KG
11366
v.509

Fundamental Stars.

Observations and Reductions.

B 6

From Sept 23. 1880. to Oct. 14 1880

780

283

β Aquilae

h	m	s
19	49	22

°	'
+6	6

0,12621

1880

Sept. 23

h	m	s		m	s
19	48	58.73		48	54.2
		0.95	2.916		56.0
		2.90	2920		57.7
		5.00			59.3
	31458	7.00		2884	1.2
		1458			384
		11.30		48	57.68
		13.36			+21.85
		15.40			
		17.47	19.572		
		19.54	1957		
		21.63	1949		
		23.75			
		25.80			
	17615	27.90			
		8615			
		31.95			
		34.05	36056		
		36.07	3606		
		38.04	38.98		
	18028	40.17		48	57.68
		3028	49 19.530		
				+	21.85

287

δ Aquilae

h	m	s
20	5	4

°	'
−1	11

1.17609 0,12621
999991
1.17600

h	m	s		m	s
20	4	40.47		4	31.3
		42.58	44570		33.5
		44.55	4457		35.0
		46.65			36.5
	22285	48.60		1746	38.3
		2285			246
		52.83		4	3492
		54.85			+26.19
		57.00			
		59.18	1.140		
		1.20	114	5	29.7
		3.20	1.08		30.8
		5.26			32.6
		7.26			34.9
	55026	9.48		1646	36.6
		1026			146
		13.32		5	3292
		15.60	17.588		−31.81
		17.60	1759		
		19.70	12216		
	8794	21.72		4	3492
		3794	5 1.110	5	3292
				+	26.19
				−	31.81
					58.00

1.76343
1.17600
2.93943
1.89337
8.95394
5 8 21

examine

607

α² Capricornae

h	m	s
20	11	20

°	'
−12	55

0,12621

h	m	s		m	s
20	10	57.07		11	7.4
		59.16			10.6
		1.30			12.4
		3.38			14.4
		5.38		604	15.6
					104
		9.90		11	12.08
		12.00			
		14.00			
		16.05	18.222		
		18.20	1822	12	11.3 ?
		20.30			2.8
		22.50			4.8
		24.50			6.4
	16400	26.55		33	8.0
		7400			333
		30.80			
		32.94	35.064		
		35.14	3506		
		37.17			
	17532	39.27		11	12.08
		2532	11 18.19		

B 13 34.00 ·
R 13 33.90 ·

13 33.95 ·

B 30 19.72 ·
B 31 37.82 ·
R 31 38.02 ·
R 31 38.00 ·

31 37.95 ·
78.23

B 14 42.00 ·
B 15 51.22 ·
R 15 51.72 ·

15 51.47 ·
6947

86

α Aurigae

h m s
5 7 46
° '
+45 52

0,12621

87

β Orionis

h m s
5 8 44
° '
−8 21

0,12621

91

γ Orionis

h m s
5 18 38
° '
+6 14

0,12621

1880

Sept. 23

	h	m	s		m	s
+29.65	5	7	15.90	45.55	7	5.1
26.64	45.36	227.17	18.70	21.720		7.0
23.72	45.42	45.434	21.70	21.72		8.8
20.76	45.56		24.80			11.6
17.78	45.28	10860	27.50		464	13.9
			860			464
11.86	45.46	411.81	33.60		7	9.28
8.89	45.63	45.756	36.74			+ 36.36
5.92	45.62		39.70			
+2.93	45.41		42.48	45.762		
−0.00	45.54		45.54	45.76		
2.96	45.74		48.70			
5.93	45.67		51.60			
8.89	46.31		55.20			
11.87	46.43	41186	58.30			
			5186			
					7	9.28

46.595
45.641

h	m	s			
5	8	17.63			
		19.76			
		21.83			
		24.22			
		26.18			
		30.40			
		32.28			
		34.45			
		36.47	38.602		
		38.40	3860	9	7.2
		40.40			8.7
		42.80			10.5
		44.95			11.9
	34742	47.27		515	13.2
		7742			15
		51.40		9	10.30
		53.37	55.434		
		55.50	5543		
		57.40			
	27717	59.50			
		2717	8 38.642	9	10.30

h	m	s			
5	18	13.98		18	3.4
		15.85	1.8176		5.2
		18.03	1818		6.7
		20.42			7.9
	9088	22.60			322 9.0
		4088			322
		26.58		18	6.44
		28.90			+ 28.41
		30.76			
		32.84	34.850		
		34.60	3485		
		36.75	3486		
		39.20			
		40.97			
	31365	43.05			
		4365			
		47.38			
		49.60	51.550		
		51.67	5155		
		53.60	69.73		
	25775	55.50		18	6.44
		775	18 34.855		
				+	28.41

A Rouly

R 41 12.68.
R 41 12.40.

41 12.54.

R 5 37.85.
R 5 38.32.

5 ~~38.08~~.

1880phae.proj.151B.

		93				556				96		
		δ Orionis				α Leporis				ι Orionis		
		h m s				h m s				h m s		
		5 25 50				5 27 24				5 29 31		
		° ′		0,12621		° ′		0.12621		° ′		0,12621
		−0 24				−17 53				−6 0		
h	m s							h	m s			
5	25 24.56		25 11.8	5	—			5	29 5.29			
	26.60	28.752	13.3		—				7.80	9.672		
	28.90	28.75	14.7		—				9.87	9.67		
	30.90		16.4		—				11.70			
	14376 32.80		742 18.0		—				4836 13.70			
	4376		242						4836			
	37.00		25 14.84		27 —				18.03			
	39.30		+ 30.48		—				20.20			
	41.40			+4.33 17.78	125.55 13.45				22.20			
	43.26	45.338		2.14 18.17	17.935 16.03				24.35	26.309		
	45.26	45.34		−0.00 18.15	18.15		27 41.5		26.23	26.31	29 54.0	
	47.32	45.30		2.16 18.02	20.18		43.2		28.32	26.34	55.4	
	49.40			4.34 17.96	22.30		45.3		30.65		56.7	
	51.47			6.51 17.79	24.30		46.6		32.60		58.0	
	40804 53.63			8.64 17.78	26.47		2250 48.4		23678 34.20		2835 59.4	
	4804						250		5678		335	
	57.80			13.01 17.78	89.65 30.79		27 45.00		38.85		29 56.70	
	59.70	18.46		15.18 18.07	17.93 33.25	35.292	−27.07		40.90	43.420	−30.38	
	1.70	185		17.35 17.92	35.27	35.29			43.35	43.02		
	3.98	9.060		19.52 18.03	37.55				45.00	52.69		
	30923 6.05		25 14.82	21.75 17.85	17646 39.60				21510 47.00			
	923	25 45.320			2646		27 45.00		1710	29 26.325	29 56.70	
			+ 30.50								− 30.38	
				17.932								
				17.933								

R 43 6.80 ·

R (14) 35.38 ·

R 20 13.28 ·
R 20 13.38 ·

20 13.33 ·

f

α Columbae

h m s
5 35 16
° '
−34 8

a,126 21

100

K Orionis

h m s
5 42 1
° '
−9 43

a,126 21

102

α Orionis

h m s
5 48 37
° '
+7 23

a,126 21

1880

Sept. 23

h m s
5 34 43.90
46.35 48.890
48.80 4889
51.43
24445 53.97
4445
57.00
1.40
3.96
6.42 8.910
8.74 891 35 35.6
11.40 885 37.0
14.00 39.4
16.38 40.8
62019 18.89 1963 43.5
8019 463
23.81 35 39.26
26.39 28.796 −30.38
28.70 2880
31.28 13769
14398 33.80
4398 35 8.880 35 39.26
− 30.38

h m s
5 41 35.30 l
37.15 39.320
39.25 3932
41.45
19660 43.45
4660
47.90
50.05
52.07
53.90 56.178
56.16 5618
58.20 5614
0.32
2.40
50560 4.60
5560
8.65
11.00 12.960
12.88 1296
14.98 11228
6480 17.29
1480 41 56.160

m s
41 18.9
21.6
23.6
25.7
11.73 27.5
173
41 23.46
+32.70
41 23.46
+ 32.70

h m s
5 48 12.58
14.79 16.968
17.00 1697
19.10
8484 21.37
3484
25.03
27.37
29.46
31.60 33.652
33.60 3365
35.60 3368
37.97
40.04
80287 42.20
3287
46.33
48.30 50.396
50.40 5040
52.45 6737
25198 54.50
198 48 33.665

m s
48 2.7
4.4
6.2
7.8
304 9.3
304
48 6.08
+27.58
48 6.08
+ 27.58

R 26 58.98
R 26 59.00

26 58.99

R x^2 6.70
R x^2 6.85

x^2 6.77

R 57 3.85
R 57 4.05

57 3.95

256

δ Urs. Min

h m s
18 12

° ′
93 24

0,12621

h	m	s	m	1350 s	m	4950 s		
18	7	37.68	9	15.65	10	58.60	4	43.2
		40.88		22.80	11	0.80		
		43.37		24.50		8.17	6	3.4
		51.60		27.10		10.54		
		52.60		32.40		12.30		
		54.00		37.44		18.56		
	8	2.75		39.57		21.78		
		4.47		46.90		25.00		
		6.70		49.15		32.18		
		13.31		51.58		34.40		
		15.20		58.42		36.46		
		18.08	10	0.60		44.27		
		24.15		2.40		46.75		
		27.00		10.60		49.20		
		29.50		12.70		54.45		
		36.28		14.80		57.18		
		39.00		22.17		59.36		
		42.10		24.40	12	9.76		
		49.45		26.36		10.28		
		57.45		34.04		10.70		
		53.55		36.27		20.15		
	9	0.76		38.33		20.77		
		2.70		44.50		21.40		
		5.65		46.70				
		11.38		49.50				
		~~13.50~~		56.66				

106

μ Gemin.

h m s
6 15 39

° ′
+22 34

0,12621

h	m	s			
6	15	13.03			
		16.65	17.754		
		17.90	17.75		
		19.90			
	8877	22.29			
		3877			
		26.36			
		29.00			
		31.40			
		33.40	35.708		
		35.68	35.71	16	3.0
		38.04	35.65		5.8
		40.22			7.5
		42.40			9.3
	32137	44.87		361	10.5
		5137			361
		49.38		16	7.22
		51.36	53.538	−31.54	
		53.60	53.54		
		55.66	71.29		
	26769	57.70			
		1769	15 35.680	16	7.22
				−	31.54

564

α Can. Maj.

h m s
6 39 49

° ′
−16 33

0,12621

h	m	s		m	s
6	39	21.45		39	15.3
		23.66	25.792		17.8
		25.88	25.79		19.4
		27.93			20.7
	12896	30.05		955	22.3
		2896			455
		34.33		39	19.10
		36.30			+23.85
		38.78			
		40.92	42.949		
		42.98	42.95		
		45.17	42.95		
		47.00			
		49.48			
	38654	51.57			
		2654			
		55.85			
		57.91	0.122		
		0.10	0.12		
		2.40	85.91		
	30061	4.35		39	19.10
		061	39 42.950		
				+	23.85

R 0 11.08·
R 0 4.75·

0

R 47 25.32·
R 47 25.35·

47 25.33·

R 52 19.28·
R 52 21.65·

	118				138				140		
	β Can. Maj				α Hydrae				o Urs. Maj		
	h m s				h m s				h m s		
	7 20 35		0,12621		9 21 38		0,12621		9. 24 45		0,12621
	° ′				° ′				° ′		
	+8 32				−8 8				+52 14		
1880	Sept. 23										
			h	m s		m s	h	m s		m s	
			9	21 11.18		21 2.0	9	24 9.50		23 57.0	
				13.35	15,386	4.0		13.04	16,270	59.5	
				15.40	15.39	5.4		16.26	16.27	1.2	
	Chf			17.44		6.7		19.55		3.5	
				7693 19.56		263 8.2		8135 23.00		3069 5.7	
				2693		263		3135		69	
				23.68		21 5,26		29.72		24 1,38	
				25.86		+26.82		33.00		+41.78	
				27.90				36.34			
				30.00	32060			40.07	43.187		
				32.20	32.06			43.25	43.19		
				34.04	32.10			46.55	43.13		
				36.06				50.00			
				38.40				53.18			
				28854 40.40				38868 56.57			
				1854				2868			
				44.53				3.20			
				46.68	48.812			6.67	9.978		
				48.85	48.81			10.00	9.98		
				51.00	64.20			13.40	86.25		
				24406 53.00		21 5.26		4989 16.62		24 1.38	
				4406	21 32.080			4989	24 43.160		
						+ 26.82				+ 41.78	

R 28 14.10.

R 8 5.18.

R 8 5.95.

8 5.56.

142

ε Leonis

h m s
9 38 59
° '
+24 20

0,12621

h m s
9 38 31.60
33.96 36,080
36.04 3608
38.30
18040 40.50
3040
45.15
47.43
49.65
52.00 54,236
54.35 5424
56.50 5422
58.67
1.02
48812 3.35
3812
7.90
10.12 12372
12.26 1237
14.65 10845
6186 16.93
1186 38 54.230

m s
39 1.7
3.8
5.0
6.4
251 8.2
251
39 5.02
− 10.79
39 26.4
27.5
29.3
30.7
1462 32.3
462
39 29.24
− 35.01
39 5.02
39 29.24
− 10.79
+ 24.99
35.78

146 Ex.

α Leonis

h m s
10 1 56
° '
+12 33

1.17609
9.98950
1.16559

0,12621

h m s
10 1 29.28
31.39 33,464
33.50 3346
35.55
16732 37.60
1732
41.70
43.90
46.10
48.18 50294
50.37 5029
52.50 5034
54.50
56.60
45265 58.80
265
3.00
5.00 7,230
7.25 723
9.40 100.69
3615 11.50
3615 1 50.315

m s
1 27.4
28.6
30.0
31.7
1507 33.0
07
1 30.14
+ 20.17
2 20.0
21.6
22.9
24.4
1149 26.0
149
2 22.98
− 32.67
1 30.14
2 22.98
+ 20.17
− 32.67
52.84
1.72294
1.16559
2.88855
1.84392
8.95537
5 9 22

c

χ' Leonis

h m s
10 13 18
° '
+20 27

0,12621

h m s
10 12 51.00
53.00 55,260
55.20 5526
57.50
27630 59.60
2630
4.05
6.18
8.48
10.63 12,888
12.97 1289
15.05 1289
17.32
19.53
11599 21.78
2599
26.03
28.28 30506
30.44 3051
32.78 145.77
15253 35.00
253 13 12.890

m s
12 44.9
46.8
48.0
49.4
2406 51.5
406
12 48.12
+ 24.77
12 48.12
+ 24.77

B 2 7.98
B 2 38.42

B 47 35.20
B 48 45.08
R 48 44.95
R 48 45.00

48 45.01
69.81

B 49 1.20

149

μ Urs Maj

h m s
10 15 7
° '
+42 6

1.17609 0.12621
9.87039
1.04648

1880

Sept. 23.

h	m	s		m	s
10	14	35.00		14	18.9
		37.90	40.722		21.3
		40.65	40.72		23.4
		43.60			25.0
	20361	46.46		1158	27.2
		361			158
		52.00		14	23.16
		54.80			+39.90
		57.50			
		0.38	3.091		
		3.03	3.09	15	43.1
		5.96	3.03		45.1
		8.58			46.6
		11.30			49.0
	56782	14.27		2350	51.2
		2782			350
		19.76		15	47.00
		22.50	25.338		−43.94
		25.35	25.34		
		28.18	126.06		
	12669	30.90		14	23.16
		2669	15 3.060	15	47.00
				+	39.90
				−	43.94
					83.84
					1.92345
					1.04648
					2.96993
					1.92163
					8.95170
					5646

S

Sun c = 45 20

h m s
12 7 21
° '
−0 48

0.12621

Sept. 23/24

h	m	s		m	s	m	s		m	s
12	5	39.45		6	41.0	7	47.86		7	3.4
		41.75	43.686		42.3		49.78	51.814		4.8
		43.72	43.69		43.6		51.78	51.81		6.0
		45.88			45.4		53.75			7.4
	21843	47.63		2195	47.2	25907	55.90		305	8.9
		1843			195		907			305
		51.97		6	43.90		0.10		7	6.10
		53.90			−43.69		2.15		+1	2.27
		56.00					4.30			
		58.18	0.204				6.30	8.377		
		0.35	0.20				8.36	8.38		
		2.20	0.22				10.43	8.36		
		4.38					12.50			
		6.40					14.60			
	54184	8.46				7539	16.65			
		184					7539			
		12.65					20.88			
		14.68	16.752				22.80	24.896		
		16.78	16.75				24.85	24.90		
		18.75	120.44				26.95	136.71		
	8376	20.90		6	43.90	12448	29.00		7	6.10
		3376	6 0.210	−	43.69		2448	8 8.370		+62.27

B 15 4.38 ·
B 16 27.58 ·
R 16 28.02 ·
R 16 27.98 ·
B 16 27.90 ·
16 27.87 ·
83.49

B 51 34.45
B

B 14 10.12

1880 Sept. 24

193
γ Boötis
h m s
14 27 12
° ′
+38 50

0.12621

h	m	s		m	s
14	26	38.67		26	26.0
		41.29	44040		27.6
		44.02	4404		29.9
		46.75			31.7
	22020	49.47		1489	33.7
		2020			489
		54.70		26	29.78
		57.30			+35.53
		0.05			
		2.66	5.327		
		5.38	533		
		8.04	5.29		
		10.67			
		13.20			
	58794	15.84			
		4794			
		21.40			
		23.90	26526		
		26.53	2653		
		29.00	130.57		
	13263	31.80		26	29.78
		3263	27 5.310	+	35.53

d
ε Boötis
h m s
14 39 42
°
+27 55

0.12621

h	m	s		m	s
14	39	12.15		39	4.2
		14.35	16660		5.8
		16.60	1666		7.5
		18.95			8.9
	8333	21.28		375	11.1
		3333			375
		26.03		39	7.50
		28.30			+27.80
		30.70			
		33.00	35.344		
		35.43	3534		
		37.70	35.26		
		40.00			
		42.34			
	31810	44.60			
		4810			
		49.20			
		51.52	53.856		
		53.90	5386		
		56.14	70.52		
	26928	58.52		39	7.50
		1928	39 35.300		27.80

198
β Urs. Min.
h m s
14 51 7
° ′
+74 39

0.12621

h	m	s		m	s	m	s
14				48	504	50	20.1
					53.8		26.4
					59.8		30.2
					2.9	1	34.1
				2971	10.2	1532	42.4
					471		32
	50	22.95		48	59.42	50	30.64
		30.81					
		38.95					
		46.40	54.319				
		54.36	54.32	51	0.2	52	12.0
		2.19			4.5		18.0
		10.15			10.7		25.5
		17.74			16.0		30.4
	48887	25.32		537	22.3	1221	36.2
		3887			37		221
				51	10.74	52	24.42
				48	5942	50	3064
				51	1074	52	2442

R 30 57.68 ·
R 30 57.75 ·

57.72 ·

R 45 59.78 ·
R 45 59.92 ·

59.85 ·

R 42 45.40 :
B 43 20.38 ·
B 43 34.30 -
B 43 59.42 -

199

β Bootis

h m s
14 57 23
° ′
+40 52

1.17609 0.12621
9.87866
1.05475

1880

Sept 24

h	m	s		m	s
14	56	48.78		56	47.4
		51.43	54.186		49.4
		54.25	5419		51.0
		56.87			53.0
	27093	59.60		2558	55.0
		2093			58
		5.00		56	51.16
		7.74			+24.82
		10.40			
		13.18	15.951		
		16.00	1595	57	54.2
		18.66	1601		56.2
		21.47			58.4
		24.18			0.5
	14356	26.93		2915	2.2
		3356			415
		32.40		57	58.30
		35.15	37.836		−42.32
		37.75	3784		
		40.60	15203		
	18918	43.28		56	51.16
		3918	57 15.980	57	5830

+ 2482
− 4232
67.14
1.82698
1.05475
2.88173
1.82066
8.93893
4 57 56

200

β Librae

h m s
15 10 30
° ′
−8 56

1.17609 0.12621
9.99470
1.17079

h	m	s		m	s
15	10	2.20		9	52.5
		4.30	6416		54.2
		6.44	642		55.7
		8.54			57.3
	3208	10.60		2782	58.5
		3208			282
		14.86		9	55.64
		16.90			+27.50
		19.00			
		20.46	23.140		
		23.17	2314	10	51.3
		25.30	2314		52.7
		27.30			54.0
		29.37			55.4
	20826	31.40		2706	57.2
		2826			266
		35.65		10	55.32
		37.70	39.874		−32.18
		39.98	3987		
		42.00	4629		
	19937	44.04		9	5564
		4937	10 23.140	10	5412

+ 27.50
− 3098
58.48
1.76791
~~1.17079~~
~~2.93780~~
~~2.14098~~
~~9.20318~~
9 4 15

209

α Cor. Bor.

h m s
15 29 39
° ′
+27 7

1.17609 0.12621
9.94943
1.12552

h	m	s		m	s
15	29	3.66		28	47.6
		6.00	8.270		49.2
		8.20	827		50.9
		10.61			52.5
	4135	12.88		2542	54.0
		4135			42
		17.50		28	50.84
		20.03			+35.98
		22.17			
		24.50	26.841		
		26.87	2684	29	59.7
		29.16	2681		1.1
		31.50			2.9
		33.80			4.5
	24157	36.04		3147	6.5
		6157			147
		40.76		30	2.94
		43.00	45.348		−36.12
		45.30	4535		
		47.68	5362		
	22674	50.00		28	50.84
		2674	29 26.825	30	2.84

+35.98
−36.02
72.00
1.85733
1.12552
2.98285
1.93717
8.95432
5 8 37

B 29 19.62 ·
B 30 25.88 ·
R 30 25.98 ·
R 30 25.75 ·
B 30 25.55 ·
30 25.79 ·
66.17

B 16 15.50 ·
B ~~18~~7 33.62 ·
R ~~18~~7 33.75 ·
R ~~18~~7 ~~34.85~~ 33.75 ·
B ~~18~~7 33.78 ·
~~18~~7 33.~~85~~72 ·
138.35

B 13 25.58 ·
B 14 52.20 ·
R 14 52.05 ·
R 14 51.88 ·
B 14 52.32 ·
14 52.11 ·
86.53

212

α Serpentis

h	m	s			
15	38	18			
	°	'	1.17609	0,12621	
	+6	48	9.99693		
			1.17302		

h	m	s		m	s
15	37	51.00		37	37.8
		53.00	55.116		39.4
		55.12	55.12		40.8
		57.18			42.2
	27558	59.28		2042	44.0
		2558			42
		3.40		37	40.84
		5.50			+30.92
		7.60			
		9.67	11.778		
		11.83	11.78	38	43.0
		13.90	11.75		44.1
		16.00			45.5
		18.00			47.0
	10600	20.10		2281	48.5
		1600			281
		24.20		38	45.62
		26.25	2.8380		−33.86
		28.40	28.38		
		30.50	143.50		
	14190	32.55		37	40.84
		4190	38 11.765	38	45.62
				+	30.92
				−	33.86
					64.78
					1.81144
					1.17302
					2.98446
					1.93571
					8.95125
					5 6 28

594

δ Scorpii

h	m	s			
15	53	11			
	°	'	1.17609	0,12621	
	−22	16	9.96654		
			1.14263		

h	m	s		m	s
15	52	42.04		52	31.1
		44.38	46.538		32.4
		46.55	46.54		34.4
		48.77			35.4
	23269	50.95		1701	36.8
		3269			201
		55.50		52	34.02
		57.76			+30.40
		0.00			
		2.25	4.437		
		4.42	4.44	53	42.3
		6.58	4.41		44.0
		8.88			45.3
		11.15			47.0
	57993	13.39		2274	48.8
		3993			274
		17.80		53	45.48
		20.14	22.266		−41.06
		22.26	22.27		
		24.55	128.81		
	11133	26.58		52	34.02
		1133	53 4.425	53	45.48
				+	70.23
				−	1.23
					71.46
					1.85406
					1.14263
					2.99669
					1.95463
					8.95794
					5 11 11

222

δ Ophiuchi

h	m	s			
16	8	0			
	°	'	1.17609	0.12621	
	−3	23	9.99924		
			1.17533		

h	m	s		m	s
16	7	33.00		7	20.7
		35.20	37.220		21.5
		37.20	37.22		23.3
		39.30			24.8
	18610	41.40		1166	26.3
		3610			166
		45.40		7	23.32
		47.60			+30.44
		49.70			
		51.80	53.794		
		53.75	53.79	8	21.2
		55.90	53.74		22.5
		57.95			24.0
		0.00			25.3
	48415	2.05		1197	26.7
		3415			197
		6.05		8	22.94
		8.27	10.262		−30.18
		10.24	10.26		
		12.35	107.48		
	5131	14.40		7	23.32
		131	7 53.765	8	23.94
				+	30.44
				−	30.18
					60.62
					1.78262
					1.17533
					2.95795
					1.91593
					8.95798
					5 11 13

B 32 0.52	B 35 51.40	B 43 1.70
B 33 26.75	B 37 21.42	B 44 22.90
R 33 26.78	R 37 21.40	R 44 23.12
R 33 26.70	R 37 21.35	R 44 24.58
B 33 26.80	B 37 21.75	B 44 25.82
33 26.76	37 21.48	44 ~~24.10~~
86.24	90.08	82.40

5~~7~~6
9

α Scorpii

h	m	s
16	21	59
	°	′
	−26	10

6.12621

228

β Herculis

h	m	s
16	25	1
	°	′
	+21	45

1.17609
9.96795
1.14404

0.12621

1880

Sept. 24

h	m	s		m	s
16	21	30.30		21	15.9
		32.45	34.834		17.2
		34.85	34.83		19.4
		37.77			21.0
	17417	39.40		965	23.0
		2417			465
		44.03		21	19.30
		46.30			+33.93
		48.60			
		50.90	53.221		
		53.16	5322	22	26.2
		55.55	53.24		27.9
		57.85			30.0
		0.20			31.6
	47899	2.40		1494	33.7
		2899			494
		7.00		22	29.88
		9.30	11.636		−36.65
		11.60	11.64		
		14.00	106.47		
	5818	16.28		21	19.30
		818	21 53.230	22	29.88
				+	33.93
				−	36.65
					70.58

h	m	s		m	s
16	24	32.00		24	21.4
		34.15	36.350		23.0
		36.34	36.35		24.4
		38.57			25.9
	18175	40.75		1220	27.3
		3175			220
		45.20		24	24.40
		47.50			+29.73
		49.65			
		52.00	54.151		
		54.15	5415	25	22.4
		56.38	54.11		23.9
		58.58			25.2
		0.88			27.0
	48736	3.02		1270	28.5
		3736			270
		7.40		25	25.40
		9.68	11.856		−31.27
		11.90	11.86		
		14.00	108.21		
	5928	16.30		24	24.40
		928	24 54.130	25	25.40
				+	29.73
				−	31.27
					61.20

1.78675
1.14404
2.93079
1.88332
8.95253
5 7 21

B 28 31.18 ·
B 29 55.92 ·

B 35 24.55 ·
B 36 40.88 ·
36 41.10 .

36 40.99 ·
7644

181

η Urs. Maj.

h m s
13 42 46
° '
+ 49 55

1880

Sept. 25

h m s
13 42 5.03
7.92 11.370
12.44 11.37
14.56
~~5~~685 17.90
685
23.92
27.35
30.80
33.78 36.924
37.00 36.92
40.04 36.97
43.18
46.40
33232 49.85
6232
56.18
59.33 2.568
2.45 2.57
6.88 73.94
31284 9.00
1284 42 36.945

AR only

0.12621

603

o Sagitt

h m s
18 47 46
° '
−26 27

1.17609 0.12621
9.95198
1.12807

h m s
18 47 14.67
17.02 19.324
19.45 19.32
21.56
9662 23.92
4662
28.60
30.94
33.00
35.57 37.801
37.88 37.80
40.06 37.78
42.48
44.68
34021 47.00
7021
51.53
53.87 56.240
56.30 56.24
58.60 75.56
28120 0.90
3120 47 37.790

m s
46 58.5
59.9
1.3
2.8
3072 4.7
72
47 1.44
+36.35
48 7.0
9.0
11.0
12.4
534 14.0
34
48 10.68
−32.89
47 1.44
48 10.68
+ 36.35
− 32.89
69.24
1.84036
1.12807
2.96843
1.91561
8.94718
5337

B 45 0.80
B 46 23.20
R 46 22.98
R 46 23.12
B 46 23.28
46 23.14
82 34

269

λ Aquilae

λ Aquilae
18 59 52
− 5 3

h m s
18 59 56
° '
~~+13 41~~

1.17609 0.12621
9.98750
1.16359

h m s
18 59 20.65
22.78 24.796
24.80 24.80
26.75
12398 29.00
2398
33.03
35.18
37.20
39.33 41.366
41.30 41.37
43.45 41.37
45.50
47.60
37229 49.70
1229
53.88
55.90 57.944
58.00 57.94
59.90 82.74
28972 2.04
3972 59 41.370

m s
59 7.3
9.0
10.6
12.0
526 13.7
26
59 10.52
+30.85
0 12.6
14.3
15.7
17.2
784 18.6
284
0 15.68
−34.31
59 10.32
0 15.68
+ ~~38.05~~ 05 31.05
− 34.31
~~72.36~~ 65.36
~~1.85950~~ 1.81531
1.16359
~~3.02309~~ 2.97890
1.93510
~~8.91201~~ 8.95620
~~4406~~ 5957

Rework with Sep λ Aq: −5°3'

Is not same star observed on Sept 23?
yes is λ not ζ

B 23 19.35
B 24 45.68
R 24 45.28
R 24 45.32
B 24 45.60
24 45.47
86.12

275^a

β Cygni

h m s
19 25 50
° ′
+27 42

0,12621

1880
Sept. 25

h m s
19 25 18.38
20.70 23.042
~~23~~.00 23~~0~~4
25.35
11~~5~~21 27.78
1521
32.30
34.70
37.00
39.85 41.672
41.70 4167
44.00 41.71
46.30
48.70
37505 51.00
1505
55.75
58.00 0.380
0.40 038
2.75 83.42
30190 5.00
190 25 41.690

m s
24 59.0
0.6
2.7
4.2
3124 5.9
124
25 2.48
+39.21
26 15.3
16.8
18.0
19.6
911 21.4
411
26 18.22
−36.53
25 2.48
26 18.22
+ 39.21
− 36.53
75.74
1.87933

B 37 38.85
B 38~~9~~ 8.45
R 38~~9~~ 8.18
R 38~~9~~ 8.10
B 389 8.48
~~38 8.30~~

277

γ Aquilae

h m s
19 40 30
° ′
+10 19
1.17609 0,12621
9.99292
1.17901

h m s
19 40 0.98
3.02 5.160
5.15 516
7.25
2580 9.40
80
13.52
15.76
17.90
19.87 2202~~4~~3
22.00 2202
24.08 21.98
26.25
28.35
19821 30.48
1821
34.57
36.75 38.810
38.75 3881
41.00 43.97
19405 42.98
4405 40 22.00

m s
39 49.0
50.2
51.3
52.7
2573 54.1
73
39 51.46
+30.54
40 58.5
59.9
1.3
2.5
3063 4.1
63
41 1.26
−39.26
39 51.46
41 1.26
+ 30.54
− 39.26
69.80
1.84386
1.17901
3.02287
1.96792
8.94505
5 2 8

B 0 38.75
B 2 11.58
R 2 11.68
2 11.63
92.88

28~~0~~

α Aquilae

h m s
19 44 53
° ′
+8 33
1.17609 0.12621
9.99515
1.17124

h m s
19 44 23.55
25.55 27.710
27.70 27.71
29.90
13855 31.85
3855
36.05
38.77
40.20
42.25 44.419
44.46 4442
46.50 44.42
48.58
50.76
39977 52.80
3977
56.90
59.00 1.126
1.15 113
3.28 88.84
30563 5.30
563 44 44.420

m s
44 11.7
13.7
14.5
15.7
721 17.0
221
44 14.42
+30.00
45 13.2
14.7
16.5
17.7
815 19.4
315
45 16.30
−31.88
44 14.42
45 16.30
+ 30.00
− 31.88
61.88
1.79155
1.17124
2.96279
1.91196
8.94917
5 5 0

B 46 45.80
B 48 7.40
R 48 7.50
48 7.45
81.65

~~2~~3

β Aquilae

h m s
19 49 22
° ′ 1.17609 0.12621
+6 6 9.99753
1.17362

h m s
19 48 53.00
55.00 57.206
57.25 57.21
59.30
28603 1.48
3603
5.56
7.80
9.80
11.83 13.894
13.86 1389
15.98 13.81
18.02
20.05
12505 22.15
3505
26.20
28.27 30.396
30.35 3040
32.58 147.61
15198 34.58
198 49 13.850

m s
48 44.7
45.6
47.0
49.0
2366 50.3
366
48 47.32
+26.53
49 43.4
44.9
46.4
47.7
2314 49.0
314
49 46.28
−32.43
48 47.32
49 46.28
+ 26.53
− 32.43
58.96

287

θ Aquilae

h m s
20 5 4
° ′ 1.17609 0.12621
−1 11 9.99991

h m s
20 4 34.90
36.90 39.016
38.95 39.02
41.15
19508 43.18
4508
47.37
49.40
51.50
53.50 55.567
55.55 55.57
57.65 55.51
59.60
1.65
50010 3.88
5010
7.85
10.00 11.996
12.05 12.00
14.03 111.02
5998 16.05
998 4 55.540

m s
4 44.7
46.3
48.0
50.0
2399 50.9
399
4 47.98
+7.56
5 17.3
18.6
20.0
21.5
1004 23.0
04
5 20.08
−24.54
4 47.98
5 20.08
+ 7.56
− 24.54
32.10

607

α² Capricorni

h m s
20 11 20
° ′ 1.17609 0.12621
−12 55 9.98887
1.16496

h m s
20 10 51.43
53.47 55.556
55.58 55.56
57.60
27778 59.70
2778
4.00
6.18
8.28
10.38 12.523
12.58 12.52
14.62 12.49
16.72
18.95
11271 21.00
2271
25.20
27.30 29.420
29.48 29.42
31.57 144.98
14710 33.55
4710 11 12.506

m s
10 47.3
48.9
50.2
51.8
2512 53.0
12
10 50.24
+22.26
11 40.2
41.8
43.0
44.2
2150 45.8
150
11 43.00
−30.50
10 50.24
11 43.00
+ 22.26
− 30.50
52.76
1.72230
1.16496
2.88726
1.84491
8.95765
5 10 59

B 13 29.50
B 14 ~~18.32~~ 45.80
R 14 ~~18.39~~ 45.98
R 14 ~~18.41~~ 46.02
B 14 ~~18.42~~ 46.05
14 ~~18.38~~ 45.96

B 31 43.82
B 31 28.15
R 31 28.18
R 31 28.08
B 31 28.22
31 28.16

B 14 21.40
B 15 31.30
R 15 31.48
R 15 31.32
15 31.37
69.97

289

γ Cygni

h m s
20 17 53

° ′
+39 52

1.17609 0.12621
9.88510
1.06119

1880

Sept 25

h	m	s		m	s
20	17	17.83		17	10.8
		20.48	23126		12.8
		23.00	2313		14.6
		25.82			16.4
	11563	28.50		732	18.6
		1563			232
		34.05		17	1464
		36.68			+30.04
		39.20			
		42.03	44,701		
		44.63	4470	18	18.4
		47.36	44.66		20.0
		50.06			21.7
		52.80			23.5
	40231	55.50		1094	25.8
		4231			94
		0.75		18	21.88
		3.53	6190		
		6.12	619		
		8.95	8932		
	3095	11.60		17	1464
		3095	17 44680	18	21.88
				+	30.04
				−	37.20
					67.24
					1.82763
					1.06119
					2.88882
					1.84036
					8.95154
					5640

294

α Cygni

h m s
20 37 18

° ′
+44 51

1.17609 0.12621
9.85062
1.02671

h	m	s		m	s
20	36	40.97		36	18.7
		43.85	46774		21.0
		46.70	4677		23.0
		49.70			25.0
	23387	52.65		1146	26.9
		3387			146
		58.44		36	2292
		1.36			+47.18
		4.20			
		7.87	10.106		
		10.14	1011	37	48.6
		13.02	1010		50.8
		15.96			52.7
		18.84			54.6
	63095	21.82		2636	56.9
		095			136
		27.60		37	52.72
		30.38	33.426		−42.62
		33.48	3343		
		36.30	14020		
	16713	39.37		36	2292
		1713	37 10.105	37	52.72
				+	47.18
				−	42.62
					89.80
					1.95328
					1.02671
					2.97999
					1.93500
					8.95501
					597

298

ε Cygni

h m s
20 41 19

° ′
~~32 31~~
+33 31

0.12621

h	m	s		m	s
20	40	46.05		40	32.3
		48.38	50.962		33.9
		50.98	5096		36.3
		53.50			38.0
	25481	55.90		1805	40.0
		481			305
		0.82		40	3610
		3.34			+34.62
		5.72			
		8.20	10.701		
		10.75	1070	41	42.8
		13.17	1074		44.7
		15.65			46.8
		18.00			48.7
	9631	20.66		2336	50.6
		631			336
		25.55		41	4672
		28.05	30.520		−36.00
		30.53	3052		
		33.00	14148		
	15260	35.47		40	3610
		260	41 10720	41	4672
				+	34.62
				−	36.00
					70.62

B	28	10.42
B	29	19.75
R	29	19.50
R	29	19.60
B	29	19.80
	29	19.66
		69.24

B	29	13.32
B	30	39.48
R	30	39.35
	30	39.42
		86.10

B	48	59.50
B	49 8	19.20
R	49 8	19.18
R	49 8	19.10
B	49 8	19.20
	49 8	19.17

383

ζ Cygni

h m s
21 7 47
° '
+ 29 44

1.17609 0.12621
9.93869
1.11478

h m s
21 7 15.47
17.88
20.18
22.64
10117 25.00
117
29.80
32.07
34.44
36.89
39.27
41.55
44.00
46.45
35322 48.75
8322
53.50
55.90
58.23
+0.68
29131 3.00
4131

20.234
2023
49.247
3925
39.25
58.262
5826
78.49
7 39.250

m s
6 56.8
58.7
0.5
2.3
3024 3.9
24
7 048
+38.77
8 12.7
14.4
16.3
18.3
814 19.7
314
8 1628
− 37.03
~~6~~7 0.48
8 1628
+ 38.77
− 37.03
75 ~~735~~ 80
1.87967
1.11478
2.99445
1.94719
8.95274
57 30

306

α Cephei

h m s
21 15 41
° '
+ 62 4

1.17609
9.67066
0.84675

h m s
21 14 49.97
54.47
59.05
3.48
29493 7.96
4493
16.48
21.00
25.60
30.04
34.20
38.50
43.20
47.57
30856 57.97
3856
0.70
5.30
9.70
14.05
4810 18.35
4810

58.986
5899
34.284
3428
3430
9.620
962
128.61
15 34.290

m s
14 24.7
27.2
30.6
33.3
1523 36.5
23
14 3046
+1 3.83
16 6.5
10.3
13.2
16.2
658 19.6
158
16 1316
− 38.87
14 3046
16 1316
+ 63.83
− 38.87
102.70
2.01157
0.84675
2.85832
1.81961
8.96129
51335

m s
15 18.8
21.7
24.2
27.5
1239 31.7
239
15 2478
+ 9.51
17 2.3
5.8
8.9
12.6
451 15.5
451
17 9.02
−1 34.73
15 2478
17 902
+ 9.51
− 94.73
104.24
2.01803
0.84675
2.86478
1.81961
8.95483
5859

0.12621

86

α Aurigae

h m s
5 7 46
° '
+45 52

h m s
5 7 10.90
14.00
16.70
19.70
8405 22.75
3405
28.50
31.35
34.40
37.28
40.57
43.40
46.26
49.30
86330 52.24
330
58.18
4.20
4.19
7.00
32077 10.20
2077

16.810
1681
367
40 ~~560~~
4037
4048
4.154
415
8096
7 40.425

0.12621

m s
7 0.6
4.0
5.7
7.6
277 9.8
277
7 554
+34.88
7 5.54
+ 34.88

B 35 58.85
B 37 27.30
R 37 27.45
R 37 27.52
B 37 27.32
37 27.40
88.55

B 16 4.42
B 16 39.58
B 17 8.90
B 17 42.80
~~17 10.43~~
66.01

R 28 39.85
R 28 39.88
28 39.86

91

γ Orionis

h m s
5 18 38
° '
+6 14

0.12621

1880

Sept. 25

h m s
5 18 8.75
10.80
12.85
14.98
6440 17.02
1440
21.10
23.17
25.25
27.38
29.43
31.50
33.70
35.67
26510 37.90
8510
42.05
44.00
46.02
48.26
23057 52.24
3057

12.880
12.88

29.456
29.46
29.49

46.114
46.11
58.99

18 29.475

m s
18 2.7
4.0
5.5
7.0
285 9.3
285
18 5.70
+23.77

18 5.70
+ 23.77

93

δ Orionis

h m s
5 25 50
° '
−0 24

0.12621

h m s
5 25 19.38
21.30
23.40
25.55
11723 27.60
1623
31.66
33.80
35.97
38.00
40.05
42.05
44.02
46.15
35993 48.23
8993
52.32
54.34
56.45
58.58
28229 0.60
3229

23.246
23.45

39.992
39.99
39.95

56.458
56.46
79.91

25 39.970

556

α Leporis

h m s
5 27 24
° '
−17 55

0.12621

h m s
5 26 51.30
53.50
55.50
57.70
27775 59.75
2775
4.20
6.30
8.30
10.45
12.78
14.82
17.02
19.18
11445 21.40
2445
25.70
27.90
30.16
32.26
15042 34.40
042

55.550
55.55

12.716
12.72
12.81

30.084
30.08
145.63

27 12.765

m s
26 47.4
49.3
51.6
52.9
2556 54.4
56
26 51.12
+21.64

26 51.12
+ 21.64

0.12621

R 5 46.20·
R 5 45.90·

5 46.05·

A Rouly

R 13 40.72·

96

i Orionis

h	m	s
5	29	31

°	'
−6	0

0.12621

h	m	s		m	s
5	29	0.34		28	48.3
		2.28	4.314		49.9
		4.32	.431		51.6
		6.28			53.0
	2157	8.35		2571	54.3
		2157			71
		12.56		28	51.42
		14.58			+29.53
		16.95			
		18.90	20.969		
		21.00	20.97		
		23.00	20.94		
		25.00			
		27.30			
	18872	29.43			
		872			
		33.45			
		35.53	37.572		
		37.60	37.57		
		39.60	141.88		
	18786	41.68		28	51.42
		3786	29 20.955		
				+	75.53

R 18 58.35 ·
R 18 58.45 ·

18 58.40 ·

b

α Columbae

h	m	s
5	35	16

°	'
−34	8

0.12621

h	m	s		m	s
5	34	38.72		34	30.0
		41.30	43.766		31.3
		43.90	43.77		33.0
		46.20			34.6
	21883	48.71		1652	36.3
		1883			152
		53.74		34	33.04
		56.37			+30.73
		59.00			
		1.13	3.803		
		3.78	3.80		
		6.40	3.75		
		8.70			
		11.34			
	57423	13.77			
		3423			
		18.70			
		21.19	23.718		
		23.76	23.72		
		26.27	127.49		
	11859	28.64		34	33.04
		1859	35 3.775		
				+	30.73

R 25 0.90 ·
R 25 1.02

25 0.96 ·

100

κ Orionis

h	m	s
5	42	1

°	'
−9	43

0.12621

h	m	s		m	s
5	41	24.95			
		32.00			
		34.05			
		36.05			
		38.20			
		42.40			
		44.48			
		46.62			
		48.67	50.773		
		50.78	50.77	42	13.2
		52.80			14.9
		54.98			16.2
		57.03			17.9
	45696	59.20		817	19.5
		5696			317
		3.85		42	16.34
		5.40	7.550		
		7.55	7.55		
		9.55			
	3775	11.90			
		3775	41 50.687	42	16.34

R 3 26.60 ·
R 3 26.55 ·

3 26.57 ·

1880

102

α Orionis

h m s
5 48 37
° ′
+7 23

0,12621

Sept. 25

h	m	s		m	s
5	48	7.44		47	57.5
		9.51	11,590		530
		11.60	1159		54.5
		13.60			56.0
	5795	15.80		2725	57.5
		795			225
		19.90		47	5450
		22.05			+33.75
		24.05			
		26.20	28,250		
		28.30	2825		
		30.32	2825		
		32.40			
		34.48			
	25425	36.55			
		7425			
		40.70			
		42.85	44,916		
		44.90	4492		
		46.95	5631		
	22458	49.18		47	54,50
		2458	48 28,250		
				+	33.75

R 7 0.15 ·
R 7 0.28 ·

7 0.21 ·

107

γ Geminorum

h m s
6 30 43
° ′
~~+6~~ 30
+16

0,12621

h	m	s		m	s
6	30	13.20		29	58.0
		15.35	17,556		59.7
		17.60	1756		1.2
		19.73			2.8
	8778	21.90		3060	4.3
		3778			60
		26.04		30	1.20
		28.26			+33.54
		30.42			
		32.50	34,727		
		34.70	3473		
		36.94	3475		
		39.10			
		41.20			
	31254	43.38			
		4254			
		47.70			
		49.80	51,936		
		51.90	5194		
		54.00	6950		
	25968	56.28		30	1,20
		968	30 34,740		
				+	33.54

R 51 20.92 ·
R 51 20.75 ·

51 20.83 ·

564

α Can. Maj

h m s
6 39 49
° ′
−16 33

0,12621

h	m	s		m	s
6	39	16.00		39	10.9
		18.10	20,316		12.7
		20.20	2032		14.4
		22.53			16.4
	10158	24.75		720	17.6
		158			220
		28.94		39	1440
		31.02			+23.15
		33.45			
		35.45	37,566		
		37.55	3757		
		39.70	3754		
		41.78			
		44.00			
	33809	46.20			
		6809			
		50.44			
		52.53	54,760		
		54.68	5476		
		57.00	75.08		
	27380	59.15		39	14,40
		2380	39 37,555		
				+	23.15

R 52 28.98 ·
R 52 29.15 ·

52 29.06 ·

21

546

ε Can. Maj

h m s
6 53 52
° ′
−28 48

0,12621

h	m	s		m	s
6	53	16.04		53	5.0
		18.40	20.776		7.2
		20.76	20.78		9.2
		23.20			11.1
	10388	25.48		451	12.6
		388			451
		30.14		53	9.02
		32.70			+30.67
		3500			
		37.40	39.707		
		39.70	39.71	54	11.5
		42.03	39.67		13.0
		4440			14.5
		46.86			16.6
	35736	49.13		738	18.2
		8736			238
		53.92		34	14.76
		56.14	58.546		−35.07
		58.47	58.55		
		1.00	79.33		
	29273	3.20		53	9.02
		4273	53 39.690	54	14.76
				+	30.67
				−	35.07
					65.74

568

δ Can. Maj

h m s
7 3 28
° ′
−26 12

0,12621

h	m	s		m	s
7	2	53.04		2	43.2
		55.19	57.584		44.6
		57.53	57.58		46.2
		0.00			47.7
	28792	2.16		2311	49.4
		3792			311
		6.80		2	46.22
		9.05			+29.73
		11.33			
		13.58	15.928		
		16.03	15.93		
		18.20	15.98		
		20.40			
		22.76			
	14335	25.20			
		5335			
		29.78			
		32.05			
		34.45	34.38		
		36.67	151.96		
	17192	38.97		2	46.22
			3 15.955		
				+	29.73

119

α Geminorum

h m s
7 26 52
° ′
+32 9

0,12621

h	m	s		m	s
7	26	2050		26	6.6
		22.98	25.446		7.8
		25.45	25.45		9.2
		28.00			11.0
	12723	30.30		477	13.1
		2723			477
		35.17		26	9.54
		3770			+35.42
		40.15			
		4250	44.978		
		4500	44.98		
		4740	44.94		
		49.80			
		52.30			
	40480	54.78			
		4480			
		59.57			
		2.00	44.32		
		4.47	44.3		
		6.90	89.88		
	32216	9.22		26	9.54
		2216	26 44.960		
				+	35.42

R 7 49.15
R 7 49.12

7 49.13

R 30 33.28
R 30 33.25

30 33.26

R 11 52.75
R 11 52.62

52.68

		120				122				146		
		α Can. Min				β Geminorum				α Leonis		
		h m s				h m s						
		7 32 58				7 37 53				10 1 56		
		° ′		0,12621		° ′		0,12621				0,12621
		+5 32				+28 19				+12 33		
	1880											
		Sept. 25										
h	m s		m s	h	m s		m s	h	m s		m s	
7	32 27.30		32 13.1	7	37 22.90		37 16.9	10	1 23.98		1 36.0	
	29.30	31,380	14.9		25.11	27,548	18.5		26.00		37.8	
	31.40	3138	16.4		27.52	2755	19.7		28.05	28.072	39.3	
	33.40		18.0		29.95		21.4		30.18		40.4	
	15690 35.50		819 19.5		13774 32.26		997 23.2		32.20		1955 42.0	
	690		319		3774		497				455	
	39.70		32 16.38		37.00		19.94		36.77		1 39.10	
	41.80		+31.60		39.30		+26.38		38.65			
	43.88				41.65				40.90			
	45.90	48,008			44.00	46,353			42.90	44.984		
	48.05	4801			46.40	4635			44.92			
	50.05	4795			48.65	4630			47.00			
	52.12				51.00				49.26			
	54.27				53.40				51.26			
	43207 56.30				41718 55.78				53.20			
	7207				5718							
	0.40				0.35				57.60			
	2.50	4,530			2.68	5,046			59.70	1,850		
	4.50	453			5.00	505			1.90	185		
	6.60	9591			7.40	9260			4.00			
	2265 8.65		32 16.38		2523 9.80		37 19.94		30925 6.05		1 39.10	
	2265	32 47,980			2523	37 46.325			925	1 44,972		
			+ 31.60				+ 26 38					
R	48 15.55·			R	2 4.48·			R	47 53.82·			
R	48 15.68·			R	2 4.68·			R	47 53.85·			
	48 15.62·				2 4.58·				47 53.83·			

c

γ' Leonis

h m s
10 13 18
° '
+ 20 27

0.12621

1880

Sept. 25

h	m	s		m	s
10	12	45.88		12	41.0
		48.00	50.126		42.3
		50.05	50.13		44.3
		52.25			46.0
	25063	54.45		2212	47.6
		063			212
		58.97		12	44.24
		1.00			+23.50
		3.44			
		5.56	7.743		
		7.70	7.74		
		9.90	7.74		
		12.18			
		14.38			
	60969	16.56			
		6969			
		20.90			
		23.10	25346		
		25.37	25.35		
		27.56	13.548		
	12673	29.80		12	44.24
		2673	13 7.740		
				+	23.50

- 54 3.45 ·

		d				198				594		
		ε Bootis				β Urs. Min.				δ Scorpii		
		h m s 14 39 42 ° ′ + 27 35		0,126 el		h m s 14 51 7 ° ′ + 74 37		0,126 el		h m s 15 53 11 ° ′ − 22 16		0,126 el
	1880	Sept. 26										
h	m s		m s	h	m s		m s	m s	h	m s	m	s
+23.29 14	38 7.00	30.29	37 52.6	14	48 —		47 15.5	49 0.2	+22.30 15	52 37.14	59.44 52	24.7
20.95 30.15	90.61 9.20		54.3		—		18.6	3.4	20.06 59.38	297.17 39.82	41.592	26.1
18.64 30.17	30.203 11.53		55.8	+62.34 49.14	147.77 46.80		25.5	10.5	17.85 59.45	59.434 41.60	4159	28.4
	—		57.5	54.54 48.44	49.256 54.90		29.7	15.2	15.62 59.47	48.85		30.0
	—		2789 58.7	46.72 49.19	2.37		1243 35.0	500 20.7	13.34 59.43	20796 46.05	1407	31.5
			289				243	500		796		407
9.31 30.23	90.63 20.92		37 55.78	31.15 49.34	443.46 18.24		47 2486	49 10.00	8.42 59.47	178.01 50.35	52	28.14
6.98 30.18	30.21 23.20		+34.43	23.37 49.27	49.273 25.90		+2 24.40	+39.26	5.31 59.06	59.333 52.75		+31.26
+4.65 30.22	25.57			15.56 49.26	33.70				+4.45 59.48	55.03		
	—			+7.71 49.53	41.82	49.287				—		
	—			−0.00 49.40	49.40	4929	51 9.0	52 26.7		—		
	—			7.77 49.05	56.82		12.4	31.2		—		
	—			15.58 49.12	4.70		19.0	35.8		—		
30.205	—			23.37 49.25	12.62		25.8	41.6		—		
30.206	—			31.19 49.19	44358 20.38		967 30.5	1845 49.2		—		
					44358		467	345				
	—				—		51 1934	52 3690		—		
	—				—		−1 30.08	−2 47.64		—		
	—				—					—		
	—				—					—		
	—		37 55.78		—		47 2486	49 1000		—		52 28.14
							51 1934	52 3690				
				49.264 49.261					59.383 59.397			
	R 45 51.08 · R 45 51.15 ·				R 42 33.48 · R 43 13.38 · R 43 57.75 · R 4~~4~~3 22.20 ·					R 35 51.20 · R 35 50.78 ·		
	45 51.12 ·									50.99 · 35 ~~59.98~~		

222

δ Ophiuchi

h m s
16 8 0
° ′
−8 23

0,12621

h	m	s		m	s
16	7	28.16		7	16.0
		30.20	32.288		17.5
		32.30	32.29		19.2
		34.38			20.7
	16144	36.40		955	22.1
		1144			455
		40.57		7	19.10
		42.63			+29.74
		44.58			
		46.84	48.842		
		48.90	48.84		
		50.90	48.84		
		53.00			
		55.00			
	43958	57.16			
		7958			
		1.29			
		3.26	5.394		
		5.33	5.39		
		7.44	97.68		
	2697	9.50		7	19.10
		2697	7 48.840		
					+ 29.74

596

α Scorpii

h m s
16 21 59
° ′
−26 10

0,12621

h	m	s		m	s
16	21	25.12			
		27.50	29.796		
		29.80	29.80		
		32.18			
	14898	34.38			
		4898			
		39.00			
		41.30			
		43.60			
		46.02	48.188		
		48.17	48.19	22	17.8
		50.45	48.24		19.7
		52.75			21.3
		55.00			22.6
	43369	57.40		1059	24.5
		7369			59
		2.00		22	21.18
		4.42	6.678		−32.97
		6.70	6.68		
		9.00	96.48		
	3339	11.27			
		3339	21 48.215	22	21.18
					− 32.97

228

β Herculis

h m s
16 23 1
° ′
+21 45

0,12621

h	m	s		m	s
16	24	26.90			
		29.02	31.156		
		31.36	31.36		
		33.60			
	15678	35.90			
		4678			
		40.28			
		42.50			
		44.75			
		46.94	49.172		
		49.17	49.17	25	12.0
		51.40	49.14		13.7
		53.65			15.2
		55.80			17.1
	44255	58.06		766	18.6
		8255			266
		2.44		25	15.32
		4.65	6.918		−26.17
		7.00	6.92		
		9.05	98.28		
	3459	11.45			
		3459	24 49.155	25	15.32
					− 26.17

R 43 2.02
R 43 2.10

43 2.06

R 29 51.50
R 29 51.58

29 51.54

R 36 33.38
R 36 33.58

36 33.48

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. 26

	h	m	s		m	s	h	m	s		m	s
+2	16	29	57.54		29	43.2	16	38	5.77		37	49.4
2			59.60	1.692		44.6			8.45	11.128		51.1
1			1.67	169		46.0			11.15	1113		52.8
			3.75			47.9			13.80			53.0
		30846	5.90		2312	49.5		5564	16.47		2651	56.8
			846			312			564			151
9			10.04		29	46.24			21.80		37	53.02
6			12.04			+32.22			24.40			+39.41
+5			14.25						27.10			
			16.42	18.467					29.78	32.434		
			18.50	1847					32.45	32.43		
			20.55	18.45					35.10	32.43		
			22.67						37.78			
			24.85						40.50			
		16620	26.88					29191	43.00			
			7620						21.91			
			31.03						48.43			
			33.00	35.198					51.00	53.730		
			35.26	3520					53.82	53.73		
			37.30	36.89					56.38	64.86		
		17599	39.40		29	46.24		26865	57.02		37	53.02
			2599	30 18.460					1865	38 32.430		
					+	3222					+	39.41

R 39 1.85.
R 39 2.02.

39 $1.\overset{9}{8}3$′

R 11 36.32′
R 11 36.48.

11 36.40.

S

Sun- C = 44 96.0

h m s
12 18 10
° '
−1 58

0,12621

1880

Sept. 27

h	s	m	s	m	s		m	s
12	—	17	19.3	18	28.85		18	4.0
	—		20.8		30.85	32.944		5.6
	—		22.6		33.00	32.94		7.1
	—		24.0		35.00			8.7
	—	1126	25.9	16472	37.02		358	10.4
			1.26		14.72			3.58
	—	17	22.52		41.28		18	7.16
	—				43.30			42.40
	—				45.36			
	—				47.45	49.553		
	—				49.57	49.55		
	—				51.60	49.58		
	—				53.80			
	—				55.80			
	—			44598	57.80			
					85.98			
	—				1.94			
	—				4.00	62.20		
	—				6.68	62.2		
	—				8.18	99.16		
	—	17	22.52	3110	10.30		18	7.16
					31.10	18 49.565		
							+	42.40

1.9.8

Blles. Min.

h m s
14 51 7
° '
+74 39

1.17609 0.12621
9.42278
0.59887

Sept. 28

h	m	s		m	s	m	s
14	50	11.50		48	35.3	49	57.0
		14.33			40.7		1.2
		16.77	16.72		46.6		7.2
		19.00			50.3		12.4
		22.00		2276	54.7	3355	17.7
		24.60			2.76		3.55
		26.80		48	45.52	50	7.10
		29.43	29.68				
		32.17					
		35.38					
		37.27		52	10.5	52	49.0
		40.21			16.2		55.0
		42.90	42.70		22.7		3.3
		45.33			27.3		6.7
		47.80		1111	34.4	3063	12.3
		50.42			11.11		6.3
		52.80		52	22.22	53	1.26
		55.47	55.45				
		58.00					
		0.56					
		3.20		48	45.52	50	7.10
		6.00		52	22.22	53	1.26
		8.68	8.54				
		11.34					
		13.47					
			50 42.62				

− 31 42.45

4 45.98

R 42 41.60
R 43 11.60
B 43 59.72
B 44 12.30
'
~~43 47.67~~
66.27

209

α Cor. Bor.

h m s
15 29 39
° '
+27 7

1.17609 0,12621
9.94943
1.12552

1880
Sept. 28

h m s		m s
15 28 51.60		28 34.7
54.00	56290	36.5
56.30	5629	38.0
58.57		39.5
28145 0.98		1903 41.6
3145		403
3.50		28 38.06
7.82		+ 36.75
10.18	14812	
12.40	~~16662~~	
14.90	1481	29 44.4
17.18	1482	46.0
19.50		47.4
21.78		49.0
13331 24.05		2372 50.4
4331		372
28.66		29 47.44
31.13	33354	− 32.62
33.30	3335	
35.65	149.64	
16677 38.03		28 38.06
1677	29 14.815	29 47.44

+ 36.75
− 37.63
49.38
1.84123
1.12552
2.96675
1.91971
8.95296
5740

B 13 23.90 ·
B 14 46.78 ·
R 14 46.68 ·
R 14 46.52 ·
B 14 48.60 ·?
14 ~~47.02~~ 6.60?
83.12

212

α Serpentis

h m s
15 38 18
° '
+6 48

1.17609 0,12621
9.99693
1.17302

h m s		m s
15 37 38.90		37 30.0
40.98	43074	31.5
43.02	4307	33.0
45.17		34.5
21537 47.30		1653 36.3
1537		153
51.40		37 33.06
53.57		+ 26.64
55.62		
57.72	59.788	
59.80	59.79	38 28.0
1.78	59.71	30.2
3.95		31.9
6.05		33.5
53809 8.20		1589 35.3
8809		89
12.17		38 31.78
14.20	16.362	− 32.03
16.40	16.36	
18.46	119.43	
8181 20.58		37 33.06
3181	37 59.750	38 31.78

+ 26.69
− 32.03
58.72
1.76879
1.17302
2.94181
1.89081
8.94900
5453

B 32 5.18 ·
B 33 22.95 ·
R 33 22.88 ·
R 33 22.98 ·
B 33 23.00 ·
33 22.95 ·
77.77

30

β Arietis

h m s
1 47 58
° '
+20 13

0,12621

h m s		m s
1 47 17.78		
19.78	22.048	
22.05	22.05	
24.17		
11024 26.46		
1024		
31.16		
33.00		
35.30		
37.38	39.762	
39.88	39.76	48 12.8
42.06	39.69	14.0
44.19		15.0
46.37		15.8
35786 48.52		749 17.3
8786		249
53.00		48 14.98
55.05	57.328	− 35.26
57.25	57.33	
59.61	79.38	
28664 1.73		
3664	47 39.725	48 14.98
		− 35.26

B 8 12.75 ·
B 8 12.62 ·
8 12.68 ·

107

ζ Geminorum

h m s
6 30 43
° ′
+16 30

0,12621

h m s
6 30 —
—
—
—
—
—
—
—
—
—

±0.00	23.60	116.51	23.50
-2,15	23,42	23.302	25.57
4.31	23.13		27.44
6.46	23.31		29.77
8.62	23.15		31.77
12.91	23.15	116.02	36.06
15.06	23.24	23.204	38.30
17.22	23.32		40.54
19.37	23.23		42.60
-21.54	23.08	20217	44.67

217

40434
4043

23.253
23.253

m s
30 34.4
36.9
39.1
41.0
1936 42.2
436
30 38.72
– 15.47

30 38.72

R 51 23.85 ·
R 51 23.78 ·
R 51 23.72 ·

51 23.78 ·

564

α Can. Maj.

h m s
6 39 49
° ′
–16 33

h m s
6 39 44.5
6.67
8.70
11.00
4410 13.28
4410
17.59
19.63
21.82
24.05
26.19
28.22
30.25
32.75
23535 34.85
5535
39.18
41.44
43.59
45.65
21771 47.85
1771 39 26.165

8.820
882

26.150
2.615
2.618

43.542
4354
52.36

0,12621

m s
38 54.5
56.3
57.5
58.8
2877 0.6
377
38 57.54
+ 28.62

38 57.54

+ 28.62

R 52 20.90 ·
R 52 20.92 ·

52 20.91 ·

566

ε Can. Maj.

h m s
6 53 52
° ′
–28 48

h m s
6 53 46.5
6.82
9.20
11.50
4621 14.04
4621
18.73
21.05
23.56
25.94
28.15
30.30
32.92
35.45
25410 38.00
7410
42.34
44.60
47.16
49.47
23542 57.85
3542 53 28.195

9.242
924

28.233
2823
2816

47084
4708
56.32

0,12621

m s
52 56.0
58.3
0.1
2.2
3003 3.7
03
53 0.06
28.13

53 0.06

+ 28.13

R 6 32.30 ·
R 6 34.82 ·

6 ~~34.82~~

118

β Can. Min.

h m s
7 20 35
° '
+8 32

0,1 26 21

1880

Sept. 28

h	m	s		m	s
7	19	53.22			
		53.28	57.382		
		57.38	67.38		
		59.48			
	28691	1.55			
		3691			
		5.90			
		7.97			
		10.00			
		12.02	14.163		
		14.02	14.16	20	41.8
		16.20	14.12		43.2
		18.32			44.6
		20.38			46.2
	12747	22.66		2235	47.7
		3747			235
		26.71		20	4470
		28.69	30.860		−30.56
		30.90	30.86		
		33.00	148.24		
	15430	35.00			
		430	20 14140	20	44.70
					9.46
				−	30.56

119

α Gem.

h m s
7 26 52
° '
+32 09

0,1 26 21

h	m	s		m	s
7	26	9.03		25	57.7
		11.56	1.4004		0.3
		14.00	14.00		1.9
		16.41			3.4
	7002	19.02		3087	5.4
		2002			87
		23.70		26	1.74
		26.25			31.74
		28.62			
		31.00	33.488		
		33.54	33.49		
		35.98	33.47		
		38.22			
		40.80			
	30139	43.28			
		3139			
		48.02			
		50.42	52954		
		52.98	52.95		
		55.50	66.95		
	26477	57.85		26	1.74
		1477	26 33.480		
					31.74

120

α Can. Min.

h m s
7 32 58
° '
+5 32

0,1 26 21

h	m	s		m	s
7	32	15.70			
		17.80	19.874		
		19.97	19.87		
		21.86			
	9937	24.04			
		4937			
		28.03			
		30.05			
		32.18			
		34.34	36390		
		36.43	36.39	33	9.4
		38.45	36.45		11.0
		40.50			12.5
		42.75			13.8
	32751	44.78		625	15.8
		5751			125
		49.00		33	1250
		50.88	53044		−36.08
		53.12	53.04		
		55.17	72.91		
	26522	57.05			
		1522	32 36.420	33	12.50
				−	36.08

R 49 46.05 ·
R 49 46.22 ·

49 46.13 ·

R 11 55.10 ·
R 11 55.15 ·

11 55.12 ·

R 49 44.22 ·
R 49 44.08 ·

49 44.15 ·

122

β Gem.

h m s
7 37 55
° ′
+28 19

0.12621

h m	s		m	s
7 37	11.14		37	1.0
	13.70	16.114		2.4
	14.03	16.11		3.6
	18.50			5.0
8057	20.90		186	6.6
	3057			186
	26.50		37	3.72
	28.05			+31.15
	30.20			
	32.47	34.887		
	34.84	34.89		
	37.24	34.86		
	39.50			
	41.80			
31398	44.38			
	4398			
	49.02			
	51.28	53.610		
	53.60	53.61		
	55.95	69.72		
26805	58.20		37	3.72
	1805	37 34.875	+	31.15

138

α Hydrae

h m s
9 21 38
° ′
−8 8

0.12621

h m	s		m	s
9 20	54.30		20	46.2
	56.38	58.462		47.7
	58.47	58.46		49.7
	0.58			51.1
29231	2.58		2474	52.7
	4231			474
	6.90		20	49.48
	9.00			+25.64
	11.00			
	13.02	15.184		
	15.17	15.18		
	17.30	15.17		
	19.32			
	21.45			
13666	23.50			
	4666			
	27.70			
	29.75	31.882		
	31.88	31.88		
	34.00	150.34		
15941	36.08		20	49.48
	941	21 15.175	+	25.69

142

ε Leonis

h m s
9 38 59
° ′
+24 20

0.12621

h m	s		m	s
9 38	14.65		38	12.7
	17.05	19.260		14.3
	19.33	19.26		15.4
	21.47			17.5
9630	23.80		794	19.5
	4630			294
	28.36		38	15.88
	30.60			+21.49
	32.76			
	35.15	37.363		
	37.38	37.36	39	9.6
	39.60	37.38		11.4
	41.88			13.0
	44.04			15.0
33627	46.50		656	16.6
	6627			156
	50.88		39	13.12
	53.20	55.512		−35.75
	55.54	55.51		
	57.84	74.77		
27756	0.10		38	15.88
	27.56	38 37.370	39	13.12
			+	21.49
			−	35.75
				57.24

R 1 57.75 ·
R 1 57.68 ·

1 5~~3~~771 ·

R 28 15.42 ·
R 28 15.25 ·

28 15.33 ·

B 1 29.90 :
B ×2 39.48 ·

~~+ 39.48~~

146		C	
α Leonis		χ' Leonis	
h m s 10 1 56		h m s 10 13 18	
° ' + 12 33	1.17609 0,12621 9.98950 1.16559	° ' + 20 27	1.17609 0.12621 9.97173 1.14782
1880 Sept. 28			

h m s		m s	h m s		m s
10 1 12.05		1 0.9	10 12 34.00		12 27.3
14.03	16.206	2.0	36.05	38.302	28.6
16.22	16.21	3.4	38.30	38.30	30.0
18.35		4.8	40.46		31.5
78103 20.38		173 6.2	19151 42.70		1502 32.8
3103		173	4151		02
24.60		1 3.46	47.00		12 30.04
26.80		+ 29.69	49.30		+ 25.90
29.00			51.62		
31.00	33.148		53.70	55.946	
33.23	33.15	1 59.5	56.00	55.95	13 24.2
35.30 35.00	33.15	1.0	58.17	55.93	25.8
37.47		2.2	0.44		27.8
39.55		3.7	2.50		29.5
29833 41.68		3116 5.2	50351 4.78		1388 31.5
2833		116	5351		388
45.80		2 2.32	9.04		13 27.76
48.05	50.076	− 29.17	11.35	13.568	− 31.82
50.09	50.08		13.55	13.57	
52.14	66.29		15.90	107.87	
25038 54.30		1 3.46	6784 18.00		12 30.04
038	1 33.150	2 2.32	1784	12 55.940	13 27.76
		+ 29.69			+ 25.90
		− 29.17			− 31.82
		58.86			57.72
		1.76982			1.76133
		1.16559			1.14782
		2.93541			2.90915
		1.88429			1.86380
		8.94888			8.95465
		5 4 48			5 8 51

B 47 23.30	B 53 59.82
B 48 40.07	B 55 12.90
R 48 39.90	
R 48 39.80	
R 48 39.88	
48 39.91	~~55 12.90~~
7661	73.08

δ

Sex. C = 44 26.8

h m s
12 25 23

° '
−2 45

0,1262/

1880

Sept. 29

h	m	s		m	s	m	s		m	s
12	23	—		24	23.8	25	33.00		24	54.7
		—			25.8		35.04	37.132		56.0
		—			27.2		37.17	37.13		57.3
		—			28.6		39.25			58.3
		—		1358	30.4	18566	41.20		2862	59.9
					358		3566			362
		—		24	27.16		45.63		24	57.24
		—			−31.73		47.70			+56.55
		—					49.76			
		—					51.78	53.854		
		—					53.70	5385		
		—					55.98	5373		
		—					58.04			
		—					0.10			
−8.27	45.33	53.60				48469	2.00			
							3469			
12.34	45.44	227.24 57.83					6.18			
14.46	45.49	45.448 59.95	2.006				8.34	10.334		
16.63	45.42	2.05	201				10.37	1033		
18.59	45.56	4.15					12.48	107.46		
20.72	45.33	31003 6.05		24	27.16	5167	14.30		24	57.24
		1003					167	25 53.790		+ 56.55

45.389
45.429

− 48 24.32

− 46 13.02

d

E Bootis

h m s
14 39 42

° '
+27 35

Sept. 29

0,12621

		h	m	s		m	s
		14	38	—		38	40.3
+20.95	18.35	73.45		57.40			42.1
18.64	18.34	18.362		59.70			43.7
16.30	18.35			2.05			45.0
13.97	18.41			4.44		2179	46.8
							179
9.31	18.44	92.51		9.18		38	43.58
6.98	18.53	18.502		11.53			+34.84
4.65	18.53			13.88			
+2.30	18.50			16.20			
				—		39	49.4
				—			51.5
				—			53.0
				—			54.9
−9.32	18.46			27.78		2655	56.7
							155
13.97	18.38	91.88		32.35	16	39	53.10
16.29	18.31	18.376		34.60	37.056		−34.68
18.63	18.37			37.00	3702		
20.96	18.42			39.38			
−23.35	18.40	18508		41.75		38	4358
				3558		39	5310

18.413
18.417

B 45 50.82
B 47 13.35
R 47 13.42
R 47 13.45
B 47 13.25
47 13.37
82.50

1880

Sept. 29

198

β Urs. Min.

h m s
14 57 7
° ′
+74 39

0.12621

h	m	s		m	s	m	s
14	50	6.46		48	17.2	49	5.3
		9.33			20.5		10.6
		11.72	11.74		24.2		17.0
		14.18			27.6		21.3
		16.59		1220	32.5	811	26.9
		19.45			220		311
		21.80		48	2440	49	16.22
		24.45	24.55				
		27.28					
		29.77					
		32.43		49	44.9	51	18.1
		35.15			48.6		24.0
		37.67	37.66		53.0		30.0
		40.06			58.5		35.9
		43.00		2697	4.7	1506	42.6
		45.50			107		.06
		48.00		49	53.94	51	30.12
		50.57	50.56				
		53.00					
		55.70					
		58.10		52	16.5	53	7.7
		0.80			23.0		12.2
		3.48	3.43		28.7		16.4
		6.28			34.5		23.6
		8.50		1430	40.3	899	30.0
			50 37.59		430		299
				52	28.60	53	17.98

199

B Boötis

h m s
14 57 23
° ′
+40 52

1.17609 0.12621
9.87866
1.05475

h	m	s		m	s
14	56	31.90		56	18.0
		34.61	37.360		19.7
		37.42	37.36		21.3
		40.05			23.5
	18680	42.82		1078	25.3
		3680			78
		48.25		56	21.56
		51.00			+ 37.67
		53.92			
		56.50	59.281		
		59.44	59.28	57	38.0
		2.00	59.19		40.2
		4.75			42.6
		7.50			44.6
	53353	10.17		2121	46.7
		8353			121
		15.60		57	42.42
		18.26	21.022		− 43.19
		21.00	21.02		
		23.78	118.38		
	10511	26.47		56	21.56
		511	56 59.235	57	42.42

+ . 37.67
− 43.19
80.76
1.90720
1.05475
2.96195
1.91761
8.95566
5934

201

δ Boötis 0.12621

h m s
15 10 37
° ′
+33 46

1.17609
9.91976
1.09585

h	m	s		m	s
15	9	48.70		9	42.7
		51.14	53.638		44.3
		53.62	53.64		46.0
		56.05			47.6
	26819	58.68		2301	49.5
		1819			301
		3.60		9	46.02
		6.05			+ 27.50
		8.52			
		11.11	13.536		
		13.56	13.54	10	42.8
		16.05	13.50		44.7
		18.50			45.7
		20.95			47.6
	12182	23.48		2307	(49.9)
		3182			307
		28.40		10	46.14
		30.85	33.364		− 32.62
		33.17	33.36		
		35.96	147.00		
	16682	38.44		9	46.02
		1682	10 13.520	10	46.14

+ 27.50
− 32.62
60.12
1.77902
1.09585
2.87487
1.82588
8.95101
5617

B 42 38.55 ·
B 42 57.75 ·
B 43 11.82 ·
B 43 45.68 ·
B 44 5.98 ·
B 44 21.02 ·
~~43 40.45~~
61.90

B 44 4.92 ·
B 45 27.58 ·
R 45 27.75 ·
R 45 27.65 ·
B 45 27.60 ·
45 27.64
82.72

B 35 10.08 ·
B 36 17.20 ·
R 36 17.12 ·
R 36 16.90 ·
B 36 16.98 ·
36 17.05 ·
66.97

209

α Cor. Bor.

h m s
15 29 39 6
° '
+27 7

1.17609 0.12621
9.94943
1.12552

h m s
15 28 46.90
49.20 51500
51.50 5150
53.90
25750 56.00
750
0.78
3.03
5.47
7.84 10.099
10.20 1010
12.45 1006
14.70
17.02
9089 19.40
089
23.91
26.27 28626
28.60 2863
31.00 14013
14313 33.35
4313 29 10.080

m s
28 29.5
31.3
33.0
34.4
1640 35.8
140
28 32.80
+37.28
29 42.2
43.7
45.3
46.8
2268 48.8
268
29 45.36
−35.28

28 32.80
29 45.36
+ 37.28
− 35.28
72.56
1.86070
1.12552
2.98622
1.93697
8.95075
5 6 6

222

δ Ophiuchi

h m s
16 8 0
° '
−3 23

1.17609 0.12621
9.99924
1.17533

h m s
18 7 16.25
18.35 20,368
20.40 2037
22.44
10184 24.40
684
28.60
30.70
32.70
34.90 36902
37.00 3690
39.00 3690
41.00
43.00
33212 45.22
6212
49.33
51.37 53432
53.40 5343
55.50 7380
26716 57.56
1716 7 · 36,900

m s
7 2.0
3.7
5.3
6.7
261 8.4
261
7 5.22
+31.68
8 5.7
7.1
8.5
9.8
421 11.0
421
8 8.42
−31.52

7 5.22
8 8.42
+ 31.68
− 31.52
63.20
1.80072
1.17533
2.97605
1.92957
8.95352
5 8 3

596

α Scorpii

h m s
16 21 59
° '
−26 10

1.17609 0.12621
9.95304
1.12913

h m s
16 21 13.40
15.47 17.854
17.90 1785
20.03
8927 22.47
3927
27.00
29.32
31.70
34.04 36.317
36.40 3632
38.63 3626
44.02
43.27
32685 45.47
5685
50.05
52.44 54.664
54.68 5466
56.88 7251
27332 59.27
2332 21 36.290

m s
20 58.5
0.5
2.5
4.7
3128 6.6
128
20 2.56
+ 1 33.73
22 9.9
12.0
13.2
14.7
663 16.5
163
22 13.26
−36.97

21 2.56
22 13.26
+ 33.73
− 36.97
70.70
~~1.93085~~ 1.84942
1.12913 5
~~3.05998~~ 2.97855
1.93085
~~8.87087~~ 8.95230
5 7 12

B 13 24.70 ·
B 14 51.18 ·
R 14 51.08 ·
R 14 51.28 ·
B 14 51.22 ·
14 51.19 ·
86.49

B 42 59.82 ·
B 44 24.72 ·
R 44 24.90 ·
R 44 25.02 ·
B 44 24.75 ·
44 24.85 ·
85.03

B 28 32.02 · ·
B 29 57.30 ·

29 57.30 ·
85.28

1880

228

β Herculis

h m s
16 25 1
° '
+21 45

Sept. 29

1.17609
9.96793
1.14402

0,12621

h 16	m 24 s 15.00		m 24 s 0.3
	17.26	19.452 1945	1.5
	19.44		2.8
	21.68		4.0
9726	23.88		144 5.8
	4726		144
	28.32		24 2.88 + 34.38
	30.66		
	32.80		
	35.00	37.264	
	37.25	3726	25 6.5
	39.47	3726	8.0
	41.70		9.6
	44.00		11.3
33538	46.18		484 13.0
	6538		484
	50.57		25 9.68
	52.80	55.080	− 32.42
	55.15	5508	
	57.38	7453	
27540	59.50		24 2.88
	2540	24 37.260	25 968

+ 34.38
− 32.42
66.80
1.82478
1.14402
2.96880
1.92319
8.95439
5 840

B 35 18.20
B 36 42.15
R 36 41.78
R 36 41.92
B 36 42.12
36 41.99
83.79

232

η Herculis

h m s
16 38 45
° '
+39 9

1.17609
9.88958
1.06567

0.12621

h 16	m 37 s 54.00		m 37 s 33.4
	56.48	59.288 5929	35.0
	59.28		36.6
	2.00		38.5
29644	4.68		1842 40.7
	4644		342
	10.00		37 36.84 + 43.73
	12.50		
	15.27		
	17.92	20.581	
	20.60	2058	38 58.2
	23.28	2056	0.2
	25.90		1.9
	28.56		3.5
18523	31.20		3097 5.9
	523		97
	36.50		39 1.94
	39.00	41.826	− 41.37
	41.88	4183	
	44.55	161.12	
20913	47.20		37 36.84
	913	38 20.570	39 1.94

+ 43.73
− 41.37
85.10
1.92993
1.06567
2.99560
1.94601
8.95041
5 552

B 11 32.85
B 13 1.10
R 13 1.15
R 13 1.28
B 13 1.12
13 1.16
88.31

240

β Draconis

h m s
17 27 42
° '
+32 23

0,12621

h 17	m 26 s 43.20		m 26 s 23.2
	46.62	50.028 5003	27.0
	50.00		29.3
	53.45		32.0
25014	56.87		1459 34.4
	014		459
	3.50		26 29.18 + 47.91
	7.00		
	10.45		
	13.77	17.133	
	17.15	1713	27 28.3
	20.50	1706	30.4
	23.88		32.5
	27.30		35.4
15420	30.65		1645 37.9
	6420		145
	37.46		27 32.90
	40.70	44.084	− 15.81
	44.06	4408	
	47.40	154.11	
22042	50.80		26 29.18
	2042	27 17.095	27 32.90

+ 47.91
− 15.81
63.72

B 57 21.35
B 58 14.50

241
α Ophiuchi
h m s
17 29 19
° ′
+12 39
1.17609 0.1262
9.98933
1.16542

h m s
17 28 34.62
36.64 38.778
38.75 3878
40.88
19389 43.00
4389
47.18
49.33
51.43
53.50 55.637
55.60 5564
57.70 5564
59.95
2.04
50873 4.00
5073
8.37
10.37 12488
12.40 1249
14.55 11127
6244 16.75
1244 28 55640

m s
28 29.3
31.1
32.7
35.0
1640 35.9
440
28 2880
+26.84
29 23.7
25.6
27.1
28.9
1359 30.6
359
29 27.18
−31.54
28 3280
29 27.18
+27.84
−31.54
5440
1.73560
1.16542
2.90102
1.85461
8.95359
586

252
χ Draconis
h m s
17 53 48
° ′
+51 30
1.17609 0.12621
9.79415
0.97024

h m s
17 52 49.90
53.20 56.556
56.50 5656
0.00
28278 3.18
3278
9.90
13.20
16.50
19.68 23.154
23.03 2315
26.55 2313
29.90
33.18
20839 36.45
2839
43.00
46.30 49.648
49.68 4970
52.96 16626
24849 56.55
4849 53 23140

m s
52 39.0
42.2
44.3
46.4
2202 48.3
202
52 4404
+39.10
54 4.5
6.8
9.5
12.4
481 14.9
481
54 9.62
52 4404
54 962
+39.10
−46.48
85.58
1.93237
0.97024
2.90261
2.11724
9.21463
9.1833

+2.04 39.82 234.14
−0.10 39.85 39.854
2.06 39.94
4.14 39.91
6.20 39.85
8.28 39.77
12.40 39.77 119.11
14.46 39.81 39.822
16.53 39.85
18.60 39.85
−20.72 39.83
39.838
39.841

h m s
17 14 —
—
—
—
—
—
—
—
37.78
39.85
42.00
44.05
46.05
48.05
52.17
54.27 56364
56.38 5636
58.45
28182 0.55
3182

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

m s
15 10.8
12.2
13.5
15.0
676 16.1
176
15 1352
−33.68
15 22.7
23.9
25.3
26.7
1271 28.5
271
15 2542
−45.58
15 1352
15 2542

B 41 29.02
B 42 40.55
42 ~~40.55~~
71.55

B 50 38.90
B 52 49.82
R 52 49.85
R 52 49.82
B 52 49.95
52 49.86
130.96

B 16 57.30
B 17 13.30
R 17 13.28
R 17 13.28
B 17 13.40
17 13.31

1880phae proj.1513

111			603			269		
51 Cephei L.C.			σ Sagittarii			λ Aquilae		
h m s 18 42 14			h m s 18 47 46			h m s 18 59 56		
° ′ +92 46		0,12621	° ′ −26 27	1.17609 9.95198 1.12807	0,12621	° ′ −5 3	1.17609 9.99831 1.17440	0,12621

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h m s	m s	m s	m s
18 40 18.35	42 1460	44 1343	36 20.3
19.55	16.60	19.78	
23.45	26.90	24.75	37 32.4
3387	29.42	26.45	
37.12	32.30	36.06	38 51.5
39.40	41.17	38.04	
48.58	43.66	40.53	
51.39	46.15	48.90	
53.60	56.00	52.17	
41 2.00	58.32	55.20	
3.75	43 6.10	45 3.98	
6.80	10.04	7.03	
15.70	11.50	8.43	
18.40	15.50	17.28	
22.00	23.47	19.20	
30.56	25.70	21.50	
33.47	29.52	—	
35.60	40.07	—	
43.00	42.58	—	
45.62	44.56	—	
50.35	53.00	—	
58.28	55.67	—	
42 1.77	44 0.50	—	
3.60	7.05	—	
12.04	8.90	—	

B 36 40.15 .
B 36 32.95 .
B 36 26.45 .

h m s		m s
18 47 0.20		46 49.7
2.50	4.844	51.5
4.85	484	52.9
7.17		54.5
2422 9.50		2646 56.0
2422		146
14.02		46 52.92
16.45		30.37
18.75		
21.00	23.312	
23.18	2331	48 0.7
25.53	2328	2.7
27.90		4.5
30.38		6.0
20981 32.60		218 7.9
2981		218
37.02		48 4.36
39.44	41.724	− 41.07
41.60	41.72	
44.18	46.56	
20862 46.38		46 52.92
862	47 23.295	48 4.36
		+ 30.37
		− 41.07
		71.44
		1.85394
		1.12807
		2.98201
		1.93495
		8.95294
		5 7 39

B 45 7.02 .
B 46 33.00 .
R 46 33.15 .
R 46 33.18 .

46 33.11 .
26.09

h m s		m s
18 59 6.20		58 50.0
8.10	10.300	51.4
10.37	10.30	53.0
12.43		55.0
5150 14.40		2659 56.5
150		159
18.62		58 53.18
20.74		+ 33.71
22.95		
24.80	26.908	
26.97	26.91	59 59.0
28.90	26.87	0.4
30.80		2.2
33.19		3.6
24217 35.20		3102 5.0
6217		102
39.37		0 2.04
41.39	43.444	−35.15
43.36	43.44	
45.50	53.74	
21722 47.60		58 53.18
1722	59 26.890	0 2.04
		+ 33.71
		− 35.15
		68.86
		1.83797
		1.17440
		3.01237
		1.95794
		8.94557
		5 2 30

B 23 16.38 .
B 24 47.15 .

24 47.15
90.77

84

β Eridani

h m s
5 1 ~~59~~ 57
° '
−5 15

0,12621

86

α Aurigae

h m s
5 7 46
° '
+45 52

0,12621

87

β Orionis

h m s
5 8 44
° '
−8 21

0,12621

h	m	s		m	s
5	1	9.24		1	0.6
		11.20	13,404		2.8
		13.40	1340		4.4
		15.48			6.2
	6702	17.70		215	7.5
		1702			215
		22.00		1	4.30
		24.04		+25,79	
		26.04			
		27.93	30.107		
		30.00	3011		
		32.19	3007		
		34.06			
		36.30			
	27096	38.40			
		096			
		42.50			
		44.77	46734		
		46.77	4673		
		48.78	6013		
	23367	50.85		1	4.30
		3367	1 30.090	+ 25.79	

h	m	s	
5		57.08	
		59.84	
	7	2.60	
		5.40	
		8.30	
		14.58	
		17.38	
		20.00	
		23.30	26,351
		26.50	2635
		29.25	
		32.55	
		35.30	
	23716	38.30	
		5716	
		44.20	
		47.00	50,050
		49.80	5005
		53.35	
	25025	55.90	
		025	7 26.377

h 5	m		s		m	s
+6.26	19.06	8	12.80			
4.17	19.17	152.76	15.00			
+2.06	19.06	19.095	17.00			
−0.00	19.05		19.05		8	43.3
2.08	19.02		21.10			45.6
4.17	19.13		23.30			47.3
6.26	19.22		25.48			49.0
8.35	19.05		27.40		2357	50.5
						357
12.51	19.29	95.96	31.80		8	47.14
14.60	19.20	19.192	33.80	35,890		−28.81
16.69	19.06		35.75	3589		
18.77	19.26		38.03			
−20.92	19.15	7945	40.07			
			2945		8	47.14

19.143
19.132

R 34 12.55·
R 34 12.68·

34 12,61·

A Rouly

R 41 7.65··
R 41 7.80·

41 7.72·

	90		93		556	
	β Tauri		δ Orionis		α Leporis	
	h m s 5 18 39 ° ′ +28 30	0,12621	h m s 5 25 50 ° ′ −0 24	0,12621	h m s 5 27 24 ° ′ −17 53	0,12621

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β Tauri

h m s		m s
5 17 53.75		17 44.[illegible]
56.20	58.570 58.57	46.3
58.54		48.4
0.92		49.7
29285 3.44		2399 51.1
4285		399
7.85		17 47.98
10.30		+29.31
12.95		
15.00	17.311	
17.20	1731	
19.60	1727	
22.00		
24.20		
15580 26.70		
6580		
31.30		
33.55	35.966	
35.90	3597	
38.38	15454	
17983 40.70		17 4798
2983	18 17.290	
		+ 29.31

δ Orionis

h m s		m s
5 25 5.47		24 (56.4
7.40	9.538	58.6
9.47	954	0.0
11.65		1.5
4769 13.70		3000 3.5)
4769		00
17.87		25 0.00
19.80		+25.88
21.70		
23.60	25.813	
25.50	2581	
27.92	25.95	
29.70		
32.05		
23232 34.18		
5232		
38.05		
40.52	42.370	
42.50	4237	
44.50	51.91	
21185 46.28		25 0.00
1185	25 25.880	
		+ 25.88

α Leporis

h m s		m s
5 26 36.88		26 23.7
39.00	41.164	25.0
41.26	4116	26.2
43.28		27.7
20582 45.40		1318 29.2
582		318
49.50		26 26.36
52.00		+ 32.15
54.00		
56.35	58.492	
58.40	5849	
0.90	58.53	
3.00		
5.00		
52643 7.28		
7043		
11.55		
13.80	15.906	
15.88	15.91	
18.02	117.07	
7953 20.28		26 26.36
2953	26 58.510	
		+ 32.15

R 50 24.50·
R 50 24.52·

A Rouly.

R 13 25.02·

50 24.51·

96

ι Orionis

h m s
5 29 31
° ′
−6 0

0,12621

h	m	s		m	s
5	28	46.00		28	33.0
		48.15	50.210		35.0
		50.25	5021		36.8
		52.40			38.4
	25105	54.25		1836	40.4
		105			336
		58.37		28	36.72
		0.72			+ 30.11
		2.74			
		4.95	6.882		
		7.05	688		
		8.95	679		
		11.16			
		13.00			
	60194	15.00			
		6194			
		19.28			
		21.17	23.374		
		23.36	2337		
		25.48	13358		
	11687	27.58		28	36.72
		1687	29 6.835		+ 30.17

b

α Columbae

h m s
5 35 16
° ′
−34 8

0,12621

h	m	s		m	s
5	34	24.88		34	11.7
		27.00	29.496		13.3
		29.38	2950		14.8
		31.92			17.0
	14748	34.30		751	18.3
		4748			251
		39.38		34	15.02
		41.80			+ 34.41
		44.27			
		46.87	49.459		
		49.48	4946		
		52.00	49.41		
		54.60			
		57.03			
	44513	59.70			
		8513			
		4.39			
		6.85	9.322		
		9.30	932		
		11.77	98.82		
	4661	14.30		34	15.02
		4661	34 49.435		+ 34.48

180

κ Orionis

h m s
5 42 1
° ′
−9 43

0,12621

[illegible]	m	s		m	s
[illegible]	41	15.80		41	2.9
		17.90	19.844		4.8
		19.70	1984		6.5
		21.78			7.8
	9922	24.04		310	9.0
		4922			31.0
		28.06		41	6.20
		30.04			+ 30.41
		32.47			
		34.50	36.608		
		36.60	3661		
		38.88	3662		
		40.80			
		42.97			
	32947	45.15			
		5947			
		49.43			
		51.35	53.410		
		53.15	5341		
		55.32	73.25		
	26705	57.50		41	6.20
		1705	41 36.615		+ 30.41

R 18 54.92
R 18 54.78

18 54.85

R 24 52.25
R 24 52.38

24 52.31

R 2 9.62
R 2 9.48

2 9.55

102 :

α Orionis

h h m s
(5) 6 48 37
° ′
+ 7 23

1880
Sept. 29

0,12621

h m s
5 47 53.40
55.20 57.352
57.32 57.35
59.30
28676 1.54
3676
5.78
7.92
9.60
11.92 13.991
13.97 1399
16.05 13.99
18.03
20.30
12592 22.35
3592
26.50
28.57 30.632
30.55 30.63
32.79 147.98
15316 34.75
316 48 13.990

m s
47 46.3
47.8
49.5
51.0
2473 52.7
473
47 49.46
+ 24.53

47 49.46
+ ~~7~~24.53

256

δ Urs. Min. L.C.

h m s
6 11 2
° ′
+ 93 24

0,12621

h m s
6 7 17.95
32.00
41.20
47.98
8 5.05
13.65
27.53
38.95
57.20
9 3.60
14.50
23.60
36.45
49.20
57.90
10 13.60
24.15
37.18
48.60
58.48
11 12.48
20.42
33.58
44.05
12 0.95

m s
2 41.2
4 5.2
5 9.3
6 24.7

106

μ Geminorum

h m s
6 15 39
° ′
+ 22 34

1.17609 0,12621
9.96541
1.14150

h m s
6 14 53.90 ~~58.358~~
56.05 ~~57.758~~
58.30 58.36
0.50
29179 3.04
41 ~~58~~79
7.35
9.76
11.90
14.20 16.302
16.30 16.30
18.44 16.28
20.70
22.87
14672 25.20
5672
29.80
32.05 34.200
34.18 34.20
36.47 152.56
17100 38.50
2100 15 16.290

m s
14 43.5
46.2
47.9
49.4
2383 51.3
383
14 47.66
+ 28.63
15 56.1
58.2
0.0
1.8
2994 3.3
494
15 59.88
− 43.59

14 47.66
15 59.88
+ 28.63
− 43.59
72.22
1.85866
1.14150
3.00016
1.94954
8.94938
5 5 9

R 57 11.05 ·
R 57 11.22 ·

57 11.13 ·

B 0 17.75 ·
B 0 10.95 ·
B 0 4.12 ·
B 59? 55.58 ·

B 46 11.60 ·
B 47 40.50 ·
R 47 40.60 ·
R 47 40.68 ·
B 47 40.75 ·
47 40.63 ·
89.03

```
                         107                                         566                                           119
                      χ Geminor                                   ε Can Maj.                                   ι Geminorum

                      h  m  s                                     h  m  s                                      h  m  s
                      6 30 43                                     6 53 52                                      7 26 52
                          °  ′  1.17609 0.12621                       °  ′  1.17609 0.12621                       °  ′  1.17609 0.12621
                      +16 30 9.98174                              -28 48 9.94266                               +32 49 9.92771
                             1.15783                                     1.11875                                      1.10380

 h  m   s                m   s            h  m   s                 m   s                h  m   s                  m   s
 6 29 59.00              29 50.5          6 53  2.20               52 49.7              7 26  6.50                 26  1.2
        1.20  3360           52.3                4.40  6890            51.6                    8.90  11390             2.5
        3.32  336            54.0                7.00  689             53.4                   11.35  1139              3.5
        5.50                 55.3                9.20                  55.8                   13.95                    5.0
 31680  7.78            2690 56.9          3445 11.65             2676 57.6              5695 16.25               192  7.0
      1680                   190               3445                   ~~176~~                  695                      192
       12.05            29 53.80                16.37             52 ~~53~~.52                21.05               26  3.84
       14.12              +26.78                18.70               + 32.14                   23.58                 + 27.00
       16.20                                    21.03                                         26.05
       18.50  20597                             23.38  25.729                                 28.48  30882
       20.60  2060      30 49.3                 25.70  25.73      54 11.7                     31.00  3088         27  9.5
       22.80  20.56          51.2               28.08  25.70         13.5                     33.25  30.80            11.2
       24.90                 52.9               30.50                15.7                     35.88                   12.5
       27.00                 54.8               32.80                17.4                     38.15                   14.2
 18537 29.20            2644 56.2         23156 35.00             778 19.5             27794  40.50               632 15.8
       537                   144                5156                  278                     794                     132
       33.35            30 52.88                39.85             54 15.56                    45.35               27 12.64
       35.65  37.766       . -32.30             42.30  44.510         49.85                   48.00  50.206         -41.80
       37.90  3777                              44.50  4451                                   50.38  5021
       39.88  41.13                             46.90  51.40                                  52.60  61.60
 18883 42.05            29 53.80          22255 49.00             52 53.52             25103  54.70               26  3.84
      3883 30 20.580    30 52.88               2255 53 25.715     54 15.56                  103 26 30.840         27 12.64
                        + ~~26.78~~                               +  32.19                                        +  27.00
                        -  32.30                                  -  49.85                                        -  41.80
                           59.08                                     82.04                                           68.80
                        1.77144                                   1.91403                                         1.83759
                        1.15783                                   1.11875                                         1.10380
                        2.92927                                   3.03278                                         2.94139
                        1.88868                                   1.98430                                         1.89293
                        8.95941                                   8.95152                                         8.95154
                         5 12 14                                   5 6 39                                          5 6 40



 B 50 28.00 .                              B 6 24.48 .                                   B 12  1.15 .
 B 51 45.40 .                              B 8  1.02 :                                   B 13 19.32 .
 R 51 45.42 '                              R 8  0.82 :                                   R 13 19.35 '
 R 51 45.32 .                              R 8  0.80 .                                   R 13 19.25 .
 B 51 45.42 .                              B 8  1.10 .                                   B 13 19.30 .
   51 45.39 .                                8  0.93 '                                     13 19.30 .
      77.39                                     96.45                                         78.15
```

1880

120

α Can. Min.

h m s
7 32 58
° ′
+5 32

1.17609 0,12621
9.99797
1.17406

Sept. 29

h m s
7 32 13.04
15.15
17.18
19.24
8599 21.38
3599
25.48
27.60
29.53
31.57
33.75
35.85
38.00
40.00
30383 42.05
3383
46.30
48.28
50.45
52.42
25185 54.40
2185

17198
1720
33.759
33.76
33.78
50270
5037
67.57
32 33.770

m s
32 0.0
2.2
4.0
5.5
187 7.0
187
32 374
+ 30.03
33 3.7
5.7
7.4
9.1
367 10.8
367
33 734
-33.57
32 374
33 734
+ 30.03
− 33.57
63.60
1.80346
1.17406
2.97752
1.93024
8.95272
5 7 30

122

β Geminor.

h m s
7 37 58
° ′
+28 19

1.17609 0,12621
9.94465
1.12074

h m s
7 37 8.60
11.00
13.44
15.90
6699 18.05
1699
22.97
25.15
27.53
29.80
32.07
34.65
36.90
39.18
24003 41.78
2003
46.32
48.72
51.00
53.15
25477 55.58
477

13398
1340
32226
3223
32.17
50954
5095
64.35
37 32.200

m s
37 2.6
4.7
6.4
8.0
307 9.0
307
37 614
+26.06
37 56.4
1.7
3.3
5.0
3161 6.7
161
38 322
-31.02
37 614
38 322
+ 26.06
− 31.02
56.08
1.74881
1.12074
2.86955
1.83569
8.96614
5 17 5

138

α Hydrae

h m s
9 21 38
° ′
−8 8

1.17609 0,12621
9.99561
1.17170

h m s
9 20 52.00
54.00
56.00
58.15
28030 0.15
3030
4.50
6.60
8.60
10.80
12.87
14.90
16.90
19.00
11535 21.18
2535
25.30
27.30
29.40
31.40
14695 33.55
4695

56.060
5606
12817
1282
12.73
29.390
2939
145.45
21 12.775

m s
20 41.6
43.2
44.6
45.7
2221 47.0
221
20 4442
+28.35
21 46.5
48.0
49.8
51.0
2479 52.6
479
21 4958
+36.81
20 4442
21 4958
+ 28.35
− 36.81
65.16
1.81398
1.17170
2.98568
1.93942
8.95374
5 8 13

B 48 16.20
B 49 41.25
R 49 41.42
R 49 41.42
49 41.36
85.16

B 2 3.12
B 3 11.52
R 3 11.68
R 3 11.70
B 3 11.58
3 11.62
68.50

B 28 10.48
B 29 37.42
R 29 37.50
29 37.46
86.98

21

140

θ Urs. Maj.

h	m	s		
9	24	45	1.17609	0.12621
°	′			
+52	14		9.78707	
			0.96316	

	h	m	s			m	s
	9	23	50.25			23	47.7
			53.66	57.016			49.3
			57.00	57.02			52.0
			0.40				55.3
28508			3.77		2617		57.4
			3508				817
			10.65			23	52.34
			13.80				+31.67
			17.17				
			20.70	24.031			
			24.00	24.03		25	7.7
			27.38	23.99			11.2
			30.90				13.5
			34.18				15.8
21628			37.50		667		18.5
			3628				167
			44.18			25	13.14
			47.55	50.962			−49.13
			50.90	50.96			
			54.38	167.98			
25481			57.80			23	52.34
			481	24 24.010		25	13.34

+ 31.67
− 49.33
81.00
1.90849
0.96316
2.87165
1.81391
8.94226
5013

142

ε Leonis

h	m	s		
9	38	59	1.17609	0,12621
°	′			
+24	20		9.95960	
			1.13569	

	h	m	s			m	s
	9	38	12.28			37	59.0
			14.48	16.796			1.2
			16.85	16.80			2.5
			19.00				3.7
8398			21.37		3116		5.0
			3398				114
			25.85			38	2.28
			28.19				+32.68
			30.50				
			32.85	34.990			
			35.00	34.99		39	6.0
			37.25	34.93			7.8
			39.38				9.3
			41.83				10.8
31491			44.06		462		12.3
			4491				462
			48.40			39	9.24
			50.80	53.066			−34.28
			53.00	53.07			
			55.38	69.87			
26533			57.75			38	2.32
			1533	38 34.960		39	9.24

+ 32.64
− 3~~2~~4.28
6~~8~~6.92
~~1.79879~~ 1.82556
1.13569
~~2.93448~~
1.91259
~~8.97811~~
~~5 2554~~ 5 6 31

146

α Leonis

h	m	s		
10	1	56	1.17609	0,12621
°	′			
+12	33		9.98950	
			1.16559	

	h	m	s			m	s
	10	1	9.62			0	55.0
			11.78	13.896			57.6
			13.98	13.90			1.0
			16.05				2.5
6948			18.05		3050		3.9
			1948				50
			22.30			1	1.00
			24.45				+29.84
			26.60				
			28.80	30.837			
			30.88	30.84		1	56.8
			32.90	30.85			58.2
			35.00				59.4
			37.22				0.9
27753			39.38		2978		2.5
			753				478
			43.50			1	59.56
			45.75	47.808			−28.72
			47.75	47.81			
			50.00	61.71			
23904			52.04			1	1.00
			3904	1 30.845		1	59.56

+ 29.84
− 28.72
58.56
1.76760
1.16559
2.93319
1.88627
8.95308
5745

B	~~58~~ 8	16.02
B	549	21.50
R	549	21.10
R	549	21.00
B	547	21.08
	549	21.17
		65.15

B	1	15.55
B	2	37.32
R	2	37.30
R	2	37.38
R	2	37.28
	2	37.32
		81.77

B	47	22.05
B	48	38.82
R	48	38.95
R	48	39.22
B	48	39.05
	48	39.01
		76.96

		148				c				149		
		ζ Leonis	9.96067			χ' Leonis				μ Urs. Maj.		
		h m s				h m s				h m s		
		10 9 57		0,12621		10 13 18		0,12621		10 15 7		0,12621
		° '				° '				° '		
		+24 1				+20 27				+42 6		
	1880	Sept. 29										
h 10	m 9 s —		m 9 s 58.0	h 10	m 13 s —		m s	h 10	m 14 s 15.91		m 15 s 8.4	
	—		57.5		—				18.70		10.3	
	—		1.8		—				21.46	21.46	12.4	
	—		3.3		—				24.22		14.8	
+13.58 33.45	33.45 19.87		3073 4.7		—				27.02		629 17.0	
	33.45		73								129	
9.04 33.36	24.32		10 1.46	+8.81 53.64	482.70 44.83				32.55		15 12.58	
6.78 33.28	299.61 26.50		−28.17	6.61 53.61	53.633 47.00				35.40			
4.51 33.21	33.290 28.70			4.40 53.50	49.10				38.05			
+2.24 33.24	31.00	33.294		2.18 53.63	51.45	53.637			41.00	43.767		
+0.00 33.26	33.25	33.29	10 19.2	−0.00 53.70	53.70	53.64	13 20.4		43.80	43.77	15 25.2	
2.26 33.34	35.60		20.4	2.20 53.60	55.80		21.9		46.55		27.9	
4.52 33.33	37.85		21.7	4.40 53.65	58.05		23.4		49.40		29.8	
6.78 33.27	40.05		23.8	6.61 53.69	0.30		25.2		52.15		31.7	
9.05 33.33	29965 42.38		1105 25.4	8.82 53.68	48273 2.50		1176 26.7		39390 55.00		1490 34.4	
	2965		105		3273		176		3390		490	
13.58 33.22	166.34 46.80		10 22.10	13.21 53.59	268.21 6.80		13 23.52		0.45		15 29.80	
15.81 33.19	33.268 49.00	51.360	−48.81	15.41 53.59	53.642 9.00	11.248	+30.12		3.18	6.050		
18.08 33.27	51.35	51.36		17.62 53.68	11.30	11.25			6.02	6.05		
20.33 33.27	53.60			19.82 53.66	13.48				8.95			
−22.66 33.39	25680 56.05		10 1.46	−22.97 53.69	5624 15.66				3025 11.65		15 12.58	
	680		10 22.10		624		13 23.52		3025	14 43.76	15 29.80	
33.336 33.293				53.637 53.636								

B 21 12.40 ·
B 21 36.52 ·
R 21 36.38 ·

21 36.45 ·

B 50 11.05 ·

B 16 13.90 ·
B 16 30.50 ·
R 16 30.28 ·
R 16 30.00 ·
B 16 30.15 ·
30.23 ·

173

S

Em. c = 44 26.8

h m s
12 29 1
° '
−3 8

0,12621

1880

Sept. 29/30

ε Urs. Maj.

h m s
12 48 42
° '
+56 37

Sept. 30

0,12621

h	m	s		m	s	m	s		m	s
12	26	59.45		28	5.6	29	8.00		28	23.2
		1.65	3.680		7.2		10.00	12.092		24.8
		3.70	3.68		8.9		12.00	12.09		26.0
		5.80			10.2		14.18			27.5
	31840	7.80		436	11.7	6046	16.28		1305	29.0
		1840			436		1046			305
		12.00		28	8.72		20.47		28	26.10
		14.00		−	48.50		22.65		+1	02.66
		16.04					24.58			
		18.18	20.217				26.65	28.789		
		20.20	20.22				28.70	28.79		
		22.28	20.22				30.90	28.73		
		24.30					33.00			
		26.45					35.00			
	18195	28.50				25910	37.15			
		195					7910			
		32.70					41.15			
		34.65	36.770				43.20	45.360		
		36.70	36.77				45.40	45.36		
		38.95	40.45				47.50	57.45		
	18385	40.85		28	8.72	22680	49.55		28	26.10
		3385	27 20.220				2680	29 28.760		
				−	48.50				+	62.66
−	11	52.35				44	21.95			

44 40.82
41? 1.32
41 0.75
43 1.00
42 15.88

198

β Urs. Min.

h m s
14 57 7
° ′
+74 39

0,12621

1880

Sept. 30

h m s
14 50 4.35 +77.90 22.25
10.15 72.06 20.21
19.80 62.34 22.14
64.60
21.533

m s
49 6.5
14.6
20.2
23.4
937 29.0
437
49 18.74
+2 2.79
49 48.3
56.0
2.4
7.9
3066 12.0
66
50 1.32
+1 20.21

49 18.74
50 1.32

+24.55 24.27
21.84 24.31
19.11 24.15
16.37 24.25
10.91 24.29
8.14 24.24
5.45 24.35
+2.70 24.25
−0.00 24.30

24.265
24.268

h m s
14 56 —
96.98 59.72
24.245 2.47
5.04
7.88
121.43 13.38
24.286 16.05
18.90
21.55
24.30
—
—
—
—
—
—
—
—
—

19~~8~~9
Er

β Bootis

h m s
14 57 23
° ′
+40 52

0,12621

m s
57 20.3 +24.83
22.2 22.33
23.8 19.87
25.8 17.38
1203 28.2 14.84
203
57 24.06 9.93
+0.21
57 47.0
49.0
51.0
53.0
2552 55.2
52
57 51.04
−36.77

57 24.06
57 51.04

h m s
15 9 46.40
11.23 56.21 48.90
11.25 11.242 51.38
11.28 53.90
11.22 25691 56.83
691
11.18 11.18 1.25
11.18 —
—
—
—
—
—
—
—
—
—
—

11.211
11.231

201

δ Bootis

h m s
15 10 37
° ′
+33 46

11.23
51382
5138

0,12621

m s
9 36.3
37.6
39.6
41.3
1968 43.0
468
9 39.36
+31.87

9 39.36

B 43 1.00 ·
B 43 15.88 ·

B 30 10.55 ·
B 30 37.12 ·
R 30 37.35 ·
R 30 37.25 ·
B 30 37.45 ·
30 37.279

B 35 4.18 :
R 35 3.78 :

35 3.98 ·

62)

209

α Cor. Bor.

h m s
15 29 39
° ′
+27 7

0,12621

h m s
15 28 44.66
46.90
49.00
51.60
24606 53.90
4606
58.50
0.98
3.17
5.50
7.90
10.03
12.45
14.83
61036 17.00
7036
21.70
24.03
26.40
28.76
13189 31.00
3189

49.212
49.21

7.818
7.82
7.80

26.378
26.38
135.59

29 7.810

m s
29 41.2
42.8
44.4
46.4
2230 48.2
230

29 44.60
−36.79

29 52.1
54.0
56.1
58.1
2805 0.2
305

29 56.10
−48.29

29 44.60
29 56.10
− 36.79
− 48.29
85.08

212

α Serpentis

h m s
15 38 18
° ′
+6 48

1.17609
9.99693
1.17302

0.12621

h m s
15 37 32.08
34.05
36.10
38.05
18056 40.28
3056
44.35
46.65
48.72
50.78
53.00
55.00
56.93
59.00
47543 1.00
2543
5.22
7.17
9.35
11.50
4666 13.42
4666

36.112
36.11

52.826
52.83
52.72

9.332
9.33
105.44

37 52.775

m s
37 18.8
20.1
21.9
23.5
1093 25.0
93

37 21.86
+ 30.91

38 16.4
17.6
19.5
20.8
965 22.2
465

38 19.30
−26.53

37 21.86
38 19.30
+ 30.91
− 26.53
57.44
1.75921
1.17302
2.93223
1.88093
8.94870
54 40

594

δ Scorpii

h m s
15 53 11
° ′
−22 16

1.17609
9.96654
1.14263

0.12621

h m s
15 52 23.18
25.26
27.70
29.98
13817 32.05
3817
36.54
38.75
41.02
43.20
45.54
47.70
49.85
52.18
40916 54.38
4916
58.85
1.00
3.22
6.56
31647 7.84
1647

27.634
27.63

45.462
45.46
45.46

3.294
3.29
90.92

52 45.460

m s
52 12.0
14.1
16.0
18.0
801 20.0
301

52 16.02
+ 29.44

53 17.1
18.3
20.0
21.3
1005 23.8
05

53 20.10
− 34.64

52 16.02
53 20.10
+ 29.44
− 34.64
64.08
1.80672
1.14263
2.94935
1.90477
8.95542
59 24

B 14 52.60 ·
B 15 6.15 ·
R 15 5.98 ·
R 15 6.02 ·
B 15 6.02 ·
15 6.04 ·

B 31 59.52 ·
B 33 15.38 ·
R 33 15.62 ·
R 33 15.60 ·
B 33 15.58 ·
33 15.54 ·
76.02

B 35 50.00 ·
B 37 10.55 ·
R 37 10.25 ·
R 37 10.12 ·
37 10.31 ·
80.31

1880phae.proj.1513.

595

β' Scorpii

h m s
15 58 24
° '
−19 28

1880

Sept. 30

0,12621

h	m	s		m	s
15	57	36.97		57	28.9
		39.03	41.202		30.9
		41.15	41.20		32.4
		43.30			34.0
	20601	45.56		1618	35.6
		601			118
		49.90		57	32.36
		52.04			
		54.48			
		56.58			
		58.80			
		1.25	58.70		
		3.17			
		5.39			
		7.53			
		11.85			
		14.00	16.198		
		16.19	16.20		
		18.37	117.40		
	8099	20.58		57	32.36
		3099	57 58.589		

269

λ Aquilae

h m s
18 59 56
° '
−5 3

0,12621

h	m	s		m	s
18	59	4.16			
		6.28	8.316		
		8.30	8.32		
		10.37			
	4158	12.47			
		4158			
		16.70			
		18.76			
		20.65			
		22.88	24.860		
		24.82	24.79	59	52.2
		27.00	24.82		54.0
		29.03			56.0
		30.90			57.4
	22314	33.00		2788	59.2
		4374			288
		37.00		59	55.76
		39.24	41.334		−30.96
		41.40	41.33		
		43.48	49.65		
	20667	45.55		59	55.76
		667	59 24.805		
				−	30.96

275

β Cygni

h m s
19 25 50
° '
+27 42

0. 12621

h	m	s		m	s
19	25	2.00		24	51.8
		4.27	6.594		53.6
		6.50	6.59		55.1
		9.00			56.8
	3297	11.20		2757	58.4
		3297			257
		15.94		24	55.14
		18.20			+ 30.09
		20.55			
		22.88	25.221		
		25.20	25.22	25	54.5
		27.45	25.25		56.0
		30.00			58.0
		32.20			59.7
	22699	34.57		2892	1.0
		4699			392
		37.18		25	57.84
		41.67	43.914		−32.61
		43.97	43.91		
		46.20	50.50		
	21957	48.55		24	55.14
		1957	25 25.235	25	57.84
				+	30.09
				−	32.61
					62.70

B 47 54.30·

R 24 40.45·
R 24 40.65·

B 37 49.32·
B 389 1.88·

24 40.55·

277

χ Aquilae

h	m	s	
19	40	30	· 1.17609 0.12621
	°	′	
	+10	19	9.99292
			1.16901

h	m	s		m	s
19	39	44.57		39	34.8
		46.70	48822		36.0
		48.90	4882		37.3
		50.90			38.8
	24411	53.04		1874	40.5
		4411			374
		57.23		39	37.48
		59.26			+28.10
		1.48			
		3.52	5.609		
		5.64	561	40	41.5
		7.70	555		43.3
		9.75			45.0
		11.90			46.6
	59048	14.00		2244	48.0
		5048			244
		18.00		40	44.88
		20.18	22276		−39.30
		22.28	2228		
		24.40	131.10		
	11138	26.52		39	37.48
		1138	40 5.580	40	44.88
				+	28.10
				−	39.30
					67.40
					1.82866
					1.16901
					2.99767
					1.94944
					8.95177
					5649

280

α Aquilae

h	m	s	
19	44	53	· 1.17609 0.12621
	°	′	
	+8	33	9.99515
			1.17124

h	m	s		m	s
19	44	7.03		43	52.5
		9.15	11268		54.6
		11.20	1127		56.0
		13.40			57.6
	5634	15.56		2799	59.2
		634			299
		19.50		43	55.98
		21.80			+31.99
		23.62			
		25.82	27.949		
		28.00	2795	45	0.9
		30.00	2800		2.9
		32.05			4.5
		34.30			5.8
	25154	36.45		213	7.2
		7154			213
		40.50		45	4.26
		42.60	44740		−36.29
		44.75	4474		
		46.90	5601		
	22370	48.95		43	55.98
		2370	44 27.975	45	4.26
				+	31.99
				−	36.29
					68.28
					1.83429
					1.17124
					3.00553
					1.95313
					8.94760
					5354

283

β Aquilae

h	m	s	
19	49	22	0.12621
	°	′	
	+6	6	

h	m	s		m	s
19	48	36.67		48	20.9
		38.80	40824		22.7
		40.85	4082		24.0
		42.80			25.5
	20412	45.00		1199	26.8
		412			199
		49.17		48	23.98
		51.25			+33.44
		53.15			
		55.34	57.418		
		57.38	5742	49	28.2
		59.55	5742		27.8
		1.63			31.5
		3.61			33.4
	51676	5.68		1576	34.7
		6676			76
		9.80		49	31.52
		11.98	14.032		−34.10
		14.00	1403		
		16.08	11485		
	7016	18.30		48	23.98
		2016	48 57.420	49	31.52
				+	33.44
				−	34.10
					67.54
					1.82956

B 0 42.82 ·
B 2 11.75 ·
R 2 11.92 ·

2 11.83 ·
89.01

B 46 43.22 ·
B 48 12.98 ·
R 48 13.02 ·
R 48 12.98 ·

48 12.99 ·
89.77

B 13 18.60 ··
B 14 48.35 ·
B 14 48.28 ·

14 48.31 ·

287
θ Aquilae
h m s
20 5 4
° ′ 1.17609 0,12621
−1 11 9.99991
1880 Sept. 30 1.17600

	h	m	s		m	s
	20	4	18.40		4	9.1
			20.45	22548		11.4
			22.55	2255		12.6
			24.60			13.9
11274			26.74		622	15.2
			1274			122
			30.90		4	1244
			33.00			+ 26.64
			35.00			
			37.00	39.097		
			39.18	39.10	5	7.9
			41.18	3907		9.3
			43.14			10.9
			45.37			12.4
35187			47.30		545	14.0
			8187			45
			52.50		5	1090
			53.36	55594		− 31.82
			55.64	5559		
			57.64	7814		
27797			58.83		4	1244
			2797	4 39.085	5	1090
					+	26.64
					−	31.82
						58.46
						1.76686
						1.17600
						2.94286
						1.89504
						8.95218
						577

607
α² Capricorni
h m s
20 11 20
° ′ 1.17609 0,12621
−12 55 9.98887
1.16496

	h	m	s		m	s
	20	10	34.84		10	22.9
			37.00	39078		25.0
			39.00	3908		26.7
			41.18			28.3
19539			43.37		1325	29.6
			4539			325
			47.50		10	2650
			49.56			+ 29.53
			51.90			
			53.87	56.058		
			56.00	5606	11	24.5
			58.27	5601		26.8
			0.32			28.0
			2.55			29.2
50452			4.55		1392	30.7
			5452			392
			8.57		11	2784
			10.68	12940		− 31.81
			13.00	1294		
			15.25	11202		
6470			17.20		10	2650
			1470	10 56035	11	2784
					+	29.53
					−	31.81
						61.34
						1.78774
						1.16496
						2.95270
						1.90849
						8.95579
						5940

294
α Cygni
h m s
20 37 18
° ′ 1.17609 0,12621
+44 57 9.85062
1.02671

	h	m	s		m	s
	20	36	24.50		36	7.3
			27.45	30336		9.4
			30.38	3034		11.3
			33.30			13.3
15168			36.05		567	15.4
			168			67
			41.90		36	11.34
			44.95			+ 42.34
			47.88			
			50.80	53.696		
			53.70	5369	37	26.5
			56.60	5367		28.6
			59.50			30.5
			2.42			32.5
48324			5.42		1527	34.6
			3326			27
			11.17		37	3054
			14.03	17010		− 36.86
			17.00	1701		
			19.95	10735		
8505			22.90		36	1134
			3505	36 53680	37	3054
					+	42.34
					−	36.86
						79.20
						1.89873
						1.02671
						2.92544
						1.87783
						8.95239
						5716

B 40 18.68
B 41 37.18
R 41 37.18
R 41 37.10
B 41 37.38
41 37.21
78.53

B 14 10.55
B 15 31.45
B 15 31.65
15 31.55
81.00

B 29 18.50
B 30 33.88
B 30 34.08
30 33.98
75.48

107

γ Geminorum

h m s
6 30 43
° ′
+16 30

1.17609 0,12621
9.98174
1.15783

h	m	s		m s
6	29	58.00	57.70	29 51.1
		59.90	2122	52.4
		2.06	212	53.8
		4.31		55.0
	31061	6.34		2696 57.3
		1061		196
		10.56		29 53.92
		12.68		+25.24
		14.80		
		16.98	19.147	
		19.20	1915	30 50.3
		21.35	1921	51.8
		23.65		53.5
		25.60		55.2
	17232	27.50		2677 58.9
		8232		177
		31.80		30 53.54
		[33.80]	36.304	−34.38
		36.38	3630	
		38.84	38.42	
	18152	40.70		29 53.92
		3152	30 19.180	30 53.54
			−.015	+ 25.26
			19.165	− 34.36
				59.60
				1.77525
				1.15783
				2.93308
				1.88024
				8.94716
				5 3 36

B 50 30.62 ·
B 51 46.75 ·
R 51 46.48 ·
R 51 46.32 ·

51 46.52 ·
75.90

564

α Can. Maj.

h m s
6 39 49
°
−16 33

1.17609 0,12621
9.98162
1.15771

h	m	s		m s
6	39	0.55		38 45.9
		2.75	4.866	47.3
		4.80	487	48.4
		7.04		49.4
	2433	9.19		2419 50.9
		2433		419
		13.37		38 48.38
		15.57		+33.75
		17.95		
		20.33	22.111	
		22.16	2211	39 57.2
		24.00	2216	57.0
		26.22		0.5
		28.40		2.0
	19900	30.70		3022 3.5
		1900		22
		35.20		40 0.44
		37.25	39.446	−38.31
		39.35	3945	
		41.55	4432	
	19723	43.88		38 48.38
		4723	39 22.135	40 0.44
				+ 33.75
				− 38.31
				72.06
				1.85769
				1.15771
				3.01540
				1.96171
				8.94631
				5 3 1

B 52 10.38 ·
B 53 41.94 ·

5 3 ~~41.94~~
97.56

566

ε Can. Maj.

h m s
6 53 52
° ′
−28 48

1.17609 0.12621
9.94266
1.11875

h	m	s		m s
6	53	0.95		52 54.9
		3.25	5610	57.1
		5.55	561	59.5
		7.95		1.4
	2805	10.35		2957 2.8
		2805		457
		15.00		52 59.14
		17.48		+25.20
		19.52		
		22.00	24.279	
		24.18	2428	53 58.9
		26.48	2440	0.4
		29.00		1.9
		31.20		3.6
	21851	33.65		3102 5.4
		3851		102
		38.58		54 2.04
		40.75	43200	−37.70
		43.20	4320	
		45.45	48.81	
	21600	48.02		52 59.14
		1600	53 24.340	54 2.04
				+ 25.20
				− 37.70
				62.90
				1.79865
				1.11875
				2.91740
				1.87955
				8.96215
				5 14 12

B 6 29.78 ·
B 7 43.40 ·
B 7 43.72 ·

7 43.56 ·
75.78

568

δ Can. Maj

h m s
7 3 28
° '
-26 12

1.17609 0.12621
9.95292
1.12901

1880

Sept. 30

118

— Can. Min.

h m s
7 20 35
° '
+8 32

0.12621

138

α Hydrae

h m s
9 21 38
° '
-8 8

0.12621

h	m s		m s		h m s		m s	h	m s		m s
7	2 37.50		2 28.0		7 19 —		20 25.8	9	20 51.00		20 44.6
	39.85	42160	30.0		—		27.8		53.00	55.012	45.9
	42.00	4216	31.6		—		29.8		55.03	55.01	47.0
	44.50		33.7		—		31.2		57.03		48.6
	21080 46.95		1591 35.8	+12.52 10.12	10.12 57.60		1474 32.8		27506 59.00		2361 50.0
	1080		91		10.12		474		2506		361
	51.66		2 31.82	8.35 10.15	41.30 1.80		20 29.48		3.30		20 47.22
	53.68		+28.78	6.26 10.29	10.325 4.03		-19.07		5.38		+24.48
	55.80			4.17 10.22	6.05				7.50		
	58.32	0.654		+2.06 10.64	8.58				9.65	11.709	
	0.60	065	3 36.3		—		20 57.9		11.75	11.71	
	3.03	0.55	38.2		—		58.8		13.90	1169	
	5.40		39.6		—		0.0		15.90		
	7.50		41.5		—		1.0		18.00		
	54589 9.90		1986 43.0		—		2997 2.0		10538 20.00		
	589		486				497		1538		
	14.40		3 39.72	-12.52 10.26	52.72 22.78		20 59.94		24.18		
	16.52	18.940	-39.12	14.60 10.60	10.544 25.20	27.248	-49.53		26.30	28.382	
	19.00	1894		16.64 10.61	27.30	2725			28.35	2838	
	21.18	121.10		18.78 10.62	29.40				30.48	14339	
	9470 23.60		2 31.82	-20.43 10.63	3624 31.56		20 29.48		14191 32.60		20 47.22
	4470	3 0.600	3 39.72		3624		20 59.94		4191	21 11.700	
			+ 28.78								+ 24.48
			- 39.12	10.329							
			67.90	10.414							
			1.83187								
			1.12901								
			2.96088								
			1.91561								
			8.95473								
			5855								

B 30 27.50 ·
B 31 49.88 ·
B 31 49.80 ·

31 49.84 ·
8234

B 49 30.25 ·
B 50 10.72

R 28 15.32 ·

140

θ Urs. Maj.

h m s
9 24 45
° ′
+52 14

0,12621

h	m	s		m	s
9	23	49.36		23	42.8
		52.55	56.978		45.3
		55.98	55.98		48.2
		57.32			50.0
	27989	2.68		2378	57.5
		2989			378
		9.60		23	47.56
		12.82			+ 35.33
		16.05			
		19.50	22.890		
		22.92	22.89		
		26.08	22.89		
		29.70			
		33.00			
	20601	36.34			
		2601			
		43.02			
		46.56	49.798		
		49.90	49.80		
		53.03	165.78		
	24899	56.48		23	47.56
		4899	24 22.890		
				+	35.33

142

ε Leonis

h m s
9 38 59
° ′
+24 20

0,12621

h	m	s		m	s
9	38	11.20			
		13.50	15.740		
		15.70	15.74		
		18.02			
	7870	20.28			
		2870			
		24.77			
		27.03			
		29.35			
		31.60	33.856		
		33.86	33.86	38	50.4
		36.06	33.97		51.8
		38.45			53.2
		40.60			55.0
	30470	42.98		2667	56.5
		3470			167
		47.55		38	53.34
		50.05	52.206		−19.43
		52.30	52.21		
		54.38	67.95		
	26103	56.75			
		1103	38 33.915	38	53.34
				−	19.43

146

α Leonis

h m s
10 1 56
° ′
+12 33

1.17609 0.12621
9.98950
1.16559

h	m	s		m	s
10	1	8.80		0	55.5
		10.88	12.926		57.0
		12.88	12.93		58.2
		15.02			0.2
	6463	17.05		2923	1.4
		1463			423
		21.37		0	58.46
		23.48			+31.35
		25.60			
		27.60	29.809		
		29.90	29.81	1	57.8
		31.88	29.82		59.3
		34.07			0.7
		36.10			2.3
	26828	38.28		3039	3.8
		8828			39
		42.50		2	0.78
		44.57	46.704		−30.97
		46.66	46.72		
		48.84	59.65		
	23362	50.95		0	58.46
		3352	1 29.815	2	0.78
				+	31.35
				−	30.97
					62.32

1.79463
1.16559
2.96022
1.91376
8.95354
584

R 8 13.12 ·
R 8 13.25 ·
8 13.18 ·

R 2 19.22 ·
B 2 19.42 ·
19.32 ·

B 47 20.45 ·
B 48 42.22 ·
R 48 42.28 ·
R 48 42.60 ·
B 48 42.68 ·
48 42.44 ·
81.99

148
ζ Leonis
h m s
10 9 57
° '
+24 1

1880
Sept. 30

0,12621

c
χ' Leonis
h m s
10 13 18
° '
+20 27

0,12621

149
μ Urs. Maj.
h m s
10 15 7
° '
+42 6

0,12621

h 10	m 9 s —		m s	h 10	m 12 s 30.60		m 12 s 22.1	h 10	m 14 s 14.55		m 15 s 0.8
	—				32.65	34982	24.0		17.63	20370	3.2
	—				34.98	3498	25.2		20.45	2037	4.6
	—				37.28		26.6		23.22		6.5
	—			17491	39.40		1265 28.6		10185 26.00		241 9.0
					2491		265		185		241
+9,04 32.21	290.55 23.17				43.88		12 25,30		31.53		15 4,82
6,78 32,25	32.283 25.47				46.05		+27.33		34.40		−22,10
4,51 32,21	27.70				48.35				37.20		
+2,24 32,27	30.03	32288			50.48	52674			39.98	42729	
−0,00 32,40	32.40	3229	10 9.9		52.70	5267	13 22.2		42.79	4273	15 19.4
2,26 32,31	34.57		11.6		54.84	5260	23.7		45.46	4272	21.9
4,52 32,28	36.80		12.9		57.04		26.9		48.30		23.4
6,78 32,22	39.00		14.7		59.23		28.5		51.00		25.0
9,05 32,46	29059 41.45		655 16.4	47407	1.50		1305 29.2		38456 53.90		1177 28.0
	2059		155		2407		305		2456		177
13,58 32,36	161.58 45.94		10 13.10		5.80		13 26,10		59.50		15 23.54
15,81 32,25	32.316 48.06	50408	−40.81		8.05	10210	−33.47		2.30	5070	−40.82
18,08 32,28	50.36	5041			10.20	1021			5.00	507	
20,33 32,35	52.68				12.40	105.19			7.90	8544	
−22,66 32,34	25204 55.00			5105	14.60		12 25,30		32535 10.65		15 4.82
	204		10 13.10		105	12 52635	13 26,10		2535	14 42725	15 23.54
					~~+210~~		+ 1,05				− 22.10
32.299							− 33.47				− 40.82
32.295							34,52				62.92

B 21 27.05 ·
B 21 27.40 ·

21 27.22 ·

B 53 58.02 ·

B 16 8.55 ,
B 16 26.35 ·
R 16 26.22 ·
R 16 26.40 ·
B 16 26.15 ·
26.28

212

☉ Sun-

h m s
12 32 38
° ′
−3 31

1880 Sept. 30 / Oct. 1

0.12621

h m s		m s	m s		m s
12 30 35.90		31 45.3	32 44.70		32 5.4
38.05	40.028	47.0	46.77	48.784	7.6
40.07	40.03	48.3	48.70	48.78	8.8
42.07		49.7	50.80		10.0
20014 44.05		2413 51.0	24392 52.95		430 11.2
014		413	4392		430
48.30		31 48.26	57.15		32 8.60
50.28		−51.63	59.25		+56.77
52.60			1.27		
54.58	56.640		3.18	5.386	
56.75	56.64		5.30	5.39	
58.70	56.62		7.55	5.35	
0.72			9.52		
2.88			11.55		
50976 4.95			58847 13.70		
5976			4847		
9.10			17.90		
11.10	13.224		19.90	21.906	
13.06	13.22		21.90	21.91	
15.38	113.25		23.75	130.69	
6612 17.48		31 48.26	10953 26.08		32 8.60
1612	30 56.630		953	33 5.370	
		− 51.63			+ 56.77

35 11.80

7 47.52

α Serpentis

h m s
15 38 18
° ′
+6 48

Oct. 1

1.17609 0.12621
9.99693
1.17302

h m s		m s
15 37 31.00		37 19.8
33.18	35.258	21.8
35.37	35.26	23.3
37.39		25.2
17629 39.35		1166 26.5
2629		166
43.65		37 23.32
45.73		+28.60
47.88		
49.88	51.954	
52.00	51.95	38 22.3
54.05	51.89	23.7
56.05		25.9
58.05		27.7
46759 0.30		1284 28.8
1759		284
4.40		38 25.68
6.45	8.506	−33.76
8.53	8.51	
10.55	103.77	
4253 12.60		37 23.32
4253	37 51.920	38 25.68
		+ 28.60
		− 33.76
		62.36
		1.79491
		1.17302
		2.96793
		1.92018
		8.95225
		5710

B 32 1.55
B 33 24.90
R 33 24.85
R 33 24.85
B 33 24.45
33 24.76
83.21

222
δ Ophiuchi

h m s
16 8 0
° ′
−3 23

1.17609 0,12621
9.99924
1.17533

1880 Oct. 1

h	m	s		m	s
16	7	13.15		7	6.1
		15.35	17.320		7.8
		17.30	1732		9.2
		19.42			10.9
	8660	21.38		463	12.3
		3660			463
25.48		25.38		7	9.26
		27.60			+24.56
		29.80			
31.77		31.65	33800		
		33.82	3380	8	9.8
		36.00	3383		11.6
		38.00			12.9
		39.95			14.2
	30420	42.00		641	15.6
		3420			141
		46.20		8	12.82
		48.05	50,336		−34.00
		50.35	5034		
		52.48	6766		
	25168	54.60		7	926
		1687	7 33815	8	1282
			+.010	+	24.55
			33.825	−	3901
					63.56
					1.80318
					1.17533
					2.97851
					1.92381
					8.94530
					5219

B 43 7.38 ·
B 44 31.25 ·
R 44 31.05 ·
R 44 31.38 ·
B 44 31.50 ·
44 31.29 ·
83.91

228
β Herculis

h m s
16 25 1
° ′
+21 45

1.17609 0,12621
9.96795
1.14404

h	m	s		m	s
16	24	12.04		23	58.0
		14.20	16,408		59.7
		16.50	1641		1.1
		18.50			2.4
	8204	20.80		3047	3.5
		3204			47
		25.23		24	0.94
		27.50			+33.32
		29.65			
		32.06	34.257		
		34.44	3426	25	4.8
		36.58	3426		6.2
		38.95			8.0
		40.90			10.3
	30831	43.00		411	11.8
		3831			411
		47.50		25	8.22
		49.85	52.120		−33.96
		52.20	5212		
		54.40	68.53		
	26060	56.65		24	094
		1060	24 34.260	25	822
				+	33.32
				−	33.96
					67.28
					1.82789
					1.14404
					2.97193
					1.92210
					8.95017
					5542

B 35 19.15 ·
B 36 43.00 ·
R 36 42.52 ·
R 36 42.62 ·
B 36 42.80 ·
36 42.73 ·
83.58

597
ζ Ophiuchi

h m s
16 30 30
° ′
−10 19

0,12621

h	m	s		m	s
16	29	42.50		29	29.4
		44.55	46730		30.6
		46.70	4673		32.0
		48.90			33.2
	23365	51.00		1598	34.6
		3365			98
		55.18		29	31.96
		57.33			+31.60
		59.38			
		1.50	3,612		
		3.60	361	30	34.1
		5.47	352		35.5
		7.80			36.9
		9.90			38.7
	57251	12.05		1852	40.0
		3251			352
		16.10		30	37.04
		18.18	20.304		−33.48
		20.38	2030		
		22.38	127.03		
	10152	24.48		29	3196
		152	30 3.565	30	3704
				+	31.60
				−	33.48
					65.08
					1.81345

B 39 1.48 ·
B 39 27.75 ·
R 39 27.08 ·
R 39 27.22 ·
B 39 27.72 ·
39 27.~~59~~ 44

232
η Herculis
h m s
16 38 45
° '
+39 9
1.17609 0,12621
9.88958
1.06567
Oct. 1

1880

h m s
16 37 50.80
53.50 56196
56.20 5620
58.95
28098 1.53
3098
6.90
9.38
12.22
14.90 17508
17.60 1751
20.09 1751
22.88
25.45
15757 28.20
6757
33.42
36.05 38808
39.00 3881
41.40 155.01
19404 44.17
4404 38 17.510

m s
37 35.5
37.5
39.0
40.7
1934 42.7
454
37 39.08
+38.43

38 53.4
55.6
57.0
59.1
2864 1.3
364
38 57.28
−39.77

37 39.08
38 57.28
+ 38.43
− 20.77
59.20
1.77232
1.06567
2.83799
1.90720
9.06921
6 41 20

275
β Cygni
h m s
19 25 50
° '
+27 42
Oct. 2

0,12621

h m s
19 24 0.40
2.67 5126
5.04 513
7.60
2563 9.92
2563
14.46
16.80
19.00
21.45 23770
23.70 2377
26.05 2376
28.47
30.90
21393 33.10
3393
37.80
40.04 42394
42.38 4239
44.75 47.52
21197 47.00
1197 24 23.765

m s
24 54.6
56.0
57.0
59.5
2892 1.1
392
24 57.84
−34.08

24 57.84
− 34.08

B 11 38.75 ·
B 12 59.62 ·
R 12 59.42 ·
R 12 59.35 ·
B 12 59.65 ·
12 59.51 ·
80.76

R 28 7.02 ·
B 28 5.40 ·

277

χ Aquilae

h m s
19 40 30
° ′
+10 19

1.17609 0.12621
9.99292
1.16901

1880

Oct. 2.

h m s
19 39 43.20
45.45 47.442
47.35 47.44
49.56
23721 51.65
3721
55.78
57.90
0.08
2.20 4.230
4.20 4.23
6.38 4.19
8.45
10.48
57807 12.60
3807
16.82
18.88 20.940
21.00 20.94
23.00 128.38
10470 25.00
470 40 42.10

m s
39 33.2
35.1
36.4
37.7
1818 39.4
318
39 36.36
+27.85
40 35.6
37.3
38.0
40.7
1949 42.3
449
40 38.98
−34.77
39 36.36
40 38.98
+ 27.85
− 34.77
62.62
1.79671
1.16901
2.96572
1.91403
8.94831
5424

280

α Aquilae

h m s
19 44 53
° ′
+8 33

0.12621

h m s
19 44 5.98
8.00 10006
10.00 10.01
12.00
5003 14.05
003
18.18
20.30
22.45
24.56 26.627
26.58 26.63
28.72 26.67
30.85
33.00
23964 35.00
59.64
39.15
41.30 43.326
43.32 43.33
45.38 53.34
21663 47.48
1663 44 26.650

m s
44 2.8
4.5
6.3
8.2
310 9.2
310
44 6.20
+20.45
44 56.2
57.8
59.0
0.5
2958 2.3
458
44 59.16
−32.51
44 6.20
44 59.16
+ 20.45
− 32.51
52.96
1.72395

283

β Aquilae

h m s
19 49 22
° ′
+6 6

1.17609 0.12621
9.99753
1.17362

h m s
19 48 35.20
37.38 39.392
39.40 39.39
41.43
19696 43.55
4696
47.70
49.70
51.78
53.97 56004
56.02 56.00
58.05 56.01
0.20
2.22
50404 4.40
5404
8.40
10.55 12630
12.60 12.63
14.70 112.02
6315 16.90
1315 48 56.005

m s
48 26.2
28.2
30.2
31.6
1492 33.0
492
48 (29.84
+26.16
49 25.8
27.3
28.8
30.0
1436 31.7
436
49 28.72
−32.72
48 29.84
49 28.72
+ 26.16
− 32.72
58.88
1.76997
1.17362
2.94359
1.88801
8.94442
5142

B 0 43.88
B 2 5.92

2 5.92
82.04

B 46 59.20
B 47 9.80
R 47 10.20

47 10.00

B 13 29.08
B 14 46.30
R 14 46.40

14 46.35
77.27

		287				607				289		
		θ Aquilae				α² Capricorni				γ Cygni		
		h m s				h m s				h m s		
		20 5 4				20 11 20				20 17 53		
		° ′	1.17609	0.12621		° ′		0.12621		° ′	1.17609	0.12621
		−1 ″	9.99991			−12 55				+39 52	9.88510	
			1.17600								1.06119	
h	m s		m s	h	m s		m s	h	m s		m s	
20	4 17.04		4 1.4	20	10 —		11 15.4	20	16 59.95		16 41.3	
	19.04	21.162	2.9		—		17.1		2.45	5.256	43.4	
	21.13	2116	4.6		—		19.0		5.28	526	45.2	
	23.20		6.0		—		20.7		7.90		47.0	
	10581 25.40		221 7.2		—		950 22.6		32628 10.70		2261 49.2	
	581		221				448		2628		261	
	27.50		4 4.42	+8.47 54.77	492.91 46.30		11 18.96		16.00		16 45.22	
	31.60		+33.35	6.35 54.80	54.768 48.45		−24.19		18.60		+41.56	
	33.65			4.23 54.75	50.52				21.30			
	35.90	37.841		2.04 54.79	52.70	54.771			24.05	26.767		
	37.85	3784	5 6.5	~~0.40~~ 54.77	54.97	54.77	11 35.2		26.80	2677	18 2.0	
	40.00	37.70	8.2	2.11 54.89	57.00		37.0		29.45	2679	4.0	
	41.95		9.4	4.23 54.77	59.00		38.7		32.20		5.8	
	44.08		10.8	6.35 54.65	1.00		40.6		34.80		7.6	
	34057 46.04		474 12.5	8.48 54.72	29294 3.20		1935 42.0		24090 37.70		294 10.0	
	7057		474		4294		435		6090		294	
	50.07		5 9.48	12.70 54.80	273.86 7.50		11 38.70		42.95		18 5.88	
	52.17	54.230	−31.71	14.82 54.75	54.772 9.57	11.722	−43.93		45.37	48.318	−39.10	
	54.30	5423		16.94 54.85	11.79	1172			48.37	4832		
	56.28	7539		19.05 54.70	13.75				51.00	5358		
	27115 58.33		4 4.42	21.24 54.76	5861 16.00		11 19.00		24159 53.70		16 45.22	
	2115	4 37.770	5 9.48		861		11 38.70		4159	17 26.780	18 5.88	
			+ 33.35								+ 41.56	
			− 31.71	54.770							− 39.10	
			65.06	54.769							80.66	
			1.81331								1.90666	
			1.17600								1.06119	
			2.98931								2.96785	
			1.94626								1.92231	
			8.95695								8.95446	
			51029								5841	
B	30 10.22 ·			B	15 22.58 ·			B	27 56.60 · ·			
B	31 38.42 ·			B	15 48.18 ·			B	29 20.12 ·			
R	31 38.72 ·							B	29 20.32 ·			
R	31 38.58 ·											
R	31 38.58 ·											
	31.38.58								29 20.22 ·			
	88.36								83.62			

1880

Oct. 2

294

α Cygni

h m s
20 37 18
° ′
+44 51

1.17609 0.12621
9.85062
1.02671

h m 20 36	s 23.16		m 36	s 1.7
	26.08	29.030		4.5
	29.04	2903		6.5
	32.00			8.4
14515	34.87		318	10.7
	4515			318
	40.70		36	636
	43.65			+45.94
	46.50			
	49.47	52331		
	52.38	5233	37	34.8
	55.05	5228		37.5
	58.18			39.3
	1.00			41.1
47098	4.05		1960	43.3
	2098			460
	9.80		37	39.20
	12.56	15528		−46.90
	15.56	1553		
	18.40	10456		
7764	21.32		36	636
	2764	36 52.305	37	3920
			+	45.94
			−	46.90
				92.84
				1.96774
				1.02671
				2.99445
				1.94768
				8.95323
				5751

298

ε Cygni

h m s
20 41 19
° ′
+33 31

1.17609 0.12621
9.92102
1.09711

20 40	28.20		40	10.7
	30.78	33148		12.5
	33.03	3315		14.4
	35.65			16.2
16574	38.08		718	18.0
	1574			218
	43.05		40	1436
	45.65			+38.63
	48.05			
	50.54	53.003		
	53.02	5300	41	26.0
	55.40	5298		27.9
	57.95			29.7
	0.47			31.4
47703	2.90		1480	33.0
	2703			480
	7.88		41	2960
	10.35	12806		−23.61
	12.70	1281		
	15.30	10596		
6403	17.80		40	1436
	1408	40 52990	41	2960
		+ 38.63		
		− 36.61		
		75.24		
		1.87645		
		1.09711		
		3.97356		
		1.92983		
		8.95627		
		5100		

303

ζ Cygni

h m s
21 7 47
° ′
+29 44

1.17609 0.12621
9.93869
1.11478

21 6	57.83		6	47.8
	0.10	2.498		49.9
	2.40	250		51.4
	4.86			53.0
31249	7.30		2568	54.7
	1249			68
	12.02		6	51.36
	14.35			+30.15
	16.80			
	19.16	21.510		
	21.42	2151	7	52.6
	23.95	2151		54.2
	26.25			55.5
	28.60			56.9
19359	31.04		2778	58.6
	1359			278
	35.80		7	55.56
	38.08	40534		−34.05
	40.47	4053		
	42.97	4303		
20267	45.85		6	5136
	267	6 7 21.510	7	5556
			+	30.15
			−	34.05
				64.20
				1.80754
				1.11478
				2.92232
				1.85733
				8.93501
				~~4.422~~ 4.5516

B 29 14.80
B 30 43.45

30 43.45
88.65

B 48 55.10
B 50 20.08

50 20.08
85.08

B 36 11.08
B 37 23.05
B 37 23.10

37 23.08
72.00

				306				566				568		
				α Cephei				ε Can. Maj				δ Can. Maj		
				h m s 21 15 41 ° ' +62 4		0,12621		h m s 6 53 52 ° ' −28 48		0,12621		h m s 7 8 28 ° ' −26 12		0,12621
21	14	58.76		13 59.3	14 43.5	6	52 59.70		52 50.6	7	2 36.60		2 23.8	
		0.47		2.2	45.5		1.97	4,384	52.4		38.70	41.000	25.3	
		1.80		4.9	48.5		4.45	438	54.0		41.00	41.00	27.0	
		3.30		7.4	51.4		6.80		55.6		43.00		29.5	
		4.79		3248 11.0	2439 55.0		32192 9.00		2694 56.8		20500 45.70		1375 31.9	
		6.31		248	439		2192		194		500		375	
		7.63		14 496	14 48.78		13.85		52 53.88		50.08		2 27.50	
		9.02					16.02		+29.33		52.50		+31.40	
		10.70					18.50				54.77			
		12.04					20.90	23.238			57.04	59.410		
		13.50		16 11.5	16 38.4		23.28	2324			59.47	5941	3 25.9	
		15.01		13.8	40.5		25.62	23.19			1.75	5939	27.8	
		16.50		16.4	43.5		28.00				4.05		29.5	
		18.00		19.6	46.4		30.40				6.35		31.8	
		19.38		844 23.1	2186 49.8		20914 32.57				53469 8.68		1486 33.6	
		20.87		344	186		2914				8469		486	
		22.33		16 1688	16 43.72		37.30				13.16		3 29.72	
		23.88					39.70	41.992			15.35	17.776	−30.32	
		25.36					42.00	4199			17.90	1778		
		26.75					44.30	46.37			20.00	11878		
		28.18		14 496	14 48.78		20996 46.66		52 5388		8888 22.45		2 2750	
		29.65		16 1688	16 4372		996	53 23215			3888	2 59400	3 2972	
		31.03			+ 4362				+ 29.33				+ 31.90	
		32.50			− [illegible]								− 30.38	
		34.06											62.28	
													1.79435	

B 15 58.80 ·
B 16 26.22 ·
B 16 20.20 ·
B 17 37.15 ·

~~16 47.86~~

R 6 29.38 ·
R 6 29.32 ·

6 29.35 ·

R 31 42.00 ··
R 31 42.08 ·

~~31 42.04~~ ·

118

Can Min.

h m s
7 20 35
° '
+8 32

0,12621

1880

Oct. 2.

h m	s		m	s
7 19	48.00			
	50.20	52256		
	52.20	5226		
	54.38			
26/28	56.50			
	1128			
	0.47			
	2.75			
	4.60			
	6.88	8.974		
	9.00	8.97	20	35.6
	11.00	8.98		36.8
	13.18			38.4
	15.23			39.6
8077	17.46		1924	41.8
	8077			424
	21.58		20	3848
	23.70	25.714		− 29.59
	25.67	25.71		
	27.82	137.97		
12857	29.80			
	2857	20 8.975	20	3848
			−	29.51

119

α Gem

h m s
7 26 52
° '
+32 09

0,12621

7 26	3.85			
	6.25	8.584		
	8.72	868		
	11.00			
4342	13.60			
	4292			
	18.34			
	20.42			
	23.40			
	25.75	28.187		
	28.28	2819	27	1.3
	30.67	2817		2.6
	33.00			4.5
	35.42			6.0
25368	37.90		224	8.0
	7368			224
	42.85		27	448
	45.15	47.674		−36.30
	47.70	4767		
	50.07	56.35		
~~23~~3837	52.60			
	3837	26 28180	27	448
			−	36.30

120

α Can. Min.

h m s
7 32 38
° '
+5 32

0,12621

7 32	10.60		32	2.0
	12.64	14760		3.7
	14.68	1476		5.0
	16.85			6.7
7380	19.03		258	8.4
	2380			258
	23.00		32	5.16
	25.00			+ 26.16
	27.18			
	29.35	31.326		
	31.30	3133		
	33.48	3132		
	35.40			
	37.57			
28195	39.67			
	1193			
	43.90			
	45.78	47.882		
	47.78	4788		
	49.90	6264		
23941	52.05		32	516
	3941	32 31325		
			+	26.16

R 49 45.60.
R 49 45.65.

49 45.62.

R 12 14.52.
R 12 14.42.

12 14.47.

R 48 22.45.
R 48 22.30.

48 22.37.

S

β Gem.

h m s
7 37 55
° '
+28 19

0.12621

1880

Oct. 2

Sun. c = 45.907

h m s
12 39 54
° '
−4 18

0.12621

Oct. 2/3

7	37	6.45		36	51.6
		9.65	11,000		53.7
		10.90	1100		55.3
		13.23			56.9
	5500	15.77		2760	58.5
		500			260
		20.35		36	55,20
		22.65			+ 34.50
		25.00			
		27.40	29,714		
		29.75	2971		
		32.06	2969		
		34.42			
		36.80			
	26743	39.00			
		8743			
		43.70			
		46.18	48,394		
		48.40	4839		
		50.69	5939		
	24197	53.00		36	5520
		4197	37 29.700		
				+	34.50

12	37	50.68		38	54.2	39	59.40	
		52.68	54,800		55.3		1.40	3,520
		54.90	54,80		56.5		3.54	352
		56.94			58.0		5.63	
	27400	58.80		2840	0.0	31760	7.63	
		2400			340		1760	
		3.00		38	56,80		11.65	
		5.10			− 45.45		13.80	
		7.20					15.95	
		9.30	11,336				18.00	20,106
		11.27	1134				20.15	2011
		13.40	1136				22.18	2009
		15.50					24.20	
		17.50					26.32	
	10202	19.75				18095	28.50	
		1202					095	
		23.80					32.58	
		25.82	27,930				34.62	36,660
		27.95	2793				36.70	3666
		30.03	14273				38.70	4018
	13965	32.05		38	56,80	18330	40.70	
		3965	38 11350				3330	40 20,100
				−	45.45			

R 4 54.92 ·
R 4 54.85 ·

4 54.88 ·

R 21 33.95 –

		201				212 .				594		
		δ Bootis				α Serpentis				δ Scorpii		
		h m s				h m s				h m s		
		15 10 37				15 38 18				15 53 11		
		° '		0,126 21		° '		0,126 21		° '		0,126 21
		+33 46				+6 48				−22 16		
	1880											
		Oct. 3										
h	m s		m s									
15	9 44.15			15	37 29.78		37 20.8	15	52 21.00			
	46.57	49.104			31.80	33.928	22.2		23.20	25.444		
	49.02	4910			33.98	3393	23.5		25.40	25.44		
	51.60				36.00		25.0		27.62			
	24552 54.16				16964 38.08		1179 26.4		12722 30.00			
	4552				1964		179		2722			
	59.20				42.27		37 23.58		34.38			
	1.08				44.40		+ 27.01		36.60			
	4.19				46.44				38.77			
	6.70	9.070			48.50	50.623			41.00	43.280		
	8.90	907	10 37.9		50.65	5062			43.30	4328	53 13.7	
	11.66	9.02	39.5		52.70	50.56			45.50	4327	15.6	
	14.00		41.3		54.80				47.70		17.0	
	16.40		43.8		56.85				50.03		18.5	
	62163 19.00		2082 45.7		45561 59.00				38952 52.24		847 19.9	
	8163		82		561				2952		347	
	23.98		10 41.64		3.03				56.60		53 1694	
	26.40	28.928	−32.60		5.12	7.182			58.90	11.04	+ 33.67	
	28.98	2893			7.14	7.18			1.12	110		
	31.38	13803			9.25	101.11			3.40	8654		
	14464 33.90				3591 11.37		37 23.58		30552 5.50			
	4464	10 9.045	10 41.64		3591	37 50.590			552	52 43.275	53 16.94	
			− 32.60				+ 27.01				+ 33.67	
R	36 18.62 ·				R 32 6.38 ·			R	37 11.42 ·			
R	36 18.28 ·				R 32 6.85 ·			R	37 11.35 ·			
					~~32 6.62~~							
	36 18.45·				32 6.62				37 11.38·			

1880phae.proj.1513.

222			
δ Ophiuchi			
h m s			
16 8 0			
° ′			
−8 23		0,12621	

16	8	12.05		8	4.2
		14.05	16.070		6.6
		16.02	16.07		7.8
		18.05			9.2
	8035	20.16		384	10.6
		3035			384
		24.30		8	7.68
		26.38			+ 24.94
		28.50			
		30.60	32.633		
		32.64	32.63		
		34.68	32.62		
		36.80			
		38.80			
	29370	41.00			
		2370			
		45.00			
		47.10	49.180		
		49.20	49.18		
		51.30	65.25		
	24590	53.30		8	7.68
		4590	8 32.625		
				+ 24.94	

596			
α Scorpii			
h m s			
16 21 59			
° ′			
−26 10		0,12621	

16	22	9.00			
		11.20	13.556		
		13.60	13.56		
		15.82			
	6778	18.16			
		1778			
		22.80			
		25.15			
		27.43			
		29.60	31.990		
		31.97	31.99	22	58.4
		34.20	31.97		59.6
		36.66			1.1
		38.90			2.4
	28791	41.20		3063	4.8
		1791			63
		45.90		23	1.26
		48.05	50.390		− 29.28
		50.32	50.39		
		52.68	63.95		
	25195	55.00			
		195	22 31.980	23	1.26
				−	29.28

228			
β Herculis			
h m s			
16 25 1			
° ′			
+21 45		0,12621	

16	25	10.68		+22.22	32.90	164.51
		12.85	15.126	19.99	32.84	32.902
		15.17	15.13	17.78	32.95	
		17.33		15.56	32.89	
	7563	19.60		13.33	32.93	
		2563				
		24.03		8.89	32.92	263.23
		26.25		6.66	32.91	32.904
		28.48		4.44	32.92	
		30.70		+2.20	32.90	
		32.90		−0.00	32.90	
		35.10		2.22	32.88	
		37.40		4.44	32.96	
		39.50		6.66	32.84	
		—				
		—				
		—				
		—				
		—				
		—				
				32.903 32.903		

R 43 8.00·	R 29 44.80·	R 36 35.32·
R 43 8.25·	R 29 44.82·	R 36 35.35·
43 8.12·	29 44.81·	36 35.33·

				232				598		
	ζ Oph.			η Herculis				η Ophiuchi		
	16 30 36 −10 19	0,12621		h m s 16 38 45 ° ' +39 9		0,12621		h m s 17 3 27 ° ' −15 34		0,12621
1880	Oct. 3									
	Ch f	16	37 49.56		37 43.0	17	2 37.70		2 26.4	
			52.30	54,892	44.7		39.78	41,916	27.9	
			54.90	54.99	46.2		41.90	41.92	29.4	
			57.50		48.1		44.00		31.0	
		27446	0.20		2323 50.3	20958	46.20		1474 32.7	
			2446		323		958		474	
			5.55		37 46.46		50.37		2 29.48	
			8.13		+29.71		52.60		29.58	
			11.00				54.80			
			13.57	16,206			57.00	59048		
			16.25	16.21			59.00	59.05		
			18.90	16.14			1.19	59.08		
			21.50				3.29			
			24.05				5.50			
		14585	26.90			53143	7.68			
			5585				8143			
			32.07				12.00			
			34.70	37,390			14.00	16,240		
			37.40	37.39			16.30	16.24		
			40.00	152.28			18.40	118.16		
		18695	42.78		37 46.46	8120	20.50		2 29.48	
			3695	38 16175			8120	2 59.065		
					+ 29.71				− 29.58	
		R	11 48.40 ·			R	53 58.05 ·			
		R	11 48.18 ·			R	53 57.78 ·			
			11 48.29 ·				53 57.91 ·			

237

α Herculis

h m s
17 9 18
° '
+14 32

0,12621

17	8	18.65		8 9.7
		20.75	22904	11.4
		22.95	2290	12.6
		25.00		14.2
	11452	27.17		634 15.5
		1452		134
		31.47		8 1268
		33.60		+27.30
		35.70		
		37.88	39992	
		40.00	3999	
		42.15	3997	
		44.25		
		46.38		
	35993	48.50		
		8993		
		52.80		
		54.92	57,042	
		57.05	5704	
		59.15	9994	
	28521	1.26		8 1268
		3521	8 39980	
				+ 27.30

R 48 40.45·
R 48 40.20·

48 40.33²

240

β Draconis

h m s
17 27 42
° '
+52 23

0,12621

17	26	38.80		26 33.5
		42.27	45592	35.7
		45.57	4559	37.8
		49.00		40.3
	22796	52.32		1901 42.8
		2796		401
		59.00		26 3802
		2.45		+34.60
		5.90		
		9.20	12609	
		12.70	1261	
		16.03	1264	
		19.40		
		22.70		
	65348	26.10		
		2348		
		32.90		
		36.30	39680	
		39.70	3969	
		43.00	145.28	
	19843	46.53		26 3802
		4840	27 12625	
				+ 34.60

R 57 33.42·

241

α Ophiuchi

h m s
17 29 19
° '
+12 39

0,12621

17	28	—			
		—			
		—			
		—			
		—			
+8.46	51.46	462.54 43.00			
6.34	51.34	51.342 45.00			
4.22	51.40	47.18			
+2.04	51.34	49.25	51,398		
-0.00	51.38	51.38	5140	29	16.7
2.11	51.34	53.50			18.2
4.23	51.34	55.57			19.7
6.34	51.36	57.70			21.2
8.47	51.53	46258 0.00			984 22.6
		1258			484
12.64	51.35	256.79 4.04		29	19.68
14.80	51.40	51.358 6.20	8,288		− 28.30
16.42	51.38	8.30	829		
19.03	51.37	10.40			
-21.21	51.29	4144 12.50			
		4144		29	1968

51,375
51,381

R 42 36.92··
R 42 36.78·

42 36.65✓

		603				269				32		
		o Sagittarii				λ Aquilae				χ Androm.		
		h m s 18 47 46 ° ′ −26 27		0,12621		h m s 18 59 56 ° ′ −5 3		0,12621		h m s 1 56 29 ° ′ +41 45		0,12621
	1880	Oct. 3.										
h	m s		m s									
46	46 56.15		46 44.0	18	59 2.00		58 35.4	+27.67 1	55 38.00	5.67	55 28.9	
	58.43	0.746	45.2		4.00	6096	56.4	24.88 5.48	28.23 40.60	43516	33.0	
	0.80	075	47.3		6.05	610	57.6	22.14 5.82	5.646 43.68	4352	36.4	
	3.00		49.0		8.18		59.6	19.37 5.54	46.17			
	30373 6.35		2365 51.0		3048 10.25		2890 0.5	16.59 5.72	21758 49.13		98.3	
	373		365		3048		390		1758		55 32.8	
	10.05		46 4730		14.40		58 57.80	11.06 5.76	51.48 54.70			
	12.20		+31.91		16.47		+24.95	8.30 5.75	5.72 57.45			
	14.62				18.60			5.53 5.73	0.20			
	16.92	19.219			20.68	22.758		+2.74 5.54	2.80	5.724		
	19.26	1922	47 49.6		22.80	22.76		−0.00 5.65	5.65	5.72		
	21.54	19.20	51.0		24.90	2274		2.76 5.64	5 8.40			
	23.90		52.6		26.97			5.53 5.74	11.27			
	26.10		54.3		29.00			8.30 5.87	14.17			
	17297 28.38		2637 56.2		20482 31.00			11.08 5.80	59152 16.88			
	8297		137		2482				5152			
	33.00		47 5274		35.20				—			
	35.36	37.652	−33.53		37.27	38376			—			
	37.70	3765			39.45	3938			—			
	40.00	3840			41.48	45.48			—			
	18826 42.20		46 4730		19688 43.48		58 57.80		—			
	3826	47 19.210	47 52.74		4688	59 22.750						
			+ 31.91				+ 24.95					
			− 33.53					5.683				
			65.424					5.694				

R 46 23.98 · R 23 24.12 · B 35 28.58 ·
R 46 23.82 · R 23 26.58 ·

46 23.90 ·

1880phae.pr6j.1513.

S

Sun - C = 44 90.7

h m s
12 43 33
° ′
−4 41

0.12621

1880

Oct. 4

Chf

12	41	27.70		42	43.6
		29.88	31.946		45.2
		32.00	3195		46.7
		34.05			48.4
	15973	36.10			
		973			
		40.18			
		42.40			
		44.39			
		46.50	48.608		
		48.60	4861		
		50.70	4858		
		52.80			
		54.90			
	43747	57.00			
		7747			
		1.00			
		3.15	5210		
		5.28	521		
		7.32	97.16		
	2605	9.00			
		2605	41 48.595		

270

ζ Aquilae

h m s
18 57 57
° ′
+13 41

Oct. 4

0.12621

18	59	0.80		58	48.0
		2.90	5.040		49.8
		5.00	504		51.0
		7.20			52.7
	2520	9.30		2558	54.3
		2520			58
		13.53		58	51.16
		15.60			+30.88
		17.85			
		19.90	22.051		
		22.05	2205		
		24.20	2203		
		26.43			
		28.40			
	19846	30.50			
		1846			
		34.78			
		36.88	39.018		
		39.00	3902		
		41.15	44.06		
	19509	43.28		58	51.16
		4509	59 22.040		
				+	34.88

B 44 58.92
B

R 38 55.38
R 38 55.25

38 55.31

287

θ Aquilae

h m s
20 5 4
° '
-1 11

1880

Oct. 4

607

Dont understand this clai

α^2 Capricorni

h m s
20 11 20
° '
-12 53

0,12621

0,12621

289

γ Cygni

h m s
20 17 53
° '
+39 52

1.17609 0,12621
9.88510
1.06119

h m s m s
20 4

20

20 16 57.30
0.00 27.46
2.92 275
5.45
31373 8.06
1373
13.43
16.20
18.88
21.70 24287
24.34 2429
27.00 2429
29.65
32.40
21858 34.98
3858
40.40
43.00 45830
45.88 4583
48.57 4858
22915 51.30
29157 24290

16 41.3
43.3
44.9
46.7
2246 48.4
246
16 4492
+39.37
18 1.6
4.4
6.0
8.0
298 9.8
29 8
18 5.96
-41.67

16 4492
18 '596
+ 39.37
- 41.67
81.04
1.90870
1.06119
2.96989
1.91950
8.94961
5519

B 30 14.60
B 31 38.92
B 31 39.08

31 39.00
84.40

B 13 11.48
B 10 33.88
B 10 33.88

10 33.88

B 27 58.02
B 29 21.15
B 29 21.05

29 21.10
83.08

294

α Cygni

h m s
20 37 18

° ′
+44 57

1.17609 0,12621
9.85062
1.02671

20	36	20.60		36	5.6
		23.55	26.464		8.0
		26.40	2646		9.7
		29.50			11.8
	13232	32.27		489	13.8
		32.92			489
		38.05		36	9.78
		41.17			+39.44
		44.05			
		46.90	49.821		
		49.95	4982	37	25.5
		52.60	4972		27.4
		55.67			28.8
		58.50			31.0
	44839	1.50		1459	33.2
		8839			459
		7.18		37	2918
		10.10	12576		−39.41
		13.00	1298		
		15.80	9944		
	6488	15.80		36	978
		1488	36 49770	37	2918

+ 39.99
− 39.41
79.40
1.89982
1.02671
2.92653
1.86285
8.93632
4569

298

ε Cygni

h m s
20 41 19

° ′
+33 31

1.17609 0,12621
9.92102
1.09711

20	40	25.65		40	16.0
		28.06	30570		17.0
		30.60	3057		19.2
		33.04			21.0
	15285	35.50		961	22.9
		285			961
		40.48		40	19.22
		43.00			+31.17
		45.40			
		48.00	50.421		
		50.47	5042	41	24.3
		52.90	5037		26.0
		55.38			27.5
		57.80			29.2
	45379	0.36		1379	30.9
		379			379
		5.25		41	2758
		7.70	10.166		37.19
		10.20	1017		
		12.68	10074		
	5083	15.00		40	1922
		083	40 50.395	41	2758

+ 31.17
− 37.19
68.36
1.83480
1.09711
2.93191
1.88264
8.95073
566

303

ζ Cygni

h m s
21 7 47

° ′
+29 44

1.17609 0,12621
9.95869
1.13478

21	6	55.04		6	37.8
		57.40	59.772		39.6
		59.77	5977		41.0
		2.05			42.5
	29886	4.60		2048	43.9
		4886			48
		9.30		6	40.96
		11.70			+37.87
		14.03			
		16.42	18.843		
		18.80	1884	7	51.8
		21.20	1882		53.3
		23.70			54.7
		26.00			56.6
	16959	28.44		2744	58.0
		7959			244
		33.18		7	5488
		35.50	37.858		−36.05
		37.84	3786		
		40.17	157.63		
	18929	42.60		6	4096
		3929	7 18.830	7	5488

+ 37.87
− 36.05
73.92
1.86876
1.13478
3.00354
1.93666
8.93312
45359

B 29 22.60″
B 30 35.42″
B 30 35.62″

30 35.52″
72.92

B 34 3.50″
B 35 19.72″
B 35 19.92″

35 19.82″
76.32

B 35 58.65″
B 37 25.08″
B 37 25.08″

37 25.08″
86.43

306

α Cephei

h	m	s
21	15	41
	°	′
	+62	4

0,12621

1880

Oct. 4

h	m	s		m	s	m	s
21	14	29.64		14	23.3	14	54.3
		34.00	38,232		25.9		57.4
		38.08	3823		29.9		0.9
		42.50			32.4		4.0
	19116	46.94		1468	35.3	3039	7.3
		4116			468		39
		56.00		14	29.36	15	0.78
		0.40			+44.16		+12.74
		4.80					
		9.03	13,511				
		13.30	1351	16	6.2	16	34.0
		17.85	13.53		9.4		37.0
		22.20			13.1		39.7
		26.74			16.5	1′	42.5
	66160	31.28		649	19.7	1986	45.4
		3160					486
		40.00			149	16	39.72
		44.56	48,838	16	12.98	−1	26.20
		48.80	4884		−59.46		
		53.03	147.07				
	24419	57.80		14	29.36	15	0.78
		4419	15 13520	16	12.98	16	39.72
				+	44.16	+	12.74
				−	59.46	−	86.20
					103.62		98.94

B 16 13.05·
B 16 33.58·
B 17 18.05·
B 17 33.95·

308

β Aquarii

h	m	s
21	25	11
	°	′
	−6	6

1.17609 0,12621
9.99753
1.17362

Oct. 4

h	m	s		m	s
21	24	22.40		24	20.6
		24.38	26,476		22.6
		26.50	2646		23.8
		28.50			25.6
	13230	30.60		1194	26.8
		3238			294
		34.75		24	25.88
		36.90			+ 17.22
		38.97			
		41.03	43147		
		43.03	4312	25	10.2
		45.30	43.09		11.9
		47.30			13.2
		49.32			14.8
	38805	51.45		661	16.0
		2805			161
		55.60		25	13.22
		57.53	59.706		− 30.12
		59.65	5971		
		1.85	8617		
	29853	3.90		24	2388
		4853	24 43105	25	13.22
				+	19.22
				−	30.12
					49.34
					1.69320
					1.17362
					2.86682
					1.82112
					8.95730
					51044

B 20 34.15·
B 21 40.50·
B 21 40.28·

21 40.39
66.24

287

θ Aquilae

h m s
20 5 4
° '
−1 11

0,12621

1880

Oct. 5

20 4

+ 4,12	32,42	226.52 28.30
2,04	32,28	32,36 30.24
−0,00	32,33	32.33
2,06	32,46	34.40
4,13	32,37	36.50
6,19	32,36	38.55
8,27	32,30	40.57
12,38	32,32	161,93 44.70
14,45	32,45	32,386 46.90
16,51	32,44	48.95
18,58	32,42	51.00
−20,70	32,30	24455 53.00
		4455

48910
4891

32.373
32.371

5 8.8
10.6
12.0
13.6
603 15.3
103
5 12,06
−39,69

5 12,06

607

α² Capricorni

h m s
20 11 20
° '
−12 55

1.17609 0.12621
9.98887
1.16496

20 10 28.20
30.32
32.50
34.60
16225 36.63
1225
41.00
43.00
45.17
47.19
49.30
51.50
53.70
55.85
44461 57.90
8461
2.04
4.17
6.33
8.52
3166 10.60
3166

32450
3245
49.401
4940
49.39
6.332
6.33
98.78

10 49395

10 17.4
19.4
20.8
22.3
1039 24.0
39
10 2078
+28,61
11 16.5
18.5
20.0
21.6
1001 23.5
01
2002
−30.63
10 2078
11 2002
+ 28.61
− 30.62
59.23
1.77254
1.16496
2.93750
1.90015
8.96265
5 1434

289

α Cygni

h m s
20 17 53
° '
+39 32

1.17609 0.12621
9.88510
1.06119

20 16 54.50
57.30
59.90
2.57
29967 5.40
4967
10.57
13.40
16.04
18.85
21.58
24.04
26.87
29.42
19292 32.15
1292
37.60
40.20
43.03
45.70
21487 48.34
1487

59934
5993
21436
2144
2145
42974
4297
16290

17 21445

16 41.4
43.6
45.2
47.0
2261 48.9
261
16 45,22
+36.22
17 53.4
55.3
56.8
58.4
2845 0.6
345
17 5690
−35,46
16 4522
17 5690
+ 36.23
− 35.46
71.69
1.85546
1.06119
2.91665
1.86326
8.94661
5 313

B 31 47.02
B 31 46.78

31 46.90

B 14 10.75
B 15 30.10
R 15 30.07
R 15 30.32
B 15 30.35
15 30.21
79.46

B 28 1.15
B 29 14.20
R 29 14.00
R 29 14.15
B 29 14.22
29 14.14
72.99

1880

Oct. 5

294

α Cygni

h	m	s			
20	37	18	1.17609	0,12621	
°	'				
+44	51		9.85062		
			1.02671		

h m	s		m	s
20 36	17.95		35	38.5
	20.60	23656		0.8
	23.65	2366		3.4
	26.60			5.2
11828	29.50		3149	7.0
	1828			149
	35.20		36	2,98
	38.03			+ 43.85
	40.90			
	43.90	46.799		
	46.80	4680	37	25.3
	49.80	4686		27.0
	52.60			29.0
	55.48			31.4
42119	58.48		1465	33.8
	6119			465
	4.00		37	29.30
	7.17	10068		− 42.47
	10.00	1007		
	13.17	9373		
5034	16.00		36	298
	034	36 46830	37	29.30

+ 43.85
− 42.47
86.32
1.93611
1.02671
2.96282
1.91529
8.95247
5719

B 29 15.95
B 30 38.07
R 30 38.40

30 38.23
82.28

298

ε Cygni

h	m	s			
20	41	19	1.17609	0,12621	
°	'				
+33	31		9.92102		
			1.09711		

h m	s		m	s
20 40	22.80		40	7.3
	25.30	27.720		8.9
	27.77	2772		10.3
	30.05			12.4
13860	32.68		526	13.7
	3860			26
	37.60		40	10,52
	40.05			+ 36.99
	42.50			
	45.00	47.476		
	47.45	4748	41	19.0
	50.05	4755		20.8
	52.45			22.5
	54.80			24.4
47728	57.38		1127	26.0
	6728			127
	2.42		41	22,54
	5.00	7.394		− 35.03
	7.55	739		
	9.80	9511		
3697	12.20		40	1052
	3697	40 47515	41	2254

+ 3699
− 35.03
7202
1.85745
1.09711
2.95456
1.90763
8.95307
5744

B 33 56.48
B 35 17.20
R 35 17.15
R 35 17.52
B 35 17.40
35 17.32
80.84

303

ζ Cygni

h	m	s			
21	7	47	1.17609	0,12621	
°	'				
+29	44		9.93869		
			1.11478		

h m	s		m	s
21 6	52.15		6	37.0
	54.60	56980		38.9
	57.00	5698		40.3
	59.40			42.0
28490	1.75		2018	43.6
	3490			18
	6.45		6	40.36
	9.00			+35.69
	11.40			
	13.70	16.080		
	15.95	1608	7	48.2
	18.50	1603		49.7
	20.80			51.2
	23.27			52.8
14472	25.65		2562	54.3
	5472			62
	30.30		7	51.24
	32.77	35074		−35.19
	35.00	3507		
	37.50	15205		
17537	39.80		6	4036
	2537	7 16.055	7	5124

+ 35.69
− 35.19
7088
1.85052
1.11478
2.96530
2.18320
9.18790
8.4544

B 36 0.98
B 37 23.28
R 38 23.22
R 38 23.22
B 38 23.38
38 23.28
14230

306

α Cephei

h m s
21 15 41

° ′
+62 4

1.17609 0.12621
9.67066
0.84675

1880

Oct. 5

21	14	27.00		13	50.0	14	17.7
		31.40	35.696		52.8		22.0
		35.55	35.70		55.6		25.6
		39.95			58.7		28.4
	17848	44.58		2794	2.3	1255	31.8
		2848			294		255
		53.40		13	55.88	14	25.10
		57.70		+1	15.10		+ 45.88
		1.92					
		6.38	10.976				
		11.15	10.98	15	42.8	16	31.5
		15.78	10.99		47.0		33.8
		19.80			49.1		37.0
		24.05			52.4		39.8
	63878	28.60		2471	55.8	1840	41.9
		[illegible]878			471		340
		37.38		15	4942	16	36.80
		41.70	46.276		~38.44	−1	25.82
		46.50	4628				
		50.65	141.98				
	23138	55.15		13	5588	14	2510
		3138	15 10.985	15	4942	16	3680
				+	75.10	+	45.88
				−	38.44	−	25.82
					113.54		71.70
					2.05515		1.85552
					0.84675		0.84675
					2.90190		2.70227
					1.80868		1.80868
					8.90678		9.10641
					43646		71651

B 15 54.00 -
B 16 13.38 -
B 17 6.12 ·
B 17 35.60 -
~~16 58.27~~
64.37

307

β Aquarii

h m s
21 25 11

° ′
−6 6

1.17609 0.12621
9.99753
1.17362

21	24	19.60		24	7.6
		21.60	23.706		9.5
		23.65	23.71		11.1
		25.80			12.8
	11853	27.88		552	14.2
		1853			52
		32.05		24	11.04
		34.06			+ 29.29
		36.20			
		38.20	40.340		
		40.38	40.34	25	10.4
		42.38	40.32		12.2
		44.50			13.7
		46.60			15.2
	36306	48.67		683	16.8
		306			183
		52.60		25	13.66
		55.00	56.920		− 33.33
		57.00	56.92		
		59.00	80.63		
	28460	1.00		24	1104
		3460	24 40.330	25	1366
				+	29.29
				−	33.33
					62.62
					1.79671
					1.17362
					2.97033
					1.91840
					8.94807
					5414

B 25 18.22 -
B 26 41.12 -
R 26 41.20 -
R 26 41.02 -
B 26 41.02 -
26 41.09 -
82.87

309

ε Pegasi

h m s
21 38 14

° ′
+9 19

1.17609 0.12621
9.99423
1.17032

21	37	22.60		37	14.4
		24.74	26.808		16.0
		26.80	26.81		17.2
		28.90			18.8
	13404	31.00		864	20.0
		3404			364
		35.20		37	17.28
		37.40			+26.31
		39.40			
		41.53	43.633		
		43.60	43.63	38	11.9
		45.70	43.56		14.6
		47.87			16.5
		50.00			18.4
	39270	52.00		818	20.4
		3270			318
		56.05		38	16.36
		58.17	0.304		− 32.77
		0.35	030		
		2.45	87.11		
	30152	4.50		37	1728
		152	37 43.595	38	1636
				+	26.31
				−	32.77
					59.08
					1.77144
					1.17032
					2.94176
					1.89376
					8.95200
					5659

B 30 20.55 ·
B 31 38.80 ·
R 31 38.85 ·
R 31 38.72 ·
R 31 39.05 ·
31 38.85 ·
78.30

30

β Arietis

h m s
1 47 38
° ′
+20 13

0,12621

1880

Oct. 5

h	m	s		m	s
1	47	5.62			
		7.85	9.948		
		9.90	995		
		12.05			
	4974	14.32			
		4974			
		18.90			
		21.00			
		23.88			
		25.88	27.663		
		27.78	2766	47	56.8
		29.70	2761		58.4
		31.90			59.8
		34.25			1.0
	24897	36.68		2996	3.6
		6897			496
		40.90		47	59.92
		43.18	45.270		− 32.29
		45.20	4527		
		47.27	55.22		
	22635	49.80			
		2635	47 27.635	47	5992
				+	32.29
				−	32.29

β 8 10.08·
β 8 9.95·

8 10.01·

S

Sun. c = 44 90.7

h m s
12 50 37
° ′
−5 27

0,12621

1880

Oct. 5/6

12	48	40.17		49	51.6	50	49.28		50	15.0
		42.19	44.320		53.2		51.20	53.418		16.6
		44.30	4432		54.8		53.50	5342		18.0
		46.37			56.4		55.45			19.0
	22160	48.57		2740	58.0	26709	57.66		888	20.2
		2160			240		1709			388
		52.70		49	54.80		1.70		50	17.76
		54.60			− 53.87		3.93			+ 52.30
		56.80					6.00			
		58.95	0933				8.00	10.074		
		1.00	093				10.03	1007		
		2.90	0.93				12.05	10.06		
		5.15					14.20			
		7.00					16.38			
	54840	9.30				9067	18.38			
		840					2067			
		13.47					22.60			
		15.43	17.548				24.62	26.700		
		17.50	1755				26.68	2670		
		19.54	121.87				28.75	140.12		
	8774	21.80		49	54.80	13350	30.85		50	17.76
		3774	49 0.930				3350	51 10.065		
				−	53.87				+	52.30

β 31 2.20

β 3 40.88

212

α Serpentis

h m s
15 38 18
° ′
+6 48

0,12621

1880

Oct. 6

15 37

37 58.4
59.7
1.2
2.7
3060 4.0
60

38 1,20
−17.63

38 27.0
28.2
29.4
31.0
1479 32.3
479

38 29,58
−46.01

38 120
38 2958

−4.16	43.54	130.47	47.70
6.23	43.45	43.49	49.68
8.32	43.48		51.80
12.47	43.58	218.14	56.05
14.54	43.66	43.628	58.20
16.63	43.67		0.30
18.70	43.68		2.38
−20.85	43.55	30133	4.40
			133

0,266
027

43,559
43,566

595

β′ Scorpii

h m s
15 58 24
° ′
−19 28

1.17609 0,12621
9.97444
1.15053

15 57 27.55
29.80
32.07
34.18
16000 36.40
1000
40.68
43.00
45.00
47.30
49.60
51.70
53.97
56.15
44570 58.30
8570
2.70
4.80
7.00
9.30
3527 11.47
3527

32,000
3200

49,522
4952
4952

7,054
705
9905

57 49520

57 17.2
18.4
19.6
20.9
985 22.4
485

57 19,70
+29.82

58 20.0
22.0
23.5
25.3
1180 27.2
180

58 23,60
−34.08

57 1970
58 2360
+ 29.82
− 34.08
63.90
1.80550
1.15053
2.95603
1.90580
8.94977
5525

222

δ Ophiuchi

h m s
16 8 0
° ′
−8 23

1.17609 0,12621
9.99533
1.17142

16 7 4.78
6.90
9.00
11.00
4468 13.00
4468
17.22
19.38
21.42
23.50
25.57
27.60
29.65
31.80
23004 33.90
5004
38.00
40.00
42.05
44.05
21028 46.18
1028

8.936
894

25.560
2556
2550

42,056
4206
5100

7 25.530

6 55.3
57.0
58.7
0.0
2924 1.4
424

6 58,48
+27.05

7 49.5
50.9
52.5
54.2
2626 55.5
126

7 52,52
−26.99

6 5848
7 5232
+ 2705
− 26.99
54.04
1.73272
1.17142
2.90414
1.86273
8.95459
5849

B ~~32~~ 33 ~~47.25~~ 47.72 ·
B 33 ~~42.40~~ 42.38 ·
B 33 42.58 ·

33 42.48 ·

B 47 52.68 ·
B 49 13.08 ·
B 49 13.28 ·

49 13.18 ·
80,50

B 43 6.75 ·
B 44 19.58 ·
B 44 19.72 ·

44 19.65 ·
72.90

1880

607

α² Capricorni

h m s
20 11 20

° ′
−12 55

1.17609 0,12621
9.98887
1.16496

Oct. 6

h m s
20 10 25.70
27.60
29.88
31.95
14913 34.00
4913

38.33
40.47
42.60
44.63
46.80
48.94
51.18
53.25
42150 55.30
6150

57.46
1.60
3.75
5.92
31873 8.00
1873

29.826
2983

46.833
4683
46.79

3.746
375
9358

10 46.810

m s
10 14.7
16.0
17.2
18.5
861 19.7
361

10 17.22
+ 29.59

11 19.9
22.0
23.5
25.0
1174 27.0
174

11 23.48
−36.67

10 1722
11 2348
+ 29.59
− 36.67
66.26
1.82125
1.16496
2.98621
1.94581
8.95960
5 12 23

/

289

γ Cygni

h m s
20 17 53

° ′
+39 52

0,12621

20 16 51.88
54.68
57.40
0.10
28682 2.76
3682

8.15
10.75
13.50
16.20
18.88
21.60
24.33
27.00
17011 29.70
8011

34.88
37.70
40.35
43.02
20183 45.88
183

57364
5736

18901
1890
1887

40366
4037
15773

17 . 18.885

16 36.0
38.0
39.6
41.6
1989 43.7
489

16 39.78
+ 39.10

17 49.9
51.7
53.8
55.7
2686 57.5
186

17 53.72
−34.84

16 3978
17 5372
+ 39.10
− 34.84
73.94
1.86888

294

α Cygni

h m s
20 37 18

° ′
+44 57

1.17609 0,12621
9.85062
1.02671

20 36 15.00
18.04
21.04
23.80
10473 26.85
473

32.70
35.60
38.50
41.50
44.33
47.20
50.17
53.00
39905 56.05
3905

1.80
4.80
7.63
10.50
3821 13.48
3821

20946
2095

44339
4434
4430

7.642
764
8859

36 44320

36 1.4
2.9
5.0
6.9
255 9.3
255

36 5.10
+39.22

37 21.0
23.5
25.5
27.7
1277 30.0
277

37 25.54
−41.22

36 510
37 2554
+ 39.22
− 41.22
80.44
1.90547
1.02671
2.93218
1.88081
8.94863
5 4 37

B 14 12.10 ·
B 15 40.20 ·
R 15 40.32 ·
R 15 40.50 ·
B 15 40.45 ·
15 40.37
88.27

B 22 59.15 ·
B 23 14.80 ·
R 23 14.65 ·
R 23 14.70 ·
B 23 14.92 ·
23 14.77

B 29 21.40 ·
B 30 37.18 ·
R 30 37.62 ·
30 37.40 ·
76.00

298

ε Cygni

h m s
20 41 19
° ′
+33 31

1.17609 0.12621
9.92102
1.09711

20	40	20.30		40	8.9
		22.70	25.204		11.1
		25.20	2520		12.6
		27.65			13.9
	12602	30.17		619	15.4
		2602			119
		35.00		40	12.38
		37.56			+32.63
		40.05			
		42.58	45.014		
		45.02	4501	41	19.0
		47.40	45.01		20.9
		50.05			23.0
		52.47			24.2
	40513	55.00		1133	26.2
		4513			133
		59.90		41	22.66
		2.29	4.824		−37.65
		4.78	482		
		7.30	90.02		
	32412	9.85		40	12.38
		2412	40 45.010	41	22.66
				+	32.63
				−	37.65
					70.28
					1.84683
					1.09711
					2.94394
					1.89470
					8.95076
					567

B 49 1.60
B 50 19.60
R 50 20.15
R 50 20.10
B 50 20.42
50 20.07
78.47

303

ζ Cygni

h m s
21 7 47
° ′
+29 44

0.12621

21	6	49.50		6	32.7
		52.20	54.570		34.7
		54.50	5457		36.0
		57.00			37.7
	27285	59.35		1805	39.4
		2285			305
		4.00		6	36.10
		6.40			+37.44
		8.80			
		11.12	13.527		
		13.50	1353	7	43.2
		15.98	13.55		44.6
		18.32			46.0
		20.62			47.5
	12174	23.00		2309	49.6
		3174			309
		27.66		7	46.18
		30.10	32.532		−32.64
		32.50	3253		
		35.00	147.10		
	16266	37.40		6	36.10
		1266	7 13.540	7	46.18
				+	37.44
				−	32.64
					70.08
					1.84559

B 35 59.68
B 36 21.18
R 36 21.02
R 36 20.95
B 36 21.30
36 21.11

306

α Cephei

h m s
21 15 41
° ′
+62 4

1.17609 0.12621
9.67066
0.84675

21	14	24.04		13	49.0	16	0.4
		28.55	32.988		52.0		4.4
		32.90	3299		54.0		7.9
		37.55			57.2		10.9
	16494	41.90		2726	0.4	381	14.5
		1494			226		381
		50.70		13	54.52	16	7.62
		55.03		+1	13.75		−59.35
		59.50					
		3.90	8.274				
		8.30	827	16	20.6		
		12.65	828		23.2		
		17.04			26.6		
		21.55			29.7		
	61447	25.80		1335	33.4		
		7447			335		
		34.70		16	26.70		
		39.28	43.572	−1	18.43		
		43.45	4357				
		48.00	136.56				
	21786	52.43		13	54.52	16	7.62
		1786	15 8.275	16	26.70		
				+	73.75	−	59.35
				−	78.43		
					152.18		
					2.18235		
					0.84675		
					3.02910		
					1.88326		
					8.85416	?	
					4518		

R 15 55.75
R 16 47.75
R 17 18.28
R 17 30.52

17 ~~12.18~~
76.43

566

ε Can. Maj

h m s
6 53 52
° ′
-28 48

0,126 21

1880

Oct. 6

h m s
6 52 51.40
53.80
56.20
58.42
28048 0.66
3048
5.45
7.88
10.18
12.46
14.75
17.03
19.40
21.85
13320 24.20
4320
29.00
31.35
33.70
36.05
16860 38.50
1860

56.096
56.10
14800
1480
1491
33.720
3372
14982
53 14855

m s
53 49.7
52.8
54.0
55.6
2693 57.2
193
53 53.86
-39.01
53 53.86
- 39.01

568

δ Can. Maj

h m s
7 3 28
° ′
-26 12

7 2 28.06
30.28
32.79
35.00
16358 37.46
1358
42.24
44.27
46.60
48.90
51.00
53.40
53.85
56.16
46072 0.30
1072
5.00
7.20
9.60
11.95
4793 14.18
4793

32716
3272
51.191
5119
5115
9586
959
10231
2 51,170

1.17609 0,12621
9.95292
1.12901

2 18.6
20.0
21.8
23.1
1084 24.9
184
2 2168
+29.44
3 21.5
23.5
24.7
26.1
1237 27.9
237
3 2474
-33.57
2 2168
3 2474
+ 29.49
- 33.57
63.06
1.79975
1.12901
2.92876
1.86427
8.93551
45536

118

β Canis Min

h m s
7 20 35
° ′
+8 32

7 19 39.85
41.90
44.06
46.20
22009 48.08
2009
52.41
54.49
56.50
58.72
0.80
2.89
5.03
7.05
54709 9.20
4709
13.28
15.38
17.40
19.74
8747 21.67
3747

44018
4402
0.788
079
076
17494
1749
12151
20 0.775

1.17609 0,12621
9.99517
1.17126

19 27.2
29.8
31.2
32.4
1543 33.7
43
19 3086
+29.41
20 30.6
32.0
33.5
34.8
1672 36.3
172
20 3344
-32.67
19 3086
20 3344
+ 29.91
- 32.67
62.58
1.79644
1.17126
2.96770
1.92101
8.95331
5755

R 8 50.60·
R 8 51.05·
8 50.82·

B 30 34.00·
B 31 47.18·
R 31 47.45·
R 31 46.92·
B 31 47.10·
31 47.16·
73.16

B 33 27.90·
B 34 51.32·
R 34 50.98·
R 34 51.20·
B 34 51.60·
34 51.27·
83.37

119

α Geminorum

h m s
7 26 52
° ′
+32 09

1.17609 0,12621
9.92771
1.10380

7	25	55.70		25	41.0
		58.16	0,496		42.6
		0.47	050		44.2
		2.98			47.0
	3048	5.17		2233	48.5
		248			233
		10.10		25	4466
		12.90			+ 35.38
		15.30			
		17.64	20,052		
		20.00	2005	26	51.3
		22.43	2003		53.4
		24.90			54.7
		27.40			56.7
	18047	29.80		2745	58.4
		047			245
		34.57		26	5490
		37.00	39560		− 34.86
		39.38	3956		
		42.10	4006		
	19780	44.75		25	4466
		4780	26 20040	26	5490
				+	35.38
				−	34.86
					70.24
					1.84658
					1.10380
					2.95038
					1.89037
					8.93999
					45839

120

α Can. Min.

h m s
7 32 38
° ′
+5 32

1.17609 0,12621
9.99797
1.17406

7	32	2.45		31	49.0
		4.45	6,540		51.6
		6.50	654		53.5
		8.60			55.3
	3270	10.70		2663	56.9
		3270			163
		14.82		31	53.26
		16.73			+ 29.85
		19.00			
		21.00	23.098		
		23.28	2310	32	52.0
		25.00	2313		53.5
		27.30			54.9
		29.30			56.6
	20788	31.45		2753	58.3
		2788			253
		35.54		32	55.06
		37.70	39.728		− 31.95
		39.90	3973		
		41.75	4627		
	19864	43.75		31	53.26
		4864	32 23115	32	5506
				+	29.85
				−	31.95
					61.80
					1.79099
					1.17406
					2.96505
					1.92169
					8.95664
					51016

122

β Geminorum

h m s
7 37 35
° ′
+28 19

1.17609 0,12621
9.94465
1.12074

7	36	58.05		36	45.6
		0.30	2728		47.8
		2.86	273		49.5
		5.15			51.2
	31364	7.28		2472	53.1
		1364			472
		12.03		36	4944
		14.42			+ 32.06
		17.00			
		19.02	21.467		
		21.45	2147	37	51.7
		23.83	2154		53.6
		26.15			55.2
		28.50			57.4
	19320	30.80		2772	59.3
		1320			272
		35.60		37	55.44
		38.05	40346		− 33.94
		40.43	4035		
		42.65	4308		
	20173	45.00		36	4944
		173	37 21.505	37	5544
				+	3206
				−	33.94
					66.00
					1.81954
					1.12074
					2.94028
					1.89109
					8.95081
					569

B 11 56.19
B 13 14.08
R 13 13.90
R 13 13.78
B 13 13.75
13 13.88
77.69

B 48 18.88
B 49 42.42
R 49 42.42
R 49 42.52
B 49 42.18
49 42.38
83.50

R 1 59.88
B 3 17.58
R 3 17.78
R 3 17.85
B 3 17.58
3 17.70
77.82

1880

570

15 Argus

h	m	s
8	2	23
	°	'
	−23	57

Oct. 6

0.12621

h	m	s		m	s
8	1	23.98		1	18.7
		~~26.20~~			20.4
		28.05			22.7
		30.65			24.6
		32.60		1124	26.0
					124
		37.15		1	22.48
		39.45			
		41.70			
		44.08	46.288		
		46.40	4629	2	22.9
		48.68			24.9
		50.85			26.0
		53.00			27.8
	41659	55.28		1314	29.8
		5659			314
		59.85		2	26.28
		2.03	4.288		
		4.30	429		
		6.48			
	32144	8.78		1	22.48
		2144	1 46.308	2	26.28

148

ζ Leonis

h	m	s
10	9	57
	°	'
	+24	1

1.17609
9.96067
1.13676

0.12621

h	m	s		m	s
10	9	0.08		8	50.0
		2.20	4.516		52.0
		4.50	452		53.4
		6.80			54.8
	2258	9.00		2666	56.4
		2258			166
		13.50		8	53.32
		15.80			+29.28
		18.00			
		20.38	22.597		
		22.60	2260	9	54.8
		24.84	2260		56.4
		27.15			58.0
		29.40			59.5
	20337	31.70		2900	1.3
		2337			400
		36.08		9	58.00
		38.45	40.678		−35.40
		40.70	4068		
		43.00	45.20		
	20339	45.16		8	53.32
		339	9 22.600	9	58.00

+ 29.28
− 35.40
64.68
1.81077
1.13676
2.94753
1.90238
8.95485
590

C

χ' Leonis

h	m	s
10	13	18
	°	'
	+20	27

0.12621

h	m	s		m	s
10	12	20.97		12	13.3
		23.03	25.284		14.8
		25.30	2528		16.1
		27.49			17.6
	12642	29.63		810	19.2
		2642			310
		34.05		12	16.20
		36.25			+26.72
		38.45			
		40.70	42.932		
		43.00	4293	13	8.9
		45.13	4291		10.6
		47.37			12.4
		49.64			13.8
	38639	51.80		613	15.6
		2639			113
		56.17		13	12.26
		58.38			−29.34
		0.50	053		
		2.60	8581		
	30265	5.00		12	1620
			12 42.920	13	1226

+ 26.72
− 29.34
56.06
1.74865

B 16 20.50
B 17 38.30
B 17 38.05

17 38.18
77.68

B 20 3.50
B 21 23.52
R 21 23.40
R 21 23.18

21 23.37
79.87

B 24 1.72

62)

149

μ Urs. Maj

h m s
10 15 7
° ′
+42 6

1.17609 0,12621
9.87039
1.04648

10 14 5.20
7.97 10.770
10.80 1077
13.58
5385 16.30
385
22.00
24.70
27.57
30.30 33.073
33.03 3307
35.80 3306
38.60
41.40
29766 44.26
2766
49.80
52.70 55.354
55.35 5535
58.02 6612
27677 0.90
2677 14 33065

13 53.7
56.0
58.0
59.5
2891 1.9
391
13 57.82
+35.24
15 8.1
10.8
12.6
14.8
633 17.0
133
15 1266
−39.60
13 5782
15 1266
+ 35.24
− 39.60
74.84
1.87413
1.04648
2.92061
1.86711
8.94650
5 3 9

153

β Urs. Maj.

h m s
10 54 32
° ′
+57 2

0,12621

10 53 43.32
47.00
50.90
54.60 58.423
58.42 5842
2.17
6.00
9.80
52581 13.60
7581

52 50.7
53.0
55.8
58.3
2788 1.0
288
52 55.76
53 18.5
20.0
22.3
25.6
1150 28.6
1.50
53 23.00
52 55.76
53 23.00

+44.55
40.07 41.79
35.65 41.90
31.19 42.04
26.72 42.04
17.81 41.86
13.36 41.99
8.90 42.10
+4.44 42.04
0.00 42.20
4.41 42.19
8.98 42.09
13.36 41.84
17.84 41.46
41.984
41.997

10 54 57.37
209.69 1.72
41.938 6.25
10.85
33151 15.32
3151
378.27 24.05
42.03 28.60
33.20
37.60
42.20
46.60
51.00
55.20
37828 59.80
1828
—
—
—
—
—

41.92
6.302
630
42.031
4203

154

α Urs. Maj

h m s
10 56 15
° ′
+62 24

0,12621

54 39.2
43.9
47.3
50.2
2336 53.0
336
54 4672
+ 41.99
56 18.4
21.7
24.6
28.0
1250 32.3
250
56 25.00
− 43.01
54 46.72
56 25.00

55 30.9
34.8
38.2
41.0
1894 44.5
394
55 3788
+ 4.11
57 1.2
4.4
7.6
10.2
379 14.5
379
57 7.58
−1 25.59
55 37.88
57 7.58

B 15 13.22 ·
B 16 26.60 ·
R 16 26.98 ·
R 16 27.05 ·
B 16 26.82 ·
16 26.86 ·
73.64

B 19 56.72 ·
B 20 18.58 ·

B 57 54.00 ·
B 58 27.02 ·
B 58 55.35 ·
B ~~58~~ 59 20.38 ·
58

156

S Leonis

h	m	s		
11	7	40	1.17609	0.12621
°	′			
+21	11		9.96962	
			1.14571	

1880 Oct. 6.

h	m	s		m	s
11	6	42.50		6	29.3
		44.76	46.956		31.2
		46.97	46.96		32.5
		49.20			34.1
	23478	51.35		1628	35.7
		3478			128
		55.80		6	32.56
		57.95			+ 32.11
		0.28			
		2.50	4.692		
		4.78	469	7	34.0
		6.90	466		35.8
		9.14			37.0
		11.40			38.7
	58223	13.48		1862	40.7
		4223			362
		18.00		7	37.24
		20.15	22.364		−32.57
		22.40	22.36		
		24.47	129.32		
	11182	26.80		6	32.56
		1182	7 4.675	7	37.24
				+	32.11
				−	32.57
					64.68
					1.81077
					1.14571
					2.95648
					1.91514
					8.95866
					5 11 42

B 9 57.40·
B 11? 19.65

11? 19.65·
~~82.25~~
82.25

---

303 examine

ζ Cygni
~~δ~~ ~~ζ~~

h	m	s		
21	7	47	1.17609	0.12621
°	′			
+29	44		9.93869	
			1.11478	

1880 Oct. 7

h	m	s		m	s
21	6	47.45		6	45.3
		49.57	51.984		46.7
		52.20	51.98		48.5
		54.20			50.5
	25992	56.50		2435	52.5
		992			435
		1.19		6	48.70
		3.76			+ 22.18
		6.12			
		8.40	10.844		
		10.60	10.84	7	42.7
		13.28	10.93		44.7
		15.60			45.6
		18.05			47.2
	9760	20.60		2298	49.6
		760			298
		25.10		7	45.96
		27.40	29.880		−35.08
		29.90	29.88		
		32.20	141.86		
	14940	34.80		6	48.70
		4940	7 10.885	7	45.96
				+	22.18
				−	35.08
					57.26
					1.75785
					1.11478
					2.87263
					1.81987
					8.94724
					5 3 39

B 36 17.40·
B 37 23.50·
R 37 23.50·
R 37 23.32·
B 37 23.47·
37 23.45·
6605

306

α Cephei

h m s
21 15 41

° ′
+62 4

0.12621

Oct. 7

h	m	s		m	s
21	14	22.00		13	38.0
		26.48	30.780		40.4
		30.92	3078		44.3
		35.00			47.0
	15390	39.50		2197	50.0
		390			197
		48.40		13	4394
		52.75		+1	22.22
		57.25			
		1.88	6.158		
		6.37	616	15	24.5
		10.57	6.16		27.2
		14.90			29.9
		19.30			33.0
	59542	24.00		1504	35.8
		5542			04
		32.80		15	3008
		37.28	41532		− 23.42
		41.50	4153		
		46.00	13231		
	20766	50.08		16	9.0
		766	15 6160		12.7
					16.8
					19.8
				815	23.2
					315
				16	1630
				−1	10.14

B 15 50.58
B 17 57.72
B 18 25.90

~~18 11.81~~
141.23

307

β Aquarii

h m s
21 25 11

° ′
−6 6

1.17609
9.99753
1.17362

0.12621

h	m	s		m	s
21	24	15.00		24	3.4
		17.18	19.186		5.3
		19.00	1919		7.5
		21.25			9.4
	9593	23.50		366	11.0
		4593			366
		27.45		24	7.32
		29.70			+28.51
		31.50			
		33.76	35.799		
		35.70	3580	25	5.0
		38.00	35.86		6.6
		40.00			8.2
		42.00			10.0
	32219	44.08		413	11.5
		5219			413
		48.28		25	8.26
		50.53	52.532		−32.43
		52.60	5253		
		54.55	71.72		
	26266	56.70		24	7.32
		1266	24 35830	25	8.26
				+	28.51
				−	32.43
					60.94
					1.78490
					1.17362
					2.95852
					1.90859
					8.95007
					5538

B 25 20.18
B 26 41.37
R 26 41.20
R 26 41.07
B 26 41.17
26 41.20
81.02

309

ε Pegasi

h m s
21 38 14

° ′
+9 19

1.17609
9.99423
1.17032

0.12621

h	m	s		m	s
21	37	18.25		37	9.4
		20.38	22.388		11.2
		22.26	2239		12.8
		24.50			14.6
	11194	26.55		645	16.2
		1194			145
		30.65		37	12.90
		32.80			+26.21
		34.94			
		37.00	39.116		
		39.20	3912	38	6.6
		41.18	3910		8.2
		43.40			9.9
		45.40			11.6
	35204	47.47		493	13.0
		8204			493
		51.70		38	9.86
		53.70	55.810		−30.75
		55.85	5581		
		57.80	78.20		
	27905	0.00		37	12.90
		2905	37 39.110	38	9.86
				+	26.21
				−	30.75
					56.96
					1.75567
					1.17032
					2.92589
					1.87017
					8.94428
					5136

B 0 21.52
B 1 35.52
R 1 35.70
R 1 35.75
B 1 35.75
1 35.68 73
74.16

3/1

α Aquarii

h m s
21 59 34
° ′
−0 54

1.17609 0,12621
9.99995
1.17604

1880

Oct. 7

h m s
21 58 38.22
40.35 42294
42.20 42.29
44.30
21147 46.40
1147
50.25
52.30
54.55
56.65 58.709
58.65 58.71
0.98 58.76
3.00
5.00
52838 7.00
7838
11.18
13.00 15.228
15.30 15.23
17.28 117.52
7614 19.38
2614 58 58.785

m s
58 24.3
26.0
27.4
29.0
1384 31.7
384
58 27.68
+31.10
59 31.9
33.9
35.5
37.2
1775 39.0
275
59 35.50
−36.72

58 27.68
59 35.50
+ 31.10
− 36.72
67.82
1.83136
1.17604
3.00740
1.95124
8.94384
5 1 18

B 13 39.55
B 15 8.92
R 15 8.68
R 15 9.20
B 15 8.92
15 8.93
89.38

1/11

57 Cephei

h m s
6 42 14
° ′
+87 14

0,12621

h m s
6 45 11.00
25.70
41.00
54.05
46 11.47
20.45
26.38
52.40
47 2.05
61450 7450

Δ6 to 9/10
8.278
8.28

m s
47 3.8
47 53.6

− 9 25.38

568

δ Canis Maj.

h m s
7 3 28
° ′
−26 12

1.17609 0,12621
9.95292
1.12901

h m s
7 2 25.95
28.00 30.260
30.03 30.26
32.52
15130 34.80
130
39.50
41.90
44.17
46.60 48.742
48.55 48.74
51.00 48.68
53.30
55.60
48868 58.06
7868
2.60
4.87 7.100
7.03 7.10
9.40 97.36
3550 11.60
3550 2 48.710

m s
2 20.9
22.3
23.6
24.7
1176 26.1
176
2 23.52
+25.19
3 17.4
19.5
21.5
23.4
1070 25.2
70
3 21.40
−32.64

2 23.52
3 21.40
+ 25.19
− 32.69
57.88
1.76253
1.12901
2.89154
1.84924
8.95770
5 11 1

B 30 31.10
B 31 41.65
R 31 41.75
R 31 41.85
R 31 41.82
31 41.77
70.67

118

β Can. Min.

	h m s			
	7 20 35			
	° ′	1.17609	0.12621	
	+8 32	9.99517		
		1.17126		
7 h 19 m 37.40 s		19 m 25.5 s		
39.45	41.542	27.7		
41.50	4154	29.7		
43.60		31.0		
20771 45.76		1466 32.7		
771		466		
49.80		19 29.32		
52.17		+28.97		
54.14				
56.40	58.290			
58.30	5829	20 31.8		
0.30	5829	33.0		
2.50		34.2		
4.50		36.0		
52461 6.50		1723 37.3		
7461		223		
10.92		20 34.46		
12.97	15.044	−36.17		
15.10	1504			
16.98	11658			
7522 19.25		19 29.32		
2522	19 58.290	20 34.46		
		+ 28.97		
		− 36.17		
		65.14		
		1.81385		
		1.17126		
		2.98511		
		1.93536		
		8.95025		
		5546		

140

θ Urs. Maj.

	h m s		
	9 24 45		
	° ′		0.12621
	+52 14		
9 h 23 m 36.82 s		m s	
40.50	43.660		
43.70	43.66		
46.98			
21830 50.30			
1830			
57.17			
0.40			
3.88			
7.00	10.533		
10.41	10.53	24 51.0	
13.85	10.59	53.7	
17.30		56.3	
20.76		59.6	
63480 24.03		2828 2.2	
480		328	
30.68		24 56.56	
34.15	37.534	−1 46.00	
37.61	37.53		
40.88	14119		
18767 44.35			
3767	24 10.560	24 56.56	
		− 46.00	

149

μ Urs. Maj.

	10 15 7		
	+42 6	1.17609	0.12621
		9.87039	
		1.04648	
10 h 14 m 2.35 s		14 m 0.2 s	
5.28	8006	1.9	
8.00	801	4.7	
10.80		6.6	
4003 13.60		222 8.8	
4003		222	
19.17		14 4.44	
21.90		+25.87	
24.70			
27.50	30.341		
30.35	3034	15 7.0	
33.15	3029	9.5	
36.05		11.7	
38.75		14.0	
27307 41.50		580 15.8	
307		80	
47.00		15 11.60	
49.85	52.566	−41.29	
52.62	5257		
53.34	6058		
26283 58.02		14 4.44	
1283	14 30.315	15 11.60	
		+ 25.87	
		− 41.29	
		67.16	
		1.82711	
		1.04648	
		2.87359	
		1.82601	
		8.95242	
		5717	

B 48 30.00 ·
B 49 56.05 ·
R 49 56.20 ·
R 49 56.35 ·
B 49 56.08 ·
49 56.17 ·
86.17

9 21.78 ·
9 21.88

9 21.83 ·

B 15 22.75 ·
B 16 29.82 ·
R 16 29.80 ·
R 16 29.85 ·
B 16 29.50 ·
16 29.74
66.99

S

Sun. c = 44 89.4

h m s
12 58 11
° ′
−6 13

0,1264

1880

Oct. 7/8

h m s
12 55 54.80
56.83
59.00
1.00
29473 3.10
4473
7.40
9.45
11.55
13.70
15.78
17.87
19.95
21.90
14160 24.00
5160
28.20
30.10
32.20
34.35
16135 36.50
1135

58946
58.95
15.733
15.73
15.61
32270
32.27
151.22
56 15.670

m s
56 57.8
59.2
0.7
2.3
3040 4.0
40
57 0.80
− 45.13
57 0.80
− 45.13

m s
58 4.15
6.37
8.35
10.50
4185 12.48
4185
16.70
18.90
20.90
23.00
25.00
27.10
29.32
31.40
22585 33.53
4585
37.85
39.80
41.88
43.88
20941 46.00
941

8370
837
25094
25.09
25.12
41882
41.88
50.25
58 25.105

m s
57 22.3
23.7
25.2
26.5
1259 28.2
259
57 25.18
59.92
57 25.18
+ 56.92

B 16 36.28

B 49 20.62

269

λ Aquilae

h m s
18 59 36
° ′
−5 3

0,12621

Oct. 9

h m s
18 58 42.00
44.05
46.15
48.20
23075 50.35
3075
54.47
56.55
58.65
0.70
2.80
4.90
7.00
9.00
56524 11.17
2524
15.30
17.30
19.40
21.50
9710 23.60
4710

46150
46.15
2.804
2.80
2.78
19.420
19.42
125.57
59 2.790

59 28.7
30.2
31.8
33.3
1590 35.0
90
59 31.80
−29.01
59 31.80
− 29.01

R 24 39.75.
R 24 39.58.

24 39.66.

		287.				607				289		
		θ Aquilae				α² Capricorni				χ Cygni		
		h m s				h m s				h m s		
		20 5 4				20 11 20				20 17 52		
		° ′	1.17609	0,12621		° ′		0,12621		° ′	1.17609	0,12621
		−1 11	9.99991			−12 55				+39 52	9.88720	
			1.17600								1.06329	
h	m s		m s	h	m s		m s	h	m s		m s	
20	3 56.30		3 57.0	20	10 —		10 58.4	20	16 38.75		16 19.5	
	58.28	0.364	57.3		—		59.7		41.45	44.154	21.6	
	0.32	036	53.0		—		1.3		44.97	4415	23.0	
	245		54.9		—		3.0		46.90		24.6	
	30182 4.47		2657 56.5		—		3070 4.6		22077 49.50		1154 26.7	
	182		157				70		2077		154	
	8.57		3 53.14	+8.47 33.62	303.78 25.15		11 1.40		54.86		16 23.08	
	10.60		+ 23.71	6.35 33.83	33.753 27.48		−27.63		57.50		+42.63	
	12.70			4.23 33.78	29.55				0.32			
	14.70	16.817		+2.04 33.64	31.60	33.757			3.00	5.709		
	16.88	1682	4 52.4	−0.00 33.75	33.45	3376	11 14.7		5.40	5.71	17 37.7	
	18.90	1688	54.0	2.11 33.89	36.00		16.2		8.45	5.72	39.2	
	21.00		55.4	4.23 33.82	38.05		17.7		11.15		41.0	
	23.00		57.2	6.35 33.70	40.05		19.2		13.90		43.0	
	15135 25.00		2777 58.7	8.48 33.70	30381 42.18		881 20.3		59138 16.50		2062 45.3	
	6135		277		3381		381		5138		62	
	29.30		4 55.54	12.70 33.70	168.97 46.40		11 17.62		21.90		17 41.24	
	31.35	33.396	38.69	14.82 33.83	33.794 48.65	50.744	−43.85		24.54	27.288	−35.53	
	33.40	3340		16.94 33.86	50.80	5074			27.30	2729		
	35.46	3376		19.05 33.82	52.87				30.00	13144		
	16698 37.47		3 53.14	−21.24 33.76	25372 55.00		11 1.40		13644 32.40		16 23.08	
	1698	4 16.850	4 55.54		372		11 17.62		3644	17 5.715	17 41.24	
			+ 23.71								+ 42.63	
			− 38.69	33.773							− 35.53	
			62.40	33.768							78.16	
			1.79518								1.89298	
			1.17600								1.06329	
			2.97118								2.95627	
			1.92070								1.90423	
			8.94952								8.94796	
			5 5 15								5 4 9	
B	30 23.80			B	15 28.12			B	27 55.30			
B	31 46.92			B	15 48.15			B	29 15.62			
R	31 47.28			R	15 48.17			R	29 15.50			
R	31 47.22			R	15 48.45			R	29 15.38			
B	31 47.02			B	15 — ?			B	29 15.55			
	31 47.11								29 15.51			
	83.31								80.21			

		294				298				303		
		α Cygni				ε Cygni				ζ Cygni		
		h m s 20 37 18		0,12621		h m s 20 41 19		0,12621		h m s 21 7 47	1.17609	0,12621
		° ′ +44 51				° ′ +33 31				° ′ +29 44	9.93869	
	1880	Oct. 9									1.11478	
h 20	m s 36 —		m s 36 56.5	h 20	m s 40 —		m s 40 48.0	h 21	m s 6 36.45		m s 6 27.6	
	—		59.3		—		49.8		38.75	41.230	29.0	
	—		1.0		—		57.2		41.30	4123	30.5	
	—		3.2		—		53.0		43.60		32.0	
	—		3055 5.5		—		2568 54.8		20615 46.45		1531 34.0	
			55				68		6.15		31	
+11.64 30.89	279.53 19.25		37 1.10	+9.40 31.90	28631 22.00		40 51.36		50.80		6 30.62	
8.73 31.10	31.059 22.37		−30.00	7.43 31.83	31.812 24.40		−29.50		53.18		+29.66	
5.81 31.16	25.35			4.44 31.69	26.75				55.66			
+2.88 31.14	28.26	31.064		+2.46 31.75	29.30	31.817			57.96	0.307		
−0.00 31.00	31.00	3106	37 9.7	−0.00 31.80	31.80	3182	41 15.5		0.36	031	7 30.6	
2.90 31.10	34.00		11.2	2.47 31.98	34.25		17.1		2.70	026	32.3	
5.82 30.98	36.80		13.4	4.45 31.90	36.85		19.0		5.00		33.7	
8.73 31.07	39.80		15.3	7.43 31.77	39.20		21.0		7.40		35.5	
11.66 31.04	27958 42.75		17.4	9.41 31.89	28635 41.80		955 22.9		54276 9.70		1694 37.3	
	9.58		17.0		16.35		45.5		2.76		19.4	
17.46 31.10	155.84 48.56		37 13.40	14.85 32.65	159.78 46.90		41 19.10		14.58		7 33.88	
20.37 31.23	31.168 51.60	54.472	−42.30	17.32 32.03	31.956 49.35	51.772	−47.10		16.90	19.294	−33.60	
23.29 31.11	54.40	5447		14.80 31.95	51.75	51.77			19.30	1929		
26.20 31.10	57.30			22.28 31.98	54.26				21.65	120.52		
−29.20 31.30	27236 0.50		37 1.10	−29.83 31.77	25886 56.60		40 51.36		9647 24.04		6 30.62	
	22.36				8.86		41 19.10		4647	7 0.285	7 33.88	
											+ 29.66	
											− 33.60	
31.113				31.884							63.26	
31.098				31.863							1.80113	
											1.11478	
											2.91591	
											1.86219	
											8.94628	
											5 2 59	

		/
B 30 26.42 ·	B 49 59.98 ·	B 36 9.32 ·
B 30 38.38 ·	B 51 30.90 ·	B 37 22.08 ·
R 30 38.55 ·	R 51 30.98 ·	R 37 22.15 ·
	R 51 31.08 ·	R 37 22.18 ·
30 38.44 ·	B 51 31.00 ·	B 37 22.12 ·
	51 30.99 ·	37 22.13 ·
	91.01	7281

·21

306

α Cephei

h m s
21 15 41
° '
+62 4

1.17609
9.67066
0.84675

0.12621

21 14	10.70		13 52.8	14 32.2
	15.18	19.572	55.0	34.7
	19.62	1957	58.5	38.0
	24.04		1.4	40.9
9786	28.32		2922 4.5	1904 44.6
	4786		422	404
	37.55		58.44	14 38.08
	41.65			+16.81
	46.20			
	50.40	54.937		
	54.90	54.94	15 46.6	16 29.0
	59.45	5484	50.2	30.0
	3.78		53.4	31.0
	8.00		56.7	32.2
49443	12.50		2672 0.3	1556 33.4
	4443		172	56
	21.27		15 53.44	16 31.12
	25.60	30.120	58.55	−1 36.23
	30.23	3012		
	34.50	09.69		
15060	39.00		13 58.44	14 38.08
	060	14 54.890	15 53.44	16 31.12
			+ 56.45	+ 16.81
			− 58.59	− 96.23
			115.04	113.04
			2.06085	2.05323
			0.84675	0.84675
			2.90760	2.89998
			1.79532	1.79532
			8.88772	8.89534
			42456	42936

307

β Aquarii

h m s
21 25 11
° '
−6 6

1.17609
9.99753
1.17362

0.12621

21 24	3.80		23 55.6
	5.90	7.950	57.0
	8.00	7.95	58.1
	10.00		59.6
3975	12.05		2917 1.4
	3975		417
	16.24		23 58.34
	18.24		+ 26.19
	20.32		
	22.45	24.510	
	24.50	2451	25 2.6
	26.58	2455	3.8
	28.66		5.1
	30.80		6.7
22059	32.80		264 8.2
	22059		264
	37.00		25 5.28
	39.17	41.158	−40.75
	41.20	4116	
	43.20	49.11	
20579	45.22		23 58.34
	579	24 24.530	25 5.28
			+ 26.19
			− 40.75
			66.94
			1.82569
			1.17362
			2.99931
			1.95371
			8.95440
			5841

309

ε Pegasi

0.12621

h m s
21 38 14
° '
+9 19

1.17609
9.99423
1.17032

21 37	6.90		37 1.8
	8.90	10.990	3.3
	11.00	1099	4.9
	13.00		6.4
5495	15.15		244 8.0
	495		244
	19.33		4.88
	21.50		+ 22.85
	23.56		
	25.63	27.741	
	27.80	2774	37 52.9
	29.80	2772	54.6
	31.96		56.1
	34.04		57.6
24967	36.05		2802 59.0
	6967		302
	40.21		37 56.04
	42.33	44.454	−28.31
	44.43	4445	
	46.60	5544	
22227	48.70		37 4.88
	22 727	37 27.730	37 56.04
			+ 22.85
			− 28.31
			51.16
			1.70895
			1.17032
			2.87927
			1.82995
			8.95068
			564

B 16 7.00·
B 16 30.62·
B 17 17.55·
B 17 39.98·

~~17 09.42~~
62.42

B 25 24.20·
B 26 54.18·
B 26 54.00·

26 54.09
89.89

B 0 26.15·
B 1 33.72·
B 1 33.78·

1 33.75·
87.60

		311				322				619		
		α Aquarii				η Pegasi				α Piscis Austral.		
		h m s				h m s				h m s		
		21 59 34		0,12621		22 37 20		0,12621		22 50 58		0,12621
		° ′				° ′				° ′		
		− 0 54				+ 29 35				−30 16		
	1880											
		Oct. 9										
h	m s		m s	h	m s		m s	h	m s		m s	
21	58 26.75		58 17.7	22	36 9.87		35 52.6	22	49 46.70		49 41.3	
	28.70	30.850	19.3		12.17	14.528	54.4		49.25	51.506	43.2	
	30.80	30.85	20.7		14.50	14.53	55.7		51.53	51.51	45.6	
	33.00		22.0		16.80		57.5		53.90		47.4	
	15425 35.00		1032 23.5		7264 19.30		2792 59.0		25753 56.15		2272 49.7	
	425		32		2264		292		753		272	
	39.00		58 20.64		24.00		35 55.84		1.00		49 45.44	
	41.17		+ 26.72		26.35		+ 37.69		3.44		+ 25.16	
	43.17				28.75				5.90			
	45.30	47.343			31.16	33.547			8.25	10.577		
	47.40	47.34	59 14.2		33.56	33.55	37 5.3		10.55	10.58	50 38.3	
	49.40	47.38	15.6		36.00	33.52	7.0		13.00	10.63	40.0	
	51.50		17.2		38.40		8.7		15.30		41.9	
	53.55		18.9		40.70		10.8		17.60		43.4	
	42609 55.60		866 20.7		80192 43.00		448 13.0		9519 20.15		2086 45.0	
	6609		366		3192		448		519		86	
	59.80		59 17.32		47.85		37 8.96		25.00		50 41.72	
	1.80	39.20	−29.96		50.20	52.508	− 35.43		27.42	29.764	−31.12	
	4.00	39.2			52.50	52.51			29.74	29.76		
	6.00	94.77			54.84	67.04			32.17	141.27		
	31960 8.00		58 20.64		26254 57.15		35 55.84		14881 34.48		49 45.44	
	1960	58 47.360	59 17.32		1254	36 33.535	37 8.96		4881	50 10.605	50 41.72	
			+ 26.72				+ 37.69				+ 25.16	
			− 29.96				− 35.43				− 31.12	
			56.68				73.82				56.28	
			1.75343				1.86404				1.75035	
B	13 45.20·			B	44 –			B	34 7.35·			
B	14 1.38·			B	45 50.78·			B	34 10.92·			
B	14 1.32·			B	45 50.92·							
	14 1.35·				45 50.85·							

154

α Urs. Maj. Sh. Ce.

h m s
22 56 15
° ′
+62 24

0,12621

h m s
22 54 38.60
43.00 47.348
47.29 4735
51.60
23674 56.25
3674
4.60
9.40
14.05
18.48 22.841
22.85 2284
27.32 2291
32.00
36.30
20557 40.57
2557
49.20
54.00 58.48
58.60 5848
3.20 165.83
29240 7.40
4240 55 228/5

m s
54 27.0
29.9
33.5
37.0
1684 41.0
184
54 35.68
+47.19
55 44.7
50.5
52.2
55.7
2608 57.7
108
55 52.16
−29.24
56 27.2
29.8
31.7
33.8
36.8
39.2
185
56 33.70
−1 10.83

+8.53 57.33
6.40 57.40
4.26 57.66
+2.11 57.49
−6.10 57.57
2.13 57.37
4.26 57.64
6.40 57.53
8.54 57.465
12.70 57.50
14.92 57.34
17.06 57.52
19.14 57.53
−21.39 57.51
57.487
57.489

h m s
22 57 —
—
—
—
—
517.45 48.80
57.494 51.00
53.40
55.38
57.57
59.50
1.90
3.93
1748 6.00
6748
287.40 10.20
57.48 12.26
14.58
16.72
7266 18.90
2266

329

α Pegasi

h m s
22 58 44
° ′
+14 33

57.49~~8~~
57.50
14.532
1453

m s
58 26.2
27.8
29.5
30.7
1468 32.6
468
58 29.36
−31.87
58 29.36

0,12621

566

ε Can. Maj.

h m s
6 58 52
(18) ° ′
−28 48

h m s
6 52 36.27
38.80 41.100
41.15 41.10
43.35
20550 45.95
550
50.63
52.87
55.15
57.60 59.931
59.80 59.93
2.20 59.93
4.68
7.00
53938 9.45
8938
14.05
16.40 18.765
18.66 18.77
21.25 119.87
9384 23.48
4384 52 59.930

m s
52 28.3
29.9
31.4
33.2
1579 35.1
79
52 31.58
+28.35
52 31.58
+ 28.35

0.12621

B 49 11.52·
B 48 22.00·
B 47 58.48·

.B 47 37.50·
B 47 37.45·

47 37.47

R 6 32.50·
R 6 32.50·

6 32.50·

1880

Oct. 9.

568

δ Can Maj.

h m s
7 3 28
° '
~~19~~ ~~16~~ 12
−26

0,126·21

h m	s		m s
19 2	13.00		
	15.34	17.646	
	17.64	17.65	
	20.00		
8823	22.25		
	3823		
	26.68		
	29.00		
	31.30		
	33.77	36.008	
	36.05	36.01	3 6.1
	38.29	36.09	7.8
	40.62		9.5
	43.00		11.2
32407	45.36		477 13.1
	5407		477
	50.02		3 9.54
	52.17	54.534	−33.49
	54.45	54.53	
	56.85	72.18	
27267	59.18		
	2267	2 36.050	3 9.54
			− 33.49

R 31 47.12·
R 31 47.30·

31 47.21·

118

- Can Min

h m s
7 20 35
° '
+8 32

0,126 21

h m	s		m s
19	24.55		19 20.7
	26.80	28.780	21.9
	28.65	28.78	23.0
	30.90		25.0
14390	33.00		1176 27.0
	4390		176
	37.40		19 23.52
	39.40		+ 22.02
	41.46		
	43.50	45.591	
	45.60	45.59	
	47.60	45.50	
	49.40		
	51.76		
41032	53.90		
	5032		
	58.19		
	0.15	2.218	
	2.15	2.22	
	4.30	91.00	
31109	6.30		19 23.52
	1109	19 45.545	
			+ 22.02

R 48 39.42·
R 48 39.55·

48 39.48·

119

α Gem.

h m s
7 26 52
° '
+32 09

0,126 21

h m	s		m s
25	40.60		25 36.1
	43.00	45.436	37.6
	45.50	45.44	39.4
	47.90		41.0
22718	50.18		1963 42.2
	2718		463
	55.00		25 39.26
	57.57		+ 25.72
	0.10		
	2.55	5.013	
	5.20	5.01	
	7.60	4.96	
	9.85		
	12.34		
68512	14.88		
	4512		
	19.46		
	22.07	24.482	
	24.55	24.48	
	27.00	129.92	
12241	29.33		25 39.26
	2241	26 4.985	
			+ 25.72

R 12 4.60·
R 12 4.95·

12 4.77·

	120				122					153		
	α Can. Min.				β Gem.					β Urs. Maj.		
	h m s				h m s					h m s		
	7 32 58				7 37 35					10 54 32		
	° ′		0,12621		° ′		0,12821			° ′		0.12621
	+ 5 32				+ 28 19					+ 57 2		
h m s		m s	h	m s		m s		h	m s		m s	
31 47.00		31 38.8		36 42.70		36 37.2	+38.81	43.47	53 4.66		52 51.0	
49.18	51.192	41.5		45.00	47.430	38.5	34.90	43.22	216.18 8.32	12.176	52.8	
51.30	51.19	42.8		47.47	47.43	39.5	31.05	43.10	43.236 12.05	12.18	55.6	
53.18		44.3		49.80		41.0	27.17	43.17	16.00		57.5	
25596 55.20		2133 45.9		23715 52.18		1986 42.4	23.37	43.22	6088 19.85		2779 1.0	
596		133		3715		486			1088		279	
57.68		31 42.66		56.88		36 39.72	15.52	42.44	382.78 27.47		52 55.58	
1.60		+ 25.16		59.24		+ 26.54	11.64	42.80	42.531 31.16		+ 47.20	
3.75				1.70			7.75	42.75	35.00			
5.90	7.878			3.90	6.273		+3.87	42.80	38.96	42.538		
7.95	7.88			6.30	6.27		−5.00	42.55	42.55	42.54		
9.87	7.77			8.53	6.25		3.87	42.53	46.40			
11.98				10.98			7.76	42.24	50.00			
14.00				13.28			11.64	42.06	53.70			
61090 16.17				59646 15.65			15.54	42.063	38284 57.60			
7090				5646					2284			
20.17				20.29					—			
22.15	24.342			22.84	25.062				—			
24.32	24.34			25.00	25.06				—			
26.40	135.53			27.35	132.49				—			
12171 28.67		31 42.66		12531 29.83		36 39.72			—		52 55.58	
2171	32 7.825			2531	37 6.260							
		+ 25.16				+ 26.54	42.883					
							42.783					
R 48 25.12·				R 2 7.75·					R 20 10.08:			
R 48 25.00·				R 2 7.95·								
48 25.06·				2 7.85·								

		154				156		
		α Urs. Maj.				δ Leonis		
		h m s				h m s		
		10 56 15				11 7 40		
		~~22~~		0,1126 21		° ′		0,1126 21
		+62 23				+21 11		
	1880	Oct. 9						
h	m s		m s	h m	s		m s	
22	—		55 3.0	23 6	26.75		6 15.7	
	—		5.7		28.83	31.146	17.2	
	—		8.7		31.17	31.15	18.5	
	—		11.3		33.40		19.6	
	—		432 14.5	15573	35.58		920 21.0	
			422		573		420	
+17.81 26.21	55 8.40		55 8.44		40.00		6 18.40	
13.36 26.06	234.89 12.70		+17.66		42.30		+30.46	
8.90 26.08	26.099 17.77				44.45			
+4.41 26.01	21.60	26.104			46.57	48.891		
-0.00 26.04	26.04	26.10	56 42.0		48.90	48.89		
4.44 26.04	30.48		46.4		51.20	48.84		
8.91 26.09	35.00		49.0		53.30			
13.36 26.19	39.55		51.6		55.58			
17.83 26.17	23494 44.00		2445 55.5	44002	57.72			
	5494		445		8002			
	—		56 48.90		2.00			
	—		-1 22.80		4.28	6.532		
	—				6.55	6.53		
	—				8.80	9.768		
	—		55 8.64	3266	11.05		6 18.40	
			56 48.90		3266	6 48.865		
							+ 30.46	
26.099								

R 58 17.62· R 10 0.22·

R 58 18.80· R 10 0.25·

R 58 18.65·

58 18.72· 10 0.26^{3}·

S

Sun c = 44 841

(13h 5m) Ex. 11h 17m 4s 0.12621

+4° 37'

1880 Oct. 9/10

13h 3m 2.88s 3m 56.0s 5m 12.65s

5.00 7090 57.4 14.85 16.856

7.02 709 58.6 16.90 1686

9.20 59.8 18.88

3545 11.35 2932 1.4 8428 21.00

3545 432 3428

15.56 3 58.64 25.75

17.60 ~34.83 27.32

19.62 29.27

21.75 23.827 31.38 33.491

23.70 2383 33.48 3349

25.93 23.79 35.56 3350

28.00 37.68

30.10 39.70

21444 32.18 30142 41.88

3444 3142

36.37 46.05

38.40 40.494 48.05 50.152

40.50 4049 50.18 50.15

42.50 47.58 52.18 67.01

20247 44.70 8 58.64 25076 54.30

247 3 23.810 076 5 33.495

— 34.83

R 34 8.48

270

ζ Aqu. Aquila

18h 59m 37s 0.12621

+13° 41'

Oct. 10

18h 58m 36.06s m s

38.18 40.264

40.25 4026

42.33

20132 44.50

132

48.70

50.90

53.00

55.23 57.331

57.38 57.33 59 20.0

59.45 57.31 21.7

1.65 23.5

3.77 25.0

51598 5.90 1167 26.5

6598 167

10.10 59 23.34

12.37 14.368 — 26.02

14.30 14.37

16.47 114.63

7184 18.60

2184 58 57.320 59 23.34

— 26.02

R 40 10.40.

R 40 10.10.

40 10.25.

S

Sum c = 44 841

h m s
13 9 14
° ′
−7 21

0,12621

1880
Oct. 10/11

287

θ Aquilae

h m s
20 5 4
° ′
−1 11

1.17609 0,12621
9.99991
1.17600

Oct. 11

h m s
13 6 37.00
39.00 41.040
41.00 41.04
43.00
20520 45.20
520
49.45
51.53
53.70
55.80 57.831
57.80 57.83
59.93 57.76
2.00
4.03
52048 6.24
7048
10.20
12.45 1.4484
14.55 14.48
16.55 115.52
7242 18.67
2242 6 57.795

m s
7 50.3
51.9
53.5
55.3
2680 57.0
180
7 53.60
−55.81
7 53.60
− 55.80

m s
8 46.68
48.78 50.862
50.90 50.86
52.95
25431 55.00
431
57.00
1.00
3.30
5.70 7.413
7.50 7.41
9.55 7.49
11.67
13.70
60672 15.80
6672
20.03
22.00 24128
24.03 24.13
26.20 134.99
12064 28.35
2064 9 7.450

m s
8 12.0
13.7
15.2
16.0
744 17.5
244
8 14.88
+52.57
8 14.88
+ 52.57

h m s
20 3 41.90
44.00 46.016
46.05 46.02
48.05
23008 50.08
3008
54.17
56.23
58.47
0.38 2.481
2.40 2.48
4.60 2.53
6.60
8.68
56233 10.80
2233
14.95
16.97 19.048
19.00 19.05
21.02 125.07
9524 23.30
4524 4 25.05

m s
3 26.0
27.5
29.0
30.0
1440 31.5
440
3 28.80 ~~4.880~~
+33.70
4 33.0
34.5
35.8
37.4
1794 38.7
294
4 35.88
−33.38

3 28.80
4 35.88
+ 33.70
− ~~10.83~~ 33.38
~~44.53~~ 67.08
~~1.64865~~ 1.82659
1.17600
~~2.82465~~ 3,00259
1.95521
~~9.13056~~ 8,95262
~~7 41 33~~ 5 7 25

B 25 1.52

B 57 40.88

B 30 10.68·
B 31 40.35
B 31 41.40

31. 40.88·
90.20

607

α² Capricorni

h m s
20 11 20
° '
−12 55

1.17609 0,12621
9.98887
1.16496

h m s
20 9 58.22 m s 9 57.2
0.38 2,440 52.6
2.45 244 54.2
4.50 55.6
31220 6.65 2714 57.8
1220 214
10.85 9 54.28
13.02 +25.10
15.15
17.30 19.389
19.40 19.39 10 50.2
21.50 19.38 51.7
23.53 52.9
25.80 54.4
17450 27.95 2652 56.0
8450 152
32.06 10 53.04
34.10 36.318 −33.66
36.40 36.32
38.45 38.76
18159 40.58 9 54.28
3159 10 19.385 10 53.04
+ 25.10
− 33.66
58.76
1.76908
1.16496
2.93404
1.88201
8.94797
54.10

289

χ Cygni

h m s
20 17 53
° '
+39 52

1.17609 0,12621
9.88510
1.06119

h m s
20 16 24.38 m s 16 8.9
27.00 29.750 10.8
29.80 29.75 12.5
32.47 14.4
14875 35.10 630 16.4
4875 130
40.38 16 12.60
43.20 +38.70
46.00
48.60 51.299
51.40 51.30 17 27.0
54.03 51.30 29.5
56.70 31.5
59.33 33.5
46169 2.05 1575 36.0
1169 75
7.48 17 31.50
10.15 12.864 −40.20
12.90 12.86
15.56 10.261
6432 18.23 16 12.60
1432 16 51.300 17 31.50
+ 38.70
− 40.20
78.90
1.89708
1.06119
2.95827
1.90417
8.94590
52 44

30 Ex. minute.

β Arietis

h m s
1 47 38
° '
+20 13

0,12621

h m s
1 45 35.45 m s
37.60 39.826
39.85 39.83
42.20
19913 44.03
4913
48.60
50.80
53.00
55.15 57.383
57.30 57.38 46 31.5
59.67 57.39 33.3
1.75 34.5
4.00 35.8
51645 6.18 1721 37.0
6645 221
10.55 46 34.42
13.00 14.950 −37.04
15.00 14.95
17.00 11.478
7475 19.20
2475 45 57.385 46 34.42
− 37.04

B 14 20.20·
B 15} 36.42·
B 15. 36.40·

15 36.41·
76,21

B 27 59.15·
B 29 19.32·
B 29 19.38·

29 19.35·
80,20

B 8 16.92·
B 8 16.80·

8 16,86·

153
Ex. minute.
β Urs. Maj.

h m s
10 54 32
° '
+57 2

0,12621

1880
Oct. 11

	h	m	s		m	s
+38.81	10	52	49.37	28.18	52	19.7
34.90	27.40	139.55	53.00	56850		23.2
31.05	27.91	27.71	56.86	5685		25.7
27.17	27.72		0.55			27.7
23.37	27.84	28425	4.47		1266	30.3
			3425			266
15.52	27.72	245.35	12.20		52	25.32
11.64	27.42	27.261	15.78		+1	2,10
7.75	27.53		19.78			
+3.84	27.34		23.50	27.268		
−4.00	27.30		27.30	2727		
3.87	27.73		31.00			
7.76	27.04		34.80			
11.64	26.96		38.60			
15.54	26.91	24541	42.45			
			6541			
27.485			—			
27421			—			
			—		52	25.32

154
α Urs. Maj.

h m s
10 56 15
° '
+62 24

0,12621

h	m	s		m	s	m	s
10	54	26.20		54	4.3	55	11.3
		30.60	35100		6.9		15.9
		35.20	3510		9.7		18.4
		39.50			12.7		20.7
	17550	44.00		503	16.7	909	24.6
		2550			703		409
		53.00		~~54.060~~		55	18.18
		57.40		54	10.06		−7.38
		1.90		+1	0.74		
		6.28	10.823				
		10.88	1082	55	52.2	56	17.0
		15.30	10.78		57.0		21.6
		19.60			0.2		24.7
		24.25			3.3		27.3
	63741	28.60		2989	6.2	1213	30.7
		741			489		213
		37.40		55	59.78	56	24.26
		42.00	46.450		−48.98	−1	23.46
		46.50	4645				
		50.85	14155				
	23225	55.50		54	10.06	55	18.18
		3225	55 10.800	55	59.78	56	24.26
				+	60.74	−	7.38
				−	48.98	−	13.46
					109.72		20.84

155
ψ Urs. Maj. 0,12621

h m s
11 2 51
° '
+45 9

1.17609
9.84835
1.02444

h	m	s		m	s
11	1	16.30		1	4.9
		19.00	22176		6.6
		22.28	2218		8.8
		25.25			10.8
	11088	28.05		441	13.0
		1088			441
		33.82		1	8.82
		36.80			+36.81
		39.92			
		42.78	45.646		
		45.66	4565	2	24.6
		48.56	4561		26.8
		51.45			28.5
		54.42			30.8
	41081	57.40		1444	33.7
		5081			444
		3.20		2	28.88
		6.15	9.026		−43.25
		9.00	903		
		11.98	9121		
	4513	14.80		1	8.82
		4513	1 45.630	2	28.88
				+	36.81
				−	43.25
					80.06
					1.90342
					1.02444
					2.92786
					1.87460
					8.94674
					5 3 19

B 19 59.15.

B 57 51.30.
B 57 33.60.
B 58 58.85.
B 59 13.95.

~~58 35.47~~

B 12 30.12.
B 13 45.00.
B 13 45.08.

13 45.04.
74.92

156

S Leonis

h m s
11 7 40
° ′
+21 11

Oct. 11

0.12621

S

Sun. c = 44 84.1

h m s
13 12 56
° ′
−7 44

Oct. 11/12

0,12621

h	m	s		m	s
11	6	11.50		6	4.3
		13.50	15.816		5.8
		15.73	1582		7.1
		18.05			8.7
	7908	20.30		366	10.7
		2908			366
		24.65		6	7.32
		26.95			+26.20
		29.00			
		31.35	33.522		
		33.60	3352	y	4.9
		35.70	3353		7.0
		37.95			8.4
		40.05			9.8
	30170	42.45		412	11.1
		3170			412
		46.84		7	8.24
		49.00	51.236		−34.72
		51.30	5124		
		53.44	67.06		
	25618	55.60		6	732
		618	6 33525	7	824
				+	26.20
				−	34.72
					60.92

h	m	s			
13	11	10.43		+20.83	31.26
		12.45	14.570	18.73	31.18
		14.60	1457	16.67	31.27
		16.60	156.15	14.58	31.18
	7285	18.77	31.230	12.44	31.26
		2285			
		—			
		—			
		—			
		29.20	188.03	+2.06	31.26
		31.35	31.338	−0.00	31.35
		33.50	31.27	2.08	31.42
		35.50		4.17	31.33
		37.60		6.25	31.35
		39.66		8.34	31.32
		75	156.44		
		43.80	31.288	12.44	31.31
		45.90	47.960	14.58	31.32
		48.00	47.96	16.66	31.34
		50.05	6253	18.74	31.31
	23980	52.05		20.84	31.16
		3980			

31.285
31.288

B H 6 22.25.
B H 22.35.

− 47 47.02

6 2230

280

α Aquilae

h m s
19 44 53
° ′
+8 32

0,12621

283

β Aquilae

h m s
19 49 22
° ′
+6 6

0,12621

303

ζ Cygni

h m s
21 7 47
° ′
+29 44

1.17609 0.12621
9.93869
1.11478

1880
Oct. 12

h m s
21 6 41.98 m s 6 34.4
44.36 46.774 36.2
46.83 4677 38.3
49.10 40.4
23387 51.60 1917 42.4
3387 41.7
56.18 6 38.34
58.70 +27.42
1.00
3.32 5.736
5.73 5.74 7 36.7
8.15 5.79 38.8
10.45 40.4
12.82 42.1
59162 15.27 2021 44.1
5162 21
30.10 7 40.42
22.45 24805 −34.66
24.72 2481
27.30 131.58
12404 29.47 6 38.34
2404 7 5.765 7 40.42
+ 27.42
\− 34.66
62.08
1.79295
1.11478
2.90773
1.85437
8.94664
5 3 14

B 46 57.00 ·
B 49 2.20 ·
B 49 2.10 ·

49 2.15 ·
125,15

B 13 45.32 ·
B 14 40.58 ·
B 14 40.50 ·

14 40.54 ·

B 36 10.00 ·
B 37 21.55 ·
B 37 21.48 ·

37 21.51 ·
71.51

21

306

α Cephei

h m s
21 15 41
° ′
+62 4

1.17609 0,12621
9.67066
0.84675

1880

Oct. 12

h	m	s		m	s	m	s
21	14	16.05		13	46.7	15	3.0
		2050	25030		50.0		7.3
		2510	2503		54.0		10.0
		2940			57.8		12.7
	12515	3410		2696	1.1	488	15.8
		2515			196		488
		42.90		13	53.92	15	9.76
		47.05		+1	6.43		−9.41
		51.55					
		56.10	0.406				
		0.40	041	15	56.2	16	27.9
		4.85	030		0.6		31.0
		9.20			4.7		34.3
		13.55			7.3		38.1
	54365	18.05		3192	10.4	1731	41.8
		365			192		231
		26.82		16	3.84	16	34.62
		30.95	35574	−1	3.49	−1	34.27
		35.70	3557				
		40.00	12060				
	17787	44.40		13	5392	15	976
		2787	15 0.355	16	384	16	3462
				+	66.43	−	9.41
				−	63.49	−	54.27
					129.92		63.68
					2.11368		1.80400
					0.84675		0.84675
					2.96043		2.65075
					1.88093		1.88093
					8.92050		9.23018
					44537		93950

307

β Aquarii

h m s
21 25 11
° ′
−6 6

1.17609 0,12621
9.99753
1.17362

h	m	s		m	s
21	24	9.50		24	5.6
		11.55	13564		7.1
		13.47	1356		8.4
		1560			9.9
	6782	17.70		421	11.1
		1782			421
		21.88		24	842
		24.00			+21.74
		26.00			
		28.18	30202		
		30.20	3020	24	57.2
		32.30	30.12		58.6
		34.30			0.3
		36.46			2.0
	27182	38.50		3017	3.6
		182			17
		42.50		25	034
		44.50	46670		−30.18
		46.65	4667		
		48.90	6023		
	23335	50.80		24	842
		3335	24 30.160	25	034
				+	21.74
				−	30.18
					51.92
					1.71533
					1.17362
					2.88895
					1.84917
					8.96022
					51249

309

ε Pegasi 0.12621

h m s
21 38 14
° ′
+9 19

1.17609
9.99423
1.17032

h	m	s		m	s
21	37	12.50		37	9.4
		14.60	16744		11.9
		16.90	1674		13.8
		18.90			15.4
	8372	20.82		680	17.5
		3372			180
		25.02		37	1360
		27.20			+19.89
		29.30			
		31.38	33506		
		33.55	3351	38	3.3
		35.65	3348		5.0
		37.70			7.0
		39.80			8.5
	30155	41.95		339	10.1
		3155			339
		46.00		38	678
		48.05	50220		−33.29
		50.25	5022		
		52.35	6696		
	25110	54.45		37	1360
		110	37 33495	38	678
				+	19.89
				−	33.29
					53.18
					1.72575
					1.17032
					2.89607
					1.84117
					8.94510
					5210

B 15 59.60·
B 16 47.72·
B 17 20.60·
B 17 38.55·

~~17 15.62~~
· 76.02

B 25 29.12·
B 26 39.75·
B 26 39.80·

26 39.78·
70.66

B 0 30.82·
B 1 40.10·
B 1 40.28·

1 40.19·
69.37

		311				153				154			
		α Aquarii				β Urs. Maj. L.C.				α Urs. Maj. L.C.			
		h m s 21 59 34	1.17609	0,12621		h m s 10 54 32		0,12621		h m s 10 56 15		0,12621	
		° ′ −0 54	9.99995			° ′ +122 58				+62 2~~0~~3			
	1880	Oct. 12	1.17604										
h	m s		m s	h m	s		m s	h m	s		m s		
21	58 32.40		58 17.5	10	—		52 42.7	10	—		55 5.0		
	34.60	36602	19.2		—		44.4		—		9.0		
	36.68	3660	20.7		—		48.3		—		11.9		
	38.68		22.2		—		51.4		—		14.9		+23.5
	18301 40.65		1033 23.7		—		2403 53.5		—		598 19.0		20.21
	3301		33				403				98		
	44.70		58 20.66	+15.19 47.11	53 31.92		52 48.06	17.84 29.44	55 11.60		56 11.96		13.47
	46.90		+32.42	11.38 46.90	421.82 25.52		+58.81	13.36 29.26	263.32 15.90				10.11
	49.00			7.54 46.79	46.869 39.20			8.91 29.31	29.258 20.40				6.73
	51.15	53.083		+3.78 46.78	43.00	46.862		4.44 29.34	24.90	29.250			+3.33
	53.10	53.08	59 21.5	−0.00 46.90	46.90	46.86	53 11.5	0.00 29.00	29.00	29.25	56 2.9		−0.00
	55.20	53.08	23.4	3.75 47.00	50.75		14.0	4.41 29.14	33.55		5.4		3.36
	57.20		25.0	7.58 46.77	54.35		16.5	8.90 29.30	38.20		10.5		6.74
	59.10		26.7	11.38 46.82	58.20		18.8	13.36 29.34	42.70		12.5		10.11
	47775 1.40		1253 28.7	15.17 46.75	42176 1.92		848 24.0	17.81 29.14	26325 47.00		469 15.6		13.44
	2775		25.3		6176		348		8325		469		
	5.40		59 25.06		—		53 16.96		—		56 9.38		20.21
	7.50	9.552	−31.98		—		+29.91		—		−40.12		23.57
	9.50	955			—				—				26.65
	11.66	10615			—				—				30.31
	4776 13.70		58 20.66		—		52 48.06		—		56 58.9		−33.74
	4776	58 53.080	59 25.06				53 16.96				59.8		
			+ 32.42								0.7		
			− 31.98								1.6		31.
			64.40								3035 2.5		31.
			1.80889								35		
			1.17604								57 0.70		
			2.98493								−1 31.44		
			1.93480										
			8.94987										
			5 5 29										

B 13 37.62·
B 15 3.60·
B 15 3.75·

B 28 56.00·
B 28 37.42·

B 48 49.25·
B 48 14.20·
B 48 43.55·

15 3.68·
86.06

140

θ Urs. Maj.

h m s
9 24 45
° '
+52 14

0,12621

h m s
9 23 —
—
—
+23.54 30.99 62.07 7.40
20.21 31.08 31.035 10.87
13.47 31.05 280.69 17.58
10.11 31.31 31.188 21.20
6.73 31.13 24.40
+3.33 31.18 27.85 31.194
-0.10 31.20 31.20 31.19
9.36 31.16 34.52
6.74 31.26 38.00
10.11 31.12 41.23
13.49 31.28 28075 44.77
1075
20.21 31.09 155.91 51.30
23.57 31.17 31.182 54.74 58.148
26.95 31.15 58.10 5815
30.31 31.24 1.60
-33.74 31.21 29074 5.00
4074

31.135
31.176

m s
24 14.8
16.9
19.5
21.7
972 24.3
472
24 19.44
+ 11.74
24 19.44

155

ψ ~~χ~~ Urs. Maj.

h m s
11 2 57
° '
+45 9

0,12621

h m s
11 1 5.90
8.80
11.70 11.68
14.64
17.46
23.50
26.32
27.30
32.10 35.217
35.21 35.22
38.26
41.10
44.18
31695 46.98
4695
52.60
55.60 58.458
58.44 58.46
1.20
29229 4.45
4229 1 35.143

m s
1 38.0
40.0
42.5
44.5
2110 46.0
110
1. 42.20
2 8.0
10.8
12.9
15.0
635 16.8
135
2 12.70
1 42.20
2 12.70

156

δ Leonis

h m s
11 7 40
° '
+21 11

1.17609
9.96962
1.14571

0.12621

h m s
11 6 0.90
3.15 5352
5.30 5352
7.66
2676 9.75
2676
14.12
16.50
18.70
20.85 23.07
23.00 23.07
25.36 23.08
27.40
29.70
20766 32.03
2766
36.38
38.55 40812
40.90 4081
43.03 46.16
20406 45.20
406 6 23.075

m s
5 51.9
53.3
54.8
56.2
2745 58.3
245
5 54.90
28.17
6 51.2
52.7
54.3
56.2
2729 58.5
229
6 54.58
− 31.51
5 54.90
6 54.58
+ 28.17
− 31.51
59.68
1.77583
1.14571
2.92154
1.87835
8.95681
5 10 23

R 9 25.18 ·
R 9 25.12 ·

25.15 ·

B 13 11.55 ·
B 13 39.05 ·
B 13 39.02 ·

13 39.03 ·

B 10 2.85 ·
B 11 18.58 ·
R 11 18.28 ·
R 11 18.40 ·

11 18.42 ·
75.57

S
Ex. minute
Sum. C = 44 830

h m s
13 16 39
° ′
−8 6

0,12621

Oct. 12/13

1880

277

J. Aguilar

h m s
19 40 30
° ′
+10 19

0,12621

Oct. 13

h
21

h m s
13

m s
17 9.0
10.5
12.0
13.7
601 14.9
101
17 1202
−1 7.62

m s
17 53.40
55.43
57.60
59.70
28813 2.00
3813
6.00
8.28
10.30
12.35
14.45
16.50
18.60
20.60
13000 22.92
4000
27.00
29.20
31.00
33.20
15578 35.38
578

57626
5763
14,444
1444
14.40
31156
3116
14879
18 14420

m s
17 24.8
26.5
28.0
29.6
1403 31.4
403
17 28.06
+ 46.36

+20.48
18.87
16.78
14.69
12.58
8.34
6.24

h
19 14.77
14.78
14.74
14.68
14.59
14.59

m s
40 53.70
73.65 53.90
14.73 58.00
0.05
28975 2.10
3975
29.18 6.20
14.54 8.30

14.68
57.950
5795

m s
40 39.5
40.9
42.5
44.6
2139 46.4
139
40 4278
+31.91

+0.00 4.50
−2.08 4.47
4.17 4.30
6.25 4.33
8.35 4.45
12.60 4.50
14.54 4.39
16.68 4.32
18.76 4.27
20.91 4.51

16 4.50
22.05 6.55
4.41 8.47
10.58
12.80
21.49 17.00
4.398 18.98
21.00
23.03
10543 25.42
543

21086
2109

4.404
4.404

17 1202

17 2806
+ 46.36

14.66
14.69

40 4278

B
B
B

B 10 7.65

B 42 43.48

B 0 38.88
B 2 12.98
B 2 13.02

2 13.00
94.12

283

β Aquilae

h m s				
19 49 22				
° ′	1.17609	0.12621		
+ 6 6	9.99753			
	1.17362			

h m	s		m	s
19 49	45.80		49	32.0
	48.00	49.990		34.0
	50.05	49.99		36.0
	52.05			37.3
24995	54.05		1779	38.6
	4995			2.79
	58.30		49	35.58
	0.42			+ 31.03
	2.40			
	4.50	6.608		
	6.45	661	50	32.0
	8.70	6.61		34.0
	10.85			35.6
	12.90			37.4
57947	14.95		1778	38.8
	5947			2.78
	19.05		50	35.56
	21.18	23.226		− 28.95
	23.20	2323		
	25.30	13322		
11613	27.40		49	35.58
	1613	50 6.610	50	35.56
			+	31.03
			−	28.95
				59.98
				1.77801
				1.17362
				2.95163
				1.89697
				8.94534
				5220

294

α Cygni

h m s				
20 37 18				
° ′	1.17609	0.12621		
+ 44 51	9.85062			
	1.02671			

h m	s		m	s
20 37	33.57		37	9.5
	36.40	39.382		11.3
	39.40	3938		13.8
	42.26			15.8
19691	45.28		684	18.0
	4691			1.84
	51.03		37	13.68
	54.03			+ 49.07
	57.03			
	0.10	2.777		
	2.80	2.78	38	43.0
	5.50	2.72		44.9
	8.65			46.4
	11.45			48.5
56499	14.40		2335	50.7
	2499			3.35
	20.18		38	46.70
	23.23	26.052		− 43.95
	26.07	2605		
	28.90	12543		
13026	31.88		37	13.68
	3026	38 2.750	38	46.70
			+	49.07
			−	43.95
				93.02
				1.96858
				1.02671
				2.99529
				1.94414
				8.94875
				5443

298

ε Cygni

h m s				
20 41 19				
° ′	1.17609	0.12621		
+ 33 31	9.92102			
	1.09711			

h m	s		m	s
20 41	38.90		41	28.2
	41.30	43.810		30.4
	43.65	4381		32.8
	46.27			35.0
21905	48.93		1633	36.9
	1905			1.33
	53.75		41	32.66
	56.03			+ 30.91
	58.60			
	1.00	3.562		
	3.60	356	42	39.0
	6.05	3.59		41.6
	8.57			44.2
	11.04			45.9
57206	13.42		2191	48.4
	3206			1.91
	18.28		42	43.82
	20.92	23.376		− 40.25
	23.48	2338		
	25.90	12719		
11688	28.30		41	32.66
	1688	42 3.575	42	43.82
			+	30.91
			−	40.25
				71.16
				1.85224
				1.09711
				2.94935
				1.89960
				8.95025
				5545

B 13 22.80
B 14 41.92
B 14 41.45

14 41.68
78.88

B 29 11.68
B 30 39.60
B 30 39.62

30 39.61
87.93

B 49 3.35
B 50 22.72
B 50 22.70

50 22.71
79.36

1880phae.proj.1513.

303

ζ Cygni

h m s
21 7 47
° ′
+29 44

1.17609
9.93869
1.11478

0,12621

1880

Oct. 13

306

α Cephei

h m s
21 15 41
° ′
+62 4

1.17609
9.67066
0.84675

0,12621

307

β Aquarii

h m s
21 25 11
° ′
−6 6

1.17609
9.99753
1.17362

0,12621

h m s
21 8 8.55
10.93 13.204 1320
13.05
15.55
6602 17.94
1602
22.60
25.03
27.40
29.80 32.122
32.25 3212
34.50 3221
36.85
39.00
28910 41.67
1910
46.34
48.90 51228 5123
51.30
53.60 6443
25614 56.00
614 8 32.165

m s
7 53.7
56.0
57.8
59.4
2877 0.8
377
7 57.54
+34.62
9 6.0
8.0
10.0
11.8
491 13.3
491
9 9.82
−37.66
7 57.54
9 9.82
+ 34.62
− 37.66
72.28
1.85902
1.11478
2.97380
2.15643
9.18263
8 39 30

h m s
21 15 42.50
47.18 51.536 5154
57.60
56.00
25768 0.40
768
9.00
13.75
18.20
22.60 26.874
26.80 2687
31.15 2684
35.65
40.05
24187 44.67
6187
53.28
57.77 2140
2.05 214
6.60 173.68
31070 11.00
1070 16 26.855

m s
15 13.9
17.5
21.0
24.0
1038 27.4
38
15 20.76
+1 06.09
17 23.6
27.0
30.8
34.0
1527 37.3
27
17 30.54
−1 3.47
15 20.76
17 30.54
+ 66.09
− 63.69
129.78
2.11320
0.84675
2.95995
1.87777
8.91782
44352

m s
16 34.2
37.2
40.5
42.8
2016 46.9
16
16 40.32
− 13.47
17 50.7
53.4
56.0
59.4
2821 2.6
321
17 56.42
−1 29.57
16 40.32
17 56.42
− 13.47
− ~~8~~29.57
9~~4~~3.04
~~1.63387~~ 1.96867
0.84675
~~2.48062~~ 2.81542
1.87777
~~9.39715~~ 9.06235
~~14 0 42~~ 656

h m s
21 25 36.05
38.07 40.096 4010
40.05
42.06
20048 44.25
048
48.40
50.45
52.47
54.77 56.734
56.77 5673
58.90 5669
0.85
3.00
51061 5.00
6061
9.05
11.20 13.282
13.38 1328
15.38 11338
6641 17.40
1641 25 56.710

m s
25 27.0
28.9
30.4
32.4
1527 34.0
27
25 30.54
+26.17
26 38.2
39.8
41.4
43.0
2074 45.0
74
26 41.48
−44.77
25 30.54
26 41.48
+ 26.17
− 44.77
70.94
1.85089
1.17362
3.02451
1.97090
8.94639
534

B 36 1.47
B 38 24.75
B 38 24.92

38 24.83
143.36

B 15 59.90
B 16 49.82
B 17 20.52
B 17 35.78

~~17 15.37~~
75.47

B 25 22.88
B 26 57.78
B 26 55.02

26 56.40
93.52

21

309

ε Pegasi

h m s
21 38 14
° ′
+9 19

1.17609 0.12621
9.99423
1.17032

311

α Aquarii

h m s
21 59 34
° ′
−0 54

0.12621

322

η Pegasi

h m s
22 37 20
° ′
+29 35

0.12621

h	m	s			m	s
21	38	39.18			38	35.0
		41.27	43.320			34.3
		43.30	4332			36.0
		45.35				37.4
	21660	47.50			1802	39.5
		1660				302
		51.70			38	36.040
		53.93				+ 24.00
		53.97				
		58.02	0.074			
		0.06	007		39	31.9
		2.06	001			33.7
		4.20				35.3
		6.35				36.8
	54067	8.38			1761	38.4
		067				261
		12.45			39	35.22
		14.56	16.692			− 35.18
		16.66	1669			
		18.84	120.01			
	8346	20.95			38	36.04
		3346	39	0.040	39	35.22
					+	24.00
					−	35.18
						59.18

1.77217
1.17032
2.94249
1.88773
8.94524
5216

h	m	s			m	s
22	37	42.40			37	50.7
		44.72	47.164			52.5
		47.20	47.16			54.0
		49.50				55.8
	23582	52.00			2706	57.6
		3582				206
		56.80			37	54.12
		59.00				+ 12.04
		1.42				
		3.86	6.179			
		6.23	6.18			
		8.54	6.14			
		10.80				
		13.26				
	59561	15.40				
		5561				
		20.20				
		22.45	25.116			
		25.05	25.12			
		27.58	132.28			
	12558	30.00			37	54.12
		2558	38	6.160		
					+	12.04

B 0 23.90.
B 1 41.05.
B 1 41.20.

1 41.12.
77.22

B 13 46.55.
B 14 59.60.
B

14 59.60.
73.05

B 44 52.90:
B 44 53.08.

44 52.99.

		~~329~~	619			153				154		
		α Piscis	Aust.			β Urs. Maj	L.C.			α Urs. Maj.	L.C.	
		h m s				h m s				h m s		
		22 52 58				10 54 32				10 56 15		
		° ′	1.17609	0,12621		° ′		0,12621		° ′		0,12621
		−30 16	9.93636			+69 2				+62 24		
	1880		1.11245									
		Oct. 13										
h	m s		m s	h	m s		m s	h	m s		m s	
22	51 19.60		51 3.5	10	54 36.00		54 26.5	10	56 —		56 47.4	
	22.00	24332	6.0		39.50	43264	29.0		—		50.4	
	24.30	2433	8.0		43.03	4326	32.2		—		54.4	
	26.76		9.9		46.86		34.0		—		57.7	
	12166 29.00		391 11.7		21632 50.93		1581 36.4		—		2707 0.5	
	2166		391		1632		81				207	
	33.83		51 7.82		58.68		54 31.62	+17.84 56.32	502.46 38.48		56 54.14	
	36.05		+35.58		2.10		+41.94	13.36 55.96	55.829 42.60		+ 1.74	
	38.50				5.80			8.91 55.81	46.90			
	41.15	43.356			9.80	13.471		+4.44 55.82	51.48	55.832		
	43.46	4336	52 16.1		13.38	1347	55 39.4	−0.70 53.70	55.80	5583	57 46.2	
	45.70	4344	18.0		17.05	1366	41.8	4.41 55.84	0.25		48.6	
	48.18		19.6		21.00		45.0	8.90 55.58	4.48		53.8	
	50.40		21.2		24.93		48.4	13.36 55.64	9.00		57.3	
	39020 52.93		979 23.0		66124 28.50		2254 50.8	17.81 55.69	50 249 13.50		2655 59.6	
	3020		479		3124		254		5249		155	
	57.58		52 19.58		36.30		55 45.08	26.72 56.08	279.92 22.80		57 53.10	
	0.87	2.560	−36.18		40.30	44.060	−31.52	31.19 55.85	55.984 27.04	31.620	−57.22	
	2.70	256			44.05	4406		35.65 56.05	31.70	3162		
	5.00	86.89			48.05	147.32		40.07 55.93	36.00			
	31280 7.35		51 7.82		22030 57.60		54 31.62	44.55 56.01	15810 40.56		56 54.14	
	1280	51 43.400	52 19.58		2030	55 13.565	55 45.08		810		57 53.10	
			+ 35.58				+ 41.94					
			− 36.18				− 31.52	55.906				
			71.76				73.46	55.884				
			1.85588				1.86605					
			1.11245									
			2.96833									
			1.91882									
			8.95049									
			5 5 56									

B 32 52.90·	B 28 52.70·	B 48 43.65·
B 34 15.85·	B 28 58.18:	B 48 7.05.

34 15.85·
82.95

329

α Pegasi

h m s
22 58 44
° ′
+14 33

0,12621

22h 59m 9.00s
11.17
13.23
15.40
6640 17.60
1640
21.80
23.90
26.05
28.17
30.40
32.50
34.58
36.80
27310 38.90
310
43.00
45.20
47.40
49.52
23682 51.70
3682

13280
1328
30344
3034
3032
47364
4736
6064
59 30.330

m s
59 13.7
15.0
16.8
18.4
839 20.0
339
59 16.78
+13.55
59 53.8
57.5
59.1
1.0
2964 3.0
464
59 59.28
−28.95
59 16.78
59 59.28
+ 13.55
− 28.95
42.50

570

15 Argus

h m s
8 2 23
° ′
−23 54

0,12621

8h 2m 45.40s
47.70
50.00
52.20
54.60
59.05
1.20
3.50
6.05
8.15
10.55
12.55
14.80
61303 17.18
7303
21.58
23.80
26.20
28.50
13078 30.40
3078

8,114
811
26156
2616
3 8.090

m s
2 59.5
1.5
2.8
4.5
3138 5.5
138
3 2.76
3 54.0
56.5
58.3
0.0
2903 1.5
403
3 58.06
3 2.76
3 58.06

0,12621

138

α Hydrae

h m s
9 21 38
° ′
−8 8

0.12621

9h 22m 3.40s
5.30
7.50
9.60
3740 11.60
3740
15.90
18.15
20.05
22.05
24.20
26.27
28.48
30.58
21838 32.70
3838
36.85
38.90
41.00
43.00
20502 45.27
502

7.480
7.48
24264
2426
2424
41.004
41.00
48.48
22 24.250

m s
21 50.6
52.1
53.7
55.0
2676 56.2
176
21 53.52
+30.73
21 53.52
+ 30.73

B 46 37.22 ·
B 47 31.65 ·
B 47 31.35 ·

47 31.50 ·

B 16 37.15 ·
B 17 44.80 ·
B 17 44.55 ·

17 44.68 ·
67.53

R 28 8.82 :
R 28 9.10 ·

28 8.96 ·

142

ε Leonis

h m s
9 38 59
° '
+24 20

0,12621

1880

Oct. 13

h	m	s		m	s
9	39	24.00			
		26.00	28.290		
		28.20	28.29		
		30.40			
	14145	32.85			
		4145			
		37.33			
		39.60			
		41.80			
		44.05	46.396		
		46.44	46.40	40	20.8
		48.80	46.41		22.8
		50.80			24.5
		53.16			26.2
	41756	55.58		1223	28.0
		5756			223
		0.00		40	24.46
		2.18	45.26		−38.06
		4.45	453		
		6.90	92.82		
	2263	9.10			
		2263	39 46.405	40	24.46
				−	38.06

R 2 45.20.
R 2 45.12.

45.16.

146

α Leonis

h m s
10 1 36
° '
+12 33

0,12621

h	m	s		m	s
10	2	21.40		2	18.4
		23.68	25.656		20.4
		25.70	25.66		22.2
		27.70			24.0
	12828	29.80		1106	25.3
		2828			106
		33.90		2	22.12
		36.00			+20.29
		38.05			
		40.20	42.367		
		42.45	42.37		
		44.50	42.46		
		46.60			
		48.70			
	38130	50.90			
		2130			
		55.00			
		57.00	59.260		
		59.30	59.26		
		1.40	84.92		
	29630	3.60		2	22.12
		4630	2 42.415	+	20.29

R 47 36.65.
R 47 36.35.

47 36.50.

148

ζ Leonis

h m s
10 9 37
° '
+24 1

0,12621

h	m	s		m	s
10	10	22.25			
		24.42	26.754		
		26.90	26.75		
		29.00			
	13377	31.20			
		3377			
		35.73			
		37.98			
		40.35			
		42.50	44.872		
		44.85	44.87	11	17.6
		47.04	44.90		19.5
		49.62			21.0
		51.78			22.4
	40385	54.00		1050	24.5
		4385			50
		58.60		11	21.00
		0.66	30.48		−36.12
		3.00	30.5		
		5.40	89.80		
	31524	7.58			
		1524	10 44.885	11	21.00
				−	36.12

0,12621

R 21 24.45.
R 21 24.42.

21 24.43.

149

μ Urs. Maj.

h m s
10 15 7
° ′
42 6

0,12621

h m s
10 15 27.50
30.28 33.066
33.00 33.07
35.95
16533 38.60
1533
44.15
46.92
49.68
52.50 55.314
55.40 55.31
58.03 55.29
0.85
3.80
49783 6.50
4783
11.90
14.76 17.520
17.50 17.52
20.40 110.59
8760 23.04
3760 15 55.300

m s
15 13.9
15.7
17.6
19.4
884 21.8
384
15 17.68
+ 37.62

15 17.68
+ 37.62

153

β Urs. Maj.

h m s
10 54 32
° ′
+57 2

1.17609 0.12621
9.73572
0.91181

h m s
10 53 42.65
46.60 50.326
50.20 50.33
54.18
25163 58.00
163
5.48
9.30
13.00
16.85 20.681
20.70 20.68
24.50 20.70
28.25
32.05
18613 36.00
613
43.44
47.20 51.070
51.00 51.07
55.00 161.40
25535 58.71
535 54 20.690

m s
53 16.4
19.2
21.8
24.3
1084 26.7
84
53 21.68
+ 59.01
54 50.4
54.0
56.0
59.3
2825 2.8
325
54 56.50
− 35.81

53 21.68
54 56.50
+ 59.01
− 35.81
94.82
1.97690
0.91181
2.88871
1.84211
8.95340
5 7 58

+17.81 4.39 98.94
13.36 4.36 4.327
8.40 4.32
+4.41 4.31
−0.20 4.20
4.44 4.21
8.91 4.44
13.36 4.34
17.83 4.37 57900
26.71 4.24 22.00
31.16 4.39 4.40
35.62 4.55
40.07 4.43
44.64 4.34 20022

4.363
4.353

h m s
10 55 —
—
—
—
—
—
46.58
51.00
55.42
59.90 4.333
4.20 4.33
8.65
13.35
17.70
22.20
3900
31.00
35.55 4.0044
40.17 4.004
44.50
49.00
022

154

α Urs. Maj.

h m s
10 56 15
° ′
+62 24

0,12621

m s
55 30.2
34.5
37.5
39.9
1860 43.9
360
55 37.20
+ 27.15
57 20.0
22.7
26.3
29.4
1313 32.9
313
57 26.26
−1. 21.91

55 37.20
57 26.26

R 15 12.82 ·
R 15 13.12 ·

12.97 ·

20 2.88 ·
21 12.40 ·

21 12.40 ·
69.52

B 58 14.12 ·
B 58 ~~Ref~~
~~B~~ 58 19.66 ·

155

χ Urs. Maj

h m s
11 2 51
° ' 1.17609 0.12621
+45 9 9.84835
1.02444

1880

Oct. 13

h m s			m s
11 2 10.00			1 57.5
12.90	15.876		59.4
15.90	1588		1.2
18.80			3.0
7938 21.78			3069 5.8
2938			69
27.48			2 1.38
30.48			+ 37.89
33.48			
36.40	39.267		
39.22	3927		3 30.0
42.26	3927		31.9
45.03			34.3
48.05			36.4
35340 51.00			1709 38.3
8340			209
56.70			3 3418
59.79	2666		− 54.91
2.64	267		
5.62	7855		
31333 8.58			2 138
1333	2 39.270		3 3418
			+ 37.89
			− 54.91
			92.80
			1.96755
			1.02444
			2.99199
			1.93227
			894028
			45851

156

S Leonis

h m s
11 7 40
° ' 1.17609 0.12621
+21 11 9.96962
1.14571

h m s		m s	
11 7 5.05		6 53.0	
7.25	9.474	55.0	
9.47	947	56.7	
11.70		58.2	
4737 13.90		2826 59.4	
4737		326	
18.32		6 5652	
20.54		+ 30.67	
22.80			
25.00	27.196		
27.30	2720	8 9.9	
29.45	2719	11.3	
31.50		13.0	
33.80		15.0	
24476 36.05		660 16.8	
6476		160	
40.50		8 1320	
42.70	43908	− 46.01	
44.90	4491		
47.04	5438		
22454 49.40		6 5652	
19547	7 27195	8 1320	
		+ 30.67	
		− 46.00	
		76.67	
		1.88463	
		1.14571	
		3.03034	
		~~1.87818~~	1.93217
		~~8.84784~~	8.90183
		~~4146~~	4.3339

1	B 12 29.90·	B 10 0.05·
	B 13 55.45·	B 11 36.48·
	R 13 55.48·	R 11 36.70·
	13 55.46·	11 36.59·
	85.56	8 ~~7~~5.54

S

Sun C = 44 83.0

h m s
13 20 22
° '
−8 28

0,12621

1880

Oct. 13/14

η Urs. Maj

h m s
13 42 46
° '
+49 35

0,12621

h	m	s		m s	m s		m s				h m s		m s
13	19	30.30		21 10.3	21 —		21 26.5				13 43 0.00		42 37.8
		32.28	34.376	12.2	—		27.8				3.40	6522	40.5
		34.35	34.38	13.5	—		29.0				6.34	652	42.7
		36.42		15.0	—		30.9				9.80		44.9
	17188	38.53		675 16.5	49.00		1462 32.0	+12.52	1.52	1.52	3261 13.04		2136 47.7
		2188		17.5			462			1.52	3261		136
		42.62		21 13.50	53.48		21 29.24	8.35	1.83	15.22	19.30		42 42.72
		45.00		−1 22.28	55.50		+32.41	6.26	1.76	1.691	22.45		+49.49
		47.00			57.50			4.17	1.67		26.00		
		49.20	51.260		59.68	1.693		+2.06	1.74		29.00	32.236	
		51.45	51.26		1.68	1.69		−0.00	1.68		32.47	32.24	44 14.3
		53.36	51.18		3.80			2.08	1.72		35.30	32.18	16.7
		55.36			5.80			4.16	1.64		38.60		18.8
		57.60			7.90			6.26	1.64		42.00		20.6
	46134	59.75			55524 9.90			8.36	1.54		29012 45.00		933 22.9
		1134			1524						2012		433
		3.83			14.10			12.52	1.58	8.07	57.57		44 18.66
		5.97	7.980		16.03	18.318		14.60	1.43	1.614	54.63	57.840	−46.45
		8.00	7.98		18.40	18.32		16.64	1.71		57.85	57.84	
		10.04	10.236		20.46			18.78	1.68		a.95	64.36	
	3990	12.06		21 13.50	9159 22.60		21 29.24	20.93	1.67		28920 4.20		42 42.72
		3990	19 51.220		41.59						3920	43 32.210	44 18.66
				− 82.28									+ 49.49
								1.604					− 46.45
								1.654					95.94
													1.98200

B 32 46.22
B 3

B 5 25.70

B	26	29.10	
B	27	20.70	51.75
R	27	20.74	.85
R	27	20.79	.98
B	27	20.7	.92
	27	20.75	51.87

182

η Bootis

h m s
13 48 53
° ′ 1.17609 0,12621
+19 0 9.97567
1.15176

1880
Oct. 14

	h m s		m s
	13 49 20.00		49 10.7
	22.00	24.300	12.7
	24.30	2430	14.3
	26.42		15.7
12150	28.78		706 17.2
	2150		206
	33.37		49 1412
	35.45		+ 27.79
	37.63		
	39.80	41.960	
	41.80	41.96	50 23.0
	44.04	41.86	25.4
	46.20		26.9
	48.55		28.3
27764	50.80		1336 30.0
	1764		336
	55.03		50 2672
	57.18	59.422	−44.81
	59.40	5942	
	1.60	8372	
29711	3.90		49 14.12
	4711	49 41.910	50 26.72
			+ 27.79
			− 44.81
			72.60
			1.86094
			1.15176
			3.01270
			1.96792
			8.95522
			5915

B 20 49.60
B 22 22.58
R 22 22.40
R 22 22.48
B 22 22.45
22 22.48
92.88

306

α Cephei

h m s
21 15 41
° ′ 1.17609 0,12621
+62 4 9.67066
0.84675

	h m s		m s	m s
	21 15 46.02		15 12.4	16 40.0
	50.95	55.330	15.0	42.5
	55.48	5533	19.2	45.7
	59.60		22.5	49.2
27665	4.60		944 25.3	2304 53.0
	2665		444	304
	13.15		15 18.88	16 46.08
	17.60		+1 11.90	−15.30
	22.19			
	26.40	30.813		
	30.70	3081	17 33.3	17 59.0
	35.20	30.75	38.0	1.0
	39.60		40.0	3.0
	44.00		43.4	4.6
27732	48.48		2014 46.7	3157 8.1
	732		14	157
	57.20		17 40.28	18 3.14
	1.80	6.160	−1 9.50	−1 32.36
	6.25	616		
	10.85	61.49		
33080	14.40		15 18.88	16 46.08
	3080	16 30.780	17 40.28	18 3.14
			+ 71.90	− 15.30
			− 69.50	− 92.36
			141.40	107.66
			2.15045	2.03206
			0.84675	0.84675
			2.99720	2.87881
			1.89603	1.89603
			8.89883	9.01722
			43146	55624

B 15 57.35
B 16 53.67
B 17 38.45
~~17 16.06~~
78.71

307

β Aquarii 0,12621

h m s
21 25 11
° ′ 1.17609
−6 6 9.99753
1.17362

	h m s		m s
	21 25 40.08		25 28.0
	42.05	44.172	30.3
	44.15	4417	31.9
	46.28		33.5
22086	48.30		1586 34.9
	2086		86
	52.40		25 31.72
	54.50		+ 29.04
	56.65		
	58.75	0.774	
	0.92	0.77	26 38.3
	2.80	0.76	39.9
	4.90		41.3
	7.00		42.6
54697	9.05		2058 43.9
	697		58
	13.20		26 41.16
	15.27	17.354	− 40.40
	17.40	1735	
	19.40	121.52	
8677	21.50		25 31.72
	3677	26 0.765	26 41.16
			+ 29.04
			− 40.40
			69.44
			1.84161
			1.17362
			3.01523
			1.96412
			8.94889
			5448

B 25 21.18
B 26 53.40
R 26 53.12
R 26 53.15
R 26 53.35
26 53.25
92.07

309

ε Pegasi

h m s
21 38 14
° ′
+9 19
1.17609 0,12621
9.99423
1.17032

h m s
21 38 43.00
45.34 47350
47.34 4735
49.45
23675 51.62
3675
55.70
57.80
0.00
2.00 4017
4.15 412
6.30 408
8.30
10.27
57705 12.53
3705
16.62
18.67 20810
20.80 2081
22.96 12816
10405 25.00
405 39 4.100

m s
38 28.0
29.6
31.0
32.4
1550 34.0
50
38 31.00
+33.10
39 34.2
35.7
37.0
38.4
1853 40.0
353
39 37.06
−32.96
38 31.00
39 37.06
+ 33.10
− 32.96
66.06
1.81994
1.17032
2.99026
1.94414
8.95388
5 8 19

311

α Aquarii

h m s
21 59 34
° ′
−0 54
1.17609 0,12621
9.99995
1.17604

h m s
22 0 3.00
5.16 7246
7.34 725
9.27
3623 11.46
3623
15.64
17.62
19.70
20.80 23747
23.90 2375
25.80 2386
28.03
30.03
21372 32.20
3372
36.30
38.40 40.476
40.43 4048
42.55 4773
20238 44.70
238 0 23805

m s
59 49.0
51.0
53.0
54.4
2631 55.7
131
59 52.62
+31.18
0 53.5
55.2
56.5
58.0
2827 59.5
327
0 56.54
−32.74
59 52.62
0 56.54
+ 31.18
− 32.74
63.92
1.80564
1.17604
2.98168
1.92392
8.94224
5 0 12

322

η Pegasi

h m s
22 37 20
° ′
+29 35
1.17609 0,12621
9.93934
1.11543

h m s
22 37 46.50
48.96 51280
51.20 5128
53.40
25640 56.04
640
0.78
3.18
5.50
7.90 10258
10.17 1026
12.55 1022
15.04
17.40
9232 19.80
232
24.35
26.60 29150
29.20 2915
31.60 14043
14575 34.00
4575 38 10240

m s
37 27.9
29.4
31.3
33.3
1567 34.8
67
37 31.34
+ 38.90
38 38.9
40.5
42.0
43.7
2101 45.0
101
38 42.02
−31.78
37 31.34
38 42.02
+ 38.90
− 31.78
70.68
1.84930
1.11543
2.96473
1.91418
8.94945
5 5 12

B 0 14.60 ·
B 1 42.28 ·
R 1 42.58 ·
R 1 42.72 ·
1 42.53 ·
87.93

B 13 41.92 ·
B 15 5.97 ·
R 15 5.85 ·
R 15 5.70 ·
B 15 5.87 ·
15 5.85 ·
83.93

B 44 24.80 ·
B 45 46.95 ·
R 45 47.00 ·
R 45 46.72 ·
R 45 46.82 ·
45 46.87 ·
82.07

619

α Pisci Aust.

h m s
22 30 58
° ′
-30 16

1.17609 0.12621
9.93636
1.11245

1880

Oct. 14

h m s		m s
22 51 23.80		51 14.5
26.06	28.526	16.2
28.40	28.53	18.0
31.00		19.8
14263 33.37		910 22.5
4263		410
38.06		51 18.20
40.58		+29.45
42.90		
45.22	47.664	
47.72	47.66	52 21.0
50.00	47.65	23.5
52.40		25.2
54.90		26.8
42898 57.20		1253 28.8
6898		25.3
2.05		52 25.06
4.30	67.74	-37.41
6.70	67.7	
9.27	95.30	
3387 11.55		51 18.20
3387	51 47.655	52 25.06

+ 29.45
− 37.41
66.86
~~1.82517~~
~~1.11245~~
~~2.93762~~
~~2.13456~~
~~9.19694~~
~~8 5637~~

153

β Urs. Maj. L. C.

h m s
22 34 32
° ′
+122 38

1.17609 0.12621

h m s		m s				h m s	
22 54 40.05		54 25.6				22 56 —	
44.05	47.670	27.6				—	
47.60	47.67	30.7				—	
67.45		32.9				—	
23835 55.20		1525 35.7				—	
3835		25					
2.70		54 30.50	+17.84	0.06	2.10	42.22	
6.45		+47.49	13.36	0.34	.233	46.98	
10.40			8.91	0.36		51.45	
14.05	17.987		+4.44	0.07		55.63	0.226
17.90	17.99	55 5.5	-0.00	0.28		0.28	0.23
22.05	18.00	9.3	4.41	0.19		4.60	
25.60		12.6	8.90	0.17		9.07	
29.57		16.0	13.36	0.44		13.80	
16188 33.16		632 19.8	17.81	0.19	54203	18.00	
7188		132				203	
40.67		55 12.64	26.72	0.43	1.62	27.15	
44.48	48.330	-5.35	31.19	0.31	.324	31.50	35.960
48.40	48.33		35.65	0.15		35.80	35.96
52.05	156.00		40.07	0.43		40.50	
24165 56.05		54 80.50	44.55	0.30	17980	44.85	
4165	55 17.995	55 12.64				2980	

+ 47.49
− 5.35 .278
52.84 .265
1.72296

154

α Urs. Maj. L. C.

h m s
22 56 15
° ′
+117 36

0.12621

m s
56 31.0
34.3
37.4
40.3
1862 43.2
362
56 37.24
+23.02
57 36.3
39.2
43.3
48.0
2180 51.2
180
57 43.60
-16.66
56 37.24
57 43.60

B 38³ 29.0 ′
B 34 19.22 ′

34 19.22 ·
136.32

B 28 51.40 ·
B 28 19.92 ·

B 48 54.58 ·
B 48 13.98 ·

1880phae.proj.151B.

chkd

1880phae.proj.151S

1880phae.proj.151S.