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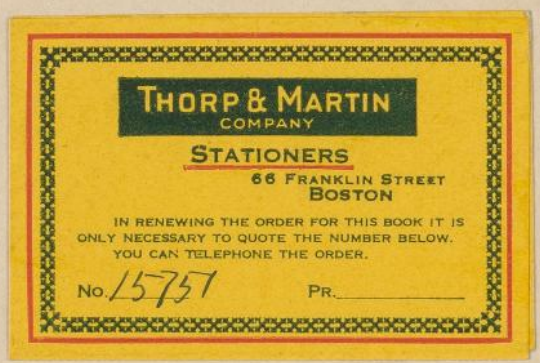
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5
8362

W. P. Gerasimovič.

Spectrophotometry of Band O Stars

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2 KG 11365-907

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B 9420
NF 7883

Carina region.

						CPD
A		10 8.3	−57 24	6.1	B2p.	2781
B	ζ Velorum	10 17.2	−55 33	4.7	B5	3286
C		10 24.9	−62.40	6.7	B3	1595
D	p Car	10 28.5	−61 10	3.6	B5	1704
E		10 38.9	−58 42	5.4	B3	2581
F		10 40.5	−58 46	9.1	B	2637
G		11 05.8	−59 33	8.0	B2	3100
H						

A0 stars

1.	10h 7m.5	−58° 39′	7.3	1967
2	7m.7	−57° 42′	8.8	2770
3	11m.8	−54° 57′	9.1	3366
4	12.2	−55° 01′	7.0	3382
5	16m.4	−56° 07′	8.3	3259
6	23m.4	−56° 41′	9.0	3357
7	27m.3	−57° 32′	8.2	3366
8	29m.4	−54° 52′	6.6	3797
9	37m.3	−57° 15′	8.4	3672
10	43m.3	−56 48′	7.2	3810
11	57m.4	−56 17′	9.4	4005
12	57m.1	−57° 9′	8.4	4048
13	55m.4	−55 40′	7.3	4038
14	10h 12m.8	−63 16′	8.0	1348
15	16m.0	−64 11′	6.2	1248
16	11m.6	−61 46′	9.1	1540
17	19m.2	−61 34′	6.8 (?)	1612
18	22m.9	−62 48	7.3	1577
19	27m.4	−61 6	7.7	1948

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20	$42^m.5$	$-60°5'$	6.5	2671
21	$44^m.0$	$-58°10'$	9.0	2717
22	$44^m.2$	$-63°44$	6.4	1672
23	$45^m.5$	$-58°48'$	6.1	2755
24	$46^m.1$	$-60°48'$	8.9	2312
25	$49^m.8$	$-58°57'$	8.2	2846
26	$55^m.0$	$-58\ 38'$	7.2	2907
27	$55^m.0$	$-58\ 52$	7.2	2909
28	$11^h\ 4^m.1$	$-63\ 57$	9.0	1843
29				

B Stars

B_0					
a	10^h	$28^m.8$	$-59\ 16'$	7.7	2080
b		$20^m.4$	$-59\ 1'$	8.4	2163
c		$23^m.2$	$-57\ 6'$	7.2	3343
d		$28^m.4$	$-63\ 26'$	7.6	1465
e		$52^m.2$	$-57\ 1'$	7.2	4016
f		$56^m.0$	$-58\ 50$	7.9	2922
B_2					
g		$22^m.6$	$-56°49'$	8.5	3322
gh		$31^m.0$	$-59°46'$	8.3	2235
i		$37^m.1$	$-57°5'$	8.5	3653
j		$38^m.7$	$-56°21'$	7.2	3696

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B_3

K	$10^m.1$	$-61°9'$	6.5	1517
l	$10^m.4$	$-54°29'$	7.7	3325
m	$16^m.2$	$-58°38'$	6.2	2095
n	$25^m.3$	$-60°23'$	7.8	1925
o	$35^m.7$	$-60°28'$	8.1	2122
p	$40^m.3$	$-63°44'$	6.1	1619
q_2	$40^m.5$	$-63°26'$	5.1	1623
	$49^m.3$	$-58°22'$	6.6	2830

B_5

s	$32^m.7$	$-58°40'$	7.0	2380
t	$37^m.6$	$-63°57'$	6.5	1573
u	$39^m.3$	$-60°39'$	7.4	2203
x	$42^m.4$	$-61°25'$	7.6	1865
y	$43^m.2$	$-63°52'$	5.1	1655
w	$43^m.9$	$-59°21'$	6.7	2713

B_8

a_1	$15^m.8$	$-60°36'$	8.2	1842
b_1	$22^m.1$	$-56°7'$	8.5	3419
c_1	$26^m.5$	$-56°34'$	6.9	3448
d_1	$29^m.6$	$-57°41'$	6.2	3431
e_1	$42^m.8$	$-63°44'$	5.4	1649
f_1	$42^m.9$	$-56°41$	5.5	3800
g_1	$46^m.5$	$-62°6'$	7.3	1908

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Bq

h_1	$12^m.3$	$-62° 2'$	6.8	1553
c_1	$20^m.0$	$-58° 10'$	8.6	2157
f_1	$21^m.7$	$-58° 22'$	6.9	2182
k_1	$24^m.3$	$-56° 42$	7.4	3386
l_1	$46^m.7$	$-58° 41'$	7.9	2779

O stars 1

α	$10^h 31^m.0$	$-57° 39'$	8.6	3463
β	44.8	$-59° 42$	7.1	2732

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	μ		
δ	5.53		
F_0	12 78	12.82	H_γ
	1280	1294	
	12 90	1295	
	5.50		
H_β	12.90	13.05	
	13.00	1302	
	13 00	13.04	
K_{pr}	1 11.32	B_V 1062	
	11.39	10.55	
	11.26	10.67	
	2 9.50	8.80	
	9.55	82	
	962	76	
	3 825	7.60	
	836	7 63	
	8.28	7 56	
	~~13 05~~		
δ	5.53		

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μ Cent.

$H\beta_2$ d-do	H_μ d-do
7.63	
6.01	
2.95	

$d_f - d_o$:

μ Cent.

	d-do		d-do	log d-do	log d-do	S-S₀		
$H\beta_2$	6.01	$H_{\mu r}$	5.10	0.779	0.708	-0.103	0.174	0.138
	4.29		3.15	.632	.498	0.250	0384	0.317
	2.95		1.98	.468	.297	0.414	0.585	0.500

$d_f - d_o$ 7.63 l_f : 0.882

ν Cent

d-do

$H_{\mu r}$	7.07	6.20	0.849	0.792	0.089	0.146	0.118
	5.27	3.92	0.723	0.593	0.215	0.345	0.280
	3.77	2.62	0.580	0.418	0.358	0.520	0.439
	8.67		0.938				

μ Cent

$\frac{H_{\mu+\nu}}{2}$	3.70	0.568	0.329
	1.93	0.286	0.611
	1.08	0.033	0.864
	7.89	0.897	

ν Cent

4.12	0.615	0.384
2.30	0.362	0.587
1.31	0.117	0.832
8.90	0.949	

ν cen

$H_{\delta+\gamma}$ / 2	μ Cent		$\frac{H_{\delta+\gamma}}{2}$		
	3.75	0.574	-0.332	4.08	0.611 0.346
	1.85	0.267	-0.639	2.15	0.332 0.625
	0.99	0.996	~~-0.090~~	1.20	0.079 0.888
	8.06	0.906	-0.910	9.07	0.957

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X Y112

12.78 12.82
80 12.94
T 90 1295 Centaur

13.08

Hβ 13.05 13.08
13.08 13.10 .08 13.09
13.09 .10
2 11.40 10.54
11.46 11.45 10.61 10.55
11.52 .50
2 9.80 8.61
9.74 9.70 8.65 8.66
9.73 .55
3 8.45 7.40
8.40 8.35 .42 7.43
8.40 .41
5.45

Hγ 13.45 13.32
13.47 .48 13.40 .30 13.32
.47 .33
2 9.04 9.05
9.03 9.05 .09 9.06
.00 .04
2 7.20 7.23
7.20 7.20 .23 7.22
7.20 .20
3 6.43 6.46
6.44 .43 .49 6.47
6.45 .45
5.43

Hβ+8 13.50 13.
13.47 .44 .48
2 9.19
9.20 .18 .24
2 7.43
7.43 .47 .40
3 6.56
6.58 6.58
6.60
13.30
13.31 .31 .30.
2. 5.50.
13.39

Hδ 13.70 13.35
13.62 .68 13.51 .33 13.35
.62 .40
2 9.32 9.63
9.32 .30 .60 9.63
.33 .67
2 7.50 7.78
7.51 .50 .73 7.76
.52 .76
3 6.57 6.72
6.54 .55 .72 6.71
.54 .70
5.50

Hγ+8/2 13.75 13.50
13.73 .72 .48 13.50
.72 13.61 .50
2 9.30
9.30 .30 9.30.
.30
2 7.40
7.40 .40
.40
3 6.52
6.54 .55
.56
5.55

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1926phae.proj..gong

H_ε 13.70 13.50 13.52
13.70 70 13.61 54
1 10.32 10.10
25 12 10.11
10.31 37 10
2 8.40 8.20
34 20 8.20
8.39 44 20
3 7.10 7.08
12 05 7.07
7.11 10 08
5.53

F_0 13.70 13.70
80 72
76 76

$H_{\beta+8}$ 5.50
14.50
55 14.52
50
1 9.60
67 9.62
60
7.80
80 7.80
80
6.81
82 6.81
80
14.28
28 14.28
28 14.30

$H_{\gamma+8}$ 14.70 45
2 65 47
70 55
9.64 9.64
1 9.60 65
69 65
2 7.70 7.77
70 75
72 80
3 6.77 6.80
77 80
78 77
5.50

14.67 14.55 14.52
14.65 45
70 65
65 45
9.60 9.68
9.62 60 62 9.65
65 65
7.70 7.75
7.70 67 70 7.73
72 75
6.82 6.78
6.82 82 78 6.78
82 78
5.45

F_0 14.05 14.07
.00 07
.02 07
5.56
14.27 14.05
14.31 33 14.20 10 14.08
32 10.

$H_{\beta 2}$ 12.55 11.72
12.60 56 76 11.73
68 72
2 10.85 9.44
10.80 70 50 9.45
85 40
9.29 8.10
9.30 35 15 8.15

δ_2 14.57 14.37
14.62 60 14.52 45 14.41
70 40
1 9.65 9.58
9.67 70 52 9.56
65 58
2 7.68 7.70
7.68 70 70 7.70
68 70
3 6.78 6.75
6.78 78 75 6.75
78 74
5.50

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1457

$H_{\gamma+\delta}$ 14.70 62 14.66 65 9.60 55 9.58 60 7.65 65 7.65 65 6.70 70 6.70 70 14.45 50 14.48 50 5.50

H_ε 14.70 14.50 14.73 80 14.60 45 14.48 $\varepsilon\nu$ 70 50 10.17 9.68 20 10.18 67 9.68 17 68 8.15 7.80 128.15 78 7.78 19 25 7 20 6 80 7.19 18 .75 6.78 20 5.48

H_β

F_0 1478 1460 75 55 78 60

l. H_ε 709 745 722 9,28 708 42 26 30 8.27 8.33 8.43 10.90 5.50 8.35 30 40 85 10.30 10.70 10 65 12 79 25 62 70 79

H_γ 842 5.50. 292 465 1068 518 714

$H_{\gamma+\delta}$ 412 220 615 342

δ 0.150 0.123 0.2 105 0112

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4112

Hγ

Hγ + δ/2

μ Cent

3.60	363	3.62	0.558	0343	μ Cent
177	1.79	1.78	0.250	0.651	
101	104	1.03	0.013	0.888	
7.97		0.901			

ν Cent

4.17	406	4.12	0.615	0.280
2.19	220	2.20	0.342	0.613
1.28	125	1.26	0.100	0.855
9.02		0.955		

μ Cent

Hδ

3.82	4.13	0.582	0.616	0.322 - 288		0.305
2.01	2.26	0.303	0.354	601 - 550		0.576
1.04	1.21	0.017	0.083	887	821	0.854
8.01		0.904				

ν Cent

4.17	4.20	0.622 -	0.623	339 -	336 -	0.337
2.25	2.28	0.352	0.358	607	601	604
1.37	1.23	0.137	0.090	822	869	845
9.10		0.959				

Hε μ

4.78	458	0.679 -	0.661	228	246	0.237
286	267	456	426	481	481	0.466
158	1.54	200	188	707	719	0.713
8.08		907				

ν

4.70	4.20	0.672 -	0.623	288	337	0.312
2.67	2.30	426	362	534	598	0.566
1.71	1.30	233	114	727	846	0.786
9.12		960				

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X 5619



μ Centauri

27.75 Hβ 5.67
19.20 19.50
19.17 19.16 19.37 65 19.57
19.15 57
1 10.02 8.24
9.97 8.30 8.25
10.00 10.02 20
2 9.80 8.25
9.77 9.70 30 8.28
9.70 28
5.68

Hγ+β/2 5.68
19.40 19.20
41
19.42 45 19.34 25 19.25
30.
1 700
00
703 09
2 680
680 680
680

H5+8/2 5.70
19.18 18.95
16
19.18 18 19.07 97 18.97
97
1 672
80 6.77
80
2 670
6.67 60 5.69
70
5.68

Hγ 5.70
2665 19.44 19.00 26.00
37 19.15 00 18.93
19.38 33 18.90
1 6.70 6.75
6.72 6.73 75 6.75
73 76
2 6.57 2.650
6.58 6.57 48 6.49
608 5.68 50
5.65

H5 5.74
19.30 18.92
28
~~19.29~~ 19.14 97 18.99
30 19.07
1 6 72 6.90
6.75 79 91 6.90
75 90
6 67 6.72
6.72 75 70 6.71
73 70
5.70
5.72

H2 5.70
19.10 19.00
14
19.13 19.08 00 19.03
16 10
1 7.20 6.70
7.17 10 77 6.76
20 80
2 705 6.85
7.02 00 80 6.82
00 80
5.68
5.69

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√ Cet

5.70

Hp 19.05 19.00
19.11 18 19.10 19.03
19.07 10 19.00
27.25 1 10.65 9.33
10.56 50 35 9.34
52 35
2 9.70 8.17 8.16
9.74 78 10
5.69 20
5.67

(Hβ) 1 11.90 2 10.70
11.78 73

Hγ 5.70
20.20 19.40 19.00
19.37 30 19.18 18.93 18.99
41 19.05
1 7.00 6.80
5.95 6.90 86 6.84
95 85
2 6.75 6.64
6.73 75 60 6.62
70 5.66 62
5.69

H1 1.800 2 7.24
00 7.25
8.00 7.25

Hp+2 5.70
19.42 19.10
19.39 42 19.24 10 19.09
25 08
1 7.15
15 7.16
18
6.72 6.72
73
70 5.70

H5 5.52
19.08 19.05
19.09 10 19.04 1890 19.00
08 1905
6.80 6.50
6.82 88 57 6.52
80 50
6.58 7.00
6.59 55 01 6.98
57 6.92 5.51
5.50

H5 1 8.18 7.32
10 7.40

Hp+5 5.50
19.18 1899
19.23 30 19.14 19.12 19.04
20 19.00
1 6.80
6.77 70 5.53
80
2 6.53 5.52
6.51 50
50

H2
5.52
19.35 1899
19.38 45 19.20 19.10 19.23
35 19.00
7.10 7.80
7.15 15 80 7.78
20 75
6.70 7.15
6.72 25 10
70 20

H2 1 9.45 8.62
50 60
5.50
5.51

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μ — X 5619 — Hγ in ν

Hβ

432	257	0.635	0.410	−0.502	0.727	0.615	0.652	Δ: +259 / −172 = Δ: 216
305	260	0.484	0.415	0.653	0.722	0.688		

13.69 1.137

ν

487	365	0.687	0.562	0.438	0.563	0.500	0.564
405	247	0.607	0.392	0.525	0.733	0.629	

13.38 1.125

Hβ+γ/2 μ

135	130	1.006	1.047	
112	049	1.087		

1366 1.136

ν

146	164	0.934	1.012	
102	059	1.089		

12.52 1.098

Hγ μ

1.04	1.07	0.017	0.029	1.111	1.099	1.105	1.151	
0.90	0.81	T.954	T.908	1.174	1.220	1.197		

13.47 1.128

ν

~~1.29~~	1.08	0.111	0.072	1.024	1.059	1.042	1.073	
~~1.07~~	1.06	0.029	1.025	1.102	1.106	1.104		

13.52 1.131

Hδ+γ/2 μ

1.08	0.033	1.093	1.114	
0.98	T.991	1.135		

13.38 1.126

ν

1.25	0.097	1.038	1.088	
0.99	T.996	1.139		

13.62 1.135

Hδ μ

1.03	1.18	013	072	1.015	1.056	1.036	1.084	
1.00	0.94	090	T.996	1.128	1.132	1.130		

13.42 1.128

ν

1.31	1.01	117	000	1.014	1.131	1.074	1.058	
1.06	1.47	025	167	1.106	0.964(?)	1.035?		

13.53 1.131

better to take μ 1.036 ν 1.074 −0.038 / 1.128 1.106 +0.011 −0.013

Hε μ

1.48	1.07	170	029	0.957	1.098	1.027	1.032	
1.33	1.13	124	057	1.003	1.074	1.038		

13.39 59 1.127

ν

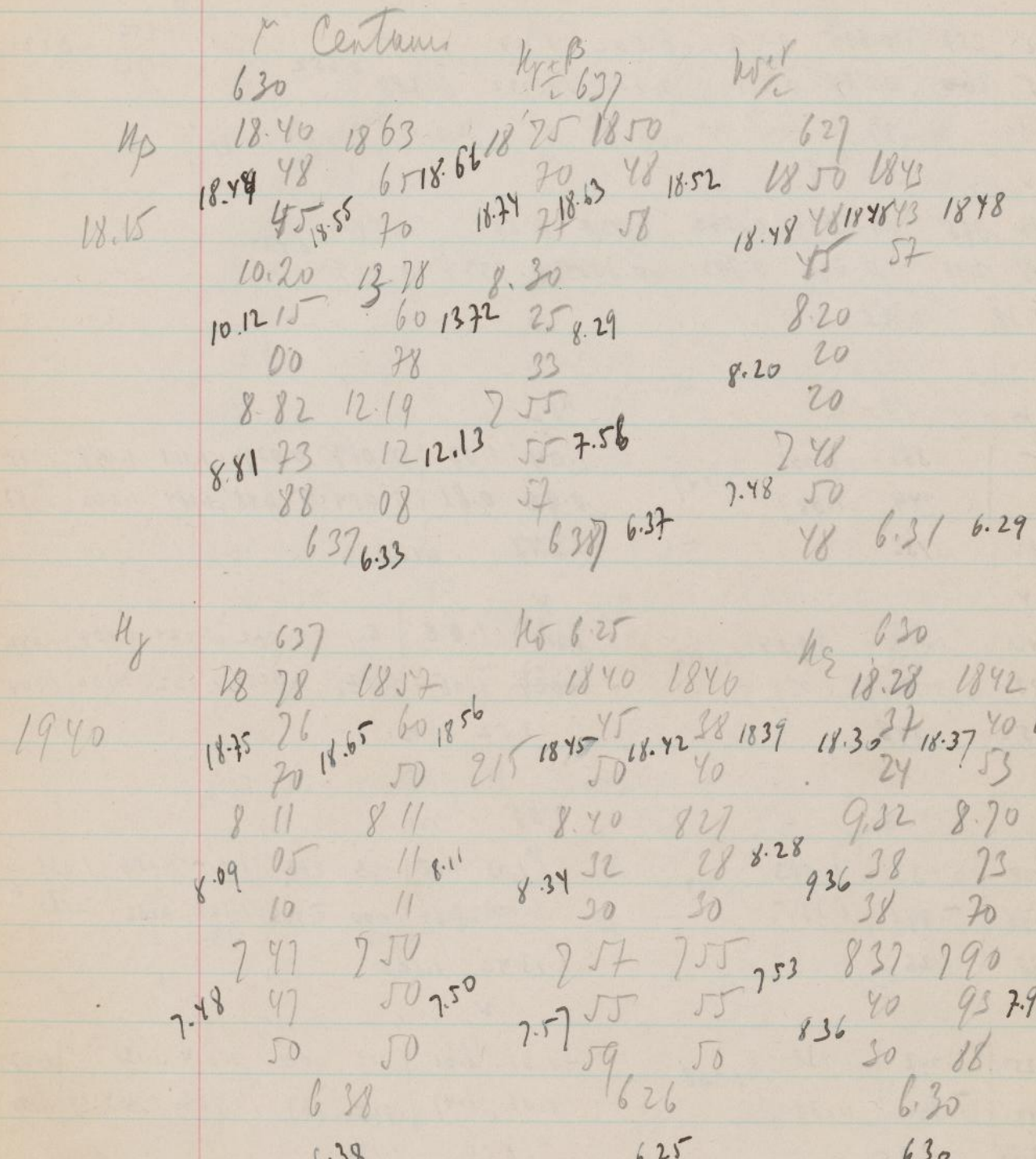
1.64	2.26	215	354	0.922	0.783	0.853	0.920
1.21	1.64	083	215	1.057	0.922	0.986	

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X 18450

α Centauri



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1926phae.proj..96MG

✓ Centaur

6.36
18.50 18.58 Hγ+Y
18.57 50 18.55 55 18.58
24.90 53 60
10.15 10.77
10.10 10 65 10.75
05 84
8.90 10.50
8.90 87 43 10.56
93 57
6.43
6.40

6.47
18.70
85 18.76
73 18.66 a4
8.30
50 8.30
50
7.60
58 7.58
56
6.39 6.41

Hδ+Y 6.46
18.60 18.55
18.69 20 18.64 55 18.59
77 67
8.30
32 8.31
50
7.60
58 7.68
57
6.47 6.47
Hε that's H2.

Hγ 6.40
18.60 18.55
26.10 18.61 63 57 55 18.54
60 18.72 53
8.16 8.15
8.13 10 14 8.15
14 15
7.48 7.55
747 48 53 753
45 51
6.40
6.40

Hδ
6.43
18.53 18.57
27.10 18.53 45 50 1857
62 18.55 65
8.48 8.59
7.84 45 57 7.85
40 56
768 774
766 65 75 7.74
65 74
6.45
6.44

6.45
1845 1850
48 52 1852
1842 1847 53
12.02 10.60
1206 12 60 10.57
03 50
10.60 9.30
47 29 9.27
10.53 52 24
6.49
647

Hε
6.50
14.82 14.60
14.87 84 14.72 65 14.62
82 60
6.50
8.13 815 844 8.40 6.50
14 45
10 20
7.46 7.84 8.88 8.84

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1926phae.proj..90MG

Hβ μ

3.79	739	0.579	0.868	0.508	0 219	0.363
248	580	0.394	0.763	0.693	0.324	0.508

0.425

12.22 1.087

✓

3.70	4.35	0.568	0.638	0.517	0.447	0.482
2.50	4.10	0.398	0.613	0.687	0.472	0.580

0.531

12.15 1.085

Hβ+γ

μ	1.92	0.283	0.805	0.908
	119	0.096	1.012	

12.26 1.088

ν	1.89	0.276	0.812	0.916
	1.17	0.068	1.020	

(12.25) 1.0.88

Hδ

μ	171	173	233 ✓	238 ✓	0.856 ✓	0.851 ✓	0.853
	110	112	041 ✓	049 ✓	1.048 ✓	1.040 ✓	1.044

0.948

✓ 12.27 1.089

ν	173	175	238 ✓	243 ✓	853 47	848 42	851 45
	107	113	029 ✓	053 ✓	062 56	038 32	1050 44

0.95

Hδ 12.17 1.085

μ	209	203	320	307	765	778	772
	132	128	121	107	964	982	973

872

12.17 1.085

ν	200	213	301	328	782	775	778
	122	130	086	114	1003	969	986

882

1211 083

Hε+γ

μ	1.91	281	805	907
	1.19	076	1010	

12.21 1.086

ν	1.84	0.265	0820	911
	1.21	0.083	1002	

12.17 1.085

Hζ

μ						
256	301	408	479	503	432	468
231	169	364	228	547	683	615

542

8.15 0.911

ν						
163	190	212	279	203	634	668
136	234	134	369	781	546	663

666

822 0.915

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X 7597

μ Centauri ≡ ^{2}

I

II spectra is very bad. Decided to not continue

I

6.50

15.37 15.38 4½+X 6.52

15.37 37 40 15.39 15.33 15.25

38 15.38 40 15.34 35 15.30 27 15.26

8.00 7.48 34 25

00 48 7.49 6.90

8.03 10 50 88 6.89

8.82 8.01 7.08 7.08

90 8.00 7.99 08

8.87 88 7.95 6.50 6.51

6.47 6.49

II

6.50

15.72 15.25 4½ 6.50

15.72 70 15.47 25 15.23 15.46

75 18 50

7.20 7.05 7.00 45

7.04 04 02 7.01 10.31

02 00 55

7.30 7.30

7.29 28 25 7.27

30 28

6.47

6.48

542

8 666

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1926phae.proj..gong

N Cent

I

6.48
15.00 1497
15.03 05 14.98 80 14.91
09 95
8.73 8.00
8.71 69 00 8.00
9.35 8.62 8.62
9.37 29 58
6.48 648

I

6.50
15.00 15.05
14.85 07 15.08
14.95 00 15.01 12
731 738 739
734 37 40
732 740 740
732 32 40
6.50
650

I

6.49
15.10 1498
15.10 10 15.03 99 14.96
10 90
732
731 80
718
718 18 6.50
6.50

II

6.47
15.12 14.95
10 80
10 95
10.72 9.50
12 50
11.50 10.33
50 52
6.47

II

6.47
1420 1505 1500
05 07
00 08
8.15 8.37
17 50
8.82 8.95
80 92
6.49

II

6.50
15.18 15.22
18 24
20 24
7.95
8.10
8.77
21
6.50

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1926phae.proj..90G

X 7597

Hβ

μ	154	100	188	000	761	949	855	764
	238	150	376	176	573	773	673	
	889	0.949						
v	223	152	348	182	581	747	664	590
	289	232	460	366	469	563	516	
	850	0929						

Hγ

μ	056	053	T.748	T.724	1.206	1.230	1.218	1.135
	081	079	T.908	T.898	1.046	1.056	1.051	
	899	0.954						
v	084	089	T.924	T.944	1.008	0.981	0.993	0.995
	082	090	T.914	T.954	1.016	0.976	0.996	
	851	0.930						

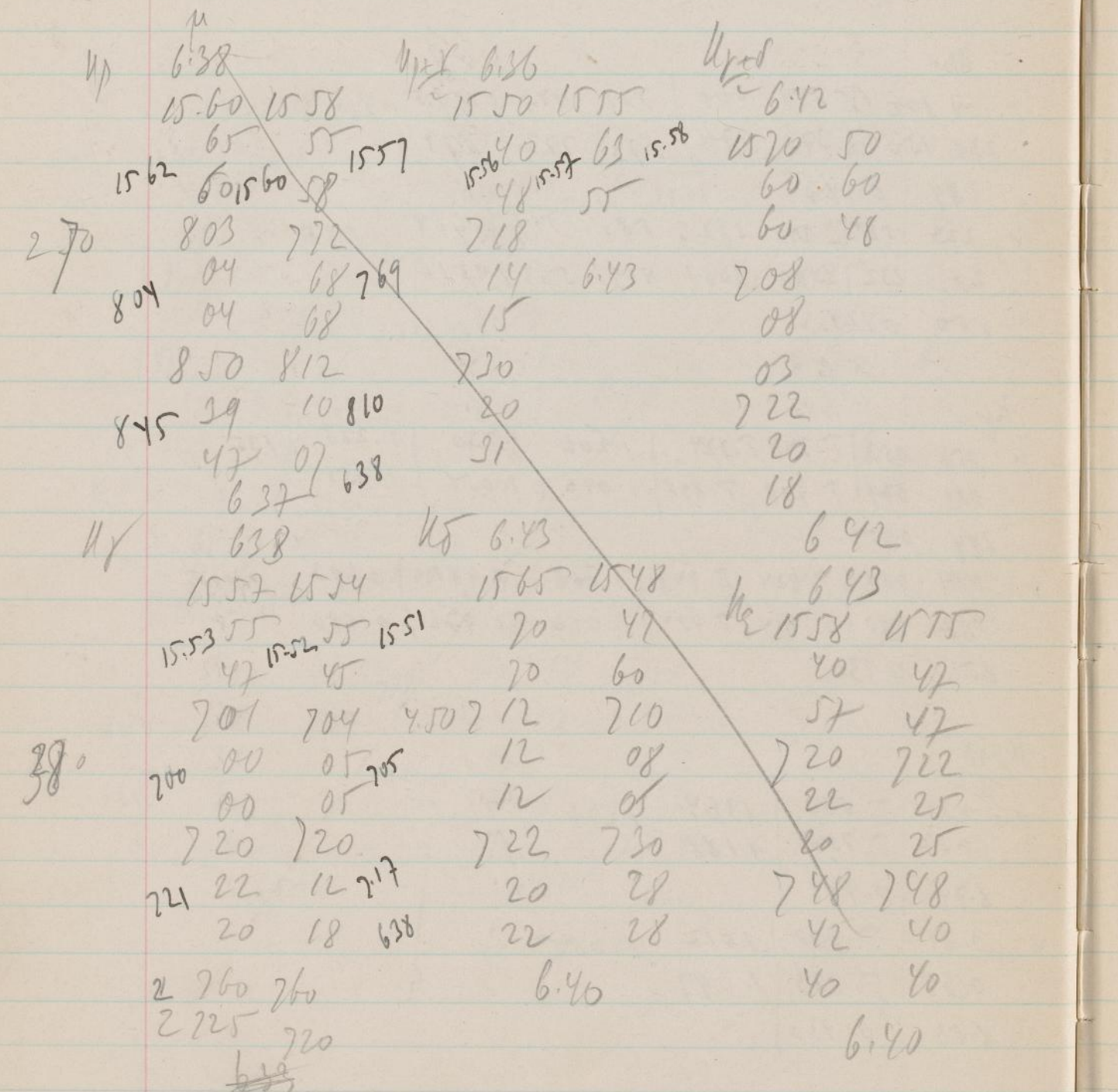
$H_{\frac{\gamma+\delta}{2}}$

μ	0.38	T.580	1364	1276
	0.57	T.256	1188	
	8.79	0.944		
v	0.81	T.908	1.012	1.055
	0.68	T.833	1.097	
	8.53	0.930		

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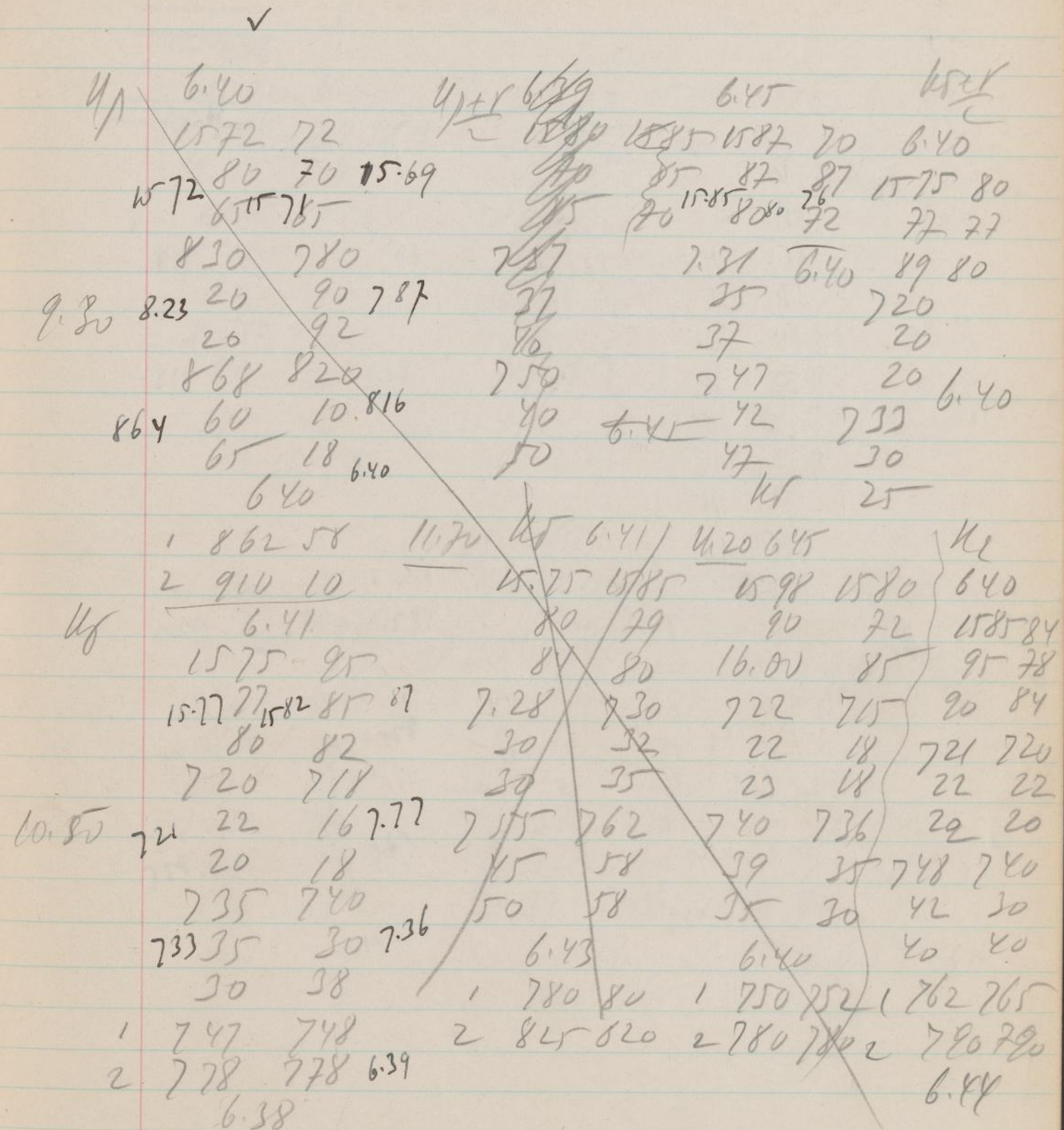
1926phae.proj..9GMG

Bands mixed up; beams weak



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1555 4126

γ

2 H

4y 650
1268 1260
65 50
50 50
4h80 810 740
22 30
25 39
772 705
73 04
65 10
652

4y 655
1265
60
52

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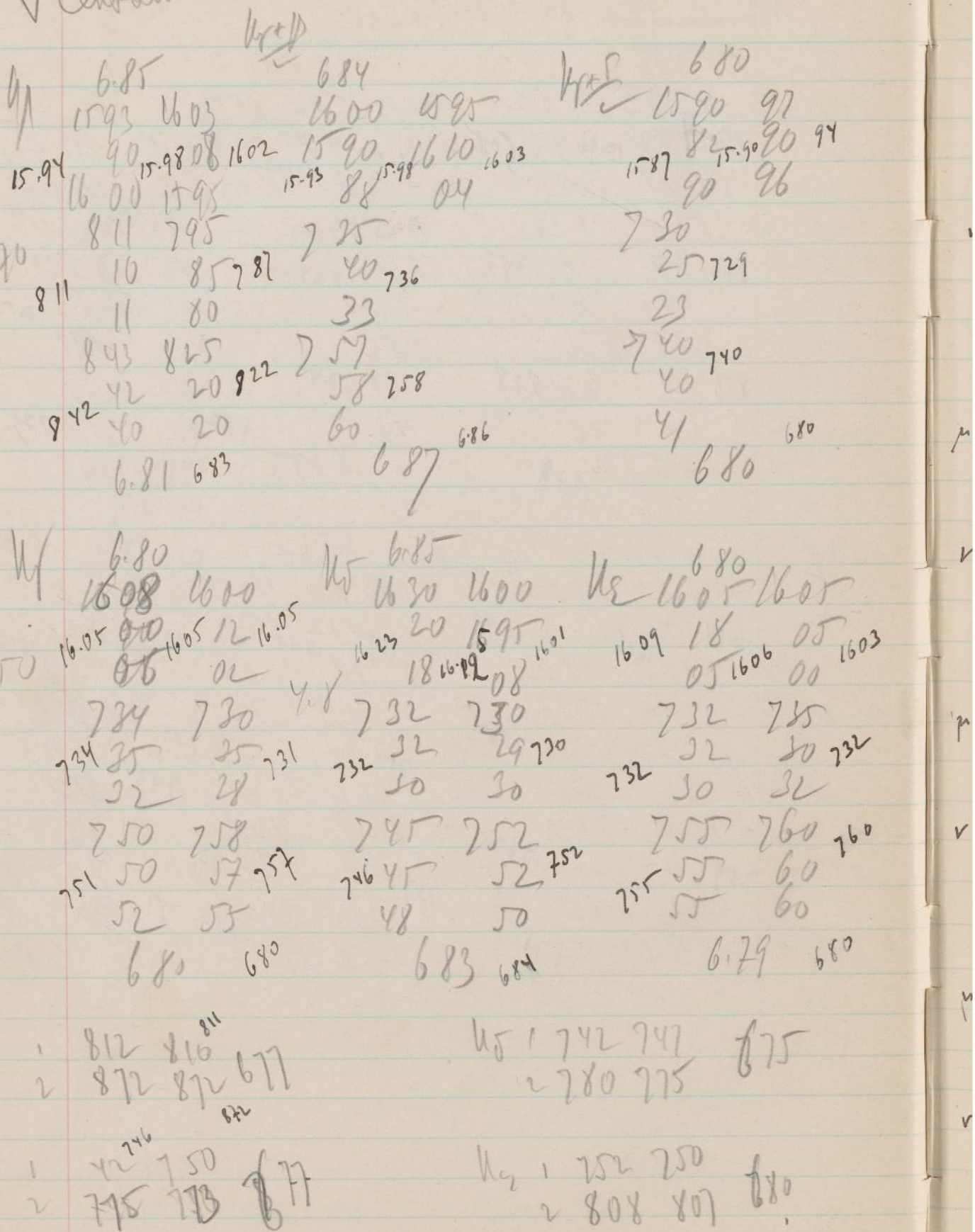
μ Centauri

	6.80	680	
μ1	15.90 1600	μ1+2 1680 1598	μ2 680
	15.94 88 15.96 97 15.98	1602 05 1600 1502	15.90 92
	1605 97	590 1602 10	1600 00 93
	812 790	760	1600 10 15.96 88
13.4	817 20 91 793	72 764	750
	20 99	60	55 756
	855 830	750	64
	856 57 27 8.28	45 747	737 681
	57 28	47 682	39 739 681
	6.77 6.78	685	40
μ4	6.77	μ5 682	μ6 681
	1621 1587	1620 1605	1623 1620
	16.14 10 1606 1600 1599	12 1595 1603	16 1208 1612 07 1613
	12 1606 80 1150	1607 18 1610 10	07 12
12.20	740 757	755 745	760 748
	740 40 62 758	758 60 57 754	60 48 747
	40 60	52 60 743	50 45
	760 760	737 738	772 85
	759 60 61 762	737 37 38 739	70 84 83
	57 65	37 40 6.80 771	70 80
	679 6.78	6.77	6.84 686

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V Centauri



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X 1322.25

Hβ

μ	1.39	1.15	1.43	0.61	7.20	9.02	8.56	
	1.78	1.50	2.50	1.76	7.13	7.87	7.50	8.03
	9.18		9.63					
ν	1.28	1.04	1.07	0.17	8.55	9.45	9.00	
	1.59	1.39	2.01	1.43	7.61	8.09	7.85	8.42
	9.15		9.62					

Hγ

μ	0.62	0.80	T.792	T.903	1175	1064	1120	
	0.81	0.84	T.908	T.924	1059	1043	1051	1086
	9.28		9.67					
ν	0.54	0.51	T.732	T.708	1234	1258	1246	
	0.71	0.77	T.851	T.886	1115	1080	1097	1172
	9.25		9.66					

Hδ

μ	0.78	0.74	T.892	T.869	1074	1099	1086	
	0.57	0.59	T.756	T.771	1212	1197	1204	1145
	9.30		9.68					
ν	0.48	0.46	T.681	T.663	1286	1304	1295	
	0.62	0.68	T.792	T.833	1175	1134	1155	1225
	9.28		9.67					

Hε

μ	0.57	0.61	7.56	7.85	1210	1181	1196	
	0.85	0.97	9.29	9.87	1037	979	1003	1100
	9.26		9.66					
ν	0.52	0.52	7.16	7.16	1250	1250	1250	
	0.75	0.80	8.75	9.03	1091	1063	1072	1161
	9.26		9.66					

Hη+λ

μ	0.82	9.14	1040	
	0.65	8.13	1151	1095
	9.20	9.64		
ν	0.50	T.699	1261	1182
	0.72	T.857	1103	
	9.12	9.60		

Hζ+5

μ	0.75	T.875	1087	
	0.58	T.763	1199	1143
	9.15	9.62		
ν	0.49	T.690	1269	
	0.60	T.778	1181	1225
	9.10	9.59		

Jan Hγ for ν Certain

1	1127	Δ = -0119	-0.115
2	0979	-.116	

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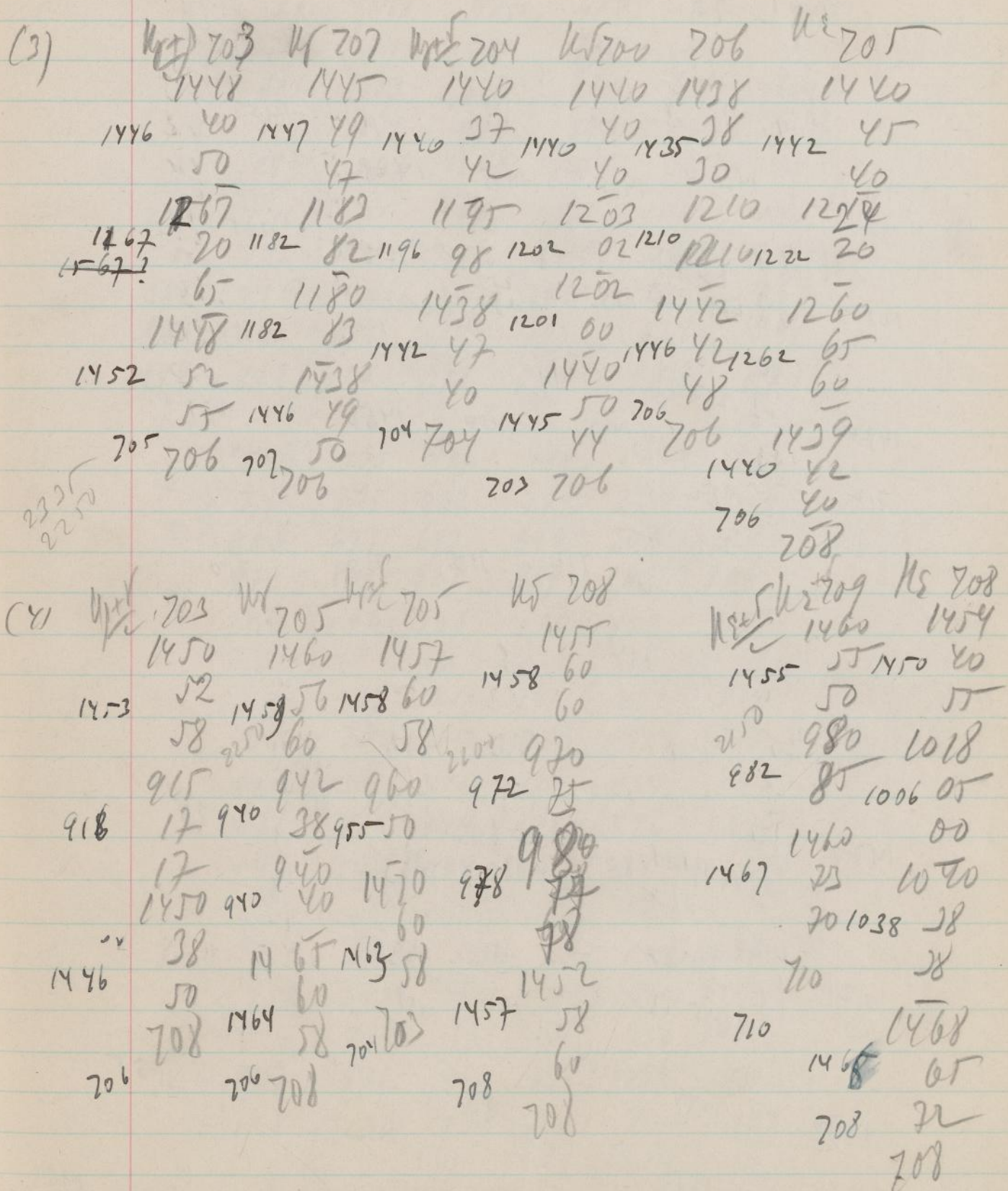
C 9850

(1)

(2)

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	Hβ	Hδ+ε	Hγ	Hθ+ι	Hδ	Hζ+η	Hε
(1)		3.81	403	475	417	426	459
		758	748	751	753	747	745
		581	605	618	620	629	662
(2)		879	874	876	877	873	872
		298	269	258	257	244	210
(2).	243	111	141	158	158	164	195
	750	745	748	752	739	748	736
	385	045	149	199	199	215	290
	875	872	874	876	868	874	867
	490	827	725	677	669	659	577
(3)		462	475	492	499	504	536
		744	739	737	739	734	725
		665	677	692	699	703	729
		871	869	867	869	865	866
		206	192	175	170	162	137
(4)		210	236	251	267	272	314
		744	256	256	250	251	250
		322	367	400	425	434	497
		871	879	879	875	876	875
		549	512	479	450	442	378
(5)		568	548	534	556	548	588
		756	743	742	739	742	742
		754	738	725	745	738	769
		879	871	860	872	868	886
		125	133	135	127	130	117
(6)		311	334	354	362	348	430
		763	766	773	768	773	772
		390	364	339	327	347	254

Celaeno 5.37

Taygete 4.18

K Pleione 5.09

c 6.04

d 5.30

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52

	Kp	$\frac{D+r}{2}$	V	$\frac{r+s}{2}$	S	$\frac{s+\varepsilon}{2}$	ε	$\frac{\varepsilon+z}{2}$	Z
	270	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
	422	274	298	282	287	340	342	431	
	522	521	510	513	497	506	499	503	
	431	438	434	450	458	532	534	634	
	718	717	708	710	696	704	698	702	
	287	279	234	260	238	172	164	068	
(2)	172	049	045	055	049	059	073	093	131
	498	497	493	4.77	486	491	488	490	494
	236	681	653	720	690	771	863	908	117
	697	696	693	679	687	691	688	690	694
	461	~~1045~~ 1015	1040	939	997	920	825	722	577
(3)		331	320	326	313	324	349		
		502	500	501	498	482	495		
		520	505	513	496	510	543		
		709	699	703	696	708	735		
		189	194	187	200	198	192		
		5750	5740	5745	5710	5710	5745		
(4)	403	209	194	226	221	226	250		
	493	426	444	493	482	499	482		
	605	320	288	354	344	354	398		
	693	678	694	693	692	698	692		
	088	358	406	334	348	344	294		
		5020	4990	5100	5050	5075	5260		
(5)		368	375	376	371	364	390		
		492	484	493	485	473	477		
		566	574	575	569	561	591		
		692	685	693	686	675	679		
		1.26	111	118	117	114	088		
(6)	385	245	250	260	258				
	488	478	470	469	446				
	586	389	398	415	412				
	688	675	672	671	645				
	102	286	274	250	234				

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C 1896

(1)

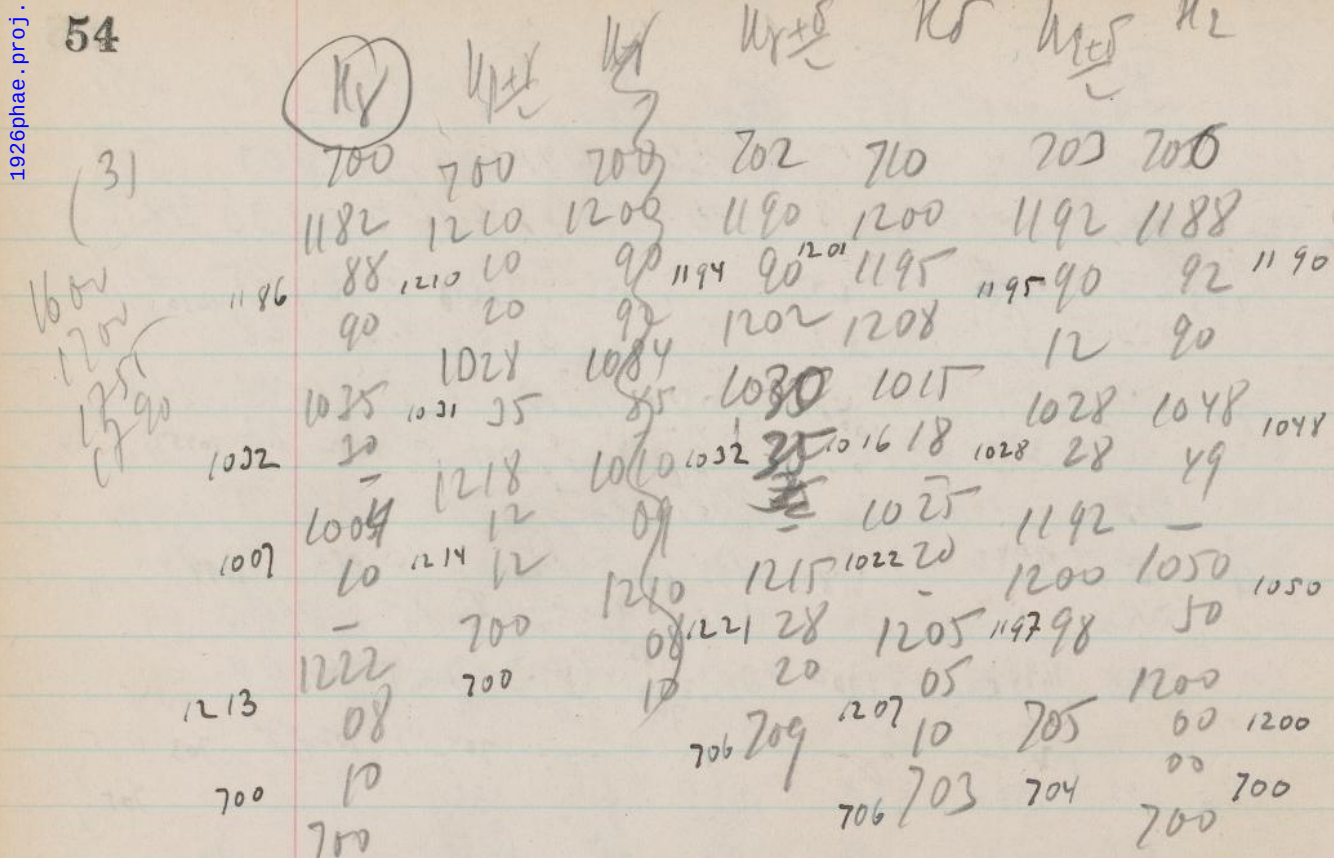
700	700	703	701	703	703	703	704
1253	1241	1250	1235	1210	1230	1212	1228
50	47	43	45	20	25	05	20
55	55	40	47	18	28	12	15
920	975	1000	980	995	1040	1050	1160
920	972	1000	984	991	1032	1045	1168
1188	982	1180	980	1185	1055	1198	1108
95	977	92	90	981	82	1052	1108
90	1190	82	1182	1187	85	1190	93
700	1203	700	1185	82	705	1192	98	704	1198
1200	707	700	704	702	88	703	1195	98
				702		705	706

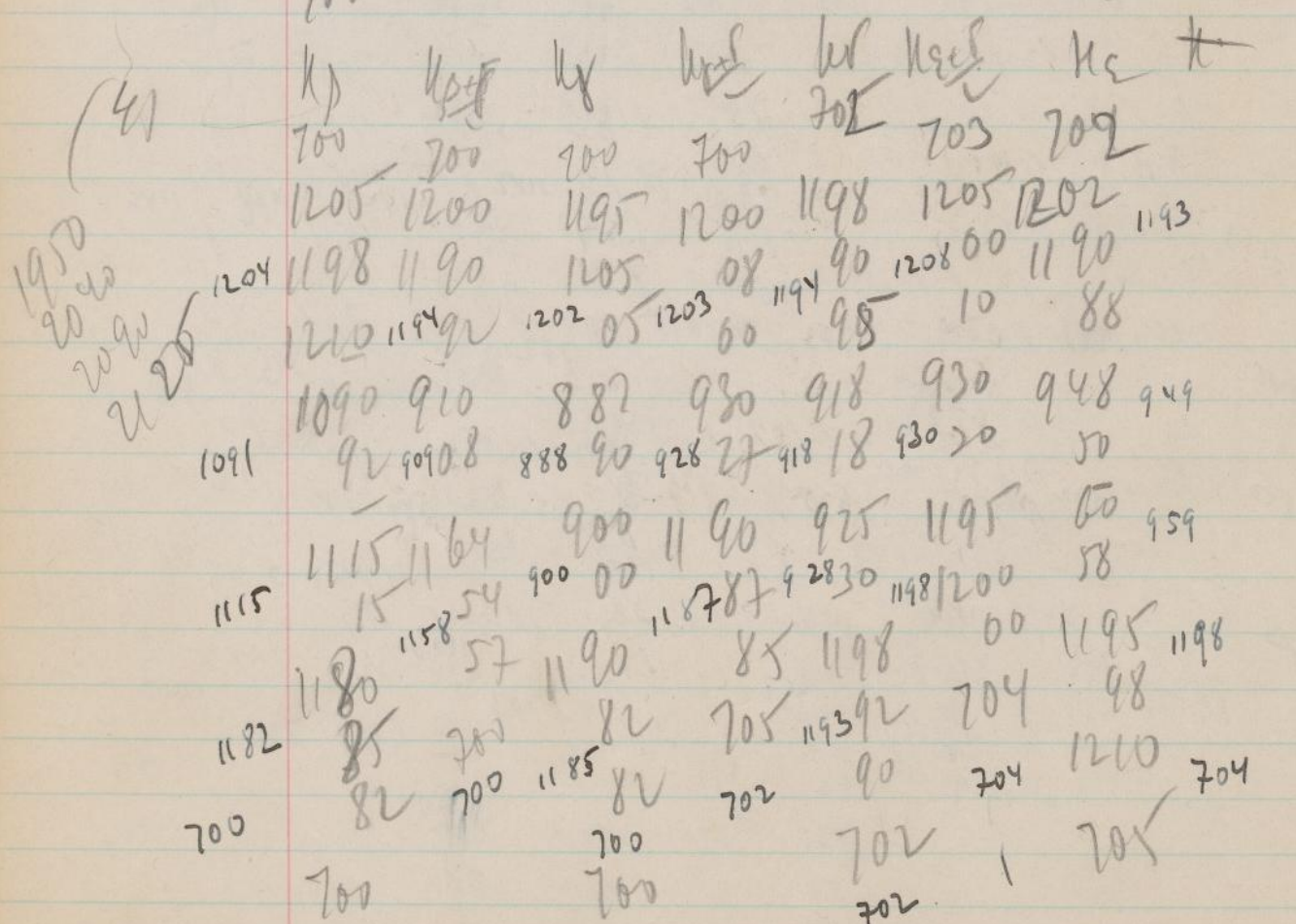
(2)

700	700	700	697	704	705	700	700
700	1190	1190	1175	1180	1180	1186	1187	1192
1200	1192	95	1192	92	80	1178	70	1182	75	1192	96	1188	90	1186	84
90	90	95	1176	74	84	90	94	87	92
90	748	750	754	745	767	768	790
900	748	48	749	48	753	52	745	45	762	68	768	68	783	98	818	820
905	910	1205	740	1175	748	1202	780	90
840	1202	00	740	40	1175	70	748	48	1205	02	789	78	1200	850	850
40	00	1198	80	1192	10	1188	1193	90
1200	700	1193	90	696	1190	88	703	1186	90	700	12	10
1203	00	700	90	90	80	1203	02
1209	698	698	703	697	700
700	699	698	701	701

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	$H_{\beta+\gamma}$	H_γ	$H_{\gamma+\delta}$	H_δ	$H_{\delta+\varepsilon}$	H_ε
(5)	705	704	703	705	705	704
	1202	1195	1208	1185	1182	1182
23 30	1201 00	1192 90	1203 1195	1187 85	1185 92	70 1179
23 20	02	90	1206	90	80	84
24 20	1070	1082	1080	1088	1070	1080
	1072 75	1081 80	1080 80	1084 80	1070 70	85 1082
	1190 -					
	1190 90	1082	1195	1072	1170	1110
	90	1081 80	1192 90	1072 72	1173 70	05 1108
	704	1188	90	1195	80	1182
	704	1189 92	705	1192 92	707	82 1185
		88	704	90	706	80 705
		706	707	705	706	705

	H_1	$H_{1+\gamma}$	H_γ	$H_{\gamma+\delta}$	H_δ
(6)	708	707	705	704	709
24 30	1200				
24 20	1198 98	1180	1185	1178	1146
25 20	98	82	70	1177 78	50 1147
	1183	86	1181 87		75 50
	1110				
	1111 11	955	957	966	970 965
	1078	952 50	957 57	966 66	60
	1076 75				
		1180		1170	962 962
	1188	78	956	78	62
		1177 74	956 52	1172	
	1194 95			70	1156 1158
	98	707	1165		66
	208 707	707	1170 70	707	708 706
			706 708	706	

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56

β	γ	δ	ε	ζ	η
5.22	5.16	5.20	5.25	5.40	5.81
7.84	7.96	7.81	7.88	7.78	7.83
0.718	0.713	0.716	0.720	0.732	0.764
0.894	898	893	897	891	894
0.176	0.185	0.177	0.187	0.159	0.130

(1) Celaeno 5.37

405	236	233	270	258	271	316	378	439	547
800	794	799	804	797	794	787	795	800	795
608	373	367	431	412	433	500	578	642	738
903	900	902	905	901	900	896	900	903	900
295	527	535	474	489	467	396	322	261	162

(2) Taygete 4.18

324	139	146	171	170	182	225	269	335	457
786	791	781	783	791	784	787	785	789	774
570	143	164	233	230	260	352	430	525	657
895	898	893	894	898	894	896	895	897	889
385	755	729	661	668	634	544	465	372	232

(3) Maja 3.80

581	599	602	6125
783	783	791	773
764	777	780	787
894	894	898	888
130	117	118	101

(4) =K 569

C 18679

580	375	376	381	390	418	452
780	782	770	777	776	780	785
763	574	575	581	591	621	655
892	893	886	890	890	892	895
129	319	311	309	299	271	240

(5) Pleione

651	667	664
800	781	793
814	824	822
903	893	899
089	069	077

(6) =C 604

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1926phae.proj..gonG

(1)									
		650		650		649	650		
		1435	1432	1425	1434	1423	1427		
1945	14.31	25	.31 40	.24 30	28	.26 22	14.28 35		
20 30		22	22	18	32 35	34	22		
2080		1168	1185	1165	1180	1190	1230		
2120	11.72	75	11.80 75	11.70 75	11.79 78	11.91 92	12.30 30		
		1440	1150	1445	20	1430	1238		
		30	11.48 47	14.38 0	11.71 72	30	.36 35		
	.37	42	52	40	1438	.31 33	1444		
		650	.44 40	657	43 50	652	.41 40		
		650	649	6.50	42	6.51	40		
			647		650		655		
			648		650		652		
(2)		650	654			653		653	
		1452	1852	1433	1460	1450	1452	1427	1447	1450	1445
1820	14.1	50	.50 45	.38 43	.57 60	.47 45	.48 38	.35 37	14.42 30	.48 45	48 50
1910		52	52	38	50	47	47	40	44	50	50
1960		1067	885	889	925	905	930	967	1035	1070	1160
2000	10.68	70	8.88 90	8.90 90	9.21 18	9.05 04	9.25 20	9.71 75	10.31 28	10.78 80	11.64 68
2020		1042	1439	877	1448	920	1452	1010	1455	11.10	1240
	10.42	42	.43 40	8.78 79	53 55	9.16 12	14.50 55	10.05 00	14.55 55	12.44	47
		1447	50	1460	55	1452	45	1455			1467	1450
	14.50	50	650	.61 55	657	.51 55	655	14.50 52	652	-61	60	.55
		52		67		45		48	6.53		54	60
		6.50	652	652	6.51	652	654	654			657	657
		650		6.51		652		655			6.55	657

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1926phae.proj..9GMG

58

	H_{γ}	H_{γ}		H_{δ}	H_{ϵ}	$H_{\epsilon+\zeta}$	$H_{\zeta+\eta}$	H_{η}
(3)	652	655						652
	1428	1440	1422	1434	1430	1430	650	652
	14.35 36	.40 32	.28 32	.30 28	.36 37	.32 35	1442	1425 1430 1418
	42	48	30	27	40	30	.38 32	.29 28 32 35 .16 25
	1005	800	802	830	827	858	40	35 30 [illegible]
	10.10 15	7.95 790	8.02 802	8.26 23	8.27 27	8.59 60	832	9.20 920 962 1065
	947	1457	804 802	1450	827	800	32	9209.58 32 10.68
	9.46 45	14.54 57	805	.46 48	8.23 20	8.98 895	1425	1440 1010 1148
	1440	47	1450	40	1458	1450	.43 40	10.14 11.49
	.46 47	658	.49 57	655	.56 53	.47 45	.30 34	50 1440 1438
	50	6.56	40	6.55	48	47	20	.44 50
	655		655		654	652	650	650 648
	654		6.57		655	6.53	6.50	6.51 6.49 655
								654
(4)		660	660	655				
		1425	1432	1445	1418			
		.34 40	.36 42	.40 35	.18 20			
		38	35	40	18			
		1243	1260	1260	1275			
		12.40 38	12.60 60	12.60 60	12.75 70			
		1450	1255	1460	1278			
		45	12.55 55	14.58 58	12.74 70			
		.49 52	1450	55	1445			
		658	47 50	662	.52 55			
			42		55			
		6.59	658	6.58	6.62			
			6.59					

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(5)	650	657		658		660
	1432	1430	1442	1425	1440	1440 1437
20 10	.34 40	.36 35	.40 37	.25 25	41 35	.37 40 .42 44
2 00	30	40	40	25	47	30 45
2 60	1275	1035	1038	1040	1045	1078 1100
2 20	12.72 70	10.32 30	10.36 35	10.39 38	10.45 45	10.78 77 10.95 1090
	1190	1435	1030	1445	1048	1445 1127
11.95	1200	.42 50	10.32 38	.45 40	10.49 50	40 11.26 25
	1430	42	1412	50	1424	42 42 1440
	.32 35	657	.16 17	658	24 20	660 .45 45
	30		20		27	50
	657	657	659	6.58	657	6.60 657
	653		6.58		6.57	658

(61	660	655	
2400	1460	1425	1444
	.61 58	.28 35	.44 50
	65	25	38
	1312	1320	1320
	13.10 08	13.20 20	25
			13.22 20
	1465	1330	
	14.57 55	13.31 32	1460
	52		60
	658	1452	14.58 53
		51 52	
		50	660
	659	660	658
		6.59	

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	β	γ	δ	ε	ζ	η
(1)	283	1.22	1.14	1.42	1.14	1.29
	8.27	8.37	8.37	8.38	8.37	8.27
	452	086	057	152	057	111
	918	923	923	923	923	918
(2)	466	837	866	771	886	807
	049	021	017	022	023	018
	828	825	831	821	822	825
	T.690	T.041	T.230	T.342	T.362	T.255
	918	916	920	914	915	916
(3)	1.228	1.873	1.690	1.572	1.553	1.661
	031	010	010	011	008	021
	820	836	818	823	823	824
	T.491	T.000	T.000	T.041	T.903	T.322
	914	922	913	915	915	916
(4)	1.423	1.922	T.913	1.874	2.012	1.594
	333	142	164	175	181	177
	819	824	838	841	826	839
	522	152	215	243	258	248
	913	916	923	925	917	924
(5)	391	764	708	683	659	676
	164	049	071	059	093	083
	797	791	796	800	778	801
	215	T.690	T.851	T.771	T.468	T.919
	902	898	901	903	891	904
(6)	687	1.208	1.050	1.132	923	985
	467	392	354	376	374	446
	807	803	806	806	807	800
	669	593	549	575	573	649
	907	905	906	906	907	903
	238	318	357	331	334	254

	θ	ι	κ	λ	μ	ν	ξ
(1)	257	389					
	842	833					
	410	590					
	924	925	921				
(2)	674	515	331				
	032	056	107				
	827	837	835	835			
	T.398	T.505	T.348	.029			
	923	922	922				
(3)	1.418	1.174	0.893				
	024	026	038	068			
	826	825	832	827			
	T.380	T.415	T.580	T.882			
	917	917	920	918			
(4)	1537	1502	1340	1086			
	177	255					
	839	829					
	248	406					
	917	924	919				
(5)	676	513					
	083	161					
	801	815					
	T.919	T.207					
	904	911					
(6)	923	985	704				
	374	446	489				
	807	800	803				
	573	649	689				
	907	903	905				
	334	254	216				

9862

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1926phae.proj..90G

(1)	II)	γ	δ	ε	ζ	η	
	649		657			650	
21 50	1482 1500	1493 1506	1490	1498 1500	1495 1515	1480	
22 30	79 97 02	1509 15.03	1500	95 1501 60	92 09 10	92	.87
22 40 .79	75 1492	.97 1490 1505	.93 .93 1490	93 02	92 02	90	
23 20	958 775	788 800	7.78 790	811	832 895	1005	10.04
23 40	9.62 65	7.78 80	7.85 800	7.76 7.90 90	816 20 36 40	8.85 75 02	
	912 1487	755 1483	800 795	1475 800	1500	948 1088	10.84
9.08	05	.89 90 754	.90 97 790	84 80000	150002	9.44 40 80	
	1485 90	1490 90	15.02 1500 78	1490	1498 1490	1488	14.89
.79	75		1495	92		90	
	78 658	14.90 88 660	1510 660	.89 85	662 .91 95		
	655				88	90	
	652 656	655 658	662 658	655	653	657	
		656	661	658	658	655	
(2)	658			655 655			
22 05	1485 1480	1500 1498	1495 1475	1460	1490 90	02	
22 20	.86 84 80	75 .93 00 .93	88 .93 90 .75	75 73 80	14.96 97 .96	98	92 98
23 40	90	85 1490	92 95	75 78 1500	00	00	
24 40	718 670	672 678	680 672	680	690 740	760	758
24 73	716 15	670 70 671 70	678 78 680 80	676 80	680 80 690 90	716 22	55
	700	1490 675	1478 80	1492 88	1485 715	780	
700	00		681 82	688 88	14.95 718	80	780
	1482 89	88 675	81 95	.92 92	1500 720		
	90 88	1482	1490	92 1500 00	662 90	1490	
88	92	80	14.86 88	657	95 00	60	14.95
	660 658	81 82 658	80	662	95		
		653	658		658 660	663	
	659 659	656 656	658	659		661	662

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β γ δ ε ζ η

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η γ δ ε

660 658

(51) 1468 1440 1455 1460 60 1455 1478

2050 61 55 45 50 56 55 .56 50 50 65 61 70 14.75

2040 57 44 58 52 48 53 62 78

2180 860 708 732 712 755 748 830

2120 8.60 60 708 708 737 42 714 15 50 752 40 742 20 8.23

785 720 1455 750 818

787 90 1460 720 20 1455 55 50 750 1455 816 817

55 58 55 60

14.58

1455 48 1450 1420 1470

.51 50 660 1449 48 657 20 660 72 14.73

14.20

48 653 658 74

658 659 657 655 658 659 659

659

662 662 660 662

(61) 1480 1470 1475 1470 1470 70 1420

2270 75 70 .70 70 75 75 .70 70 .75 80 .65 60 68 .69

2260 1130 1070 1020 1045 1035 1060 1158 11.54

2310 11.30 30 10.66 62 10.20 20 10.45 45 10.35 35 10.62 65 50

2360 1050

1470 10.50 50 1470 1035 1152

.70 70 10.35 35 58 11.56 60 75 68

.64 58 1475 .60 62 62

665 .68 62 665 662 662 1458

.61 65 665

668

664

663 666 666 664 661 663 665

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	ηJ	4pΓ	Hγ	Hγ'	Hδ	Hε'	Hε	Hε''	Hζ
(1)	603								
	1035	1010	1042	1022	1010	1038	1028	603	1020
	40	12	40	30	18	25	38	1032	32
	32	20	48	28	18	25	22	32	37
1285	907	725	726	789	795	795	810	848	876
1820	08	75	78	90	92	800	10	50	74
1925	844	1047	770	1040	788	1010	820	1020	
19	45	38	70	40	80	20	28	25	900
19	1030	610	1050	608	1022	604	1015	607	1040
	40		50		12		20		30
	42		610		22				
	~~598~~				602		605		608

(2)	607		γ		δ		ε		ζ	η
	1045	1040	1052	1040	1055	1050	1045	1032	1020	1028
	40	33	40	45	52	38	45	32	15	28
1670	52	48	40	45	40	30	50	26	15	28
1260	748	640	645	650	658	660	680	690	710	770
0840	55	42	45	50	52	58	78	92	06	20
1850	720	1025	640	1032	653	1040	678	1035	730	807
1820	10	38	40	32	53	48	80	45	30	00
	1033	28	1054	602	1040	40	1035	35	1010	1030
	25	605	42		45					
	40		55		35	607	30	602	18	32
	602		605		605		605		22	35
									605	608

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	β	γ	δ	ε			
(4)	608						
1630	1045	1020	1032	1045	1040	1040	1038
17 20	45	10	45	48	45	30	40
0220	45	15	40	42	40	820	
18 10	800	810	820	842	845	60	
18 30	295	12	18	50	40	860	
	1040	820	1042	830	1048	55	
	24	22	45	35	45	1038	
	40	1045	50	1047	28	40	
	607	50	609	40		42	
		608		45	608	609	
				606			

(31.	605	β		δ		ε		ζ	η	
	1022	1015	1032	1020	1040	1050	1050	1035	1040	1035
	30	25	40	30	55	45	45	40	58	32
1840	35	20	42	25	48	50	42	28	40	20
1900	200	628	630	635	635	645	655	668	690	740
1930	10	24	30	38	38	50	55	68	80	40
1952	670						658			
1957	80	1055	655	1052	640	1040	58	1052	200	765
		45	30	48	40	53	1050	47	00	62
	1045	50	1060	42	1050	48	55	50	1058	
	55	50		50	612	50	610	45	60	1040
	42	610		40		55		610	65	50
	608		605		607				608	610

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	α	δ	ℓ
(5)	608		
	1120 1109	1110 1090	1100 1100
2070	18 04	00 1100	10 00
2130	23 09	03 1092	95 90
2160	~~795~~ 800	800 790	795 825
	290 295	10 90	98 27
	1105 778	1122 280	1120 830
	68 88	12 90	20 35
	92 1100	15 1102	10 1110
	610 90	03	610 02
	90	610 09	03
	610	612	610

	α		δ
(6)	610	610	
	1100 1108	1115	1100
2320	15 20	10	00
2430	22 20	18	90
	948 960	955	950
	54 58	940	50
	1130 —	—	940
	21 957	1123	40
	30 60	20	
	610 1118	18	1140
	28	610	12
	18		95
	610		612

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1926phae.proj..9739G

V S E

9739

(6)

561 580 571 576 567 618
789 778 789 782 778 778
749 763 757 760 754 791
897 891 897 893 891 891
148 128 140 133 137 100

(5)

211 213 224 217 208 239
800 798 796 762 761 760
903 901 884 882 881 881
324 328 350 336 318 378
579 573 534 546 563 503

(4)

331 351 339 361 365 398
742 740 735 729 733 734
870 869 866 863 865 866
520 545 530 558 562 600
350 324 336 305 303 266

(1)

269 286 286 288 283 322 344 411
761 760 760 752 752 744 740 734
881 881 881 876 876 872 869 866
430 456 456 459 452 508 537 614
451 425 425 417 424 364 332 252

(2)

241 109 111 109 113 108 137 132 176 262
753 746 740 739 737 719 724 719 718 721
382 037 045 037 053 033 137 121 246 418
877 873 869 869 868 857 860 857 856 858
495 836 824 832 815 824 723 736 610 440

(3)

179 082 090 084 089 084 102 104 202 217
750 746 741 734 736 736 724 726 722 724
253 T 914 T 954 T 924 T 944 T 924 009 017 305 336
875 873 870 866 867 867 860 861 859 860
692 959 916 942 918 943 851 846 554 524

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1926phae.proj...9739

α α' δ ε 9739

(6)
2260 2340 2340

680 675 670
1468 1445 1448 1443 1440 1445
.71 75 .46 45 14.44 45 .45 50 .37 30 40 14.45
70 48 38 42 40 40
1238 1245 1245 1245 1230 1272
12.38 38 12.42 40 12.41 37 12.45 45 12.31 32 72 12.72
1455 1260 40 39 38 1448 92 12.92
67 1262 64 1455 40 48 48 92
.61 60 1458 54 50 1450 48 1440 14.40
625 1455 55 57 .51 53 40
53 50
677 671 68 65 63
670 672 670 666 664 664

γ δ ε

667
(5)
2340 2340 2140 2180

1460 1460 665 667
65 65 .63 20 1425 1430 1428 1420
70 60 .27 30 22 .26 25 20 .23
880 880 25 .25 23 25 80
8.29 78 8.80 80 888 882 875 900 895
1420 878 8.88 88 8.84 8.72 70 890
1422 75 878 78 1430 878 1428 908 909
70 1458 .35 38 8.77 76 1425 21 10
668 .61 65 38 1428 25 1425 14.22
668 60 14.25 28 65 20
665 20 20
666 664 662 664
663 663

(

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1926phae.proj..90MG

	H₂	V	S	Σ
(4)	620			
	1410 1410 1403 1400 1398 1400			
23180	.15 20 .09 08 00 05 00 00 62 14.09			
2450	15 10 .03 05 .02 00 00 02			
2420	1005 1025 1016 1032 1033 1073 10.70			
	10.02 00 10.28 30 10.10 10 10.33 25 10.33 23 68			
	1410 1015 1410 1032 1400 –			
	.11 12 10.15 15 14.10 10 10.31 30 14695 1082 10.81			
	10 1412 10 1460 95 80			
	672 .13 12 14.97 97 1397 14.02			
	16 672 95 665 05			
	671 670 670 00			
	671 671 671 668 670 8+2 7			
	Σ 668			
(1)	620			
21480	1430 1430 1428 1420 1420 1415 677			
22280	.28 25 .31 35 .28 27 .21 20 22 .18 18 1410 1412			
2360	30 30 30 22 .20 18 20 14.06 05 18 14.15			
2320	938 968 955 965 955 990 02 15			
	9.39 40 964 60 956 58 963 62 9.55 55 990 90 1020 1090 10.85			
	1440 950 1428 950 1425 10.15 10.20 20 80			
	.35 32 948 45 .31 35 952 55 14.24 20 10.14 12 1418 1090 10.90			
	23 1428 20 1422 28 – 14.14 12 90			
	670 .29 30 30 670 22 25 675 1420 20 1400 1405			
	670 22 675 05			
	670 670 670 672 675 676 676			

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β γ δ ε ζ η

(2) 670

1420 1413 1403 1402 1400 1388 1400 675

.21 22 .15 12 14.04 00 .03 05 14.99 98 13.85 87 14.00 00 1398 95 93 90

2260 2350 2920 2440 940 40 780 780 780 785 780 822 90 98 95

9.40 880 7.79 78 780 80 779 78 789 92 780 80 820 18 810 850 925

882 85 1420 780 1405 778 02 802 98 60 —

14.18 15 780 80 14.15 07 779 80 13.98 98 804 05 98 958 8.59 950

1418 18 1412 04 95 93 00 90 9.48 95

.24 25 28 620 14.13 12 15 672 1395 00 675 98 60 677 90 98

670 668 13.97 95 60 90 88 00

670 670 669 670 620 672 676 676 677

01 04

671

675 677 676 676

V δ ε ζ η

(3) 678

1425 1415 1410 1410 1400 1408 1400 60 90 10

2290 2270 2330 2360 30 25 .18 18 .09 08 .06 00 .12 15 08 10 .02 00 02 00 97 00 07 05

20 10 08 10 05 05 05 00 05

872 755 765 758 768 764 776 780 885 895

8.72 72 755 55 765 65 758 58 7.69 76 760 60 7.75 74 780 80 8.85 85 893 92

8.25 825 25 1420 60 1410 760 1405 780 00 75 92

14.20 20 59 58 14.11 10 7.61 62 .15 02 780 80 02 00 72 70 92

05 02

1422 20 1415 12 1410 00 677 01 00 90

.21 20 20 675 .08 20 20 774 14.13 10 18 678 97 00 00 92 00

90 676 678 92

672 672 676

675 673 673 674 675 676 677 674

676 676

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6	4	γ	δ	ε	ζ
	612	615			
	1372	1325	72 1385	80	78
	72	80	71 68	84	77 20 .74
.73	70	78 80	72 .85	85 .78	78 25
	10 40	10 65	10 60	10 52	10 46 1115
10.40	40	10.68 72	10.61 62	10.50 98	10.40 40 20 11.18
	1375	1022	1380 1055	1320	1094
.77	80	10.72 72	13.76 72	10.52 50	13.75 78 11.00 10.97
	28	1373	76	1382	78 1380
	.72	22	612 .81	28	610 88 .83
613	613	20		82	610 80
		612	612 611	60	612 610
		γ		δ	ε

5	613					
	1372	1367	65	47	60	1356
23	20	.69 20	64 65	.61 65	65 64	57 1357
	78	70	62	60	67	57
	795	800	800	816	810	838 839
.94	93	.98 95	800	00 8.14	12	0386 40
	1367	800	800	1362	805	53 20 19
.71	28	800	00	60	8.08 10	58 55 18
	67	1365	61	60	50	55 1350 13.46
	612	.65 67		611 .50	55	48
612		62			45	60 40
		610		610		610 610
		611	610	610		

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1926phae.proj..900G

	H	γ	δ	ε	
	4.27	4.57	4.49	4.40	4.30	4.97
(6)	762	762	7.62	772	766	768
	630	660	652	644	634	696
	882	882	882	888	884	885
	252	222	230	244	250	189

Cu

(5)	182	1.88	190	201	196	219
	760	756	753	746	750	742
	260	274	279	303	292	340
	881	878	877	873	875	870
	621	604	598	570	583	570
	+42	+31	+64	+24	+20	+67	+41

(5)	δ					
II	580	563	557	529	542	529
I	579	573	534	546	563	503
	580	568	526	538	553	516
(6)	211	181	189	203	209	148

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287	219
744	747
458	340
872	873
414	533

0.59	0.76
7.52	7.20
T.721	T 881
876	886
1.105	1.005

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1926phae.proj..9036

6

	V			δ		Σ	(t)/2	
	609							
1320	52	62	50	65	58	55		
62	60	54	55	60	58	56 55	53	9862
56	65	55	54	67	52	50		
825	825	815	827	848	918	829		
20	22	20	20	48	920	919 20	830	
1360	828	1352	842	60	877	60		
65	30	48	40	65	78	878	64	
70	50	60	1359	60	1360	70		
612	60	610	50	612	52	13.57 62		
	60		60		60	610	611	
	610		610		612	612		

5

	V			δ		Σ	
610							
1358	1370	1360	1367	1365	1375		
58	70	58	70	60	62	75	13.73
60	70	60	62	62	70		
650	660	672	660	672	692		
48	60	70	60	72	672 688		690
1313	60	1350	72	1365	685		
55	60	42	75	65	67 85		685
52	1358	50	—	70	68		
610	55	614	57	612	72		70
	59		65	613	70		612
	614		614		612		

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76

	β	γ	δ		ε	ζ	η
(6)	199	208	222	228	222	280	382
	743	750	740	736	744	742	752
	299	~~033~~ 348	346	358	346	447	582
	871	875	869	867	872	870	876
	572	~~842~~ 557	523	509	526	423	294
(5)	033	043	051	050	060	081	123
	737	746	742	754	753	758	757
	T·518 4025	T·634 4325	T·708 4480	T·699 4450	T·778 4610	T·908 4810	090 5020
	867	873	870	877	877	880	879
	1.319	1239	1162	1178	1099	972	789
(4)	107	122	124	134	133	183	280
	755 5000	755 5080	756 5080	762 5125	766 5120	756 5330	761 5750
	029	086	093	127	124	262	447
	878	878	878	882	884	878	881
	849	792	785	755	760	616	434

(3)

029		030	050
760		760	753
T·462		T·477	T·699
881		881	877
1419		1404	1.178

(2)

038		037	080
758		748	750
T·580		T·568	T·903
880		874	875
1.300		1.306	1.972

(1)

	β	γ	δ		ε	ζ	η
	202	086	092	098	105	103	106	143
	753	745	758	772	752	736	742	733
	305	T·934	T·964	T·991	021	013	025	286
	877	872	880	888	876	867	870	865
	572	938	916	993	855	854	845	579

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8 5 2 7 4

(61

560 561

1300 1312 1300 1294 04 02 20

24.40 10 18 02 02 05 12 18 .16
13.09 .17 .01 00 01 05
2352 02 20 00 05 25 10 10
2300
2268

759 770 782 792 785 810 905
259 59 69 68 7.85 88 92 92 87 12 13 05 9.48

1300 772 1296 792 1312 878 990
13.02 95 71 70 90 78 95
10 1310 2017
1312 .06 12 1296 20 1310 1318
561 .08 07 10 10 20 13.19
07 07 08
560 564 96 565 10 20
562 563 565 565 565 567 5.66
562 564 565

(57

565

1310 1315 1290 1322 1320 1330 20
2140 .06 20 .08 25 1297 90 .23 25 .17 20 .31 32 28 .32
2060 18 15 1310 20 20 30 37
200
1970 600 600 612 618 618 632 650 681
600 6.10 08 619 20 619 20 6.31 30 6.51 52 85 6.85
1308 610 1328 620 1329 655 705
1303 02 6.10 10 .23 17 02 22 30 30 655 55 10 708
00 1318 25 1325 38 1330 1326
568 .18 18 .26 25 30 30 35 1328
18 570 27 572 30 20
567 567 568 570 571 572 574 573
567 570 572

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78

(4)

β	γ	ε	δ	ζ	η
1830	570				
1740	1325 28	25	20 40	1332	1332
1690	.28 30 20 28	20 22	28 30 37 30	31 50	28 .33
16	30 38	20	35 40	82	38
	675 698	698	710 710	748	798 795
	6.78 80 88 6.93	92 95	709 08 705 00	749 50	92
	1330 688	1330	702 —	768	910 910
	23 20 98 93		701 00 1340	765 62	10
	30 1322	32 35	1340 1335	1370	1330 34
	572 22 24	30	39 40 574	50	38
	571 28	572	42 572	30 50	35
	570	571	570	575	570
	571		571	574	572

(3)

β					
570					575
1330					1382 28
33 28					34 30 30 29
42					40 50
600					600 612
601 02					00 12612
1333					605 35
31 27					605 05 32 33
33					35 1322
538					31 30 2021
572					28 20
					570 572
					572

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	α	δ	ℓ
(21	575		1320 20
	1330		20 28
	37 38		-20 20 32 27
	38		605 630
	632		605 05 50 630
	30 631		615 678
	595		615 15 88 679
	94 594		1322 22
	1325		20 21 20
	22 26		-22 25
	30		572 575
	74		573 574
	524		
(11	572 575		
	1328 1320 1340 1348 1335 1310 1320 18		
2660	30 22 22 .37 25 52.50 40.37 22 20 12 13		
1915	31 34 22 25 38 50 35 10 14 40 10		
1860	830 665 670 675 690 682 680 740		
1825	831 32 662 60 6.70 70 78 676 86 689 84 681 80 80 40 740		
	718 1320 68 1355 675 676 1316 90 90 810		
	719 20 20 22 1332 48 1351 1325 18 1318 1312 805		
	1318 18 35 52 50 25 13.23 .14 20 13.12		
	21 20 25 578 40 578 20 19 80 12		
	575 576 578 578 578 578 580 578		
	573 578 578 579 579		

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X 836

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p

λ 8562

v cen

Hβ

194 142 288 152 422 558 490
168 123 225 090 485 620 552 521

513 710

Hr.
459
944

Hβ+γ

063 T.799 922
051 T.708 1013 0968

526 721

Hr Δ
238 377 | 321
188 274 | 309 340

Hγ

083 096 T.919 T.982 811 748 789 822
069 078 T.839 T.892 891 838 864

537 730

Hγ+δ

101 004 722
090 T.954 772 747

532 726

Hδ

119 132 076 121. 649. 604. 626 655
104 116 017. 064. 708. 661. 685

531 725

v

Hβ

265 218 423 338 291 376 332 350
253 189 403 276 301 438 369

518 714

β+γ

086 T. 934 792
075 T. 875 853 823

535 728

δ

098 105 T.991 021 006 745 715 730
087 098 T.939 T.991 797 745 771 750

544 736

δ+ε

107 029 692
97 T.987 734 713

526 721

δ

133 121 124 083 591 632 612
104 100 017 000 698 715 706 659

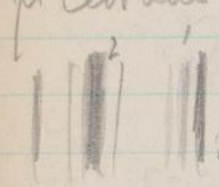
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μ and ν Centauri X 13450

μ Centauri



	Kβ	Kβ+γ	Kβ	Kβ+γ
	6.30			
	1342 1340	1345	1340 1350	1350
23.10	40 42 13.42 45 44	55 52	45 50 52	45 40 1345
21.90	35 47	55	41 38 47 55	
21.20	860 780	740	700 740	707
8.61	58 8.20 89.80	10 710	700 00 00 00	05 705
	65 80	10	00 00	03
	955 850	750	740 740	750
	52	50 750	40 740 40	50 750
9.55	58 9.05 55 8.54	50	40 40	50
	58			1350
	630	630	630	40
				45 45

Kβ		Kγ
1338	1350	
39 40 45	52 51	
40	50	
718	740	
718	18 12 711	
	17 12	
757	760	
759	60 60 760	
	60 60	
	630	

Kβ		Kγ
1342	1350	
50	48	
40	49	
728	732	
30	32	
28	32	
787	790	
87	90	
90	85	
	630	

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V Center	H1		H1+H8	H5
16.50	1353	1370	1350	1358
1530	60	70	50	60
	60	70	50	52
	862	770	710	705
	58	70	10	02
	58	70	10	02
	950	840	745	738
	48	38	40	39
	50	40	45	40
	633		1320	
			68	
			70	
			635	

V Cent	H1		H1+V	V		H1+5	
	635						
	1348	1320	1340	1342	1335	1350	
249	48 50	13.37 33 26	35 38	48 42	38 38	48	13.46
26.0	45	25	40	47 50	40	40	
269	810	850	705	692	695	695	
	803 798	850 851	704 704	93	95 695	695	695
	800	852	703	692 90	94	95	
	832	930	740	727	728	730	
	834 37	32 932	740 740	30	30 29	30	730
	32	35	40	28 27	30	30	
	635		1340 13.36	635		1340	
			30	H 730 1		42	1341
			38	780 2		40	
			638	E		635	

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H5				He	
1350	1340			1340	1339
40	45	45	1343	43	35
1347 50	45	45		38	30
702	700			735	720
701 02	00	00		38	20
00	00			35	20
742	740			795	767
40	40	40		92	67
41 40	40			92	62
638				630	

H_β	μ	2.31	1.50	190	.279	.573	.493
		3.25	2.24	275	.459	.413	
		712		852			
	ν	216	1.68	192	.283	.563	.580
		297	199	248	.394	.598	
		702		846			
$H_{\beta\sigma}$	μ	0.80	1.203	955		867	
		0.20	079	779			
		722	8.8				
	ν	0.66	1.820	1125			
		102	009	836		980	
		700	845				

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Ky μ 0.70 0.70 | 0.70 | T.845 1040
110 1.10 | 110 | 041 814 912
717 855

ν 0.60 0.57 | 59 | T.771 1078
0.94 0.93 | 93 [81 T.968 881 980
707 849

Ky+S
μ 0.75 T.875 979
120 0.079 775 877
715 0.854

ν 0.60 T.778 1073
0.95 T.978 873 973
710 0.851

Ks
μ 0.88 0.81 0.85 T.929 925
1.29 1.30 1.30 114 740 832
715 854

ν 0.65 0.66 0.65 T.813 1038
105 106 105 021 830 934
710 857

Ky line ν Centauri
1.20 079 = Δ = 099
849
8 0

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3. A0 91041 8.5

213 B3 7.78 91024
284 A0 9.8 25

✓

38749 21 91053 2247 8.9 B9
273 A0 9.3 55
38749 73 2163 9.28 A0
67 B9 9.6 82
38749 A0 9.7 91102 3337
38749 A0 9.5 13 2169
271 B9 8.8 58

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		8		12		119		121	
		258		255		258			
		11.90		11.00		1245		1240	
		85		05		45		30	
		92		10.95		1240		1230	
		95		00		40		25	
H_P	1490	6.43	H_4	529	H_4				
		645		25					
	1	432	1	552	1	1010			
		440		47		07			
	2	400	2	533	2	900			
		08		33		05			
H_3'		387	H_3	585	H_3	890	H_3	1003	
		90		82		90		05	
		255		257	1	855	1	1008	
	1	378	1	550		60		02	
		75		52	2	855	2	990	
	2	378	$H_{2,1}$	650		58		92	
		78		50	$H_{5,1}$	880	$H_{5,1}$	1028	
H_5+H_2		4.00		11.15		80		28	
		00		08					
H_2		410		15				1225	
		02		13		1220		22	
$H_{2'}+H_2$		444				18			
		45		260				1215	
		12.22				1230		20	
		18				35			
		1205							
		00				262		266	
		258							

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	38	39	71	109	45
	258	260	265	262	265
	1215	1225	1208	1190	1165
	20	28	10	90	20
	05	18	60	95	1175
	08	29	95	85	75
0_{11}	782	832			
	80	30			
2	715	760			
	20	60			
k_f	680	732	784	1030	850
	80	30	30	30	50
1	680	752	782	1010	920
	80	50	30	10	10
2	710	750	760	1020	960
	10	50	58	20	70
k_{51}	745	758	810	1030	
	41	58	795	30	
3	760	788			
	62	88			
$\frac{1+2}{2}$	852	805			
	42	05			
	1225	1235	1195	1195	
	20	35	00	87	
	1208	35	95	88	
	02	35	00	90	
	265	265	263	262	

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C 19109

Ap 5

g = α Lyrae m = 0.75

N - O C - O

	1.290	19.5	1.648	44.5	0.358			
Hp	1.000	10.0	1.648	44.5	0.648	+0.92		
Hp+ε	0.505	3.2	1.644	44.1	1.139	1.87		
Hγ	0.602	4.0	1.643	44.0	1.041	✓		
Hζ+hδ	0.613	4.1	1.643	44.0	1.030	✓		
Hδ	0.681	4.8	1.643	44.0	0.962	✓		
Hε+δ	0.699	5.0	1.641	43.8	0.942	✓		
Hε	0.833	6.8	1.641	43.8	0.808	✓		
Hζ	1.127	13.4	1.640	43.7	0.533			
Hη	1.332	21.5	1.638	43.5	0.306			

Ap 3.

e = α Lyrae m = 1.50

	1.130	13.5		44.1	−0.513			
Hp	0.792	6.2		44.1	0.851			
Hp+ε	0.279	1.9		43.9	1.364	✓	✓	
Hγ	0.255	1.8		44.0	1.388	✓	✓	
Hζ+hδ	0.255	1.8		44.0	1.388	✓		
Hδ	0.301	2.0		44.0	1.342	✓	✓	
Hε+δ	0.301	2.0		43.9	1.342			
Hε	0.544	3.5		44.0	1.099	✓	✓	
Hζ	0.857	7.2		44.0	0.786			
Hη	1.193	15.6		44.0	0.450			

44.0

1.643

Ap 7 m = 0

f = α Lyrae

	1.499	31.6	1.634	43.1	0.135	−0.78		
Hp	1.301	20.0	1.633	43.0	0.332	−0.07		
Hp+ε	0.964	9.2	1.634	43.1	0.670	+0.97		
Hγ	1.041	11.0	1.638	43.5	0.597	+0.80		
Hγ+δ	1.072	11.8	1.638	43.5	0.566	+0.73		
Hδ	1.083	12.1	1.638	43.5	0.555	+0.71		
Hδ+ε	1.114	13.0	1.638	43.5	0.524	+0.62		
Hε	1.228	16.9	1.637	43.4	0.409	+0.27		
Hζ	1.376	23.8	1.638	43.5	0.262			
Hη	1.492	31.1	1.640	43.7	0.148			

c = α Lyrae

Ap 5 m = 0.75

	1.332	21.5	1.648	44.5	0.316	−0.12		
Hp	1.041	11.0	1.645	44.2	0.604	+0.81		
Hp+ε	0.613	4.1	1.645	44.2	1.032	✓		
Hγ	0.740	5.5	1.643	44.0	0.903	✓		
Hγ+δ	0.778	6.0	1.644	44.1	0.866			
Hδ	0.813	6.5	1.643	44.0	0.830	✓		
Hδ+ε	0.845	7.0	1.645	44.2	0.800	✓		
Hε	0.964	9.2	1.644	44.1	0.680	✓		
Hζ	1.207	16.1	1.643	44.0	0.436			
Hη	1.382	24.1	1.643	44.0	0.261			

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d = α Lyrae Ap 7 m=0

							A-d
	1.525	33.5	1.643	44.0	0.118	-0.85	+0.07
Hβ	1.342	22.0	1.643	44.0	0.301	-0.17	+0.10
Hβ+ε	1.021	10.8	0.640	43.7	0.619	+0.85	+0.12
Hγ	1.064	11.6	0.637	43.4	0.573	√+0.74	+0.06
Hγ+ε	1.072	11.8	0.633	43.0	0.561	√+0.72	+0.01
Hδ	1.117	13.1	0.633	43.0	0.516	√+0.7	+0.09
Hδ+ε	1.143	13.9	0.632	42.9	0.489	√+0.50	+0.12
Hε	1.230	17.0	0.630	42.7	0.400	√+0.20	+0.07
Hζ	1.398	25.0	0.626	42.3	0.228	√-0.47	
Hη	1.505	32.0	0.624	42.1	0.119	-0.85	

Hβ	0.08	0.02
Hβ+ε	0.09	0.01
Hγ	0.09	0.01
Hγ+ε	0.10	0.00
Hδ	0.10	-0.01
Hδ+ε	0.11	-0.01

0.10

p Cygni

	1.613	41.0		47.0	0.059		
Hβe	1.519	33.0		47.0	0.153	-0.75	
	1.146	14.0		47.0	0.526	+0.58	
	1.505	32.0	1.677	47.0	0.167	-0.68	
Hβ c.s	1.512	32.5		47.0	0.160	-0.73 √	
4713 e	1.360	22.9		47.2	0.314	-0.12	
4713 c.s	1.396	24.9		47.2	0.278	-0.26	
Hβ+ε	1.360	22.9	1.674	47.2	0.314	-0.12 √	
4552 a	1.389	24.5		47.2	0.285	-0.23	
4552 c.s	1.358	22.8		47.2	0.316	-0.12	
4471 e	1.281	19.1		47.3	0.394	+0.11	
4471 c.s	1.367	23.3	1.675	47.3	0.308	-0.12	
Hβ	1.400	25.1		47.5	0.276		
	1.199	15.8		47.5	0.477	+0.7	
	1.406	25.5		47.5	0.270		
Hγ c.s	1.406	25.5	1.676	47.5	0.270	-0.27 √	
A	1.430	26.9		47.5	0.246		
Hδ+ε e.c.s	1.431	27.0		47.5	0.245	-0.37	

1.460	Hε+ε	R.C.S		28.9	47.5	0.216	
1.437	β	e c.s		27.4	47.5	0.239	
1.462		R C S		29.0	47.5	0.214	
1.477	C		1.676	28.0	47.5	0.229	
1.460	Hδ	c.s		28.9	47.5	0.216	
1.362	Hδ	e		23.0	47.5	0.314	
1.518		a		32.9	47.5	0.158	
1.499	Hδ+ε		1.681	31.6	48.0	0.182	
1.504	4026	C S	1.674	31.9	47.8	0.175	
1.457		e	1.674	28.7	47.8	0.222	
1.502		a	1.680	31.8	47.7	0.178	
1.535	Hζ	C.S	1.680	34.3	47.7	0.145	
1.480		e	1.680	30.2	47.7	0.200	
1.491		a	1.680	39.0	47.7	0.089	

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Ap. E.T

Vega $22^h 4^m.2$ f a $1^m = l$ P Cygni $21^h 32^m.5$
$22^h 11^m.5$ 5 6 = c
$22^h 21^m.0$ 7 7 = d Diaph.
$22^h 29^m.0$ 3 6 = e 1 – 3 0.75
22 38.5 7 6 = f 3 – 5 0.75
22 47.5 5 6 = g 5 – 7 0.75

	e ✓	Vega d	a ✓	f ✓	g ✓	P Cygni
	$3^h 37^m.9$	$3^h 47^m.4$	$3^h 55^m.4$	$4^h 4^m.9$	$4^h 13^m.9$	$1^h 18^m.4$
	54°28'	56°57'	58°57'	61°13'	63°28'	19°36'
Cos θ-2	T.7643	T.7379	T.7137	T.6826	T.6500	T.9741
Cos²Cos θ-2	T.5251	T.4987	T.4745	T.4434	T.4108	T.7407
Num	0.3357	0.2153	0.2982	0.2776	0.2575	0.5504
	0.7564	0.7366	0.7195	0.6989	0.6788	0.9628
Cos	T.8787	T.8673	T.8570	T.8450	T.8318	T.9835
z	40°52'	42°33'	44°0'	45°35'	47°16'	15°40'

97°

5 7 3 7 5

P Cygni – α Lyrae (d) f

	(−0.56)	(+0.41)		(−0.66)	(+0.40)	(+0.40)
Hp						
$H_{p+\gamma}$	−0.97	0.0	+0.09	−1.09	+0.05	+0.07
H_γ	−1.01	−0.04	+0.05	−1.07	+0.07	+0.06
$H_{\gamma+\delta}$	−1.09	−0.12	−0.03	−1.10	+0.04	−0.00
H_δ	−1.08	−0.11	−0.02	−1.19	−0.05	−0.04
$H_{\delta+\varepsilon}$	−1.12	−0.15	−0.06	−1.24	−0.10	−0.08
H_ε						
				(+0.06)		
	−1.06			1.14		9500°

d+f

T 8570
0.1430 0.0165
1.39 1.04
Δ = 0.35

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1926phae.proj..90DG

C 19124

m = 0.75 m = 0.

c = α Lyrae Ap. 5 b = α Lyrae Ap = 7

	1.182	15.2	41.5	1.618 +0.22 −0.436	1.460	28.9	1.658	45.5	0.198 −0.25
H_p	0.785	6.1	41.5	1.618 +0.97 −0.933	1.233	17.1	1.655	45.2	0.422 ±0.30
$H_{p+\gamma}$	0.279	1.9	41.8	1.623 +1.57 −1.349	0.881	7.6	1.655	45.2	0.774 ±0.90
H_γ	0.322	2.1	41.9	1.622 +1.53 −1.300	0.929	8.5	1.653	45.0	0.724 ±0.82
$H_{\gamma+\zeta}$	0.342	2.2	42.0	1.623 +1.51 −1.281	0.964	9.2	1.653	45.0	0.689 ±0.78
H_δ	0.342	2.2	41.9	1.622 +1.51 −1.280	1.049	11.2	1.653	45.0	0.604 ±0.67
$H_{\delta+\nu}$	0.462	2.9	42.0	1.623 +1.38 −1.161	1.117	13.1	1.653	45.0	0.536 ±0.60
H_ζ	0.602	4.0	42.0	1.623 +1.20 −1.021	1.190	15.5	1.651	44.8	0.461 ±0.42
H_2	0.954	9.0	42.0	1.623 +0.77 −0.669	1.342	22.8	1.651	44.8	0.309 ±0.0
H_η	1.233	17.1	42.1	1.624 +0.92 −0.791	1.477	30.0	1.650	44.7	0.173

a = α Lyrae Ap = 3 m = 1.50

	0.699	5.0	42.0	1.623	0.924
H_p	0.362	2.3	42.0	1.623	1.261
$H_{p+\gamma}$					
H_γ					
$H_{\gamma+\zeta}$					
H_δ					
$H_{\delta+\zeta}$					
H_ζ					
H_2	0.301	2.0	42.7	1.630	1.329
H_η	0.699	5.0	42.7	1.630	0.931

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19124

P Cygni

PC-22

	1.491	31.0	Y2.6	1.629	0.138	-0.40 -0.15	+0.19	
	1.342	22.0	Y2.5	1.628	0.286	-0.05		
Hβ	0.914	8.2	Y2.5	1.628	0.714	+0.82		
	1.290	19.5	Y2.4	1.627	0.337	+0.07		
Hβ CS	1.322	21.0	Y2.5	1.628	0.306	+0.02 -0.28	+0.06	+0.12
Hβ+γ/2	1.041	11.0	Y2.0	1.623	0.582	+0.62 -0.28	+0.06	+0.12
4471 e	0.908	8.1	Y2.0	1.623	0.705	+0.80		
" CS	1.041	11.0	Y2.0	1.623	0.582	+0.63		
Hγ	1.107	12.8	Y2.0	1.623	0.516	+0.50		
	0.854	7.1	Y1.9	1.622	0.771	+0.88		
	1.114	13.0	Y1.9	1.622	0.508	+0.50		
Hγ CS	1.111	12.9	Y2.0	1.623	0.512	+0.50 -0.32	+0.02	+0.08
Hγ+δ/2	1.196	15.7	Y1.8	1.621	0.425	+0.33 -0.45	-0.11	-0.05
Hδ CS	1.230	17.0	Y1.6	1.619	0.389	+0.22 -0.45	-0.11	-0.05
Hδ e	1.079	12.0	Y1.6	1.619	0.540	+0.55		
Hδ a	0.301	20.0	Y1.8	0.621	0.320	+0.03		
Hδ+ε/2	1.279	19.0	Y1.7	1.620	0.341	+0.12 -0.48	-0.14	-0.08
CS	1.290	19.5	Y1.7	1.620	0.330	+0.05		
4026 e	1.241	17.4	Y1.7	1.620	0.379	+0.23		
a	1.350	22.4	Y1.5	1.618	0.268	-0.08		
Hε CS	1.342	22.0	Y1.2	1.615	0.273	-0.08 (-0.50)		
e	1.274	19.0	Y1.2	1.615	0.336	+0.08		
a	1.493	26.9	Y1.1	1.614	0.184	-0.28		
H9 CS	1.447	28.0	Y1.0	1.613	0.166	-0.32		
e	1.382	24.1	Y1.0	1.613	0.231	-0.18		
a	1.498	31.5	Y1.0	1.613	0.115	-0.42		
CS	1.459	28.8	Y1.0	1.613	0.154	-0.35		

T = 9900

-040

A

D 1.230 17.0 Y1.5 1.618 0.388 +0.23

1.170 14.8 Y1.5 0.248 +0.12

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94

α Lyrae = α = 18h 33m.6 +38° 41′ φ = 42° 22′.8
P Cygni = 20h 14m.1 +37° 43′ log φ = T.8287
Ap. Cos φ = T.8684

1912.4

1	Vega	22h 12m.5	3
2		22h 20m.0	7
3		22h 27m.0	5
	P Cygni	23h 17m.5	fuel ap.

Vega log φ h5 = T.6246 (0.4213) P Cygni log φ h5 = T.6153 (0.4124)
Cos φ Cos δ = T.7608 Cos φ Cos δ = T.7666

	Vega			P Cygni
(θ−α)h	3h 38m.9	3h 47m.4	3h 54m.4	3h 3m.4
(θ−α)°	54° 43′	56° 57′	58° 36′	45° 57′
Cos θ−α	T.7616	T.7379	T.7168	T.8429
Cos φ Cos δ Cos θ−α	T.5224	T.4987	T.4776	T.6095
N sin	0.3330	0.3153	0.3003	0.4069
Cos z	0.7543	0.7366	0.7216	0.8193
log cos z	T.8776	T.8673	T.8583	T.9135
z	41° 21′	42° 50′	43° 49′	35° 0′

7° ? 7

(7) PCyg

Cos z = T867
ker: 0.133 0.086
1.36 1.22 0.14
1 − ker −0.36 −0.22

P Cygni Cyanogen band 1912.4 δm = 0m.17
1910.9 δm = 0m.11
0m.14 = 11%

ρ	0.03
(ρ+γ)/2	0.03
γ	0.04
(γ+δ)/2	0.04
δ	0.04
(δ+ε)/2	0.04

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P Cygni.

		1909	1924		Der.	
Hε	e	0.19	0.16	0.18	0.02	
4026	e	0.22	0.22	0.22	0.00	
	a	0.05	0.13	0.09	0.04	
Hδ	e	0.39	0.33	0.36	0.03	
	a	0.21	0.19	0.20	0.01	
Hγ	e	200	189	195	5.	total emission
4471	e	0.26	0.17	0.22	0.04	
4552	a	0.11		(0.11)		
4713	e	0.14		(0.14)		
Hβ	e	461	576	488	27.	total emission
Cyan. Band		0.11	0.17	0.14	0.03	

λ

Hβ

transmission. Hε+δ 403 0.76 T. 881 −0.119 (25) 0.30

Hδ 410 0.76

Hδ+γ 422 0.72 T. 886 −0.114 0.29

Hγ 434 0.78 T. 892 −0.108 0.27

Hγ+γ 460 0.79 T. 898 −0.102 0.25

Hβ 486 0.82 T. 914 −0.086 0.22

Smiths. II, 113.

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1926phae.proj..96G

1912 4 | 1909

Hβ | Hβ

Δ = 42.0 1.623 | 47.0 672

0.3 mm	c.5	1.338	21.8	0.285		1.0	0.7	0.0				0.0
1.0	l	1.041	11.0	0.582 +0.62	+0.62	1.78	1.1	1.516	32.8	525	33.5	−0.72 0.156	−0.74 0.147	0.02	1.019
	c5	1.320	20.9	0.303 0.0			1.5	1.512	32.5	525	33.5	−0.70 0.160	−0.74 0.147	0.04	1.038
1.3	l	0.903	8.0	0.720 +0.82	+0.82	2.13	1.9	1.398	25.0	519	33.0	−0.27 0.274	−0.74 0.153	0.50	1.585
	c	5 1.318	20.8	0.305 0.00			2.1	1.496	14.0	512	32.5	+0.63 0.526	−0.70 0.160	1.33	3.467
1.7	l	1.161	14.5	0.462 +0.42	+0.40	1.45	2.5	1.477	28.0	509	32.3	−0.47 0.225	−0.68 0.163	0.21	1.213
	c	5 1.314	20.6	0.309 +0.02			3.0	1.472	30.0	505	32.0	−0.47 0.225	−0.67 0.167	0.20	1.202
2.0	l	1.248	17.7	0.375 +0.18	+0.14	1.14	3.2		0.0	505	32.0		−0.67 0.167	0.0	
	c	1.301	20.0	0.322 +0.04											
2.5	l	1.274	18.8	0.349 +0.12	+0.08	1.08									
	c	1.301	20.0	0.322 +0.04											
3.0	l	1.279	19.0	0.344 +0.11		1.0									
	c	1.279	19.0	0.344 +0.11											
0.7			15.0	1.176	0.447 +0.37	0.39	1.43								
			21.2	1.326	0.297 −0.02										

Dispersion ww

Hδ	0	24373	0
Hγ	25.0	23083	36.2
4471	54.7	22357	53.5
Hβ	94.1	20564	97.8

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19124

4V

$\Delta = 42.0$

0^m	cs	12.9	1.111	0.542	0.50	1.00
0.5	l	10.0	1.000	0.623	0.68	0.18	1.18
	cs	12.9				
1.0	l	8.2	0.914	0.709	0.80	0.30	1.32
	cs.	12.9				
1.9	l	11.0	1.041	0.582	0.64	0.14	1.14
	cs	12.9				
2.2						1.00

19109

0.5	lsc	25.5	1.406	0.266	-0.08		1.00
0.8	l	21.0	1.322	0.350	+0.02	0.30	1.32
		25.5	1.406				
1.0	l.	15.9	1.201	0.471	+0.15	0.73	1.97
		25.5					
1.E	l	~~19.5~~ 21.0	1.322	0.350	+0.02	0.30	1.32
		25.5					
1.5	l.	29.0	1.389	0.384	-0.08	0.20	1.20
		25.5					
1.9	cs						1.00

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5m

δ1	1	0		0
δ2	3/4	−0.375	−0.312	0.31
δ3	1/2	−0.755		0.75
δ4	1/4	−0.995	1.504	1.51
δ5				

	λ	ν	
Hα	6563	15237	0.0
a	6230	16051	
b	5470	18282	1.7
Hβ	4861	20565	3.4
c	4570	21882	
Hγ	4340	23033	5.7
Hδ	4102	24373	
Hε	3970	25181	
Hζ	3889	25713	
38	3600	27778	
35	3500	28571	

Hα	0.0	15.2
d1	0.4	16.0
a	1.1	17.1
b	2.0	18.2
x	3.0	19.5
β	3.95	20.6
c	5.05	21.9
γ	6.15	23.0
δ		24.4
ε		25.2

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1926phae.proj...90MG

H 3275 $Z = 13°$

μ 2987 $t = 1^h 10^m$ 1.03

+0.01 7- i Herculis (B1)

	F_0	F_1					7-5
H_α	218	396	178	598	250	0.378	0.47 +0.17
a	265	392	127	593	104	0.489	0.46 +0.15
b	200	393	193	594	286	0.308	0.39 +0.06
H_β	205	391	186	592	270	0.322	0.33 +0.01
c	342	390	048	591	~~0.279~~ 1.681	~~0.900~~ 0.910	0.31 +0.01
H_γ	348	389	041	590	1.613	~~0.203~~ 0.977	0.24 -0.07
H_δ	338	388	050	589	1.699	~~0.288~~ 0.900	0.21 -0.11
H_ε	323	388	065	589	1.813	~~0.402~~ 0.776	0.23 -0.08
H_ζ	302	387	085	588	1.929	~~0.517~~ 0.689	~~0.28 -0.10~~
360	220	386	166	587	220	~~0.807~~ 0.367	
350	130	385	255	586	407	~~0.993~~ 0.179	

Mean h.A = $0^h 28^m$ E

~~0.02~~ 5 β Lyrae (D2)

H_α	240	380	140	582	146	728	436	
a	278	382	104		017	799	565	Z = 120
b	208	382	174		240	822	342	1.02
H_β	202	382	180		255	837	327	
c	335	382	047		1.672	254	0.910	
H_γ	337	382	045		1.653	235	929	
H_δ	324	382	058		1.763	345	819	
H_ε	310	382	072		1.857	439	725	
H_ζ	285	382	097		1.987	569	595	
360	075	382	307		487	1069	0.095	
350	040	382	342		534	1116	0.048	

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1926phae.proj..9GMG

100 H3275 α Coronae B (A3)

RA = 2h 38m W Z = 36 2 1.24

+0.92

2

α	280	3.89	108	589	033	556	0.12	
a	308	389	080		T.903	686	0.15	
b	240	389	148		170	~~446~~ 419	0.19	
β	235	389	153		185	404	0.11	
c	352	389	036		T.556	1.033	0.11	
g	355	389	034		T.532	1.057	0.13	
δ	335	389	054		T.732	857	0.25	
ε	305	388	083		T.919	670	0.35	
~~360~~ 2	258	388	130		114	475		
360	085	388	303		481	108		
350	050	388	338		529	060		

8 ε Herculis (A2) RA 1h 17m W 8-3 Z = 15 1.04

+0.02

α	180	378	197	576 208	294	282	0.65	
a	205	378	172		236	340	0.73	
b	150	377	227		356	220	0.62	
β	180	377	197		294	282	0.80	
c	315	377	062		T.795	~~930~~ 2784	0.55	
γ	320	377	057		T.756	820	0.52	
δ	310	377	067		T.826	750	0.39	
ε	292	377	085		T.929	647	0.37	
ζ	260	377	117		.068	~~444~~ 508		
360	180	377	197		.294	282		
350	150	377	227		356	220		

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6 γ Lyrae (D1)

H 3275

α	295	382	087	582	1.940	1.522	642
a	318	380	062	580	1.792	1.372	788
b	275	380	105	580	021	601	559
β	248	380	132	580	121	701	459
c	350	380	030	580	1.477	1057	1.103
g	355	380	0.25	580	1.398	978	1.182
δ	350	378	0.28	578	1.447	1025	1.131
ε	340	378	0.38	578	1.580	1058	998
z	325	378	0.53	578	1.724	1302	854
360	105	377	2.72	576	2.435	1	141
350	060	377	317	576	501		075

4 γ Lyrae (D4)

α	080	392	311	592	493	.099	
a	103	391	288		459	.133	
b	052	390	339		530	.062	
β	088	392	303		481	.111	
c	223	392	168		225	.367	
γ	220	390	171		233	359	
δ	198	390	193		286	306	
ε	170	390	221		344	248	
z	140	390	251		400	192	
360	018	392	373		572	020	
350	010	390	381		581	011	

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1926phae.proj..93G

H 3275 3 ζ Lyrae (53)

α	165	379	265	580	332	248	
a	202	380	178		250	330	
b	128	380	252		401	179	
β	153	380	227		392	238	
c	301	381	079		1.898	682	
γ	300	381	080		1.903	677	
δ	267	380	113		053	527	
ε	228	381	152		182	398	
ζ	189	381	191		281	299	
360	040	381	340		532	048	
350	020	381	360		556	024	

+0.20 1 α Coronae B (51) H 2h 33m W

Z = 35°

1.22

α	330	380	050	580	+0.301	881	-0.08
a	342	380	038		420	1000	
b	309	382	071		137	717	
β	300	380	080		097	677	
c	364	379	015		824	1404	
γ	365	379	014		854	1434	
δ	359	379	020		699	1279	
ε	343	379	036		523		
ζ	320	379	059		229		
360	113	379	266				
350	055	379	324				

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1926phae.proj...90MG

H. 3278

4 ζ Aquilae (24) M. A.H. 1h 20m W

		383					
α	091	382	291	583	464 v	119 v	ζ = 35° v
a	120	384	264		422 v	161 v	
b	064	384	320		505 v	078 v	1.22
p	077	384	307		487 v	096 v	
c	227	383	156		193 v	390 v	
γ	210	383	173		238 v	345 v	
δ	185	382	207		316 v	267	
ε	147	382	235		371 v	212 v	
ζ	105	382	277 312		444 494 v	089 v	139
360	020	382	362		559 v	024 v	
350	012	381	369		587 v	−004 v	

5 ζ Aquilae (03)

α							
a							
b	130	378	248 .	578	394 v	184 v	
p	125	378	253 .		403 v	175 v	
c	290	379	089 .		T 949 v	629 v	
γ	288	379	091 .		T 959 v	619 v	
δ	270	379	109 .		037 v	541 v	
ε	228	379	151 .		179 v	399 v	
ζ	180	378	198 .		297 v	281 v	
360	040	378	338 .		529 v	049 v	
350	020	378	358 .		554 v	024 v	

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H 3278

6 Z Aquilae (D2)

d	240	390	150 v	591	176 v	315 v	
a	280	390	110 v		041 v	450 v	
b	210	390	180 v	586	255 v	336 v	
p	209	388	179 v	589	253 v	336 v	
c	345	388	043 v	587	T·684 v	955 v	
g	342	387	045 v	588	T·653 v	935 v	
d	320	387	067 v	174	T·826 v	762 v	
e	287	385	098 v	586	T·991 v	595 v	
z	260	382	122 v	582	086 v	496 v	
360	212	381	169 v	581	228 v	353 v	
350	192	380	188 v	580	274 v	306 v	

overlap by another 45°

2 67 Ophiuchi (D1.) H 1h 45m W Z = 46°

+0.22

d	178	390	212 v	591	326 v	265 v	0.44	1.44
a	229	390	161 v		207 v	384 v	0.43	
b	170	390	220 v		342 v	249 v	0.55	
p	140	390	250 v		398 v	193 v	0.67	
c	270	390	120 v		079 v	512 v	1.06	
g	269	390	121 v		083 v	508 v	1.03	
d	250	390	140 v		146 v	445 v	1.02	
e	227	390	163 v		212 v	379 v	0.82	
z	205	390	185 v		267 v	324 v		
360	087	390	303 v		481 v	110 v		
350	050	390	340 v		532 v	059 v		

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1926phae.proj...90MG

H. 3278 7 Z Aquilae (D1)

α	270	380	110	580	041	539	
a	300	378	078	579	T 892	- 687	
b	240	379	139		143	- 436	
β	212	379	167		223	- 356	
c	340	378	038	578	T. 580	- 998	
γ	339	377	045	576	T. 653	- 923	
δ	319	375	056	574	T. 248	- 826	
ε	299	374	075	573	T. 875	- 698	
ζ	262	373	111	572	045	- 527	
360	060	371	311	569	493	- 076	
350	025	370	345	568	538	- 030	

2 67 Ophiuchi

								Def
α	170	392	220	591	342	249	0.52	0.48
a	230	390	160		204	387	0.44	0.44
b	155	390	235		371	220	0.65	0.60
β	130	390	260		415	176	0.72	0.70
c	267	390	123		090	501	1.10	1.08
γ	260	390	130		114	477	1.11	1.07
δ	240	390	150		176	415	1.10	1.06
ε	218	390	172		236	355	0.92	(0.87)
ζ	195	390	195		290	301	0.70	~~0.67~~
360								
350								

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1926phae.proj..9GMG

H 3278 ν Sagittarii $0^h\,0^m$

+0.67

α	156	320	164	505	215	290	0.38
a	190	320	130		114	291	0.42
b	120	320	200		307	204	0.69
p	092	320	228		158	147	0.82
c	198	320	122		086	419	1.38
k	195	320	125		097	408	1.31
r	170	320	150		204	301	1.41
s	155	320	165		217	288	
z							

$Z = 58^\circ$ 1.89

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1926phae.proj...90MG

a is different of a in the former pertes

H. 3279 4. Z Aquilae (D1)

a	195	275	080 v	T. 903	439	536 v	
α	190	275	085 v	T. 929		570 v	MKA = 1h50m
b	180	275	095 v	T. 978		461 v	
β	228	275	047 v	T. 672		767 v	Z = 37
c	260	275	015 v	T. 176		1.263 v	1.25
γ	255	275	020 v	T. 301		1.138 v	
δ	247	275	028 v	T. 447		992 v	
ε	232	275	043 v	T. 634		805 v	
z	200	275	075 v	T. 875		564 v	

0.00 6 1 Vulpec. (D1) MA 2h22m Z = 37.

1.25

a	050	278	228 v	358 v	44.4	086 v	2.15 ± 0.23
α	045	278	233 v	367 v		077 v	
b	040	278	238 v	377 v		067 v	
β	105	278	173 v	238 v		206 v	1.54 0.07
c	165	278	113 v	053 v		391 v	0.82 0.06
γ	158	278	120 v	079 v		365 v	0.88 0.00
δ	147	278	131 v	117 v		327 v	1.01 −0.17
ε	125	278	153 v	185 v		259 v	

Va = 14500

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1926phae.proj..96G

K 3279 δ 3 Vulpeculae (1) 1h 58m Z = 40

+0.06 1.31

a		285	?						
α	039	285	246 v	391 v	455 v	064 v	1.09	~~1.12~~	
b	037	285	248 v	295 v		060 v	1.06		
β	082	285	203 v	308 v		147 v	1.10	1.80	+0.35
c	155	285	130 v	114 v		341 v	1.06	0.96	+0.20
γ	142	285	143 v	155 v		300 v	1.05	1.16	+.22
δ	130	285	155 v	161 v		294 v	0.99	1.11	-.02
ε	120	285	165 v	218 v		237 v	0.97	1.38	-.11
Z	100?	285	185 v	267 v		188 v	0.92		

1 Aquilae (4)

a	072	279	207 v	316 v	446	130 v	1.92
α	070	280	209 v	320 v		126 v	1.94
b	055	280	229 v	350 v		096 v	2.14
β	110	278	169 v	228 v		218 v	1.47
c	170	278	109 v	037 v		409 v	0.76
γ	158	278	121 v	083 v		363 v	0.88
δ	132	278	147 v	167 v		279 v	1.18
ε	110	278	169 v	228 v		218 v	1.49
Z	085	278	294 v	288 v		158 v	

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1926phae..proj...9G

H 3279 ζ Lyrae (D2) ~~H~~ 3h 18m Z = 40°
+0.06 1.305

α	048	259	215	332	415	083	2.14	+0.22
α	040	260	220	342		073	2.16	0.20
b	032	260	228	358		057	1.97	
β	082	260	178	250		165	1.71	+0.24
c	129	260	131	117		298	1.12	+0.16
γ	110	260	150	176		239	1.35	+0.47
? δ	095?	260	165	218		198	1.60	~~+0~~ 0.42
ε	085	260	175	243		172	1.70	(+0.21)
ζ	075	260	185	267		148	1.82	

3 ζ Aquilae (D2)

a	172	275	106	025	444	419	~~1.08~~
α	170	275	108	033		411	
b	150	278	128	107		337	
β	205	278	073	T.863		581	
c	250	278	028	T.447		997	
γ	245	278	033	T 579		925	
δ	232	280	046	T. 663		781	
ε	208	280	070	T. 845		599	
ζ	175	280	103	013		435	

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1926phae.proj..9GBG

H 3265 3 ζ Ursae maj (D2) MHA = $2^h 41^m$

Z = 29

1.14

a	200	352	152	544	176	368	
α	195	350	155		190	354	
b	199	350	151		179	365	
β	210	350	140		146	398	
c	295	350	055		T 740	804	
γ	308	350	042		T 699	845	
δ	318	350	032		T 580	1039	
ε	3103	352	040		T 602	972	
ζ	298	350	052		T 716	828	

4 ζ Ursae maj (D3)

a	112	352	240	547	380	167	
α	110	352	242		384	163	
b	112	352	240		380	167	
β	105	352	247		393	154	
c	285	352	117		068	479	
γ	255	352	097		T 987	583	
δ	272	352	080		T 903	644	
ε	265	352	087		T 940	607	
ζ	230	352	122		086	461	
			107		029	518	

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1926phae.proj..9GMG

H 3265 2 K Draconis 1926 2h19m Z=32

1.18

+0.04

a	160	352	195	550	290	260	0.55	0.50
α	162	355	193		286	264	0.52	0.45
b	150	352	202		305	245	0.55	0.53
β	200	355	155		190	360	0.44	0.37
c	295	355	060		T.778	772	0.41	0.34
γ	305	355	050		T.699	857	0.45	0.39
δ	310	355	045		T.653	897	0.47	0.47
ε	308	355	047		T.672	878	0.48	
ζ	295	355	060		T.778	772	0.40	

1 γ Ursae maj (81)

a	280	358	077	553	T.887	666	
α	272	357	085	995	T.929	624	
b	261	356	096	1045	T.982	571	
β	280	356	077		T.887	666	
c	332	356	028		T.398	1.155	
γ	335	355	029		T.342	1.211	
δ	340	356	027		T.230	1.323	
ε	338	357	019		T.279	1.274	
ζ	325	357	032		T.505	1.097	
						1.048	

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1926phae.proj..9GG

H 3269 5 ℓ Coronae Bor (S.3) NMA = $0^h 44^m$

18°

1.05

α	092	312	220	494	342	152	
a	130	312	182		260	234	
b	085	312	227		357	137	
β	078	312	234		369	125	
c	215	312	097		T 987	507	
γ	2305	312	077		T.887	607	
δ	232	312	080		T.903	591	
ε	215	312	097		T.987	507	
ζ	190	312	122		E 686	408	

6 ℓ Coronae Bor (D 2)

α	178	315	137	498	137	361
a	210	315	105		021	477
b	153	315	162		210	288
β	140	315	175		243	255
c	262	315	053		T.724	774
γ	2705	315	040		T.602	896
δ	2705	312	045		T.602	896
ε	2680	315	047		T.672	826
ζ	240	315	075		T.875	623

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1926phae.proj..9GG

H 3269 2 κ Draconis KA 3h19m Z = 86

1.24

+0.19

α	122	310	188	491	274	217	0.55	
a	155	310	155		190	301	0.53	
b	120	310	190		279	212	0.46	
β	115	310	195		290	201	0.40	
c	240	310	070		T.845	646	0.43	
γ	248	310	062		T.792	699	0.52	
δ	253	310	057		T.756	735	[0.33]	defect
ε	257	310	053		T.724	767	[0.37]	in spect
ζ	242	310	068		T.833	658	~~0.26~~	

+0.01 1 η Ursae maj KA 1h40m Z = 19

1.06

α	110	315	205	498	312	186	0.65	0.61
a	152	315	163		212	286	0.61	0.57
b	115	315	200		301	197	0.55	0.49
β	100	315	215		332	166	0.55	0.48
c	225	315	090		T.954	544	0.58	0.61
γ	235	315	080		T.903	595		
δ	240	315	075		T.875	623		
ε	228	315	087		T.940	558		
ζ	215	315	100		000	498	0.56	

0.55 0.56

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1926phae.proj..90MG

H 3269 3 d Coronae (B1)

α	290	318	028	502	T.447	1055
a	299	318	019		T.279	1.223
b	275	318	043		T.634	0.868
β	275	319	044		T.644	0.858
c	308	318	010		T.000	1.502
γ	310	318	008		2.903	1.599
δ	308	318	010		T.000	1.502
ε	305	318	013		T.114	1.388
ζ	300	318	018		T.255	1.247

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1926phae.proj..9GHG

H 3282

MKA = $1^h 54^m$

7 τ Aquilae (82)

a	1.98	3.85	187 v	585 v	272.	313 v	0.72	0.67
α	1.95	3.85	190 v		279.	306 v	0.73	0.69
b	1.70	3.85	215 v		332.	253 v	0.86	0.93
β	2.59	3.85	126 v		100 v	485 v	0.34	0.10
c	3.25	3.85	060 v		T 778 v	807	0.36	
γ	3.20	3.85	065 v		T. 813 v	772	0.39	0.00
δ	3.02	3.85	083 v		T. 919 v	666	0.55	0.30
ε	2.78	3.85	107 v		029 v	556 v	0.72	0.71
ζ	2.40	3.85	145 v		161 v	424 v	0.90	

z = 37° v 1.25

+ 0.31

2 67 Ophiuchi MA = $2^h 22^m$ z-67

Z = 50 1.56

a	235	380	145 v	580 v	161 v	419 v	0.30	+0.37
α	233	381	147 v		167 v	413 v	0.31	+0.35
b	198	380	182 v		260 v	320 v	0.66	+0.29
β	260	380	120 v		079 v	501 v	0.07	+0.03
c	310	380	070 v		T. 845 v	735 v	0.45	+0.09
γ	302	380	078 v		T. 892 v	688 v	0.22 v	+0.22
δ	290	380	090 v		T. 954 v	626 v	0.44	+0.14
ε	272	380	108 v		033 v	547 v	0.72	−0.01
ζ								

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1926phae.proj..90.G

H 3282 5 ? Aquarae (54.)

a	060	375	315 v	574 v	498 v	076 v	
α	060	375	315 v		498 v	076 v	
b	050	375	325 v		572 v	062 v	
β	128	370	242 v	568 v	382 v	186 v	
c	200	370	170 v		230 v	338 v	
γ	180	370	190 v		279 v	289 v	
δ	138	370	232 v		366 v	202 v	
ε	109	370	261 v		417 v	157 v	
ζ	085	370	285 v		454 v	114 v	

+0.64 1 ν Sagittarii $0^h 22^m$ 1.89 2-v

a	235	375	140 v	574 v	146 v	428 v	0.28	+0.39
α	230	378	148 v		170 v	404 v	0.35	+0.34
b	185	373	188 v		274 v	300 v	0.73	+0.20
β	240	370	130 v	568 v	114 v	454 v	0.20	+0.10
c	305	375	068 v		T 833 v	734 v	0.10	
γ	290	374	081 v		T 908 v	660 v	0.82	-0.32
δ	265	370	105 v		021 v	547 v	0.72	-0.42
ε	250	370	120 v		079 v	489 v	0.95	~~-0.21~~

Z = 58

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1926phae.proj..9GG

H 3282 4 η Aquilae (D1)

a	215	380	165	580	217	363
α	205	378	173	579	238	341
b	180	379	199	579	299	280
β	252	375	123	574	090	484
c	312	375	063	574	T.799	775
f	308	375	067	574	T.826	748
δ	290	372	082	570	T.914	656
ε	259	372	113		053	517
ζ	228	372	144		158	412

6 ζ Aquilae (D3)

a	120	365	245	562	389	173
α	125	367	240		380	182
b	095	365	270		431	131
β	180	365	185		267	295
c	265	365	100		000	562
f	260	365	105		021	541
δ	229	365	136		134	428
ε	195	365	170		230	332
η	165	365	200		301	261

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1926phae.proj..90MG

h 3282 i Aquilae HA $1^h 04^m$ $\zeta = 46$ 1.44

+0.19	a	212	385	173.	585.	238.	347.	0.52	+0.15
	i	205	382	180.		255.	330.	0.61	+0.18
	b	180	385	205.		312.	273.	0.84	+0.09
	β	260	382	125.		097.	488.	0.10	-0.0
	c	320	385	065.		T 813.	772.		
	g	315	385	070.		T. 845.	740.	0.07	-0.07
	δ	300	385	085.		T. 929.	656.	0.33	-0.03
	ε	280	385	105.		021.	564.	0.66	+0.06

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1926phae..proj...9G

H 3399

MHA = 2h 28m Z = 310

1 ζ Lyrae

α	182	310	128 v	491 v	107 v	384 v	1.17
a	190	310	120 v		079 v	412 v	
b	122	310	188 v		274 v	217 v	
β	158	310	152 v		182 v	309 v	
c	250	310	060 v		T 778 v	713 v	
γ	248	310	062 v		T 792 v	699 v	
δ	212	310	098 v		T 991 v	500 v	
ε	180	310	130 v		114 v	377 v	

2 ζ Lyrae

mean

α	140	310	170 v	491 v	230 v	261 v	322
a	172	310	138 v		140 v	357 v	286
b	082	310	228 v		358 v	133 v	175
β	080	310	230 v		362 v	129 v	219
c	202	310	108 v		033 v	458 v	583
γ	230	310	080 v		T 903 v	588 v	644
δ	228	310	082 v		T 914 v	577 v	538
ε	200	310	110 v		041 v	450 v	413

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1926phae.proj..90MG

H3399

3 ζ Lyrae

α	240	320	080	505 ✓	T 903	602
a	255	320	065		T.813	692
b	180	320	140		146	359
β	185	320	135		130	375
c	278	320	042		T.623	882
γ	285	320	035		T.844	961
δ	265	320	055		T.740	765
ε	238	320	082		T.914	591

✓

4 ζ Lyrae

α	286	310	024	591	T.532	959
a	282	310	028		T.447	1.044
b	235	310	075		T.875	615
β	240	310	070		T.845	646
c	295	310	015		T.176	1.315
γ	298	310	012		T.079	1.412
δ	285	310	025		T.398	1.093
ε	270	310	040		T.602	889

✓

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1926phae.proj..90MG

H 3399 5 γ Lyrae

α	305	330	025	579v	T.398	1.121	
a	315	330	015		T.176	1.343	
b	270	330	060		T.378	741	
β	280	330	050		T.699	820	
c	325	330	005		2.		
γ	325	330	005				
δ	310	330	020		T.301	1.218	
ε	293	330	037		T.568	957	

Z = 42

δ Δ Cygni HA = 4h 28m λC.-γ Lyr 3 1.35

+0.18

α	290	330	040	167 579.	T.602	917	0.353	+0.04
a	295	330	035		T.544	975	0.380	+0.07
b	238	330	092		T.964	555	0.380	+0.07
β	200	330	130		144	405	0.680	+0.37
c	280	330	050		T.699	820	0.860	+0.55
γ	280	330	050		T.699	820	0.970	+0.66
δ	268	330	062		T.792	727	0.830	+0.52
ε	238	330	095		T.978	541	0.850	+0.54

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1926phae.proj..90MG

H 3399 12 π Androm HA = 2h52m Overexp.

α	270	330	060	579	T 778	741	0.57
a	282	330	048		T 681	838	0.55
b	242	330	088		T 944	575	0.35
β	208	330	122		086	433	0.11
c	295	330	035		T 544	975	0.66
γ	295	330	035		T 544	975	0.71
δ	285	330	045		T 653	866	0.59
ε	272	330	058		T 763	756	0.47

3h32m Z = 76 1.24

+0.07 11 ρ Cas. HA

α	292	320	028	505	T 447	1058	0.20
a	300	320	020	"	T 301	1204	0.14
b	242	320	078	"	T 892	613	0.29
β	150	315	165	498	T 218	280	1.10
c	225	315	090	"	T 954	544	(1.59)
γ	190	315	125	"	097	401	
δ	142	312	170	491	T 930	268	
ε	075	310	235	491	371	127	

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1926phae.proj..90MG

H 3399 13 o Cass. HA -2h59m overexp.

α	265	325	060	576	T 778	738	0.57
a	285	330	045		T 653	863	0.51
b	250	330	080		T 903	613	0.33
β	232	325	093		T 968	548	0.43
c	300	328	028		T 447	1069	0.53
γ	300	330	030		T 477	1039	0.65
δ	290	330	040		T 682	802	0.53
ε	275	330	055		T 740	776	0.45

6 HR 8281 HA 4h07m ✓ Z=41

+0.16

1.33

α	240	329	085	572	T 929	583	0.75
a	250	325	075		T 875	637	0.83
b	182	330	133		124	398	0.65
β	170	325	155		190	422	0.64
c	250	325	075		T 875	637	1.35
γ	255	325	070		T 845	689	1.39 1.42
δ	240	325	085		T 929	583	1.26
ε	205	325	120		079	433	1.29

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1926phae.proj..90MG

h 3399 Ba. Cass. V 2h 59m z = 32

+0.01 1.18

α	152	315	163	498	212	986	0.69	1.39
a	190 -	315	125 -	"	097	904	1.45	1.30
b	185 -	315	200 -	"	304	197	1.38	1.15
β	205 -	315	220 -	"	392	176	~~1.47~~	1.29
c	240 -	315	075 -	"	T.875	623	1.37	1.18
γ	245	320	075 -	505	T.845	653	(mean) 1.47	1.29
δ	232	320	088	"	T.945	580	1.28	1.30
ε	205	320	115	"	061	444	1.20	

μA = 4h 11m

7 19 Cephei Overexp.

α	240	310	070	491	T.845	646	0.69
a	255	310	055	222 113	T.740	751	0.66
b	212	310	098		T.991	500	0.47
β	170	310	140		146	345	0.81
c	260	310	050		T.699	791	0.91
γ	262	310	048		T.681	820	0.98
δ	250	310	060		T.778	713	0.87
ε	233	310	077		T.887	604	0.71

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1926phae.proj...96MG

H 3399 1Ya Cass. HA = 3h 10m ζ = 35 underexpos

+0.05

α	172	290	236	462	226	1.77	1.22
a	145		161		201		
ℓ	200		301		161	156	
β	200		301		161		
c	085		T 929		533	1.65	
γ	060		T 778		684	1.37	
δ	075		T 875		587	1.25	
ε	098		T 991		471	1.03	

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1926phae.proj..96MG

H 3388 ζ Lyrae B3 MKA = 1.47

				147		
α	155	450	190	653	463	$z = 28^\circ$ V
a	120	450	079	187	574	
b	200	450	301		352	1.09
β	225	450	352		301	
c	072	450	T.857		796	
γ	065	450	T.813		840	
δ	090	450	T.954		699	
ε	115	450	061		593	

3 ζ Lyrae B2

α	090	435	-046	634	680
a	068	435	-168		802
b	130	430	114		520
β	155	430	190		444
c	040	430	-398		1032
γ	030	430	-523		1157
δ	040	430	-398		1032
ε	070	430	-155		789

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H 3388 4 γ Lyrae Δ1

α	048	460	-319	663	982
a	040	455	-398		1061
b	100	460	000		663
β	120	460	079		584
c	028	460	-553		1216
γ	022	460	-658		1321
δ	032	460	-495		1158
ε	054	460	-268		931

1 γ Lyrae Δ4

α	250	445	398	648	250
a	218	445	339		309
b	200	445	477		171
β	330	445	518		130
c	155	445	190		458
γ	135	445	130		518
δ	145	445	161		487
ε	170	445	230		418

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H 3388 8 g Cas $0^h 48^m$ Z = 17

1.05

-0.04

d	040	440	-398	644	1042	-0.05
a	033	"	-482		1126	-0.16
b	123	"	090		554	+0.23
p	240	"	380		264	+0.85
e	122	"	086		556	+1.52
f	150	"	176		468	+1.61
g	218	"	-338		306	
h						

15 0 Cas $1^h 23^m$ Z = 16 1.04

-0.05

d	220	455	342	658	316	1.15
a	265	"	277		427	1.05
b	270	"	431		227	1.16
p	280	"	447		211	1.23
e	125	"	097		569	1.23
f	109	"	037		621	1.23
g	125	"	079		579	1.08
E	138	"	1480		518	

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H3388 13 λ Cephei $3^h 29^m$ $\zeta = 35$

+0.13 1.22

α	115	Y30	061	634	573	0.57
a	080	"	-097		731	0.43
b	180	"	255		379	0.66
β	240	"	380		254	0.89
c	100	"	000		634	1.07
γ	092	"	-036		670	1.13
δ	110	"	+041		593	1.04
ε	150	"	+176		458	1.01

14 G Andr $1^h 22^m$ $\zeta = 29$

+0.05 1.14

α	080 (90)	Y32	-097 (046)	636	738 (680) v	0.32
a	065	Y30	-187	634	821 v	0.30
b	150	Y30	176	"	458 v	0.45
β	155	Y30	190	"	444 v	0.31
c	028	Y25	-553	628	1181 v	0.06
γ	020	Y20	-699	623	1322 v	0.00
δ	022	Y20	-658	"	1281 v	?
ε	045	Y20	-347	"	970 v	-0.08

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H 3388 10 19 Cephei $3^h\ 04^m$ Z = 33 1.19

+0.10

d	185	450	130	653	523	0.61
a	105	450	021		632	0.61
b	200	"	301		352	0.75
β	240	"	380		273	0.83
c	085	"	-071		724	0.87
γ	080	"	-097		750	0.94
ζ	100	"	000		653	0.85
ε	140	"	146		507	0.97

-0.04 7 ζ Cas $0^h\ 40^m$

d	023	450	-638	653	1291	
a	020	"	-699		1352	
b	120	"	079		574	0.18
β	215	"	332		321	0.68
c	120	"	079		574	1.20
γ	170	"	230		423	1.71
δ	240		380		273	
ε						

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H 3388 : 9 π_1 Cygni $0^h 50^m$ $z = 12$

-0.07 1.02

α	140	440	146	644	498	0.68
a	095	"	-022		666	0.53
b	175	"	243		401	0.60
β	190	"	279		365	0.53
c	055	"	-260		904	0.55
δ	045	"	-347		991	0.50
δ	055	"	-260		904	0.45
ε	075	"	-125		769	0.34

6 β Lyrae – low over the horizon $5^h 16^m$

+0.95 2.06

α	185	455	267	658	391	0.94
a	152	"	182		476	0.96
b	250	"	312		346	Defect in plate
β	270	"	431		227	1.09
c	110	"	041		617	1.10
γ	109	"	037		621	1.23
δ	150	"	176		482	1.50
ε	200	"	301		357	

$z = 61$ ✓

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h 3588 11 19 Cephei $3^h 14^m$ $z = .35$

+0.13 1.22

α	082	430	-086	634	720	0.26
a	070	"	-155	"	789	033
b	170	"	230	"	404	0.58
β	180	432	255	636	381	0.48
c	060	438	-222	642	864	069
γ	060	440	-222	644	866	0.71
δ	060	"	-222	"	866	0.48 } ?
ε	080	441	-097	"	748	0.40 }

+0.13 12 δ Cephei $3^h 20^m$ $z = .35$ 1.22

α	130	450	114	653	539	0.58
a	125	"	097	"	556	0.77
b	225		352	"	301	0.88
β	225	"	352	"	301	0.75
c	105	452	021	655	632	1.06
γ	102	455	009	658	644	1.18
δ	110	460	041	663	612	0.98
ε	135	460	130	"	523	

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Nov 4 2 ζ Lyrae MJA = 2h 42m

α	090	280	-046	447	493	
a	080	285	-097	455	552	
b	135	285	130		325	
β	150	288	176	459	283	
c	055	290	-260	462	722	z = 33°
γ	045	290	-347		809	1.19
δ	055	292	-260	465	725	
ε	080	295	-097	470	567	

3 ζ Lyrae

α	075	320	-125	502	627	560
a	060	315	-222		724	638
b	125	318	097		405	365
β	175	320	243		259	271
c	059	318	-229		731	727
γ	045	318	-347		849	829
δ	042	318	-377		879	802
ε	055	315	-260		762	665

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H 3404 4 g Lyrae

α	040	345	-398	538	936
a	025	340	-602	532	1134
b	060	340	-282	"	754
β	100	340	000	"	532
c	030	335	-523	525	1048
g	030	335	-523	"	1048
δ	025	330	-602	518	1120
ε	030	330	-523	"	1041

5 g Lyrae

α	010	315	-1.000	498	1498
a	~~035~~	~~310~~	-456		954
b	035	310	∓.456	491	947
β	050	308	-301	489	790
c	010	305	-1.000	484	1484
γ	010		-1		1484
δ					
ε	[illegible]				

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1926phae.proj..90MG

H 3404 14 HD 114470 ? $0^h 29^m$

α	012	340	-921	532	1453	0.34
a	010	340	-1000		1532	
b	050	340	-301		833	0.58
β	100	340	-006		532	0.77
c	022	340	-699		1231	0.56)
γ	025	338	-602		1134	053)
δ	045	338 v	-347 v		879	1.18
ε						

AK

1 45 Tracinis $2^h 33^m$ $z = 28$

-0.06

1.13

α	010	318	-1000	502	1502	0.31
a	010?	315	-1000	498	1498	?
b	055	312	-260	494	754	0.75
β	080	312	-097		591	0.65
c	030	310	-523	491	1014	0.82
γ	035	310	-456	"	947	1.00
δ	068	310	-168	"	659	
ε						

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1926phae.proj..90MG

H 3404 · 16 o cam. $0^h 15^m$ two foggs

α	030	260	-523	415	938	0.75
a	030	260	-523	"	938	0.91
b	060	260	-222	"	637	1.03
β	080	262	-097	418	575	0.80
c	025	265	-602	423	1025	0.79
g	020	270	-699	431	1130	0.64
δ	030	270	-523	"	954	1.01
ε	045	270	-347	"	778	1.18

7 α Lacertae $0^h 28^m$. AL

-0.18

			455		711	
α	080	260	~~-097~~	556	~~653~~	1.09
a	040	258	-398	554	952	0.90
b	085	255	-071	550	621	1.07
β	120	250	+079	544	465	0.91
c	025	250	-602		1146	0.64
g	~~075~~	250	~~-745~~ -834		~~1289~~ 1368	~~(0.43)~~
δ	~~032~~	~~248~~	~~-495~~	~~538~~	~~1033~~	~~0.85~~
ε	~~062~~	~~245~~	~~-208~~	~~538~~	~~746~~	
δ	0.25	245	-602		1140	0.72

1.01

Z = 90

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K 3404 11 25 Cygni 3h 02m Alt z = 36° 1.24
+0.05

α	038	320	-420	505	925	0.76
a	038	320	-420		925	0.93
b	100	"	000		505	1.41
p	165	"	218		287	1.52
c	062	"	-208		713	1.62
γ	070	"	-155		660	
δ	100	"	000		505	
ε						

10 31 Pegasi 0h 40m overexposed.

α	045	~~308~~	-347	491	838	0.87
a	035	310	-456		947	0.92
b	080	310	-097		588	
p	045	"	-347		838	0.22
c	018	308	-745	489	1234	0.53
γ	019	308	-721		1210	0.50
δ	025	308	-602		1091	0.77
ε	040	308	-398		887	

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M104 17γ Virginis $8^h 58^m$ Overexposed.

α	038	318	-420	491	911	0.78
a	035	305	-456	"	947	0.92
β	082	310	-086	"	577	1.20
p	070	310	-155	"	646	0.56
c	018		-745	"	1236	
γ	020	312	-799	494	1293	
δ	028	315	-553	498	1051	
ε	040	318	-398	502	900	

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H 3283 3 ζ Lyrae MKA $2^h 49^m$

a	270	310	431	491	060	$Z = 36°$
d	270	310	431		060	
b	275	310	439		052	1.24
p	220		342		149	
c	145		161		360	
g	145		161		330	
e	162		210		281	
z	192		283		208	

4 ζ Lyrae

a	250	350	398	544	146
d	255	"	406	"	138
b	250	"	398	"	146
p	170	"	280	"	314
c	105	348	021	542	523
g	105	"	021	"	523
e	118	342	072	534	472
z	142	"	152	"	392

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N 3283 5 ζ Lyrae

a	210	356	322	556	234
d	200		307	"	255
e	205	358	312	"	244
f	135		130	"	426
c	078	360	-108	"	664
r	075	360	-125	"	681
s	085	355	-071	550	627
a	102	352	009	547	547

6 ζ Lyrae

a	170	352	230	546	316
d	170	352	230		316
e	178	"	250		296
f	100		000		546
c	058	352	-237		783
r	055		-260		806
s	080	"	-097		643
c	080	"	-097		643

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1926phae.proj..90G

H 3283 8 1 Vulpeculae $3^h 20^m$ $Z = 47$

+0.23

α	240	355	380	550	166	0.63	1.47
α	240	355	380	.	170	0.50	
ε	245	352	389	546	157	0.69	
β	170	350	230	544	324	0.75	
c	095	350	−022	544	566	0.60	
δ	098	350	−009	1	553	0.68	
δ	110	348	041	542	501	0.64	
ε	125	348	097	538	441	0.59	

7 η Lyrae $3^h 02^m$ $Z = 35$

−0.02.

α	230	350	362	544	182	0.53	1.22
α	220	350	342		202	0.45	
ε	228	350	358		186	0.52	
β	120		079		465	0.22	
c	075		−143		687	0.22	
δ	070	350	−155		699	0.28	
δ	085	350	−071		615		
ε	105	"	026		523	0.32	

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H 3283 1 Z Aquilae $2^h 15^m$ $Z = 41°$

+0.09

						1.33
a	190	280	279	447	168	0.62
α	185	279	267	446	179	0.56
b	185	270	267	431	164	0.62
β	120	.	079		352	0.58
c	080		-097		528	0.74
γ	080	269	-097	430	527	0.75
δ	085	264	-071	428	499	0.65
ε	110	265	041	423	382	0.76

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H 8285 3 γ Lyrae (24) MHA $0^h 8^m$

α	208	315	318	498	180
a	180		255		243
b	222		246		152
l	202		205		193
c	118		072		426
r	102		009		489
s	103		013		485
Σ	111		045		453

$z = 10°$

1.02

γ Lyrae (3)

α	125	318	097	502	405
a	100	318	000		502
b	135	318	130		372
l	130	315	114	498	384
c	050		-301		799
r	038		-420		918
s	040	312	-398		896
Σ	050	312	-301		799

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H 3285 – ~~δ~~ γ Lyrae

d	058	310	-287	491	728
a	082		-495		986
b	060		-222		713
p	062		-208		699
c	010		-1000		1491
γ	009		-1070		1561
δ	010		-1000		1491
ε	020		-699		1190

KA = 0h 0d

z = 3°

1.00

6 η Lyrae

-0.02

d	092	310	-036	491	527	0.54
a	085		-071		562	0.67
b	129		+111		380	0.73
p	100		000		491	0.57
c	055		-260		751	0.80
γ	052		-284		785	0.89
δ	060		-222		713	0.97
ε	072		-143		634	1.02

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H 3285 1 α Coronae bor HA $2^h 59^m$ Z = 39

+0.27

α	070	309	-155	490	645	0.57	1.29
a	048		-319		809	0.42	
β	098		-009		499	0.55	
ρ	080		-097		587	0.43	
c	020		-609		1099	0.57	
γ	018		-745		1235	0.49	
δ	022		-658		1148	0.53	
ε	042		-377		867	0.65	

Repeated tracing HA = $0^h 0^m$

Z = 3.

-0.02 ζ η Lyrae

α	045	170	-357	230	587	0.46
a	028	170	-553	"	783	0.44
β	048	170	-319	"	549	0.47
ρ	045	170	-347		577	0.47
c	005	170	-1.301		1.531	0.29
γ						
δ						
ε	010	170	-1.00		1.230	0.28

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H 3330 1 β Lyrae

α	~~122~~ 140	300	146	477	331
a	122	"	086		391
β	210	"	322		155
β	~~122~~ 190	"	279		198
c	095	"	-022		499
γ	085		-071		548
δ	110		041		436
ε	142		152		325

1.70.

MHA = $4^h\ 34^m$ $\quad$ Z = 540

2 β Lyrae

α	060	290	-222	462	684
a	048	"	-319		781
β	090	"	-046		508
β	~~090~~ 122		+086		376
c	038		-420		882
γ	035	295	-456	470	926
δ	042	295	-377		847
ε	052	"	-284		754

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H 3330 3 γ Lyrae

(327)

α	050	325	-301	575	806
a	032	328	-495		1006
b	0.65	325	-187		702
p	~~100~~ 110	328	041		556
e	027	325	-569		1084
g	022	327	-658		1173
d	025	325	-602		1117
z	039	328	-409		924

6 ω' Cygni H 3h 43m z=39

-0.41 1.29

α	048	302	-319	480	799	0.38
a	035		-456		936	0.45
b	010		-097		577	0.59
p	095		-092		502	0.43
e	025		-602		1082	0.32
g	020		-699		1179	0.28
d	022		-658		1138	0.25
z	040		-398		878	0.44

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H 3330 5. Pegasi ✓ RA = 3h41m

−0.33 Z = 43

1.37

α	020	320	−699	505	1204	
a	025		−602		1107	
b	092		−036		541	0.65
p	125		+097		408	0.66
c	050		−301		806	0.92
γ	050		−301		806	1.00
δ	065		−187		692	1.05
ε	095		−022		527	1.17

RA = 3h54m

Z = 40

1.31

−0.39 9 f' Cygni ? ✓ Identification ?

α	100	315	000	498	498	1.18
a	075		−125		623	1.09
b	150		+177		321	1.15
p	155		190		308	0.93
c	085		−456		954	0.61
γ	025		−602		1100	0.43
δ	032		−495		993	0.52
ε	050		−301		799	0.63

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A3330 7 λ Cygni V RA $3^h 37^m$ Z = 42

-0.35	λ	050	325	-301	√72	813	0.34 1.35
	a	035		-456		968	0.38
	b	080		-097		609	0.52
	p	090		-046		√58	0.30
	c	025		-602		1113	0.24
	r	015		-824		1336	
	s	020		-699		1211	0.00
	e	080		-523		1035	-0.01

RA ~ $3^h 50^m$

Z = 41

8 √5 Cygni V

-0.37 1.33

λ	050	330	-301	578	819	0.32
a	040		-398		916	0.48
b	109		037		481	0.80
p	140		146		372	0.75
c	055		-260		778	0.98
r	055		-260		778	1.06
s	075		-125		643	1.13
e	105		021		497	1.22

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H 3330 γ Lyrae

α	038	320	-420	505	925
a	028		-553		1058
b	052		-284		789
β	070		-155		660
c					
γ	022		-658		1163
δ	020		-699		1204
ε	030		-523		1028

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H 3321 1 γ Lyrae 3^h.

α	285	345	455	538	083
a	270		431		107
b	310		491		047
β	300		477		061
c	165	340	218	532	314
γ	148		170		362
δ	185	338	267	529	262
ε	225	335	352	525	173

$M_{HA} = 3^h\ 30^m$

$Z = 42°$

1.35

2 γ Lyrae

α	200	345	301	538	237
a	145		161		377
b	220		342		196
β	240	345	380		158
c	075		-125		663
γ	055	342	-.260	534	794
δ	065	340	-.187	532	719
ε	095	340	-.022		554

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1926phae.proj..96MG

H 3321

3 ζ Lyrae

α	130	360	114	556	442
a	090		-046		600
b	~~160~~		~~204~~		~~352~~
β	150		176		380
c	040	358	-398	554	952
γ	025	355	-608	550	1158
δ	~~0.30~~ 0.40		-398		948
ε	~~0.50~~ 0.55	353	-260	548	808

4 ζ Lyrae

α	085	360	-071	556	627
a	068		-167		723
b	140		146		410
β	120		079		477
c	040		-398		954
γ	035		-456		1012
δ	~~0.30~~ 0.40		-398		954
ε	~~0.50~~ 0.60		-222		778

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1926phae.proj..9GMG

H 3321 6 ω¹ Cygni ✓ 2ʰ 44ᵐ Z = 30

-0.19

α	180	350	255	544	289	0.61	1.16
a	125		097		147	0.61	
b	190		279		265	0.53	
l	200		301		243	0.55	
c	055		-260		804	0.53	
γ	045		-347		891	0.62	
δ	050		-301		845	0.53	
ε	070		-155		699	0.52	

7 λ Cygni 2ʰ 44ᵐ Z = 32°

-0.17

1.18

α	180	348	114	542	428	0.33
a	098	-	-009		551	0.41
β	170		230		312	0.41
l	150		176		366	0.33
c	035		-456		998	0.23
γ	025		-602		1144	0.32
δ	035		-456		998	0.21
ε	055		-260		802	0.32

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1926phae.proj..90156

H 3321 5 KRP 7739 RA $2^h 46^m$ $z = .38$

-0.08 1.27

α	~~115~~ 122	350	086	544	458	0.29
a	090		-046		590	0.33
b	160		204		340	0.34
β	~~140~~		146		398	0.25
c	035		-456		1000	0.23
γ	025		-602		1146	0.31
δ	030		-525		1067	(0.11)
ε	~~048~~ 0.45		-347		891	(0.19)

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1926phae.proj..9036

H 3938 1 f type 0^h

α	240	500	880	699	319
a	190		279		420
b	310		491		208
β	330		579		180
c	128		107		592
γ	109		037		662
δ	160		204		495
ε	225		352		647

Mean = $0^h 52^m$

$Z = 15^0$

1.04

2 f type

α	090	490	-046	690	736
a	055		-260		950
b	125		097		593
β	190		279		411
c	038		-420		1110
γ	030		-523		1213
δ	040		-398		1088
ε	070		-155		845

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H 3338 3 γ Lyrae

α	040	490	-398	690	1088
a	080		-523		1213
b	090		-046		736
p	140		146		544
c	028		-553		1243
γ	018		-745		1435
δ	028		-553		1243
ζ	040		-398		1088

Y γ Lyrae

α	030	510	-523	708	1231
a	025		-699		1407
b	040		-398		1166
p	090		-046		754
c					
γ					
δ					
ζ	030		-523		1231

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A 3338 5 i Aquilae KA = 0h40m Z = 45°

+0.37

α	045	485	-347	686	1033	0.38	1.41
a	095		-602		1288	0.23	
β	070		-155		841	0.26	
p	140		146		540	0.34	
c	022		-658		1344		
γ	015	482	-824	683	1507		
δ	022	480	-658	681	1339		
ε	042		-377		1058	0.34	

α			
a			
β			
p			
c			
γ			
δ			
ε			

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H 3889

1 p Lyne

d	205	361	312	√57	245
a	180	360	255	√56	301
e	248	360	394	1	162
p	255	"	406		150
c	112	"	049		√07
r	100	359	000	√55	√√5
δ	140	"	146		409
ε	190	358	279	√54	275

MHA = $2^h\ 20^m$ $\zeta = 29°$ 1.14

2 p Lyne

In Cond. col. curves

d	100	325	000	√72	√72	0.84
a	085		-071		√83	0.68
e	155	328	190	√76	327	1.30
p	160		204		312	1.38
c	055	330	-260	√79	779	0.37 √
r	045		-347		866	0.19 √
δ	060		-222		741	0.44 √
ε	090		-046		565	0.83 √

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H 3389 3 γ Lyrae

α	045	331	-247	520	867
a	045		-347		867
β	102	330	009	579	570
p	105		021		498
c	025	328	-602	576	1118
r	025	328	-602	576	1118
δ	030		-523		1041
ε	050		-301		819

γ δ Lyrae

α	030	337	-523	527	1050
a	029	339	-538	530	1068
e	075		-125		655
p	080	340	-097	531	628
c	018		-745		1276
r	015	342	-824	533	1357
δ	018	343	-745	525	1280
ε	035	345	-456	537	993

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1926phae.proj..90MG

H 3389 ε β Cygni HA = 1h 21m Z = 17°

-0.09 1.05

α	045	345	-347	537	894	0.27
a	085		-456		993	0.14
b	105	342	021	584	513	0.82
∫	210	342	322		226	1.04
c	080		-097		631	1.05
γ	070		-155		689	1.11
δ	088		-056		590	1.26
ε						

9 41 Cygni HA = 2h 02m Z = 28°

-0.01 1.13

α	030	315	-523	498	1021	0.86
a	025		-602		1100	-0.07
b	088	318	-056	502	558	0.20
∫	125	325	097	572	415	0.49
c	040	328	-398	516	914	0.53
γ	040	320	-398	519	917	0.69
δ	058	332	-237	521	758	0.72
ε						

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H 3389

HA = $1^h 28^m$ Z = 37°

6 ε Delphini

+0.11 1.25

α	045	348	-347	541	888	0.27
a	040	350	-398	544	942	0.22
e	085		-071		615	0.08
β	110	351	041	545	704	0.27
c	020		-698		1244	0.09
γ	015		-824		1369	-0.01
δ	020		-698		1244	+0.04
ε	032		-495		1040	-0.07

HA = $1^h 35^m$

Z = 38°

7 ε Delphini

+0.13 1.27

α	050	345	-301	537	838	0.34
a	045	348	-347		884	0.30
e	095	345	-022		559	0.20
β	100		000		537	0.20
c	028		-553		1090	0.32
γ	024	346	-620	539	1159	0.25
δ	025		-682		1141	0.17
ε	038		-420		959	0.05

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1926phae.proj..90MG

H 3289 8 55 Cygni HA = 1h 28m Z = 17°

-0.09	α	060	346	-222	331	753	0.57
	a	055		-260		791	0.45
	b	140		146		385	0.61
	d	180		255		276	0.82
	c	070		-155		686	0.93
	γ	070		-155		686	1.10
	δ	090		-046		577	1.07
	ε	120		079		452	0.94

1.05

11 π_2 Cygni HA = 1h 06m Z = 12°

-0.12

1.02

	α	045	350	-347	344	891	0.27
	a	040		-398		942	0.21
	b	078		-108		652	0.00
	d	100	352	000	346	346	0.17
	c	018	353	-745	348	1293	-0.07
	γ	014	355	-745	350	1295	0.06
	δ	020		-699		1249	0.03
	ε	029		-553		1103	-0.18

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H 3389 13 A Cygni HA = 2h 18m

Z = 25°

1.10

-0.02

α	120	340	079	531	452	0.85
a	097		-009		540	0.82
ℓ	180		255		276	0.89
ρ	200		301		230	1.00
c	068		-167		698	0.89
γ	060		-222		753	0.97
δ	080	343	-155	535	690	0.82
ε	095	345	-022	537	559	0.75

HA = 1h 10m

14 10 Lacertae

Z = 17°

1.05

-0.09

α	140	345	146	538	392	0.99
a	100		000		538	0.82
ℓ	165		217		321	0.76
ρ	190		279		259	0.87
c	058		-237		775	0.75
γ	045		-347		885	0.73
δ	055		-260		798	0.65
ε	072		-143		681	0.83

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H 3889 10 σ Cygni HA: 1h 24m Z=16°

-0.10

α	035	345	-456	537	993	0.11	1.04
a	035		-456		993	0.13	
e	087		-066		597	0.11	
p	120		+079		458	0.38	
c	032		-495		1032	0.39	
δ	035		-456		993	0.54	
δ	045		-347		884	0.52	
ε	060		-222		759	0.41	

HA = 3h 11m 12 19h 59.8 +35° 45' Ae star Cont. arc 0-p type Z=38

+0.13

α	182	350	260	514	284	1.48	+0.64 ~ 1.27
a	190		279		265	1.54	+0.86
e	265		422		122		
p	255		406		138		
c	162	352	210	546	336	1.41	+1.04
ζ	155		190		356	1.36	+1.14
δ	178		250		296	1.51	+1.07
ε	~~200~~		301		245	1.63	+(0.80) extinct?

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H3329

1 γ Lyrae

α	130	405	114	607	493
a	098		-009		616
b	170		230		377
β	230		362		245
c	075		-125		732
γ	070	403	-155	605	760
δ	095	400	-022	602	624
ε	133	400	124		478

MM = 3h 28m Z = 41°

1.33

2 γ Lyrae

α	035	390	~~-456~~ -523	591	~~1047~~ 1114
a	020		~~-721~~ -699		~~1312~~ 1290
b	060		-292		~~883~~ 813
β	110		071		~~515~~ 550
c	025		-602		1193
γ	019		-721		1312
δ	025		-602		1193
ε	035		-456		1047

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H 3339 3 ζ Lyrae

α	018	419	-745	622	1367
a					
ε	028		-553		1175
ρ	070	413	-155	616	~~1771~~ 1771
c					
γ					
δ					
ε	021	410	-678	613	1291

9 A Cygni HA: 2h 57m Z=325

1.18

-0.15

α	080	402	-97	604	711	1.25
a	055		-260		864	1.23
ι	~~150~~ 132		~~+46~~ 111		488	1.30
ρ	170		230		374	1.19
c	050	400	-301	602	903	1.22
γ	044		-357		959	1.25
δ	060		-222		824	1.24
ε	088		-056		658	1.27

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H 3339 10 10 Lacertae RA = 1h 50m Z = 21

-0.26 1.07

α	080	395	-097	596	693	1.28
a	055		-260		856	1.24
b	110	391	041	592	551	1.19
p	140	390	146	591	445	1.01
c	030		-523		1114	0.87
γ	025	388	-602	589	1191	0.93
δ	030		-523		1112	0.86
ε	045	387	-347	588	935	0.91

8 ν Cygni RA = 2h 43m Z = 33

-0.14 1.19

α	060	392	-222	593	815	1.12
a	040		-398		991	1.09
b	096		-018		611	1.09
p	141	390	149	591	442	1.02
c	030		-523		1114	0.88
γ	028		-553		1144	0.97
δ	040		-398		989	1.03
ε	058		-237		828	1.03

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H 3339 // π_1 Cygni HA = $2^h 58^m$ Z = 39°

-0.15	α	040	393	-398	594	992	0.90	1.18
	a	025		-602		1196	0.85	
	b	068		-167		761	0.94	
	β	110	390	040	591	551	0.75	
	c	015		-824		1415		
	γ	010		-1000		1591		
	δ	012		-921		1572		
	ε	026		-585		1176	0.59	

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1926phae.proj..90MG

H 3403

MA $4^h 32^m$

4 β Lyrae (δ4)

α	109	173	037	238	201	206	203
a	100		000		238	206	222
b	129	171	111	233	122	091	106
p	147		167		066	077	072
c	095		-022		255	246	250
γ	082		-086		319	313	316
δ	088		-056		289	303	296
ε	100	170	000	230	230	218	224

from 3 | final

$Z = 53^\circ$ ✓

1.66

5 β Lyrae (δ3)

α	060	175	-222	243	465
a	058		-237		480
b	096		-018		261
p	118	178	0~~82~~	250	~~178~~ 189
c	060	179	-222	253	475
γ	052		-284		537
δ	060	180	-222	255	477
ε	070		-155		410

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H. 3403

3 δ Lyrae (D4)

α	115	185	061	267	206
a	115	185	061		206
b	150		176		091
β	155		190		077
c	105		021		246
γ	090		-046		313
δ	092		-036		303
ε	112		049		218

6 δ Lyrae (D2)

α	050	182	-301	260	561
a	045		-347		607
b	078	181	-108	258	366
β	100		-000		258
c	045		-347		605
γ	040	181	-398		656
δ	045	181	-347		605
ε	055	181	-260		578

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A 8403 7 ζ Lyrae (D1)

α	042	175	-377	243	620
a	035		-456		699
b	063	173	-201	238	439
β	060	172	-222	236	458
c	031		-509		745
γ	020	171	-523	233	756
δ	035	170	-456	230	686
ε	048	169	-319	228	547

HA = 4h 25m

2 45 Draconis Z = 43.

-0.29

1.37

α	035	189	-456	276	732	
a	030		-523		799	
b	070	187	-155	272	427	-0.01
β	102	185	009	267	258	+0.31
c	058		-237		504	+0.65
γ	058		-237		500	+0.87
δ	080		-097		364	+1.23
ε						

129
42

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H 3403

1 45 Draconis

HA = 4h 14m

Z = 44°

-0.26

1.39

α	034	185	-469	267	746	
a	032		-495		762	-0.18
b	070		-155		422	+0.05
β	105	181	021	258	237	+0.51
c	055	180	-260	255	515	+0.61
γ	055	178	-260	250	510	+0.84
δ	080		-097		347	+1.30
ε						

HA = 1h 26m

8 α Lacertae

-0.61

α	095	198	-022	297	319	1.20
a	079		-102		399	1.01
b	125		+097		200	1.03
β	120	195	079	290	211	0.57
c	055		-260		550	0.50
γ	052		-284		524	0.61
δ	065		-187		477	0.78
ε	090		-0.46		336	

1.05

Z = 17°

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1926phae..proj...9G

H 3403 10 π_2 Cygni $kA = 2^h 57^m$ $Z = 30°$

−0.50	α	050	185	−301	267	568	0.29	1.16
	a	045		−347		614	0.29	
	b	062		−215		482	0.24	
	p	079		−102		369	0.10	
	c	040		−398		665	0.17	
	γ	038		−420		687	0.21	
	δ	040		−398		665	0.05	
	ε	050		−301		568	−0.02	

$k = 2^h 46^m$ $Z = 30°$

16 HRP8926

1.16

−0.50

α	090	180	−046	255	301	1.25	
a	085		−071		326	1.24	
b	125		097		158	1.25	
p	120		079		176	0.87	
c	068		−167		422	0.91	
γ	060		−222		477	0.95	
δ	069		−161		416	1.03	
ε	082		−086		341	1.01	

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H 3403 11 31 Pegasi H = 2h 34m Z = 45°

1.41

−0.25	α	069	155	−161	190	351	1.10
	a	060	157	−222	196	418	0.93
	b	080		−097		293	0.62
	β	098	159	−009	201	210	0.60
	c	048		−319		520	0.60
	γ	046		−398		599	0.53
	δ	046		−337		538	0.61
	ε	058		−237		438	0.70

H = 2h 34m Z = 30

17 δ Cass.

1.16

−0.50	α	110	185	041	267	226	1.46
	a	102		009		258	1.42
	b	128		107		160	1.23
	β	142	188	152	274	122	1.18
	c	080		−097		371	1.09
	γ	070		−155		429	1.11
	δ	080		−097		371	1.20
	ε	090		−046		320	1.13

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H 3403 14 19 Cephei HA 3h 36m Z = 37°

-0.41							1.25
α	080	182	-097	260	357	1.09	
a	075		-125		385	1.04	
b	115		061		199	1.05	
β	132	187	121	272	157	1.01	
c	075	188	-125	274	399	0.99	
γ	070	189	-155	276	431	1.10	
δ	080		-097		375	1.19	
ε	100	190	000	279	279	1.27	

15 λ Cephei HA 3h 46m Z = 37°

-0.41							1.25
α	092	195	-0.36	290	326	1.19	
a	090	192	-046	283	329	1.22	
b	120	192	114		169	1.20	
β	145		161		122	1.19	
c	1090	190	-046	279	325	1.25	
γ	095		-022		301	1.55	
δ	105		+021		258	1.62	
ε	118	189	+072	276	204	1.59	

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1926phae.proj..90MG

H 3403 13 6 Lacertae HA $2^h 57^m$ $Z = 32°$

−0.48	α	068	180	−167	255	423	0.88	1.18
	a	065		−187		442	0.87	
	ℓ	098		−009		264	0.75	
	β	112	180	+049		206	0.60	
	c	058		−237		492	0.69	
	γ	049		−310		565	0.65	
	δ	053		−276		531	0.56	
	ε	068	180	−167		422	0.69	

12 2 Lacertae HA $2^h 48^m$ $Z = 30°$

−0.50	α	070	180	−155	255	410	0.92	1.16
	a	055		−260		576	0.63	
	ℓ	080		−097		352	0.37	
	β	090		−046		301	0.21	
	c	030	178	−523	250	773	−0.06	
	γ	025	178	−602	250	852		
	δ	035		−456		706	−0.06	
	ε	048		−319		569	−0.10	

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1926phae.proj..9GMG

H 3403 18 ζ Cas. X

α	070	185	-155	267	422	0.88	
a	085		-187		454	0.84	
b	140		146		121	1.42	
l	150	180	176	255	079	1.46	
c	120		079		176		
	135		130		125		
δ	150		176		079		
δ2							

17 ϭ Cas $h = 2^h 34^m$ $Z = 36°$

-0.50	α	125	190	097	279	182	1.58	1.16
	a	111		045		234	1.48	
	b	135		130		149	1.29	
	l	150	191	176	281	105	1.28	
	c	082	192	-086	283	369	1.10	
	r	075	195	-125	290	415	1.18	
	δ	080		-097		387	1.14	
	c							

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178

H 3403 19 ζ Persei HA 0h 18m Z = 9°

-0.65	α	075	179	-125	253	378	1.02
	a	068	179	-167		420	0.94
	b	100		000		253	0.79
	p	132	179	121		132	1.10
	c	060	180	-222	255	477	0.74
	g	040		-398		653	0.32
	d	050		-301		556	0.47
	e	060		-222		477	0.43

1.01

Uncertain!

9 HRP 8281 HA = 2 38

Z = 30°

-0.50

	α	080	190	-097	279	376	1.02
	a	075	188	-125	274	399	1.00
	b	110	188	041		233	0.88
	p	125		130		144	1.07
	c	078	185	-108	267	375	1.08
	g	075		-125		392	1.24
	d	085		-071		338	1.34
	e	100	184	000	265	265	1.33

1.16

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H 2337

3 ζ Lyrae

α	100	265	000	423	423
a	075	268	-125	428	553
ε	140	269	146	430	284
β	180	270	255	431	176
c	063		-201		632
γ	060	271	-222	433	655
δ	054	274	-268	437	705
ζ	079	275	-102	439	541

MPA = 4h0m

Z = 48°

4 ζ Lyrae

1.49

α	022	280	-658	447	1105
a	020	280	-699		1146
ε	070	280	-155		602
β	063		-201		648
c	017		-770		1217
γ	012		-921		1368
δ	018	278	-745	444	1189
ζ	026	277	-585	442	1027

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H 3337

δ γ Lyrae

α	015	200	-824	477	1301
a	010		-1000		1477
b	038		- 920		897
p	040		- 398		875
c					
γ					
δ					
ε	018		-745		1222

1 55 Cygni

HA = $0^h 32^s$ Z = 8°

1.01

-0.48

d	010	272	-1000	434	1.434	
a						
b	050	275	-301	439	740	0.55
p	087		-660		499	1.060
c	020		- 523		962	1.12
γ	020		- 523		962	1.20
δ	035		- 456		895	1.27
ε	064		- 194		633	1.37

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H 3337 9 v Cygni Overexposed! HA: $1^h 46^m$

-0.40	α	024	285	-620	455	1079	0.79	Z = 23
	a	020		-523		978	0.99	
	e	060	289	-222	460	682	0.63	1.09
	p	070		-155		615	0.80	
	c	018		-745		1205	0.77	
	b	010		-1000		1460	0.60	
	s	020		-699		1159	0.81	
	ζ	030	289	-523		983	0.81	

7 f' Cygni is this f' Cygni? HA = $1^h 21^m$

-0.36

Z = 28

α	035	289	-456	413	869	1.04	1.13
a	029		-538		951	1.03	
e	080		-097		570	0.94	
p	069		+161		574	0.88	
c	020		699		1112	0.92	
γ	013		-886		1299	0.83	
δ	020		-699		1112	0.91	
ε	030		-524		937	0.89	

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H 3337

8 2 Cygni HA: $3^h 21^m$ $Z = 33^\circ$

1.19

−0.30

α	100	280	000	447	447	1.49
a	067		-174		621	1.43
b	112		049		398	1.20
β	138		140		307	1.31
c	040	282	-398	450	948	1.17
γ	030	283	-523	457	974	1.19
δ	030	285	-525	454	977	1.15
ε	050		-307		755	1.18

10 HRP 7739 HA $3^h 18^m$ $Z = 43^\circ$

1.37

−0.68

α	058	260	-237	415	652	1.29
a	043		-367		782	1.25
b	092		-036		457	1.09
β	112		+049		366	1.22
c	025		-602		1017	1.06
γ	020		-699		1114	1.04
δ	025	261	-602	400	1002	1.10
ε	036		-444		844	1.03

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H 3415 10 α Lacertae

d	335	460	525	663	138 v
a	290		462		201 v
b	338		553		110 v
f	360		556		107 v
c	160		204		459 v
g	150		176		487 v
h	175		243		420 v
i	228		258		305 v

MHA = $2^h 10^m$ Z = 24

1·10

11 β Lacertae

d	260	570	415	708	293 v
a	200		301		407 v
b	300		477		231 v
f	325	572	572	710	198 v
c	100	575	000	712	712 v
g	082		-086		798 v
h	108		033		679 v
i	150		176		536 v

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H 3415 α Lacertae 13

α	100	479	000	680	680 v
a	065		-187		867
b	150		176		504
?	130		114		566
c	025		-602		1282
d	022		-658		1338
e	035		-456		1136
f	060		-222		902

1 o Aquarii HA = 0h45m

+0.37 1.47

α	0					
a	098	460	-009	663	672	0.28
b	200		201		362	0.33
β	140	462	146	665	579	(0.06) ?
c	040	463	-398	666	1064	0.22
g	035		-456		1122	0.26
f	050	468	-201	671	972	0.21
z	080	470	-097	672	769	0.23

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H 3445 2 o Aquarii HA = 0h 53m

Z = 47

+0.37

α	118	490	072	690	648	0.18	
a	105	489	021	689	668	0.27	1.47
b	200	488	301	688	387	0.26	
l	165	488	217		471	(0.13)	
c	048	487	-319	687	1006	0.27	
d	041	486	-387	686	1073	0.33	
δ	062		-208		894	0.34	
ε	095		-022		708	0.35	

HA 0h 43m

Z = 43°

3 π Aquarii

+0.27

1.37

α	100	479	000	680	680	0.00
a	075		-125		805	0.08
b	155		190		490	0.03
p	160		204		476	0.12
c	038	477	-420	678	1098	0.17
d	029	475	-538	676	1214	0.15
δ	047		-328		1004	0.16
ε	070		-155		837	0.15

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M 3415 4 π Aquarii HA 0h 57m Z=43°

+0.27

α	095	490	-022	690	712	-0.03	1.37
a	068		-167		857	+0.02	
ℓ	143	488	155	689	534	-0.05	
b	140		146		543	+0.03	
c	029	484	-538	685	1223	+0.05	
γ	025		-602		1287	+0.06	
δ	040	480	-398	681	1079	+0.07	
ε	060		-222		903	+0.02	

+0.19 ζ β Piscium HA 0h 22m Z=39° 1.29

α	095	475	-022	676	698	-0.02
a	065		-187		863	+0.01
ℓ	138		140		536	-0.05
b	130		114		562	+0.01
c	022	477	-658	678	1336	-0.04
γ	018		-745		1423	-0.09
δ	030		-523		1201	-0.08
ε	049	478	-310	679	989	-0.12

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1926phae..proj...9G

K 2405 6 p Piscium KA. $0^h 30^m$

$Z = 40°$

+0.21

α	118	475	072	677	605	0.10	1.31
a	082		-086		763	0.14	
e	160		204		473	0.07	
ρ	150		176		501	0.08	
c	030		-523		1200	0.07	
g	025		-602		1279	0.07	
δ	082		-495		1172	-0.04	
ε	055		-260		937	-0.03	

KA = $2^h 57^m$

$Z = 32$

9 A Cygni

+0.08

α	190	480	279	681	402	0.45	1.18
a	145		161		520	0.53	
e	262		418		263	0.62	
ρ	225		352		329	0.53	
c	070		-155		836	0.54	
g	060	479	-222	680	902	0.58	
δ	080		-097		777	0.56	
ε	115	478	061	679	618	0.54	

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h 3445 16 λ Cotthop HA = 2h 05m Z = 24

0.0

α	120	470	079	672	593	0.12	1.10
a	089		-057		723	0.19	
e	190		279		393	0.25	
p	140		146		526	0.05	
c	022		-658		1330	-0.03	
γ	020		-699		1371	-0.03	
δ	033		-481		1153	-0.02	
ε	052		-284		956	-0.08	

8 ϖ Cygni 21 14 +29 2h 45m Z = 25

+0.06

α	170	448	230	657	421	0.42	1.16
a	118	445	072	648	576	0.44	
e	188		274		374	0.34	
p	190		279		369	0.30	
c	045		-347		995	0.30	
γ	035		-456		1104	0.28	
δ	052		-284		932	0.28	
ε	070		-155		803	0.18	

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HR 145 15a HRP 144 O 54 Z = 17

-0.05	α	190	430	279	634	355	0.57
	a	135		130		504	0.55
	b	223	432	348	636	288	0.54
	β	205	435	312	639	327	0.39
	c	050	438	-301	642	943	0.37
	δ	045	440	-347	644	991	0.44
	δ	060		-222		866	0.38
	ε	095	440	-046	644	690	0.39

1.05

HR 346
Standard
of 145

1 α Lacerta (Comparison Star)

α	365	475	562	677	115	1.57
a	360		556		121	
b	410		613		064	
β	390		591		086	
c	325		572		165	
δ	320		505		172	
δ	330		578		159	
ε	350		544		133	

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1926phae.proj..90MG

1926

3 ξ Cas $2^h 6^m$ V $z = 22$

1.08

-0.02

α	~~190~~					
a						
b	190	450	279	653	374	0.31
p	170		230		423	.0.20
c	030		-523		1176	0.10
γ	022		-658		1311	0.04
δ	038	452	-420	655	1075	0.07
ε	052	455	-284	658	942	−0.05

$2^h 17^m$ $z = 24$

4 ξ Cas

α	110	450	041	653	612	0.09
a	068		-167		820	0.06
b	137	452	137	655	518	−0.02
p	125		097		558	+0.02
c	018	455	-745	658	1403	−0.07
γ	020		-699		1387	−0.02
δ	020		-523		1181	−0.07
ε	040		-398		1056	

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1926phae.proj..90MG

H 3446 11 A Persei $0^h 15^m$ $Z = 10°$

-0.08

α	170	470	250	672	442	0.37	1.02
a	110		041		631	0.34	
b							
p							
c	080		-097		769	0.64	
g	090		-046		718	0.90	
δ	140		146		526	1.17	
ε	190		279		393	1.15	

ζ Cass. 2 00 $Z = 27°$

+0.02

1.12

α	050	475	-301	677	978	
a	085	470	-456	672	1128	
b	125		097		575	(-0.13)
p	205		312		660	(-0.08)
c	060		-222		894	0.44
g	070		-155		827	0.70
δ	102	468	009	670	661	0.80
ε	142		152		518	0.79

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1926phae.proj..9GMG

Hγνδ $\sqrt{\varphi}\cos\beta\,\Delta\,\sqrt{r}$ $z=25°$ 1.10

0.00

α	070	γ65	-155	668	823	(-0.14)
a	045		-347		1015	(-0.13)
b	150		176		492	+0.03
β	230		362		306	+0.43
c	068		-168		836	+0.53
γ	075	γ63	-125	666	791	+0.77
δ	120	γ61	079	664	585	+0.99
ε	160		204		γ60	+0.94

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1926phae.proj..99MG

H 7428 α Lacertae 6 M. KA = 1h53m

Z = 20°

α	225	328	352	576	164
a	195		290		226
b	255		407		109
p	245		389		127
c	110		041		475
g	095		-022		538
δ	130	326	114	573	399
ε	180	325	255	572	257

1.06

α Lacertae 8

α	150	350	176	544	368
a	115		061		483
l	190		279		265
p	210		392		222
c	065		-187		731
r	060		-222		766
δ	075	351	-125	545	670
ω	120		079		466

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1926phae.proj..90MG

A 3490 7 α Lacertæ

α	170	350	230	544	314
a	125		097		447
b	200		301		243
β	210	348	322	542	990
c	075		-155		697
γ	069		-222		766
δ	082		-086		628
q	125		097		445

+0.19 4 31 Pegasi KA $1^h 31^m$ $Z = 37°$ 1.25

α	190	340	279	532	253	0.53
a	150		176		356	0.52
b	215		332		200	0.49
β	220		342		190	0.48
c	080		-097		629	0.49
γ	065		-187		719	0.42
δ	095		-028		560	0.48
ε	130		114		418	0 43

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H 3420 11 ξ Cas

α	160	360	204	556	352	0 12
a	115		061		495	
b	205		312		244	
p	190		279		277	
c	050		-301		857	
γ	040		-398		954	
δ	060		-222		778	
ε	092		-036		592	

HRP 144

α	200	342	301	534	233	0.59
a	135		130		404	0.46
b	200		307		233	0.37
p	230	340	362	532	170	
c	060		-222		754	
γ	048		-319		851	
δ	062		-208		740	
ε	105		021		511	

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1926phae.proj..90MG

Standardstar for α to b.
is affected by an error
of unknown nature.
α - b reported, exept for γ Lyrae

H 3829

1 γ Lyrae

α	340	418	582	621	089	
a	308		489		132	
b	355 (Ws)		550		071	159
p	327		574		107	130
c	165	417	218	620	402	
γ	150	415	176	618	442	
δ	190		279		339	
ε	245	414	389	617	228	

MA = 0h 32m Z = 12°

1.02

2 γ Lyrae

α	220	408	342	611	269
a	185		267		344
b	275		439		172
p	195 -	410	290	613	323
c	075		-125		738
γ	069		-161		774
δ	093 -	411	-032	614	626
ε	140	411	146		468

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H 3329 3 ζ Lyrae

α	150	440	176	644	488
a	120		079		565
b	215		332		312
p	145		161		483
c	050		-301		945
γ	048	441	-319	644	963
δ	055	442	-260	645	905
ε	075		-128		770

4 ζ Lyrae

α	1200	420	079	623	544
a	080		-097		720
b	130		114		509
p	130		+147		509
c	030		-523		1146
γ	025		-638		1264
δ	030		-523		1146
ε	045		-347		970

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H 3329 $\sqrt{}$ -3 Vulpeculae $0^h 28^m$ $Z = 18°$

+0.03

α	250	420	415	623	208	0.92	1.05
a	218		338		285	0.93	
b	280	418	447	621	174	0.75	
l	270	417	431	620	189	1.15	
c	1.00		021		600	0.98	
γ	080	415	-097	618	715	0.85	
δ	095		-122		740	0.58	
ε	130		114		504	0.69	

+0.04

8 62 Cygni $1^h 32^m$ $Z = 19°$

α	220	420	348	623	285	0.72	1.06
a	170		230		393	0.65	
b	255		405		217	0.54	
l	250		398		225	1.04	
c	100		000		623	0.97	
γ	092		-036		659	0.96	
δ	112		049		574	0.90	
ε	150		176		447	0.80	

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H 3329 — 9 – 12 Vulpeculae — $2^h 14^m$ — $z = 25°$

+0.08	α	260	420	415	623	208	0.92	1.10
	a	210		322		201	0.87	
	b	285		455		168	0.73	
	β	260	421	415	624	209	1.01	
	c	100	423	000	626	626	0.97	
	γ	090	425	-046	628	674	0.95	
	δ	097	426	-013	629	642	0.75	
	ε	125		097		532	0.65	

$0^h 52^m$ — $z = 20°$

+0.04 — 6 – 3 Vulpeculae — 1.06

α	210	312	322	494	172	1.06
a	165	315	218	498	280	0.94
b	215		332		166	0.76
β	195		290		208	1.09
c	077		-113		611	1.05
γ	068		-167		665	0.95
δ	082		-086		584	0.87
ε	100		000		498	0.70

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H3329 7 – 8 Cygni $1^h\ 0^m$ $Z = 14°$

+0.01 1.03

α	205	440	312	644	332	0.60
a	150		176		468	0.57
β	220		342		302	0.82
p	210		322		322	
c	065		-187		831	0.56
γ	048	438	-319	642	961	0.32
δ	059		-229		871	0.37
ε	075		-125		767	0.30

$2^h\ 27^m$ $Z = 29°$

+0.12 10 – 22 Cygni 1.14

α	250	420	398	623	225	0.87
a	202		305		318	0.93
β	288	418	459	621	162	0.76
p	240	415	380	618	238	1.00
c	100	412	000	615	615	0.99
γ	085		-071		686	0.97
δ	100	410	000	613	613	0.82
ε	125		097		516	0.67

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1926phae.proj...90MG

$4^h 10^m$

H 3329 12 ζ Lyrae (low) $z = 50°$

+0.54 1.56

α_{325}	325	439	512	642	130	128
a_{326}	280	435	447	638	191	123
b	260		536		082	120 114
ρ_{285}	310	430	491	634	143	132 128
c[illegible]	130		114		520	122
γ	122	428	086	631	545	123
δ	170	424	230	627	297	136
ε	225		252		275	132

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1926phae.proj..96MG

H 3287 2 glyrae

Hand for b is erroneous

α	220	416	342	613	271
a	188		274		339
b	270		431		182
p	220		342		271
c	100		000		613
γ	100		000		613
δ	140	412	146	615	469
ε	182	413	260	616	256

1.37 Left A = $3^h 37^m$ Z = 43° 1.37

3 glyrae

α	200	440	301	644	343
a	145		161		483
b	225		352		292
p	200		301		343
c	070		-155		799
γ	072	439	-143	643	786
δ	092	438	-036	642	678
ε	122		086		556

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H 3287 γ Ophiuchi

α	140	415	146	618	472
a	100		000		618
b	170		230		388
β	140	412	146	615	469
c	045	411	-347	614	961
γ	042	410	-377	613	990
δ	060		-222		835
ε	080		-097		710

5 – 12 Vulpeculae $3^h 13^m$ $Z = 45$

+0.04 1.41

α	175	410	243	613	370	0.23
a	125		097		516	0.22
b	170		230		383	(0.02)
β	160	408	204	611	407	0.12
c	050		-301		912	0.08
γ	042		-377		988	0.02
δ	058	407	-237	610	847	-0.02
ε	070	405	-155	608	763	-0.08

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H 3287 7 – 22 Cygni $3^h\,40^m$ $z = 42°$

-0.02 1.35

α	225	400	352	602	250	0.85
a	180		255		347	0.71
l	240		380		222	(0.53)
p	220		342		260	0.76
c	095		-022		624	0.75
b	090		-046		648	0.65
s	100		000		602	0.46
q	120	398	079	600	521	0.39

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H 3320 1 2 Cygni $0^h 22^m$ $z = 22$

−0.09 1.08

α	135	350	130	544	414	0.49	
a	112		049		495	0.75	
b	212		326		218	0.88	wrong
p	180		255		289	0.65	Ann Fdn
c	058		−168		752	0.92	
γ	060		−222		766	1.16	
δ	082	352	−086	546	632	1.17	perhaps g Cygni
ε	140		146		400	1.32	

3 − i Aquilae $0^h.45^m$ $z = 45°$

+0.21 1.41

α	090	380	−046	580	626	0.25
a	060		−222		802	0.28
l	135		130		450	0.32
p	105	383	021	583	562	0.27
c	020	385	−690	586	1276	0.33
γ	018		−745		1331	0.44
δ	023		−638		1224	0.37
ε	038		−420		1006	0.42

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H 3820 — 6 P Cygni — $1^h\ 0^m$ — $Z = 12°$ — 1.02 — −0.17

α	095	380	−022	580	602	0.27
a	065		−187		767	0.32
b	180	378	255	578	323	0.58
β	160		204		374	0.51
c	070	375	−155	574	729	0.96
γ	065		−187		761	1.17
δ	090	370	−046	568	614	1.20
ε	120		079		489	1.18

176 371 246 568 322 (1.03)

$Z = 11°$ — $0^h\ 43^m$ — 1.02 — −0.17

4 — 22 Cygni

α	102	386	009	587	578	0.30
a	080		−097		684	0.43
b	168		225		362	0.50
β	175	385	243	586	343	0.55
c	040		−398		984	0.57
γ	082		−495		1081	0.70
δ	042		−377		963	0.65
ε	055		−260		846	0.65

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H 3320 5 b^2 Cygni $0^h 43^m$ $z = 12$

1.02

-0.17 α	180	395	255	597	342	0.61
a	115		061		536	0.68
b	187		272		325	0.59
β	180	394	255	596	341	0.55
c	040		-398		994	0.56
γ	030	393	-523	594	1117	0.66
δ	040	392	-398	593	991	0.61
ε	056	390	-252	591	843	0.65

MMA = $2^h 37^m$

$z = 33°$

1.19 7 β Lyrae

α	220	285	342	455	113
a	190		279		176
b	235		371		084
β	210		322		133
c	080		-097		552
γ	078		-108		563
δ	100		000		455
ε	145		161		294

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A 3320

8 β Lyrae

α	150	280	176	447	271
a	090	.	-046		493
b	150		176		271
β	160	278	204	444	240
c	040	277	-398	443	841
γ	025	276	-602	441	1043
δ	035	275	-456	439	891
ε	045	274	-347	438	785

9 β Lyrae

α	082	300	-086	477	563
a	050		-301		778
b	102	299	009	476	467
β	090		-046		522
c	015	297	-824	473	1297
γ	010		-1000		1473
δ	015		-824		1297
ε	025		-602		1075

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10 g Lyrae

d	070	300	-155	477	682
a	040		-398		875
b	080		-097		574
)	088		-056		533
c	015	298			1297
g	010	297			1473
d	015				1297
e	025				1075

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H 3286 1. ζ Lyrae

α	370	445	568	648	080
a	320		505	648	143
c	370	444	568	647	079
p	360	440	556	644	088
c	205		312		332
r	212		326		318
δ	258		412		282
ε	295		470		174

1.07

MKA. $1^h 30^m$ $z = 210$

2 ζ Lyrae

α	250	450	398	653	255
a	220		342		311
b	210		491		162
p	250		398		255
c	110		041		613
δ	110		041		613
ε	148		170		483
ζ	205	453	312	656	344

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H 3286 3 ϕ Lyrae

α	187	433	272	636	76 4
a	135	435	130	638	508
b	220		242		296
β	190		279		359
c	070		-155		793
γ	065	429	-187	643	830
δ	085	420	-071	644	715
ε	112		049		595

4 ϕ Lyrae

from C. curve

α	130	430	114	634	520	0.93
a	082		-086		720	0.57
b	150		176		458	1.07
β	125	430	097		537	0.90
c	040		-398		1032	+0.02
γ	038		-420		1054	0.00
δ	055		-260		894	0.22
ε	070	428	-155	631	786	0.39

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1926phae.proj..90MG

H 3286. 5 3 Vulpeculae from Cord. curve $1^h 45^+$ $Z = 25°$

+0.04	α	090	370	-046	568	614	0.73	-0.20
	a	078		-108		674	0.62	+0.11
	e	120		079		489	1.00	-0.07
	b	080	372	-097	571	668	0.62	-0.28
	c	023	374	-638	573	1211	-0.18	-0.20
Rejected.	d	022	375	-658	574	1232	~~0.0~~	
	f	030		-573		1097	-0.05	-0.28
	g	040		-398		972	+0.11	-0.27

$2^h 15^+$ $Z = 30$

+0.09 6 2 Cygni V 1.66

α	120	350	079	544	465	0.12
a	080		-097		641	0.10
e	135		130		414	0.08
b	115	352	061	546	485	0.08
c	037	355	-432	550	982	0.05
d	038	357	-420	553	973	0.10
f	050	358	-201	554	855	0.05
g	060	358	-222		776	0.03

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1926phae.proj..93MG

H 3286 7 8 Cyg. $2^h 34^m$ $z = 31°$

1.17

+0.10

a	130	340	114	∫32	418	0.20
a	082		-086		618	0.14
b	130		114		418	0.06
b	110		041		491	0.07
c	035		-456		988	0.04
g	032	338	-495	∫29	1024	0.03
d	040		-398		927	-0.05
e	050		-260		789	0.00

ba 2 Cyg. $2^h 15$

1.16

+0.09

a	090	329	-046	∫17	∫63	0.84	-0.09
a	062	330	-208	∫18	726	0.50	-0.01
b	100	330	000		∫78	0.93	-0.14
b	085		-071		∫89	0.78	-0.12
c	020	332	-699	∫21	1221	-0.20	-0.22
g	018	335	-745	∫25	1270		
d	022		-658		1183	-0.16	-0.38
e	030		-523		1048	0.00	-0.39

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1926phae.proj..90MG

H 3421 1 HRP 8281 HA = 2h00

Z = 24

+0.01	α	235	462	371	665	294	0.21
	a	130		114		551	0.39
	b	210		322		343	0.42
	p	250		398		267	0.57
	c	100		000		665	0.82
	t	100		000		665	0.91
	δ	140		146		519	1.00
	ε	180		255		410	0.90

1.10

MHA = 2h03m Z = 23

1.09 2 α Lacerta

1.09

α	300	332	477	521	044
a	250	335	398	525	127
b	300		477		047
λ	290	339	462	520	058
c	160	340	204	532	328
γ	145		161		371
δ	182		260		272
ε	230		362		170

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1926phae.proj..93MG

H 3421 3 Lacerta

						dreu
α	240	335	380	√25	145	136
a	160		204		321	360
e	222	337	346	√28	182	228
p	210	338	322	√29	207	219
c	080		-097		626	709
r	070		-115		684	758
δ	085		-071		600	660
ε	135		+130		399	477

4 Lacerta

α	195	340	290	√32	24·2
a	085		-071		601
e	140		146		386
p	150		176		356
c	032		-495		1027
r	030		-√23		1055
δ	035		-456		988
ε	065		-187		719

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H 3421 5 α Lacerta

α	122	340	086	∫32	446
a	058		-237		769
e	110		041		491
p	075		-125		657
c	015	342	-824	∫31	1358
γ	018	345	-745	∫38	1283
δ	025		-602		1146
ε	050		-301		839

6 α Lacerta

α	250	335	398	∫25	127
a	135	338	130	∫29	399
e	180		255		274
p	205	340	301	∫32	231
c	055		-260		792
γ	050		-301		833
δ	065		-188		720
ε	095		-022		554

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H 3421 12 α Lacertae (var) 3h55m

Z = 36

+0.15	α	282	338	366 v	529 v	163 v	0.59 v	
	a	140		146 v		383 v	0.70 v	1.24
	b	210		322 v		207 v	0.82 v	
	p	210	338	322 v		207 v	0.78 v	
	c	070		-155 v		~~771~~ 684 v	0.79 v	
	g	060		-222 v		757 v	0.77 v	
	d	075		-125 v		684 v	0.76	
	e	105		021 v		508 v	0.66 v	

8' 22 Andron 1h10m

Z = 12

-0.07	α	105	340	021	532	571	-0.04	1.02
	a	035		-456		988		
	b	090		-046		578		
	p	140		146		376	0.27	
	c	035		-456		988	0.41	
	g	035		-456		988	0.41	
	d	065		-187		719	0.65	
	e	111		045		487	0.73	

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1926phae.proj..90MG

13 β Trianguli $0^h 35^m$

$z = 11°$

−0.07

α	400	440	602	644	042	1.52	1.02
a	280	442	447	645	198	1.20	
b	340	443	532	646	114	1.19	
ι	340	445	532	648	106	1.16	
c	160	445	204		444	1.25	
γ	135		130		518	1.18	
δ	155		190		458	1.12	
ε	195		290		358	1.10	

14 γ Trianguli $0^h 43^m$

$z = 13°$

−0.06

α	390	455	591	658	067	1.18	1.03
a	290	458	462		196	1.21	
b	355		550		108	1.16	
ι	350		544		114	1.17	
c	168	458	225	661	436	125	
γ	150		176		485	125	
δ	170		230		431	1.18	
ε	210		322		339	107	

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1926phae.proj..90MG

Repeated tracings

λ3278 1 v Sagittae

α	165	320	217	505	288	0.41
a	140		146		359	0.70
b	205	322	312	508	196	0.73
β	235	324	371	570	129	0.89
c	130		114		396	1.47
γ	135		130		380	1.40
δ	185	325	217	572	295	1.43
ε	185		269		245	(1.35)

λ3282 1 v Sagittae

						2-1	
aa	145	370	161	568	407		
α	145		261	568	407	0.34	+0.25
b	158	368	199	566	369	0.46	+0.47
β	075	364	-125	561	686	0.24	-0.14
c	085		-071		632	0.43	
δ	110		041		520	0.83	-0.83
δ	130		114		447	1.07	-0.77
ε	180		176		385	1.23	-052)

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1926phnae..proj...9D

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1926phaz.proj...9G

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1926phac.proj..9086

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