

1863phae.proj..281.

KG
11365
281

M 34
(marked June 4, 1877.)

TRA...CATALOGUE.

KG 11365. 281
 Equator $312^{\circ} 23'$
 N Pole $222^{\circ} 23'$

$16^{\circ} 36'$
 $312 23$
 $\hline 328 59$

ULF 2/3

Transit Catalogue.

Refraction

	Ref		Circle	APD
7° 23	7.0	50°	222° 30'	- 35°
12° 23	4.3	60	27	- 30
	2.3	70	25	- 20
	1.5	80	24	- 10
42° 23	1.0	+ 90	24	± 0 :
	0.7	1 80	24	+ 10
	0.5	70	23	20
	0.3	60	23	30
	0.0	50	23	40
	0.1	40	23	50
	0.2	30	23	60
	+ 2.5	15.9 17.1 18.3	23	70
	+ 2.0	20.3 21.5 23.4	23	80
	+ 1.5	24.6 26.4 28.3	22	90
	+ 1.0	28.9 30.8 32.9	22	100
	+ .5	32.9 34.9 37.4	22	110
47° 37	0.8	36.0 38.7 41.5	22	120
	- .5	39.3 42.2 46.3	22	130
	- 1.0	42.3 45.3 48.7	21	140
	- 1.5	44.9 48.3 51.8	21	150
	- 2.0	47.2 50.8 54.4	20	160
	- 2.5	49.1 52.8 56.6	20	170
	- 3.0	50.6 54.1 58.1	20	180
	- 3.4	51.9 55.4 59.4	19	190
	- 3.6	52.9 56.4 60.4	18	200
	- 3.7	53.9 57.4 61.4	18	210
	- 3.8	54.9 58.4 62.4	17	220
	- 3.9	55.9 59.4 63.4	17	230
	- 4.0	56.9 60.4 64.4	16	240

Pencil
CircleHorizontal
Pencil

53.9 57.1 61.1

20.3 21.5 23.4

24.6 26.4 28.3

28.9 30.8 32.9

32.9 34.9 37.4

36.0 38.7 41.5

39.3 42.2 46.3

42.3 45.3 48.7

44.9 48.3 51.8

47.2 50.8 54.4

49.1 52.8 56.6

50.6 54.1 58.1

51.9 55.4 59.4

52.9 56.4 60.4

53.9 57.4 61.4

54.9 58.4 62.4

KG 11365.281



The stars interpolated in red ink
were introduced Jan. 12th 1863. for a
better examination of the effect of irregular-
ities of pivots etc.

11.57
10 44

A.R. 1861.0

A.v.

N. P. II. 1861.

A.v.

α Andromedæ.	-0 ^h 1 ^m 13 ^s	+3.1	61° 40'.7	-0.33
γ Pegasi.	- 6 5	3.1	75 35.4	0.33
+ Ursæ min. 5B.	- 12 47	+2.0	-2 47.5	0.33
+ Ursæ min. 6B.	- 14 21	-0.2	-1 31.8	0.33
α Phænixis	19 24	+3.0	+133 3.6	0.33
+ 12 Ceti	- 22 57	3.1	94 43.5	0.33
ζ Cassiopeæ	29 15	3.3	36 52.1	0.33
δ Cassiopeæ	29 26	4.2	8 16.5	0.33
α Cassiopeæ	32 38	3.4	34 13.5	0.33
+ β Ceti	- 36 37	3.0	108 45.0	0.33
+ δ Piscium	41 28	3.1	83 10.3	0.33
	42 6	5.0	+7 2.9	0.33
+ ϵ Ursæ maj.	- 47 34	2.7	-33 17.1	0.33
γ Cassiopeæ	48 20	3.5	30 2.2	0.33
μ Andromedæ	49 3	3.3	52 15.3	0.33
43 Cephei H.	50 24	6.8	4 29.4	0.33
+ ϵ Piscium	-0 55 44	3.1	82 51.5	0.33
+ 44 Cephei H.	1 0 23	4.9	11 4.1	0.32
+ β Andromedæ	1 1 57	3.3	55 7.0	0.32
α Ursæ min.	-1 8 23	18.9	1 25.9	0.32
+ γ Cassiopeæ	1 16 9	4.1	22 35.8	0.32
+ θ Ceti	-1 17 5	+3.0	+98 54.1	0.31
+	-1 20 24	-2.7	-4 31.2	0.31
+ η Piscium	-1 24 6	+3.2	75 22.3	0.31
51 Andromedæ 6 Persei	1 29 29	3.6	42 4.7	0.31

	Mag.	Circle reading.	BAC
3	2.	284° 3'	
3	3.2	297 58'	
3	6.	219 36	4150
3	6.	220 52	4165
3	(2)	355 17	
3	(6).	317 5	
3	4.	259 15	
3	6.	230 40	154
3	var.	256 37	
3	2.	331 6	
3	4.5	305 32	
3	6	229 27	275
3	2	189 12	
3	2.	252. 25	
3	4.	274. 38	
3	4.5	226. 53	262 L.
3	4.	305. 14	
32	6.5	233 28	
2	2.3.	277. 30	
32	2.	223. 50	360 L
32	5	244 59	
31	3	321. 16	
31	7.6	217. 53	4498.
31	4.3	297. 44	
31	4.3	264. 28	

	A.R. 1861.0	A.U.	N.P.D. 1861.0	A.U.
γ Piscium.	- 1 ^h 34 ^m 12 ^s	3.1	85° 13'. 1	0.32
ϕ Andr	35			
τ Ceti	37 37	2.8	106 40.2	0.32
~~ϕ Piscium~~	~~38 3~~		~~81 29.6~~	~~0.31~~
+ χ Ceti	42 45	2.9	+101 22.5	0.30
Camelopard 219 B	- 46 29	2.1	- 6 33.1	0.30
+ β Arietis	- 46 58	3.3	+69 52.4	0.30
+ 50 Cassiopeae	51 38	5.0	18 15.3	0.30
+ α Piscium.	54 54	3.1	87 54.5	0.29
β Ceti	47			
+ γ Andromedæ	55 23	3.6	48 20.3	0.29
α Arietis.	- 1 59 21	+3.4	+67 11.8	0.29
+ α Draconis s.p. Tr. 2	0 38	+1.5	-24 57.5	0.29
+ Gr. 2099.	- 2 4 20	-8.0	- 3 34.6	0.29
+ 67 Ceti.	+ 10 3	+3.0	+97 3.9	0.28
θ Ceti.	12 20	3.0	93 36.6	0.28
+ ϵ Cassiopeae	17 40	4.8	23 13.5	0.28
+ 35 (H) Cassa				
+ ξ^2 Ceti.	- 20 46	3.2	82 9.9	0.27
+ 36 Cassiopeae H	24 54	5.5	17 47.6	0.27
+ Gr. 527	- 28 00	+8.1	9 8.7	0.27
+ ϵ Ceti.	32 51	2.9	102 27.8	0.26
+ γ Ceti.	- 36 6	3.1	87 21.1	0.26
+ 41 Arietis	41 49	+3.5	+63 18.9	0.25
+ θ Vir. 217	- 47 56	-1.5	-30 8.5	0.25
+ η Eridani.	49 38	+2.9	+99 27.2	0.24
δ Ursæ min s.p. Tr.	51 9	-0.3	-15 10.6	0.25
ϵ Arietis.	51 16	+3.4	+69 13.1	0.25
α Ceti.	- 55 1	3.1	86 27.5	0.24
+ β Persei	2 59 8	3.9	49 34.9	0.24
δ Arietis.	- 3 3 41	3.4	70 48.1	0.23

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	Mag.	Circle reading		BAC.
2	5.4	307°	35'	B
2	3.4	329	1	
0	5.4	323	44	
0	6	215	51	
0	3.2	292	15	
0	4	240	42	
9	3.4	310	17	
7	2.3	270	43	
9	2.	289	34	
9	3.4	197	29	
9	7.3	218	49	
8	6.	319	26	
8	var.	315	58	
8	4	245	37	
7	4.	304	33	
7	6.5	240	11	
7	6	231	32	784
6	5.4	324	49	
6	3.4	309	44	
5	4.	285	41	
5	6	192	19	
4	3.	321	50	
5	2	207	8	
5	4.5	291	35	
4	2.3	308	49	
4	var.	271	58	
3	4.5	293	10	

	A. R. 1861. 0	A. v.	N. P. D. 1861. 0	A. v.
12 a Eridani.	3 ^h 6 ^m 10 ^s	+2.6	119° 32'. 2	-0.24
+ ζ Eridani.	3 9 5	2.9	99 20.3	0.23
a Persei.	3 14 25	4.2	40 38.2	0.22
+ θ Tauri.	3 17 20	+3.2	+81 27.8	0.22
γ Ursa minoris	3 20 59	-0.1	-17 40.3	0.21
323 Cephei B.	3 21 18	+18.6	+3 48.0	0.22
57 Ursa min. B.	3 23 39	-23.4	-2 14.4	0.21
+ ε Eridani.	3 26 23	+2.8	+99 55.9	0.21
β Canis M.	3 30 8	5.1	27 14.3	0.21
+ δ Persei.	3 33 3	4.2	42 39.6	0.20
δ Eridani.	3 36 36	2.9	100 14.2	0.21
+ η Tauri.	3 39 14	3.6	66 19.7	0.19
+ ζ Persei.	3 45 24	+3.8	+58 32.0	0.19
γ Ursa min.	3 49 6	-2.3	-11 46.8	0.18
+ γ Eridani.	3 51 33	+2.8	+103 54.5	0.18
+ 36γ. γ 50	3 54 4	+16.7	+4 49.1	0.18
+ 62 Ursa min. B.	3 58 19	-6.9	-6 38.3	0.17
Gr. 2315	3 59 15	+11.1	-31 37.8	0.16
δ Draconis	3 59 15	+10.1	+9 37.8	0.16
Gr. 779	4 5 15	+2.9	+97 12.2	0.16
+ o' Eridani.	4 11 53	3.4	74 42.7	0.15
+ γ Tauri.	4 14 55	3.5	72 47.2	0.15
+ δ Tauri.	4 16 5	3.5	72 52.9	0.15
+ 64 "	4 20 30	3.5	+71 7.9	0.14
ε Tauri.	4 22 7	0.8	-28 10.2	0.14
η Draconis sp. Is	4 27 57	3.4	73 46.4	0.13
a Tauri.	4 31 49	+2.7	104 34.7	0.12
+ 53 Eridani	4 33 33	+3.5	-17 44.2	0.12

	Mag.	Circle reading		BAC.
24	3.4	341°	42'	B
3	4.5	321	42	B
2	2	263	1	B
2	4.3	303	50	
1	3	204	45	
2	6.	226	12	1061
1	6.9	220	9	5140
1	3	322	17	
1	6	249	38	1
0	3	265	3	R
1	3	322	36	R
9	3	288	42	R
9	3	280	55	
8	4.5	210	38	
8	3.	326	16	B
8	6.7	227	13	1235
7	6	215	46	5352
6	4.3	191	24	
6	4.6	231	55	
6	4.5	319	34	
5	4.	297	31	5
5	4	295	10	
5	6	295	15	
4	4.3	293	30	
4	3.2	194	17	
3	1	296	9	
2	4	326	56	

	A.R. 1861.0	A.v.	N.P.D. 1861.0	A.v.
μ Eridani.	4 ^d 38 ^m 33 ^s	3.0	93° 30.7	-0.12
9 Camelop.	40 15	5.9	23 54.0	0.12
+ 1 Aurigæ	47 57	3.9	57 3.5	0.10
+ 1 Tauri	54 47	3.6	68 36.7	0.09
+ ϵ Leporis	-4 59 35	+2.5	+112 33.6	0.09
~~8 Urs. min.~~	-5 0 21	-6.4	-7 44.4	0.09
α Aurigæ.	-5 6 26	+4.4	+44 8.9	0.07
β Orionis.	- 7 52	2.9	98 21.9	0.08
+ γ Orionis.	10 52	2.9	96 59.9	0.07
β Tauri.	- 17 31	3.8	61 30.8	0.06
64 Camelop. B.	- 17 50	18.4	4 53.2	0.06
74 Camelop B	21 14	8.0	75 3.4	0.06
β Leporis	22 18	2.6	110 52.3	0.05
+ δ Orionis	- 24 55	3.1	90 24.3	0.05
+ α Leporis.	- 26 36	2.6	107 55.5	0.05
+ ϵ Orionis.	- 29 10	3.0	91 17.6	0.05
+ α Columbæ	- 34 37	2.2	124 9.1	0.04
κ Orionis	41 10	2.8	99 43.4	0.03
+ ν Draconis	44 26	-1.1	-17 47.0	0.03
α Orionis	- 47 38	3.2	82 37.3	0.02
+ θ Aurigæ	50 15	4.1	52 48.1	0.01
7 Draconis sp	51 8	1.0	-33 6.3	0.01
+ η Geminorum	55 40	3.6	66 44.0	-0.01
+ ν Orionis	-5 59 38	3.4	75 13.1	0.00

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12	4.3	315° 52'	○
12	4	246 18	
10	3	279 26	
19	5	290 59	B
19	4.3	334 54	○
19	4.5	214 40	5780 L.
17	1	266 32	B
18	1	320 43	B
17	4.	319 22	○
16	2.	283 53	A
16	6.	227 17	1662
16	6.7	237 27	
15	3.4	333 13	
15	2	312 46	A
15	3.	330 17	A
15	2.	313 39	A
14	2.	346 28	A
13	3.2	322 5	
13	4.5	204 38	
12		304 59	A
11	3	275 11	B
11	3.4	289 23	
11	5	289 6	B
10	5.4	297 35	

	A.R. 1861.0	A.U.	N.P.D. 1861.0	A.U.
γ Geminorum	6 ^h 6 ^m 29 ^s	+3.6	+67° 27.4	+0.01
δ Draconis	10 32	-4.5	-10 1.2	0.02
κ Columbae	11 37	2.1	125 5.8	0.02
μ Geminorum	14 33	3.6	67 25.1	0.02
β Canis maj.	16 35	+2.6	+107 53.4	0.02
δ Urs. min.	17 11	-19.4	-3 23.9	0.03
ν Geminorum	20 42	+3.6	+69 42.2	0.03
ϵ Camelop H.	22 27	10.4	10 17.7	0.04
γ Geminorum	29 40	3.5	73 29.1	0.04
δ Cephei H.	34 8	30.4	2 45.1	0.05
ϵ Geminorum	35 23	3.7	64 44.1	0.05
α Canis maj.	39 1	2.6	106 31.7	0.07
β Canis maj.	44 39	2.2	122 21.1	0.06
θ Canis maj.	47 44	2.8	101 52.0	0.07
δ Draconis	50 52	-1.9	-14 43.9	0.07
ϵ Canis maj.	53 10	2.4	+118 47.0	0.08
ζ Geminorum	55 52	3.6	69 13.8	0.08
γ Canis maj.	57 28	2.7	105 25.9	0.08
ϵ Camel. H.	7 1 36	13.1	7 20.0	0.09
δ Canis maj.	2 45	2.4	116 10.5	0.09
λ Geminorum	10 5	3.5	73 12.7	0.10
δ Ursae min. B.	11 27	77.1	0 58.8	0.10
δ Geminorum	11 49	3.6	67 45.9	0.10

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	Mag.	Circle reading		BAC.
1	3.4	289° 50'	B	
2	6.	212 24		Lo Draconis procyon
2	(4½)	347 24		
2	3	289 47	A	
2	3.2	330 14		
3	4.5	219 0		Piscis A Can Min 6281 L
3	5.4	292 5	B	
4	5.6	232 41		
4	2.3	295 51	A	
5	5	225 9		omit last circle 2157 L.
5	3.4	287 7		
7	1	328 54	A	
6	4	344 40		
7	4.5	324 13		
7	6	207 41		
8	2.1	341 17	A	Alcyon
8	4	291 36	B	
8	4.5	327 47		
9	5	229 43		2326 L.
9	2	338 31	(11) 338° 28'	
10	4.3	295 35		
10	7.2	223 23		Alcyon 1320
10	2.4	290 8	A	

A.R. 1861.0 A.U. N.P.D. 1861.0 A.U.

η Canis maj.	7 ^h 18 ^m 36 ^s	2.4	119° 2.1	0.11
α Geminorum	25 43	3.8	57 48.6	0.12
α Canis min.	32 2	3.1	84 25.3	0.15
β Geminorum	36 52	3.7	61 38.5	0.14
~~+ 156 Camelopardalis~~ ~~9. 1359.~~	43 9	15.5	5 33.2	0.15
ϵ Argus.	43 27	2.5	114 30.8	0.14
~~6 Cancri~~ ~~x Geminorum~~	54 59	3.7	61 49.2	0.16
γ Argus.	7 58 42	2.1	129 36.8	0.17
~~15 Argus.~~ ~~1.2.5~~	8 1 48	+2.6	+113 54.3	0.17
~~A Ursæ min.~~ ~~24 Cephei Her.~~	2 58	-56.6	- 1 6.4	0.17
β Cancri	8 59	+3.3	+ 80 23.3	0.18
~~Gr. 1418~~	14 26	17.1	4 28.0	0.19
θ Ursæ maj.	18 41	5.1	28 49.3	0.19
α Ursæ maj.	22 6	5.5	24 23.1	0.19
η Cancri.	24 40	3.5	+ 69 5.4	0.20
~~6 Cephei~~	24 15	+1.0	- 27 28.3	0.20
~~25~~	36 35	-0.2	- 17 56.4	0.20
δ Cancri.	36 47	+3.4	+ 71 20.3	0.21
γ Draconis	37 20	-3.2	- 9 23.9	0.21
ϵ Hydræ	39 25	+3.2	+ 83 4.4	0.21
~~6 Ursæ maj.~~	42 28	0.2	- 28 42.0	0.20
ι Ursæ maj.	49 40	4.1	+ 24 52.1	0.22
γ Draconis	52 23	-3.9	- 7 59.2	0.23
δ Ursæ maj.	8 58 7	5.4	22 18.3	0.24
κ Cancri.	9 0 13	3.3	78 46.5	0.21

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	Magn.	Circle reading.	BAC.
1	3.2	341° 22'	
2	2.1	280 11	B A
3	1	306 47	B A
4	1.2	284 1	B A
5	6	227 57	2585
6	4.3	336 51	
7	5	284 12	
8	(2½)	351 ~~52~~ 53	
9	3	336 15	A
10	6.7	221 17	6999 L.
11	4.3	302 45	(W) 302 42 *
12	7.5	226 52	
13	3.4	251 12	
14	5	246 46	
15	6	291 28	B
16	4.6	194 58	
17	4	293 43	
18	6	213 0	7185
19	3.4	305 27	A
20	3	193 45	
21	3	263 48	A
22		214 25	
23		244 42	
24		301 9	A

	A.R. 1861.0	A.V.	N.P.D. 1861.0	A.M.	
ϵ Caneri	9 ^h 1 ^m				
+ λ Argus.	9 ^h 2 ^m 53 ^s	2.2	132° 52.4	+0.24	
+ θ Hydræ.	7 8	3.1	+87 6.1	0.25	
+ α Cephei	- 15 16	1.4	-28 0.2	0.25	
83 Cancri.	- 11 13	3.4	71 42.5	0.25	
γ Draconis H.	- 16 58	9.2	8 4.1	0.25	
α Hydræ.	- 20 45	3.0	98 3.5	0.26	
θ Urs. maj.	- 23 32	+4.0	+37 41.5	0.27	
119 Cephei B.					
+ Br. 2832	- 24 33	-4.4	-6 20.1	0.26	
+ β Cephei	- 26 51	+0.8	-20 3.0	0.2	
+ δ Leonis.	- 30 17	+5.3	+20 8.0	0.2	
+ θ Leonis.	33 44	+3.2	+79 28.6	0.27	
+ ϵ Leonis.	37 58	3.4	65 35.3	0.27	
+ θ Urs. maj.	41 5	4.4	30 18.6	0.2	
+ μ Leonis.	44 51	3.4	63 20.4	0.28	
+ π Leonis.	-9 52 53	3.2	81 17.4	0.27	
α Leonis.	-10 0 58	3.2	77 21.3	0.27	
+ λ Hydræ	3 49	2.9	101 40.1	0.27	
+ ϵ Cephei	- 6 2	2.1	-32 29.0	0.27	
+ λ Urs. maj.	8 42	3.7	46 23.6	0.30	
+ γ Leonis.	- 12 18	3.3	69 27.4	0.30	
+ 30 Camel. H.	13 46	8.1	6 44.3	0.30	
+ μ Hydræ	19 22	2.9	106 7.7	0.28	
+ ρ Leonis.	25 30	3.2	79 58.8	0.28	
+ 33 Camel B.	29 34	8.5	8 51.1	0.28	
+ λ Leonis	41 57	3.2	+78 43.2		
+ 34 Cephei A.	47 55	0.0	-7 35.0		

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	Mag.	Circle reading.		BAC.
24	(3)	355 7		
25	4	309 28		
25	3.2	¹⁹⁴ 27		
25	6	294 5	294 6'	
25	4.5	²³⁰ 28		
26	2	320 25	B A	
27	3	260 4	B A	
26	7	216 4	A	7484
27	³ 6	²⁰² 22		
27	4.3	²⁴² 32		
27		301 51		
27	3	287 58	A	
27	4.3	252 41		
27	4	285 43		
27	5	303 40		
27	1.2	299 44		
27	4	324 2		
27	4.3	~~254 32~~	189 58	
30	3.4	268 46		
30	2	291 50		
35	5	229 8		3528 L
40	4	328 29		
40	4	302 21		
40	5	²³¹ 15		
40	5	301 5		
40	5	214 49		7990 L.

	A.R. 1861.0	A.U.	N.P.D. 1861.0	A.U.
β Urs. maj.	10 ^h 53 ^m 26 ^s	3.7	32° 52' 4"	0.32
α Urs. maj.	- 55 8	3.8	27 30.0	0.32
χ Leonis.	- 10 57 51	3.1	81 54.8	0.32
ψ Urs. maj.	11 1 50	3.4	44 44.9	0.32
δ Leonis.	- 6 43	3.2	68 42.9	0.33
ϕ Crateris.	- 12 24	3.0	104 1.6	0.32
γ Crateris.	17 56	3.0	106 55.2	0.33
τ Leonis.	20 47	3.1	86 22.7	0.33
+ 202 Camel. B.	- 21 56	4.6	+ 8 6.5	0.33
+ 39 Cephei H.	- 27 50	0.1	- 3 27.6	0.33
δ Leonis	- 29 50	3.1	+ 90 7.4	0.33
+ γ Cephei	- 33 40	2.4	- 13 8.6	0.33
+ χ Urs. maj.	38 42	3.2	+ 41 27.0	0.33
β Leonis	- 41 58	3.1	74 30.0	0.33
β Virginis.	- 43 27	3.1	+ 87 25.8	0.34
+ 202 Radcliffe	- 45 19	2.7	- 13 10.2	0.33
γ Urs. maj.	- 46 30	3.2	+ 35 31.9	0.33
209 Cephei B.	- 53 4	2.5	- 4 4.3	0.33
+ Gr. 4193	53 4	2.5	- 4 4.3	0.33
π Virginis.	11 53 45	3.1	+ 82 36.6	0.34
ϵ Corvi.	- 12 2 59	3.1	111 50.7	0.33
+ γ Corvi.	8 40	3.1	106 46.2	0.33
+ .	- 12 47	2.0	2 47.5	0.33

Mag.	Circle reading.	S.P.	B.A.C.
2.3	255° 15'	189° 35'	
2	249 53	194 56	
5	304 17		
3	267 8		
2.3	291 5		
3.4	326 23		
4	329 16		
5	308 45		
6	230 30	Anten precedes 2 ^m 5 ^{so} .	3906
6	~~248~~ 56	218° 56'	8213 L
5.4	312 25		
3.4	209 16		
4	263 51		
2	297 1		
3.4	309 48		
6.7	209 15		
2.3	257 55		
6.9	218 19	TT Ven. after 2 ^d or 3 ^d	8336
4.5	304 59		
3	334 11		
2	329 7		
6.7	225 11		4150



	A.R. 1861.0	A.O.	D.P.D. 1861.0	A.V.
η Virginis	$-12^{\text{h}} 12^{\text{m}} 48^{\text{s}} + 3.1$		$89^{\circ} 53'.7$	0.33
+ <i>Comae Berenices</i>	$14 21 - 0.2$		$1 31.8$	0.33
+ 15γ Cor. bor.	$20 0 + 3.0$		$60 57.5$	0.33
+ δ Corvi	$22 41 3.1$		$105 44.5$	0.34
+ η Corvi	$24 55 3.1$		$105 24.5$	0.33
+ β Corvi	$27 5 3.1$		$112 37.7$	0.33
+ α Cassiopeae	$29 26 4.2$		$8 16.5$	0.33
+ γ Virginis	$34 37 3.0$		$90 41.2$	0.33
+ β Vir.	$42 6 5.0$		$7 2.9$	0.33
+ ϵ Urs. maj.	$47 54 2.7$		$33 17.1$	0.33
+ γ Cassiopeae	$48 20 3.5$		$30 2.2$	0.33
+ δ Virginis	$48 36 3.0$		$85 50.8$	0.33
+ 12 Canum = α	$49 31 2.8$		$+50 55.8$	0.33
+	$50 24 6.8$		$-4 29.4$	0.33
+ ϵ Virginis	$12 55 16 3.0$		$+78 17.5$	0.32
+ 44 Cephei H	$-13 0 23 4.9$		$-11 4.1$	0.32
+ ϵ Virginis	$-13 2 45 3.1$		$+94 47.8$	0.32
+ <i>Comae Berenices</i>				
43β Cor. bor.	$5 23 2.8$		$+61 25.0$	0.31
+ α Ursae minoris	$8 23 18.9$		$-1 25.9$	0.32
+ 1 Centauri	$12 48 3.3$		$+125 58.7$	0.32
+ γ Cassiopeae	$16 9 4.1$		$-22 55.8$	0.32
+ α Virginis	$17 53 + 3.2$		$100 26.1$	0.32
+	$20 24 - 2.7$		$4 31.2$	0.31
+ ζ Virginis	$27 37 + 3.1$		$89 53.2$	0.31
+ η Urs. maj.	$42 3 + 2.4$		$39 59.5$	0.30

Mag.	Circle reading	BAC
3.4	312° 16'	B
6.5	223 55 (or 56?)	4165
4.5	283 20	
2.3	328 6	
5	327 46	
2.3	334 58	
6	214 8	
var	188 13	154
3.2	313 3	
6	215 21	225
2	255 40	
2	192 25	
3	308 13	
3	273 19	
4.4	~~226 53~~	217 55
3.2	300 40	262
6.5	241 20	
4.5	317 10	
4	283 48	
2.0	220 58	360
3	348 17	
5	179 50	
1	322 48	
7.3	226 55	4498
3.4	312 15	
2	262 22	

	A.R. 1861.0			A.V.	N.P.D. 1861.0			A.V.
η Bootis	-13	^{h.} 48	^{m.} 4	^{s.} 2.9	+70°	54'	2	0.30
+50 Cassiopeae	-	50	48	5.0	-18	18.8		0.30
ϵ Virginis	-	54	35	3.0	87	46.9		0.29
θ Centauri		58	30	3.5	125	41.1		0.30
+a Draconis	14	0	38	+1.6	24	57.5		0.29
+20 Urs. min. B	-	44	20	-8.0	3	34.6		0.29
a Bootis	-	9	19	+2.7	70	5.5		0.32
+A Virginis		11	36	3.2	102	43.8		0.28
+L Cassiopeae sp. Tr.	-	17	40	4.8	-23	13.5		0.28
θ Bootis		20	28	2.0	37	30.3		0.28
+36 Cassiopeae H	-	24	54	5.5	-17	47.6		0.27
+p Bootis	-	25	50	2.6	+59	1.0		0.27
+Gr 527.	-	28	0	8.1	-9	8.7		0.27
o Bootis		28	38	2.6	+59	39.0		0.26
+u Virginis		35	45	3.2	95	3.1		0.27
+e Bootis	-	38	55	2.6	62	20.5		0.26
1a Librae	-	43	4	3.3	105	25.3		0.25
2a Librae	-	43	15	+3.3	105	27.9		0.25
+19 XIV. 217		47	56	+1.5	30	8.5		0.25
+ β Urs. min.	-	51	9	-0.3	15	16.6		0.25
{ 20 Librae }		55.57		+3.5	114	44.0		0.24
{ γ Scorpii }					49			
ψ Bootis	-14	58.29		2.6	62	30.5		0.24
+c Bootis	15	1.12		2.6	64	35.2		0.24
+ β Librae	-	9.32		3.2	98	52.1		0.23
μ Bootis		19.14		2.3	52	8.0		0.21

Mag.	Circle reading.	BAC.
3	293° 17'	
4	204 6	
4	310 9	
3	347 59	
3.4	247 21	
7.3	225 58	
1	292 28	B
5.4	325 5	B
4	199 12	
4.3	259 53	B
6.5	204 38	
4.3	281 24	
6	213 16	784
5.4	282 2	
4	317 25	
2.3	284 43	
2.3	327 47	
2.3	327 50	
6	232 31	
2	237 40	
3.4	337 5	
4.5	284 53	
5.4	286 58	
2	321 14	B
4.3	274 31	

	A.R. 1861.0	A.v.	N.P.D. 1864.0	A.v.
+ γ Urs. min	15 ^h 20 ^m 59 ^s	-0.1	+17° 40'.3	0.21
+ <i>Oblique</i>	- 21 18	+18.6	- 3 48.0	0.22
+ <i>alternately</i>	- 23 39	-23.4	+ 2 14.4	0.21
+ 37 Libræ.	26 35	+3.3	99 35.1	0.21
+ α Cor. bor.	- 28 48	2.5	+62 48.9	0.21
+ δ Cassio. H.	- 30 8	5.1	-27 14.3	0.21
+ ϵ Serpentis	35 21	2.7	69 52.8	0.20
+ α Serpentis	- 37 25	3.0	83 8.1	0.19
+ λ Serpentis	39 42	2.9	82 22.5	0.19
+ μ Serpentis	42 22	3.1	93 0.1	0.19
+ ϵ Serpentis	43 53	3.0	85 7.1	0.19
+ γ Serpentis	50 2	+2.8	73 52.9	0.20
+ ζ Urs. min.	- 49 6	-2.3	11 46.8	0.18
+ δ Scorpii	52 7	3.5	+12 13.4	0.18
+ γ 750	- 54 4	16.7	-4 49.1	0.18
+ β Scorpii pr.	- 57 22	+3.5	+109 25.3	0.17
+ δ Hydræ min. Boet.	- 58. 19	-6.9	6 38.3	0.17
+ θ Draconis.	15 59 18	+1.1	+31 3.8	0.16
+ δ Ophiuchi	-16 3 3	+0.1	- 9 31.0	0.16
+ ϵ Ophiuchi	16 7 4	3.1	93 20.0	0.16
+ ϵ Ophiuchi	10 58	3.2	94 20.1	0.15
+ γ Herculis	15 47	2.6	70 31.1	0.15

Mag.	Circle reading	BAC.
3	240° 4'	Connaissance des Temps
5.9	218 36	1061
6.9	224 37	5140
5	321 57	
2	285 11	B
6	195 12	
5.4	292 15	
2.3	306 30	B
4.5	304 35	
3.4	315 22	
3.4	307 29	Connaissance des Temps
4.3	296 15	
4.5	234 10	
2.3	334 34	B
6.7	217 35	1235
2	331 46	B
6	229. 2	5352
4.3	253. 27	
6	212 53	
3	315 42	B
3.4	316 42	
3	292 53	

	A.R. 1861.0	A.v.	M.P.D. 1861.0	A.v.
α Scorpii	-16° 20' 53"	3.7	116° 7' 2"	0.14
η Draconis	- 22 7	0.8	28 10.2	0.14
+ β Herculis	24 15	2.6	68 12.3	0.14
γ Scorpii	27 14	3.7	117 55.4	0.13
+ ζ Ophiuchi	29 31	+3.3	100 16.9	0.13
+ ~~181~~ 182	33 33	-3.5	+10 44.6	0.12
+ 50 Cephei #	34 30	+10.9	-9 2.9	0.12
ζ Herculis	- 36 3	+2.3	58 8.6	0.11
+ η Herculis	38 8	2.1	+50 48.7	0.12
θ Camelopardalis	- 40 15	5.9	-23 54.0	0.12
ϵ Scorpii	41 10	3.9	+124 2.3	0.12
ζ' Scorpii	44 12	4.2	132 7.6	0.11
ζ^2 Scorpii	44 49	4.2	132 7.2	0.11
κ Ophiuchi	- 51 5	2.8	80 24.3	0.10
+ ϵ Herculis	16 54 58	+2.3	58 52.0	0.09
+ ϵ Ursa minoris	-17 0 21	-6.4	7 44.4	0.09
+ η Ophiuchi	2 25	+3.4	105 23.0	0.08
α Herculis	- 8 19	2.7	75 26.9	0.07
+ π Herculis	10 15	2.1	53 1.9	0.07
40 ϵ Ophiuchi	12 41	3.6	110 57.6	0.07
420 Ophiuchi	- 13 29	+3.7	+114 51.4	0.07
44 Camelopardalis sp. Tr.	- 17 50	18.4	- 4 53.2	0.06
74	- 21 14	8.0	- 15 3.4	0.06
β Draconis	- 27 18	1.4	+37 35.7	0.05

Mag.	Circle reading.	BAC
1.2	338° 28'	B ✓
3.2	250 33	✓
2.3	290 35	
3.4	340 16	B
3.2	322 38	
6	233 8	
5	213 21	
3.2	280 31	✓
3	273 11	
4	198 32	
3	346 21	Coma star in Lupa
(4½)	354 22	
(3)	354 21	
3.4	302 47	✓
3.4	281 15	
4.5	230 8	✓
2.3	327 54	
var.	297 49	B ✓
3.4	275 25	
5	333 19	
3.4	337 12	B ✓
6	217 31	✓
6.7	259 59	107 23
3.2	~~260 9~~	✓

5780 L

1662

1863phae.proj..281.

	A.R. 1861.0	A.v.	N.P.D. 1861.0	A.v.
α Ophiuchi	-17 ^h 28 ^m 29 ^s	2.8	77° 20'.1	0.05
β Ophiuchi	36. 36	3.0	85 22.3	0.03
μ Herculis	- ~~44~~ 1	+2.3	62 11.7	0.04
ψ Draconis	-44 26	-1.1	17 47.0	0.03
ξ Draconis	51 8	1.0	33 6.3	0.01
γ Draconis	-53 23	1.4	38 29.6	0.01
γ Ophiuchi	17 58 26	3.0	87 27.9	0.02
μ Sagittarii	-18 5 27	+3.6	111 5.5	-0.01
δ Draconis	10 32	-4.5	10 1.2	-0.02
δ Sagittarii	12 6	3.8	119 53.0	-0.02
γ Serpentis	14 7	+3.1	92 55.9	-0.01
δ Camelopardalis	-17 11	-19.4	+3 23.9	-0.03
δ Camelopardalis	-22 27	+10.4	-10 17.7	0.04
α Lyrae	-32 14	+2.0	+51 20.6	0.05
δ Cygni	-34 8	30.4	-2 45.1	0.05
γ Herculis	39 41	2.6	+69 35.0	0.05
β Lyrae	-44 57	2.2	56 47.8	0.06
σ Sagittarii	46 39	3.7	116 27.9	0.07
θ Serpentis	49 18	+3.0	85 58.4	0.07
δ Draconis	50 52	-1.9	14 43.9	0.07
ϵ Aquilae	53 19	+2.7	75 7.1	0.07
δ Sagittarii	56 21	3.6	111 56.5	0.08
ζ Aquilae	-18 59 1	2.8	76 20.4	0.08
π Sagittarii	19 1 30	3.6	111 14.4	-0.09

Magn.	Circle reading.	BAC
2	299° 42'	B ✓
3	307 44	Comma in lower part of image
3.4	284 34	✓
4.5	240 11	✓
3.4	255 29	
2.3	260 53	B ✓
4.5	309 50	
4	333 26	B ✓
6	232 25	40 Dracoin. provided.
3.4	342 13	B
3	315 18	
4.5	225 47	✓
5.6	212 7	✓
7	273 43	B ✓
5	219 39	✓
4	291 57	
var.	279 10	B ✓
2.3	338 48	
4.3	308 20	Disks nearly equal.
6	237 7	With stars can be placed.
4	297 29	
4	334 17	B
3	298 43	B ✓
3	333 35	

62812

2157

	A.R. 1861.0	A.v.	N.P.D. 1861.0	A.v.
~~25 Camel H~~	~~19^h 1^m 36^s~~	~~13.1~~	~~-7° 20.0~~	~~-0.09~~
~~de Sagittarii~~	~~19 9 30~~	~~2.5~~	~~109 11.8~~	~~0.10~~
α Aquilæ	19 11 18	2.8	+78 39.1	-0.10
	11 27	77.1	-0 58.8	0.10
β' Sagittarii	12 38	4.3	+134 43.0	0.10
β'' Sagittarii	13 9	4.3	135 3.5	0.10
vii 67	16 23	6.5	-24 15.4	0.11
δ Aquilæ	18 29	3.0	87 9.6	0.11
δa Vulpeculæ	22 55	2.5	65 36.8	0.12
β Cygni	25 7	2.4	62 19.8	0.12
κ Sagittarii	28 15	3.7	115 11.2	0.12
θ Cygni	32 43	1.6	40 6.0	0.13
γ Aquilæ	39 39	2.9	+79 43.4	0.14
+15b Camelopard. B. sp. Tr.	43 9	15.5	-5 33.2	0.15
α Aquilæ	44 0	2.9	+81 29.8	0.15
β Aquilæ	48 29	3.0	83 56.3	0.14
γ Sagittarii	19 52 34	+2.7	70 53.3?	0.16
λ Virginis minoris B.	20 2 58	-56.6	1 6.4	0.17
ρ Aquilæ	7 51	+2.8	75 13.4	0.18
1a Capricorni	9 56	3.3	102 56.1	0.18
2a Capricorni	10 20	3.3	+102 58.4	0.18
γ 1418	14 26	17.1	-4 28.0	0.19
γ Cygni	17 14	2.2	+50 11.2	0.19

Mag.	Circle reading.		BAC.
5	215° 4'	✓	2326
6.5	301 1	✓	
7.2	221 25		2320
(3½)	356 54		
(4)	357 15		
6	~~242~~ 39		
3.4	309 31	Q ✓	
4.5	287 59		
3	284 42		
5.4	337 32	B	
5.4	262 29	B	
3	302 6	B ✓	
6.5	216 51	✓	2585
1.2	303 52	B ✓	
4	306 18	B ✓	
4.3	293 16		
6.7	223 30		6999 L.
5	297 36		
3.4	325 18	B ✓	
3.4	325 20	B ✓	
7.5	~~217~~ 39		
3.2	272 34		
3.4	~~193~~ 38		

Sequences of the camp:
B. Bowme of h.

C. de T.

A.R. 1861.0 A.v. N.P.D. 1861.0 A.v.

<i>Capricorni</i>	-	20 ^h 20 ^m 56 ^s	3.4	108° 16' 2"	-0.19
<i>Antares</i> sp.	-	22 6	5.5	-24 23.1	0.19
<i>α Cephei</i>		27 15	+1.0	+27 28.3	0.20
<i>β Cephei</i>		30 35	-0.2	17 56.4	0.20
<i>α Delphini</i>		33 11	+2.8	74 34.5	0.21
<i>α Cygni</i>	-	36 42	+2.0	45 12.9	0.21
<i>γ Draconis</i>	-	37 20	-3.2	9 23 9	0.21
<i>+ε Cygni</i>		40 35	+2.4	56 32.9	0.22
<i>η Cephei</i>		42 28	1.2	+28 42.0	0.23
<i>6 VULCANI</i>	-	44 40	5.2	-24 52.1	0.22
<i>32 Vulpeculae</i>	-	20 48 38	2.6	62 28.1	0.22
<i>76 Draconis</i>		52 23	-3.9	+7 59.2	0.23
<i>61 Cygni</i>	-	21 0 40	2.7	57 55.9	0.29
<i>ζ Cygni</i>	-	7 1	2.5	60 20.5	0.24
<i>α Cephei</i>	-	15 16	1.4	+28 0.2	0.25
<i>1 Draconis</i>	-	16 58	9.2	-8 4.1	0.25
<i>β Aquarii</i>	-	24 14	+3.2	-96 10.8	0.26
	-	24 33	-4.4	6 20.1	0.26
<i>β Cephei</i>	-	26 51	+0.8	+20 3.0	0.26
<i>γ Capricorni</i>	-	30 17	5.3	-20 8.0	0.26
<i>γ Capricorni</i>		32 23	3.3	107 17.3	0.27
<i>ε Pegasi</i>	-	37 22	3.0	+80 45.6	0.27
<i>δ Capricorni</i>		39 22	3.3	+106 45.4	0.27
<i>16 Pegasi</i>	-	46 44	2.7	+64 43.7	0.28
<i>α Aquarii</i>	-	21 58 39	3.1	90 59.6	0.29
<i>δ Pegasi</i>		22 0 33	+2.8	65 19.9	0.29

Mag.	Circle reading	BAC.
5	330° 37'	B ✓
5	198 2	
4	249 51	
6	240 20	
4.3	296 57	B
2.1	267 36	B ✓
6	231 47	✓ }
		7185
3.2	278 55	B
4.3	251 5	
6	197 34	
5.6	284 51	✓
6	230 23	
5.6	200 2	
5.6	274 18	
3	282 43	✓
3.2	250 23	✓
4.5	214 20	✓
3	318 32	B ✓
7	228 44	
		7484
3	242 26	B ✓
6	202 17	
4.3	329 38	B
2.3	303 8	✓
3	329 7	B
	192 9	
5.6	287 6	✓
3	313 21	B ✓
4	287 42	

A.R. 1861.0 A.v. N.P.D. 1861.0 A.v.

5 Cephei	22	6 ^m 2 ^s	2.1	32	29.0	0.29
0 Aquarii	-	9 30	3.2	+98	28.4	0.30
30 Camelopardalis	-	13 46	8.1	-6	44.3	0.30
! γ Aquarii	-	14 29	3.1	+92	5.2	0.30
σ Aquarii	-	23 17	3.2	101	23.3	0.31
η Aquarii	-	N 28 13	3.1	+90	50.0	0.31
193 Camelopardalis	-	29 34	6.5	-8	51.1	0.32
5 Pegasi	-	N 34 32	3.0	+79	53.6	0.31
+ η Pegasi	-	36 29	2.8	60	30.3	0.31
+ ξ Pegasi	-	39 45	3.0	78	32.3	0.31
! δ Aquarii	-	47 16	3.2	106	33.5	0.32
+ 34 Cephei	-	47 55	0.0	7	35.0	0.32
α Piscis auv.	-	49 58	3.3	+120	21.5	0.32
β Ursae majoris	-	53 26	3.7	-32	32.4	0.32
α Ursae majoris	-	55 8	3.8	-27	30.0	0.32
+ β Pegasi	-	56 48	3.1	+86	55.7	0.32
α Pegasi	-	22 57 50	3.0	75	32.5	0.32
γ Piscium	-	23 9 58	3.1	87	28.6	0.33
~~18 Aquarii~~						
δ Aquarii	-	15 40	3.2	110	51.5	0.33
κ Piscium	-	19 48	3.1	+89	30.3	0.33
+ 20 Camelopardalis	-	21 56	4.6	-8	6.5	0.33
39 Cephei	-	27 50	0.1	+3	27.6	0.33
ι Piscium	-	32 49	3.1	+85	7.6	0.32

Mag.	Circle reading.		BAC.
4.3	254° 52'		
4.5	320 50	B ✓	
5	215 40	✓	3528
4.3	314 27	B	
5.4	323 45	B	
4.3	313 ¹² ~~27~~	B	
	²¹³ ²³		
3.4	302 16	✓	
3	282 53		
5.4	300 54		
3	328 55	B	
5	229 58	✓	7990 L
1.2	342 41	✓	
2.3	¹³⁹ ³⁶		
2.3	¹⁹⁴ ⁵⁷	✓	
2	297 55	✓	
4	309 50	✓	
5.4	333 12		
5.4	311 52	B	
6	214 18	✓	3906
57	225 51	✓	8213 L
4.5	307 29	✓	

A.R. 1861.0 A.v. N.P.D. 1861.0 A.v.

<i>γ Cephei</i> -	23 ^h 33 ^m 40 ^s	2.4	13° 8' 6"	-0.33
<i>Piscis aust.</i> -	41 41	3.1	118 53.9	0.33
<i>Ursae majoris</i> -	45 19	2.7	+13 10.2	0.33
<i>α Piscium</i> -	46 30	3.2	+35 34.9	0.33
	52 11	3.7	83 54.4	0.33
<i>309. Ceph. B</i> -	53 4	2.5	4 4.3	0.33
<i>2 Ceti.</i>	23 56 37	3.1	108 6.6	-0.33

Mag.	Circle reading.	B.A.C.
3.4	235° 32'	✓
4.5	391 14	✓
~~6.7~~	~~235 34~~	✓
~~2.3~~	~~306 17~~	✓
4		
6.9	226 28	83.36
4.5	330 28	83.36

	1866			1866		Mag
				Ref		
	^h	^m	^s			
Andromedae	0	1	28	+61° 39'		2
~~Corvus~~	0	5	53	-11 38		5.4
4 Draconis H	0	5	53	-11 38		5.4
γ Pegasi	0	6	20	+75 34		3.2
12 Ceti	0	23				
K Draconis		27	45	-19 28		3.4
2 Cassiopea		32	55	+34 12		var
21 "		36	57	+15 45		6
β Ceti		36	52	+108 43		2
32 Camelopard H		48	10	-5 52		5.4
ε Piscium	0	55	59	+82 50		4
Palais	1	9	57	+1 24		2
θ' Ceti		17	20	+98 53		3
38 Cassiopea		21	18	+20 26		6
η Piscium		24	19	+75 21		4.3
0 "		38	19	+81 31		4
β Arietis		47	15	+69 51		3.2
50 Cassiopea		52	3	+18 14		4
δ Arietis		59	37	+67 10		2
α Draconis	2	0	46	-24 59		3.4
ζ' Ceti		5	54	+81 47		4.5
δ Cassiop		18	4	+23 12		4
δ Draconis		27	51	-73 43		5.4
γ Ceti		36	22	+87 20		3.4

BVA

- BVA

β Ursae minor	2	51	8	-	15	18	2
α Ceti		55	17	+	86	26	2.3
45 Cephei α	3	3	26	+	12	46	6
δ Arietis		7	12	+	69	27	4.5
α Persei		14	46	+	40	37	2
γ^2 Ursae minor		20	58	-	17	41	3
α Persei		33	24	+	42	39	3
η Tauri		39	31	+	66	19	3
δ Persei		45	43	+	58	31	3
δ Ursae minor		48	55	-	11	48	4.5
γ^1 Eridani	3	51	47	+	103	54	3
Gr 2320	4	5	58	-	21	50	6.5
γ Tauri		12	10	+	74	42	4
ϵ Tauri		20	48	+	71	7	4.3
α Tauri		28	14	+	73	46	1
15 Draconis (A)		28	16	-	20	57	5
α Camelopard (9)		40	45	+	23	53	4
ϵ Aurigae		48	16	+	57	3	3
11 Orionis		56	55	+	74	47	5
ϵ Ursae minor		59	48	-	7	45	4.5
α Aurigae	5	6	48	+	44	9	1
β Orionis		8	6	+	98	22	1
β Tauri		17	49	+	61	31	2

200	35
297	5
293	30
296	9
201	28
246	16
279	26
297	70
214	89
266	32
320	43
283	54

Gr 966	5	21	50	+ 15	3	67
♂ Orionis		25	10	+ 90	24	2
♂ Leporis		26	49	+ 107	55	3
♂ Orionis		29	25	+ 91	17	2
♂ Columbae		34	48	+ 124	9	2
W Draconis		37	44	- 21	11	5
4' Droc Pr		44	20	- 17	47	4.5
♂ Orionis		47	55	+ 82	37	^{nan} 1
22 Camelopard (H) 6		4	4	+ 20	38	5.4
♂ Gemmarum		14	51	+ 67	25	3
♂ Ursae ellin		15	34	- 3	24	4.5
♂ Geminorum		29	58	+ 73	29	2.3
♂ Cephei (H)		36	41	+ 2	45	5
♂ Canis Maj		39	15	+ 106	32	1
50 Draconis		50	41	- 14	44	6
♂ Canis Maj		53	22	+ 118	48	2.1
♂ Canis Maj 7		2	57	+ 116	11	2
♂ Geminorum		12	7	+ 67	46	3.4
♂ Draconis		12	31	- 22	34	3
Pr VII 67		16	55	+ 21	46	6
♂ Draconis		18	7	- 16	54	5
♂ Geminorum		26	2	+ 57	49	2.1
♂ Canis ellin		32	17	+ 84	26	1

237 27

312 45

330 16

313 39

346 28

201 14

204 38

304 59

242 61

289 48

219 0

295 52

225 9

328 53

207 40

341 8

338 31

290 9

199 51

243 39

205 31

280 12

306 48

B Geminorum	7	37	7	+ 61	39	1.2
φ Geminorum		45	18	+ 62	53	5
ε Draconis		48	37	- 20	4	4
λ Ursae minor B		58	11	- 1	6	6.7
3 Ursae maj (HL)		59	26	+ 21	8	6
• 15 Argus	8	1	50	+ 113	55	3
* Cephei		13	21	- 12	42	4.5
Gr 3241		30	34	- 17	55	6.7
• ε Hydrae		39	41	+ 83	5	3.4
• ι Ursae maj		50	1	+ 41	26	3
May 1879		53	34	- 9	57	6
• 2 Ursae maj		58	34	+ 22	20	5
* Cancri	9	0	29	+ 78	48	5
• 1' Draconis d		17	44	+ 8	5	4.5
• δ Hydrae		21	0	+ 98	5	2
24 Ursae maj d		22	35	+ 19	35	5.4
• δ Ursae maj		23	53	+ 37	43	3
β Cephei		26	55	- 20	2	3
• ε Leonis		38	14	+ 65	37	3
• 11 Cephei		39	57	- 19	8	5
• 11 Leonis		45	8	+ 63	22	4
79 Draconis		51	12	- 16	56	6.7
• δ Leonis	10	1	14	+ 77	23	1.2

284	2
285	16
202	21
221	18
243	31
336	15
209	42
204	30
305	27
263	49
212	27
244	43
301	10
230	29
320	26
241	58
260	6
202	23
288	0
203	17
285	45
205	29
299	44

32 Ursae maj	10	8	16	+	24	14	6
γ Leonis	12	35	-	+	69	29	2
9 Draconis $\mathcal{H}$	23	37	+	13	36	5.4	
ρ Leonis	25	46	+	80	0	4	
226 Cephei B	29	55	-	14	28	5.6	
ι Leonis	42	13	+	78	45	5	
ι Cephei	44	55	-	24	30	4.3	
δ Ursae maj	55	26	+	27	32	2	
δ Leonis	11	6	59	+	68	45	2.3
δ Crateris	12	39	+	104	3	3.4	
θ Cephei	13	8	-	22	37	6.5	
θ Leonis	21	3	+	86	24	5	
λ Draconis	23	25	+	19	5.6	3.4	
91 Leonis v	30	5	+	90	5	5.4	
κ Cephei	33	52	-	13	7	3.4	
β Leonis	42	13	+	74	41	2	
γ Ursae maj	46	46	+	35	34	2.3	
Gr 4163	48	21	-	16	20	7	
θ Virginis	58	23	+	80	31	4	
4 Draconis $\mathcal{H}$	12	5	53	+	11	38	5.4
η Virginis	13	3	+	89	55	3.4	
β Corvi	27	20	+	112	39	2.3	
κ Draconis	27	45	+	19	28	3.4	

246 37

291 52

236 '0

302 22

207 56

301 7

197 55

249 55

291 48

326 24

199 48

308 46

242 19

312 27

209 17

297 64

309 48

257 57

206 5

302 53

234 2

~~234 2~~ 312.17

334 59

241 52

	R.A.			Declination	Mg.
	h.	m.	s.		
ϵ Corvi.	12	03	16	$-21^{\circ} 53'$	3
γ Cassiopeæ	12	36	51	$105^{\circ} 44'$	
δ Draconis (H)	12	05	53	$+78^{\circ} 22'$	5.4
α Urs. Min.					
η Virginis	12	13	03	$+00^{\circ} 05'$	3.4
β Corvi.	12	27	21	$-22^{\circ} 39'$	2.3
κ Draconis.	12	27	45	$+70^{\circ} 32'$	3.4
γ' Virginis	12	34	52	$-00^{\circ} 53'$	3.2
γ Camelop. H. (foll.)	12	48	11	$+84^{\circ} 08'$	5.4
δ Canum Venat.	12	49	45	$+39^{\circ} 03'$	3
θ Virginis	13	03	01	$-04^{\circ} 49'$	4.5
α Urs. Min.	13	09	57		
α "	13	18	08	$-10^{\circ} 28'$	1
δ Cassiopeæ.	13	21	18	$110^{\circ} 25'$	
ϵ "	13	27	52	$+00^{\circ} 05'$	3.4
η Ursae Maj.	13	42	15	$+49^{\circ} 59'$	2
η Bootis.	13	48	18	$+19^{\circ} 04'$	3
γ Cassiopeæ.	13	52	03	$128^{\circ} 13'$	
α Draconis.	14	00	44	$+65^{\circ} 01'$	3.4
α Bootis.	14	09	33	$+19^{\circ} 53'$	1
δ Cassiopeæ.	14	18	04	$113^{\circ} 12'$	
θ "	14	20	38	$+52^{\circ} 28'$	4.3
ρ "	14	26	03	$+30^{\circ} 58'$	4.3
δ Urs. Min.	14	27	51	$+76^{\circ} 17'$	5.4
ϵ Bootis.	14	39	08	$+27^{\circ} 38'$	2.3
α Librae	14	43	28	$-15^{\circ} 29'$	2.3
β Urs. Min.	14	51	08	$+74^{\circ} 42'$	2
β Bootis.	14	56	54	$+40^{\circ} 55'$	3
γ "	14	58	42	$+27^{\circ} 28'$	4.5

Circle Read⁹

circles

334° 14' BNA.

206° 39'

234° 01'

312° 16'

334° 58'

241° 51'

313° 03' BNA.

228° 16'

273° 19'

317° 10'

220° 59'

312° 50'

201° 58'

312° 15'

262° 22'

293° 17'

204° 10'

247° 21'

292° 28'

199° 11'

259° 53'

287° 24'

236° 06'

284° 43'

324° 50'

237° 40'

271° 28'

284° 53' BNA.

48 [*] Cephei (H)	3	03	26	+ 102°.46'
β Librae	15	09	48	- 8°.53'
α Bootis	15	19	26	+ 37°.51'
α Coronae Bor.	15	29	01	+ 27°.10'
α Serpentiis	15	37	40	+ 6°.51'
ϵ Serpentiis	15	44	08	+ 4°.53'
ϵ Coronae Bor.	15	52	03	+ 27°.16'
δ Scorpii	15	52	25	- 22°.14'
β' Scorpii	15	57	39	- 19°.26'
~~Greenwich 2220~~	16	05	58	+ 68°.10'
δ Ophiuchi	16	07	20	- 3°.21'
ϵ Herculis.	16	15	43	+ 46°.38'
α Scorpii	16	21	12	- 26°.08'
η Draconis	16	22	11	+ 61°.49'
15 Draconis (A.)	16	28	16	+ 69°.03'
ζ Ophiuchi.	16	29	47	- 10°.17'
ζ Herculis.	16	36	15	+ 31°.51'
η Herculis.	16	38	18	+ 39°.11'
α Camelopard.	4	40	45	+ 113°.53'
α Ophiuchi.	16	51	20	+ 9°.35'
δ Herculis.	16	56	40	+ 33°.46'
ϵ Ursa Min.	16	59	48	+ 82°.15'

6. 209.37
 2 321.15
 4.3 274.32
 2 285.13
 2.3 305.32
 3.4 307.30
 4 285.07
 2.3 334.35
 2 331.47
 6.5 244.13
 3 315.44
 3.4 265.45
 1.2 338.28
 3.2 250.34
 5. 243.20
 3.2 322.39
 280.32
 3 273.2
 4 198.30
 3.4 302.48
 5 278.37
 230.08

BNA

$\frac{21.7}{38.3}$ slow. of MC

30.3

34.2

37.7

40.5

39 44.4

Mrs. Min

Mrs. Min

