nnnphac.proj.1920.

KG
11366
v.616

Fundamental Stars
Observations and Reductions
From Jan. 8 1885 to Mar. 29. 1885.
B,

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Reduction of groups of 5 wires for the polar observations to the mean of all the 25 wires

		Reduction Log.
Group I	1st 5 wires = 6.875 sec	0.83725
Group II	2nd " " 3.4375 sec	0.53624
Group III	~~~~~~~~~~	
Group IV	−3.4375 sec	0.53624n
Group V	−6.875 sec	0.83725n

$i = -4^\circ\ 5'\ 5''$

tan i	8.93437n
log 15	1.17609
log 15 tan i	0.11046n

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Jan. 8. 1885

2 H Camel +1.70

	h	m	s	
	19	51		
	+59	33	+	.80
			+	.00

30	1813	19	508
	19	508	(527)
A-I	235	510	551
	276	512	598
	317	510	32
	23,400	510	73
	−32,558		

19 50842 19 51.000

Mean T 19 ~~50.927~~ 51.027

K − .031

T + K 19 50.89

R.A. 19 48.36 − 4.02

T − R.A. ★ 2.53 + 1.36

.61 + .00

ℓ 45.76 − 2.60

− 5.26

19 45.71

J Tauri +.22

3	24	36	
	+12	33	

24	1853	24	28.0
	17.5		30.2
	19.5		32.2
	21.6		34.3
	23.6	19500	36.4
			38.6
	49.8		40.7
	51.2		42.8
	53.4		45.0
	55.4		
	57.6	53.38	

7288 828.2

24 36.440 24 36.467

24 36.454

− .016

24 36.44

24 32.61 − 4.02

+ 3.83 + .18

31.45

− 1.16

− 5.00

24 31.44

Z Persei +.61

3	46	68	
	+31	33	

46	354		498
	377		522
	400		546
	425		570
	451	4014	594
			20
	138		43
	163		66
	190		91
	211		
	237	18.78	

11892 5350

46 59.460 46 59.444

46 59.452

− .019

46 59.43

46 55.82 − 4.03

+ 3.61 + .50

54.25

− 1.54

− 5.10

46 54.33

Assumed R = − 18 48

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	π Ceti	τ_2 Eridani	η Eridani	O_2 Persei
		−.39	−.17	+.79
		+1.08	+1.01	+1.08
h m s	2 38 41	2 45 52	2 50 51	2 57 52
	−14 21	−21 28	−9 21	+38 24
	+.53	+63 51 +.90	+51 44 +.78	+3 59 +.07
	−.02 z cos z			

44	29.2	32.3		44	45.6	49	25.9	32.7		49	46.3	56	19.3	27.5		56	43.2			
	30.5	34.7			47.7		27.2	34.8			47.4		21.2	30.0			45.6			
	32.6	36.9			50.0		29.0	37.0			49.5		23.6	32.6			48.4			
	33.5	38.9			52.3		30.6	38.8			51.4		24.9	35.3			50.9			
	35.0	41.2	3.680		54.4		32.1	41.0	3.686		53.7		26.7	37.9	3.266		53.6			
					56.7						55.9						56.3			
		7.8			59.0			6.2			58.0			9.5			58.9			
		10.0			1.0			8.5			0.2			12.0			1.6			
		12.1			3.3			10.5			2.0			14.7			4.3			
		14.4						12.5						17.3						
		16.8	1.222					14.5	1.044					20.0	1.470					
	1.608		1.0902		4.900	57	1.448		1.0730	57	4.834	57	1.156		1.0736	57	4.828			
44.5	32.16	44.5	54.510	44.5	54.444	49	28.96	49	53.650	49	53.711	56	23.12	56	53.680	56	53.644			
										50										
				44.5	54.477					49	53.680					56	53.662			
					−.017						−.016						−.020			
				45	54.46					50	53.66					57	53.64			
				45	49.97		−4.15			50	49.33		−4.15			57	50.00		−4.15	
					+4.49		−.21				+4.33		−.09				+3.64		+.42	
					49.34		−.02				48.57		−.02				48.28		−.03	
							−0.63						−0.76						−1.47	
							−5.01						−5.02						−5.23	
						45	49.45					50	48.64					57	48.41	

Col S

		31	55.35			9.96878					4.99419					9.89415				
Circ Read W − W Sky W		32	2.85	+22.32		1.34861	25	24.42	+24.72		1.39305	41	23.90	+30.54		1.48487				
Rim		−	26.78			1.42785$_n$	−	31.46			1.49770$_n$	−	30.87			1.48948$_n$				
Corr Circ Read		31	36.07				24	52.96				40	53.03							
		28	57																	
Circ Read	2			+63 50 13		2.06691			+51 43 34		1.86240			+3 59 34		0.60420				
Rim	z																			
Corr Circ Read																				
	73+5+7			+3176					7.31.76					+31.76						
Ref				−125.51					−78.37					−4.32						
Read				+.08					+.05					−.24						
Rrs				+.00					+.00					+.00						
Sum				−125.43					−78.32					−4.56						
δ				+2 53.45					3 22.93					41 50.76						
				10 45.65																
Ref		−21°					−9					+38								
Read																				
Rrs		48	47.72				2	46.1				41	55.32							
Sum		8	40.22																	
δ																				

Mean δ				10 45.65		10 45.65			3 22.93		3 22.93			41 50.76		41 50.76				
Red				− 1.25		−18 9.85			− 1.08		−18 9.85			− .10		−18 9.85				
Jun				10 46.9		− 1.25			3 24.0		− 1.08			41 50.7		− .10				
App δ				28 58.4		+ 14.40			21 34.6		+ 11.00			23 41.5		− 3.80				
				−18 11.5		−17 56.70			−18 10.6		−17 59.73			−18 9.2		−18 13.75				
				28 44.0		28 42.35			21 23.6		21 22.86			23 32.7		23 37.01				

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48 Ψ Cephei +4.44 +4.55 | ζ Persei +1.17 +1.54 | γ Ursæ Min −3.11 −3.27 | f Tauri ch. f

h m s
0 5 53
+77 19
+34 56 −.57

3 16 11
+49 27
−7 4 −.12

3 20 56
+107 42
−65 19 −.91

3 24 36
+12 33

6	26.5	4	—		318	14	488	406		14	597	20	16.8		19	437	
	33.5		—		343		51.7	439			30		18.2			45.7	43.70
	38.0	216	21.6		372		54.3	47.0			60		32.0			48.0	1.74
	44.1	.6	24.7		410		56.3	50.0			92		26.1			49.8	
	50.8	.8	28.0	21.67	438	3756	58.2	53.4	4695		121		31.4			52.6	
			21.2								153					55.3	54.94
			18.0		46.7			31.3			18.7	21	25.0			57.2	—
			21.3		50.0			34.6			218		29.0			59.8	
	Ex		24.2		53.0			37.8			25.0		32.8			20	
			27.5		56.0			40.9					36.0			4.0	
			31.0	24.40	59.0	5294		44.2	3776				41.5			66	
																88	6.38
87	19.29				2.2		2693		14474		650.8				20	10.5	
	38.58				5.5	14	5386	15	12.370	16	12.311	21	2260		19	55.07	
					8.6							21	3286			57.23	
		5													20	57.23	
		4	53062		12.3					15	12340				19	55.07	23
			−.070	5	15.1	8.74					−.023					+ .050	
				4	53062												
																57.28	
T		5	52.99							16	12.32				20	55.65	
Δ t m		5	51.22		−4.15					16	889		−4.15		20	51.64	−4.15
mtnd		+	1.77		+ 2.35					+	3.43		+ .62		+	3.91	− 1.65
corr d			45.73		− .09						6.94		− .03		+	.564	+ .06
+ d					− 5.49								− 1.95			55.20	+ 3.56
Sum					− 7.28								− 5.51				− 2.18
☌ 1885.0					5 45.61								16 6.81				20 55.10

					9.34156						9.81299							9.48292$_n$	
46	47.40	−10.52	2.02333$_n$	37	51.75	+18.48	1.26670							21	30.35	−25.37	4.97	1.40432$_n$	
+	29.88		1.47535	−	15.49		1.19015$_n$							−	9.94	−9.85		1.98059$_n$	
47	17.28			37	35.76									21	20.41	−15.63		0.99770$_n$	
																		1.57397$_n$	
47	6.472	−34.55	45 1.60410$_n$				−7 3 54	0.85360$_n$						21	58.70	−65.20	20	2.09601$_n$	
+	29.88													−	37.49	−65.19	51	2.09584	
46	34.60													21	21.21				
		+3176					+3176									+3176			
		+43.24					+7.68									+134.21			
		− 1.36					− .09									+ .10			
		+ .00					+ .00									+ .00			
		+ 41.88					+ 7.59									+134.31			
		36 55.63					45 20.18									3 42.25			
+77°				+49										+108		+134.15			
36	13.75			45	12.59									1	27.94	+ 1.49			
																+ .00			
														1	27.14	134.64			
																3 42.78			
Means		36	55.63				45	20.18							3	42.52			
Reg		+	.79	−18	9.85		+	.17	−18	9.85					+	1.26	−18	9.85	
Red		36	56.4	+	.79		45	20.4	+	.17					3	43.8	+	1.26	
☉ − δ		18	48.7	−	11.30		27	7.4	−	4.60					45	25.6	−	11.30	
		−18	7.7	−18	20.36		−18	13.0	−18	14.28					−18	8.2	−18	19.89	
☌ 1885.0		18	37.4	[18	35.27]		[27	28	27	6.90]					+45	24.3	45	22.63	

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Jan. 10, 1885

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No Ephemeris
17 Taurii

h m s
2 37 56
+23 45
+18 38 +.32

36 548 45.7
565 48.0
580 50.2
597 52.3
617 54.3 50.10

21.7
24.0
26.1
28.4
30.8 26.20

36 591 39 328
13 35.8
36 37.8
60 38.8
82 40.7
10.8
12.7
14.9
17.2

37 8.147
— .017

38 8.13

39 328
35.8
37.8
38.8
40.7

578
0.2
2.3
4.9
7.0 2.440
−18.026

39 383 40 560 27
374 585 45
398 610 67
420 2.5 90
443 3.2 11.3 6.74
465
488
510
533

39 44.414
40 44.269
40 44.316
— .017
40 44.30

40 40.31
+ 3.99
38.93

4x² 30.14
0.28

4x² 24.740
4x² 24.733
4x² 24.736
.017
4x² 24.753

888
405
427
450
472 427

41 15.7 45 340
18.0 357
20.2 37.0
22.6 38.4
24.7 40.0
27.0
29.3
31.4
33.8

45⁶ 37.02

354 45 409
38.0 52.3
40.4 54.7
42.8 57.1
45.1 40.34 59.6
1.9
14.1 4.5
16.4 6.8
18.9 9.2
21.4
23.8 18.92

45⁶ 59.630
45⁶ 59.556
45⁶ 59.593
— .019
46 59.57

46 55.80
+ 3.77
59.25

— 4.15
+ .33
— .02
— 1.55
— 5.39
46 54.18

40 38.98

9.96157

+ 10.01 1.00043 19 33.10 + 7.14 0.85870
— 8.43
19 24.67

0.92573₂₂

+18 37 43 1.28800

+ 3.76
— 2.088
— .01
+ .00
— 2.089
3 2.79

+24
.3 23.68

+ 34.46 1.38846

32
27 23.05 + 22.57 1.35353
— 24.80
146 58.25
31

1.39452₂₂

+31
50 50.10

+10 50 33 1.04260

9.93053

+ 3.17.6
— 11.87
— .12
+ .00
— 11.99
50 38.11

3 2.79
— .44 −18 9.85
3 2.3 — .44
44 52.2 + 2.70
−18 10.1 −18 7.59
44 54.9 44 55.20

50 38.11
— .26 −18 9.85
50 37.8 — .26
32 26.9 + 1.00
−18 10.9 −18 9.11
32 27.9 32 29.00

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	ℵ Tauri	C Persei	δ Tauri	E Tauri
	+10 +1.02	+109 +1.48	+31 +1.05	+34 +1.06
h m s	3 57 6	4 0 23	4 16 22	4 21 58
	+5 40	+47 24	+17 17	+18 56
	+36 43 +.60	−5 1 −.09	+25 6 +.42	+23 27 +.40

	47.0		55	59.5	59	42.9			59	12.1	14	54.0	20		15	15.0	20	31.2	38.0	20	57.0
	49.0			1.6		45.2				15.3		55.7		42		17.0		32.8	40.0		59.0
	51.2			3.6		48.7				18.6		58.9		6.4		19.3		34.9	42.3		63.8
	53.2			5.7		52.9				21.4		0.5		8.4		21.5		36.8	44.3		57.6
	55.5	51.8		7.8		53.5				24.5		2.3		10.6	6.32	23.5		38.5	46.6	42.24	59.7
				10.0						27.6						26.9					1.8
86	36.0	20.2		12.6				43.9		30.6				36.5		28.0		12.6			4.0
	37.5	22.2		14.0				45.2		33.8				38.7		30.4		14.9			6.2
	39.1	24.4		16.0				48.7		37.0				40.8		32.4		16.9			8.5
	41.0	26.4						50.9						43.0				19.2			
	42.9	28.5	24.34					53.5	48.24					45.2	40.84			21.4	17.00		
									−24.38												
58	19.71			61.02	0	24.12			0	22.09		29.14		47.16		31.30		17.42			53.71
58	39.42	58	7.760	58	7.800	59	48.24		59	24.544	14	58.28	18	23.380	16	23.667	28	34.84	28	59.620	28	59.678

			58	7.780			0												20	59.649
				−.016			59	24.544							15	23.623				.016
								−.023								−.016				
			57	7.776			0	24.52							16	23.61			21	59.63
			57	3.57		−4.15	0	20.96		−4.15					16	19.60		−4.15	21	55.58
				+4.19		+.05		+3.56		+.58						+4.01		+.16		+4.05
				2.35		−.02		1.887		−.03						18.18		−.02		54.11
						−1.22				−2.09								−1.42		
						−5.34				−5.69								−5.43		
					57	2.42			0	18.83							16	18.18		

																				−.546
																			21	54.17
				9.99787				9.85051						9.97993						9.97584
23	9.40	−31.64		1.580242	40	7.82	−23.70	1.374752	48	27.68	+24.34			1.40381	9	19.70	+24.81			1.39463
	+10.60			1.60857		+20.69		1.31572		−31.20				1.49420n		−30.26				1.48093n
23	49.64				40	28.01			47	56.48					8	49.44				
		+36 41 19		1.63220			−5 1 43	0.70470					+25 6 38	1.43110					+23 27 30	1.39760

				+3176				+3176						+3176						+3176
				−4613				+5.45						−29.03						−2688
				−.06				−.15						−.10						−.10
				+.00				+.00						+.00						+.00
				−4619				+5530						−2913						−2698
				58 12.52				42 25.64						34 22.74						13 31.93
+5					+47				+17						419					
58	58.71				42	20.34			34	57.87					13	58.91				

	58	12.52			42	25.64			34	22.74					13	31.93				
	−	.83	−18	9.85	+	.12	−18	9.85	−	.58	−18	9.85			−	.56	−18	9.85		
	58	11.7	−	.83	42	25.8	+	.17	34	22.2	−	.58			13	31.4	−	.56		
	40	0.7	+	8.60	24	1.70	−	2.00	16	12.1	+	6.20			55	21.2	+	6.10		
	−18	11.0	−18	2.08	−18	8.8	−18	11.73	−18	10.1	−18	4.23			−18	10.2	−18	4.31		
	40	9.3	40	10.44	24	15.0	24	13.91	16	18.3	16	18.51			55	21.3	55	27.62		

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Jan. 10 1885

α Tauri
h m s
4 29 23
+16 17
ch. f.

Jan 10

R_{2v} −18 11.5
10.6
9.2
9.7
8.2
10.1
10.9
11.0
8.8
10.1
10.2

−18 9.85

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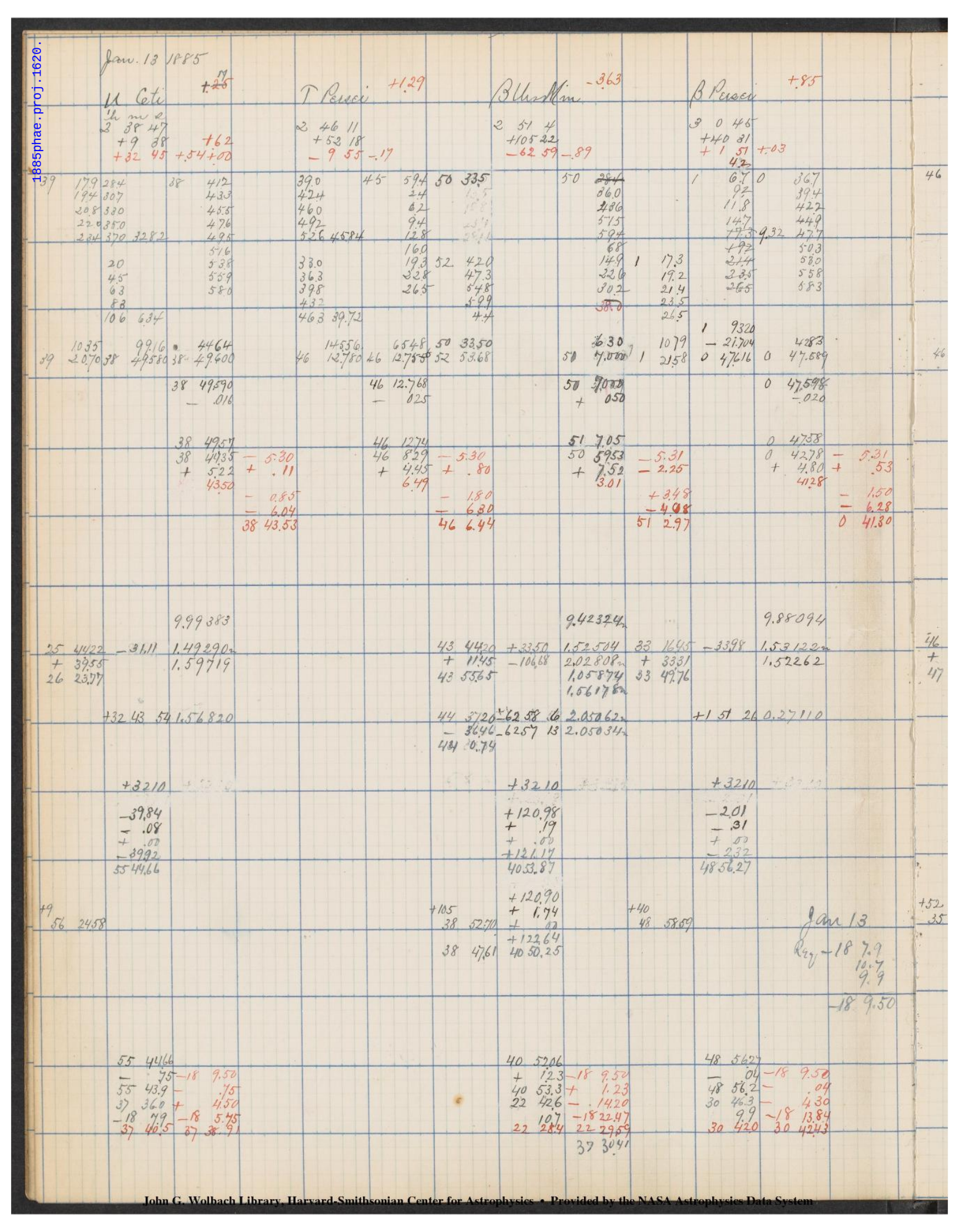
Jan. 13 1885

11 Ceti +.25

T Persei +1.29

Blue Mm. -.363

B Persei +.85



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Jan. 14. 1885

T Persei +1.29

β Tri Mus. −3.63

Q Persei +.79

48 H Cephei +.444

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Jan. 14 1885

ρ Tauri ch f

h m s
3 18 41
+8 38

ϑ Ursa Min

3 20 55
+10 7 45

ff Tauri

+.22

3 24 35
+12 33
+29 50 +.50

No Ephemeris

17 Tauri

3 37 56
+23 45
+18 38 +.32

21 34.1 29.3 36.4 38.0
21 39.4 42.6 45.8 49.5 52.6 45980 −54273
24 12.0 13.9 15.6 17.4 19.4 17.0 19.1 21.2 23.4 25.5 21.24 50.7 52.6 54.8 57.0 59.0 54.82
24 29.5 31.6 33.7 35.7 37.8 40.0 42.2 44.3 46.4
37 49.8 37 56.3
37 46.8 49.3 51.5 53.8 56.0 37.48 22.8 25.0 27.3 29.6 31.9 27.32
38 05 2.8 5.0 7.0 9.4 11.7 13.8 16.0 18.4

1248
21 31.70
24 7.83 7.66
24 37.606 38.030
24 34.12 37.911
37 49.80 37 54.30
38 7.880 9.402
38 8.46 9.400

20. 51.707 + .050
24 37.970 − .016
38 9.402 − .017

20 51.76
20 51.92 − 0.16
24 37.95
24 32.56 + 5.39 = 31.45
38 9.38
− 5.48 + .14 − 1.11 − 6.45 = 24 31.50

9.98950
1.34850
1.44846

−39.99
32 7.72 − 28.08 = 31 39.64
+22.31
+18.60 +13.10

+29 50 18 1.51880

+3596
−3587
− .05
+ .00
− 35.92
50 32.79

+12°
51 8.71

50 32.79
− .68
50 32.1
32 24.5
−18 7.6
32 30.1

−18 8.95 − .68 + 5.60 −18 4.03
32 28.76

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No Ephemerides

η Tauri +.44

27 Tauri

ν Tauri +.10

C Persei +.07

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δ Tauri +.31 | ε Tauri +.34 | α Tauri +.29

h m s
4 16 22 | 4 21 58 | 4 29 23
+17 17 +.64 | +18 56 | +16 17
+25 6 +.42 +.00 | +23 27 +.40 | +26 6 +.44

16 428		16	16.3	21	30.5	39.0	21	52.0	28 57.5 44	29 17.5
432	5.5	24.7	18.3		32.2	41.2		54.3	59.6 6.7	19.5
446	7.7	24.6	20.5		34.2	43.5		56.3	1.3 9.0	21.7
479		24.7			35.7	45.4		58.5	2.6 11.0	24.0
495	12.0 7.70	25.2			37.5	47.6 4334		0.7	3.7 13.2 886	26.0
		25.1						3.0		28.3
	37.9					13.7		5.0	39.0	30.5
	40.0		31.5			16.2		7.3	41.0	32.6
	42.2		33.5			18.4		9.4	43.1	34.8
	44.5					20.5			45.4	
	46.2 4216					22.8 1832			47.5 4320	

2280 | 4986 | 1701 | 121.66 | 5465 | 3047 | 5206 | 2349
16 45.60 | 16 24.930 | 16 24.860 | 21 34.02 | 22 0.830 | 22 0.722 | 29 0.94 | 29 26.030 | 29 26.100

16 24.895 | 22 0.776 | 29 26.065
— .016 | — 16 | — 16

16 24.88 | 22 0.76 | 29 26.05
16 19.57 — 5.51 | 21 55.55 — 5.51 | 29 20.74 — 5.52
+ 5.31 + .20 | + 5.21 + .22 | + 5.31 + .19
18.18 | 54.11 | 19.30
— 1.39 | — 1.44 | — 1.44
— 6.70 | — 6.73 | — 6.77
16 18.18 | 21 54.03 | 29 19.28

9.97993 | 9.97584 | 9.98222
47 31.38 — 2071 1.31618n 9 22.22 | +2676 1.42749 48 8.78 | +2512 1.40002
+ 25.50 1.40657 — 32.64 | 1.51379n — 31.10 | 1.49270n
47 56.88 8 49.58 | 47 37.68

+25 5 41 1.43080 | +23 27 32 1.39770 | +26 6 19 1.45840

+3704 | +3717 | +3728
—29.37 | —27.22 | —30.74
— .07 | — .12 | — .09
+ .00 | + .00 | + .00
—29.44 | —27.34 | —30.83
34 22.03 | 13 31.43 | 34 39.84

+17° 34 51.47 | +19 13 58.77 | +16 35 10.67

Jan 14
Ag — 18 9.3
9.7
9.1
8.0
7.6
9.9
7.3
9.5
9.8
9.3
—18 8.95

34 22.03 | 13 31.43 | 34 39.84
— .58 —18 8.95 | — .55 —18 8.95 | — .60 —18 8.95
34 21.4 — .58 | 13 30.9 — .55 | 34 39.2 — .60
16 11.9 + 6.40 | 55 21.1 + 6.20 | 16 29.9 + 7.30
—18 9.5 —18 3.13 | 9.8 —18 3.30 | 9.3 —18 2.25
16 18.3 16 18.90 | 55 27.3 55 28.13 | 16 37.2 16 37.59

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β Ursæ Min. −3.63

h m s
2 51 4
+105 22
−62 59 −.89 +.58

ζ Persei +.79

2 57 52
+38 24
+3 59 +.07

48 H Cephei +4.44

3 5 53
+77 19
−34 56 −.57

ψ Aurigæ +.15

3 18 41
+8 38
+33 45 +.56

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1885phae.proj.1620.

Jan 17 1885

ζ Ursæ Min. −3.11

h m s
3 20 55
+107 42
−65 19 −91 33.4
45.2

f Tauri +.22

3 24 25
+12 33
+29 50 +.50

ν Tauri +.44

3 18 40 32.7
+23 45
+18 38 +.32

ζ Persei +.61

3 46 58
+31 33
+10 50 +.19

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1885phae.proj.1620.

Jan 17 1885

C Persei +1.09

h m s
4 0 23
+47 24
−.5 1 −.09

09	6.50	5.64	0	1.46	28	5.97
	5.80	5.94		17.7		15 8.0
	0.0	26		20.7		3.3 100
	2.9	56		23.7		4.7 12.3
	5.3	85 250		26.8		6.2 14.4 10.10
				29.9		
		4.50		33.0		4.02
		4.80		35.8		4.24
		5.11		39.1		4.44
		5.43				4.67
		5.7.3 5.11.4				4.88 4.450

	30.12		53.64	0	24.13		31.54	
0	0.24	0	26.820	0	26.811	29	30.8	29

	54.60		24.52			
29	27.300	29	27.244			

0 26.816
− 22

29 27.272
− 16

0 26.79

29 27.26

0 20.84 −.666
+5.95 + .63
18.87
− 1.97
− 8.00
0 18.79

29 20.71 −6.66
+ 6.55 + .17
19.30
− 1.41
− 7.90
29 19.36

9.83051

9.98222

40 49.60 +26.58 1.42455

1.36552

40 23.20
40 26.40

48 7.38 +24.189 1.38364
− 29.94
47 37.44
1.47632

−5 1 0 0.70370

+26 6 17 1.45040

+2228

+5.32
− .19
− .01
+5.12
42 27.07

+2339

−29.77
− .08
− .03
−29.88
34 41.03

Jan 17

+47
42 21.95

+16
35 10.91

Reg −18 10.1
9.7
8.6
8.0
10.1
8.5
11.4
9.6
10.5
−18 9.61

42 27.07
+ .12 −18 9.61
42 27.2 + .12
24 17.6 − 2.60
9.6 −18 12.09
24 15.0 24 14.98

34 41.03
− .59 −18 9.61
34 40.4 − .59
16 29.9 + 7.30
10.5 −18 2.90
16 37.2 16 38.13

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9 Persei	43 Cass	ζ Persei	ε Cass
+1.11	+2.41	+1.20	+1.97
l m n	1 83 64	1 86 31	1 46 12
1 80 89	+67 28	+50 7	+63 6
+48 4 +56	−25.5 −.42	−7 44 −.13	−20 43 −.35
−5 41 −.10 +.60			

330	32.7	30	5.70	33	5.22	33	35.7	35	5.95	26		36	21.8	45	1.42	2.98		45	5.70
348	36.4		5.40		5.50		41.4		1.2	55			24.9		1.84	3.48			1.9
36.7	39.0		5.72		5.79		46.2		4.0	8.8			28.8		2.15	3.88			6.4
39.6	41.7		0.3		19		51.8		5.8	12.2			31.6		2.72	4.33			11.0
44	44.7	38.90	33				57.3		8.4	15.4	8.90		34.7		3.03	4.79	38.92		15.6
			64				39						38.4						19.8
	22.0		9.4				7.8			53.9			41.0			4.26			24.4
	25.0		12.5				13.2			57.6			44.4			4.72			28.8
	28.1		16.0				18.8			0.5			47.5			5.16			33.7
	31.5									3.8						5.66			
	34.6	28.24								7.2	0.58					12	5.184		

1885		12714		5701		2270			5151		3189		6948		3126		1116		15076		6786
30	37.108	1	8.570	31	3.344	33	56.75	33	57.238	36	3.276	36	34.740	36	34.738	45	3.232	46	15.380	46	15.400
				31	3.457			33	57.233			36	34.736					46	15.390	
					−.023				−38				−24						−34	
				31	3.43			33	57.20			36	34.71					46	15.36	
				30	5.716		−6.93	33	51.80		−6.93	36	28.42		−6.94			46	9.43		−6.95
					+6.27		+.63		+5.40		+1.35		+6.29		+.67				+5.93		+1.10
					5.621				58.08				27.36						7.81		
							−0.95				−1.72				−1.06						−1.62
							−7.25				−7.30				−7.33						−7.47
						30	5.618			33	49.90			36	27.38					46	7.89

			9.82495				9.58345						9.80701						9.65556
2	12.32	+26.36	1.42095	37	15.50	+0.48	9.68124	58	2.710	+30.96			1.49080	59	6.92	+53.07			1.72485
−	22.72		1.35636	−	0.24		9.37515	−	2.560				1.40827	−	30.96				1.49087
1	49.60			37	15.26			58	1.50					58	35.96				
		−5 39 38	0.75640			−25 4 35	1.43040			−7 43 23			0.89260			−20 42 43			1.33790

		+3268				+3281				+3281						+3307			
		+6.15				+29.05				+8.42						+23.49			
		−.19				−.00				−.26						−.62			
		−.02				−.02				−.03						−.04			
		+5.94				+29.03				+8.13						+22.83			
		21 4.69				46 2.12				24 54.98						24 35.22			

+48°				+67				+50				+63							
20	58.75			45	23.09			24	46.85			24	12.39						

		21	4.69			46	2.12			24	54.98					24	35.22		
		+	.14	−18	9.92	+	.57	−18	9.92	+	.18	−18	9.92			+	.47	−18	9.92
		21	4.8	+	.14	46	2.7	+	.57	24	55.2	+	.18			24	35.7	+	.47
		2	53.3	−	10.90	27	53.9	−	15.40	6	42.9	−	11.20			6	25.1	−	14.00
		−18	11.5	−18	20.68		8.8	−18	24.75		12.3	−18	20.94				10.6	−18	23.45
		2	42.4	2	44.01	27	38.5	27	37.37	6	31.7	6	34.84			6	11.1	6	11.77

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T Persei +1.29	β Urs. Min. −363	χ Persei +1.33	48 H Cephei +444
h m s			
2 46 11	2 51 4	2 56 33	3 5 53
+52 18	+105 22	+53 4	+77 19
−9 55 −.17	−62 59 −.89	−10 41 −.19	−34 56 −.57

45 25.7 40.8 46 0.8 49 44.8 57.2 50 37.5 55 52.5 22 56 22.5 4 28.5 22.0 17.3 5 34.1
28.7 44.2 4.3 56.2 58.6 46.0 55.5 54 26.0 37.4 30.4 21.0 37.1
31.0 47.6 7.8 22 67 54.2 57.9 88 29.4 47.7 40.2 23.4 39.5
33.6 51.0 11.0 95 15.0 1.9 0.4 12.4 32.7 54.4 49.8 26.7 43.2
36.0 54.4 47.60 14.3 17.2 22.2 67.40 8.7 44 15.8 8.92 36.3 60 58.8 30.4 23.76 46.2 40.02
17.6 19.8 +62.264 17.3 39.7 46.80 40.240
35.0 21.1 52 35.6 24.8 57.0 42.9 7 25.4 20.0 49.0
38.3 24.6 39.7 31.0 0.2 46.5 33.4 23.3 52.0
41.3 28.4 45.1 39.9 3.9 50.2 37.3 26.2 55.5
44.6 50.7 7.7 42.3 29.3 58.7
47.8 41.40 56.3 10.7 8.90 48.6 32.5 26.26 1.8 55.40
45.48 37.40

15.50 14900 1299 6213 2907 7282 3262 4.0
45 31.00 46 14500 46 14433 49 1.98 50 9.004 51 9.023 55 58.14 56 36.410 56 36.244 4 46.80 5 55.389 7.3
52 45.48 7 37.40 10.5
46 14.466 51 9.023 56 36.327 5 55.188 13.2
− 25 + 57 − 25 − 70 16.5 10.30
5 55.148

46 14.44 51 9.08 56 36.30 5 55.12
46 8.17 −7.01 50 59.95 −7.02 56 30.08 −7.02 5 50.60 −7.03
+6.27 + .72 + 9.13 −2.03 + 6.22 + .74 + 4.52 + 2.49
6.49 3.01 28.29 45.73
−1.68 +3.06 −1.79 −4.87
−7.97 −5.99 −8.07 −9.41
46 6.47 51 3.09 56 28.23 5 45.71

9.78642 9.42324n 9.77879 9.34156
47 46.82 +4347 1.63819 43 36.52 +127.04 1.82633 1 52.80 +38.19 1.58195 46 50.52 +68.39 1.83499
− 34.28 1.53507n + 22.91 −96.46 1.98435n − 29.60 1.47120n − 19.36 −102.21 2.00949n
47 12.54 43 59.43 1.36003 1 23.20 46 31.16 1.28691n
1.57805n 1.46151
−9 54 3 1.00220 44 28.87 −62 58 13 2.05065n −10 39 57 1.03520 46 2.68 −34 54 59 1.60390n
− 32.96 −62 57 21 2.05040n + 28.94 −34 55 46 1.60410n
43 55.91 46 32.62

+34 42 +34 49 +34 56 +34 78
+10.88 +121.66 +11.74 +43.52
− 50 + .71 − .39 − .54
− .03 − .04 − .02 − .02
+10.35 +122.32 +11.33 +42.96
35 46.16 40 51.25 21 36.48 37 0.15

+121.59 +43.54
+52 +105 + 1.48 +53 +77 − 1.22
35 35.81 38 48.92 − .04 21 25.15 36 17.19 − .01
+123.03 +42.31
38 52.44 40 55.47 36 15.73 36 58.04

35 46.16 40 53.36 21 36.48 36 59.10
+ .23 −18 9.92 + 1.20 −18 9.92 + .26 −18 9.92 + .77 −18 9.92
35 46.4 + .23 40 54.6 + 1.20 21 36.7 + .26 36 59.9 + .77
17 35.6 − 8.50 22 43.5 − 15.10 3 26.5 − 8.10 18 49.8 − 12.40
10.8 −18 18.19 11.1 −18 23.82 10.2 −18 17.76 10.1 −18 21.55
17 27.1 17 27.97 22 28.4 22 29.54 3 18.4 3 18.72 18 37.4 18 37.55

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+.15

ζ Tauri

h m s

3 18 41

+8 38

+33 45 +.56

γ Ursæ Min. −.311

3 20 65

+10 74 2

−6 5 19 −.91

3 X Persei +.61

3 46 68

+31 33

+10 50 +.19

18	17.7	247	18	37.3	20	55.0	20	38.4	46	28.5	38.2		46	52.7					
	20.9	26.8		39.5		58.4		40.7		30.7	40.6			55.2					
	21.6	28.9		41.5		2.7		48.0		32.4	43.0			57.5					
	23.3	31.0		43.5		6.8		54.3		34.0	45.5			59.8					
	25.6	33.1	2890	45.5		12.6		0.7		35.8	48.0	4306		2.4					
				47.6				8.3						4.7					
	5.8.0			49.8				14.4			17.2			7.2					
	0.2			51.7				21.0			19.4			9.7					
	2.0			54.0				27.6			22.0			12.0					
	4.2										24.2								
	6.4	31.6									26.6	2188							

18	10 8 2																		
18	21.64	9106		4104		3155		5484		1614		12494		5612					
	18	45530	18	45.600	21	3.10	21	0.933	46	3228	47	2.470	47	2.356					
			18	45.565			21	0.933					47	2.413					
				−.016				+.050						−18					
			18	45.55			21	0.98					47	2.40					
			18	38.48		−7.05	20	5.220		−7.05			46	6.570		−7.08			
				+7.07		+.08		+8.78		−1.74				+6.70		+.35			
				37.50				55.20						54.25					
						−0.68				+3.00						−1.45			
						−7.95				−5.79						−8.18			
						18 37.60				20 55.19						46 54.22			

				9.99505				9.48292n						9.93053					
27	10.40	+23.92		1.37876	21	19.10	−2.17	0.33646n	32	33.55	+30.13			1.47900					
	−30.50			1.48427n		−.85		9.92984n		−33.11				1.51999					
26	39.90				21	18.25			32	0.44									
		+33.45	20	1.58510	22	6.45	−6.52	0 31		2.09607n			+10	50 44		1.41260			

		+34.94				+34.94				+35.34									
		−41.69				+13.521				−11.97									
		−.04				+.00				−.22									
		−.02				−.01				−.03									
		−41.75				+13.520				−12.22									
		55 26.70				3 46.30				50 35.69									

48°

56	8.45			+108				+31											
				1 30.10				50 47.91											

Jan 18

Reg − 18

11.5
8.8
10.6
10.8
11.1
10.2
10.1
8.7
9.1
8.3

− 18 9.92

		55 26.70				3 45.30				50 35.69									
		.76	−18	9.92		+ 1.23	−18	9.92		− 26	−18	9.92							
		55 25.9	−	.76		3 46.5	+	1.23		50 35.4	−	.26							
		37 17.2	+	6.80		45 37.4	−	13.10		32 27.1	+	0.80							
		8.7	−18	3.88		9.1	−18	21.79		8.3	−18	9.38							
		37 24.0	37	22.82		45 24.3	45	23.51		32 27.9	32	26.31							

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B Uss. Nine ch. f

h m s
2 54
+105 22

48 H Cephei +.44

2 54 53
+77 19 +.73
−34 56 −.57 +.00

4 35 8 207
448 306
470 396
526 486
563 583 895 6
62

5 06
0.5
10 4
19 1
279 9.70

5 17.0 18
26 4
36 8
45 7
54 7
45
13 1
23 6
32 3

3047 22926
4 50.785 54.030

5 54.654
− 70

5 5458
5 5052 − 7.29
+4.06 + 3.24
45.73
− 4.79
− 8.84
5 45.74

9.34156
46 5022 +6387 1.80530
− 18.08 1.25732
46 32.14

34 55 0 46.0390

+3688
+43.73
− .47
− .02
+43.24
36 59.45

+77 36 16.21

36 59.45
+ 76 −18 10.48
37 0.2 + .76
18 49.9 − 12.50
−18 10.3 −18 22.22
18 37.4 18 37.23

0 Tauri +.15

3 18 41
+8 38
+33 45 +.56

204 248
223 272
238 290
254 311
267 332 2906

5 83
0.3
24
44
65 238

18 372
394
415
436
456
477
499
520
540

9144
45.720

4109
25.653

9.99505
1.34183
1.44734

+33 45 18 1.58510

+3736
−41.92
− .04
− .02
−41.98
55 26.73

55 26.73
− 75 −18 10.48
55 26.0 − .75
37 17.1 + 690
8.9 −18 4.33
37 240 37 22.40

W. Ephemeris
17 Tauri 7

3
37 37 56
+23 45
+18 38 +.32

37 446 487
468 510
491 532
514 553
535 578 5320

247
267
290
313
336 2906

3454
4808

14226
11.130

38 7.0
44
66
88
112
134
155
178
202

38 11.15
− 17
38 11.10

999
1.100

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Jan 19 1885

2 Tauri ?
h m s
17 40 32
+23 48

η Persei +.61

3 46 58
+31 33
+10 50 +.19

46	330	383	46	529	15	525	51	16	180	29	270	63	29	191			
	353	408		552		540	73		200		286	84		215			
	368	435		576		557	94		222		304	107		237			
	386	456		01		576	116		245		317	128		258			
	404	480	4324	35		596	138	9440	266		330	151	1066	281			
				48				19.280	287					301			
		169		73					309			406		322			
		194		96					330			426		344			
		218		123					354			463		364			
		242										473					
		267	2180									494	4504				

	1841		12504		5623		2794		2393		1507		5570		2512		
46	3682	47	2520	47	2478	15	5588	16	26720	16	26589	29	3014	29	27850	29	27911
				47	2499					16	26633					29	27880
					018						16						16
				47	248					16	2662					29	2786
				46	5569		7.30			16	1952		7.30			29	2070
					6.79	+	.45			+	710	+	.23			+	716
					5925						1818						1930
							1.44						1.34				1.40
							8.29						8.41				8.50
						46	54.19					16	18.21			29	19.36

					9.93053						9.97993						9.98222
												47					
	32	2655	+2568		1.40960	48	3257	+3075			1.48785	16	3385	−	226		0.35411
	−	2822			1.45059	−	3785				1.57824	+	280				0.44679
	31	5833				47	5472					16	3665				
												47					

+10 50 37 1.04260 +25 6 43 1.43110 +26 5 44 1.45020

δ Tauri +.31

4 16 22
+17 17
+25 6 +.42

ζ Tauri +.29

4 29 83
+16 17
+26 6 +.44

+3856

−12.06
− .16
− .02
−12.24
50 37.78

+3976

−29.57
− .15
− .03
−29.75
34 23.88

+4024

−30.93
− .00
− .03
−30.96
34 40.74

+31° 50 50.02 +17 34 53.63 +16 35 11.70

50	37.78					34	23.88					34	40.74				
−	25	−18	10.48			−	.56	−18	10.48			−	.59	−18	10.48		
50	37.53	−	.25			34	23.32	−	.56			34	40.15	−	.59		
32	27.1	+	0.80			16	11.8	+	6.50			16	29.8	+	7.40		
−18	10.4	−18	9.93				11.5	−18	4.54				10.4	−18	3.67		
32	27.9	32	27.85			16	18.3	16	19.34			16	37.2	16	37.07		

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i Aurigae +.65

h m s
4 49
+22 59
+9 24 +.16

Dm

4 ~~56~~ 17
+55 11

μ Aurigae +.79

5 5 57
+38 21
+ 4 2 +.07

χ Aurigae +1.03

5 8 16
+45 52
− 3 27 −.06

49	13.8	14.5		49	29.0		5	10.5	15.9		5	31.7	8	9.3			8	8.6	
	15.1	16.9			31.4			12.6	18.5			34.3		5.8				11.3	
	16.1	19.3			34.0			14.2	21.2			37.0		7.6				14.4	
	18.2	21.6			36.4			15.6	23.8			39.6		9.3	5.96	56.6		17.4	
	19.9	24.1	19.28		38.8			16.3	26.4	21.16		42.2		10.9	27	58.7		20.4	
					41.3							44.8				56.65		23.3	
	5.87				43.7			5.81				47.5			3.84			26.2	
	56.0				46.2			1.0				50.0			41.3			29.2	
	3.84				48.7			3.4				52.7			44.1			32.2	
	.08							3.8							47.2				
	34	58.46						86	3.38						5.00	44.20			
	8.31		7.784		8.490			6.92		8.454		8.798		3.64		4.085		1.830	
49	16.62	49	38.870	49	38.883		5	13.84	5	42.270	5	42.300	8	7.28	8	20.425	8	20.338	
				49	38.852						5	42.235					8	20.379	
					19							20						22	
				49	38.83						5	42.21					8	20.36	
				49	32.04	−7.31					5	35.45		−7.31			8	13.82	−7.31
					+6.79	+.47						+6.76		+.58				+6.54	+.75
					30.32							33.54						11.66	
						−1.72								−1.91					−2.16
						−8.56								−8.64					−8.72
				49		30.27							5	33.57			8		11.64
			9.92367							9.89445								9.84282	
5	55.78	+22.3	1.34964				44	17.32	+28.40	1.45332	12	8.78	+13.10	1.11727					
−	24.20		1.38377a					−28.72		1.45832		−11.76		1.07055a					
5	31.58						43	48.60			11	57.02							
		+9 24 6	0.97930						+4 2 27	0.60850			−3 29 41	0.54620					
		+4096							+4169				+4169						
		−10.48							−4.47				+3.87						
		− .12							− .21				− .05						
		− .01							− .04				− .02						
		−10.61							−4.72				+3.80						
		17 6.16							38 55.03				10 55.13						
+33							+38				+46								
17	16.77						38	59.75			10	51.33							
																	Jan 19		
																	Reg	−18	10.3
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																		−18	10.48
		17 6.16							38 5503				10 5513						
		.21	−18	10.48					− .09	−18	10.48		+ .08	−18	10.48				
		17 56.9	−	.21					38 54.9	−	.09		10 55.2	+	.08				
		58 54.2	+	3.90					20 45.2	+	3.60		52 44.3	+	2.10				
		127	−18	6.79					9.7	−18	6.97		10.9	−18	8.30				
		11.7	58	59.39					20 48.8	20	48.06		52 46.4	52	46.83				
		58 58.1																	

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o Tauri

h m s
3 18 41
+8 38
+33 45

+.56
+56 +.00

f Tauri

+.22

3 34 25
+12 33
+29 50

+.50

1885	340	252		18	377	24	466			24	317	
	366	272			397		477				337	
	374	293			418		499				356	
	392	314			438		517				378	
	401	336	2934		462		539				398	
					481						420	
		586			502			526			441	
		07			524			548			462	
		27			544			569			485	
		47						590				
		70	274					10 56860				
								−16.904				
	18	63	9208		4143		2491				3594	
18	37	26	18 46	18	46.033	24	4982	24	39956	24	39933	
				18	46.037					24	39.941	
				+	.016					−	16	
				18	4602					24	3992	
				18	38.46	−	7.59			24	32.49	− 7.60
				+	756	+	.08			+	743	+ .12
					37.50						31.45	
						−	0.96					− 1.04
						−	8.47					− 8.52
						18	37.55					24 31.40
					9.99505						9.98950	
27	22	10	+ 8.78		0.94349	31	5818	−	988		0.99476	
−	11	20			1.04900	n +	1244				1.09472	
27	10	96				32	1062					
			+33 44 56		1.58500			+29	49 32		1.51860	
			+3369					+3369				
			−4156					−3567				
			− .01					− .01				
			− .02					− .02				
			−41.59					−35.70				
			54 55.80					50 2.03				
+8°												
55	37	39				+12						
						50	37.73					
			54 55.80					50 2.03				
			− .75	−17	37.50			− .67	−17	37.50		
			54 55.0	−	.75			50 1.4	−	.67		
			37 17.1	+	6.90			32 24.3	+	5.80		
			−17 39.9	−17	31.35			371	−17	32.63		
			37 24.6	37	24.45			32 32.1	32	29.40		

Jan 20
Reg −17 37.9
37.1
−17 37.50

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ℓ Persei +.79

h m s
2 57 52
+38 24 +.56
+3 59 +.07 +.60

47 H Cephei +.44

3 5 53
+77 19
−34 56 −.57

o Tauri +.15

3 18 41
+8 38
+33 45 +.56

γ Ursæ Min. −3.11

3 20 55
+10 42
−65 19 −.91

57 273 312 | 58 464 | 4 382 | 4 21.1 | 5 184 | 18 467 | 18 378 | 20 404 | 20 324
288 335 | 492 | 457 | 31.0 | 270 | 479 | 399 | 460 | 413
308 360 | 517 | 535 | 204 | 340 | 495 | 420 | 518 | 482
324 386 | 543 | .25 | 001 | 465 | 518 | 442 | 541 | 548
345 412 361.00 | 570 | 94 | 595 40426 | 555 | 529 | 465 | 02 | 10
+21.054 | 597 | 5386 | +75.149 | 45 | | 484 | | 88
34 | 7 278 | 142 | | 504 | | 153
49 | 340 | 236 | | 526 | | 220
76 | 411 | 330 | | 546 | | 289
482
514
40.50

57 15388 / 30.76 | 56 57.154 | 58 57135 / 57.056 | 4 53.86 / 7 40.50 | 5 55569 | 5 55.522 | 18 2488 / 49.76 | 18 4164 / 46.268 | 20 2525 / 50.50 | 21 5557 / 1.744

58 57.089
− 20

58 5707
57 49.82 − 7.77
+ 7.25 + .14
48.53
− 1.29
− 8.62
57 48.45

5 55537
− 70

5 5547
5 50.36 − 7.78
+ 5.11 + 2.49
45.73
− 4.63
− 9.92
5 45.55

18 46.267
− 16

18 4625
18 38.44 − 7.78
+ 7.81 + .08
37.50
− 9.94
− 8.64
18 37.61

21 1.744
+ 050

21 1.79
20 52.42 − 7.78
+ 9.37 − 1.74
55.20
+ 2.78
− 6.74
20 55.05

9.89415
4412 +26.33
−26.61
17.51
1.420445 47 19.05 +61.68
1.425066 − 17.46 −104.96
47 1.59

9.84156
1.79014 27 3.88 −3.49
2.02104
1.24216
1.47306 + 4.45
27 8.33

9.99505
0.54028 21 41.50 +11.24
0.64834 + 4.41
21 45.91

9.48292
1.05077
0.64415

46 31.78 −34 55 7 1.60390
+ 29.72 −34 55 54 1.60420
47 1.50

+33 44 38 1.58490

−65 20 44 2.09614

+2635
+42.68
− .44
− .02
+42.22
36 28.98

+42.71
− 1.29
− .02
+41.40
36 28.25

+2660
−40.88
− .00
− .02
−40.90
54 59.12

+2664
+132.67
+ .02
− .02
+132.67
3 15.71

+77 35 46.76
35 46.85

+8 55 40.02

+108 1 24.4

36 28.62
+ .76 −17 38.48
36 29.4 + .76
18 50.1 − 12.70
−17 39.3 −17 50.42
18 37.4 18 38.20

54 59.12
− .74 −17 38.48
54 58.4 − .74
37 17.0 + 7.00
41.4 −17 32.22
37 24.0 37 26.90

3 15.11
+ 1.21 −17 38.48
3 16.3 + 1.21
45 38.0 − 13.70
38.3 −17 50.97
45 24.3 45 24.14

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Jan 21 1885-

ε Tauri +.34

h m s
4 21 58
+18 56
+23 27 +.40

21 35.3 414 21 5448 112 8 9.0
37.8 435 564 135 120
40.2 45.7 586 157 150
41.7 480 09 169 149
44.0 502 4576 31 191 208
53 237
16.2 74 266
18.2 97 297
20.5 117 224
22.7
25.0 2052

1990 12628 6675 761 14154 18719
21 39.80 22 3.140 22 3.055 8 15.22 8 20.770 8 20.788

22 3.098
— .016

22 308
21 5548 — 7.81
+ 7.60 + .19
54.11
— 1.37
— 8.99
21 54.09

9.97584

9 50.38 +23.30 1.36736 12 34.35 +5.56 0.74587
— 28.42 1.45366n — 4.99 0.69835n
9 21.96 12 29.36

+23.27 24 1.39760 -3 29 52 0.54660n

+2957
−26.74
— .09
— .05
−26.88
12 59.51

+46
10 18.99

+19°
13 26.39

ζ Orionis +1.03

h m s
5 8 16
+45 52
— 3 29 −.06

8 9.0
12.0
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20.8
23.7
26.6
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8 20.780
— .22

8 20.76
8 13.80 — 7.83
+ 6.96 + .58
11.66
— 2.14
— 9.39
8 [11.37]

9.84282

0.74587
0.69835n

-3 29 52 0.54660n

+3090
+3.78
— .01
— .03
+3.74
10 22.73

Jan 21
Reg −17 39.3
38.3
38.0
38.3
−17 38.48

12 59.51
— .53 −17 38.48
12 59.0 — .53
55 21.0 + 6.30
−17 38.0 −17 32.71
55 27.3 55 26.80

10 22.73
+ .08 −17 38.48
10 22.8 + .08
52 44.5 + 1.90
38.3 −17 36.50
52 46.4 52 46.23

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43 Comæ

h m s
1 33 54
+67 28
ch. f.

O Persei +1.14

2 36 25
+48 44 +.66
− 6 21 −.11 +.00

36 196
224
246
360

582
13
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10.7 454

36 170
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263
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327
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46 356
380
413
432

480
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577
04 54.34

926
36 23.15

5888
36 29.440

36 29.459
− 23

36 29.436

36 22.32 − 7.83
+ 7.12 + 0.75
20.92
− 1.40
− 8.48
3620.96

2653
36 29.478

1581
46 39.52

9.81926

20 4648 +6.31
− 5.37
20 41.11

0.80003
0.72975 2

47 2838
+ 1934
47 4772

−6 21 40 0.80760 2

+54446

+7.28
− .01
− .01
+ 7.26
2 14.50

+49 2 7.24

+52
35 0.63

2 14.50
+ .15 −17 37.25
2 14.6 + .15
44 36.2 − 8.10
−17 38.4 −17 45.20
44 28.1 44 29.30

T Persei +1.29

2 46 11
+52 18
− 9 55 −.17

1952
386
418
451

46 218
150 256
154 289
153

485 41840
− 26.981

46 14.859

46 15.233

36 29.459
− 23

46 14.999
− 25

46 14.974

46 8.07 − 7.83
+ 6.90 + 0.85
6.49
− 1.58
− 8.56
46 6.41

9.78642

1.38952 2
1.28640 2

−2452

−9 54 58 1.00290 2

+54158

+11.41
− .16
− .02
+11.23
35 11.86

35 11.86
+ .22 −17 37.25
35 12.1 + .22
17 35.7 − 8.60
36.4 −17 45.63
17 27.1 17 26.23

B Ur. Min. −.363

2 51
+105 22
− 6 2 59 −.89

4952.7
59.5
75
160
232.778

572
46
134
202
283.274

140.52
51 10.260

56 38.7
48.0
55.0
34
10.2
18.9
25.0
33.3
41.9

6351
51 10.568

51 10.414
+ 057

51 1047

51 0.29 − 7.84
+10.18 − 2.40
3.01
+ 2.72
− 7.52
51 2.95

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48 Cephei +4.44

h m s
3 5 53
+97 19
-34 56 -.57

f Persei +.09

3 34 49
+47 26
-5 2 -.09

5	60	233	5	18.1	34	150	2230	34 412
	147	321		27.4		190	259	442
	214	410		36.6		217	290	473
	278	498		454		234	321	500
	372	592 4.08		539		264	350 2900	532
				35				563
		578		134			116	594
		0.5		235			146	23
		95		332			177	56
		189					208	
		286 9.86					238 17.70	
	1071	23094		4950		1045	10670	4795
5	21.42	5 55470	5	55000	34	2090	34 53350	34 53278
			5	55235				34 53.314
				-.070				- 22
			5	55.16				34 53.29
			5	50.27		-7.85		34 46.10 -7.86
				+4.89		+2.93		+ 7.19 + .72
				45.73				4436
						-4.54		-1.74
						-9.46		-8.88
					5	45.70		34 44.41

		9.34156			9.83037
47	16.75 +3382	1.52917	40	3305 +3241	1.51068
-	9.58	0.98129n	-	28.28	1.45151n
47	7.17		40	4.77	
	-34 55 9	1.60400n		-5 1 53	0.70580n
	+5470			+5469	
	+4557			+5.75	
	- .14			- .29	
	- .02			- .04	
	+45.41			+5.45	
	36 26.23			42 49.03	
+77		+47			
35	40.82	42	48.58		

Jan 22

Reg -17 38.4
36.4
36.8
37.4

-17 37.25

36	26.23			42	49.03		
+	.75	-17	37.25	+	.12	-17	37.25
36	27.0	+	.75	42	49.1	+	.12
18	50.2	-	12.80	25	11.7	-	4.50
-17	36.8	-17	49.30		3.4	-17	41.63
18	37.4	18	36.95	25	7.2	25	7.40

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T Perrine +1.29 +1.64

h m s
2 46 11
+52 17 +.83
−9 54 −.17 +.03

45 680 424 46 25 50 495 — 50 413 56 27 35 56 338 0 171 2 36 0 398
02 45.6 58 540 — 490 52 69 273 188 264 426
27 48.8 90 12 100 10.0 560 72 10.1 307 205 290 453
43 52.3 124 60 178 18.0 748 90 13.6 340 224 316 480
6.3 55.6 48.94 158 108 258 18.2 10.067 12.1 116 169 1020 375 244 345 2902 507
190 302 41.0 535
360 224 596 15.2 27.7 580 444 70 561
394 256 6.8 14.6 362 1.5 47.7 9.7 588
427 290 145 14.5 434 5.2 514 124 155
460 — 86 152
494 42.70 — 14.967 11.95.04 18.0 1246

3115 15164 1415 3015 24834 6507 357 7524 3378 1032 10148 4563
46 3.30 46 15.820 46 15.722 51 0.30 51 12.41 51 12.300 56 7.14 56 37.620 56 37.533 0 30.64 0 50.740 0 4483
50.900

46 15.771 51 12.347 56 37.576 0 50.720
− 25 + 57 − 25 − 20

46 15.75 51 1240 56 37.55 0 50.70
46 7.97 +8.91 51 065 −8.92 56 2988 −8.92 0 42.54 −5.93
+ 7.78 +1.07 + 11.75 −3.01 + 467 +1.10 + 816 + 71
6.49 +.05 3.01 − .11 2829 +.05 4128 + .04
−1.48 +2.36 −1.59 −1.26
−9.27 = 9.68 −9.36 −9.44
46 6.48 51 2.72 56 28.19 0 41.26

9.78658 9.42324m 9.77896 9.88094

47 55.78 +13.47 1.12937 44 23.67 +12.05 1.08099 2 17.18 +30.44 1.48344 34 50.22 +30.08 1.47828
−10.63 1.02641m + 4.12 0.67469 − 23.60 1.37286m − 29.49 1.46968m
47 45.15 44 27.79 1 53.58 34 20.73

−9 54 30 1.02250 −62 58 2 20.6859 −10 40 9 1.03540 +1 52 24 0.27580

+2719 +2726 +2732 +2746

+10.71 +11963 +1155 −2.01
− .04 + .02 − .24 − .24
− .03 − .04 − .02 − .05
+10.64 +11961 +11.29 −2.30
35 13.84 40 20.17 21 6.06 48 25.32

+52 +105 +53 +40
35 3.20 38 20.56 20 54.77 48 27.62

35 13.84 40 20.17 21 6.06 48 25.32
+ .22 −17 37.87 + 1.16 −17 37.87 + .25 −17 37.87 − .03 −17 37.87
35 14.06 + .22 40 21.3 + 1.16 21 6.3 + .25 48 25.3 − .03
17 35.7 − 8.60 22 44.5 − 16.10 3 26.7 − 8.30 30 46.3 − 4.30
−17 38.4 −17 46.25 368 −17 52.81 396 −17 45.92 39.0 −17 42.20
17 27.1 17 29.59 22 28.4 22 27.36 3 18.4 3 20.74 30 42.0 30 43.12

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48 Persei +4.44 +4.55

h m s
3 5 53
+77 19
−34 56 −.57

2 Camelop +1.70 +1.97

3 19 51
+59 33
+17 10 −.30

μ Aurigae

5 5 30
+38 20

No. obs.

α Aurigae +1.03 +1.44

5 8 16
+45 53
−3 30 −.06

3	488	5	179	5	336	14	78	147	19	388	7	449	526	8	103
	631		206		361		114	187		430		475	556		131
	52		234		395		142	227		470		498	586		160
	164		266		427		169	270		510		528	13		190
	229	528	306	2382	460	3958	190	310	2282	550		548	435848		220
										594					247
7	309		203		486			196		38			398		278
	374		233		513			236		74			427		307
	422		269		552			278		117			457		338
	476		295		585			318					486		
	535	4232	327	2654	1455	00		363	2782				517	4576	
					46	693		110	64	4971		2493	16418		1976
4	5.28				76	19	1386	19	55320	19	55233	7	4986	8	22090	8	21958
7	4232				113												
		5	55152		138					19	55276			8	22023
		5	570		168	1082					30				22
				5	55.152										
		5	5508							19	55525			8	22001
		5	4993	−	8.94					19	47.83	−	8.95	8	13.73	−	9.06
		+	5.15	+	3.68					+	7.42	+	1.41	+	8.27	+	.85
			45.73	+	.14						45.76	+	.06		11.66	+	.04
				−	4.20							−	2.07			−	2.07
				−	9.32							−	9.55			−	10.26
				5	45.76							19	46.70			8	11.74

				9.34156					9.70482					9.84269	
47	3302	+10987		2.04088	33	2935	+ 41.42		1.61721	12	5960	+32.16		1.50732	
−	31.11	−107.17		2.03008$_n$	−	27.07			1.43249$_n$	−	2887			1.46047$_n$	
47	1.91			1.49290$_n$	33	2.28				12	30.73				
				1.48210											
46	3407	−34 54 53		1.60890$_n$			−17 8 57		1.24970$_n$			−3 29 26		0.54550$_n$	
+	3035	−34 55 52		1.60420$_n$											
47	4.42														
			+2760					+2788					+3034		
			+4281					+1895					+3.77		
			− 1.31					− .41					− .28		
			− .03					− .03					− .03		
			+ 41.47					+ 18.51					+ 3.46		
			36 27.91					50 4.58					10 21.08		
			+ 42.83												
+77°			− 1.34				+59					+46			
35	46.44		− .02				49	46.07				10	17.62		
			+ 41.47												
35	43.93		36 25.40												
			36 26.66					50 4.58					10 21.08		
			+ .74	−17	37.87			+ .39	−17	37.87			+ .08	−17	37.87
			36 27.4	+	.74			50 5.0	+	.39			10 21.2	+	.08
			18 50.5	−	13.10			32 26.8	−	8.60			52 45.0	+	1.40
			−17 36.9	−17	50.23			38.2	−17	46.08			36.2	−17	36.39
			18 37.4	18	36.43			32 18.2	32	18.50			52 46.4	52	44.69

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δ Aurigae +1.39 +1.71

lim el

δ⁻ 50 8
+ 54 16

B Aurigae +1.50 +1.41

δ⁻ 51 10
+44 56
− 2 33 −.05

rej

49 20.9 388 49 5.99 51 40.2 51 45
22.9 42.3 3.2 42.5 76
25.0 45.7 6.4 44.6 10.4
26.7 49.6 10.4 47.0 13.0
29.3 52 9 45 8 6.0 13.8 49.2 16.2
34.6 +28.253 17.4 50.4 18.8
21.0 335 21.9
24.7 36.4 24.8
28.0 39.6 37.7
42.3
45.2 − 39400
− 23307

50 14.113 50 6651 2739 1449
50 13900 51 45.65 51 16,093 51 16.100

50 14.042 51 16.097
— 26 — 22

50 1402 51 16.08
50 6.06 −9.13 51 7.76 −9.14
+ 7.96 +1.15 + 8.32 +.83
348 + .05 5.60 +.04
−2.58 −2.16
= 10.51 = 10.43
50 3.51 51 5.65

9.84 999

8 5044 −2955 1.47056
+ 2698 1.43101
9 1738

−2 33 36 0.41070

+3137

+2.77
−.24
−.04
+2.49
13 33.46

+45
13 3097

Jan 26
Reg − 17 38.4
36.8
37.6
39.0
36.9
38.2
36.2
−17 37.87

13 3346
+ .06 −17 37.87
13 33.5 + .06
55 59.1 + 4.30
3.44 −1 33.51
56 3.4 55 59.95

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β Ursæ Min −3.63

h m R
2 51
+105 22

γ Persei +1.33

2 56 32
+53 3 +.46
−10 40 −.19+.02

β Persei +.85

3 0 45
+40 31
+1 52 +.02

48 Persei +4.44

3 5 53
+77 19
−34 56 −.57

55	562	4.5	56	246	0	171	242	0	404	4	55	225	5	196					
	597	7.3		28.0		204	264		432		123	322		28.6					
	26	10.6		31.5		223	29.7		459		328	420		38.0					
	47	14.3		34.4		24.4	32.6		485		290	5-16		277					
	75	17.7	1088	384		256	351	3960	512		363	14	4940	571					
				416					540		21.18	+7	5148	66					
54	58.3	58.7		44.8			7.7		568	7	490			154					
	56	22		48.3			10.2		593		555			24.7					
	136	5.7		51.9			13.0		8.0		35			34.5					
	21.7	9.0					15.6				96								
	297	126	564				185	1300			142								
	−62.64										2.36								
	3107	7652		3435		1098	10260		4613					51.25					
51	11.516	56	2.14	56	38.260	56	38.168	0	21.96	0	51.300	0	51.255	4	21.18	5	57.088	5	56.944
														7	2.36				

51 11.516
+ .057

51 11.57
51 0.73 −9.04
+ 10.84 − 1.67
3.01

+2.28
= 8.43
51 3.14

56 38.214
− 25

56 38.19
56 29.85 −9.04
+ 8.34 + .61
28.19

−1.56
− 9.99
56 28.20

0 51.278
− 20

0 51.26
0 42.52 −9.04
+ 8.74 + .39
41.28

−1.24
+9.89
0 41.37

5 56.992
− 70

5 56.92
5 49.84 −9.04
+ 7.08 + .204
45.73

−4.11
= 11.11
5 45.84

			9.77896						9.88094						9.34156				
2	2492	+3607	1.55715	34	51.78	+2982	1.46716	47	33121	+9581	1.98141								
−	2796		1.44657	−	28.74		1.45856	−	2713	−6537	1.81538								
1	5696			34	23.04			47	5.99		1.43343								
											1.26740								
		−10 40 1	1.03530			+1 52 26	0.27500			−34 54 53	1.60390								

		+4505				+4505				+4505									
		+12.03				−2.09				+4456									
		− .34				− .23				− 1.08									
		− .02				− .05				− .03									
		+11.67				−2.37				+43.45									
		21 3.06				48 22.94				36 25.81									
	+53°			+40				+77											
	20 5139			48 2581				35 4236											

Jan 27

Reg −17 36.6
36.6
36.0
−17 36.40

		21 3.06				48 2294				36 2581									
		+ .24	−17	36.40		− .03	−17	36.40		+ .73	−17	36.40							
		21 3.3	+	.24		48 22.9	−	.03		36 26.5	+	.73							
		3 26.7	−	8.30		30 46.3	−	4.30		18 50.5	−	13.10							
		−17 36.6	−17	44.46		36.6	−17	40.73		36.0	−17	48.77							
		3 18.4	3	18.60		30 42.0	30	42.21		18 37.4	18	37.04							

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ζ N Camelop.

h m s
3 19 51
+59 32

Nobles.

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T Persei +1.64 +1.29	β Urs. Min. −3.77 −3.63	γ Persei +1.66 +1.33	δ Persei +1.32 +.85
h m s			
2 46 11	2 5 1	3 56 33	3 0 45
+52 18 +.54	+105 22	+53 4	+40 31
−9 55 −.17 +.10	−62 59 −.89	−10 41 −.19	+1 52 +.02

45 340	431	46 32	50	416	50	540	56	36	42	56	247	0	197	244	0	407			
374	462	63		446		580		60	75		280		208	273		435			
414	495	97		472		622		89	110		316		323	299		460			
434	527	131		496		27		113	146		350		247	323		489			
467	563 4956	164		521 4702		57012		130	175 1096		384			353 3984		515			
		196									417					542			
	368	233	51	338		77			590		454			78		570			
	402	265		365		100			24		488			105		596			
	433	300		387		128			58		521			130		23			
	468			414		137			91					157					
	502 4342			439 3886		184	1292		1285 82					186 1312					
2034	15298	14816				209		428	7678		3457		872	10296		4639			
45 4068	46 16490	46 16455				233	56	F56	56 38390	56	38411	0	21.80	0 61480	0	51544			
						259													
		46 16473		51 12952		284				56	38400				0	51512			
		− .025		+ 57		307	25.84				− 25					− 20			
					51	12.957													
		46 16445		51 13.01						56	38.38				0	5149			
		46 7.88	−9.51	50 60.91	−	9.50				56	29.79	−9.50			0	4248	−9.50		
		+ 8.57	+.70	+ 12.10	−	1.96					+ 8.59	+.72				+ 9.01	+ .46		
		6.49	+.16	3.01	−	.38					28.29	+.17				41.28	+ .13		
			−1.39			+2.10						−1.50					−1.20		
			−10.04			−9.74						−10.11					−10.11		
		46 6.41		51 3.27						56	28.27				0	41.38			

		9.78642									9.77899					9.88094			
48 1572	+3599	1.55376					2	2100	+29.84		1.47480	4	38 5340	+29.71		1.47290			
− 28.23	−	1.45064$_n$					−	23.12			1.36405$_n$		− 29.13			1.46430$_n$			
47 4749							1	5788					38 24.27						
												4							
	−9 54 38	1.00260$_n$							−10 40 5		1.03540$_n$			+1 52 27		0.27540			
	+4686								+4688					+4691					
	+11.21								+12.09					−2.10					
	− .34								− .24					− .24					
	− .03								− .02					− .05					
	+10.84								+11.83					−2.39					
	35 11.70								21 2.30					48 21.69					

+52							+53						+40						
35 0.86							20 5047						48 2408						
	35 11.70								21 2.30					48 21.69					
	+ .22	−17	35.72						+ 24	−17	35.72			− .03	−17	35.72			
	35 11.92	+	.22						21 2.54	+	.24			48 21.66	−	.03			
	17 35.70	−	8.50						3 26.64	−	8.20			30 462	−	4.20			
	−17 363	−17	44.00						35.98	−17	43.68			35.58	−17	39.95			
	17 27.13	17	27.70						3 18.4	3	18.62			30 42.0	30	41.74			

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48 Nb Cephei +4.44 +4.55 — 3 5 53 / +77 19 / −34 56 −.57

o Aurigae +1.18 +1.55 — 5 37 4 / +49 46 / −7 23 −.13

δ Aurigae +1.39 +1.71 — 5 50 8 / +54 16 / −11 53 −.21

β Aurigae — 5 51 10 / +44 56 / No obs.

3 546	230	5 18.8	36 47.5	38.7	36 57.8	49 32.2	39.4	50 0.4		
33	514	28.5	49.7	41.8	08	36.0	42.8	40		
114	40.8	38.2	51.8	45.0	41	38.3	46.4	75		
191	50.2	47.4	54.0	48.3	7.4	40.8	49.9	110		
292	59.9 41.060	57.0	57.0	51.5 45.06	10.5	43.2	53.5 46.40	14.5		
1152	+75148	66			13.7			17.1		
7 414		15.3		29.4	16.8		35.8	21.3		
48.0		24.3		32.9	20.0		39.3	25.3		
54.5		33.9		36.0	23.1		42.9	28.7		
58.7				39.0			46.3			
54				42.5 35.96			50.2 42.90			
5360										
34 11.52	5 56.208	5 51.00 56.668	7 36 26.00 52.00	37 14.102 10.510	37 63.42 10.468	7 49 19.05 38.10	50 149.30 146.50	50 13.06 145.11		
7 53.60		5 56.514			37 10.489			50 14.580		
		− 70			− 24			− 26		
		5 56.44			37 10.46			50 14.55		
		5 49.67	−9.50		37 1.76	−9.48		50 6.02	−9.48	
		+ 6.77	+2.40		+ 8.70	+ .64		+ 8.55	+ .75	
		45.73	+ .46		59.49	+ .15		3.48	+ .17	
			− 3.94			−2.27			−2.52	
			− 10.58			−10.96			− 11.08	
			5 45.86			36 59.50			50 3.47	

		9.34156			9.81017		9.76642	
47 36.72	+16.99	2.02115	19 10.42	+18.49	1.26694	+36.48	1.56205	
− 29.73	−117.09	2.06852n	− 15.40		1.18757n		1.43893	
47 6.99		1.47317n	18 55.02					
		0.51054						
46 34.32	−34 54 49	1.60390n		−7 23 16	0.87320n			
+ 32.40	−34 55 52	1.60420						
47 6.72								

+1.1693   +48.58

	+44.75		+ 8.35
	− 1.29		− .09
	− .03		− .04
	+ 43.43		+ 8.22
	36 24.79		4 1.55
	+44.78		
+77	− 1.60	+50	
35 41.36	− .02	3 53.33	
	+ 43.16		
35 41.63	36 24.79		

Jan. 29

Reg. −17 36.3 / 35.9 / 35.5 / 34.8 / 36.1 / −17 35.72

36 24.79		4 1.55	
+ 72	−17 35.72	+ 16	−17 35.72
36 25.5	+ .72	4 1.7	+ .16
18 50.7	− 13.30	46 25.6	+ 2.00
34.8	−17 48.30	36.1	−17 33.56
18 37.4	18 36.49	46 27.6	46 27.99

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+26

ζ Orionis +1.03

h m s
6 1 3
+14. 46
+27 37 +46

0	502	1	28
	522		48
	544		71
	564		93
	587 5438		116
			137
	243		156
	263		179
	285		200
	306		
	329 2852		
	14290		1028
1	1.4450	1	1.1422
		1	1.1436
			−.016
		1	1.1420
		1	1.196
		+	9.46
			0.36

−9.48
+.14
+.10
−1.60
−10.84
1 0.58

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τ₂ Eridani −.39		η Eridani −.17		γ Persei +1.33		β Persei +.85	
h m s 2 45 52 −31 28 +63 51 +.90 +.00 (+.75)		2 50 51 −9 21 +51 44 +.80		2 56 33 +53 4 −10 41 −.19		3 0 45 +40 31 +1 52 +.02	

46 47 66 80 97 185	37.4 39.6 41.7 43.9 46.2 41.76	45 50.5 52.7 55.0 57.2 59.4	50 31.5 33.0 34.7 36.3 37.5	37.9 40.0 42.0 44.0 46.2 4202	50 50.3 52.3 54.5 56.6 58.8	56 1.9 4.2 6.0 8.0 11.0	3.5 7.4 10.6 14.2 17.8 1070	56 24.3 27.8 31.1 34.7 38.1	0 19.2 22.0 24.6 26.4 28.0	24.4 27.0 29.7 32.3 35.3 2974	0 40.5 43.1 45.8 48.5 51.2	
	12.8 14.9 17.3 19.4 21.6 1720	1.5 4.0 6.3 8.4		11.2 13.3 15.5 17.4 19.5 1538	0.7 2.8 4.9 7.0		58.7 2.2 5.7 9.0 12.4 560	41.4 44.8 48.3 51.8		7.5 10.3 13.0 15.6 18.4 1296	54.0 56.7 59.3 2.1	
405 46 8.10	11896 45 59.480	5350 45 59.444	1730 50 34.60	11740 50 58.700	5279 50 58.655	311 56 6.22	7630 56 38.150	3423 56 38.033	1202 0 24.04	10270 0 51.350	4612 0 51.244	
		45 59.462 − .017			50 58.678 − 16			56 38.092 − 25			0 51.297 − 20	
		45 59.44 45 49.64 + 9.80 49.34	−9.49 −.29 −0.30 −10.08 45 49.36		50 58.66 50 49.03 + 9.63 48.57	−9.49 −.12 −0.46 −10.07 50 48.59		56 38.07 56 29.73 + 8.34 28.29	−9.49 +1.00 −1.44 − 9.93 56 28.14		0 51.28 0 42.43 + 8.85 41.28	−9.49 +.64 −1.15 −10.00 0 41.28
		9.96878			9.99419			9.77879			9.88094	
31 57.06 + 10.37 32 7.43	−8.64	0.93651n 1.01575	26 0.57 − 30.64 25 29.93	+24.08	1.38166 1.48631n	2 21.85 − 24.70 1 57.15	+31.87	1.50338 1.39263n	34 50.94 − 26.73 34 24.21	+27.26	1.43553 1.42693n	
	+63 49 31	2.06669		+51 43 35	1.86240		−10 40 4	1.03540n		+1 52 25	0.27540	
	+28.93 −124.63 + .02 − .02 −124.63 11 23.71			+27.19 −77.55 + .05 − .01 −77.51 3 59.09			+29.15 +11.60 − .27 − .02 +11.31 21 2.51			+29.29 −2.02 − 20 − .05 −2.27 48 21.87		
−21° 9 19.08			−9 2 41.58			+53 20 57.20			+40 48 24.14			
	11 23.71 − 1.13 11 24.8 29 0.1 −17 35.3 28 44.0	−17 35.07 − 1.13 + 16.10 −17 20.10 28 43.81		3 59.09 − 1.01 4 0.1 21 36.1 36.0 21 23.6	−17 35.07 − 1.01 + 12.50 −17 23.58 21 22.67		21 2.51 + .24 21 2.7 3 26.6 36.1 3 18.4	−17 35.07 + .24 − 8.20 −17 43.03 3 19.48		48 21.87 − .03 48 21.8 30 46.2 35.6 30 42.0	−17 35.07 − .03 − 4.20 −17 39.30 30 42.57	

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48 N Cephei +.44

h m s
3 5 53
+77 19
−34 56 −.57

E Eridani −.17

3 27 34
−9 51
+52 14 +.79

53 Eridani −.26

4 32 58
−14 32
+56 53 +.84

E Leporis

5 0 38
−22 31
no obs.

4	14	220	5	18.1	27	25.4	30.2	27	32.8	32	40.0	44.4	32	57.0			37
	52.6	31.4		27.2		27.6	22.3		35.0		41.0	46.5		59.0			
	59.7	41.0		36.5		29.4	24.6		37.0		42.5	48.4		1.3			
	3.7	5.02		46.6		30.6	26.6		39.0		43.6	50.5		3.3			
	1.37	594.40800		55.5		32.0	28.6	24.46	41.0		44.6	52.74850		5.6			
	5822	+ 75116		50					43.2		46.0			7.6			
7	49.9			14.8			53.6		45.4		47.5	18.3		9.8			
	57.7			24.0			55.8		47.5		49.7	20.5		12.0			
	27			32.7			57.8		49.5		52.0	22.6		13.9			
	100						01					24.7					
	172						2.2 57.90					26.9 22.60					
	350																
				5004		1450	8236		3704		468	1311.0		589.5			
4	5842	5 55.949	5	55.600	27	29.00	27 41.180	27	41.155	32	45.20	33 5550	33	55.00			37
8	3.50																
			5	55.716				27	41.168				33	5.525			
				− 70					− 16					− 16			
			5	55.65				27	41.15				33	5.51			
			5	49.49		−9.49		27	31.40		−9.49		32	55.80		−9.49	
				+ 6.16		+ 3.33			+ 9.75		− .13			+ 9.71		− .20	
				45.73					30.73					54.78			
						−3.76					−0.67					−1.02	
						−9.92					−10.29					−10.71	
					5	45.73				27	30.86				32	54.80	
				9.34156					9.99355					9.98588			
47	218.5	+ 5.750		1.75967	55	17.52	+12.17		1.08529	36	7.18	+20.32		1.30792			18
	− 16.28	− 1.2778		2.10646n		− 15.46			1.18930n		− 25.37			1.40426n			+
47	5.57			1.21169n	55	2.06				35	41.81						18
				0.55848													
46	292.2	−34 55 4		1.60390n			+52 18 52		1.87030			+56 53 41		1.94487			
	+ 36.18	−34 55 57		1.60420n													
47	5.40																
		+29.46					+30.08					+32.32					
		+42.99					−79.50					−94.88					
		− .39					+ .01					+ .05					
		− 02					− 00					− 01					
		+42.58					−79.49					−94.84					
		36 25.36					33 33.20					14 28.30					
0		+43.02															
+77		− 1.91		−9					−14								+50
35	42.78	− .02		32 13.71					12 53.46								3
		+41.09															
35	42.95	36 24.04															
		36 24.70					33 33.20					14 28.30					
		+ .32	−17	35.07			− 1.50	−17	35.07			− 1.06	−17	35.07			
		36 25.41	+	.42			33 34.2	−	1.00			14 29.4	−	1.66			
		18 56.7	−	13.30			51 84	+	14.00			32 4.6	+	17.00			
		−17 34.7	−17	47.65			34.2	−17	22.07			352	−17	19.13			
		18 37.4	18	37.05			50 54.4	50	55.27			31 47.6	31	47.43			

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θ Aurigae +1.18

h m s
5 37 4
+49 46
− 7 23 −.13

37 64 | 38.4 | 36 57.8 | 49 50.7
8.7 | 41.5 | 0.8 | 53.7
11.2 | 45.0 | 4.0 | 56.2
13.0 | 47.9 | 7.3 | 58.5
15.5 | 51.2 4480 | 10.3 | 0.8
| | 13.4 |
29.6 | 16.6
32.7 | 19.9
35.9 | 23.0
39.0
42.2 3588

5.48 | 14068 | 63.31 | 27.99
37 10.96 | 37 10.340 | 37 10.344 | 49 55.98

37 10.342
− 24

37 10.32
37 1.73 −9.49
+ 8.59 +.88
59.49
−2.24
−10.85
36 59.47

9.81017
18 55.02 − 0.62 | 9.79239 | 49 17.40 | + 18.32
+ .52 | 9.71302 | − 13.80
18 55.54 | | 49 3.60

−7 23 31 0.87340n

+3532

+ 8.10
+ 00
− .04
+ 8.06
4 0.87

+50
3 52.81

4 0.87
+ .16 −17 35.07
4 1.0 + .16
46 25.8 + 1.80
35.2 −17 33.11
46 27.6 46 27.76

δ Aurigae +1.39

5 50 8
+54 16
− 11 53 −.21

38.9 | 50 0.4
42.4 | 3.6
46.2 | 7.2
49.8 | 10.7
53.1 4608 | 14.2
| 17.8
35.5 | 21.4
38.7 | 25.0
42.5 | 28.6
46.0
49.6 4246

14854 | 12.89
50 14.270 | 50 14.322

50 14.296
− 26

50 14.27
50 5.97 −9.49
+ 8.30 +1.04
3.48
− 2.49
− 10.94
50 3.33

9.76642
1.26293
1.13981n

−11 53 9 1.08350n

+3594

+ 13.17
− .08
− .04
+ 13.05
33 57.80

+54
33 44.75

33 57.80
+ 26 −17 35.07
33 58.1 + .26
16 25.6 + 1.50
32.5 −17 33.31
16 27.1 16 24.49

22 H Camel

6 6 17
+69 22

5 58.8 | 6 8.7 | 43.2
1.0 | 10.7 | 45.4
3.4 | 12.6 | 47.7
5.0 | 14.7 | 48.8
7.0 30.4 | 16.7 | 50.5
| 12.68
37.8 | 18.6
39.8 | 20.5
41.7 | 22.3
43.3 | 24.2
45.6 41.64 | 26.1
| 22.34
| 28.3 | 23.56
| 30.3 7 | 47.12
| 32.2
| 34.3
| 36.2
| 32.26

6 22.392
− 40

6 22.35
6 14.26
+ 8.09

33 51.5 + 20.08
− 23.92
32 41.23

+22
50 7.12

−17 35.07
.48
+ 9.80
−17 25.70
32 18.68

η Gem +.41

6 7 59
+22 32
+19 51 +.34

45.0 | 7 58.4
47.0 | 0.5
49.3 | 2.6
51.6 | 5.1
53.7 49.32 | 7.2
| 9.3
20.5 | 11.7
22.9 | 14.0
25.0 | 16.0
27.4
29.5 25.06

13438 | 60.48
8 7.190 | 8 7.200

8 7.195
− 17

8 7.18
7 57.85 −9.49
+ 9.33 + .31
56.16
−1.69
− 10.87
7 56.31

9.96551
1.30276
1.37873n

+19 50 39 1.31770

+3692

−22.63
− .08
− .03
− 22.74
49 44.38

49 44.38
− .43
49 43.9
32 10.6
33.3
32 20.4

Jan 31

Reg −17

35.3
36.0
36.1
35.6
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34.2
35.2
35.2
33.3
−17 35.07

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9.48411

ρ Persei		β Persei		48 Ν Cephei		γ Urs. Min.	
	+.79		+.85		+4.44		−3.11
	+1.28		+1.32		+4.55		−3.27
h m s							
2 57 52		3 0 45		3 5 53		3 31	
+38 24	+.78	+40 31		+77 19		+107 45	
+3 59	+.07 +.10	+1 52	+.03	−34 56	−.57	−65 22	−.91

58	40			57	482	0	185	243		0	405	3	566	316	183		332			20			494								
	58				508		200	270			433		87	305	211		367						519								
	70	377	37.7		533		222	298			460		90	405	246		394						542								
	87	403	377		560		237	324			487		173	496	275		425				474	41.08	560								
	116	428	375		587		262	353	3976		514		270	585	302	2434	4463	3962			476	408	581	5392							
			87.63		12						540			40140								48.90										
		145			37			76			566		℄	+75149	204		493				22.9		10								
		170			68			102			595				236		520				25.7		29								
		197			92			130			20				263		555				28.0		51								
		224						157							294		584				298		74								
		250	1972					185	1300						3	3.1267	6	16	5536		32.1	3770	98	524							
	371		11735		5279		1106		10276		4620		3536	5	53289		42						120								
58	742	57	58.675	57	58.655	0	2312	0	51380	0	51333	4	1072				71				add 1 rev		140								
																	106			5			162								
				57	58665					0	51356			5	55325		137			21	4812		183								
				−	020					−	20			−	70		173	1058		+	50		210	1630							
																5	55332					21	4812								
				57	5864					0	5134			5	5526					5											
				57	4959		−9.78			0	4239		−9.78	5	4931		−9.79			21	4886										
					+ 905		+ 62				+ 895		+ 66		+ 595		+ 3.46			20	5332		−9.80								
					4853		+ 13				4128		+ 13		4573		+ 46				+ 1254		− 2.42								
							− 1.06						−1.11				− 2.58				5520		− 31								
							− 10.09						− 10.10				− 9.45						+ 188								
						57	48.55					0	41.24			5	45.81						− 1065								
																							20	5521							
			9.89415						9.88094						9.34156																
41	2088	− 8.76	0.94258	34	5540	+ 2924	1.46598	47	3518	+ 104.60	2.01953																				
+	8.85		0.94711		− 2867		1.45738		− 2962		1.47155																				
41	29.73			34	2673			47	5.56																						
		+3 58 55	0.60290			+1 52 29	0.27540	46	3565	−34 54 51	1.60390																				
		+4443				+4450				+4464																					
		−4.44				−2.09				+4452																					
		− 02				− .23				− 1.28																					
		− 03				− .10				− 05																					
		−4.49				− 2.42				+4319																					
		41 14.13				48 19.20				36 25.98																					
+38°				+40				+77																							
41	18.62			48	21.62			35	42.79																						
		41 14.13				48 19.20				36 25.98																					
		− .09	−17 34.07			− .04	−17 34.07			+ .71	−17 34.07																				
		41 14.0	− .09			48 19.2	− .04			36 26.7	+ .71																				
		23 41.3	− 3.60			30 46.1	− 4.10			18 50.8	− 13.40																				
		−17 32.7	−17 37.76			33.1	−17 38.21			359	−17 46.76																				
		23 37.7	23 36.37			30 42.0	30 40.99			18 37.4	18 39.22																				

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No Ephemeris

ε Eridani −.17 +.101

δ Eridani

ϑ Eridani −.25 +1.03

ζ Persei +.109 +1.48

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5 Eridani

B Eridani

17 Camel

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π Ceti −.25

h m s
3 38 41
−14 21 +.71
+56 44 +.84 +56

38 34 0 28.2 38 40.9 45 29.7
37 0 30.0 43 0 31.6 33 4
38 0 32.3 45 6 33.4 32 4
40 0 34.5 47 3 35.0 35 0
41 2 36 6 32.32 49 4 37 0
51.5
2.0 53.6
4.1 55.7
6.5 57.6
8.6
10.7 6.88

38 19 02 9 87 0 44 42 16 67
38 38 04 38 49.50 38 49.56 45 33.34

38 49.353
— 16

38 49.34
38 39.23 −9.81
+10.11 −.18
38.95
−0.28
−10.27
38 39.07

9.98623

24 54 22 +11.31
— 14.13
24 40.09

1.05346
1.15015

+56 42 28 1.94180

+3518

−9484
+ .02
− .10
−9492
3 26.66

3 26.66
− 1.03 −17 33.67
3 27.7 − 1.63
21 0.8 + 13.80
−17 33.1 −17 20.90
20 47.0 20 47.56

τ_2 Eridani −.39

2 45 52
−21 29
+63 52 +.90

37 8 45 5.1.0 50 32 3
40.0 53.1 34.0
42 3 55.3 35.3
44 2 57 6 36.6
46 5 42 16 59.7 37.7
1.8
13.0 40
15.3 63
17.4 84
19.7
22.0 17.48

45 59.820 45 59.688 50 35.18

45 59.754
— 17

45 59.74
45 49.89 −9.82
+10.15 −.28
49.34
−0.25
−10.35
45 49.39

9.96873

32 37.85 +26.41
— 31.69
32 6.16

1.42177
1.50096

26 29.6 +23.72
— 30.18
25 32.78

+63 50 12 2.06691

+3560

−12662
+ .12
− .05
−126.55
11 24.36

11 24.36
− 1.1 −17 33.67
11 25.5 − 1.19
29 0.2 + 16.20
34.7 −17 18.66
28 44.0 28 43.02

η Eridani −.17

2 50 57
−9 31
+51 44 +.78

38.2 50 50.3 57 30.0
40.2 52.7 32.0
42.2 54.8 34.4
44.3 57.0 36.7
46.3 42 24 59.0 38.7
1.0
11.5 3.0
13.5 4.9
15.5 7.3
17.7
19.8 15.60

11784 5300 9 1718
58.920 50 58.888 57 34.36

50 58.904
— 16

50 58.889
50 48.78 −9.82
+ 9.91 −.11
48.57
−.41
+10.34
50 48.55

9.99419

41 53.67 +24.35
— 24.61
41 29.06

1.37571
1.47976

+51 43 37 1.86240

+3574

−7909
+ .05
− .02
−7906
4 3.49

4 3.49
− .96 −17 33.67
4 4.4 − .96
21 36.3 + 12.70
31.9 −17 21.93
21 23.6 21 25.42

ζ Persei +.779

2
2 37 52
+38 24
+3 59 +.07

32.4 57 48.1
35.0 50.7
37.9 53.4
40.5 56.0
43.0 37.6 59.0
1.3
14.7 3.9
17.0 6.5
19.7 9.2
22.4
25.0 12.6

11752 5280
57 58.760 57 58.666

57 58.713
— 20

57 58.69
57 49.57 −9.82
+ 9.12 +.56
48.53
−1.04
−10.30
57 48.39

9.89415

41 53.67 +24.35
1.38650
1.39111

+3 59 28 0.60410

+3616

− .437
− .16
− .04
− 4.57
41 14.72

41 14.72
− .09 −17 33.67
41 14.6 − .09
23 41.2 − 3.50
33.4 −17 37.26
23 37.7 23 37.46

−14
1 51.74

−21
9 17.81

−9
2 44.43

+38
41 19.29

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B. Russell +.85

h m s
3 0 45
+40 31
+1 52 +.02

48 M. Cohen +.444

h m s
3 5 83
+77 19
−34 56 −.57

E. Erickson −.17

h m s
3 27 34
−9 51
+52 14 +.79

J. Erickson −.25

h m s
3 52 12
−13 52
+56 15 +.83

0 1/6.3	244	0	40.7	4	7.4	214	5	18.5	27	14.6	206	27	33.0	52	26.1	29.7	52	42.2	
18.4	27.2		43.3		10.7	31.5		27.7		17.0	22.7		35.2		28.0	31.8		44.4	
20.6	29.9		45.9		16.7	41.0		37.0		18.7	24.6		37.3		29.9	33.8		46.4	
22.1	32.4		48.8		21.7	50.6		47.1		20.3	26.8		39.3		31.2	35.9		48.6	
23.9	36.3 2.94		51.4		30.2	54.4 4.78	0	56.0		22.0	28.9 2.72		41.4		32.7	38.1 3.16		50.9	
			54.2		17.34	+7.51 49		62					43.5					52.8	
	7.8		56.8	7	4.40			14.2			5.41		46.2					55.0	
	10.4		59.6		5.32			24.0			5.61		47.7					57.0	
	13.0		2.3		1.2			33.7			5.83		49.7					59.4	
	15.9				6.5						0.4								
	18.7 1.36				1.04						3.55828					12.1 7.88			
					59.06														
10.13	10.300		46.30					50.34		9.26	8.300		37.23		14.79	10.174		45.67	
0 20.26	0 51.800	0	51.444	4	17.34	5 55.929	5	55.933	27	18.52	27 41.800	27	41.368	52	29.58	52 58.870	52	50.744	
	5			7	59.06						5								
		0	51.472				5	55.931				27	41.434				52	50.807	
			−.020					−.70					−.16					−.16	
		0	51.45				5	55.86				27	41.42				52	50.79	
		0	42.37		−9.83		5	49.22		−9.83		27	31.35		−9.84		52	40.87	−9.86
			+9.08		+.60			+6.64		+3.15			+10.07		−.12			+10.00	−.18
			41.28					45.73					30.73					39.83	
					−1.09					−3.49					−.62				−.74
					−10.32					−10.17					−10.58				−10.78
					0 41.13					5 45.69					27 30.84				52 39.95

			9.88094					9.34156					9.99355					9.98715	
34 56.35	+31.21		1.49429	47	33.85	+9.859		1.99383	55	30.75	+22.91		1.36603	54	32.20	+21.16		1.32552	
−30.60			1.48569n		−27.91	−12.313		2.09036n		−29.11			1.46404n		−26.49			1.42313n	
34 25.75				47	5.94			1.44585n	55	1.64				54	5.71				
								1.54238											
	+1 52 30		0.27540	46	31.65	−34 54 52		1.60390n			+52 13 5		1.87010			+56 12 6		1.93351	
					+34.86	−34 55 54		1.60420n											
				47	6.51														
	+3630					+3644					+3693					+3758			
	−2.05					+43.69					−80.73					−93.56			
	−.26					−1.15					+.04					+.05			
	−.10					−.05					−.01					−.09			
	−2.41					+42.49					−80.70					−93.60			
	48 20.19					36 24.90					33 33.99					32 50.96			
+40°						+43.72													
48 22.60				+77		−1.77			−9			−13							
				35	42.41	−.03		32 13.29				31	17.36						
						+41.92													
				35	41.84	36 23.76													
	48 20.19					36 24.33					33 33.99					32 50.96			
	−.02	−17	33.67			+.70	−17	33.67			−.97	−17	33.67			−1.02	−17	33.67	
48	20.2	−	.02			36 25.0	+	.70			33 32.0	−	.97			32 52.1	−	1.02	
30	46.0	−	4.00			18 50.8	−	13.40			51 8.6	+	14.20			50 27.8	+	16.20	
−17	34.2	−17	37.69			34.2	−17	46.37			33.6	−17	20.44			35.7	−17	18.49	
30	42.0	30	42.50			18 37.4	18	37.96			50 54.4	50	54.93			50 11.6	50	9.45	

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g Camel

h m s
4 42 43
+66 9

i Auriga +.65

4 49 34
+32 59
+9 24 +.16

44	135	49	114	167	49	314	
	175		140	192		337	
	201		156	217		361	
	237		170	240		387	
	280		188	265 3162		412	
						436	
43	420			560		463	
	470			685		485	
	530			10		510	
	576			34			
	335 2580			59 0.96			
	40,806						
	1028						
44	2056	43	11,774	49 773 5546	49	8258 41290	49 3708 41300
		43	11.774		49	41.245	
			37			19	
		43	11.74		49	4123	
		42	4030		49	31.85	−9.90
			+3144			+9.38	+.46
						3032	−1.53
							−10.97
							49 30.26

9.92367

−68.79 6. 3852 +2578 1.41128

6 27.89 1.44541n

6 10.63

+9.24 12 0.97940

+3861

−10,412
− .17
− .03
−10.62
16 27.10

+33
16 3772

Sft 3

Reg −17 33.1
34.7
31.9
33.4
34.2
34.2
33.6
35.7
32.2

−17 33.67

Sft 5

Reg assumed
−17 33.25

16 27.10
− 2.0 −17 33.67
16 26.9 − .20
58 54.7 + 340
322 −17 30.47
58 58.1 58 59.87
5663

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48 Ursae Cephei +.444

2 Ursae Camel +1.70

ε Eridani −.17

γ Eridani −.25

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c Persei +1.09				ο Eridani −.12				ι Aurigae +.65				No Ephemeris γ Leporis	
h m s 4 0 23 +47 24 −5 1 −.09				4 6 18 −7 8 +49 31 +.76				4 49 34 +32 59 +9 24 +.16				5 39 15 −22 30	
1	1.0 3.1 5.6 7.7 9.5		6	1.1 3.0 4.7 6.2 7.2	5.9 7.9 10.0 12.0 14.0 9.96	6	18.3 20.4 22.6 24.5 26.5 28.7 30.8 32.8 35.0	49	15.8 17.8 19.4 21.4 23.5	17.5 19.9 22.4 24.9 27.2 22.40	49	32.0 34.3 36.8 39.3 41.7 44.1 46.6 49.1 51.7	39	41.3 44.0 45.2 46.5 48.5	32.2 34.4 36.6 39.0 34.44	39	43.6 45.8 48.0 50.2 52.4 54.6 56.8 59.1 1.4
	m 0 48.3 51.4 54.5 57.7 06 54.50 0 −24.376				39.0 41.2 43.0 45.3 47.4 43.18				56.6 59.2 16 40 65 1.58				6.5 8.0 10.0 12.5 14.8 10.16	
1	26.9 5.38		6	22.2 4.44	6 53.14 26.570	6	23.96 26.622	49	97.9 19.58	49 83.98 41.990	49	37.56 41.733	39	22.55 45.10	39 104.60 52.300	39	47.19 52.433
		0 30.124 − 22				6 26.596 − 16				49 41.862 − 09				39 52.367 − .017
		0 30.10 0 20.40 + 9.70 18.87		−10.54 +.90 −1.53 −11.17 0 18.93		6 26.58 6 15.95 + 10.63 15.14		−10.54 −.10 −.81 −11.45 6 15.13		49 41.84 49 31.79 + 10.05 30.32		−10.56 + .54 −1.47 −11.49 49 30.35		39 52.35
		9.83051				9.99663				9.92367			
40 31.25 + 30.78 41 2.03		−35.26	1.54728n 1.48825	13 2.90 − 28.36 12 34.54		+22.16	1.34557 1.45266n	6 34.05 − 24.10 6 9.95		+22.28	1.34792 1.38205n			+7.27	0.86153
		−5 1 55	0.70510n			+49 30 37	1.82830			+9 24 8	0.97930		
		+35.92 +55.08 = − 34 − .01 +54.73 +5.16 42 41.05 41 51.48				+36.01 −73.17 + 03 − .06 −73.20 50 59.39				+36.62 −10.37 − .12 − .03 −10.52 16 27.88			
+47 41 46.32				−6 49 46.19				+33 16 38.40					
		41 51.48 42 41.05 + .11 48 41.2 24 18.6 18 22.6 33.0 24 15.0	−17 32.83 5.16 + .11 − 3.60 −17 36.32 24 15.16			50 59.39 − .90 51 0.3 8 32.7 32.4 8 17.9	−17 32.83 − 90 + 14.80 −17 18.93 8 18.32			16 27.88 − .79 16 27.1 58 54.8 32.9 58 58.1	−17 32.83 − .79 + 3.30 −17 29.72 58 58.16				

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Feb. 7 1885

Seporis −.27

h m s
5 41 17
−14 52

ε Aurigae +1.39

5 50 8
+54 16
−11 53 −.21

ζ Orionis +.26

6 1 24
+14 46
+27 37 +.46

22 M. Camel +2.65

6 6 17
+69 22
−26 59 −.45

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Feb. 8, 1885

β Persei +.85

h m s
3 0 45
+40 30 +.89
+1 53 +.03 +00

0 18.7
21.1
23.0
24.7
26.9

25.2
27.9
30.7
33.2
36.0 30.60

85
112
139
166
194 13.92

0 41.4 6 37.6
44.2 48.6
46.7 50.3
49.4 55.2
52.2 1.7
55.0
57.6
0.5
3.0

1144 10452 4700 2504
0 22.88 0 52.240 0 52.222 6 50.08

0 52.241
— 20

0 52.22
0 42.26 —10.72
+ 9.96 + .76
41.28
— .98
—10.94
0 41.28

+4.44

26 Cephei

3 5 53
+77 19
—34 56 —.57

5 46.4
49.4
52.5
55.6
58.6
2.0
4.7

389
5 55.60

5 55.60
— .070

5 55.53
5 48.76 —10.72
+ 6.71 + 3.95
45.73
— 3.03
— 9.80
5 45.73

9.88105 9.34156

34 54.85 + 29.36 1.46776 46 50.67 — 54.48 1.73624n
— 28.79 1.45927n + 15.43 1.18826
34 26.06 47 6.10

+1 52 29 0.27540 —34 55 35 1.60410n

+3193
— .203
— .23
— .10
— 2.36
48 19.93

+3193
+43.25
— .34
— .04
+42.87
36 25.12

+40 48 22.29

+77 35 42.25

Reg — 17 34.1
35.0
— 17 34.55

48 19.93
— .04 —17 34.55
48 19.9 — .04
30 45.8 — 3.80
— 17 34.1 —17 38.39
30 42.0 30 41.54

36 25.12
+ .67 —17 34.55
36 25.8 + .67
18 50.8 — 13.40
35.0 —17 47.28
18 37.4 18 37.84

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Feb. 12, 1885

No Ephemeris

η Eridani −.17

h. m. s.
3 50 41
−9 21 +.77
+51 44 +.78 +.00

51 13.4, 15.3, 16.8, 18.8, 20.4
13.0, 15.0, 17.2, 19.3
21.3 171.60
−16.74
84.7
51 16.94 | 51 0.413

50 51.9, 54.0, 56.1, 58.4, 0.5, 2.4, 4.6, 6.7, 8.7
54.33
51 0.368
51 0.382
− .016
51 0.37
50 48.84
+11.53
48.57

27 23.7, 25.4, 27.6, 29.1, 30.6
13.64
27 27.28

−11.37
− .12
− .27
− 11.76
50 48.61

9.99419
25 9.87 | −16.56 | 1.21906 | 55 20.62
+ 21.07 | | 1.32371 | − 19.54
25 30.94 | | | 55 1.08

+51 42 44 1.86220

+3686

−79.26
+ .02
− .02
−79.26
4 1.85

−9°
2 42.59

−9
32 12.73

4 1.85
− 89 | −17 33.50
4 2.7 | − .89
21 36.6 | + 13.60
−17 33.9 | −17 21.39
21 23.6 | 21 23.24

ε Eridani −.17

3 27 34
−9 51
+52 14 +.79

21.7, 23.8, 26.0, 28.1, 30.3
25.98
65.2, 57.2, 59.5, 14
36.59.38
85.36
27 42.680

27 34.3, 36.3, 38.5, 40.6, 42.7, 44.7, 46.7, 49.0, 51.0
38.38
42.644
27 42.662
− 16
27 42.65
27 31.20
+ 11.45
30.73

39 27.8, 29.8, 31.5, 32.6, 34.3
15.60
39 31.20

−11.34
− .13
− .47
− 11.94
27 30.71

9.99355
+15.38 | 1.18696
| 1.29097

+52 12 55 1.87010

+3774

−80.88
+ .02
− .01
−80.87
33 33.60

33 33.60
− .90 | −17 33.50
33 34.5 | − .90
51 9.0 | + 14.60
34.5 | −17 19.80
50 54.4 | 50 53.40

γ Leporis

5 39 15
−22 30
+64 53 +.91

30.8, 33.0, 35.4, 37.4, 39.5 35.22
6.3, 8.5, 10.8, 13.0
15.3 10.78
106.00
39 53.000

39 44.0, 46.3, 48.4, 50.7, 52.8, 55.2, 57.3, 59.5, 18
47.60
39 52.889
39 52.945
− 17
39 52.93

42 3.5, 5.5, 7.3, 9.0, 10.6
35.9
42 7.18

−11.24

+21.74

55 40.45
+ 12.25
55 52.70

−14
33 4.35

ζ Leporis −.27

5 41 17
−14 52
+57 15 +.84

10.2, 12.2, 14.4, 16.5
18.8 144.20
−17.072
41 57.348

41 48.9, 57.0, 53.0, 55.1, 57.4, 59.5, 1.7, 3.8, 5.8
51.62
41 57.356
41 57.353
− .016
41 57.34
41 45.91
+ 11.43
44.68

−11.24
− .21
− 1.23
− 12.68
41 44.66

9.98521
−9.83 | 0.99255
| 1.08822

+57 13 14 1.95024

+3911

−97.58
+ .01
− .01
− 97.58
34 41.93

34 41.93
− .96 | −17 33.50
34 42.9 | − .96
52 15.9 | + 19.30
33.0 | −17 15.16
51 56.6 | 51 57.09

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Feb. 12 1885

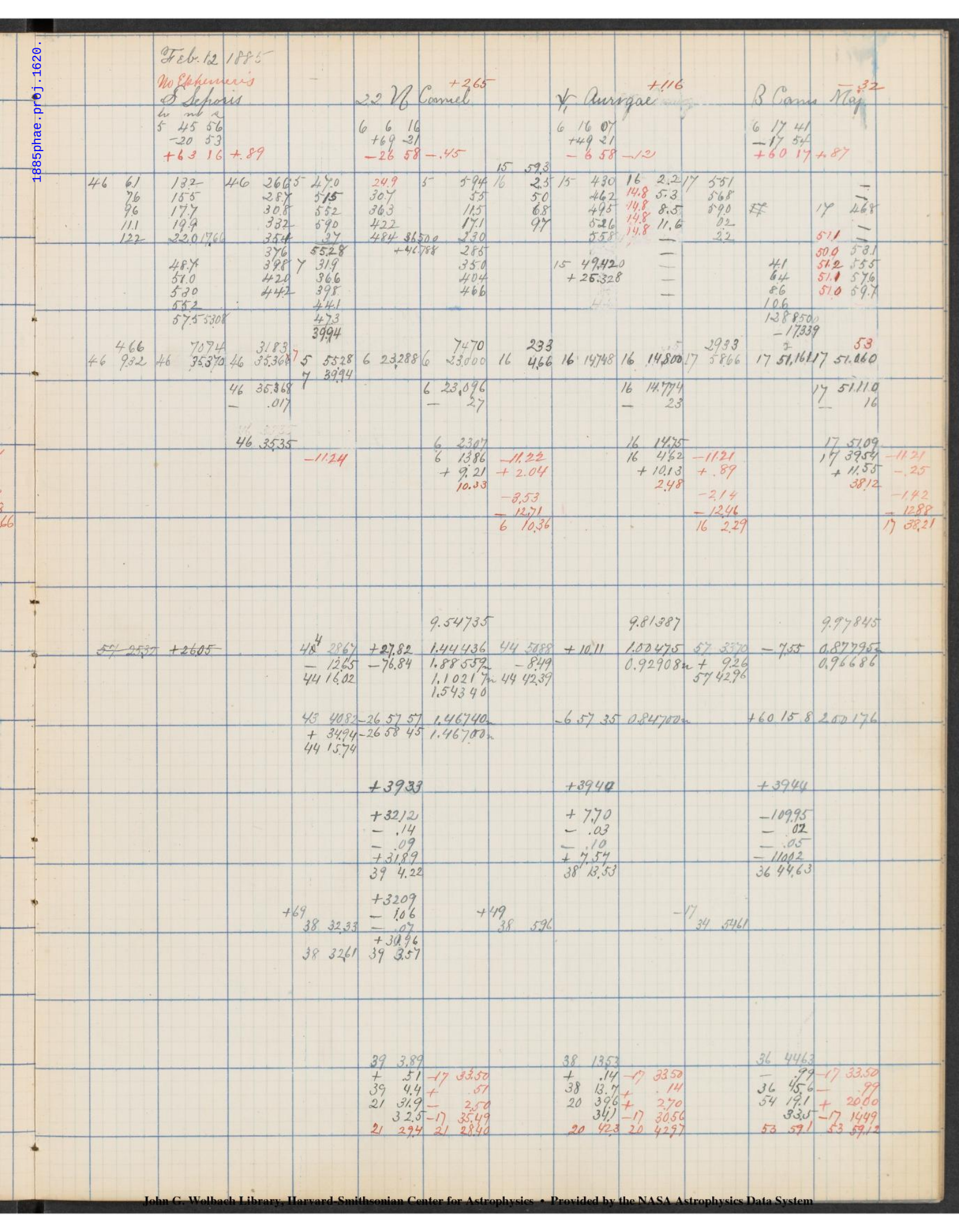
No Ephemeris

δ Leporis

22 M Comet +265

ν Aurigae +116

B Cam. Maj. −32



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8 Lyncis +1.85

h m s
6 27 16
+61 35
-19 12 -.33

51 Aurigae +.82

6 80 46
+39 29
+2 54 +.05

E Gem +.47

6 36 65
+25 15
+17 8 +.29

27 12.6 40.1 27 5.8 30 5.95 27.0 30 43.2 36 39.7 41.3 36 54.7 27
17.1 44.3 10.7 1.5 29.8 45.8 41.6 43.6 57.1
20.9 48.5 14.6 3.6 32.5 48.6 43.0 45.8 59.3
24.0 52.9 19.0 5.0 35.3 51.0 44.8 48.0 1.6
26.4 57.3 4862 23.3 7.0 37.9 3250 53.8 46.4 50.2 45.78 4.0
27.5 56.5 6.2
49.5 9.8 59.3 17.5 8.5
53.4 12.5 1.8 19.7 10.7
57.8 15.2 4.5 22.0 13.0
2.2 18.0 24.4
6.6 57.90 20.6 15.20 26.7 22.06

1010 24652 2096 3166 10770 4845 2155 12784 5751
27 20.20 27 23.260 27 23.288 31 33.2 30 53.850 30 53.833 36 43.10 37 39.20 37 39.00 27

27 23.278
− 633

30 53.842
− 20

37 3.910
− .017

27 2324

30 5382

37 3.89

27 13.49 −11.21
+ 9.75 + 1.42
10.68

30 43.30 −11.20
+ 10.52 + .63
41.38

36 53.07 −11.20
+ 10.82 + .36
57.38

− 281
−12.60
27 10.64

− 192
−12.49
30 41.33

−1.69
− 12.53
36 51.36

9.67750

9.88751

9.95639

30 50.18 +3.08 0.48855 35 41.80 −.948 0.97681n 50 43.95 +2081 1.31827
− 1.89 0.27651n + 9.44 0.97478 − 24.27 1.38512n
30 48.29 35 50.74 50 19.68

−19 11 36 1.30190 +2 53 15 0.46320 +17 8 18 1.24940

+3.955

+21.95
− 00
− 02
+21.93
52 21.99

+3.955

−3.18
− .03
− .01
−3.22
46 54.39

+3.960

−1.945
− .09
− .01
−1.955
32 9.12

Feb 12

Reg −17 33.9
34.5
33.0
32.5
34.1
33.5
33.1
33.4
−17 33.50

+61°
52 0.06

+39
46 57.61

+25
32 28.67

−9

52 21.99
+ .38 −17 33.50
52 22.4 + .38
34 49.3 + .60
−17 33.1 −17 32.52
34 49.9 34 49.47

46 54.39
− .06 −17 33.50
46 54.3 − .06
29 20.9 + 6.00
33.4 −17 27.56
29 26.9 29 26.83

32 9.12
− .33
32 8.8
14 27.8
41.0

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Feb. 15 1885.

E Eridani −.17

h	m	s
3	27	34
	−9	51
	+52	14

+.80
+.79 +80

δ Aurigae +1.39

5	50	8
	+54	16
	−11	53

−.21

27	16.0	216	27	340	49	456	406	50	14
	17.3	23.7		36.1		48.5	442	15.5	5.0
	18.7	25.8		38.3		50.7	48.0	15.6	8.7
	20.0	27.9		40.4		52.8	5.12	15.8	
	21.8	300 2580		42.5		55.0	.5446 47720		
				44.5			+28.253		
		55.0		46.7					
		57.0		48.7					
		59.2		50.8					
		12.							
		33 59.14							

	938		8494		3820		2526		19
27	18.76	27	42.470	27	42.444	49	50.52	50 15.973	50 15.633

				27	42.457				50 15.845
				−	.016				.026
				27	4244				50 1582
				27	31.15	−11.19			50 565 −11.24
					+11.29	− .14			+ 10.17 + 1.11
					30.73				3.48
						− 0.42			− 2.17
						− 11.75			− 12.30
						27 30.69			50 3.52

				9.99355				9.76642	
55	32.85	+23.70		1.37475	49	18.22	+25.32	1.40346	
	− 30.11			1.47876		− 19.07		1.28034	
55	2.74				48	59.15			

+52 13 7 1.87010 −11 53 8 1.08350

+2746

	−78.99						+30.41		
	+ .05						+ 13.00		
	− .01						− .17		
	−78.95						− .09		
	33 33.34						+12.44		
							34 1.94		

Feb 15

Reg − 1ᵐ 34.90

−9 32 1439

+54 33 4920

	33	33.34					34	1.94	
	−	.87	−1ᵐ	34.90			+	.23	−1ᵐ 34.90
	33	34.2	−	.87			34	2.2	+ .23
	51	9.1	+	1470			16	2.5	− .40
	−17	34.9	−17	21.07				34.7	−17 35.07
	50	54.4	50	54.41			16	2.71	16 2.687

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Feb. 17. 1885

α Leporis

No Ephemeris

ε Leporis

22 Hr Camelop.

W. Aurigae

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Feb. 17 1885

23 M. Camel +6.50

h m s
6 26 46
+79 41
−37 18 −.61

51 Aurigae +.82

6 30 46
+39 29
+2 54 +.05

E Gem. +.47

6 36 55
+25 14
+17 9 +.29

O Gem. +.68

6 45 16
+34 6
+8 17 +.14

25	284	26	85		344	30	256	27.7		30	435	36	41.0	41.6		36	55.3	44	52.7	0.6		45	15.4		
	322		26		28.3		24.0	30.5			46.2		43.0	43.9			57.4		55.2	3.0			17.8		
ref	40.2		11.1		25.8		30.1	33.2			48.9		45.0	46.2			59.7		58.6	5.5			20.2		
	46.0		13.1		28.9	29.70	32.6	35.6			51.5		46.7	48.5			2.0		1.0	7.8			22.9		
	52.8		18.5	1068	33.1		34.0	284.3308			54.4		48.2	50.5	4614		4.4		2.5	10.4	546		25.2		
	57.6				2644						56.7						6.4						27.6		
			45.4		27.4			10.2			59.6			18.0			8.7			40.3			30.3		
27	38.5		19.6		41.0			12.9			2.0			20.2			11.0			42.8			32.5		
	45.5		23.0	2708	44.6			15.5			5.0			22.3			13.4			45.6			35.0		
	50.6		27.2		48.5	48.74		18.2						24.6						47.8					
	57.4		30.8	3320	52.7			20.6	1548					27.0	2342					50.2	4532				
	2.2		34.8		44.94																				
	7.9			4896	56.4		1503	10856		4878		2239		12856		5783		2900		5078		2269			
	32.21			.740	0.0	30	30.86	30	54.280	30	54.200	36	44.78	37	4.280	37	4.253	44	58.00	45	25.390	45	25.211		
29	53.68		48.745		57.6		35																		
		26	45.848		70.0		8.0		7.78							37	4.268					115	25.301		
			− 85		120					30	54.240						− 17						− .019		
					154						− 20														
			48.66		26 43.78																				
		26	45.76							30	54.22					37	4.25					45	25.28		
		26	41.53		− 11.48					30	43.22		−11.49			36	53.01		−11.49			45	14.34		−11.49
			+ 4.23		+ 3.96						+ 1100		+ .59				+ 11.24		+ .34				+ 10.94		+ .49
			+ 7.13								41.38						51.38						12.56		
			35.34		− 6.19								− 1.84						− 1.63						− .178
					− 13.71								− 12.74						− 12.78						− 12.78
					26 34.95								30 41.48						36 51.47						45 12.50
					9.25307						9.88751						9.95645						9.91806		
			− 6.494																						
24	36.92		− 4.783		1.81251n		36 13.72		+ 24.18		1.38346		50.4995		+ 19.49		1.28981		59 47.82		+ 27.30		1.43616		
	+ 15.00				1.17604		− 24.07				1.38143		− 22.74				1.25672n		− 29.15				1.46468n		
24	51.92						35 49.65						50 27.21						59 18.67						
			−37 17 49		1.64180n				+2 53 48		0.46450				+17 8 24		1.24940				+8 17 22		0.92380		
			+4297						+4303						+4305						+4309				
			+4839						− 3.22						− 19.61						− 9.27				
			− .40						− .15						− .08						− .18				
			− .09						− .02						− .02						− .10				
			+4790						− 3.39						− 19.71						− 9.55				
			58 44.33						46 55.31						32 1.43						23 20.13				
+79						+39						+25						+34								
57	56.43					46	58.70					32	21.14					23	29.68							
			58 44.33						46 55.31						32 1.43						23 20.13				
			+ .65	−17	33.52				− .05	−17	33.52				− .31	−17	33.52				− .15	−17	33.52		
			58 45.0	+	.65				46 55.3	−	.05				32 1.1	−	.31				23 20.0	−	.15		
			41 11.3	−	3.80				29 21.4	+	5.50				14 28.0	+	9.70				3 47.9	+	7.50		
				337	−17	36.67				339	−17	28.07				331	−17	24.13				321	−17	26.17		
			41 7.5	41	7.66				29 26.9	29	27.24				14 37.7	14	37.30				5 55.4	5	53.96		

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15 Lyncis +1.64

h m s
6 47 24
+58 34
−16 11 −.28

i Aurigae

4 49 34
+32 59

α Leporis

5 27 13
−27 55

χ Lepor.

5 44 17
−14 52

520
557
580
12
38

1 1
1 1
47 316

316 358
31.8 396
31.7 436
31.8 476
31.8

554
595
35
75

11.3 3440
−31.639

2897
47 57.964

47 31801 47 31.740 37

47 31.770
− .030

47 3174
47 2157 −11.49
+10.17 +1.18
19.01
−2.56
−12.87
47 18.87

9.71726

30 5800 −2617 1.41780n
+ 1760 1.24552
31 1560

−16 11 28 422320n

+4311

+18.46
− 16
− 02
+18.28
51 51.03

Feb 17

+58°
51 32.75

Reg −17 350
331
33.1
33.7
339
33.1
32.1
342
−17 33.52

51 51.03
+ .30
51 51.3
34 17.1
−17 342
34 18.7

−17 33.52
+ .30
+ 1.60
−17 3162
34 19.41

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1885phae.proj.1620.

Feb. 18 1885

New Ephemeris

i Aurigae +.65

h m s
4934
+32 59 +.72
+9 24 +.16 +.00

49 42.3
44.7
47.0
49.0
51.0

49 33.0
35.3
37.9
40.1
43.0
45.3
47.7
50.2
52.5

27 28.6
30.8
32.6
34.4
37.0

α Leporis −.32

5 27 13
−27 55
+60 18 +.87

31.0
33.2
35.4
37.4
39.4 35.380
+17.341

27 43.9
46.0
48.1
50.2
52.3
54.7
56.7
59.0
1.1

42 18.2
19.6
20.8
22.4
24.7

γ Leporis −.27

5 41 17
−14 52
+57 15 +.84

40.8 40.8
42.8 41.7
45.0 40.7
40.73

10.4
12.8
15.0
17.0

41 49.2
51.3
53.5
55.6
57.8
59.7
2.0
4.1
6.4

46 11.5
12.6
14.2
15.4
17.4

19.3149.0

δ Lepor.

5 45 56
−20 53
+63 16 +.89

13.9
15.9
18.1
20.1
22.2 18.04

48.8
51.0
53.3
55.6

58.05332

46 26.6
29.3
31.3
33.4
35.6
37.7
40.0
42.2
44.5

2350
49 47.00

38508
49 42.778

1629
27 32.58

27 52.621

47.20
27 52.444

1057
42 21.14

11563
41 57.815

5196
41 57.738

711
41 57.422

7136
46 35.680

32.06
46 35.622

49 42.778
− .019

27 52.503
− .16

41 57.774
− .16

46 35.651
− .17

49 42.76

27 52.49

41 57.76

46 35.63

49 31.59 −11.57
+11.17 +.47
30.32
−1.27
−12.37
49 30.39

27 40.51 −11.58
+11.98 −.23
39.48
−1.03
−12.84
27 39.65

41 45.81 −11.59
+11.95 −.19
44.68
−1.13
−12.91
41 44.85

−11.59

9.92367

9.97841

9.98521

6 5.50 −4.22
+ 4.56
6 10.06

0.62531
0.65944

58 27.00 +1.992
− .2444
58 2.56

1.29929
1.38816

55 23.87 −.2337
m + 29.13
55 52.95

4.36866
1.46433

+2.143

+9 23 40 0.97900

+60 16 1 2.00202

+57 12 58 1.95018

+3420

−10.31
− .00
− .02
−10.33
16 27.96

+3519

−108.94
+ .06
− .07
−108.95
37 3.16

+3553

−96.76
+ .07
− .01
−96.70
34 41.30

+33
16 38.29

−17
35 14.21

−14
33 46.0

16 27.96
− .17
16 27.8
58 54.9
−17 32.9
58 55.1

−17 33.56
− .17
+ 3.20
−17 30.53
58 57.43

37 3.16
− .90
37 3.1
54 40.5
37.4
54 20.1

−17 33.56
− .90
+ 20.40
−17 14.06
54 17.22

34 41.30
− .87
34 42.2
52 16.5
343
51 56.6

−17 33.56
− .87
+ 19.90
−17 14.53
51 55.83

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Feb. 18 1885

22 N Camel. +.41 — η Geminorum — +1.16 — ν Aurigae — 23 N Camel. +.50

h m s
6 6 17
+69 21

pre observations

η Gem: 6 7 59 / +22 32 / +19 51 +.34

ν Aurigae: 6 16 7 / +49 20 / −6 57 −.12

23 N Camel: 6 26 46 / +79 41 / −37 18 −.61

	η Gem		ν Aurigae		23 N Camel
7	42.4	8	00.0	16	96	43.4	16	26.0	25	34.6	24	58.9	26	42
	44.3		2.3		114	46.6		6.0		42.3		57		14.3
	46.3		4.4		13.8	50.0		9.0		51.2		17.8		26.0
	48.0		6.8		15.9	53.0		12.0		57.9		39.6		37.5
	50.0		9.0		18.7	56.2	49.84	15.3		5.6		39.4	17.220	48.7
			11.2					18.4		11.4			92.13⅓	0.4
	22.4		13.4			34.2		21.5						11.8
	24.6		15.7			37.4		24.7	28	28.4				23.3
	26.8		18.0			40.5		28.0		41.7				35.8
	28.9					43.6				49.3				
	31.3	26.80				47.0	40.57			55.7				
										34.47.70				
	23.10		13.802		8.088	694		15.038		13.758				44.20
7	46.20	8	9.010	8	8.977	16 13.88	16	15.190	16	15.278	25	53.832	6.493	52 26 49.111
											28	47.70		

8 8.994 − .017

16 15.234 − 23

26 49.191 − 85

8 8.98

7 5.64 −11.60 + 30

+11.34 −1.48

56.16 −12.78

7 56.20

16 15.21

16 4.51 −11.61 + 84

+10.70 −2.03

2.48 −12.80

16 2.41

26 49.11

26 41.44 −11.61 + 3.96

+7.67 −6.10

35.34 −13.75

26 35.36

			9.96551					9.81402					9.25307	
33	7.92	+22.79	1.35774	44	42.78	+1.35	0.13033	25	2.02	+55.36	1.74320			
−	27.15		1.43371n	−	1.13		0.05481	−	12.79	−118.51	2.07376			
32	40.77			44	41.65			24	49.23		1.10673n			
											1.43729			
		+19 50 42	1.31770			−6 57 43	0.84710	24	21.50	−37 17 24	1.64170			
								+	2.37	−37 18 4	1.64190			
								24	48.87					

+3607 / −22.58 / −.10 / −.06 / −22.74 / 49 44.84

+3635 / +7.65 / −.00 / −.09 / +7.56 / 38 14.26

+3651 / +47.67 / −.29 / −.00 / +47.38 / 58 46.50

+22° 50 7.58

+49 38 6.70

+79 57 59.12

+4769 / −1.35 / −.09 / +46.25 / 57 59.48 / 58 45.73

49	44.84					38	14.26					58	46.12	
−	.35	−17	33.56			+	.12	−17	33.56			+	.63	−17 23.56
49	44.5	−	.35			38	14.4	+	.12			58	46.8	+ .63
32	11.0	+	9.40			20	40.2	+	2.10			41	11.5	− 4.00
−17	33.4	−17	24.51				34.2	−17	31.34				3.53	−17 36.93
32	20.4	32	20.33			20	42.3	20	42.92			41	7.5	41 9.19

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Feb. 18 1885

ε Gem	+.47	ε Gem.	+.23	ο Gem.	+.68	15 Lyncis	+1.64
h m s							
6 36 55		6 38 53		6 48 16		6 47 24	
+25 14		+13 1		+34 6		+58 34	
+17 9	+.29	+29 22	+.49	+8 17	+.14	−16 11	−.28
						524	

37	38	416	36	550	39	104	421	38	546	45	17.7	0.7	45	154	47	344	560	47	162
	59	438		577		120	441		568		195	3.0		180		375	02		197
	77	462		599		142	464		590		219	5.6		206		399	42		239
	93	485		21		162	484		10		236	8.0		230		426	61 0.18		282
	116	506 46.12		45			505 46.30		32		257	10.5 5.56		255		460			322
				68					52			+19.926		280					357
		18.0		87			15.8		73					304			585		396
		20.2		110			18.0		94					328			594		438
		226		134			20.0		116					355			36		477
		246					222										74		
		27.2 22.52					24.5 20.10										114 3.46		

	383	12864		5791		528	12640		5681		1084			2292		2004	6364		2870
37	7.66	37 4.320	37	4.344	39	13.20	39 3.200	39	3.122	45	2.168	45 25.481	45	25.468	47	40.08	47 32.820	47	31.889
			37	4.332				39	3.161				45	25.471				47	31.855
				.017					16					19					30
			37	432				39	314				45	2545				47	3182
			36	53.00		−11.61		38	51.60		−11.61		45	14.33		−11.62		47	21.55
				+11.32		+ .34			+11.54		+ .17			+11.12		+ .49			+10.27
				51.38					5008					12.56					19.01
						−1.62					−1.52					−1.77			−2.54
						− 12.89					− 12.96					− 12.90			− 12.938
						36 51.43					38 50.18					45 12.55			47 18.88

				9.95645					9.98869					9.91806					9.71726
50	24.47	−3.33		0.52244	3	32.30	−10.04		1.50173	59	22.75	+3.79		0.57864	31	9.35	−8.22		0.91487
+	3.88			0.158935	+	12.61			1.10088	−	4.05			0.60716	+	5.53			0.74259
50	28.35				3	45.91				59	18.70				31	14.88			
		+17 7 58		1.24920			+29 21 7		1.51010			+8 16 57		0.92.330			−16 12 17		1.22360

		+3671					+3673					+3681					+3683		
		−19.32					−35.22					−9.12					+18.21		
		− .80					− .01					− .01					− .02		
		− .01					− .07					− .09					− .02		
		−19.33					−35.30					−9.22					+18.17		
		32 0.67					18 27.14					23 20.43					51 51.64		

+25			+13				+34					+58						Feb 18	
32	20.00		19	24.41			23	29.65				51	38.47				−17	32.9	
																		33.4	
																		34.2	
																		35.3	
																		32.3	
																		33.4	
																		32.4	
																		34.6	
																		−17 33.56	

32	0.67		18	27.14			23	20.43				51	51.64						
−	.30	−17 33.56		.51	−17	33.56		.15	−17	33.56		+	.29	−17	33.56				
32	0.4	− .30	18	26.6	−	.51	23	20.3	−	.15		51	51.9	+	.29				
14	28.1	+ 9.70	0	53.2	+	13.20	5	47.9	+	7.50		34	1.13	+	1.40				
	323	−17 24.16		334	−17	20.87		324	−17	26.21			346	−17	31.87				
14	37.8	14 36.51	1	6.4	1	6.27	5	58.4	5	54.22		34	18.7	34	19.77				

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ζ Sepor. −.32

h m s
5 27 13
−17 55 +.79
+60 18 +.87 +.50

No Ephemeris

χ Seporis

5 39 15
−22 30
+64 53 +.91

ψ Seporis

5 41 17
−14 52

acc. 0h

No Ephemeris

δ Seporis

5 45 56
−20 53
+63 16

27	269	31.0	27	439	39	392	31.5	39	446	46	206	13.8	46	270	
	284	33.3		462		311	33.6		468		22.0	16.0		29.2	
	302	35.3		48.3		330	35.7		49.1		24.0	18.2		31.8	
	32.0	37.5		50.7		349	38.0		51.3		25.5	20.2		33.5	
	338	39.5	3532	52.6		364	40.0	3576	53.4		27.3	22.4	1813	35.6	
				54.8					55.7					37.8	
		5.7		56.8			6.8		57.7			49.1		40.2	
		7.8		58.8			9.0		0.2			51.2		42.4	
		10.0		1.3			11.3		2.2			53.4		44.3	
		12.2					13.7					55.7			
		14.4	1002				15.8	1132				58.1	5350		

	1513		10534		4734		1646		10708		4810		1194		7162		3213
27	30.26	27	52.670	27	52.600	39	32.92	39	53.540	39	53.444	46	23.88	46	36.810	46	35.700
				27	52.635					39	53.492					46	35.755
				−	.016					−	17					−	017
				27	5262					39	5348					46	3574
				27	4050		−11.78										
					+12.12		− 25										
					3948												
							−102										
							−1305										
							27 39.57										

−11.79 −11.79

9.97841

58	3297	+2238	1.34986	33	053	+2057				57	7052	+1188	1.07482		
−	27.46		1.43873							−	14.31		1.15577		
58	5.51									56	56.21				

9.97049

+60 16 7 2.00205 +63 14 46 2.05581

+3510 +3537

−10893
− 08
− 07
−10908
37 6.24

−12336
+ .03

−17°
35 1716

−20
34 786

37 624
− 90 −17 33.24
37 7.1 − 90
54 406 + 2050
−17 33.5 −17 13.64
54 20.1 54 19.88

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δ Aurigae +1.39

h m s
5 50 8
+54 16
−11 53 −.21

B Aurigae

5 51 10
+44 56

no obs.

22 Mo Camel. +2.65

6 6 16
+69 22
−26 59 −.45

χ Aurigae +1.16

6 16 7
+40 21
− 6 58 −.12

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ε Syncis +1.85

h m s
6 27 16
+61 35
−19 12 −.33

51 Aurigae +.82

6 20 45
+39 29
+2 54 +.05

15 Syncis

6 47 24
+58 34

24	54.8	40.4	27	6.8	31	25.3		
	55.3	44.8		11.0		27.0		
	56.6	49.1		15.5		29.0		
	2.6	54.0		19.5		81.2		
	5.5	58.0	4.936	24.0		33.5		
				28.0				
		50.0		32.5	31	1.03		
		54.3		36.7		1.32		
		58.6		41.4		1.64		
		3.0				1.85		
		7.3	58.64			2.12	1.5780	
							21.378	
2938		16.790		2.154		1.460		
26	58.76	27	23.950	27	23.933	31	29.20	
				27	23.942			30 54.402
					− 33			− 20
				27	2.391			30 5.438
				27	1.329	−11.81		30 43.19 −11.81
					+ 10.62	+ 1.46		+ 11.19 + .65
					10.68			41.38
						− 2.61		− 1.81
						− 12.96		− 12.97
				27	10.95			30 41.41
			9.67750					9.88751
31	26.5	+25.18	1.40106	35	14.90	−.3480		1.54158
−	15.81		1.19902		+ .3464			1.53955
30	46.84			35	49.54			
		−19 11 23	1.30190			+2 52 49		0.46207
		+3.585				+3.588		
		+21.76				−3.15		
		− .15				− .33		
		− .01				− .04		
		+ 21.60				− 3.52		
		52 23.11				46 55.29		
+61°								
52	1.51			+39	46.5881			

Feb 19

Reg −17

33.5	
[30.8]	
33.0	
33.0	
33.0	
33.7	
−17	33.24

52	23.11		46	55.29	
+	.34	−17 33.24	−	.05	−17 33.24
52	23.4	+ .34	46	55.2	− .05
34	50.4	− 0.50	29	21.5	+ 5.40
−17	33.0	−17 33.40		33.7	−17 27.89
34	49.9	34 49.71	29	26.9	29 27.40

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10 Camel. +1.75

h m s
4 53 16
+60 16 +66
+17 53 −.31 +00

52 35.4
37.4
39.3
43.8
47.4

43.0
46.4
51.0
55.3
59.3 51.00
+33.269

20 33
52 40.066

53 7.7
11.8
16.0
20.0
24.5
28.6
32.6
36.8
40.8

53 21.88
53 24.269
53 24.311

53 24.297
− .01

53 24.296

53 13.42 −12.18
+ 10.85 + 1.15
11.50 − 1.92
− 12.95
53 11.32

27 38.0
31.9
33.0
34.8
36.2

1659
33.18

L. Leporis −.32

5 27 13
−17 55
+60 18 +.87

31.6
33.5
35.6
37.8
40.0 3570

5.8
8.1
10.2
12.4
14.7 1024

27 10594
27 52.970

27 52.974
16

27 52.96
27 40.46 −12.20
+ 12.50 − .21
39.48 − .098
− 13.39
27 39.57

27 44.3
46.3
48.7
50.9
53.0
55.2
57.3
59.5
1.6

4768

42 5.0
7.0
8.2
10.0
11.3

42 8.30

γ Leporis −.27

5 41 17
−44 52
+57 15 +.84

41

582 589
583 592
583 588
583 04
581 34
582 46
583 68

17
41 58.243

41 58,243
− 16

41 58.23
41 43.76 −12.21
+ 12.47 − .18
44.68 − .108
− 13.47
41 44.76

46 8.2
10.4
12.3
13.6
15.6

601
46 1202

δ Leporis
No Ephemeris

5 45 86
−20 53
+63 16 +.89

140
16.2
18.5
20.8
22.9 1848

49.3
51.6
53.9
56.0
58.4 5384

7232
46 36.160

46 27.3
29.6
31.7
34.0
36.1
38.3
40.5
42.8
44.9

3252
46 36.133

46 36.147
− 17

46 36.13 −12.21

9.69545

49 35.8 +43.64
− 27.91
49 7.87

1.63988
1.44579

58 34.12
− 24.28
58 9.84

9.97841

+19.79

1.29645
1.38532

55 45.65
+ 12.54
55 58.19

9.98521

−10.06

1.00260
1.09827

54 27.82 +24.13

−17 52 50 1.26890

+60 15 8 2.00176

+57 13 20 1.95026

+26.12
+19.72
− .15
− .09
+ 19.18
33 59.66

+26.88
−10.682
+ .06
− .07
− 10.683
37 8.32

+27.23
−94.96
+ .01
− .02
− 9.496
34 44.80

+60 33 40.48

−17 35 21.49

−14 33 9.84

33 59.66
+ .31
34 59.0
16 26.0
−17 34.0
16 20.7

−17 32.67
+ .31
− 5.30
−17 27.66
16 22.01

37 8.32
− .88
37 9.2
54 40.7
31.5
54 20.1

−17 32.67
− .88
−17 20.60
−17 12.95
54 21.27

34 44.80
− .85
34 45.6
52 16.8
31.2
52 56.6

−17 32.67
− .85
−17 20.20
−17 13.32
51 58.12

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3 Lepus

h m s
5 50 43
−14 12

no obs.

54 Aurigae +.82

6 30 45
+39 29
+2 54 +.05

63 Aurigae

7 3 49
+39 30
Ch. f.

19 Lyncis +1.45

7 13 34
+55 29
−13 6 −.23

3822	3844	30	4442	30	2222	3844	30	4442				12	5317	60		13	2800		
3842	3910				2422	3110		4690					5516	99			3150		
3852	3935				2622	3360		4950					5811	132			3520		
3861	3960				2817	3600		5200					601	170			3877		
3875	3988				3055	3888	3354	5488					627	2081938			4244		
								5755									4600		
						108		00						43			4966		
						135		28						78			5344		
						161		56						116			5700		
						189								152					
						2151616								1861150					
			1318		10970			4933					2912	8488			3818		
		30	2636	30	54850	30		54811				12	5824	13	42440	13	42422		
							30	54831											
								−.020								13	42431		
																	−27		
							30	5481								13	4246		
							30	4315	−12.23							13	3123	−12.25	
								+11.66	+.54								+11.17	+.96	
								41.38									2884		
									−1.77								−.239		
									−13.46								−13.68		
									30 41.35								13 28.72		

						9.88751											9.75331		
		36	1822	+28.47		1.45439						36	1670	+44.9			1.64532		
			−28.34			1.45236							−32.29				1.50909		
		35	4988									35	4441						
				+2 53 52		0.46480								−13 6 9			1.09160		
				+2848										+2952					
				−3.11										+13.22					
				− .22										− .50					
				− .03										− .03					
				−3.36										+1269					
				46 55.11										47 16.63					
		+39										+55							
			46	58.47									47	3.94					
						46 55.11								47 16.63					
						− .05	−17	32.67						+ 2.3	−17	32.67			
						46 55.1	−	.05						47 16.9	+	.23			
						29 21.7	+	5.20						29 44.6	+	3.10			
						−17 33.4	−17	27.52						323	−17	29.34			
						29 26.9	29	24.59						29 47.7	29	47.29			

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β Can Min +.15 — α Gem +.63 — 25 Mensae −.07 — 24 Lyncis +1.66

h m s
7 20 58
+8 31
+33 52 +.56

7 27 19
+32 8
+10 15 +.18

7 31 36
−3 57
+46 14 +.72

7 33 21
+58 58
−16 35 −.28

20 41.6	#80	21	03	26	57.8	5.0	27	19.4	31	22.0	27.1	31	39.5	33	33.4		33	14.3
43.7	49.7		2.3		59.6	7.4		23.2		23.8	29.0		41.7		35.6			18.0
45.3	52.0		4.4		1.5	10.0		24.7		25.6	31.2		43.5		38.3			22.9
46.8	54.0		6.4		3.4	12.3		27.0		27.5	33.3		45.5		42.2			36.0
48.4	56.1	5.196	8.6		4.6	14.9	992	29.4		29.3	35.4	3120	47.6		44.0			39.1
			10.6					31.6					49.4					34.0
	21.2		12.7			44.0		34.3			0.1		51.7					38.0
	23.2		14.8			46.5		36.8			2.2		54.0					42.0
	25.4		16.8			49.0		39.3			4.2		56.1					46.5
	27.4					51.3					6.5							
	29.6	25.36				54.0	48.96				8.4	28						

2258	13732		769		3069	5888		2650		1282	9548		4290		1935			2709	
20 45.16	21 8.660	21	8.544	27	1.38	27	29.440	27	29.444	31	25.64	31	47.740	31	47.668	33	9.870	33	30.160
		21	8.602					27	29.442					31	47.704			33	30.160
			16						19						16				30
		21	8.59					27	29.42					31	47.69			33	30.07
		20	56.45	−12.25				27	17.29	−12.26				31	35.16	+14 −12.26		33	18.98	−12.26
			+12.14	+.10					+12.13	+.42					+12.39	−.05			+11.09	+1.10
			54.85						15.48						33.53				16.38	
				−1.60						−1.81						−1.63				−2.60
				−13.75						−13.65						−13.94				−13.76
				20 54.84						27 15.77						31 33.75				33 16.31

			9.99518					9.92779					9.99902					9.71226	
34 6.10	+2344		1.36996	57	2208	+2806		1.44809	56	1622	+2206		1.34361	6	5160	−860		0.93450	
29.90			1.47560	−	3064			1.48634	−	2838			1.45307	+	572			0.75722	
33 36.20				56	5144				55	4784				6	5732				
	+33 51 40		1.58680			+10 14 56		1.01750			+46 13 50		1.77840			−16 35 34		1.23450	

	+2964					+2981					+2987					+3000			
	−41.35					−11.15					−64.31					+18.39			
	− .04					− .19					+ .02					− .02			
	− .08					− .05					− .03					− .02			
	−41.47					−11.39					−64.32					+18.35			
	48 30.68					25 45.32					34 3.81					16 9.38			

+8				+32				−3				+59							
49 12.15				25 56.71				32 59.49				15 51.03							

	48 30.68					25 45.32					34 3.81					16 9.38			
	− .57	−17	32.67			− .18	−17	32.67			− .73	−17	32.67			+ .28	−17	32.67	
48	30.1	−	.57			25	45.1	−	.18		34	4.5	−	.73		16	9.7	+	.28
30	57.3	+	15.16			8	12.8	+	9.40		51	36.5	+	17.90		58	36.8	+	3.50
	328	−17	18.14				323	17	23.45			320	−17	15.50			329	−17	28.89
31	12.4	31	12.54			8	22.2	8	21.87		51	18.6	51	19.31		58	40.3	58	40.49

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χ Gem +.46

h m s
7 37 34
+24 40
+17 43 +.30

π Gem +.67

7 40 9
+33 41
+8 42 +.15

Gr. 1374 +.353

7 46 32
+74 13
−81 50 −.53

χ Gem +.53

7 56 31
+28 7
+14 16 +.25

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Feb. 21 1885

27 Lyncis
h m s
7 59 53
+51 50
no obs.

Grw.1147 +4.04

8 5 12
+76 6
−33 43 −.55

3

3 410 537 4 447 585 10 52
462 1.3 476 1.5 6.9
517 102 503 4.0 8.3
585 180 530 7.4 10.0
62 275 555 5026 9.8424 11.2
146 10.040
56.37 +68.685 414 12.2
6 43.6 445 15.1
48.7 472 18.1
556 496 21.8
0.7 524 24.0 18.24
8.35588 4702

3 56.37 5 18.725 272 416
6 55.38 296 10 8.32
325

5 18.527 356
− 64 385 32.68
5 18.488

5 1846
5 8.92 −12.28
+ 9.54 + 2.67
4.01
− 4.91
− 14.52
5 3.94

β Cancri +.17

8 10 30
+9 32
+32 51 +.54

98 10 22.2
118 244
140 265
160 285
180 1392 295
326
432 347
450 368
474 390
495
5 1.74786

6128 2752
10 30640 10 30578

10 30.609
− 16

10 30.59
10 18.44 −12.28
+ 12.15 + .11
16.67
−1.75
−13.92
10 16.67

9.38062

0 1.12 +8.16 1.91466 32 5788
− 25.45 −96.85 1.98610 − 28.38
59 36.67 1.40574 32 29.50
1.47718

59 642 −33.42 25 1.58430
+ 3058 −33 43 20 1.58450
59 36.42

+3062

+41.20
− .86
− .00
+40.34
23 53.02

+41.22
− 1.20
− .09
+39.93
23 11.93 23 51.86

23 52.44
+ .56 −17 32.67
23 53.0 + .36
6 19.1 + 2.10
33.9 −17 30.01
6 21.2 6 22.43

9.99452

10 1844 1.34811
+ 12.15 1.45309

+2229

+3074

+32.50 32 1.57500

*39.88
− .04
− .06
*39.78
50 58.63
49 38.87

49 38.87
50 58.63
− .55 −17 32.67
49.50 58.08 − .55
32 5.4 15.30
32.9 −17 17.92
32 20.7 32 20.95

Reg

Feb 21

−17 34.0
33.4
32.3
32.8
32.3
32.0
32.9
32.6
31.4
32.6
31.6
33.9
32.9

−17 32.67

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Feb. 23 1885

α Seforis −.82

h m s
5 27 13
−17 55 +.59
+60 18 +.87 +.02

No Ephemeris

δ Seforis

h m s
5 39 15
−22 30
+64 53 +.91

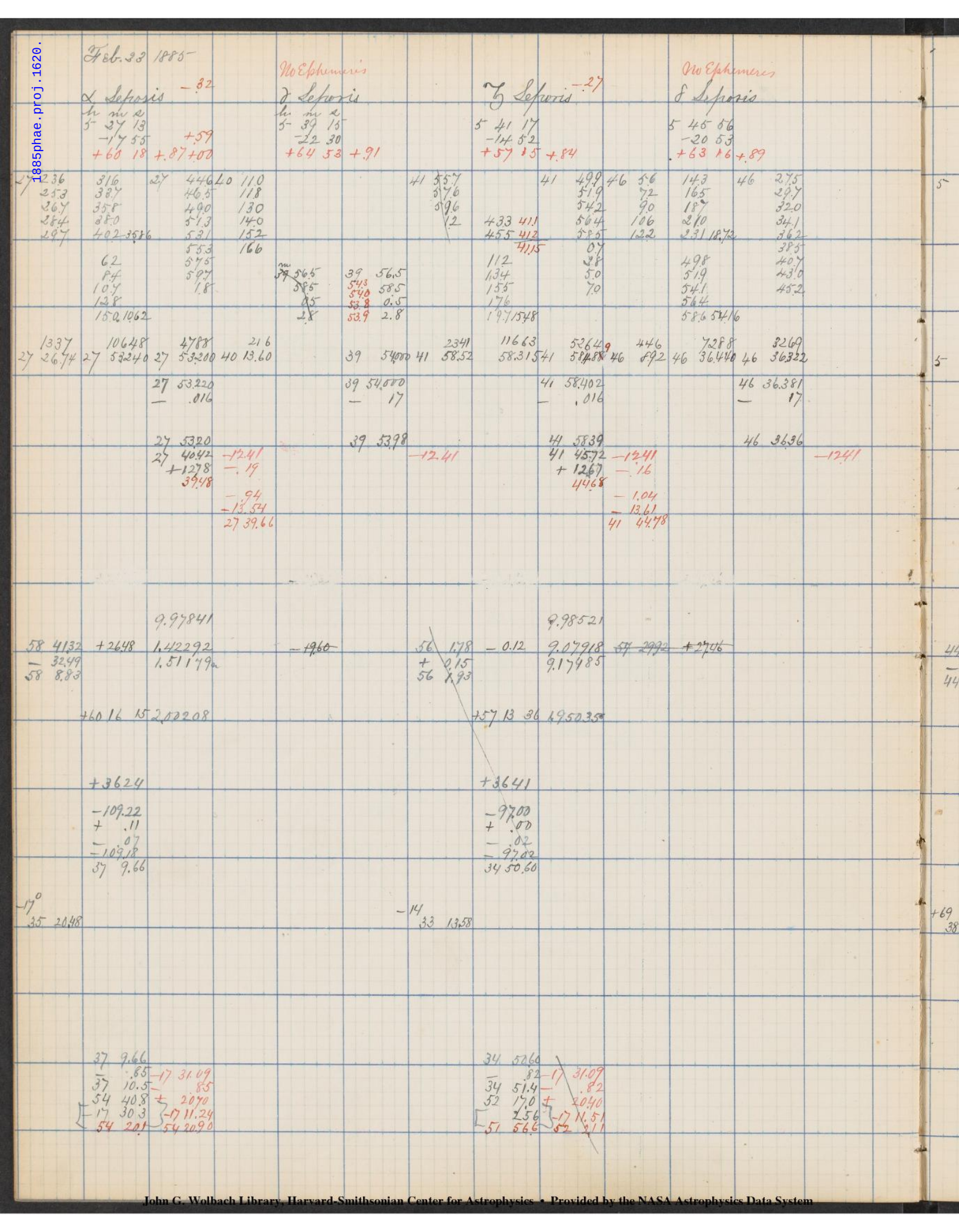
ζ Seforis −.27

5 41 17
−14 52
+57 15 +.84

No Ephemeris

ε Seforis

5 45 56
−20 53
+63 16 +.89



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22 U Camel. +2.65	V Aurigae +1.16	10 Monoc. −.08	δ Lyncis +1.85
h m s			
6 6 17	6 16 7	6 22 20	6 27 16
+69 21	+49 21	−4 41	+61 35
−26 58 −.45	−6 58 −.12	+47 4 +.73	−19 12 −.33

5 46	25.8	6 0.7	15 34.0	44.5	16 3.4	22 4.9	10.2	22 22.5	26 28.1	41.0	27 7.0
10.3	31.8	6.6	36.2	47.5	6.5	6.5	12.2	24.6	30.7	45.5	11.2
15.8	37.4	12.5	39.4	50.9	9.7	7.8	14.3	26.7	33.7	50.0	15.6
19.7	43.2	18.3	41.8	54.0	12.9	9.0	16.3	28.7	37.0	54.1	19.8
22.7	49.1 37.46	24.0	43.4	57.2 50.82	15.9	10.5	18.4 14.28	30.7	40.2	58.2 49.76	24.4
		30.0			19.2			32.8			28.9
	59.1	36.2		35.0	22.4		43.3	34.9		50.6	33.0
	5.2	41.9		38.2	25.5		45.4	37.0		54.7	37.5
	10.9	47.7		41.3	28.7		47.3	39.0		59.4	41.8
	16.6			44.5			49.2			3.6	
	22.5 10.86			47.7 41.34			51.6 47.36			7.8 59.22	
73.1	168.32	217.9	194.8	152.16	144.2	38.7	61.64	276.9	169.7	168.98	219.2
5 146.2	6 24.160	6 24.211	15 38.96	16 16.080	16 16.022	22 7.74	22 30.820	22 30.768	26 33.94	27 24.490	27 24.356
		6 24.186			16 16.051			22 30.794			27 24.423
		− 40			− 23			− 16			− 33
		6 24.15			16 16.03			22 30.78			27 24.39
		6 13.37	−12.42		16 4.40	−12.42		22 18.15	−12.42		27 13.16	−12.42
		+ 10.78	+ 7.56		+ 11.63	+ .69		+ 12.63	− .05		+ 11.23	+ 1.09
		10.33			2.48			16.84			10.68	
			− 3.04			− 1.92			− 1.31			− 2.48
			− 13.90			− 13.65			− 13.78			− 13.81
			6 10.25			16 2.38			22 17.50			27 10.58

		9.54735			9.81387			9.99855			9.67750
44 47.17	+69.57	1.84242	45 14.90	+37.09	1.56926	46 29.08	+23.05	1.36267	31 19.18	+50.48	1.70312
− 31.64		1.50023n	− 31.29		1.49359n	− 29.63		1.47168	− 30.98		1.49108n
44 15.53			44 43.61			45 59.45			30 48.20		
−26 57 39	1.46660n		−6 57 11	0.84650n		+47 4 3	1.79110		−19 11 7	1.30170n	
+3670			+3694			+3708			+3714		
+31.86			+ 7.65			−67.32			+ 21.82		
− .87			− .37			− .03			− .58		
− .10			− .04			− .03			− .03		
+ 30.89			+ 7.24			− 67.38			+ 21.21		
39 3.71			38 11.98			24 18.49			52 21.36		

+69 38 32.82   +49 38 4.74   −4 23 11.10   +61 52 0.15

39 3.71	38 11.98	24 18.49	52 21.36
+ 44 −17 31.09	+ .12 −17 31.09	− .72 −17 31.09	+ 33 −17 31.09
39 4.1 + 44	38 12.1 + .12	24 19.2 − .72	52 21.7 + .33
21 33.6 − 4.20	20 40.7 + 1.60	41 49.8 + 17.80	34 51.0 − 1.10
30.5 −17 34.85	31.4 −17 29.37	30.6 −17 14.01	30.7 −17 31.86
21 29.4 21 28.86	20 42.3 20 42.61	41 32.0 41 32.50	34 49.9 34 49.50

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	7 Gem.	18 Monoc.	15 Lyncis	19 Lyncis
	+.30	+.04	+1.64	+1.45
h m s	6 31 7	6 41 55	6 47 24	9 13 34
	+16 30	+2 32	+88 34	+55 29
	+25 53 +.44	+39 51 +.64	−16 11 −.28	−13 6 −.23
			53.2	
	394			
30	51.9	48.2	57.2	6.4
	54.0	47.2	1.0	10.0
	55.7	49.3	4.9	13.7
	57.4	51.3	9.0 1.06	17.5
	59.3	53.4 4925	32.9	20.7 1366
			36.6	
	30.8	18.2	86.6	4.7
	33.0	20.3	04	8.1
	35.1	22.2	43	11.8
	37.2	24.2	82	15.5
	395 3512	264 2226	122 434	19.2 1186
	278.3 3590	1600 8 2097	13154 5.919 7 1402	6540 2948
30	55.66 31 17.950	31 17.777 41 4194	42 5.770 42 5.768 47 2804	47 32.700 47 32.758
		31 17.864	42 5.769	47 32.728
		− .016	− .016	− 80
		31 1785	42 5.575	47 3270
		31 3.56 −12.42	41 5328 −12.42	47 2142 −12.43
		+ 12.29 + .18	+ 1247 + .02	+ 11.28 + .97
		4.11	5187	47 1901
		−1.45	−.141	−2.41
		−13.69	−13.81	−13.87
		31 4.16	41 5194	47 18.83
		9.98174	9.99958	9.71726
35	39.05 +2220	1.34635 32 5995	+23.83 1.37712 31 2070	+469 0.67117 35 4998
	− 27.45	1.43855 − 30.70	1.48716 − 3.15	0.49889 − 519
35	11.60	32 29.25	31 17.55	35 44.79
	+25 53 13 1.44620	+39 50 34 1.68140	−16 11 5 1.22300	−13 6 36 1.12750
	+3720	+3742	+3753	+3799
	−30.44	−52.34	+18.22	+14.64
	− .07	− .01	− .01	− .01
	− .81	− .06	− .03	− .02
	−30.52	−52.41	+18.18	+14.61
	47 6.23	49 26.69	51 48.98	47 18.17
+16°		+2	+58	+55
47	36.5	50 19.10	51 30.80	47 3.56
	47 6.23	49 26.69	51 48.98	47 18.17
	47 5.8 −17 31.09	49 26.1 −17 31.09	+ .27 −17 31.09	+ .22 −17 31.09
	− .43	− .63	51 49.2 + .27	47 18.4 + .22
	29 34.7 + 12.00	31 56.6 + 16.20	34 18.0 + 0.70	29 44.9 + 2.80
	−17 31.1 −17 19.52	29.5 −17 15.52	31.2 −17 30.12	33.5 −17 28.07
	29 46.7 29 46.41	32 12.8 32 11.17	34 18.7 34 18.86	29 47.7 29 50.10

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B Can. Min. +.15

h m s
7 20 58
+8 31
+33 52 +.56

25 Monoc. -.07

7 31 36
-3 51
+46 14 +.72

ζ Can. Min.

7 33 20
+5 31
no obs

Gr. 1374 +3.53

7 46 32
+7 41 3
-31 50 -.53

20 453 48.1 21 06 31 240 271 31 895 45 42 233 46 87
468 502 2.7 255 293 416 116 307 168
486 522 47 27.4 313 435 180 385 240
506 543 6.7 296 332 458 249 464 317
519 564 5224 88 305 355 3128 478 290 544 3866 294
109 500 466
21.3 13.0 0.3 51.9 24.7 54.7
23.4 153 34 54.0 31.8 2.0
25.5 17.2 44 56.0 40.2 9.7
27.7 64 47.6
29.7 3552 8.7444 54.8 39.82

2432 13776 799 1370 9572 4301 877 1984.8 3536
20 4864 21 8.880 21 8.87 8 31 2740 31 47.860 31 47.788 9 45 17.54 46 39.249 46 39.2889

21 8.879 31 47.824 46 39.264
- 16 - 16 - 35

21 8.86 31 4781 46 3921
20 5643 -12.43 31 3514 +14 12.43 46 2887
+12.93 +.09 +12.67 - .04 + 10.34 -12.44
5485 53 2453 + 2.08
3353
- 1.58 - 1.61 - 4.34
- 13.92 - 14.08 - 14.74
20 54.94 31 33.73 46 24.57

9.99518 9.99902 9.43457

34 240 +2024 1.30621 56 1425 +20.42 1.31006 53 230 +8172 1.91233
- 25.81 1.41185 - 26.27 1.41954 - 2867 1.45736
33 3659 55 47.98 52 33.63

+33 51 36 1.58680 +46 13 48 1.77840 -31 49 24 1.55290

+3811 +3833 +3869
-4216 -6557 +39.05
- .03 - .02 - .95
- .08 - .02 - .06
-4227 -6561 +38.04
48 29.49 34 5.24 30 52.76

48 49 11.76 -3 32 59.63 +74 30 14.72

48 29.49 34 5.24 30 52.76
.55 .71 + .52
48 28.9 -17 31.09 34 5.9 -17 31.09 30 53.3 -17 31.09
30 57.2 - .55 51 36.6 - .71 12 22.2 + .52
+ 15.20 + 18.00 31.1 + .80
317 -17 16.44 30.7 -17 13.80 -17 29.77
31 12.4 31 13.05 51 18.6 51 17.04 13 2.30 13 22.99

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+.17

B Cancri

h m s
8 10 19
+9 32
+32 51 + 54

10 24 100 10 226
39 121 245
55 140 266
72 162 284
87 183 1412 308
328
434 350
455 372
475 393
496
518 4756

277 6168 2775
10 554 10 30840 10 30833

10 30.837
— 16

10 3082
10 1843
+12.39 −12.44
1669 + .10

− 1.74
− 14.08
10 16.74

9.99396

36 1265 +25.30 1.40312
− 32.18 1.50754
35 40.47

+32 53 47 1.57090

+39 12

− 40.74
− .06
− .02
− 40.82
46 27.06

+49° 47 788

Feb 23

Reg −17 30.5
31.4
30.6
30.7
31.1
29.5
31.2
33.5
31.7
30.7
31.1
−17 31.09

46 27.06
− .53
46 26.5
32 5.3

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4 Camel +1.51

h m s
4 38 30
+56 33 +.71
−14 10 −.24+00

10 Camel +1.75

4 53 16
+60 16
−17 53 −.31

E Gem +.23

6 38 53
+13 1
+29 22 +.49

18 Monoc +.04

6 41 55
+2 32
+39 51 +.64

38 0.5 3.0 5.6 9.0 12.0

1.5 5.2 8.7 12.6 16.2 884
1.4 5.0 8.5 12.2 16.0 862

38 2.40 27.5 31.2 34.7 38.4 42.2 46.1 49.8 53.9

53 17.1 20.9 24.8 28.2 31.0

53 7.8 12.3 16.5 20.7 24.8 28.8 33.0 37.2 41.4

38 36.5 38.3 39.8 41.5 42.5

43.0 45.0 47.0 49.2 51.2 4708 16.7 18.8 20.8 23.0 25.3 2092

38 53.5 57.7 59.6 1.7 3.8 5.7 7.8

41 40.8 42.8 44.6 46.3 48.0

45.1 47.2 49.4 51.8 53.6 4932 18.1 20.2 22.2 24.3 26.6 2226

41 5.7 9.7 1.7 3.8 5.9 7.9 10.2 12.0 14.2

301 38 6.02

7746 38 38.730

3478 38 38.644

1220 53 24.40

5
2224 53 24.711 22

1986 38 39.72

12800 39 4.000

5743 39 3.811

2225 41 44.50

13158 42 5.790

5931 42 5.900

38 38.687 − 28

53 24.722 − 31

39 3.906 − 16

42 5.845 − 17

38 3866
38 27.07 −12.60
+11.59 +1.08
25.54
−1.53
−13.05
38 25.61

53 2469
53 13.27 −12.61
+11.42 +1.24
11.50
−1.77
−13.14
53 11.55

39 3.89
38 5150 −12.63
+1239 +.16
50.08
−1.42
−13.89
38 50.00

42 5.83
41 53.25 −12.64
+12.58 +.03
51.87
−1.38
−13.99
41 51.84

9.74132

32 43.40 +32.67
−23.22
32 20.18

1.51485
1.36593 m

49 8.95 −0.20
49 8.75

9.69545

+0.32

9.58515
9.31106 m

41 19.75 −30.39
3 47.36

9.98869

+24.19

1.38364
1.48279 m

32 55.30 −27.49
32 27.81

9.99958

+21.34

1.82919
1.43923 m

−14 9 48 1.16230 m

−17 53 17 1.26920 m

+29 21 54 1.51040

+39 50 29 1.68130

+2574

+15.42
−.27
−.05
+15.10
50 43.27

+2617

+19.74
−.80
−.08
+19.66
33 59.26

+2877

−34.61
−.17
−.09
−34.77
18 24.22

+2891

−51.31
−.01
−.06
−51.38
49 29.16

+56 50 28.17

+60 33 39.60

+13 18 58.99

+12 50 20.54

50 43.27
+ .23
50 43.50 + .23
33 9.5 − 4.80
−17 34.0 −17 37.35
33 4.7 33 5.92

33 59.26
+ .29 −17 32.78
33 59.55 + .29
16 26.1 − 5.40
33.4 −17 37.89
16 20.7 16 21.37

18 24.22
− .27 −17 32.78
18 23.95 − .47
0 53.1 + 13.30
30.6 −17 19.95
12 6.4 1 4.27

49 29.16
− .61 −17 32.78
49 28.55 − .61
31 56.6 + 16.20
31.9 −17 17.19
32 12.8 32 11.97

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Feb 25 1885

19 Syncio +1.45

h m s
7 13 34
+55 29
+ 13 6 −.23

B Can. Min. +.15

7 20 58
+8 31
+33 52 +.56

25 Monoc. −.17

7 31 36
−3 51
+46 13 +.72

* doubtful
2 Can. Min.

7 33 20
+5 31

13 04	64	13	28.4	20	46.0		48.2	21	0.7	31	21.2		27.4	31	39.8	34	17.0		34	6.4
25	10.0		31.8		47.3		50.3		2.9		22.8		29.4		41.8		18.2			8.6
48	13.7		35.5		49.0		52.4		4.8		24.0		31.6		43.9		20.3			10.6
8.0	17.2		39.2		50.7		54.4		6.9		26.4		33.6		46.2		21.8			12.5
9.7	21.0	13.6	42.9		52.8		56.4	52.34	9.0		28.0		35.5	31.50	48.0					14.7
			46.6						11.0						49.8					16.7
	4.7		50.0				21.7		13.2				0.4		52.0			27.0		18.9
	8.4		53.4				23.6		15.3				2.4		54.3			29.0		20.8
	12.0		57.3				25.7		17.4				4.4		56.2			31.3		23.0
	15.5						27.7						6.6					33.5		
	19.2	11.96					30.0	25.74					8.9	4.54				35.6	31.280	
																			−16.577	
25 4	8.562		38.51	9	34.58		13.808		8.12		12.24		8.604		43.20		17.73			13.22
13 5.08	13 42.810	13	42.788	20	49.16	21	9.040	21	9.022	31	24.48	31	48.020	31	48.000	34	19.32	34	14.703	34	14.689
		13	42.800					21	9.031					31	48.010					34	14.691
			−.027						−16						−16						−16
		13	42.77					21	9.02					31	47.99					34	14.68
		13	31.14		−12.64			20	56.41		−12.64			31	35.12	+17	−12.65			33	18.50
			+11.63		+1.04				+12.61		+.11				+12.87		−.05				+56.18
			28.84						54.85						33.73						
					−2.30						−1.56						−1.59				
					−13.90						−14.09						−14.29				
				13	28.87					20	54.93					31	33.70				
			9.75331						9.99518						9.99902						
36 11.58	+39.72		1.57657	34	3.15		+19.87		1.29820	56	18.22		+23.53		1.37162				−4.62		
− 2.56			1.44034		− 2.534				1.40384		− 30.28				1.48110						
35 44.02				33	37.81					55	47.94										
	−13 6 14		1.12720				+33 51 37		1.58680				+46 13 52		1.77850						
	+2965						+2979						+3008								
	+14.35						−41.36						−64.35								
	− .36						− .03						− .02								
	− .02						− .08						− .03								
	+13.97						−41.47						−64.40								
	47 18.30						48 29.07						34 3.99								
+55°				+8				−3													
47 4.33				49	10.54			32	59.59												
	47 18.30						48 29.07						34 3.99								
	+ 22	−17	32.78				− .53	−17	32.78				− .68	+17	32.78						
	47 18.52	+	.22				48 28.54	−	.53				34 4.67	−	.68						
	29 45.2	+	2.50				30 57.2	+	15.20				51 36.8	+	18.20						
	−17 33.3	−17	30.06				31.3	−17	18.11				32.1	−17	15.26						
	29 47.7	29	48.24				31 12.4	31	10.96				51 18.6	51	18.25						

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Gr. 1374

h m s
7 46 32
+74 10

Ch. f

27 Lyncis +1.27

7 59 53
+51 50
−9 27 −.16

Br. 1147 +4.04

8 5 12
+76 6
−33 43 −.55

B Cancri +.17

8 10 20
+9 32
+32 51 +.54

59	254		290		59	487	3	293		528		4	442	10	60		102		10	225
	281		323			522		390		14			527		77		123			245
	313		360			555		466		98			15		94		142			267
	337		388			590		510		185			106		118		164			287
	374		422	3566		33		585		367	954		183		130		185	1432		309
						54							273							330
			220			88				102			367				436			352
			256			120				186			448				454			370
			288			155				273			528				474			392
			321							356							496			
			355	2880						442	2718						518	4756		

	1559		12446		5594		2344		15702			7079		474		6188		2777		
59	31.18	0	2.230	0	2.155	3	4.488	5	18.510	5	18.632	10	9.48	10	30.940	10	30.853			
				0	2.193					5	18.583					10	30.898			
					25						64						16			
				0	2.168					5	18.519					10	30.882			
				59	30.39	+08	1.266			5	8.75		−12.66			10	18.41		−12.66	
					+11.78		+.90				+9.77		+2.87				+12.47		+.12	
					.90						4.01						16.69			
					48.13		−2.26						−4.74						−1.72	
							−1.02						−14.53						−14.26	
						59	48.15					5	3.99						10	16.62

					9.79095						9.38062						9.99396			
15	4270	+31.01	1.49150	0	480	+9.370	1.97174	32	5920	+21.42	1.33082									
−	1963	2871	1.29291	−	2903		1.46282	−	2724		1.43524									
15	2307		3	59	35.77			32	31.96											
	17.99																			
		−9 26 43	0.98140			−33 42 21	1.58430			+32 50 33	1.57000									
		+3085				+3099				+3113										
		+ 1029				+ 4124				− 3991										
		− .25				− 1.12				− .04										
		− .01				− .00				− .06										
		+ 1023				+ 4012				− 40.81										
		7 35.37				23 52.70				49 36.38										
		40.39																		

+52				+76				+9												
7	3528			23	1258			50	1639											
	30.36																			

Feb 25

Reg. −17 34.0
33.4
[30.6]
31.9
33.3
31.3
32.1
33.1
33.1

			7 35.31	7	40.39			23	52.70				49	36.38						
			+ .15	+	.15	−17	32.78	+	.52	−17	32.78		−	.51	−17	32.78				
			7 35.46	7	40.54	+	.15	23	53.22	+	.52		49	35.99	−	.51				
			50 7.4	50	7.4	+	5.70	6	20.1	+	1.10		32	5.3	+	15.40				
			17 28.1		33.1	−17	26.93		33.1	−17	31.16			30.6	−17	17.89				
			50 13.1	50	13.1	50	13.46	6	21.2	6	21.54		32	20.7	32	18.49				

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δ Orionis −.01 +1.00

h m s
5 26 11
− 0 23
+42 46 +.76 +.68 −.08

26 44.6 | 47.1 | 48.6 | 50.6 | 52.0
26 35.1 | 37.0 | 39.0 | 41.1 | 43.2
16 1.8 | 4.8 | 6.7 | 9.5 | 11.7

26 39.080
− 16.500

24.39
26 48.58
26 22.580
16 6.90 (34.5)

26 22.580
− .016

26 22.56
26 8.78
+ 13.78
7.86

Red: −13.53 | − .01 | − .08 | − .92 | −14.54 | 26 8.02

9.99999
1.41497n
1.52542

27 17.07 −26.00
+ 33.53
27 50.60

44 46.32
− 8.57
44 37.75

+42 44 51 1.72570

+11.05
−54.54
+ .01
− .05
−54.58
5 56.83

−0° 5 2.25
+49 38 10.60

5 56.83
− .60
5 57.4
23 23.2
−17 25.8

ψ Aurigae +1.16 +1.53

6 16 7
+49 31
−6 58 −.12

45.6 | 48.8 | 52.0 | 55.0 | 58.1 | 57.90
16 4.5 | 7.7 | 11.0 | 14.0 | 17.0 | 20.1 | 23.4 | 26.5 | 29.5
25 36.0 | 39.0 | 43.0 | 48.7 | 53.6

36.0 | 39.0 | 42.5 | 45.6 | 48.74 (red: 36)

94.26
16 17.130
153.7(8)
16 17.07(7)
220.3
25 44.06

16 17.104
− 23

16 17.08
16 4.22
+ 12.86
2.48

Red: −13.59 | + .88 | − .12 | − 1.74 | −14.57 | 16 2.51

9.81387
+10.20 1.00860
0.93293

24 59.50
− 15.26
24 44.24

−6 57 40 0.84710

+13.42
+ 7.25
− .03
− .10
+ 7.12
38 17.72

+79 58 4.11

38 17.72
+ .11
38 17.8
20 41.2
−17 36.6
20 42.3

Red: −17 35.36 | + .11 | + 1.10 | −17 34.15 | 20 43.57

23 H Camel. +5.50 +5.59

6 26 46
+79 41
−37 18 −.61

26 3.7 | 7.7 | 12.0 | 15.6 | 20.0 | 11.80
23.5 | 27.3 | 31.2 | 35.0 | 38.7 | 31.14
38 41.0 | 42.9 | 44.3 | 45.5 | 46.5

20.0 | 24.3 | 28.4 | 32.7 | 36.4 | 28.36
43.0 | 46.6 | 50.2 | 53.8 | 57.7 | 50.26

17 | 52 | 92 | 130 | 168 | 9.18
22.02
38 44.04

26 50.148
− 85
26 50.148

26 50.06
26 40.30
+ 9.76
35.34

Red: −13.59 | + 4.18 | − .45 | − 4.96 | −14.82 | 26 35.24

9.25307
+66.09 1.82014
1.18367n

4 13.42
− 26.26
3 47.16

−37 17 27 1.64170n

+13.64
+45.22
− .42
− .10
+ 44.70
58 48.81

+13 19 1.19

58 48.81
+ .54
58 49.4
41 13.4
36.0
41 7.5

Red: −17 35.36 | + .54 | − 5.90 | −17 40.72 | 41 8.09

ξ Gem. +2.3 +10.3

6 38 53
+13 1
+29 22 +.49

44.0 | 46.1 | 48.0 | 50.2 | 52.4 | 48.14
38 56.5 | 58.6 | 0.7 | 2.8 | 4.8 | 7.0 | 9.0 | 11.2 | 13.4

17.6 | 19.7 | 21.8 | 24.0 | 26.0 | 21.82

129.96
39 4.980
58.40
39 4.888(9)

39 4.935
− 16

39 4.92
38 51.43
+13.49
50.08

Red: −13.60 | + .17 | − .08 | − 1.35 | −14.86 | 38 50.06

9.98869
+20.90 1.32015
1.41930n

+29 21 47 1.51030

+14.10
−33.45
− .05
− .08
−33.58
18 27.61

18 27.61
− .43
18 27.2
0 53.1
34.1
1 6.4

Red: −17 35.36 | − .43 | + 13.30 | −17 22.49 | 1 5.19

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λ Gem +.30 +1.04

h m s
7 11 32
+16 43
+25 40 +.43

19 Lyncis +1.45 +1.77

7 13 34
+55 29
−13 .6 −.23

β Cam Min +.15 +1.01

7 20 58
+8 31
+33 52 +.56

25 Monoc. −.07 +1.00

7 31 36
−3 51
+46 14 +.72

12 2.6 4.8 6.6 7.8 9.7

14 0.8 3.5 5.8 8.8 11.5

20 43.1 44.6 46.3 47.8 48.9

49.3 51.3 53.2 55.3 57.3 5328

21 1.7 3.7 5.8 7.8 9.8 12.0

31 22.2 23.9 25.5 27.0 28.0

284 30.4 32.5 34.5 36.6 3248

31 40.8 42.8 44.8 46.8 48.8 51.1

11 56.8 59.0 1.2 3.5 5.5 1.200 −17.229

14 5.3 9.0 12.8 16.4 20.2 12.740 − 29.119

22.4 24.6 26.6 28.6 30.7 2458

14.0 16.2 18.2

1.2 3.4 5.5 7.6 9.7 548

53.2 55.2 57.2

315 12 6.30

304 11 43.971 14 6.08

2307 20 46.14

7986 21 9.930

892 21 9.911

1266 31 25.32

9796 31 48.980

4407 31 48.967

11 43.971 − .016

13 43.621 − 27

21 9.921 − 16

31 48.974 − 16

11 43.96
11 30.53 −13.64 +3.43 +.23 −.08 −1.50 −14.99
29.03
11 28.97

13 43.59
13 31.62 −13.64 +1.11 −.14 −2.18 −14.85
12.57
28.84
13 28.74

21 9.90
20 56.34 −13.65 +.11 −.08 −1.49 −15.11
+13.56
54.85
20 54.79

31 48.96
31 35.05 +14.13 −.05 −.08 −.15 −15.31
+13.94
33.53
31 33.65

9.98125

9.75331

9.99518

9.99902

19 41.70 + 2.58 20 9.28 −.2233

1.34889 1.44060

35 24.12 + 16.41 35 40.53 −.2246

1.35141 1.21518

34 57.5 − .3033 33 35.42 +.2378

1.37621 1.48185

56 19.40 − 30.43 55 48.97 +.2365

1.37383 1.48331

+25 37 16 1.44110

−13 7 2 1.12770

+33 52 40 1.58710

+46 13 53 1.77850

+1544 −28.61 − .07 − .04 − 28.77
2 10.30

+1549 +13.91 − .13 − .01 +13.77
47 21.59

+1566 −40.06 − .04 − .08 − 40.18
48 32.75

+1610 −62.32 + .02 − .03 − 62.33
34 2.95

+17 2 39.07

+55 47 48.2

+8 49 12.93

−3 33 0.62

2 10.30 − .38 2 9.9 44 35.7 342 44 48.6

−17 35.36 − .38 + 12.90 −17 22.84 44 47.46

47 21.59 + 20 47 21.8 + .20 29 46.0 − 35.8 29 47.7

−17 35.36 + 1.70 −17 33.46 29 48.13

48 32.75 49 48 32.3 30 57.1 35.2 31 12.4

−17 35.36 − .49 + 15.30 −17 20.55 31 12.0

34 2.95 − .63 34 3.6 51 37.1 335 18.6

−17 35.36 − .63 + 18.50 −17 17.49 51 20.44

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24 Lyncis +1.66 +1.94

α 2000
7 33 21
+58 59
−16 36 −.29

Gr 1374 +3.53 +3.67

7 46 81
+74 13
−31 50 −.53

27 Lyncis +1.27 +1.62

7 59 43
+51 50
−9 27 −.16

B Cancri +.17 +1.01

8 10 19
+9 32
+32 51 +.54

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λ Gem. +.30 +1.04 | β Can. Min. +.15 +1.01 | 25 Monoc. −.07 +1.00 | α Can. Min. +.10 +1.00

λ Gem.	β Can. Min.	25 Monoc.	α Can. Min.
h m s 7 11 33 +16 44 +.74 +25 39 +.43 +.02	7 30 58 +8 31 +33 52 +.56	7 31 36 −3 51 +46 14 +.72	7 33 20 +5 30 +36 53 +.60

11 14.8 16.5 18.0 19.5 21.0 | 22.6 25.0 26.9 29.2 31.4 270.20 +17.228 | 11 44.1 35.5 44.0 37.6 44.1 39.8 44.2 42.0 | 20 40.3 42.6 44.2 45.9 47.5

49.2 51.3 53.3 55.4 57.5 53.34 22.5 24.5 26.5 29.0 31.0 267.0 | 21 18 3.7 5.8 7.9 10.0 12.1 14.0 16.2 18.2 | 31 48.2 50.2 51.7 52.7

28.2 30.4 32.6 34.5 36.5 32.44 15 3.7 5.8 7.8 9.7 57.0 | 31 40.8 43.0 45.1 47.1 49.0 51.3 53.3 55.3 57.4 | 33 46.3 48.0 49.2 50.3 52.2

44.8 46.8 49.0 51.0 53.0 489.20 −16.576 | 33 23.8 26.0 28.0 30.3 32.3 34.4 36.4 38.4 40.5

898 | 4 | 2205 | 14004 | 897 | 28 | 9814 | 4423 | 2460 | 2901

11 17.96 | 11 44.248 | 11 44.100 | 20 44.10 | 21 10.020 | 21 9.967 | 31 50.70 | 31 49.070 | 31 49.144 | 33 49.20 | 33 32.344 | 33 32.233

11 44.174 − 16 | 21 9.994 − 16 | 31 49.107 − 16 | 33 32.270 − 16

11 44.16 | 21 9.98 | 31 49.09 | 33 32.25
11 30.52 −13.88 | 20 56.33 −13.88 | 31 35.04 +4 13.88 | 33 18.42 −13.89
+13.64 +.22 | +13.65 +.11 | +14.05 −.05 | +13.83 +.07
29.03 +.02 | 54.85 +.02 | 13.91 +.02 | 16.91 +.02
−1.49 | −1.48 | 33.53 −1.51 | −1.51
−15.13 | −15.23 | −15.42 | −15.31
11 29.03 | 20 54.75 | 31 33.67 | 33 16.94

9.98121 | 9.99518 | 9.99902 | 9.99800

20 41.70 − 32.37 20 9.53 | +26.21 | 1.41847 1.51014 | 34 9.18 − 33.02 33 36.16 | +25.89 | 1.41313 1.51877 | 55 47.60 + 2.05 55 49.65 | −1.59 | 0.20140 0.31088 | 33 13.62 + 21.73 33 35.35 | −16.93 | 1.22866 1.33712

+25 38 16 1.44140 | +33 51 43 1.58680 | +46 13 22 1.77830 | +36 50 48 1.63470

+21.86 | +21.95 | +22.12 | +22.21

−29.06 − .10 − .01 −29.17 2 9.65 | −40.62 − .05 − .08 −40.75 48 31.44 | −63.16 + .00 − .02 −63.18 34 4.48 | −45.38 − .01 − .06 −45.45 48 27.55

+17 2 38.82 | +8 49 12.19 | −3 33 1.30 | +5 49 13.00

λ Gem.	β Can. Min.	25 Monoc.	α Can. Min.
2 9.65	48 31.44	34 4.48	48 27.55
− .37 −17 33.77	− .49 −17 33.77	− .63 −17 33.77	− .52 −17 33.77
2 9.3 − .37	48 31.0 − .49	34 5.1 − .63	48 27.0 − .52
44 35.7 + 12.90	30 57.1 + 15.30	51 37.1 + 18.50	30 52.5 + 15.40
−17 33.6 −17 21.24	33.9 −17 18.96	32.0 −17 15.90	29.5 −17 18.89
44 48.6 44 48.41	31 12.4 31 12.48	51 18.6 51 20.38	34.5 31 8.66
			31 7.9

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Gr. 1374 +3.53 +3.67

h m s
7 46 32
+74 13
−31 50 −.53

Br. 1147 +4.04 +4.16

h m s
8 5 12
+76 6
−33 43 −.55

B Cancri +.17 +1.01

h m s
8 10 20
+9 32
+32 51 +.54

47 42.4 / 51.0 / 55.2 / 59.8 / 2.3 — 46 10.0 / 12.5 / 14.7 / 17.0 / 19.5 1474 — 46 22.0 / 24.2 / 27.5 / 29.7 / 31.8 2704 — 6 52.3 / 56.9 / 1.0 / 8 / 1.52

10 0.4 / 2.7 / 4.5 / 5.9 / 7.3

5 99 / 2.6 / 5.0 / 7.5 / 9.7 494 — 34.0 / 37.3 / 39.4 / 41.6 / 44.8 39.42

6 10.8 / 20.2 / 27.8 / 34.6 / 45.4 — 28.160 − 68685

44.8 / 46.9 / 48.9 / 51.3 / 53.1 — 32.0 38.3 / 32.0 40.4 / −16.731

2707 / 47 54.14 — 47.0 / 49.4 / 52.0 — 7 2.84 — 142

11 4.16 — 10 32.69 — 10 32.000

46 39.668 − .055 — 55.2 / 57.4 5220 / 46 39.668 — 5 19.475 − 64 — 10 32.192 − 16

46 39.61 — 5 19.41 — 10 32.18

46 28.49 −13.89 / + 11.12 +2.61 / 24.53 +.09 / −3.96 / −15.17 / 46 24.44 — 5 8.46 −13.90 / +10.95 +2.99 / 4.01 +.08 / −4.45 / −15.28 / 5 4.13 — 10 18.35 −13.91 / +13.83 +.13 / 16.69 +.02 / −1.66 / −15.42 / 10 16.76

9.43457 — 9.38062 — 9.99396

52 12.0 − 7.47 — 1.87198 — 58 59.45 — −10.336 — 2.01435 — 31 49.60 — −3.197 — 1.50474
+ 26.12 — 1.41701 — + 32.02 — 1.50543 — + 40.66 — 1.60916
52 27.32 — 59 31.47 — 32 30.26

−31 50 25 1.55320 — −33 43 27 1.58458 — +32 49 24 1.56970

+2.239 — +2.265 — +2.274

+37.63 / −.80 / −.04 / +36.79 / 30 57.82 — +40.47 / −1.37 / −.08 / +39.02 / 23 55.90 — −39.12 / −.09 / −.04 / −39.25 / 49 38.84

mar 3
Reg −17 33.6 / 33.9 / 32.0 / 34.5 / 34.3 / 34.9 / 33.2 / −17 33.77

+94° 30 21.03 — +76 23 16.88 — +9 50 18.09

30 57.82 — 23 55.90 — 49 38.84

+.46 −17 33.77 / 30 58.3 +.46 / 13 24.0 −.100 / 34.3 −17 34.31 / 13 23.0 13 23.51 — +.48 −17 33.77 / 23 56.4 +.48 / 6 21.5 −0.20 / 34.9 −17 33.49 / 6 21.3 6 22.41 — −.47 −17 33.77 / 49 38.4 −.47 / 32 5.2 +1.550 / 33.2 −17 18.74 / 32 20.7 32 20.10

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8 Lyncis +1.85 +2.10

19 Lyncis +1.45 +1.77

R Can. Min. +.15 +1.01

35 Monoc −.07 +1.00

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α Can Min +.10 +1.00

h m s
γ 83 20
+5 31
+36 52 +.60

β Gem

γ 38 20
+28 18
no obs

Gr 1874 +3.53 +3.67

γ 46 32
+74 13
−31 50 −.53

27 Lynxes +1.27 +1.62

γ 59 53
+51 50
− 9 27 −.16

33 44 11.7 33 24.2
15.7 14.1 26.2
17.2 16.2 28.2
18.4 18.2 30.3
19.5 20.1 16.06 32.3
34.5
44.8 36.6
47.1 38.8
49.2 40.8
51.3
53 34 9.14

45 19.5
29.7
32.5
38.6
43.3

46 18.2 23.3 59 20.2
13.9 25.7 23.8
15.5 28.2 26.1
17.9 30.5 29.0
20.5 15.40 32.9 38.42 31.0
0.3 35.4
2.5 37.8
5.7 40.2
8.3 42.4
108 5.72 45.6 40.28

30.8 59 50.6
34.0 53.7
37.8 57.0
40.5 0.7
44.0 37.32 3.8
7.2
24.0 10.5
27.4 14.0
30.6 17.2
34.1
37.3 38.68

8.52 6.520 3.919
1.38 17.04 33 32.600 33 32.433

16.36
45 32.72

48.1 13.01 12.800 5.747
50.7 59 26.02 0 4.000 0 3.856
53.4

33 32.587
− .016

46 40.556
− 55 58.2 53.26
46 40.556

0 3.928
− 25

33 32.50
33 18.40 −14.22 46 40.50
+ 14.10 + .05 46 28.44 −14.23
16.91 + .03 + 12.06 + 1.91
− 1.49 2.453 + .11
− 15.63 − 3.91
33 16.87 − 16.13
46 24.37

0 3.90
59 50.27 +.08 14.23
+ 13.63 + .69
48.14 + .05
− 2.13
15.62
59 48.28

9.99798
1.18977
1.29821n

9.43457
1.83149 15 44.35 + 3.791
1.37652n − 24.00 30.2
15 2.785
14.14

9.79095
1.57875
1.38016n
4

33 57.55 +15.48
− 19.87
33 37.68

52 49.02 +6.784
− 23.80
52 25.22

+36 51 32 1.63490

−31 49 37 1.55300n

42
−9 26 34 0.98130n
4

+14.99
−44.66
− .01
− .08
−44.75
48 25.92

+15.07
+36.99
− .66
− .06
+36.27
30 59.40

+15.14
+ 9.92
− .38
− .02
+ 9.52
7 30.02
7 43.73

+5°
49 10.67

+74
30 23.13

+52 34.21
4 20.50

48 25.92
− .52 −17 34.79
48 25.54 .52
30 52.4 + 15.50
17 33.0 −17 19.81
31 7.9 31 6.11

30 59.40
+ .46 −17 34.79
30 59.9 + .46
13 24.2 − 1.20
35.7 −17 35.53
13 23.6 13 23.87

4 30.22 7 43.73
+ .14 + 0.14 −17 34.79
7 30.2 7 43.9 + .14
50 8.5 50 8.5 + 4.60
21.7 35.4 −17 30.05
50 13.1 50 13.1 50 13.68

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Br. 1147 +4.04 +4.16

h m s
8 5 12
+76 6
−33 43 −.55

B Cavers +.17 +1.01

8 10 30
+9 32
+32 51 +.54

4 30.4 36.2 45.2 49.3 56.8

4 46.6 48.8 52.3 56.0 57.8 52.10

04 34 5.8 8.9 10 12.2 6.14

10 23.5 26.4 28.5 30.0 31.8

10 34.1 36.2 28.3 30.4 32.5 34.6 36.8 38.9 40.9

43.2 46.4 49.0 51.6 54.7 48.98

15.0 17.8 20.5 23.8 36.6 30.74

45.1 47.1 49.2 51.3 53.6 49.260 16.731

2179
4 43.58

29.4 31.8 34.8 14.02 10 28.04

10 32.529

29.27 10 32.522

5 20.560 — 64

37.8 40.4 34.84

5 20.560

10 32.525 — 16

5 20.50

10 32.51

5 8.41 + 12.09 4.01

−14.24 + 2.18 + .12 − 4.40 − 16.34

5 4.16

10 18.34 + 14.17 16.69

−14.24 + .09 + .03 − 1.65 − 15.77

10 16.73

9.38062

1.56799
1.05905

9.99396

+4.48

0.65128
0.75570

59 42.15 — 11.46 59 30.69

+ 3698

−33 42 44

1.58430

+~~75.18~~

+39.76 − .18 − .09 +39.49

23 57.15

+~~1522~~

+76 23 17.66

Mar 4

Reg − 17 35.2 35.6 33.4 34.1 33.0 35.7 35.4 35.9 ~~34.63~~

−17 34.59

23 57.15 + 47 23 57.6 6 21.7 35.9 6 21.2

−17 34.79 + .47 − 0.50 −17 34.82 6 22.33

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β Can. Min +.15 +1.01

h m s
7 30 58
+8 31 +.51
+33 52 +.56 +.02

25 Monoc. −.07 +1.00

7 31 36
−3 51
+46 14 +.42

2 Can. Min +.10 +1.00

7 33 20
+5 30
+36 53 +.60

χ Gem. +.53 +1.13

7 56 31
+28 6
+44 17 +.25

30	57.2		49.7	21	23	31	26.1	29.0		31	41.2	32	39.8			33	34.4	56	18.2		19.7	56	33.8
	58.9		51.7		4.3		27.9	31.0			43.2		41.5				36.4		20.0		21.8		36.0
	0.6		53.8		6.3		29.4	33.2			45.4		43.6				38.5		21.5		24.5		38.4
	2.0		56.0		8.4		30.6	35.2			47.5		45.6				40.6		23.1		26.6		40.8
	3.3		58.0	58.84	10.6		32.2	37.0	33.08		49.5		46.8				32.6		24.7		29.1	24.34	43.0
					12.6						51.6						34.6						45.5
			23.0		14.7			2.0			53.6				45.4		36.9				5.70		47.7
			25.2		16.8			4.0			55.7				47.4		39.0				6.94		50.1
			27.2		18.8			6.1			57.8				49.2		41.0				1.6		52.4
			29.3					8.2							51.2						4.0		
			31.5	27.24				10.3	6.12						53.4	49.20					6.41	6.8	
																−16.56							
	30.20		141.08		9.48		14.62	99.20			445.5		217.3				294.0		187.5		86.02		387.7
32	0.40	21	105.40	21	105.33	31	29.24	31	476.00	31	495.0	33	43.46	33	32.744	33	32.668	56	21.50	56	430.10	56	438.78
				21	10.537					31	49.550					33	32.693					56	43.644
				—	.016					—	16					—	16					—	018
				21	10.52					31	49.53					33	32.68					56	43.63
				20	56.29		−14.36			31	35.00		+14 14.36			33	18.38		−14.36			56	28.94	−14.37
				+	.1423		+ .08			+	14.39		− .04				+14.30		+ .05				+ 1409	+ .27
					54.85		+ .02				33.33		+ .02				16.91		+ .02				27.26	+ .02
							− 1.44						−1.47						−1.47					−1.68
							− 15.70						−15.85						−15.76					−15.76
							20 54.82						31 33.68						33 16.92					56 27.27
					9.99518						9.99902						9.99800						9.94553
33	49.02		+10.14		1.00604	56	14.52		+20.31		1.30771	38	21.12		−10.77		1.03222	58	36.05		+21.54		1.33325
−	12.93				1.11168	n	− 26.13				1.41719	n	+ 13.82				1.14068		− 24.50		+		1.38924
33	36.09					55	48.39					38	34.94					58	11.55				
												3											
			+33 51 23		1.58670				+46 13 49		1.77840				+36 50 55		1.63480				+14 16 10		1.16570
			+1839						+1861						+1871						+1903		
			−40.28						−62.66						−45.03						−15.30		
			− .01						+ .02						− .01						− .10		
			− .08						− .02						− .07						− 15.47		
			−40.37						− 62.66						−45.11								
			48 31.89						34 2.70						48 28.30						24 21.33		
+8	0					−3				+5						+28								+7
49	12.26						33 0.04				49 13.41						24 36.80						
			48 31.89						34 2.70						48 28.30						24 21.33		
			− .42	−17	34.64				− .60	−17	34.64				− .50	−17	34.64				− .21	−17	34.64
			48 31.47	−	.46				34 3.3	−	.60				48 27.8	−	.50				24 21.1	−	.21
			30 57.0	+	15.40				51 37.3	+	15.70				30 52.4	+	15.50				6 46.4	+	10.40
			−17 3.44	−17	19.70				34.0	−17	16.54				35.4	−17	19.64				34.7	−17	24.45
			31 12.4	31	12.19				51 18.6	51	19.24				31 7.9	31	8.66				6 56.8	6	56.88

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h m s
8 5 12
+7 6 6
m −33 43 −.55

2	360	5	5.1	4	46.2		0.5	10	38.2	10	24.2
	44.4		8.4		49.3		3.1		35.0		26.4
	50.3		11.8		52.0		5.9		37.2		28.4
	58.1		20.6		54.6		9.7		38.7		30.5
	3.7		28.1	4	57.3		12.1		6.2.6		32.7
											34.8
	6		12.3		43.2		14.7				36.9
			21.0		46.0		17.4				39.0
			29.0		48.7		20.4				41.0
			38.0		51.8		24.0				
			47.1	4	54.8		26.4		20.58		

B Cancri +.17 +1.01

8 10 20
+9 32
+32 51 +.54

5 35.5 49.260
−16.731

	252.5			41.42		29.5		241			29.39
3	50.50	5	20.710			32.2	10	36.02	10	32.529	10	32.655
						35.2					
		5	20.583			37.8					10	32.613
			− 64			40.5		35.04				− 16
					5	24.532						
		5	20.52								10	32.60
		5	8.30	−14.38							10	18.32
			+ 12.22	+ 2.06								+ 14.28
			4.01	+ .08								16.69
				− 4.29								
				− 16.53								
				5 3.99								

−14.38
+ .09
+ .02
− 1.63
− 15.90
10 16.70

9.38062 9.99396

59 58.78 +9.08 1.95463 32 22.68 −3.41 0.53275
− 27.91 1.44571 + 4.34 0.63717
59 30.87 32 27.02

−33 42 27 1.58430 +32 49 57 1.56990

+19.23 +19.34

+40.14 −38.84
− 1.04 − .80
− .10 − .05
+39.01 −38.89
23 56.48 49 42.44

Mar 6
Reg −17 34.4
34.0
35.4
34.7
34.7
[36.87]
−17 35.00
34.64

+76 +9
23 17.48 50 21.33

23 56.48 49 42.44
+ 46 −17 34.64 − .45 −17 34.64
23 56.9 + .46 49 42.0 + 15.50
6 22.2 − .090 32 5.2 [36.8 G +17 19.59
34.7 −17 35.08 82 2.07 32 22.88
6 21.3 6 21.40

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β Cam Min +.15 +1.01

α m 2
7 30 58
+8 31 +.51
+33 52 +.56 +02

25 Mon. −.07 +1.02

7 31 36
−3 51
+46 14 +.42

2 Cam Min +.10 +1.00

7 33 20
+5 30
+36 53 +.60

χ Gem. +.53 +1.13

7 56 31
+28 6
+44 17 +.25

3020	14108		948		1462		9920		4485		2173		2940		1875		8602		3877
321 0.40	21 10.540	21	10.533	31	3924	31	49.600	31	49.500	33	4346	33	32.744	33	32.668	56	2150	56	43.010

3.572	49.7	21	2.3	31	26.1	29.0	31	412	32	398		33	344	56	182	19.7	56	338	
58.9	51.4		43		27.9	31.0		432		415			364		200	21.8		360	
0.6	53.8		63		29.4	33.2		464		436			38.5		21.5	24.5		38.4	
2.0	56.0		8.4		30.6	35.2		47.5		456			30.6		23.1	26.6		40.8	
3.3	58.0 5884		10.6		32.2	37.0 3808		49.5		468			32.6		24.7	29.1 2434		43.0	
			13.6					51.6					34.6					45.5	
	2.30		14.7			3.0		53.6				45.4	36.9			5.70		47.7	
	2.52		16.8			4.0		55.7				47.4	39.0			6.94		50.1	
	2.72		18.8			6.1		57.8				49.2	41.0			1.6		52.4	
	2.93					8.2						51.2				4.0			
	3.15 2.724					10.3 612						53.4 49.320				6.4 168			
												−16.576							

		21	10.537				31	49.550					33	32.693				56	43.044
		—	.016				—	16					—	16				—	018
		21	10.52				31	49.53					33	32.68				56	43.03
		20	56.29		−14.36		31	35.00		+14.36			33	18.38		−14.36		56	28.94	−14.37
		+	1.423		+ .08		+	14.53		− .04				+1430		+ .05		+	1409	+ .27
			5485		+ .02			33.39		+ .02				1691		+ .02			2726	+ .02
					− .144			33.53		−1.47						−1.47				−1.68
					−15.70					−15.85						−15.76				−15.76
					20 54.82					31 33.68						33 16.92				56 27.27

			9.99518					9.99902						9.99850					9.94553
33 49.02	+10.14		1.00604	56	1452	+2031		1.30771	38	2112	−10.77			1.03222	n 58	3605	+2154		1.33325
— 12.93			1.11168	n	− 26.13			1.41719	n	+ 1382				1.14068		− 2450	+		1.38924
33 36.09				55	48.39				38	3494					58	11.55			
									3										
	+33 57 23		1.58670			+46 13 49		1.77840			+36 50 55			1.63480			+14 16 10		1.16570

			+1839					+1861						+1871					+1903
			−40.28					−62.66						−45.03					−15.30
			− .01					+ .02						− .01					− .10
			− .08					− .02						− .07					− .07
			−40.37					−62.66						−45.11					−15.47
			48 31.89					34 2.70						48 28.30					24 21.33

+8.0				−3					+5						+28				+76
49 12.26				33 0.04					49 13.41						24 36.81				

	48 31.89					34 2.70					48 28.30					24 21.33			
	− .42	−17	34.64			− .60	−17	34.64			− .50	−17	34.64			− 21	−17	34.64	
	48 31.47	−	.46			34 3.3	−	.60			48 27.8	−	.50			24 51.1	−	21	
	30 57.0	+	1540			51 37.3	+	18.70			30 52.4	+	15.50			6 464	+	1040	
	−17 3.44	−17	19.70				−17	16.54			35.4	−17	19.64			3.47	−17	2445	
	31 12.4	31	12.19			51 18.6	51	19.24			31 7.9	31	8.66			6 568	6	5688	

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Br. 1147 +4.04 +4.16

B Cancri +.17 +1.01

h m s
8 5 12
+76 6
m −33 43 −.55

8 10 20
+9 32
+32 51 +.54

2	360	55.1	4.62	0.5	10	33.2			10	24.2
	44.4	8.4	4.93	3.1		35.0				36.4
	50.3	11.8	5.20	5.9		37.2				28.4
	58.1	20.6	5.46	9.7		38.7				30.5
	37	28.1194	5	7.3518	8.2	1.6236				32.7
										34.8
	6	12.3	4.32	14.7			45.1			36.9
		21.0	4.60	17.4			47.1			39.0
		29.0	4.87	20.4			49.2			41.0
		38.0	5.18	24.0			51.4			
		47.1	2.748	5	4.848.90	3.64	2.038			

53.5 49.260
− 16.731

	25.25		41.42		29.5	24.1				29.39
3	50.50	5	20.710		32.2	10	36.02	10	32.529	10	32.655
					35.2					
		5	20.583		37.8					10	32.613
			− 64		40.5	35.04					− 16
				5	24.532						
		5	24.52							10	32.60
		5	8.30	−14.38						10	18.32	−14.38
			+ 12.22	+ 2.06							+ 14.28	+ .09
			4.01	+ .08							16.69	+ .02
				− 4.29								− 1.63
				− 16.53								− 15.90
				5 3.99								10 16.70

9.38062 9.99396

59 58.78 +90.08 1.95463 32 22.68 −3.41 0.53275
− 27.91 1.44571n + 4.34 0.63717
59 30.87 32 27.02

−33 42 27 1.58430n +32 49 57 1.56990

+19.23 +19.34

+ 42.14 − 38.84
− 1.04 − .50
− .10 − .05
+ 39.01 − 38.89
23 56.48 49 42.44

Mar 6

Reg −17 34.4
34.0
35.4
34.7
34.7
[36.87
−17 35.08
34.64

+76
23 17.48

+9 50 21.33

23 56.48
+ 46 −17 34.64
23 56.9 + .46
6 22.2 + 0.90
34.7 −17 35.08
6 21.3 6 21.40

49 42.44
45 −17 34.64
49 42.0 − .45
32 52 + 15.50
36.8 [+17 19.59
32 20.7 32 22.85

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19 Lyncis +1.45 +1.77

h m s
7 13 34
+55 30
+ 13 7 +61 −.23 +.02

8 Cam. Nin. +.15 +1.01

7 20 58
+8 31
+33 52 +.56

25 Monoc +.07 +1.00

7 31 36
−3 51
+46 14 +.72

2 Cam. Nin. +.10 +1.00

7 33 20
+5 31
+36 52 +.60

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β Gem +54 +1.14	Grb. 1374 +353 +367	χ Gem +53 +1.13	27 Lyncis +127 +162
h m s 7 38 20 +28 18 +14 5 +24	7 46 31 +74 13 −31 50 −.53	7 56 31 +28 7 +14 16 +.25	7 59 53 +51 50 −9 27 −.16

38 5.3 7.0 8.5 10.4 12.0 | 9.3 11.7 14.0 16.2 18.6 13.96 | 38 23.4 25.5 28.0 30.3 32.7 35.0 37.4 39.7 42.0 | 44 57.4 32 10.7 16.2 23.0 | 45 25.2 46 32.7 40.5 47.7 55.7 40.368 +60.661 | 108 135 160 182 209 1.588 | 23.3 25.6 28.2 30.5 33.2 2816 | 56 40.0 41.8 43.9 46.0 47.5 | 20.0 22.4 24.8 27.2 29.5 24.78 | 56 34.0 36.4 38.8 41.0 43.4 | 59 23.8 27.6 31.5 33.5 37.2 | 31.2 34.4 37.8 41.0 44.3 37.74 | 59 51.0 54.3 57.6 1.0 4.1

46.7 49.0 51.4 53.6 56.2 51.38 | 1.0 34 60 85 1.10.598 | 35.6 38.4 40.7 43.0 45.6 40.66 | 57.6 59.8 22 46 69 22.2 | 45.7 48.0 50.4 52.8 | 24.3 27.6 31.2 34.3 37.8 31.04 | 7.6 11.0 14.4 17.8

38 43.2 8.64 | 38 65.34 32.670 | 38 29.40 32.668 | 45 35.05 10.10 | 46 41.021 | 48.3 50.6 53.2 55.7 58.6 53.28 | 56 21.92 43.84 | 56 87.00 43.500 | 56 39.05 43.388 | 59 15.36 30.72 | 0 12.878 4.390 | 0 57.88 4.311

38 32.669 − .018 · 38 32.65 | 46 40.830 − 55 · 46 40.792 · 46 40.78 | 56 43.445 − .018 · 56 43.43 | 0 4.351 − .025 · 0 4.33

38 18.27 +14.38 16.69 | −14.76 +33 +.02 −1.58 −15.99 · 38 16.66
46 28.22 +12.56 24.53 | −14.77 +2.15 +.07 −3.69 −16.24 · 46 24.54
56 28.91 +14.52 27.26 | −14.77 +.32 +.02 −1.65 −16.08 · 56 27.35
59 50.19 +14.14 48.13 | +08 14.77 +.77 +.03 −2.06 −16.03 · 59 48.30

9.94472 · 9.43457 · 9.94546 · 9.79095

47 27.05 − 27.29 46 59.76 | +24.03 | 1.38075 1.43593n | 53 0.57 − 31.82 52 28.75 | +90.73 | 1.95775 1.50278n | 58 14.22 + .46 58 14.68 | −0.40 | 9.60206 9.65798 | 15 43.42 − 26.80 15 16.62 | +33.63 | 1.52673 1.42814n

+14 5 1 1.15970 | −31 49 25 1.55290n | +14 15 48 1.16550 | −9 26 43 0.98140n

+31.84 · −15.54 − .13 − .05 − 15.72 · 35 32.87
+32.22 · +38.47 − 1.18 − .06 +37.23 · 30 56.83
+32.46 · −15.77 − .00 − .06 − 15.83 · 24 17.84
+32.70 · +10.33 − .30 − .01 +10.02 · 7 41.75

+28 35 48.59 | +74 30 19.60 | +28 24 33.67 | +52 7 31.73

35 32.87 − .19 35 33.1 18 0.7 32.4 18 10.6 | −17 32.07 − .19 + 9.90 −17 22.36 18 10.51
30 56.83 + 43 30 57.3 13 25.0 32.3 13 23.0 | −17 32.07 + .43 − 2.00 −17 33.64 13 23.19
24 17.84 − .20 24 17.6 6 46.5 31.1 6 56.8 | −17 32.07 − .20 + 10.30 −17 21.97 6 55.87
7 41.75 + .13 7 41.9 50 9.2 32.7 50 18.1 | −17 32.07 + .13 + 3.90 −17 28.04 50 13.71

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Br 1147 +4.04 +4.16 — B Cancri +.17 +1.01

h m s
8 5 12
+76 6
m 33 43 −.55

8 10 20
+9 32
+32 51 +.54

3 m

3	422	5	47 4	46.1	03	10	398	12.5	10	245
	48.8		40	49.0	3.0		41.7	14.2		26.6
	55.3		120	52.2	6.2		43.0	16.2		28.9
	44		205	54.8	9.0		44.5	18.3		30.8
	9.9		288	13000 5	77596	11.7	604	46.0	20.3 1630	32.9
				18685						35.0
				43.7	14.6			45.5		37.2
				46.2	17.4			47.5		39.3
				49.2	20.4			49.6		44.4
				51.7	23.4			51.7		
			5	42490	0260	2036		54.0 4966		
	2806	5	20685		291		2150	65.96	2966	
3	5612				32.0	10	4300	10 32980	10 32955	6
					348					
		5	20.471		37.5				10 32.968	
			−.064		405	3478			− 16	
				5	20428					
		5	20.41						10 32.95	
		5	8.18	−14.78					10 18.29	−14.78
			+12.23	+ 2.46					+ 14.66	+ .07 10
			4.01	+ .08					16.69	+ .02
				4.17						− 1.60
				−16.41						−16.26
				5 4.80						10 16.69

9.38062 — 9.99396

0	212	+8435	1.92609	32 18.20	−10.03	1.00130	
−	2613		1.41717 m	+ 12.76		1.10572	
59	35.99			32 30.96			
		−33 42 24	1.58430		+32 49 52	1.56990	

+3297 — +3324

+41.43	−40.10
− .91	− .01
− .00	− .05
+40.52	−40.16
23 52.88	49 37.23

+76°
23 12.36 — +9 50 17.39

Mar 8

Reg −17 33.3
31.8
32.2
32.6
32.4
32.3
31.1
32.7
30.4
31.6
−17 32.07

	23	52.88			49	37.23	
	+	.45	−17	32.07		44	−17 32.07
	23	53.3	+	.45	49	36.8	− .44
	6	22.6	−	1.30	32	5.2	+ 15.50
		30.4	−17	32.92		31.6	−17 17.01
	6	21.3	6	19.96	32	20.7	32 20.22

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19 Lyncis +1.45

h m s
7 13 34
+55 29 +.54
− 13 6 −.23+60

i Gem +.53

7 18 38
+28 2
+14 21 +.25

β Cam Min +.15

7 30 58
+8 31
+33 52 +.56

25 Mono

7 31 36
−3 51
chf

14 175
204
233
258
291

18 21.6
23.2
25.0
27.0
28.4

28.1
30.5
32.8
35.2
37.5 3282

18 42.0
44.6
46.8
49.2
51.5
53.8
56.0
58.5
0.7

21 19.1
20.6
22.2
24.2
25.7

21 32
52
73
93
114
136
156
177
198

72
109
144
180
217 14440
−2913 1

13 44.9 52.2
45.3 56.2
45.8 59.9

54
78
100
126
149 1014

240
262
282
302
322 28180
−16684

1161
14 2322

13 45309

5
13 45.167

1252
18 2504

10296
18 51480

4631
18 51458

6
1118
21 2236

21 11.496

3
1031
21 11677
456

13 45.262
− 27

18 51.468
− 018

21 11.469
− 16

13 4523
13 30.79 −1521
+1444 +.79
2884

−1.95
−16.37
13 28.86

18 51445
18 3650 −1521
+14.95 +.29
3501

−1.49
−16.41
18 35.04

21 11445
20 5623 −1522
+1522 +.08
5485

−1.38
−16.52
20 54.93

9.75331

9.94580

9.99518

35 1672 −3796 1.57933n 4 8.98 +2643 1.42210 33 2515 −1089 1.03703n
+ 27.74 1.44310 − 3009 1.47836n + 1389 1.14267
35 4446 3 38.89 33 39.04

−13 7 9 1.12780n +14 21 43 1.16860 +33 50 59 1.58660

+2814

+14.32
− .37
− .01
+13.94
47 17.83

+2826

−15.73
− .15
− .08
−15.96
18 53.50

+2837

−41.20
− .01
− .07
−41.28
48 28.03

+55 47 389

+28 19 946

+8 49 931

47 1783
+ 18 −17 3064
47 18.0 + .18
29 47.0 + 0.70
−17 31.9 −17 29.76
29 47.7 29 48.07

18 5350
− 20 −17 3064
18 53.3 − .20
1 22.6 + 9.30
30.7 −17 21.54
1 31.9 1 31.96

48 2803
− 44 −17 3064
48 27.6 − .44
30 57.0 + 15.40
30.6 −17 15.68
31 12.4 31 12.35

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ζ Can Min	β Gem +.54	π Gem +.67	Gc 1374 +3.53
h m s	7 38 20	7 40 9	7 46 32
7 33 20	+28 18	+33 41	+74 13
+5 30	+14 5 +.24	+8 42 +.15	+31 50 +.53
chf			m 45

38 588 0.6 2.5 4.6 6.6

40 448 47.0 48.7 51.3 52.8

45 282 340 396 412 463 509

46 360 836 412 484 564 4112

46 112 142 162 186 212 1628

242 263 289 316 337 3894

m 38 472 49.7 520 543 566 5196 −18.99

m 40 365 393 417 443 467 41700 −19829

m 47 274 347 422 498 575 4232

1.7 4.0 6.6 9.4 11.7 6.68

366 393 417 440 465 4162

3131 39 2.62

2446 38 33221 40 4892

1984 40 21871 45 39.68

8341 46 41.720

491 515 543

38 33221 −.018

40 21.871 −19

46 41589 −55

569 590 5416 41536

38 3320

38 18.23 −15.22 + 14.97 +.29 16.69 −1.54 −16.47 38 16.73

40 21.85

40 7.09 −15.22 + 14.76 +.36 5.47 −1.62 −16.48 40 5.37

46 4183

46 28.11 −1523 + 13.42 +1.91 24.53 −3.58 −16.90 46 24.63

9.94472

46 2755 −2940 + 3338 47 0.93

1.46835 1.52353

22.5 3917 + 29.16 23 28.33

−2705

9.92018

1.43217 1.46481

52 5247 +61.91 − 21.72 52 30.75

9.43457

4.79176 1.23679n

+14 4 2 4.15920

+8 40 33 0.94390

−31 49 34 1.55350n

+2874

−15.41 − .19 − .03 −15.63 35 31.79

+2898

−9.39 − .18 − .06 −9.63 59 10.39

+2932

+38.22 − .55 − .06 +37.61 30 55.21

+28° 35 47.42

+33 59 20.02

+74 30 17.60

35 31.79 − .19 35 31.6 − .19 18 0.8 30.8 18 10.5

−17 30.64 + 9.70 −17 21.13 −18 10.66

59 10.39 − .12 59 10.2 41 40.4 29.8 41 48.6

−17 30.64 − .12 + 8.20 −17 22.56 41 47.83

30 55.21 + .42 30 55.6 13 25.4 30.2 13 23.0

−17 30.64 + .42 − 2.40 −17 28.62 13 25.59 2.59

3262

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Br. 1147 +.404

h m s
8 5 11
+7 6 6
−33 43 −.55

5	59.3	4	46.4		1.0	10	43.6		12.5	10	25.0	14	46.2	45.9	15 3.0
	5.8		49.5		4.5		45.4		14.6		27.2		48.9	48.6	5.6
	10.7		52.5		6.8		47.3		16.7		29.8		50.5	51.5	8.3
	15.8		55.8		9.4		48.9		18.8		31.3		53.0	54.3	11.3
	26.5		58.0	5344	12.2	678	49.9		20.9	1670	33.5		55.2	57.0	5146 14.2
											35.5				17.0
			43.3		15.3				46.1		37.6			31.2	20.0
			46.9		18.3				48.2		39.7			34.1	22.7
			49.3		21.3				50.8		41.9			37.0	25.5
			52.6		24.1				52.3					39.8	
			55.8	4958	27.0	2120			54.4	5026				42.8	3698
	3531				29.7		2351		6696		3010		2538	14844	1276
4	1062				33.0	16	4702	10	33480	10	33444	14	5076	15 14220	15 14178
					35.3										
		5	21.072		38.2					10	33.462				15 14.199
			− 64		40.6	3536					− 16				− 21
				5	21.072										
		5	21.01							10	33.45				15 1418
		5	8.65		−1524					10	18.27	−1524			14 5953 −1524
			+ 12.96		+ 2.18						+ 15.18	+ .09			+ 1465 + .57
			4.01								1669				5767
					−4.04							−1.58			−1.86
					−17.10							−16.73			−16.59
					5 39.1							10 16.72			14 57.59

β Cancri +.17

h m s
8 10 20
+9 32
+32 51 +.54

31 Gyncis +.95

h m s
8 15 2
+48 33
−1 10 −.02

9.38062

59	2012	−49.55	1.69504	32	1530	−13.56	1.13226	32	2508	+23.41	1.36996				
+	15.35		1.18612	+	17.25		1.23668	−	21.91		1.34062				
59	3547			32	32.55			32	3.17						

9.99396

9.86020

−33 43 6 1.58440n +32 49 49 1.56980 −1 10 1 5.06920n

		+30.06				+30.31				+30.60					
		+41.16				−39.82				+ 1.26					
		− .32				− .02				− .25					
		− .09				− .05				− .05					
		+40.75				−39.89				+ .96					
		23 53.63				49 35.91				50 46.14					

Mar. 10

Reg. −17

+76			+9			+43								31.0	
23	1288		50	1580		50	45.18							30.7	
														30.6	
														30.8	
														29.8	
														30.2	
														31.1	
														30.3	
														31.3	
														−17	30.64

23	53.63					49	35.91			50	46.14				
+	.43	−17	30.64				.43	−17	30.64	+	.02	−17	30.64		
23	54.06	+	.43			49	35.5	−	.43	50	46.2	+	.02		
6	23.0	−	1.70			32	5.2	+	15.30	33	149	+	6.50		
	31.1	−17	31.91				30.3	−17	15.57		31.3	−17	24.12		
6	21.3	6	21.72			32	20.7	32	20.34	33	21.4	33	22.02		

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	19 Lyncis +1.77		ζ Geminorum +1.13		B Cam. Min +1.01		25 Monoc.
	+1.45		+.53		+.15		
	h m s						
	7 13 34		7 18 39		7 20 58		7 31 36
	+55 29	+.35	+28 1		+8 31		−3 51
	−13 6	−.23 −.05	+14 22	+.25	+33 52	+.56	Ch. I
14 102	9.0	13 31.7 18 19.1	285	18 42.5 20 44.0	57.0	21 3.2	
127	12.9	34.7 20.6	31.0	44.8 45.4	53.0	5.5	
146	17.0	38.3 21.7	33.0	47.0 46.7	55.1	7.6	
166	20.3	42.0 23.0	35.6	49.4 48.5	57.2	9.7	
190	23.9 16.62	46.8 24.5	37.7 33.16	51.5 50.2	59 35 5.2	12.0	
		49.3	60	53.9		14.0	
	7.6	53.0	8.2	56.4	24.5	15.6	
	11.0	56.6	10.6	59.0	26.3	17.9	
	14.4	0.3	12.9	1.2	28.5	20.1	
	18.6		15.3 10.60		30.7		
	32 14.74				32.5 28.50		
731	9136	41.17 1089	10376	4657 2348	14362	1056	
14 1462	13 45680	13 45.744 18 21.78	18 51.880	18 51.744 20 46.96	21 11.810	21 11.733	
		13 45.712		18 51.812		21 11.772	
		− 27		− 018		− 16	
		13 45.68		18 51.79		21 11.76	
		13 30.73 −1542		18 36.47 −1542		20 56.20 −1542	
		+ 14.95 + .51		+ 15.32 + .19		+ 15.56 + .05	
		28.84 − .09		35.01 − .06		54.85 − .05	
		−1.89		−1.46		−1.35	
		−16.89		−16.75		−16.77	
		13 28.79		18 35.04		20 54.99	
		9.75331		9.94587		9.99518	
35 24.20 21.70	−.2891	1.46105 4 14.70	+.3023	1.47756 34 11.62	+.2481	1.39463	
+ 21.13		1.32482 − 34.19		1.53389 − 31.64		1.50027	
35 42.83 45.33		3 40.51		33 39.98			
	−13 7 4	1.12770	+14 21 49	1.16870	+33 51 46	1.58680	
	+4364		+4390		+4403		
	+ 14.84		− 16.32		− 42.74		
	− .22		− .20		− .05		
	− .01		− .08		− .08		
	+ .1461		−16.60		−42.87		
	47 20.13		18 57.24		48 25.50		
	17.63						
+55° 47 55.2		+28 19 78.4		+8 49 83.7			
3.02							
	47 20.17 1763		18 57.24		48 25.50		
	+ .18 −17 29.59		.19 −17 29.59		− .43 −17 29.59		
	47 20.3 17.8 + .18		18 51.0 − .19		48 25.1 − .43		
	29 47.2 + 0.50		1 22.7 + 9.20		30 57.0 + 15.40		
	−17 33.1 −17 28.91		28.3 −17 20.58		28.1 −17 14.62		
	.1 30.2 29 48.72		1 31.9 1 30.66		31 12.4 31 10.88		
	29 47.7						

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α Can Min
h m s
7 33 20
+5 31
cluf.

β Gem. +.54 +1.14
7 38 20
+28 18
+14 5 +24

Gr. 1374 +3.53 +3.67
7 46 32
+74 13
−31 50 +.53

χ Gem. +.53 +1.13
7 56 31
+28 4
+14 16 +.25

38 36 56 74 93 10.7

102 124 15.0 17.5 19.7 14.96 — 47.9 50.0 52.4 54.6 56.9 52.36

38 24.1 26.4 28.7 31.2 33.5 35.9 38.2 40.5 42.8

45 25.6 31.2 36.6 42.7 52.5

26.7 33.9 42.2 49.9 56.9 41.92 — 28.2 35.3 42.7 50.8 58.5 43.10

46 12.0 19.7 27.6 35.2 42.7 49.5 57.6 5.3 13.2

56 19.7 22.0 24.5 26.0 27.2

21.3 23.3 25.7 27.8 30.2 25.66 — 58.1 0.5 2.9 5.2 7.7 2.88

56 34.8 37.3 39.5 41.7 43.9 46.4 48.8 51.1 53.6

38 36.6 73.2 | 38 67.32 33.660 | 38 30.13 33.47 8 | 45 18.86 37.72 | 46 20.502 42.510 | 46 38.28 42.533 | 56 11.94 23.88 | 56 88.54 44.270 | 56 39.71 44.122

38 33.569 − 18 — 38 33.55
38 18.20 + 15.35 16.69

−15.43 +.19 −.06 −1.51 −16.81 38 16.74

46 42.521 − 55 — 46 42.47
46 27.99 + 14.48 24.53

−15.44 +1.23 −.18 −3.46 −17.85 46 24.62

56 44.196 − 18 — 56 44.18
56 28.88 +15.30 27.26

−15.44 +.19 −.06 −1.59 −16.90 56 27.28

47 32.25 − 29.81 47 2.44 | +26.25 | 9.94472 1.41913 1.47431n | 52 53.95 − 22.68 52 31.27 | +64.80 | 9.43457 1.81158 1.35561n | 58 38.00 − 23.11 58 14.89 | +20.32 | 9.94546 1.30792 1.36384n

+14 5 6 1.15980 | −31 49 32 1.55290n | +14 16 12 1.16570

+44.67 | +45.17 | +45.43

−16.01 −.15 −.05 −16.21 35 29.70 | +39.63 −.60 −.06 +38.97 30 56.05 | −16.26 −.09 −.07 −16.42 24 17.04

+28 35 45.91 | +74 30 17.08 | +28 24 33.46

35 29.70 − .18 35 29.5 18 1.0 −17 28.5 18 10.6

−17 29.59 − .18 + 9.60 −17 20.17 18 9.53

30 56.05 + .41 30 56.5 13 25.7 30.8 13 23.0

−17 29.59 + .41 − 2.70 −17 31.88 13 24.17

24 17.04 − .19 24 16.8 6 46.8 30.0 6 56.8

−17 29.59 − .19 + 10.00 −17 19.78 6 57.26

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27 Lyncis +1.27 +1.62

Br. 1147 +4.04 +4.16

β Cancri +.17 +1.01

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15 Lyncis +1.64 +1.92

w m s
6 47 24
+58 34 +54
−16 11 −28.05

7 Gem +38 +1.07

6 57 21
+20 44
+21 39 +.37

19 Lyncis +1.45 +1.77

7 13 34
+55 39
+ 13 6 −.23

i Gem +.53 +1.13

7 18 39
+28 1
+14 22 +.25

48 24.8
28.6
30.5
32.4
36.3

57 50
62
74
92
110

12.3
14.4
16.7
18.7
21.0 16.62

57 35.3
27.7
30.1
32.0
34.0
36.5
38.7
40.6
43.2

13 27.0
29.1
30.8
33.6
35.9

13 31.4
34.8
38.5
42.1
45.4
49.3
52.8
57.0
03

18 25.8
27.7
29.4
31.5
33.1

29.0
31.2
33.5
35.7
38.2 38.2

18 42.5
44.9
47.3
49.6
51.9
54.2
56.7
59.2
1.2

48 7.05 10.8
7.3 15.2

4.74
49.6
51.8
54.0
56.2 51.80

7.6
11.1
14.6
19.3
22.2 14.40
− 29.119

60
84
106
130
154 10.68

48 7.050
− 31.639

48 15.26
48 30.52

47 35.411

57 3.88
7.76

57 68.42
34.210

57 30.81
34.233

13 15.64
31.28

13 45.821

13 45.788

18 14.70
29.40

18 10.420
52.100

18 46.75
51.944

47 35.411
− 30

57 34.221
− 17

13 45.799
− 27

18 52.022
− 18

47 35.38
47 20.81 −15.80
+ 14.57 + .88
19.01 − .10
−1.80
−16.82
47 18.56

57 34.20
57 18.55 −15.79
+ 15.65 + .21
17.29 − .06
−1.26
−16.90
57 17.30

13 45.77
13 30.87 −15.79
+ 15.10 + .79
28.84 − .09
−1.83
−16.92
13 28.85

18 52.00
18 36.43 −15.79
+ 15.57 + .29
35.01 − .05
+ .42
−16.97
18 35.03

9.71726
30 33.87 −55.11
+ 37.06
31 10.93

1.74123
1.56895

21 14.22
− 31.91
20 42.31

9.97092
+26.46
1.42259
1.50397

35 51.50
− 10.61
35 40.89

9.75331
+14.52
1.16197
1.02654

4 33.5
− 25.75
3 37.76

9.94587
+22.62
1.35449
1.41082

−16 11 52 1.22390

+21 38 48 1.35890

−13 6 35 1.12750

+14 21 37 1.16860

+2388
+17.69
− .73
− .01
+16.95
51 54.37

+2399
−24.15
− .12
− .01
−24.28
1 41.76

+2415
+14.18
− .06
− .01
+14.11
47 21.57

+2422
−15.59
− .12
− .04
−15.75
18 5.80

+58
57 37.42

+21
2 6.04

+55
47 7.46

+28
19 10.75

51 54.37
+ .21 −17 32.87
51 54.6 + .21
34 20.2 − 1.50
−17 34.4 −17 34.16
34 18.7 34 20.21

1 41.76
− .28
1 41.5
44 5.4
36.18
8

47 21.57
+ .17 −17 32.57
47 21.7 + .17
29 47.4 + 0.30
34.3 −17 32.40
29 47.7 29 49.17

18 5.80
− .19 −17 32.87
18 5.8 − .19
1 22.8 + 9.10
320 −17 23.96
1 31.9 1 31.04

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χ Gem. +4.16 +4.10

h m s
7 37 33
+24 40
+17 43 +.30

37 160 246 37 382
178 268 406
195 290 429
211 313 452
223 337 2908 473
494
10 515
32 542
53 564
77
102 548

967
37 1934 37 9456 37 47280 4257 37 47300

37 47.290
— .017

37 47.27
37 31.71 −15.79
+ 15.56 + .25
30.25 − .06
−1.46
−17.06
37 30.21

9.95844
25 1992 + 2795 1.44638
− 32.76 1.51528m
24 47.16

+17 42 54 1.26470

+2442
−1946
− .16
− .50
−196.2
57 41.57

57 41.57
− .22 −17 32.87
57 41.3 − .02
40 11.0 + 10.70
17 30.3 −17 22.39
40 21.7 40 19.18

π Gem.

7 40 9
+33 42
no obs.

45 160 1.7 344 86 134
209 1.43 268 15.0
268 1.65 292 18.0
324 1.95 317 20.1
389 566 4136 1.8 1676 347 29.26 32.3
+60.661

1.7 372
4.6 400
7.5 420
10.0 443
126.28 465 42.00

1350 46 42.021 496 888
45 27.00 525 56 1776
549
572
46 42.023 594 54.72
− .55 46 42.024

46 49.97
46 27.87 −15.78
+ 14.16 + 1.91
24.53 − .18
− 3.34
−17.39
46 24.58

9.43457
+7502
52 53.55 + 14.32 1.87518 58 43.67 + 26.60
÷ 26.32 1.42021m − 30.25
52 27.23 58 13.42

−31 49 33 1.55300m

+2455
+37.80
− .80
− .03
+36.97
30 58.09

30 58.09
+ .40 −17 32.87
30 58.5 + .40
13 26.0 − 3.00
32.5 −17 35.47
13 23.0 13 22.62

Gr. 1874 +3.53 +3.67

7 46 32
+74 13
−31 50 −.53
m
45

λ Gem +.52 +1.13

7 56 31
+28 7
+14 16 +.25

21.1 86 35.0
23.3 87.4
25.6 89.7
28.0 42.0
30.5 25.70 44.2
466
58.5 49.0
0.7 51.3
3.0 53.8
5.4
78 30.8

8878 3990
56 44.390 56 44.333

56 44.362
− .18

56 44.344
56 28.82 −15.78
+ 15.52 + .29
27.26 − .05
−1.56
−17.10
56 27.24

9.94546
1.42488
1.48080m

+14.16 18 1.16580

+2461
−15.50
− .16
− .04
−15.70
24 19.23

24 19.23
− .19 −17 32.87
24 19.0 − .19
6 47.0 + 9.80
32.0 −17 23.26
6 56.8 6 55.47

+24°
58 1.19

+74
30 21.12

+28
24 34.23

+5

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27 Lyncis +1.27 +1.62

Qr. 1147 +409 +416

β Cancri +1.17 +1.01

h m s
7 8 9 53
+51 50
−9 27 −.16

8 5 11
+7 6 6
−33 43 −.55

8 10 20
+9 32
+32 51 +.54

0 1.70
19.5
23.5
26.0
27.7
29.8

59 51.6
55.2
58.8
2.4
5.8
8.6
12.2
15.2
18.8

5 7.5
14.3
18.6
22.7
27.3
32.2

4 (48.3)
55.6
4.0
13.1
21.7
30.2
39.1
47.3
56.5

10 6.0
8.0
9.8
11.2
12.4

12.9
15.2
17.2
19.2
21.4 1.418
46.8
48.7
50.7
52.6
54 8 50.2

10 25.3
27.6
29.7
31.9
34.0
36.0
38.0
40.3
42.5

25.3
28.7
31.8
35.5
38 9 32.040
26.701

13.2
21.3
29.8
38.9
47.6 .30160
.68685

1435
0 23.92

0 5.339

5886
0 5.400

1226
5 20.43

5 21.475

7358.6
5 21.755

474
9.48

6790
10 33.950

3055
10 33.944

0 5.380
− 25

5 21.662
− 64

10 33.947
− 16

0 5.36

5 2160
5 2.79
+ 13.81
4.01

10 3393
10 18.22
+ 15.71
16.69

59 58.05
+ 15.31
.23
48.14

+.08 15.78
+ .69
− .08
−1.91
−1.08
59 48.28

−15.78
+ 2.18
− .21
−3.78
−17.59
5 4.01

−15.78
+ .09
− .05
−1.53
−17.27
10 16.66

9.79095

9.38062

9.99396

14 58.55 −18.54
+ 14.77
15 13.32

1.26811
1.16952

59 33.35 +1.23
− 0.38
59 32.97

0.48991
9.58099

23 26.5 +24.47
− 31.12
32 31.03

1.38863
1.49305

−9 27 27 0.98220

−33 42 53 1.58440

+32 50 36 1.57020

+2468
+10.16
− .09
− .03
+10.04
7 45.07

+2474
+40.66
− .50
− .05
+40.61
23 55.99

+2481
−39.34
− .05
− .03
−39.42
49 39.90

+52
7 35.03

+76
23 15.38

+9
50 17.32

Mar 14
Reg −17
34.4
34.3
32.0
32.5
32.0
32.6
32.3
−17 32.87

7 45.07
+ .12 −17 32.87
7 45.2 + .12
50 10.0 + 3.10
35.7 −17 29.65
50 13.7 50 15.42

23 55.99
+ .41 −17 32.87
23 56.4 + .41
6 23.8 − 2.60
32.6 −17 35.06
6 21.2 6 20.93

49 39.90
− .40 −17 32.87
49 39.5 − .40
32 5.2 + 15.50
32.3 −17 17.77
32 20.7 32 20.13

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β Cancri +.17

a m s
8 10 19
+9 32 +.65
+32 51 +.00

10	14.2	10	26.3
	16.0		28.5
	18.2		30.6
	20.2		32.8
	22.2 18.16		34.8
			36.8
	47.2		39.1
	49.3		41.0
	51.5		42.1
	53.5		
	55.6 51.42		
	6958		9130
10	34.790	10	34.7778
		10	34.784
			− .016
		10	34.77
		10	18.19 −16.70
			+ 16.58 +.11
			16.69
			−1.50
			−18.09
			10 16.68

o Ursæ Maj +1.81

h 20 47
+61 6
−18 43

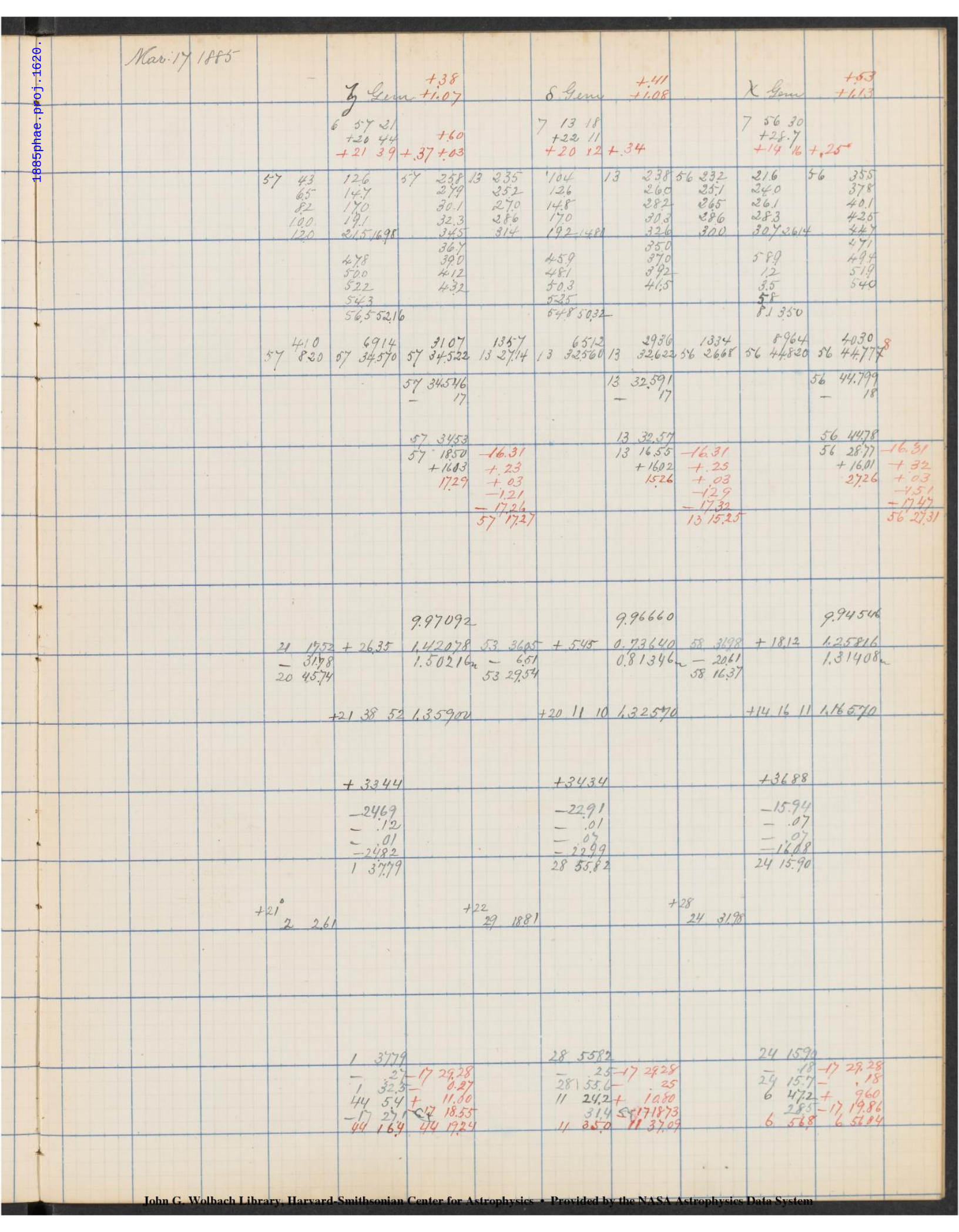
20	43.1		
	47.0		
	51.3		
	55.6		
	59.7		
	4.0		
	8.6		
	13.0		
	17.2		
	5395		
20	59.944		
20	59.944		
	− 16		
20	59.93		
20	44.41	−16.70	
	+ 15.52	+1.18	
	42.16		
		−2.25	
		−17.77	
		20 42.16	

Assumed Reg = 17 29.50

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27 Lyncis +1.27 +1.62

h m s
7 59 53
+51 50
− 9 27 −.16

β Cancri +.17 +1.01

8 10 19
+9 32
+32 51 +.54

γ Cancri +.38 +1.07

8 26 7
+20 49
+21 34 +.37

δ Cancri +.34 +1.06

8 38 12
+18 34
+23 49 +.40

57 228	322	59 52.2	10 24.0	13.6	10 26.2	26 15.3		26 12.2	38 2.0	5.0	38 17.9								
28.1	35.4	55.4	25.4	15.8	28.0	17.0		14.5	4.1	7.2	20.2								
28.3	38.8	58.7	27.0	17.6	30.2	19.2	36 36	16.6	6.0	9.2	22.2								
30.0	42.0	2.2	28.5	19.7	32.2	20.5	56 34	18.9	7.6	11.5	24.5								
32.5	45.4 38.76	5.4	29.4	22.0 17.74	34.5	21.6	80 36	3.53 21.2	9.5	13.6 9.80	26.6								
		8.6			36.3			23.3			28.7								
	25.7	12.2		47.0	38.5		34.3	25.4		39.7	31.0								
	29.0	15.5		49.2	40.6		36.5	27.7		41.8	33.1								
	32.3	19.0		51.2	42.7		39.0	29.8		44.0	35.4								
	35.5			53.3			41.0			46.2									
	38.8 32.26			55.5 51.24			43.2 38.80			48.4 44.02									
1387	13102	5892	1343	6898	3092	936	4233	1896	292	5332	2396								
59 27.74	0 55.10	0 54.667	10 26.86	10 34.490	10 34.355	6 26 18.72	26 21.165	26 21.068	7 38 5.84	38 26.660	38 26.622								
		0 5.489			10 34.423			26 21.116			38 26.641								
		− 25			− 16			− .017			− 16								
		0 .546			10 .3441			26 .2110			38 .2662								
		59 4998	+.08 16.31		10 1817	−16.31		26 506	−16.31		38 1053	−16.31							
		+ 15.48	+ .76		+ 16.24	+ .10		+ 16.04	+ .23		+ 1.609	+ .20							
		40			407	+ .03			+ .03			+ .03							
		48.13	+ .05		16.69	+1416 −1.48		3.48	− 1.58		893	− .160							
			−1.85			−17.66			−17.63			−17.68							
			−17.35			10 16.75			26 3.47			38 8.94							
			59 48.11																
		9.79095			9.99396			9.97068			9.97679								
15 47.30	+37.75	1.57692	32 .4180	+7.56	0.87852	15 .1708	+2.40	0.38021	30 .5592	+20.80	1.31806								
− 30.08		1.44833m	− 9.61		0.98294m	− .289		0.46135m	− 25.43		1.40531m								
15 17.22			32 32.19			15 14.19			30 30.99										
	−9 26 39	0.98140		+32 50 16	1.54702		+21 32 51	1.35670		+23 48 30	1.40490								
	+37.24			+37.96			+38.69			+39.41									
	+10.44			−40.55			−24.85			−27.82									
	− .37			− .01			− .50			− .07									
	− .01			− .03			− .50			− .01									
	+ 10.06			−40.59			−24.85			−27.90									
	7 41.19			49 35.57			7 9.31			51 49.96									
+52°			+9			+21			+18										
7 3.13			50 16.16			7 34.16			52 17.86										
	7 4.119			49 35.57			7 9.31			51 49.96									
	+ .12	−17 29.28		− .39	−17 29.28		− .27	−17 29.28		− .29	−17 29.28								
	7 41.3	+ .12		49 35.2	− .39		7 9.0	− .27		51 49.7	− .29								
	50 10.4	+ 27.0		32 5.2	+ 16.56		49 39.2	+ 12.40		34 21.2	+ 13.20								
	.30.9	−17 28.46		30.0	−17 14.17		29.8	−17 17.15		28.5	−17 16.37								
	50 13.1	60 14.72		6 21.3	32 21.40		49 51.6	49 52.16		34 34.4	34 33.59								
				32 20.1															

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i Canis +1.15 +.56 | i Ursæ Maj. +1.51 +1.13 | χ Ursæ Maj. +1.48 +1.10

h m s
8 39 48 | 8 51 23 | 8 55 50
+29 10 | +48 29 | +47 36
+13 13 +.23 | −6 6 −.11 | −5 13 −.09

40 17.5 19.6 21.7 23.6 25.8 | 50 55.4 57.8 0.1 2.4 4.4 | 6.3 9.6 12.3 15.7 18.8 | 51 25.0 28.0 31.0 34.2 37.3 | 55 30.0 32.3 34.6 36.6 38.2 | 33.2 36.3 39.6 42.5 46.7 | 56 54.8 54.7 57.7 0.7 3.0

40 1.8 42 1.9 66 1.9 90 1.8 112 | 40.4 43.4 46.6 49.7 | 6.9 9.8 12.7 16.2

16.0 18.6 20.7 23.2 | 56.1 59.1 2.3 5.2 | 8.3 2.20 | 32.3 25.2 28.2 31.3 | 34.5 28.30

25.6 20820 −18.896

1082 40 2.164 | 34 40 1.924 | 3001 40 1.852 | 51 0.02 | 7474 51 37.370 | 3356 51 37.288 | 1717 55 34.34 | 12776 56 3.880 | 5744 56 3.832

40 1.887 − 18 | 51 37.330 − 23 | 56 3.851 − 23

40 1.87 | 51 37.31 | 56 3.83

39 45.89 −16.31 | 51 21.78 −16.31 | 55 48.20 −16.31
+15.98 +.34 | +15.53 +.68 | +15.63 +.67
44.24 +.03 | 19.86 +.04 | 46.27 +.05
−1.65 | −1.92 | −1.93
−17.59 | −17.51 | −17.52
39 44.28 | 51 19.80 | 55 46.31

9.94112 | 9.82141 | 9.82885

54 50.5 −19.75 | 1.29557 | 36.3187 | +3.731 | 1.57183 | 29.1762 | +29.51 | 1.46997
+22.24 | 1.34913 − 3.189 | 1.50370 − 25.66 | 1.40928
54 27.29 | 35 59.98 | 28 51.96

+13 11 39 1.13030 | −6 5 54 0.78910 | −5 13 8 0.72090

+3959 −14.79 −.09 −.04 −14.92 28 6.14 | +4031 +6.75 −.38 −.01 +6.36 46 54.73 | +4050 +5.77 −.24 −.04 +5.49 54 1.88

Mar 17
Reg −17 27.1 31.4 28.5 30.9 30.0 29.8 28.5 29.0 27.8 29.8 −17 29.28

+29 28 21.06 | +48 46 48.37 | +47 53 56.39

28 6.14 | 46 54.73 | 54 1.88
− 1.7 −17 29.28 | + .08 −17 29.28 | + .07 −17 29.28
28 6.0 − .17 | 46 54.8 + .08 | 54 1.9 + .07
10 37.0 + 10.20 | 29 27.0 + 5.30 | 36 31.7 + 5.60
290 −17 17.25 | 278 −17 23.90 | 298 −17 23.61
10 47.2 10 46.89 | 29 32.3 29 30.83 | 36 37.3 36 38.27

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Mar. 18 1885

19 Lyncis +1.45

h	m	s
7	13	34
	+55	29
	−13	6

+.45
−.23 +.00

13	11	10.1	13 32.0
	35	133	355
	66	175	392
	94	207	424
	124	242 1716	461
			498
		84	534
		116	570
		155	08
		190	
		22.7 1544	

	330	9260
13	6.60	13 46.300

4162
13 46.244
13 46.272
− .027
13 4624
13 30.55 −16.51
+ 1569 +.66
2884
−1.71
−17.56
13 28.68

χ Gem

h	m	s
7	56	31
	+28	6

no obs.

27 Lyncis +1.27

h	m	s
7	59	53
	+51	50
	−9	27

−.16

0	28.1		59	52.5	26 0.5
	31.2			56.9	3.0
	38.8			59.3	5.6
	36.5			2.5	8.0
	38.5			5.8	9.9
				9.4	
		26.0		12.6	
		29.5		16.0	
		32.4		19.4	
		36.1			
		39.6	32.750		
			−26.701		

	1681	5935 270
0	33.62	0 6.079 0 5.944 26 5.40

0 59.89
− 25
0 5.96
59 49.95 +.08 16.53
+ 1601 +.57
1593
4813
−1.82
−17.78
59 48.18

Gr. 1450 +.79

h	m	s
8	25	30
	+38	24
	+3	59

+.07

25	33.8				
	36.4				
	39.0				
	41.5				
	44.2				
	46.7				
		0.1		49.4	
		2.6		52.1	
		5.3		54.9	
		7.7			
		10.7	52.80		
			−21.054		

		3980
25	44.226	25 44.222

25 44.224
− 28
25 44.20
25 27.95 −16.54
+ 16.25 +.35
2627
−1.68
−17.87
25 26.33

9.75331
1.59846
1.46223

36 12.78 +39.67
− 28.99
35 43.79

−13 6 44 1.12750

+3079
+14.40
− .40
− .01
+13.99
47 18.55

9.79095
1.44138 40 25.47 −21.18
1.34279 + 21.41
40 46.83

14 56.20 −27.63
+ 22.02
15 18.22

−9 27 30 0.98200

+3270
+10.34
− .20
− .03
+10.11
7 40.24

9.89415
1.32593
1.33054

+3 57 59 0.60130

+3290
−4.31
− .12
− .03
− 4.43
41 57.09

+55 0
47 45.6

+52
7 30.13

+38
42 1.52

47 18.55
+ .17 −17 29.81
47 18.72 + .17
29 47.8 − 0.10
−17 32.9 −17 29.74
29 47.7 29 48.81

7 40.24
+ .12 −17 29.81
7 40.4 + .12
50 10.6 + 2.50
29.8 −17 27.19
50 13.1 50 13.45

41 57.09
− .03 −17 29.81
41 57.0 − .05
24 27.3 + 7.20
29.7 −17 22.66
24 34.5 24 34.43

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δ Cancri +.34

by m a
8 38 12
+18 34
+23 49 +.40

38 25.7
27.7
29.7
30.9
32.6

40.0
42.2
44.5
46.5
48.8 44400
17.406

1466
38 29.32

38 26.994

38 18.2 49 11.0
30.4 12.6
32.6 14.0
24.9 15.0
27.0 15.9
29.3
31.7
33.4
35.7

38 2.432 49 6.85

38 27.013
− 16

38 27.00
38 10.52 −16.55
+1648 + .15
8.93 −1.59
−17.99
38 9.01

38 2.702 49 13.70

η Hydrae +.11

8 49 22
+6 22
+36 1 +.59

49 16.2 49 28.7 52 1.6
18.2 30.6 3.4
20.3 32.7 5.7
22.3 35.0 7.2
24.5 20.30 37.2 8.0
39.2
41.2
43.2
45.2

49 7.384 49 3.330 52 .259

49 36.960
− 16

49 36.94
49 20.50 −16.56
+16.44 + .05
18.87 −1.63
−18.14
49 18.80

49 3.700 52 5.18

α Cancri +.22

8 52 15
+12 18
+30 5 +.58

52 8.8 52 21.4 55 30.0
10.8 23.6 31.5
13.3 25.6 34.0
15.4 27.7 37.2
17.2 13.10 29.7 39.3
31.8
34.0
36.1
38.3

42.6
44.7
46.8
49.0
5 1.04682

52 5.992 52 2.682 55 1.720

52 29.960 52 29.800 55 34.40

χ Ursæ Maj. +1.10

8 55 50
+47 36
− 5 13 +.09

55 33.6 55 5.19
36.7 54.8
39.8 57.7
42.8 1.2
45.8 39.74 4.2
7.1
22.4 10.2
25.5 13.4
28.8 16.2
31.5
34 6.28.46

55 1.2820 55 5.767

56 4.100 56 4.077

56 4.089
− 23

56 4.07
55 48.18 −16.56
+1.589 + .49
46.27 −1.96
−17.98
55 46.09

9.97679

30 27.10 − 2.31
+ .282
30 29.92

0.36.361 42 23.35
0.45086 − 29.81
41.53.54

+23 48 1 1.40470

9.99731

0.36.661 47 22.2
1.47438 − 31.12
46 51.10

+23.26

+35 59 57 1.62130

9.98991

1.39270 29 16.98
1.49307 − 25.82
28 51.16

+24.70

+30 4 56 1.52310

9.82885

1.47261
1.41192

+29.69

−5 13 9 0.72110

+32.99

−27.40
− .00
− .60
−27.40
57 51.03

+33.07

−45.12
− .03
− .02
−45.17
40 9.64

+33.12

−35.99
− .07
− .02
−36.08
35 21.17

+33.12

+5.68
− .24
− .04
+5.40
54 2.59

+18
52 18.43

+6
40.5481

+12
35 57.25

+47
53 57.19

51 51.03
− .29 −17 29.81
51 50.7 − .29
34 21.3 + 13.10
29.4 −17 17.00
34 34.4 34 3.403

40 9.64
− .42 −17 29.81
40 9.2 − .42
22 48.7 + 16.30
28.5 −17 13.93
22 57.0 22 55.71

35 21.17
− .36 −17 29.81
35 20.8 − .36
17 52.9 + 14.90
27.9 −17 15.27
18 7.8 18 5.90

54 2.59
+ .06 −17 29.81
54 2.6 + .06
36 31.9 + 5.40
30.7 −17 24.35
36 37.3 36 38.29

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+2.43

σ^2 Urs. Maj.

h m s
9 0 21
+67 36
−25 13 −.43

0 5.99	89.6	0	12.7
53	45.0		17.9
100	50.3		23.0
136	56.4		28.4
178	12 50.50		34.3
			39.1
	68		45.3
	11.5		50.4
	17.5		55.2
	23.7		

28.31736

3466	6786	3063
1 9.92	0 33930	34.033

0 33.982
− .039

0 33.94
0 18.48 −16.56
+ 15.46 + 1.09
15.76
−2.72
−18.19
0 15.75

9.58101

29 2862 − 3534 1.54827
+ 1737 1.23974
29 4399

−25 12 40 1.43310

+3316
+29.26
− .25
− .04
+28.97
53 31.33

+67°
53 236

Mar 18
Reg. −17 30.9
29.8
29.7
29.4
28.5
27.9
30.7
31.6
−17 29.81

53 31.33
+ 31 −17 29.81
53 31.6 + .31
36 0.0 + 0.90
−17 31.6 −17 28.60
36 0.9 36 2.73

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β Cancri +.17

h m s
8 10 30
+9 32 +.45
+32 51 +.54 +.00

γ Cancri +.38

8 26 7
+20 60
+21 33 +.37

δ Cancri +.34

8 38 12
+18 35
+23 48 +.40

ζ Hydrae +.11

8 49 22
+6 23
+36 0 +.59

10 74 142 10 266 25 552 596 26 128 37 592 56 38 186 49 160 764 49 290
9.7 16.0 28.7 570 19 151 09 78 206 176 18.7 811
11.3 18.3 30.6 58.6 4.0 17.3 2.5 10.0 22.8 19.0 20.8 33.2
12.6 20.3 32.8 0.0 6.3 19.5 4.0 12.1 25.0 20.1 22.9 35.2
13.6 22.4 1824 84.9 1.2 26 408 21.8 6.0 14.3 996 27.2 22.3 24.7 2070 37.2
37.0 23.8 39.3
47.5 89.0 35.0 26.1 40.2 39.3 49.7 41.4
49.6 41.1 37.1 28.2 42.4 31.5 51.9 43.8
51.6 43.3 39.2 30.5 44.5 33.6 53.9 45.7
53.8 41.4 46.8 35.9 56.0
86.0 5170 43.6 3926 49.0 4458 58.1 5392

546 6994 3140 9 2920 4334 1951 8 3126 5454 2445 950 7462 3859
10 10.92 10 34.970 10 34.888 25 58.40 26 21.670 26 21.677 38 252 38 27.270 38 27.166 49 1900 49 37.310 49 37.322

10 34.930 26 21.674 38 27.219 49 37.316
— 16 — 17 — 16 — 16

10 34.91 26 21.66 38 2720 49 3730
10 18.14 −16.83 26 503 −16.83 38 1.051 −16.84 49 2048 −16.85
+ 16.77 +.08 + 16.63 +.17 + 1669 +.15 + 1682 +.05
16.69 3.48 8.93 1887
−1.45 −1.55 −1.58 −1.61
−18.20 −18.21 −18.27 −18.41
10 16.71 26 3.45 38 8.93 49 18.89

9.99396 9.97063 9.97674 9.99730

33 627 + 2401 1.38139 15 4525 + 2327 1.36680 31 265 + 2470 1.39270 42 1800 + 1832 1.26293
−30.54 1.4848 m − 28.05 1.4479 m − 30.19 1.4799 m − 23.48 1.3706 m
32 3568 15 17.20 30 32.46 41 5452

+32 50 40 1.57000 +21 33 19 1.35680 +23 48 37 1.40490 +35 59 52 1.62130

+1592 +16.82 +1770 +18.58
−38.54 −23.64 −26.46 −48.64
− .05 − .10 − .10 − .02
− .03 − .01 − .01 − .02
−38.62 −23.75 −26.57 −48.68
49 34.05 7 7.40 51 49.32 40 6.15

+9 50 1267 +21 7 31.15 +18 52 1589 +6 40 4983

49 34.05 7 7.40 51 49.32 40 6.15
− .39 −17 27.78 − .27 −17 27.78 29 −17 27.78 − .42 −17 27.78
49 33.7 − 39 7 7.1 − .27 51 49.0 − 29 40 5.7 − .42
32 5.3 + 1540 49 39.3 + 1230 34 21.3 + 13.10 22 40.1 + 16.30
−17 28.4 −17 12.77 28.2 −17 15.75 27.7 −17 14.97 25.0 −17 14.90
32 2.07 32 2.128 49 51.6 49 51.65 34 54.4 34 34.35 22 57.0 22.54.25

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ζ Cancri +.22

h m s
8 52 15
+12 17
+30 6 +.50

52 46 92 52 21.8 ~~32 10~~
59 11.3 24.1
71 13.4 26.0
82 15.5 28.0
95 17 6 13 40 30.0
32.0
428 34.4
46.0 36.4
47.1 38.6
49.2
5 12 47 06

853 6046 2713
52 706 52 30230 52 30.144 ~~22 1.50~~

52 30.187
— 16

52 30.17
52 13.43 −16.85
+ 16.74 +.10
11.81
−.162
− 18.37
52 11.80

9.98994

47 22.55 +23.13 1.36418
− 29.15 1.46458n
46 53.40

+30.4 5/ 1.52310

+19.03
−34.84
− .06
− .02
−34.92
35 20.03

+12° 35 54.95

126 +6.97
9 Draco.

9 20 45
+81 50

312 19 5.90
~~2.49~~ 1.35
0.6 27.2
14.5 41.2
30.0 0.24 56.7
10.3
236 24.8
37.6 39.6
53.0 63.7
67
222 52 62

23286 10460
20 56430 20 56.222

20 56.326
— 108

20 56.22
20 42.32 −16.86
+13.90 +3.14
21
+13.69 −5.95
36.37 −19.67
20 36.55

9.15245

~~44.7~~ 1.81070n
1.07361

1mar19

Rey − 17 28.4
28.2
27.7
26.8
−17 27.78

35 20.23
− 36 −17 27.78
35 19.87 − .36
17 52.9 + 14.90
26.8 −17 13.24
18 7.8 18 6.79

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Mar. 21, 1885

Gr. 1374 +353

h m s
7 46 32
+74 13 +50
−31 50 +53 +50

Gr. sheet

45 460	2.72	46	12.7
505	347		20.0
562	424		27.8
1.1	50.0		35.6
7.7	57.4	42340	42.8
		+60.661	50.8
			58.3
			59
			14.4

2815
45 56.30 | 46 43.001 | 46 43.144 | 3883

46 43.096
− 55

46 43.04
46 27.41 −17.42
+ 1563 + 1.76
2453 −288
− 1854
46 2450

9.43457
52 5062 +46.80 1.67025
− 16.42 1.21528n
52 34.20

−31 49 35 1.55350n

+3800

+38.99
− .32
− .03
+3864
30 52.79

+74
30 14.15

30 52.79
+ 38 −17 25.67
30 53.2 + .38
13 27.0 − 41.00
−17 26.2 −17 29.29
13 23.0 13 23.50

X Gem

7 56 31
+28 6
ch. f

27 Lyncis

7 59 53
+57 50
ch. f

γ Cancri +.38

8 26 6
+20 49
+21 34 +.37

26 452	26 −		26	135
475	+.0 3.2			157
488	−			177
50.0	−			200
521	− 3.20			222
				244
	35.5			266
	37.7			289
	39.8			31.0
	42			
	44.5	39940		
		−17.652		

2436 2000
26 48.72 | 26 22.288 | 26 22.222

26 22.244
− .017

26 2223
−17.44 26 500
+.19 + 1723
3.48
−1.52
− 18.77
26 3.46

9.97068
14 4620 − 2648 1.42292n
+ 31.92 1.50406
15 18.12

+21 32 20 1.35650

+3872

−24.84
− .12
− .05
−2.501
7 5.22

+21
7 30.23

7 5.22
− .26 −17 25.67
7 5.0 − .26
49 39.4 + 1220
25.6 −17 13.78
49 51.6 49 51.49

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Mar. 21. 1885

δ Cancri +.34

h m s
8 38 12
+18 34
+23 49 +40

38 19.7
220
240
250
266

38 19.1
21.6
236
25.7
27.8
29.9
32.1
343
36.5

40
39 18.0
20.2
22.4
22.6
26.0

408
430
452
478

496 45180
− 17.406

1173
38 23.46

38 27.774

38 27.844

39 22.24
40

38 28.21
− .016

38 27.80
38 10.48
+17.32
18.93

− 17.44
+ .17
− 1.55
− 18.82
38 8.98

9.97679

30 39.05 + 4.36
− 5.33
30 33.72

0.639449
0.726.74

54 9.20
+ 14.94
53 23.24
54 30.81

+23 48 13 1.40480

+ 3893

− 27.78
− .01
− .01
− 27.80
51 46.83

51 46.83
28 −17 25.67
51 46.5 − .28
34 21.1 + 13.00
25.1 − 17 12.39
34 34.4 34 34.44

+18°
52 14.63

+29
29 25.11
28 17.54

i Cancri +.56

8 39 47
+29 10
+13 13 +.23

173
197
220
243

268 22020
18.896

39 53.7
55.4
58.3
0.6
3.0
5.3
7.5
10.0
12.5

49 100
11.7
13.3
15.1
16.4

40 3.124

40 3.611

49 13.30

40 3.049
− 18

40 3.03
39 45.84
+17.19
44.24

− 17.44
+ .28
− 1.60
− 18.76
39 44.27

9.94112
1.28307
1.66+077
1.66235m
1.33465

+ 4081
− 19.19

42 26.72
− 31.45
41 55.27

+13 11 43 1.13040

+ 3898

− 14.77
− .08
− .04
− 14.89

29 9.91
28 26.6

+29

+6
40 53.8

γ Hydrae +.11

8 49 22
+6 23
+36 0 +.59

170
194
21.5
23.3
25.5 2134

49 29.6
31.5
33.6
35.7
37.8
39.9
41.9
44.0
46.0

52 28
44
60
75
88

58.65448

503
525
544
566

49 37.910

49 37.777 8

52 5.90

49 37.844
− 16

49 37.83
49 20.46
+17.37
18.87

− 17.45
+ .06
− 1.59
− 18.98
49 18.85

9.99730

1.38987
1.49763m

47 23.90
− 31.29
46 52.61

+36 0 1 1.62130

+ 3914

− 45.75
− .03
− .02
− 45.80
40 7.28

40 7.28
40 4.2 −17 25.67
40 6.8 − .42
22 40.7 + 16.30
26.1 −17 9.79
22 57.0 22 57.49

+12
35 55.74

α Cancri +.22

8 52 15
+13 18
+30 5 +.50

94
117
138
160
182 1388

52 22.2
24.4
26.5
28.5
30.7
32.7
35.0
37.0
39.2

434
456
476
498

519 4766

52 30.770

52 30.730
− 16

52 30.71
52 13.41
+17.30
11.82

− 17.45
+ .11
− 1.59
− 18.93
52 11.78

9.98991

1.39498
1.49535m

+24.54

+24.83

46 52.61

+30 4 58 1.52310

+ 3925

− 36.50
− .07
− .02
− 36.59
35 19.15

35 19.15
35 18.8 −17 25.67
35 18.8 − .36
27 2.76 58.0 +14.80
25.8 −17 11.23
18 7.8 18 7.92

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ζ^2 Ursæ Maj. +2.93

h m s
9 0 21
+67 36
−25 13 −.43

409	0 13.0	
460	18.4	
514	23.8	
567	29.4	
32.5144	34.4	
	39.4	
74	45.5	
126	51.0	
179	56.5	
229		
28.7 1790		
18934	3114	
0 34.670	0 34.600	
	0 34.635	
	— 39	
	0 3460	
	0 18.37	−17.45
	+16.23	+1.22
	15.76	−.261
		−18.84
		0 15.76

Mar 21

Reg −17 26.2
25.6
25.1
25.2
24.1
25.8
−17 25.67

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1885phae.proj.1620.

Mar. 23 1885

Br. 1187 +4.04

h m s
8 5 11
+76 6 +46
−33 43 −.55 +.00

β Cancri +.17

8 10 20
+9 32
+32 51 +.54

γ Cancri +.38

8 26 17
+20 50
+21 33 +.37

δ Cancri +.34

8 38 12
+18 34
+23 49 +.40

[illegible] 3

5 5.72 4 48.8 10 8.8
5.3 5.72 10.4
13.9 5.8 12.2
22.7 14.1 13.6
31.2 1406 22.6 15.0
31.3
14.5 39.7
22.9 48.2
31.9 57.0
39.6
48.4 3146

14.7 10 27.2 26 42.5
16.7 29.2 43.7
18.8 31.2 45.4
20.8 33.4 46.7
23 29 1878 35.4 48.3
37.5
48.0 39.6
50.0 41.7
52.2 44.0
54.2
56.3 5214

38 5.3
7.1
26 17.9 9.3
22.3 20.1 10.9
22.3 22.2 11.9
22.3 24.5
22.3 26.7
22.4 29.0
22.3 31.1

35.5
37.9
40.0
42.2
44 39 9980
17654

63 38 19.1
8.3 21.2
10.6 23.5
12.5 25.7
14 7 1848 27.8
29.9
40.7 32.1
43.0 34.2
45.2 36.3
47.4
49 7 4520

16552 7447 600
5 22.760 5 22.744 10 1200

7092 3192 2266
10 35.460 10 35.468 7 26 4532

21 445
26 22.326 26 22.300 38 8.90

5568 2498
38 27.840 38 27.758 16

5 22.752
− .064

10 35.464
− 16

26 22.311
− 17

38 27.798
− 16

5 22.69
5 7.15 −17.47
+15.54 +1.86
4.01
−3.14
−18.75
5 3.94

10 35.45
10 18.09 −17.48
+17.36 +.08
16.69
−1.40
−18.80
10 16.65

26 22.29
26 4.96 −17.48
+17.33 +.17
3.48
−1.48
−18.79
26 3.50

38 27.78
38 10.45 −17.49
+17.33 +.16
8.93
−1.52
−18.85
38 8.93

9.99396

33 5.87 +23.46
− 29.84
32 36.03

1.37033 14 50.00 −23.01
1.47475 + 27.73
15 17.73

9.97063

1.36192 30 55.22 +18.90
1.44301 − 23.11
30 32.11

9.97679

1.27646
1.36371

+32 50 40 1.57000

+21 32 24 1.35650

+23 48 29 1.40490

+3094

−39.90
− .05
− .03
−39.98
49 32.34

+3111

−24.41
− .10
− .03
−24.54
7 6.08

+3127

−27.30
− .06
− .01
−27.37
51 48.87

+9° 50 12.32

+21 7 30.62

+18 52 16.24

+29

49 32.34
.38 −17 26.72
49 32.0 − .38
32 5.3 + 15.40
−17 27.3 −17 11.70
32 20.7 32 20.60

7 6.08
− .26 −17 26.72
7 5.8 − .26
49 39.5 + 12.10
263 −17 14.88
49 51.6 49 57.20

51 48.87
− .28 −17 26.72
51 48.6 − .28
34 21.5 + 12.90
271 −17 14.10
34 34.4 34 34.77

40

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Mar. 23 1885

i Cancri +.56

h m R
F 39 48
+29 11
+13 12 +.23

40 205
224
24.7
25.7
27.7

40 30 54
3.1 7.8
31 10.2
32 12.6

172
195
221
244

26.6 21960
18.899

1210
40 27.20

40 3.061

40 3.081
— 18

40 3.06
39 45.80 −17.49
+17.26 +.26
44.24

−1.56
−18.79
39 44.27

49 12.6
1.44
1.59
1.76
1.90

795
49 15.90

40 3.160

9.94105
1.32469
1.37620

54 6.15 − 21.12
+ 23.78
54 29.93

42 23.60
— 28.17
41 55.43

+13 11 40 1.13040

+3131
− 1451
− .10
− .04
− 14.65
28 3.77

28 3.77
— .16 −17 26.72
28 3.6 — .16
10 37.5 + 9.70
261 −17 11.18
10 47.7 10 44.59

+29
28 18.42

+6
40 52.92

Z Hydrae +11

8 49 22
+6 22
+36 1 +.59

172 49 29.6
194 31.6
212 33.7
235 35.8
254 2134 37.9
39.8

504 42.0
523 44.0
546 46.3
565
585 54.46

7580 34.07
49 37.900 49 37.856

49 37.878
— 16

49 37.86

49 37.86

49 37.786
49 20.43 −17.49
+17.43 +.05
18.87

−1.56
−19.00
49 18.86

+ 21.98 1.34203
1.44980

+35 59 58 1.62130

+3144
− 44.95
− .03
− .02
− 45.00
40 7.92

40 7.92
— .42 −17 26.72
40 7.5 — .42
22 40.7 + 16.30
26.8 −17 10.84
22 57.0 22 57.08

η Draconis +6.97

9 20 45
+81 50
−39 27 +.64

19 58.7 22.7
30 26.7
85 32.8
126 37.7
180 216 42.4 3246

36.0 47.0
39.8 52.1
46.2 57.0
50.0 1.5
54.7 4494 6.3 5678

11.3
15.8
21.2

20 56.612 25.2
− .108 30.0 2072
19 56.612

20 56.50
20 41.73 −17.51
+14.57 +3.21
— 21
+14.36 −5.55
36.38 −19.85
20 36.65

Mar 23

Reg −17 27.3
26.3
27.1
26.1
26.8
−17 26.72

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Mar. 25 1885

α Gem.	β Gem.	Gr. 1374	λ Gem.
h m s	h m s		
7 27 19	7 38 30	7 46 32	7 56 31
+32 8	+28 18	+74 13	+28 7
ch. f.	ch. f.	−31 50 −.53	ch. f.

47 17.7
19.2
20.7
22.8
24.5

46 35.4

37 38.2
64 40.7
92 42.4
115 46.0
14.1 898 48.5 4316
−25.256
43160 5.13
452 5.36
445 724 5.60
46 43.702 5.86
− .055 0.9 5608
46 43.702 −13.638
39.5
46 43.60
46 2.14
+16.57
25

9.43457

53 0.60 −37.28 1.57449
+ 13.17 − 34.54 1.11952
53 13.77

−31 49 25 1.55290

+25.94

+37.92
− .20
− .03
37.69
30 12.27

+74°
29 34.58

30 12.27
+ .34
30 12.61
13 27.5
−17 45.1 Rej

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Mar 25 1885

no more Obs. for this date ch.f.

27 Lyncis

Br. 1147

β Cancri

γ Cancri

α m s
7 59 53
+51 50
−9 27 −.16

8 5 12
+76 6

8 10 20
+9 32
ch.f

8 26 7
+20 50
ch.f

Ex

0 11.0
14.3
16.8
19.4
23.2

59 54.0
57.2
0.6
4.0
7.4
10.7
14.0
17.3
20.5

5 49.2
52.2
55.1
57.9

27.6
30.7
34.0
37.4
40.6 34060
−26701
6057

0 16.94

0 7.359

0 7.360

0 7.320
− 25

0 7.30
59 49.76 +.08
+17.54
46

9.790095

15 40.15 − 962
+ 767
15 47.82

0.98318
0.88459

−9 26 46

0.98140

+2644

+10.18
− .03
− .01
+10.14
7 10.67

+52
7 0.63

7 10.67
+ .17
7 10.8
50 11.4
−16 59.4 Rej

Reject-These Obs. are good Obs.

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Mar. 25 1885

ξ Cancri

h m s
8 38 12
+18 35
ch f

i Cancri

8 39 47
+29 10
ch f

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Mar 28 1885

19 Lyncis
h m s
7 13 49
+55 30
Ch. f.

Ex.
β Can Min
7 20 58
+8 31

21 41.0
43.3
45.8
47.3
50.8

21 35.0
38.2
41.5
44.9
48.3

α Can Min
7 33 20
+5 31

33 20.5
23.6
26.6
29.4
31.7

13.18
33 26.36

33 27.8
31.6
34.2
37.7
41.3

1726
33 34.520

33 34.520
− 16

33 34.50
33 18.03
+16.47

+8.16

Gr. 1374
7 46 32
+74 13
−31 50 − 53

46 28.5
34.9 Rej
43.0
50.0
58.1 42.90

46 12.9
15.2
17.6
20.2
22.4 1766
3.3
5.8
8.3
11.0
13.4 8.36

25.1
28.0
30.5
33.0
35.5
30.42
38.1
40.4
43.0
45.6
48.3
43.08
50.5
53.0
55.7
58.2
0.3
55.54
46 43.012

46 43.012
− 55

46 42.96
46 26.93
+16.03

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1885phrac.proj.1020.

Mar. 28 1885

27 Lyncis

h m s
7 59 52
+51 50
−9 27 −.16

59	322	336	59	535	
	340	370		566	
	360	400		0.1	
	383	434		3.4	
	418	468	4016	6.7	
				1.0	
59	880	264		133	
		302		168	
		335		201	
		268			
		402	3348		
	1823	13364		6005	
59	2646	0 6820	0	6.722	
	880				
			0	6.771	
			−	.025	
			0	6.75	
			59	49.68	+08
			+	~~2407~~	
				16.99	

9.79095

16.	+57.97	
55 5.27	+30.31	1.48159
~~2415~~	~~4620~~	1.38300n
~~54 41.12~~		
15 19.07		

−9 26.21 0.98110

+12.19

+ 9.85
− .88
+ .50
+8.97
7 38.25

+52
7 ~~29.08~~

Mar 28

~~Rej − 17 26.70~~ reject. no gone obs.

7 38.25
+ .11
7 38.4
60 11.7
−17 26.7 Rej

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1885phae.proj.1620.

Mar. 29 1885

37 Lyncis
h m s
7 59 53
+81 50
chf.

γ Hydrae +.11

8 49 22
+6 23 +.50
+36 0 +.59 +.02

49 166 178 49 300 52 136 102 52 228
184 198 322 153 122 246
193 217 340 170 141 269
210 240 362 180 164 290
247 259 2184 380 193 1871432 313
402 335
505 423 439 356
527 446 458 375
545 465 480 396
566 500
588 5462 520 4794

1000 7646 3440 832 6226 2808
49 20.000 49 38.230 49 38.322 52 1664 52 31.130 52 31.200

49 38.226 52 31.165
− 16 − 16

49 3821 52 3115
49 2034 −17.96 52 1329 −17.96
+1787 +.06 +1786 +.11
1887 11.81
−1.47 −1.48
−19.37 −19.33
49 18.84 52 11.82

9.99730 9.98994
42 3315 +18.23 1.26079 47 2408 +1452 1.16197
− 2336 1.36855 − 1830 1.26237
42 979 47 578

+35 59 47 1.62120 +30 4 38 1.52300

+2840 +2852
−44.63 −3561
− .02 − .02
+ .00 + .00
−4465 −3563
39 5391 35 694

+6 +12
40 38.51 35 42.57

39 5391 35 694
− .40 −17 12.80 − .34 −17 12.80
39 53.51 − .40 35 66 − .34
22 40.8 + 16.20 17 53.3 + 14.50
−17 127 −16 5700 133 −16 58.64
22 57.0 22 5691 18 7.8 18 8.30

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Mar 29 1885

Q Hydrae +.05

h m s
9 8 26
+2 48
+39 35 +.64

83 Cancri +.33

9 12 37
+18 11
+24 12 +.41

17 Draco +6.97

9 20 45
+81 59 57
−39 27 −.64

8 17.4 18.7 19.9 21.1 22.7 — 21.8 23.7 25.7 27.9 29.9 — 2580 — 54.8 56.7 58.9 0.9 — 3.0 5886

8 34.1 36.3 38.3 40.4 42.4 44.3 46.2 48.6 50.9

12 29.2 30.5 32.8 34.9 35.9

31.5 33.7 35.7 38.0 40.3 — 3584 — 6.2 8.3 10.5 12.7 — 14.9 1052

12 44.4 46.8 48.8 51.0 53.2 55.6 58.7 2.0

19 57.6 59.0 20 2.8 7.5 13.6 18.4 — 7.62 — 34.9 40.1 44.6 48.0 — 53.0 4452

20 22.8 28.0 31.7 36.7 43.4 — 3252 — 47.3 52.2 57.5 1.8 — 7.1 8718

9.99948

17 36.07 + 2240 — 28.85 — 17 7.22

1.35025 — 1.46019n

54 14.78 — 25.14 — 53 49.64

9.97775

1.31218 — 1.40039n

+39 34 50 — 1.67730

+18 11 29 — 1.27700

+2880 — −5083 −.01 +.00 −5084 — 4 50.29

+2893 — −20.23 −.07 +.00 −2030 — 28 38.41

43° 5 41.13

+18 28 58.71

4 50.29 — 4 50.8 — 47 38.4 — −17 12.4 — 47 56.4

−17 12.80 — −441 — +1720 — −16 5584 — 5446

28 38.41 — 28 38.1 — 11 18.9 — 19.2

Mar 29

Reg −17 12.4
13.3
12.4

−17 12.80

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