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KG
11366
v.508

Fundamental Stars.
Observations and Reductions
B 5
From Aug 18. 1880 to Sept 23 1880

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181 η Ursae Majoris

h m s
13 42 46
+49 55

0,12621

1880 Aug. 18

h	m	s		m	s													
13	41	17.98		41	38.3	13	47	36.30		47	28.0		13	54	—			
		20.20	23.62		40.4			38.47	40.758		30.21				—			
		23.45			42.3			40.75	4076		32.0				—			
		26.60			45.0			43.00			33.5				—			
	118,10	29.87		2130	47.0		20379	45.27		1591	35.4				—			
					130			379			91							
		36.30		41	42.60			49.35		47	3.182	+8.26	32.03	288.79	23.71			
		39.50						51.56			+26.32	6.19	32.19	32.088	26.00			
		42.68						53.87				4.13	32.13		28.00			
		46.00	49.193					56.00	58122			2.08	32.10		30.00	32.090		
		49.00	49.19	42	29.5			58.07	5812	48	28.0	0.80	32.16		32.18	3209	55	1.0
		52.30			31.8			0.30	5817		29.5	2.81	32.14		34.20			2.3
		55.73			34.0			2.40			31.0	4.13	32.02		36.15			3.7
		59.00			36.3			4.55			32.5	6.19	32.09		38.28			4.8
	44274	2.23		1682	38.6		52310	7.00		1551	34.1	8.27	31.98	28881	40.25		182	6.4
		8274			202			7310			51				1881			182
		8.40		42	34.04			11.15		48	3.102	12.39	32.01	159.76	44.40		55	36.4
		11.70	14.822					13.43	15576		−32.88	13.96	31.98	31.952	46.40	4.8482		−31.60
		14.80	14.82					15.55	1558			16.52	31.98		48.47	4848		
		18.03						17.73	11634			14.54	31.97		50.36			
	7411	21.18	h m s	41	4260		7788	20.00		47	3182	21.70	31.88	24241	52.58			
		2411	13 41 49.207	42	33.64			2788	47 58.145	48	3.102				4241		55	36.4
											+26.32							
											−32.88	32.020						
											59.20	32.039						
										1.77232								
										1.15176								
										2.92408								
										1.87668								
										6.95260								
										5 724								

B	26	50.85				B	20	43.68						B	14	5.38		
B	27	35.10				B	21	58.70						B	14	5.32		
R	27	35.20				R	21	58.62						R	14	5.45		
R	27	35.15				R	21	58.82						R	14	5.52		
B	27	34.90				B	21	59.70							14	5.42		
	27	35.09					21	58.96							14	6.43		
		44.24						75.28								0.05		

182 η Bootis

h m s
13 48 33
+19 0

1.17609
9.97567
1.15176

0.12621

183 θ Virginis

h m s
13 53 27
+2 8

0,12621

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1880

Aug 18

187 α Bootis

h m s
14 10 8
+19° 49

1.17609 0,12621
9.97349
1.14958

h m s
14 8 49.25
51.45 53644
53.60 5364
55.88
26822 58.04
1822
2.40
4.60
6.90
9.04 11229
11.22 1123
13.40 1119
15.70
17.80
10106 20.00
10106
24.38
26.47 28742
28.70 2874
30.96 14238
14371 33.20
4371

9 11.210

8 34.4
36.4
38.0
39.3
1890 40.9
390
8 37.80
+ 33.41
9 38.3
40.0
41.4
43.0
2073 44.6
73
9 41.46
−30.25

8 37.80
9 41.46
+ 33.41
− 30.26
63.67
1.80393
1.14958
2.95351
1.90580
8.95229
5 7 11

B 32 6.68
B 33 27.22
R 33 27.22
R 33 27.18
B 33 27.10
33 27.18
80.50

193 γ Bootis

h m s
14 27 12
+38° 50

1.17609 0,12621
9.89152
1.06761

14 25 48.56
51.30 53886
53.90 5389
56.55
26943 59.18
1943
4.37
7.03
9.75
12.50 15051
15.04 1505
17.70 1505
20.42
23.00
13546 25.65
4546
30.90
33.60 36206
36.20 3621
38.85 15010
18103 41.48
3103

26 15.050

25 36.3
37.9
39.5
41.0
1983 43.6
483
25 39.66
35.39
26 47.4
49.2
50.8
53.0
2557 55.3
57
26 51.14
− 36.09

25 39.66
26 51.14
+ 35.39
− 36.09
71.48
1.85418
1.06761
2.92179
1.87541
8.95362
5 8 8

B 30 52.35
B 32 7.08
R 32 7.50
R 32 7.62
B 32 7.45
32 7.41
75.06

d ε Bootis

h m s
14 39 42
+27° 35

1.17609 0,12621
9.94760
1.12369

14 38 21.65
24.00 26306
26.28 2631
28.62
13153 30.98
3153
35.50
37.90
40.28
42.69 44927
45.00 4493
47.23 4489
49.58
51.96
40434 54.30
4434
58.85
1.17 3462
3.50 346
5.76 89.77
31731 8.03
1731

38 44910

38 15.4
17.0
18.5
20.0
929 22.0
429
38 18.58
+ 26.33
39 11.7
13.8
15.0
16.5
758 18.8
258
39 15.16
− 30.25

38 18.58
39 15.16
+ 26.33
− 30.25
56.58
1.75266
1.12369
2.87635
1.83110
8.95475
5 8 55

B 45 58.45
B 47 6.22
R 47 6.25
47 6.23
67.78

14

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198

β Ursæ Min

h m s
14 51 7
+74° 39'

0.12621

1880
Aug 18

201

δ Bootis

h m s
15 10 37
+33° 46'

0.12621

209

α Coronæ Bor

0.12691

h m s
15 29 34
+27° 7'

1.17609
9.94943
1.12552

14	49	35.17			47	33.8	48	41.0		15	9	15.40			9	4.0		15	28	13.50				27	59.5						
		37.80				38.0		46.3				17.80	20310			5.5				15.80	18130				1.0						
		40.46				44.0		51.5				20.27	2031			7.1				18.15	18.13				2.5						
		43.96				48.2		56.9				22.80				9.0				20.40					4.1						
		45.53			2185	54.5	2577	2.0			10155	25.28			364	10.8			9065	22.80				3128	5.7						
		48.20				185		77				155				364				4065					128						
		50.75			47	43.70	48	51.54				30.20			9	7.28				27.35				28	256						
		53.40										32.75				+32.89				29.80					34.20						
		56.03										35.29								32.05											
		58.72										37.68	40182							34.45	36724										
		1.17			60	57.9	51	43.4				40.18	4018		10	16.0				36.75	3672			29	7.7						
		3.80				8.6		50.0				42.60	4016			17.5				39.03	3680				9.2						
		6.27				9.7		54.6				45.17				19.0				41.34					10.8						
		8.95				15.0		1.4				47.60				21.0				43.70					12.5						
		11.70			3480	21.8	2762	6.8			36164	50.17			967	23.2			33052	46.05				547	14.5						
		14.00				480		262				164				467				6052					47						
		16.70			51	9.60	51	55.24				55.00			10	19.34				50.64				29	10.54						
		19.42										57.50	0.000			-39.17				52.97	55.472				-34.18						
		21.57										0.00	000							55.30	5547										
		24.60										2.48	80.31							57.55	7.360				8						
		27.48			47	43.70	48	51.54			30000	5.02			9	7.28			27736	0.90				28	256						
		29.70			51	9.60	51	55.24				000	9	40170	10	19.34				2736	28	36.760		29	1094						
		32.50														+32.89									+34.20						
		35.00														-39.17									-34.18						
		37.43														72.06									68.38						
																1.85769									1.83493						
																									1.12552						
																									2.96045						
																									1.91455						
																									8.95410						
																									5 8 28						

B	42	24.55	·							B	36	20.52	·							B	13	25.75	·								
B	42	52.25	·							B	36	20.40	·							B	14	47.80	·								
B	43	41.25	·							R	36	20.42	·							R	14	47.90	·								
										R	36	20.82	·							R	14	48.20	·								
										B	36	20.55	·							B	14	47.68	·								
											~~36 20.54~~		55								14	47.89									
											"	00.02									82.14										

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212 α Serpentis

h m s
15 38 18
+6° 48′
1880
Aug 18

1.17609 0.12621
9.99693
1.17302

h	m	s		m	s												
15	37	0.80		36	56.2	15	01	51.78		51	45.7	15	57	6.55		56	55.3
		2.80	4902		57.8			54.00	56236		47.0			7.70	9.930		56.8
		4.85	490		59.2			56.20	5624		48.2			10.00	993		58 2
		7.03			1.0			58.50			50.1			12.10			59.6
	2451	9.03		2963	2.1		28118	0.70		2425	51.5		4965	14.30		2913	1.4
		2451			463			3118			425			4965			413
		13.17		36	59.26			5.15		51	48.50			18.65		56	58.26
		15.22			+22.25			7.45			+25.61			21.00			+29.20
		17.34						9.65						23.00			
		19.38	21512					12.00	14121					25.25	27.470		
		21.55	2151	37	39.0			14.17	1412	52	51.0			27.53	2747	57	59.2
		23.60	2151		0.4			16.33	1410		52.2			29.68	2745		1.0
		25.67			1.6			18.56			54.0			31.82			2.3
		27.78			3.0			20.78			55.6			34.05			3.8
	19361	29.90		3090	5.0		12709	23.00		2705	57.7		24723	36.28		3119	5.6
		1361			90			3709			205			6723			119
		34.00		38	1.80			27.48		52	5410			40.60		58	2.38
		36.00	38132		−40.29			29.70	31950		−39.99			42.75	44976		−34.92
		38.18	3813					32.02	3195					45.00	4498		
		40.20	43.03					34.15	148.19					47.15	54.91		
	19066	42.28		36	5926		15975	36.40		51	4850		22488	49.38		56	5826
		4066	37 2.1510	38	1.80			975	52 14.110	52	5410			2488	57 27.460	58	2.38
					+22.25						+25.61						+29.20
					−40.39						−39.99						−34.92
					62.64						65.60						64.12
					1.79685						1.81690						1.80699
					1.17302												1.15053
					2.96987												2.95752
					1.92111												1.91185
					8.95124												8.95433
					5 627												5 838

B 32 12.40 ·
B 33 35.72 ·
R 33 35.85 ·
R 33 35.80 ·
B 33 35.78 ·
33 35.79 ·
83.39

594 S Scorpii

h m s
15 53 11
−22° 16′

0.12621

B 36 1.32 ·
B 36 21.80 ·
R 36 21.85 ·

~~26 27.82~~
" ~~20.50~~

595 β′ Scorpii

h m s
15 58 24
−19° 28′

1.17609 0.12631
9.97444
1.15053

B 47 54.88 ·
B 49 16.48 ·
R 49 16.58 ·
R 49 16.62 ·
B 49 16.38 ·
49 16.51 ·
81.63

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1880phae.proj.1512.

198

B Urs Min

h m s
14 51 7

105° 21'

1880
Aug 18

0.12621

47

d Cet

h m s
2 55 57

+3° 37'

1.17609
9.99913
1.17522

0.12621

52

d Persei

h m s
3 15 41

+49° 26'

1.17609
9.81314
0.98923

0.12621

h	m	s		m	s												
14	49	19.80	+3.122	51.02	48	32.9	2	54	39.84		54	35.0	3	14	17.25		13	39.3
+23.38	51.16	27.78				35.0			42.05	44028		37.6			20.20	23412		1.3
15.59	50.89	461.38	85.30			37.9			44.05	44.03		39.3			23.43	2341		3.9
+7.77	51.77	51.264	44.00	51261		41.4			46.00			41.0			26.43			6.6
- 0.10	51.18		51.00	5126	1953	48.1		22014	48.20		1954	42.8		11706	29.75		3199	8.8
7.71	51.84		39.55			453			2014			454			1706			199
15.57	51.78		7.35		48	39.06			52.25		54	39.08			36.13		14	348
23.38	51.19		14.57		+1	92.20			54.30			+21.40			39.26			+44.90
31.17	50.83	46135	22.00						56.40						42.58			
		46135							58.48	0476					45.75	48.920		
					50	36.6			0.40	048	55	42.7			48.90	4892	15	46.9
51.308						44.8			2.57	0.49		44.3			52.05	4884		48.5
						51.3			4.50			45.9			55.40			50.4
						56.4			6.60			47.3			58.58			52.7
					2521	3.0		54428	3.78		2289	48.7		44028	1.63		2539	55.4
						21			428			280			8028			39
					50	5042			12.78		55	4560			7.90		15	5078
						- 59.16			14.92	1 6954		- 45.12			11.00	14270	- 1	1.90
									17.00	1695					14.30	1427		
									19.05	120.98					17.55	9768		
					52	6.0		8477	21.02		54	3908		71.35	20.60		14	398
						15.5			3477	55 0.485	55	4578			2135	14 48.880	15	5078
						20.7						+ 21.40						+44.90
						27.5						- 45.30						- 61.90
					1055	35.8						66.70						106.80
						1055						1.824 13						2.02857
					52	2.110						1.17522						0.98923
					-2	29.84						2.99935						3.01780
												1.95516						1.97128
												8.95581						8.95348
												5 9 41						5 8 2

B 2 43.85
B 1 56.38
B 1 27.32

B 42 57.40
B 44 21.50
R 44 21.55
R 44 21.65
B 44 21.65
44 21.59
90.19

B 54 58.12
B 56' 31.58
R 56' 31.85
R 56' 31.85
B 56' 31.85
56' 31.78
93.66

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56

E Eridani

9.94352

h m s
3 27 14
−9° 52'

0.12621

1880
Aug 18

h	m	s		m	s														
3	25	—		26	35.5	3	32	55.50		32	34.5	3	38	59.55		38	49.7		
		—			36.6			3862	1642		36.1			1.60	3.944		51.2		
		—			37.8			1.57	164		38.7			4.05	3.94		52.6		
+1.867	15.67	31.40	1.00		39.0			4.70			40.4			6.15			54.0		
12.54	15.73	15.70	3.15		1896	40.7	30821	7.82		1931	43.4		31972	8.37		2631	55.6		
					396			821			431			1972			185		
8.38	15.78	142.76	7.40	26	3792			13.85		32	3862			12.85		38	5262		
6.28	16.08	+5.862	9.80		− 22.04			16.97			+ 47.45			15.36			+ 29.37		
8.18	15.86		11.68					20.03						17.40					
+2.07	15.79		13.72	15.864				23.06	26081					19.80	2.1980				
−.020	16.08		16.00	1586	27	0.0		26.06	2608	34	5.3			21.90	2196	39	51.5		
2.09	15.86		17.95			1.8		29.13	26.07		7.5			24.18	22.02		53.2		
4.19	15.81		20.00			3.3		32.15			9.5			26.34			54.9		
6.28	15.77		22.05			4.7		35.20			11.6			28.80			56.3		
8.34	15.79	14278	24.18		160	6.2	23473	38.28		479	14.0		19762	31.00		2741	58.2		
		6278			160			5473			479			1.782			241		
12.37	15.93	79.93	28.50	27	320			44.30		34	0.58			35.70		39	5.082	4.82	
13.66	15.92	15.986	30.68	3.2756	− 47.32			47.80	50.500		−43.51			37.97	40100		−32.83		
14.76	15.94		32.70	3276				50.55	5050					40.05	40.10				
15.85	16.15		35.00					53.55	52.14					42.20	44.07				
−2.61	15.99	16378	37.00		26	3792	25250	56.60		32	3862		20050	44.58		38	52.62		
			1378		27	3.20		250	33	26.075	34	958		050	39	2199	39	54.82	
											+ 47.45						+ 29.37		
15.849											− 43.51						− 32.83		
15.880											90.96						62.20		
											1.95885						1.79379		
											1.00660						1.13771		
											2.96545						2.93150		
											1.91540						1.87344		
											8.94998						8.94194		
											5 5 33						5 0 0		

B	12	22.50	.				B	56	44.50	.			B	36	30.20	.			
B	12	53.38	.				R	58	6.80	.			B	37	44.85	.			
R	12	53.89	.										R	37	45.02	.			
R	12	53.90	.										R	37	44.95	.			
B	12	53.62	.										B	37	44.95	.			
	12	53.70						58	6.80	.				37	44.924				
								82.30							74.72				

57

β Persei

h m s
3 34 19
+47° 24'

1.17609 0.12621
9.83051
1.00660

61

h Tauri

h m s
3 40 18
+23° 44'

1.17609 0.12621
9.96162
1.13771

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63

ζ Persei

h m s
3 46 32
+31° 31 1.17609 0.12621
1.99306
1.10678

1880
Aug 18

h	m	s		m	s							
3	45	12.63		45	3.4	4	27	40.48		27	28.5	
		15.00	17434		5.0			42.60	44776		28.4	
		17.48	17.43		7.4			44.65	44.78		26.8	
		19.76			9.5			47.00			28.5	
	87.17	22.30		366	11.3		22388	49.15		1342	30.0	
		3717			366			2388			342	
		27.15		45	732			53.20		27	2684	
		29.60			+29.48			58.46			+35.13	
		32.10						57.58				
		34.38	36872					59.90	1.991			
		36.90	36.87	46	8.7			2.00	.199	28	30.2	
		39.40	36.73		11.0			4.18	1.95		31.4	
		41.70			12.8			6.30			33.1	
		44.05			14.4			8.50			34.7	
	3318	46.54		63.5	16.6		55792	10.70		1658	36.4	
		6185			135			1792			158	
		51.40		46	1270			14.80		28	3316	
		53.80	56234		-35.90			17.00	19.116		-31.19	
		56.27	56.03					19.00	19.12			
		58.70	73.46					21.20	12390			
	2801	1.00		45	7.32		9558	2348		27	26.84	
		3117	45 36.80	46	12.70			4558	28 1.97	28	33.16	
					+29.48						+35.13	
					-35.90						-31.19	
					65.38						66.32	
					1.81544						1.82164	
					1.10678						1.15835	
					2.92222						2.97999	
					1.86249						1.92578	
					8.94027						8.94579	
					4 58 51						5 2 39	

B	49	7.32	'
B	50	20.22	'
R	50	20.22	'
R	50	20.15	'
B	50	20.13	'
	50	20.18	'
		72.86	

B	4	12.72	'
B	5	36.98	'
R	5	37.18	'
R	5	37.10	'
B	5	36.78	'
	5	37.01	'
		84.29	

73

α Tauri

h m s
4 28 59
+16° 16 1.17609 0.12621
0.99822
1.15835

Sign corr after diff mach. Taurus

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	260			87			90		
	ζ Lyrae			β Orionis			β Tauri		
	h m s			h m s			h m s		
	18 32 50			5 8 44			5 18 39		
	° ′			° ′			° ′		
	+38 40	1.17609	0.12621	−8 21		0.12621	+28 30		0.12621
		9.89254							
1880		1.06863							
Aug 21									
h m s									
18 31 22.06		31 4.7	5	7 17.54		7 5.2	5 17 13.00		16 34.4
24.76	27.338	6.5		19.68	21.748	7.0	15.26	17.672	56.0
27.37	27.34	8.4		21.75	21.75	9.4	17.68	17.67	58.0
29.90		10.7		23.82		10.8	20.02		59.4
13669 32.60		1135 13.2		10874 25.95		449 12.5	8836 22.40		288.8 1.0
3660		435		874		449	3836		388
37.93		31 8.70		30.00		7 8.98	27.00		16 57.76
40.57		+ 39.84		32.05		+ 29.37	29.40		+ 38.71
43.23				34.17			31.88		
45.98	48.559			36.30	38.332		34.20	36480	
48.50	48.56	32 28.3		38.30	38.33		36.58	3648	
51.30	48.52	30.7		40.37	38.38		38.50	36.46	
53.80		32.9		42.45			41.15		
56.55		34.9		44.65			43.46		
43703 59.17		163.6 36.8		34499 46.70			32832 45.85		
7703		136		7499			5832		
4.48		32 32.72		50.85			50.60		
7.00	9.690	+44.18		53.00	55006		52.80	55200	
9.67	9.69			55.00	55.01		55.30	55.26	
12.30	97.03			57.00	76.76		57.60	72.93	
48 45 15.00		31 8.70		27503 59.18		7 8.98	27630 0.00		16 57.76
4845	31 48.54	32 32.72		2503	7 38.355		2600	17 36.47	
		+39.84				+29.37			+ 38.71
		−44.18							
		84.02							
		1.92438							
		1.06863							
		2.99301							
		1.94062							
		8.94761							
		5 3 55							

B	40 9.18 ·	
B	41 36.12 ·	R 39 56.10 ·
R	41 36.38 ·	R 39 58.82 ·
	41 36.40 ·	~~39 58.82~~
	′ 87 22	272

R 50 14.62 ·
R 50 14.52 ·
50 14.57 ·

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93 S Orionis

h m s
δ 25 50
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0.12621

5	24	24.40			24	11.4	5	28	39.0			28	30.5	5	33	13.78		33	8.2
		26.40	28.488			12.6			41.15	43.230			32.0			15.80	17.930		9.8
		28.53	28.49			14.0			43.28	43.23			33.7			18.03	17.93		11.4
		30.53				15.6			45.30				35.1			20.00			12.6
	14244	32.58			705	16.9		21615	47.42			1679	36.6		8965	22.04		56	14.0
		4244				205			1615				179			3965			560
		36.70			24	14.10			51.60			28	33.58			26.17		38	11.20
		38.70				+30.82			53.60				+26.19			28.27			+23.25
		40.80							55.66							30.30			
		42.85	44900						57.64	59.774						32.38	34464		
		44.90	4490						59.75	5977						34.46	2446		
		47.00	44.94						1.85	59.77						36.50	3444		
		49.00							3.88							38.67			
		51.00							5.95							40.68			
	40410	53.15						53797	8.04						31018	42.75			
		4410							8797							4018			
		57.30							12.17							46.70			
		59.27	1994						14.30	16304						48.96	50942		
		1.30	1.39						16.30	16.30						51.00	5094		
		3.43	8988						18.30	119.53						53.00	6887		
	30697	5.67			24	14.10		8152	20.45			28	33.58		25471	55.05		33	11.20
		697	24	4492		+30.82			3152	28	59.77		+26.19			471	33	34.45	+23.25

R 43 8.75 ·
R 43 8.92 ·

43 8.83 ·

97 E Orionis

h m s
δ 30 04
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−1 17

0.12621

R 40.68 ·
R 40.72 ·

40.70 ·

a Z Orionis

h m s
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R 20 22.12 ·
R 20 22.12 ·

20 22.12 ·

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S

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1880

Aug. 21-22

h	m	s		m	s			
10	5	23.50		6	27.1	7	32.77	
		25.50	27.646		28.5		35.00	37056
		27.65	27.65		29.9		37.00	37.06
		29.70			31.3		39.13	
	13823	31.88		1494	32.6	18528	41.38	
		3829			494		3528	
		36.06		6	29.88		45.50	
		38.06			-45.36		47.70	
		40.30					49.85	
		42.45	44.514				52.05	54.064
		44.50	44.51				54.00	5406
		46.67	44.53				56.05	54.01
		48.79					58.45	
		50.80					0.48	
	40063	53.00				48658	2.50	
		4069					3658	
		57.03					6.70	
		59.35	1.396				8.88	
		1.40	1.40				11.00	10.96
		3.85	89.05				13.04	10802
	30498	5.65		6	29.88	5482	15.20	
		698	5 44.52		-45.36		7 57.035	

5 45.32

198

B Mes. Min.

h m s
14 57 4
o '
+74 38

0.12621

Aug. 22

Sheets not numbered

27.03		21.3	41.0
29.35		24.4	44.4
31.80		28.4	50.5
34.17		32.5	55.2
37.02	1453	28.7	1.3
39.40		453	424
42.16		29.06	48.48
44.74			
47.60			
50.28			
52.58		23.8	
55.50		27.5	
58.05		34.0	
0.70		39.8	
3.00	1711	46.0	
5.45		211	
8.30		34.22	
11.03			
13.37			
15.95			
18.40		2906	
21.04		3422	
23.60			
26.30			
29.00			

R 42 22.18
R 42 53.52
R 43 50.72

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252 γ Draconis			
h m s			
17 53 48			0.12621
° ′			
+51 30			

17 52 8.75		51 54.1		
11.95	15334	56.6		
15.37	1533	59.2		
18.70		1.8		
7667 21.90		2957 4.0		
2667		457		
28.35		51 59140		
31.91		+52.73		
35.35				
38.56	41877			
41.90	4188			
45.17	4186			
48.50				
51.80				
37689 55.15				
1689				
1.70				
5.15	8366			
8.40	838			
11.70	8371			
4188 14.88		51 59.14		
41.83	52 41.87			

R 50 36.55
R 50 36.60

50 36.57

256 δ Urs. Min			
h m s			
18 11 2			0.12621
° ′			
+86 37			

18 7 54.10		4 6.0	
8 7.40		5 57.0	
18.30			
30.27			
41.16			
52.80			
9 4.50			
16.05			
27.60			
40.00			
50.90			
10 3.03			
14.05			
25.63			
38.40			
49.40			
11 0.20			
13.30			
24.40			

R 45 3.80
R 45 14.98

257 η Serpentis			
h m s			
18 15 29			0.12621
° ′			
−2 56			

18 13 37.00		13 23.1	
39.00	41134	24.4	
41.17	4113	25.9	
43.20		27.1	
20567 45.30		1294 28.9	
567		294	
49.40		13 25.88	
51.50		+31.83	
53.70			
55.83	57770		
57.70	5777		
59.87	5765		
1.90			
4.00			
51993 6.03			
6993			
10.10			
12.04	14188		
14.12	1417		
16.20	11530		
7084 18.38		13 25.88	
2094	13 57.71	+31.83	

R 15 30.52
R 15 30.55

15 30.53

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260 ζ Lyrae

h m s
18 32 50
o ′
+38 40

0.12621

198 β Urs. Min

h m s
14 57 4
o ′
+74 38

0.12621

47 examine ζ Cet

h m s
2 33 57
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+3 37

0.12621

1880 Aug. 22

h	h	m	s		m	s															
10	18	31	18.35		31			14	48	24.38		47	57.0		2	54	—		54	55.2	
			21.02	23.738						30.17	40.016		2.7				—			57.3	
			23.55	23.74						40.05	40.02		9.0				—			58.8	
			26.44							47.95			13.4				—			0.3	
		11869	29.03						20008	56.53		340	18.0				—		2934	1.8	
			1869							008			208							434	
			34.20							10.98		48	8.02	+8.27	50.64	456.10	42.37		54	5865	
			36.95							19.00		+1	41.17	6.20	50.70	50.677	44.50			− 8.02	
			39.65							26.50				4.13	50.53		48.42				
			42.17	44.863						34.00	42.006			2.05	50.60		48.55	50.681			
			44.80	44.89	32	22.0				42.15	42.01	50	16.9	0.50	50.77		50.77	50.68	55	34.4	
			47.50	44.90		24.3				49.80	4238		21.1	2.06	50.70		52.76			36.0	
			50.20			26.2				57.35			28.3	4.19	50.64		54.78			37.4	
			52.81			28.4				5.40			34.8	6.20	50.78		56.98			38.9	
		40377	55.44		13	15 30.6			37805	13.37			41.3	8.28	50.72	4563	59.00		1871	40.4	
			4377			31.5				37805		1893	46.9				613			371	
			0.90		32	2630				39.15			93	12.40	50.60	253.08	3.00		55	4342	
			3.37	6.048		−41.41				36.80	44.740	50	31.55	14.47	50.53	50.616	5.00	7.168		− 56.76	
			5.97	6.05						44.85	44.74			16.54	50.61		7.18	7.17			
			8.60	89.79						52.70	204.76			18.61	50.65		9.26				
		3024	11.48						22370	0.20		51	22.3	20.79	50.66	3584	11.48		54	58.68	
			3824	31	44.895	32	26.30			22370		49	42.195				3584		55	37.42	
							−41.41						25.8								
													29.2								
													37.5		50.646						
													1623 47.5		50.656						
													123								
												51	32.46								
												−1	43.27								

R	41	34.20	·					B	2	51.82	·					B	40	30.98	·		
R	41	34.35	·					B	2	0.45	·					B	44	23.22	·		
								B	2	39.18	·					K	44	23.38	·		
																K	44	23.50	·		
																B	44	23.15	·		
		41	34.27	·													44	23.31	·		
																	239	1873	33		

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1262[illegible]

56 ε Eridani

h m s
3 27 14
° ′
−9 52

1.17609 0,12621
9.99353
1.16962

3	25	45.00		25		40.0
		47.13	49190			42.0
		49.20	49.19			43.5
		51.22				45.7
	24595	53.40			2189	47.7
		24595				189
		57.48		25		43.78
		59.65				+ 22.12
		1.80				
		3.90	5.910			
		5.90	5.91	26		36.0
		7.90	5.89			37.3
		10.15				38.7
		12.19				40.0
	59319	14.22			1934	41.4
		5319				434
		18.34		26		38.68
		20.54	22580			− 32.78
		22.54	22.58			
		24.60	13177			
	11290	26.88		25		43.78
		1290	26 5.90	26		38.68
						+ 22.12
						− 32.78
						54.90
						1.73957
						1.16962
						2.90919
						1.85278
						8.94359
						518

57 δ Persei

h m s
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° ′
+47 24

0.12621

3	32	45.60		32		35.3
		48.55	51666			37.5
		51.62	51.67			40.2
		54.70				42.2
	25833	57.86			1988	43.6
		833				488
		3.75		32		39.76
		7.00				+ 36.28
		9.94				
		12.80	16018			
		15.97	16.02	33		57.4
		19.04	16.06			59.9
		22.16				1.5
		25.30				3.6
	14416	28.20			3082	5.8
		5416				82
		34.20		34		1.64
		37.43	40.438			− 45.60
		40.48	40.44			
		43.54	15 2.11			
	20219	46.54		32		39.76
		219	33 16.04	34		1.64
						+ 36.28
						− 45.60

550 δ Eridani

h m s
3 37 27
° ′
−10 10

0.12621

3	35	58.20		36		41.0
		0.16	2.388			43.5
		2.30	2.39			46.0
		4.58				47.7
	31194	6.70			2279	49.7
		1194				279
		10.90		36		45.58
		12.90				+ 26.40
		15.00				
		17.00	19.176			
		19.20	19.18	36		59.9
		21.20	19.19			1.8
		23.28				3.5
		25.50				5.0
	17258	27.60			3169	6.7
		8258				169
		31.70		37		3.38
		34.05	35.986			− 44.20
		36.07	35.99			
		38.06	38.38			
	17993	40.05	36	36		45.58
		2993	~~35~~ 19.185	37		3.38
						− 26.40
						− 44.20

B 11 21.00
B 12 32.20
R 12 32.32
R 12 32.38
B 12 32.10
12 32.25
71.25

B 56 53.02

B 30 44.40
B 31 6.22
R 31 6.62
R 31 6.60
~~31 6.48~~
~~22.08~~

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63

ζ Persei

h m s
3 46 22
° ′
+31 31

1.17609 0,12621
9.93069
1.10678

1880. Aug. 22.

552

γ' Eridani

h m s
3 52 23
° ′
−13 57

0,12621

h	m	s		m	s								
3	45	2.70		44	45.5		3	50	—			51	41.0
		5.00	7.438		47.2				—				42.5
		7.45	7.44		48.6			26.51	—				43.8
		9.82			50.0	+14.88	14.73	14.755	59.55				45.2
	37	19 12.22		24	31 51.8	12.75	14.78	121.86	2.03			21	89 46.4
	37	19			431								189
		17.15		44	48 62	6.48	14.53	132.66	6.05			51	43 78
		19.47			+38.21	6.38	14.74	14.74	8.36				−29.03
		21.95				4.25	14.83		10.58				
		24.40	26889			+2.10	14.71		12.61	14.7246			
		26.58	26.84	45	58.3	−8.80	14.80		14.80	14.75		51	53.5
		29.30	26,82		59.9	2.12	14.75		16.87				55.4
		31.75			1.8	4.25	14.75		19.00				57.0
		34.05			3.2	6.38	14.76		21.14				58.4
	24	155 36.60		30	78 4.6	8.51	14.79	132	71 23.30			28	47 0.4
	61	55			78				42 71				347
		41.45		46	156	12.75	14.75	73.88	27.50			51	56 84
		43.80	46202		−34.73	14.87	14.81	14.776	29.68	31810			−42.19
		46.17	46,20			17.00	14.82		31.82	31,81			
		48.59	53,64			19.13	14.77		33.90				
	23	101 51.00		44	48,62	−21.32	14.79	15	905 34.15			51	43 78
	31	01	45 26.83	46	1,56				905			51	56,94
					+38.21								
					−34.73	14.757							
					72.94	14.753							
					1.86297								
					1.10678								
					2.96975								
					1.91782								
					8.94807								
					5 4 14								

B	48 57.30	B	11 23.32
B	50 20.02	B	11 42.65
R	50 20.05	R	11 42.98
R	50 20.12	R	11 42.42
		B	11 42.70
	50 2006		11 42.69
	82.76		

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240

β Draconis

h m s
17 27 42
0 ,
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0.12621

1880
Aug. 23

17	25	58.60			25	33.0	17	27	49.00			27	42.3	17	52	5.130			51	39.3
		2.05	5.376			34.8			51.10	53220			43.7			8.40	11.766			41.9
		5.33	5.38			37.5			53.20	53.22			45.2			11.73	11.77			44.2
		8.78				40.0			55.35				46.7			15.00				46.5
	32688	12.12			1878	42.2		266 10	57.45			2261	48.2		58,83	18.40			2204	48.5
		2688				378			1610				261			883				204
		18.98			25	3756			1.67			27	4522			25.20			51	4408
		22.32				+54.85			3.88				+24.93			28.36				+54.28
		25.70							6.00							31.85				
		29.03	32.444						8.00	10,168						35.00	38.379			
		32.37	32.41						10.18	10.17		28	36.8			38.32	38,38		53	15.6
		35.90	32.42						12.28	10,13			37.8			41.72	38,34			17.3
		39.14							14.40				39.1			44.95				19.8
		42.56							16.45				40.3			48.33				21.8
	29170	46.00						9151	18.65			1952	41.7		34541	51.68			989	24.4
		2290							9151				452			7541				489
		52.60							22.75			28	3904			38.22			53	19.760
		56.04	59.454						24.94	27028			−28.89			1.57	4.888			−41.42
		59.46	59.45						27.00	27.03						4.92	4.90			
		2.90	64.83						29,15	140,25						8.13	76,67			
	29727	6.27			25	37.56		13514	31.30			27	45.22		32452	11.68			51	44.08
		4727	26	32.445		+54.85			3514		28	10.15	28	39.04		2444		52	38.36	53	19.78
														+24.93						+54.28
														−28.89						−41.42
														53.82						95.70
														1.73094						1.98091
														1.16542						0.97024
														2.89636						2.95115
														1.84942						1.90580
														8.95306						8.95465
														5 7 44						5 8 51

B 57 15.15 ·

B 41 27.28 ·
B 42 37.92 ·
R 42 38.02 ·
R 42 38.02 ·
B 42 37.95 ·
42 37.98 ·
70.70

B 50 26.82 ·
B 51 47.18 ·
R 51 47.32 ·
R 51 47.32 ·
B 51 47.28 ·
51 47.32 ·
80.50

241

α Ophiuchi

h m s
17 29 19
0 ,
+12 39

1.17609 0.12621
9.98933
1.16542

252

χ Draconis

h m s
17 53 48
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+67 30

1.17609 0.12621
1.79415
0.97024

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256

σ Ser. Mic.

h m s
18 11 2
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+86 37

0,12621

1880
Aug. 23

h	m	s		m	s
18	7	50.82		3	27.0
	8	2.34			6.
		14.25		5	25.2
		25.50			
		~~38.72~~		6	39.5
		49.15			
	9	1.20			
		12.05			
		24.48			
		35.00			
		47.00			
		59.00			
	10	12.00			
		23.00			
		33.80			
		45.87			
		57.00			
	11	9.28			
		20.28	9	29.418	

B 45 1.10
B 45 13.68
B 45 20.28

257

η Serpentis

h m s
18 15 29
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−2 86

0,12691

h	m	s		m	s
18	13	~~33.75~~			
		35.65			
		37.80			
		39.80			
		42.00			
		46.15			
		48.22			
		50.25			
		52.30	54,348		
		54.30	54,35		
		56.40			
		58.45			
		0.48			
		489 13 2.55			
		3913			
		6.70			
		8.70	10,804		
		10.85	10,80		
		12.90			
		5402 14.87			
		402	13 54.314		

13	42.5				
	44.9				
	45.7				
	46.8				
2278	47.9				
	278				
13	45.56				
14	24.7				
	26.2				
	27.6				
	29.0				
1379	30.4				
	379				
14	27.58				
13	45.86				
14	27.58				

B 16 1.52
B 16 57.95
R 16 58.08
R 16 58.02
B 16 57.82
16 57.97

260

α Lyrae.

h m s
18 32 30
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+38 40

1.17609 0,12621
9.89254
1.06863

h	m	s			
18	31	15.00	20296	30	58.7
		17.60	~~2076~~		58.9
		20.38	20,30		0.5
		22.90			2.4
	10148	25.60		3027	4.2
		148			27
		30.98		31	0.54
		33.54			+40.94
		36.28			
		38.80	41.479		
		41.40	41,48	32	10.7
		44.05	41.49		12.3
		46.75			14.3
		49.43			16.6
	37331	52.06			724 18.5
		1331			224
		57.42		32	14.48
		0.10	2674		−33.00
		2.70	2,67		3
		5.25	82.97		
	31337	7.90		31	0.54
		1337	31 41.485	32	14.48
					+40.94
					−33.00
					7.94
					1.86868
					1.06863
					2.93751
					1.89620
					8.95869
					5 11 44

B 40 7.38
B 41 25.85
R 41 26.20
R 41 26.32
41 26.12
78.74

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111						52				56			
51 Cephei						α Persei				ε Eridani			
h m s						h m s				h m s			
				0,12621		3 15 41			0,12621	3 27 14			0,12621
						0 ′				0 ′			
						+49 24				−9 59			
39	11.44	36	46.2	3	14 4.18		13 45.4	3	25 42.00		25 37.3		
	13.20				7.35	10,566	47.7		44.15	46202	39.3		
	15.65	37	43.7		10.52	10,57	50.3		46.18	46,20	41.4		
	54.20				13.78		52.8		48.30		42.9		
	56.58	38	51.8		5283 17.00		2508 54.8		23101 50.38		2053 44.4		
40	0.20				283		08		3101		53		
	37.38	40	5.8		23.22		13 5016		54.56		25 41,060		
	39.92				26.30		+45.81		56.67		+21.89		
	42.80	42	25.9		29.65				58.88				
41	19.79				32.82	35,963			0.90	2,949			
	22.98	43	49.8		36.00	3596			2.98	2,95			
	25.38				39.10	3598			5.00	2,95			
42	1.50				42.30				7.05				
	3.56				45.50				9.18				
	6.42				323674 8.78				56654 11.35				
	45.60				5367				2654				
	48.48				55.00				15.48				
	50.60				58.17	1,386			17.60	19,690			
43	27.00				1.30	1,39			19.67	19.69			
	30.20				4.48	71.96			21.70	12589			
	31.90				30693 7.98		13 50,16		9845 24.00		25 41,06		
44	10.28				693	14 3597	+45.81		4845	26 2.95	+21.89		
	12.53												
	15.28												
	52.30												
	55.41												
	58.16												
B 36 34.15 ·				R 54 57.40 ·				R 11 22.60 ·					
B 36 29.10 ·				R 54 57.60 ·				R 11 22.78 ·					
B 36 23.98 ·													
B 36 17.60 ·													
B 36 7.42 ·													
B 36 2.25 ·				54 57.50 ·				11 22.69 ·					

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57

S Persei

h m s
3 34 19
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1880
Aug. 23

h	m	s		m	s												
3	32	42.56		33	27.8	-3	35	55.20		35	44.6	-3	38	46.48		38	
		43.75	48.718		34.4			57.30	59.404		46.3			48.70	50.984		
		48.90	48.72		32.1			59.37	59.40		48.0			51.00	50.98		
		51.68			34.1			1.50			49.5			53.24			
	24359	54.80		1619	37.5		29702	3.65		2394	51.0		25492	55.50			
		4359			119			4702			394			492			
		0.95		32	32.38			7.90		35	47.88			0.10			
		4.00			+40.81			10.00			+28.36			2.20			
		7.02						12.03						4.60			
		10.27	13.187					14.05	16.286					6.85	9.068		
		13.30	13.19					16.38	16.29					9.03	9.07	39	34.0
		16.30	13.19					18.45	16.20					11.40	9.03		35.4
		19.18						20.50						13.57			36.6
		22.36						22.56						15.83			38.0
	11868	25.30					14657	24.70					8161	18.03		1840	40.0
		2868						5657						8161			340
		31.35						28.85						22.50		39	36.80
		34.55	37.654					30.95	33.004					24.80	27.066		- 27.75
		37.80	37.65					33.00	33.00					27.00	27.07		
		40.75	14.637					35.05	15.240					29.38	13.805		
	18827	43.82		32	32.38		16502	37.17		35	47.88		13533	31.65			
		3827	33 13.19		+40.81			1502	36 16.248		+28.36			3533	39 9.05	39	36.80
																	+ 27.75

R 56 48.52 -

R 29 32.05
R 29 32.00

29 32.02 -

R 37 39.12 -
R 37 39.32 -

37 39.22 -

550

S Eridani

h m s
3 37 27
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-10 10

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h	m	s															
3	32	42.56		33	27.8	-3	35	55.20		35	44.6	-3	38	46.48		38	
		43.75	48.718		34.4			57.30	59.404		46.3			48.70	50.984		
		48.90	48.72		32.1			59.37	59.40		48.0			51.00	50.98		
		51.68			34.1			1.50			49.5			53.24			
	24359	54.80		1619	37.5		29702	3.65		2394	51.0		25492	55.50			
		4359			119			4702			394			492			
		0.95		32	32.38			7.90		35	47.88			0.10			
		4.00			+40.81			10.00			+28.36			2.20			
		7.02						12.03						4.60			
		10.27	13.187					14.05	16.286					6.85	9.068		
		13.30	13.19					16.38	16.29					9.03	9.07	39	34.0
		16.30	13.19					18.45	16.20					11.40	9.03		35.4
		19.18						20.50						13.57			36.6
		22.36						22.56						15.83			38.0
	11868	25.30					14657	24.70					8161	18.03		1840	40.0
		2868						5657						8161			340
		31.35						28.85						22.50		39	36.80
		34.55	37.654					30.95	33.004					24.80	27.066		- 27.75
		37.80	37.65					33.00	33.00					27.00	27.07		
		40.75	14.637					35.05	15.240					29.38	13.805		
	18827	43.82		32	32.38		16502	37.17		35	47.88		13533	31.65			
		3827	33 13.19		+40.81			1502	36 16.248		+28.36			3533	39 9.05	39	36.80
																	+ 27.75

R 29 32.05
R 29 32.00

29 32.02 -

61 Tauri

h m s
2 40 18
o ' "
+23 44

0,12621

h	m	s															
3	32	42.56		33	27.8	-3	35	55.20		35	44.6	-3	38	46.48		38	
		43.75	48.718		34.4			57.30	59.404		46.3			48.70	50.984		
		48.90	48.72		32.1			59.37	59.40		48.0			51.00	50.98		
		51.68			34.1			1.50			49.5			53.24			
	24359	54.80		1619	37.5		29702	3.65		2394	51.0		25492	55.50			
		4359			119			4702			394			492			
		0.95		32	32.38			7.90		35	47.88			0.10			
		4.00			+40.81			10.00			+28.36			2.20			
		7.02						12.03						4.60			
		10.27	13.187					14.05	16.286					6.85	9.068		
		13.30	13.19					16.38	16.29					9.03	9.07	39	34.0
		16.30	13.19					18.45	16.20					11.40	9.03		35.4
		19.18						20.50						13.57			36.6
		22.36						22.56						15.83			38.0
	11868	25.30					14657	24.70					8161	18.03		1840	40.0
		2868						5657						8161			340
		31.35						28.85						22.50		39	36.80
		34.55	37.654					30.95	33.004					24.80	27.066		- 27.75
		37.80	37.65					33.00	33.00					27.00	27.07		
		40.75	14.637					35.05	15.240					29.38	13.805		
	18827	43.82		32	32.38		16502	37.17		35	47.88		13533	31.65			
		3827	33 13.19		+40.81			1502	36 16.248		+28.36			3533	39 9.05	39	36.80
																	+ 27.75

R 37 39.12 -
R 37 39.32 -

37 39.22 -

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552

χ¹ Eridani

h m s
3 42 23
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−13 54

0.12621

90

β Tauri

h m s
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+28 30

0.12621

−7	50	50.65			50	46.7	5	17	6.70		16	50.3
		52.85	54920			48.2			9.00	11,352		52.0
		54.90	54.92			49.7			11.34	11,35		53.3
		57.02				51.9			13.69			55.0
	27460	59.18			2504	53.9		5676	16.03		2673	56.7
		2460				504			676			173
		3.40			50	5088			20.80		16	5346
		5.60				+ 21,84			23.10			+36.67
		7.65							25.42			
		9.80	11.921						27.80	30.137		
		11.90	11.92						30.20	30.14		
		13.94	11,92						32.47	30.12		
		16.30							34.80			
		18.37							37.10			
	10729	20.33						27123	39.54			
		1729							123			
		24.70							44.18			
		26.90	28920						46.45	48896		
		28.85	28.92						48.90	48.90		
		31.00	143.84						51.30	60.25		
	14460	33.15			58	5008		24448	53.65		16	5346
		4460	51	11,92					4448	17 30.13		
						+21.84						+36.67

R	11	20.18		R	50	17.88	
R	11	20.08		R	50	17.88	
	11	20.~~68~~ 13			50	17.88	

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S

Sun-

h m s
10 15 24
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+10 49

0.12621

1880

Aug. 23/24

h	m	s		m	s			
10	12	38.67		13	38.6	14	~~44.8~~	
		40.79	42922		39.8		50.17	
		43.00	42.92		41.4		52.13	
		45.00			42.7		54.38	
	21461	47.15		20 71	44.6		56.35	
		1461			71			
		51.36		13	41.42		0.55	
		53.58			−41.65		2.80	
		55.55					4.75	
		57.67	59.779				7.05	9.043
		59.80	59.78				9.05	9.04
		1.88	59.77				11.17	
		3.98					13.25	
		6.03					15.37	
	53801	8.16				8139	17.40	
		8801					8139	
		12.37					21.70	
		14.50	16614				23.98	25926
		16.60	16.61				25.95	25.93
		18.75	11953				28.00	
	8307	20.85		13	41.42	12963	30.00	
		3307	12 59.775		−41.65		2963	

256

Mer. Min

h m s
18 11 2
° ′
+86 37

0.12621

Aug. 28

h	m	s		
18	7	30.90	5	44.0
		43.00		
		54.60	16	36.1
	8	5.38		
		17.42	18	51.0
		29.52		
		40.05		
		52.60		
	9	4.25		
		16.05		
		27.53		
		39.30		
		50.85		
	10	2.50		
		13.84		
		25.50		
		37.47		
		50.00		
	11	0.30		
		12.05		
		24.00		
		35.40		
		47.40		
		59.15		
	12	10.67		

R 14 53.72

B 45 15,28.
B 45 32.88.
B 46 8.62.

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1880phae.proj.1512.

257

ζ Serpentis

h m s
18 15 29
° ′
−2 35

0.21621

260

α Lyrae

h m s
18 32 50
° ′
+38 40

0.21621

111

37 H. Cephei

h m s
6 42 14
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+87 14

0.21621

18	13	16.65			13	57.2		18	30	58.05					h	38	57.25			37	0.0		
		18.90	28880			58.8				0.67	23232					39	1.00						
		20.90	20,88			0.5				3.34	3,33						3.84			37	38.3		
		22.95				1.9				6.00						4	42.00						
	10440	25.00			3021	3.7			31666	8.60							43.70			39	17.2		
	440					2.1				1666							46.30						
		29.20			14	0,42				13.90						40	23.60			40	55.9		
		31.20				−22,99				16.70							25.58						
		33.38								19.18							27.75			42	5.9		
		35.35	37,442							21.88	24,570					41	6.65						
		37.40	37,44		14	7.3				24.52	24,57		31	49.9			9.50			43	49.3		
		39.55	37,42			9.0				27.18	24,53			51.7			12.40						
		41.55				10.7				29.80				53.0			47.30						
		43.65				12.0				32.43				54.6			51.90						
	33698	45.70			52,8	13.8			22059	35.00			2657	56.5			55.40						
	6698					2.8			4059					157			31.85						
		49.90			14	10,56				40.40			31	53,14			34.75						
		51.90	53960			−33,13				43.03	43,732			−28,62			37.60						
		54.00	53,96							45.80	43,73						15.30						
		56.00	74,84							48.43	49,06						17.40						
	26980	58.00			14	0,42			22866	51.00							20.44						
	1980		13	37.43	14	10,56			2866		31	24.52	31	53,14			57.00						
						−22,99											59.47						
						−33,13								−28,62		44	2.00						
																	40.15						
																	42.66						
																	44.95						

B 16 43.22 ·
B 16 57.12 ·

B 41 19.95 ·
R 41 20.45 ·
R 41 20.32 ·
B 41 20.15 ·
41 20,22 ·

B 36 30.85 ·
B 36 27.15 ·
B 36 19.32 ·
B 36 11.80 ·
B 36 7.05 ·
B 36 0.98 ·

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603

O Sagittarii 9.95198

h m s
18 47 46
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1880
Aug. 27

h	m	s	m	s
18	46	—	46	38.0
		—		40.0
		—		42.0
		—		43.1
		—	20	81 45.0
				81
		—	46	41.62
		—		+39.26
		—		
+2.28	20.73	124.48	18.45	
-1.70	20.40	20.83	20.90	
2.30	20.70		23.00	
4.61	20.84		25.50	
6.91	20.95		27.86	
9.23	20.81		30.04	
			39.8	11.2
				308
13.63	20.92	104.68	34.75	
16.13	21.02	20.936	37.15	39.388
18.44	20.93		39.37	39.39
20.74	20.93		41.67	
23.12	20.88	104.44	44.00	
		4604		
			46	41.62
			47	7.96

20.883
20.879

B	46	10.65	·
B	46	42.12	·
R	46	42.02	·
R	46	42.32	·
B	46	42.12	·
	46	42.14	·

0.12621

h	m	s
18	58	4.00
		6.15
		8.30
		10.45
4150		12.60
		4150
		16.87
		19.00
		21.03
		23.30
		25.45
		27.58
		29.66
		31.78
22849		33.90
		4849
		38.05
		40.24
		42.40
		44.40
21159		46.58
		1159

B	39	33.78	·
B	40	35.62	·
R	40	35.02	·
R	40	35.18	·
B	40	35.65	·
	40	35.37	·
		61.59	

270

ζ Aquilae

h m s
18 59 57
° ′
+13 41

1.17609 212621
9.98750
1.16359

h	m	s		
18	58	19.4		
		21.4	8.300	
		22.5	8.30	
		24.0		
1131		25.8		
		131		
58	22.62			
	+2.73			
			25.388	
59	6.7		25.39	
	8.3		25.31	
	10.0			
	11.5			
494		12.9		
		494		
59	9.88		42.318	
	-44.53		42.32	
			50.62	
58	22.62			
58	25.35	59	9.88	
			+2.73	
			-44.53	
			4726	
			1.67449	
			1.16359	
			2.83808	
			1.78951	
			8.95143	
			5635	

B	39	1.72	·
B	39	16.40	·
R	39	16.50	·
R	39	16.40	·
B	39	16.35	·
	39	16.41	·

275

β Cygni

h m s
19 25 50
° ′
+27 42

0.12621

h	m	s		
19	24	1.63		
		3.88	6.190	
		6.16	6.19	
		8.48		
3095		10.80		
		3095		
		15.57		
		17.95		
		20.17		
		22.50	24.888	
		24.93	24.89	
		27.20	24.85	
		29.56		
		31.94		
23999		34.17		
		4399		
		38.80		
		41.20	43.516	
		43.50	43.52	
		45.86	49.71	
21758		48.22		
		1758	24	24.87

h	m	s
23	58.0	
	56.5	
	58.0	
	59.7	
2912		2.0
		412
23	58.24	
	+24.63	
25	2.0	
	3.5	
	5.1	
	6.8	
2598		8.5
		259
25	5.18	
	-40.31	
23	58.24	
25	5.18	
	+26.63	
	-40.31	

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277

χ Aquilae

h m s
19 40 30

1.17609 0.12621
+10 129.99292
1.16901

19	38	44.04			38	39.5	19	43	6.80		
		46.07	48.194			31.2			6.65	10,730	
		48.19	48,19			32.4			10.70	10,73	
		50.27				33.9			12.80		
	24097	52.40			1622	35.2		5365	15.0		
		4097				122			365		
		56.45			38	32.44			19.03		
		58.70				+32.56			21.25		
		0.85							23.35		
		3.00	5,0 144						25.35	27,469	
		5.03	5.01		39	29.3			27.47	27.47	
		7.07	4.99			30.6			29.56	27.45	
		9.20				32.0			31.64		
		11.35				33.4			33.77		
	58513	13.48			1607	35.4		24722	35.80		
		4613				107			6722		
		17.60			39	32.14			39.98		
		19.68	21,796			− 27.14			42.05	44166	
		21.70	21.78						44.25	4417	
		24.00	129.97						46.25	3490	
	10898	26.00			38	32.44		22083	48.30		
		898	39	5.50	39	32.14		2083		43	27.46
						+ 32.56					
						− 27.14					
						5.970					
						1.77597					
						1.16901					
						2.94498					
						1.99922					
						8.95424					
						5 8 34					

19	42	55.3			19	47	36.05			47	21.2
		58.9					38.16	40.238			22.5
		58.0					40.18	4,024			23.8
		59.8					42.35				25.7
	2913	1.3				20119	44.45			1204	27.2
		413					119				204
	42	5826					48.55			47	2408
		+29,20					50.85				+32.80
							52.80				
							55.00	56.933			
	43	578					56.90	56,93		48	28.4
		59.4					58.95	56,83			29.6
		1.0					1.0				31.6
		2.5					3.15				33.4
	3046	3.9				57240	5.20			1580	35.0
		46					6240				80
	44	092					9.30			48	3160
		−33,46					11.37	13,420			−34.72
							13.40	13,42			
							15.48	113,66			
	42	58.26				6710	17.55			47	24.08
	44	092					1710	47	56.86	48	31.60
		+29.20									+32.80
		−33.46									−34.72
		62.66									67.52
		1.79699									1.82943
		1.17124									1.17362
		2.96823									3.00305
		2.15470									1.95737
		9.18647	?								8.95432
		8442									5 8 37

283

β Aquilae

h m s
19 49 22

1.17609 0.12631
+6 6 9.99753
1.17362

19	47	36.05			47	21.2					
		38.16	40.238			22.5					
		40.18	4,024			23.8					
		42.35				25.7					
	20119	44.45			1204	27.2					
		119				204					
		48.55			47	2408					
		50.85				+32.80					
		52.80									
		55.00	56.933								
		56.90	56,93		48	28.4					
		58.95	56,83			29.6					
		1.0				31.6					
		3.15				33.4					
	57240	5.20				1580	35.0				
		6240				80					
		9.30			48	3160					
		11.37	13,420			−34.72					
		13.40	13,42								
		15.48	113,66								
	6710	17.55			47	24.08					
		1710	47	56.86	48	31.60					
						+32.80					
						−34.72					
						67.52					
						1.82943					
						1.17362					
						3.00305					
						1.95737					
						8.95432					
						5 8 37					

B 0 39.28 ·
B 1 58.45 ·
R 1 58.75 ·
R 1 58.80 ·

1 58.67 ·
79.29

B 46 50.45 ·
B 49 13.05 ·
R 49 13.42 ·

49 13.24 ·
142.79

B 13 22.10 ·
B 14 52.78 ·
R 14 52.92 ·
R 14 52.82 ·
B 14 52.48 ·

14 52.75 ·
90.66

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79 See record book

i Aurigæ

h m s
4 49 7
+32° 58'

0,12621

1880
Aug 28

h	m	s		m	s												
4	47	—				5	28	15.70			28	23 3	5	32	50.37		32	36.5
		—						17.76	19.832			5.2			52.35	54476		38.4
		—						19.80	19.83			6.6			54.47	54.78		40.0
		—						21.90				8.0			56.55			41.4
		—					9916	24.00			326	9.5		27239	58.64		1996	43.3
								4916				326			2238			496
19.84	41.84	377.20	32.00					28.05			28	6.52			2.80		32	39.92
7.38	41.93	41.911	34.55					30.20				+29.81			4.80			+31.08
4.51	41.91		37.00					32.20							6.93			
2.73	41.88		39.45	41.916				34.30	36.333						9.00	11.022		
1.80	41.95		41.95	41.92		48	12.7	36.35	36.33						11.04	11.02		
2.45	41.84		44.39				15.3	38.35	36.33						13.00	10.98		
4.52	41.96		46.88				16.9	40.47							15.15			
7.38	41.97		49.35				19.0	42.50							17.20			
9.84	41.92	37724	51.77				849 21.0	44.58						9920	19.28			
			1724				349	5700							920			
14.76	41.82	209.40	56.58			48	16.98	48.70							23.30			
17.21	41.97	41.88	59.18	1.572			-25.09	50.77	52828						25.44	27468		
19.68	41.92		1.60	1.57				52.77	52.83						27.50	27.47		
22.14	41.86		4.00					54.90	7266						29.50	14.195		
24.67	41.83	30786	6.50					26414	57.00		28	6,52		13734	31.60		32	39.92
			786			48	16,98		1414	28	36.33		33		3734	33	11.00	
												+29.81						+31.08

41.896
41.843

R 23 32.82 ·
R 23 32.98 ·

23 32.90 ·

97 ε Orionis

h m s
5 30 04
−1° 17'

0,12621

R 36 36.30 ·
R 36 36.20 ·

36 36.25

ζ Orionis

h m s
5 34 39
−2° 0'

0,12621

R 20 12.78 ·
R 20 12.88 ·

20 12.83

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S

Sun C = 45 16.7

h m s
10 33 41
+9° 3'

0.12621

1880

Aug 29/30

h	m	s		m	s			
10	30	38.00		31	32.2	32	46.85	
		39.86	42088		33.7		49.00	51.050
		42.04	42.09		35.3		51.00	51.05
		44.27			36.9		53.12	
	21044	46.25		1769	38.8	25525	55.30	
		1044			269		525	
		50.50		31	3538		59.30	
		52.37			-36.54		1.34	
		54.62					3.46	
		56.80	58.871				5.66	7.758
		58.90	58.87				7.86	7.76
		1.00	58.81				10.00	7.81
		3.00					11.88	
		5.15					14.04	
	52984	7.30				60982	16.28	
		7984					6982	
		11.28					20.28	
		13.40	15.518				22.40	24.566
		15.58	16.52				24.65	24.57
		17.58	117.61				26.70	135.62
	7759	19.75		31	35.38	12283	28.80	
		2759	30 58.84		-36.54		2283	32 7.785

10 7.28

564

α Can Maj

h m s
6 39 49
-16° 33'

0.12621

Aug 31

6	37	52.25				37	44.0	
		54.46	56624				45.2	
		56.63	56.62				47.0	
		58.80					48.4	
	28312	0.96				2345	49.9	
		3312					345	
		5.15				37	46.90	
		7.28					+26.96	
		9.47	13.799					
		11.65	13.80					
		13.90	13.80					
		16.04	13.81					
		18.20						
		20.13						
	12419	22.37						
		3419						
		26.74						
		28.84	30.698					
		30.90	31.80					
		33.13	147.62					
	15477	35.38				37	46.90	
		499	38 13.805				+26.90	

R 52 26.25
R 52 26.25

52 26.25

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240

β Draconis

h m s
17 27 42
+52° 23'

0.12621

1880
Sept 1

h	m	s															
17	25	30.35			25	26.4		17	27	21.40			27	15.5		17	51	37.40			51	24.2
		34.00	37360			28.0				23.48	25586			16.8				40.87	44138			23.9
		37.50	37.36			32.5				25.50	25.59			18.6				44.06	44.14			27.8
		40.80				35.5				27.70				20.3				47.46				29.8
	18680	44.15			1604	38.0			12793	29.85			932	22.0			22069	50.90			1403	32.6
		3680				104				2793				432				2069				403
		51.02			25	3248				34.05			27	1864				57.45			51	2806
		54.18				+32.37				36.05				+23.85				0.87				+4260
		57.60								38.05								4.03				
		1.00	4456							40.35	42474							7.47	10663			
		4.47	446							42.50	42.47		28	26.5				10.62	10.66		52	34.2
		8.00	4.45							44.68	42.51			28.4				13.90	10.66			36.4
		11.26								46.72				30.0				17.25				38.6
		14.60								48.87				31.4				20.48				1.4
	58010	17.97							38227	51.00			1497	33.4			63597	23.90			2944	3.8
		4010								2227				497				597				444
		24.78								55.19			28	29.94				30.48			52	5888
		28.15	31534							57.33	59432			−47.45				33.95	37.180			−48.22
		31.56	31.53							59.54	59.43							37.17	37.18			
		34.90	12889							1.50	85.02							40.50	14132			
	15767	38.28			25	32.08			29716	3.70			27	18.64			18590	43.80			51	29.06
		767	26	4.455						4716	27	42.49	28	29.94				3590	52	10.66	52	5888
						+32.37								+23.85								+42.60
														−47.45								−48.22
														71.30								90.82
														1.85309								1.95818
														1.16542								0.97024
														3.01851								2.92842
														1.99559								1.85513
														8.97708								8.95671
														5258								5019

B 52 33.78 .

B 41 29.42 .
B 43 0.595 .
R 43 0.800 .
R 430.920 .
B 430.952 .
43 8.41 0.93.
98.99

B 50 35.60 .
B 51 52.35 .
R 51 52.45 .
R 51 52.30 .
B 51 52.35 .
51 52.36 .
76.76

241

α Ophiuchi

h m s
17 29 19
+12° 39'

1.17609 0.12621
99.98933
1.16542

252

γ Draconis

h m s
17 53 48
+51° 30'

1.17609 0.12621
99.99415
997024

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256 S Urs Min.

h m s
18 11 2
+86° 36'

0.12621

18	7	19.60		0	8.3	18	13	6.00		12	56.2	18	30	47.40		30	31.8
		29.15						8.15	10,158		57.9			49.97	52644		33.2
		43.00		2	28.3			10.20	10,16		59.3			52.60	52,62		35.0
		54.77						12.18			0.5			55.30			37.0
	8	5.30		3	50.1		5079	14.21		29	58 1.9		26	32 57.95		1755	38.5
		17.00						5079			458			1322			285
		30.00		5	40.5			18.53		12	59.16			3.10		30	35.10
		39.00						20.65			+27.59			5.90			+36.72
		53.40						22.60						8.50			
	9	4.05						24.77	26,798					11.30	13.831		
		15.80						26.80	26,80	13	56.2			13.88	+3.83	31	52.7
		26.00						28.90	26,71		57.5			16.45	13,82		54.2
		39.00						30.95			59.0			19.00			55.9
		52.80						32.98			0.2			21.90			58.0
	10	3.95					24,118	35.00		29	46 1.7		12	448 24.45		26	11 0.3
		15.60						6118			446			3448			311
		26.18						39.10		13	58.92			29.71		31	56.22
		38.20						41.18	43264		-32.17			32.40	35,018		-42.40
		49.50						43.27	43,26					35.00	35.02		
	11	2.20						45.37	53,42					37.88	14764		
		13.15					21632	47.40		12	59.16		17509	40.34		30	35.10
		25.38						1632	13 26,755	13	58.92			2509	31 13,825	31	56.22
		37.38									+27.59						+38.72
		48.72									-32.17						-42.40
	12	0.65									59.76						31.12
											1.77641						1.90913
											1.17552						1.06863
											2.95193						2.97776
											1.90800						1.92361
											8.95607						8.94585
											5952						5241

B 44 42.68 .
B 44 58.08 .
B 45 7.50 .
B 45 18.10 .

257 h Serpentis

h m s
18 15 29
−2° 56'

0.12621

1.17609
9.99943
1.17552

B 15 33.50 .
B 16 54.52 .
R 16 54.38 .
R 16 54.48 .
B 16 54.28 .
16 54.41
80.91

260 x Lyrae

h m s
18 32 50
+38° 40'

0.12621

1.17609
9.89254
1.06863

B 40 9.45 .
B 41 33.15 .
R 41 33.38 .
R 41 33.62 .
B 41 33.15 .
41 33.32 .
8.3.87

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603

O Sagittarii

h m s
18 47 46
-26° 27'
1880
Sept 1

1.17609 0.12621
9.95198
1.12807

270

Z Aquilae

h m s
18 59 51
+13° 41'

1.17609 0.12621
9.98750
1.16359

h	m	s		m	s								
18	45	47.18	.	45	34.4	18	57	53.38		57	42.3		
		49.54	51.756		35.9			55.62	57.714		43.5		
		51.90	51.76		37.0			57.76	57.71		45.0		
		54.00			38.8			59.83			46.6		
	2587	8 56.16		1861	40.0		2885	7 1.98		2254	48.0		
		878			361			3857			254		
		1.00		45	37.22			6.18		57	45.08		
		3.20			+32.97			8.28			+29.59		
		5.59						10.40					
		7.88	10.182					12.60	14.648				
		10.20	10.18	46	48.2			14.68	14.65	58	44.6		
		12.52	10.20		44.8			16.80	14.69		46.4		
		14.80			46.3			18.84			47.8		
		17.15			48.2			21.00			49.4		
	9164	19.30		2333	50.8		1318	3 23.10		2392	51.0		
		164			333			4183			392		
		24.00		46	4666			27.40		58	4784		
		26.08	28.652		-36.47			29.53	31.666		-33.17		
		28.65	28.65					31.60	31.67				
		30.87	14041					33.80	14938				
	1432	6 33.36		45	37.22		1583	3 36.00		57	45.08		
		4326	46 10.19	46	4666			833	58 14.67	58	4784		
					+32.97						+29.59		
					-36.47						-33.17		
					6944						6276		
					1.841161						1.79768		
					1.12807						1.16359		
					2.96968						2.96127		
					2.16239						1.91323		
					9.19271						8.95196		
					8 51130						6 57		

B	44	1.15	.	B	38	57.45	.		
B	46	26.42		B	40	19.05			
R	46	26.58		R	40	19.25			
R	46	26.60		R	40	19.65			
B	46	26.38		B	40	19.40			
	46	26.49	.		40	19.34			
		145.34				81.89			

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S

Sun C = 45 16.6

h m s
10 47 26

0.12621

1880

Sept 1/2

h	m	s		m	s										
10	44	39.18		45	57.0	47	7.40			13	40	34.65			
		1.40	3380		58.5		9.70					37.85	41.070		
		3.35	3.38		0.0		11.80	11.74				41.03	41.07		
		5.50			1.5		13.85					44.30			
	31	690 7.47		2995	2.5	5870	15.95				20535	47.52			
		1690			445		2.17					535			
		11.77		45	59.90		20.17					54.00			
		14.00			-39.80		22.21					57.14			
		16.00					24.33					0.35			
		18.00	20840				26.38	28499				3.60	6.760		
		20.05	20.14				28.40	28.50				6.77	6.76	41	36.0
		22.20	20.06				30.45	28.54				10.00	6.75		38.2
		24.36					32.68					13.12			40.3
		26.36					34.67					16.36			42.7
	18	126 28.50				2649	37.00				60084	19.50		2023	45.1
		126					7649					6084			23
		32.55					41.20					26.00		41	4046
		34.50	36734				43.75	45330				29.20	32430		+27.09
		36.75	36.73				45.80	45.33				32.40	32.43		
		38.90	40.11				47.45	57.07				35.65	133.50		
	18	367 40.97		45	59.90	2265	49.45				16215	38.90			
		3367	45 20.10				2665	47 28.52				1215	41 6.755	41	40.46
					-39.80										-33.71

R 0 3.65

0.12621

181

h Ursae Maj

h m s
13 42 46
+49° 55'

Sept 2

R 27 27.02
R 27 26.85

27 26.93

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		182				596				228		
		h Bootis			α	α Scorpii				β Herculis		
		h m s 13 48 55		0.12621		h m s 16 21 59		0.12621		h m s 16 25 1		0.12621
		+19° 0'				−26° 10'				+21° 45'		
	1880	Sept 2										
h 13	m s 46 —		m s 4	16	19 57.55		19 44.4	16	23 —			
	—				59.55	2100	46.2		—			
	—				2.00	2,10	47.9		—			
	—				4.40		49.4		—			
+13.09 15.69	15.69 2.60				31050 6.70		2391 51.2		—			
	15.69				1050		391					
8.73 15.73	7.00				11.26		19 47.82		—			
6.33 15.70	141.94 9.15				13.54		+32.65	+6.66 21.56	172.31 14.90			
4.36 15.84	15.771 11.48				15.80			4.44 21.47	21.539 17.03			
+2.16 15.81	13.65	15.776			18.18	20.451		+2.20 21.50	19.30			
−0.00 15.80	15.80	15.78	47 39.0		20.42	20.45		−0.00 21.57	21.57		23 47.3	
2.18 15.82	18.00		40.7		22.67	20.50		2.22 21.53	23.75		48.9	
4.37 15.73	20.10		42.6		25.04			4.49 21.56	26.00		50.5	
6.55 15.75	22.30		44.3		27.45			6.66 21.54	28.20		52.0	
8.74 15.76	14198 24.50		2122 45.6		18406 29.70			8.90 21.58	30.48		2522 53.7	
	5198		122		406						24	
13.09 15.71	78.85 28.80		47 4244		34.33			13.33 21.62	107.99 34.95		23 50.48	
15.27 15.73	15.77 31.00	33240	−26.68		36.60	38896		15.55 21.65	21.578 37.20	39.384	−28.92	
17.46 15.79	33.25	33.24			38.88	38.90		17.78 21.58	39.36	39.38		
19.64 15.81	35.45				41.19	41.00		19.99 21.57	41.56			
−21.89 15.81	16620 37.70				19448 43.48		19 4782	−22.28 21.57	19692 43.85			
	1620		47 42.44		4448	20 20.475			4692		23 50.44	
							+32.65					
15.744								21.558				
15.765								21.561				
R	21 50.05				R 28 33.62				R 36 35.85			
R	21 50.02				R 28 33.78				R 36 35.55			
	21 50.03				28 33.70				36 35.70			

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21

597 ζ Ophiuchi

h m s
16 30 30
−10° 19′

0,12621

16	28	29.85			28	25.8	16	36	38.40		36	25.8	17	1	26.05		1	16.0	
		31.98	33.962			27.4			41.00	43.726		27.3			28.28	30.380		17.3	
		33.90	33.96			28.9			43.70	43.73		29.0			30.40	30.38		18.8	
		36.00				30.3			46.38			30.8			32.50			20.5	
	16981	38.05			1444	32.0		21863	49.15		1456	32.7		1519	34.67		942	21.6	
		1981				444			1863			456			190			442	
		42.27			28	2.888			54.40		36	29.12			39.00		1	18.84	
		44.33				+21.84			57.00			−35.88			41.20			+28.71	
		46.58							59.70						43.28				
		48.60	50.711						2.30	4.989					45.34	47.566			
		50.70	50.71						5.00	4.99					47.55	47.57			
		52.85	50.73						7.68	5.01					49.70	47.53			
		55.00							10.27						51.85				
		57.00							12.95						54.00				
	45640	59.15						58490	15.60					42809	56.17				
		640							4490						6809				
		3.30							20.90						0.36				
		5.37	7.496						23.64	26278					2.50	4688			
		7.53	7.50						26.30	26.28					4.70	4.69			
		9.58	101.46						28.98	130.01					6.90	95.07			
	3748	11.70			28	2.888		131393	31.87		36	29.12		2344	8.98		1	18.84	
		3748	28	50.72					3139	37	5.50				2344	1	47.56		
				+21.84								−35.88						+28.71	

R 29 16.45 ·
R 29 16.60 ·

29 16.52 ·

232 N Herculis

h m s
16 38 45
+39° 9′

0,12621

R 11 38.10 ·
R 11 38.12 ·

11 38.11 ·

598 N Ophiuchi

h m s
17 3 27
−15° 34′

0,12621

R 115 58.88 ·
R 45 58.88 ·

45 58.84 ·

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252

δ Draconis

h m s
17 53 48
51° 30'
1.17609 0.12621
9.79415
0.96024

1880
Sept 2

h	m	s		m	s												
17	51	34.60		51	47.2	18	7	16.20		3	41.3	18	13	3.50		12	52.0
		37.90	41.338		49.4			27.57				1		5.55	7.640		51.7
		41.34	41.34		51.6			40.70		4	53.5			7.57	7.64		53.2
		44.80			54.1			52.04						9.78			54.6
	20669	48.05		2583	56.0		8	13.05		6	21.0		3820	11.30		2655	56.0
		669			83			14.87						3820			155
		54.88		51	51.66			25.76						15.91		12	53.10
		58.06			+16.34			37.70						18.00			+31.01
		1.40						50.05						19.93			
		4.80	8.027				9	1.00						22.00	24.103		
		8.00	8.08	52	46.7			12.90						24.04	24.10		
		11.32	7.92		49.3			25.00						26.14	24.13		
		14.65			51.3			35.92						28.18			
		17.97			53.4			48.28						30.33			
	41274	21.16		2568	56.1		10	0.00					21693	32.40			
		7224			68			11.00						2693			
		27.80		52	51.36			22.57						36.45			
		31.18	34.492		-43.36			34.85						38.58	40.692		
		34.50	34.49					46.22						40.63	40.61		
		37.84	135.83					57.98						42.70	48.25		
	17246	41.14		51	51.66		11	9.20					20306	44.70		12	53.10
		2246	52 8.00	52	51.36			21.14						306	13 24.115		
					+16.34			32.55									+31.01
					-43.36			43.87									
					59.70			56.20									
					1.77594												
					0.96024												
					2.73621												
					77597												

B 50 57.92
B 51 46.90
R 51 46.92
R 51 47.10
B 51 46.68
~~51 46.90~~
~~48.98~~

256

S Ursæ Min

h m s
18 11 2
+86° 36'
0.12621

B 45 6.02
B 45 12.68
B 45 19.98

257

η Serpentis

h m s
18 15 29
-2° 56'
0.12621

B 15 29.70
B 15 29.82
R 15 29.85
R 15 29.95

15 29.83

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260

χ Dyrae

h m s
18 32 50
+38° 40'

1880

Sept 2

1.17609 0.12621
9.89254
1.06863

18	30	44.90			30	23.0	6	38	49.69		35	28.6	18	43	44.66			45	38.1
		47.31	54.064			35.0		39	32.50						46.91	48.194			39.8
		50.05	50.06			36.6		40	14.30		36	20.0			49.12	49.19			41.3
		52.65				38.3			57.70						51.48				42.9
	25032	55.35			1829	40.0		41	41.95		37	12.5		24597	53.80			2072	45.1
		032				32.9		42	22.75						4597				72
		0.63			30	36.58		43	4.88		37	55.0			58.38			45	41.44
		3.16				+34.62			47.88						0.60				+26.14
		5.90						44	30.03		39	21.9			3.00				
		8.60	11.210												5.26	7.562			
		11.32	11.21		31	43.5					40	27.8			7.48	7.56		46	47.6
		13.90	11.19			46.3									9.90	7.60			49.0
		16.50				48.7					41	52.8			12.25				51.0
		19.00				51.4									14.40				53.0
	10089	21.88			2433	53.4								20806	16.79			2551	54.5
		1089				433									6806				51
		27.00			31	48.66									21.43			46	51.02
		29.68	32.318			-37.46									23.70	26.024			-43.44
		32.36	32.32												26.04	26.02			
		35.00	142.38												28.30	135.21			
	16159	37.55			30	36.58								13012	30.65			45	41.44
		7159	31	11.20	31	48.66				41	40.187				3012	46	7.58	46	51.02
						+34.62													+26.14
						-37.46													-43.44
						72.08													
						1.85781													
						1.06863													
						2.92644													
						1.87518													
						8.94874													
						5442													

111

51 Cephei LC

h m s
6 42 14
+87° 14'

0.12621

B	40	12.95	·				B	36	37.15	·	B	45	11.58	·					
B	41	27.72	·				B	36	28.68	·	B	45	35.12						
R	41	28.22	·				B	36	26.02	·	R	45	35.02						
							B	36	19.05	·	R	45	35.05						
							B	36	12.72	·	B	45	35.28						
							B	36	7.90	·		45	35.12						
		4127.97	·																
		75.02																	

603

δ Sagittarii

h m s
18 47 46
-26° 27'

0.12621

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270

ζ Aquilae

h m s
18 09 57 50.7
+13 41 1.17609 0,12621
9.98750
1.16359

1880

8 sf 02

h	m	s		m	s													
18	57	30.80		57	42.1	3	25	12.45		24	57.6	3	32	—		32		
		53.00	55.104		43.5			14.50	16528		59.2			—				
		55.02	55.10		45.0			16.45	16,53		0.5			—				
		57.30			46.4			18.62			2.3			—				
	27	55.52	39.40	22	48 47.8		8	26 4	20.62	30	40	4.4		—				
		2552			248			3264				40						
		3.66		57	4496			24.87		25	080			—				
		5.80			+27.14			27.00			+32.49			—				
		7.90						29.03						—				
		10.00	12,116					31.00	33281				+3.62	43.32	260.13	40.30		
		12.00	12.12	58	41.0			33.20	3328	26	1.0		-5.50	43.40	43.35	43.40	33	6.1
		14.20	12.09		42.5			35.45	3330		2.5		3.04	43.16	46.20			8.4
		16.36			44.0			37.60			3.8		6.10	43.46	49.56			10.3
		18.52			45.6			39.68			5.3		9.15	43.45	52.60			12.4
	10	90 4	20.60	22	01 47.0		29	95 3	41.80	19	36.7		12.21	43.34	55.55		5	17 14.3
		1904			201			2653			193							17
		24.80		58	44.02			45.88		26	3.86		18.24	43.71	217.96	1.90	33	1034
		26.90	29.072		-31.92			48.04	50070		-30.57		21.34	43.66	43.59	5.00		-26.88
		29.03	29.07					50.15	5007				24.39	43.61		8.00		
		31.25	14417					52.13	6660				27.44	43.56		11.00		
	14	53 6	33.38		57 4496		25	03 5	54.15	25	0.80		-30.58	43.42		14.00		
		4536	58 12,105	58	44.02			035	25 33.29	26	3.86						33	1034
					+27.14						+32.49							
					-31.92						-30.57		43.468					
					59.06						3.06		43.463					
					1.77129						1.79975							
					1.16359						1.16962							
					2.93488						2.96937							
					1.89148						1.91745							
					8.95660						8.94808							
					5 10 14						5 11 15							

B	39	0.12	
B	40	18.38	
R	40	18.38	
R	40	18.18	
B	40	18.32	
	40	18.31	
		77.89	

B	11	7.82	
B	12	30.52	
R	12	30.55	
R	12	30.50	
B	12	30.48	
	12	30.51	
		82.69	

56

E Eridani

h m s
3 27 14
-9 52 1.17609 0,12021
9.99353
1.16962

57

S Persei

h m s
3 34 19
+47 24 0,12621

B	57	48.75	
B	58	16.05	

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550 δ Eridani

h m s
3 37 27
° ′
−10 10

0.12621

61 η Tauri

h m s
3 40 18
° ′
+23 44

1.17609 0.12621
9.96162
1.13771

63 ζ Persei

h m s
3 46 32
° ′
+31 31

1.17609 0.12621
9.93069
1.10678

δ Eridani

	3	35 —
+6.29	46.66	372.46 40.37
4.19	46.56	46.558 42.37
+2.07	46.57	44.50
−0.00	46.56	46.56
2.09	46.56	48.65
4.19	46.51	50.70
6.29	46.57	52.80
8.40	46.50	54.90
12.58	46.54	233.35 59.17
14.67	46.63	46.67 1.30
16.39	46.98	3.37
18.87	46.63	5.50
−21.63	46.52	31689 7.55
		1689

46.614
46.601

3378
3.38

35 59.7
1.8
3.0
4.2
31 45 5.8
145
36 2900
−16.34
36 2.90

B 30 29.75
B 30 32.17

η Tauri

3	38	16.95	
		19.20	21454
		21.45	2145
		23.63	
	10727	26.04	
		727	
		30.53	
		32.67	
		34.98	
		37.22	39.483
		39.37	39.48
		41.80	39.50
		44.00	
		46.30	
	35535	48.48	
		8535	
		53.00	
		55.25	57.556
		57.56	57.56
		59.80	79.01
	28778	2.17	
		3778	39 39.49

38	20.0
	21.8
	23.0
	24.4
11 56	26.4
	156
38	2312
	+16.37
39	13.9
	15.6
	17.0
	18.7
8 56	20.4
	356
39	1712
	−37.63
38	2342
39	1712

+16.37
−37.63
54.00
1.73239
1.13771
2.87010
2.10006
9.22996
~~9 39 33~~ 9 3815

B 36 43.20
B 38 49.10
R 38 49.10
R 38 49.20
B 38 49.05
38 49.11
125.91

ζ Persei

3	44	30.05	
		32.48	34918
		34.96	3492
		37.40	
	17459	39.70	
		2459	
		44.50	
		47.00	
		49.40	
		51.76	54.237
		54.29	5424
		56.71	54.28
		59.10	
		1.45	
	48813	3.92	
		3813	
		8.78	
		11.20	13630
		13.62	13.63
		16.05	10855
	6815	18.50	
		1815	44 54.26

44	16.3
	18.1
	20.0
	21.5
988	22.9
	488
44	1976
	+34.50
45	25.3
	26.6
	28.4
	30.0
1423	32.0
	423
45	2846
	−34.20
44	19.76
45	28.46

+34.70
−34.20
68.90
1.83822
1.10678
2.94500
2.03687
9.09187
7237

B ~~48~~ 49 ~~30~~.40
B 50 18.55
R 50 18.92
R 50 19.02
B 50 18.95
50 18.86
108.86

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552

χ Eridani

h m s
3 52 23
° ′
−13 57

0.12621

1880
Sept. 2

h	m	s		m	s												
3	50	20.66		50	34.0		4	26	58.30		26	45.0	4	47	4.67		46	54.3
		22.83			35.3				0.36	2.542		47.0			7.17	9.648		56.0
		25.00			37.3				2.58	2.54		48.4			9.70	9.65		57.7
		27.00			38.7				4.72			49.7			12.15			59.3
		29.35		18	56 40.3			31	27 16.80		24,1	51.3		4824	14.55		2884	1.1
					3.56				1.271			4.14			4.824			3.84
		33.60		60	37.12				11.00		26	48.28			19.46		46	57.68
		35.80							13.25			+31.43			22.03			+31.660
		38.00							15.42						24.40			
		40.00	42.120						17.55	19.690					26.80	29.352		
		42.05	42.12	51	13.8				19.75	19.69	27	50.2			29.30	29.35	48	2.8
		44.25			15.2				21.88	19.74		51.8			31.80	29.33		5.0
		46.30			16.5				24.00			53.3			34.33			6.7
		48.44			18.4				26.06			55.0			36.79			8.5
	37	908 50.64		8	40 20.1			17	721 28.30		26	72 56.9		26	417 39.26		33	10.2
		1.908			3.40				8.721			1.72			8.417			3.32
		54.85		51	16.80				32.60		27	53.44			44.05		48	6.64
		57.00	59.160						34.80	36.944		−33.73			46.57	49.004		−37.30
		59.20	59.16						36.87	36.94					49.00	49.00		
		1.25							39.14	39.48					51.40	58.65		
	29	580 3.50		50	37.12			18	472 41.31		26	48.28		24	502 54.00		46	37.68
		4.580	50 42.091	51	16.80				3.472	27 19.715	27	53.24			4.582	47 29.34	48	6.64
												+31.93						+31.66
												−33.53						−37.30
																		6.96
																		1.83860
																		0.09985
																		2.93845
																		1.88795
																		9.94950
																		5 5 14

B	10	40.20	·				B	4	13.52	·			B	22	17.02	·			
B	11	32.75	·				B	4	37.55	·			B	23	34.40	·			
R	11	32.77	·				R	4	37.45	·			R	23	34.18	·			
R	11	32.97	·				R	4	37.40	·			R	23	34.15	·			
							B	4	37.45	·			B	23	34.38	·			
	11	32.83	·					4	~~37.46~~	·				23	34.28	·			
									23.94						77.26				

73

ζ Tauri

h m s
4 28 39
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+16 16

0.12621

h	m	s		m	s												
4	26	58.30		26	45.0	4	47	4.67		46	54.3						
		0.36	2.542		47.0			7.17	9.648		56.0						
		2.58	2.54		48.4			9.70	9.65		57.7						
		4.72			49.7			12.15			59.3						
	31	271 6.80		24,1	51.3		4824	14.55		2884	1.1						
		1.271			4.14			4.824			3.84						
		11.00		26	48.28			19.46		46	57.68						
		13.25			+31.43			22.03			+31.660						
		15.42						24.40									
		17.55	19.690					26.80	29.352								
		19.75	19.69	27	50.2			29.30	29.35	48	2.8						
		21.88	19.74		51.8			31.80	29.33		5.0						
		24.00			53.3			34.33			6.7						
		26.06			55.0			36.79			8.5						
	17	721 28.30		26	72 56.9		26	417 39.26		33	10.2						
		8.721			1.72			8.417			3.32						
		32.60		27	53.44			44.05		48	6.64						
		34.80	36.944		−33.73			46.57	49.004		−37.30						
		36.87	36.94					49.00	49.00								
		39.14	39.48					51.40	58.65								
	18	472 41.31		26	48.28		24	502 54.00		46	37.68						
27		3.472 19.715		27	53.24			4.582	47 29.34	48	6.64						
					+31.93						+31.66						
					−33.53						−37.30						
											6.96						
											1.83860						
											0.09985						
											2.93845						
											1.88795						
											9.94950						
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79

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1.17609 0.12621
9.92376
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84

β Eridani

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1.17609 0.12621
9.99817
1.17426

4 59 52.50
54.60 56.660
56.65 56.66
58.70
28330 0.85
3330
4.98
7.02
9.04
11.18 13248
13.20 13.25
15.32 13.23
17.38
19.48
11923 21.63
2923
25.70
27.70 29810
29.80 29.81
31.85 14647
14905 34.00
4905 60 13.24

59 38.0
39.5
41.0
42.7
2055 44.3
55
59 41.10
+32.14
0 42.7
44.0
45.7
47.0
2278 48.4
278
0 4556
−32.32
59 41.10
0 4556
+32.14
−32.32
64.46
1.80929
1.17426
2.98355
1.91169
8.92814
4 50 39

87

β Orionis

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−8 21
1.17609 0.12621
9.99537
1.17146

5 6 41.48
43.50 45566
45.55 45.57
47.60
22783 49.70
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53.80
56.05
58.05
0.22 2236
2.25 224
4.30 226
6.35
8.50
56012 10.60
2012
14.77
16.84 18948
18.90 18.95
21.00 12452
9474 23.20
4474 7 2.25

6 32.0
33.7
35.0
36.5
1756 38.4
256
6 35.12
+27.13
7 31.0
32.6
34.0
35.8
1709 37.5
209
7 3418
−31.93
6 35.12
7 3418
+27.13
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59.06
1.77129
1.17146
2.94275
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β Tauri

h m s
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5 16 36.90
39.30 41.646
41.68 4165
44.00
20823 46.35
823
51.00
53.40
55.77
58.04 0418
0.36 0.42
2.76 0.42
5.15
7.48
54376 9.80
376
14.50
16.85 19.200
19.15 19.20
21.50 12085
9600 24.00
4600 17 0.42

16 16.1
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21.5
995 23.5
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16 19.90
+40.52
17 31.6
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35.0
36.6
1751 38.6
258
17 3502
−34.60
16 1990
17 35.02
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−34.60
75.12
1.87576
1.11999
2.99575
1.94968
8.95393
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B 34 5.42 ·
B 35 27.00 ·
R 35 27.00 ·?
R 35 27.02 ·
B 35 27.05 ·
35 27.02 ·
81.60

B 39 58.72 ·
B 41 18.65
R 41 18.52
R 41 18.45
B 41 18.62
41 18.56 ·
79.84

B 50 12.10 ·
B 51 41.00 ·
R 51 41.28 ·
R 51 41.25 ·
B 51 41.12 ·
51 41.16 ·
89.06

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93
S Orionis

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1880
Sept. 2

h	m	s		m	s												
5	23	48.18		23	45.41	5	28	3.02		27	49.8	5	32	37.70		32	26.4
		50.35	52330		46.8			5.02	7.128		51.5			39.75	41836		27.9
		52.40	52.33		48.5			7.17	7.13		52.7			41.88	41.84		29.2
		54.40			49.7			9.18			54.3			43.85			30.5
	26165	56.32		2419	51.5		3564	11.25		2641	55.8		20918	46.00		1459	31.9
		1165			419			3564			141			918			459
		0.50		23	4838			15.40		27	52.82			50.04		32	29.18
		2.70			+20.43			17.47			+30.85			52.17			+29.18
		4.70						19.54						54.29			
		6.80	8817					21.60	23687					56.20	58363		
		8.85	8.82					23.67	23.69		52.9			58.45	58.36		27.0
		10.95	8.80					25.70	23.66		54.2			0.45	58.37		28.8
		12.90						27.80			55.6			2.45			30.5
		14.95						29.90			56.8			4.55			32.0
	7935	17.00					21318	32.10		2780	58.5		52527	6.67		1517	33.4
		7935						3918			280			7527			17
		21.00						36.05		28	55.60			10.80		33	30.34
		23.20	25766					38.08	40.182		−31.93			12.86	14.904		−31.98
		25.28	25.27					40.18	40.18					14.86	14.90		
		27.40	137.60					42.30	47.31					17.00	11.674		
	126.33	29.45		23	4838		22091	44.30		27	52.82		74521	9.00		32	29.18
		2633	24 8.81					091	23.675	28	55.60			2452	58.365	33	30.34
					+20.43						+30.85						+29.18
											−31.93						−31.98
											62.78						61.16
											1.79782						1.78647
											1.17598						1.17583
											2.97380						2.46230
											1.92722						1.91036
											8.95342						8.94806
											5 7 59						5 4 14

B	43	22.62	·	B	36	32.78	·	B	35	13.58	·								
				B	37	57.42	·	B	36	34.98	·								
				R	37	57.32	·	R	36	35.00	·								
				R	37	57.30	·	R	36	34.90	·								
								B	36	34.85	·								
					37	57.35	·		36	34.93	·								
						84.57				81.35									

97
E Orionis

h m s
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1.17609 0.12621
9.99989
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a
Z Orionis

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5 34 39
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1.17609 0.12621
9.99974
1.17583

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62!

100 κ Orionis

h m s
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−9 43

0.12621

5

12.56	19.44	40	32.00
14.65	19.50	97.43	34.15
16.75	19.43	19.486	36.18
18.84	19.42		38.33
21.00	19.57	18123	40.51
			3123

86246
3625

40 42.6
44.2
45.7
47.3
2285 48.7
285
40 4570
− 26.21

40 4570

102 α Orionis

h m s
5 48 37
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+7 23

1.17609 0.12621
9.99638
1.17247

5 46 36.27
38.30
40.38
42.40
20195 44.60
195
46.70
50.90
52.97
55.00
57.05
59.15
1.26
3.36
51383 5.44
6383
9.52
11.60
13.75
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6839 17.80
1839

40390
4039

57.092
5709
57.04

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46 57.065

46 19.2
20.7
22.0
23.3
1100 24.8
100
46 2200
+ 35.06

47 31.0
32.6
34.0
35.6
1700 36.8
200
47 3400
− 36.94

46 22.00
47 34.00
+ 35.06
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72.00
1.85733
1.17247
3.02980
1.98028
8.95048
5 5 55

119 α Geminorum

h m s
7 26 52
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+32 10

1.17609 0.12621
9.92771
1.10380

7 24 49.58
52.00
54.40
56.60
27196 59.18
2196
4.10
6.58
9.00
11.40
13.86
16.25
18.68
21.15
12459 23.57
3459
28.47
30.80
33.30
35.80
16642 38.05
1642

54392
5439

13843
1384
1384

33.284
3324
14767

25 13.84

24 43.5
44.9
46.3
47.5
2332 50.0
332
24 4664
+ 27.20

25 53.6
55.4
57.0
58.9
2859 1.0
359
25 5718
− 43.34

24 4664
25 5718
+ 27.20
− 43.34
70.54
1.84844
1.10380
2.95224
1.90276
8.95052
5 5 57

B 3 29.42
B 3 29.68
R 3 29.50
R 3 29.38

3 29.49

B 56 59.10
B 58 34.78
R 58 34.75
R 58 34.72
B 58 34.38
58 34.66
9 5 55.56

B 11 59.15
B 13 19.00
R 13 19.05
R 13 19.28
B 13 19.02
13 19.09
7994

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120

α Can. Mon

h m s
7 32 58
o ' 1.176090 0.12621
+5 32 9.99797
1.17406

1880
Sept. 2

h	m	s		m	s							
7	30	56.11		30	40.0	7	35	51.82		35	40.1	
		58.14	0.290		41.2			54.03	56.454		41.7	
		0.30	0.29		42.4			56.48	56.45		43.3	
		2.40			44.2			58.76			44.9	
	30145	4.50		2139	46.1		28227	1.18		2165	46.5	
		145			139			3227			165	
		8.55		30	42.78			5.90		35	43.30	
		10.65			+34.12			8.20			+31.92	
		12.83						10.57				
		14.85	16.915					12.90	15.266			
		16.90	16.91	31	44.6			15.25	15.23	36	48.0	
		19.00	16.90		46.2			17.66	15.22		47.6	
		21.00			47.7			19.88			49.3	
		23.17			49.0			22.08			50.9	
	15220	25.25		2380	50.5		37049	24.65		2466	52.8	
		6220			380			4739			466	
		29.38		31	47.60			29.30		36	49.32	
		31.40	33.512		- 30.70			31.60	33.978		- 34.10	
		33.50	33.51					34.00	33.98			
		35.60	33.80					36.37	150.43			
	16786	37.68		30	42.78		16989	38.62		35	43.30	
		1756	31 16.905	31	47.60			1989	36 15.225	36	49.32	
					+34.12						+ 31.92	
					- 30.70						- 34.10	
					64.82						66.02	
					1.81171						1.81968	
					1.17406						1.12074	
					2.98577						2.94042	
					1.93611						1.88941	
					8.95034						8.94899	
					5549						5453	

-12.74
17.56
1664
18.72
-20.86

122

β Leon.

h m s
7 37 53
o ' 1.17609 0.12621
+28 19 9.94465
1.12074

B 48 12.55 .
B 49 38.88 .
R 49 39.08 .
R 49 38.65 .
~~49 38.87~~ .
49 38.87 .
86.32

B 1 55.82 .
B 3 13.20 .
R 3 13.60 .
R 3 13.30 .
B 3 13.25 .
3 13.34 .
77.52

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Sun. c = 45.132 — 0,12627

h m s
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1880 Sept. 2/3

η Urs. Maj. — 0,12621

h m s
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Sept. 3

h	m	s		m	s											
10		—		49	38.3	—				13	40	—		41	2.0
		—			39.7	—						—			3.5
		—			41.1	—						—			6.0
		—			42.5	—						—			8.4
		—		2058	44.2	—						—		311	11.2
					58										311
		—		49	41.16	—				+12.82	4.12	39.34	52.00		41	6.22
		—			− 46.23	—				9.61	4.29	4.371	54.68			−1.90
		—				—				6.40	4.25		57.85			
		—				—				+3.17	4.32		1.15	4.377		
		—				—				−0.00	4.45		4.45	438	41	47.4
		—				—				3.20	4.33		7.53			50.0
		—				—				6.41	4.39		10.80			51.8
		—				—				9.61	4.27		13.88			53.8
		—				—				12.83	4.22	57939	17.05		2599	56.9
													3939			99
−12.48 54.96	49	7.44			51	15.78		−12.48	3.30	16.74	18.22	4.28	21.20	23.50		41	51.98
14.56 54.74	274.64	9.30	11.580			17.90	20000	14.56	3.34	3.348	22.43	4.17	4.24	26.60	29.894		−47.66
16.64 54.94	54.928	11.58	11.58			20.00	20.00	16.64	3.36		26.64	4.40		30.04	29.89		
18.72 54.96		13.68				22.02		18.72	3.30		28.84	4.19		33.03			
−20.86 55.04	5790	15.90		49 41.16	10000	24.30		−20.86	3.44		−32.14	4.16	14947	36.30		41	6.22
		790				000								4947		41	52.0

4.305
4.317

B 49 26.25

B 26 59.75·
B 28 38.00·
R 28 38.35·
R 28 38.48·
B 28 38.20·
28 38.26·
98.51

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182 ζ Bootis

h m s
13 48 53
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193 ζ Bootis

h m s
14 27 12
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+38 30

0.12621

209 α Cor. Bor.

h m s
15 29 39
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+27 7

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1880 Sept. 3.

h	m	s		m	s												
13	46	51.62		46	34.6		14	25	—			15	27	28.76		27	16.3
		53.77	55.954		36.6				—					31.00	33312		18.1
		56.00	53.97		38.3				—					33.30	33,31		19.6
		58.18			40.0				—					35.56			21.0
	27992	0.35		1908	41.3				—				16656	38.00		976	22.6
	2992				4.08									1656			476
		4.85		46	38.16	11060	30.14	272.38	19.54					42.64		27	19.52
		7.03			35.29	7.95	30.30	30.264	22.05					44.96			+32.38
		9.15				5.29	30.29		25.00					47.33			
		11.30	13.488			2.62	30.27		27.65	30269				49.58	51978		
		13.40	13.49	47	46.2	-0.20	30.30		30.30	30.27	26	5.7		52.00	51.98		
		15.60	13.42		47.7	2.64	30.36		33.00			7.7		54.18	51.83		
		17.90			49.0	5.30	30.30		35.60			9.5		56.58			
		20.00			50.4	7.95	30.23		38.18			11.5		58.80			
	12139	22.16		2454	52.1	10161	30.19	27242	40.80			474 13.0		46780 1.73			
	3139				454				2.42			474		1780			
		26.54		47	49.08	15.90	30.30	157.00	46.20			26 9.48		5.80			
		28.68	30.854		-35.63	18.54	30.14	30.20	48.68	51.4160		-39.24		8.20	10.446		
		30.85	30.85			21.20	30.25		51.45	51.42				10.45	10.45		
		33.00	146.83			23.86	30.19		54.05					12.75	103.76		
	15427	35.20			46 38.16	26.58	30.12	25708	56.70					52231 5.03		27	19.57
		427	47 13.455		47 49.08				708			26 9.48		5223	27 51.905		
					+35.29												+32.38
					-35.63	30.232											
						30.241											

B 20 32.30 .
B 27² 7.60 .
R 27² 7.82 .
R 27² 8.00 .
B 27² 7.48 .
~~27² 7.72~~ .
~~33.42~~

R 32 10.32
R 33 9.92

R 13 27.20
R 13 27.35

13 27.27

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594 S Scorpii

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−22 16

0.12621

15	51	7.03			50	53.3	15	56	20.80			56	8.2	16	19	55.15		19	47.0
		9.29	11.476			54.9			22.95	25.180			9.5			57.40	59.750		48.0
		11.40	11.48			56.2			25.18	25.18			11.1			59.80	59.75		49.4
		13.70				57.8			27.38				12.8			2.05			51.3
	7738	15.96			2816	59.4		12590	29.59			5631	14.7		29875	4.35		2487	53.0
		7738				316			2560				63			4875			487
		20.37			50	5632			33.97			56	11.26			9.00		19	49.74
		22.60				+ 33.01			36.07				+ 31.43			11.30			+ 28.41
		24.80							38.33							13.60			
		27.14	29.328						40.50	42674						15.90	18.159		
		29.34	29.33						42.68	42.67						18.15	18.16		
		31.58	29.33						44.78	42.71						20.40	18.15		
		33.80							47.00							22.78			
		36.04							49.29							25.00			
	26395	38.28						38407	51.45						16343	27.30			
		8395							2407							7343			
		42.68							55.95							32.06			
		45.00	47.176						58.00	0240						34.20	36554		
		47.17	47.18						0.25	0.24						36.55	36.55		
		49.40	58.66						2.40	85.42						38.87	156.30		
	23588	51.63			50	56.32		30204	4.60			56	1126		18277	41.18		20	49.74
		3688	51	29.33					120	56	42.69					3277	20	18.155	
						+33.01							+31.43						−31.59

R 35 53.02
R 35 53.08

35 53.05

R 47 53.55
R 47 53.42

47 53.48

R 28 41.52
R 28 41.10

28 41.31

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228 — β Herculis — h m s 16 25 1 — ° ′ +21 45 — 0.12621

597 — ζ Ophiuchi — h m s 16 30 30 — ° ′ −10 19 — 0.12621

232 — η Herculis — h m s 16 38 45 — ° ′ +39 9 — 0.12621

1880

Sept. 3.

h	m	s		m	s									
	16					16 28	27.40			16 36	36.05		36	20.7
							29.50	31612			38.65	41370		22.9
							31.58	31.61			41.40	41.37		24.5
+15.56	19.26	23 3.70					33.70				44.05			26.7
13.33	19.30	38.56 5.97				15806	35.88			20685	46.70		1233	28.5
		19.28					806				685			233
8.89	19.28	10.34					40.00				52.00		36	2466
6.66	19.24	173.39 12.58					42.05				54.70			+38.02
4.44	19.24	19.265 14.90					44.20				57.34			
2.20	19.25	17.05	19.269				46.30	48.894			0.10	2.691		
−0.00	19.25	19.25	19.27	23	43.5		48.45	48.39	29 14.2		2.70	2.69		
2.22	19.28	21.30			45.5		50.45	48.39	15.9		5.33	2.67		
4.44	19.26	23.70			47.0		52.60		17.3		8.00			
6.66	19.31	25.97			48.5		54.70		18.6		10.70			
8.90	19.28	17342 28.18		2347	50.2	43555	56.80		860 20.0	56422	13.35			
		8342			347		7555		360		2422			
13.33	19.17	96.02 32.50		23	4694		1.00		29 1720		18.54			
15.55	19.25	19.205 34.80	36990		−27.71		3.00	5170	−28.81		21.28	23956		
17.78	19.22	37.00	3699				5.15	5.17			24.00	2396		
16.44	19.21	39.20					7.30	9678			26.68	12533		
22.28	19.17	18495 41.45				2585	9.40			11978	29.28		36	2466
		3495		23	46.94		2585	28 48.39	29 17.20		1978	37 2.68		+38.02
19.250									−28.81					
19.235														

R 36 34.92.
R 36 34.80.

36 34.86.

R 40 25.68.
R 40 55.78.

R 11 36.55.
R 11 36.75.

11 36.65.

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598

N Ophiuchi

h m s
17 8 27
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−15 34

0,12621

237

α Herculis

h m s
17 9 18
° '
+14 32

0,12621

17 1 23.90 | 1 12.0 | 17 | — | 7 50.2
26.04 28.116 | 13.3 | — | 52.0
28.06 28.12 | 14.8 | — | 53.8
30.20 | 16.3 | — | 55.1
14058 32.38 | 746 18.2 | — | 2679 56.8
4058 | 246 | — | 179
36.57 | 1 1492 | — | 7 53.58
38.78 | +30.30 | — | −27.36
41.00 | — |
43.04 45,216 | — |
45.20 45,22 | — |
47.40 45,23 | — |
49.50 | — |
51.65 | — |
40694 53.80 | — |
4694 | — |
58.00 | −12.79 26.11 | 7 38.90 | 4 3,292
0.20 2,340 | 14.92 26.29 | 131.10 40.21 | 43.29
2.40 2,34 | 17.08 26.29 | 26.22 43.37
4.50 9046 | 19.19 26.29 | 45.48
31170 6.60 | 1 14.92 | 21.38 26.12 | 21646 47.50
1170 1 45,225 | 1646 | 7 53.58

+30.30

26,220

R 53 58.88
R 53 59,32

53 59.10

R 49 50.55
R 49 51.12

49 50.83

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252 χ Draconis

h m s
17 53 48
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+57 30

1.17609 0.12621
9.73022
0.90638

1880
Sept. 4

h	m	s		m	s												
17	51	28.16		51	10.9	18	7	7.35		1	57.8	18	12	56.81		12	46.3
		31.60	34862		12.9			20.68						59.00	1.000		47.5
		34.90	34,86		15.0			33.00		4	1.5			1.00	1.00		48.7
		38.17			17.3			45.12						3.00			50.1
	1743	41.48		765	20.4			56.35		5	19.4		30500	5.14		2441	51.5
		2431			765		8	7.35						500			441
		48.31		51	1530			19.03						9.40		12	4882
		51.60			+46.22			30.55						11.47			+28.80
		54.90						42.00						13.50			
		58.15	1.510					54.50						15.60	17.676		
		1.47	1,54	52	46.4		9	5.13						17.65	17.68	13	46.3
		4.58	1,50		48.7			18.15						19.70	17.56		47.7
		8.22			51.0			29.50						21.88			49.2
		11.50			53.5			40.15						23.89			50.5
	55389	14.86		2565	55.9			52.05					15908	26.00		2457	52.0
		1359			55		10	3.76						6908			457
		21.38		52	51.10			15.30						30.00		13	49.14
		24.86	28.086		-49.58			27.44						32.00	34110		-31.52
		28.17	28,15					39.50						34.05	34.11		
		31.40	123.01					50.30						36.19	35.11		
	14043	34.65		51	1530		11	2.90					17055	39.31		12	4882
		4043	52 1,52	52	51.10			14.03						2055	13 17.62	13	49.14
					+46.22			24.84									+28.80
					-49.58			36.66									-31.52
					95.80			47.90									60.32
					1.98137												1.78046
					0.90631												1.17552
					2.88768												2.95598
					1.90168												1.91645
					9.01400												8.96047
					5 53 47												5130

B 50 31.55 ·
B 51 51.38 ·
R 51 51.32 ·
R 51 51.32 ·
B 51 51.15 ·
51 57.29 ·
79.74

256 Sles. Min.

h m s
18 11 2
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+86 36

0.12621

B 44 39.0 ·
B 45 5.92 ·
B 45 13.80 ·

257 ζ Serpentis

h m s
18 15 29
° ′
-2 56

1.17609 0.12621
9.99943
1.17552

B 15 34.18 ·
B 16 36.72 ·
R 16 56.80 ·
R 16 56.68 ·
B 16 56.50 ·
16 56.68 ·
82.50

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1880phae.proj.1512

260

α Lyrae

h m s
18 32 50
° ′
+38 40

1.17609 (0.1262)
9.89254
1.06863

111

57 Cephei

h m s
6 42 14
° ′
+87 14

0.12621

603

θ Sagittarii

h m s
18 47 46
° ′
-26 27

0.12621

18 30 38.20
40.70 43560
43.45 4356
46.35
21780 48.70
1780
54.07
58.77
59.37
2.00 4654
4.70 465
7.33 4.65
10.00
12.50
58189 15.20
4189
20.35
23.00 25.740
25.75 25.74
28.50 12930
12870 31.10
2870 31 4.65

30 35.3
37.0
39.2
41.2
195743.0
1957
30 39.14
+25.51
31 40.0
42.3
44.5
46.8
2221 48.5
221
31 4442
30 39.14
31 4442
+2.551
−39.77
65.28
1.81478
1.06863
2.88341
1.83398
8.95057
5559

6 38 (5.00 6.40 9.00) 42.50 45.60 48.30
39 25.75 28.45 31.00
40 7.33 10.24 12.75 51.75 54.10 56.50
41 32.60 35.65 38.65
42 18.55 18.15 20.30 57.00 58.50
43 1.65 37.80 42.40 45.50

43 56.15 57.32 58.00 22.80 25.00 28.80

35 58.0
37 22.6
38 30.5
39 41.0
41 9.6
42 27.5

18

+13.83 1.07
16.13 1.07
18.44 1.11
20.74 1.11
23.12 1.83

46 14.70
5.39 17.20
1.078 19.55
21.85
976.5 24.15
4765

19530
19553

46 30.7
32.0
34.0
35.8
1699 37.4
199
46 3398
−32.90
46 33.98

B 40 22.02
B 41 30.25
R 41 30.25

41 30.25
68.23

B 36 32.55
B 36 25.42
B 36 20.40
B 36 13.70
B 36 7.15
B 36 2.35
B 35 57.88

B 46 26.78
B 46 26.95
R 46 26.95
R 46 26.92
46 26.90

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1880phae.proj.1512.

270 ζ Aquilae

h m s
18 59 57
° ′
+13 41

1.17609 0.12621
9.98750
1.16359

1880
Sept. 4

h	m	s			m	s														
18	57	44.7			57	40.5	19	23	41.72			23	31.9	19	38	24.15			38	20.4
		46.4	4.5538			41.8			44.06	4.6404			33.5			26.38	2.8410			21.9
		48.50	48.34			43.6			46.44	46.40			35.2			28.38	28.41			23.6
		50.65				44.8			48.80				36.9			30.47				25.1
	24269	52.80			2175	46.8		23202	51.00			1759	38.4		14205	32.70			1179	26.9
	4269				175			3202				259				4205				179
		57.00			57	43.50			55.75			23	35.18			36.90			38	23.58
		59.15				+22.06			58.05				+29.84			39.00				+21.61
		1.25							0.30							41.00				
		3.40	5.5749						2.68	5.5022						43.15	4.5196			
		5.57	5.54		58	39.80			5.00	5.02		24	37.3			45.18	45.19		39	19.4
		7.72				38.4			7.37				38.8			47.27				20.7
		9.85				39.1			9.65				40.4			49.25				21.9
		11.95				41.4			12.04				42.6			51.46				23.5
	58994	14.05			1990	42.9		385201	14.33			20	35 44.4		40676	53.55			1105	25.0
	4994				5	49.0			4520				835			4676				105
		18.25			58	39.80			18.90			24	40.70			57.60			39	22.10
		20.50	2.2538			-34.24			21.30	2.3636			-35.68			59.95	1.960			-36.91
		22.50	22.54						23.65	23.64						2.00	1.96			
		24.65	13108						26.03	13004						4.05	9037			
	11269	26.76			57	43.50		1181828.30				23	35.18		3098062.20				38	23.38
	1269	58	5.565	58	39.80			1818	24	5.02		24	40.70		980	38	45.19		39	22.10
					+22.06								+29.84							+21.61
					-34.24								-35.68							-36.91
					56.36								165.52							58.52
					1.75051							1.8	76624							1.76730
					1.16359								1.12323							1.16901
					2.91410								2.93947							2.93631
					1.86929								1.89115							1.87749
					8.95519								8.95168							8.94118
					5 9 14								5 6 46							4 5 9 28

B 39 8.18
B 40 22.40
R 40 22.15
R 40 22.20
B 40 22.02
40 22.19
74.01

B 37 57.50
B 39 9.28
R 39 9.33
R 39 9.35
B 39 9.37
39 9.33
77.83

B 0 53.32
B 2 10.45
R 2 8.00
R 2 7.78
7.89
2 8.74
75.42

275 β Cygni

h m s
19 25 50
° ′
+27 42

1.17609 0.12621
9.94714
1.12323

277 γ Aquilae

h m s
19 40 30
° ′
+10 19

1.17609 0.12621
9.99292
1.16901

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1880phae.proj.1512.

		283				287				607		
		β Aquilae				θ Aquilae				α² Capricorni		
		h m s				h m s				h m s		
		19 49 22	1.17609	0.12621		20 5 4		0.12621		20 11 20		0.12621
		° ′ +6 6	9.99753			° ′ −1 11				° ′ −12 35		
			1.17362									
19	47 16.28		47 1.8	20	3 58.0		3 44.0	20	10 14.40		9 57.3	
	18.35	20406	3.1		0.05	2.070	46.0		16.56	18644	58.8	
	20.40	20.41	4.2		2.05	2.07	47.7		18.60	18.64	0.8	
	22.44		5.7		4.05		49.0		20.76		1.5	
	10203 24.56		218 7.0		31035 6.20		2372 50.5		9322 22.90		3008 2.9	
	203		218		10.35		372		4322		18	
	28.60		47 4.86		10.30		3 47.44		27.18		10 036	
	30.50		+32.59		12.43		31.15		29.20		+35.20	
	32.85				14.47				31.30			
	35.00	37002			16.57	18.604			33.40	35.548		
	37.00	37.00	48 3.9		18.67	18.60	4 46.6		35.50	35.55		
	39.00	36.90	5.3		20.70	18.59	48.3		37.60	35.57		
	41.20		6.7		22.75		49.8		39.75			
	43.27		8.4		24.75		51.5		41.95			
	33302 45.30		338 9.5		16744 26.80		2494 53.2		31993 44.05			
	6302		338		7744		494		4993			
	49.40		48 6.76		30.96		4 49.88		48.20			
	51.46	53578	−29.81		33.00	35.098	−31.29		50.30	52490		
	53.53	53.38			35.18	35.10			52.55	52.49		
	55.70	13.79			37.12	3717			54.60	7113		
	26789 57.80		47 4.36		17549 39.23		3 47.44		26245 56.80		10 0.16	
	1789	47 36.95	48 6.76		2549	4 18.595	4 49.88		1245	10 35.56		
			+32.59				+31.16				+35.40	
			−29.81				−31.28					
			62.40									
			1.79518									
			1.17362									
			2.96880									
			1.98420									
			8.96540									
			51633									

B 13 21.45
B 14 47.15
R 14 47.52
R 14 47.48
B 14 47.50
14 ~~47.39~~ 41
85.94

B 31 16.20
B 31 39.65
R 31 40.05
R 31 40.02
B 31 40.00
~~31 39.72~~ 39.93
~~2373~~

B 14 7.85
B 14 4.22
R 14 4.92
R 14 5.20
14 4.58

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		289				93				556		
		χ Cygni				δ Orionis				α Leporis		
		h m s				h m s				h m s		
		20 17 53				5 25 30				5 27 24		
		° ′	1.17609	0.12621		° ′		0.12621		° ′		0.12621
		+39 52	9.88510			−0 24				−17 33		
	1880		1.06119									
		Sept. 4										
h	m s		m s									
20	16 41.00		16 21.0	5	23 40.80		23 28.5	5	25 —			
	43.70	46.424	22.5		42.80	44.906	29.9		—			
	46.33	46.42	24.3		44.93	44.91	31.3		—			
	49.19		26.0		47.00		33.0		—			
	23212 51.90		1218 28.0		22453 49.00		1572 34.5		—			
	3212		218		2453		72					
	57.20		16 2436		53.10		23 3144	+8.68 34.13	806.70 25.45			
	0.10		+43.65		55.30		+90.00	6.51 33.99	34.077 27.48			
	2.70				57.38			4.33 34.16	29.83			
	5.36	8.070			59.40	1.458		+2.14 34.09	31.95	34.082		
	8.03	8.07	17 49.2		1.47	1.46		−0.00 34.16	34.16	34.07	25 56.2	
	10.77	7.95	50.5		3.50	1.42		2.16 34.09	36.25		58.0	
	13.45		52.3		5.60			4.34 34.01	38.35		59.5	
	16.17		54.5		7.67			6.51 33.99	40.50		1.2	
	61263 18.85		2632 56.7		55312 9.70			8.69 34.08	30664 42.77		2976 2.7	
	7263		132		1312				170.54 3674		476	
	24.15		17 5264		13.72			13.01 33.94	34.108 47.00		25 59.52	
	26.80	29.484	+44.63		15.88	17.920		15.18 34.17	49.35	51.470	−25.43	
	29.50	29.48			18.00	17.92		17.35 34.15	51.50	51.47		
	32.10	13590			20.00	12283		19.52 34.18	53.70			
	14742 34.87		16 2436		8960 22.00		23 3144	21.75 34.05	75735 55.80			
	4742	17 8.01	17 5264		3960	24 1.44			735		25 59.52	
			+43.65				+30.00					
			−44.63					34.092				
			88.28					34.087				
			1.94596									
			1.06119									
			3.00705									
			1.95766									
			8.95061									
			561									

B 27 58.18 · R 43 10.02 · R 14 38.70 ·

B 29 28.88 ·
R 29 28.88 ·
R 29 28.90 ·
B 29 28.90 ·
29 28.89 ·
90.71

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96 i Orionis

h m s
5 29 31
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−6 0

0.12621

21	5	27	55.60				5	32	30.20				5	46	28.85			46	22.6
			57.65	59.736					32.30	34340					30.90	33006			24.6
			59.73	59.74					34.30	34.32					33.00	33.01			25.9
			1.80						36.40						35.14				27.3
		29868	3.90					17170	38.50					16503	37.14			12.89	28.5
			4868						2170						1503				2.89
			8.00						42.66						41.25			46	25.78
			10.00						44.60						43.40				+23.86
			12.16						46.88						45.50				
			14.18	16.257					48.96	50.943					47.60	49.649			
			16.27	16.25	28	38.6			51.00	50.94	33	15.8			49.64	49.65			
			18.35	16.28		40.0			53.00	50.89		20.1			51.76	49.63			
			20.40			41.4			55.00			21.5			53.80				
			22.40			42.5			57.17			23.0			55.95				
		14626	24.50		20	63 43.8		45849	59.20		1077	24.3		44684	57.90				
			5626			63			849			77			8684				
			28.66		28	41.26			3.37		33	21.54			2.00				
			30.78	32.824		−25.00			5.40	7.454		−30.63			4.12	6.238			
			32.76	32.82					7.40	7.45					6.26	6.24			
			34.94	15256					9.50	101.77					8.36	99.25			
		16412	36.94					37271	11.60					3119	10.48			46	25.78
			1412	28 16.265	28	41.26			3727	32 50.915	33	21.54			3189	46 49.64			+23.86
						−25.00						−30.62							

R 37 48.82 ·
R 37 49.22 ·

37 49.02 ·

a Orionis

h m s
5 34 39
° ′
−2 0

0.12621

R 21 33.72 ·
R 21 33.58 ·

21 33.65 ·

102 α Orionis

h m s
5 48 37
° ′
+7 23

0.12621

R 57 14.48 ·
R 57 14.40 ·

57 14.44 ·

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1880phae.proj.1512.

106 u Gem.			107 γ Gem.			564 α Cen. Maj.		
h m s			h m s			h m s		
6 15 39		0,12621	6 20 43		0,12621	6 39 49		0,12621
° ′			° ′			° ′		
+22 34			+16 30			−16 23		
1880 Sept. 4								
h m s	m s		h m s			h m s	m s	
6 13 29.53	13 14.5		6 28 31.50			6 37 37.35	37 28.5	
31.67 33.960	16.0		36.63 36.826			37.58 41.686	30.0	
34.00 33.96	17.5		38.80 38.83			41.70 41.69	31.8	
36.16	19.2		41.00			43.80	33.7	
16980 38.44	882 21.0		19413 43.20			20843 46.00	1596 35.6	
1980	382		4413			843	96	
42.80	13 17.64		47.46			50.30	37 31.92	
45.15	+34.18		49.64			52.50	+27.00	
47.40			51.80			54.60		
49.63 51.829			54.00 56.093			56.70 58.911		
51.90 51.83			56.07 56.09	29 23.4		58.88 08.91		
54.05 51.81			58.27 56.02	25.5		1.00 58.93		
56.30			0.40	27.0		3.25		
58.48			2.55	28.5		5.40		
46646 0.73			5946 4.65	1344 30.0		53020 7.57		
1646			5484	344		8020		
5.15			8.90	29 26.86		11.90		
7.40 9.670			11.00 13.212	−30.83		14.00 16.180		
9.70 9.67			13.15 13.21			16.20 16.18		
11.95 103.63			15.48 11 2.04			18.30 11787		
14335 14.15	13 17.64		16606 17.50			8090 20.50	37 31.92	
4835 13 51.82			1606 28 56.055	29 26.88		2090 37 58.92		
	+34.18			−30.83			+27.00	
R 46 5.40			R 51 43.55			R 52 29.85		
R 46 5.02			R 51 43.75			R 52 29.90		
46 5.21			51 43.65			52 29.87		

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1880phae.proj.1512.

S

Sun. C = 45,132

h m s
10 57 3
s
+6 30

0,12621

1880 Sept. 4/5

10	55	39.80			56	33.43	57	47.90									
		41.90	43.952			34.7		50.00	51822								
		43.98	43.95			36.0		51.07	51,82								
		46.04				37.5		54.07									
	21976	48.04			1603	38.8	26911	56.07									
	1976					303		911									
		52.32			56	36.06		0.37									
		54.30				− 35,50		2.30									
		56.40						4.58									
		58.47	0.4518					6.70	8.787								
		0.47	0.62					8.76	879								
		2.60	0,61					10.98	8.65								
		4.70						13.02									
		6.76						15.02									
	34466	8.74					7908	17.15									
	466							7908									
		13.00						21.40									
		15.16	17,212					23.50	25470								
		17.25	17,27					25.48	25,47								
		19.30	12122					27.40	13729								
	8636	21.35			56	36.06	12735	29.54									
	3606		56	0,565				2735	56	8.72							
						−35.50											

R 5 37.28

Sept. 5

13	40	24.00					40	15.7									
		27.13	30366					18.4									
		30.28	30,37					20.3									
		33.56						22.7									
	15183	36.84					10	25.4									
		183						25									
		43.25					40	20.50									
		46.58						35.52									
		49.72															
		52.82	56.046														
		56.00	56,04														
		59.23	56,01														
		2.35															
		5.60															
	50439	8.86															
	5441																
		15.22															
		18.48	2.1640														
		21.68	21,64														
		24.80	11201														
	10820	28.05					40	20.50									
	820		40	56,025				+35.52									

R 26 26.78
R 26 26.88

26 26.83

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1880phae.proj.1512.

187			193			2		
α Boötis			J Boötis			E Boötis		
h m s			h m s			h m s		
14 10 8		0,12621	14 27 12		0,12621	14 39 42		0,12621
° ′			° ′			° ′		
+19 49			38 50			+27 53		
1880								
Sept. 5								
h m s		m s						
14 7 56.17		7 43.2	14 24 55.25		24 33.5	14 37 28.50		37 22.2
58.40	0.540	44.7	57.95	0.576	36.3	30.70	33.040	24.0
0.55	0.54	46.2	0.58	0.58	38.2	33.00	33.04	25.7
2.70		48.0	3.10		39.6	35.30		27.4
302704.88		2318 49.7	302886.00		1849 41.3	165201 37.70		1283 29.0
272		318	288		384	1520		283
9.35		7 4636	11.85		24 3778	42.30		37 25.66
11.52		+31.72	13.90		+43.97	44.70		+26.00
13.70			16.50			47.00		
15.90	18.069		19.18	21.782		49.40	51.668	
18.10	18.07		21.90	21.78		51.75	51.67	
20.39	18.09		24.46	21.73		54.00	51.65	
22.35			27.00			56.28		
24.63			29.60			58.58		
16262 26.85			196041 32.35			465011.00		
7262			1604			1501		
31.20			37.60			5.60		
33.45	35626		40.20	42880		8.00	10260	
35.62	35.63		42.90	4288		10.25	10.26	
37.86	36.17		45.50	4346		12.45	10330	
178132 40.90		7 4636	214404 48.20		24 3778	57130 15.00		37 2566
28138	18.08	+31.72	1740	25 21.755	+43.97	130	37 51.66	+26.00

R 32 9.10 ·	R 30 43.28 ·	R 45 58.45 ·
R 32 9.18 ·	R 30 43.38 ·	R 45 58.58 ·
32 9.14 ·	30 43.33 ·	45 58.51 ·

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1880phae.proj.1512

21

199 β Bootis
h m s
14 57 23
° '
+40 52
0.12621

209 α Cor. Bor.
h m s
15 29 39
° '
+27 7
0.12621

212 α Serpentis
h m s
15 38 18
° '
+6 48
0.(262)

14 55 5.30
7.95 10.740
10.75 10.74
13.45
5370 16.25
370
21.68
24.30
27.00
29.85 32.538
32.46 32.56
35.20 32.56
38.05
40.77
29284 43.58
2284
48.98
51.68 54.384
54.38 54.38
57.00 65.12
27192 59.88
2192 55 32.56

54 45.8
47.7
49.1
51.4
2474 53.4
474
54 49.48
+43.08
54 49.48
+43.08

15 27
−9.24 43.20 43.20 52.44
43.20
13.91 43.24 216.01 57.15
16.23 43.24 43.202 59.47 1.764
18.55 43.21 1.76 1.76
20.87 43.17 4.04
−23.26 43.15 3088.2 6.40
882
43.201
43.201

28 10.5
12.8
14.4
15.9
711 17.5
211
28 14.22
~32.02
28 14.22

15 36 7.20
9.30 11.390
11.40 11.39
13.42
5695 15.62
695
19.80
21.90
24.00
26.05 28.072
28.05 28.07
30.05 28.01
32.20
34.24
25265 36.36
7265
40.38
42.50 44.630
44.72 44.63
46.70 56.02
22315 48.85
2315 36 28.04

36 1.8
2.9
4.3
5.7
222 7.5
222
36 4.44
+23.60
36 4.44
+23.60

R 28 53.30·
R 28 53.40·

28 53.35·

R 14 43.60·
R 14 43.90·

14 43.75·

R 32 9.85·
R 32 9.90·

32 9.87·

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1880phae.proj.1512.

194 S Serpentis

h m s
15 53 11
° ′
−22 16

0.12621

1880 Sept. 5

h	m	s		m	s												
15	50	58.40		51	55.1	15	56	12.00		55	59.7	16	19	45.90		19	17.0
		0.60	2820		56.3			14.28	16452		1.4			50.25	54.610		19.0
		2.80	282		57.8			16.50	1645		2.7			54.50	5461		21.6
		5.00			59.4			18.60			4.3			59.00			24.2
	31410	7.80		2896	1.0		8226	20.88		3141	6.0		27305	3.40		1096	27.8
		1410			396			3226			141			2305			96
		11.65		50	57.92			25.20		56	2.82			12.10		19	2.192
		13.90			+22.70			27.43			+31.16			16.43		+1	7.60
		16.17						29.56						20.88			
		18.33	20592					31.80	33992					25.15	29.527		
		20.60	2059					34.00	3399					29.55	2953	21	53.1
		22.98	2065					36.17	3397					33.85	2952		55.5
		25.00						38.40						38.20			59.2
		27.30						40.60						42.58			0.3
	18533	29.50					30593	42.77					26574	47.00			2971 6.0
		533						3593						8574			471
		34.02						47.00						55.70		21	5942
		36.28	38490					49.30	51500					0.15	4430	−1	29.90
		38.47	3849					51.50	5150					4.45	43		
		40.68	4131					53.70	6795					8.70	1704		
	19245	43.00		50	57.92		25750	56.00		56	2.82		32215	13.15		19	2.192
		4245	51 20620		+22.70			750	56 33980		+31.16			2215	20 29.525	21	5942
																	+67.60
																	−89.90
																	157.50
																	2.19728
																	0.85077
																	3.04805
																	1.99489
																	5.94684
																	5323

R 35 7.15 ·
R 35 7.20 ·

35 7.17 ·

R 47 55.08 ·
R 47 54.82 ·

47 55.95 ·

R 33 47.27 ·
R 35 26.05 ·

3526.05
98.83

595 β Serpentis

h m s
15 58 24
° ′
−19 28

0.12621

226 N Draconis

h m s
16 22
° ′
+61 47

1.17609 0.12621
9.67468
0.85077

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1880phae.proj.1512.

597 ζ Ophiuchi

h m s
16 30 30
° ′
−10 19

0.12621

16	28	18.63			28	5.6	17	1	15.00			1	6.7	17	6	38.05		6	32.0
		20.80	22846			7.2			17.00	19.240			8.0			58.15	0.320		40.1
		22.80	2285			8.5			19.24	1924			9.4			0.30	032		41.5
		25.00				10.2			21.40				10.9			2.45			42.9
	11423	27.00			431	11.6		9620	23.56			473	12.3		30160	4.65		2078	44.3
	1423				431				4620				473			160			78
		31.30			28	862			27.85			1	946			8.90		6	4156
		33.35				+31.03			29.90				+26.90			11.00			+35.79
		35.48							32.05							13.07			
		37.50	39687						34.17	36.371						15.23	17.364		
		39.70	3969						36.37	3637						17.35	1736		
		41.55	3962						38.48	3636						19.50	1734		
		43.95							40.65							21.60			
		46.00							42.87							23.78			
	35718	48.05						32734	45.00						15628	25.90			
	8718								5734							6628			
		52.20							49.20							30.14			
		54.30	56.392						51.40	53482						32.28	34368		
		56.38	5639						53.45	5348						34.39	3437		
		58.48	7924						55.58	7272						36.52	3469		
	28196	0.60			28	862		26741	57.78			1	946		17184	38.60		6	4156
	3196		28	39655		+31.03			1741	1	36.365		+26.90			2184	7 17.350		+35.79

R 38 6.78 ·
R 39 6.80 ·

39 6.79 ·

R 53 4 3.65 ·
R 53 4 3.48 ·

53 4 3.56 ·

R 48 29.08 ·
R 48 28.85 ·

48 28.96 ·

598 η Ophiuchi

h m s
17 3 27
° ′
−15 34

0.12621

237 α′ Herculis

h m s
17 9 18
° ′
+14 32

0.12621

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1880phae.proj.1512.

52

d Persei

h m s
3 15 7 46
+49 26

1.17609 0.12621
9.81314
0.98923

1880
Sept. 5

h	m	s	m	s																				
3	13	22.65	13	13.0																				
		25.90	29.156		14.8																			
		29.15	2916		17.0																			
		32.45			19.3																			
	14578	35.60		858	21.7																			
	4578				358																			
		41.87		13	1716																			
		45.00			+ 37.35																			
		48.05																						
		51.47	54520																					
		54.44	5452	14	30.8																			
		57.75	5450		33.2																			
		0.80			35.5																			
		4.00			38.2																			
	24068	7.30		1784	40.7																			
	4068				284																			
		13.45		14	3568																			
		16.60	19.836		- 41.17																			
		20.00	1984																					
		22.85	109.00																					
	9918	26.28		13	1716																			
	4918		13 54510	14	3568																			
					+ 37.35																			
					- 41.17																			
					78.52																			
					1.89498																			
					0.98923																			
					2.88421																			
					2.10999																			
					9.22578																			
					9.3248																			

B3 5 4 3.08.
B3 56 11.95.
B2 56 11.88.
B2 56 11.90.
B3 56 11.88.
56 11.90
128.82

56

E Eridani

h m s
3 27 14

1.17609 0.12621
-9 52 9.99353
1.16962

h	m	s																						
3	25	0.55																						
		2.50	4640																					
		4.58	464																					
		6.65																						
	2320	9.00																						
	2320																							
		13.00																						
		15.00																						
		17.00																						
		19.22	21300																					
		21.28	2130																					
		23.40	2134																					
		25.50																						
		27.60																						
	19170	29.70																						
	1170																							
		33.76																						
		36.08	38044																					
		38.08	3804																					
		40.15	4268																					
	19022	42.15																						
	4022		25 21320																					

h	m	s
24	56	6.8
		58.3
		59.7
		1.0
2986		2.8
		486
24	59	72
		+ 21.60
25		52.9
		54.8
		56.4
		58.2
2820		59.7
		320
25	56	40
		- 35.08
24	59	72
25	56	40
		+ 21.60
		- 35.08
		56.68
		1.75343
		1.16962
		2.92305
		1.87512
		8.95207
		572

B3 11 22.78.
B3 12 37.65.
B2 12 37.80.
B2 12 37.88.
B3 12 37.85.
12 37.79.
76.01

57

S Persei

h m s
3 34 19
+47 24

1.17609 0.12621

h	m	s																						
3	32	0.98																						
		4.02	7.190																					
		7.05	719																					
		10.45																						
	3595	13.45																						
	3595																							
		19.70																						
		22.52																						
		25.50																						
		28.60	31.661																					
		31.70	3166																					
		34.70	3162																					
		37.75																						
		40.70																						
	28495	43.80																						
	1495																							
		50.00																						
		53.00	56040																					
		56.05	5604																					
		59.00	6323																					
	28020	2.15																						
	3020		32 31640																					

h	m	s
32		12.4
		14.4
		16.0
		18.4
816		20.4
		316
32	16	32
		+ 15.32
33		16.7
		18.5
		20.2
		22.3
1025		24.8
		25
33	20	50
		- 48.86
32	16	32
33	20	50
		+ 15.32
		- 48.86

B3 57 28.72.
B3 57 38.48.

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550 δ Eridani

h m s
3 37 27
° '
−10 10

0.12621

61 η Tauri

h m s
3 40 18
° '
+23 44

1.17609 0.12621
9.96162
1.13771

63 ζ Persei

h m s
3 46 32
° '
+31 31

1.17609 0.12621
9.93069
1.10678

δ Eridani:

3 35 —
—
—
—
—

35 46.5
48.1
50.0
52.0
2506 54.0
06

+8.38 34.58 311.94 26.20
6.24 34.69 34.66 28.40
4.19 34.69 30.50
2.07 34.62 32.55 34.664
−1.80 34.55 34.55 3466
2.04 34.79 36.88
4.14 34.71 38.90
6.29 34.71 41.00
8.40 34.60 31198 43.00
4198

35 5012
− 15.46

36 14.4
15.6
17.1
18.4
857 20.2
357

12.48 34.70 173.31 47.28
14.67 34.83 34.662 49.50 51.570
16.39 34.23 51.62 5157
18.87 34.83 53.70
−21.03 34.72 25785 55.75
785

36 1714
− 42.48

35 5012
36 2714

34.665
34.661

η Tauri:

3 38 4.95
7.33 9.576
9.40 958
12.00
4788 14.20
4788
18.70
20.85
23.00
25.20 27.540
27.48 2754
29.80 2765
32.05
34.28
24786 36.50
6786
41.36
43.40 45.734
45.67 4573
48.06 5531
22867 50.18
2867 38 27595

38 7.7
9.0
10.6
12.7
545 14.5
45
38 1090
+16.69
38 58.4
59.8
1.6
3.2
3083 5.3
83
39 166
− 34.07
38 10.90
39 166
+16.69
− 33.03
49.72
1.69653
1.13771
2.83424
1.79344
8.95920
5125

ζ Persei:

3 44 18.00
20.50 22976
23.04 2298
25.38
11488 27.96
1488
32.77
35.15
37.46
40.00 42413
42.33 4241
44.85 4232
47.30
49.70
38172 52.16
2172
56.90
59.17 1654
1.60 165
4.20 8463
30827 6.40
827 44 42365

44 1.5
3.7
5.4
7.4
270 9.0
270
44 540
+36.96
45 16.9
19.0
21.2
23.1
1052 25.0
52
45 21.04
− 38.68
44 540
45 2104
+36.96
−38.68
75.64
1.87875
1.10678
2.98553
1.93389
8.94836
5426

B 30 28.85 ·
B 31 5.65 ·

B 36 42.72 ·
B 37 44.90 ·
R 37 44.88 ·
B 37 44.72 ·
B 37 44.98 ·
37 44.87
62.15

B 33 58.02 ·
B 35 23.82
R 35 23.88
R 35 24.03
B 35 23.88
35 23.90
85.88

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552

χ' Eridani

h m s
3 32 23
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−18 37

0.12621

1880

Sept. 5

73

α Tauri

h m s
4 28 39
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+16 16

1.17609 0.12621
9.98226
1.15835

79

i Aurigae

h m s
4 49 07
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+32 58

1.17609 0.12621
9.92376
1.09985

h	m	s		m	s		h	m	s		h	m	s		h	m	s
3	50	8.86		49	56.0		4	26	46.05		26	35.4		4	46	54.68				46	47.5
		11.00			57.6				48.25	50.374		37.0				55.25	58.032			48.8
		13.17			59.2				50.43	5037		38.6				57.60	5803			50.6
		15.40			0.8				52.50			40.7				0.07				52.4
		17.40		2963	2.7			25187	54.64		1940	42.3			29016	2.86			2584	54.1
					463				187			440				4016					34
		21.57		49	59.26				58.90		26	3880				7.38				46	5068
		23.90							1.40			+28.86				9.90					+26.67
		25.90							3.30							12.40					
		28.00	30.163						5.60	7.696						14.90	17.239				
		30.18	3016	51	0.2				7.78	770	27	37.08				17.28	1724		47	51.1	
		32.32			2.2				9.88	7.62		39.4				19.70	1747			53.2	
		34.40			3.5				12.05			41.4				22.05				54.8	
		36.50			4.9				14.05			43.3				24.60				56.7	
	27147	38.70		172	6.4			60926	16.30		2065	45.4			15515	27.00			2748	59.0	
		147			172				6926			65				6515					248
		42.67		51	3.44				20.50		27	41.30				32.00			47	54.96	
		45.00	47.100						22.75	24870		−33.64				34.40	36920			−37.61	
		47.18	4719						24.90	2487						36.95	3692				
		49.35							27.00	135.24						39.45	15495				
	23595	51.55		49	5926			12435	29.20		26	3880			18460	41.80			46	5068	
		3595	50 30.171	51	344				2435	27 7.660	27	4130				3460	47 17.355		47	5496	
												+28.86						364		+26.67	
												−33.64								−37.61	
												6250								64.25	
												1.79588								1.80808	
												1.15835								1.09985	
												2.95423								2.90793	
												1.90179								1.85211	
												8.94756								8.94418	
												5 3 53								5 1 32	

B	10	7.95		B	4	17.35		B	22	23.42			
B	11	31.15		B	5	37.12		B	23	34.55			
R	11	31.38		R	5	37.02		R	23	34.50			
R	11	31.28		R	5	37.30		R	23	34.60			
B	11	31.25		B	5	37.00		R	23	34.60			
	11	31.26			5	37.11			23	34.56			
		83.31				79.76				71.84			

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ex minute

84
β Eridani

h m s
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0.12621

86
α Aurigae

h m s
5 7 46
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+45 52

0.12621

87
β Orionis

h m s
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−8 21

0.12621

5		—		0	28.9	5	5 27.43		5 7.6	5	—		
		—			30.1		30.47	33280	9.8		—		
		—			31.5		33.30	3328	12.5		—		
		—			33.0		36.05		15.4		—		
		—		1583	34.8	16640	39.15		634 18.1		—		
					83		1640		634				
		—		0	31.66		45.00		5 1268		—		
		—			− 30.62		48.20		+ 44.40		—		
		—					51.20				—		
		—					54.05	57.061			—		
		—		0	43.3		57.00	5706			—	7	19.0
−2.07 1.03	0	3.10			44.6		59.90	57.10			—		20.4
4.15 .85	3.86	5.00			45.6		2.90				—		22.0
6.22 .98	0.965	7.20			47.1		6.00				—		23.9
8.30 1.00		9.30		2291	48.5	51355	9.30				—	1109	25.6
					291		6355						109
12.43 1.04	5.50	13.52		0	4582		14.95			−12.51 49.99	7 2.50		7 2218
14.50 1.05	1.10	15.55	17.690		− 44.78		18.00	20916		14.60 50.20	250.29 4.80	6.756	−32.12
16.58 1.12		17.70	1769				20.95	2092		16.69 50.04	50.058 6.78	676	
18.65 1.13		19.78					23.78	114.20		18.77 49.93	8.70		
20.79 1.11	8845	21.90		0	3166	10458	26.90		5 1268	−20.92 50.08	3378 11.00		
		3845		0	4582		458	5 57.080			3378		7 2218
1.032									+44.40				
1.040										50.058			

B 35 28.72 ·
B 35 47.75 ·
R 35 47.55 ·
R 35 47.60 ·
B 35 47.57 ·
35 47.60

B 28 31.28 ·

B 41 17.72 ·
B 41 17.72 ·

41 17.72 ·

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91 χ Orionis

h m s
5 18 38
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0,12621

1880

Sept. 5

h	m	s		m	s
5	16	25.60		16	26.2
		27.50	29.770		28.0
		29.70	2977		29.3
		32.05			30.5
	14885	34.00		1465	32.5
		4885			465
		38.00		16	2930
		40.08			+16.96
		42.05			
		44.07	46198		
		46.18	4620	17	15.0
		48.33	4633		16.5
		50.40			17.6
		52.37			19.2
	41578	54.30		890	20.7
		5578			390
		58.76		17	17.80
		0.90	2902		−31.54
		2.95	290		
		4.97	9267		
	31451	6.93		16	2930
		1451	16 46.265	17	1780
					+16.96
					−31.54

93 δ Orionis

h m s
5 25 50
0 ′
−0 24

0.12621

h	m	s		m	s
5	23	36.04		23	24.4
		38.07	40.046		26.3
		40.07	4010		28.2
		42.15			29.7
	20048	44.15		1401	31.5
		048			401
		48.30		23	28.02
		50.37			+28.60
		52.53			
		54.58	56654		
		56.70	5665		
		58.78	5660		
		0.73			
		2.90			
	50989	5.00			
		5989			
		9.05			
		11.00	13090		
		13.05	1309		
		15.10	11319		
	1545	17.25		23	2802
		1545	23 56.625		+28.60

556 α Leporis

h m s
5 27 24
−17 53

1.17609 0.12621
9.97841
1.15450

h	m	s		m	s
5	25	7.76		24	59.5
		9.90	11.986		1.0
		11.90	1199		2.8
		14.05			4.0
	5993	16.32		3131	5.8
		993			131
		20.72		25	262
		23.04			+26.76
		25.00			
		27.20	29.420		
		29.40	2942	25	58.6
		31.57	2936		0.4
		33.95			1.8
		35.90			3.6
	26478	38.00		3099	5.5
		8478			99
		42.28		26	198
		44.57	46.706		−32.60
		46.60	4671		
		48.90	5870		
	23353	51.18		25	262
		3353	25 29.385	26	198
					+26.76
					−32.60
					59.36

1.77349
1.15450
2.92799
1.90684
8.97835
5265

B 6 55.48
B 6 59.45
R 6 59.70
R 6 59.55
B 6 59.35
~~6 59.51~~
~~4.03~~

B 43 10.80

B 13 36.22
B 14 56.82

14 56.82
80.60

+1.44
12.38
8.26
6.19
4.12
2.04
0.00
2.06
4.13
6.19
8.27
12.38
14.45
16.51
18.5
20.71

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97
ε Orionis

h m s
5 30 04
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0.12621

5 37 — — 36.8 38.8 40.3 +1946 11.28 22.66 56.82 1232 11.38 11.33 59.00 1932 42.3 4.32

5.26 11.46 102.98 3.20 6.19 11.49 11.442 5.30 4.12 11.52 7.40 +2.69 11.49 9.40 11447 −9.40 11.46 11.46 1145

28 38.64

2.86 11.40 13.46 4.13 11.42 15.55 6.19 11.46 17.65 8.27 11.33 10302 19.60 10302

12.38 11.32 57.22 23.70 19.45 11.50 11.444 25.95 16.51 11.49 28.00 18.58 11.47 30.05 20.71 11.44 13985 32.15 3985

28 49.46

27.970 27.97

28 38.64 2473 52.4 473

28 46.7 48.0 49.4 50.8

28 49.46

11.405
11.424

B 37 50.28
B 37 4.68
R 37 4.48
R 37 4.32
37 4.49

a
ζ Orionis

h m s
5 34 39
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−2 0

1.17609 0.12621
.99974
1.17583

5 32 25.67 27.80 29.70 31.60 1485 33.80 4857 37.88 40.00 42.05 44.00 46.25 48.37 50.47 52.40 54.65 31390 7.00 1390

29.714 29.71

32 21.0 23.4 25.0 26.1 1230 27.5 230 32 24.60

33 15.9 17.3 18.8 20.5 947 22.2 447 33 18.94

4624

2780 278 9249

32 2460 32 46.239

B 20 23.28
B 21 35.80
21 35.80
72.52

100
κ Orionis

h m s
5 42 1
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−9 43

1.17609 0.12621
.99372
1.16981

5 39 46.40 48.45 50.58 52.58 25261 54.60 261 58.90 1.00 3.18 5.30 7.40 33 15.9 9.55 11.78 13.70 60661 15.80 6661 19.90 22.00 24.05 26.15 12038 28.25 2038

50522 5052 7.401 740 7.30 24076 2408 13460 40 7.350

39 36.9 38.6 40.5 42.0 2018 43.8 18 39 4036 +26.99 40 35.7 37.5 38.3 40.3 1941 41.8 441 40 3882 −31.47 39 4036 40 3882 +26.99 −31.47 5546 1.76686 1.16981 2.93667 1.88553 6.94886 5447

B 2 19.18
B 3 36.08
R 3 35.88
R 3 36.00
B 3 36.08
3 36.01
76.83

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102

α Orionis

h m s
5 48 37
° ′
+7 23

0,12621

1880 Sept. 5

h	m	s		m	s
5	46	24.05		48	14.1
		26.16	28218		15.5
		28.20	2822		16.7
		30.33			18.3
	14109	32.36		841	19.5
		4109			341
		36.40		46	1682
		38.65			+28.05
		40.70			
		42.80	44857		
		44.98	4486		
		47.00	4488		
		49.00			
		51.00			
	40371	53.18			
		4371			
		57.30			
		59.58	1552		
		1.50	155		
		3.60	89.77		
	30776	5.78		46	1682
		776	46 4487		+28.05

0,12621

S

Lm. C = 45, 108

h m s
11 2 40
° ′
+6 8

1880 Sept. 15/6

h	m	s			m	s		
10	59	11.00			0	28.8		
		13.00	15120			30.5		
		15.00	1512			32.2		
		17.22				33.9		
	7560	19.38			1612	35.8		
		2560				112		
		23.40			0	3224		
		25.60			-1	0.44		
		27.50						
		29.77	31808					
		31.85	3181					
		33.95	31.80					
		36.00						
		38.05						
	28627	40.16						
		28627						
		44.25						
		46.38	48476					
		48.50	4848					
		50.55	6360					
	24238	52.70			0	3224		
		4238	59 31805			-0.44		

h	m	s			m	s
11	1	19.04			0	54.2
		21.20	23324			52.5
		23.30	2332			54.0
		25.50				55.5
	11662	27.58			2700	56.8
		1662				200
		31.70			0	5400
		33.77				+45.94
		35.88				
		37.90	39941			
		39.90	3994			
		42.05	3995			
		44.05				
		46.05				
	35947	48.17				
		8947				
		52.30				
		54.50	56576			
		56.50	5658			
		58.72	7990			
	28288	0.80			0	5400
		3288	×1 39945			+45.94

B 57 695 .
B 57 7.15 .
R 57 7.22 .
R 57 7.10 .

57 7.10 .

B 56 42.50

B 14 5.55

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182

η Bootis

h m s
13 48 33
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+19 0

1.176090 .12671
9.97567
1.15176

1880
Sept. 6

13	47	37.80			47	23.5										
		40.05	42210			25.2										
		42.10	4221			26.5										
		44.50				28.0										
	21105	46.60			1327	29.5										
		1105				327										
		51.00			47	2654										
		53.28				+33.21										
		55.40														
		57.60	59782													
		59.75	5978		48	38.6										
		2.00	59.73			40.3										
		4.04				42.0										
		6.37				43.8										
	53804	8.60			2101	45.4										
		8804				101										
		12.85			48	42.02										
		15.03	17246			-42.27										
		17.30	1725													
		19.38	11946													
	8623	21.67			47	2654										
		3623	47	59.755	48	4202										
						+33.21										
						-42.27										
						7548										
					1.847783											
					1.15176											
					3.02959											
					1.97791											
					5.44832											
					5425											

B 20 36.02 -
B 22 11.25 .
R 22 11.02 .
R 22 11.10 .
B 22 10.85 .
22 11.06 .
95.04

256

Mus. Min

h m s
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86 36

0.12621

Sept. 11

18	7	32.85	9	21.18	11	15.68	4	26.3								
		33.60		28.75		17.56										
		34.68		30.65		25.25	16	50.0								
		43.33		32.70		28.35										
		45.55		40.50		30.40	18	15.9								
		48.30		42.55		36.6										
		56.16		45.25		39.40										
		58.28		52.20		41.70										
	8	0.30		53.53		48.45										
		6.90		56.27		50.78										
		10.15	10	3.35		53.38										
		11.90		6.47	12	0.30										
		19.18		8.50		3.15										
		21.50		15.48		5.18										
		23.47		18.40		11.55										
		29.16		20.55		14.88										
		31.48		27.55		17.25										
		34.05		30.25												
		41.35		32.05												
		44.00		38.40												
		46.33		41.50												
		53.45		43.30												
		55.40		50.75												
		57.38		52.73												
	9	5.00		55.26												
		7.00	11	1.56												
		9.15		3.54												
		17.37		6.35												
		19.24		13.50												
		21.18		16												
		28.75														
		30.65														
		32.70														

R 45 10.50 ?
B 46 4.22 .
B 46 7.45 .

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257

η Serpentis

h m s
18 15 29
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-2 56

0,126 21

1880
Sept. 11

h	m	s		m	s																		
18	13	25.25		13	19.2	18	31	6.37		30	49.4	6	39	13.47	41	27.30	43	45.00	36	59.0			
		27.20	29320		20.7			9.04	11706		51.7			15.75		35.20		47.38					
		29.30	2932		22.0			11.80	1171		53.6			19.58		37.45		56.87	38	10.8			
		31.40			23.2			14.32			55.4			27.40		41.00	44	0.10					
	14660	33.45		1097	24.6		5853	17.00		2679	57.8			29.60		50.20		2.15					
	4660			97				853			179			32.65		53.00		12.70					
		37.50		13	2194			22.18		30	5358			42.50		55.87		14.60					
		39.67			+23.91			24.86			+39.23			44.40	42	2.82		17.18					
		41.80						27.88						48.30		6.40		24.65					
		43.80	45854					30.20	32832					53.58		8.93		26.75					
		45.85	4585	14	14.2			32.90	3283	22	8.4			58.20		19.56		30.50					
		47.90	4586		16.0			35.55	3279		10.4		40	1.50		21.58		39.42					
		50.07			17.5			38.04			12.4			10.70		24.50		42.25					
		52.05			18.9			40.78			14.0			13.75		31.75		46.20					
	41269	54.05		871	20.5		29549	43.40		616	16.4			16.40		34.27		56.00					
	5269			371				2549			116			25.00		37.68		58.22					
		58.30		14	1742			48.60		32	1232			27.40		46.75	45	1.40					
		0.36	2414		-31.57			51.20	53856		-39.51			29.85		49.00							
		2.43	241					53.80	5386					38.50		51.55							
		4.40	91.73					56.50	6557					41.10	43	1.15							
	31207	6.68		13	2194		26928	59.18		30	5358			45.00		3.28							
	1207		13 45.855	14	1742			1928	31 32.810	32	1282			53.18		6.68							
					+23.91						+39.23			55.70		14.60							
					-31.57						-39.51			58.90		17.25							
											78.74		41	7.40		19.95							
											1.89620			10.27		29.80							
											1.06863			13.38		32.18							
											2.96483			22.44		34.20							
											2.15393			25.20		42.60							
											9.18910												
											~~8 47 10~~	84822											

B 15 39.62 ·
B 15 53.40 ·

260

α Lyrae

h m s
18 32 50
° '
+38 40

0,126 21

B 39 682 ·
B 41 29.38 ·
R 41 29.15 ·
R 41 29.45 ·
B 41 29.45 ·
41 29.36 ·
142.54

1.17609
9.89254
1.06863

111

57 Cephei

h m s
6 42 14
° '
+87 14

0,126 21

B 36 31.45 ·
B 36 25.72 ·

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603

Θ Sagittarii

h m s
18 47 46
° ′
−26 27

1.17609 0.12621
9.99519 8
1.12807

18 4 6.28
8.60 10.916
10.87 1092
13.18
5458 15.65
458
20.10
22.50
24.78
27.00 29.334
27.30 2933
31.60 29.35
34.05
36.20
264401 36.48
8401
43.14
45.45 47794
47.88 4779
50.05 5871
23897 52.45
3897

45 47.5
48.0
50.7
52.2
2530 53.6
30
45 5060
+38.74
47 0.1
2.0
3.4
4.9
171 6.7
171
47 3.42
−34.08

46 29.340

45 5060
47 3.42
+38.74
−34.08
72.82
1.86225
1.12807
2.99032
1.54802
8.95770
5 11 1

B 44 55.90 -
B 46 24.62

46 24.62
88.72

270 Examine name + decl OK

ζ Aquilae

h m s
18 39 57
° ′
+13 41

0.12621

18 58 10.07
12.15 14264
14.20 1426
16.40
18.50
7132 2132
20.65
23.00
25.10
29.10 31.273
31.30 3127
33.50 3122
35.47
37.56
28146 39.78
1146
44.00
46.00 48182
48.15 4818
50.30 6244
24091 52.46
4091

58 4.3
6.4
8.2
9.4
387 10.4
387
58 774
+23.50

58 31.245

58 774
−23.50

B 39 5.08 -
B 39 5.10 -

39 5.09 -

275

β Cygni

h m s
19 25 30
° ′
+27 42

19 24 10.0
12.35 14640
14.50 1464
17.00
7320 19.35
2320
24.05
26.40
28.77
31.03 33386
33.35 3339
35.60 3333
38.08
40.46
30047 42.70
3047
47.30
49.66 52012
52.00 5201
54.40 6665
26006 56.70
1006

24 33.360

B 37 51.40 -
B 38 15.65 -
R 38 16.05 -

38 15.85
8475

1.17609 0.12621
9.94714
1.12323

24 0.4
1.7
3.5
5.0
173 6.7
173
24 346
+29.90
25 11.7
13.1
15.3
17.0
754 18.3
254
25 1508
−41.72

24 346
25 1508
+29.90
−41.72
71.62
1.85503
1.12323
2.97826
1.92814
8.94988
5 5 30

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277 χ Aquilae

h m s
19 40 30
o ′
+10 19

1.17609 0.12621
9.99292
1.16901

1880
Sept. 11

h	m	s		m	s
19	38	52.57		39	10.3
		54.58	54.706		12.1
		56.80	56.71		14.0
		58.70			15.1
		2835	30.95	679	16.4
			3.363		176
			5.05	39	13.58
			7.30		−0.04
			9.45		
			11.50	13594	
			13.67	1359	39 57.6
			15.75	13.49	58.9
			17.75		0.6
			19.85		1.7
		12235	22.03	3025	3.7
			3235		25
			26.05	40	0.50
			28.05	30258	−46.96
			30.38	3026	
			32.35	146.97	
		151 29	34.46	39	13.58
			129	39 13.540	40 0.50
					− 0.04
					− 46.96
					47.00
					1.67210
					1.16901
					2.84111
					2.08898
					9.24787
					10 26

B 0 19 60
B 2 22.42
R 2 22.25

222.34
122.74

280 λ Aquilae

h m s
19 44 53
o ′
+8 33

1.17609 0.12621
9.99515
1.17124

h	m	s		m	s
19	43	15.00		43	7.4
		17.00	21.166		8.6
		29.05	19.17		10.2
		21.34			11.5
		9583	23.44	507	13.0
			583		07
			27.55	43	10.14
			29.80		+25.80
			31.90		
			33.90	35.978	
			36.05	35.98	44 7.01
			38.05	35.91	8.6
			40.05		10.4
			42.20		11.7
		32380	44.30	509	13.2
			5380		09
			48.48		44 10.18
			50.50	52646	−34.20
			52.72	5265	
			5488	71.82	
		26323	56.85	43	10.14
			1323	43 35.945	44 10.18
					+ 25.80
					− 34.24
					60.04
					1.77844
					1.17124
					2.94968
					1.89900
					8.94432
					5 5 6

B 46 52.88
B 48 12.15
R 48 12.10

48 12.13
79.25

283 β Aquilae

h m s
19 49 22
o ′
+6 6

0.12621

h	m	s			m	s
19	47	44.60			47	37.0
		46.55	48.714			38.6
		48.68	48.41			0.4
		50.84				1.8
		24357	52.90		3008	3.0
			4357			08
			56.70		48	0.16
			59.18			+ 5.19
			1.30			
			3.30	5.366		
			5.30	537	48	38.7
			7.50	5.33		40.0
			9.58			41.7
			11.65			43.4
		5882	9 13.78		2086	44.8
			4829			86
			17.68		48	41.72
			19.90	21.936		− 36.37
			22.00	2194		
			24.05	13065		
		10968	26.05		48	0.16
			968	48 5.350	48	41.72
						+ 5.19
						− 36.37

B 13 56.30
B 14 52.30

~~14 52.30~~
~~56.00~~

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287

θ Aquilae

h m s
20 3 4
- 0 ' 1.176090, 12621
-1 11 9.99991
1.17600

607

2 Capricorni

h m s
20 11 20
- 0 ' 1.17609 0,12621
-12 55 9.98887
1.16496

289

γ Cygni

h m s
20 17 53
0 '
+39 32 0.12621

20	3	26.38			3	29.9		20	9	42.87			9	25.0		20	16	9.18			15	55.6	
		28.46	30.558			31.3				45.00	47.010			27.0				12.18	14744			57.8	
		30.53	30.56			33.4				47.00	4701			28.3				14.80	1474			0.0	
		32.60				35.2				49.00				29.8				17.46				1.8	
	15279	34.82			1668	36.0			23505	51.18			1417	31.6			7372	20.10			2991	3.9	
		279				158				3505				417				2372				491	
		38.80			3	3316				55.53			9	2834				25.40				15 5982	
		40.90				+13.87				57.67				+35.62				28.20				+36.44	
		43.00								59.86								30.90					
		45.00	47.042							1.96	4.803							33.66	36.281				
		47.00	4704		4	4.2				4.05	400		10	29.3				36.25	3628				
		49.00	4702			15.5				6.03	3.93			30.9				39.00	36.24				
		51.18				17.4				8.14				32.5				41.67					
		53.25				19.1				10.37				34.1				44.45					
	42338	55.25			872	21.0			57603	12.40			1624	35.6			32653	47.00					
		6338				372				3603				124				5653					
		57.30			4	1744				16.58			10	3248				52.30					
		1.30	3484			-30.141				18.66	20.854			-28.52				55.04	57738				
		3.50	348							20.86	2085							57.70	5774				
		5.66	9404							23.00	127.86							0.40	7248				
	31742	7.66			3	33.16			10427	25.19			9	2834			28869	3.25			15	5982	
		1742	3	47.030	4	1744				427	10	3.965	10	3248				8869	16	36.260		+36.44	
						+13.87								+35.62									
						-30.41								-28.52									
						44.28								64.14									
						1.64621								1.80713									
						1.17600								1.16496									
						2.82221								2.97209									
						1.77901								1.92443									
						8.95680								8.95234									
						5 10 23								5 7 13									

B	30	37.45	·					B	14	4.68	·					B	28	3.75	·				
B	31	37.62	·					B	15	28.78	·					B	28	4.22	·				
R	31	37.52	·					R	15	28.72	·												
R	31	37.52	·					R	15	28.62	·												
B	31	37.68	·																				
	31	37.58	·						16	28.71	·						28	3.98	·				
		60.13								84.03													

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294 α Cygni

h m s
20 37 18
° ′
+44 51

1880 Sept. 11

1.17609 0.12621
6.85062
1.02671

ex micrometer

298 ε Cygni

h m s
20 41 19
° ′
+33 31

0.12621

87 β Orionis

h m s
5 8 44
° ′
−8 21

0.12621

h	m	s		m	s														
20	36	32.76		36	31.8	20	40	37.40		40	49.4	5	6	3.30		5	57.3		
		35.04	38592		33.6			40.00	42416		51.2			5.32	7.332		59.0		
		38.68	3859		36.0			43.40	4242		53.0			7.28	733		0.6		
		41.68			37.6			44.78			55.1			9.36			1.9		
	19296	44.36		1793	40.3		21208	47.50		2650	56.3		3666	11.40		3024	3.6		
	4296			293				1208			150			3666			24		
		50.15		36	25.86			52.40		40	5300			15.60		6	0.48		
		53.00			+25.42			54.90			+9.21			17.74			+23.44		
		55.88						57.35						19.80					
		58.85	1.764					59.70	2.243					21.85	23.939				
		1.82	177			37		2.28	224	41	38.5			23.93	23.94				
		4.72	180		38.0			4.80	219		40.3			26.00	23.90				
		7.60			40.0			7.17			42.3			28.05					
		10.50			42.2			9.65			44.2			30.10					
	55592	13.40		2111	46.4		56019	12.14		2116	46.3		21545	32.28					
	1592			111				2019			116			3545					
		19.00		37	4222			17.00		41	4232			36.30					
		22.04	25918		−40.44			19.50	21960		−40.11			38.45	40470				
		25.00	2502					22.00	2196					40.50	4047				
		28.05	12361					24.45	12438					42.55	47.80				
	12509	31.00		36	3586		10980	26.85		40	5300		20235	44.55			6	048	
	2509		37 1785	37	4222		980		41 2215	41	4232		235		6 23720			+ 23.44	
					+25.92						+9.21								
					−40.44						−40.11								
					66.36														
					1.82191														
					1.02671														
					2.84862														
					1.79532														
					6.94670														
					5 3 17														

B 29 37.50 ·
B 30 39.80 ·
R 30 39.98 ·
R 30 39.98 ·

30 39.92 ·
62.42

B 49 29.88 ·
B 50 26.32 ·

~~50 26.32~~
~~56.44~~

R 40 1.78 ·
R 40 1.65 ·

40 1.71 ·

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91 γ Orionis

h m s
5 18 38
° ′
+6 14

0.12621

5	15	59.35		15 46.9
		1.32	3.490	48.5
		3.48	349	50.0
		5.60		51.5
	31745	7.70		2504 53.5
		1745		04
		11.80		15 50.08
		13.96		+29.97
		16.00		
		18.05	20.080	
		20.03	2008	
		22.13	20.03	
		24.25		
		26.20		
	18072	28.30		
		072		
		32.47		
		34.50	36.562	
		36.54	3656	
		38.60	40.05	
	18281	40.70		15 50.08
		3281	16 20.055	
				+29.97

93 δ Orionis

h m s
5 25 50
° ′
−0 24

0.12621

5	23	9.85		22 55.4
		12.02	13.988	56.8
		14.00	13.99	58.4
		16.05		0.1
	6994	18.02		2925 1.8
		1994		425
		22.20		22 58.50
		24.32		+32.01
		26.40		
		28.50	30.520	
		30.58	3052	
		32.68	30.50	
		34.50		
		36.60		
	27468	38.90		
		468		
		42.90		
		44.90	47.000	
		47.00	4700	
		49.00	60.99	
	23500	51.20		22 58.50
		3500	23 30.510	
				+32.01

97 ε Orionis

h m s
5 30 04
° ′
−1 17

0.12621

5	27	24.74		27 10.3
		26.70	24.814	12.0
		28.78	28.82	13.4
		30.87		15.1
	14409	33.00		678 17.0
		4409		178
		37.00		27 13.56
		39.12		+31.74
		41.00		
		43.30	45.294	
		45.30	4529	
		47.42	45.32	
		49.45		
		51.50		
	40765	53.56		
		4765		
		57.72		
		59.75	1.832	
		1.78	183	
		3.86	90.65	
	30916	6.05		27 13.56
		916	27 45.305	
				+31.74

R 5 35.70 ·
R 5 36.15 ·

5 ?

R 44 42.5 ·

R 36 30.22 ·
R 36 30.25 ·

36 30.23 ·

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a

ζ Orionis

h m s
5 34 39
° '
−2 0

0,12621

1880
Sept. 11

h	m	s		m	s												
5	31	57.28		31	44.4	5	39	20.27		39	8.6	5	45	57.90		45	50.0
		1.30	3.440		46.2			22.30	24464		10.5			59.95	2010		51.5
		3.47	344		47.8			24.48	24.46		12.0			2.00	2.01		53.2
		5.55			49.1			26.57			13.5			4.05			54.8
	31720	7.64		2379	50.4		12232	28.70		598	15.2		31005	6.15		2661	56.6
		1720			379			2232			98			1005			161
		11.68		31	47.58			33.00		39	11.96			10.37		45	53.22
		13.78			+32.34			35.00			+29.28			12.40			+25.47
		15.87						37.00						14.46			
		17.97	19969					39.00	41294					16.66	18.696		
		20.00	1997					41.30	4129					18.77	18.70		
		22.02	1997					43.35	4120					20.80	18.68		
		24.10						45.50						22.90			
		26.10						47.70						24.90			
	17972	28.20					37165	49.80					16826	27.00			
		8972						1165						7826			
		32.40						53.70						31.20			
		34.38	36490					55.76	57942					33.28	35.836		
		36.50	3649					58.00	5794					35.30	3534		
		38.60	39.93					0.10	8240					37.45	3735		
	18245	40.57		31	47.58		28971	2.15		39	1196		17668	39.48		45	53.22
		3245	32 19970		+32.39			3971	39 41245		+29.28			2668	46 18.690		+25.47

+2.21
−4.20
2.23
4.97
6.78
8.93
13.41
15.69
17.84
20.11
−22.32
20
20

R 20 6.50 ·
R 20 6.32 ·

20 6.41 ·

R 2 13.68 ·
R 2 13.90 ·

2 13.79 ·

R 57 10.00 ·
R 57 9.75 ·

57 9.87 ·

100

K Orionis

h m s
5 42 1
° '
−9 43

0,12621

102

α Orionis

h m s
5 48 37
° '
+7 23

0,12621

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106 ω Gem.

h m s
6 15 32
° '
+22 34

6

+2.21	20.81	13	18.60
−0.70	21.00	125.41	21.00
2.23	20.77	20.901	23.00
4.97	21.03		25.50
6.70	20.90		27.60
8.55	20.90		29.85
13.41	20.96	104.24	34.37
15.69	20.89	20.848	36.53
17.88	20.82		38.70
20.11	20.89		41.00
22.42	20.68	19370	43.10
			4370

38.740
3874

20.874
20.877

0.12621

13	51.4
	53.3
	55.3
	57.0
2760	59.0
	260
13	55.20
	−34.32

13 55.20

R 47 29.15
R 47 29.18

47 29.16

564 α Can. Maj.

h m s
6 39 49
° '
−16 33

6 37

	6.58	
	8.75	10.896
	11.00	1090
	12.95	
5448	15.20	
	448	
	19.63	
	21.57	
	23.78	
	26.00	28.052
	28.05	2805
	30.17	2805
	32.28	
	34.40	
25247	36.59	
	7247	
	40.85	
	43.00	45.210
	45.20	4521
	47.40	5611
22605	49.60	
	2605	37 28.050

36	55.8
	57.7
	59.0
	0.4
2949	2.0
	449
36	58.98
	+29.07

36 58.98
+29.07

0.12621

R − 21.00
R 20.82

20.91

119 α Gem.

h m s
7 26 52
° '
+32 9

7 24

	11.00	
	13.35	15.820
	15.80	1582
	18.25	
7910	20.70	
	2910	
	25.55	
	28.04	
	30.50	
	32.96	35.363
	35.40	3536
	37.70	3534
	40.30	
	42.67	
31827	45.15	
	4827	
	50.07	
	52.40	54.852
	54.80	5485
	57.89	7067
27426	59.80	
	2426	24 35.350

23	55.8
	57.6
	59.5
	1.4
2973	3.0
	473
23	59.46
	+35.89

23 59.46
+35.89

0.12621

R 11 50.25
R 11 50.08

11 50.16

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120

α Cam. Min.

h m s
7 32 58
° ′
+5 32

0.12621

1880
Sept. 11

h	m	s		m	s
7	30	17.80			
		19.75	21.900		
		21.95	2190		
		24.00			
		26.00	10950		
			950		
		30.05			
		32.34			
		34.26			
		36.35	38422		
		38.40	3842	31	7.3
		40.50	3843		8.6
		42.57			10.2
		44.58			11.5
		46.75	34580		510 13.4
			7580		10
		50.90		31	1020
		52.90	54964		-31.78
		55.00	5496		
		57.02	7686		
		59.00	27482		
			2482	30	38425

31 1020
− 31.78

S

Sim. C = 45.075

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Sept. 11/12

11	20	20.37			
		22.47	24546		
		24.49	2455		
		26.70			
		28.70	12273		
			2273		
		32.85			
		34.85			
		37.00			
		39.00	41120		
		41.10	4112		
		43.20	4119		
		45.30			
		47.38			
		49.40	37008		
			1008		
		53.50			
		55.80	57830		
		57.80	5783		
		0.00	8238		
		2.05	28915		
			3915	20	41155

21	22.5	22	28.50		
	23.7		30.55		32680
	24.9		32.70		3268
	26.3		34.80		
	28.0		36.85	16340	
	25.4		1340		
21	2508		40.80		
	−43.93		43.00		
			45.00		
			47.25		49250
			49.17		4925
			51.42		4925
			53.53		
			55.58		
			57.50	44325	
			8325		
			1.68		
			3.82		58108
			5.75		581
			7.80		9849
21	2508		2905		10.00
	−43.93		2905	22	49250

R 49 39.15 .
R 49 39.28 .

49 39 21 .

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	181				596			226	
	η Urs Maj				α Scorpii			η Draconis	
	h m s 13 42 46				h m s 16 21 59			h m s 16 22 22	
	° ′ +49 53		0.12621		° ′ −26 10		0.12621	° ′ +61 47	0.12621
1880	Sept. 12								

13 39 53.20 · 56.36 · 59.68 · 2.62 · 29788 6.02 · 4788 · 59.576 · 5958

39 37.2 · 39.5 · 42.1 · 44.4 · 2107 47.5 · 107 · 39 42.14 · +43.14

16 19 15.92 · 18.15 · 20.40 · 22.75 · 10224 25.02 · 224 · 20448 · 2045

19 · 12

20 23.9 · 26.7 · 30.2 · 32.5 · 1497 36.4 · 497 · 20 29.94 · −31.18

12.47 · 15.80 · 18.90 · 22.04 · 25.25 · 28.55 · 31.90 · 34.90 · 22786 38.05 · 4786 · 25.318 · 2532 · 25.24

29.75 · 32.07 · 34.40 · 36.60 · 38.90 · 41.25 · 43.50 · 45.80 · 35030 48.03 · 8030 · 38.922 · 3892 · 38.90

21 17.4 · 20.8 · 24.7 · 27.2 · 1202 30.1 · 202 · 21 24.04 · −1 25.28

44.50 · 47.60 · 51.00 · 54.00 · 25447 57.37 · 447 · 50.894 · 5089 · 170.47 · 40 25.280 · 39 42.14 · +43.14

52.75 · 55.00 · 57.30 · 59.60 · 28670 2.05 · 3670 · 57.340 · 5734 · 77.79 · 19 38.910

−26.18 58.74 · 30.55 58.95 · 34.42 58.88 · 38.28 58.62 · 42.74 58.62 · 293.81 · 58.762 · 20 24.92 · 29.50 · 33.80 · 37.90 · 16852 42.40 · 1852 · 33704 · 3370

20 29.94 · 21 24.04

R 26 22.40 ·
R 26 22.35 ·

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R 34 52.50 ·
R 35 25.58 ·

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597 ζ Ophiuchi

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1880 Sept. 12

h	m	s		m	s
16	27	48.29		27	32.6
		50.29	52444		34.3
		52.47	52.44		35.8
		54.57			37.7
	26222	56.60		1794	39.0
		1222			294
		0.80		27	35.88
		2.90			+33.31
		5.00			
		7.10	9.200		
		9.20	920		
		11.30	9.19		
		13.40			
		15.50			
	8280	17.60			
		8280			
		21.70			
		23.80	25.944		
		26.00	25.94		
		28.03	138.38		
	12972	30.19		27	3588
		2972	28 9.195		+33.31

R 38 1.35 ·
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232 N Coronæ

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h	m	s		m	s
16	35	56.74		35	44.2
		59.40	2072		46.5
		2.03	207		48.5
		4.76			50.3
	31036	7.43		2418	52.3
		1036			418
		12.87		35	4836
		15.40			+35.04
		18.00			
		20.78	23422		
		23.45	2342		
		26.05	2339		
		28.70			
		31.45			
	21080	34.10			
		3080			
		39.42			
		42.00	44704		
		44.70	4470		
		47.40	4677		
	22352	50.00		35	4836
		2352	36 23405		+35.04

R 11 39.98 ·
R 11 40.02 ·

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598 η Ophiuchi

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h	m	s		m	s
17	0	44.60		0	32.2
		46.60	48800		33.5
		48.80	4880		34.7
		51.00			36.3
	24400	53.00		1747	38.0
		4400			247
		57.37		0	3494
		59.50			+31.02
		1.70			
		3.85	5973		
		6.00	597		
		8.03	595		
		10.30			
		12.46			
	9376	14.55			
		5376			
		18.85			
		21.02	23094		
		23.00	2309		
		25.20	131.89		
	11547	27.40		0	3494
		1547	1 5.960		+31.02

R 53 56.28 ·
R 53 56.32 ·

53 56.30 ·

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237

α Herculis

h m s
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1880

Sept. 12

17 h 25.60
27.70 29880
29.80 2988
32.02
14940 34.28
4940
38.45
40.60
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44.96 46990
47.00 4699
49.15 4697
51.25
53.33
42291 55.47
6291
57.80
2.00 4068
4.00 407
6.18 4395
32034 8.36
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6 20.0
21.7
22.9
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1148 25.9
148
6 2296
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R 48 43.05
R 48 43.08

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Sun - C = 45° 7'5

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Sept. 12/13

26 12.9
14.6
16.3
18.0
819 20.1
319
26 16.38
26 16.38

27 0.74
3.03 5110
5.23 5.11
7.25
2555 9.30
2555
13.45
15.53
17.50
19.70 21.722
21.78 2172
23.68 21.72
25.90
27.94
19550 30.00
1558
34.04
36.25 38316
38.42 3832
40.40 4343
19158 42.47
4158 27 21/20

B − 5.02

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ex. numbering on this sheet

84 β Eridani

h m s
5 1 54
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1.17609 2.12621
9.99 814
1.17426

1880 Sept. 15

86 α Aurigæ

h m s
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87 β Orionis

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h	m	s		m	s																		
5	1	59.00		1	50.2	5	7	45.98		7	27.5	5								9	24.5		
		1.00	8190		52.0			48.58	51540		29.0										26.0		
		3.20	319		54.0			51.42	5154		31.0										27.5		
		5.30			55.3			54.42			33.5										28.7		
	31595	7.45		2687	57.2		25770	57.30		1576	36.6									1367	30.0		
	1595			187			770			76										367			
		11.35		1	5374			8.50		7	31.52									9	27.34		
		13.42			+25.90			6.60			+43.87		+6.26	8.53	9	2.27				+18.76		
		15.40						9.40					4.17	8.50	08.13	4.33							
		17.60	19647					12.58	15380				2.06	8.46	8.516	6.40							
		19.60	1965	2	31.0			15.48	1338				−0.10	8.45		8.45	850		9	42.2		
		21.87	1964		57.4			18.30	15.41				2.08	8.52		10.50				44.0		
		23.80			58.7			21.26					4.17	8.53		12.70				45.9		
		25.83			0.5			24.30					6.26	8.69		14.95				47.6		
	17682	27.95		2946	2.0		13842	27.00					8.35	8.53	7650	16.90			2292	49.5		
	8682			446				4842												292		
		31.86		2	5892			33.59					12.57	8.67	42.98	21.18			9	4584		
		34.05	36092		−39.28			36.47	39282				15.60	8.62	8.596	23.22	25294			−37.29		
		36.17	3609					39.50	3928				16.64	8.61		25.30	2529					
		38.00	39.28					42.05	15682				17.77	8.53		27.30						
	18046	40.38		1	5374		19641	44.80		7	8.152		20.92	8.55	12647	29.47			9	2734		
	3046	2	19.645	2	58.92		4641		8 15.395						2647				9	4584		
					+25.90						+43.87												
					−39.28								8.556										
					65.18								8.547										
				1.81411																			
				1.17426																			
				2.98837																			
				1.70841																			
				5.82004	?																		
				3 46 49																			

B 34 11.75 ·

B 35 16.14 40.35
R 35 16.14 40.28
R 35 15.99 3998
B 35 16.06 40.15
~~35 16.08 40.19~~
64.33

B 29 30.20 ·

B 40 58.30 ·
B 41 25.18 ·
R 41 25.30 ·
R 41 25.28 ·

~~41 2525~~ ·
~~2695~~

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91 ϑ Orionis

h m s
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+6 14

0.12621

5	18	43.00			19	22.6	5	25	54.60			25	41.4	6	15	43.19			15	34.0
		45.60	47930			24.2			58.73	58736			43.4			48.30	47372			35.4
		48.03	4793			26.1			58.65	5874			44.8			47.57	4757			37.2
		50.42				29.0			0.80				46.3			44.80				39.0
	23965	52.60			1330	31.1		29368	2.90			2235	47.6		23786	52.00			1866	41.0
		3965				330			4368				235			3786				366
		57.15			19	2660			7.03			25	4470			56.52			15	37320
		59.60				−19.91			9.47				+30.50			58.80				+28.14
		1.95							11.87							1.00				
		4.33	6.643						13.12	15178						3.30	5469			
		6.64	664		19	37.4			15.18	1518						5.47	549		16	37.3
		9.00	6.75			41.7			17.25	1522						7.77	544			38.6
		11.37				43.4			19.15							9.98				40.2
		13.70				45.3			21.28							12.06				42.0
	39979	16.05			2178	47.5		13660	23.00						58940	14.50			2018	43.7
		5979				178			4660							4940				18
		20.80			19	4346			27.50							18.96			16	4036
		23.15	25580			36.77			29.60	31706						20.94	23300			−34.90
		25.50	2558						31.60	3171						23.30	2330			
		28.00	13351						33.58	15045						25.50	13087			
	12790	30.45			18	2660		15853	35.95			25	4470		11650	27.80			15	3732
		4790	19	6695	19	4346			853	26	15200		+30.50			1650	16	5463	16	4036
						+40.09														+28.14
						−36.76														−34.90
																				63.04
																				1.79962
																				1.14150
																				2.94112
																				1.69003
																				6.94891
																				5 449

B	51	22.22	·
B	51	41.90	·
R	51	41.75	·
R	51	41.57	·
B	51	41.87	·
~~51~~	~~41.77~~		
	19.55		

B	43	6.92	·

B	46	13.20	·
B	47	30.95	·
R	47	30.67	·
R	47	30.90	·
B	47	30.82	·
47	30.83	·	
	77.63		

93 S Orionis

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0.12621

106 μ Gem.

h m s
6 15 39
° '
+22 34

1.17609 0.12621
9.96541
1.14150

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10.7

γ Gem.

h m s
6 30 43
° '
+16 30

0,126 R1

1880

Sept. 15

h m s
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m s

+32.04
28.83
25.65
22.44
19.22

12.82
9.61
6.40
+3.17
0.00
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9.20 13
9.23
9.19
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9.32
9.57
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9.37
9.40
9.27

42 37.15
46.08 40.40
9.216 43.54
46.80
21789 50.00
1789

56.20 58.50
9.366 59.90
2.93
6.20
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9.291
9.296

03 50 28.72.
03 50 28.30.

50 28.51.

03 26 46.18.

181

β Ursae Maj.

h m s
13 42 46
° '
+49 53

0,126 R1

Sept. 16

42 13.8
43.575
43.58
16.4
18.5
20.5
917 22.5
417
42 18.34
+50.96

42 18.34

+20.
15.1
16.7
19.6
12.5

8.39
6.24
4.19
+2.04
−0.00
2.04
4.20
6.24
−8.41

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277 exp. star

γ δ Aquilae

h m s
19 40 30
+10 14

0,12621

287

Q Aquilae

h m s
20 5 4
° '
−1 11

0,12621

607

α² Capricorni

h m s
20 11 20
° '
−12 53

0,12621

+20.98	16.64	19	44	55.66			44	44.10		20	5	7.00			5	36.4		20	11	23.47			
15.87	16.53		83.80	57.66	59820			45.90				9.00	11096			37.9				25.50	27610		
16.78	16.66		16.60	59.88	5982			47.6				11.15	1110			39.4				27.60	2761		
13.64	16.54			1.90				49.2				13.00				41.0				29.68			
12.38	16.38		29910	4.00			2375	50.7			5548	15.33			1973	42.6			13805	31.80			
				4910				375				548				473				3805			
8.39	16.57			8.16			44	4750				19.40			5	3946				36.04			
6.24	16.57		148,60	10.26				+29.04				21.48				−11.80				38.17			
4.19	16.34		16,511	12.35								23.55								40.20			
+2.05	16.48			14.40	16516							25.60	27691							42.45	44546		
−0.00	16.56			16.56	1652							27.60	2769							44.55	4455	12	18.4
2.04	16.57			16.60								29.80	2784							46.65	4464		19.7
4.20	16.47			20.67								31.87								48.87			21.0
6.29	16.57			22.80								33.87								50.98			22.5
−8.41	16.34		14864	24.80							24922	36.05							40091	53.00		1056	24.0
				5864								6922								4091			56
				—								40.09								57.20		12	2112
				—								42.14	44182							59.30	1466		−36.58
	16,555			—								44.20	4418							1.45	147		
	16,543			—								46.18	5528							3.60	8908		
				—			44	47.50			22091	48.30			5	3946			30738	5.78			
												2091	5	27.665						733	11	44.545	12	2112
																−11.80							−36.58

R 1 34.85 ·
R 1 34.70 ·

1 34.77 ·

R 31 10.92 · ·
R 31 10.62 ·

31 10.77 ·

R 0 39.22 ·
R 0 39.58 ·

0 39.40 ·

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	289			298			84		
	1 Cygni			ε Cygni			β Eridani		
	h m s			h m s			h m s		
	20 17 33		0,12621	20 41 19		0,12621	5 1 57		0,12621
	° '			° '			° '		
	+39 32			+38 31			−5 15		
1880									
	Sept. 16								
h m s		m s							
20 17 49.90		17 48.4	20	41 18.25		41 11.2	5	—	
52.58	55.258	44.5		20.75	23162	12.9		—	
55.13	5526	46.1		23.16	2316	14.7		—	
57.98		47.7		25.58		16.4		—	
27629 0.67		2310 49.3		11581 28.07		738 18.6		—	
2629		310		1581		238			
5.98		17 46.20		33.00		41 14.76		—	
8.50		+30.54		35.47		+28.20		—	
11.29				38.00				—	
13.85	16.721			40.45	42936			—	
16.83	1672			42.97	4294			—	2 45.9
19.54	16.76			45.50	4299			—	48.3
22.15				47.87			−4.15 15.78	2 19.93	50.0
24.80				50.36			6.22 15.78	47.53 22.00	52.0
15049 27.55				8642 52.80			8.30 15.87	15.843 24.27	2502 54.0
6049				2642					02
32.90				57.94			12.43 15.62	76.70 28.05	2 5004
35.55	38262			0.30	2816		14.50 15.70	15.74 30.20	32330 −34.26
38.23	3826			2.84	282		16.58 15.82	32.40	3233
41.00	15352			5.30	8598		18.65 15.85	34.50	
191314 8.63		17 4620		21408 7.70		41 14.76	20.79 15.71	16165 36.50	
41.31	18 16.740	−30.54		1408	41 42965	+28.20		1165	2 5004
							15.791		
							15.778		

R 23 7.48	R 49 7.12	B 35 33.78
R 23 7.32	R 49 7.30	B 35 33.72
		R 35 33.92
		R 35 33.88
23 7.40	49 7.21	35 3382

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		86				87				90		
		α Aurigae				β Orionis				β Tauri		
		h m s				h m s				h m s		
		5 7 46				5 8 44				5 18 39		
		° ′		0,12621		° ′		0,12621		° ′		0,12621
		+45 52				−8 21				+28 30		
5	7 42.30		7 39.2	5	—			5	18 —		19 1.8	
	45.18	48116	41.2		—				—		3.8	
	48.05	4812	44.2		—				—		5.5	
	51.00		46.2		—				—		6.9	
	24058 54.05		2193 48.5		—				—		264 8.4	
	4058		193								264	
	59.92		7 4386		—			+9.34 2.77	25.77 53.38		19 528	
	3.30		+27.44		—			7.04 2.84	2.861 55.80		−2.43	
	5.95			+4.17 4.47	9 0.80			4.69 2.74	58.05			
	8.88	11870		2.06 4.76	93.57 2.70			+2.32 2.91	0.59	2869		
	11.90	1187		−0.00 4.70	4.795 4.70		9 28.2	−0.00 3.00	3.00	287	19 33.3	
	14.88	1183		−2.08 4.92	7.00		29.9	2.34 2.83	5.17		35.6	
	17.78			4.17 4.53	8.70		31.3	4.70 2.40	7.60		37.4	
	20.62			6.26 4.78	11.04		32.5	7.04 2.44	10.03		39.1	
	64683 23.60			8.30 4.91	13.26		1557 33.8	9.40 2.80	56582 12.20		1869 41.5	
	1683						57		2582		269	
	29.47			12.57 4.79	24.34 17.30		9 3114	14.04 2.86	14.11 16.95		19 3738	
	32.52	35540		14.60 4.88	4.878 19.48	21576	−26.31	16.43 2.77	2.822 19.20	21620	−34.53	
	35.50	3554		16.64 4.81	21.50	2158		18.74 2.81	21.60	2162		
	38.73	14366		18.77 4.93	23.70			21.13 2.87	24.00			
	17770 41.48		7 4386	−20.62 4.98	10788 25.90			23.55 2.80	10810 26.35		19 528	
	2770	8 11.850			788		9 31.14		810		19 3738	
			+27.99									
				4.837				2.841				
				4.830				2.848				

B 28 46.58·

B 41 7.57·
B 41 7.67·
R 41 7.17·
R 41 7.45·
41 7.46·

B 51 2.75·
B 51 40.00·
R 51 39.60·
R 51 39.75·
B 51 39.57·
51 39.73·

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96

ι Orionis

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1880

Sept. 16

h	m	s		m	s												
5	29	31.19		29	46.4	5	34	40.06			34	29.6	9	21	37.27		21	33.0
		~~37.32~~			48.7			42.17	44,232			30.9			39.34	41,340		34.7
		35.48			50.2			44.20	4423			32.2			41.40	4137		36.4
		37.57			51.4			46.30				33.9			43.36			38.1
		39.78		2467	52.0		22	16 48.43			1622	35.6		20687	45.50		1819	39.7
					487			2116				122			687			319
		43.83		29	49.74			53.47			34	32.44			49.68		21	3638
		46.00						54.56				+28.31			51.82			+21.60
		48.20						55.63							53.97			
		50.37	52.240					58.60	0.768						52.00	58.013		
		52.40	8224	30	36.7			0.80	077		35	30.8			58.00	5801	22	35.2
		54.19			39.0			2.85	0.73			32.2			0.00	5796		37.0
		56.20			40.5			4.96				33.4			2.00			39.2
		58.37			41.9			7.04				34.9			4.25			40.5
	47016	0.40		2019	43.8		54691	9.00			1678	36.5		52212	6.40		1938	41.9
		2016			19			691				148			7212			438
		4.60		30	40.38			12.89			35	33.56			10.38		22	38.76
		6.70	8676					15.19	17220			−32.81			12.43	14552		−40.78
		8.65	~~8681~~					17.30	1722						14.58	1455		
		10.75						19.32	12145						16.60	11592		
	4338	12.63		29	4974		8610	21.40			34	3244		7276	18.80		21	3638
		4338	29 52.150	30	4038			3610	85	0.750	35	3356			2276	21 57.985	22	3876
												+28.31						+21.60
												−32.81						−40.78
												61.12						62.38
												1.78618						1.79505
												1.17583						1.17170
												2.96201						2.96675
												1.91529						1.91871
												6.95328						6.95196
												5753						5657

B 49 32.17·
B 50 41.87
R 50 41.55
~~R 50~~

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69.54

B 20 12.35·
B 21 34.87·
R 21 34.47·
R 21 34.52·
B 21 34.67·
21 34.63·
82.28

B 28 22.35·
B 29 45.28·

29 45.28·
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											1.17609	0,12621						
											9.99974							
											1.17583							

138

α Hydrae

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											1.17609	0,12621						
											9.99561							
											1.17170							

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140

δ Ursæ Maj

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9 24 45
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+62 14 1.17609 D.12621
9.78707
0.96316

9	24	35.00			24	27.3	9	38	57.40		
		38.50	41880			29.7			59.60	1940	
		41.80	4188			32.6			2.00	194	
		45.30				36.0			4.20		
	20940	48.60			1634	37.8		30970	6.50		
		940				134			970		
		55.40			24	3268			11.00		
		58.87				+36.26			13.25		
		2.20							15.53		
		5.70	8977						17.87	20083	
		9.00	898		25	49.8			20.00	2008	
		12.45	890			52.7			22.38	2007	
		15.70				55.0			24.57		
		19.00				57.3			26.90		
	62079	22.47			2744	59.6		18075	29.25		
		8079				244			075		
		29.18			25	5488			33.65		
		32.53	35918			−45.94			36.00	38204	
		35.88	3592						38.20	3820	
		39.30	13780						40.42	4014	
	17959	42.70			24	3268		19102	42.75		
		2959	25 8.940		25	5488			4102	39 20.075	
						+36.26					
						−45.94					
						82.20					
						1.91487					
						0.96316					
						2.87803					
						1.82289					
						8.94486					
						5 2 0					

38	49.3			
	51.0			
	52.4			
	54.0			
2624	55.7			
	124			
38	5248			
39	58.5			
	59.0			
	58.9			
	58.3			
2833	59.6			
	333			
39	6666			
	−36.59			
38	5248			
39	5666			
	+27.59			
	−36.59			
	6418			
	1.80740			
	1.13569			
	2.94309			
	1.88913			
	8.94604			
	5 2 49			

142

ε Leonis

h m s
9 38 39
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+24 20 1.17609 D.12621
9.95960
1.13569

B 8 7.90 ·
B 9 14.55 ·
R 9 14.32 ·
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66.51

B 1 19.62 ·
B 2 38.25 ·
R 2 38.30 ·
R 2 38.60 ·
B 2 38.20 ·
2 ~~37.09~~ 38.34 ·
77.47

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S

Sun - C = 45. 44

181

ex. sheet

R Uscae Maj.

h m s
11 42 12
+1 ° ' 56

0.12621

h m s
13 42 46
+49 ° ' 85

0.12621

1880

Sept. 16/17

Sept. 17

h	m	s		m	s												
11	40	57.82		41	53.0	43	5.00		42	26.2		13	42	—		43	23.4
		59.40	1450		55.2		7.14	9.324		27.8				—			26.0
		1.48	145		56.9		9.35	932		29.4				—			28.7
		3.48			58.0		11.48			30.6				—			30.3
	30725	5.57			2827 57.6		4662 13.60			1460 32.0				—			1409 32.3
		725			327		4662			460							409
		9.80		41	56.54		17.62		42	29.20		+12.82	5.38	48.96	52.56	43	2818
		11.90			-38.50		19.78			56.75		9.61	5.25	5,439	55.64		-22.69
		13.97					21.85					6.90	5.40		59.00		
		16.00	18086				23.87	25.949				3.17	5.44		2.27	5446	
		18.00	1809	42	26.2		26.00	25.95				0.80	5.54		5.54	545	43 46.4
		20.20	1800		27.8		28.05	25.94				8.20	5.60		8.80		48.6
		22.24			29.4		30.05					6.41	5.59		12.00		50.4
		24.28			30.6		32.02					9.61	5.39		15.00		52.9
	16277	26.38			32.0		23354 34.30					12.83	5.37	58901	18.20		2635 55.2
		7277					5354								49.01		36
		30.50					38.35					19.22	5.73	27.91	24.95		43 5070
		32.58	34542				40.50	42.558				22.45	5.59	5,382	28.02	31236	-45.21
		34.50	3454				42.70	4256				25.61	5.61		31.25	3124	
		36.57	35.99				44.60	51.88				28.84	5.58		34.42		
	17271	38.50		41	5654		21379 46.64		42	2920		32.14	5.40	15618	37.84		43 2818
		2271	41 18045				1279	43 25.945							618		43 50.70
					-38.50					+56.74							
												5,510					
												5,490					

B 7 5.82

B 10 52.78

R 32 39.50.

R 32 39.22.

32 39.36?

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187 α Bootis

h m s
14 10 8
° ′
+19 49

0.12621

14 10 5.70
7.94 10,108
10.03 1011
12.30
5054 14.57
5054
18.85
21.00
23.30
25.48 27,667
27.65 2767
29.90 2767
32.06
34.27
24900 36.49
6900
40.80
43.00 45,226
45.28 4523
47.45 5534
22613 49.60
2613 10 27.670

10 0.3
1.7
3.0
4.7
162 6.5
162
10 3.24
+24.43

10 3.24
+24.43

R 32 19.85
R 32 19.75

32 19.80

193 η Bootis

h m s
14 27 12
° ′
+38 50

0.12621

14 27 4.76
7.43 10,042
10.02 1004
12.70
5021 15.30
021
20.70
23.40
26.06
28.78 31299
31.32 3130
33.80 3125
36.57
39.16
28169 41.90
1169
47.10
49.92 52446
52.43 5245
55.00 62.49
26223 57.78
1223 27 31.275

26 46.8
48.1
49.7
51.9
2505 54.0
505
26 50.10
+41.17

26 50.10
+41.17

R 30 48.48
R 30 48.25

30 48.36

ε Bootis

h m s
14 39 42
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+27 35

0.12621

14 39 37.86
40.20 42,604
42.58 4260
45.00
21302 47.38
1302
52.00
54.22
56.56
58.92 1,211
1.20 121
3.50 121
5.90
8.03
55090 10.57
1090
15.12
17.60 19,808
19.84 1981
22.10 12241
9904 24.38
4904 40 1.210

39 28.7
30.8
32.3
33.6
1607 35.3
107
39 32.14
+29.07

39 32.14
+29.07

R 45 56.02
R 45 56.20

45 56.11

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198 β Ursae Min

h m s
14 51 7.
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+74 39

1.17609 0.12621

199 β Bootis

h m s
14 57 23
° ′
+40 52

0 0.12621

200 β Librae

h m s
15 10 30
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0.12621

1880 Sept. 17

h	m	s		m	s		h	m	s		h	m	s		h	m	s	
14	50	2.64		49	7.4		14	57	14.70		56	59.7		15	10	28.15		10	16.0	
		10.46	16.310		10.8				17.48	20.172		1.6				30.23	32328		17.6	
		18.50	1831		17.9				20.19	20.17		3.3				32.38	3233		19.0	
		26.10			22.4				22.90			6.0				34.38			20.8	
	9155	33.85		870	28.5			10086	25.59		3186	8.0			16164	36.50		951	22.0	
	4155				370				086			186				1164			451	
		49.20		49	17.40				31.00		57	3.72				40.73		10	19.02	
		57.25		+2	3.25				33.75			+38.28				42.88			+38.04	
51		5.00							36.50							45.00				
		13.05	20.639						39.30	42.020						47.10	49.114			
		20.75	2064	52	41.0				42.00	42.02						49.00	4911			
		28.40	2067		46.3				44.80	41.98						51.17	4912			
		36.30			52.0				47.58							53.27				
		44.00			57.2				50.25							55.38				
	72575	51.80		2615	5.0			37818	53.00						44203	57.50				
	72575				115				1818							8203				
52		7.75		52	52.30				58.38							1.60				
		15.15	23.040	−1	31.65				1.00	3.792						3.70	5.914			
		23.00	2304						3.70	3.79						5.77	5.91			
		30.80	1811.35						6.56	8396						7.60	98.24			
	11520	38.50		49	17.40			31896	9.32		57	3.72			2957	10.70		10	19.02	
	1520	51	20655	52	52.30				1896	57	42.000					2957	10 49.116			
					+123.25							+38.28							+30.09	
					−91.65															

R 42 37.92 ·
R 43 54.38 ·
R 43 54.65 ·

43 54.46 ·
7654

R 29 0.25 ·
R 29 0.35 ·

29 0.30 ·

R 16 13.35 ·
R 16 13.38 ·

16 13.36 ·

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209
α Cornae

h m s
15 29 39
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+27 7

0.12621

16 29 29.60
32.00 34250
34.25 3425
36.53
17125 38.87
2125
43.55
45.93
48.21
50.57 52872
52.90 5287
55.15 5280
57.47
59.90
47585 2.17
2585
6.73
9.00 11.336
11.30 1134
13.65 10559
5668 16.00
668 29 52835

29 13.6
15.0
16.5
18.2
830 19.7
330
29 1660
+36.23

29 1660
+ 36.23

R 13 23.90.
R 13 23.88.
13 23.89.

212
α Serpentis

h m s
15 38 18
° ′
+6 48

0.12621

15 38 17.00
19.00 21076
21.00 2108
23.18
10538 25.20
538
29.33
31.50
33.57
35.60 37754
37.78 3776
39.88 3774
42.05
44.02
33979 46.06
6979
50.20
52.30 54400
54.40 5440
56.43 7548
27200 58.67
2200
38 37.745

38 39.5
0.8
2.0
3.7
3112 5.2
112
39 2.24
− 24.50
39 2.24
−24.50

R 32 14.20.
R 32 14.08.
32 14.14.

594
S Scorpii

h m s
15 53 11

0.12621

15 53 7.39
10.42
12.55
14.70
17.00
21.45
23.68
26.00
28.10 30.368
30.32 3037
32.65
34.84
37.00
27331 39.28
3331
43.82
46.00 48.218
48.20 4822
50.49
24109 52.57
4109
53 30.334

54 0.5
1.8
3.1
4.6
165 6.5
165
54 3.30
54 330

R 37 12.78.
R 37 12.98.
37 12.88.

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596 α Scorpii

h m s
16 21 59
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1880
Sept 17

h	m	s		m	s											
16	21	56.00				16	—									
		58.38	0.676				—									
		0.70	068				—									
		3.00					—									
	80338	5.30					—									
		338														
		9.85					—									
		12.18					—									
		14.50					—									
		16.85	19117			+2.20	20.08	25	17.80							
		19.18	1912	22	44.3	−0.70	20.02	120.48	20.02		25	46.3				
		21.48	19.12		45.7	2.22	20.11	20.08	22.33			48.0				
		23.70			47.2	4.44	20.11		24.55			49.5				
		25.94			48.9	6.66	20.14		26.80			51.3				
	17205	28.87		2367	50.6	8.80	20.10		29.00		2481	53.0		57119	14.04	
		8205			367							481			3119	
		33.00		22	47.34	13.33	20.12	100.45	33.45		25	49.62			19.32	
		35.28	37.568		+28.22	15.55	20.18	20.09	35.63	37876		−29.54			22.00	24682
		37.56	3757			17.78	20.10		37.88	3788					24.64	2468
		39.95	38.25			19.44	20.06		40.05						27.40	126.81
	18784	42.05				22.28	20.09	18938	42.37					12341	30.05	
		3784	22 19120	22	4734				3938		25	4962			2341	39 3.440
					−28.22		20.086									
							20.084									

R 24 48.08 ·
R 24 48.30 ·

24 48.19 ·

228 β Herculis

h m s
16 25 1
° ′
+21 45

0,12621

R 21 37.02 ·
R 21 37.02 ·

21 37.02 ·

232 η Herculis

h m s
16 38 46
° ′
+39 9

0,12621

Sept-17

h	m	s		m	s											
16	38	36.88														
		39.48	42134													
		42.05	4213													
		44.84														
	21067	47.47														
		1067														
		52.85														
		55.50														
		58.18														
		0.74	3466													
		3.50	347													
		6.10	341													
		8.78														
		11.50														
		14.04														
		3119														
		19.32														
		22.00	24682													
		24.64	2468													
		27.40	126.81													
	12341	30.05														
		2341	39 3.440													

R 11 32.20 ·
R 11 32.08 ·

11 32.14 ·

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21

111
51 Cephei Lo. C.
h m s
6 42 14

0.12621

2 269
λ Aquilae
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18 59 56
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−5 3

0.12621

275
β Cygni
h m s
19 25 50
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+29 42

0.12621

Sept. 18

6	40 52.10	42 48.40	44 44.90	36 7.2	18	59 —		59	19	25 43.56		25 33.0
	54.60	51.50	54.68			—				45.72	48096	34.9
	57.78	43 0.00	56.72	50 22.0		—				48.05	4810	37.1
	41 5.00	1.58	58.20		+14.51 6.41	12.74 51.90				50.40		38.9
	7.66	4.12	45 8.40	52 10.7	12.43 6.33	6.37 53.90				24048 52.75		1846 40.7
	11.00	15.20	10.20							4048		346
36 37.50	21.70	17.40	13.35	53 38.5	8.24 6.29	56.06 58.00				57.45		25 3692
40.55	23.70	20.54	22.25		6.21 6.21	6.229 0.00				59.65		+29.82
43.45	26.03	28.70	25.63	55 8.1	4.14 6.16	2.02				2.03		
37 19.00	34.80	31.20	27.66		+2.05 6.20	4.15	6.232			4.45	6.741	
20.55	36.78	33.50	36.05		−0.20 6.20	6.20	623	0 32.7		6.90	674	
23.77	39.50	43.43	38.30		2.07 6.31	8.38		34.0		9.18	6.74	
38 4.05	49.75	45.70	41.30		4.14 6.26	10.40		35.1		11.40		
6.03	51.95	48.35	50.60		6.21 6.26	12.47		36.4		13.61		
7.70	55.00	57.17	52.90		8.30 6.17	59609 14.47		1762 38.0		60067 16.00		
45.30	42 4.00	59.20	56.30			5609		62		6067		
47.00	6.30	44 2.40	46 4.50		12.43 6.22	31.03 15.65		0 31.24		20.63		
48.95	9.00	11.10	6.70		14.50 6.28	6.206 20.78	22792	~25.50		23.00	25380	
39 26.90	19.00	13.37	7.60		16.57 6.23	22.80	2279			25.45	2538	
28.80	21.25	16.47	18.50		18.65 6.18	24.83				27.82	13348	
—	23.40	25.40	20.45		−20.78 6.12	11396 26.90				12690 30.00		25 3692
	31.60	28.07	24.75			1396		0 3524		2690	26 6.740	
	35.50	32.28	33.60									+29.82
	37.90	41.30	36.75		6.268							
	46.28	43.20	40.02		6.239							

R 36 44.35
R 35 45.42
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R 24 37.40
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Sept. 18/19

h	m	s		m	s			
11	48	1.20		48	58.0	50	9.00	
		3.30	5326		59.3		11.00	13.146
		5.36	5.33		0.7		13.14	13.15
		7.40			2.0		15.24	
	2663	9.37		3037	3.7	6573	17.35	
		2663			37		1573	
		13.39		49	074		21.40	
		15.62			38.86		23.60	
		17.70					25.60	
		20.80	21.919				27.68	29.803
		21.80	2192				29.90	2980
		23.90	2185				32.00	2978
		26.00					34.00	
		28.00					36.00	
	19727	30.06				26823	38.05	
		1727					8823	
		34.25	8				42.20	
		36.34	3872				44.30	46398
		38.30	3837				46.47	4640
		40.44	4370				48.52	5955
	19186	42.53		49	074	23199	50.50	
		4186	48 21.885		-38.86		3199	50 29.790

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Sept. 19/20

h	m	s		m	s		
11	51	33.40		52	36.7		
		35.70			38.3		
		38.24			39.6		
		40.78			40.9		
		41.48		1983	42.8		
					483		
		45.78		50	39.66		
		47.65					
		49.81					
		52.00	53919				
		54.00	5392				
		56.00					
		57.90					
		0.10					
	48527	2.03					
		3527					
		6.30					
		8.20	10,400				
		10.40	1040				
		12.50					
	5200	14.60		52	39.66		
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Sept. 20/21

11	55	3.94			56	19.2	57	13.99		56	41.6		15	10	13.60			10	6.4
		6.00				20.5		14.04			42.8				15.60	17714			8.0
		8.00				21.8		16.04			44.2				17.70	1771			9.6
		10.15				23.4		18.04			46.0				19.77				11.0
		12.15			1104	25.5		20.06		2223	47.7			8857	21.90			475	12.5
					104					223				3857				475	
		16.25			56	22.08		24.25		56	44.46				26.04			10	6.50
		18.30						26.30							28.10				+24.94
		20.40						28.48							30.30				
		22.45	24563					30.53	32571						32.37	34463			
		24.55	2456					32.50	3257						34.40	3446		11	4.5
		26.62						34.68							36.60	3442			5.8
		28.74						36.70							38.80				7.4
		30.58						38.80							40.78				9.3
	22107	32.88					29314	40.90						31017	42.78			379	10.9
		4107						2314							4017			379	
		37.03	41.098					45.03							46.90			11	758
		39.12	4116					47.00	49166						49.00	51118			-33.14
		41.20	4110					49.20	4917						51.10	5112			
		43.00						51.30							53.25	6883			
	20549	45.14			56	2208	24583	53.30		56	4446			25559	55.33			10	950
		549						4583							559	10 34440		11	758

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Sept. 21

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Sept. 21

h	m	s		m	s												
15	29	15.00		29	14.5	15	28	2.35		37	50.8	15	52	53.30		52	41.6
		17.40	19.678		16.0			4.20	6402		52.2			55.48	57776		43.3
		19.67	1968		18.0			6.38	640		53.6			57.80	5778		44.9
		22.05			20.0			8.48			55.2			0.00			46.3
	9839	24.27			21.5		3201	10.60		2687	56.9		28888	2.30		2243	48.2
		4839			400			3201			187			3888			243
		28.90		29	18.00			14.84		37	5374			6.70		52	4486
		31.22			+20.20			16.90			+29.35			9.00			+30.79
		33.55						19.00						11.27			
		36.00	38.199					20.98	23.109					13.38	15,666		
		38.30	3820	30	9.8			23.00	2311	38	48.5			15.64	1567	53	46.4
		40.54	3820		11.6			25.17	2307		50.0			17.85	1563		48.2
		42.78			13.2			27.22			51.5			20.19			50.0
		45.20			15.0			29.48			52.7			22.38			51.5
	34379	47.40			663 16.7		20798	31.45		2567	54.0		14099	24.58		2493	53.2
		8379			163			2798			67			5099			493
		52.06		30	1326			35.60		38	5134			28.94		53	59.86
		54.43	56722		−35.06			37.65	39744		−28.25			31.25	33470		−49.21
		56.75	5672					39.76	3974					33.48	3347		
		59.00	7640					41.76	4614					35.70	151.25		
	28361	1.37		29	1800		19872	43.95		37	5374		16735	37.92		52	4486
		3361	29 38.200	30	1326			4872	38 2309	38	5134			1735	53 15.650	53	4986
					+20.20						+29.35						+30.79
					−35.06						−28.25						−34.21
					55.20						57.60						66.00
					1.74241						1.76042						1.81291
					1.12552						1.17302						1.14243
					2.86793						2.93344						2.95534
					1.82347						1.87262						1.90617
					8.95554						8.93918						8.95083
					5929						4586						5610

B	13	43.18	·	B	32	485	·	B	35	53.10	·						
B	14	49.82	·	B	33	19.67	·	B	37	13.75	·						
R	14	49.82	·	R	33	19.38	·	R	37	13.57	·						
R	14	49.62	·	R	33	19.30	·	R	37	13.75	·						
B	14	49.85	·	B	33	19.38	·	B	37	13.62	·						
	14	49.78	·		33	1943	·		37	13.67	·						
		66.60				74.58				80.57							

212 α Serpentis

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594 S Scorpii

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595

β Scorpii

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		15	58	—		59	0.2		16	7	44.28		7	30.7	+23.80	16	21	41.50	4.50	21	24.7
				—			1.7				46.40	48448		32.7	20.68	4.38		43.70	46032		26.6
				—			3.4				48.46	4845		34.0	18.40	4.46	4.406	46.06	4603		28.3
				—			5.0				50.55			35.4	16.10	4.40		48.30			30.0
				—			170 6.7			24224	52.55			1698 37.0	13.79	4.39	23016	50.60		1414	31.8
							170				4224			198				3016			414
				—		59	340				56.70		7	3396	9.20	4.37	39.41	55.17		21	28.28
				—			−34.46				58.80			+31.03	6.40	4.37	4.39	57.47			+ 36.11
				—							0.90				4.39	4.39		59.80			
				—							3.00	5.011			+2.27	4.27		2.00	4382		
				—		59	14.4				5.00	501	8	34.0	−0.30	4.38		4.38	4.38		
							15.8				7.00	4.98		35.5	2.28	4.42		6.70			
−4.38	28.90	86.41	33.28				17.0				9.14			37.0	4.60	4.37		8.97			
6.57	28.93	28.936	35.50				18.6				11.26			38.8	6.90	4.40		11.30			
8.77	28.98		37.75				858 20.0			58510	13.30			1854 40.1	−9.21	4.44	57944	13.65			
							358				4.510			354				3944			
13.13	29.02	144.72	42.15		466	59	17.16				17.40		8	37.08				—			
15.32	28.88	28.944	44.20		46966		−48.22				19.40	21500		−32.09				—			
17.51	28.89		46.40		4647						21.45	2150						—			
19.70	29.00		48.70								23.60	129.95						—			
21.95	28.93	232.33	50.82			59	340			10750	25.65		7	3396				—		21	2828
			~~3183~~			59	17.16				750	8 4.995	8	3708							
			3233											+31.03							
		28.940												− 32.09	4.348						
		28.941												63.12	4.388						
														1.80017							
														1.17533							
														2.97550							
														2.16029							
														9.18479							
														~~8.44425~~	842.3						

B 49 14.55 ·
B 49 33.10 ·
R 49 32.52 ·
R 49 32.55 ·
B 49 32.47 ·
49 32.58 71·

B 43 1.22 ·
B 44 25.72 ·
R 44 26.05 ·
R 44 25.80 ·

44 25.86 71
144.64

B 28 37.28 ·

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η Herculis

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h	m	s	m	s		m	s		m	s		m	s
16			22	48.0	16	30	13.65		30	4.7	16	38	22.11			38	14.4
				51.0			15.70	17.880		6.6			24.80	27.412			16.5
				53.7			18.00	1788		8.0			27.40	2741			18.0
				56.5			20.00			9.4			30.00				20.1
			2694	0.2		8940	22.05		397	11.0		13706	32.75			907	21.7
				194			3940			397			3706				407
			22	53.88			26.22		30	7.94			38.05			38	18.14
				−29.87			28.33			+26.70			40.73				+30.60
							30.45						43.53				
							32.60	34643					46.04	48.771			
			23	53.4			34.70	3464	31	3.6			48.78	4877		39	19.9
−4.35	−23.95	22	28.30				36.75	3464		4.9			51.46	48.72			21.7
8.73	23.91	95.84	32.64				38.82			6.3			54.02				23.2
13.04	23.96	23.980	37.00				40.92			8.0			56.75				25.2
17.48	24.02		41.50		3164	9.2		31179	322	9.4		43894	59.58			1172	27.2
							43.00	4179		322			7894				172
26.18	24.09	120.27	50.27				47.20		31	6.44			4.68			39	23.44
30.55	24.10	24.084	54.65	−8.996			49.36	51402		−31.80			7.40	10.020			−34.70
34.92	24.08		59.00	59.00			51.40	5140					10.02	1002			
39.28	24.10		3.38				53.45	6928					12.70	9743			
43.78	23.98	2948	7.68		22	53.88	55.60		30	7.94		5010	15.30			38	18.14
			4498		24	3.28		701	30	34640	31	6.44		010	38	48.745	39	23.44
												+26.70						+30.60
												−31.80						−34.70
												58.50						65.30
24.017												1.76716						1.81491
24.012												1.16901						1.06567
												2.93617						2.88058
												1.89321						1.83467
												8.95704						8.95409
												5 10 53 33						5 8 27

B 34 51.85 ·
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B 39 10.68 ·
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B 11 44.62 ·
B 12 52.85 ·
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17	3	9.95			3	43.4	17	8	51.00			8	42.9	17	53	18.03			52	58.7
		12.05	14214			45.1			53.00	55260			44.6			21.42	24756			1.5
		14.20	1421			47.0			55.20	5526			46.0			24.80	2476			3.4
		16.40				48.2			57.40				47.5			28.06				5.8
	7107	18.47			2337	50.0		27630	59.60			2302	49.2		12378	31.47			3172	7.8
	2107				237			2630				302				2378				172
		22.95			3	4674			3.70			8	4604			38.04			53	3.44
		25.00				−15.32			6.05				+26.27			41.46				+47.88
		27.00							8.02							44.70				
		29.27	31391						10.26	12.339						48.04	51.416			
		31.40	3139		3	58.4			12.40	1234		9	41.0			51.52	5142		54	28.5
		33.50	3146			0.2			14.50	1228			42.8			54.65	5122			31.2
		35.60				1.4			16.60				44.3			58.00				33.5
		37.80				3.0			18.72				45.7			1.33				36.0
	28252	40.00			3076	4.6		11105	20.80			2212	47.4		46274	4.80			1679	38.7
	1252					76			2105				212			1274				479
		44.40			4	152			25.00			9	4424			11.20			54	29.58
		46.70	48708			−90.10			27.10	29.298			−31.93			14.65	17676			−38.26
		48.78	4871						29.26	2930						17.85	1768			
		50.90	6292						31.48	14456						20.10	10244			
	24354	52.96			3	4674		14649	33.65			8	4604		8838	24.58			53	344
	4354		3	31425	4	152		4649		9	12.310	9	4424		3838		53	5732	54	3358
						−15.32							+26.27							+47.88
						−30.10							−31.93							−42.26
													58.20							90.14
													1.76492							1.95492
													1.16197							0.97024
													2.92689							2.92516
													1.88144							1.87541
													8.95455							8.95325
													5847							5752

B	54	55.05	·
B	55	15.95	·
R	55	16.02	·
R	55	16.22	·
	55	16.06	
	2101		

B	48	40.22	·
B	49	56.22	·
R	49	56.20	·
R	49	56.45	·
B	49	56.47	·
	49	56.33	·
		76.11	

B	50	30.10	·
B	51	45.62	·
B	51	45.75	·
	51	45.68	
		75.58	

237

α Herculis

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β Draconis

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Sept. 21

h	m	s	m	s												
18	8	54.37	3	58.2	3	26	56.40			26	49.6	3	33	57.03		33	37.1
	9	4.30					58.32	0.474			51.2			0.20	3186		39.3
		15.90	5	1.7			0.40	0.47			53.0			3.00	319		42.0
		26.75		59.3			2.47				54.6			6.35			44.7
		39.20				30.237	4.78			2641	55.7		31593	9.85		2099	46.8
		50.65	7	35.3			2.37				141			1593			99
	10	1.93					9.02			16	5282			15.40		33	4198
		14.01	(2 | 27.0)			11.00				+24.36			18.47			+45.66
		25.00					13.03							21.60			
		36.48					15.00	17.182						24.65	27.679		
		49.00					17.24	17.18		27	47.8			27.67	2768	35	6.2
	11	0.45					19.36	17.19			49.6			30.70	2760		9.0
		12.05					21.23				51.0			33.78			11.5
		24.00					23.40				52.4			36.89			13.5
		35.90				15464	25.36			2550	54.2		24911	39.95		559	15.7
		47.30					6464				50			6911			59
		58.56					29.68			27	51.00			46.00		35	111.8
	12	10.80					31.72	33918			−33.82			49.02	52.010		−43.54
		23.18					33.91	3392						52.00	5201		
		34.04					36.05	3439						55.03	55.20		
		45.75				16959	38.18			26	5282		26005	58.00		33	41.98
		57.77					1959	27 17185		27	5100			1005	34 27640	35	11.18
	13	9.30									+24.36						+45.66
		19.90									−33.82						−43.54
		32.55									58.18						89.20
										1.76477						1.95636	
										1.16962						1.00660	
										2.93439						2.95696	
										1.88969						1.90455	
										8.95530						8.94759	
										59 19						53 54	

B 44 46.20.
B 44 56.18.
B 45 00.00.
B 45 8.65.
B 45 17.55.

B 11 17.15.
B 12 34.80.
R 12 34.65.

12 34.72
77.57

B 56 40.98.
B 58 1.25.

58 1.25
80.27

56

ε Eridani

h m s
3 27 14

° '
−9 52

1.17609 0.12621
9.99363
1.16962

57

1 Persei

h m s
3 34 19

° '
+47 24

1.17609 0.12621
9.83051
1.00660

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550 δ Eridani

h m s
3 37 27

° ′
−10 10

1.17609 0,12621
9.99313
1.16922

61 η Tauri

h m s
3 40 18

° ′
+23 44

0,12621

63 ζ Persei

h m s
3 46 32

° ′
+31 31

1.17609 0,12621
9.93069
1.10678

3 37 9.50 | 11.60 | 13.65 | 15.75 | 6830 17.80 | 1830
13660
1366

36 55.9 | 57.8 | 0.0 | 1.5 | 2982 3.0 | 482

40 36.0 | 38.2 | 40.0 | 42.0 | 1992 43.0 | 492

3 46 14.02 | 16.40 | 18.90 | 21.25 | 9425 23.68 | 4425
18850
1885

46 4.3 | 6.0 | 8.2 | 10.2 | 408 12.1 | 408

22.14 | 24.04 | 26.34 | 28.34 | 30.47 | 32.50 | 34.50 | 36.78 | 27411 39.00 | 411
30457
3046
3043

36 59.64 +9.02 23.47
+30.80 6.76 23.96
4.50 23.40
+2.23 23.23
37 59.4 +0.00 23.46
1.3 2.24 23.51
3.3 4.51 23.39
5.0 6.76 23.42
3158 6.8 9.03 23.47
158

40 14.45 | 210.71 16.60 | 23.411 18.90 | 21.00 | 23.46 | 25.75 | 27.90 | 30.18 | 21074 32.50 | 3074
23.416
2342

40 39.84
−16.41
40 55.2 | 57.3 | 58.9 | 0.8 | 2945 2.3 | 445

28.50 | 31.00 | 33.38 | 35.90 | 38.84 | 40.77 | 43.15 | 45.60 | 84464 48.00 | 7464
38.293
3829
3825

46 8.16
+30.11
47 9.2 | 10.8 | 12.9 | 14.6 | 640 16.5 | 140

48.00 | 45.15 | 47.00 | 49.46 | 23601 51.40 | 3601
47202
4720
6086
37 30445

38 316 17.52 23.48
−32.72 15.78 23.47
18.89 23.46
20.24 23.57
36 5964 22.61 23.39
38 316
+30.80
−32.72 23.436
63.52 23.430
1.80291
1.16922
2.97213
1.93389
8.96176
5 13 55

117.31 37.00 | 23.462 39.25 | 41.50 | 43.70 | 20745 46.00 | 745
41490
4149

40 5890
−35.47
40 3984
40 5890

62.80 | 55.18 | 57.60 | 0.10 | 28818 2.50 | 3818
57636
5764
7649
46 38270

47 12.80
−34.53
46 8.16
47 12.80
+30.11
−34.53
64.64
1.81050
1.10678
2.91728
2.12931
9.21203
9 15 16

B 29 24.02
B 30 49.90

30 49.90
85.88

B 37 8.49
B 37 17.88
R 37 17.82
R 37 17.88
B 37 17.81
~~37 17.85~~
9.36

B 33 2.58
B 35 16.98
R 35 17.22
R 35 17.58
~~B 35~~
35 17.26
13468

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1880phae.proj.1512.

552

γ ζ' Eridani

h m s
3 52 23
° '
−13 51
1.17609 0.12621
9.98719
1.16328

1880
Sept. 21

h	m	s		m	s	
−3	52	4.77		51	55.0	16
		6.77	9.002		56.8	
		9.03	9.00		58.5	
		11.14			59.8	
	4501	13.30		2919	1.8	
		4501			419	
		17.56		51	58.38	
		19.62			+27.57	
		21.62				
		23.78	25.948			
		25.9.	2595	52	55.0	
		28.05	25.98		56.4	
		30.26			58.3	
		32.33			0.3	
	23353	34.40		2922	2.2	
		5353			452	
		38.76		52	5904	
		40.83	42960		−33.04	
		42.98	4296			
		45.00	51.96			
	21480	47.20		51	5838	
		1480	52 25.965	52	5844	
					+27.58	
					−32.48	
					60.06	
					1.77859	
					1.16328	
					2.94187	
					1.89337	
					8.95150	
					5 6.38	

B	10	9.55 '
B	11	27.52 '
R	11	28.02 '
R	11	27.95 '
B	11	27.62 '
	11	27.78 '
		78.23

226

η Draconis

h m s
16 22 22
° '
~~−18 13~~
+61 47

B	43	9.82 '				
B	42	13.98 '				
B	42	48.85 '				
R	42	48.88 '				

0.12621

73

α Tauri

h m s
4 28 39
° '
+16 16

h	m	s		m	s	
4	28	42.05				28 31.7
		44.17	46352			33.4
		46.31	4635			35.5
		48.53				36.9
	23176	50.65				1757 38.2
		3176				257
		54.92				28 3514
		57.16				+28.45
		59.35				
		1.44	3586			
		3.60	359			29 35.6
		5.80	359			37.0
		8.00				38.5
		10.00				40.0
	57227	12.00				1929 41.8
		3227				429
		16.48				29 3858
		18.60	208-16			−34.99
		20.78	2082			
		23.02	12717			
	10408	25.20				28 3514
		408	29 3590			29 3858
						+28.45
						−34.99
						63.44
						1.80236
						1.15835
						2.96071
						1.91719
						8.95648
						5 10.9

B	4	16.22 '
B	5	38.70 '
R	5	38.90 '
R	5	39.08 '
R	5	38.75 '
	5	38.86
		82.64

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1880phae.proj.1512.

79 i Aurigæ

h m s
4 49 07
° ′
+32 38

1.17609 0,12621
9.92376
1.09985

84 β Eridani

h m s
5 1 54
° ′
−5 15

1.17609 0,12621
9.99817
1.17426

86 α Aurigæ

h m s
5 7 46
° ′
+45 52

0,12621

4	48	48.50			48	35.5	5	1	36.30			1	31.1	5	7	23.46			7	11.3		
		51.30	53640			37.7			38.40	40492			32.7			26.68	29.478			13.8		
		53.60	5364			39.0			40.40	4049			34.7			29.40	2948			15.5		
		56.00				41.3			42.56				36.6			32.35				17.3		
	26820	58.50			1961	42.6		20246	44.80			1731	38.0		14739	35.50			773	19.4		
		1.820				461			2.46				231			4.39				273		
		3.50			48	3922			48.70			1	34.62			41.40			7	1546		
		6.05				+34.17			50.87				+22.45			44.47				+37.80		
		8.47							53.00							47.38						
		11.10	13.434						55.14	57.093						50.35	53272					
		13.55	1343		49	53.5			57.00	5709		2	26.2			53.30	5327					
		15.88	1336			55.7			59.30	5706			27.8			56.30	58.25					
		18.26				57.5			1.20				29.3			59.15						
		20.80				59.8			3.20				31.9			2.10						
	12091	23.30			2879	1.4		51384	5.43			1492	34.0		47945	5.00						
		3091				379			6.384				492			2.945						
		28.05			49	57.58			9.50			2	23.84			11.00						
		30.53	33072			−44.19			11.60	13630			−32.77			14.00	17.020					
		33.00	3307						13.60	1363						17.00	1702					
		35.50	14671						15.75	114.12						19.95	10650					
	16536	38.28			48	3922		6815	17.70			1	3462		8510	23.15			7	1546		
		1.536	49	13395	49	5758			1815	1	57075	2	2984			3510	7	53.260		+37.80		
						+34.17							+22.45									
						−44.19							−32.77									
						78.36							55.22									
						1.89409							1.74210									
						1.09985							1.17426									
						2.99394							2.91636									
						1.93972							1.87192									
						8.94578							8.95556									
						5239							5930									

B	7	13.05	·					B	34	16.32	·					B	28	36.58	·				
B	8	40.88	·					B	35	30.68													
R	8	41.18	·					R	35	30.88													
R	8	41.12	·																				
R	8	41.20	·																				
		5.4109	·							35.30.78	·												
		87.04								74.46													

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87 β Orionis

h m s
5 8 44
0 '
−8 21

0.12621

91 γ¹ Orionis

h m s
5 18 38
0 '
+6 14

0.12621

93 δ Orionis

h m s
5 25 30
0 '
−0 24

0.12621

1880 Sept. 21

h	m s		m s	5	18 21.40		18 12.3	5	25 32.03		25 23.4
	—		8 55.0		23.42	25566	13.7		34.08	36108	25.4
	—		56.9		25.58	2557	15.1		36.08	36.11	27.0
	—		59.1		27.65		16.6		38.20		28.4
	—		0.2		12783 29.78		762 18.5		18054 40.18		1341 29.9
			2931 1.9		2783		262		3054		341
	—		431		34.00		18 15.24		44.20		25 26.82
	—		8 5862		36.05		+26.78		46.47		+25.84
+4.17	45.97	32247 41.30	− 12.56		38.02				48.50		
2.06	46.06	46.067 44.00			40.18	42248			50.80	52681	
+0.10	46.05	46.05	9 28.7		42.25	4225	19 10.0		52.66	5268	
2.88	46.10	48.18	30.1		44.25	4220	11.5		54.78	5265	
4.17	45.95	50.12	31.5		46.38		13.0		56.80		
6.26	46.29	52.55	32.7		48.50		14.6		58.92		
8.38	46.15	54.56	1574 34.4		88023 50.60		661 17.0		47413 1.00		
			74		2023		161		2413		
12.37	46.04	230.26 58.60	9 3.148		54.80		19 1322		5.00		
14.60	46.10	46.0520.70	−45.42	2.750	56.57	58818	−31.00		7.10	9.186	
16.69	46.06	2.75		275	58.88	5882			9.18	919	
18.77	45.93	4.70			0.80	8439			11.35	10530	
+20.92	46.08	31375 7.00	8 5862		29409 3.04		18 1544		4593 13.30		25 2682
		1375	9 31.48		4409	18 42225	19 1322		4593	25 52665	
							+26.78				+25.84
							−31.00				

46.054
46.061

B	40 49.58			B	5 41.30	− 43 13.32	
B	41 33.80			B	6 58.42		
R	41 33.85			R	6 4.75		
R	41 33.82						
B	41 33.80						
	41 33.82				6 ~~3158~~		
					~~5028~~		

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556		96		b	
α Leporis		ι Orionis		α Columbae	
h m s 5 27 24		h m s 5 29 31		h m s 5 35 16	
° ′ −17 55	0.12621	° ′ −6 0	1.17609 0.12621 9.99761 1.17370	° ′ −34 8	0.12621

α Leporis

5 27 3.50
5.90 8034
7.95 803
10.35
4017 12.47
4017
16.90
18.85
21.00
23.34 25.421
25.45 2542
27.55 2542
29.80
31.85
22879 34.05
4879
38.48
40.62 42796
42.88 4280
45.00 5083
21398 47.00
1398 27 25.420

26 51.2
53.3
54.7
56.5
2740 58.3
240
26 5460
+30.62

26 5480
+30.62

ι Orionis

5 29 13.03
15.03 17072
17.14 1707
19.00
8536 21.16
3536
25.30
27.46
29.50
31.54 33560
33.50 3356
35.46 3361
37.58
39.70
30204 42.00
3204
46.00
48.00 50.150
50.20 5015
52.18 6722
25075 54.37
075 29 33.585

29 2.0
3.7
5.4
7.2
268 8.5
268
29 536
+28.22
30 1.0
2.5
4.4
6.2
221 8.0
221
30 442
−30.84

29 536
30 442
+28.22
−30.84
59.06
1.77129
1.17370
2.94499
1.90531
8.96032
5 1253

α Columbae

5 34 51.35
53.70 56330
56.30 5633
59.00
28165 1.30
3165
6.40
8.92
11.35
13.76 16330
16.38 1623
18.70 1629
21.16
23.90
14697 26.40
5697
31.30
33.80 36246
36.28 3625
38.75 15258
18123 41.10
3123 35 16.310

34 45.3
48.2
50.4
52.3
362
34 4724
29.06
35 47.6
49.8
51.7
53.3
2574 55.0
74
35 5148
−35.17

35 51.48
−35.17

B 13 28.25 ·

B 18 58.50 ·
B 20 18.98 ·
R 20 18.52 ·
B 20 19.22 ·

20 18.91 ·
80.41

B 29 5.42 ·
B 29 13.72 ·
R 29 13.52 ·
B 29 13.48 ·

29 13.57 ·
68.15

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100

κ Orionis

h m s
5 42 1
° ′
−9 43

1.17609 0.12621
9.99372
1.16981

1880
Sept. 21

h	m	s		m	s												
5	41	42.50		41	35.2	5	48	20.00		48	19.3	6	7	44.90		7	11.8
		44.50	46640		37.0			22.20	24138		20.7		8	17.85			
		46.63	4664		38.5			24.12	2414		22.5			57.40		8	42.0
		48.67			39.8			26.00			23.3		9	33.60			
	23320	50.90		1918	41.3		12069	28.37		1103	24.5		10	3.80		10	56.7
		3320			418			2069			103			40.05			
		55.00		41	3836			32.37		48	22.06		11	18.05			
		57.13			+25.10			34.65			+18.76			57.50			
		59.16						36.78					12	22.05			
		1.30	3369					38.80	40822								
		3.25	337	42	37.8			4090	4082	49	9.0						
		5.40	335		34.2			43.00	4083		10.8						
		7.62			35.6			44.90			12.4						
		9.66			37.0			47.00			14.1						
	57032	11.80		1781	38.5		36740	49.00		618	15.5						
		3032			281			740			118						
		15.95		42	3562			53.35		49	12.36						
		17.90	20070		−32.26			55.43			−31.54						
		20.00	2007					57.55	5753								
		22.20	12671					59.60	8167								
	10035	24.30		41	3836		28763	1.70		48	22.06						
		035	42 3360	42	3562				48 40825	49	1236						
					+5.00						+18.76						
					−32.26						−31.54						
					57.26						50.30						
					1.75485						1.70157						
					1.16981						1.17247						
					2.92766						2.87404						
					1.87846						1.83340						
					8.95080						8.95936						
					5 69						5 12 12						

102

δ Orionis

h m s
5 48 37
° ′
+7 23

1.17609 0.12621
9.99638
1.17247

256

Pleiades Nimbus Lt. 6.

h m s
6 11 2
° ′
93 24

0.12621

B	2	19.28	·	B	57	18.98	·	B	59	53.42	·						
B	3	34.82	·	B	58	27.12	·	B	59	45.32	·						
R	3	34.90	·					B		—							
B	3	34.90	·														
	3	34.87	·	5	8	27.12	·										
		75.59				68.14											

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106

μ Geminorum

h m s
6 15 39
° '
+22 24

1.17609 0.12621
9.96541
1.14150

6	15	20.68			15	9.5	6	30	23.78			30	22.0	6	39	28.50			39	15.2
		22.90	25156			11.5			28.00	30088			23.5			30.60	32822			16.6
		25.20	2516			12.8			30.04	3009			24.8			32.86	3282			18.3
		27.40				14.2			32.27				26.0			35.00				20.0
	12578	29.60			638	15.8		15044	34.35			1236	27.3		16411	37.15			915	21.4
	2578				638				044				236			1411				415
		34.00			15	1276			38.65			30	2472			41.45			39	1830
		36.30				+30.31			41.00				+22.56			43.66				+31.78
		38.67							43.00							45.71				
		40.72	43079						45.15	47.294						48.04	50100			
		43.15	4308		16	12.3			47.25	4729		31	20.0			50.16	5010		40	22.3
		45.30	4306			14.0			49.50	4727			21.5			52.32	5007			23.7
		47.60				15.3			51.55				22.8			54.38				25.1
		49.97				17.0			53.75				24.4			56.48				26.4
	38771	52.20			782	19.6		42565	55.80			1150	26.3		45090	58.70			1251	27.6
	2771				282				6565				150			090				251
		58.50			16	1564			0.30			31	2300			3.00			40	2502
		58.70	0956			−32.57			2.27	4442			−35.72			5.10	7314			−34.64
		0.98	096						4.40	444						7.27	731			
		3.20	8612						6.54	9453						9.50	10013			
	30478	5.40			15	1276		2221	8.70			30	2472		3657	11.70			39	1830
	478		15	43070	16	1564		2221		30	47.280	31	2300		3657		39	50085	40	2502
						+30.31							+22.56							+31.78
						−32.57							−35.72							−34.64
						62.88							58.28							66.72
						1.79851							1.76552							1.82426
						1.14150							1.15783							1.15771
						2.94001							2.92335							2.98197
						1.89109							1.87093							1.92283
						8.95108							8.94758							8.94086
						56 20							53 54							4 59 15

107

χ Geminorum

h m s
6 30 43
° '
+16 30

1.17609 0.12621
9.98174
1.15783

564

χ Loc. Maj

h m s
6 39 49
° '
−16 33

1.17609 0.12621
9.98162
1.15771

B 46 10.02
B 47 28.08
R 47 28.10
R 47 28.48
B 47 26.70
47 27.64
77.82

B 50 35.40
B 51 49.65
R 51 49.75
R 51 49.68
B 51 49.68
50 49.69
74.29

B 52 17.88
B 53 41.72
R 53 41.48
53 41 60
83.72

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1880phae.proj.1512.

568

S Com. Maj

h m s
7 3 28
° ′
−26 12

1.176090 0.12621
9.952922
1.129012

118

β Com. Min

h m s
7 20 33
° ′
+8 22

1.176090 0.12621
9.995177
1.171267

119

δ Com.

h m s
7 26 52
° ′
+32 49

1.17609 0.12621
9.927711
1.103802

1880
Sept. 21

h	m	s		m	s		h	m	s		h	m	s		h	m	s	
7	3	5.38		2	36.6		7	20	17.25			20	6.8		7	26	33.01	
		7.79	10006		58.3				19.38	21452			8.4				35.58	38004
		10.00	1001		0.2				21.38	2145			9.7				38.03	3800
		12.22			2.2				23.60				11.0				40.50	
	5003	14.64		3011	3.8			10726	25.65			483	12.4			19002	42.90	
		003			11				724				483				4002	
		19.30		3	022				29.79			20	966				47.90	
		21.56			+28.24				31.93				+28.48				50.30	
		23.84							34.00								52.70	
		26.24	28486						36.02	38223							55.00	57578
		28.53	2849	3	59.9				38.20	3816		21	6.3				57.60	5758
		30.75	2843		1.6				40.77	3813			7.8				0.03	57.47
		33.00			3.5				42.30				9.2				2.46	
		35.39			5.3				44.45				11.0				4.88	
	25637	37.76		3181	7.8			34341	46.55			464	12.1			51820	7.33	
		7637			181				7401				464				6820	
		42.27		4	362				50.68			21	928				12.02	
		44.58	46848		−35.16				52.70	54812			−31.14				14.50	16988
		46.76	4685						54.78	5481							16.95	16.94
		49.10	5686						56.90	76.26							19.32	11494
	23424	51.53		3	022			27406	59.00			20	966			8469	21.90	
		3424	3 28460	4	362				2406	20 38145		21	928				3469	26 57525
					+28.24								+28.48					
					−35.16								−31.14					
					63.40								59.62					
					1.80209								1.77539					
					1.12901								1.17126					
					2.93110								2.94665					
					1.88502								1.89905					
					8.95392								8.95240					
					5 8 20								5 7 16					

B	30	35.60	·	B	48	29.70	·	B	11	57.95	·							
B	31	52.38	·	B	49	48.95	·	B	13	10.62	·							
R	31	52.28	·	R	49	49.10	·	R	13	10.90	·							
R	31	52.32	·	R	49	48.85	·	R	13	10.90	·							
B	31	52.38	·	B	49	48.95	·	B	13	10.62	·							
	31	52.34	·		49	48.96	·		13	10.76	·							
		76.74				79.26				72.81								

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120

d Can. Min.

h m s
7 32 58
° ′
+5 32

1.17609 0.12621
9.99797
1.17406

7	32	39.70			32	27.5			
		41.78	40.874			28.8			
		43.88	4387			30.4			
		45.96				31.9			
	21937	48.05			1519	33.3			
		1937				19			
		52.17			32	3038			
		54.30				+30.09			
		56.35							
		58.40	0.480						
		0.50	048		33	30.5			
		2.48	047			32.0			
		4.64				33.5			
		6.70				34.9			
	54432	8.78			1674	36.5			
		432				174			
		12.95			33	3348			
		15.00	1.070			−33.01			
		17.00	107						
		19.15	12 094						
	8535	21.25			32	3038			
		3535	33	0.475	33	3348			
						+30.09			
						−33.01			
						63.10			
						1.80003			
						1.17406			
						2.97409			
						1.92314			
						8.94905			
						54 55			

B 48 17.12 ·
B 49 40.78 ·
R 49 41.02 −

4940.90 ·
83.78

122

13 Gem.

h m s
7 37 33
° ′
+28 19

1.17609 0.12621
9.94465
1.12074

7	37	35.53			37	24.0			
		37.73	40.146			25.7			
		40.17	4015			27.4			
		42.50				29.0			
	20073	44.80			1371	31.0			
		073				371			
		49.44			37	2742			
		51.90				+31.50			
		54.20							
		56.60	58.926						
		59.00	5893		38	28.9			
		1.23	58.91			30.7			
		3.61				32.4			
		6.05				34.1			
	53033	8.30			1623	36.2			
		8033				123			
		13.00			38	3246			
		15.35	17.680			−33.54			
		17.65	1768						
		20.05	11783						
	8840	22.35			37	2742			
		8840	37	58.920	38	3246			
						+31.50			
						−33.54			
						65.04			
						1.81318			
						1.12074			
						2.93392			
						1.88525			
						8.95133			
						56 51			31

B 1 57.82 ·
B 3 14.60 ·

314.60 ·
76.78

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1880phae.proj.1512.

S

Sim. C = 45° 55'

h m s
12 0 9
0 ' "
−0 0 59

0.12621

181

J Urs. May

h m s
13 42 46
° ' "
+49 33

0.12621

1880 Sept. 21/22

Sept. 22

h	m	s		m	s												
11	58	35.30		59	37.1	0	43.27		0	0.7		13	42	—		43	18.2
		37.45	39.492		38.3		45.30	4.7424		2.5				—			15.8
		39.58	3949		39.7		47.45	474.2		3.8				—			17.5
		41.56			41.0		49.50			4.9				—			19.7
	19746	43.62		1988	42.7	23712	51.60		182	6.3				—		887	22.5
	4746			488		3712			182							387	
		47.72		59	3976		55.62		0	3.64		+12.82	46.58	418.95	33.76	43	17.74
		49.80			−43.77		57.70		+1	0.30		9.61	46.56	46.538	36.95		−31.15
		51.90					59.95					6.40	46.44		40.04		
		53.95	56.024				2.00	3.969				+3.17	46.47		43.30	46.556	
		56.00	5602				4.00	397				−0.20	46.58		46.58	46.56	48 30.2
		58.10	5597				6.05	391				3.20	46.60		49.80		32.7
		0.15					8.05					6.41	46.59		53.00		34.8
		2.20					10.10					9.61	46.56		56.17		36.8
	50422	4.40				57572	12.25					12.83	46.57	41900	59.40		1732 39.2
	5422					3572								5900			232
		8.40					16.25					19.22	4673	233.36	5.95	48	34.64
		10.48	12442				18.38	20402				22.48	46.57	46.672	9.00	12326	−48.05
		12.60	1244				20.40	2040				25.69	46.76		12.40	1233	
		14.55	111.93				22.48	12782				28.89	46.69		15.53		
	6221	16.48		59	39.76	10201	24.30		0	3.64		−32.19	46.61	6163	18.75		43 17.74
	1221	58	55995		−43.76		201	1	3.940		+60.30				6163		43 34.64

46.611
46.593

− 4 47.82

22 23.15

B 27 30.80 .
B 27 44.60 .

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93 δ Orionis	556 α Leporis	96 ι Orionis
h m s 5 25 50 ° ′ −0 24	h m s 5 27 24 ° ′ −17 55	h m s 5 29 31 ° ′ −6 0
0.12621	0.12621	0.12621

δ Orionis

5 25	27.47		25	14.7
	29.95	31.824		16.0
	31.80	3182		17.5
	33.90			18.9
15912	36.00		871	20.0
	912			371
	40.27		25	17.42
	42.27			+30.98
	44.42			
	46.37	48.416		
	48.50	4842		
	50.50	4838		
	52.30			
	54.48			
43574	56.63			
	7574			
	0.70			
	2.80	4.936		
	5.00	494		
	7.00	96.76		
2468	9.18		25	1742
	2468	25 48.400		
				+30.98

α Leporis

5 26	59.40		26	47.0
	1.58	3.788		49.5
	3.88	379		51.5
	6.04			53.0
31894	8.04		2560	55.0
	1894			60
	12.20		26	51.20
	14.44			+29.87
	16.70			
	18.90	21.071		
	21.10	2107		
	23.40	21.07		
	25.40			
	27.70			
18964	29.80			
	964			
	33.97			
	36.10	38.354		
	38.50	3835		
	40.60	42.14		
19177	42.60		26	51.20
	4177	27 21.070		
				+29.87

+8.30	29.33
6.22	29.40
4.15	29.45
+2.05	29.52
−0.00	29.63
2.07	29.53
4.15	29.43
6.22	29.36
8.31	29.49
12.45	29.85
14.52	29.48
16.60	29.40
18.68	29.50
20.81	29.37

29.490
29.478

ι Orionis

5 29	—			29	43.0
	—				44.5
	—				47.0
	—				48.8
	—			2338	50.5
					338
265.14	21.03			29	46.76
29.46	23.18				−17.24
	25.30				
	27.47	29.463			
	29.63	2946		30	8.8
	31.60				11.9
	33.58				13.4
	35.58				15.0
26517	37.80			654	16.3
	8517				154
147.60	42.30			31	13.08
29.52	44.00	46.132		−1	44.56
	46.00	4613			
	48.18				
23066	50.18			29	46.76
	3066			30	13.08

B 13 7.12 ·

B 13 28.02 ·

B 19 58.72 ·
B 20 34.75 ·
R 20 34.72 ·
R 20 34.85 ·

20 34.77 ·

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1880 Sept. 22

b α Columbae

h m s 5 35 16
° ′ −34 8

0,12621

h	m s		m s
5	34 47.00		34 37.7
	49.48	52.082	40.0
	52.19	5203	41.6
	54.56		43.2
	26016 56.96		2074 44.9
	1016		74
	1.90		34 41.48
	4.48		+30.49
	7.04		
	9.65	11.977	
	12.03	1198	35 44.6
	14.55	1.96	46.7
	16.88		49.2
	19.46		51.3
	10779 21.80		2448 53.0
	1779		448
	27.00		35 48.96
	29.40	31.894	−36.99
	31.80	3189	
	34.40	14392	
	15947 36.87		34 41.48
	947	35 11.970	35 48.96
			+30.49
			−36.99

100 κ Orionis

h m s 5 42 1
° ′ −9 43

1.17609 0,12621
9.99372
1.16981

h m s		m s
5 41 38.22		41 32.7
40.60	42.424	34.8
42.40	4242	36.6
44.40		38.5
21212 46.50		1826 40.0
1212		326
50.80		41 36.52
53.00		+22.76
55.30		
57.27	59.306	
59.40	5931	42 29.0
1.38	59.26	31.0
3.42		32.8
5.58		34.6
53375 7.60		1636 36.2
8375		136
12.05		42 32.72
14.05	16100	−33.44
16.30	1610	
18.05	11852	
8050 20.05		41 36.52
3050	41 59.285	42 32.72
		+22.76
		−33.44
		56.20
		1.74974
		1.16981
		2.91955
		1.87622
		8.95667
		5 1017

102 α Orionis

h m s 5 48 37
° ′ +7 23

1.17609 0,12621
9.99638
1.17247

h m s		m s
5 48 16.06		48 2.0
18.02	19.992	4.2
19.85	1999	5.8
21.98		7.5
9996 24.05		284 8.9
9996		284
28.47		48 5.68
30.40		+30.94
32.49		
34.30	36.587	
36.50	3659	49 6.9
38.76	36.65	8.3
40.60		9.7
42.76		11.0
32928 45.00		483 12.4
5928		483
49.00		49 9.66
51.20	53310	−33.04
53.45	5331	
55.50	7330	
26655 57.40		48 5.68
1655	48 36.620	49 9.66
		+30.94
		−33.04
		63.98
		1.80604
		1.17247
		2.97851
		1.92480
		8.94629
		5 3 0

B 24 55.00 ·
B 25 10.75 ·

~~25 10.75~~
~~15.75~~

B 2 20.20 ·
B 3 35.32 ·
R 3 35.55 ·
R 3 35.35 ·

3 35.40
75.20

B 57 2.42 ·
B 58 26.48 ·
R 58 26.62 ·
R 58 26.38 ·
R 58 26.60 ·
58 26.52 ·
84.10

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1880phae.proj.1512

256	106	107
S Mon. Min. Lx. Cr.	μ Gem.	γ ζ Gem.
h m s 6 11 2	h m s 6 15 39	h m s 6 30 43
° ′ +23 24	° ′ +22 34	° ′ +16 30
0.12621	0.12621	0.12621

1.17609
9.98174
1.15783

256

6	6	(35.50)	2	23.5
	7	42.00		
		52.70	3	40.3
	8	6.44		
		20.20	5	28.6
		28.75		
		42.50	6	49.2
		55.75		
	9	6.04		
		17.48		
		29.00		
		40.56		
		53.20		
	10	3.60		
		15.20		
		26.50		
		36.20		
		49.70		
	11	1.47		
		12.90		
		25.40		
		35.20		
		47.50		
		58.36		
	12	11.28		
		24.37		

106

6	15	16.45		15	8.5	
		18.45	20840		10.3	
		20.70	2084		12.0	
		23.10			13.7	
	10420	25.50		600	15.5	
		420			100	
		29.95		15	1200	
		32.04			26.77	
		34.26				
		36.60	38.792			
		38.67	38.79			
		41.00	38.76			
		43.18				
		45.53				
	34913	47.90				
		7913				
		52.00				
		54.56	56674			
		56.63	5667			
		58.90	77.51			
	28337	1.28		15	1200	
		3337	15 38.775		+26.78	

107

6	30	21.58		30	9.3
		23.52	25.706		11.0
		25.55	25.71		12.6
		27.98			14.0
	12853	29.90		629	16.0
		2853			129
		34.25		30	12.58
		36.55			+30.38
		38.60			
		40.95	42.944		
		43.00	4294	31	17.9
		45.00	4298		19.9
		47.16			21.7
		49.46			23.4
	38650	51.53		1084	25.5
		2650			84
		56.00		31	21.68
		58.16	0.248		−38.72
		0.20	025		
		2.38	8596		
	30124	4.50		30	12.58
		124	30 42.960	31	21.68

+30.38
−38.72
69.10
1.83948
1.15783
2.99731
1.94379
8.94648
538

B 0 24.30 ·	B 46 14.28 ·	B 50 24.10 ·
B 0 17.42 ·	B 46 14.50 ·	B 51 51.90 ·
B 0 6.45 ·		B 51 52.02 ·
B ~~59~~ 4 58.00 ·		
0 ~~7.26~~ 2.96	46 14.39 ·	51 51.96 ·
		87.86

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1880phae.proj.1512.

564

α Cen. Maj

h m s
6 39 49
° ′
−16 33

1.17609 0.12621
9.98162
1.15771

1880
Sept. 22

h	m	s		m	s																
6	39	24.50		39	21.0	7	3	1.40		3	13.3	7	21	29.00		21	10.0				
		26.50	28.736		23.3			3.93	6064		5.3			31.30	33804		11.6				
		28.74	28.74		25.3			6.07	606		6.7			32.98	3380		13.5				
		30.94			27.3			8.30			8.6			35.19			16.7				
	14368	33.00		1261	29.2		3032	10.62		351	11.2		16902	38.60		705	18.7				
	4368			261			3032			351			4902			205				
		37.28		39	2522			15.20		3	702			43.50		26	1410				
		39.50			+20.77			17.40			+17.40			46.00			+39.17				
		41.70						19.77						48.45							
		43.95	45.989					22.03	24430					50.80	53287						
		46.30	45.99	40	11.9			24.40	2443					53.40	5329	27	28.4				
		48.30	4600		13.5			26.75	2442					55.62	53.26		30.0				
		50.15			15.5			29.00						58.20			31.6				
		52.17			17.0			31.50						0.58			33.0				
	41390	54.55		769	19.0		21987	33.82					47958	3.63		1578	34.8				
	5390			269			3987						2958			78					
		58.90		40	1538			38.30						8.00		27	31.56				
		1.00	3270		−29.39			40.50	42780					10.20	12722		−38.29				
		3.30	327					42.80	4278					12.60	1272						
		5.45	9201					45.00	4884					15.16	10652						
	31635	7.70		39	2522		21390	47.30		3	702		6361	17.65		26	1410				
	1635		39 46795	40	1538		1390		3 24425		+17.40		1361		26 53275	27	3156				
					+20.77												+39.17				
					−29.39												−38.29				
					50.16												7746				
					1.70036												1.88908				
					1.15771												1.10380				
					2.85807												2.99288				
					1.82705												1.93777				
					6.96895												8.94489				
					5 19 9												5 2 2				

B 42 28.60 ·
B 43 35.90 ·
B 43 35.60 ·

43 35.75 ·
67.15

B 30 44.20 ·

B 11 48.65 ·
B 13 15.40 ·
R 13 15.22 ·
R 13 15.45 ·
B 13 15.12 ·
13 15.30 ·
86.65

568

S Cen. Maj

h m s
7 3 28
° ′
−26 12

0.12621

119

α Cen.

h m s
7 26 52
° ′
+32 49

1.17609 0.12621
9.92771
1.10380

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1880phae.proj.1512

120

α Can. Min.

7 32 38
+ 32

1.17609 0.12621
0.99796
1.17405

122

β Gem.

h m s
7 37 33
° ′
+28 18

0.12621

138

α Hydrae

h m s
9 21 38
° ′
−8 8

0.12621

7	32	35.47			32	21.9	7	37	31.17			37	35.5	9	21	14.28		21	8.0
		37.55	39.678			23.8			33.48	35.890			26.9			16.38	18.476		9.7
		39.70	39.68			25.2			35.90	35.89			28.5			13.42	18.48		11.2
		41.70				26.4			38.30				29.9			20.60			12.7
	19839	43.97			1250	27.7		17945	40.60			1417	30.9		9238	22.70		562	14.6
	4839				250			2945				317			4238			62	
		48.05			32	2500			45.27			37	2634			26.82		21	11.24
		50.05				+ 31.32			47.75				+ 28.43			28.88			+ 23.90
		52.10							50.08							31.00			
		54.20	56.350						52.50	54.911						33.00	35.109		
		56.32	56.35		33	24.0			55.00	57.91		38	24.2			35.13	35.11		
		58.48	56.30			25.2			57.40	57.63			25.6			37.00	35.18		
		0.50				26.3			59.87				26.7			39.20			
		2.64				27.5			2.03				27.9			41.40			
	50715	4.81			1315	28.5		49420	4.30			1343	29.9		31598	43.55			
	5715				315			4420				343			4598				
		8.80			33	2630			8.80			38	2686			47.73			
		10.90	12.910			29.98			11.00	13.368			− 32.09			49.80	51.686		
		12.80	12.91						13.34	13.37						51.90	51.89		
		15.05	11.259						15.70	10.926						54.00	50.37		
	6455	17.00			32	2500		6684	18.00			37	2834		25943	56.00		21	11.24
	1455		32	56.325	33	2630		1684	37	54.770		38	2686		943	21	35.145		+ 23.90
						+ 31.32							+ 26.43						
						− 29.98							− 32.09						
						61.30							58.52						
						1.78746							1.76730						
						1.17405													
						2.96151													
						1.91222													
						0.95071													
						56													

B 48 14.60 .
B 49 36.05 .
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49 36.30 .
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R 28 18.02 .
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142					146				148			
E Leonis					α Leonis				ζ Leonis			
h m s					h m s				h m s			
9 38 57					10 1 56				10 9 57			
° ′		1.17609	0,12621		° ′		0,12621		° ′			0,12621
+24 20		9.95960			+12 33				+24 1			
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9 38 34.72		38 21.1	10	—	2 21.3	10	9 33.49		10 8.0			
37.00	39.230	23.2		—	22.6		35.42		10.0			
39.15	39.23	24.9		—	24.2		37.65		11.2			
41.53		26.5		—	25.7		39.95		13.0			
19615 43.75		1234 27.7		—	1208 27.0		42.03		568 14.6			
4695		2.34			208				68			
46.30		38 2468		—	2 2416		46.74		10 11.36			
50.60		+92.68		—	−30.84		49.00					
52.75				—			51.18					
55.18	57374			—			53.51	55.750				
57.40	5737	39 26.2		—	2 36.6		55.75	55.75	10 34.7			
59.65	5735	28.0		—	37.5		58.04		36.0			
1.90		29.2		—	38.3		0.30		37.4			
4.15		30.7		—	39.2		2.48		39.0			
51637 6.44		1465 32.4		—	1918 40.2		50175 4.70		1879 40.8			
6637		465			418		5175		379			
10.95		39 29.30	-12.68 53.32	2 6.00	2 3836		9.40		10 37.58			
13.17	15464	−31.94	-14.50 53.20	266.34 8.00	−45.04		11.65	13.884				
15.45	1546		-16.91 52.58	53.368 10.29			13.97	1388				
17.77	114.69		-19.03 53.27	12.30			16.00					
7732 19.98		38 2468	-21.21 53.17	5097 14.38	2 2416		6942 18.40		10 1136			
27.32	38 57360	39 2930		097	2 38.36		1942	9 55.758	10 37.58			
		+32.68										
		−31.94										
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		1.81037										
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		2.94606										
		1.89955										
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		582										
B 1 15.80				B 48 42.52				B 20 56.48				
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10	12	54.00			12	43.3		10	14	38.40			14	23.9	
		56.20	58444			45.0				41.18	43936			25.4	
		58.42	5844			46.3				44.00	43.94			27.3	
		0.70				48.0				46.60				29.6	
	29222	2.90			2321	49.5			21968	49.50			1375	31.3	
		4222				321				1968				375	
		7.26			12	4642				55.00			14	2750	
		9.47				+24.67				57.93				+38.72	
		11.70								0.62					
		13.90	16.106							3.40	6.206				
		16.05	1611							6.20	6.21		15	45.3	
		18.37	16.07							8.98	6.24			47.8	
		20.50								11.75				49.4	
		22.70								14.57				51.3	
	14495	25.00							39585	17.40			2473	53.5	
		5495								5585				473	
		29.30								22.95			15	4946	
		31.47	33694							25.80	28540			−43.24	
		33.75	3369							28.55	2854				
		35.90	15213							31.30	13248				
	16847	38.05			12	4642			14270	34.10			14	2750	
		1847	13	16.090						4270	15	6.225	15	4946	
						+29.67								+38.72	
														−43.24	
														81.96	
														1.91360	
														1.04648	
														2.96008	
														1.92179	
														8.96171	
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B 15 4.55 .
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12	2	7.00		3	57	4	15.10		3	32.3	16	21	32.28		21	1.6	
		9.00	11.030		7.0		17.00	19.106		33.8			36.45	40536		4.5	
		10.90	11.03		8.7		19.05	19.11		35.2			40.90	4094		7.3	
		13.05			10.7		21.20			36.5			45.40			10.6	
	3515	15.20		441	12.0		9553 23.18		1753	37.5		20468	49.70		374	13.4	
		515			441		4553			253			468			374	
		19.30		3	882		27.00		3	35.06			58.47		21	748	
		21.30			−41.22		29.60		+1	0.68			2.60		+1	8.43	
		23.44					31.77						7.30				
		25.50	27.584				33.80	35.762					11.50	15.938			
		27.70	2758				35.70	35.76					16.04	15.94	22	14.0	
		29.58	27.63				37.87	35.72					20.33	15.88		16.8	
		31.62					39.90						24.70			19.4	
		33.75					42.00						29.00			22.0	
	24826	36.07					32186 44.22					68341	33.50		974	25.2	
		6826					5186						5344			474	
		40.18					48.15						42.10		22	1948	
		42.10	44236				50.26	52332					46.40	50.810		−3.57	
		44.28	4424				52.37	5233					50.80	5081			
		46.30	55.27				54.40	71.44					55.20	151.75			
	22118	48.32		3	882		26166 58.48		3	35.06		25405	57.55		23	7.3	
		29.18	2 27.605				1166	4 35.740					405	22 15.910		11.8	
					−41.22					+20.68						14.4	
																17.3	
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ν Draconis

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Sept 23

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228 β Herculis

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597 ζ Ophiuchi

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1.17609 0,12621
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232 η Herculis

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1.17609 0,12621
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16 24 35.25		24 24.1	16 30 5.65		29 56.4	16 38 14.18		37 58.8
37.46	39.652	26.0	7.78	9.866	57.5	16.80	19.488	0.4
39.60	3965	27.3	9.90	987	58.8	19.47	1949	2.0
41.90		28.6	12.00		0.0	22.19		3.7
19826 44.05		1362 30.2	4933 14.00		2944 1.7	9744 24.80		2104 5.5
4826		362	4933		444	4744		104
48.50		24 2724	18.20		29 5888	30.05		38 2.08
50.88		+30.20	20.40		+27.79	32.84		+38.72
53.03			22.45			35.50		
55.18	57.456		24.57	26.687		38.05	40.816	
57.40	5746		26.75	2669	30 56.9	40.80	4082	39 11.7
59.72	5742		28.86	2666	58.0	43.64	4079	13.5
1.85			30.95		59.3	46.26		14.9
4.19			33.00		0.9	48.75		16.9
51710 6.35			24018 35.00		2976 2.5	36734 51.45		767 19.7
6710			6018		476	734		267
10.70			39.30		30 59.52	56.80		39 15.34
13.00	15.194		41.40	43.450	−32.85	59.50	2.086	−34.54
15.20	1519		43.45	4345		1.97	209	
17.37	11484		45.50	5332		4.67	8158	
7597 19.70		24 2724	21725 47.60		29 5888	31043 7.49		38 2.08
2597	24 57.440		1725	30 26.675	30 59.52	1043	38 40.805	39 15.34
		+30.20			+27.79			+38.72
					−32.85			−34.54
					60.64			73.26
					1.78276			1.86487
					1.16901			1.06567
					2.95177			2.93054
					1.90666			1.88717
					8.95489			8.95663
					5 9 2			5 10 15

B 35 23.82·

B 39 7.80
B 40 28.55
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B 11 37.45
B 12 54.38
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598 η Ophiuchi

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237 α Coronae

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240 β Draconis

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1880
Sept. 23

h	m	s		m	s										
17	3	2.06		2	52.9	17	Clof	+33.82	17	27	3.60	37.42		26	40.0
		4.16	6346		52.2			30.42	37.24		186.66 6.82	10.278			42.6
		6.32	635		53.5			27.07	37.41		37.332 10.34	1028			44.6
		8.47			55.1			23.67	37.27		13.60				47.3
	3173	10.72		2683	56.6			20.29	37.32		5189 17.03			2239	49.4
		3173			183						139				2.3
		14.80		2	5366			13.53	37.42		336.52 23.89			26	4478
		17.03			+25.81			10.15	37.40		37.380 27.25				+52.59
		19.17						6.76	37.36		30.60				
		21.32	23.456					+3.35	37.35		34.00	37.344			
		23.40	2345					−0.30	37.40		37.40	3739			
		25.62	2349					3.37	37.41		40.78				
		27.80						6.76	37.42		44.18				
		29.90						10.15	37.40		47.55				
	21109	32.05						+13.54	37.36		23655 50.90				
		3109									6655				
		36.35													
		38.47	40630												
		40.60	4663					37.356							
		42.78	4698					37.370							
	20315	44.95		2	5366									26	44.78
		315	3 23.470		+29.81										

R 53 55.55.
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241 α Ophiuchi

h m s
17 28 54.51
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56.66	58832	
58.94	5883	
1.00		
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9.48		
11.57		
13.70	15804	
15.88	1580	
17.98	15.76	
20.05		
22.03		
14224 24.28		
5224		
28.50		
30.60	32702	
32.65	3270	
34.88	151.53	
16.351 36.88		
1351	29 15.780	

28 42.5		
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603 O Sagittarii

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18 47 20.55		
23.03	25128	
25.00	2513	
27.38		
12564 29.68		
2564		
34.28		
36.69		
39.00	43581	
41.27	46446	
43.50	4358	
45.86	4356	
48.08		
50.60		
39223 52.95		
3223		
57.38		
59.70	1976	
2.00	198	
4.30	8711	
30988 6.50		
988	47 43570	

47 12.4		
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1.80718		
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269 λ Aquilae

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18 59 26.30		
28.30	30366	
30.40	3037	
32.38		
15183 34.45		
183		
38.64		
40.77		
42.80		
44.80	46932	
47.00	4693	
49.00	46.95	
51.00		
53.18		
42239 55.20		
6239		
59.40		
1.53	3540	
3.57	354	
5.60	9391	
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1.79920		
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B 23 17.05 ·
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24 40.95 ·
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52 32.85 54 42.35 38 31.88 53 25.29
57.07 51.41 32.12 +10.75
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56.66	58832	28	42.5	44.0	
58.94	5883			45.3	
1.00				47.0	
29416	3.00	2270	48.2	27.0	
4416		28	45.40		
7.30			+30.38		
9.48					
11.57					
13.70	15804				
15.83	1580				
17.98	15.76				
20.05					
22.03					
14224	24.28				
5224					
28.50					
30.60	32702				
32.65	3270				
34.88	151.53				
16351	36.83	28	4540		
1351		29	15.780	+30.38	

R 41 18.75 ·
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18	47	20.55	25128	47	12.4
		23.03	2513		13.7
		25.00			15.0
		27.38			17.0
12564	29.68			769	18.8
2564				269	
		34.28		47	15.38
		36.69			+28.19
		39.00	43581		
		41.27	46446		
		43.50	4358	48	16.2
		45.86	4356		18.3
		48.08			19.5
		50.60			20.9
39223	52.95			976	22.7
3223				476	
		57.38		48	1.052
		59.70	1976		−35.95
		2.00	198		
		4.30	8711		
30988	6.50			47	15.38
988		47	43570	48	1952

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18	59	26.30		59	12.5
		28.30	30366		14.2
		30.40	3037		15.3
		32.38			16.7
15183	34.45			771	18.4
		38.64		59	15.42
		40.77			+31.52
		42.80			
		44.80	46932		
		47.00	4693	0	15.8
		49.00	4695		17.2
		51.00			18.4
		53.18			19.6
42239	55.20			920	21.0
		59.40		0	1840
		1.53	3540		−31.46
		3.57	354		
		5.60	9391		
31770	7.60			59	1542
1770		59	46940	0	1840

+31.52
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10 12.44 13 32.77 15 22.98 18 33.01
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275 Cygni

1880 Sept. 23

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h	m	s		m	s												
19	25	24.00		25	9.8	19	40	6.62		39	56.4	19	44	29.29		44	14.4
		26.30	28654		11.6			8.77	10842		58.6			31.20	33374		16.2
		28.60	2865		13.0			10.82	1084		0.2			33.40	3337		17.7
		31.00			15.0			13.00			1.7			35.48			19.3
	14327	33.37		660	16.6		5421	15.00		2999	3.0		16687	37.50		885	20.9
	4327				160			421			499			1687			385
		38.02		25	1320			19.32		39	59.98			41.85		44	17.70
		40.30			+34.11			21.50			+27.73			43.90			+32.41
		42.60						23.48						46.00			
		45.00	47338					25.55	27.729					48.05	50.163		
		47.38	4734	26	19.0			27.70	2773	40	55.5			50.05	5016	45	24.2
		49.68	4728		20.6			29.87	2769		56.9			52.35	5007		26.0
		52.05			21.9			32.06			58.5			54.37			27.7
		54.40			23.5			34.00			0.9			56.40			29.0
	42604	56.60		1108	25.8		24956	36.08		2942	2.6		45147	58.50		1379	31.0
	42604				108			6956			444			147			379
		1.27		26	22.16			40.30		40	58.88			2.63		45	27.58
		3.50	5908		-34.85			42.35	44542		-31.17			4.70	6756		-37.47
		5.80	591					44.50	4454					6.75	6.76		
		8.32	9456					46.66	5538					8.80	100.13		
	2954	10.65		25	13.20		22271	48.90		39	59.98		3378	10.90		44	17.70
	2954		25 47310	26	22.16		2271		40 27.710	40	58.88		3378		44 50.115	45	27.58
					+34.11						+27.73						+32.41
					-34.85						-31.17						-37.47
					68.96						58.60						69.88
					1.83860						1.77012						1.84435
					1.12323						1.16901						1.17124
					2.96183						2.93913						3.01559
					1.91376						1.89894						1.96731
					8.95193						8.95981						8.95172
					5656						5132						5647

B	37	44.25	
B	39	6.30	
R	39	6.05	
R	39	6.25	
B	39	6.38	
	39	6.24	
		81.99	

B	0	41.98	
B	2	1.10	
R	2	1.35	
	2	1.22	
		79.24	

B	46	43.02	
B	48	15.88	
R	48	15.82	
R	48	15.62	
	48	15.77	
		92.75	

277 γ Cygni

h m s
19 40 30
o ' "
+10 19 1.17609 0.12621
9.99292
1.16901

280 α Aquilae 0.12621

h m s
19 44 53
o ' "
+8 33 1.17609
9.99815
1.17124

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z - φ for - δ
φ - z " + δ

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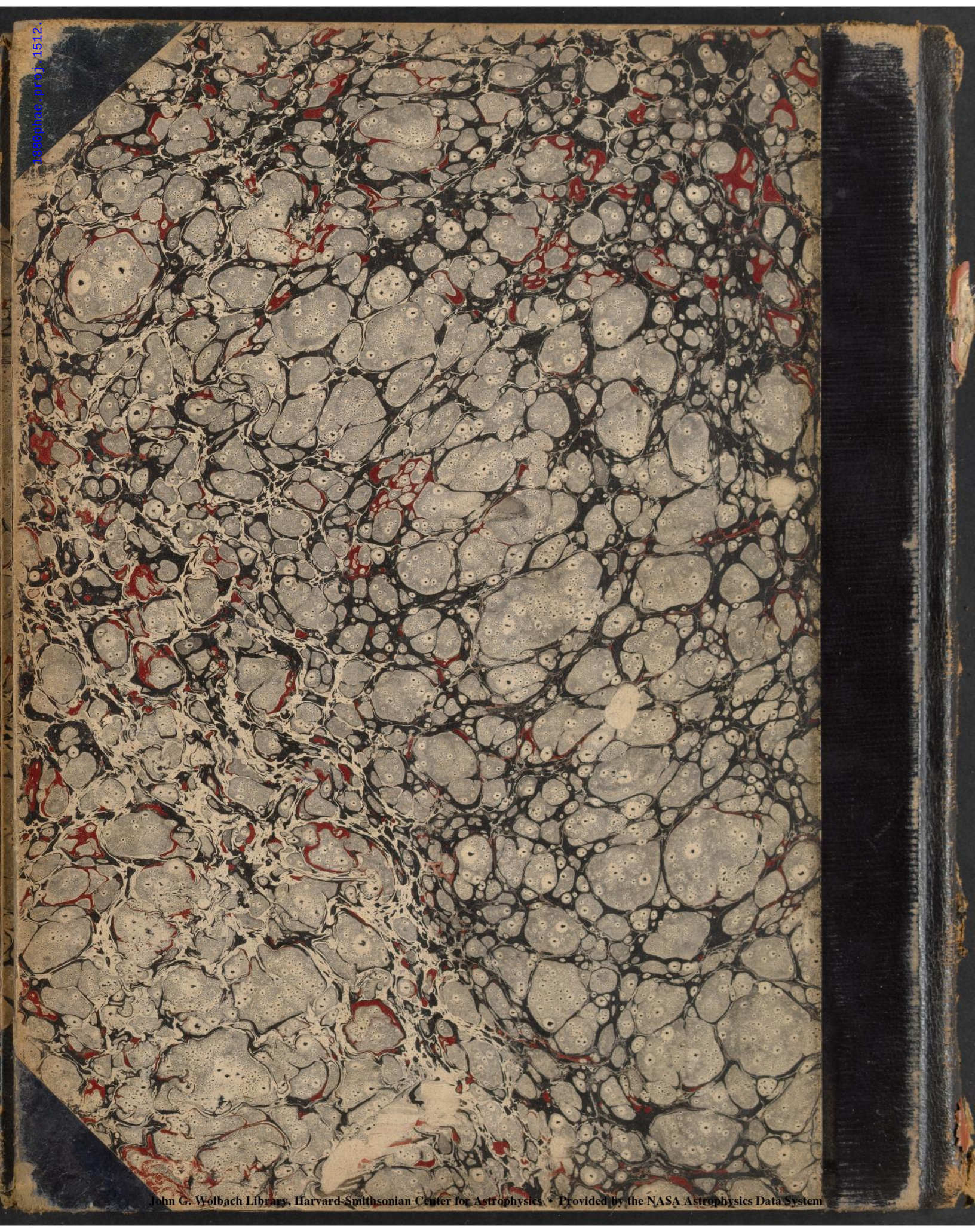
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