82	63	66	74	91	72	19	16
	83	64	66	74	86	72	14	12
	84	64	66	74	86	72	14	12
4233	85	62	66	74	99	72	27	22
4227	86	63	66	74	91	72	19	16
4215	87	64	66	74	86	72	14	12
	88	64	66	74	86	72	14	12
4202	89	62	65	74	99	77	22	18
4198	90	63	65	74	91	77	19	16

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1924phae.proj.1110P

#1-7 4515

Sun in mtn town

	91									
	92									
	93									
	94									
4178	95	58	65	74	58	65	123	77	46	34
4173	95a	59	65	74	59	65	116	77	39	30
	96	61	65	74	61	65	104	77	27	22
	97									
	98	64	65	74	64	65	86	77	09	08
	99	63	65	74	63	65	91	77	14	12
	100	63	65	74	63	65	91	77	14	12
	101	64	65	74	64	65	86	77	09	08
	102	61	65	74	61	65	104	77	27	22
4132	103	60	64	74	60	64	111	86	25	21
4128	104	61	64	74	61	64	104	86	18	15
	105	62	64	74	62	64	99	86	13	11
	106	63	64	74	63	64	91	86	05	04
4101	107	42	64	74	42	64	~~200~~	86	114	65
	108	62	64	74	62	64	99	86	13	11
	109	62	63	74	62	63	99	91	08	09
4077	110	58	63	74	58	63	123	91	32	26
4072	111	59	63	74	59	63	116	91	25	21
	112	59	62	74	59	62	116	99	25	21
4064	113	60	62	74	60	62	111	99	12	10
	114	57	62	74	57	62	129	99	30	24
	115	58	61	74	58	61	123	104	19	16
4046	116	57	61	74	57	61	129	104	25	21
	117	60	61	74	60	61	111	104	07	06
	118	58	61	74	58	61	123	104	19	16
	119	58	60	74	58	60	123	111	12	10
	120	55	60	74	55	60	142	111	31	25

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1924phae.proj.1110P

#1 χ 4515

b Velorum

	line	n	mth	comty						
	121									
	122	53	60	74	53	60	151	111	40	31
	123	58	59	74	58	59	123	116	07	06
	124	55	59	74	55	59	142	116	26	21
	125	54	59	74	54	59	145	116	29	23
	126	55	58	74	55	58	142	123	19	16
	127	57	58	74	57	58	129	123	06	05
4006	128	54	58	74	54	58	145	123	22	18
	129	54	58	74	54	58	145	123	22	18
	130	53	57	74	53	57	151	129	22	18
	131	55	56	74	55	56	142	136	06	05
	132	55	56	74	55	56	142	136	06	05
	133	50	55	74	50	55	164	142	22	18
3970	134	12	52	74	12	52	310	155	155	76
	135	48	50	74	48	50	173	164	09	08
	136	45	49	74	45	49	186	168	18	15
	137	43	48	74	43	48	195	173	22	18
3933	138	7	45	74	7	45	327	186	141	73
	139	39	42	74	39	42	211	200	11	10
	140	39	41	74	39	41	211	203	08	07
3913	141	30	39	74	30	39	245	211	34	27
	142	—	—	—						
3903	143	31	35	74	31	35	241	226	15	13
	144	30	34	74	30	34	283	230	53	39
3889	145	12	29	74	12	29	310	249	61	43
	146	25	26	74	25	26	264	261	03	03
	147	21	24	74	21	24	280	269	11	10
	148	16	21	74	16	21	297	280	17	14
	149	17	19	74	17	19	293	286	07	06
	150	16	18	74	16	18	297	290	7	06
	151	4	14	74	4	14	337	303	34	27

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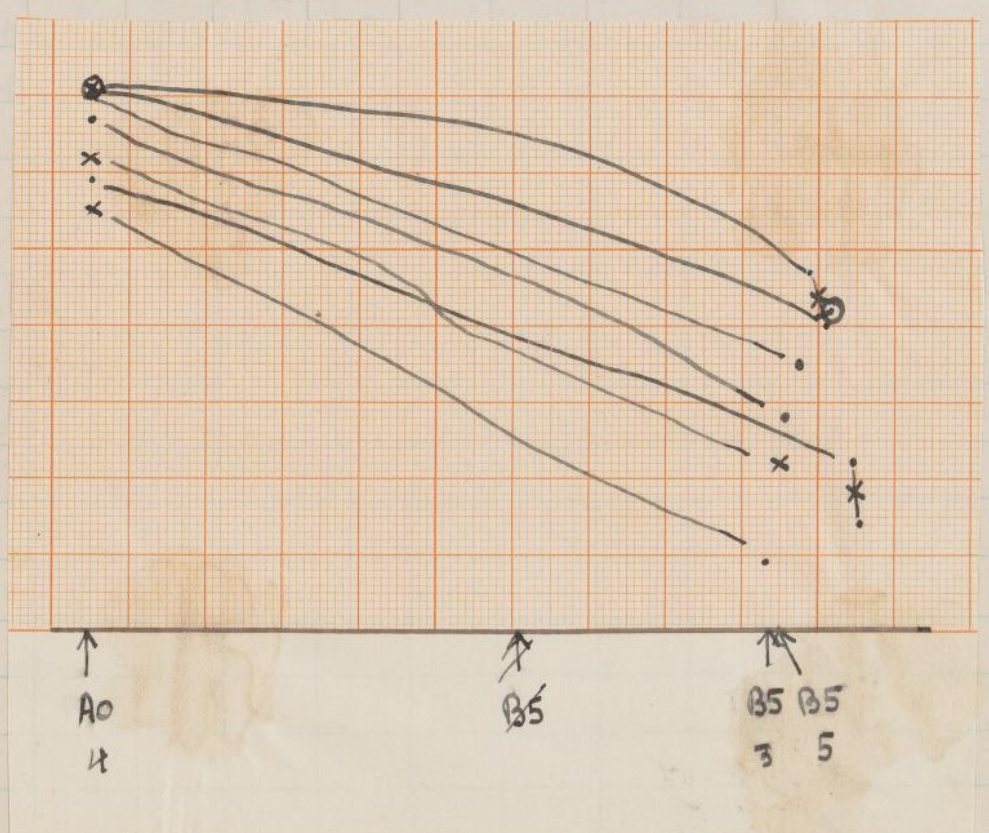
1924phae.proj.111QP

#3, χ 4515 age 11786

8h 38.5, −45 3 5.21 B5

Revised m, (27, 28) 5.87

Line	n	m+n	l+m+n	n	m+n	l+m+n		
β	8	11	36.5	16	22	73	16	22
4481	21.5	23	36.5	43	46	73	44	47
4471	21	23	36.5	42	46	73	43	47
γ	17	22	36.5	34	44	73	34	45
δ	13	19.5	36.5	26	39	73	26	40
4026	14	16	36.5	28	32	73	28	32
ε	6.5	13	36.5	13	26	73	13	26
K	8	10	36.5	16	20	73	16	20
3	2.5	5	36.5	5	10	73	5	10



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174 # 4 χ-4515 age 11900

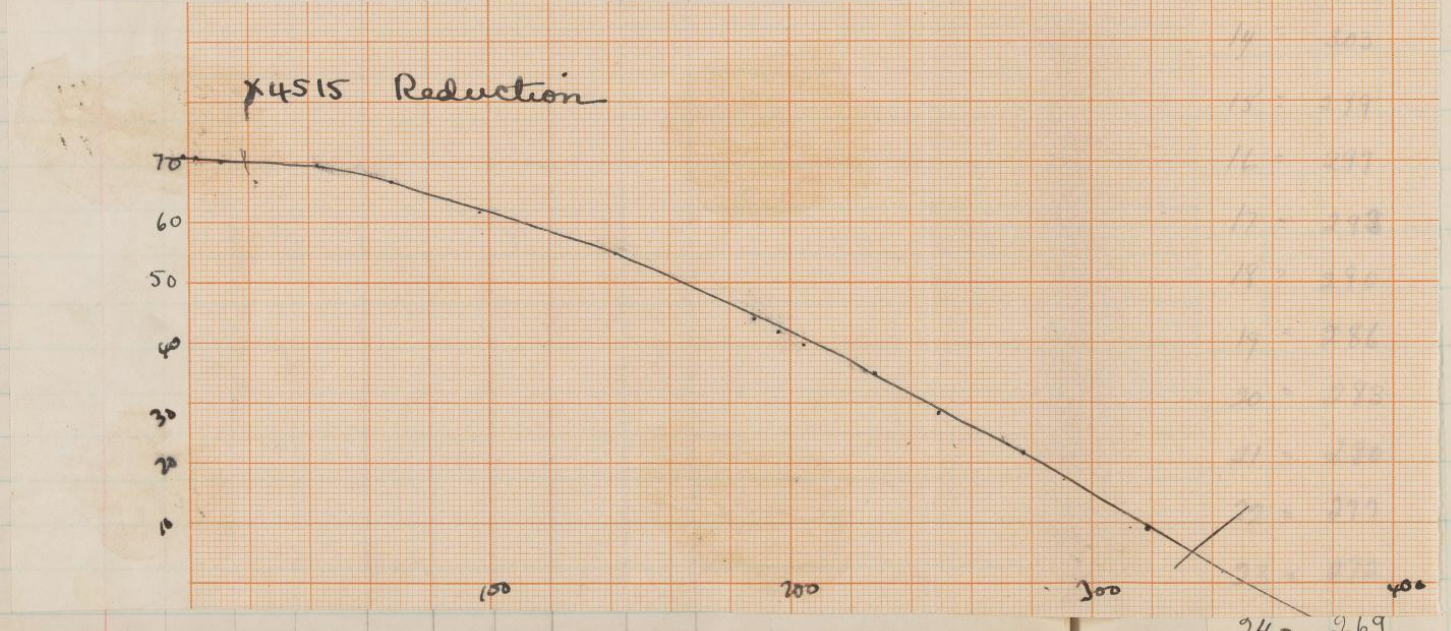
8h 42.6 -45 40 4.01 A0

Revised m = 4.09 (28, 27)

Line	n	m+n	l.mth	n	m+n	l.mth						
B	20	29	365	40	58	73	41	59	203	116	87	55
4481	34	35	365	68	70	73	69	71	45	1	44	33
4471	34	35	36.5	68	70	73	69	71	45	1	44	33
Y	27	35	365	54	70	73	55	71	142	1	141	73
S	24	34.5	365	48	69	73	49	70	168	20	148	74
(4026)	28	33.5	37	56	67	74	56	67	136	65	71	48
ε	17	33	37	34	66	74	34	66	230	77	153	76
K	28	31.5	37	56	63	74	56	63	136	91	45	34
3	13	27.5	37	26	55	74	26	55	261	142	119	67
η	5	19	37	10	38	74	10	38	317	216	101	61
θ	3	12	37	6	24	74	6	24	330	269	61	43
L	2.5	8	37	5	16	74	5	16	334	297	37	29
K	1.5	4.5	37	3	9	74	3	9	340	320	20	17
Λ	0	3	37	0	6	74	0	6	347	330	17	14

5 χ 4515

1 = 347
2 = 343
3 = 340
4 = 337
5 = 334
6 = 330
7 = 327
8 = 324
9 = 320
10 = 317
11 = 313
12 = 310
13 = 306



24 = 269

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1924phae.proj.11107

#5 X 4515 a.g.c. 11917 8 43.1 -45 32

5.58 B5

Revised u = 5.90 (28, 27)

Line	u	m+n	l+m+n	n	m+n	l+m+n						
β	4.5	7	36	9	14	72	9	14	320	303	17	14
4471	15.5	19	36	31	38	72	32	40	238	207	31	25
γ	14	18	36	28	36	72	29	38	249	216	33	26
δ	10	14.5	35.5	20	29	71	21	30	280	245	35	28
4026	9	11.5	35.5	18	23	71	18	24	290	269	21	18
ε	4	8.5	35.5	8	17	71	8	17	324	293	31	25
ζ	1	4	35.5	2	8	71	2	8	343	324	19	16

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1924phae.proj.1176

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1924phae.proj.1110P

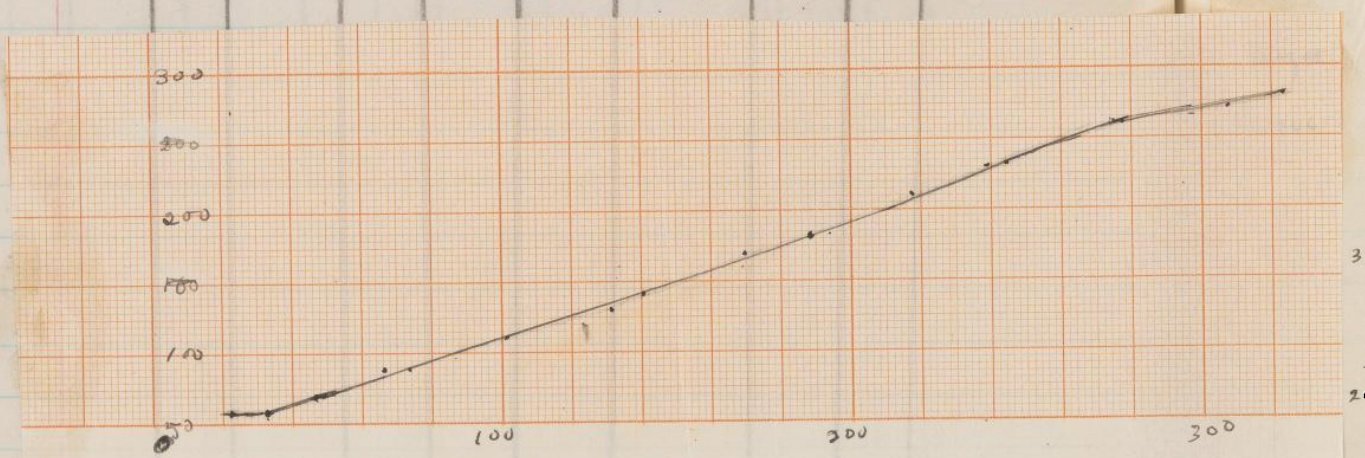
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1924phae

178

MQ 2051 Alcor
C-12566

Line	u	u+v	l+w+x	n	m+n	[n,y]	[m,n]+[n,y]	dww	dl	Nijar [cm tm]	Diff
β	40	95	300	40	95		80			252	172
γ	60	140	300	60	140	34	137	103		322	186
δ	40	120	300	40	120		112			300	188
ε	20	90	300	20	90		74			276	202
ζ	30	80	300	30	80		62			268	204
ε	20	55	300	20	55						
η	10	40	300	10	40						
θ	10	30	300	10	30						



C 12566

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1924phae.proj.11100

HD 205
C 12566

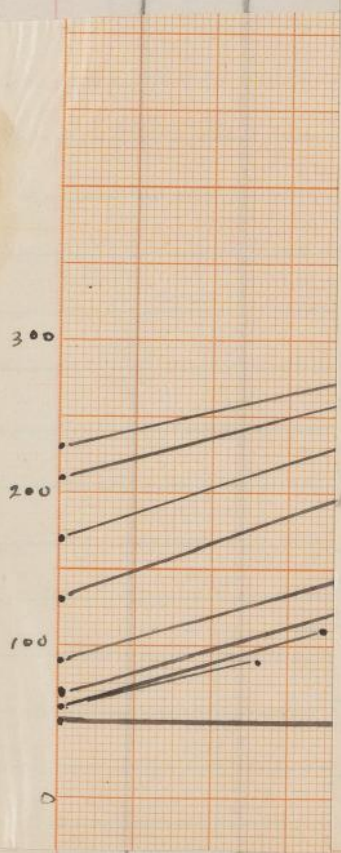
Mizar

Fine	u	m+u	l+m+u	ū	m+ū	(u)	(m+u)	dm	dl
β	200	240	300	200	240	210	252	42	
γ	230	280	300	230	280	241	322	81	
δ	210	270	300						
ε	170	260	300						
ζ	230	255	300						
η	130	230	300						
Θ	90	185	300						
ι	70	140	300						
κ	60	110	300						
λ	60	90	300						
A	50	70	300						

C12566

30	125 = 119	220 = 232	
35	130 = 124	225 = 236	
40	135 = 131	230 = 241	
45	140 = 137	235 = 247	
50	145 = 144	240 = 252	
55	150 = 151	245 = 257	
60 = 34	155 = 157	250 = 262	
65 = 41	160 = 163	255 = 268	
70 = 48	165 = 169	260 = 276	
75 = 56	170 = 175	265 = 286	
80 = 62	175 = 181	270 = 308	
85 = 68	180 = 187	275 = 310	
90 = 74	185 = 193	280 = 322	
95 = 80	190 = 199	285	
100 = 87	195 = 205	290	
105 = 93	200 = 210	295	
110 = 99	205 = 216	300	
115 = 106	210 = 221		
120 = 112	215 = 226		

Mizar
C12566.



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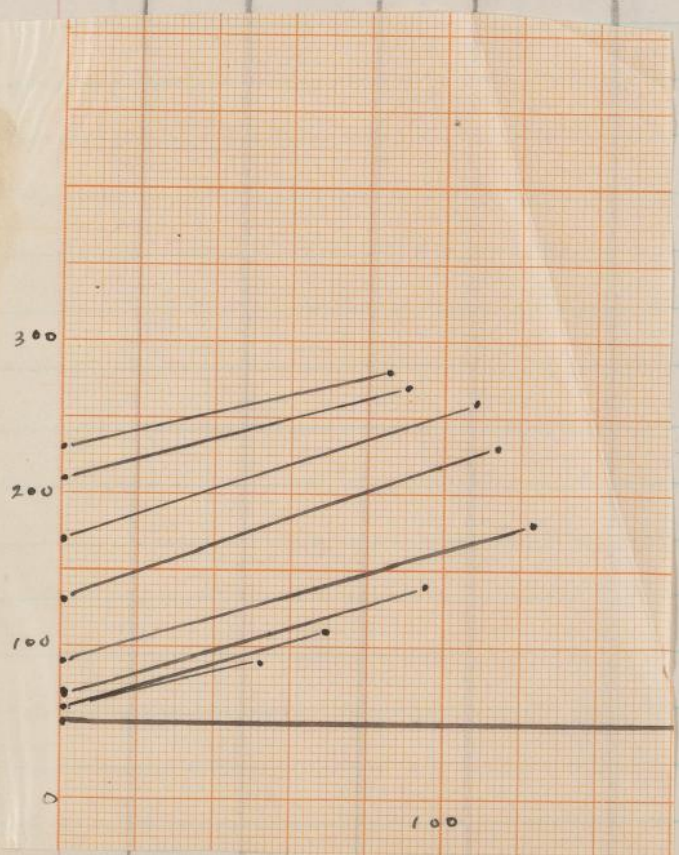
1924phae.proj.1110P

HD 205
C 12566

Mizar

line	u	m+u	l+m+u	ū	m+ū	(u)	(m+ū)	dm	dl
β	200	240	300	~~200~~	240	210	252	42	
γ	230	280	300	230	280	241	322	81	
δ	210	270	300	210	270	221	300	79	
ε	170	260	300	170	260	175	276	101	
× ζ	230	255	300	230	255	241	268	27	
3	130	230	300	130	230	124	241	17	
η	90	185	300	90	180	74	187	113	
Θ	70	140	300	70	140	48	137	89	
ι	60	110	300	60	110	34	99	65	
K	60	90	300	60	90	34	74	40	
λ	50	70	300	50	70		48		
A									

Mizar
C 12566.



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1924phae.proj.1110P

Lim u $m+u$ $l+m+u$ $\overline{u}$ $\overline{m+u}$ $[a,]$ $[m+u]$ du dl.

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1924phae.proj.11100

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nq 2046
C-19176 Vega 1

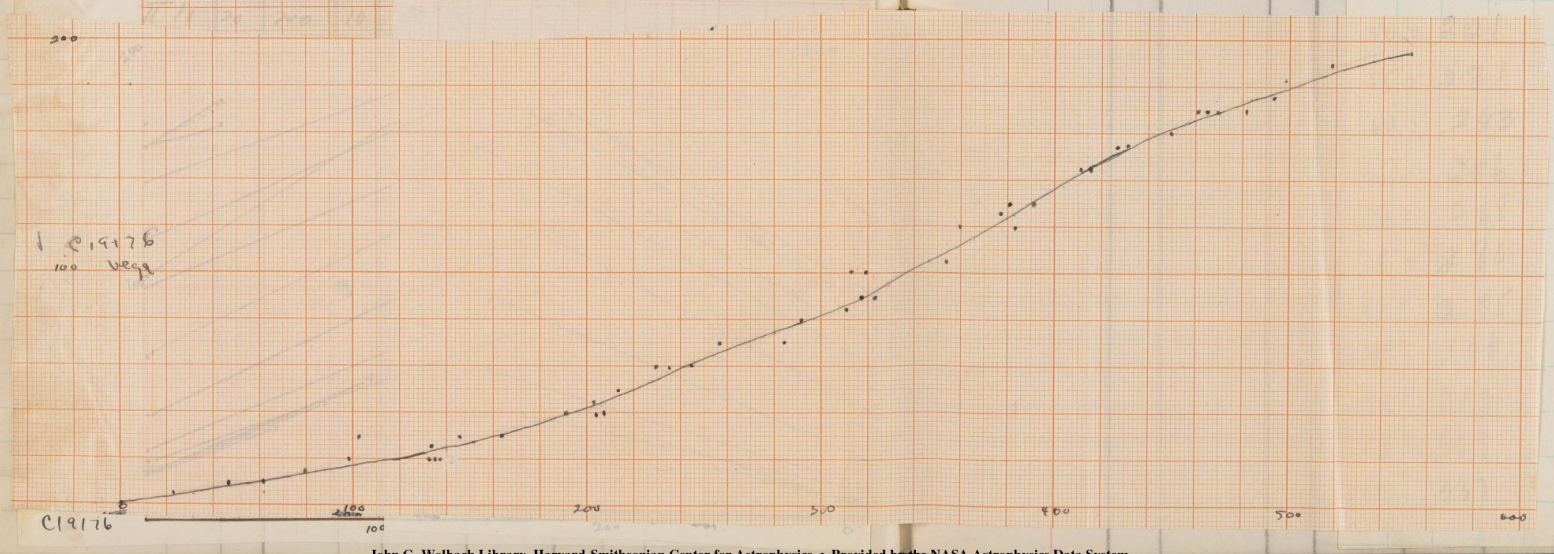
Line	u	m+u	l+m+u	w	m+w	Δ u-j	Δ m-j	Δ l-j
β	100	160	190	195	170	347	473	126
δ	140	190	195	145	195	413	550	137
δ	120	185	195	120	190	374	531	157
ε	110	175	200	100	175	337	486	149
K	160	170	200	160	170	445	473	27
ζ	70	155	200	70	155	268	434	166
η	45	125	200	45	125	208	382	174
Q	30	100	200	30	100	180	337	157
c	25	80	200	25	80	142	295	153
ν	20	60	200	20	60	120	243	123
λ	20	50	200	20	50	120	221	101
μ	20	40	200	20	40	120	193	73
r	20	35	200	20	35	120	180	60
ζ	30	30	200	20	30	120	161	41
o	20	30	200	20	30	120	161	41

nq 2047 Vega 2
C-19176

Line	u	m+u	l+m+u	w	m+w	Δ u-j	Δ m-j
β	70	130	200	70	130	268	390
δ	90	170	200	90	1		
δ	85	170	200	85	1		
ε	60	155	200	60	1		
K	120	145	200	120	1		
ζ	40	130	200	40	1		
η	200	90	200	200			
o	10	60	200	10			
c	10	40	200	10			
K	00	30	200	00	a		
λ	5	20	200	5	a		
μ	5	15	200	5	1		
r	00	10	200	00	1		

C191

0 =
5 = 30
10 = 60
15 = 88
20 = 120
25 = 142
30 = 161
35 = 180
40 = 193
45 = 208



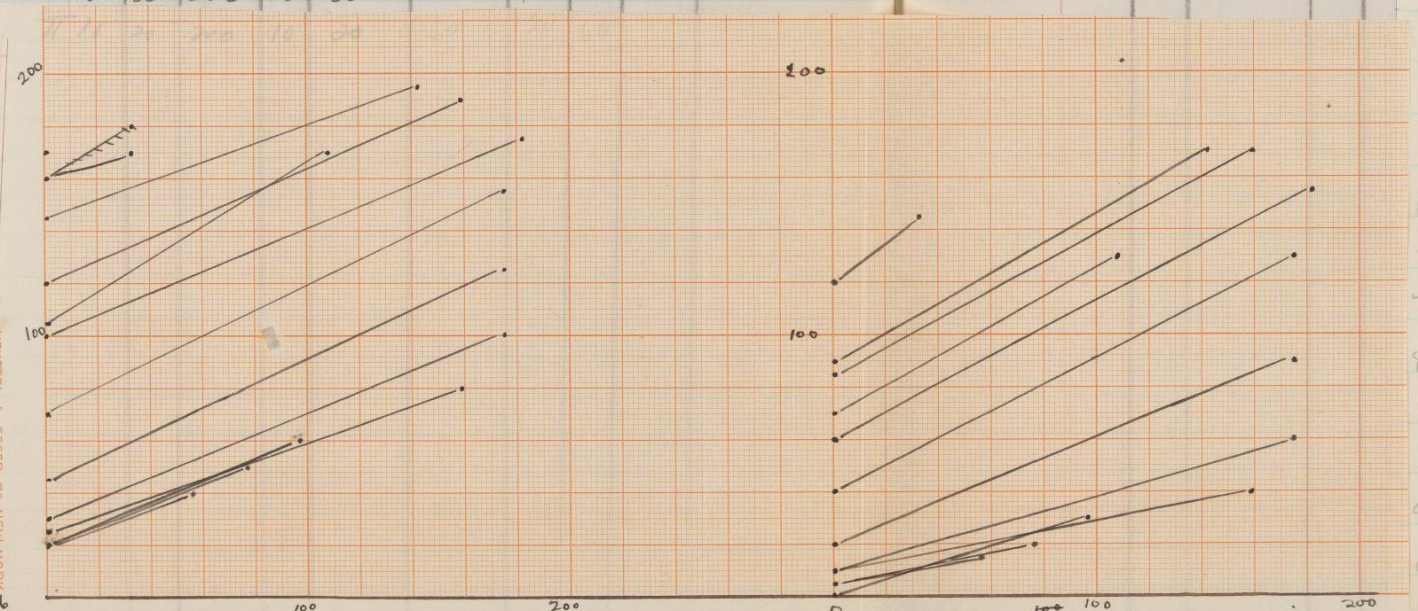
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mp 2046
C-19176 Vega 1

Line	u	m+u	l+m+u	ū	m+ū	ū_y	ū_x	dx	dy
β	100	160	190	145	170	347	473	126	
γ	140	190	195	145	195	413	550	137	
δ	120	185	195	120	190	374	531	157	
ε	110	135	200	100	135	337	486	149	
ζ	160	170	200	160	170	445	473	27	
ζ	70	155	200	70	155	268	434	166	
η	45	125	200	45	125	208	382	174	
θ	30	100	200	30	100	180	337	157	
ι	25	80	200	25	80	142	295	153	
κ	20	60	200	20	60	120	243	123	
λ	20	50	200	20	50	120	221	101	
μ	20	40	200	20	40	120	193	73	
ν	20	35	200	20	35	120	180	60	
ξ	20	30	200	20	30	120	161	41	
ο	20	30	200	20	30	120	161	41	

mp 2047 Vega 2
C-19176

Line	u	m+u	l+m+u	ū	m+ū
β	70	130	200	70	130
γ	90	170	200	90	1
δ	85	170	200	85	1
ε	60	155	200	60	1
ζ	120	145	200	120	1
ζ	40	130	200	40	1
η	20	90	200	20	
θ	10	60	200	10	
ι	10	40	200	10	
κ	00	30	200	00	
λ	5	20	200	5	
μ	5	15	200	5	
ν	00	10	200	00	



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C19176

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1924phae.proj.11[illegible]

md 2047 Vegaz L
C-19176

Line	u	u+m	u+m+m	u	u+m	u+m	u+m	dm	dl
						268	390	122	
β	70	130	200	70	130				
σ	90	170	200	90					
δ	85	170	200	85					
ε	60	155	200	60					
k	120	145	~~200~~	120					
ζ	40	130	200	40					
η	~~200~~	90	200	~~200~~					
θ	10	60	200	10					
ι	10	40	200	10					
K	00	30	200	00					
λ	5	20	200	5					
μ	5	15	200	5					
ν	00	10	200	00					

C19176

0 =

5 = 30

10 = 60

15 = 88

20 = 120

25 = 142

30 = 161

35 = 180

40 = 193

45 = 208

50 = 221

55 = 231

60 = 243

65 = 256

70 = 268

75 = 280

80 = 295

85 = 308

90 = 319

95 = 329

100 = 337

105 = 347

110 = 356

115 = 365

120 = 374

125 = 382

130 = 390

135 = 398

140 = 407

145 = 413

150 = 424

155 = 434

160 = 445

165 = 458

170 = 473

175 = 486

180 = 502

185 = 516

190 = 531

195 = 550

200 =

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1924phae.proj.11:CP

mQ 2047 Vega 2 L
C-19176

Line	u	mm	l+m+n	u	m+u	[u]y	[m+u]y	dm	dl
β	70	130	200	70	130	268	390	122	
γ	90	170	200	90	170	319	473	154	
δ	85	170	200	85	170	308	473	165	
ε	60	155	200	60	155	243	434	191	
ζ	120	145	~~200~~	120	145	374	413	139	
ξ	40	130	200	40	130	193	390	197	
η	~~200~~	90	200	~~200~~	90	120	319	199	
θ	10	60	200	10	60	60	243	183	
ι	10	40	200	10	40	60	193	133	
κ	00	30	200	00	30				
λ	5⁻	20	200	5⁻	20	30	161	131	
μ	5⁻	15	200	5⁻	15	30	161	131	
ν	00	10	200	00	10				

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1924phae.proj.11[illegible]

α 2046 C 19176

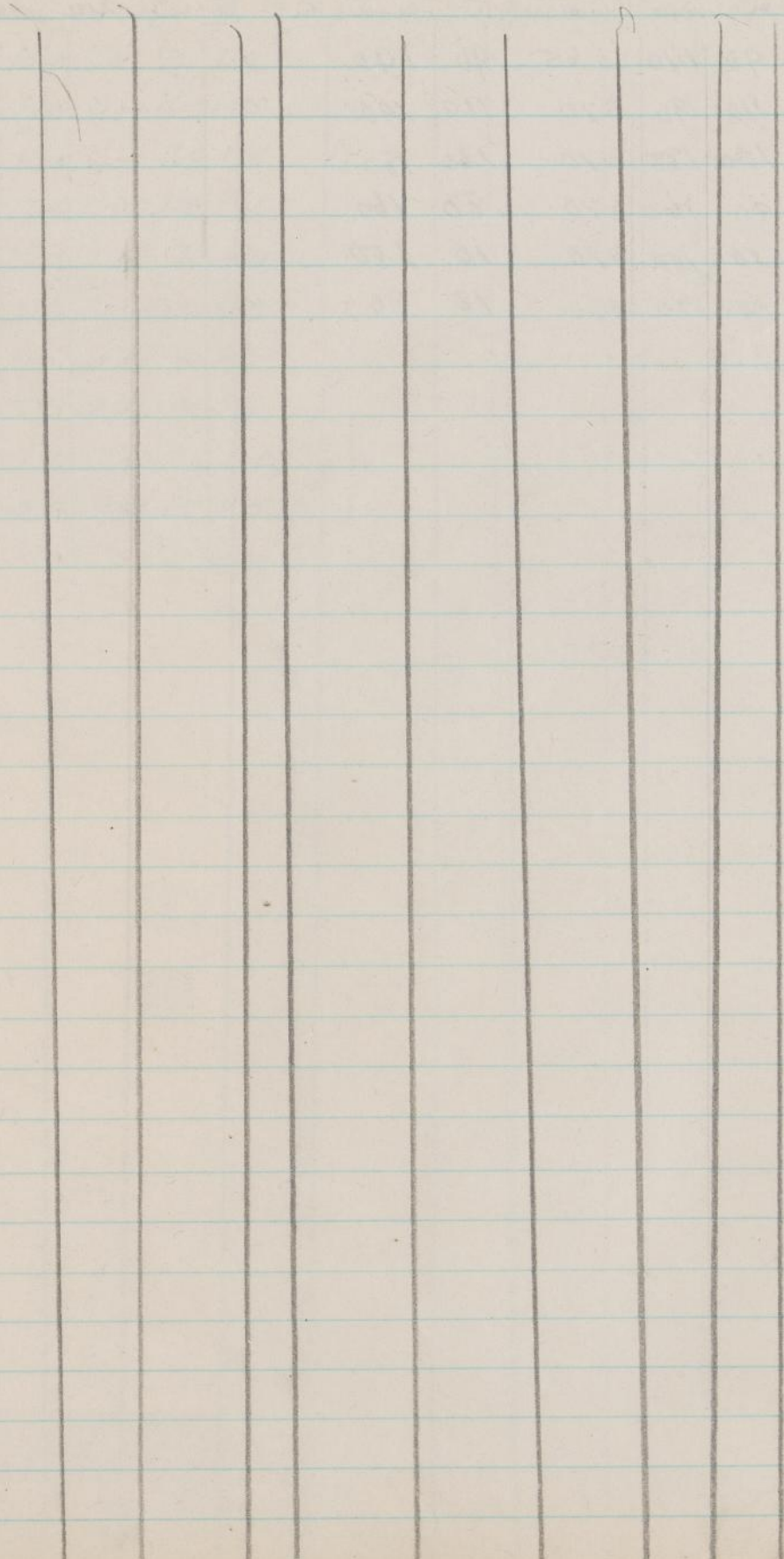
#3

Vega

Line	n	m+n	l+m+n	n	m+n	{n}	{m+n}	dm	dl
β	130	170	190	135	180		502		
γ	160	180	190	170	190		531		
δ	140	180	190	150	190		531		
ε	50	160	190	55	170		473		
ζ	40	150	190	40	160		445		
3	70 ~~40~~	130 ~~140~~	190	75	140		407		
η	40 ~~30~~	90 ~~60~~	140	45	95		329		
θ	20	60	190	20	65		256		
ι	20	45	190	20	30		221		
κ	10	30	190	10	30		161		

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1924phae.proj.11.tif



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1924phae.proj.111QP

m Φ 2048
C 19189 φ Cas Reduce to 370

Line	u	m+u	l+m+u	ū	m+ū	[illegible]	[illegible]	dum	dl
β	90	140	365	90	140				
γ	110	190	370	110	190				
G	130	185	370	130	185				
δ	80	160	370	80	160				
ε	10	100	370	10	100				
K	10	80	370	10	80				

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1924phae.proj.11[illegible]

α 2048 H.D. 8065
C - 19189

3	70	105	360	70	110
4481	160	170	360	165	175
4471	160	170	360	165	175
γ	100	160	360	100	165
δ	70	130	370	70	130
4026	100	110	370	100	105
ε	40	90	370	40	90
ζ	20	55	370	20	55
η	20	40	380	20	40
α	10	25	380	10	25

Please reduce
C 19189

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1924phae.proj.11188

α 2049
C 19189
Vega I.

Lira	u	m+u	l+m+u	$\bar{u}$	$\bar{m}+\bar{u}$	[illegible]	[illegible]	dm	dl
β	220	310	360	225	320				
γ	280	350	370	280	350				
δ	240	350	370	240	350				
ε	190	330	370	190	320				
ζ	310	330	370	310	320				
3	130	300	370	130	300				
η	70	240	380	70	240				
θ	50	180	380	50	180				
ι	40	120	380	40	125				
κ	30	90	380	30	95				
λ	30	70	380	30	70				
μ	30	50	380	30	50				
ν	20	40	380	20	40				

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1924phae.proj.11[illegible]

m a 2049
C 14189 Vega 2

	m	m+n	0+m	n	m+n	[illegible]	[illegible]	[illegible]	[illegible]
β	80	200	370	80	300				
γ	130	280	370	130	280				
δ	100	270	370	100	270				
ε	60	240	370	60	240				
R	190	215	375	185	210				
ζ	30	165	380	30	160				
η	20	90	380	20	85				
Q	10	50	375	10	50				
c	00	30	380	00	30				
K	00	20	380	00	20				
λ	00	20	380	00	20				

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1924phae.proj.11RP

m Q 2050
C-19189

Br 283

Line	u	m+u	l+m+u	ū	m+ū	[illegible]	[illegible]	dus	dh
β	60	80	370	60	80				
γ	80	115	375	80	110				
δ	50	90	380	50	85				
ε	30	60	380	30	60				
ζ	20	40	380	20	40				

gr-591

β	40	60	380	40	60
γ	50	70	380	50	70
δ	30	50	390	30	45
ε	10	20	390	10	30
ζ	00	30	390	10	30

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1924phae.proj.11[illegible]

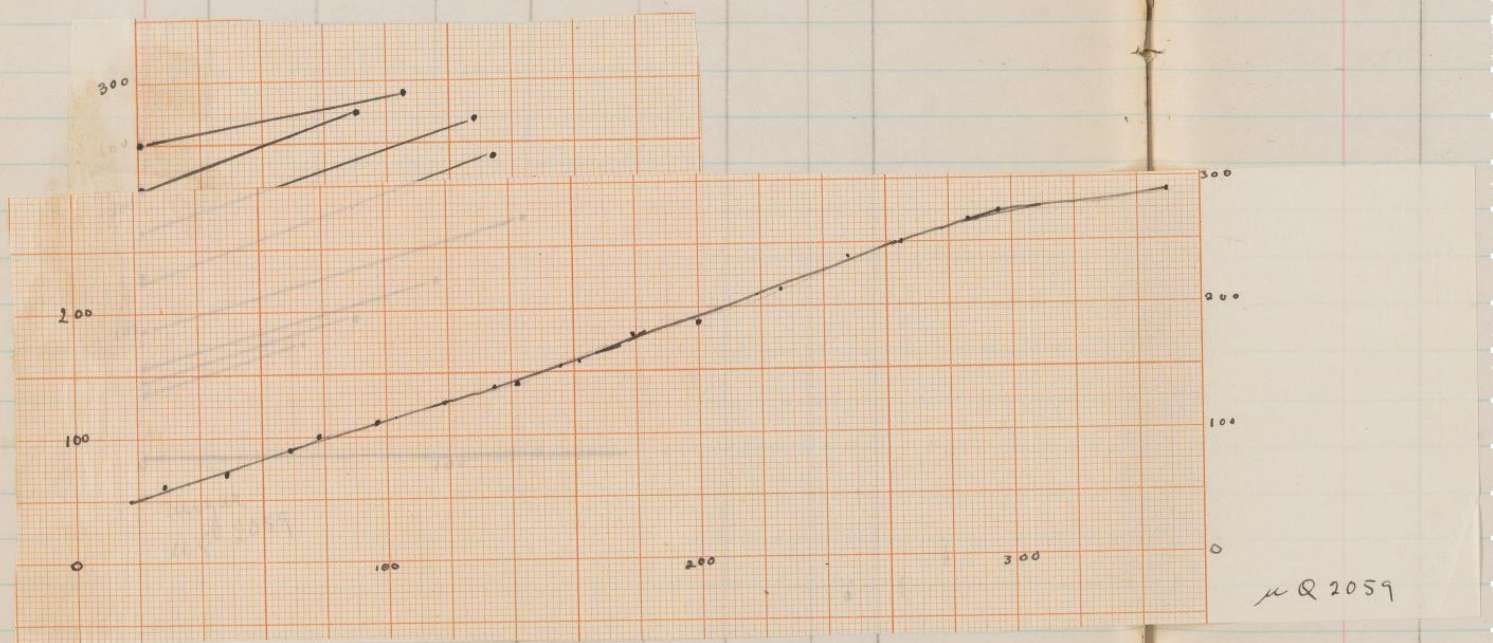
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μ Q 2059
Mizar C12580

Line	n	m+n	l+m+n	n	m+n	[n]	m+n	Δmn	Δl
β	200	250	290	205	260	214	270?	63	
δ	240	280	295	250	290	264	349	85	
δ	210	275	295	215	275	225	304	79	
ε	175	265	295	180	270	183	294	111	
k	230	250	295	235	255	247	270	23	
ζ	140	240	300	140	240	138	253	115	
η	100	190	300	100	190	83	196	113	
φ	70	140	300	70	140	44	138	94	
c	60	110	300	60	110	31	97	66	
K	50	90	300	50	90	18	69	51	
λ	60	70	300	50	70	18	44	26	

μ Q 205
Alcor

Line	n	m+n
β	50	100
δ	80	150
δ	60	135
ε	40	105
k	40	90
ζ	30	80
η	20	50
φ	10	30
c	00	20
K	10	20

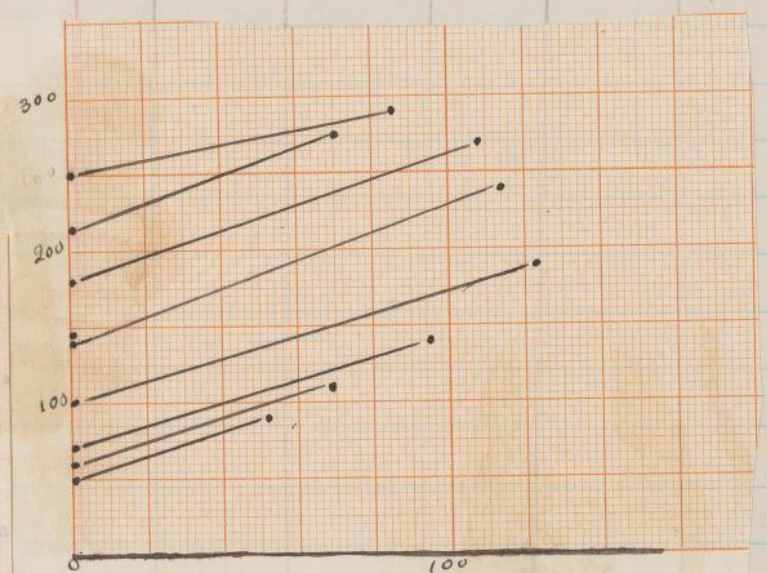


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1924phae.proj.11tif

gr. Q 2059
Mizar C12580

Line	n	m+n	l+m+n	n	m+n	[n]	[m+n]	Diff	dl
β	200	250	290	205	260	214	270	63	
γ	240	280	295	250	290	264	349	85	
δ	210	275	295	215	275	225	304	79	
ε	175	265	295	180	270	183	294	111	
ζ	230	250	295	235	255	247	270	23	
ζ	140	240	300	140	240	138	253	115	
η	100	190	300	100	190	83	196	113	
θ	70	140	300	70	140	44	138	94	
ι	60	110	300	60	110	31	97	66	
κ	50	90	300	50	90	18	69	51	
λ	50	70	300	50	70	18	44	26	



mizar
gr Q 2059

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1924phae.proj.11rep

μ Q 2059

Alcor

Line	u	u+u	l+u+u
β	50	100	295
γ	80	150	295
δ	60	135	300
ε	40	105	300
k	40	90	300
ζ	~~20~~	80	~~300~~
η	20	~~50~~	~~300~~
θ	10	30	300
c	00	20	~~300~~
K	10	~~200~~	300

μ Q 2059 C-

50 =	18	170 =	173
55 =	25	175 =	178
60 =	31	180 =	183
65 =	37	185 =	190
70 =	44	190 =	196
75 =	50	195 =	202
80 =	57	200 =	208
85 =	63	205 =	214
90 =	69	210 =	219
95 =	76	215 =	225
100 =	83	220 =	230
105 =	90	225 =	236
110 =	97	230 =	242
115 =	103	235 =	247
120 =	110	240 =	253
125 =	116	245 =	259
130 =	124	250 =	264
135 =	132	255 =	270
140 =	138	260 =	277
145 =	143	265 =	284
150 =	150	270 =	294
155 =	156	275 =	304
160 =	161	280 =	318
165 =	168	285 =	336
		290 =	349

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1924phae.proj.11100

MQ 2059
Alcor

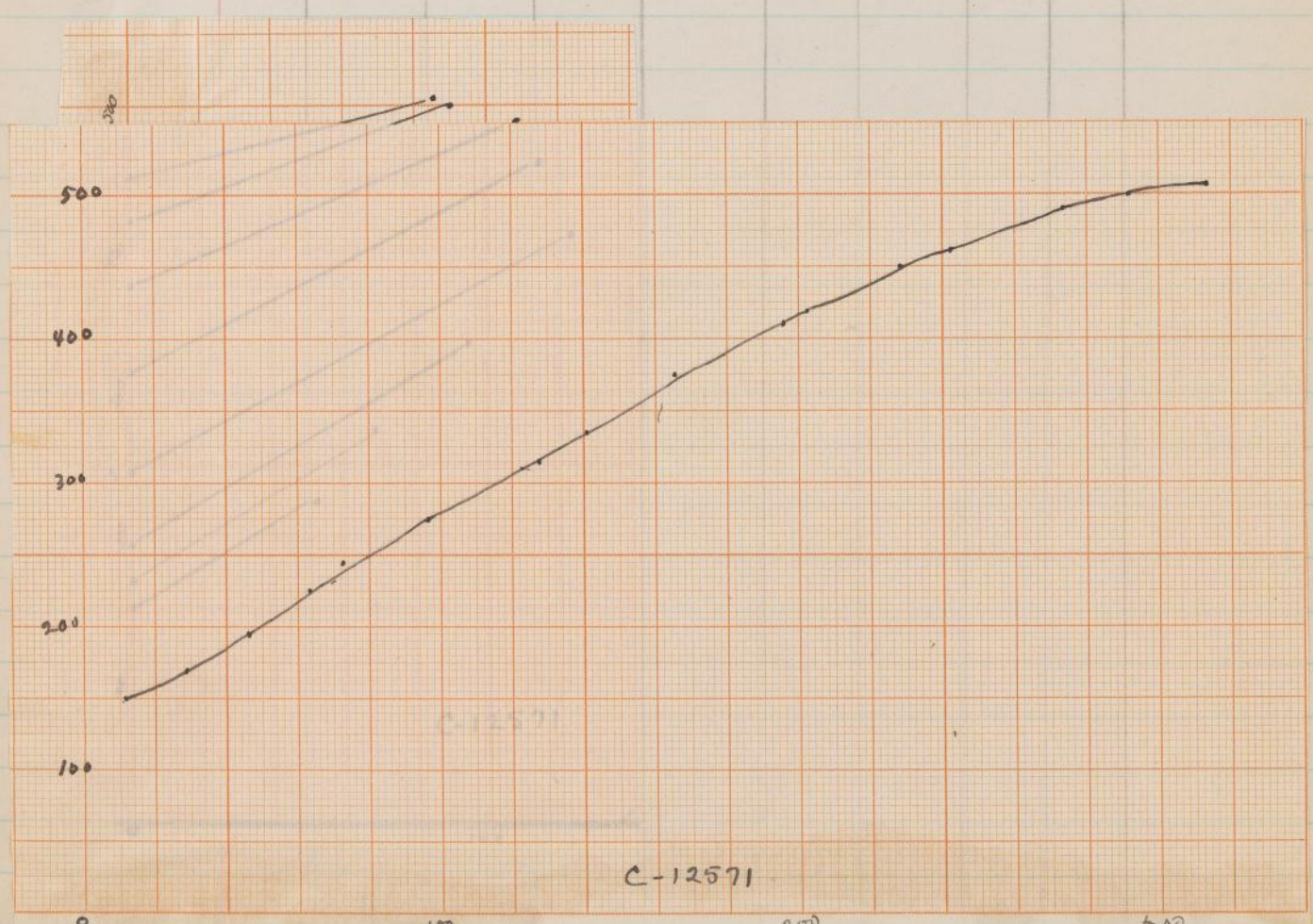
Line	n	n+u	l+n+u	u	u+u	[illegible]	[illegible]+[illegible]	dec	dl	Nijau	
β	50	100	295	50	100	18	83	65		277	194
γ	80	150	295	80	150	57	150	93		349	199
δ	60	135	300	60	135	31	132	101		304	172
ε	40	105	300	40	105		90			294	202
ζ	40	90	300	40	90		69			270	201
ζ	30	80	300	30	80		57			253	196
η	20	50	300	20	50		18			196	178
φ	10	30	300	10	30						
c	00	20	300	00	20						
K	10	20	300	10	20						

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1924phae.proj.111CP

α 2060 Mizar
C-12571

Pair	n	m+n	l+m+n	n̄	m+n	[n²]	[m+n²]	dm	dl.
β	410	480	530	410	480	196	264	68	46
γ	450	505	530	450	505	230	302	72	48
δ	420	500	530	430	500	202	292	90	56
ε	370	485	525	375	490	169	274	105	62
ζ	450	470	525	455	475	234	258	24	20
3	310	450	520	315	460	127	240	113	65
η	240	400	520	245	410	77	196	119	67
Θ	190	330	520	195	335	46	141	95	58
ι	170	270	520	170	275	30	97	67	46
κ	150	220	520	150	225	11	65	54	
λ	135	180	520	135	180		37		
μ	120	140	520	120	140				
ν	110	130	520	110	130				

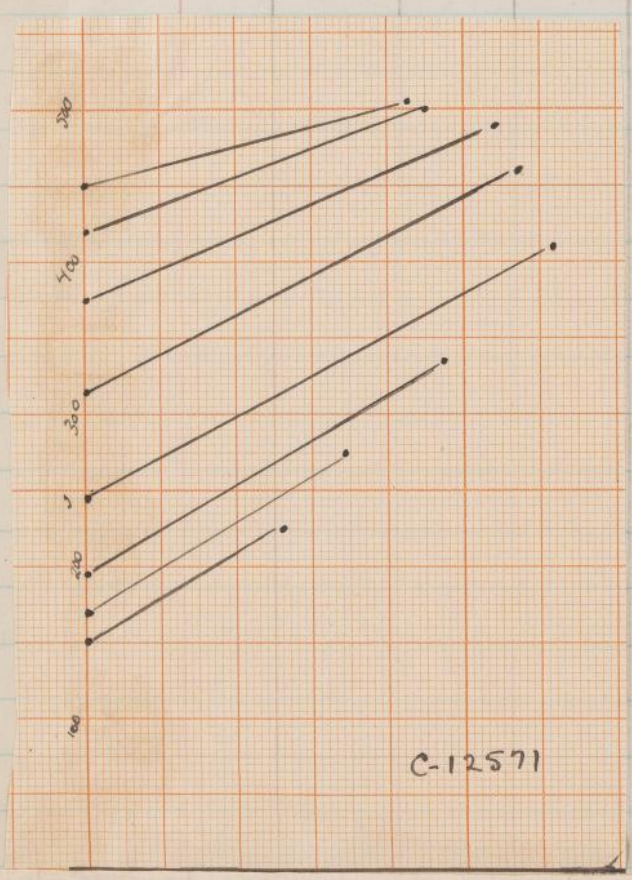


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1924phae.proj.11CP

n Ω 2060
C-12571
Mizar

Pair	n	m+n	l+m+n	n̄	m+n	[n]	[m+n]	dm	dl.
β	410	480	530	410	480	196	264	68	46
γ	450	505	530	450	505	230	302	72	48
δ	420	500	530	420	500	202	292	90	56
ε	370	485	525	375	490	169	274	105	62
ζ	450	470	525	455	475	234	258	24	20
ϑ	310	450	520	315	460	127	240	113	65
η	240	400	520	245	410	77	196	119	67
ϕ	190	330	520	195	335	46	141	95	58
ι	170	270	520	170	275	30	97	67	46
κ	150	220	520	150	225	11	65	54	
λ	135	180	520	135	180		37		
μ	120	140	520	120	140				
ν	110	130	520	110	130				



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1924phae.proj.11167

Lines

150 = 11	270 = 93	390 = 180
155 = 17	275 = 97	395 = 183
160 = 22	280 = 100	400 = 187
165 = 26	285 = 104	405 = 191
170 = 30	290 = 109	410 = 196
175 = 33	295 = 112	415 = 200
180 = 37	300 = 116	420 = 202
185 = 40	305 = 119	425 = 209
190 = 43	310 = 123	430 = 214
195 = 46	315 = 127	435 = 219
200 = 49	320 = 130	440 = 223
205 = 53	325 = 134	445 = 228
210 = 56	330 = 138	450 = 230
215 = 59	335 = 141	455 = 234
220 = 62	340 = 145	460 = 240
225 = 65	345 = 149	465 = 247
230 = 67	350 = 152	470 = 252
235 = 70	355 = 156	475 = 258
240 = 74	360 = 159	480 = 264
245 = 77	365 = 162	485 = 269
250 = 81	370 = 165	490 = 274
255 = 84	375 = 169	495 = 281
260 = 88	380 = 172	500 = 292
265 = 90	385 = 177	505 = 302

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1924phae.proj.11107

m Q 2061
C 12571 Alcor

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	$[n^2]$	$[\overline{m+n}^2]$	dm	dl.	
							88			264 176
β	120	260	530	120	260					
γ	170	335	535	170	330	30	138	108		302 164
δ	150	320	540	150	315	11	127	116		292 165
ε	60	275	540	60	270		93			274 181
ζ	90	240	540	90	235		70			258 188
3	40	180	540	40	180		37			240 203
η	20	100	540	20	100					
Θ	10	50	540	10	50					
c	10	20	540	10	20					

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1924phae.proj.1196

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1924phae.proj.11:QP

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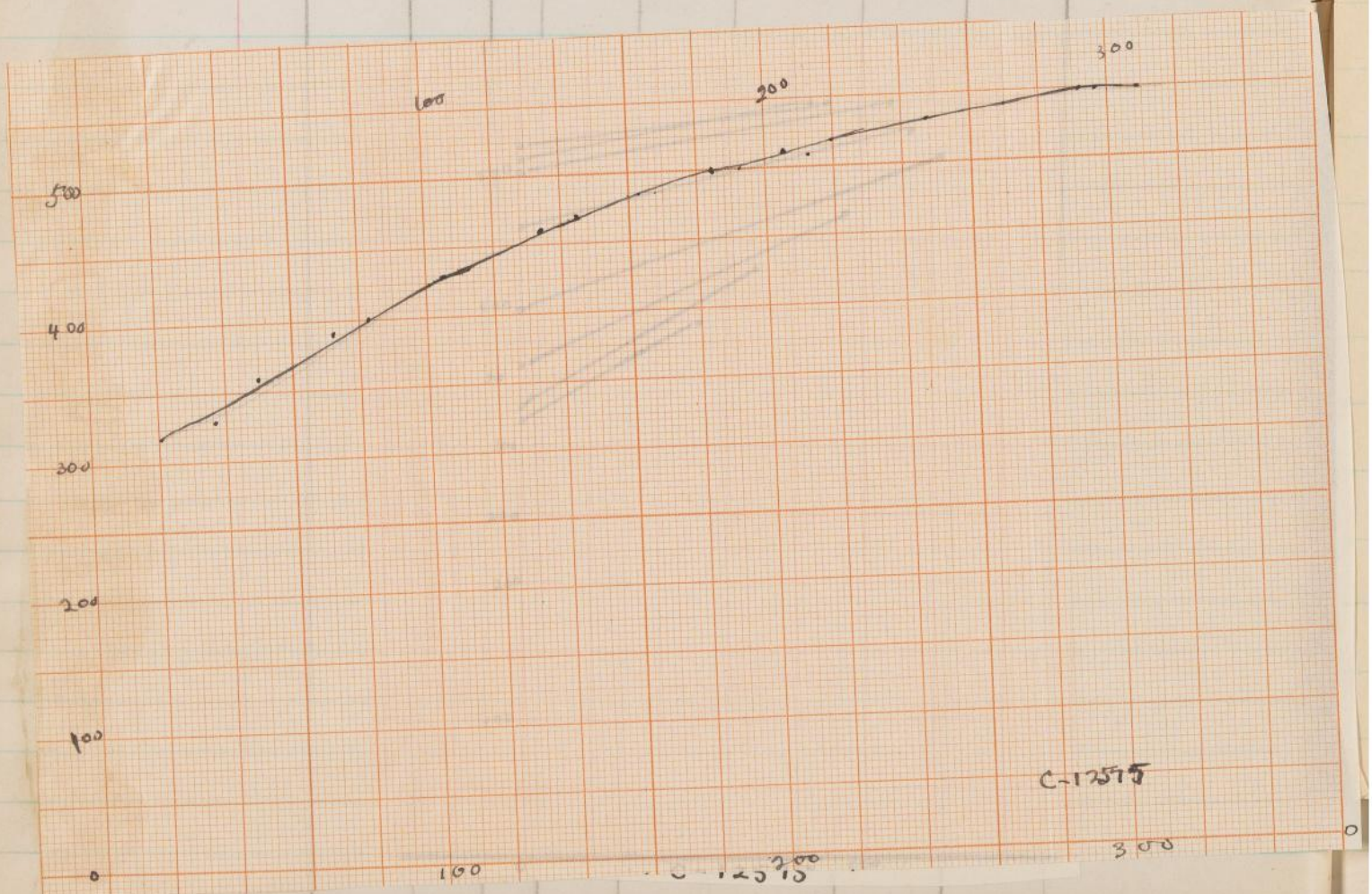
1924phae.proj.11tif

198

nd 2063
C-12575

Mizar

Line	u	m+u	l+m+u	$\bar{u}$	$\overline{m+u}$	$\boxed{\bar{u}}$	$\boxed{m+u}$	dm	dl
β	520	540	550	520	540	221	270	49	
γ	510	550	550	516	550	206	292	86	
δ	520	550	550	520	550	221	292	71	
ε	500	550	550	500	550	185	292	107	
K	530	540	550	530	540	244	270	26	
ζ	460	530	550	460	530	136	244	108	
η	400	510	550	400	510	83	206	123	
Θ	360	470	550	360	470	54	147	93	
ι	330	430	550	330	430	30	107	77	
κ	320	390	550	320	390	21	77	56	
λ	300	350	550	300	350		47		
μ	260	320	550	260	320		21		
ν	270	290	550	270	290				



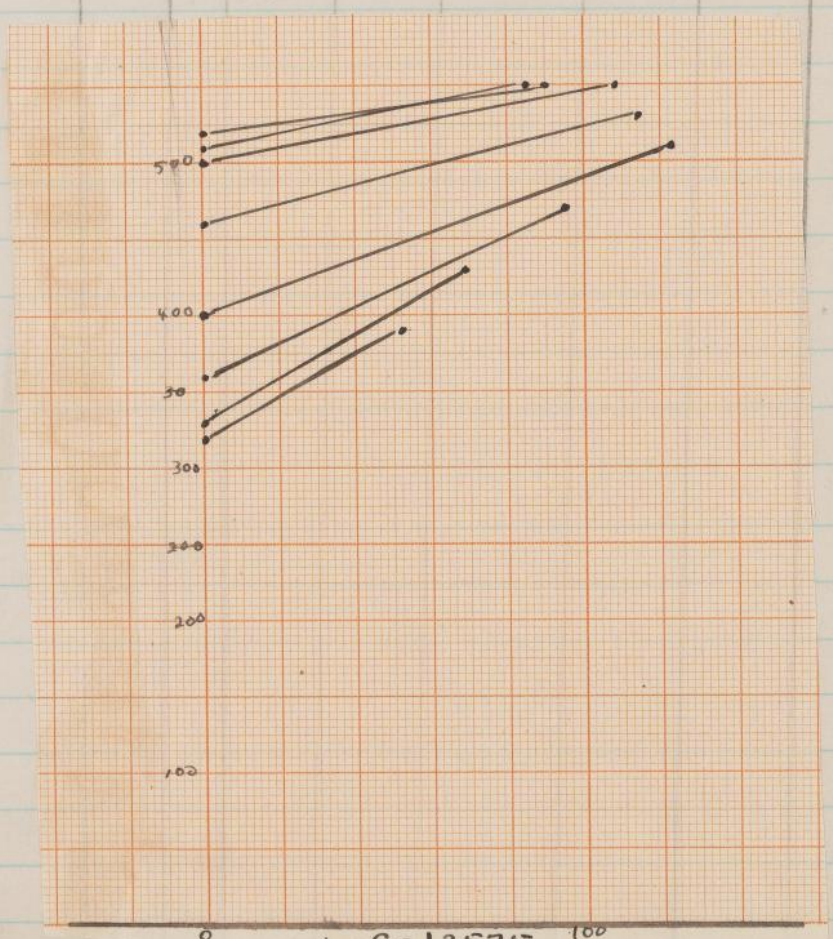
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1924phae.proj.1110P

md 2063
C - 12575

Mizar

Line	u	m+u	l+m+u	ū	m+u	[ū]	[m+ū]	dm	dl
β	530	540	550	520	540	221	270	49	
γ	510	550	550	510	550	206	292	86	
δ	520	550	550	520	550	221	292	71	
ε	500	550	550	500	550	185	292	107	
κ	530	540	550	530	540	244	270	26	
ζ	460	530	550	460	530	136	244	108	
η	400	510	550	400	510	83	206	123	
θ	360	470	550	360	470	54	147	93	
ι	330	430	550	330	430	30	107	77	
κ	320	390	550	320	390	21	77	56	
λ	300	350	550	300	350		47		
μ	260	320	550	260	320		21		
ν	270	290	550	270	290				



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1924phae.proj.1116P

m Q 2063
C - 12575

Algol

Line	u	u+u	l+u	l+u+u	ū	ū+u	ū+ū	ū+ū+ū		
β	260	420	550	260	420		98		270	172
γ	340	480	550	340	480	39	157		292	135
δ	300	460	550	300	460		136		292	156
ε	180	430	540	180	440		117		292	175
ρ	230	400	540	235	410		91		270	179
ζ	150	340	540	150	350		47		244	197
η	80	240	540	80	245					
α	60	170	540	60	170					
c	60	120	540	60	150					
κ	40	90	540	40	90					
λ	40	65	540	40	65					

C-12575

315′ =		375′ =	65	435′ =	112	495′ =	176
320 =	21	380 =	69	440 =	117	500 =	185
325′ =	25	385′ =	73	445′ =	122	505′ =	198
330 =	30	390 =	77	450 =	126	510 =	206
335′ =	34	395′ =	80	455′ =	131	515′ =	214
340 =	39	400 =	83	460 =	136	520 =	221
345′ =	43	405′ =	87	465′ =	142	525′ =	232
350 =	47	410 =	91	470 =	147	530 =	244
355′ =	51	415′ =	94	475′ =	152	535′ =	256
360 =	54	420 =	98	480 =	157	540 =	270
365′ =	58	425′ =	102	485′ =	163	545′ =	280
370 =	62	430 =	107	490 =	170	550 =	292

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1924phae.proj.110P

nell 2052

G 17325

	$18^h 30^m + 5°8'.3$							
Lira	u	u+u	l+u+u	u	u+u	[u²]	[u+u²]	dm dl.
β	130	150	420	130	150			
γ	130	185	420	130	185			
GS	80	175	420	80	175			
δ	80	120	420	80	120			
ε	00	50	420	00	50			
ζ	00	40	420	00	40			

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1924phae.proj.11GP

nd 2053
C-17320
18h 20m +59°.5

Line	n	m+n	l+m+n	n̄	m+n̄	[n̄]²	[m+n]²	dm	dl.
β	10	25	420	10	25				
γ	20	65	420	20	65				
δ	30	65	425	30	65				
ε	20	55	425	30	55				
κ	30	55	430	30	55				
ζ	10	40	430	10	40				
η	5	25	430	5	25				
α	10	20	438	10	20				

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1924phae.proj.111@P

nd 2055
L 17325
$18^h 5^m 2,459.950$

Line	h	m+u	l+m+u	n	m+u	$[u^2]$	$[u+u^2]$	dudl
β	20	30	430	20	30			
γ	30	70	430	30	70			
δ	30	60	430	30	60			
ε	20	50	430	20	50			
ζ	10	30	430	10	30			

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$\lim_{n \to \infty} \frac{1}{n+1} + \frac{1}{n+2} + \frac{1}{n+3} \cdots \frac{1}{n+n} \int_0^{\frac{\pi}{2}} \int_0^{\frac{\pi}{2}} du\, dv.$

1924phae.proj.1110P

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1924phae.proj.111QP

m 0 206 ✓
C-19180 ✓
H.D. 8065 ✓

Lin	u	u+u	u+u+u	ū	u+u	ū+u	ū+u+u	dū	dl
β	90	120	340	90	120	324	365	41	31
4481	200	205	340	195	200	438	442	04	4
4471	190	205	340	185	200	427	442	15	13
δ	140	195	340	140	190	384	433	45	34
δ	110	175	340	110	170	353	411	58	41
4026	140	160	340	140	160	384	401	17	14
ε	70	130	340	70	130	295	374	79	52
K	90	105	340	90	105	324	346	22	18
3	40	70	340	40	70	226	295	69	47
η	20	40	340	20	40	150	226	76	50
ϕ	10	25	340	10	25	78	182	104	
ι	10	15	340	10	15	78	126	38	

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1924phae.proj.11CP

MP 2065
C-19/80
#4a

Reduce to 335

Line	u	u+v	l+u+v	$\bar{u}$	$\bar{u}+\bar{v}$	$\overline{uu}$	$\overline{uu}+\overline{vv}$	dom	dl
β	95	195	360	90	180	324	420	96	59
γ	170	285	355	165	270	406	528	122	67
δ	145	275	350	140	265	384	520	136	71
ε	95	235	345	90	230	324	478	154	76
κ	195	215	345	~~185~~ 190	210	432	452	20	17
ζ	50	165	340	50	165	256	406	150	75
η	25	90	340	25	90	182	324	142	73
θ	15	50	340	15	50	126	256	130	70
ι	10	30	340	10	30	78	198	120	67
λ	5	20	335	5	20	30	150	120	67

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1924phae.proj.11[illegible]

MO 2066
C-19180
d Pyxad #11

Line	n	mtn	ltmtn	$\bar{n}$	$\overline{mtn}$	[n]	[mtn]	dm	dl
β	70	165	335	70	165	295	406	111	64
γ	110	245	335	110	245	355	496	141	73
δ	85	230	335	85	230	316	478	162	78
ε	55	200	335	55	200	266	442	176	80
K	155	180	335	155	180	397	420	23	19
ζ	35	175	330	35	145	240	398	178	81
η	20	85	335	20	85	150	316	166	78
θ	15	50	335	15	50	126	256	130	70
i	10	30	335	10	30	78	198	120	67
K									

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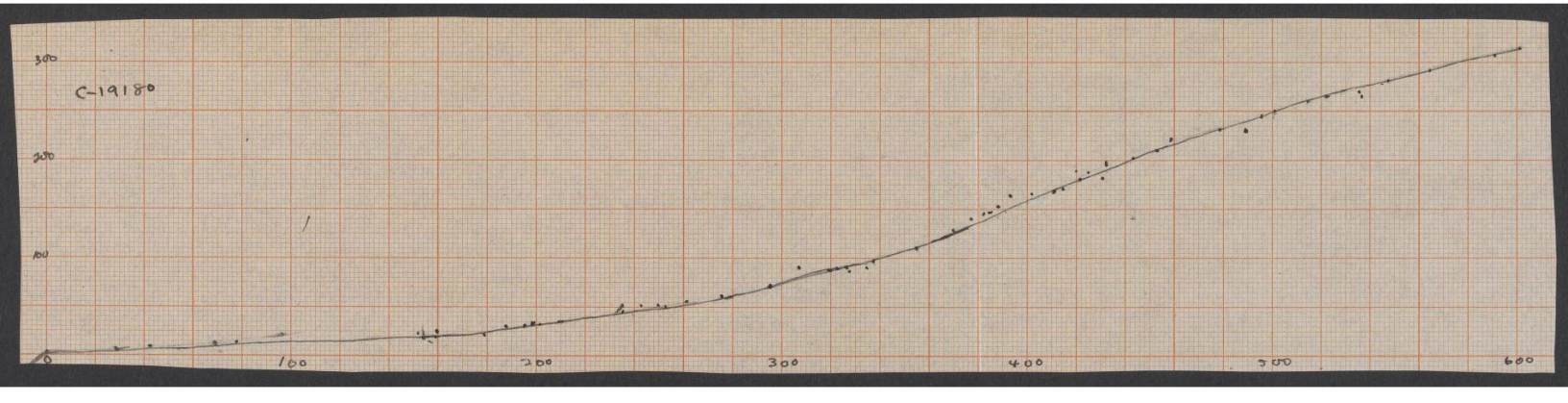
1924phae.proj.11fop

MP 2967
C 19180
Lyrae (#2)

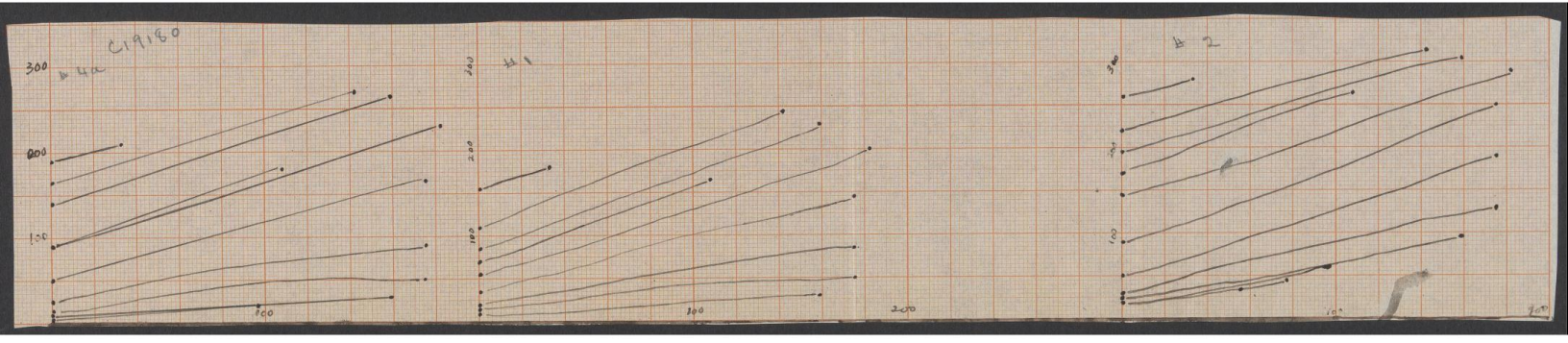
335

Line	n	m+n	l+m+n	$\bar{n}$	m+n	[n]	[m+n]	dw	dl
β	165	255	325	170	265	411	520	109	63
γ	215	305	325	220	315	464	601	137	72
δ	190	295	325	195	305	438	586	148	74
ε	140	280	325 ~~325~~	145	290	388	564	176	80
π	250	270	325	260	280	514	547	33	26
ζ	90	245	330	90	250	324	501	177	80
η	50	185	330	50	190	256	433	177	80
θ	30	130	330	30	130	198	374	176	80
ι	25	90	325	25	95	182	334	152	75
κ	20	160	325	20	60	150	278	128	69
λ	20	45	325	20	45	150	240	90	56
μ	20	35	325	20	35	150	210	60	42
ν	15	25	325	15	25	126	182	56	40

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1924phae.proj.111CP

208 u Q 2083
C-19192

Reduce to 390

#3

Line	n	m+n	l+m+n	$\bar{n}$	$\overline{m+n}$	[n]	[m+n]	dm	dl
β	105	200	400	100	195				
γ	150	265	395	150	260				
δ	105	225	395	105	220				
ε	20	180	395	20	180				
K									
K	25	155	395	25	155				
ζ	35	110	395	35	110				
η	20	65	395	20	65				
θ	15	40	395	15	40				
L	10	35	395	10	35				
K	5	20	395	5	20				

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1924phae.proj.11MP

C 19192
MQ 2081

α Lyrae (#2)

Line	m	m+n	k(m+n)	n̄	m+n	[n]	[m+n]	dm	dl
β	90	200	385	90	200				
γ	155	295	385	155	300				
δ	125	295	390	125	295				
ε	85	260	390	86	260				
κ	205	240	390	205	240				
ζ	45	205	390	45	205				
η	25	130	390	25	130				
θ	15	75	390	15	75				
ι	15	50	390	15	50				
κ	5	35	390	5	35				

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1924phae.proj.111QP

μΦ 2082
C-19192
#1

Line	u	m+n	l+m+n	$\overline{n}$	$\overline{m+n}$	[n]	[n+n]	dm	dl
β	225	325	385	230	330				
γ	275	360	385	280	365				
δ	250	355	390	250	355				
ε	200	350	390	200	350				
K	310	335	390	310	335				
ζ	150	310	390	150	310				
η	80	260	390	80	260				
θ	50	195	390	50	195				
ι	35	140	390	35	140				
κ	30	105	390	30	105				
λ	35	75	390	35	75				
μ	20	45	390	20	45				

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1924phae.proj.111CP

Intensities of lines of α Cygni

Wright	Int.	dl	Smoothed dl	dm	dl × 18/27
δ	5	51	48		
ε	4	(61)	46		
ζ	5	44	43		
η	5	41	40		
θ	5	37	38		
ι	4	34	35		
κ	4	31	33		
λ	4	26	30		20
μ	4	18	27	22	18
ν	4	17	25	21	17
ξ	4		22	18	15
ο	4		20	17 —	13
π	4		17	14	11
ρ	3+		15	13	10
σ	3		13	11	9
τ	3		11	10	7
υ	2		9	8	6
φ	2		6	5	4
χ	2		4	4	3
ψ	1		2	2	1 0
ω	1-		0.5	0.5	0.4
		0	0		

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1924phae.proj.11:6P

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1924phae.proj.111qP

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1924phae.proj.1116p

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