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KG
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v.696

Instrumental Constants (continued)

Star Constants (continued)

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1

ute of the

2 m
ii d = 21 25-

$\frac{dv}{dt}$

"u = − 0".210

+15.4526 286
.4812 286
.5098 285
.5383 284
.5667 283
.5950 283
6233

·410

L0,".821

·4

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Continuation of the precession constants of the fundamental stars of the General Catalogue.

γ Cygni $\alpha = 21^h\ 10^m$

	$\frac{d\alpha}{dt}$		$\frac{d\rho}{dt}$	
			$u = +0.''4470$	
18 10			+14.6236	226
20			.6462	227
30			.6689	228
40			.6917	230
50			.7147	231
60			.7378	232
70			.7610	

α Cephei $\alpha = 21^h\ 16^m$

	$\frac{d\alpha}{dt}$		$\frac{d\rho}{dt}$	
			$u = +0.''0120$	
			+15.0243	136
			.0379	135
			.0514	134
			.0648	132
			.0780	131
			.0911	130
			.1041	

β Aquarii $\alpha = 21^h\ 25^m$

	$\frac{d\alpha}{dt}$		$\frac{d\rho}{dt}$	
			$u = -0.''0210$	
			+15.4526	286
			.4812	286
			.5098	285
			.5383	284
			.5667	283
			.5950	283
			.6233	

β Cephei $\alpha = 21\ 27$

			$u = -0.''0430$	
18 10			+15.7068	67
20			.7135	66
30			.7201	66
40			.7267	66
50			.7333	66
60			.7399	65
70			.7464	

ε Pegasi $\alpha = 21\ 38$

			$u = +0.''0110$	
			+16.1691	244
			.1935	244
			.2179	244
			.2423	243
			.2666	243
			.2909	243
			.3152	

11 Cephei $\alpha = 21\ 40$

			$u = +0.''0821$	
			+16.3863	64
			.3927	66
			.3993	67
			.4060	68
			.4128	69
			.4197	71
			.4268	

π²⁰ Cygni $\alpha = 21\ 42$

			$u = -0.''0154$	
18 16			+16.4201	178
20			.4379	178
30			.4557	176
40			.4733	176
50			.4909	174
60			.5083	174
70			.5257	

16 Pegasi $\alpha = 21\ 47$

			$u = +0.''0000$	
			+16.6497	215
			.6712	214
			.6926	213
			.7139	211
			.7350	210
			.7560	209
			.7769	

α Aquarii $\alpha = 21\ 59$

			$u = +0.''0000$	
			+17.1944	224
			.2168	223
			.2391	222
			.2613	220
			.2833	219
			.3052	218
			.3270	

i Pegasi $\alpha = 22\ 01$

			$u = +0.''0280$	
18 10			+17.2909	197
20			.3106	196
30			.3302	196
40			.3498	195
50			.3693	195
60			.3888	194
70			.4082	

δ Pegasi $\alpha = 22\ 04$

			$u = +0.''0310$	
			+17.3979	212
			.4191	211
			.4402	210
			.4612	208
			.4820	207
			.5027	206
			.5233	

ζ Cephei $\alpha = 22\ 06$

			$u = -0.''0080$	
			+17.5554	137
			.5691	137
			.5828	137
			.5965	136
			.6101	136
			.6237	136
			.6373	

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δ Aquarii $\alpha = 22^h 10^m$

	$\frac{d\alpha}{dt}$	$\frac{dp}{dt}$ $u = -0.0200$
1810		+17.0621
		204
20		.6825
		206
30		.7031
		208
40		.7289
		209
50		.7448
		211
60		.7659
		213
70		.7862

γ Aquarii $\alpha = 22^h 15^m$

	$\frac{d\alpha}{dt}$	$\frac{dp}{dt}$ $u = +0.0150$
		+17.8651
		200
		.8851
		199
		9050
		197
		.9247
		195
		.9442
		193
		.9635
		192
		.9827

3 Lacertae $\alpha = 22^h 19^m$

	$\frac{d\alpha}{dt}$	$\frac{dp}{dt}$ $u = -0.1950$
		+18.0326
		140
		.0466
		141
		0607
		139
		.0746
		140
		.0886
		138
		.1024
		139
		.1163

ν Aquarii $\alpha = 22^h 29^m$

	$\frac{dp}{dt}$ $u = -0.0500$
1810	+18.3807
	170
20	.3977
	170
30	.4147
	169
40	.4316
	168
50	.4484
	167
60	.4651
	167
70	.4818

ξ Pegasi $\alpha = 22^h 35^m$

	$\frac{dp}{dt}$ $u = +0.0120$
	+18.5977
	153
	.6132
	152
	.6284
	152
	.6436
	151
	.6587
	151
	.6738
	150
	.6888

ψ Pegasi $\alpha = 22^h 37^m$

	$\frac{dp}{dt}$ $u = -0.0220$
	+18.6659
	143
	.6802
	141
	.6943
	140
	.7083
	138
	.7221
	137
	.7358
	135
	.7493

13 Lacertae $\alpha = 22^h 38^m$

	$\frac{dp}{dt}$ $u = +0.0137$
1810	+18.7146
	131
20	.7277
	131
30	.7408
	129
40	.7537
	129
50	.7666
	127
60	.7793
	127
70	.7920

λ Pegasi $\alpha = 22^h 40^m$

	$\frac{dp}{dt}$ $u = -0.0090$
	+18.7697
	138
	.7835
	138
	.7973
	137
	.8110
	136
	.8246
	135
	.8381
	135
	.8516

ω Pegasi $\alpha = 22^h 44^m$

	$\frac{dp}{dt}$ $u = -0.0260$
	+18.8738
	134
	.8872
	133
	.9005
	132
	9134
	131
	.9268
	130
	.9398
	129
	.9527

ι Cephei $\alpha = 22^h 45^m$

	$\frac{dp}{dt}$ $u = -0.1370$
1810	+18.9350
	95
20	.9445
	94
30	9539
	93
40	.9632
	91
50	.9723
	90
60	.9813
	89
70	.9902

λ Aquarii $\alpha = 22^h 46^m$

	$\frac{dp}{dt}$ $u = +0.0390$
	+18.9285
	141
	.9426
	140
	.9566
	139
	.9705
	139
	.9844
	138
	.9982
	137
	19.0119

ο Androm $\alpha = 22^h 56^m$

	$\frac{dp}{dt}$ $u = -0.2260$
	+19.2127
	105
	2232
	104
	.2336
	104
	.2440
	103
	2543
	103
	.2646
	102
	.2748

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α Pegasi $\alpha = 22^h\,58^m$

	$\frac{d\alpha}{dt}$	$\frac{d\delta}{dt}$	
		$u = -0.0090$	
1810		+19.2645	113
20		.2758	111
30		.2869	110
40		.2979	109
50		.3088	108
60		.3196	106
70		.3302	

γ Piscium $\alpha = 23^h\,11^m$

	$\frac{d\alpha}{dt}$	$\frac{d\delta}{dt}$	
		$u = -0.0030$	
		+19.5307	95
		.5402	93
		.5495	92
		.5587	91
		.5678	90
		.5768	88
		.5856	

τ Pegasi $\alpha = 23^h\,14^m$

	$\frac{d\alpha}{dt}$	$\frac{d\delta}{dt}$	
		$u = -0.0192$	
		+19.6064	81
		.6145	81
		.6226	79
		.6305	79
		.6384	77
		.6461	77
		.6538	

υ Pegasi $\alpha = 23\ 19$

		$u = +0.0293$
1810	+19.6888	72
20	.6960	71
30	.7031	71
40	.7102	70
50	.7172	70
60	.7242	69
70	.7311	

λ Andromedae $\alpha = 23\ 31$

		$u = -0.4530$
	+19.8673	47
	.8720	46
	.8766	46
	.8812	46
	.8858	46
	.8904	45
	.8949	

i Piscium $\alpha = 23\ 33$

		$u = -0.4470$
	+19.8890	48
	.8938	48
	.8986	46
	.9032	46
	.9078	44
	.9122	44
	.9166	

γ Cephei $\alpha = 23\ 34$

		$u = +0.1440$
1870	+19.9051	34
20	.9085	33
30	.9118	32
40	.9150	32
50	.9182	31
60	.9213	30
70	.9243	

φ Pegasi $\alpha = 23\ 46$

		$u = -0.2213$
	+20.0019	25
	.0044	24
	.0068	22
	.0090	21
	.0111	19
	.0130	18
	.0148	

ρ Cassiop $\alpha = 23\ 48$

		$u = -0.0093$
	+20.0150	20
	.0170	18
	.0188	17
	.0205	16
	.0221	15
	.0236	13
	.0249	

ω Piscium $\alpha = 23\ 53$

		$u = -0.0990$
1810	+20.0374	12
20	.0386	11
30	.0397	9
40	.0406	8
50	.0414	6
60	.0420	5
70	.0425	

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α Ursae Minoris

	$\frac{dl}{dt}$	$\frac{dS}{dt}$	
1810		+19.″4907	+0.″0200
			−247
15		.4660	
			260
20		.4400	
			273
25		.4127	
			288
30		.3839	
			301
35		.3538	
			318
40		.3220	
			335
45		.2885	
			354
50		.2531	
			374
55		.2157	
			−395
60		.1762	

β Ursae Minoris n = +0.″0200

	$\frac{dl}{dt}$	$\frac{dS}{dt}$	
		+ 2.″9208	
			.1371
		+ 2.″7837	
			1376
		+ 2.6461	
			1381
		.5080	
			1386
		.3694	
			1390
		.2304	
			1394
		.0910	
			1396
		1.9514	
			1401
		.8113	
			1403
		.6710	
			1408
		.5302	

λ Ursae Minoris n = +.0258

	$\frac{dl}{dt}$	$\frac{dS}{dt}$	
		13.″2076	
			2404
		+12.″9675	
			2521
		.7154	
			2542
		.4612	
			2670
		.1942	
			2797
		11.9145	
			2927
		.6218	
			3057
		.3161	
			3188
		10.9973	
			3316
		.6657	
			3447
		.3210	

51 Cephei n = −.0800

	$\frac{dl}{dt}$	$\frac{dS}{dt}$	
1810		− 0.″7067	
			2213
15		− 0.″9280	
			2221
20		− 1.1501	
			2229
25		− 1.3730	
			2237
30		.5967	
			2255
35		.8222	
			2244
40		2.0466	
			2230
45		.2696	
			2221
50		.4917	
			2216
55		.7133	
			2211
60		− 2.9344	

α Ursae Minoris β Ursae Minoris δ Ursae Minoris 51 Cephei

1800
1890

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228 Camelop. $\alpha = 6^h\ 5^m$

	$\frac{dt}{dt}$	$\frac{d\delta}{dt}$	"	$u = -0.1106$
1810		+0.1842	965-	
20		+.0877	968	
30		−0.0089	965-	
40		−0.1054	966	
50		−0.2020	966	
60		−0.2986	966	
70		−0.3952		

57 Cancri med. $\alpha = 8^h\ 46^m$

	$\frac{dt}{dt}$	$\frac{d\delta}{dt}$	"	$u = -0.0209$
		−13.0684	402	
		−13.1086	400	
		−13.1486	399	
		−13.1885	398	
		−13.2283	397	
		−13.2680	395-	
		−13.3076		

1 H Draconis $\alpha = 9^h\ 19^m$

	$\frac{dt}{dt}$	$\frac{d\delta}{dt}$	"	$u = -0.0870$
		−14.7238	943	
		−14.8181	936	
		−14.9117	909	
		−15.0026	902	
		−15.0928	875-	
		−15.1803	868	
		−15.2671		

d Ursae Majoris $\alpha = 9\ 23$

			"	$u = +0.0589$
1810		−15.2201	527	
20		−15.2728	520	
30		−15.3248	513	
40		−15.3761	505-	
50		−15.4266	498	
60		−15.4764	491	
70		−15.5255		

31 Leonis Min. $\alpha = 10\ 20$

			"	$u = -0.1034$
		−18.0609	216	
		−18.0825	214	
		−18.1039	211	
		−18.1250	210	
		−18.1460	207	
		−18.1667	205-	
		−18.1872		

2 Draconis $\alpha = 11\ 24$

			"	$u = -0.0350$
		−19.7543	79	
		−19.7622	79	
		−19.7701	80	
		−19.7781	80	
		−19.7861	81	
		−19.7942	81	
		−19.8023		

β Coronae $\alpha = 15\ 23$

			"	$u = +0.0750$
1810		−12.8928	280	
20		−12.8648	280	
30		−12.8368	282	
40		−12.8086	282	
50		−12.7804	284	
60		−12.7520	284	
70		−12.7236		

γ Lacertae $\alpha = 22\ 26$

			"	$u = -0.0120$
		+18.3064	135-	
		+18.3199	135-	
		+18.3334	135-	
		+18.3469	135-	
		+18.3604	135-	
		+18.3739	135-	
		+18.3874		

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Declinations of Polar stars.

α Ursae Minoris

	°	′	″	′	″	
1870	88	36	58.73			
				1	35.47	21
65		35	23.06			
				1	35.88	19
60		33	47.18			
				1	36.07	22
55		32	11.11			
				1	36.29	16
50		30	34.82			
				1	36.45	18
45		28	58.37			
				1	36.63	16
40		27	21.74			
				1	36.79	16
35		25	44.95			
				1	36.95	
30		24	8.00			
20		20	53.67			
10		17	38.81			
1800		14	23.47			

β Ursae Minoris

	°	′	″	′	″	
1870	88	36	20.95			
				0	6.69	71
		36	14.26			
					7.40	70
		36	6.86			
					8.10	71
		35	58.76			
					8.81	69
		35	49.95			
					9.50	71
		35	40.45			
					10.21	69
		35	30.24			
					10.90	70
		35	19.34			
					11.60	
		35	7.74			
		34	42.46			
		34	14.42			
		33	43.64			

λ Ursae Minoris

	°	′	″	′	″	
1870	88	55	41.89			
				0	49.01	
		54	15.88			1.86
					57.87	
		53	25.01			1.72
					52.59	
		52	32.42			1.73
					54.32	
		51	38.10			1.69
					55.91	
		50	42.19			1.54
					57.50	
		49	44.69			1.46
					58.96	
		48	46.73			1.48
					60.44	
		47	46.29			
		45	40.43			
		43	30.51			
		41	15.93			

51 Cephei

	°	′	″	′	″	
1870	87	14	21.25			
				0	16.72	1.09
65		14	37.97			
					16.63	1.12
60		14	53.60			
					14.51	1.09
55		15	8.11			
					13.42	1.11
50		15	21.53			
					12.31	1.12
45		15	33.84			
					11.19	1.12
40		15	45.03			
					10.07	1.10
35		15	55.10			
					8.97	
30		16	4.05			
					7.85	
20		16	18.58			
10		16	28.66			
1880		16	34.32			

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1837½ $\frac{d\delta}{dt}+u$	$15\frac{d\alpha}{dt}+u$		St Helena 1830 S			Pulkova 1830 S		Pulkova minus St Helena	Melbourne 1870 S			Cape of Good Hope 1860 S			Pulkova minus Melbourne	Pulkova minus Good Hope	
	′	″	°	′	″	′	″	″	°	′	″	°	″	″	″	″	
+19.235	−4	48.52	−11	5	9.8	5	9.5	+0.3									X
+18.750	−4	41.25	−9	3	49.0	3	47.7	+1.3	−8	51	17.46	−8	54	24.78	−1.02	−0.75	X
										51	18.47		54	25.53			
+12.495	−3	7.42	−10	2	21.5	2	19.8	+1.7									X
+12.556	−3	8.34	−10	20	41.3	20	40.2	+1.1									X
+10.964	−2	44.46										−25	1	44.70		−1.64	
													1	46.34			
+10.624	−2	39.36	−13	59	54.6	59	52.3	+2.3	−13	52	48.04	−13	54	33.96	−1.01	−0.37	X
										52	49.05		54	34.32			
+6.123	−1	16.86	−5	18	47.5	18	47.2	+0.3	−								X
+5.046	−1	15.69	−8	58	44.3	58	42.9	+1.4									X
+4.602	−1	9.03	−8	24	18.2	24	17.0	+1.2	−8	21	14.33	−8	21	59.13	−0.80	−0.81	X
										21	15.13		21	59.94			
+4.336	−1	4.54	−7	2	6.7	2	4.9	+1.8									X
+2.824	−0	42.36	−6	1	43.1	1	41.7	+1.4									X
+1.785	−0	26.77	−14	53	31.4	53	30.2	+1.2									X
+1.717	−0	25.76	−9	44	13.5	44	11.7	+1.8									X
+1.102	−0	16.53	−14	12	20.4	12	18.7	+1.7									X
−1.380	+0	20.70	−17	52	41.4	52	40.3	+1.1									X
−4.550	+1	8.25	−16	29	23.5	29	19.6	+3.9	−16	32	23.57	−16	31	36.54	+0.09	−0.41	X
										32	23.48		31	36.95			
−5.331	+1	19.96	−26	7	43.3	7	42.4	+0.9				−26	16	24.52		+1.42	X
													10	23.10			
−10.097	+2	31.45	−23	49	8.9	49	9.3	−0.4	−23	55	51.23				−3.40		X
										55	54.63						
−15.313	+3	49.69	−7	55	34.3	55	33.9	+0.4	−8	5	46.87	−8	3	13.30	−0.86	−0.55	X
										5	47.73		3	13.85			
−17.566	+4	23.49	−11	31	1.6	31	1.4	+0.2									X
−18.222	+4	33.33	−15	58	16.4	58	16.5	−0.1				−16	7	22.09		−1.54	X
													7	23.64			
−18.706	+4	40.59															
−19.453	+4	51.79	−21	53	57.5	53	57.6	−0.1									X
−19.425	+4	51.37	−13	51	35.5	51	35.2	+0.3	−14	4	30.77	−14	1	16.82	−1.81	−1.29	X
										4	32.58		1	18.11			
−19.670	+4	56.06	−16	45	4.3	45	6.8	−2.0									X
−20.024	+5	0.36	−16	35	51.1	35	50.7	+0.4									X
−19.997	+4	59.96	−22	27	17.7	27	22.4	(−4.7)	−22	40	38.51	−22	37	19.22	(3.65)	(3.06)	X
										40	42.16		37	22.28			
−18.987	+4	44.80	−10	16	17.6	16	17.1	+0.5	−10	28	54.92	−10	26	45.48	−0.81	−0.82	X
										28	55.73		25	46.30			
−16.318	+3	49.77	−15	19	48.5	19	48.6	−0.1	−15	29	59.15	−15	27	26.70	−0.62	−0.57	X
										29	59.77		27	27.47			
−13.671	+3	25.06	−8	44	59.6	44	59.9	−0.3	−8	54	4.91	−8	51	44.32	−0.12	+0.03	✓
										54	5.03		51	44.29			
−10.731	+2	40.96	−22	7	48.1	7	50.9	−2.8	−22	14	57.37	−22	13	11.52	−0.62	−0.35	✓
										14	57.99		13	11.87			
−10.351	+2	35.26	−19	19	57.7	19	58.3	−0.6	−19	26	50.25	−19	25	8.04	+0.11	+0.19	X
										26	50.14		25	7.85			
−8.550	+2	8.26	−26	2	47.8	2	49.4	−1.6	−26	8	26.99	−26	7	3.10	−1.91	−1.64	X
										8	28.90		7	4.74			
−7.790	+1	56.85	−10	12	56.5	12	54.5	+2.0									X
−4.982	+1	14.73	−15	30	22.2	30	24.2	−2.0				−15	32	49.86		−2.66	X
													32	52.52			
−19.176	+4	47.62	−17	23	41.9	23	41.8	+0.1									

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Pulcova Observations in S for 1845

			h	m	S 1845.	$\frac{d\delta}{dt}$ 1845	μ	1852.5 $\frac{d\delta}{dt}+\mu$	1857.5 $\frac{d\delta}{dt}+\mu$	15×($\frac{d\delta}{dt}$+μ)	25×($\frac{d\delta}{dt}$+μ)	Pulkova 1860			Pulkova 1870		
					° ′ ″	″	″					°	′	″	°	′	″
✕	η	Ceti	1	0	−11 0 20.94	+19.355	−1.3 t	−1.380									
✕	θ	Ceti	1	16	−8 59 6.42	+18.958	−1.6	−0.220	+18.726	+18.718	+4 40.89	+7 47.95	−8	54	26.53	−8	51 18.47
✕	ε	Eridani	3	25	−9 59 12.34	+12.571	−3.2	−0.040									
✕	S	"	3	35	−10 17 31.81	+11.801	−3.4	+0.730									
	~~Ps~~	"															
	Ps	"	3	47	−25 4 30.14	+11.032	−2.9	−0.090	+10.920	+10.906	+2 43.80	+4 32.65	−25	1	46.34	−24	59 57.49
✕	τ	"	3	50	−13 57 12.90	+10.718	−3.5	−0.120	+10.572	+10.554	+2 38.58	+4 23.85	−13	54	34.32	−13	52 49.05
✕	β	"	5	00	−5 17 30.39	+5.171	−4.3	−0.080									
✕	λ	"	5	1	−8 57 27.20	+5.044	−4.3	−0.130									
✕	β	Orionis	5	7	−8 23 7.98	+4.589	−4.4	−0.020	+4.536	+4.514	+1 8.04	+1 5.85	−8	21	59.94	−8	21 17.63
✕	γ	"	5	10	−7 1 0.44	+4.334	−4.3	−0.030									
✕	ι	"	5	27	−6 0 59.31	+2.803	−4.1	−0.010									
✕	g	Leporis	5	39	−14 53 3.39	+1.754	−4.2	+0.000									
✕	κ	Orionis	5	40	−9 43 45.98	+1.713	−4.5	−0.030									
✕	γ	Leporis	5	49	−14 12 2.20	+0.932	−4.0	+0.140									
✕	β	Can Maj	6	15	−17 53 0.96	−1.388	−3.8	−0.020									
✕	α	"	"	6	38 −16 30 27.86	−3.338	−3.8	−1.240	−4.606	−4.625	−1 9.09	−1	55	62	−16 31 36.95	−16	32 23.48
✕	ζ	"	"	7	2 −26 9 2.36	−5.367	−3.5	+0.010	−5.383	−5.401	−1 20.74	−2	15	03	−26 10 23.10	−26	11 17.39
✕	ι	Navis	8	1	−23 51 40.71	−10.179	−3.0	+0.060	−10.141	−10.157	−2 32.11	−4	13	92	−23 54 12.82	−23	55 54.63
✕	δ	Hydrae	9	21	−7 59 23.56	−15.363	−2.7	+0.030	−15.353	−15.367	−3 50.29	−6	24	17	−8 3 13.85	−8	5 47.73
✕	λ	"	10	3	−11 35 24.84	−17.501	−2.0	−0.080									
✕	μ	"	10	18	−16 2 49.86	−18.127	−2.0	−0.110	−18.252	−18.262	−4 33.78	−7	36	55	−16 7 23.64	−16	10 26.41
·	ν	"	10	41	−15 23 2.96	−18.906	−1.4	+0.190									
✕	ζ	Crateris	11	4	−21 58 49.37	−19.462	−1.2	—									
✕	ν	"	11	11	−13 56 26.56	−19.611	−0.8	+0.180	−19.437	−19.441	−4 51.58	−8	6	02	−14 1 18.11	−14	4 32.58
✕	γ	"	11	17	−16 50 1.39	−19.707	−1.0	+0.030									
✕	γ	Corvi	12	7	−16 40 51.10	−20.045	−0.2	+0.020									
✕	β	"	12	27	−22 32 22.39	−19.925	+0.3	−0.070	−19.993	−19.991	−4 59.89	−8	19	77	−22 37 22.28	−22	40 42.16
✕	ε	Virginis	13	17	−10 21 1.85	−18.935	+1.6	−0.040	−18.963	−18.955	−4 44.45	−7	53	88	−10 25 46.30	−10	28 58.73
✕	α²	Librae	14	42	−15 23 38.42	−15.234	+3.2	−0.060	−15.270	−15.254	−3 49.05	−6	21	35	−16 27 27.47	−16	29 59.77
✕	β	Librae	15	8	−8 48 26.01	−13.635	+3.5	−0.010	−13.619	−13.601	−3 24.28	−5	40	02	−8 51 49.29	−8	54 5.03
✕	δ	Scorpii	16	51	−22 10 31.87	−10.689	+4.3	−0.010	−10.667	−10.645	−2 40.00	−4	26	12	−22 13 15.87	−22	14 57.99
✕	β	"	15	56	−19 22 33.61	−10.297	+4.5	−0.020	−10.283	−10.261	−2 34.24	−4	16	53	−19 25 7.85	−19	26 50.14
✕	α	"	16	20	−26 4 57.60	−8.483	+4.9	−0.030	−8.476	−8.452	−2 7.14	−3	31	30	−26 7 4.74	−26	8 28.90
✕	β	Ophiuchi	16	28	−10 14 54.31	−7.786	+4.6	+0.030	−7.722	−7.698	−1 55.83	−3	12	45	−10 16 52.14	−10	18 6.76
✕	μ	Ophiuchi	17	1	−15 31 38.93	−5.064	+5.1	+0.120	−4.906	−4.880	−1 13.59	−2	2	00	−16 32 52.52	−15	33 40.93
·	ζ	Coratcris	10	52	−17 28 29.41	−19.186	−1.5	—									

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Pulkova Observations in δ for 1845.

	α	δ 1845	$\frac{d\delta}{dt}$ 1846	μ	$\frac{d\delta}{dt}\mu$ 1852.5	$\frac{d\delta}{dt}\mu$ 1857.5	$15\times\frac{d\delta}{dt}\mu$	$25\times\frac{d\delta}{dt}\mu$	Pulkova 1860	Pulkova 1870
	h m	° ′	″	″	″	″	′ ″	′ ″	h m s	h m s
γ Ophiuchi	17 50	−9 49	56.17 −0.832 +4.8t	−0.100						
ε μ Sagittarii	18 4	−21 6	36.83 +0.391 +5.2	−0.010	+0.420	+0.446	+0 6.30	+0 11.15	−21 5 30.53	−21 5 25.68
× λ "	18 18	−25 30	7.33 +1.277 +5.4	−0.240	+1.077	+1.105	+0 16.15	+6 27.62	−25 29 51.18	−25 29 39.77
× σ "	18 46	−26 28	56.30 +3.968 +5.3	−0.080	+3.928	+3.954	+0 58.92	+1 38.85	−26 27 57.38	−26 27 17.45
× π "	19 0	−21 15	52.12 +5.237 +4.9	−0.030	+5.244	+5.268	+1 18.66	+2 16.70	−21 14 33.46	−21 13 40.42
× a¹ Capricorni	20 9	−12 58	57.98 +10.706 +4.1	+0.000	+10.736	+10.757	+2 41.04	+4 28.93	−12 56 16.94	−12 54 29.05
∧ a² "	20 9	−13 1	15.17 +10.736 +4.0	+0.000	+10.766	+10.786	+2 41.34	+4 29.65	−12 58 33.68	−12 56 45.32
× ε Aquarii	20 39	−10 3	33.55 +12.844 +3.6	−0.010						
× γ Capricorni	21 30	−17 21	33.71 +15.995 +2.8	−0.030	+15.986	+16.000	+3 59.79	+6 40.00	−17 17 33.92	−17 14 53.71
× δ "	21 38	−16 49	40.27 +16.353 +2.6	−0.280	+16.092	+16.105	+4 1.38	+6 42.63	−16 45 38.89	−16 42 57.64
× ι Aquarii	21 58	−14 37	10.00 +17.284 +2.4	−0.070	+17.232	+17.244	+4 18.48	+7 11.10	−14 32 51.52	−14 29 58.90
× ε Precis Aust	22 32	−27 51	3.24 +18.598 +1.6	+0.000	+18.610	+18.618	+4 39.15	+7 45.45	−27 46 24.09	−27 43 17.79
× 2 Aquarii	22 44	−8 24	10.78 +18.979 +1.4	+0.030	+19.019	+19.027	+4 45.28	+7 55.67	−8 19 28.51	−8 16 15.11
× δ "	22 46	−16 38	39.96 +19.004 +1.3	+0.000	+19.014	+19.020	+4 45.21	+7 55.50	−16 33 54.25	−16 30 43.90

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Melbourne 1870 S			Cape of Good Hope 1860 S			Pulkova minus Melbourne	Pulkova minus Good Hope	1837½ $\frac{dS}{dt}+u$	$15\left(\frac{dS}{dt}+u\right)$	St. Helena 1830 S			Pulkova 1830		Pulkova minus St. Helena
o	'	"	o	'	"	"	"	"	'	"	o	'	"	'	"	"
								−0.968	+0	14.52	−9	44	41.8	44	41.7	+0.1
	−21	5	23.76	−21	5	29.02	−1.92	−1.51	+0.342	−0	5.13	−21	5	40.1	5	42.0	−1.9
		5	25.68		5	30.53											
	−25	29	25.59	−25	29	41.63	−12.18	−9.54	+0.997	−0	14.95	−25	30	25.0	30	22.3	+2.7
		29	37.77		29	51.18											
	−26	27	19.01	−26	27	59.31	+1.56	+1.93	+3.848	−0	57.72	−26	29	56.4	29	54.0	+2.4
		27	17.45		27	57.38											
	~~−27~~	~~57~~	~~26.58~~	−21	14	32.46		−1.00	+5.170	−1	17.53	−21	17	7.2	17	9.7	−2.5
					14	33.46											
	−12	54	28.52				−0.53		+10.675	−2	40.12	−13	1	38.7	1	38.1	+0.6
		54	27.85														
	−12	56	44.17	−12	58	32.43	−1.35	−1.25	+10.706	−2	40.59	−13	3	55.8	3	55.8	+0.0
		56	45.52		58	33.68											
									+12.807	−3	12.10	−10	6	47.3	6	45.6	+1.7
	−17	14	52.54	−17	17	33.05	−1.17	−0.87	+15.944	−3	59.16	−17	25	33.6	25	32.9	+0.7
		14	53.71		17	33.92											
				−16	45	37.53		−1.36	+16.054	−4	0.81	−16	53	39.3	53	41.1	−1.8
					46	38.89											
				−14	32	17.62		−1.90	+17.196	−4	17.94	−14	41	32.0	41	27.9	+4.1
					32	57.52											
				−27	46	21.41		−2.68	+18.586	−4	38.79	−27	53	38.5	55	42.0	−3.5
					46	24.09											
				−8	19	24.22		−1.28	+18.998	−4	44.97	−8	28	57.2	28	55.8	+1.4
					19	25.50											
				−16	33	57.09		−3.16	+18.994	−4	44.91	−16	43	23.0	43	24.4	−1.4
					33	54.25											

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Annual Variations in Declinations
for extreme south stars.

	α		$\frac{d\delta}{dt}$ 1815	$\frac{d\delta}{dt}$ 1837½	$\frac{d\delta}{dt}$ 1852½	$\frac{d\delta}{dt}$ 1855	$\frac{d\delta}{dt}$ 1857½	1860.	1815 $\frac{d\delta}{dt}+u$	1837½ $\frac{d\delta}{dt}+u$	1850 1852½ $\frac{d\delta}{dt}+u$	1855 $\frac{d\delta}{dt}+u$	1857½ $\frac{d\delta}{dt}+u$	
δ Ceti	h 0	m 37	+19.834	+19.817	+19.805	+19.803	+19.801	+19.799	+19.854	+19.837	+19.825	+19.823	+19.821	+19
			+0.020											
α Sculptoris	0	52		+19.565	+19.551	+19.548	+19.545	+19.543			+19.535	+19.531	+19.528	+19.525	+19.523	+19
			−.030											
α Ceporis	5	27	+3.088	+3.032	+2.944	+2.934	+2.925	+2.915	+3.088	+3.032	+2.944	+2.934	+2.925	+2
			.060											
α Columbae	5	35	+2.351	+2.295	+2.243	+2.236	+2.228	+2.220	+2.311	+2.235	+2.203	+2.196	+2.188	+2
			−.040											
ζ Leporis	5	39	+1.872	+1.783	+1.723	+1.713	+1.703	+1.694	+1.872	+1.783	+1.723	+1.713	+1.703	+1
			.080											
β Columbae	5	46		+1.292	+1.245	+1.238	+1.230	+1.222		+1.682	+1.635	+1.628	+1.620	+1
			+.390											
γ Columbae	5	53		+0.720	+0.673	+0.666	+0.658	+0.650		+0.720	+0.673	+0.666	+0.658	+0
			+.030											
δ Columbae	6	3		−0.171	−0.217	−0.224	−0.231	−0.239		−0.161	−0.207	−0.214	−0.221	−0
			+.010											
β Can. Maj	6	15	−1.273	−1.359	−1.416	−1.425	−1.434	−1.443	−1.293	−1.379	−1.436	−1.445	−1.454	−1
			−.020											
α Can Maj	6	39	−3.224	−3.310	−3.366	−3.375	−3.385	−3.394	−4.464	−4.550	−4.606	−4.615	−4.623	−4
			−1.240											
ε Can. Maj	6	54	−4.457	−4.533	−4.582	−4.590	−4.599	−4.607	−4.477	−4.553	−4.602	−4.610	−4.619	−4
			−.020											
γ Can. Maj.	6	57	−4.801	−4.889	−4.943	−4.953	−4.963	−4.972	−4.811	−4.899	−4.953	−4.963	−4.973	−4
			−.010											
δ Can Maj	7	3	−5.265	−5.342	−5.391	−5.400	−5.408	−5.417	−5.255	−5.332	−5.381	−5.390	−5.398	−5
			+.010											
μ Can Maj	7	19	−6.594	−6.668	−6.716	−6.724	−6.732	−6.740	−6.584	−6.658	−6.706	−6.714	−6.722	−6
			+.010											
ι Navis	8	2	−10.006	−10.075	−10.123	−10.131	−10.139	−10.147	−9.946	−10.015	−10.063	−10.071	−10.079	−10
			+.060											
α Hydrae	10	18	−18.073	−18.120	−18.137	−18.141	−18.146	−18.150	−18.183	−18.230	−18.247	−18.251	−18.256	−18
			−.110											
α Antliae	10	21		−18.044	−18.069	−18.073	−18.077	−18.081		−18.074	−18.099	−18.103	−18.107	−18
			−.030											
β Crateris	11	11	−19.584	−19.603	−19.616	−19.618	−19.620	−19.622	−19.404	−19.423	−19.436	−19.438	−19.440	−19
			+.180											
α Corvi	12	2	−20.058	−20.056	−20.053	−20.053	−20.054	−20.054	−20.098	−20.096	−20.095	−20.095	−20.094	−20
			−.040											
ε Corvi	12	3	−20.059	−20.055	−20.054	−20.053	−20.053	−20.052	−20.049	−20.045	−20.044	−20.043	−20.043	−20
			+.010											
β Corvi	12	27	−19.942	−19.925	−19.919	−19.917	−19.916	−19.914	−20.012	−19.995	−19.989	−19.987	−19.986	−19
			−.070											
θ Centauri	13	59	−17.550	−17.493	−17.454	−17.448	−17.442	−17.435	−18.190	−18.133	−18.094	−18.088	−18.082	−18
			−.640											
α² Librae	14	43	−15.328	−15.240	−15.208	−15.200	−15.192	−15.184	−15.388	−15.300	−15.268	−15.260	−15.252	−15
			−.060											
σ Lupi	15	12	−13.398	−13.502	−13.438	−13.427	−13.416	−13.406	−13.608	−13.512	−13.448	−13.437	−13.426	−13
			−.010											
ν Scorpii	15	52	−10.820	−10.721	−10.655	−10.644	−10.633	−10.622	−10.830	−10.731	−10.665	−10.654	−10.643	−10
			−.010											
β Scorpii	15	58	−10.428	−10.329	−10.264	−10.253	−10.242	−10.231	−10.448	−10.349	−10.284	−10.273	−10.262	−10
			−.020											
α Scorpii	16	21	−8.629	−8.495	−8.446	−8.434	−8.422	−8.409	−8.659	−8.525	−8.476	−8.464	−8.452	−8
			−.030											
ξ Ophiuchi	17	18	−3.905	−3.788	−3.709	−3.696	−3.683	−3.670	−4.005	−3.908	−3.829	−3.816	−3.803	−3
			−.120											
γ² Sagittarii	17	57	−0.531	−0.377	−0.321	−0.307	−0.293	−0.279	−0.761	−0.607	−0.551	−0.537	−0.523	−0
			−.230											
η Sagittarii	18	6	+0.238	+0.354	+0.432	+0.445	+0.458	+0.472	+0.228	+0.344	+0.422	+0.435	+0.448	+0
			−.010											
λ Sagittarii	18	18	+1.447	+1.596	+1.649	+1.663	+1.676	+1.689	+1.207	+1.356	+1.409	+1.423	+1.436	+1
			−.240											
δ Sagittarii	18	47	+3.809	+3.955	+4.008	+4.021	+4.035	+4.048	+3.729	+3.875	+3.928	+3.941	+3.955	+3
			−.080											
π Sagittarii	19	2	+5.086	+5.200	+5.274	+5.286	+5.298	+5.312	+5.056	+5.170	+5.244	+5.256	+5.268	+5
			−.030											
β Piscis Aust	22	24	+18.214	+18.259	+18.289	+18.294	+18.299	+18.303	+18.144	+18.189	+18.219	+18.224	+18.229	+18
			−.070											
ε Piscis Aust	22	33	+18.544	+18.584	+18.610	+18.614	+18.618	+18.623	+18.484	+18.524	+18.550	+18.554	+18.558	+18
			−.060											
ι Piscis Aust	22	50	+19.061	+19.099	+19.113	+19.116	+19.120	+19.123	+18.881	+18.919	+18.933	+18.936	+18.940	+18
			−.180											
ν Sculptoris	23	42	+19.977	+19.983	+19.987	+19.988	+19.988	+19.989	+19.877	+19.883	+19.887	+19.888	+19.888	+19
			−.100											

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	1860 dd/dt +u −	Gord Hope 1860 S			Melbourne 1870 S			St Helena 1830 S			Gord Hope 1845 S			Melbourne 1845 S			St Helena 1845 S			Palermo 1845 S		Gord Hope 1845 S		Melbourne 1845 S		St Helena 1845 S	
		°	′	″	°	′	″	°	′	″	°	′	″	°	′	″	°	′	″			′	″	′	″	′	″
.821	+ 19.819	− 18	45	20.51	− 18	42	22.6	− 18	53	16.1	− 18	50	17.9	50	17.8	50	18.5			50	19.2	50	19.0	50	18.9
		− 4		57.37	− 8		15.52	+ 4		3.26			− 1.3		− 1.2		− 0.4								
.515	+ 19.573	− 30	6	33.80				− 30	16	39.5	− 30	11	46.6			11	46.5				11	48.0			11	48.5
		− 4		32.81				+ 4		58.0			− 1.4				− 2.0								
.925	+ 2.915	− 17	55	31.53	− 17	55	1.88	− 17	57	1.1	− 17	56	15.7	56	15.0	56	16.1			56	17.0	56	16.2	56	16.3
		− 0	0	44.16	− 1		18.12	+ 0		45.0			− 1.3		− 1.2		− 0.2								
.188	+ 2.180	− 34	9	3.27	− 34	8	41.51	− 34	10	10.4	− 34	9	35.3	9	36.2	9	36.9			9	36.7	9	37.9	9	39.5
		− 0		33.04	− 0		54.70	+ 0		33.5			− 1.4		− 1.7		− 2.6								
.703	+ 1.694							− 14	53	31.4						53	4.7			53	3.4			53	4.4
										24.74							+ 0.3								
.620	+ 1.612	− 35	49	23.46	− 35	49	7.13	− 35	50	11.7	− 35	49	48.0	49	47.6	49	46.5			49	49.4	49	49.4	49	49.4
		− 0		24.82	− 0		10.50	+ 0		25.23			− 1.4		− 1.8		− 2.9								
.658	+ 0.650	− 35	18	1.78	− 35	17	54.84	− 35	18	23.2	− 35	18	11.9	18	11.3	18	12.4			18	13.3	18	13.1	18	15.2
		− 0		12.29	− 0		16.45	+ 0		10.80			− 1.4		− 1.8		− 2.8								
.221	− 0.229	− 37	14	7.50							− 37	14	4.4							14	5.8				
		+ 0		3.10									− 1.4												
454	− 1.463							− 17	52	41.4								53	12.1	53	1.0			53	2.3
									− 0	20.68									− 0.2						
.623	− 4.634	− 16	31	36.54	− 16	32	23.57	− 16	29	23.5	− 16	30	27.5	30	27.9	30	31.7			30	27.9	30	28.7	30	29.0	30	[31.7]
		+ 1		9.09	+ 1		56.62	− 1		8.2			− 1.2		− 1.1		0.0										
.619	− 4.627	− 28	47	2.17	− 28	47	48.25	− 28	44	45.4	− 28	45	53.1	45	52.8	45	53.8				45	54.6	45	54.4	45	55.7
		+ 1		9.03	+ 1		55.47	− 1		8.3			− 1.4		− 1.6		− 1.9										
.973	− 4.982	− 15	25	45.11	− 15	26	34.62	− 15	23	19.2	− 15	24	30.8	24	30.3	24	32.7				24	32.0	24	31.3	24	32.4
		+ 1		1.29	+ 2		4.32	− 1		13.5			− 1.7		− 1.0		+ 0.3										
.398	− 5.407	− 26	10	24.52				− 26	7	43.3	− 26	9	3.8			9	3.3			9	[2.4]	9	5.1			9	4.7
		+ 1		20.71				− 1		20.0			− 1.3				− 1.4										
.722	− 6.730	− 29	1	56.61	− 29	3	13.89	− 28	58	36.4	− 29	0	16.0	0	15.8	0	16.3				0	17.4	0	17.4	0	18.2
		+ 1		48.59	+ 2		48.06	− 1		39.9			− 1.4		− 1.6		− 1.9										
.079	− 10.087	− 23	54	11.03	− 23	55	51.23	− 23	49	8.9	− 23	51	40.1	51	39.3	51	39.1			51	40.7	51	41.4	51	40.7	51	40.2
		+ 2		34.94	+ 4		11.98	− 2		30.21			− 1.3		− 1.4		− 1.1										
.256	− 18.260	− 16	7	22.09				− 15	58	16.4	− 16	2	48.4			2	54.8			2	49.8	2	49.6			2	[54.7]
		+ 4		33.70				− 4		38.4			− 1.2				+ 0.1										
.107	− 18.111	− 30	21	21.73	− 30	24	23.29	− 30	12	15.5	− 30	16	50.3	16	50.6	16	46.6				16	51.7	16	52.2	16	48.6
		+ 4		31.48	+ 7		32.67	− 4		31.1			− 1.4		− 1.6		− 2.0										
.440	− 19.442	− 13	56	26.56	− 14	4	30.77	− 13	51	35.5	− 13	54	24.3	56	24.8	56	26.8			56	26.6	56	25.3	56	25.8	56	26.4
		+ 4		31.34	+ 8		6.00	− 4		31.3			− 1.2		− 1.0		+ 0.4										
.094	− 20.094	− 23	56	53.41				− 23	46	48.1	− 23	51	52.0			51	47.5				51	53.3			51	50.6
		+ 5		1.42				− 5		1.4			− 1.3				− 1.1										
.843	− 20.042	− 21	50	27.76	− 21	53	47.47	− 21	40	25.3	− 21	45	27.1	45	26.4	45	26.0				45	28.4	45	27.7	45	26.8
		+ 5		0.66	+ 8		21.07	− 5		0.7			− 1.3		− 1.3		− 0.8										
.986	− 19.984	− 22	37	19.22	− 22	40	38.51	− 22	27	12.7	− 22	32	19.4	32	18.9	32	17.6			32	22.4	32	20.7	32	20.2	32	18.4
		+ 4		59.83	+ 8		19.65	− 4		59.9			− 1.3		− 1.3		− 0.8										
.082	− 18.075	− 35	40	43.82	− 35	43	45.10	− 35	31	47.1	− 35	36	12.4	36	13.0	36	19.1				36	13.8	36	14.8	36	22.0
		+ 4		31.41	+ 7		32.05	− 4		32.0			− 1.4		− 1.8		− 2.9										
.232	− 15.244	− 15	27	26.90	− 15	29	59.15	− 15	19	48.5	− 15	23	37.9	23	37.9	23	38.0			23	38.4	23	39.1	23	39.0	23	37.9
		+ 3		49.02	+ 6		21.30	− 3		49.5			− 1.2		− 1.1		+ 0.1										
.426	− 13.416	− 40	8	12.47	− 40	10	27.51	− 40	1	29.8	− 40	4	50.8	4	51.9	4	52.5				4	52.2	4	53.8	4	56.1
		+ 3		21.72	+ 5		35.65	− 3		22.7			− 1.4		− 1.9		− 3.6										
.643	− 10.632	− 22	13	11.52	− 22	14	57.37	− 22	7	48.1	− 22	10	31.6	10	31.3	10	29.1			10	31.9	10	32.9	10	32.6	10	29.9
		+ 2		29.97	+ 4		21.07	− 2		44.0			− 1.3		− 1.3		− 1.8										
.262	− 10.251	− 19	25	8.04	− 19	26	52.25	− 19	19	57.7	− 19	22	33.8	22	33.7	22	32.9			22	33.6	22	35.1	22	34.9	22	33.3
		+ 2		34.26	+ 4		16.55	− 2		35.2			− 1.3		− 1.2		− 0.4										
.452	− 8.489	− 26	7	3.10	− 26	8	26.99	− 26	2	47.8	− 26	4	56.0	4	56.7	4	56.7			4	57.6	4	57.4	4	57.2	4	57.1
		+ 2		7.14	+ 3		31.60	− 2		7.9			− 1.4		− 1.5		− 1.4										
.803	− 3.790	− 24	2	33.40	− 24	3	9.62	− 2			− 24	1	36.0	1	34.6							1	37.3	1	36.0		
		+ 0		5.43	+ 1		35.07						− 1.3		− 1.4												
.523	− 0.509	− 30	25	16.54				− 30	24	59.6	− 30	25	8.3			25	8.7				25	9.7			25	10.7
		+ 0		8.26				− 0		9.10			− 1.4				− 2.0										
.448	+ 0.462	− 21	3	29.02	− 21	5	23.76	− 21	5	40.1	− 21	5	35.3	5	35.0	5	34.9			5	36.5	6	36.6	5	36.3	5	35.6
		− 0		6.33	− 0		11.20	+ 0		5.16			− 1.3		− 1.3		− 0.7										
.436	+ 1.449	− 25	29	41.03	− 25	29	25.59	−			− 25	30	28.8	30	1.5					30	[7.3]	30	4.1	30	2.9		
		− 0		21.13	− 0		35.90						− 1.3		− 1.4												
.955	+ 3.968	− 26	27	59.31	− 26	27	19.01	− 26	29	56.4	− 26	28	58.2	28	57.9	28	58.3			28	[5.6]3	28	59.6	28	59.4	28	59.8
		− 0		58.72	− 1		38.88	+ 0		58.1			− 1.4		− 1.5		− 1.5										
.268	+ 5.282	− 21	14	32.46				− 21	17	7.2	− 21	15	51.1			15	49.7			15	52.1	15	52.4			15	50.4
		− 1		18.66				+ 1		1.75			− 1.3				− 0.7										
.229	+ 18.233	− 33	3	44.91	− 33	0	41.90	− 33	12	53.6	− 33	8	18.2	8	17.6	8	20.8				8	19.6	8	19.3	8	[23.3]
		− 4		33.28	− 7		35.72	+ 4		32.8			− 1.4		− 1.7		− 2.5										
.558	+ 18.563	− 27	46	21.41				− 27	55	38.5	− 27	50	59.7			60	60.6			51	32.1	51	1.1	2		51	2.3
		− 4		38.25				+ 4		37.9			− 1.4				− 1.7										
.940	+ 18.943	− 30	21	47.28	− 30	18	37.55	− 30	31	15.8	− 30	26	31.3	26	31.1	26	32.0				26	32.7	26	32.7	26	34.0
		− 4		43.44	− 7		53.50	+ 4		43.8			− 1.4		− 1.6		− 2.0										
.888	+ 19.889	− 28	54	15.76	− 28	50	55.83				− 28	59	13.5			59	13.0				59	14.9			59	14.9
		− 4		38.30	− 8		17.20						− 1.4				− 1.7										

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Comparison of Pulkova 1845, with Melbourne 1870, Cape of Good Hope 1860, and St. Helena 1830.

Star	α h	α m	δ °	Pulcova minus Melbourne ″	Pulcova minus Good Hope ″
α Hydrae	9	21	−8.1	−0.86	−0.55
λ Aquarii	22	46	−8.3	—	−1.28
β Orionis	5	8	−8.4	−0.80	−0.81
β Librae	15	10	−8.9	−0.12	+0.03
θ Ceti	1	18	−8.9	−1.02	−0.75
α Virginis	13	18	−10.5	−0.81	−0.82
α' Capricorni	20	10	−12.9	−0.53	—
α² Capricorni	20	11	−12.9	−1.35	−1.25
γ Eridani	3	52	−13.9	−1.01	−0.37
δ Crateris	11	13	−14.1	−1.81	−1.29
i Aquarii	21	59	−14.6	—	−1.90
α² Librae	14	14	−15.5	−0.62	−0.57
η Ophiuchi	17	2	−15.5	—	−2.66
μ Hydrae	10	19	−16.1	—	−1.54
α Canis Maj.	6	39	−16.5	+0.09	−0.41
δ Aquarii	22	47	−16.5	—	−3.16
δ Capricorni	21	39	−16.8	—	−1.36
γ Capricorni	21	33	−17.2	−1.17	−0.87
β' Scorpii	15	58	−19.4	+0.11	+0.19
μ Sagittarii	18	6	−21.1	−1.92	−1.51
π Sagittarii	19	1	−21.2	—	−1.00
δ Scorpii	15	53	−22.2	−0.62	−0.35
β Corvi	12	28	−22.7	−3.65	−3.06
ι Navis	8	2	−23.9	−3.40	—
τ⁸ Eridani	3	48	−25.0	—	−1.64
α Scorpii	16	21	−26.1	−1.91	−1.64
δ Canis Maj.	7	3	−26.2	—	+1.42
θ Sagittarii	18	47	−26.5	+1.56	+1.93
ε⁹ Piscis Aust.	22	33	−27.8	—	−2.68

Star	α h	α m	δ °	Pulcova minus St Helena ″
β Eridani	5	0	−5.3	+0.3
ι Orionis	5	27	−6.0	+1.4
τ Orionis	5	10	−7.0	+1.8
β Orionis	5	7	−8.4	+1.2
λ Eridani	5	1	−8.9	+1.4
λ Aquarii	22	44	−8.2	+1.4
α Hydrae	9	21	−8.0	+0.4
β Librae	15	8	−8.8	−0.3
σ Ceti	1	16	−11.0	+1.3
ε Eridani	3	25	−10.0	+1.7
δ Eridani	3	35	−10.3	+1.1
ε Aquarii	20	39	−10.1	+1.7
ξ Ophiuchi	16	28	−10.2	+2.0
α Virginis	13	17	−10.3	+0.5
ν Ophiuchi	17	50	−9.8	+0.1
η Ceti	1	0	−11.0	+0.3
κ Orionis	5	40	−9.7	+1.8
λ Hydrae	10	3	−11.6	+0.2
α' Capricorni	20	9	−12.9	+0.6
α² Capricorni	20	9	−12.9	+0.0
γ Eridani	3	50	−14.0	+2.3
η Leporis	5	49	−14.2	+1.7
δ Crateris	11	11	−13.9	+0.3
ξ Leporis	5	39	−14.9	+1.2
μ Hydrae	10	18	−16.0	−0.1
η Ophiuchi	17	1	−15.5	−2.0
α² Librae	14	42	−15.4	−0.1
α Can. Maj.				
γ Crateris				

No. stars	Pulcova minus Melbourne δ	Pulcova minus Melbourne ″	No. stars	Pulcova minus Cape δ	Pulcova minus Cape ″
10	−11.4	−0.99	13	−11.9	−1.26
7	−20.9	−1.36	11	−20.1	−1.34

Catalogue minus Pulcova = +0.06 for 10 stars

δ	No. stars	Pulcova minus St. Helena ″
−8.4	13	+1.18
−13.0	14	+0.49
−18.0	9	−0.60
−23.9	8	−1.27

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Star	α h	m	δ °	Pulcova minus St. Helena "
~~α Canis Maj.~~	~~6~~	~~39~~		
γ Crateris	11	17	−16.8	−2.0
ι Aquarii	22	46	−16.8	−1.4
δ Capricorni	21	38	−16.8	−1.8
γ Corvi	12	7	−16.7	+0.4
γ Capricorni	21	30	−17.2	+0.7
α Crateris	10	52	−17.5	+0.1
β Canis Maj.	6	15	−17.9	+1.1
β Scorpii	15	56	−19.4	−0.6
μ Sagittarii	18	4	−21.1	−1.9
π Sagittarii	19	0	−21.3	−2.5
β Crateris	11	4	−22.0	−0.1
δ Scorpii	15	57	−22.2	−2.8
β Crateris	11	4	−22.0	−0.1
ι Navis	8	1	−23.9	−0.4
λ Scorpii	16	20	−26.1	−1.6
δ Canis Maj.	17	2	−26.1	+0.9
ε Piscis Aust.	22	32	−27.8	−3.5

Catalogue minus Melbourne δ	"	Catalogue minus Cape δ	"	Catalogue minus St. Helena δ	"
−11.4	−0.93	−11.9	−1.20	−8.6	+1.24
−20.9	−1.30	−20.1	−1.28	−13.0	+0.54
				−18.0	−0.54
				−23.9	−1.21

Reduction to (Pulcova) Catalogue.

Melbourne $r = +2.44 \sin \delta - 0.45 \cos \delta$

Cape Good Hope $r = +1.08 \sin \delta - 0.97 \cos \delta$

St. Helena $r = +8.40 \sin \delta + 2.49 \cos \delta$

δ	Melbourne	Cape Good Hope	St. Helena
	"	"	"
−10	−0.88	−1.13	+1.01
11	−0.89	−1.15	+0.86
12	−0.93	−1.16	+0.71
13	−0.97	−1.18	+0.56
14	−1.01	−1.19	+0.41
15	−1.05	−1.21	+0.25
16	−1.09	−1.23	+0.10
17	−1.14	−1.25	−0.05
18	−1.18	−1.26	−0.20
19	−1.21	−1.27	−0.36
20	−1.24	−1.28	−0.52
21	−1.28	−1.29	−0.67
22	−1.32	−1.30	−0.82
23	−1.36	−1.31	−0.97
24	−1.40	−1.32	−1.12
25	−1.43	−1.33	−1.28
26	−1.47	−1.34	−1.43
27	−1.51	−1.35	−1.58
28	−1.54	−1.36	−1.73
29	−1.58	−1.37	−1.88
30	−1.61	−1.38	−2.03
31	−1.64	−1.39	−2.18
32	−1.67	−1.40	−2.33
33	−1.70	−1.41	−2.48
34	−1.74	−1.41	−2.63
35	−1.77	−1.41	−2.75
36	−1.80	−1.42	−2.90

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16

1810	+ 11	1850	− 08	
20	+ 08	60	− 13	
30	+ 01	70	− 18	
40	− .53			

Supplemental List.
Computation of $\frac{dl}{dt}$

ℓ Columbae

	L h	m	s	$\frac{dl}{dt}$ "	
1810	5	32	46.5	+ 2.3769	
20				2.3456	313
30	5	33	29.8	2.3142	314
40				2.2829	313
50	5	34	13.1	2.2515	314
60				2.2201	314
70	5	34	56.5	+ 2.1886	315

μ Hydrae

	L h	m	s	$\frac{dl}{dt}$ "	
	10	16	54.4	− 18.0612	184
				18.0798	
	10	17	52.5	18.0979	183
				18.1061	182
	10	18	50.6	18.1343	182
				18.1524	181
	10	19	48.9	− 18.1704	180

ℓ² Librae

	L h	m	s	$\frac{dl}{dt}$ "	
	14	40	23.3	− 15.3422	311
				15.3111	
	14	41	29.4	15.2800	311
				15.2488	312
	14	42	35.4	15.2175	313
				15.1861	314
	14	43	41.5	− 15.1545	316

ℓ Scorpii

	L h	m	s	$\frac{dl}{dt}$ "	
	16	17	46.6	− 8.6521	482
				8.6039	483
	16	18	39.8	8.5556	483
				8.5073	482
	16	20	13.0	8.4590	483
				8.4105	485
	16	21	26.4	− 8.3619	486

γ² Sagittarii

	L h	m	s	$\frac{dl}{dt}$ "	
1810	17	53	36.5	− 0.5593	
20				0.5031	562
30	17	54	53.6	0.4468	563
40				0.3908	560
50	17	56	10.4	0.3348	560
60				0.2787	561
70	17	57	27.5	− 0.2225	562

λ Sagittarii

	L h	m	s	$\frac{dl}{dt}$ "	
	18	16	14.7	+ 1.4205	538
				1.4743	
	18	17	28.8	1.5282	539
				1.5821	539
	18	18	42.9	1.6360	539
				1.6897	537
	18	19	56.8	+ 1.7434	537

σ Sagittarii

	L h	m	s	$\frac{dl}{dt}$ "	
	18	43	28.7	+ 3.7821	
				3.8255	534
	18	44	43.2	3.8888	533
				3.9421	533
	18	45	57.7	3.9953	532
				4.0485	532
	18	47	12.1	+ 4.1016	531

ℓ Piscis Aust.

	L h	m	s	$\frac{dl}{dt}$ "	
	22	47	9.0	+ 19.0516	151
				19.0667	150
		48	15.3	19.0817	150
				19.0965	148
		49	21.5	19.1112	147
				19.1257	145
		50	27.3	+ 19.1402	145

ℓ Columbae

1810	+ 2.3772	
		314
20	+ 2.3458	
		316
30	+ 2.3142	
		314
40	+ 2.2828	
		315
50	+ 2.2513	
		315
60	+ 2.2198	
		316
70	+ 2.1882	

μ Hydrae

− 18.0632	
	178
18.0810	
	171
18.0981	
	175
18.1156	
	173
18.1329	
	171
18.1500	
	171
− 18.1671	

ℓ² Librae

− 15.3439	
	316
15.3123	
	321
15.2802	
	319
15.2483	
	320
15.2163	
	322
15.1841	
	323
− 15.1518	

ℓ Scorpii

− 8.6580	
	484
8.6046	
	489
8.5557	
	487
8.5070	
	487
8.4583	
	489
8.4094	
	490
− 8.3604	

γ² Sagittarii

− 0.5594	
	563
0.5031	
	563
0.4468	
	560
0.3908	
	560
0.3348	
	561
0.2787	
	562
− 0.2225	

λ Sagittarii

+ 1.4206	
	538
1.4744	
	538
1.5282	
	539
1.5821	
	538
1.6359	
	536
1.6895	
	537
+ 1.7432	

σ Sagittarii

1810	+ 3.7825
	533
20	3.8358
	530
30	3.8888
	532
40	3.9420
	530
50	3.9950
	530
60	4.0480
	529
70	+ 4.1009

ℓ Piscis Aust.

+ 19.0537	
	145
19.0682	
	137
19.0819	
	140
19.0959	
	138
19.1097	
	135
19.1232	
	134
19.1366	

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Declination of southern stars from Pulcova, Gord Hope, Melbourne and St. Helena,

	h	m	S 1845			30(dδ/dt) 1860			S 1875.	120(dδ/dt) 1815			S 1755.	76(dδ/dt) 1897½			S 1800		
			°	′	″	″	°	′	″	″	°	′	″	″	″	°	′	″	°	′	″
β Ceti	0	37	−18	50	19.03	+9	−18	40	24.46	−39	−19	20	6.94	−24	47.78	−19	5	12.24			
α Sculptoris	0	52	−30	11	48.25	+9	−30	2	2.86					−24	25.13	−30	26	27.99			
α Leporis	5	27	−17	56	16.50	+1	−17	54	49.05	−6	−18	0	59.61	−3	45.15	−17	58	34.20			
α Columbae	5	35	−34	9	38.03	+1	−34	8	32.63	−4	−34	13	9.95	−2	47.63	−34	11	20.26			
ζ Leporis	5	39	−14	53	3.90	+0	−14	52	13.08	−3	−14	55	57.12	−2	13.72	−14	54	26.80			
β Columbae	5	46	−35	49	49.40	+0	−35	49	1.04					−2	6.15	−35	51	7.19			
γ Columbae	5	53	−35	18	13.87	+0	−35	17	54.37					−0	54.02	−35	18	48.37			
δ Columbae	6	3	−37	14	5.80	−0	−37	14	12.67					+0	12.08	−37	14	0.59			
β Canis Maj	6	15	−17	53	1.65	−0	−17	53	45.54	+2	−17	51	10.38	+1	43.42	−17	52	2.13			
α Canis Maj	6	39	−16	30	28.83	−2	−16	32	47.55	+8	−16	23	51.87	+5	41.25	−16	27	6.30			
ε Canis Maj	6	54	−28	45	54.87	−2	−28	48	13.68	+8	−28	39	16.44	+5	41.48	−28	42	32.20			
γ Canis Maj	6	57	−15	24	31.90	−2	−15	27	1.36	+9	−15	17	24.04	+6	7.43	−15	20	53.93			
δ Canis Maj	7	3	−26	9	4.80	−2	−26	11	47.11	+10	−26	1	16.51	+6	39.90	−26	5	9.21			
η Canis Maj	7	19	−29	0	17.67	−3	−29	3	39.57	+13	−28	50	29.49	+8	19.35	−28	55	20.22			
ι Navis	8	2	−23	57	40.75	−5	−23	56	43.36	+19	−23	36	39.84	+12	31.12	−23	44	12.24			
ν Hydrae	10	18	−16	2	49.05	−9	−16	11	57.55	+38	−15	33	55.59	+22	47.25	−15	49	10.30			
α Antliae	10	21	−30	16	50.83	−9	−30	25	54.16					+22	35.35	−30	3	18.61			
δ Crateris	11	11	−14	56	24.02	−9	−15	6	9.28	+38	−14	27	20.80	+24	16.73	−14	41	52.55			
α Corvi	12	2	−23	57	57.95	−10	−24	1	54.77	+40	−23	21	53.01	+25	7.20	−23	36	47.57			
ε Corvi	12	3	−21	45	27.63	−10	−21	55	28.89	+40	−21	15	23.01	+25	3.38	−21	30	25.51			
β Corvi	12	27	−22	32	20.42	−9	−22	42	19.91	+40	−22	2	18.50	+24	59.62	−22	17	20.32			
δ Centauri	13	59	−35	36	14.30	−9	−35	45	16.55	+36	−35	8	53.75	+22	39.98	−35	22	36.57			
α² Librae	14	43	−15	23	38.60	−7	−15	31	15.92	+30	−15	0	29.36	+19	7.50	−15	12	8.42			
β Lupi	15	12	−40	4	54.03	−6	−40	11	36.51	+27	−39	44	23.55	+16	53.40	−39	54	43.11			
β Scorpii	15	52	−22	10	31.82	−5	−22	15	50.78	+21	−21	54	11.18	+13	24.82	−22	2	25.96			
δ Scorpii	16	58	−19	22	34.22	−5	−19	27	41.75	+20	−19	6	47.99	+12	56.18	−19	14	45.57			
α Scorpii	16	21	−26	4	57.33	−4	−26	9	10.50	+17	−25	51	51.42	+10	39.38	−25	58	31.12			
δ Ophiuchi	17	18	−24	1	36.65	−2	−24	3	50.35	+8	−23	55	22.75	+4	53.10	−23	58	37.25			
γ² Sagittarii	17	57	−30	25	10.20	−0	−30	25	25.47	+1	−30	23	54.15	+0	54.53	−30	24	30.94			
μ Sagittarii	18	6	−21	5	36.32	+0	−21	5	22.46	−0	−21	5	49.82	−0	25.80	−21	5	48.26			
λ Sagittarii	18	18	−25	30	3.50	+0	−25	29	20.83	−2	−25	31	44.87	−1	41.70	−25	31	1.73			
σ Sagittarii	18	47	−26	28	59.60	+1	−26	27	0.56	−7	−26	34	28.84	−4	50.63	−26	31	51.19			
π Sagittarii	19	2	−21	15	51.63	+2	−21	13	13.17	−10	−21	23	19.89	−6	27.75	−21	19	40.92			
β Piscis Aust	22	24	−33	8	19.45	+9	−32	57	12.46	−36	−33	35	29.74	−22	44.18	−33	21	56.64			
ε Piscis Aust	22	33	−27	51	2.20	+9	−27	41	45.31	−36	−28	18	43.39	−23	9.30	−28	4	54.61			
α Piscis Aust	22	50	−30	26	33.13	+9	−30	17	4.84	−37	−30	54	50.16	−23	38.93	−30	40	43.77			
β Sculptoris	23	42	−28	59	14.90	+9	−28	49	18.23	−39	−29	29	3.41	−25 −24	41.23 −50.71	−29	14	59.42 −8.77			

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	α h	α m	$\frac{d\alpha}{dt}$ 1870	$\frac{d\alpha}{dt}+\mu$ 1870	$3(\frac{d\alpha}{dt}+\mu)$ 1870	δ 1875 °	′	″	δ 1872 °	′	″	$45(\frac{d\alpha}{dt}+\mu)$ 1852½ ′	″	$40(\frac{d\alpha}{dt}+\mu)$ 1855. ′	″	$35(\frac{d\alpha}{dt}+\mu)$ 1857.5 ′	″
ω Ceti	0	37	+19.791	+19.811	−59.43	−18	40	24.46	−18	41	23.89	−14	52.14	−13	12.92	−11	32.73
2 Sculptoris	0	52	+19.532	+19.502	−58.51	−30	2	2.86	−30	3	1.37	−14	38.46	−13	0.72	−11	23.02
α Lrtoris	5	27	+2.877	+2.877	−8.63	−17	54	49.05	−17	54	57.68	−2	12.48	−1	57.36	−1	42.37
α Columbae	5	35	+2.189	+2.149	−6.45	−34	8	32.63	−34	8	39.08	−1	39.12	−1	27.84	−1	16.58
β Lrtoris	5	39	+1.655	+1.655	−4.96	−14	52	13.08	−14	52	18.04	−1	17.52	−1	8.52	−0	59.60
β Columbae	5	46	+1.191	+1.681	−4.74	−35	49	1.04	−35	49	5.78	−1	13.56	−1	5.12	−0	56.70
γ Columbae	5	53	+0.619	+0.619	−1.86	−35	17	54.37	−35	17	56.23	−0	30.30	−0	26.64	−0	23.03
δ Columbae	6	3	−0.269	−0.259	+0.78	−37	14	12.67	−37	14	11.89	+0	9.30	+0	8.56	+0	7.73
β Canis Maj	6	15	−1.479	−1.499	+4.50	−17	53	45.54	−17	53	41.04	+1	4.62	+0	57.80	+0	50.89
α Canis Maj	6	39	−3.431	−4.671	+14.01	−16	32	47.55	−16	32	33.54	+3	27.30	+3	4.60	+2	41.87
ε Canis Maj	6	54	−4.640	−4.660	+13.98	−28	48	13.68	−28	47	59.70	+3	27.12	+3	4.40	+2	41.67
γ Canis Maj	6	57	−5.010	−5.020	+15.06	−15	27	1.36	−15	26	46.30	+3	42.90	+3	18.52	+2	54.05
δ Canis Maj	7	3	−5.452	−5.442	+16.33	−26	11	49.11	−26	11	30.78	+4	2.16	+3	35.60	+3	8.93
η Canis Maj	7	19	−6.772	−6.762	+20.29	−29	3	39.57	−29	3	19.28	+5	1.80	+4	28.56	+3	55.27
ι Navis	8	21	−10.178	−10.118	+30.35	−23	56	43.36	−23	56	13.01	+7	32.82	+6	42.84	+5	52.76
μ Hydrae	10	18	−18.170	−18.280	+54.84	−16	11	57.55	−16	11	2.71	+13	41.10	+12	10.04	+10	38.96
α Antliae	10	21	−18.218	−18.248	+54.74	−30	25	54.16	−30	24	54.42	+13	34.14	+12	4.12	+10	33.74
ν Crateris	11	11	−19.630	−19.450	+58.35	−15	6	9.28	−15	5	10.93	+14	34.62	+12	57.52	+11	20.40
α Corvi	12	2	−20.052	−20.092	+60.28	−24	1	54.77	−24	0	54.19	+15	4.26	+13	23.80	+11	43.29
ε Corvi	12	3	−20.051	−20.041	+60.12	−21	55	28.89	−21	54	28.77	+15	1.98	+13	21.72	+11	41.50
β Corvi	12	27	−19.908	−19.978	+59.93	−22	42	19.94	−22	41	20.01	+14	59.52	+13	19.48	+11	39.51
δ Centauri	13	59	−17.409	−18.049	+54.15	−35	45	16.55	−35	44	22.40	+13	34.26	+12	3.52	+10	32.87
α^2 Librae	14	43	−15.154	−15.214	+45.64	−15	31	15.92	−15	30	30.28	+11	27.06	+10	10.40	+8	53.82
β Lupi	15	12	−13.364	−13.374	+40.02	−40	11	34.51	−40	10	56.49	+10	5.16	+8	57.48	+7	49.91
β Scorpii	15	52	−10.578	−10.588	+31.76	−22	15	50.78	−22	14	19.02	+7	59.94	+7	6.16	+6	12.50
ω Scorpii	15	58	−10.187	−10.207	+30.62	−19	27	41.75	−19	27	11.13	+7	42.78	+6	50.92	+5	59.17
ζ Scorpii	16	21	−8.362	−8.392	+25.18	−26	9	10.50	−26	8	45.32	+6	21.42	+5	38.56	+4	55.82
ζ Ophiuchi	17	18	−3.617	−3.737	+11.31	−24	3	30.35	−24	3	19.04	+2	52.32	+2	32.64	+2	13.10
γ^2 Sagittarii	17	57	−0.223	−0.453	+1.36	−30	25	25.47	−30	25	24.11	+0	24.78	+0	21.48	+0	18.30
μ Sagittarii	18	6	+0.524	+0.514	−1.54	−21	5	22.46	−21	5	24.00	−0	19.02	−0	17.40	−0	15.68
λ Sagittarii	18	18	+1.743	+1.503	−4.51	−25	29	20.03	−25	29	24.54	−1	3.42	−0	56.92	−0	50.26
σ Sagittarii	18	47	+4.102	+4.022	−12.07	−26	27	0.56	−26	27	12.63	−2	56.76	−2	37.64	−2	18.42
π Sagittarii	19	2	+5.362	+5.332	−16.00	−21	13	13.17	−21	13	29.17	−3	55.98	−3	30.24	−3	4.38
β Piscis Aust.	22	24	+18.323	+18.253	−54.76	−32	59	12.46	−33	0	7.22	−13	39.84	−12	8.96	−10	38.02
ε Piscis Aust.	22	33	+18.640	+18.580	−55.74	−27	41	45.31	−27	42	41.05	−13	54.78	−12	22.16	−10	49.53
α Piscis Aust.	22	50	+19.140	+18.960	−56.88	−30	17	4.84	−30	18	1.72	−14	12.00	−12	37.44	−11	2.90
δ Sculptoris	23	42	+19.992	+19.892	−59.68	−28	49	18.23	−28	50	17.91	−14	54.90	−13	15.52	−11	36.08

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S 1830			S 1835			S 1840		
°	'	"	°	'	"	°	'	"
−18	55	16.60	−18	53	37.38	−18	51	58.19
−30	16	41.32	−30	15	3.58	−30	13	25.88
−17	57	1.53	−17	56	46.41	−17	56	31.42
−34	10	11.75	−34	10	0.47	−34	9	49.21
−14	53	30.60	−14	53	21.60	−14	53	12.68
−35	50	14.60	−35	50	6.16	−35	49	57.74
−35	18	24.67	−35	18	21.01	−35	18	17.40
−37	14	3.37	−37	14	4.11	−37	14	4.94
−17	52	40.92	−17	52	47.74	−17	52	54.65
−16	29	20.25	−16	29	42.95	−16	30	5.68
−28	44	46.56	−28	45	9.28	−28	45	32.01
−15	23	18.46	−15	23	42.84	−15	24	7.31
−26	7	44.95	−26	8	11.51	−26	8	38.18
−28	58	37.77	−28	59	11.01	−28	59	44.30
−23	49	10.54	−23	50	0.52	−23	50	50.60
−15	58	16.45	−15	59	47.51	−16	1	18.59
−30	12	19.72	−30	13	50.04	−30	15	20.42
−14	51	34.66	−14	53	11.76	−14	54	48.88
−23	46	52.51	−23	48	30.97	−23	50	11.48
−21	40	26.91	−21	42	7.17	−21	43	47.39
−22	27	20.42	−22	29	0.46	−22	30	40.43
−35	31	42.29	−35	33	13.03	−35	34	43.68
−15	19	48.86	−15	21	5.52	−15	22	22.10
−40	1	31.35	−40	2	39.03	−40	3	46.60
−22	7	50.84	−22	8	44.62	−22	9	38.28
−19	19	58.97	−19	20	50.83	−19	21	42.58
−26	2	49.08	−26	3	31.94	−26	4	14.68
−24	0	38.03	−24	0	57.71	−24	1	17.25
−30	25	0.69	−30	25	3.99	−30	25	7.17
−21	5	41.48	−21	5	39.86	−21	5	38.14
−25	30	23.45	−25	30	16.95	−25	30	10.29
−26	29	57.32	−26	29	38.20	−26	29	18.98
−21	17	9.15	−21	16	43.41	−21	16	17.55
−33	12	52.30	−33	11	21.92	−33	9	50.48
−27	55	40.09	−27	54	7.47	−27	52	34.84
−30	30	16.84	−30	29	42.28	−30	28	7.74
−29	4	13.13	−29	2	33.95	−29	0	54.31

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A Cass $\alpha = 1^h\ 16^m$

	$\frac{d\alpha}{dt}$		$\frac{d\delta}{dt}$	
	α +13		" +1	
1800	+4.22580		+18.9505	
15	4.24648	+2068	18.9180	−325
30	4.26733	+2085	18.8851	−329
45	4.28825	+2092	18.8519	−332
60	4.30934	+2109	18.8182	−337
	+112		+2	

48 Lyncis $\alpha = 10\ 24$

	+12		−1	
1800	+3.14556		−18.3379	
15	.14455	−101	.3643	−264
30	3.14354	101	18.3906	263
45	.14258	99	.4165	259
60	3.14156	99	18.4423	258
	+11		−2	

B.A.C. 4513 $\alpha = 13\ 21$

1800	+3.01081		−19.9725	
15	3.00938	143	19.7649	76
30	3.00797	141	19.9575	74
45	.00657	140	19.9502	73
60	3.00519	138	19.9430	72

5 Ursae Min. $\alpha = 14\ 28$

1800	+0.96628		−18.5944	
15	.97914	+1286	.5986	−72
30	0.99181	1267	18.5966	20
45	1.00426	1245	.5973	7
60	1.01652	1226	18.5979	6

3 Ophiuchi $\alpha = 16\ 26$

	+13		−0	
1800	+3.28918		−7.9861	
15	3.29054	+136	7.9192	669
30	3.29191	137	7.8523	669
45	.29326	135	7.7855	668
60	3.29461	135	7.7186	669
	+11		−1	

ν Ceti $\alpha = 1^h\ 50^m$

	$\frac{d\alpha}{dt}$		$\frac{d\delta}{dt}$	
	α +12		" +1	
	+2.81823		+17.7895	
	818 01	−22	.7393	−302
	2.81780	21	17.7090	303
	.81760	20	.6787	303
	2.81741	19	17.6483	304
	+11		+2	

54 Leonis $\alpha = 10\ 44$

	+13		−1	
	+3.27817		−18.9882	
	.27553	−264	19.0105	−223
	3.27293	260	19.0321	216
	.27034	259	19.0529	208
	3.26776	258	19.0730	201
	+11		−2	

25 Can. Ven. $\alpha = 13\ 26$

	+2.95217		−19.9272	
	2.93841		19.8863	
	2.93389		19.8678	

ζ^2 Librae $\alpha = 14\ 40$

	+12		−1	
	+3.30295		−15.3757	
	3.30528	+233	.3279	+478
	3.30762	234	15.2802	477
	3.30996	234	.2321	481
	3.31230	234	15.1841	480
	+11		−2	

γ^2 Sagittarii $\alpha = 17\ 53$

	+13		−0	
	+3.85411		−0.6154	
	85457	+46	.5313	841
	3.85503	43	0.4470	843
	.85541	41	.3629	841
	3.85579	38	0.2787	842
	+12		−0	

η Ursae $\alpha = 9\ 38^m$

	$\frac{d\alpha}{dt}$		$\frac{d\delta}{dt}$	
	α +13		" −1	
	+4.17550		−16.3513	
	.16580	−970	.4026	−513
	4.15629	961	16.4536	510
	14673	956	.5041	505
	4.13715	958	16.5543	502
	+12		−2	

α Virginis $\alpha = 13\ 14$

	+3.08484		−20.0185	
	.08660	176	20.0123	+62
	3.08736	176	20.0062	61
	.08864	128	19.9998	64
	3.08992	128	19.9932	66

h Centauri $\alpha = 13\ 42$

	+3.21473		−19.7302	
	21811	+368	.7135	167
	3.22211	370	19.6972	163
	22583	372	.6813	159
	3.22954	371	19.6658	155

α Scorpii $\alpha = 16\ 17$

	+13		−0	
	+3.65659		−8.7016	
	.65891	+232	8.6288	728
	3.66123	232	8.5558	730
	.66354	231	8.4827	731
	3.66585	231	8.4093	734
	+11		−1	

σ Sagittarii $\alpha = 18\ 43$

	+13		+0	
	+3.72556		+3.7294	
	.72485	−71	3.8100	+806
	3.72414	71	3.8900	800
	.72341	73	3.9693	793
	3.72268	73	4.0481	788
	+11		+0	

Precession constants in Right Ascension and Declination for stars not Fundamental, continued from previous book.

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50 Draconis $\alpha = 18\ 53$ (h m)

	$\frac{d\alpha}{dt}$		$\frac{d\delta}{dt}$	
	s +10		" +0	
1800	−1.85548		+4.5742	
15	1.84320	−772	4.5355	.387
30	1.87128	808	4.4959	.396
45	1.86284	844	.4555	.404
60	1.88856	882	4.4144	.412
	+9		+0	

d Sagittarii $\alpha = 19\ 6$ (h m)

	$\frac{d\alpha}{dt}$		$\frac{d\delta}{dt}$	
	s +13		" +0	
	+3.51853		+5.6908	
	.51768	−85	5.7645	+737
	3.51684	84	5.8378	733
	.51598	86	.9108	730
	3.51512	86	5.9835	727
	+11		+1	

κ Aquilae $\alpha = 19\ 26$ (h m)

	$\frac{d\alpha}{dt}$		$\frac{d\delta}{dt}$	
	s +13		" +0	
	+3.23246		+7.3622	
	.23186	−60	.4274	+652
	3.23125	61	7.4925	651
	.23063	62	.5575	650
	3.22999	64	7.6223	648
	+11		+1	

ε Sagittae $\alpha = 19\ 28$

	+12		+0	
1800	+2.71363		+7.5335	
15	.71367	+4	+7.5881	+546
30	2.71370	3	7.6426	545
45	7.1371	1	7.6969	543
60	2.71372	1	7.7511	542
	+10		+1	

ζ' Capricorni $\alpha = 20\ 6$

	+13		+1	
	+3.33483		+10.5222	
	33361	−122	.5835	+613
	3.33238	123	10.6447	612
	33115	123	.7057	610
	3.32992	123	10.7665	608
	+11		+1	

ζ² Capricorni $\alpha = 20\ 7$

	+13		+1	
	+3.33535		+10.5517	
	.33412	−123	10.6130	+613
	3.33289	123	10.6741	611
	.33166	123	10.7350	609
	3.33042	124	10.7958	608
	+11		+1	

π Capricorni $\alpha = 20\ 16$

	+13		+1	
1800	+3.44836		+11.2069	
15	.44667	−169	11.2686	+617
30	3.44498	169	11.3301	615
45	.44328	170	11.3912	611
60	3.44159	169	11.4524	612
	+10		+1	

12 Year Cat. 1879 $\alpha = 20\ 56$

	−2.26822		+13.9512	
	23372	−4437	.9107	405
	2.35723	4464	13.8708	399
	40213	4490	.8314	394
	2.44729	4516	13.7923	395

B.A.C. 7803 $\alpha = 22\ 13$

	+12		+1	
	+2.51595		+17.9341	
	2.51791	196	17.9574	233
	2.51986	195	17.9806	232
	2.52180	194	18.0035	229
	2.52373	193	18.0260	225
	+10		+2	

226 B. Cephei $\alpha = 22\ 29$

	+11		+1	
1800	+1.10657		+18.4889	
15	1.10209	−448	.4971	+82
30	1.09744	465	18.5051	80
45	1.09269	475	.5128	77
60	1.08771	498	18.5204	76
75	1.08249	522	18.5129	75
	+9		+2	

α Piscis Aust. $\alpha = 22\ 47$

	+13		+1	
	+3.31945		+19.0387	
	.31622	−323	19.0596	+209
	3.31301	321	19.0814	218
	.30982	319	19.1040	226
	3.30664	318	19.1274	234
	+11		+2	

Groom 4163 $\alpha = 23\ 45$

	+12		+1	
	+2.78286		+20.0180	
	2.79555	+1269	20.0304	+24
	2.80828	1273	20.0227	23
	2.82104	1276	20.0248	21
	2.83385	1281	20.0266	18
	+11	1286	+2	15
	2.84671		20.0281	
	+11		+2	

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22

ζ Virginis α = 13 14

	$\frac{d\alpha}{dt}$ (s +12)		$\frac{d^2\alpha}{dt^2}$ (" −1)	
1800	+3.14592		−19.5041	
		170		+235
15	3.14762		18.9806	
		171		238
30	3.14933		18.9568	
		172		243
45	.15105		18.9325	
		172		247
60	3.15277		18.9078	
	+11		−2	

h Centauri α = 13 42

	+13		−1	
1800	+3.41377		−18.1153	
		+403		+337
15	.41780		18.0816	
		403		338
30	3.42183		18.0478	
		404		340
45	.42587		18.0138	
		404		342
60	3.42991		17.9796	
	+11		−2	
75				

B.A.C. 4513 α = 13 21

	$\frac{d\alpha}{dt}$ (s +12)		$\frac{d^2\alpha}{dt^2}$ (" −1)	
	+2.83012		−18.8087	
		−74		+239
	.84938		.7848	
		72		236
	2.84866		−18.7612	
		71		232
	.84795		.7380	
		69		229
	2.84726		−18.7151	
	+10		−2	

δ Ursae Min. α = 14 28

	+11		−1	
	−0.30745		−16.0131	
		+1938		+29
	.28807		16.0160	
		1911		25
	0.26896		16.0185	
		1882		22
	.25014		.0207	
		.1855		18
	0.23159		16.0225	
	+7		−2	
	.21331	.1828	16.0239	14

25 Can. Ven. α = 13 28

	$\frac{d\alpha}{dt}$ (s +12)		$\frac{d^2\alpha}{dt^2}$ (" −1)	
	+2.68546		−18.5810	
		−133		+235
	.68413		.5575	
		.133		237
	2.68280		18.5338	
		.130		238
	.68150		.5100	
		.130		240
	2.68020		18.4860	
	+10		−2	

Pi 0 207 α = 0 43

1800
15
30
45
60

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35
37
38
40

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Tabular values of Clock

Date	R.A. Obs.	Limits of Obs.	n	No Obs.	ΔT+m	No Obs.	Hourly rate	Micrometer reading for Tenth Coll.	Reg	No Obs.	Clock corrections 10	11
Apr 26	12h 20m R.	——	-.040s	1	+3.31s	3	+.002	35.607	-7.73"	3		
29	12 10 R.		.089	1	+3.42	1	-.003	35.630	-6.30	2		
30	12 20 R		.090	—	+3.29	2	-.004	35.630	-7.45	2		
May 1	12 40 R.		.105	1	+3.21	6	-.005	35.615	-8.92	5		
2	12 20 M.		.149	2	+3.06	6	-.003	35.618	-7.07	6		
9	13 10 R		.106	1	+3.02	8	-.005	—	-9.79	7		
10	12 50 M		.109	1	+2.92	8	-.001	35.626	-14.08	8		
11	12 40 R		.132	2	+2.99	6	-.002	35.626	-15.27	6		
14	13 20 M		.096	1	+2.43	5	-.006	35.630	-15.48	5		
June 6	13 10 R		.391	1	-0.11	4	-.009	42.596	-24.73	3		
12	14 00 R		.420	1	-1.42	2	-.008	42.351	-1 40.40	1		
14	14 00 M		.399	1	-1.71	5	-.006	42.340	-1 40.48	5		
17	14 00 R		.455	2	-2.13	3	-.007	42.340	-1 38.92	4		
19	14 30 R		.408	1	-2.50	6	-.004	39.966	+1 2.05	6		
21	14 10 M		.481	2	-2.50	9	-.002	44.096	+49.67	8		
25	14 20 R		.421	4	-2.84	10	-.003	44.104	+49.81	10		
26	14 40 M		.423	3	-2.92	6	-.003	44.145	+48.61	7		
27	14 20 R		.398	5	-3.02	6	-.007	44.132	+48.41	8		
29	14 00 M.		.408	1	-3.55	2	-.007	—	+49.10	1		
30	14 40 M.		.400	2	-3.65	6	-.006	44.132	+49.02	4		
July 1	14 40 M.		.410	3	-3.83	5	-.007	—	+49.97	6		
3	14 40 M.		.422	2	-4.15	6	-.015	—	+48.69	7		
7	15 10 R		.500	2	-6.36	6	-.023	44.147	+49.08	6		
8	15 20 R.		.500	1	-6.93	4	-.022	——	+49.92	5		

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errors and Instrumental Constants.

and $B+\frac{1}{2}T+j$ for even hours of R.A.

12h	13h	14h	15h	16h	17h	Date.	Variations of $(B+\frac{1}{2}T+j)$ for tenths of hours. 1	2	3	4	5	6	7	8	9
+3.31			+3.32			Apr. 26									
+01512															
+3.42			+3.41			29									
+00264															
+3.29		+3.28				30									
+00449															
+3.22	+3.21	+3.21				May 1									
+00087															
+3.06			+3.05			2									
+00092															
	+3.02		+3.01			9									
+00538															
	+2.92					10									
+00997															
	+2.99			+2.98		11									
+00289															
	+2.43	+2.42	+2.42			14									
+00144															
-00006						June 1									
-0.10	-0.11	-0.12	-0.13			June 6									
-01367															
	-1.41	-1.43	-1.44			12									
	-01137	-01071	-01003			12	7	14	21	28	35	42	49	56	63
	-1.71	-1.71	-1.72			14									
	-00396	-00390	-00384	-00378		14	1	1	2	3	4	5	5	6	6
	-2.12	-2.13	-2.14			17	1								
		-00143	-00016	+00112		17	13	25	38	50	63	76	88	101	114
	-2.49	-2.50	-2.50	-2.51		19									
		-00575	-00406	-237		19	17	34	51	68	85	102	119	136	153
	-2.50	-2.50	-2.50			21									
		+00148	+00138	+00128		21	1	2	3	4	5	6	7	8	9
	-2.84	-2.84	-2.84	-2.85		25									
		-00568	-00500	-00432		25	7	14	21	28	35	42	49	56	62
		-2.92	-2.92	-2.92		26									
		-01705	-01442	-01178		26	26	52	79	105	131	158	184	210	236
	-3.01	-3.02	-3.03	-3.03		27									
		-01189				27									
	-3.54	-3.55	-3.56			29									
		-01239	-01033	-00827	-00620	29	21	42	63	84	104	135	156	177	
		-3.65	-3.65	-3.66		30									
			-00513	-00268	-00023	30	25	49	74	98	123	147	171	196	221
		-3.87	-3.83	-3.84		July 1									
		+00045	+00045	+00045	+00045	1	00								00
	-4.12	-4.13	-4.15	-4.16	-4.18	3									
		-01394	-01342	-01290	-01238	3	5	10	16	21	26	31	36	42	47
		-6.34	-6.36	-6.38	-6.40	7									
			-02023	-01858		7	16	33	49	66	82	98	115	131	147
		-6.91	-6.92	-6.94		8									
				-01652		8									
11	12	13	14	15	16	17	1	2	3	4	5	6	7	8	9

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Tabular values of Clock errors and

Date	R.A Obs.	Limits of Obs.	n	No Obs.	ΔT_{4m}	No Obs	Hourly rate	Microm readings for North Cell.	Reg	No Obs.	Clock corrections 13	14
			s		s		s					
July 9	15 40 M6		.537	2	-7.42	3	-.027		+47.25	2		-7.37
10	15 10 R		.500	2	-8.20	4	-.026		+47.80	5	-8.15	.17
12	15 20 R		.535	2	-9.14	6	-.020		+49.09	7	-9.09	11
13	15 30 M6		.612	3	-9.62	10	-.019		+48.92	14	-9.57	59
20	15 30 M6		.477	2	-12.69	11	-.015		+47.52	12		-12.66
22	16 04 R		.512	1	-13.30	5	-.007		+47.22	6		
23	15 40 R		.501	2	-13.87	14	-.004		+48.16	16		-13.36
27	16 10 R		.525	2	-13.92	5	-.008		+48.31	7		-13.90
Aug 2	16 40 R		.508	2	-15.39	14	-.008		+47.27	15		
3	16 10 R		.579	3	-15.52	12	-.009		+45.73	11		-15.50
5	16 50 R		.573	3	-16.27	8	-.015		+46.88	9		
6	16 40 R		.526	5	-12.63	10	-.014		+46.26	12		
9	17 10 R		.573	3	-13.53	4	-.013		+45.98	6		
10	16 40 M6		.538	4	-13.86	8	-.009		+45.58	12		
11	16 50 M6		.556	1	-13.95	9	-.007		+44.61	9		
13	16 50 R		.553	3	-14.46	4	-.011		+44.67	3		
17	18 00 M6		.550	1	-15.32	3	-.010		+45.55	2		
18	18 30 M6		.528	1	-15.74	9	-.008		+44.93	3		
19	17 40 M6		.500	2	-15.86	2	-.009		+48.10	1		
22	17 40 M6		.450	3	-16.65	3	-.010		+48.20	4		
28 29	19 40 R		.497	2	-18.10	1	-.012		+46.85	2		
31	17 50 M6		.613	3	-19.04	4	-.014		+47.52	4		
Sept. 1	17 50 R		.622	2	-19.38	3	-.013		+49.97	3		
2	18 30 R		.459	2	-19.67	6	-.011		+47.56	5		
3	18 00 M6		.556	4	-19.92	5	-.011		+48.15	6		

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Instrumental Constants.

(B+T+) for even hours of R.A.

	15h	16h	17h	18h	19h	20h	21h
4							
37	−7.40	43	.45				
		−02579					
17	−8.20	.23	25				
		−01449					
11	9.13	15	17	19			
	−02200	−02027	−01854				
39	.61	.63	.65	67			
		−01456					
.66	67	69	.71	.72			
		−01026					
	−13.29	.30	.31				
		−00645	−00476	−307			
36	36	.37	.37	38			
	−00348	−00306	−00263	−220			
70	.91	.92	.93				
		−01485	−01320				
	−15.37	.38	.39	.40			
		−1756	−01622	−01487	−01353.		
50	.51	.52	.53	.54			
		−2283	−02201	−02119	−02038		
	−16.24	25	.27	.28	30		
			−02197	−02069	−01941		
		−1262	.64	.65	67		
			−2297	−01957	−01617		
	−13.50	51	.53	.54	56		
			−1627				
	−13.84	85	.86	.87	88		
				−01380			
		−13.94	95	95	96		
		−01349	−01249	−01149	−01050	−9 51	
	−14.44	.45	46	47	48		
		−01017	−00914	−00792	−670		
		−1550	51	52	53	54	
			−01243	−01094	−00945	−00796	
			−15.73	74	75	76	
			−01349	−01193	−01038	−00883	
			−15.85	.86	87	88	
				−00504	−00352	−00200	
			−1668	69	70	71	
			−00026	−00107	−00188	−00268	
				−17.99	18.00	.01	02
				−00828	−00734	−00640	−00546
				−01595			
		−19.01	.03	.04	05	07	
				−00911	−00732	−00552	
		−19.35	37	.38	39	40	
				+00028	+00075	+00122	
			−19.66	67	68	69	70
				−00801	−00695	−00590	−00485
		−1990	.91	92	93	94	
				−00571	−530	−00488	

Date — Variations of (B+T+) for tenths of hours.

Date		1	2	3	4	5	6	7	8	9
July	9									
	9									
	10									
	10									
	12									
	12	17	35	52	69	86	103	120	138	156
	13									
	13									
	20									
	20									
	22									
	22	17	34	51	68	85	102	119	136	153
	23									
	23	4	8	12	17	21	26	30	34	38
	27									
	27	165	33	49	66	82	99	115	132	148
Aug	2									
	2	13.5	27	40	54	67	81	94	108	121
	3									
	3	8	16	24	32	41	49	37	65	74
	5									
	5	13	26	39	52	65	78	81	94	106
	6									
	6	34	68	102	136	170	204	238	272	306
	9									
	9									
	10									
	10									
	11									
	11	10	20	30	40	50	60	70	80	90
	13									
	13	11	22	33	44	56	67	78	89	100
	17									
	17	15	30	45	60	75	90	105	120	135
	18									
	18	15.5	31	46	62	77	93	108	124	139
	19									
	19	15.2	30	46	61	76	91	106	121	136
	22									
	22	8	16	24	32	40	48	56	64	72
	28									
	28									
	29	9.4	19	28	38	47	57	66	76	85
	29									
	31									
	31	18	36	54	72	90	108	126	144	162
Sept.	1									
	1	4.7	10	15	20	24	29	34	38	42
	2									
	2	10	21	31	42	52	63	73	84	94
	3									
	3	4	8	12	16	20	24	28	32	36

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Tabular values of clock errors and

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Date	R.A.	Obs.	Limits of Obs.	n	No. Obs.	ΔI + m	No. Obs.	Hourly rate s	Micrometer reading for North Coll.	No.	No. Obs.	Clock corrections and
												16h 17h 18h 19h
Sept. 6	18	20	R	-.564	2	-20.74	9	-.014	+4763	8		20.73 -20.74 -20.75
												-14.68 13.86
7	18	20	R	.547	3	-21.17	9	-.012	+47.87	9		2116 21.17 21.18
												-14.35 -08.74
8												+06.78 +07.72
10	18	30	M	+.449	3	-21.63	5	-.007	+48.10	4		2162 21.63 21.64
18	18	20	R	-.041	1	-23.17	8	-.007	1 42.77	3		23.16 23.17 23.18
												+06.15 +07.69 +09.23
21	18	40	R	+.011	1	-23.58	4	-.003	+55.25	5		23.58 23.58
												+08.70 +10.51
23	19	10	M	+.040	1	-23.57	4	-.003	1 18.21	11		23.57 23.57
												-07.01
24	19	10	R	+.027	3	-23.73	9	-.007	1 18.86	7		23.72 23.73
												-15.57 -15.04
25	19	10	R	+.045	4	-23.95	7	-.009	1 19.16	10		23.94 23.95
												-04.26
27	20	40	M	+.112	2	-5.88	9	-.008	1 16.78	8		-5.87
28	19	40	R	+.100	1	-6.07	5	-.004	1 19.32	5		-6.07
												-02.29
30	21	10	M	+.082	2	-37.11	6	000	62.61	9		
Oct. 3	22	40	R	+.057	2	-6.15	5	-.004	61.57	3		
4	21	40	R *H.W. from 21h 4m to 22h 10m	+.059	5	-6.36	21	-.009	61.76	27		-04.79
5	20	10	R	+.048	4	-6.44	11	-.007	62.62	13		-6.43
												-08.32
8	19	50	R from 18h 59m to 20h 54m	+.065	5	-6.87	10	-.002	62.21	14		-6.87
												+07.22
8	21	40	M from 20h 38m to 22h 40m	+.065	6	-6.97	10	-.002	60.31	14		
8	22	40	R 22h 15m to 22h 58m	+.065	1	-6.91	10	-.002	61.41	10		
9	20	30	R 20h 05m to 20h 37m	+.025	—	-6.82	6	-.002	62.87	6		
9	20	50	M 20h 41m to 21h 18m	+.025	3	-6.93	6	-.002	61.59	7		
9	23	10	R 22h 45m to 23h 19m	+.003	2	-6.89	4	-.002	62.14	5		
9	22	40	M 22h 22m to 22h 45m	+.059	3	-6.98	5	-.002	61.62	4		
15	20	32	R	+.079	—	-7.48	5	-.006	65.73	6		-7.47
16	19	40	R 19h 11m to 19h 45m	+.079	2	-8.21	5	-.005	63.63	7		+04.73
16	22	0	M 21h 59m to 22h 26m	+.079	2	-7.79	5	-.005	61.01	13		
16	23	50	M 23h 14m to 23h 46m	+.079	3	-7.84	4	-.005	61.01	—		
16	20	30	R 20h 13m to 21h 50m	+.079	1	-7.71	7	-.005	62.69	9		

16h 17h 18h 19h

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Instrumental Constants.

(B+I+J) for even hours of R.A.

	20h	21h	22h	23h	0h	1h
075	-20.77					
3.86	-1383					
1.18	21.20					
74	-0302					
72	+0866	+960				
164	2.164					
	-0298					
18	23.18					
23	+1077	+1231				
58	23.58	23.59				
051	+1132	+1414				
3.57	23.67					
	-0701					
73	23.74	23.74				
04	-1450					
3.95	23.96	23.97				
26	-0299	-0171				
87	-5.87	-5.88	-5.89	-5.86		
	-0261	-0141	-0021			
07	-6.07	-6.07	-6.08			
29	+0023	+0276				
	37.11	37.11	37.11			
	+1143	+1230	+1317			
		-614	-6.14	-6.15	-6.15	-6.16
		-0639			-0639	
	-6.34	-6.35	-6.36	-6.37	-6.38	
79	-0400	-0321	-0242	-0164		
43	-6.44	-6.45	-6.45			
32	-0748	-0664	-0580			
87	-6.87	-6.87	-6.87			
22	+0800	+0878	+0955			
		-6.97	-697	-6.97		
			-6.91	-6.91	-6.91	
	-6.82	-6.82	-6.82			
	-0511	-0286	-0061	+0163		
	-6.93	-6.93	-6.93			
			-6.89	-6.89	-6.89	
			-6.98	-6.98	-6.98	
47	-7.48	-7.48	-7.49			
	+0228	+0400	+0571	0742		
	-8.21	-8.21	-8.21	-8.22 = (North Clocks)		
473	+0566	+0639	+0752	+0845	+0938	
		-7.78	-7.79	-7.79	-7.80	
			-784	-7.84	-7.85	
		-7.71	-7.71	-7.72		

Variations of (B+I+J) for tenths of hours.

Date.	.1	.2	.3	.4	.5	.6	.7	.8	.9
Sept. 6									
6	8	16	24	32	40	49	57	65	73
7									
7	56	112	168	224	280	336	392	448	504
8	9	19	27	37	46	56	65	75	84
10									
10									
18									
18	15	31	46	61	77	92	108	123	189
21									
21	18	36	54	72	90	108	126	144	162
23									
23	00								00
24									
24	5	10	16	21	26	31	37	42	48
25									
25	12	25	37	50	62	75	87	100	112
27									
27	12	24	36	48	60	72	84	96	108
28									
28	25	50	75	101	126	151	177	202	227
30									
30	8	17	25	34	42	51	59	68	77
Oct. 3									
3	00								00
4									
4	8	16	24	32	40	48	56	64	72
5									
5	8	17	25	34	42	51	59	68	77
8									
8	8	16	24	32	40	47	55	63	71
8									
8									
9									
9	22	45	67	90	112	135	157	180	203
9									
9									
9									
15									
15	17	34	51	68	86	103	120	137	155
16									
16	9	18	27	36	45	54	63	72	82
16									
16									
16									

	20h	21h	22h	23h	0h	1h		.1	.2	.3	.4	.5	.6	.7	.8	.9
9h	20h	21h	22h	23h	0h	1h										

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Tabular values of clock errors and

Clock corrections and

Date	R.A. Obs	Limits of Obs	n	Nobs	ΔI+m	Nobs	Hourly rate	Microm reading for Arctt-Colle	Rg	Nobs	19h	20h	21h
Oct. 21	20 00 R		+133	2	−7.77	7	−.000	+	+6150	8	−7.77	−7.77	−7.77
											+0337	+0526	+0715
22	19 40 R	From 19h 10m 15 20 21	.147	2	7.79	5	−.003		63.08		−7.79	−7.79	−7.79
									62.54		−414	−374	−334
23	20 30 R		.100	4	7.94	17	−.008		63.49	22	−7.93	−7.94	−7.95
	AM	20 24 15 22 45	.114	4	7.81	16					−1234	−1179	−1124
29	22 00 M		.119	5	9.40	24	−.007		61.51	28			−9.40
												+0839	+0972
30	20 30 R		200	3	9.29	9	+.005		62.41	9	−9.30	−9.39	−9.29
31	22 10 R		180	4	9.21	10	−.001		62.08	13			−9.21
Nov. 2	20 30 R	19 12 15 21 28	.192	6	9.51	14	−.003					−9.51	−9.51
	M			—	9.65	4					+0835	+0980	+1125
					9.51								
5	21 40 R		200	3	9.58	10	−.006		62.73	12		−9.59	−9.58
												+1918	+2105
6													
7	21 40 R		240	5	8.95	17	+.010		63.21	22		−8.97	−8.96
													+1385
9	22 00 R		213	3	8.61	14	+.008		63.04	16		−8.63	−8.62
													+1640
12	22 40 M		220	1	8.80	7	+.016		63.78	6			−8.03
13	22 40 R		220	2	7.39	13	+.019		63.10	12			−7.42
													+2293
19	22 00 R		350	3	5.50	8	+.013		63.05	14			−5.52
		20 1 6 0 41		2	5.52	5							
22	22 30 R		253	3	4.64	10	+.014		62.56	11			−4.66
23	22 50 R		180	5	4.48	12	+.012		61.64	12			−4.50
25	23 00 R		214	4	3.69	12	+.015		62.92	13			−3.72
28													
28	22 40 R		280	1	−2.70	12	+.018		63.69	16			−2.73
29	0 40 M		290	3	−2.13	6	+.026		63.52	9			
Dec. 1	1 50 M		385	2	−0.69	12	+.030		63.89	15			
2	1 40 M		373	1	+0.09	6	+.027		64.12	6			
5	23 18 R		373	2	+1.68	13	+.028		62.63	11			
6	22 50 R		450	3	+2.49	13	+.030		62.31	14			+2.43
6	1 30 M		370	3	+2.49	7	+.030		62.51	9			
9	2 10 R		356	3	+4.54	11	+.032		62.24	19			
11	1 40 R		371	6	+5.99	9	+.030		61.67	13			

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Instrumental Constants.

$(B+I+J)$ for even hours of R.A.

22h	23h	0h	1h	2h	3h
+0904	+1093				
−294	−254	−214	−174	−134	
−795					
−1068	−1012				
−9.40	−9.40				
+1105	+1238	+1370			
−9.29	−9.28				
−9.21	−9.21				
+0240	+0394				
−9.51					
+1271	+1416	+1562			
−9.58	−9.57				
+2293			+2062		
+2062					
−8.95	−8.94	−8.93			
+1423	+1511	+1599	+1687	+1777	
−8.61	−8.60	−8.59			
+1679	+1718	+1757	+1796	+1835	
−8.01	−8.00	−7.98	−7.97		
+2600	+2778				
−7.40	7.38	−7.36	−7.34		
+2333	+2376	+2420			
−5.50	−5.49	−5.47			
+2111	+2203	+2295	+2387		
		5.56	+6.53		
−4.64	−4.63	−4.61	−4.59		
+0977	+1016	+1055	+1093		
−4.49	−4.48	−4.47	−4.46		
+2834					
−2.70	−3.69	−3.67	−3.66		
	+2018	+2051	+2084	+2117	
+3396	+3433	+3471			
−2.71	−2.69	−2.67			
		−2.14	−2.12	−2.09	
		+3004	+3041	+3079	
			−0.72	−0.69	−0.66
			+3075	+3212	+3350
			+0.07	+0.10	+0.13
			+3520	+3692	
+1.64	+1.67	+1.70	+1.73		
+2651	+2717	+2783	+2849	+2916	
+2.46	+2.49	+2.51	+2.54		
+3052	+3113	+3174	+3236	+3298	
		+2.49	+2.52	+2.55	
		+3307	+4.50	+4.53	+4.56
			+3401	+3495	+3590
			+5.97	+6.00	+6.03
		+1863			+1863

Variations of $(B+I+J)$ for tenths of hours.

Date		1	2	3	4	5	6	7	8	9
Oct.	21	19	38	57	76	95	114	133	152	171
	21									
	22									
	22	4	8	12	16	20	24	28	32	36
	23									
	23	5	11	16	22	27	33	38	43	49
	29									
	29	13	25	38	50	63	75	88	100	113
	30									
	31									
	31									
	31	15	30	46	62	77	93	108	124	139
Nov.	2									
	2	15	30	45	60	74	88	102	117	131
	5									
	5	18	37	55	74	92	111	130	148	167
	6									00
	7									
	7	9	18	27	36	45	54	62	71	80
	9									
	9	4	8	12	16	20	24	28	32	36
	12									
	12	18	36	54	72	90	108	126	144	161
	13									
	13	4	8	13	17	22	26	30	35	38
	19									
	19	9	18	27	36	45	55	64	73	83
	19									
	22									
	22	4	8	12	16	20	24	28	32	36
	23									
	23									
	25									
	25	3	6	9	14	17	20	24	27	30
	28									
	28	4	8	11	15	19	22	26	30	34
	28									
	29									
	29	4	8	11	15	19	22	26	30	34
Dec.	1									
	1	14	28	42	55	69	83	96	110	124
	2									
	2	17	34	51	69	86	113	120	137	154
	5									
	5	7	13	20	26	33	37	46	52	59
	6									
	6	6	12	18	24	30	36	42	48	54
	6									
	9									
	9	9	19	28	38	47	57	66	76	85
	11									
	11	10								00

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III 32

Tabular values and Clock corrections and

1871

Date	R.A. Obs.	Limits of obs.	n	No. obs.	ΔI + m	No. obs.	Hourly rate	Micrometer reading for zero of North & Sth.	Clock corrections	No. obs.	22h	23h	
Dec. 12	1 0 0 R		+387	3	+6.64	12	+.030		+62.36	14		6.61 +2639	6.6 +27
17	23 20 R	from 22h 44m / 29	.376	5	10.62	12	+.032		+62.70	16	+10.58	+10.61 +18.26	+10. +19
17	2 30 M	1 30 to 2 45	.400	2	10.60	13	+.032		+61.98	15			
18	3 00 R		.350	3	11.48	7	+.028		+61.98	12			
20	0 00 R		.328	5	12.45	15	+.033		+63.08	17		+1242 +2988	+12. +31
24	0 40 M		.330	1	16.73	4	+.035					+16.70	+16 +18
27	1 20 R		.350	2	18.62	4	+.033		+62.88	15		+18.58	+18
27		3 40 to 1 30	.350		18.66								
28	1 30 R	3 15 to 4 16	.458	12	19.59	22	+.038		62.93	22		+19.53	+19 +40
29	2 40 M		+444	4	20.54	7	+.038		+62.38	14			

1872

Jan. 1	2 35 R		+398	5	23.46	17	+.042		+63.09	21			
2	0 45 R		+.350	2	24.39	4	+.037		+63.51	6		+	+24 +37
5	3 13 M		+392	4	26.74	15	+.028		+61.75	17			
6	3 17 M		375	4	27.30	15	+.029		+61.73	19			
8	1 32 R	1 25 to 1 39	.420	1	28.89	4	+.034		+6406	11			+ 28
8	3 59 R	3 29 to 4 21	.420	—	29.04	7	+.034						
9	1 46 R		.430	4	29.71	9	+.036		+63.10	12			+29
10	2 54 R		.394	3	30.67	4	+.038		6276	19			
10	4 49 R	4 21 to 5 08		2	30.73	11	+.038		62.76	—			
12	4 31 M		.405	2	2.71	10	+.009		+61.78	11			
13	3 29 M		.387	3	2.92	11	+.005		60.73	14			
14	2 40 M		.387	3	2.95	5	+.002		61.23	7			
15	3 48 M		.350	3	3.02	13	+.003		6334	14			
21	2 7 M		.376	5	5.29	4	+.010		55.58	16			

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errors and Instrumental Constants.

$(B+I+j)$ for even hours of R.A.

Date.	0h	1h	2h	3h	4h	5h
Dec. 12	6.64	6.67				
12	+27.27	+28.15	+29.02			
17	+10.64	10.67				
17	+19.27	+20.28	+21.29	+22.31		
17		+10.55	+10.58	+10.61		
18			+11.45	+11.48	+11.51	
18			+15.89	+16.78		
20	+12.48	+12.48	+12.52			
20	+31.75	+33.62	+35.49	+37.36	+39.21	
24	+16.70	+16.74	+16.77	+16.81		
24	+18.77	+19.60	+20.53	+21.25		
27	+18.58	+18.61	+18.64	+18.68		
27		+26.44	+27.53	+28.62	+29.71	
27				18.64	18.69	18.71
28	+19.53	+19.57	+19.61	19.65		
28	+40.55	+40.86	+41.17	+41.49		
29			+20.51	+20.86	+20.59	
29			+29.23	+29.59		
1		+23.40	+23.44	+23.48	+23.52	
1			+24.13	+26.03		
2	+24.36	+24.40	+24.44			
2	+37.24	+38.34	+39.44	+40.51		
5			+26.70	+26.73	+26.76	
5			+13.45	+14.52	+15.60	
6			+27.26	+27.29	+27.32	
6			+20.37	+20.91	+21.46	
8	+28.84	+28.87	+28.90	+28.94		
8		+32.00	+32.91	+33.82	+34.74	
8				+29.00	+29.04	+29.07
9	+25.65	+29.69	+29.72	+29.76	+29.79	
9		21.61	+21.92	+22.23	+22.54	
10			30.63	+30.67	+30.71	
10		+18.76	+19.47	+20.18	+20.89	+21.60
10					+30.70	+30.74
12					+2.70	+2.71
12				+12.40	+12.95	+13.50
13			+2.91	+2.92	+2.92	+2.93
13				+10.31	+13.64	
14			+2.95	+2.98	+2.95	
14		35.39	+37.62	+39.85		
15				+3.02	+3.02	+3.02
15				+34.26	+34.77	+35.29
21			+5.29	+5.30	+5.31	
21		+16.57	+16.93	+17.29	17.65	+18.00

Variations of $(B+I+j)$ for tenths of hours.

	1	2	3	4	5	6	7	8	9
12	9	18	27	36	44	53	62	71	80
17	10	20	30	40	50	60	70	80	90
18	9	18	27	36	45	54	63	72	81
20	19	38	57	76	95	112	131	150	169
24	8	16	25	33	41	50	58	66	74
27	11	22	33	41	54	65	76	88	99
28	3	6	9	12	15	18	21	24	27
29	3	7	10	14	17	21	24	28	32
1	9	18	27	36	45	54	63	72	81
2	11	22	33	44	55	66	77	88	99
5	11	22	33	43	54	65	75	86	97
6	5	11	16	22	27	33	39	44	49
8	9	18	27	36	45	54	63	72	81
9	3	6	9	12	15	18	21	24	27
10	7	14	21	29	36	43	50	58	65
12	5	11	16	22	27	33	38	43	49
13	33	67	100	133	167	200	233	267	300
14	22	45	67	90	112	135	157	180	202
15	5	10	15	20	25	30	35	40	45
21	3	7	10	14	17	21	24	28	31

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Tabular values of clock errors and (B+I+J) for clock corrections

1872 Date	R.A. Obs.	Limits of Obs.	no.	No. Obs.	ΔT+m	No. Obs.	Hourly rate	Mean reading for zero of North Coll.	Reg.	No. Obs.	j	μ	
Jan 23	3h 4m R		+.360	1	+5.40	5	+.002		+57.25	5			+5.
24	3 5 R		.343	4	5.48	9	+.004		+58.20	11			+5. 26
30	2 50 R	from 1 48 to 3 46	.437	3	6.39	8	+.004		41.68	12			+6. +43
30	4 57 Mo	4 16 to 5 23	.417	3	6.34	15	+.004		43.15	18			
30	5 56 R	5 48 to 6 56	.477	3	6.39	5	+.004		41.68	—			
31	2 7 R		.513	3	6.87	4	+.015		42.06	11	+6.84	+6.86	+6. +34
31	5 27 R		.513	—	6.91	4	+.015			—			
Feb. 1	3 57 R		.505	4	7.44	8	+.024		42.78	13			+7. +38
2	5 56 Mo.		.522	4	8.04	4	+.023		41.76	7			
4	3 52 Mo		.445	2	8.73	15	+.019		42.34	18			+86
5	5 48 R		.460	3	9.17	9	+.017		42.19	9			
7	2 19 R		.387	1	9.79	6	+.017		41.71	16		+9.77	+9. +34
7	5 14 R		.387	2	9.86	10	+.015			—			
8	5 34 R		.352	6	10.22	15	+.013		42.81	17			
12	4 52 R		.338	4	11.18	10	+.006		42.37	12			
14	3 35 R		.290	6	11.32	12	+.002		41.76	17			+17
15	5 10 R		.400	1	11.31	6	+.005		43.73	6			
16													
17													
18	4 48 Mo		.427	3	12.01	11	+.014		45.03	13			
19	7 17 Mo		.430	—	12.49	7	+.013		45.21	8			
22	4 33 R		.400	6	12.99	15	+.007		24.14	15			
24	4 36 R	4 32 to 4 53	.400	1	13.21	7	+.006						
24	7 24 R	7 3 to 7 24	.400	2	13.33	4	+.006		23.47	14			
26	5 3 R		.372	4	13.04	19	+.000		25.33	23			
27	5 51 R		.416	3	12.92	8	−.004		26.34	12			

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ance Instrumental Constants.

even hours of R.A

2^h	3^h	4^h	5^h	6^h	7^h	8^h
+5.40	+5.40	+5.40				
	+18 38	+1883	+1928			
+5.48	+5.48	+5.48	+5.49			
2607	+2662	+2717	+2772	+2827		
+6.39	+6.39	+6.39	+6.40			
+43 84				+43 84		
	+6.33	+6.34	+6.34	+6.34		
		+6.38	+6.39	+6.39	639	640
+6.87	+6.89	+6.90	—			
+3416	+3589	+3762	+3935	+4109		
	+6.87	+6.89	+6.90	+6.92	6.93	6.93
+7.40	+7.42	+7.44	+7.46	+7.49		
+3867	+4065	+4264	+4463	4662		
		+8.00	+8.02	+8.04	+8.06	+8.09
				+4637	+4665	
+869	+8.71	+8.73	+8.75	+8.77		
	+2390	+2511	+2632	+2753		
		+9.14	+9.16	+9.17	+9.19	+9.20
				+2175	+2263	
+9.78	+9.80	+9.82				
+3466	+3607	+3746	+3884	+4022		
		+9.83	+9.85	+9.87	+9.88	
		10.20	+10.22	+10.23	+10.24	+10.26
		+3104	+3162	+3220	+3278	
	+11.16	+11.17	+11.18	+11.19	+11.19	
	+1303	+1347	+1391	+1435	+1479	
	+11.32	+11.32	+11.32			
+1707	+1857	+2016	+2175	+2234		
	+11.30	+11.31	+11.31	+11.31	+11.32	
			+2300	+2556		
				+1982		
			+2381	+2560	+2739	+2918
		+11.99	+12.01	+12.02	+12.04	+12.08
		+2189	+2234	+2278		
				+12.47	+12.49	+12.50
				+2203	+2382	+2561
	+12.98	+12.98	+12.99	+13.00	+13.00	
	+1726	+1815	+1904	+1994		
	+13.29	+13.30	+13.31	+13.32	+	
		−0123	−0015	+0093	+0201	+0308
				+1382	+1333	+1334
		+13.04	+13.04	+13.04		
		+3118	+3128	+3137		
			+12.92	+12.92	+12.92	
			+2556	+2647	+2739	

Variations of $f(B+T+J)$ for Months & Hours.

Date	1	2	3	4	5	6	7	8	9
Jan. 23									
	4	9	13	18	22	27	31	36	40
24									
	5	11	16	22	27	33	38	44	49
30									
30									
30									
31									
	17	35	52	70	87	105	123	140	156
31									
Feb. 1									
	20	40	60	79	99	119	138	158	178
2									
	3	6	9	12	15	18	20	23	26
4									
	12	24	36	48	60	72	84	96	108
5									
	9	18	27	36	44	53	62	71	79
7									
	14	28	42	56	70	84	98	112	126
7									
8									
	6	12	18	24	30	36	42	48	53
12									
	4	9	13	18	22	27	31	36	40
14									
	16	32	48	64	80	96	112	128	144
15									
	26	51	77	102	128	153	179	204	230
16									
17									
	18	36	54	72	90	107	125	143	162
18									
	4	9	13	18	22	27	31	36	40
19									
	18	36	54	72	90	108	126	144	162
22									
	9	18	27	36	45	54	63	72	81
24									
	11	22	33	43	54	65	76	87	98
24									
26									
	1	2	3	4	5	6	7	8	9
27									
	9	18	27	36	45	54	63	72	81

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Tabular values of clock errors and clock corrections and (B.T.+)

Date	R.A.	Obs.	Limits of Obs.	n	Notes.	ΔT+m	No	Obs Rounds rated	Micrm reading for zero of Scale.	Kng	Notes.	h	h	for
Feb. 28	4 39	R	from 4 22 5 4 35	+438	3	+12.85	9	-.002		+26.73	15	+12.85 +20.52	+12.85 +2.215	+12 +23
28	6 58	R	6 39 5 7 11	+438	4	12.84	5	-.002		26.73	—			+12
Mar. 1	6 9	M	6 0 5 6 9	+467	3	12.77	9	-.003		27.47	12	+12.78	12.77	+12 +8
1	7 30	M	6 56 5 7 30	+467	3	12.76	7	-.003		27.47	—			+12
3	5 27	R	5 7 5 5 52	+356	2	12.73	8	-.002		26.27	18	+12.73	+12.73 +1842	+12 +19
3	7 13	R	1 6 40 5 7 37	+356	5	12.74	9	-.002		26.27	—			+12
11	5 44	R	5 5 5 5 11	+398	—	13.74	4	+.002		25.32	13		+13.74 +1956	+1 +1
11	7 19	R	7 9 5 7 37	+398	4	13.71	7	+.002		26.32	—			+1
14	6 19	R	6 0 5 6 39	+366	3	1295	4	-.003		26.80	10		+1295	+12 +11
14	7 53	R	7 31 5 8 10	+366	2	1293	3	-.003		—	—			
18	8 8	R		+424	5	1420	4	+.001		26.32	6			+24
19	5 59	R	5 51 5 6 7	+382	2	1422	3	+.001		26.57	16		+1422	+14 +16
19	7 23	R	7 3 to 8 20	+382	3	1422	11	+.001		26.57	—			+14
21	7 11	R	6 56 5 7 26	+460	2	1432	7	+.001		28.45	12			+14
21	8 50	R	8 23 5 8 55	+460	2	1425	4	+.001		28.45	—			
24	7 22	R		+420	2	1479	5	+.004		25.34	5			+14
27	8 15	R		+830	2	1530	10	+.007		25.01	11			+15
28	6 50	R	6 39 5 7 3	+306	3	1533	4	+.004		24.77	7		+15.32	+15
28	9 40	R	8 55 5 9 42	+306	5	1528	5	-.004		—	—			
Apr. 1	9 21	R		+261	7	1444	9	-.004		24.39	11			
2	8 58	R		+235	6	1441	15	-.004		24.76	18			
3	7 4	R	6 56 5 7 37	+218	—	1458	8	+.003		24.61	12			+14
3	8 50	R	8 37 5 8 55	+218	4	1455	5	+.003		—	—			
4	7 14	R		+220	2	1452	6	-.004		25.43	6			+14
6	9 23	R		+140	6	1414	9	-.004		2469	11			
10	8 29	R		+187	3	1312	7	-.009		2640	7			

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and Instrumental Constants.

for even hours of R.A.

6h	7h	8h	9h	10h	Date
+12.85					Feb 28
+2378	+2541				
+12.84	+12.84	+12.84			28
+12.77	+12.77	+12.76			Mar. 1
+3109	+3197	+3235	+3374		
+12.77	+12.76	+12.76	+12.75		1
+12.73	+12.78				Mar 3
+1991	+2140	+2290			
+12.74	+12.74	+12.74			3
+13.74	+13.74	+13.74			11
+1965	+1974	+1984			
+13.71	+13.71	+13.71			11
+12.95	+12.95	+12.94			14
+1136	+1325	+1515			
	+12.93	+12.93	+12.93		14
	+14.20	+14.20	+14.20		18
+2403	+2557	+2711			
+1422	+1422				19
+1648	+1827	+2006			
+14.22	+14.22	+14.22			19
+14.32	+14.32	+14.32			21
	+3143	+3280	+3316		
		+14.25	+14.25	+1425	21
+1478	+14.79	+1479	+14.80		24
	+2674	+2696	+2719		
+15.29	+15.30	+15.30	+15.31	1433	27
	+1840	+1943	+2045		
+15.33	+15.33	+15.33	+15.34		28
	+1679	+1780	+1881	+1982	28
		+15.27	+15.28	1628	28
		+1445	+1444	+1444	Apr. 1
			+1645		
		+14.41	+1441	+1441	2
		+1657	+1789		
+14.58	+14.58	+14.58			3
	+1027	+1219	+1412		
	+14.54	+14.55	+1455	+1455	3
+1452	+14.52	+1452			4
	+1222	+1371	+1519		
		+14.15	+1414	+1414	6
			+1236	+1351	
	+13.13	+13.12	+13.12	+13.11	10
	+0206	+0365	+0524	+0683	

Variations of (B+H+D) for tenths of hours.

1	2	3	4	5	6	7	8	9
16	32	48	64	81	97	114	130	146
9	18	27	36	44	53	62	71	80
15	30	45	60	75	90	105	120	135
1	1	2	3	4	5	6	7	8
19	38	57	76	95	104	133	152	171
15	30	46	61	76	92	107	122	138
18	36	54	72	90	108	126	144	162
9	18	26	35	44	52	61	70	78
2	4	6	8	10	13	15	17	19
10	20	30	40	50	61	71	81	92
10	20	30	40	50	60	70	80	90
13	26	39	52	66	79	92	105	119
19	38	57	76	95	105	134	153	173
15	30	45	60	75	90	105	120	135
5	11	16	22	27	33	38	44	49
16	32	48	64	80	96	112	128	144

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Tabular values of clock errors and clock corrections and (B+2I+J)

Date	R.A.	Obs.	Limb	obs.	n	No. obs.	ΔI+m	No. obs.	Hourly rate	Micrometer reading for zero & North Coll.	Reg.	No. obs.
Apr.	11	8	28	R		+1.85	2	+12.77	4	-.012		+32.02	4
	17	10	5	R		+1.50	6	11.61	15	-.011		+33.27	19
	18	10	24	R		+1.60	3	11.49	15	-.007		33.19	17
	19	10	52	M6		+1.73	6	11.09	7	-.010		34.37	11
	20	11	46	R		+0.85	1	10.97	5	-.010		32.96	6
	21	10	12	R		+0.58	9	10.80	15	-.006		33.84	20
	22	10	47	R		+0.20	4	10.57	10	-.013		34.33	13
	23	10	19	R		+0.66	2	10.19	16	-.009		34.45	17
	24	11	6	R		+0.77	3	10.09	11	-.003		33.71	13
	25	11	01	R		+0.70	4	10.04	19	-.007		33.61	22
	26	10	52	M6		-0.30	4	9.75	16	-.009		35.08	23
	27	10	52	M6		+0.40	4	9.59	11	-.011		35.45	21
	29	9	49	R		+0.45	6	8.91	9	-.011		34.23	10
	30	10	12	R		+0.55	2	8.71	6	-.011		35.06	7
May.	20	11	40	R		-0.50	1	6.24	3	+.012		-6.53	3
	21												
	22	11	46	R		-0.60	1	+6.77	5	+.012		-7.18	8
	24												
June	3												
	6												
	9												

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Instrumental Constants.

for seven hours of R.A.

8h	9h	10h	11h	12h	13h
+12.77	+ 12.76	+12.75			
+11.07	+ 12.95	+14.83			
	+11.62	+11.61	+11,60		
	+0776	+0968	+1'60	+1351	
	+11.50	+11.49	+11.48	+11.48	
	+0455	+0635	+0814		
	+11.1	+11.10	+11.09	+11.08	
		+0625	+0774		
			+10.98	+10.97	+10.96
			−0356	−0152	
	+10.81	+10.80	+10.79	+10.79	
	−0187	−0048	+0091	+0230	
		+10.52	+10.51	+10.50	
		+0716	+0982	+1249	
	+10.20	+10.19	+10.18	+10.17	
	+0859	+1139	+1419		
		+10.09	+1009	+1009	
		+0311	+0540	+0768	
		+1005	+1004	+1003	
		+0303	+0371	+0439	
		+9.96	+9.95	+9.94	
		−1448	−1198	−0949	
		+9.60	+9.59	+9.58	
		+0189	+0301	+0412	
	+8.92	+8.91	+8.90		
	+0891	+1053	+1215	+1377	
	+872	+8.71	+870		
		+0644	+0897	+1151	
			+6.20	+6.24	+6.25
			−1318	−1158	−998
			+676	+677	+678
			−0430	−0278	−0127
				−540	

	12h	13h	14h	15h	16h	17h
		−61	+92	+245	+398	
			−206	+34		
		−1190	−1119	−1048	−977	

Variations of (B+I+) for tenths of hours.

Date.	1	2	3	4	5	6	7	8	9
Apr. 11	19	38	57	76	94	113	132	151	170
17	19	38	57	76	96	115	134	153	172
18	18	36	54	72	90	108	126	144	162
19	15	30	45	60	75	90	105	120	135
20	20	40	61	81	102	122	143	163	184
21	14	28	42	56	70	84	98	112	126
22	27	53	80	106	133	157	185	212	238
23	28	56	84	112	140	168	196	224	252
24	23	46	69	92	115	138	161	184	207
25	7	14	21	28	35	42	48	55	61
26	25	50	75	100	125	150	175	200	225
27	11	22	33	44	56	67	78	89	100
29	16	32	48	64	80	96	112	129	146
30	25	51	76	101	127	152	177	203	228
May 20	16	32	48	64	80	96	112	128	144
21									
22	15	30	46	61	76	91	107	122	137
24									
June 3	15	31	46	61	77	92	107	122	137
6	24	48	72	96	120	144	168	192	216
9	7	14	21	28	35	43	50	57	64

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Reduction of Mean of single wires to

α Andromedæ

δ 28° 24′ 21″
0ˢ.149
139
145
131
179
[255]
154
115
180
147
094
126
128

12 | 1687
1406
9.14799
9.94429
9.09228
0ˢ.1237

γ Pegasi

14ʰ 29′ 38″
0ˢ.132
85
163
134
178
95
89
144

08 | 1020
1275
9.10551
9.98595
9.09166
0ˢ.1234

α Arietis

22ʰ 52′ 30″
0ˢ.157
170
139
137
155
168
[034]

6 | 926
1543
9.18837
9.96442
9.15279
0ˢ.1422

α Leti

3ʰ 36′ 6″
0ˢ.172
125
87
135
129
[231]

5 | 1618
1236
9.09202
9.99914
9.09116
0ˢ.1234

α Tauri

16ʰ 15′ 29″
0ˢ.185
159
134
200
196
158
130
151
205
119
203
120
136
155

14 | 2251
1608
9.20629
9.98228
9.18857
0ˢ.1544

α Aurigæ

45° 52′ 9″
0ˢ.147
148
187
146
135
183
94
228
141
137
113
135
166
180
180
141 9.17493
124 9.84280
187 9.01773
0ˢ.1042

18 | 2692
0ˢ.1496

β Orionis

−8 20 48
133
9.12385
9.99537
9.11922
.1376

β Tauri

28 30 1
135
209
142
182
113
161
127
177
118
130
186
177
133
152
175
190

16 | 2506
1566
9.17479
9.94356
9.13869
.1376

α Orionis

7 22 55
102
125
101
135
136
89
186
99
195
150
105
100
80
141
121
103

16 | 1968
1230
9.08991
9.99638
9.08629
1226

α canis Maj.

−16 32 50
165
159
112
162
90
199
65
202
134
139
204
146
141

13 | 1918
1475
9.16879
9.98162
9.15041
.1414

α Geminor

α can. Min.

5 32 28
142
126
98
147
103
171
138
125
104
129
132
169
165
76

22 | 2907
1321
9.12090
9.99797
9.11887
1315

113
143
139
132
110
135
224
88

β Geminor

28 19 25
143
93
36
59
66
119
128
115
101
105
122
127
106
163
112
114
78

17 | 1774
1644
9.01870
9.94462
8.96332
.0919

α Hydræ

−8 7 20
156
[21]
107
118
140
110

5 | 1631
1262
9.10106
9.99563
9.09669
.1249

α Leonis

12 34 20
75
129
113
88
110
106
138
179
163
77
157

11 | 1335
1214
9.08422
9.98946
9.07368
1185

β Leonis

15 15 54
115
144
147
134
66
143
144

7 | 893
1276
9.10585
9.98440
9.09025
1231

α Virginis

−10 30 48
185
99
77
120
[25]
141
80
65
115
123
177
101
74
67
95

14 | 1539
1099
9.04100
9.99265
9.03365
.1081

α Bootis

19 49 44
188
213
85
99
[326]
203
99
113
90
127
116

10 | 1333
1333
9.12483
9.97345
9.09828
.1254

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Mean of double wires - 1876

α Librae

δ −15° 31′ 30″
0ˢ.141
142
181
138
146
81
142
109

8 | 1080
1350
9.13033
9.98386
.11419
0ˢ.1301

α Coronæ

27° 8′ 0″
0ˢ.183
217
93
173
134
126
194

7 | 1110
1586
9.20030
9.94936
9.14966
0ˢ.1411

α Serpentis

6° 49′ 1″
0ˢ.162
123
171
148
65
93
131
121

8 | 1014
1268
9.10312
9.99692
9.10004
0ˢ.1259

α Scorpii

−26° 9′ 17″
0ˢ.164
153
151
185
165
159
123
149
152
137
91
67
249
153
132
132

16 | 2362
1476
9.16909
9.95308
9.12217
0ˢ.1325

α Herculis

14° 31′ 59″
0ˢ.149
176
179
178
149
122
199
156
99
155
91
124
178
63
153 9.16197
129 9.98588
90 9.14785
198 0ˢ.1406
141

19 | 2759
1452

α Ophiuchi

12° 39′ 7″
0ˢ.169
150
154
77
95
173
143
132
190
94
31
115
84
156
202
210
116
146
141
168

20 | 2736
1368
9.13609
9.98933
9.12542
0ˢ.13351

α Lyræ

38 40 9
184
227
173
174
187
186
185
122
217
184
188
128
161
119
125
187
143
144
182
181
99
170

186
117
205
4
25 | 4124
1658
9.21958
9.89252
.11210
.1294

α Piscis Aust.

−30 16 43
112
187
224
98
155
99
176
120
135
166
91
132
176
97
[004]

14 | 1968
1406
9.14799
9.93650
9.08429
1214

γ Aquilæ

10 18 44
136
115
142
196
45
140
133
147
108
176
139 178
149 107
144
12 | 1626 157
1355 12
9.13194 67
9.99293 120
9.12487 117
.13338 88
120
55

α Pegasi

14 32 19
126
188
62
108
51
137
105
108
165
132
158
192
129
141
100
120
85
131
138

19 | 2376
1257
9.10726
9.95087
9.08313
1211

α Aquilæ

8 32 32
118
109
114
137
112
61
136
117
88
120
55
145
99
130
147
128
143
133

19 | 2237
1177
9.07078
9.99546
9.06594
1164

β Aquilæ

6 5 54
113
127
92
171
149
136

6 | 788
1313
9.11826
9.99753
9.11579
1306

α Cygni

44 30 17
218
245
145
157
156
205
241
181
229
169
183
214

12 | 2313
1928
9.28511
9.85071
9.13582
1367

α Aquarii

−0 55 17
91
135
133
139
179
183
150
136
144
113
178
115
73

13 | 1769
1361
9.13386
9.99994
9.13380
1361

Results

	δ		
α Androm.	0ˢ.1257	12	14844
γ Pegasi	1234	8	9872
α Arietis	1422	6	8532
α Ceti	1234	5	6170
α Tauri	1544	14	21616
α Aurigæ	1496	18	26928
β Orionis	1316	1	1316
β Tauri	1376	16	22016
ε Orionis	1220	16	19520
α Canis Maj.	1414	13	18382
α " Min.	1315	22	28930
β Geminor.	0919	17	15623
α Hydræ	1249	5	6245
α Leonis	1185	11	13035
β "	1231	7	8617
α Virginis	1081	14	15134
α Bootis	1254	10	12540
α Libræ	1301	8	10408
α Coronæ	1411	7	9877
α Serpentis	1259	8	10072
α Scorpii	1325	16	21200
α Herculis	1406	19	26714
α Ophiuchi	1335	20	26700
α Lyræ	1294	25	32350
γ Aquilæ	1333	12	15996
α "	1164	19	22116
β "	1306	6	7836
α Cygni	1367	12	16404
α Aquarii	1361	13	17693
α Piscis Aus.	1214	14	16996
α Pegasi	1211	19	23009
		393	506671

1876
Mean value
−0ˢ.1289

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42
1877.

Reduction of Means of single wires to

α Androm.	γ Pegasi	α Arietis	α Ceti	α Tauri	α Aurigæ
			s .050 094 124 020 045 5|333 .0666 8.82347 9.99914 8.82261 0s.0665	s 0.121 113 105 [004] 35 85 56 85 102 39 60 86 91 62 101 14|1141 0815 8.91116 9.58227 8.89343 0s.0782	s 0.196 135 95 [242] 109 109 109 116 109 101 9|1079 1199 9.07882 9.84279 8.92161 0s.0835

β Tauri ~~β Orionis~~	~~β Tauri~~	α Orionis	α Canis Maj.	α Geminorum	α Canis Min.
144 76 ~~148~~ 184 91 64 57 125 54 123 118 130 101 12|1267 1056 9.02366 9.94389 8.96755 0928		24 62 127 118 124 [-31] 110 57 60 75 59 70 11|886 0805 8.90580 9.99638 8.90218 .0798	144 145 164 67 [069] 46 165 77 103 59 9|970 878 9.03262 9.98162 9.01424 .1033		26 52 115 [202] 81 [069] 81 5|355 0710 8.85126 9.99797 8.84923 0907

β Geminorum	α Hydræ	α Leonis	β Leonis	α Virginis	α Bootis
[-102] 89 74 [-287] 53 91 60 91 6|458 0763 8.88252 9.94463 8.82715 0672	44 63 107 103 58 ~~103~~ ~~58~~ 5|375 0750 8.87506 9.99562 8.87068 0742	135 81 82 106 96 80 5|498 0996 8.99826 9.98947 8.98773 0972	112 133 66 89 51 100 6|551 0918 8.96284 9.98441 8.94725 0886	65 62 84 3|211 .0703 8.84696 9.99264 8.83960 0691	50 157 85 77 128 113 82 7|692 .0989 8.99520 9.97347 8.96867 0930

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Mean of double wires – 1877.

1877

α² Librae

	0.100
	164
110	90
	82
	109
	116
	99
	86
	141
9	987
	1097
	9.04021
	~~9.76677~~
	7.24737
	8.98958
	0.0976

α Coronæ

	0.046
	69
	92
	91
	108
	43
	90
	41
	102
9	682
	0758
	8.87967
	9.99692
	8.87659
	0.0753

α Serpentis

	0.098
	166
2	264
	1320
	9.120557
	9.95308
	9.07365
	0.1185

α Scorpii

	0.081
	170
	70
	73
	176
	~~83~~
5	570
	1140
	9.05690
	9.98588
	9.04278
	0.1104

α Herculis

	0.183
	125
	139
	105
	~~88~~
	[225]
	93
	75
	65
	72
	108 112
	85
	65
12	1208 3
	.1002
	9.00087
	9.98983
	8.99020
	0.0978

α Ophiuchi

α Lyræ

	124
	153
	140
	201
	74
	85
	49
	122
	~~149~~
	187
	152
	42
	124
	93
	162
20	2317 116
	.1158 84
	9.06371 76
	9.89252 126
	8.95623 144
	0904 63

γ Aquilæ

	164 124
	88 58
	135
	65
	131
	33
	124
	173
	22
9	935
	1039
	9.01662
	9.99292
	9.00954
	.1022

α Aquilæ

	58
	45
	105
	170
	69
	158
	111
	85
	76
	104
	142
	165
	70
	40
	90
15	1485
	.0990
	8.99564
	9.99515
	8.99079
	0979

β Aquilæ

	110
	91
	117
	44
	67
	112
	100
	85
	73
9	799
	.0888
	8.94841
	9.99783
	8.94594
	0883

α Cygni

	118
	80
	98
	85
	152
	171
	142
	98
	70
	119
10	1133
	1133
	9.05423
	9.85068
	8.90491
	0803

α Aquarii

	62
	— 120
	122
	160
	74
	[= 19]
	43
	141
6	602
	1003
	~~9.00087~~
	9.00186
	9.99994
	9.00124
	1003

α Piscis Austr.

	[101]
	72
	132
	95
	153
	177
	87
	71
7	787
	1124
	9.05077
	9.93633
	8.98710
	0971

α Pegasi

	[−008]
	~~155~~
	38
	94
	131
	56
	— 99
5	474
	0948
	8.97681
	9.98585
	8.96266
	0918

α² Capricorni

	56
	64
	88
	87
	73
	116
	50
	85
8	619
	.0774
	8.88874
	9.98886
	8.87760
	0754

Results

		No.	
α Ceti	0.0665	5	3325
α Tauri	0782	14	10948
α Aurigæ	835	9	7515
β Tauri	928	12	11136
α Orionis	798	11	8778
α Canis Maj	1033	9	9297
α " Min	707	5	3535
β Geminor	672	6	4032
α Hydræ	742	5	3710
α Leonis	972	5	4860
β Leonis	886	6	5316
α Virginis	691	3	2073
α Bootis	930	7	6510
α Coronæ	976	9	8784
α Serpentis	753	9	6777
α Scorpii	1185	2	2370
α' Herculis	1104	5	5520
α Ophiuchi	978	12	11736
α Lyræ	904	20	18080
γ Aquilæ	1022	9	9198
α "	979	15	14625
β "	883	9	7947
α Cygni	803	10	8030
α Aquarii	1003	6	6018
α Piscis Aust	971	7	6797
α Pegasi	918	5	4590
α² Capric.	754	8	6032
		223	197539
			0.0886

1877

Mean Value

+0.0886

log = 8.947+3

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Tabular values of Clock errs and corrections

1870 Date	R.A.	Obs Limits of Obs.	n	No Obs.	Δ T + n	No Obs.	Hourly rate	Resp.	No Obs.	h 1	h 2
Nov 10											+2002
13											
15											
16											
17											
19											
27											
Dec 10											
13											+1336
14											
18											
22											
26											
31											
1871 Jan 1											
7											+3610 +3715
10											
17											+2314 +2335
Feb 7											+3069
11											
20											
21											
28											
Mar 1											
2											

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1876phae.proj:1700f

and Instrumental Constants
and B+T+γ for even hours of R.A.

Date	h 3	h 4	h 5	h 6	h 7	h 8	h 9	Variations of (B+T+γ) for tenths of hours .1	.2	.3	.4	.5	.6	.7	.8	.9
1870																
Nov 10																
13																
15																
16																
17																
19																
27																
Dec 10																
Dec 13								6,8	14	20	27	34	41	48	55	61
14																
18																
22																
26																
31																
1871																
Jan 1																
7								10,5	21	31	42	52	63	73	84	94
10																
17								2.1	4	6	8	10	12	15	17	19
Feb. 7								6	13	19	25	31	38	44	50	57
11																
20								11	22	32	43	54	65	76	86	97
21																
28								4	14	21	28	35	43	50	57	64
Mar 1								42	85	127	169	211	254	296	338	381
2																

	−334						
	+1424						
	+1877						
	+2083						
	+1734						
		+413					
		+2389					
336	+1268	+1200	+1132				
		+1210					
		+2605					
		+3704					
		+2705					
		+1650					
		+2939					
15	+3820	+3925	+4030	+4135	+4240	+4345	+4345
			+3616				
35	+2356	+2377	+2398	+2419	+2440		
69	+3132	+3198	+3261	+3324	+3387	+3450	
				+3969			
		+1893	+2001	+2109	+2217	+2325	
					+3769		
				+2404	+2475	+2546	
					+1103	+1526	+1949
					+1782		

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Tabular values of Clock errors

Clock corrections found

1871 Date	h 8	h 9	
Mar 5	+1562	+1568	+
7	+2297	+2405	+
9	+593	+1082	
14			+1
19			+
22			
25			
28			
29			
Apr. 2			
5	+1408	+1512	+1
6		+1302	+1
8			
17			
18			
23			
24			
May 7			
12			
13			
15			
16			
17			
18			
20			

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1876phae.proj.17007

ers and Instrumental Constants

(B+T+R) for even hours of R.A.

	h 10	h 11	h 12	h 13	h 14	h 15
9						
568	+1574	+1581				
405	+2513	+2621				
082						
	+1557					
	+1739					
		+830				
		+2200				
		+2238				
		+2201				
			+1441			
513	+1616	+1720	+1824			
02	+1194	+1086	+978			
		-311				
		+1071				
		+1257				
		+1156				
		+1214				
			+276			
			-562			
		+313	+529	+745		
				-181		
		-607	-525	-443		
				-183		
			+13	+200	+387	+574
			-542	-247	+48	

Variations of (B+T+R) for tenths of hours

Date	.1	.2	.3	.4	.5	.6	.7	.8	.9
1871									
Mar 5	1	1	2	2	3	4	4	5	5
7	11	22	32	43	54	65	76	86	97
9	49	98	147	196	244	293	342	391	440
14									
19									
22									
25									
28									
29									
Apr 2									
5	10	21	31	42	52	62	73	84	94
6	11	22	32	43	54	65	76	86	97
8									
17									
18									
23									
24									
May 7									
12									
13	22	43	65	86	108	130	151	173	194
15									
16	8	16	25	33	41	49	57	66	74
17									
18	19	37	56	75	94	112	131	150	168
20	29	59	88	118	148	177	206	236	266

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1876phae.proj.1700R

112
118

Tabular values of Clock e
Clock corrections and

1871 Date	h 13	h 14	
May 21			-2
23			+
24	+398	+653	
25	-643	-655	-6
26			-1
27			+3
29	-1668	-1500	-1
June 2			-8
3	-1891	-1914	-1
4			-1
5	-429	-355	-2
9			-3
July 5			-13.
17			
Sept 9			
22			
Oct 17			
22			
Nov. 27			

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1876phae.proj.17000

Clock errors and Instrumental Constants

(B + T + T) for even hours of R.A.

h 14	h 15	h 16	h 17	h 18	h 19	h 20	h 21
	-206						
	+13						
653							
655	-667						
	-1177						
	+565						
1500	-1332						
	-865						
1914	-1937	-1960					
	-1476						
55	-281	-207					
	-391						
	-1335	-1309	-1283	-1257			
		-1161					
		+455					
					+1299		

h 20	h 21	h 22	h 23	h 24
		+222	+599	+976
			-414	-374
			+2716	

Variations of (B + T + T) for tenths of hours

Date	h .1	.2	.3	.4	.5	.6	.7	.8	.9
May 21									
23									
24	26	51	76	102	129	153	178	204	230
25	1	2	4	5	6	7	8	10	11
26									
27									
29	17	34	50	67	84	101	118	134	151
June 2									
3	2	5	7	9	11	14	16	18	21
4									
5	7	15	22	30	37	44	52	59	67
9									
July 5	3	5	8	10	13	16	18	21	23
17									
Sept 9									
22									
Oct 17	38	75	113	151	188	226	264	302	339
22	4	8	12	16	20	24	28	32	36
Nov. 27									

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11 2
60
1877.

Reduction of the Mean of the wires A+2 and A-2 to the δ

α Ceti (3° 36′)

A+2 to A-1, A, A+1	A-2 to A-1, A, A+1
18.558	18.48
18.704	18.496
18.724	18.476
18.58	18.54
18.605	18.575
18.6386	18.5014
2.27042	2.26720
9.99914	9.99914
2.26956	2.26634

α Tauri (16° 16′)

19.371	19.129
19.493	19.267
19.415	19.285
[19.384]	[19.376]
19.315	19.245
19.455	19.285
19.336	19.224
19.425	19.255
19.382	19.178
19.369	19.291
19.340	19.220
19.416	19.244
19.411	19.229
19.402	19.278
19.391	19.189
~~5531~~	
~~5581~~	3239
19.394	19.231
2.28767	2.28401
9.98227	9.98227
2.26994	2.26628

α Aurigæ (45° 52′)

26.856	26.464
.865	.595
.765	.575
[.882]	[.398]
.789	.571
.746	.531
.809	.591
.767	.533
.749	.531
.731	.529
7070	4920
26.786	26.547
2.42791	2.42461
9.84279	9.84279
2.27070	2.26680

β Tauri (28° 36′)

21.215	20.925
.276	21.124
.224	20.856
.211	21.029
.204	21.076
.167	21.053
.235	20.985
.144	21.036
.233	20.987
.258	21.022
.260	21.000
.281	21.029
2658	122
21.238	21.010
222	
2.32679	2.32243
9.94389	9.94389
2.27068	2.26632

α Orionis (7 23)

18.704	18.656
.782	.658
.807	.553
.838	.602
.904	.656
.840	.620
.787	.673
.760	.640
.785	.635
.729	.611
.740	.600
8676	6904
18.789	18.628
2.27390	2.27016
9.99638	9.99638
2.27028	2.26654

α Canis Maj. (-16 33)

19.475	19.185
.544	.216
.465	.175
.387	.263
.416	.324
.495	.165
.427	.273
.473	.267
.469	.351
4151	2209
19.461	19.245
2.28917	2.28432
9.98162	9.98162
2.27079	2.26594

β Geminor. (28° 19′)

21.189	21.011
.104	20.956
.133	21.027
.191	21.029
.120	21.000
.151	20.969
888	5992
21.148	20.999
2.32527	2.32220
9.94463	9.94463
2.26990	2.26683

α Canis Min. (5 32)

18.656	18.604
.722	.618
.765	.535
.711	.549
.711	.549
3565	2855
18.713	18.571
2.27214	2.26883
9.99797	9.99797
2.27011	2.26680

α Hydræ (-8 8)

18.784	18.696
.833	.707
.827	.613
.833	.627
.778	.662
4055	3305
18.811	18.661
2.27441	2.27093
9.99562	9.99562
2.27003	2.26655

β Leonis (15 16)

19.362	19.138
.393	.127
.336	.204
.289	.111
.251	.149
.388	.188
2019	917
19.336	19.153
2.28637	2.28224
9.98441	9.98441
2.27078	2.26665

α Bootis (19 49)

19.740	19.640
.887	.573
.810	.640
.795	.641
.855	.599
.815	.589
.804	.640
5706	4322
19.815	19.617
2.29699	2.29263
9.97347	9.97347
2.27046	2.26610

α Serpentis (6 49)

18.696	18.604
.769	.631
.782	.598
.851	.669
.818	.602
.718	.632
.733	.593
.725	.643
.760	.556
6852	5488
18.761	18.610
2.27325	2.26975
9.99692	9.99692
2.27017	2.26667

α Leonis (12 34)

19.095	18.825
.091	.929
.096	.884
.096	.904
.180	.940
19.096	18.896
2.28944	2.27637
9.98947	9.98947
2.27021	2.26584

α Virginis (-10 31)

18.955	18.825
.950	.826
.949	.781
18.951	18.811
2.27763	2.27441
9.99264	9.99264
2.27027	2.26705

α Coronæ (27 8)

20.960	20.760
21.024	.696
20.882	.718
20.952	.734
20.997	.765
20.987	.789
20.955	.783
21.026	.744
7783	389
20.973	20.749
2.32166	2.31706
9.94937	9.94937
2.27103	2.26637

α Scorpii (-26 9)

20.818	20.622
.816	.484
20.817	20.553
2.31842	2.31287
9.95308	9.95308
2.27150	2.26595

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Mean of the wires A+1, A, and A−1.

1877.

α Herculis (14° 32′)

A+1	A−1
19.ˢ251	19.ˢ089
.340	.000
.260	.120
.207	.061
.311	18.959
19.274	19.046
2.28497	2.27980
9.98588	9.98588
2.27085	2.26568

α Ophiuchi (12° 34′)

A+1	A−1
19.ˢ293	18.ˢ927
.145	.895⁻
.129	.851
.165⁻	.955⁻
.111	.935
[.247]	[.807]
.107	.921
.089	.939
.072	.942
.074	.930
.143	.879
.178	19.008
.089	18.959
1595	11181
19.133	18.932
2.28178	2.27720
9.98433	9.98433
2.27111	2.26653

α Lyrae (38° 40′)

A+1	A−1
23.ˢ924	23.ˢ676
.893	.587
.920	.640
.971	.569
.865⁻	.717
.873	.703
.835⁻	.737
.888	.644
24.002	.628
23.936	.632
.862	.778
.922	.674
.877	.691
.928	.604
.847	.645⁻
.837	.669
.838	.681
.946	.694
.879	.591
.835⁻	.709
17903	13269
23.895	23.663
2.37831	2.37407
9.85252	9.85252
2.27083	2.26659

γ Aquilæ (10° 19′)

A+1	A−1
18.ˢ984	18.ˢ736
.978	.862
19.035⁻	.765⁻
18.945⁻	.815⁻
.973	.711
19.052	.728
.019	.771
.040	.694
18.837	.793
.883	.807
.889	.771
.907	.859
.958	.776	2.27079
12500	10088
18.9615	18.776
2.27787	2.27360	2.26652
9.99272	9.99292

α Aquilæ (8° 33′)

A+1	A−1
18.875	18.765
.815	.725⁻
.885⁻	.675⁻
.930	.590
.829	.691
.913	.597
.830	.608
.842	.672
.871	.719
.862	.654
.913	.629
.957	.624
.842	.702
.803	.723
.941	.717
.849	.751
.848	.774
14799	1413
18.8705	18.683
2.27578	2.27145⁻
9.99515	9.99515
2.27063	2.26660

β Aquilæ (−6° 6′)

A+1	A−1	
18.820	18.600	
.765	.583	
.747	.513	
.687	.599	
.764	.630	
.773	.549	
.738	.638	
.775	.605	
.732	.586	2.27076
.705	.589	
.905⁻	.553	
.747	.675⁻	2.26665
.719	.583	
777	1083	
18.7598	18.5833	
2.27323	2.26912	
9.99753	9.99753	

α Cygni (44° 50′)

A+1	A−1		
26.238	26.002		
.240	.080		
.263	.067		
.289	.116		
.291	25.987		
.313	.971		
.310	26.026		
.305⁻	.109		
.179	.039		
.243	.005⁻		
.236	.040	26.259	26.040
.204	.038	2.41927	2.41564
711	483	9.85068	9.85068
		2.26775	2.26632

α Capricorni (−12° 55′)

A+1	A−1
19.091	18.979
.045	.917
.144	.968
.124	.950
.074	.928
.132	.900
.184	19.034
.165	18.995
.163	.969
.135	.889
18.998	.974
105	603
19.1095	18.955
2.28126	2.27772
9.98886	9.98886
2.27011	2.26658

α Pisc. Austr. (−30° 16′)

A+1	A−1
21.603	21.459
.625⁻	.361
.580	.390
.659	.353
.687	.333
.601	.427
.563	.421
.637	.415⁻
.540	.400
95	859
21.6906	21.3954
2.33466	2.33032
9.93683	9.93683
2.27094	2.26665

α Pegasi (14° 33′)

A+1	A−1
19.342	19.032
.194	.118
.218	.080
.197	18.935⁻
.198	19.086
.255⁻	.057
.246	.062
.279	.083
.241	.013
.301	.971
471	387
19.247	19.0387
2.28436	2.27964
9.98585	9.98586
2.27021	2.26549

Results.

	A+2 to (A+1, A, A−1)	(A−2 to A+1, A, A−1)
	+18.ˢ602	−18.ˢ465
α Tauri	.618	.462
α Aurigæ	.651	.484
β Tauri	.650	.464
α Orionis	.633	.473
α Canis Maj.	.655	.448
β Geminorum	.617	.485⁻
α Canis Min.	.626	.484
α Hydræ	.622	.473
α Leonis	.630	.443
β "	.654	.478
α Virginis	.632	.475
α Bootis	.640	.454
α Coronæ	.665⁻	.466
α Serpentis	.628	.479
α Scorpii	.685⁻	.448
α² Herculis	.657	.437
α Ophiuchi	.669	.473
α Lyræ	.657	.475
γ Aquilæ	.685	.472
α "	.661	.476
β "	.653	.478
α Cygni	.619	.464
α Aquarii	.656	.471
α² Capricorni	.626	.475⁻
α Piscis Aust.	.663	.478
α Pegasi	.630	.418
	+18.ˢ643	−18.ˢ468
log =	1.27052	1.26642

For the Reduction of the Mean of the wires A+2 and A−2 to the Mean of the wires A+1, A, and A−1 for 1876 see page 90 of this Book.

I′ = 0.988
log = 8.99448

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2

Value of 5' space May 22, 1877.
on which Runs are determined.

E	F	G	H	Means
"	"	"	'	"
300.26	301.16	298.84	300.66	300.23
300.42	300.12	299.28	299.76	299.89
300.16	298.58	298.38	299.58	299.18
300.20	299.68	298.94	299.78	299.65
300.58	300.82	297.76	299.66	299.68
300.90	300.50	298.72	300.26	300.10
299.38	300.42	298.42	299.60	299.45
300.70	299.20	299.24	299.64	299.70
299.70	300.60	298.86	300.58	299.88
301.00	300.50	299.44	299.42	300.09
299.80	300.58	299.14	299.88	299.85
300.14	300.68	299.30	299.24	299.84
299.80	301.84	298.86	299.94	300.11
Means 300.23	300.36	298.86	299.82	299.82 check
300.36				
298.86				
~~Final~~ 299.82				

East-circle for C.E.

Final Mean 299.82
299.53 = value for 1885 5' space.
5 29

Corr. for +".06 = Corr. for 1'
error of the 5' space used
in determining Runs.

West-circle, for C.E.

A.	B.	C.	D.
"	"	"	"
299.40	301.30	300.38	301.66

E = 135°

299.28	301.26	300.32	302.42	E = 145
299.28	300.72	300.98	301.72	155
299.50	300.56	302.05	302.14	2e
298.84	300.48	300.40	304.36	
300.24	301.00	301.50	302.20	
299.52	300.94	300.92	302.46	
300.02	301.00	300.22	30410	
299.60	300.66	301.34	30410	
299.36	301.06	301.86	302.08	
299.52	300.85	301.07	302.84	
+.12	-.48	+.69	+1.18	

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Polar Catalogue 1872-3

Secondary Stars.

A1

		h	m	°	′		1872	1873
Sch. 813		13	50.4	+79	37.4	1	80 29.99	29.58
5 ~~Ursae Min.~~ B A C		14	27.7	+76	15.6	2	27 49.48	49.24
Groom. 537		2	33.9	+112	43.0	3	33 —	55.832
Sch. 853	X	14	38.5	+80	12.4	4	37 14.20	12.681
B.A.C. = 960 ~~Ursae Min.~~		3	2.5	+95	32.2	5	2 2 —	38.645
Groom. 2213	X	15	4.2	+84	25.0	6	4 46.295	39.433
5141 ~~Ursae Min.~~ B A C	X	15	19.4	+87	43.0	7	19 24.545	1.914
Groom. 642		3	23.9	+93	44.0	8	24 48.106	67.720
15 ~~Ursae Min.~~ B A C		15	35.2	+77	46.3	9	35 15.818	13.647
1235 Ursae Min. = Gr. 750		3	57.4	+94	47.0	10	57 7.771	24.436
Groom. 2320		16	6.0	+68	8.7	11	58 58.918	59.055
Groom. 828		4	18.7	+107	44.9	12	18 42.765	49.860

A2

Groom. 2372		16	32.8	+79	13.8	13	32 64.554	58.960
Groom. 2391		16	48.7	+77	43.6	14	48 48.750	47.085
Groom. 2437		17	18.2	+71	55.1	15	18 12.828	11.497
1879 ~~Ursae Min.~~ B A C		5	56.0	+93	14.3	16	56 —	1.607
Lal. 896		6	20.7	+101	52.0	17	20 39.140	43.747
50 Draconis		18	50.4	+75	16.9	18	50 29.389	24.530
Groom. 1255		7	1.3	+98	31.2	19		
Groom. 2784		19	3.4	+76	52.5	20	3 18.260	15.900
Groom. 1259		7	4.5	+97	21.1	21	4 0.120	12.460

A3

2320 ~~Ursae Min.~~ B A C		7	26.7	+91	0.1	22		
Groom. 2917		19	35.7	+71	19.5	23	35 —	8.020
Groom. 1339		7	35.9			24	35	8.020

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A 3

		h	m	°	′					
Groom. 1359		7	46.6	+95	35.0	25	45	57.847	46	13.083
Groom. 1431		8	23.2	+97	19.1	26	23	0.832		12.047
Groom. 3241		20	30.5	+72	6.1	27	30	32.580		32.436
Lal. 7393 = Pond. 3606		20	47.3	+63	30.0	28	47	2.310		3.505
~~76 Draconis~~		~~20~~	~~51.6~~	~~+82~~	~~3.5~~	~~29~~				
11 Ursae Maj.		8	57.2	+112	37.1	29	57	7.410		12.768
Groom. 1537		9	18.9	+98	3.	30	18	38.140		47.790
7504 B.A.C. ~~Ursae Min.~~	X	21	24.6	+86	30.4	31	✓			(5)
79 Draconis		21	51.3	+73	6.1	32	51	16.360		17.117

A 4

Groom. 3735		22	11.2	+75	49.8	33	11			10.777
Lal. 4123		22	13.1	+66	3.8	34	13	26.455		28.200
B.A.C. 7851 ~~Ursae Min.~~ 7852 N.C.		22	23.1	+85	28.1	35				(7)
226 β Cephei		22	30.0	+75	34.3	36	30	0.740		1.862
Lal. 4309		22	48.1	+79	41.6	37	48	2.583		3.202
o Cephei		23	13.4	+67	25.0	38	13	22.710		25.870
8213 B.A.C. ~~Ursae Min.~~		23	27.8	+86	36.4	39	27	51.300		80.525
Groom. 4163		23	48.7	+73	42.2	40				
Sch. 9		0	18.4	+71	6.2	41				
Groom. 67	X	0	23.6	+85	37.1	42				
23 Cassiop.		0	39.3	+74	9.2	43	39	15.843		19.516
32 H. Camelop.		1	48.2	+75	53.8	44				

A 5

240 B.A.C. ~~Ursae Min.~~	X	0	44.2	+88	20.5	45	49			13.538	(2) = Pol.
Groom. 2063		13	45.8	+96	36.9	46				
Groom. 404		1	50.1	+77	17.8	47	50	4.505		10.062
Sch. 109	X	2	6.0	+80	8.3	48	5			22.703
5 B.A.C. ~~Ursae Min.~~		14	27.8	+103	44.9	49	27	49.460		49.421
960 B.A.C. ~~Ursae Min.~~	X	3	2.5	+84	27.8	50	2			38.758 (4)
Groom. 2212		15	4.3	+95	33.8	51	4			41.762
B.A.C. 5140		15	18.9	+92	16.9	52	18			3.865

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A 5

		h	m	°	′				
Groom. 642	X	3	23.9	+86	13.9	53	25	7.347	(8)
15 Ursae Min. B A C		15	35.2	+102	13.8	54	35 16.120	13.617	

A 6

Sch. 230 = Groom. 779	X	4	4.9	+80	30.4	55	45	3.184	
Groom. 2320		16	6.0	+111	51.3	56	5	59.217	
Groom. 828		4	18.8	+72	14.8	57	18	48.198	
Groom. 2372		4	32.8	+79	13.8	58	32	51.264	
Groom. 2373		4	37.1	+77	40.9	59	36	8.401	
Groom. 2391		16	48.7	+102	17.1	60	48	47.107	
Groom. 2437		17	18.2	+108	4.4	61	18	6.320	
1662 Ursae Min. B A C	X	5	21.5	+85	7.4	62	21	31.725	
1879 Ursae Min. B A C	X	5	56.0	+86	46.8	63	56	2.542	(4)

A 7

50 Draconis		18	50.4	+104	43.0	64	50	27.572	
Groom. 2784		19	3.4	+103	7.5	65	3	15.712	
2320 Ursae Min. B A C	X	7	26.7	+88	59.9	66	26	37.491	(6.)
Groom. 2917		19	35.9	+108	40.0	67	35	40.925	
3 H. Ursae Min.		8	0.0	+68	51.	68	0	8.583	
Groom. 3241		20	30.5	+107	53.9	69	30	32.380	
5 Ursae Maj. = Gr. 1472		8	42.9	+62	29.1	70	42	53.337	
Groom. 3452		21	17.0	+103	31.8	71	17	3.270	
7504 Ursae Min. B A C		21	24.6	+93	29.6	72	24	33.36	
32 Ursae Maj.		10	8.8	+65	44.4	73	8	47.087	
Groom. 1620	X	10	11.5	+84	54.0	74	10	49.412	

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A 8

		h	m	°	′		1872 m	1873 s
7851 Vesta Mem.		22	23.2	+94	32.1	75	23	4.604
226 β Cephei		22	30.0	+104	25.7	76	30	2.082
Fedorenko 4309		22	48.1	+100	18.8	77	48	3.662
8213 Vesta Mem.		23	27.8	+93	23.3	78	27	50.617
Groom. 4163		11	48.8	+73	42.2	79	48	39.785
Groom. 1845	X	11	53.7	+81	33.8	80	53	37.954
4165 Vesta Mem.	X	12	14.3	+88	24.9	81	14	19.259
Sch. 91		0	18.4	+108	53.8	82	18	32.133
Groom. 1909	X	12	30.3	+80	57.0	83	30	14.747
23 Cassiop.		0	39.3	+105	51.8	84	39	18.666
Groom. 1927	X	12	41.2	+81	19.2	85	41	12.627
3276 Camelop.	X	12	48.2	+84	6.2	86	48	12.604
240 Vesta Mem.		0	49.2	+91	39.5	87	49	15.075

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Sch. 813 = No 1

	h	m	s		°	′	″		′	″
1790	13	51	1.76		+80	1	54.8			
1810		50	53.07	− 8.69	79	56	0.0	− D	5	54.8
1830		50	45.28	− 7.79	79	50	6.3	−	5	53.7
1850		50	37.29	− 7.99	79	44	9.6	−	5	56.7
1870		50	30.59	6.70	79	38	12.9			

5 Ursae Min. = No 2

	h	m	s		°	′	″		′	″
1790	14	28	11.15		+76	37	48.2			
				− 6.70				− 5	21.5	
1810		28	4.45			32	26.7			
				− 4.86				− 5	18.7	
1830		27	59.59			27	8.0			
				− 5.39				− 5	22.1	
1850		27	54.20			21	45.9			
1870		27	49.81	− 4.39						

Groom. 537 = No 3

					°	′	″		′	″
	2	27	10.5		+66	55	3.0			
		28	39.39	+ 1 38.34	67	0	22.1	+	5	19.1
		30	19.23	+ 1 39.84	67	5	39.2	+	5	17.1
		31	59.08	+ 1 40.85	67	10	56.4	+	5	17.2
		33	39.87	+ 1 40.79	67	16	13.6			

Sch. 853 = No 4 (Rod. 2253?)

					°	′	″		′	″
	14	39	58.09		+81	33	45.6			
				− 41.47				− 5	6.9	
		39	16.62			28	38.7			
				− 41.46				− 5	6.9	
		38	35.16			23	31.8			
				− 41.19				− 5	9.2	
		37	53.97			18	22.6			
		37	12.79							

B.A.C. 961 Ursae Min. = No 5

					°	′	″		′	″
	2	45	34.42		+84	7	18.1			
		49	30.00	+ 3 55.58		12	15.5	+	4	57.4
		53	35.69	+ 4 5.69		17	8.3	+	4	52.8
		57	39.97	+ 4 4.28		21	56.1	+	4	47.8
	3	2	0.66	+ 4 20.69		26	43.9			

Groom. 2213 = No 6

					°	′	″		′	″
	15	14	41.40		+84	45	21.1			
				− 2 26.98				− 4	31.9	
		12	14.42			40	49.2			
				− 2 27.80				− 4	29.0	
		9	46.62			36	20.2			
				− 2 26.51				− 4	33.8	
		7	20.11			31	46.4			
		5	0.04	− 2 20.07						

5140 Ursae Min. = No 7

					°	′	″		′	″
	15	54	38.88		+87	59	18.6			
		45	17.78	− 9 41.10		55	40.6	−	3	38.0
		36	23.17	− 8 54.61		51	52.4	−	3	48.2
		27	58.42	− 8 24.75		47	49.2	−	4	3.2
		19	10.57	− 47.51						

Groom. 642 = No 8

					°	′	″		′	″
	3	0	29.85		+85	55	59.6			
				+ 5 36.19				+ 4	40.9	
		6	6.04			86	0	40.5		
				+ 5 49.62				+ 4	32.0	
		11	55.66			86	5	12.5		
				+ 5 54.03				+ 4	25.4	
		17	49.69			86	9	37.9		
				+ 6 20.72						
		24	10.41							

15 Ursae Min. = No 9

					°	′	″		′	″
	15	37	59.60		+78	2	32.8			
		37	16.82	− 0 42.78	77	58	38.7	−	3	54.1
		36	37.25	− 0 39.57		54	42.6	−	3	56.1
		35	58.56	− 0 38.69		50	48.2	−	3	54.4
		35	19.57	− 39.05						

1235 Ursae Min. = Gr. 750 = No 10

					°	′	″		′	″
	3	35	12.09		+84	57	40.9			
				+ 5 8.13				+ 3	52.0	
		40	20.22			85	1	32.9		
				+ 5 17.87				+ 3	48.0	
		45	38.09				5	20.9		
				+ 5 25.57				+ 3	36.6	
		51	3.66				8	57.5		

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b

Groom. 2320 = № 11

h	m	s		s	°	′	″		′	″
16	5	48.74		+68	21	47.7		− 3	8.0	
			+ 2.47							
	5	51.21			18	39.7		− 3	9.7	
			+ 2.39							
	5	53.60			15	30.0		− 3	9.1	
			+ 2.55							
	5	56.15			12	20.9				
			+ 2.53							
	5	58.68								

Groom. 828 = № 12

h	m	s		m	s	°	′	″	′	″
4	9	25.70				+72	2	51.9		
			+ 2	15.04					+ 2	57.0
	11	40.74					5	48.9		
			+ 2	14.92					+ 2	57.0
	13	55.66					8	45.9		
			+ 2	16.30					+ 2	56.7
	16	11.96					11	42.6		
			+2	17.01						
	18	28.97								

Groom. 2372 = № 13

h	m	s		s	°	′	″		′	″
16	37	46.37		+79	23	48.2		− 2	19.3	
			− 1	12.10						
	36	34.27			21	28.9		− 2	18.8	
			− 1	12.13						
	35	22.14			19	10.1		− 2	26.0	
			− 1	10.20						
	34	11.94			16	44.1				
			− 1	10.46						
	33	1.48								

Groom. 2391 = № 14

h	m	s		s	°	′	″		′	″
16	52	40.15		+77	51	53.6				
			−	57.42				− 1	55.5	
	51	42.73			49	58.1				
			−	55.70				− 1	53.8	
	50	47.03			48	4.3				
			−	57.66				− 1	58.4	
	49	49.37			46	5.9				
				540						
	4	8	55.35							

Groom. 2437 = № 15

h	m	s		s	°	′	″		′	″
17	19	32.37		+72	0	21.6		− 1	10.5	
			− 0	20.00						
	19	12.37		71	59	11.1		− 1	10.4	
			− 0	18.83						
	18	53.54			58	0.7		− 1	12.8	
			− 0	20.01						
	18	33.53			56	47.9				
			−	18.79						
	18	14.74								

1879 Vesae Mim. = № 16

h	m	s		s	°	′	″		′	″
5	19	28.80		+66	43	7.5				
			+ 8	37.04				+ 6	2.9	
	28	5.84				44	10.4			
			+ 8	48.65				+ 4	6.6	
	36	54.49				44	57.0			
			+ 8	52.91				+ 1	6.5	
	45	47.40				45	13.5			
				8.54.90						
	54	42.30								

Lal. 896 = Fed. = № 17

h	m	s		s	°	′	″		′	″
6	7	42.42		+78	7	11.7		− 0	20.6	
			+ 3	8.23						
	10	50.65			6	51.1		− 0	21.6	
			+ 3	8.48						
	13	59.13			6	29.5		− 0	27.4	
			+ 3	8.92						
	17	8.05			6	2.1				
			+ 3	7.46						
	20	15.51								

50 Draconis = № 18

h	m	s		s	°	′	″		′	″
18	53	3.56		+75	10	44.4				
			− 0	37.90				+ 1	27.3	
	52	25.66			12	11.7				
			−	38.65				+ 1	34.3	
	51	47.01			13	46.0				
			−	36.31				+ 1	24.3	
	51	10.70			15	10.3				
				37.48						
	50	33.22								

Groom. 1255 = № 19

h	m	s		s	°	′	″		′	″
6	44	50.14		+81	35	14.0		− 1	21.1	
			+ 3	58.10						
	48	48.24			33	52.9		− 1	30.8	
			+ 3	56.03						
	52	44.27			32	22.1		− 1	31.3	
			+ 3	52.97						
	56	37.24			30	50.8				
			+3	57.69						
7	0	34.93								

Groom. 2784 = № 20

h	m	s		s	°	′	″		′	″
19	6	37.29		+76	44	21.2				
			−	50.20				+ 1	5.61	
	5	47.09			46	17.3				
			−	47.86				+ 1	52.8	
	4	59.23			48	10.1				
			−	47.57				+ 1	54.4	
	4	11.66			50	4.5				
				48.50						
	3	23.16								

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1760 7 10 9.16 8901 2.82

Groom. 1259 = N°21

	h	m	s	m	s	°	′	″	′	″
1760	6	45	53.69			+82	45	32.8		
				+4	28.70					
1800		50	22.39				44	8.5	−1	24.3
				+4	25.99					
1830		54	48.38				42	36.5	−1	32.2
				+4	24.02					
1850		59	12.40				40	58.0	−1	38.5
		6	9.76	4	21.27					
1870		3	33.67							

Groom. 2917 = N°23

19	26	25.98			+71	8	10.4			
			−0	11.34				+2	41.8	
	36	14.64				10	52.2			
			−0	10.40				+2	43.3	
	36	4.24				13	35.5			
			−0	10.52				+2	43.3	
	35	53.72				16	18.8			
	35	42.54	−0	11.18						

Groom. 1359 = N°25

(7	24	20.07)			+84	36	16.9			
			+5	30.21				−2	32.8	
	29	50.28				33	44.1			
			+5	13.49				−2	37.0	
	35	3.77				31	7.1			
			+5	14.48				−2	46.7	
	40	18.25				28	20.4			
	45	26.03	+5	7.78						

Groom 3241 = N°27

20	30	47.49			+71	49	9.9			
			−0	3.20				+4	2.1	
	30	44.29				53	12.0			
			−0	3.46				+4	5.0	
	30	40.83			+71	57	17.0			
			−0	3.77				+4	4.4	
	30	37.06			+72	1	21.4			
	30	33.02	−0	4.04						

11 Ursae Maj. = N°29

8	49	42.62			+67	41	56.0			
			+1	49.34				−4	29.7	
	51	32.16				37	26.3			
			+1	48.40				−4	36.0	
	53	20.56				32	50.3			
			+1	48.40				−4	35.9	
	55	8.96				28	14.4			
	56	57.60	+1	47.90						

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2320 Ursae Min. = N°22

	h	m	s	m	s	°	′	″	′	″
	5	33	25.43			+89	4	11.3		
				+28	15.70				−0	13.2
	6	1	41.13				3	58.1		
				+28	57.70				−0	28.6
		29	38.83				3	29.5		
				+27	24.34				−1	14.4
5-0		57	3.17				2	15.1		
60	7	10	5.16	+26	41.18		1	20.8		
70		(22	44.35				89	0	15.1	
		22	53.70							
1872	7	23	26.19				89	0	0.7	

Groom. 1339 = N°24

7	20	47.33			+80	45	2.7			
			+3	30.44				−2	23.2	
	24	17.77				42	39.5			
			+3	29.20				−2	23.8	
	27	46.97				40	15.7			
			+3	24.98				−2	24.2	
	31	11.95				37	51.5			
	31	36.89	+3	24.94						

Groom. 1431 = N° 26

8	6	46.66			+82	56	36.0			
			+4	3.16				−3	18.6	
	10	49.82				52	47.4			
			+3	58.88				−3	38.2	
	14	48.70				49	9.2			
			+3	57.08				−3	47.1	
	18	45.78				45	22.1			
	22	37.61	+3	51.83						

Fed = Lal. 3606 = N°28

20	46	34.78			+63	15	42.7			
			+0	21.72				+4	26.3	
	46	56.50				20	9.0			
			+0	21.72				+4	26.0	
	47	18.22				24	35.0			
			+0	21.72				+4	26.0	
	47	39.94				29	1.0			
	48	0.23	+0	20.29						

[Groom 1537 = N°30 = 1 76 Draconis = Fr.

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8

7504 Ursae Min. = №31

h	m	s	m	s	°	′	″	′	″
21	37	45.88			+86	8	22.3		
			−2	38.90				+5	20.5
	34	46.98				13	42.8		
			−3	9.18				+6	20.1
	31	37.80				19	2.9		
			−3	9.22				+5	20.2
	28	28.58				24	23.1		
			−3	23.50					
	25	5.08							

79 Draconis = №32

h	m	s	°	′	″	′	″
21	50	14.24	+72	42	39.6		
						+5	38.8
	50	29.59		48	18.4		
						+5	38.9
	50	44.94		53	57.3		
						+5	33.7
	51	0.02		59	31.0		
			+0	14.89			
	51	14.91					

This star is 4097 Rad.

Groom. 3735 = №33

22	10	15.54	+75	25	13.0		
			+0	10.29		+5	54.6
	10	25.83		31	7.6		
			+0	14.79		+5	55.6
	10	40.62		37	3.2		
			+0	14.82		+5	55.6
	10	55.42		42	58.8		
			+0	13.48			
	11	8.90					

22 10 27.2
2.87
11 38.07
12 12.15
12 47.23

Lal. 4722. Double = №34

22	15	~~30.88~~	+65	~~28~~ 5	~~55.6~~ 52.6 3.3		
			+0	34.79		+5	59.4
	16	5.67		44	55.0		
			+0	35.92	10	49.5	+6 1.5
	16	41.59		~~50~~	~~56.5~~		
			+0	35.92	16	47.0	+6 1.6
	17	17.51		~~56~~ 22	~~58.1~~ 44.6		
	13	22.90					

7851 Ursae Min. = №35

22	27	43.27	+85	2	26.2		
			−1	2.17		+6	17.0
	26	41.10		8	43.2		
			−1	3.44		+6	9.8
	25	37.66		14	53.0		
			−1	4.21		+6	7.4
	24	33.45		21	0.4		
			−1	17.48			
	23	15.97					

226 β Cephei = №36

22	28	31.38	+75	8	43.2		
			+0	21.84		+6	9.1
	28	53.22		14	52.3		
			+0	22.44		+6	11.8
	29	15.66		21	4.1		
			+0	22.44		+6	11.8
	29	38.10		27	15.9		
	29	58.63	+0	20.53			

Lal. 4309 = №37

22	46	55.21	+79	15	15.0		
			+0	15.85		+6	22.7
	47	11.06		21	37.7		
			+0	~~17.47~~ 16.45		+6	20.9
	47	28.53 .01		27	58.6		
			+0	~~16.47~~ 16.96		+6	21.2
	47	44.97		34	19.8		
			+0	16.03			
	48	1.00					

o Cephei = №38

23	10	4.73	+66	57	53.3		
			+0	47.51		+6	29.3
	10	52.27		67 4	22.6		
			+0	48.35		+6	33.3
	11	40.62		67 10	55.9		
			+0	48.35		+6	32.4
	12	28.97		67 17	29.3		
	13	18.31	+0	49.34			

8213 Ursae Min. = №39

23	27	37.13	+86	8	57.5		
			+0	2.65	1′		
	27	39.78		15	31.4	+6	33.9
			+0	5.09			
	27	44.87		22	10.2	+6	38.8
			+0	1.58			
	27	46.45		28	47.8	+6	37.6
	27	52.68	+0	6.28			

Groom. 4163 = №40

23	44	47.44	+73	14	33.3		
			+0	55.14		+6	37.2
	45	42.58		21	10.5		
			+0	~~5.33~~ 36.86		+6	42.3
	46	~~38.91~~ 39.24		27	52.8		
			+0	~~56.33~~ 56.66		+6	42.3
	47	35.24 90		34	35.1		
	48	31.92	+0	56.02			

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~~See p. 71~~

Sch. 9 = N°41

h	m	s	m	″	°	′	″	′	″
0	13	53.20			+70	38	30.0		
			+1	7.14				+6	40.0
	15	0.34				45	10.0		
			+1	7.13				+6	42.3
	16	7.47				51	52.3		
			+1	6.93				+6	38.0
	17	14.40				58	30.3		
				7.62					
	18	22.02	+1						

Groom. 67 = N°42

h	m	s	m	″	°	′	″	′	″
0	17	28.10			+85	9	26.5		
			+1	32.09				+6	39.6
	19	0.19				16	5.9		
			+1	32.12				+6	39.4
	20	32.31				22	45.3		
			+1	32.12				+6	38.0
	22	443				29	23.3		
			+1	37.19					
	23	41.62							

23 Cassiop. = N°43

0	34	3.80			+73	41	53.1		
			+1	13.99				+6	31.8
	35	17.79				48	24.9		
			+1	17.02				+6	37.1
	36	34.81				55	2.0		
			+1	15.93				+6	34.1
	37	50.74			+74	1	36.1		
			+1	17.30					
	39	8.04							

32 H. Camelop. = N°44

12	47	43.78	X		+84	33	44.9	X	
	47	52.91	−	1.78		33	20.9	− 6	38.8
	47	45.56	X	0.80		27	5.1	X 6	34.2
	47	53.71	−	6.91		26	46.7	− 6	32.2
	47	52.47	X	6.85		20	32.9	X 6	31.9
	48	0.56	−	4.94		20	14.8	− 6	32.8
	47	57.21	X	4.15		14	0.2	X 6	32.3
	48	4.71	−			13	42.5	−	

240 Ursae Min. = N°45

0	34	28.82			+87	53	16.8		
			+3	5.93				+6	30.8
	37	34.75				59	47.6		
			+3	19.45				+6	36.2
	40	54.20			+88	6	23.8		
			+3	38.21				+6	34.4
	44	32.41				12	58.2		
			+4	3.97					
	48	36.38							

Groom. 2063 = N°46

13	49	14.69			+83	48	12.7		
			− 0	51.60				− 6	1.2
	48	23.09				42	11.5		
			− 0	45.91				− 5	57.4
	47	37.18				36	14.1		
			− 0	45.80				− 5	58.7
	46	51.38				30	15.4		
			− 0	41.28					
	46	10.09							

Groom. 404 = N°47

1	42	19.92			+76	53	10.3		
			+1	50.82				+5	57.2
	44	10.74				76	59	7.5	
			+1	53.76				+5	59.5
	46	4.00				77	5	7.0	
			+1	53.67				+5	56.9
	47	57.67				77	11	3.9	
			+1	55.65					
	49	53.32							

Sch. 109 = N°48

1	55	54.05			+79	44	10.2		
			+2	14.43				+5	57.0
	58	8.48				50	1.2		
			+2	14.45				+5	48.1
2	0	22.93				55	49.3		
			+2	12.97				+5	50.7
	2	35.90				61	40.0		
			+2	2.600					
	5	0.80							

5 Ursae Min. = N°49X

14	28	11.15			+76	37	48.2		
			− 0	6.70				− 5	21.5
	28	4.45				32	26.7		
			− 0	4.86				− 5	18.7
	27	59.59				27	8.0		
			− 0	5.39				− 5	22.1
	27	54.20				21	45.9		
	27	49.91							

X 960 Ursae Min. = N°50 = N°5

2	45	34.42			+84	7	18.1		
			+3	55.58				+4	57.4
	49	30.00				12	15.5		
			+4	5.19				+4	52.8
	53	35.19				17	8.3		
			+4	4.78				+3	47.8
	57	39.97				21	56.1		

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X Groom. 2213 = N°51 = 6

h	m	s	m	s	°	′	″	″
15	14	41.40			+84	45	21.1	
			−2	26.98				−4 31.9
	12	14.42				40	49.2	
			−2	27.86				−4 29.0
	9	46.62				36	20.2	
			−2	26.51				−4 33.8
	7	20.11				31	46.4	

X Groom. 642 = N°53 = 8

3	0	29.85			+85	55	59.6	
			+5	36.19				+4 40.9
	6	6.04				86	0	40.5
			+5	49.62				+4 32.0
	11	55.66				86	5	12.5
			+5	54.03				+4 25.4
	17	49.69				86	9	37.9

Sch. 230 = Groom. 779 = N°55

3	51	22.96			+80	16	49.3	
			+3	14.84				+3 32.2
	54	37.00				20	21.5	
			+3	16.72				+3 26.4
	57	53.72				23	47.9	
			+3	18.39				+3 21.2
	61	12.11				27	9.1	
			+3	19.86				
	64	31.97						

X Groom. 828 = N°57 = 12

4	9	25.70			+72	2	51.9	
			+2	15.04				+2 57.0
	11	40.74				5	48.9	
			+2	14.92				+2 57.0
	13	55.66				8	45.9	
			+2	16.30				+2 58.7
	16	11.96				11	42.6	

Groom. 2373 = N°59

16	39	55.19			+77	51	12.9	
			−0	55.91				−2 14.5
	38	59.28				48	58.4	
			−0	57.00				−2 19.9
	38	5.28				46	38.5	
			−0	54.11				−2 21.0
	37	11.17				44	17.5	
			−1	10.72				
	36	0.45						

X

B.A.C. 5144 = N°52 = 7

h	m	s	m	s	°	′	″	″
15	54	58.88			+87	59	18.6	
			−9	41.10				−3 38.0
	45	17.78				55	40.6	
			−8	54.81				−3 48.2
	36	23.17				51	52.4	
			−8	21.75				−4 3.2
	27	38.42				47	49.2	

15 Vesae Min. X = N°54 = 9

15	37	59.60			+78	2	32.8	
			−0	42.78				−3 34.1
	37	16.82				77	58	38.7
			−0	39.57				−3 56.1
	36	37.25				54	42.6	
			−0	38.89				−3 54.4
	35	58.56				50	48.2	

X Groom. 2320 = N°56 = 11

16	5	48.74			+68	21	47.7	
			+0	2.47				−3 8.0
	5	51.21				18	39.7	
			+0	2.39				−3 9.7
	5	53.60				15	30.0	
			+0	2.55				−3 9.1
	5	56.15				12	20.9	

X Groom. 2372 = N°58 = 13

16	37	46.37			+79	23	48.2	
			−1	12.10				−2 19.3
	36	34.27				21	28.9	
			−1	12.13				−2 18.8
	35	22.14				19	10.1	
			−1	10.20				−2 26.0
	34	11.94				16	44.1	

X Groom. 2391 = N°60 = 14

16	52	40.15			+77	51	53.6	
			−0	57.42				−1 55.5
	51	42.73				49	58.1	
			−0	55.76				−1 53.8
	50	47.03				48	4.3	
			−	57.66				−1 58.4
	49	49.37				46	5.9	

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× Groom. 2437 = N°61 = 15

h	m	s	m	″	°	′	″	′	″
17	19	32.37			+72	0	21.6		
			−0	20.00				−1	10.5
	19	12.37			71	59	11.1		
			−0	18.83				−1	10.4
	18	53.54				58	0.7		
			−0	20.01				−1	12.8
	18	33.53				56	47.9		

1662 Ursae Min. = N°62

h	m	s	m	″	°	′	″	′	″
4	56	21.80			+85	1	37.1		
			+5	56.96				+1	28.4
5	2	18.76				3	5.5		
			+6	2.72				+1	33.8
	8	21.48				4	39.3		
			+6	5.33				+1	25.6
	14	26.81				6	4.9		
	20	36.16	+6	9.35					

× 1879 Ursae Min = N°63 = 16

5	19	28.80			+86	43	7.5		
			+8	37.04				+1	2.9
	28	5.84				44	10.4		
			+8	48.65				+0	46.6
	36	54.49				44	57.0		
			+8	52.91				+0	16.5
	45	47.40				45	13.5		

× 50 Draconis = N°64 = 18

18	53	3.56			+75	10	44.4		
			−0	37.90				+1	27.3
	52	25.66				12	11.7		
			−0	38.65				+1	34.3
	51	47.01				13	46.0		
			−0	36.31				+1	34.8
	51	10.70				15	10.3		

× Groom. 2784 = N°65 = 20

19	6	37.29			+76	44	21.2		
			−0	50.20				+1	56.1
	5	47.09				46	17.3		
			−0	47.86				+1	52.8
	4	59.23				48	10.1		
			−0	47.57				+1	51.4
	4	11.66				50	4.5		

2320 Ursae Min. = N°66 = 22

5	33	25.43			+89	4	11.3		
			+28	1.70				−0	13.2
6	1	41.13				3	58.1		
			+27	57.70				−0	28.6
	29	38.83				3	29.5		
			+27	21.34				−1	14.4
	57	3.17				2	15.1		
	22	38.84	+25	35.67					

× Groom. 2917 = N°67 = 23

19	36	25.98			+71	8	10.4		
			−0	11.34				+2	41.8
	36	14.64				10	52.2		
			−0	10.40				+2	43.3
	36	4.24				13	35.5		
			−0	10.52				+2	43.3
	35	53.72				16	18.8		

37 Ursae Min. = N°68

7	51	41.09			+69	4	7.2		
			+2	2.63				−3	18.7
	53	43.72			69	0	56.5		
			+2	3.06				−3	11.7
	55	46.78			68	57	44.8		
			+2	1.81				−3	15.7
	57	48.59			68	54	29.1		
	59	50.37	+2	1.78					

× Groom. 3241 = N°69 = 27

20	30	47.49			+71	49	9.9		
			−0	3.20				+4	2.1
	30	44.29				53	12.0		
			−0	3.46				+4	5.0
	30	40.83			71	57	17.0		
			−0	3.77				+4	4.4
	30	37.06			+72	1	21.4		

5 Ursae Maj. = Ge. 1472 = N°70

8	35	54.53			+62	43	50.1		
			+1	40.72				−4	12.5
	37	35.25				39	37.6		
			+1	41.25				−4	15.1
	39	16.50				35	22.5		
			+1	41.25				−4	15.1
	40	57.75				31	7.4		
	42	39.31	+1	40.56					

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68

1r

Groom. 3452 = №71

h	m	s	m	s	°	′	″
21	17	43.00			+76	7	34.0
			−0	9.04			
	17	33.96				12	38.7
			−0	9.10			+5 4.3
	17	24.86				17	43.0
			−0	9.09			+5 6.2
	17	15.77				22	49.2
M		4.92	−0	10.85			

X 7504 Vesrae Min. = №72

h	m	s	m	s	°	′	″	′	″
21	37	45.88			+86	8	22.3		
			−2	58.90				+5	20.5
	34	46.98				13	42.8		
			−3	9.18				+5	20.1
	31	37.80				19	2.9		
			−3	9.22				+5	20.2
	28	28.58				24	23.1		

32 Vesrae Maj. = №73

h	m	s	m	s	°	′	″	′	″
10	2	34.48			+66	8	50.6		
			+1	30.11				−5	51.1
	4	4.59				2	59.5		
			+1	30.10				−5	52.2
	5	34.59				57	7.3		
			+1	30.01				−5	52.2
	7	4.60				51	15.1		
			+1	29.93					
8		34.03							

Groom. 1620 = №74

h	m	s	m	s	°	′	″	′	″
9	56	12.75			+85	18	6.7		
			+3	43.74				−5	51.3
	59	56.49				12	15.4		
			+3	34.28				−5	52.6
	3	30.77				6	22.8		
			+3	26.06				−5	53.2
	6	56.83				0	29.6		
			+3	22.63					
10		19.46							

X 7851 Vesrae Min. = №75 = 35

h	m	s	m	s	°	′	″	′	″
22	27	43.27			+85	2	26.2		
			−1	2.17				+6	17.0
	26	41.10				8	43.2		
			−1	3.44				+6	9.8
	25	37.66				14	53.0		
			−1	4.21				+6	7.4
	24	33.45				21	0.4		

X 226 β Cephei = №76 = 36

h	m	s	m	s	°	′	″	′	″
22	28	31.38			+75	8	43.2		
			+0	21.84				+6	9.1
	28	53.22				14	52.3		
			+0	22.44				+6	11.8
	29	15.66				21	4.1		
			+0	22.44				+6	11.8
	29	38.10				27	15.9		

Y Fedorenko 4309 = №77 = 37

h	m	s	m	s	°	′	″	′	″
22	46	55.21			+79	15	14.9		
			+0	15.85				+6	22.8
	47	11.06				21	37.7		
			+0	16.95				+6	21.1
	47	28.01				27	58.8		
			+0	16.96				+6	21.0
	47	44.97				34	19.8		

X 8213 Vesrae Min. = №78 = 39

h	m	s	m	s	°	′	″	′	″
23	27	37.13			+86	8	57.5		
			+0	2.65				+6	33.9
	27	39.78				15	31.4		
			+0	5.02				+6	38.8
	27	44.80				22	10.2		
			+0	1.65				+6	37.6
	27	46.45				28	47.8		

X Groom. 4163 = №79 = 40

h	m	s	m	s	°	′	″	′	″
23	44	47.44			+73	14	33.3		
			+0	55.14				+6	37.2
	45	42.58				21	10.5		
			+0	56.66				+6	41.3
	46	39.24				27	51.8		
			+0	55.66				+6	43.3
	47	35.90				34	35.1		

Groom. 1845 = №80

h	m	s	m	s	°	′	″	′	″
11	48	53.65			+82	1	30.1		
			+1	10.27				−6	47.8
	50	3.92			81	54	42.3		
			+1	9.84				−6	37.0
	51	13.76				48	5.3		
			+1	7.18				−6	40.7
	52	20.94				41	24.6		
53		28.24	+1	7.30					

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4165 Ursae Min. = N°81

h	m	s	m	s	°	′	″	′	″
12	15	23.86			+85	51	54.1		
			−0	35.49				−6	42.7
	14	48.37				45	11.4		
			−0	17.62				−6	39.7
	14	30.75				38	31.7		
			−0	8.46				−6	39.4
	14	22.29	+0	1.54		31	52.3		
	14	19.86	−12.43						

X Sch. 9 = N°82 = 41

h	m	s	m	s	°	′	″	′	″
0	13	53.20			+70	38	30.0		
			+1	7.10				+6	40.0
	15	0.30				45	10.0		
			+1	7.17				+6	42.3
	16	7.47				51	52.3		
			+1	6.93				+6	38.0
	17	14.40				58	30.3		

Groom. 1909 = N°83

h	m	s	m	s	°	′	″	′	″
12	27	34.90			+81	24	37.6		
			+0	36.23				−6	40.8
	28	11.13				17	56.8		
			+0	40.31				−6	41.3
	28	51.44				11	15.5		
			+0	39.18				−6	34.6
	29	30.62				4	40.9		
			+0	38.29					
	30	8.91							

X 23 Cassiop. = N°84 = 43

h	m	s	m	s	°	′	″	′	″
0	34	38.0			+73	41	53.1		
			+1	13.99				+6	31.8
	35	17.79				48	24.9		
			+1	17.02				+6	37.1
	36	34.81			+73	55	2.0		
			+1	15.93				+6	34.1
	37	50.74			+74	1	36.1		

Groom. 1927 = N°85

h	m	s	m	s	°	′	″	′	″
12	39	7.59			+81	46	22.7		
			+0	28.21				−6	33.5
	39	35.80				39	49.2		
			+0	31.14				−6	36.0
	40	6.94				33	13.2		
			+0	28.97				−6	34.0
	40	35.91				26	39.2		
			+0	32.19					
	41	8.10							

X 32 Camelop. fole = N°86 = 44

h	m	s	m	s	°	′	″	′	″
12	47	52.91			+84	33	20.9		
			+0	0.80				−6	~~15.8~~ 34.2
	47	53.71				26	~~46.7~~ 5.1		
			+0	6.85				−6	~~50.3~~ 31.9
	48	0.56				20	14.8		
			+0	4.15				−6	32.3
	48	4.71				13	42.5		

X 240 Ursae Min. = N°87 = 45

h	m	s	m	s	°	′	″	′	″
0	34	28.82			+87	53	16.8		
			+3	5.93				+6	30.8
	37	34.75				89	47.6		
			+3	19.45				+6	36.2
	40	54.20			88	6	23.8		
			+3	38.21				+6	34.4
	44	32.41				12	58.2		

Stars from 0^h to 12^h which occur between pages 6 and 9 and which are also found between pages 9 and 13 are marked with a x. Those which

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2320 Ursae Min

		α =			δ =			
1790	Pond	5	33	25.43	89	4	11.3	
~~90 25 16.95~~	1810	Lamont	6	1	41.13	89	3	58.1	13.2
97 24 42.45	1832		6	29	38.83	89	3	29.5	2.86
100 52 6.45	1840	Rob.	6	43	28.43	89	2	57.2	3.03
104 15 47.55	1850		6	57	3.17	89	2	15.1	4.41
107 32 17.40	1860		7	10	9.16	89	1	20.8	5.43
110 43 15.45	1870		7	22	53.03	89	0	15.1	6.57
113 ~~23~~ 46 ~~40.03~~	1880	Lw.	7	35	6.69	88	58	58.4	7.67

1.02
11.4
11.0

s s
+7443 −0.30 +7.31 +10″

					1700				1870	
1872	Lw.	7	25	23.19	22	53.73	89	0	04	~~58 49 52.5~~
1872			25	21.04		51.61	~~87~~	0		85 0 15.1
1873	Nov.		26	37.49		53.75				
				~~44.03~~	22	53.03				
1880	Lw.	7	36	~			88	58	59	88 58 58.8
1881		7	36	18.21				58	48.8	18.2
										58.4

For 1875

α = 7 29 ~~27 5.15~~ ~~56.7 3.03~~ ~~44.4 51.6~~

7 29 ~~57~~ 4.41

112 16 6.15

δ = 89 59 38.3

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Positions of stars within 10° of the Sun observed by Safford
for the Epoch 1883.0

	h	m	s								
Br. 48	0	30	59.122	Lq. 1278	7	13	17.604	11 Ursae Min	15	17	11.818
Br 74	0	44	0.495	SCh. 424	7	22	2.440	Lq. 2275	15	36	1.500
Br 65	0	51	28.323	28 H Camel	7	36	52.968	Lq. 2276	15	36	14.158
Br 95	0	56	38.350	Lq. 1119	7	38	44.015	Rod 3445	15	37	2.532
38 Cass	1	22	32.547	Lq. 1355	7	40	30.250	SCh. 932	15	44	7.678
Lq. 339	1	36	54.928	Lq 1368	7	46	20.127	Rod 3475	15	48	22.802
SCh 75	1	44	2.060	Rod 2021	7	46	45.597	18 Ursae Min	15	46	6.074
Lq 424	1	55	4.912	Lq. 1359	7	48	45.828	SCh. 945	15	52	36.545
Br. 344	2	31	0.366	Lq. 1391	8	1	46.863	Lq. 2315	15	55	38.955
Lq. 642	3	28	19.854	Lq. 1418	8	20	39.010	A Draco	16	28	13.114
Lq 766	4	1	12.048	Lq 1431	8	25	6.781	SCh. 988	16	36	4.078
Lq 774	4	4	22.802	SCh 529	8	38	31.757	SCh 986	16	38	53.132
Lq 775	4	6	44.641	SCh 533	8	41	15.820	SCh 1016	17	6	13.538
Lq. 785	4	9	4.665	Rod. 2218	8	50	44.090	Lq. 2456	17	28	29.895
SCh. 242	4	16	12.719	Lq. 1482	8	53	38.765	Lq. 2476	17	35	2.508
SCh. 241	4	17	29.315	SCh. 587	8	44	41.278	ψ Draco.	17	44	1.462
Pc. IV 59	4	25	36.139	Rod. 2404	9	49	40.360	SCh.	17	51	26.282
Pc IV 77	4	28	37.021	Rod 2407	9	58	12.708	35 Draco	17	54	41.355
Lq. 848	4	33	6.516	29 H Camel	10	12	26.892	40 Draco	18	8	47.685
50 H Cephei	4	38	30.224	Rod. 2594	11	0	18.173	41 Draco	18	8	53.892
Rod 1311	4	52	27.600	Lq. 1782	11	23	32.415	24 Ursae Min	18	14	6.152
19 H Camelop	5	3	17.544	Lq 1850	11	58	50.642	X Draco	18	23	9.808
Rod 1377	5	4	13.934	Br. 1656	12	13	25.256	Rod. 3961	18	24	3.901
SCh. 306	5	7	32.782	Br 1672	12	14	20.658	Br 2412	18	39	34.600
Lq. 966	5	24	5.011	Lq. 1923	12	37	32.972	52 Draco	18	50	8.527
Lq. 944	5	24	37.780	Lq 1927	12	41	27.782	Rod. 4208	18	53	2.074
Lq. 1004	6	0	29.092	32 Camelop	12	48	16.336	2 Draco.	18	55	49.629
SCh. 362	6	13	47.658	Lq. 2026	13	7	6.752	Rod. 4253	19	6	25.100
SCh. 369	6	19	45.414	Lq. 2047	13	15	22.211	Rod 4360	19	15	38.907
SCh. 377	6	23	58.015	Lq. 2063	13	45	43.643	Rod 4313	19	16	48.533
33 H Camel	6	26	14.706	Lq. 2071	13	52	44.675	Draco	19	17	47.645
Lq. 1257	7	3	6.902	Lq. 2099	14	1	28.637	Lq. 2900	19	28	45.021
25 H Camel	7	6	23.395	Ursae Min	14	27	47.220	SCh. 1172	19	32	2.057
SCh. 406	7	9	10.546	Lq. 2196	14	58	18.173	X Cephei	20	12	45.436
SCh. 415	7	11	28.706	Lq 2213	15	3	33.850	Lq 3402	20	13	26.772
24 H Camelop	16	42	59.218	Lq. 2283	15	15	19.965	Lq 3212	20	16	18.289

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Sch. 1213 20 21 4.262
Hy. 3260 20 26 35.417
Hy. 3261 20 30 0.303
Bz. 2673 20 30 30.291
Bz. 2701 20 34 9.950
71 Draco 20 35 31.666
Sch. 1235 20 35 51.364
71 Draco 20 36 10.475
Rod. 4976 20 49 39.804
Sch. 1255 21 0 26.958
Sch. 1258 21 8 46.610
Sch 1260 21 11 44.330
Rod 5218 21 17 20.574
Rod 5228 21 18 9.671
Hy 3518 21 22 45.651
Bz. 2832 21 22 53.491
Hy. 3511 21 28 14.102
32 H Cephei 22 22 26.703
Hy. 3534 22 30 12.822
Pi. XXIII 280 22 50 19.188
36 H Cephei 22 57 17.652
o Cephei 23 13 48.571
39 H Cephei 23 27 50.229
Hy 4163 23 49 8.886
Bz. 3564 23 54 1.429

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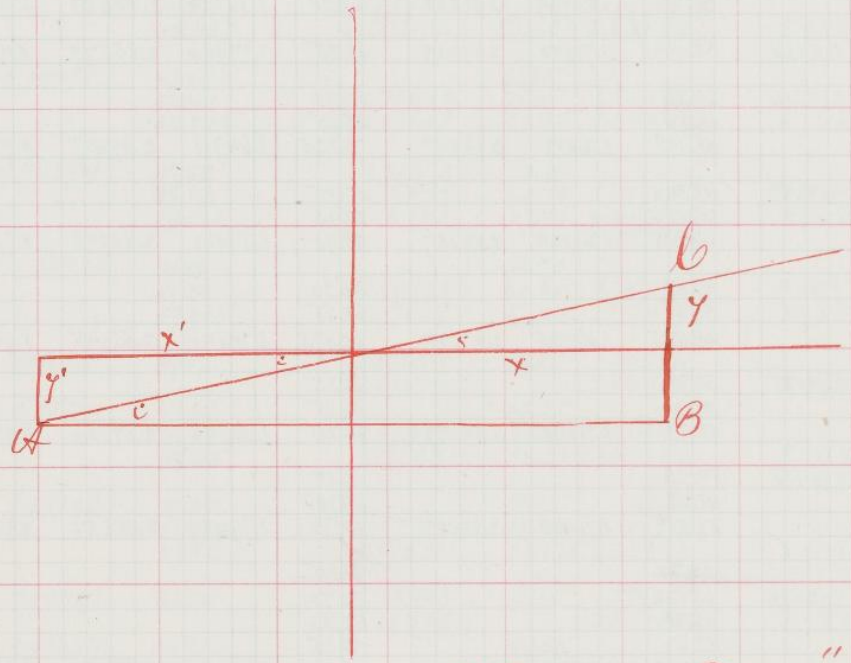
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$15 x \cos\delta + 15 x' \cos\delta = AB = 15 \cos\delta [x + x'']$

$y + y' = Bb''$ [from circle]

$\tan i = \frac{Bb}{AB} = \frac{y + y'}{15 \cdot \cos\delta [x + x']}$

Choose such stars as have $x = x'$ nearly and $x + x' = 50^s$ or more for Equatorial stars.

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18

1875.

Inclination of Declination wires Jan. 5 – Feb. 10

Date	✕	δ	log cos δ	x	log x	log 15 cos δ	y	log y	log 15 cos δ	log tan i = log y − log 15 cos δ	i	
Jan 27	ψ Eridani	−19° 3′	9.97554	60.80	1.78390	2.95999	75.45	1.87766	2.93553	8.94213	5° 0′ 10″	5 0 10
Jan 27	τ Persei	52 15	9.78691	108.10	2.03383	3.20992	89.00	1.94939	2.99683	8.95256	5 7 20	5 7 20
Feb. 8	β Persei	40 28	9.88126	52.67			53.95					
10				61.30			60.80					
				56.98	1.75572	2.93181	57.375	1.75872	2.81407	8.94565	5 2 30	10 5 0
Feb 8	o Tauri	8 35	9.99511	57.50	1.71181	2.88790	66.15	1.82053	2.88301	8.93752	4 57 0	4 57 0
" 8	ε Eridani	−9 53	9.99351	51.87	1.71492	2.89101	67.80	1.83123	2.88452	8.94671	5 3 20	5 3 20
" 8	δ Persei	47 23	9.83065	61.40			57.80					
13				76.90			70.60					
				69.15	1.83979	3.01588	64.20	1.80754	2.84653	8.96101	5 13 20	10 26 40
Jan 5	η Tauri	23 43	9.96168	52.24	1.71800	2.89409	60.25	1.77996	2.85577	8.92419	4 48 0	4 48 0
" 30	λ Tauri	26 9	9.95310	69.56			84.70					
Feb 1				46.83			55.95					
				58.195	1.76488	2.94097	70.325	1.84711	2.89407	8.95304	5 7 40	10 15 20
Feb 2	o′ Eridani	−7 10	9.99659	43.30			57.85					
4				45.07			59.95					
				44.185	1.64528	2.82137	58.90	1.77012	2.81796	8.95216	5 7 10	10 14 20
Feb 2	δ′ Tauri	17 15	9.98501	43.80			56.20					
4				55.37			69.55					
				49.585	1.69535	2.87144	62.875	1.79848	2.85145	8.94703	5 3 30	10 7 0
Feb 2	δ^2 "	17 9	9.98025	51.76			66.25					
4				52.46			66.15					
				52.11	1.71692	2.89301	66.20	1.82086	2.87326	8.94760	5 3 50	10 7 40
Feb 2	τ "	22 43	9.96493	54.93			67.00					
9				48.23			57.70					
				51.58	1.71248	2.88857	62.35	1.79484	2.85350	8.94134	4 59 30	9 59 0
~~Jan 25~~	~~ε Camelop.~~	~~66 8~~		122.70			64.75					
Feb. 9	i Aurigæ	32 58	9.92376	65.60			72.70					
14				45.73			52.30					
18				52.60			58.35					
				54.443	1.73594	2.91203	61.117	1.78616	2.83579	8.95037	5 5 50	15 17 30
Jan 25	β Orionis	−8 21	9.99587	45.41			61.80					
Feb 2				49.84			65.00					
				47.625	1.67784	2.85393	63.40	1.80209	2.84930	8.95279	5 7 30	10 15 0
Jan 27	ν Leporis	−12 27	9.98967	56.57			73.40					
Feb. 9				53.57			70.35					
				55.07	1.74092	2.91701	71.875	1.85658	2.90668	8.94990	5 5 30	10 11 0
Jan 27	μ Orionis	3 26	9.99922	58.87			79.00					
30				46.73			62.70					
Feb 1				50.64			67.70					
2				46.33			61.70					
9				45.64			61.50					
				49.642	1.69585	2.87194	66.52	1.82295	2.87116	8.95179	5 6 50	25 34 10
Jan 27	β Tauri	28 30	9.94390	77.60			90.35					
Feb. 2				60.34			71.20					
9				56.20			66.60					
				64.713	1.81099	2.98708	76.383 / 05	1.88110	2.93098	8.95012	5 5 40	15 17 0

34 | 172 45 30

Σy 2227.75 | 34

My 65.522

Mean value of y 65″.522

i′ = 5 4 52

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1876.

Inclination of Declination series Apr. 10 – June 10

Date	*	δ	log cos δ	x	log x	log 15 cos δ	y	log y	log 15 cos δ	log tan i	i
				s			"				
Apr. 10	48 Leonis	7° 35′	9.99618	44.57	1.65499	1.17227	60.40				
14				45.80			61.50	1.78497			
				45.185			60.95	2.82726		8.95771	5° 11′ 0″ 10° 22′ 0″
Apr. 11	κ Cancri	11 11	9.99167	41.74			54.95				
15				45.43		1.63934	60.15	1.76005			
				43.585		1.16776	57.55	2.80710		8.95295	5 7 40 10 15 20
Apr. 7	θ Hydrae	2 57	9.99946	48.40			63.65				
10				41.40		1.65225	54.70	1.77214			
				44.90		1.17555	59.175	2.82780		8.94434	5 1 0 10 2 0
Apr. 14	κ "	−8 7	9.99563	48.24			63.90				
20				44.17			58.00				
24				44.50		1.65932	57.70	1.77719			
				45.637		1.17172	59.867	2.83104		8.94615	5 2 50 15 8 30
Apr. 11	i "	−0 33	9.99998	47.27			63.85				
21				54.46		1.70642	71.65	1.83091			
				50.865		1.17607	67.75	2.88249		8.94842	5 4 30 10 9 0
Apr. 7	ψ Leonis	14 36	9.98574	57.50		1.71613	72.90				
22				~~46.53~~		~~+.75599~~	61.40	1.82705		8.94909	5 5 0 10 10 0
				~~52.015~~		1.16183	67.15	~~2.91782~~		~~8.90923~~	
								2.87796			
Apr. 27	ν "	−0 8	0.00000	41.03			53.90				
May 3				38.24		1.59808	60.60	1.75778			
				39.635		1.17609	57.25	2.77417		8.98361	rej.
May 5	b Virginis	4 21	9.99875	47.07		1.17484	62.80	1.79796			
						1.67274		2.84758		8.95038	5 5 50 5 5 50
May 13	77 "	0 2	0.00000	49.23			65.35				
June 1				49.67		1.69417	65.10	1.81441			
				49.45		1.17609	65.225	2.87026		~~8.94435~~	5 1 30 10 3 0
May 22	γ "	0 46	9.99996	44.03			58.15				
June 8				51.17		1.67761	68.20	1.80054			
				47.60		1.17605	63.175	2.85366		8.94688	5 3 20 10 6 40
May 22	36 Comae	18 6	9.97796	46.54		1.15405	60.15	1.77924			
						1.66783		282188		8.95736	5 10 50 5 10 50
May 23	α Virginis	−10 30	9.99267	48.50			53.55				
26				51.63			67.85				
June 8				43.07			56.90				
10				47.67		1.66009	61.95	1.77860			
				45.718		1.16876	60.062	2.82885		8.94975	5 5 20 20 21 20
May 26	BAC 4513	24 53	9.95769	50.10			60.35				
June 8				50.83			62.10				
				50.465		1.70299	61.225	1.78692			
						1.13378		2.83677		8.95015	5 5 40 10 11 20

25/127 5 50

Σy 1547.20

Mean value of y 61.″888

i′ = 5 5 2

My 61.888

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1875

Inclination of Declination wires June 8 – July 10

Date	*	δ	log cos δ	x	log 15 cos δ / log x	y	log y / log 15 cos δ	log tan i	i		
				s	1.97301	"	1.79134				
July 10	α Serpentis	6° 49'	9.99692	47.17	1.67367	61.85	2.84668	8.94466	5° 1' 50"	5° 1' 50	
					1.15933		1.78993				
" 8	β "	15 49	9.98324	48.40	1.68485	61.65	2.84418	8.94575	5 2 40	5 2 40	
					1.17453		1.77232				
" 12	ε "	4 51	9.99844	45.13	1.65447	59.20	2.82900	8.94332	5 1 0	5 1 0	
					1.15579		1.78923				
" 8	κ' Herculis	17 23	9.97970	48.67	1.68726	61.55	2.84305	8.94618	5 3 0	5 3 0	
" 7	δ Ophiuchi	−3 22	9.99925	43.80		58.35					
" 8				44.03		58.25					
" 10				41.63	1.17534	54.85	1.75702				
				43.153	1.63501	57.15	2.81035	8.94667	5 3 20	15 10 0	
					1.17482		1.77597				
Aug. 8	ε "	−4 23	9.99873	44.60	1.64933	59.70	2.82415	8.95182	5 6 50	5 6 50	
" 4	ω Herculis	14 19	9.98630	40.74		53.35					
" 9				44.83	1.16239	58.15	1.74624				
				42.785	1.63129	55.75	2.79368	8.95056	5 6 0	10 12 0	
					1.16901		1.81856				
" 10	ζ Ophiuchi	−10 19	9.99292	49.14	1.69144	65.85	2.86045	8.95811	5 11 20	5 11 20	
					1.12283		1.88734				
July 31	μ Herculis	27 48	9.94674	61.33	1.78767	77.15	2.91050	8.97684	rej.		
					1.12950		1.75587				
" 31	89 "	26 4	9.95341	47.77	1.67916	57.00	2.80866	8.94721	5 3 40	~~5~~ 3 40	

12)60 52 20
5 4 22

Rejecting Aug. 10, the value is 5 3 44 which indicates a change and necessitates smaller groups.

June 8	2 Libræ	−11° 8'	9.99175	s 43.80		" 57.35					
10				39.36	1.16784	52.40					
				41.58	1.61888	54.875	1.73937	8.95265	5 7 30	10 15 0	
							2.78672				
" 21	c Bootis	25 22	9.95597	40.90		50.00					
" 27				44.03		52.80					
July 1				41.56	1.13206	50.15					
				42.163	1.62493	50.983	1.70743	8.95044	5 5 50	15 17 30	
							2.75699				
June 24	ε Libræ	−9 51	9.99355	44.03	1.16964	56.85	1.75473	8.94134	4 59 30	4 59 30	
					1.64375		2.81339				
" 24	β Coronæ	29 32	9.93955	44.70		51.90					
" 28				45.96		53.15					
July 1				50.57	1.11564	57.60					
				47.078	1.67282	54.217	1.73414	8.94568	5 2 30	15 7 30	
							2.78846				
" 7	α Serpentis	6 49	9.99692	40.73		53.80					
10				47.17	1.17301	61.85					
				43.95	1.64296	57.825	1.76212				
							2.81597	8.94615	5 2 50	10 5 40	
8	β "	15 49	9.98324	48.40	1.15933	61.65	1.78993				
					1.68485		2.84478	8.94575	5 2 40	5 2 40	
7	ε "	4 51	9.99844	37.64		50.55					
8				41.80		54.80					
12				45.13	1.17453	59.20					
				41.523	1.61829	54.85	1.73918	8.94636	5 3 0	15 9 0	
							2.79282				
8	ι "	16 14	9.98233	45.50		58.50					
11				40.63	1.15842	52.10					
				43.065	1.63412	55.30	1.74273	8.95019	5 6 40	10 11 20	
							2.79254				
8	κ' Herculis	17 23	9.97970	48.67		61.55					
11				42.60	1.15579	54.55					
				45.635	1.65930	58.05	1.76380	8.94871	5 4 40	10 9 20	
							2.81509				
7	δ Ophiuchi	−3 22	9.99925	43.80		58.35					
8				44.03		58.25					
10				41.63	1.17534	54.85					
				43.153	1.63501	57.15	1.75702	8.94667	5 3 20	15 10 0	
							2.81035				

Sy 12230
my 55555

Mean value of y ~~56.175~~ 55.555

22)111 27 30
5° 3' 59"

No observations July 13 – 30.

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1876.81
1675

Inclinations July 31, Aug 4, 7, 9, 10, 14.

Date		δ	log cos δ	log x″	x″	log y″	y″	log tan i	i	
				s						° ′ ″
Aug 4	ω Herculis	14° 19′	9.98630	40.74	[1.61062	53.35	[1.72713	8.95472		5 8 50
9				44.83	1.65157	58.15	1.76455	8.95059		5 6 0
10				37.70	1.57634]	50.05	1.69940]	8.96067	° ′ ″	5 13 10
				41.69	1.61374	53.85	1.73119	8.95506	5 9 10	
					[1.69636]		2.77613			
4	λ Ophiuchi	2 16	9.99966	49.70	1.61140]	65.70	[1.81757	8.94546		5 2 30
9				40.87	1.17575	54.90	1.73957]	8.95942		5 7 20
				45.285	1.65575	60.30	1.78032	8.94862	5 4 40	
							2.83170			
10	3 "	−10 19	9.99292	49.14	1.16901	65.85	1.81856	8.95811	5 11 20	
					1.69144		286045			
					[1.65128					
7	49 Herculis	15 11	9.98457	44.80	1.59594]	57.85	[1.76230]	8.95036		5 5 50
9				39.44	1.16066	51.95	1.71559]	8.95899		5 12 0
				42.12	1.62449	54.890	1.73957	8.95442	5 8 40	
							2.78515			
July 31	89 "	26 4	9.95341	47.77	1.12950	57.00	1.75587	8.94721	5 3 40	
					1.67916		280866			
Aug 7	0 "	28 45	9.94286	45.43	1.11895	53.90	1.73159	8.95530	5 9 20	
					1.65734		2.77629			
10	γ Serpentis	−2 56	9.99943	39.67	1.17552	54.10	1.73320	8.95922	5 12 10	
					1.59846		2.77398			
9	109 Herculis	21 43	9.96803	42.46	1.14412	53.00	1.72428	8.95218	5 7 10	
					1.62798		2.77210			

	July 31	Aug. 4	Aug. 7	Aug. 9	Aug. 10	
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″	′ ″
	5 3 40	5 8 50	5 5 50	5 6 0	5 13 10	13 10
		5 2 30	5 9 20	7 20	11 20	11 20
				12 0	12 10	12 10
				7 10		6 0
						7 20
Mean	5° 3′ 40″	5 5 40	5 7 35	5 8 8	5 12 13	12 0
						7 10
Value of y	57.″00	59.525	55.875	54.50	55.95	5 50
						9 20
						9 84 20
					Aug 7–10	5° 9′ 22″
					Means	55.528

				s						
Aug. 14	BAC 5790	40° 41′	9.87985	49.56	~~3594~~ 1.05594	49.85	1.69767	8.94660	5° 3′ 10″	
					1.69513		2.75107			
" 14	2 Ophiuchi	12 39	9.98933	37.40	1.16542	49.20	1.69197	8.95368	5 8 10	
					1.57287		2.73829			
14	κ "	9 34	9.99392	39.27	1.17001	51.85	1.71475	8.95068	5 6 0	
					1.59406		2.76407			
14	25i "	10 22	9.99285	38.77	1.16894	51.20	1.70927	8.94960	5 5 20	
					1.59073		2.75967			
14	49 Herculis	15 11	9.98457	39.33	1.16026	50.50	1.70329	8.94791	5 4 10	
					1.59472		2.75538			

Aug. 14 $i' = 5° 5' 22''$

			Σ y	
	° ′ ″			5)252.60
34	165 30		2227.75	50.52
25	125 50		1547.20	
22	87 30		1221.20	
1	3 40		57.00	
2	11 20		53.35	
84	393 50		68.70	
	5° 4′ 41″	Jan–Aug. 4	517320	
			Σ y 6.586	

$y = 50.''52$

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82
1875

Inclination of Declination wires Aug. 26 – Sept. 7

Date	✶	δ	log cos δ	x	log 15 cos δ + log x	y	log y + log 15 cos δ	log tan i	i
Aug. 26	κ Ophiuchi	9° 34′	9.99392	44.76	1.17001	59.75	1.77634	8.95544	5° 9′ 20″
					1.65089		2.82090		5° 9′ 20″
26	ζ Herculis	14 32	9.98558	48.96	1.16197	~~64.25~~	1.78711	8.93530	rej.
					1.68984		2.85181		
					1.93904		1.90768	8.94581	5 2 40
29	μ "	27 48	9.94674	69.03	1.88121	80.85	1.95999	8.95595	5 9 50
30				76.07	1.12283	91.20			
				72.55	1.86064	86.025	1.93462	8.95115	5 6 20 10 12 40
					1.85187		2.98347		
29	BAC 6062	40 1	9.88415	71.10	1.72648	70.90	1.85065	8.93854	4 57 40
30				53.27	1.78297	54.40	1.73560	8.94888	5 4 40
31				60.67	1.78053	61.50	1.78888	8.94567	5 2 30
Sept 1				60.83	1.86024	60.55	1.78211	8.94734	4 59 30
				61.342	1.78775	61.838	1.79126	8.94327	5 0 50 20 3 20
					1.82105		2.84799		
Aug. 29	89 Herculis	26 4	9.95341	66.23	1.76042	79.50	1.89763	8.94708	5 3 30
30				57.60	1.81796	69.30	1.84073	8.95081	5 6 10
31				65.76	1.78909	78.95	1.89735	8.93989	4 58 40
Sept 1				61.53	1.12950	73.95	1.86894	8.95035	5 5 50
				62.78	1.79782	75.30	1.87679	8.94947	5 5 10 20 20 40
					1.94890		2.92732		
Aug. 30	γ Draconis	51 30	9.79415	88.90	1.83353	73.40	1.86570	8.94656	5 3 10
31				68.76	0.97024	58.30	1.76567	8.96190	5 14 0
				78.53	1.89504	65.85	1.81856	8.95328	5 7 50 10 15 40
					1.65552		2.86528		
Sept. 5	η Serpentis	−2 56	9.99943	45.24	1.67852	59.80	1.77670	8.94566	5 2 30
7				47.70	1.17552	63.35	1.80175	8.94771	5 4 0
				46.47	1.66717	61.575	1.78940	8.94671	5 3 20 10 6 40
					1.66276		2.84269		
Aug. 26	1 Aquilæ	−8 20	9.99539	46.00	1.78937	60.35	1.78068	8.94644	5 3 10
30				61.57	1.85851	80.40	1.90526	8.94441	5 1 40
31				63.14	1.17148	84.35	1.92609	8.95410	5 8 30
				56.913	1.75521	75.033	1.87525	8.94856	5 4 30 15 13 30
					1.90596		2.92669		
31	ε Lyræ	38 40	9.89254	80.53	1.70842	84.10	1.92480	8.95021	5 5 40
Sept 4				51.10	1.75691	52.45	1.71975	8.94270	5 0 30
5				57.11	1.06863	58.75	1.76901	8.94367	5 1 10
				62.933	1.79874	65.10	1.81358	8.94621	5 3 0 15 9 0
							2.86737		
Sept 5	ζ Aquilæ	13 41	9.98750	53.63	1.16359	70.20	1.84634	8.95334	5 8 0 5 8 0
					1.72941		2.89300		5 8 0
					1.66773				
Aug. 28	δ "	2 52	9.99946	46.53	1.81954	61.10	1.78604	8.94276	5 0 30
29				66.00	1.83168	87.75	1.94325	8.94816	5 4 20
30				67.87	1.74943	90.40	1.95617	8.94894	5 4 50
31				56.16	1.67906	74.60	1.87274	8.94776	5 4 0
Sept 1				47.76	1.61286	63.05	1.79969	8.94508	5 2 10
4				40.96	1.17555	54.85	1.73918	8.95127	5 6 30 23
				54.218	1.73410	~~73.625~~ 71.958	~~1.86708~~ 2.90965	~~8.95443~~	5 ~~8~~ 50 30 ~~8~~ 0
Aug. 29	4 Cygni	36 4	9.90759	61.03		65.50			
30				64.30	1.91418	69.15			
31				82.07	1.76268	89.25	1.95061	8.95275	5 7 30
Sept 1				57.90	1.08368	61.95	1.79204	8.94568	5 2 30
				66.325	1.82168	71.462	1.85407	8.94871	5 4 40 20 18 40
					1.85836		2.90536		
Aug. 29	β "	27 42	9.94714	72.17	1.83778	84.50	1.92686	8.94527	5 2 10
30				68.83	1.88104	82.10	1.91434	8.95333	5 8 0
31				76.04	1.12323	90.15	1.95497	8.95070	5 6 0
				72.347	1.85942	85.583	1.93238	8.94973	5 5 20 15 16 0
					1.84198		2.98265		
Sept 31	ε Sagittæ	16 11	9.98244	69.50	1.67287	89.40	1.95134	8.95083	5 6 10
1				47.03	1.15853	62.05	1.79274	8.96184	5 14 0
				58.265	1.76541	75.725	1.87924	8.95530	5 9 20 10 18 40
							2.92394		
Aug. 31	β "	17 11	9.98017	70.86	1.85040	89.90	1.95376	8.94710	5 3 30
Sept 1				49.07	1.69346	64.90			
4				49.37	1.15626	63.70	1.80414	8.95442	5 8 40
				56.433	1.75153	72.833	1.86235	8.95456	5 8 50 15 26 30
							2.90779		

For Mean y = 81.621 i = 5 4 10
= 59.744 = 5 4 44

Σy 2870.10
Mean y 71.752

40) 219 01 40

i = 5° 8′ 2″
5 5 2

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Inclinations of Declinations mids, Nov. 2 – Dec. 30 1875

Date	☆	δ	log cos δ	χ	log 15 cos δ	γ	log 15 cos δ	log tan i	i	
Nov. 17	12 Lyncis	−4° 39′	9.99857	50.34		67.20				
20				43.60		56.50				
Dec 1				51.63	1.17466	68.30				
				48.523	1.68595	64.00	1.80618	8.94557	5° 2′ 30″	7′ 30″
							2.86061			
Nov. 20	ε Piscium	7 13	9.99655	41.10		54.45				
Dec. 6				50.23		66.00				
15				47.80	1.17264	63.55				
				46.377	1.66630	61.333	1.78769	8.94875	5 4 40	14 0
					1.11607		2.83894			
Nov. 22	τ "	29 26	9.93998	51.44	1.71130	60.60	1.77815	8.95078	5 6 10	6 10
							2.82737			
					1.17453					
Dec. 13	υ "	4 51	9.99844	48.03	1.68151	63.70	1.80414	8.94810	5 4 20	4 20
							2.85604			
					1.07652					
12	BAC 5444	37 20	9.90043	64.14	1.80713	67.75	1.83091	8.94726	5 3 40	3 40
							2.88365			
Nov. 3	ω Piscium	6 10	9.99748	41.36		55.25				
29				45.97		61.45				
30				43.30	1.17357	59.60				
				43.543	1.63892	58.767	1.76914	8.95665	5 10 20	31 0
							2.81249			
Nov. 11	33 "	−6 24	9.99728	38.70		52.90				
17				38.13		50.60				
21				41.30		55.25				
29				38.53	1.17337	51.05				
				39.165	1.57290	52.30	1.71850	8.95223	5 7 10	14 20
							2.76627			
Nov. 2	ρ Aquarii	−8 26	9.99528	42.10		54.95				
7				38.93		53.45				
Nov. 2	ζ Aquarii	−0 39	9.99997	48.50		65.50				
4				41.20		54.65				
6				40.50	1.17606	52.55				
				43.40	1.63749	57.567	1.76018	8.94663	5 3 10	6 20
				2			2.81355			
2	2 Pegasi	14 32	9.98588	48.73		55.10				
22				46.90	1.16197	61.55				
				47.815	1.65142	58.325	1.76586	8.95247	5 7 20	14 40
					1.17564		2.81339			
29	ζ Piscium	2 36	9.99955	50.20	1.76070	66.55	1.82315	8.94681	5 3 20	3 20
							2.87634			
3	ϕ Pegasi	18 26	9.97713	41.20		52.55				
11				41.23		53.05				
29				50.57		63.80				
30				45.44	1.15322	59.05				
				44.61	1.64943	57.112	1.75673	8.95408	5 8 30	25 30
					1.17559		2.80265			
11	o Aquarii	−2 45	9.99950	45.60	1.65896	61.20	1.78675	8.95220	5 7 10	7 10
							2.83455			
					1.17603					
4	α "	−0 56	9.99994	45.90	1.66181	60.70	1.78319	8.94535	5 2 20	2 20
							2.83784			

24 | 140′ 20″
5° 5′ 50″

Σy 1439.92
Mean y = 59.997

64 | 380 0 → 23′ 40″
140 20
5° 5′ 56″

64 | 352 0 → 5° 5′ 30″
140 20
201 40

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Results — Inclination & Declination series for year 1875.

Jan 1 — Aug. 4	i' =	5° 4′ 41″	$\frac{dy}{dt}$	61.″586
Aug. 5 — Aug. 11	=	5 9 22		55.528
Aug. 12 — Aug. 24	=	5 5 22		50.52
Aug. 25 — Dec. 31	=	5 5 ~~31~~ 30		67.313

From group Nov. 2 - Dec. 30

i			$\frac{dy}{dt}$	No.	
5°	10′	20″	58.767	3	
	7	10	52.30	4	
	3	10	57.567	3	
	7	20	58.325	2	
	8	30	57.112	4	
5	7	19	56.456		Mean by Wts

From group Aug. 26 - Sept 7

i			$\frac{dy}{dt}$	No.
5°	5′	20″	85.583	3
	6	20	86.025	2
	9	20	75.725	2
	11	50	73.625	6
	4	30	75.033	3
5	8	14	77.319	

5	2	30	64.00	3	
	4	40	61.333	3	
	4	20	63.70	1	
	3	40	67.75	1	
	3	20	66.55	1	
5	3	39	63.778		Mean by wts

For 1875

Adopt: 5° 5′ 11 except for Aug 5 — 11

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Inclination of Declination wires May 1 – July 22 1876

Date	*	δ	log 15 cos δ	x	log 15 x	y	log y / 15 sec δ	log tan i	i
May 16	ζ Virginis		9.99267	58.63		78.05			
21				52.76		70.25			
24				62.80		82.35			
30				64.00		83.70			
31				62.66		83.60			
June 1				58.63		76.55			
13				57.30		73.80			
14				69.53	1.16876	88.275	1.90076	8.95042	5° 5′ 50″
				60.470	1.78158	79.572	2.95031	8.94529	2 20
12				75.14	1.65956	93.125	1.72880	8.95242	5 7 20
July 13	α Coronæ	27° 8′	9.94936	67.37	1.82847	80.60	1.90854	8.95210	7 0
17				71.56	1.85467	85.55	1.93222	8.94733	4 10
19				65.40	1.81558	77.45	1.88902	8.95090	5 6 10
				68.11	1.83321	81.20	1.90956		
					1.76118		2.95866		
12	ζ Serpentis	6 49	9.99692	57.70	1.77254	75.925	1.88038	8.94619	5 3 0
13				59.23	1.78987	77.825	1.89112	8.94657	3 10
17				61.57	1.78901	80.875	1.90782	8.94544	2 20
				59.50	1.77452	78.208	1.89325	8.94572	2 40
							2.94753		
19	δ Ophiuchi	−3 22	9.99925	45.20		59.275			
22				54.13	1.17534	72.025	1.81723	8.94584	5 2 40
				49.665	1.69605	65.650	2.87139		
19	β Herculis	21 46	9.96788	58.03		71.~~975~~ 125			
22				54.33	1.14397	66.150	1.83657	8.94302	5 0 40
				56.18	1.74958	~~67.062~~ 68.638	2.89355		
							1.88972	8.93910	4 58 0
22	κ Ophiuchi	9 34	9.99392	60.34	1.17001	77.575	2.95062		
					1.78061				
							1.88409	8.94180	4 59 50
19	ζ Herculis	14 32	9.98588	60.30	1.16197	76.575	2.94229		
					1.78032				
							1.91724	8.94496	5 2 0
22	ζ Ophiuchi	12 39	9.98933	64.10	1.16642	82.65	2.97228		
					1.80686				
June 13	109 Virginis	2 25	9.99961	~~55.53~~	1.17570		1.84973	8.94975	5 5 20
14				53.00	1.72428	70.75	2.89998		
July 12				54.53		72.50			
13				45.47	1.17570	60.15	1.82168	8.94701	5 3 30
				50.00	1.69877	66.325	2.87467		
May 16	β Virginis	2 28	9.99960	47.23		63.275			
17				44.20		58.825			
24				47.23		62.85			
28				44.54	1.17569	59.625			
				45.80	1.66087	61.144	1.78636	8.94980	5 5 30
							2.83656		
1	δ Leonis	21 12	9.96957	48.70		61.45			
16				50.57		62.175			
24				57.60	1.14566	71.125			
				52.29	1.71842	64.917	1.81236	8.94828	5 4 20
							2.86408		

For values of i from Jan. to May see page 92 of This book

May 1 – June 15

8	46′	40″
1	5	20
4	22	0
3	13	0
16	87	0
	1′	1″
5°	5	26

Σy 1146.50

a_j = 71.666

July 10 – 22

4	20′	20″
3	15	30
2	10	40
2	10	20
1	4	58
1	4	59
1	5	20
2	10	7
16	80	42
	1′	1″
5°	2	41

Σy 1235.50

b_j = 77.231

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876

Inclination & Declination arcs July 24

Date			δ	log cos δ	x	log 15 cos δ + x	y	log y + log sec δ	log tan i	i
July	24	β Serpentis	15° 49′	9.98324	53.04	1.15933 1.72460	67.825	1.83139 2.88393	8.94746	5° 3′ 50″
	24	δ Ophiuchi	− 3 22	9.99925	76.14	1.17534 1.88161	100.40	2.00173 3.05695	8.94478	5 2 0
	24	ε "	− 4 23	9.99873	65.70	1.17482 1.81757	86.25	1.93576 2.99239 3.03695	8.94337	5 1 0
	24	β Herculis	21 46	9.96788	78.16	1.89298	97.05	1.98760	8.95005	5 5 40
	25				rej. ~~52.23~~	1.14397	~~67.20~~	1.91147	~~8.95616~~	~~5 10 0~~
					~~65.275~~	1.81434	~~82.125~~	2.95834		
	24	η "	39	109.88948	85.40	1.06557 1.93146	89.075	1.94976 2.99703	8.95273	5 7 30
	24	Lr. 2377	57 0	9.~~47359~~ 73611	119.36	9.91220 ~~1.04968~~ 2.07686	86.80	1.93852 ~~8.47854~~ 2.98906	8.94946	5 5 10
	24	κ Ophiuchi	9 34	9.99892	70.46	1.17091 1.84794	92.25	1.96497 3.01795	8.94702	5 3 30
	24	ε Herculis	31 7	9.93253	76.80	1.10862 1.88081	86.625	1.93764 2.98943	8.94821	5 4 20
	24	α "	14 32	9.98588	76.74	1.16197 1.88502	99.375	1.99728 3.04699	8.95029	5 5 50
									~~9 38 50~~	~~Aug~~
									~~5 4 19~~	
	24	q "	45 16		99.94	1.02354 1.99974	94.95	1.97749 3.02328	9.95421	5 8 30
						Σy	900600		10) 47′ 20″	
						y = 90.060			5° 4′ 44″	

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Inclination of Declination circle July 26 – Aug. 5 1876

Date	*	δ	log cos δ	x	log 15 cos δ	y	log 15 sin δ	log tan i	i	July 26
									° ′ ″	° ′ ″
					1.81 23		1.94866	8.96309		5 14 50
July 26	δ Ophiuchi	−3° 22′		64.60	1.78154	88.85	1.90485	8.94796		~~5 4 10~~
Aug 1				60.47	1.17534	80.325	1.92731			
				62.535	1.79612	84.5875	2.97146	8.95585	5 9 40	19 20
July 26	ε "	−4 23		61.37	1.17482	83.45	1.92143			
					1.78796		2.96278	8.95865	5 11 40	11 40
26	β Herculis	21 46		78.24	1.89343	96.125	1.98284	8.94544		5 2 20
Aug 1				71.93	1.14377	89.55	1.96773			
				75.085	1.87555	92.8375	3.01952	8.94821	5 4 20	8 40
July 26	η "	39 10		89.00	1.94939	90.85	1.95832	8.94536		5 2 20
Aug 1				79.63		81.95				
2				82.30	1.06557	84.90	1.93399			
				83.643	1.92243	85.90	2.98806	8.94599	5 2 50	8 30
July 26	Gr. 2377	57 0		131.70	2.11959	93.85	1.97243	8.94064		4 57 10
Aug 1				126.47		92.475				
2				100.66	0.91220	73.775	1.93802			
				119.61	1.07777	86.700	1.98997	8.94805	5 4 10	12 30
July 26	κ Ophiuchi	9 84		62.00	1.79239	81.55	1.91142	8.94902		5 4 50
Aug 2				62.36		81.925				
3				52.43		68.575				
5				49.03	1.17001	64.20	1.86974			
				56.455	1.75170	74.0875	2.92171	8.94803	5 4 10	16 40
26	ξ Herculis	31 7		63.17	1.80051	72.175	1.85839	8.94926		5 5 0
Aug 2				61.96		71.15				
3				63.80	1.10862	73.625	1.85924			
				62.977	1.79918	72.317	2.90780	8.95144	5 6 40	20 00
					1.88213					
July 26	α "	14 32		76.23	1.16197	96.975	1.98668	8.94258		5 0 30
Aug 1				71.77	1.86923	91.70	1.97469			
				74.00		94.338	3.03120	8.94349	5 1 0	2 0
July 26	α Ophiuchi	12 39	9.98933	73.46	1.86605	95.50	1.98000	8.94853		5 4 30
Aug 1				64.34		82.70				
2				63.34		82.675				
5				53.70	1.16542	69.15	1.91649			
				63.71	1.80421	82.506	2.96963	8.94686	5 3 20	13 20
3	72 "	9 32	9.99396	51.87		68.85				
5				55.74	1.17005	73.875	1.85346			
				53.805	1.73072	71.362	2.90077	8.95269	5 7 30	15 0
					1.98158		1.95880			
July 26	ζ Herculis	45 16	9.84745	95.84	1.02354	90.95	3.00509	8.95371	5 8 10	5 8 10 8 10
Aug 1				99.00	1.99564	93.60	1.97128	8.95210	5 7 0	7 0
							3.04918			
July 26	θ Draconis	58 54	9.71310	112.83	0.88919	75.825	1.87981	8.93820	4 57 30	4 57 30 [4] 57 30
					2.05242		2.94161			
							1.93802			
26	δ Scorpii	−22 16	9.96634	68.90	1.83822	86.70	2.98065	8.95737	5 10 50	5 10 50 10 50
Aug 1				78.50	1.14243	97.125	1.98733	8.95003	5 5 40	5 40
					1.89487		3.03730			
July 26	β Bootis	40 53	9.87855	56.50	1.05464	57.575	1.76024	8.95355	5 8 0	5 8 0 8 0
					1.75205		2.80669			

~~171 30~~

Σy 2632.600 32 164 50

Mean y = 82.269 5 5 9

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1876.

Inclination of Declination wires Aug. 6 – 28

Date	*	δ	log cosδ	x	log 15 cosδ · x	y	log y	log tani	i	
				s		"				
Aug. 6	2 Ophiuchi	12° 39′		78.57		97.975				
8				70.67		90.975				
9				72.63		93.875				
10				68.70		88.875				
12				67.53		86.70				
13				72.40		92.85				
15				70.50		92.075				
21				63.67		81.325				
22				47.50		61.55				
26				64.13	1.16542	83.575				
28				55.73	1.82135	72.425				
				66.275		85.655	1.93276 2.98677	8.94599	° ′ ″ 5 2 50	′ ″ 31 10
6	ξ Herculis	46 4	9.84125	39.50		91.85				
8				75.80		87.85				
10				70.14		66.175				
12				82.26	1.01734	75.675				
				86.925	1.93914	80.388	1.90519 2.95648	8.94871	5 4 40	18 40
15	γ Ophiuchi	2 45	9.99950	57.60		76.60				
21				53.10		69.85				
22				63.73		84.925				
23				63.03		82.975				
28				63.20	1.17559	83.95				
				60.132	1.77910	79.66	1.90124 2.95469	8.94655	5 3 10	15 50
8				71.33		87.30				
9				56.54		68.825				
10	109 Herculis	21 43	9.96803	67.14	1.14412	82.275				
				65.503	1.81293	79.467	1.90018 2.95705	8.94313	5 0 50	2 30

Σy 1900450

Mean y = 82.628

23 | 68 10

5° 2′ 58″

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Inclination of Declination arcs Oct. 2 – 24 1876.

Date	*	δ	log cos δ	x	log 15 cos δ Δx	y	log y − log 15 cos δ − log tan i	i
Oct. 3	δ Cygni	49° 56′	9.80867	103.83	0.98476	89.″65	1.95285	8.95046	5° 5′ 50″	5 50
					2.01633		3.00109			
11	γ Aquilæ	10 19	9.99292	57.96		68.425				
12				54.80		71.775				
15				62.03		80.625				
17				57.80		75.900				
18				46.97	1.16901	60.600				
19				59.86		78.275				
				55.57	1.74484	72.600	1.86094	8.94709	5° 3′ 30″	21 0
							2.91385			
2	α "	8 32	9.99517	57.60		75.20				
15				63.70		82.525				
17				62.73		81.800				
18				55.73		72.600				
19				57.63	1.17126	74.750				
				59.358	1.77348	77.255	1.88792	8.94318	5 0 50	4 10
							2.94474			
3	α Cygni	44 50	9.85074	85.57		80.45				
9				69.57		65.75				
12				71.20	1.02683	66.975				
				75.447	1.87764	76.058	1.85162	8.94715	5 3 40	11 0
							2.90447			
2	μ Aquarii	−7 27	9.99407	52.10		69.10				
3				60.27		79.55				
17				61.97	1.17016	80.375				
				58.113	1.76427	76.342	1.88276	8.94833	5 4 20	13 0
							2.93443			
3	ε Cygni	43 26	9.86104	84.00		81.125				
16				73.77	1.03713	71.925				
				78.885	1.89700	76.525	1.88380	8.94967	5 5 20	10 40
							2.93413			
13	δ "	38 52	9.89132	79.60		81.975				
16				67.63		69.075				
24				82.56	1.06741	85.925				
				76.597	1.88421	78.992	1.89758	8.94596	5 2 50	8 30
							2.95162			
~~8~~	α Aquarii	−0 56	9.99994							
12				66.40		87.60				
15				60.37		79.65				
16				52.53		70.225				
17				56.00		74.325				
18				55.73		74.425				
24				59.04	1.17603	77.650				
				58.345	1.76600	77.312	1.88825	8.94622	5 3 0	18 0
							2.94203			

Sy 2207625

Mean y 76.125

~~86 20~~

29 | 92 10

5° 3′ 11″

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1876

Reduction of the Mean of the wires A+2 and A−2 to the A

α Andromedæ (+28° 24′)

A+2 to A-1, A, A+1	A-2 to A-1, A, A+1
s	s
−20.911	+21.209
.911	.184
.945	.235
.919	.171
.931	.289
.936	.244
.965	.195
.956	.244
20.973	.267
21.036	.224
20.984	236
557	2503
20.9506	21.2275
2.32120	2.32691
9.94431	9.94431
2.26551	2.27122

α Arietis +22° 52″

s	s
−19.953	+20.267
19.940	.280
19.943	.289
20.025	.315
19.982	.318
20.136	.204
20.033	.307
139992	1980
19.999	20.283
2.30101	2.30713
9.96445	9.96445
2.26546	2.27158

α Ceti (+3° 36′)

s	s
18.398	18.742
.445	.695
.453	.627
.455	.665
.451	.709
.369	.831
2571	4269
18.429	18.712
2.26550	2.27212
9.99914	9.99914
2.26464	2.27126

α Tauri (+16° 15′)

s	s
19.115	19.485
.151	.469
.196	.484
.140	.540
.124	.516
.182	.498
.250	.460
.169	.471
.085	.495
.211	.449
.227	.433
.220	.460
.164	.436
2184	996
19.168	19.477
2.28258	2.28952
9.98229	9.98229
2.26487	2.27181

α Aurigæ (+45 52)

26.553	26.847
.422	.718
.453	.827
.524	.816
.525	.775
.547	.813
.576	.764
.402	.858
.489	.471
.533	.807
.527	.753
5531	8749
26.503	26.795
2.42330	2.42805
9.84282	9.84282
2.26612	2.27087

α Orionis (+7 23)

18.631	18.809
.484	.856
.651	.849
.485	.875
.520	.820
.605	.815
.600	.800
.580	.740
.560	.840
.609	.851
.627	.833
.609	.811
.575	.825
.609	.811
.605	.875
.544	.816
9294	426
18.581	18.827
2.26907	2.27478
9.99638	9.99638
2.26545	2.27116

α Canis Min. (+5 33)

18.467	18.753
.458	.422
.540	.760
.495	.765
.436	.884
.584	.756
.498	.782
.504	.756
.522	.718
.493	.787
.547	.753
.469	.811
.562	.838
.495	.745
.556	.764
.511	.769
.398	.862
.451	.789
.475	.805
.524	.676
9985	15495
18.499	18.775
2.26715	2.27358
9.99796	9.99796
2.26511	2.27154

α Leonis (+12 35)

18.955	19.105
.891	.149
.907	.133
.962	.138
.900	.120
.884	.096
.882	.158
.831	.189
.807	.133
.933	.087
.853	.127
9865	1435
18.891	19.130
2.27625	2.28171
9.98944	9.98944
2.26569	2.27115

β Leonis (+15 16)

19.155	19.385
.096	.524
.073	.367
.116	.384
.164	.296
.027	.313
.076	.364
707	2633
19.101	19.376
2.28106	2.28726
9.98440	9.98440
2.26546	2.27166

α Virginis (−10 31)

18.585	18.955
.811	19.009
.793	18.947
.700	.940
.815	.865
.845	.975
.735	.965
.747	18.993
.693	19.047
.809	19.011
.776	18.924
.793	.967
.755	.945
9854	843
18.738	18.965
2.27319	2.27795
9.99264	9.99264
2.26583	2.27059

Results

	A+2 to (A+1, A, A-1)	A-2 to (A+1, A, A-1)
	s	s
α Androm.	−18.429	+18.673
α Arietis	.427	.689
α Ceti	.393	.675
α Tauri	.402	.699
α Aurigæ	.455	.658
α Orionis	.427	.671
α Can. Min.	.412	.687
α Leonis	.437	.670
β Leonis	.427	.692
α Virginis	.443	.646
	−18.425	+18.676
log =	1.26541	1.27128

I′ = 0.125 Discovered that this value log = 9.09691 has been computed on page 41 of this book, but value .125 is used in the

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tre. Mean of the wires $A+1$ A and $A-1$

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92

1874 Inclination of Declination wires

Stars whose $\delta = -10°$ to $+30°$

Date	*	δ	log cos δ	X	log .15 cos δ · x	Y	log Y / .15 x cos δ	log tan i	i
Jan 10	α Arietis	+22° 52′	9.96445	57.90	1.14054	70.38	1.84198	8.93974	4° 58′ 29″
" 13	"	"		57.64		68.63	2.90224		
				57.77	1.76170	69.50			
" 13	γ Arietis	+21° 25′	9.96893	55.13	1.17502	66.98	1.82595	8.90954	4° 38′ 31″
					1.74139		2.91641		
" 10	α Ceti	+ 3° 36′	9.99914	59.87	1.17523	77.48	1.87477	8.94192	4° 59′ 59″
" 13	"	"		54.60		72.43	2.93285		
				57.23	1.75762	74.95			
" 11	f. Pauri	+12° 30′	9.98958	66.43	1.16567	85.42	1.93156	8.94353	5° 1′ 5″
					1.82236		2.98803		
" 26	ε Eridan.	− 9° 53′	9.99351	56.17	1.16940	84.25	1.87910	8.94757	5° 0′ 53″
" 31	"	"		59.43		77.15	2.02407	9.07254	
				57.80	1.76193	80.70	2.93153		
" 11	η Pauri	+25° 48′	9.96148	56.50	1.15777	68.68	1.83683	8.94701	5° 3′ 30″
					1.75205		2.88982		
" 20	θ Eridani	− 7° 10′	9.99459	49.20	1.17268	64.80	1.81158	8.94693	5° 3′ 26″
					1.69197		2.86465		
" 10	δ Pauri	+17° 15′	9.98001	67.70	1.15610	87.55	1.88395	8.94309	5° 0′ 47″
" 20	"	"		52.14		65.55	2.94086		
				60.92	1.78476	76.55			
" 10	α Pauri	+16° 15′	9.98229	55.34	1.15838	70.77	1.82776	8.87945	
" 31	"	"		76.04		62.45	2.94831	8.94860	5° 4′ 36″
" 20	"	"		53.57		68.53	1.84298		
				61.65	1.78993	67.26	2.89438		
				54.45	73600	69.66			
Feb 23	τ Orionis	− 6° 59′	9.99677	51.83	1.17286	68.33	1.83461	8.94717	5° 3′ 36″
					1.71458		2.88744		
" 8	β Pauri	+28° 30′	9.94390	66.57	1.11999	78.70	1.90423	8.95474	5° 8′ 55″
" 23	"	"		68.50	1.82950	81.72	2.94949		
				67.53		80.21			
Jan. 27	ε Orion.	− 1° 17′	9.99989	50.17	1.17598	66.40	1.82217	8.94575	5° 2′ 37″
					1.70044		2.87642		
Feb. 17	α Orion.	+ 7° 23′	9.99638	59.03	1.17247	77.95	1.89182	8.94828	5° 4′ 23″
					1.77107		2.94354		
Feb. 20	ζ Gemin.	+20° 45′	9.97087	62.20	1.14696	78.53	1.89504	8.95429	5° 8′ 36″
					1.79379		2.94075		
Mar. 13	α Can. min	+ 5° 33′	9.99796	64.00	1.17405	85.92	1.91614	8.95265	5° 7′ 27″
" 18	"	"		59.16		78.97	1.98874	9.02525	
				61.58	1.78944	82.44	2.96349		
Feb. 29	β Gemin.	+28° 20′	9.94458	61.03	1.12067	73.80	1.87111	8.95470	5° 8′ 53″
Mar. 6	"	"		66.20		77.30	2.91641		
" 13	"	"		60.20		71.85			
				62.48	1.79574	74.32			
" 13	δ Cancri	+18° 37′	9.97466	56.54	1.15275	33.25	1.52179	8.61668	
					1.75236		2.90511		
Apr. 9	ε Hydræ	+ 6° 55′	9.99686	55.63	1.17295	73.17	1.86433	8.94607	5° 2′ 51″
					1.74531		2.91826		
" 10	ε Leonis	+24° 21′	9.95954	62.73	1.13563	78.10	1.89265	8.95954	5° 12′ 20″
					1.79748		2.93311		

Mean of $i = 5° 4′ 26″$

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1876

Inclination of Declination wires

Stars whose δ = +30° to +60°

Date	*	δ	log.cos.δ	X (s)	log.15cosδ ″ X	y (″)	log.y ″ 15×cosδ	log.tan.i	i
Jan. 10	α Cassiop.	+55° 51′	9.74924	62.50	0.92533 1.79588	47.47	1.67642 2.72121	8.95521	5° 9′ 15″
" 11	δ Cassiop	+59° 35′	9.70489	88.77	0.88048 1.94827	61.17	1.78654 2.82875	8.95779	5° 11′ 5″
" 20	θ Persei	+48° 42′	9.81955	73.60	0.99564 1.86688	64.68	1.81077 2.86252	8.94825	5° 4′ 22″
" 12	η Persei	+55° 23′	9.75441	62.40	0.93050 1.79518	46.92	1.67136 2.72568	8.94568	5° 2′ 34″
" 10	α Persei	+49° 25′	9.81328	~~75.64~~	0.98937	~~5.51~~	~~1.61374~~	~~8.84283~~	
" 11	"	"		56.43		50.00	~~2.77091~~		
" 26	"	"		56.90		52.13			
" 27	"	"		50.90		43.60	1.69161	8.95467	5° 8′ 52″
" 31	"	"		59.47		50.92	2.73694		
				~~60.47~~	~~1.78154~~	~~41.09~~			
				55.92	1.74757	49.16			
" 31	δ Persei	+47° 23′	9.83065	51.57	1.00674 1.71240	46.08	1.66351 2.71914	8.94437	5° 1′ 40″
" 12	4 Camelop.	+56° 32′	9.74151	61.84	0.91760	45.50	1.69557	8.94854	5° 4′ 34″
" 20	"	"		73.20		53.73	2.74703		
				67.52	1.82943	49.61			
Feb. 2	i Auriga	+32° 58′	9.92376	51.23	1.09985	56.35	1.76893	8.94661	5° 3′ 13″
" 16	"	"		54.33		61.13	2.82232		
				52.78	1.72247	58.74			
" 2	ζ Auriga	+40° 53′	9.87855	59.43	1.05464	59.82	1.74445	8.94701	5° 0′ 30″
" 17	"	"		51.20		51.22	2.79744		
				55.31	1.74280	55.52			
" 31	α Auriga	+45° 52′	9.84282	78.10	1.01891 1.89265	71.27	1.85291 2.91156	8.94135	4° 59′ 35″
" 29	β Auriga	+44° 56′	9.84999	57.80	1.02608	54.13	1.72713	8.93942	4° 58′ 16″
Mar. 6	"	"		57.73		52.58	2.78771		
				57.76	1.74163	53.35	1.		
Feb. 20	64 Auriga	+41° 6′	9.87712	~~67.43~~	1.05321	~~140.27~~	~~1.90271~~	~~9.04707~~	
" 29	"	"		59.47	1.77480	59.60	~~2.85564~~	8.94774	5° 4′ 0″
				~~63.45~~	~~1.80243~~	~~79.93~~	1.77525		
							2.82751		
Mar. 15	31 Lyncis	+43° 35′	9.85754	59.40	1.03363	59.10	1.76056	8.95059	5° 6′ 0″
" 30	"	"		60.10		58.82	2.80997		
				59.75	1.77634	58.96			
Apr. 9	i Urs. Maj.	+48° 32′	9.82098	75.14	0.99707 1.87587	67.93	1.83206 2.87294	8.95912	5° 12′ 2″
" 9	κ Urs. Maj	+47° 39′	9.82844	59.77	1.00453	53.00	1.72648	8.94692	5° 3′ 26″
" 10	"	"		59.37		53.54	2.77956		
				59.57	1.77503	53.27			
Mar. 29	θ Urs. Maj	+52° 15′	9.78691	67.10	0.96300	54.10	1.78183	8.94400	5° 1′ 25″
" 30	"	"		82.83		66.93	2.83783		
				74.96	1.87483	60.51			
Apr. 2	v Urs. Maj.	+59° 38′	9.70375	68.43	0.87984 1.83525	46.32	1.66577 2.71509	8.95068	5° 6′ 4″
" 6	19 Leonis	+41° 39′	9.87345	65.40	1.04954 1.81558	65.43	1.81578 2.86512	8.95066	5° 6′ 3″
" 10	μ Urs. Maj.	+42° 8′	9.87016	64.56	1.04625	63.58	1.78576	8.94937	5° 5′ 8″
" 11	"			57.07		56.73	2.83639		
May. 1	"			63.40		62.88			
				61.68	1.79014	61.06			
" 1	37 Urs. Maj.	+57° 44′	9.72743	60.67	0.90352 1.28297	39.26 ✓	1.59384 2.68649	8.90735	4° 37′ 8″

mean of $i = 5° 4′ 38″$

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1876

Inclination of Declination wires
Stars whose $\delta = +60°$ to $+75°$

Date	*	δ	log.cosδ	X	log.15 cosδ . X	y	log.y. .15 x cosδ	log.tan i	i
Jan 11	40 Cassiop	+72° 24'	9.48034	86.16	~~0.65668~~ 1.92521	~~29.15~~	~~1.46464~~ 2.59194	8.87270	
" 12	i Cassiop	+66° 50'	9.59484	93.54	0.77093	48.94	1.68215	8.94743	5° 3' 47"
" 13	"	"		90.46		47.27	2.73472		
				92.00	1.96379	48.10			
" 12	36 H.Cass.	+72° 16'	9.48371	117.53	0.65980	49.40	1.69373	8.96378	5° 15' 23"
					2.07015		2.72995		
" 10	Gr. 716	+62° 49'	9.65976	92.73	0.83585	58.20	1.71650	8.95710	5° 10' 36"
" 26	"	"		75.00		45.93	2.75940		
				83.86	1.92355	52.06			
" 20	9 Camelop.	+66° 8'	9.60704	74.67	0.78313	40.35	1.64326	8.94764	5° 3' 56"
Feb. 8	"			89.30		48.13	2.69562		
" 17	"			74.30		40.55			
" 23	"			88.74		46.90			
				81.75	1.91249	43.98			
" 23	Gr. 966	+74° 57'	9.41441	128.36	0.59050	45.40	1.65706	8.95813	5° 11' 20"
					2.10843		2.69893		
Feb. 29	36 Camelop.	+65° 44'	9.61382	87.70	0.78991	47.25	1.72542	8.94874	5° 4' 42"
Mar. 7	"			78.83		43.08	2.77668		
" 19	"			125.47		69.10			
				97.00	1.98677	53.14			
Feb. 29	22 H. Camel.	+69° 22'	9.54702	55.60	0.72311	25.97	1.65215	8.92995	4° 51' 52"
Mar. 6	"			107.20		48.31	2.72220		
" 19	"			136.57		65.28			
				99.77	1.99909	44.89			
Feb. 22	8 Lyncis	+61° 35'	9.67750	77.23	0.85359	49.78	1.72640	8.95076	5° 6' 7"
" 29	"	"		111.63		70.28	2.77564		
Mar. 7	"	"		61.54		39.73			
				83.57	1.92205	53.26			
" 13	Gr. 1446	+74° 4'	9.43857	69.60	0.61466	25.50	1.40841	8.95408	5° 8' 27"
" 30	"	"		68.67		25.73	2.45433		
				69.13	1.83967	25.61			
Mar. 30	5 Urs. Maj.	+62° 26'	9.66537	99.30	0.84146	61.80	1.79099	8.95258	5° 7' 24"
					1.99695		2.83841		
" 29	σ^2 Urs. Maj	+67° 38'	9.58039	116.03	0.75648	45.73	1.73231	8.91182	4° 39' 59"
Apr. 10	"	+ "		80.47		40.65	2.82049		
" 11	"	"		151.14		75.60			
				115.88	2.06401	53.99			
Mar 29	Gr. 1564	+69° 48'	9.53819	123.03	0.71428	56.97	1.75565	8.95135	5° 6' 32"
"					2.09002		2.80430		
Apr. 2	Gr. 1586	+73° 28'	9.45419	79.30	0.63028	27.88	1.38435	8.93236	4° 58' 29"
" 9	"	"		59.26		22.14	2.45199		
May 1	"	"		60.23		22.66			
				66.33	1.82171	24.23			

Mean of $i = 5° 5' 18"$ = groups $+60°$ to $75°$
$5° 4' 38"$ = " $+30°$ " $60°$
$5° 4' 26"$ = " $-10°$ " $+30°$
3)142
$5° 4' 47"$

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Results — Inclination of Declination wires for year 1876

Jan. 10 — May 1	$i = 5^\circ\ 4'\ 47''$	$5^\circ\ 4'\ 47''$
May 1 — July 23	$= 5^\circ\ 2'\ 41''$	5 2 41
July 24 + 25	$= 5^\circ\ 4'\ 44''$	
July 26 — Aug 5	$= 5^\circ\ 5'\ 09''$	5 4 56
Aug. 6 — Sept. 6	$= 5^\circ\ 2'\ 58''$	
Oct. 3 — Oct 24	$= 5^\circ\ 3'\ 11''$	
Oct. 25 — Dec. 5	$= 5^\circ\ 3'\ 32''$	
Dec. 7 — Dec. 27	$= 5^\circ\ 2'\ 14''$	5 2 59

Adopted values of i for 1876

	i	tang i	15 tan i
1876 Jan 10 — May 1	$5^\circ\ 4'\ 47''$	8.94886	0.12495
May 3 — July 23	5 2 41	8.94584	0.12193
July 24 — Aug 5	5 4 56	8.94907	0.12516
Aug 6 1876 — Jan 4 1877	5 2 59	8.94627	0.12236

75°
60°
30°

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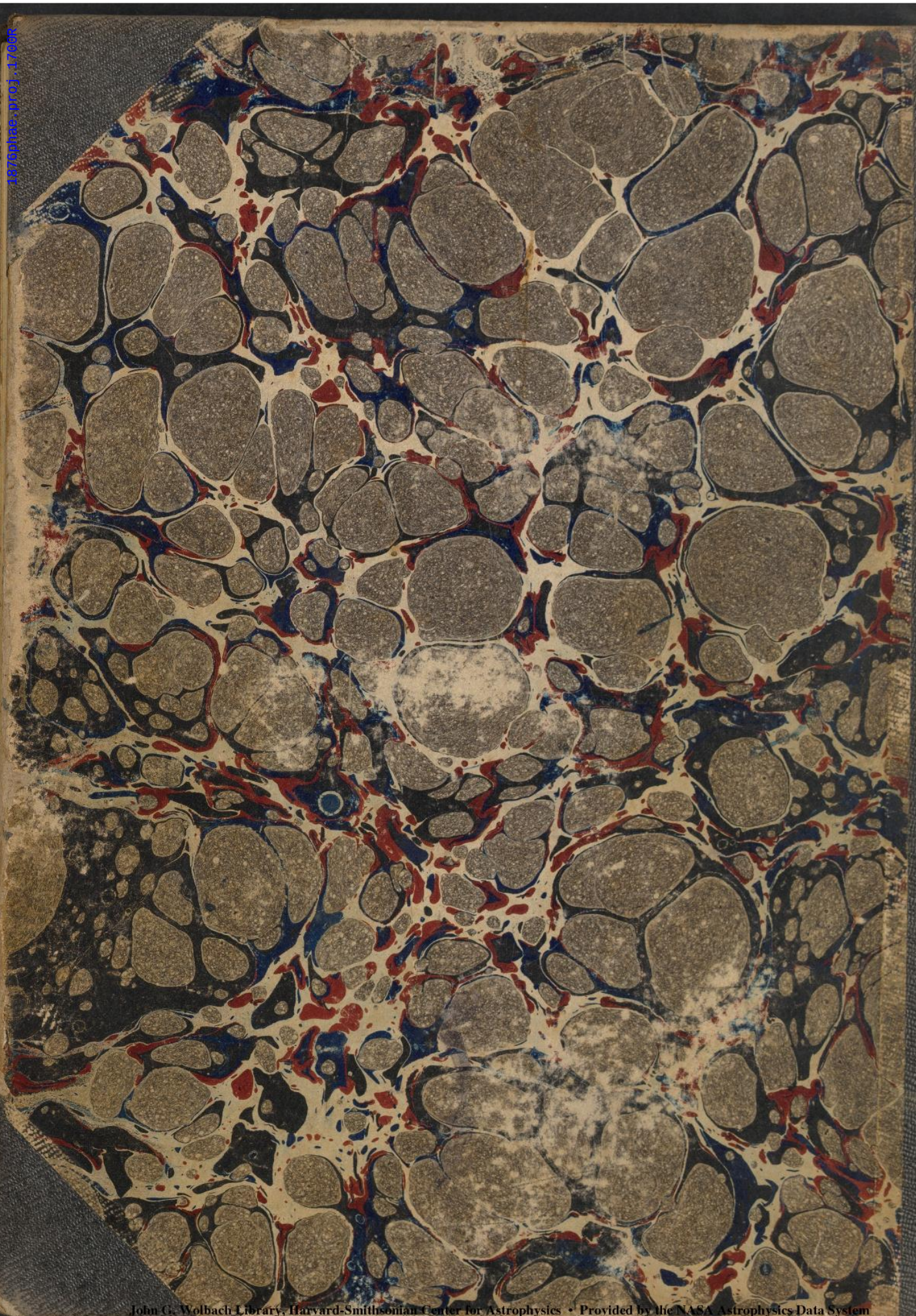
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