1872phae.proj.1459.

KG
11366
v.455

General Catalogue
Observations & Reductions
Final Reductions

B 2

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General Catalogue
Observed with the Meridian Circle in 1871–2

Final Reductions

Mz

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App.n = true δ − 2 or 2 = δ − 2

Δα = +0.003s
Δδ = +1.61″

* Str λ Draconis δ. α = 11 h 23 m 46.67 s (+3.6405, 46.274) δ = +70° 2′ 14″ (ζ = −67° 34′ 58″) K = +0.041 tang δ = −2.75

Date	n	ζ	T	T m	n tang δ	1.7 m	Red 1872.0	Sum	AR. 1872.0	AR. 1872.0
	s		h	m s	s	s	s	s	h m s	h m s
1871 Oct. 9	+.003		23	23 48.50	−.008	+0.03	−6.89	+1.54	−5.32	+5.18 23 23 43.18	23 23 46.82
Oct. 16	+.079		23	23 49.44	−.217	−.18	−7.84	+1.27	−6.75	+4.91	42.69	46.33
Oct. 29	+.119		23	23 52.05	−.327	−.29	−9.40	+0.66	−9.03	+4.30	43.02	46.66
Nov. 13	+.220		23	23 57.37	−.605	−.56	−9.37	−0.23	−8.16	+2.41	43.23	46.67
Nov. 23	+.180		23	23 48.88	−.495	−.45	−4.48	−0.93	−5.86	+2.71	43.02	46.66
10 Nov. 25	+.214		23	23 48.37	−.588	−.55	−2.68	−1.08	−5.31	+2.56	43.06	46.70
1.9 Dec. 6	+.450		23	23 43.22	−1.237	−1.20	+2.50	−1.90	−0.60	+1.74	42.62	46.26
Dec. 12	+.387		23	23 39.94	−1.064	−1.02	+6.62	−2.38	+3.22	+1.26	43.16	46.80
Dec. 17	+.376		23	23 36.32	−1.034	−0.99	+10.60	−2.77	+6.84	+0.87	43.16	46.80
Dec. 28	+.458		23	23 28.59	−1.259	−1.22	+19.51	−3.65	+14.64	−0.01	43.23	46.87
											43.040	46.677
												± .142
												± .048

β Aquarii o α = 23 h 26 m 34.56 s δ = −21° 37′ 18″ (ζ = +69° 00′ 07″) K = −.017 tang δ = −.40

Date	n	ζ	T	T m	n tang δ	1.7 m	Red 1872.0	Sum	AR. 1872.0	AR. 1872.0
	s		h	m s	s	s	s	s	h m s	h m s
1871 Oct. 3	+.057		23	26 40.24	−.023	−0.04	−6.15	−2.57	−8.76	+0.58 26 31.48	26 34.63
Oct. 16	+.079		23	26 41.89	−.032	−.05	−7.84	−2.53	−10.42	+0.62 .47	34.62
Oct. 29	+.119		23	26 43.41	−.048	−.06	−9.40	−2.43	−11.89	+0.72 .52	34.67
9 Nov. 9	+.213		23	26 42.44	−.085	−.10	−8.60	−2.32	−11.02	+0.83 .42	34.54
1.9 Nov. 23	+.180		23	26 38.24	−.072	−.09	−4.48	−2.15	−6.72	+1.00 .52	34.67
Nov. 25	+.214		23	26 37.41	−.086	−.10	−3.68	−2.13	−5.91	+1.02 .50	34.65
Nov. 28	+.280		23	26 36.35	−.112	−.13	−2.68	−2.09	−4.90	+1.06 .45	34.60
Dec. 6	+.450		23	26 31.15	−.180	−.20	+2.50	−1.99	+0.31	+1.16 .46	34.61
Dec. 12	+.387		23	26 26.78	−.155	−.17	+6.62	−1.92	+4.53	+1.23 .31	34.45
										31.459	34.609
											± .039

15 Andromedae α = 23 h 28 m 22.14 s δ = +39° 31′ 51″ (ζ = +2° 50′ 58″) K = −.020 tang δ = +.82

Date	n	ζ	T	T m	n tang δ	1.7 m	Red 1872.0	Sum	AR. 1872.0	AR. 1872.0
	s		h	m s	s	s	s	s	h m s	h m s
1871 Oct. 16	+.079		23	28 29.58	+.064	+0.04	−7.84	−2.56	−10.36	+0.36 28 19.22	28 22.14
Nov. 9	+.213		23	28 29.91	+.174	+.15	−8.60	−2.28	−10.73	+0.64 .18	22.10
Nov. 23	+.180		23	28 25.47	+.147	+.13	−4.48	−2.07	−6.42	+0.85 .05	21.97
Nov. 25	+.214		23	28 24.87	+.175	+.16	−3.68	−2.03	−5.55	+0.89 .22	22.04
9 Nov. 28	+.280		23	28 23.55	+.229	+.21	−2.68	−1.98	−4.45	+0.94 .10	22.02
1.9 Dec. 6	+.450		23	28 18.24	+.369	+.35	+2.50	−1.84	+1.01	+1.08 .25	22.17
Dec. 9	+.356		23	28 16.14	+.291	+.27	+4.47	−1.78	+2.96	+1.14 .10	22.02
Dec. 12	+.387		23	28 13.95	+.317	+.30	+6.62	−1.43	+5.19	+1.19 .14	22.06
Dec. 28	+.458		23	28 0.64	+.375	+.35	+19.51	−1.43	+18.43	+1.49 .07	22.99
										19.151	22.057
											± .049

Δα = −0.093s
Δδ = −0.51″

* λ Andromedae α = 23 h 31 m 18.36 s (+2.9157, 518.358) δ = +45° 45′ 52″ (ζ = −3° 23′ 03″) K = −.022 tang δ = +1.03

Date	n	ζ	T	T m	n tang δ	1.7 m	Red 1872.0	Sum	AR. 1872.0	AR. 1872.0
	s		h	m s	s	s	s	s	h m s	h m s
1871 Oct. 16	+.079		23	31 25.82	+.081	+0.06	−7.85	−2.71	−10.50	+0.21 31 15.32	31 18.21
Oct. 29	+.119		23	31 27.22	+.122	+.10	−9.40	−2.56	−11.86	+0.36 .36	18.28
Nov. 9	+.213		23	31 26.16	+.219	+.20	−8.59	−2.39	−10.98	+0.53 .38	18.30
Nov. 23	+.180		23	31 21.80	+.185	+.16	−4.47	−2.14	−6.45	+0.78 .35	18.29
10 Nov. 25	+.214		23	31 20.94	+.220	+.20	−3.68	−2.10	−5.58	+0.82 .36	18.28
1.9 Nov. 28	+.280		23	31 19.82	+.288	+.27	−2.68	−2.04	−4.45	+0.88 .37	18.29
Dec. 9	+.356		23	31 12.24	+.366	+.34	+4.47	−1.82	+2.99	+1.10 .23	18.15
Dec. 12	+.387		23	31 10.09	+.398	+.38	+6.63	−1.76	+5.25	+1.16 .34	18.26
Dec. 17	+.376		23	31 6.01	+.387	+.37	+10.63	−1.65	+9.33	+1.21 .34	18.26
Dec. 28	+.458		23	30 56.79	+.471	+.45	+19.52	−1.42	+18.55	+1.30 .34	18.26
										15.345	18.265
											± .022

Δα = +0.050s
Δδ = +1.52″

\# i Piscium α = 23 h 33 m 22.03 s (+3.0854, 522.034) δ = +4° 55′ 57″ (ζ = +37° 26′ 52″) K = −.015 tang δ = +.09

Date	n	ζ	T	T m	n tang δ	1.7 m	Red 1872.0	Sum	AR. 1872.0	AR. 1872.0
	s		h	m s	s	s	s	s	h m s	h m s
1871 Nov. 23	+.180		23	33 25.59	+.016	+0.00	−4.47	−2.10	−6.57	+0.99 23 19.02	23 22.11
5 Dec. 6	+.450		23	33 18.45	+.040	+.03	+2.50	−1.96	+0.57	+1.13 19.02	22.11
1.9 Dec. 9	+.356		23	33 16.42	+.032	+.02	+4.47	−1.93	+2.56	+1.16 18.98	22.07
Dec. 12	+.387		23	33 14.20	+.034	+.02	+6.63	−1.89	+4.76	+1.20 .96	22.05
Dec. 20	+.328		23	33 8.32	+.029	+.01	+12.46	−1.80	+10.69	+1.29 .98	22.08
										18.988	22.084
											± .018

Stars marked # are fundamental

Stars marked * are in the Micrometric Nova.

Stars marked o follow the nomenclature of the B. A. C.

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For stars north of the equator $\alpha - \psi - z_1$ (z_1 being the circle reading) $= \delta$

For stars south of the equator $z_1 - \psi$ (" $\frac{d\delta}{dt} = +19.84$ " ") $= \delta$

For stars below pole from $\psi - z_1$ ($z_1 - \psi$) (" " " ")

$\frac{d\alpha}{dt}$ 2 +3.64

Tim – 75 Circle Read. Red. Horizon Circle Read.

log u + log log u = 2.14107 (19.839) 2 sin z = −.92 B+T+γ

$\delta_0 = 70$ 2 " 13.6 " 13.54 " " " −19.84 ' "

6	34.26	−18.3	28	24.50	+8.31	28	32.81	+54	15.54	+	.00253	+2	19.19	.01	+.06	−.54	+.37	+13.30	+6.54	+1.70	+62.14	57	45.1
	37.27	+38.4	28	49.40	−17.44	28	31.96	54	16.39	+	887	2	21.23	.00	.26	.61	+.50	+15.90	+3.94	+1.83	+61.01		44.4
	41.66	+51.6	28	52.65	−23.43	28	29.22	54	19.13	+	1288	2	22.54	.00	.47	.66	+.66	+20.20	+0.36	+1.99	+61.51		44.8
	42.77	+17.9	28	39.70	−8.13	28	31.57	54	16.78	+	2393	2	26.22	.00	.06	.29	+.62	+24.60	+4.76	+1.95	+63.10		43.3
	46.76	+18.8	28	38.15	−8.54	28	29.61	54	18.74	+	2834	2	27.71	.01	.06	.32	+.64	+27.10	+7.26	+2.02	+61.64		42.9
	47.80	−25.2	28	14.05	+11.44	28	25.49	54	22.86	+	2032	2	25.01	.01	.11	.19	+.77	+27.60	+7.76	+2.10	+62.92		45.1
	51.27	+46.1	28	47.00	−20.94	28	26.06	54	22.29	+	3137	2	28.75	.01	.37	.15	+1.07	+29.70	+9.86	+2.40	+62.31		45.9
	50.40	−45.9	28	4.25	+20.85	28	25.10	54	23.25	+	2675	2	27.17	.01	.37	.40	+.82	+30.50	+10.66	+2.15	+62.36		44.3
	52.94	−48.2	27	58.00	+21.89	28	19.89	54	28.46	+	1866	2	24.46	.00	.40	.38	+.87	+31.10	+11.26	+2.20	+62.90		46.6
	52.34	+46.5	28	48.85	−21.12	28	27.73	54	20.62	+	4037	+2	31.86	.01	+.38	−.53	+.70	+31.70	+11.86	+2.03	+62.93		45.6
																							44.80 ±0.77

$\delta_0 = -21\ 37\ 18.3$

3.15 $u + \log u_2 = 2.06939$ $\frac{d\delta}{dt} = +19.84$ −.84 −1.30

	+20.5	58	52.25	+25.64	59	17.89	−36	29.54	−	.00639	−2	0.88	.01	+.09	−.66	−1.41	−12.89	+6.95	−2.71	+61.57	57		19.3
	+25.0	58	43.20	+31.11	59	14.31	36	25.96	+	881	2	5.20	.00	.14	.59	1.29	−11.39	+6.15	−2.59	+61.08	1		18.8
	−22.8	59	41.75	−28.47	59	13.28	36	24.93	+	1288	2	6.35	.01	.11	.80	1.53	−9.83	+10.01	−2.83	+61.51			17.1
	−17.9	59	38.70	−22.27	59	16.43	36	28.06	+	1734	2	7.68	.02	.07	.37	1.14	−8.54	+11.30	−2.44	+63.04			18.0
	+16.1	58	53.15	+20.03	59	13.18	36	24.83	+	2834	2	10.96	.04	.05	.23	1.02	−7.18	+4.26	−2.32	+61.64			18.1
	+17.7	58	54.45	+23.02	59	16.47	36	28.12	+	2032	2	8.56	.02	.07	.33	1.00	−6.86	+12.98	−2.30	+62.92			17.5
	+20.5	58	47.10	+25.51	59	12.61	36	24.26	+	3448	2	12.82	.05	.08	.22	.99	−6.39	+13.45	−2.29	+63.69			16.5
	+16.0	58	55.25	+19.91	59	15.16	36	26.81	+	3137	2	11.87	.04	.05	.16	.95	−5.94	+13.93	−2.25	+62.31			16.9
	+14.2	58	57.65	+17.67	59	15.32	36	26.97	+	2675	−2	10.48	.04	+.05	−.51	−1.30	−5.51	+14.33	−2.60	+62.36			17.7
																							17.03 ±.37

±.036 $\delta_0 = +39\ 31\ 51.7$

+2.92 0.45710 +19.86 −.02 −.07

	+26.2	51	28.05	+27.05	51	55.10	+30	53.25	+	.00890	−0	2.92	−.18	−.24	−.45	−20.78	−0.92	−0.52	+61.01	+1.31			49.9
	+24.3	51	26.25	+25.09	51	57.34	30	57.01	+	1738		2.98	−.15	.11	−.29	−24.40	−4.58	−0.36	+63.04				52.1
	+20.6	51	30.55	+21.27	51	51.82	30	56.53	+	2834		3.06	−.12	.11	−.26	−25.58	−5.72	−0.33	+61.64				48.7
	−16.4	52	8.65	−16.93	51	51.72	30	56.63	+	2035		3.00	−.17	.13	−.28	−25.69	−5.83	−0.30	+62.92				50.4
	+26.9	51	25.50	+27.78	51	53.28	30	55.07	+	3452		3.10	−.20	.08	−.31	−25.55	−5.69	−0.38	+63.69				49.6
	−12.1	52	3.45	−12.39	51	51.06	30	57.29	+	3260		3.09	−.04	.08	−.15	−25.89	−6.03	0.22	+62.24				50.2
	+19.0	51	32.35	+19.62	51	51.97	30	56.38	+	2683		3.05	−.10	.20	−.33	−25.82	−5.96	0.40	+62.36				49.3
	−22.2	52	14.85	−22.92	51	51.93	30	56.42	+	4024	−	3.15	−.13	.21	−.47	−24.90	−5.04	−0.54	+62.93				50.6
																							50.15 ±0.61

+19.443
52.29

±.038 $\delta_0 = +45\ 45\ 52.3$

+2.92 0.53210 sin z = −.06 +19.44 +.05 +.08

4	50.81	+32.9	37	29.60	+30.72	38	0.32	+44	45.03	+	00890	+0	3.48	−.30	−.40	−.65	−20.60	−1.16	−0.57	+61.01	+1.45		50.9
	54.64	−19.6	38	14.85	−18.30	37	56.55	44	51.80	+	1311		3.51	.12	.55	−.62	−23.20	−3.76	−0.54	+61.51			52.5
	55.16	−5.2	38	1.35	−4.86	37	56.49	44	51.86	+	1738		3.55	.01	.24	−.20	−24.90	−5.46	−0.12	+63.04			52.9
	56.02	+21.6	37	30.55	+20.17	37	55.72	44	52.63	+	2834		3.64	.13	.16	−.24	−26.40	−6.96	−0.16	+61.64			50.8
	57.66	−21.6	38	14.20	−20.17	37	54.03	44	54.32	+	2035		3.57	.13	.10	−.18	−26.60	−7.16	−0.10	+62.92			53.5
	54.34	+18.9	37	39.85	+17.65	37	57.50	44	50.85	+	3452		3.69	.10	.10	−.15	−26.70	−7.26	−0.07	+63.69			50.9
	58.10	+24.4	37	34.40	+19.05	37	53.45	44	54.90	+	3260		3.67	.11	.06	−.12	−27.00	−7.56	−0.04	+62.24			53.2
	55.68	+25.1	37	32.35	+23.44	37	53.79	44	52.56	+	2683		3.62	.17	.33	−.45	−27.00	−7.56	−0.37	+62.36			50.6
	56.26	+28.8	37	28.10	+26.99	37	53.09	44	53.26	+	1476		3.56	.23	.33	−.57	−26.90	−7.46	−0.43	+62.90			51.6
	54.64	+30.5	37	28.50	+28.48	37	56.98	44	51.37	+	4040	+	3.74	−.26	−.21	−.42	−26.10	−6.66	−0.34	+62.93			51.0
																							51.78 ±0.89

+19.470
52.30

±.015 $\delta_0 = +4\ 55\ 57.3$

+3.09 1.64400 sin z = +.61 +19.47 −.56 −.87

2	55.83	+19.4	26	39.50	+25.87	27	5.37	+55	42.98	+	.02834	−0	4.03	−.12	−.10	−.68	−15.70	+3.77	−1.55	+61.64	55		59.8
	52.92	+17.6	26	44.50	+23.47	27	7.97	55	40.38	+	3149		4.37	.12	.07	−.65	−15.00	+4.47	−1.52	+62.31			58.3
	52.66	−18.2	27	32.35	−24.28	27	8.07	55	40.28	+	3269		4.50	.12	.10	−.68	−14.80	+4.67	−1.55	+62.24			58.1
	53.38	+23.1	26	37.05	+30.81	27	7.86	55	40.49	+	2692		4.87	.13	.21	−.80	−14.60	+4.87	−1.67	+62.36			59.2
	52.60	+18.4	26	44.65	+24.54	27	9.19	55	39.16	+	3100	−	4.32	−.12	.27	−.80	−14.00	+5.47	−1.67	+63.08			58.7
																							58.82 ±0.51

±.018

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$\Delta\alpha = +0^s.079$
$\Delta\delta = -0''.12$

Star ✱ δ Cephei $\alpha = 23^h\ 34^m\ 6^s.66$ (+2.4016, 56.658) $\delta = +76°\ 55'\ 4''$ $k = -.068$ tang $\delta = +4.30$
$z = -34\ 32\ 15$

Date	n	T_s	T_m	m tang δ	m tg δ + dα	Sl. T + m	Red. 1871.0	Sum	R.A. 1871.0	R.A. 1872.0
1871 Oct. 16	+.079		23 34 17.54	+.330	+0.26	−7.85	−5.43	−13.02	−3.03 23 34 4.52	23 34 6.92
Oct. 29	+.119		23 34 17.92	+.512	+.44	−9.40	−4.82	−13.78	−2.02 .14	6.54
7 Nov. 25	+.214		23 34 12.15	+.920	+.85	−3.68	−2.91	−5.74	−0.57 .41	6.81
1.9 Nov. 28	+.280		23 34 8.80	+1.204	+1.14	−2.68	−2.67	−1.21	−0.27 .59	6.99
Dec. 17	+.376		23 33 53.11	+1.617	+1.55	+10.61	−1.70	+11.16	+1.40 .27	6.69
Dec. 20	+.328		23 33 51.17	+1.410	+1.34	+12.45	−0.74	+13.05	+1.66 .22	6.62
Dec. 28	+.458		23 33 42.75	+1.969	+1.90	+19.52	−0.01	+21.41	+2.39 .16	6.56
									4.330	6.737 ±.134

ι Aquarii $\alpha = 23^h\ 37^m\ 38^s.64$ $\delta = -18°\ 59'\ 15''$ $k = -.016$ tang $\delta = -.34$
$z = +61\ 22\ 4$

Date	n	T_s	T_m	m tang δ	m tg δ + dα	Sl. T + m	Red. 1871.0	Sum	R.A. 1871.0	R.A. 1872.0
1871 Oct. 16	+.079		23 37 40.99	−.026	−0.04	−7.85	−2.52	−10.41	+0.60 37 30.58	37 33.70
Oct. 29	+.119		23 37 42.48	−.040	−.06	−9.40	−2.44	−11.90	+0.68 .58	33.70
Nov. 28	+.280		23 37 35.46	−.095	−.11	−2.68	−2.13	−4.92	+0.19 .54	33.66
9 Dec. 6	+.450		23 37 30.28	−.153	−.17	+2.50	−2.04	+0.29	+1.08 .57	33.69
1.9 Dec. 9	+.356		23 37 28.13	−.121	−.14	+4.46	−2.00	+2.32	+1.12 .45	33.57
Dec. 12	+.387		23 37 26.01	−.131	−.15	+6.63	−1.97	+4.51	+1.15 .52	33.64
Dec. 17	+.376		23 37 22.13	−.127	−.14	+10.61	−1.91	+8.56	+1.21 .69	33.81
Dec. 20	+.328		23 37 20.08	−.117	−.13	+12.45	−1.87	+10.45	+1.25 .58	33.65
Dec. 28	+.458		23 37 12.94	−.155	−.17	+19.52	−1.78	+17.57	+1.34 .57	33.63
									30.552	33.679 ±.041

γ Andromedae $\alpha = 23^h\ 39^m\ 41^s.87$ $\delta = +45°\ 42'\ 35''$ $k = .022$ tang $\delta = +1.02$
$z = -3\ 19\ 46$

Date	n	T_s	T_m	m tang δ	m tg δ + dα	Sl. T + m	Red. 1871.0	Sum	R.A. 1871.0	R.A. 1872.0
1871 Oct. 16	+.079		23 39 49.44	+.080	+0.06	−7.85	−2.75	−10.54	+0.20 39 38.90	39 41.85
Oct. 29	+.119		23 39 50.75	+.121	+.10	−9.40	−2.61	−11.91	+0.34 .84	41.79
Nov. 9	+.213		23 39 49.73	+.217	+.19	−8.59	−2.45	−10.85	+0.50 .88	41.83
Nov. 28	+.280		23 39 43.35	+.285	+.26	−2.68	−2.11	−4.53	+0.84 .82	41.77
Dec. 6	+.450		23 39 37.85	+.459	+.44	+2.50	−1.96	+0.98	+0.99 .83	41.78
10 Dec. 9	+.356		23 39 35.91	+.363	+.34	+4.46	−1.89	+2.92	+1.06 .82	41.78
1.9 Dec. 12	+.387		23 39 33.63	+.394	+.37	+6.63	−1.83	+5.17	+1.12 .80	41.75
Dec. 17	+.376		23 39 29.65	+.383	+.36	+10.61	−1.72	+9.24	+1.22 .89	41.84
Dec. 20	+.328		23 39 27.72	+.334	+.31	+12.45	−1.66	+11.10	+1.29 .82	41.78
Dec. 28	+.458		23 39 20.26	+.467	+.45	+19.52	−1.50	+18.47	+1.45 .75	41.70
									38.835	41.789 ±.031

S Sculptoreo $\alpha = 23^h\ 42^m\ 15^s.22$ $\delta = -28°\ 50'\ 15''$ $k = -.018$ tang $\delta = -.55$
$z = +71\ 13\ 4$

Date	n	T_s	T_m	m tang δ	m tg δ + dα	Sl. T + m	Red. 1871.0	Sum	R.A. 1871.0	R.A. 1872.0
1871 Nov. 9	+.213		23 42 23.47	−.117	−0.14	−8.59	−2.45	−11.18	+0.68 42 12.29	42 15.42
Dec. 6	+.450		23 42 12.05	−.247	−.26	+2.50	−2.11	+0.13	+1.02 .18	15.31
7 Dec. 9	+.356		23 42 9.95	−.193	−.21	+4.46	−2.06	+2.19	+1.07 .14	15.28
1.9 Dec. 12	+.387		23 42 7.82	−.212	−.23	+6.63	−2.02	+4.38	+1.11 .20	15.33
Dec. 17	+.376		23 42 3.89	−.206	−.22	+10.61	−1.96	+8.43	+1.17 .32	15.45
Dec. 20	+.328		23 42 1.93	−.180	−.20	+12.45	−1.92	+10.33	+1.21 .26	15.39
Dec. 28	+.458		23 41 54.76	−.251	−.27	+19.52	−1.81	+17.44	+1.32 .18	15.24
									12.229	15.366 ±.051

P. XXIII 204
B.R. 6.8289 $\alpha = 23^h\ 43^m\ 59^s.36$ $\delta = +50°\ 54'\ 40''$ $k = -.024$ tang $\delta = +1.23$
$z = -8\ 31\ 51$

Date	n	T_s	T_m	m tang δ	m tg δ + dα	Sl. T + m	Red. 1871.0	Sum	R.A. 1871.0	R.A. 1872.0
1871 Oct. 16	+.079		23 44 6.92	+.097	+0.07	−7.85	−2.92	−10.70	+0.04 43 56.22	43 59.18
Oct. 29	+.119		23 44 8.25	+.148	+.12	−9.40	−2.77	−12.05	+0.19 .20	59.16
Nov. 7	+.240		23 44 7.39	+.295	+.27	−8.93	−2.63	−11.29	+0.33 .10	59.06
8 Nov. 9	+.213		23 44 7.15	+.261	+.24	−8.59	−2.37	−10.94	+0.37 .21	59.17
1.9 Dec. 6	+.450		23 43 55.06	+.553	+.53	+2.50	−2.02	+1.01	+0.94 .07	59.03
Dec. 9	+.356		23 43 53.24	+.437	+.41	+4.46	−1.95	+2.92	+1.01 .16	59.12
Dec. 20	+.328		23 43 44.95	+.403	+.38	+12.45	−1.68	+11.15	+1.28 .10	59.06
Dec. 28	+.458		23 43 37.48	+.563	+.54	+19.52	−1.48	+18.58	+1.48 .06	59.02
									56.140	59.100 ±.052

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1872phae.proj.1459.

$\frac{d\delta}{dt}$ +24069 ·11,32 +2.40

$\delta^\circ = +76\ 55\ 4.3$ Sin z = −.57 $\frac{d\delta}{dt}$ =

Tm − TS Circle Read. Red. Mean Circle Read. Com. B+77γ +20.07 λ−γ +.52 +.81 Rm Ratt Red Am to 1872.0 Rm I δ 1872.0

μ + log tan z = 1.59760 m

54	2.25	+76.5	29	2.15	+23.03 29	25.18	+53	23.17	+ .00899	+0	40.42	−.67	−.65	−.82	−20.00	+0.07	−0.01	+61.01	55	4.7
	5.38	+30.4	29	13.75	+ 9.21 29	22.96	53	25.39	+ 1323		40.82	.12	−.71	−.31	−24.10	−4.03	+0.50	+61.51		4.2
	10.70	+65.1	28	58.65	+19.73 29	18.38	53	29.97	+ 2038		41.49	.50	.73	−.21	−30.10	−10.03	+0.60	+62.92		4.9
	9.60	+23.4	29	14.50	+ 7.09 29	21.59	53	26.76	+ 3455		42.87	.08	.55	−.11	−30.60	−10.53	+0.70	+63.69		3.5
	13.10	+70.9	28	54.00	+21.49 29	15.49	53	32.86	+ 1486		41.35	.60	.51	−.59	−32.30	−12.23	+0.22	+62.76		4.9
	10.90	−68.4	29	39.50	−20.73 29	18.77	53	29.58	+ 3100	+	42.52	−.57	−.62	−.68	−32.40	−12.33	+0.13	+63.08		3.0

±.030 $\delta_0 = -18\ 59\ 14.6$ +3.12 2.02098 +19.96 −.81 −1.26

+20.3	20	56.70	+25.69 21	22.39	−58	34.04	+ .00899	−1	47.14	.00	+.07	−.14	−.88	−12.36	+7.60	−2.14	+61.01	59	14.7
+18.0	20	57.15	+22.78 21	19.93	58	31.58	+ 1323	1	48.20	.01	.06	.16	−.91	−10.89	+9.07	−2.17	+61.51		11.4
+18.0	20	58.85	+22.78 21	21.63	58	33.25	+ 3455	1	53.64	.04	.06	.06	−.81	−7.66	+12.30	−2.07	+63.69		13.0
+13.9	21	4.60	+17.59 21	22.19	58	33.84	+ 3199	1	52.84	.04	.03	.04	−.82	−6.99	+12.97	−2.08	+62.31		13.5
+13.5	21	7.15	+17.09 21	24.24	58	35.89	+ 3269	1	53.15	.04	.03	.04	−.82	−6.77	+13.19	−2.08	+62.24		15.7
+18.5	20	59.80	+23.42 21	23.22	58	34.87	+ 2692	1	51.66	.03	.06	.13	−.88	−6.55	+13.41	−2.14	+62.36		12.9
−21.7	21	54.50	−27.47 21	27.03	58	38.68	+ 1886	1	49.61	.01	.08	.25	−.98	−6.21	+13.75	−2.24	+62.70		14.1
+20.7	20	59.40	+26.20 21	25.60	58	37.25	+ 3106	1	52.72	.04	.08	.13	−.86	−6.04	+13.92	−2.12	+63.08		15.1
+10.2	21	7.80	+12.91 21	20.71	58	32.36	+ 4043	−1	55.19	.04	+.02	−.15	−.94	−5.67	+14.29	−2.20	+62.93		12.6

±.039 $\delta_0 = +45\ 42\ 35.0$ +2.95 0.52490 m +19.97 +.05 +.08

+31.4	40	49.00	+29.36 41	18.36	+41	29.99	+ .00908	+0	3.42	−.27	−.13	−.35	−20.58	−0.61	−0.27	+61.01	42	33.5
−19.7	41	32.50	−18.42 41	14.08	41	34.27	+ 1334		3.45	.12	.16	−.33	−23.30	−3.33	−0.25	+61.51		35.6
+28.6	40	49.10	+26.74 41	15.84	41	32.51	+ 1740		3.49	.23	.06	−.24	−25.10	−5.12	0.16	+63.04		33.7
+23.6	40	52.90	+22.07 41	14.97	41	33.38	+ 3459		3.63	.15	.05	−.15	−27.05	−7.08	−0.07	+63.69		33.6
+28.7	40	47.30	+26.83 41	14.43	41	34.22	+ 3155		3.60	.23	.02	−.21	−27.68	−7.41	−0.13	+62.31		32.6
+25.5	40	49.50	+23.84 41	13.34	41	35.01	+ 3279		3.61	.17	.03	−.15	−27.39	−7.42	−0.07	+62.24		33.4
+27.1	40	46.95	+25.24 41	12.19	41	36.16	+ 2701		3.57	.20	.10	−.25	−27.40	−7.43	−0.17	+62.36		34.5
+28.8	40	46.20	+26.93 41	13.13	41	35.22	+ 1896		3.50	.23	.10	−.28	−27.35	−7.38	−0.20	+62.70		33.8
+23.9	40	50.95	+22.34 41	13.29	41	35.06	+ 3119		3.60	.16	.10	−.21	−27.25	−7.28	−0.13	+63.08		34.3
+22.2	40	51.35	+20.76 41	12.11	41	36.24	+ 4046	+	3.68	−.13	−.11	−.19	−26.77	−6.80	−0.11	+62.93		35.9

±.022 $\delta_0 = -28\ 50\ 17.5$ +3.13 2.22837 +19.99 −.87 −1.37

+23.3	10	55.30	+27.32 11	22.62	−48	34.27	+ 01740	−2	54.09	.07	+.03	−.07	−.81	−6.85	+13.14	−2.18	+63.04	58	14.4
−19.4	11	44.15	−22.75 11	21.40	48	33.05	+ 3150	2	59.86	.13	.07	.07	−.87	−3.76	+16.23	−2.24	+62.31		16.7
+21.8	10	54.80	+25.56 11	20.36	48	32.01	+ 3279	2	60.37	.12	.11	.04	−.80	−3.53	+16.46	−2.17	+62.24		16.0
~~+12.8~~	~~11~~	~~52.90~~	~~+15.41 12~~	~~7.91~~	~~49~~	~~19.56~~	~~+ 2761~~	~~2~~	~~57.99~~	~~.09~~	~~.03~~	~~.25~~	~~−.09~~	~~−3.32~~	~~+16.67~~	~~−2.46~~	~~+62.36~~		
+16.2	11	2.65	+18.99 11	21.64	48	33.29	+ 3119	2	59.71	.16	.06	.13	−.94	−2.87	+17.12	−2.31	+63.08		15.3
+18.6	10	54.90	+21.81 11	16.71	48	28.36	+ 4046	−2	63.58	.15	+.06	−.13	−.92	−2.64	+17.39	−2.29	+62.93		14.1

±.045

$\delta_0 = +50\ 54\ 39.2$ +2.96 0.93630 m +20.00 +.14 +.21

+39.5	28	46.40	+33.37 29	19.77	+53	28.58	+ 00908	+0	8.82	−.11	−.61	−.88	−20.46	−0.46	−0.67	+61.01	54	37.3
+29.7	28	51.35	+25.08 29	16.43	53	31.92	+ 1334		8.91	.25	.65	−.76	−23.46	−3.46	−0.55	+61.51		38.3
+25.3	28	55.95	+21.36 29	17.31	53	31.04	+ 1573		8.96	.17	.31	−.34	−25.56	−5.56	0.13	+63.21		37.5
+34.2	28	47.20	+28.88 29	16.08	53	32.27	+ 1740		8.99	.31	.30	−.47	−25.57	−5.57	−0.26	+63.04		38.5
−10.9	29	22.80	−9.20 29	13.60	53	34.75	+ 3150		9.08	.03	.17	−.06	−28.92	−8.42	+0.15	+62.31		37.9
−27.4	29	36.20	−23.14 29	13.06	53	35.29	+ 3279		9.31	.20	.18	−.24	−28.52	−8.52	0.03	+62.24		38.3
+24.6	28	54.35	+20.77 29	15.12	53	33.23	+ 3119		9.28	.16	.51	−.53	−28.52	−8.52	0.32	+63.08		36.7
−21.2	29	33.15	−17.90 29	15.25	53	33.10	+ 4046	+	9.48	−.12	−.63	−.61	−28.13	−8.13	0.40	+62.93		37.0

±.033

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3

Δδ = −.025″ (2)
Δα − .45″

+3.0440
58694

Star # φ Pegasi α = 23 h 45 m 58.69 s δ = + 18° 24′ 34″ K = −.016 (2) tang δ = +.33
z = + 23 58 15

Date	α (2)	T s	T m	n tang δ	d.T.7 m	Red 1871.0	Sum (2)	AR 1871.0	AR 1872.0
1871 Oct. 3	+.057	23h	46m 4.26s	+.018	+0.00	−6.15	−2.47	−8.62 +0.57	23h 45m 55.64s 23h 45m 58.68s
Oct. 16	+.079	23	46 5.92	+.026	+.01	−7.85	−2.45	−10.29 +0.59	.63 58.67
Nov. 7	+.240	23	46 6.77	+.079	+.06	−8.93	−2.31	−11.18 +0.73	.59 58.63
Nov. 9	+.213	23	46 6.50	+.070	+.05	−8.59	−2.30	−10.84 +0.74	.56 58.70
9 ~~Nov. 28~~									
1.9 Dec. 6	+.450	23	45 55.03	+.148	+.13	+2.51	−2.01	+0.63 +1.03	.66 58.70
Dec. 9	+.356	23	45 53.01	+.117	+.10	+4.46	−1.97	+2.59 +1.07	.60 58.64
Dec. 12	+.387	23	45 50.79	+.127	+.11	+6.63	−1.94	+4.80 +1.10	.59 58.63
Dec. 17	+.376	23	45 46.82	+.124	+.11	+10.61	−1.88	+8.84 +1.16	.66 58.70
Dec. 20	+.328	23	45 44.91	+.108	+.09	+12.46	−1.83	+10.72 +1.21	.63 58.67
									55.629 58.669 ±.021

+.048 (2)
−.54
+2.9633
34833

# Q Cassiopeiae α = 23 h 47 m 59.82 s δ = +56° 47′ 14″ K = −.027 tang δ = +1.53
z = − 14 24 25

Date	α (2)	T s	T m	n tang δ	d.T.7 m	Red 1871.0	Sum (2)	AR 1871.0	AR 1872.0
1871 Oct. 3	+.057	23	48 6.24	+.087	+0.06	−6.15	−3.29	−9.38 −0.33	47h 56.86s 47h 59.82s
Oct. 16	+.079	23	48 7.88	+.120	+.09	−7.85	−3.18	−10.94 −0.22	.94 59.90
Nov. 7	+.240	23	48 8.28	+.367	+.34	−8.93	−2.84	−11.43 +0.12	.85 59.81
Nov. 9	+.213	23	48 8.01	+.325	+.30	−8.59	−2.79	−11.08 +0.17	.93 59.89
10 Nov. 28	+.280	23	48 1.52	+.428	+.40	−2.67	−2.33	−4.60 +0.63	.92 59.88
1.9 Dec. 6	+.450	23	47 55.85	+.688	+.66	+2.51	−2.08	+1.09 +0.88	.94 59.90
Dec. 9	+.356	23	47 53.93	+.544	+.52	+4.47	−2.01	+2.98 +0.95	.90 59.86
Dec. 12	+.387	23	47 51.72	+.592	+.56	+6.64	−1.94	+5.26 +1.02	.98 59.94
Dec. 17	+.376	23	47 47.51	+.575	+.55	+10.62	−1.78	+9.29 +1.18	.90 59.86
Dec. 20	+.328	23	47 45.65	+.501	+.47	+12.46	−1.69	+11.24 +1.27	.89 59.85
									56.911 59.871 ±.028

~~Q XXIII~~ 237
~~Vi XXIII 237~~
~~B 322~~

α = 23 h 50 m 42.28 s δ = +54° 59′ 37″ K = −.026 tang δ = +1.43
z = − 12 36 48

Date	α (2)	T s	T m	n tang δ	d.T.7 m	Red 1871.0	Sum (2)	AR 1871.0	AR 1872.0
1871 Nov. 7	+.240	23	50 50.13	+.343	+0.32	−8.93	−2.81	−11.42 +0.18	50h 39.01s 50h 42.00s
Nov. 9	+.213	23	50 50.25	+.304	+.28	−8.59	−2.77	−11.08 +0.22	.97 41.96
Nov. 28	+.280	23	50 43.63	+.400	+.37	−2.67	−2.36	−4.65 +0.64	.98 41.97
8 Dec. 6	+.450	23	50 38.05	+.643	+.62	+2.51	−2.14	+0.99 +0.85	.04 42.03
1.9 Dec. 9	+.356	23	50 35.99	+.509	+.48	+4.47	−2.06	+2.89 +0.93	.88 41.87
Dec. 12	+.387	23	50 33.72	+.553	+.53	+6.64	−1.98	+5.19 +1.01	.97 41.90
Dec. 17	+.376	23	50 29.65	+.537	+.51	+10.62	−1.84	+9.29 +1.15	.96 41.93
Dec. 20	+.328	23	50 27.82	+.469	+.44	+12.46	−1.75	+11.16 +1.24	.97 41.96
									38.962 41.952 ±.040

(2) +.045
+1.05
+3.0762
44304

# W Piscium α = 23 h 52 m 44.30 s δ = + 6° 9′ 16″ K = −.016 tang δ = +.11
z = + 36 13 33

Date	α (2)	T s	T m	n tang δ	d.T.7 m	Red 1871.0	Sum (2)	AR 1871.0	AR 1872.0
1871 Oct. 3	+.057	23	52 49.88	+.006	−0.01	−6.15	−2.46	−8.62 +0.62	52h 41.26s 52h 44.34s
Nov. 7	+.240	23	52 52.51	+.026	+.01	−8.93	−2.34	−11.26 +0.74	.25 44.33
Nov. 9	+.213	23	52 52.25	+.023	+.01	−8.59	−2.32	−10.90 +0.76	.35 44.43
8 Dec. 6	+.450	23	52 40.76	+.049	+.03	+2.51	−2.08	+0.46 +1.00	.32 44.30
1.9 Dec. 9	+.356	23	52 38.84	+.039	+.02	+4.47	−2.05	+2.44 +1.03	.29 44.36
Dec. 12	+.357	23	52 36.56	+.042	+.03	+6.64	−2.02	+4.65 +1.06	.21 44.29
Dec. 17	+.376	23	52 32.59	+.041	+.02	+10.62	−1.96	+8.68 +1.12	.27 44.35
Dec. 20	+.328	23	52 30.76	+.036	+.02	+12.46	−1.93	+10.56 +1.15	.32 44.39
									41.269 44.349 ±.032

# 30 Piscium α = 23 h 55 m 23.70 s δ = − 6° 43′ 31″ K = −.016 tang δ = −.12
z = + 49 6 20

Date	α (2)	T s	T m	n tang δ	d.T.7 m	Red 1871.0	Sum (2)	AR 1871.0	AR 1872.0
1871 Nov. 2	+.192	23	55 32.71	−.023	−0.04	−9.65	−2.40	−12.09 +0.67	55h 20.62s 55h 23.69s
Nov. 19	+.350	23	55 25.45	−.042	−.06	−5.47	−2.27	−7.80 +0.88	.65 23.72
Dec. 6	+.450	23	55 20.32	−.054	−.07	+2.51	−2.10	+0.34 +0.97	.66 23.73
7 Dec. 9	+.356	23	55 18.20	−.042	−.06	+4.47	−2.06	+2.35 +1.01	.65 23.72
1.9 Dec. 17	+.376	23	55 13.07	−.045	−.06	+10.62	−1.98	+8.58 +1.09	.65 23.72
Dec. 20	+.328	23	55 10.20	−.039	−.06	+12.46	−1.95	+10.45 +1.12	.65 23.72
Dec. 28	+.458	23	55 3.00	−.054	−.07	+19.53	−1.86	+17.62 +1.21	.60 23.69
									20.626 23.696 ±.027

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1872phae.proj1459.

$\frac{d\alpha}{dt}$ +3.04

+19.994
0 ′ 33.93″

$\delta_0 = +18\ 24\ 33.9$ $\sin z = +.41$ $\frac{d\delta}{dt} =$ ″

Corr.

Tim – T's Circle Read. Red. Hour Circle Circle Read.

$\beta + 774\gamma$ $\lambda\gamma - \gamma$

μ + log Δ_1 = 1.40810

+19.99

31.38	+19.5	58	25.45	+24.77	58	50.22	+23	58.13	+	00917	−0	26.14	−.07	−.54	−.97	−18.50	+1.49	−1.55	+61.01	24	329
32.57	+20.9	58	22.35	+26.85	58	48.90	23	59.45	+	1582		26.54	.08	.26	−.70	−19.90	+0.09	−1.28	+63.21		349
32.77	+20.2	58	22.95	+25.66	58	48.61	23	59.74	+	1750		26.64	.07	.36	−.69	−20.00	−0.01	−1.27	+63.04		34.9
30.96	+12.6	58	33.80	+16.00	58	49.80	23	58.55	+	3161		27.52	.03	.14	−.53	−20.00	−0.01	−1.11	+62.31		32.2
31.98	−16.6	59	9.65	−21.09	58	48.56	23	59.79	+	3288		27.60	.05	.16	−.57	−19.90	+0.09	−1.15	+62.24		33.4
31.57	+21.0	58	22.35	+26.67	58	49.02	23	59.33	+	2710		27.24	.08	.44	−.88	−19.70	+0.29	−1.46	+62.36		33.3
31.88	+22.6	58	20.50	+28.71	58	49.21	23	59.14	+	1906		26.74	.09	.43	−.88	−19.40	+0.59	−1.46	+62.70		34.2
29.79	+18.3	58	27.80	+23.25	58	51.05	23	57.30	+	3138		27.51	−.06	−.44	−.86	−19.20	+0.79	−1.44	+63.08		32.2

33.60
±0.79

+20.016
13.62

$\delta_0 = +56\ 47\ 13.7$

+2.96 1.16990n $\sin z = -.25$

+20.02

+.22 +.35

46 12.06	+31.8	36	27.60	+23.22	36	50.92	+45	57.43	+	917	+0	15.10	−.26	−.31	−.25	−20.20	−0.18	+0.10	+61.01	47	135
14.96	+37.9	36	20.35	+27.79	36	48.14	46	0.21	+	1582		15.34	.36	.28	−.37	−25.50	−5.46	−0.02	+63.21		133
16.28	+33.7	36	22.35	+24.71	36	47.06	46	1.24	+	1750		15.40	.30	.11	−.19	−25.60	−5.58	+0.16	+63.04		14.3
12.77	+37.9	36	19.35	+27.80	36	47.15	46	1.20	+	3463		16.01	.36	.08	−.22	−28.70	−8.68	+0.13	+63.69		12.4
19.23	+28.5	36	23.85	+20.90	36	44.75	46	3.60	+	3161		15.90	.21	.06	−.05	−29.40	−9.38	+0.30	+62.31		12.7
19.64	−16.7	36	56.75	−12.25	36	44.50	46	3.85	+	3288		15.95	.08	.08	+.06	−29.60	−9.58	+0.41	+62.24		12.9
21.38	+27.2	36	22.40	+19.95	36	42.35	46	6.00	+	2710		15.74	.19	.17	−.14	−29.70	−9.68	+0.21	+62.36		14.6
20.72	−28.9	37	4.30	−21.19	36	43.11	46	5.24	+	1906		15.45	.22	.27	−.27	−29.80	−9.78	+0.08	+62.70		13.7
18.48	+27.8	36	25.00	+20.39	36	45.39	46	2.96	+	3138		15.90	−.20	−.18	−.16	−29.80	−9.78	+0.19	+63.08		12.4

13.31
±0.57

±.015
+2.99

$\delta_0 = +54\ 59\ 37.0$

1.11000n

+20.04

+.21 +.31

	+39.7	23	52.05	+30.51	24	22.56	+58	25.79	+	01582	+0	13.36	−.42	−.31	−.52	−25.31	−5.27	−0.21	+63.21	59	369
	+41.1	23	50.10	+32.32	24	22.42	58	25.93	+	1750		13.41	.44	.31	−.54	−25.41	−5.37	−0.23	+63.04		368
	+36.4	23	53.20	+27.97	24	21.17	58	27.18	+	3463		13.95	.34	.23	−.36	−28.61	−8.57	−0.05	+63.69		36.2
	−27.4	24	40.10	−21.86	24	19.04	58	29.31	+	3161		13.86	.19	.19	−.17	−29.11	−9.07	+0.14	+62.31		366
	+25.6	23	58.40	+19.67	24	18.07	58	30.28	+	3288		13.90	.17	.16	−.12	−29.27	−9.23	+0.19	+62.24		374
	+32.7	23	52.45	+25.13	24	17.58	58	30.77	+	2710		13.71	.28	.51	−.38	−29.38	−9.34	−0.27	+62.36		372
	+32.1	23	53.40	+24.67	24	18.07	58	30.28	+	1906		13.46	.26	.51	−.56	−29.45	−9.41	−0.25	+62.70		368
	+28.2	23	58.20	+21.67	24	19.87	58	28.48	+	3138		13.85	−.20	−.52	−.51	−29.44	−9.40	−0.20	+63.08		35.8

36.7 b
±0.35

±.028

+19.944
16.41

$\delta_0 = +6\ 9\ 16.4$

+3.08 1.62480 $\sin z = +.59$

+19.94

−.54 −.85

8 12.85	+25.0	13	18.20	+33.29	13	51.49	+8	56.86	+	01590	−0	43.72	−.03	−.26	−.83	−16.80	+3.14	−1.68	+63.21	9	178
11.83	+20.5	13	25.05	+27.29	13	52.34	8	56.01	+	1753		43.89	.02	.27	−.83	−16.80	+3.14	−1.68	+63.04		16.6
11.65	−9.4	14	3.70	−12.51	13	51.19	8	57.16	+	3168		45.34	.01	.16	−.71	−15.70	+4.24	−1.56	+62.31		16.8
13.15	+15.0	13	29.60	+19.97	13	49.57	8	58.78	+	3298		45.48	.01	.14	−.69	−15.50	+4.44	−1.54	+62.24		18.0
12.80	+20.3	13	23.20	+27.02	13	50.22	8	58.13	+	2718		44.87	.02	.44	−1.00	−15.30	+4.64	−1.85	+62.36		18.1
10.94	+15.7	13	32.20	+20.90	13	53.10	8	55.26	+	1917		44.05	.01	.45	−1.00	−15.00	+4.94	−1.85	+62.70		17.0
10.49	+18.5	13	27.45	+24.62	13	52.07	8	56.28	+	3156		45.33	−.02	−.44	−1.00	−14.90	+5.04	−1.85	+63.08		17.2

17.46
±0.59

±.032

$\delta_0 = -6\ 43\ 31.9$

+3.07 1.82190

+20.05

−.49 −1.08

	+18.1	5	52.85	+24.06	6	16.91	−43	28.56	+	01548	−1	8.77	.00	+.01	−.15	−.83	−14.02	+6.03	−1.91	+63.40	43	298
	+9.8	6	7.95	+13.03	6	20.98	43	32.63	+	02286	1	9.94	.00	.01	.07	−.75	−12.54	+7.51	−1.83	+63.05		33.8
	−8.0	6	41.60	−22.93	6	17.67	43	29.32	+	03168	1	11.38	.01	.01	.07	−.75	−11.43	+8.62	−1.83	+62.31		36.6
	−20.6	6	45.75	−27.39	6	18.36	43	30.01	+	03298	1	11.60	.00	.02	.07	−.74	−11.21	+8.84	−1.82	+62.24		32.4
	+20.1	5	55.65	+26.73	6	22.38	43	34.03	+	01906	1	9.34	.00	.02	.12	−.79	−10.64	+9.41	−1.87	+62.70		33.1
	+19.0	5	53.95	+25.26	6	19.21	43	30.86	+	03156	1	11.36	.01	.02	.12	−.79	−10.43	+9.62	−1.87	+63.08		31.4
	+16.7	5	55.45	+22.20	6	17.65	43	29.31	+	04052	−1	12.85	.01	+.01	−.13	−.81	−9.89	+10.16	−1.89	+62.93		31.0

31.87
±0.96

±.027

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1872phae.proj.1459.

A

Star 2 Cetti S α = 23h 5m 10.03s δ = −18° 2′ 54″ K = −.016 tang δ = −.32
z = +60 25 43

	Date	n	T_s	T_-	n tang δ	n tang δ d.T	Red. 1871.0	Sum Red. 1871.0	A.R. 1871.0	A.R. 1872.0
1871	Nov. 2	+.192	23	57 20.00	−.061	−0.08	−9.65 −2.46	−12.19 +0.62	23 57 7.81	23 57 10.89
	Nov. 22	+.253	33	57 14.91	−.080	−.10	−4.61 −2.29	−7.00 +0.79	.91	10.99
6	Dec. 9	+.356	23	57 5.53	−.113	−.13	+4.47 −2.10	+2.24 +0.98	.77	10.85
1.9	Dec. 17	+.376	23	56 59.35	−.120	−.14	+10.62 −2.01	+8.47 +1.07	.82	10.90
	Dec. 20	+.328	23	56 57.50	−.104	−.12	+12.46 −1.97	+10.37 +1.11	.87	10.95
	Dec. 28	+.458	23	56 50.44	−.146	−.16	+19.53 −1.88	+17.49 +1.20	.93	11.01
									7.852	10.932 ±.046

33 Precium S α = 23h 58m 47.99s δ = −6° 25′ 26″ K −.016 tang δ = −.11
z = +48 48 15

1871	Nov. 2	+.192	23	58 56.10	−.021	−0.04	−9.65 −2.41	−12.10 +0.66	58 44.00	58 47.07
	Nov. 19	+.350	23	58 51.77	−.038	−.05	−5.47 −2.28	−7.80 +0.79	43.97	47.04
6	Dec. 9	+.356	23	58 41.62	−.039	−.06	+4.47 −2.08	+2.33 +0.99	.95	47.02
1.9	Dec. 17	+.376	23	58 38.32	−.041	−.06	+10.62 −2.00	+8.56 +1.07	.88	46.95
	Dec. 20	+.328	23	58 33.46	−.036	−.05	+12.46 −1.96	+10.45 +1.11	.91	46.98
	Dec. 28	+.458	23	58 26.35	−.050	−.07	+19.53 −1.87	+17.59 +1.20	.94	47.01
									43.942	47.012 ±.029

Δα = +0.21
Δδ = +0.21

# 2 Andromedae α = 0h 1m 46.46s (+3.0871, 46.464) δ = +28° 2′ 3″ K −.018 tang δ = +.54
z = +13 59 48

1871-2	Nov. 2	+.192	0	1 55.44	+.103	+0.08	−9.65 −2.50	−12.07 +0.59	0 1 43.37	0 1 46.46
	Nov. 19	+.350	0	1 51.10	+.189	+.17	−5.56 −2.35	−7.74 +0.74	.36	46.45
	Nov. 22	+.253	0	1 50.30	+.136	+.12	−4.61 −2.32	−6.81 +0.77	.49	46.58
	Nov. 29	+.290	0	1 47.62	+.157	+.14	−2.14 −2.23	−4.23 +0.86	.39	46.48
	Dec. 6	+.370	0	1 42.81	+.200	+.18	+2.49 −2.15	+0.52 +0.94	.38	46.42
11	Dec. 9	+.356	0	1 40.76	+.192	+.17	+4.47 −2.11	+2.53 +0.98	.29	46.38
1.9	Dec. 12	+.387	0	1 38.65	+.208	+.19	+6.64 −2.08	+4.75 +1.01	.40	46.49
	Dec. 17	+.376	0	1 34.51	+.203	+.19	+10.62 −2.00	+8.81 +1.09	.32	46.41
	Dec. 20	+.328	0	1 32.72	+.177	+.16	+12.46 −1.96	+10.65 +1.13	.38	46.47
	Dec. 28	+.458	0	1 25.46	+.247	+.23	+19.53 −1.83	+17.93 +1.26	.39	46.48
	Jan. 2	+.380	0	1 20.63	+.205	+.19	+24.36 −1.77	+22.78 +1.22	.41	46.50
									43.375	46.465 ±.033

−.078
.69

# 22 Andromedae α = 0h 3m 40.53s (+3.0958, 40.533) δ = +45° 21′ 35″ K = −.022 tang δ = +1.01
z = −2 58 46

1871-2	Nov. 2	+.192	0	3 49.68	+.193	+0.17	−9.65 −2.76	−12.24 +0.34	3 37.44	3 40.54
	Nov. 19	+.350	0	3 45.11	+.353	+.33	−5.56 −2.54	−7.87 +0.56	.34	40.44
	Nov. 22	+.253	0	3 44.28	+.255	+.23	−4.61 −2.48	−6.86 +0.62	.42	40.52
	Dec. 6	+.370	0	3 36.70	+.378	+.35	+2.49 −2.24	+0.60 +0.86	.30	40.40
10	Dec. 9	+.356	0	3 34.69	+.369	+.34	+4.47 −2.18	+2.63 +0.92	.32	40.42
1.9	Dec. 12	+.387	0	3 32.47	+.396	+.37	+6.64 −2.12	+4.89 +0.98	.36	40.46
	Dec. 17	+.376	0	3 28.36	+.349	+.36	+10.62 −2.03	+8.95 +1.07	.31	40.41
	Dec. 20	+.328	0	3 26.60	+.331	+.31	+12.46 −1.96	+10.81 +1.14	.41	40.51
	Dec. 28	+.458	0	3 19.20	+.462	+.44	+19.53 −1.80	+18.17 +1.30	.37	40.47
	Jan. 2	+.380	0	3 14.25	+.383	+.36	+24.36 −1.69	+23.03 +1.41	.28	40.38
									37.355	40.455 ±.040

Δα = −.38
Δδ = +1.18

# 4 H Draconis L.6. α = 12h 06m 10.47s (+2.9044, 10.471) δ = +78° 19′ 39″ K = +.076 tang δ = −4.84
z = −35 56 50

1871-2	Nov. 22	+.253	0	6 11.78	−1.224	−1.15	−4.61 +1.35	−4.41 +4.26	6 7.37	6 10.28
	Dec. 6	+.370	0	6 6.98	−1.790	−1.71	+2.49 −0.15	+0.63 +2.76	.61	10.52
	Dec. 9	+.356	0	6 4.91	−1.723	−1.65	+4.47 −0.49	+2.33 +2.42	.24	10.15
7	Dec. 17	+.376	0	5 59.93	−1.819	−1.74	+10.62 −1.51	+7.37 +1.40	.30	10.21
1.9	Dec. 20	+.328	0	5 58.10	−1.587	−1.51	+12.46 −1.82	+9.13 +1.09	.23	10.14
	Dec. 28	+.458	0	5 52.87	−2.216	−2.14	+19.53 −2.81	+14.58 +0.70	.45	10.36
	Jan. 2	+.380	0	5 48.58	−1.839	−1.76	+24.36 −3.42	+19.18 −0.51	.76	10.67
									7.423	10.333 ±.144

−.004
+.47

# γ Pegasi α = 0h 6m 38.78s (+3.0825, 38.776) δ = +14° 28′ 18″ K = −.016 tang δ = +.26
z = +27 54 31

1871	Nov. 2	+.192	0	6 47.75	+.049	+0.03	−9.65 −2.44	−12.06 +0.64	6 36.69	6 38.77
	Nov 19	+.350	0	6 43.51	+.097	+.07	−5.56 −2.32	−7.81 +0.76	.70	38.78
4	Dec. 12	+.387	0	6 31.04	+.100	+.08	+6.64 −2.10	+4.62 +0.98	.66	38.74
1.9	Dec. 24	+.330	0	6 20.88	+.086	+.07	+16.72 −1.95	+14.84 +1.13	.72	38.80
									35.492	38.772

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$\frac{d\alpha}{dt_2}$ +3.08

$\delta_0 = -18°\ 2'\ 56.''1$ $\quad$ $d\alpha$ $\quad$ $\psi + \log \tan \gamma$ 2.00439 $\quad$ $\frac{d\delta}{dt} = +20.''05$ $\quad$ −.81 −1.25

	Tm − TS	Circle Read.		Red. Hor. wire	Corr. Circle Read.						Δt − γ	Rm	Ro	Rm − Ro − Rf	Redn 1871.0	Red to 1872.0 + Ro + Rf	I	δ 1872.0
	s	′	″	″	′	″	′	″		″	″	″	″	″	″			″
	+16.5	24	46.10	+21.00	25	7.10	−2	18.75	+ 01563 −1	44.72	.01	+.05	−.81	−1.57	−11.19	+8.86 2.82 + 63.40	2	54.0
	+16.6	24	48.25	+21.13	25	9.38	2	21.03	+ 1055. 1	43.50	.01	.05	.29	−1.06	−8.91	+11.14 2.30 + 62.56		53.1
	−19.3	25	31.10	−24.57	25	6.53	2	18.18	+ 3307. 1	49.01	.03	.08	.02	−.77	−7.30	+12.75 2.02 + 62.24		54.3
	+17.2	24	51.35	+21.89	25	13.24	2	24.89	+ 1927. 1	45.60	.01	.05	.64	−1.40	−6.69	+13.36 2.65 + 62.70		57.1
	+15.7	24	48.75	+19.98	25	8.73	2	20.38	+ 3175. 1	48.68	.03	.04	.62	−1.39	−6.49	+13.56 2.64 + 63.08		55.1
	+15.2	24	47.00	+19.35	25	6.35	2	18.00	+ 4055. 1	50.90	.03	+.04	−.67	−1.44	−6.04	+14.01 2.69 + 62.93		54.7

±.046 $\quad$ 54.″72 ±0.85

+3.07 $\quad$ $\delta_0 = -6\ 25\ 25.8$ $\quad$ 1.81720 $\quad$ +20.05 $\quad$ −.69 −1.08

	+16.7	47	49.75	+22.22	48	11.97	−25	23.62	+ 01563 −1	8.05	.00	+.01	−.48	−1.16	−14.12	+5.93 2.24 + 63.40	25	24.6
	+13.5	47	55.10	+17.96	48	13.06	25	24.71	+ 2295. 1	9.21	.00	.01	.17	−.85	−12.89	+7.16 1.93 + 63.05		25.6
	−10.0	48	25.65	−13.30	48	12.35	25	24.00	+ 3307. 1	10.84	.01	.01	.44	−1.12	−11.34	+8.71 2.20 + 62.24		26.1
	+10.4	48	2.75	+13.83	48	16.58	25	28.23	+ 1927. 1	8.62	.00	.01	.39	−1.07	−10.76	+9.29 2.15 + 62.70		27.0
	−14.6	48	33.50	−19.42	48	14.08	25	25.73	+ 3175. 1	10.62	.01	.01	.46	−1.14	−10.55	+9.50 2.22 + 63.08		26.0
	−5.4	48	20.40	−7.18	48	13.22	25	24.87	+ 4055. 1	12.07	.01	+.00	−.46	−1.15	−10.02	+10.03 2.13 + 62.93		26.1

±.029 $\quad$ 25.″90 ±0.49

+3.09 $\quad$ $\delta_0 = +28\ 23\ 1.3$ (+19.907, 1.25) $\quad$ sin z = +.24 $\quad$ 1.15680 $\quad$ +19.91 $\quad$ −.22 −.34

22 0.95	+20.5	0	7.70	+24.71	0	32.41	+22	15.94	+ .01563 −0	14.87		−.10	−.02	−.34	−21.10	−1.19 −0.68 + 63.40	23	2.6
1.27	+22.8	0	4.95	+26.86	0	31.81	22	16.54	+ 2295.	15.13		.13	.01	−.36	−22.40	−2.49 −0.70 + 63.05		1.3
2.19	+21.2	0	6.40	+24.97	0	31.37	22	16.98	+ 1055.	14.70		.10	.01	−.33	−22.50	−2.59 −0.67 + 62.56		1.6
1.08	−23.7	0	59.60	−27.91	0	31.69	22	16.66	+ 3004.	15.37		.14	.07	−.43	−22.80	−2.89 −0.77 + 63.52		1.2
1.30	+20.8	0	7.00	+24.51	0	31.51	22	16.84	+ 3174.	15.44		.10	.00	−.32	−22.80	−2.89 −0.66 + 62.51		0.4
1.67	+21.6	0	5.65	+25.44	0	31.09	22	17.26	+ 3307.	15.48		.11	.00	−.33	−22.70	−2.79 −0.67 + 62.24		0.6
2.21	+24.3	0	2.10	+28.62	0	30.72	22	17.63	+ 2727.	15.28		.14	.00	−.36	−22.70	−2.79 −0.70 + 62.36		1.2
1.65	+28.7	59	57.70	+33.80	0	31.50	22	16.85	+ 1927.	15.00		.20	.00	−.42	−22.60	−2.69 −0.76 + 62.70		1.1
1.43	+22.7	0	4.60	+26.74	0	31.34	22	17.01	+ 3175.	15.44		.13	.01	−.36	−22.40	−2.49 −0.70 + 63.08		1.5
2.60	+21.4	0	3.05	+26.85	0	29.90	22	18.45	+ 4055.	15.75		.10	.00	−.32	−22.00	−2.09 −0.64 + 62.93		2.9
0.47	+18.5	0	10.35	+21.79	0	32.14	22	16.21	+ 3724.	15.63		−.08	−.03	−.33	−21.60	−1.69 −0.67 + 63.51		1.7

±.029 $\quad$ 1.″46 ±0.48

+3.10 $\quad$ $\delta_0 = +45\ 21\ 35.2$ (+20.051, 35.16) $\quad$ sin z = −.05 $\quad$ 0.47680n $\quad$ +20.05 $\quad$ +.05 +.07

20 36.80	+26.9	1	48.85	+25.30	2	14.15	+20	34.20	+ 01578 +0	3.11		−.20	−.31	−.46	−23.10	−3.05 −0.39 + 63.40	21	37.3
36.49	+20.2	1	55.80	+19.00	2	14.80	20	33.55	+ 2304.	3.16		.17	.11	−.17	−25.70	−5.65 −0.10 + 63.05		34.0
38.00	+24.2	1	50.40	+22.76	2	13.16	20	35.19	+ 1059.	3.07		.16	.10	−.21	−26.00	−5.95 −0.14 + 62.56		34.7
38.52	+20.8	1	53.30	+19.56	2	12.86	20	35.49	+ 3180.	3.23		.12	.08	−.15	−27.10	−7.05 −0.08 + 62.51		34.1
40.37	+23.7	1	48.70	+22.29	2	10.99	20	37.36	+ 3316.	3.24		.16	.07	−.18	−27.20	−7.15 −0.11 + 62.24		35.6
38.15	+19.9	1	54.30	+18.72	2	13.02	20	35.33	+ 2736.	3.19		.12	.25	−.32	−27.30	−7.25 −0.25 + 62.36		33.4
38.17	+24.1	1	50.25	+22.67	2	12.92	20	35.43	+ 1937.	3.13		.16	.23	−.34	−27.40	−7.35 −0.27 + 62.70		33.6
37.35	+17.1	1	57.80	+16.08	2	13.88	20	34.47	+ 3194.	3.23		.09	.26	−.30	−27.40	−7.35 −0.23 + 63.08		33.2
37.50	+20.6	1	54.35	+19.38	2	13.73	20	34.62	+ 3735.	3.27		−.12	−.27	−.34	−26.90	−6.85 −0.27 + 63.51		34.3

±.028 $\quad$ 34.″47 ±0.87

+2.91 $\quad$ $\delta_0 = +78\ 19\ 37.4$ (−20.034, 39.42; 101 40 20.6) $\quad$ sin z = −.86 $\quad$ 1.98449n +20.03 $\quad$ +.80 +1.24

39 22.12	−32.0	44	56.35	+8.65	45	5.00	+37	43.35	+ 01059 +1	38.87	+.01	−.11	−.00	+.69	+27.00	+6.97 +1.93 + 62.56	40	19.7
25.36	+65.6	45	24.10	−17.73	45	6.37	37	41.98	+ 3180. 1	43.82	+.03	.47	.00	+.33	+30.40	+10.37 +1.57 + 62.51		19.5
24.34	−39.0	44	56.85	+10.54	45	7.39	37	40.96	+ 3316. 1	44.15	+.03	−.19	−.09	+.61	+31.00	+10.97 +1.85 + 62.24		18.3
25.95	−76.0	44	47.10	+20.54	45	7.64	37	40.71	+ 4058 1	45.94	+.03	−.64	−.09	+.07	+33.50	+13.47 +1.31 + 62.93		17.5
27.23	−72.0	44	46.25	+19.38	45	5.63	37	42.72	+ 3735 +1	45.16	+.03	−.58	.10	+.12	+33.80	+13.77 +1.36 + 63.51		19.0

±.029 $\quad$ 18.″80 ±0.68

+3.08 $\quad$ $\delta_0 = +14\ 28\ 18.1$ (+20.031, 18.06) $\quad$ sin z = +.47 $\quad$ 1.48400 $\quad$ +20.03 $\quad$ −.12 −.67

27 15.57	+17.4	54	37.80	+22.55	55	0.35	+27	48.00	+ 01578 −0	31.61		−.04	−.78	−1.24	−18.70	+1.33 −1.91 + 63.40	28	19.2
15.84	+24.9	54	27.75	+32.28	55	0.03	27	48.32	+ 2304.	32.14		.08	.26	−.76	−19.00	+1.03 −1.43 + 63.05		18.8
14.79	+18.2	54	36.90	+23.60	55	0.50	27	47.85	+ 2736 −	32.46		−.04	−.64	−1.10	−18.40	+1.63 −1.77 + 62.36		17.6

18.″53

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1872phae.proj.1459.

1872phae.proj.1459.

8

Star 35 Precium (pr.?) α = 0 h 8 m 23.76 s δ = +8° 6′ 36″ K = −.016 tang δ = +.14
z = +34 16 13

	Date	n	T_s	T_−	n tang δ	d.T.	Red 1871.0	Sum	Red A.R. 1870		A.R. 1872.0
		s	h	s	s	s	s	s	h m s		h m s
1871	Nov. 2	+.192	0	8 32.31	+.026	+0.01	−9.65	−2.43	−12.07	+0.65	0 8 20.24
	Nov. 22	+.253	0	8 27.20	+.035	+.02	−4.61	−2.29	−6.88	+0.79	.32
3	Nov. 29	+.290	0	8 24.64	+.040	+.02	−2.14	−2.23	−4.35	+0.85	.29
1.9											20.283

											23.363

θ Andromedae α = 0 h 10 m 24.53 s δ = +37° 5′ 14″ K = −.020 tang δ = +.78
z = +4 24 35

1871	Nov. 2	+.192	0	10 33.69	+.149	+0.13	−9.65	−2.67	−12.19	+0.45	10 21.50
3	Nov. 22	+.253	0	10 28.49	+.197	+.18	−4.61	−2.46	−6.89	+0.66	.60
1.9	Dec 28	+.458	0	10 3.40	+.357	+.34	+19.54	−1.89	+17.99	+0.99 1.23	39
											21.497

											24.617

Δα = +.026 s
Δδ = +.47″

+3.0586
54.352

# i Ceti α = 0 h 12 m 54.35 s δ = −9° 32′ 2″ K = −.016 tang δ = −.17
z = +51 54 51

1871	Nov. 2	+.192	0	13 3.42	−.032	−0.05	−9.65	−2.47	−12.17	+0.59	12 51.25
	Dec. 6	+.370	0	12 51.21	−.082	−.15	+2.50	−2.20	+0.22	+0.86	.43
5	Dec. 9	+.356	0	12 49.07	−.060	−.08	+4.48	−2.17	+2.23	+0.89	.30
1.9	Dec. 20	+.328	0	12 40.99	−.055	−.07	+12.47	−2.05	+10.35	+1.07	.34
	Dec. 28	+.458	0	12 33.77	−.077	−.09	+19.54	−1.95	+17.50	+1.11	.27
											51.218

											54.378 ±.051

i Sculptoris o α = 0 h 15 m 5.10 s δ = −29° 41′ 24″ K = −.018 tang δ = −.57
z = +72 4 13

1871	Nov. 19	+.350	0	15 10.29	−.199	−0.22	−5.56	−2.47	−8.25	+0.55	15 2.04
	Dec. 5	+.373	0	15 3.09	−.212	−.23	+1.71	−2.28	−0.80	+0.74	.23
6	Dec. 6	+.370	0	15 2.28	−.210	−.23	+2.50	−2.26	+0.01	+0.76	.29
1.9	Dec. 9	+.356	0	15 0.18	−.202	−.22	+4.48	−2.22	+2.04	+0.80	.22
	Dec. 28	+.458	0	14 44.83	−.261	−.28	+19.54	−1.96	+17.30	+1.06	.13
											2.182

											5.202 ±.074

12 Cassiopeiae α = 0 h 17 m 44.74 s δ = +61° 9′ 15″ K = −.032 tang δ = +1.81
z = −18 44 28

1871	Nov. 19	+.350	0	17 49.54	+.633	+0.60	−5.56	−3.16	+8.12	+0.10	17 41.42
	Nov. 29	+.290	0	17 46.09	+.525	+.49	−2.14	−2.89	−4.54	+0.37	.55
6	Dec. 5	+.373	0	17 41.86	+.675	+.64	+1.71	−2.71	−0.36	+0.55	.50
1.9	Dec. 6	+.370	0	17 41.01	+.669	+.63	+2.50	−2.68	+0.45	+0.58	.46
	Dec. 9	+.356	0	17 38.88	+.644	+.61	+4.48	−2.59	+2.50	+0.67	.38
	Dec. 20	+.328	0	17 30.56	+.593	+.56	+12.47	−2.22	+10.81	+1.04	.37
											41.447

											44.707 ±.053

Pi 0 79
B.A.C. 103 α = 0 h 21 m 34.61 s δ = −33° 42′ 45″ K = −.019 tang δ = −.67
z = +76 5 34

1871	Nov. 2	+.192	0	21 44.16	−.128	−0.15	−9.65	−2.70	−12.50	+0.29	21 31.66
	Nov. 29	+.290	0	21 36.52	−.194	−.21	−2.14	−2.41	−4.76	+0.58	.76
6	Dec. 6	+.370	0	21 31.84	−.247	−.27	+2.50	−2.32	−0.09	+0.67	.75
1.9	Dec. 9	+.356	0	21 29.85	−.238	−.26	+4.48	−2.27	+1.95	+0.72	.80
	Dec. 20	+.328	0	21 21.69	−.219	−.24	+12.47	−2.11	+10.12	+0.88	.81
											31.756

											34.726 ±.060

Δα = +.028 s
Δδ = +.84″

+3.0610
80.407

# 12 Cetti α = 0 h 23 m 30.41 s δ = −4° 39′ 54″ K = −.015 tang δ = −.08
z = +47 2 43

1871	Nov. 2	+.192	0	23 39.51	−.015	−0.03	−9.65	−2.47	−12.15	+0.59	23 27.36
	Dec. 5	+.373	0	23 27.93	−.029	−.04	+1.71	−2.26	−0.59	+0.80	.34
4	Dec. 20	+.328	0	23 17.11	−.026	−.04	+12.47	−2.10	+10.33	+0.96	.44
1.9	Dec. 28	+.458	0	23 9.87	−.036	−.05	+19.54	−2.00	+17.49	+1.06	.36
											27.375

											30.435

Δα = +.019 s
Δδ = −.95″

+3.3577
441.422

# κ Cassiopeiae α = 0 h 25 m 44.42 s δ = +62° 13′ 30″ K = −.013 tang δ = +1.89
z = −19 50 41

1871–2	Nov. 2	+.192	0	25 54.13	+.362	+0.33	−9.65	−3.67	−12.99	−0.31	25 41.12
	Nov. 29	+.290	0	25 45.94	+.548	+.52	−2.14	−3.08	−4.70	+0.28	.24
	Dec. 5	+.373	0	25 41.59	+.704	+.67	+1.71	−2.88	−0.50	+0.48	.09
7	Dec. 11	+.371	0	25 37.06	+.701	+.67	+5.95	−2.69	+3.93	+0.67	.01
1.9	Dec. 20	+.328	0	25 30.38	+.619	+.59	+12.47	−2.38	+10.68	+0.98	.06
	Dec. 24	+.330	0	25 25.90	+.624	+.59	+16.73	−2.20	+15.12	+1.16	.02
	Jan. 3	+.380	0	25 17.87	+.718	+.68	+24.37	−1.91	+23.14	+1.45	.01
											41.079

											44.441

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$\frac{d\delta}{dt}$ $\frac{d\rho}{dt}$ = +20.04

+3.08 $\delta_0 = +8\ 6\ 35.0$

Tm − TS Circle Read. Red. Kn. vine Corr. Circle Read. μ + log log μ

B + T + J 1.29330

																		−.52	−.81				
																		Rmo Rso	Red t	Red Rn			
																	λ8-8.	Rme	Rs	R4	18710	40 I + Rn 1877 + R4	I δ	18720
+19.4	16	8.50	+25.71	16	34.21	+6	14.14	+	01578	−0	40.65		−.04	−.19	−.75	−17.39	+265	1.56	+63.40	6			380
+13.0	16	17.00	+17.23	16	34.23	6	14.12	+	1059		40.17		.01	.08	−.61	−17.12	+292	1.42	+62.59				380
−2.72	17	8.75	−36.03	16	32.72	6	15.63	+	3008	−	42.01		−.07	−.13	−.72	−16.85	+319	1.53	+63.52				388

38.27

+3.13 $\delta_0 = +37\ 58\ 15.4$ 0.64730 +25.03 −.06 −.11

+21.3	25	5.80	+22.48	25	28.28	+57	20.07	+	01593	−0	460		−.12	−.02	−.20	−22.14	211	0.31	+63.40	58			18.4
+24.0	25	0.80	+25.34	25	26.14	57	22.21	+	1165		455		.15	.00	−.21	−24.53	−450	0.32	+62.56				15.4
−7.8	25	34.60	−8.23	25	26.37	57	21.98	+	3479	−	451		−.03	−.08	−.17	−25.09	−506	0.28	+62.93				14.8

15.53

+19.957
2.03

+3.06 $\delta_0 = -9\ 32\ 2.0$ Eni Z = +.79 1.86500 +19.96 −.72 −1.13

33 7.63	+16.4	54	17.60	+21.65	54	39.25	−31	50.90	+	01593	−1	16.02	+.00	+.02	−.73	−1.43	−13.50	+6.46	−2.56	+63.40	31		59.6
11.08	+16.5	54	18.65	+21.78	54	40.43	31	52.08	+	3186	1	18.86	+.01	.02	.17	−.87	−10.50	+9.46	−2.00	+62.51			61.0
10.81	+17.7	54	16.55	+23.37	54	39.92	31	51.57	+	3326	1	19.11	+.01	.03	.17	−.86	−10.30	+9.66	−1.99	+62.24			60.8
14.19	+13.2	54	25.65	+17.43	54	43.08	31	54.73	+	3213	1	16.91	+.01	.01	.57	−1.28	−9.50	+10.46	−2.41	+63.08			62.5
	+16.8	54	21.10	+22.18	54	43.28	31	54.93	+	4061	−1	20.47	+.01	+.03	−.61	−1.30	−9.00	+10.96	−2.43	+62.93			63.9

82 01.56
± 1.17

±.050
+3.12 $\delta_0 = -29\ 41\ 22.9$ 2.24447 +20.01 −.88 −1.37

+16.4	2	0.30	+19.07	2	19.37	−39	31.02	+	02322	−3	5.20	.06	+.07	−.12	−.93	−6.12	+13.89	−2.30	+63.05	41			21.6
−6.8	2	24.90	−7.91	2	16.99	39	28.64	+	2803	−3	7.26	.15	.02	.10	−.96	−4.09	+15.92	−2.33	+62.63				19.8
−12.8	2	30.20	−14.88	2	15.32	39	26.97	+	3192	3	8.95	.15	.04	.10	−.94	−3.99	+16.02	−2.31	+62.51				19.8
+16.1	1	59.30	+18.72	2	18.02	39	29.67	+	3335	3	9.57	.15	.06	.08	−.90	−3.69	+16.32	−2.27	+62.24				23.1
−11.6	2	27.60	−13.48	2	14.12	39	25.74	+	4064	−3	12.76	.18	+.03	−.35	−1.20	−2.42	+17.59	−2.57	+62.93				20.8

21.02
± 1.00

.064
+3.26 $\delta_0 = +61\ 7\ 17.3$ 1.29070 +19.99 +.30 +.45

+45.3	16	18.05	+29.30	16	47.35	+6	1.00	+	02322	+0	20.60		−.48	−.08	−.26	−26.84	+6.45	+0.19	+63.05				17.9
+36.7	16	23.05	+23.75	16	46.80	6	1.55	+	3045		20.93		.32	.08	−.10	−28.65	−266	+0.35	+63.52				17.7
+44.4	16	16.85	+28.73	16	45.58	6	2.77	+	2803		20.83		.47	.05	−.22	−29.40	−5.45	+0.23	+62.63				17.0
+39.2	16	21.05	+25.36	16	46.41	6	1.94	+	3192		21.02		.36	.05	−.11	−29.56	−5.57	+0.34	+62.51				16.2
+26.2	16	29.35	+16.95	16	46.30	6	2.05	+	3335		21.09		.16	.06	+.08	−29.86	−5.57	+0.53	+62.24				16.0
+44.1	16	18.30	+28.53	16	46.83	6	1.52	+	3232	+	21.04		−.46	−.17	−.33	−30.60	−10.61	+0.12	+63.08				15.1

16.65
±1.00

±.020
+2.99 $\delta_0 = -33\ 42\ 49.6$ 2.35676 +19.96 −.90 −1.40

+18.0	2	34.45	+20.04	2	54.49	−40	6.14	+	01622	−3	56.04	.15	+.08	−.44	−1.26	−8.12	+11.84	−2.66	+63.40	42			49.7
+20.7	2	30.15	+23.05	2	53.20	40	4.85	+	3019	3	63.75	.37	.11	.15	.94	−3.71	+16.25	−2.34	+63.52				51.4
+20.1	2	25.65	+22.38	2	48.03	39	59.68	+	3198	3	64.76	.36	.10	.10	.90	−2.83	+17.12	−2.30	+62.51				47.5
+18.3	2	31.30	+20.37	2	51.67	40	3.32	+	3345	3	65.60	.32	.08	.10	−.92	−2.52	+17.44	−2.32	+62.24				51.9
−22.0	3	16.70	−24.50	2	52.20	40	3.85	+	3251	−3	65.06	.43	+.12	−.43	−1.21	−1.55	+18.41	−2.61	+63.08				50.5

50.20
±1.26

+19.923
53.82

±.050
+3.06 $\delta_0 = -4\ 39\ 53.8$ Eni Z = +.73 1.79050 +19.92 −.67 −1.06

40 59.29	+17.9	2	19.30	+23.88	2	43.18	−39	54.83	+	01622	−1	4.08	+.00	+.01	−.39	−1.05	−14.60	+5.32	−2.11	+63.40	39		52.3
41 2.73	+18.4	2	20.60	+24.55	2	45.15	39	56.80	+	2809	1	5.86	+.01	.01	.09	−0.75	−12.20	+7.72	−1.81	+62.63			54.1
3.01	−14.6	3	3.95	−19.49	2	44.46	39	56.11	+	3251	1	6.53	+.01	.01	.39	−1.05	−11.30	+8.62	−2.11	+63.08			53.1
2.76	+17.7	2	19.40	+23.62	2	43.02	39	54.67	+	4067	−1	7.79	+.01	+.01	−.32	−0.93	−10.70	+9.22	−2.04	+62.93			52.4

52.98

+19.939
30.15

+3.36 $\delta_0 = +62\ 13\ 30.2$ Eni Z = −.34 1.31750 +19.94 +.32 +.48

12 28.08	+29.9	10	22.90	+18.67	10	41.57	+12	6.78	+	01622	+0	22.56		−.20	−.06	+.06	−22.70	−2.76	+0.54	+63.40	13		29.5
33.10	+34.5	10	15.70	+21.54	10	37.24	12	11.11	+	3019		22.07		.26	.02	+.04	−28.50	−8.56	+0.52	+63.52			28.9
40.13	+29.3	10	17.90	+18.30	10	36.20	12	12.15	+	2809		22.16		.20	.01	+.11	−29.40	−9.46	+0.59	+62.63			28.1
37.33	+43.2	10	5.30	+26.97	10	32.27	12	16.08	+	1863		21.68		.42	.01	−.16	−30.10	−10.16	+0.37	+61.87			29.6
36.26	+33.4	10	13.35	+22.85	10	34.20	12	14.15	+	3251		22.39		.25	.03	+.04	−30.80	−10.86	+0.52	+63.08			29.3
±.028	+12.1	10	26.90	+7.56	10	34.46	12	13.89	+	3768	+	22.66		−.03	−.06	+.23	−30.90	−10.96	+0.71	+63.51			29.8

±.059 +1 29.20

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1872phae.proj.1459.

6 Δα = +.174
Δδ = +.218

+2.5971
.8354
0.35

Nu #K Draconis L.6. α = 12h 28m δ = +70° 29′ 38″ / −67 07 34 k = +.043 tang. δ −2.82

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Nov. 2	+.192	0	28 5.59	−.541	−0.50	−9.65 +2.13	−7.88 +4.73	27 57.41 57	28 60.17
Nov. 29	+.290	0	27 59.96	−.817	−.77	−2.13 +0.29	−2.94 +2.89	57.54 35	59.95
3 Dec. 20	+.328	0	27 53.28	−.924	−.88	+12.47 −1.30	+10.29 +1.30	63.59 57	60.17
1.9 Dec. 28	+.458	0	27 41.35	−1.291	−1.25	+19.55 −1.83	+16.47 +0.77	59.34 82	60.42
Jan. 2	+.380	0	27 37.03	−1.071	−1.03	+24.38 −3.22	+21.13 +0.38	58.16	
									60.180

Pi° 130
Bd. 6.160 L = 0h 30m 46.31s δ = −25° 28′ 26″ / z = +67 51 15 k = −.017 tang. δ = −.48

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Nov. 19	+.350	0	30 51.22	−.168	−0.19	−5.66 −2.50	−8.25 +0.49	30 42.97 30	45.56
Dec. 5	+.373	0	30 43.94	−.170	−.20	+1.71 −2.33	−0.82 +0.66	43.12	46.11
5 Dec. 20	+.328	0	30 33.02	−.154	−.17	+12.47 −2.14	+10.16 +0.85	43.20	46.17
1.9 Dec. 28	+.458	0	30 25.78	−.219	−.24	+19.55 −2.04	+17.27 +0.95	43.07	46.04
Jan. 2	+.380	0	30 20.99	−.182	−.20	+24.38 +1.02	+25.20 +1.02	46.19	46.19
									46.094
									±.072

Δα = −.070
Δδ = +.15

+3.3626
13.375

ε Cassiopeiae L = 0h 33m 15.37s δ = +55° 50′ 5″ / z = −13 27 16 k = −.027 tang. δ +1.47

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Nov. 2	+.192	0	33 24.75	+.282	+0.26	−9.65 −.38	−12.77 −0.02	33 11.98 11.98 33	15.48 34
Nov. 19	+.350	0	33 20.14	+.514	+.49	−5.56 −3.45	−8.12 +0.21	12.02 11.92	15.38 28
Nov. 29	+.290	0	33 16.68	+.426	+.40	−2.13 −2.95	−4.68 +0.41	12.02 .00	15.38 36
Dec. 5	+.373	0	33 12.62	+.548	+.52	+1.72 −2.81	−1.57 +0.55	12.05 05	15.41 41
Dec. 11	+.371	0	33 8.15	+.545	+.52	+5.96 −2.67	+3.81 +0.69	11.98 96	15.34 32
10 Dec. 20	+.328	0	33 1.48	+.482	+.45	+12.47 −2.43	+10.51 +0.93	11.99 97	15.35 33
1.9 Dec. 24	+.330	0	32 57.06	+.485	+.46	+16.74 −2.32	+14.88 +1.04	11.94 94	15.30 30
Dec. 28	+.458	0	32 53.86	+.673	+.65	+19.55 −2.21	+18.01 +1.15	11.87 85	15.23 21
Jan. 2	+.380	0	32 49.08	+.559	+.53	+20.38 −2.07	+22.84 +1.29	11.92 92	15.28 25
Jan. 23	+.360	0	33 7.43	+.529	+.50	+5.40 −1.47	+4.43 +1.89	11.86 86	15.22 22
									15.305
									±.042

ζ Cassiopeiae L = 0h 34m 5.96s δ = +49° 48′ 34″ / z = −7 25 45 k = −.023 tang. δ +1.18

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Dec. 28	+.458	0	34 34.78	+.540	+0.52	+19.55 −2.19	+17.90 +1.12	34 52.68 34	55.49 97
2 Jan. 2	+.380	0	34 30.06	+.448	+.42	+24.38 +1.24	+26.04 +1.24		56.10 10
2.0									56.135

β Ceti L = 0h 37m 10.77s δ = −14° 41′ 23″ / z = +61 4 12 k = −.016 tang. δ = −.34

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Dec. 5	+.373	0	37 7.64	−.126	−0.14	+1.72 −2.34	−0.76 +0.66	37 6.88 88 37	9.88 88
4 Dec. 20	+.328	0	36 56.74	−.111	−.13	+12.47 −2.17	+10.19 +0.83	6.93 91	9.93 91
1.9 Dec. 28	+.458	0	36 49.62	−.155	−.17	+19.55 −2.07	+17.33 +0.93	6.95 93	9.95 93
Jan. 2	+.380	0	36 44.72	−.129	−.15	+24.38 +1.03	+25.26 +1.03	9.98 98	9.98 98
									9.925

Δα = +.308
Δδ = +.54

+3.8321
14.095

21 Cassiopeiae L = 0 37 14.09 δ = +74° 17′ 15″ / z = −31 54 26 k = −.056 tang. δ = +3.55

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871 Nov. 19	+.350	0	37 19.88	+1.242	+1.19	−5.55 −4.91	−9.27 −1.08	37 10.70 61 37	14.53 44
3 Nov. 29	+.290	0	37 16.22	+1.029	+0.97	−2.13 −4.43	−5.59 −0.60	10.65 53	14.48 46
1.9 Dec. 11	+.371	0	37 6.96	+1.317	+1.26	+5.96 −3.70	+3.54 +0.13	10.53 48	14.33 31
									14.403

Δα = −.001
Δδ = −.62

+3.1684
33.441

3 Andromedae L = 0 40 33.44 δ = +23° 34′ 18″ / z = +18 48 36 k = −.017 tang. δ = +.44

Date	n	T	T′	n tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Nov. 2	+.192	0	40 42.53	+.084	+0.07	−9.51 −2.66	−12.11 +0.51	40 30.43 25 40	33.46
Nov. 19	+.350	0	40 38.24	+.154	+.14	−5.55 −2.57	−7.98 +0.60	.26	33.42 43
5 Nov. 29	+.290	0	40 34.74	+.128	+.11	−2.13 −2.48	−4.50 +0.69	.26 24	33.43 41
1.9 Dec. 5	+.373	0	40 30.86	+.164	+.15	+1.72 −2.43	−0.56 +0.74	.30	33.47
Jan. 21	+.376	0	40 26.67	+.165	+.15	+5.28 −1.84	+3.59 +1.33	.26	33.43
									33.440
									±.019

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+2.60 $\delta_0 = +70\ 29\ 38.8$ (−19.920, 37.965) $\sin z = -.92$ $\frac{d\delta}{dt} = -19.92''$ +.85 +1.32

Tim − T'S	Circle Read.	Red. Horizon	Corr. Circle Read.	ω + log tg z	Rm Rs Rs	Red. to 1872.0	Red. Rm to 1872.0 + Rs	Iδ	
	409 80	22.0		B+T+z					
	s ′ ″	″ ′ ″	′ ″	2.13146	′ ″	″ ″ ″	″ ″	″	
29 13.30 +11.1	56 0.30	−4.95 55 55.35	+26 53.00 +	01637	+2 20.55	+.03 −.02 −.17 +.66	+15.00	+1.92 +1.98 +63.40 30	20.9
1.58 −45.6	55 31.30	+20.36 55 51.66	26 56.69 +	3023	ν 25.11	+.06 .35 .03 +.47	+27.00	+7.08 +1.79 +63.52	20.7
~~−44.0~~	~~55 28.10~~	~~+18.31 55 46.41~~	~~27 1.94 +~~	~~3270~~	~~ν 23.94~~	~~+.08 .30 .05 +.50~~	~~+31.60~~	~~+1.62 +~~	
26.61 −3.0	55 49.00	+1.34 55 50.34	26 58.01 +	4070	ν 28.65	+.07 .01 .11 +.78	+32.00	+13.08 +2.95 +62.93	18.6
~~−23.2~~	~~55 36.80~~	~~+10.40 55 47.20~~	~~27 1.15 +~~	~~3769~~	~~ν 27.62~~	~~+.06 −.09 −.08 +.68~~			

19.87″

+2.99 $\delta_0 = -25\ 28\ 19.7$ 2.14689 +19.87 −.85 −1.33

−4.8	49 58.05	−5.80	49 52.25	−27 3.90 +	02340	−2 28.01	.04	+.01	−.00	−.84	−7.68	+12.14	−2.17	+63.05 28	18.9
+18.7	49 28.55	+22.60	49 51.15	27 2.80 +	2819	ν 29.65	.07	.08	.18	−.95	−5.57	+14.30	−2.28	+62.63	17.9
+15.8	49 32.55	+19.09	49 52.64	27 4.29 +	3270	ν 31.21	.09	.05	.60	−1.40	−4.11	+15.76	−2.73	+63.08	17.5
+18.1	49 27.45	+21.87	49 49.32	27 0.97 +	4070	ν 34.03	.08	.07	.62	−1.40	−3.59	+16.28	−2.73	+62.93	18.6
−21.4	50 16.95	−25.86	49 51.09	27 2.74 +	3769	ν 32.96	.07	+.09	−.04	−.80	+16.57	+16.51	−2.13	+63.51	17.9

±.065 18.56″ ±0.49

+3.36 $\delta_0 = +55\ 50\ 5.2$ (+19.788, 5.16) $\sin z = -.23$ 1.13900 +19.79 +.21 +.33

3.71	+9.4	33 51.20	+7.07	33 58.27	+48 50.08 +	01652	+0 14.31	−.03	−.65	−.47	−22.20	−2.41	−0.14	+63.40 50	5.2
6.27	−27.5	34 16.85	−20.68	33 56.17	48 52.18 +	2340	14.54	.19	.26	−.24	−25.80	−6.01	+0.09	+63.05	3.9
9.88	+37.0	33 24.85	+27.83	33 52.68	48 55.67 +	3023	14.77	.36	.20	−.35	−27.50	−7.71	−0.02	+63.52	6.2
9.79	+26.2	33 37.80	+15.20	33 53.00	48 55.35 +	2822	14.69	.10	.10	−.03	−28.20	−8.41	+0.30	+62.63	4.6
13.65	+24.1	33 30.35	+18.13	33 48.48	48 59.87 +	1863	14.38	.15	.45	−.39	−28.80	−9.01	−0.06	+61.67	6.8
11.64	+24.0	33 32.90	+18.05	33 50.95	48 57.40 +	3270	14.85	.15	.46	−.40	−29.40	−9.61	−0.07	+63.08	5.7
10.52	+23.1	33 34.95	+17.37	33 52.32	48 56.03 +	4070	15.13	.14	.50	−.43	−29.50	−9.71	−0.10	+62.93	4.3
11.49	−5.7	33 55.65	−4.29	33 51.36	48 56.99 +	3769	+0 15.02	−.01	−.57	−.31	−29.50	−9.71	+0.02	+63.51	5.8

5.21″ ±0.73

±.024

+3.31 $\delta_0 = +49\ 48\ 36.4$ 0.87560 +19.82 +.10 +.18

+9.4	35 7.20	+8.13	35 15.33	+47 33.02 +	04073	+0 8.25	−.03	−.01	+.06	−28.20	−8.38	+0.24	+62.93 48	36.1
−28.5	35 40.55	−24.63	35 15.92	47 32.43 +	3790	+ 8.19	−.22	−.10	−.22	−8.26	−8.26	−0.04	+63.51	35.8

35.95″

+3.00 $\delta_0 = -18\ 41\ 23.1$ 2.01567 +19.79 −.81 −1.26

+22.0	3 3.20	+27.90	3 31.10	−40 42.75 +	02822	−1 50.63	.04	+.08	−.12	−.85	−7.80	+1.99	−2.11	+62.63 41	20.9
+10.5	3 19.80	+13.31	3 33.11	40 44.76 +	3287	51.83	.04	.02	.43	−1.22	−6.36	+13.43	−2.48	+63.08	22.6
+11.6	3 16.70	+14.71	3 31.41	40 43.06 +	4073	53.87	.04	.02	.46	−1.25	−5.78	+14.01	−2.51	+62.93	22.5
−5.9	3 40.80	−7.48	3 33.32	40 44.97 +	3790	−1 53.13	.04	+.01	−.52	−1.32	+2.71	+2.71 14.26	−2.58	+63.51	22.9

22.25″

+3.83 $\delta_0 = +74\ 17\ 15.2$ (+19.744, 15.19) $\sin z = -.53$ 1.55420 +19.74 +.49 +.76

17.55	+49.5	6 50.20	+17.97	7 8.17	+15 40.18 +	02350	+0 37.82	−.34	−.11	+.04	−26.50	−6.76	+0.80	+63.05 17	15.1
17.55	+69.4	6 41.80	+25.19	7 6.99	15 41.36 +	3026	38.41	.66	.10	−.27	−28.80	−9.06	+0.49	+63.52	14.7
19.01	+19.4	6 62.80	+7.04	6 59.84	15 46.51 +	1863	+0 37.40	−.05	−.25	+.19	−30.90	−11.16	+0.95	+61.67	17.4
25.61															

15.73″

+3.17 $\delta_0 = +28\ 34\ 13.4$ (+19.658, 13.40) $\sin z = +.32$ 1.29240 +19.66 −.30 −.46

9.65	+24.8	48 47.10	+30.44	49 17.54	+33 30.81 +	01667	−0 20.38	−.13	−.65	−1.08	−19.40	+0.26	−1.54	+63.40 33	12.5
11.66	+17.3	48 54.15	+21.23	49 15.38	33 32.97 +	3030	21.02	.06	.23	−.59	−20.90	−1.24	−1.05	+63.52	13.2
11.88	+16.0	48 55.70	+19.64	49 13.34	33 33.01 +	2829	20.92	.05	.16	−.51	−20.90	−1.24	−.97	+62.63	12.5
17.16	+22.0	48 43.25	+27.50	49 10.25	33 38.10 +	1647	−0 20.36	−.10	−.49	−.88	−18.70	+0.96	−1.34	+55.58	12.9

12.78″

±.017

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7.

Δα = +.188
(+.5) Δν = +.30

+3.5802
.59.027

Stars ☆ η Cassiopeiae α = 0h 41m 22.01s δ = +57° 8′ 10″ k = −.028 tang δ = +1.55
z = −14 45 21

Date	n	T's	T_m	n tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871 Nov. 2	+ .192	0	41m 31.63s	+.297	+0.27	−9.55 −2.63	−12.57	−0.05	0h 41m 18.62s 41m 22.34s
Nov. 19	+ .350	0	41 27.17	+.542	+.51	−5.56 −3.41	−8.26	+0.17	.62 22.29
4 Dec. 24	+ .330	0	41 3.94	+.511	+.48	+16.75 −2.60	+14.63	+0.98	.59 22.15
1.9 Dec. 28	+ .458	0	41 0.79	+.709	+.68	+19.86 −2.48	+17.86	+1.10	.55 22.13

22.195

ι Andromedae α = 0h 42m 46.67s δ = +40° 22′ 54″ k = −.020 tang δ = +.85
z = + 1 59 55

1871 Nov. 29	+ .290	0	42 47.01	+.246	+0.23	−2.12 −2.69	−4.58	+0.59	42h 42m 43s 42 45.81
2 Dec. 5	+ .373	0	42 43.05	+.317	+.30	+1.72 −2.61	−0.59	+0.67	.46 45.71
1.9									45.725

Δα = −.045
Δν = +.01

+3.5685
.59.965

☆ θ Cassiopeiae α = 0h 48m 59.97s δ = +60° 1′ 22″ k = −.031 tang δ = +1.73
z = − 17 38 33

1871-2 Nov. 29	+ .290	0	49 1.35	+.501	+0.47	−2.12 −3.35	−4.99	+0.22	48h 56m 35s 48 59.92
Dec. 24	+ .330	0	48 41.74	+.571	+.54	+16.75 −2.66	+14.63	+0.91	.37 59.94
3 Jan. 21	+ .376	0	48 52.12	+.650	+.62	+5.28 −1.69	+4.21	+1.88	.33 59.90
2.0									59.920

α Sculptoris α = 0h 52m 27.26s δ = −30° 3′ 0″ k = −.018 tang δ = −.58
z = + 72 28 49

1871 Nov. 29	+ .290	0	52 28.08	−.168	−0.19	−2.12 −2.51	−4.82	23.27 +0.39	23.26 52 26.16
3 Dec. 5	+ .373	0	52 24.28	−.216	−.23	+1.73 −2.44	−0.84	.34 +0.46	.34 .24
1.9 Dec. 20	+ .328	0	52 13.42	−.190	−.21	+12.48 −2.30	+9.97	.39 +1.60	.39 .29
									26.230

Δα = +.056
Δν = +.06

+3.1084
.58.087

☆ ε Piscium α = 0h 56m 18.09s δ = +7° 12′ 1″ k = −.016 tang δ = +.13
z = + 35 10 48

1871-2 Nov. 29	+ .290	0	56 19.59	+.037	+0.02	−2.12 −2.50	−4.58	+0.61	56h 50m 14.59s 56 18.12
Dec. 5	+ .373	0	56 15.73	+.048	+.03	+1.73 −2.46	−0.70	+0.65	15.03 .03 18.14
Dec. 17	+ .376	0	56 6.62	+.048	+.03	+10.67 −2.35	+8.35	+0.76	14.97 .97 18.08
7 Dec. 20	+ .328	0	56 4.87	+.042	+.03	+12.50 −2.32	+10.19	+0.79	15.08 .06 18.17
2.0 Dec. 24	+ .330	0	56 0.55	+.043	+.03	+16.76 −2.28	+14.51	+0.83	15.06 18.17
Jan. 2	+ .380	0	55 52.83	+.049	+.03	+24.40 −2.17	+22.26	+0.91	15.09 18.20
Jan. 21	+ .376	0	56 11.67	+.048	+.03	+5.28 −1.95	+3.36	+1.16	15.03 18.14
										18.143
										±.029

υ Cassiopeiae α = 0h 59m 46.15s δ = +54° 17′ 57″ k = −.026 tang δ = +1.39
z = − 11 55 10

1871-2 Nov. 29	+ .290	0	59 47.57	+.403	+0.38	−2.12 −3.23	−4.95	+0.32	59h 42m 52.60s 59 46.77
Dec. 5	+ .373	0	59 43.44	+.518	+.49	+1.73 −3.13	−0.91	+0.42	42.53 .53 46.08
Dec. 17	+ .376	0	59 34.25	+.522	+.50	+10.67 −2.87	+7.30	+0.68	42.45 .55 46.00
8 Dec. 20	+ .328	0	59 32.51	+.455	+.43	+12.50 −2.80	+11.13	+0.95	42.54 .62 46.17
2.0 Dec. 28	+ .458	0	59 24.92	+.636	+.61	+19.57 −2.60	+18.58	+0.95	42.52 .50 46.05
Jan. 2	+ .380	0	59 20.06	+.528	+.50	+24.40 +1.09	+25.99	+1.09	46.05 46.05
Jan. 14	+ .387	0	59 41.28	+.537	+.51	+2.95 +1.92	+4.87	+1.41	46.35 46.15
Jan. 21	+ .376	0	59 38.84	+.522	+.50	+5.28 +1.61	+7.39	+1.61	46.22 46.23
										46.125
										±.047

32 Camelop. α = 12h 48m 12s. δ = +84° 6′ 30″
z = − 47 43 41
+03 30 42

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+19.244 (9.70) $\frac{d\delta}{dt} = +19.24$

+3.58 $\delta_0 = +57\ 8\ 9.7$ Rin z = −.25 μ + log tgn

Corr. B + π + γ

	T'm − TS	Circle Read	Red Morning	Circle Read																			
7	7.60	+5.9	15 52.00	+4.29	15 56.29	+6 32.06	01518	+0 15.70	−.02	−.14	+.08	−21.10	−1.86	+0.43	+63.408	9.7
	12.59	−27.8	16 11.70	−20.20	15 51.50	6 56.85	2369	+ 16.01	−.20	−.07	−.03	−25.20	−5.96	+0.32	+63.05	10.3
																10.00

$\delta_0 = +40\ 22\ 52.9$ 0.30270 +19.70 −.03 −.05

	+33.7	1 19.55	+34.38	10 53.93	+21 54.42	0330	−0 2.15	−.08	−.08	−.19	−24.64	−4.94	0.24	+63.5222	50.6
	+21.4	0 25.50	+21.83	10 50.33	21 58.02	2829	2.14	−.02	−.02	−.07	−25.13	−5.43	0.12	+62.63	53.0
																51.80

+19.571 (21.94)

+8.57 $\delta_0 = +60\ 1\ 21.9$ Rin z = −.30 1.26260 +19.57 +.29 +.43

0	24.94	+41.9	22 14.45	+28.03	22 42.48	+0 58.7	0304	+0 19.63	−.42	−.14	−.29	−27.30	−7.73	+0.16	+63.521	21.4
	35.94	+42.2	21 2.65	+28.23	22 30.88	0 17.47	1650	+ 19.02	−.42	−.13	−.26	−29.30	−9.73	+0.17	+55.58	22.5
																21.95

+2.90 $\delta_0 = -30\ 2\ 59.7$ 2.25355 +19.53 −.88 −.137

1	−31.0	24 25.85	−35.92	23 49.93	−1 1.58	0307	−8 12.27	.18	+.23	−.36	−.91	−5.33	+1.20	−2.28	+63.52	2	58.6
	−27.0	24 18.25	−31.29	23 46.96	0 58.61	2776	11.12	.17	.17	.17	−.88	−4.47	+1.16	−2.25	+62.03		(59.5)
	+12.9	23 36.30	+14.95	23 51.25	1 2.90	3543	13.63	.21	+.04	−.47	−1.31	−2.84	+1.69	−2.68	+63.08		59.6
																					59.10

+19.483 (1.17)

+3.11 $\delta_0 = +7\ 12\ 1.2$ Rin z = +.58 1.60800 +19.48 −.53 −.83

10	57.48	+20.6	10 39.95	+27.36	11 7.31	+11 41.04	0307	−0 43.49	−.03	−.04	−.60	−16.10	+3.38	−1.43	+63.52	11	63.0
10	58.33	+18.4	10 43.30	+24.44	11 7.74	11 40.61	2776	43.23	.02	.03	−.58	−15.80	+3.68	−1.41	+62.63		62.3
	56.26	−10.6	11 23.50	−14.08	11 9.42	11 38.93	2018	42.48	.01	.18	−.72	−15.20	+4.28	−1.55	+62.70		61.9
	55.59	+12.4	10 52.35	+16.47	11 8.82	11 39.53	3353	43.81	.01	.12	−.66	−15.10	+4.38	−1.49	+63.08		61.7
	54.82	+17.7	10 45.60	+23.51	11 9.11	11 39.24	3823	44.28	.03	.11	−.67	−14.50	+4.98	−1.50	+63.51		61.9
11	2.11	+21.3	10 35.70	+28.29	11 3.99	11 44.36	1654	−0 42.13	−.04	−.08	−.65	−18.20	+1.28	−1.48	+55.58		62.6
																					62.23
																					±0.37

±.028

+3.53 $\delta_0 = +54\ 17\ 28.6$ 1.08430 +19.38 = Large value of μ +.35 +.29

	+35.8	6 2.30	+27.97	6 30.27	+16 18.08	0304	+0 13.02	−.34	−.06	−.23	−26.15	−6.77	+0.06	+63.52	17	27.9
	+39.9	5 57.00	+31.17	6 28.17	16 20.18	2849	12.97	.42	.04	−.29	−27.02	−7.62	+0.00	+62.63		28.2
	+35.5	5 55.05	+27.73	6 25.78	16 22.57	2028	12.72	.33	.13	−.29	−28.31	−8.93	+0.07	+62.70		29.1
	+39.0	5 56.15	+30.47	6 26.62	16 21.73	3362	13.12	.40	.13	−.36	−28.52	−9.14	0.07	+63.08		28.7
	+31.6	6 2.10	+24.69	6 26.79	16 21.54	3834	13.26	.24	.14	−.23	−9.59	−9.59	+0.06	+63.51		28.8
	+35.6	5 58.30	+27.81	6 26.11	16 22.24	3539	13.17	.34	.11	−.28	−9.30	−9.30	+0.01	+61.23		27.4
	−9.5	6 25.50	−7.42	6 18.08	16 30.27	1657	12.61	−.03	−.18	−.04	−9.25	−9.25	+0.25	+55.58		29.5
																28.51
																±.053

±.028

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1872phae.proj.1459

$\Delta\delta = -.061$ $\Delta\delta = -0.69$

+33411

Star #B Andromedae $\alpha = 1^h\ 2^m\ 34.273$ $\delta = +34°\ 56'\ 29''$ $k = -.019$ tang. $\delta = +.70$

$z = +\ 7\ 26\ 20$

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2 Nov. 29	+.290	1	2 35.58 +.203	+0.18	-2.12	-2.79	-4.71 +0.55	1 2 30.87 85	2 34.21 19
Dec. 5	+.373	1	2 31.66 +.261	+.24	+1.73	-2.74	-0.77 +0.60	.87 89	34.23 23
Dec. 17	+.376	1	2 22.53 +.268	+.24	+10.57	-2.60	+8.31 +0.74	.44 84	34.18 18
9 Dec. 20	+.328	1	2 20.77 +.220	+.21	+12.98	-2.55	+10.164 +0.79	.75 91	34.25 25
2.0 Dec. 24	+.330	1	2 16.41 +.231	+.21	+16.76	-2.50	+14.47 +0.84	.23 88	34.22 22
Dec. 27	+.350	1	2 14.49 +.245	+.23	+18.61	-2.45	+16.39 +0.89	.90 88	34.22 22
Dec. 28	+.458	1	2 13.42 +.321	+.30	+19.57	-2.44	+17.43 +0.90	.87 85	34.21 19
Jan. 2	+.380	1	2 8.61 +.266	+.25	+24.40	-2.40	+22.25 +0.94	.86	34.20 20
Jan. 21	+.376	1	2 27.42 +.263	+.24	+5.28	-2.05	+3.47 +1.29	.89	34.23 23

34.212
±.018

$\Delta\delta = -.109$ $\Delta\delta = +0.51$

+32910

T Piscium $\alpha = 1^h\ 4^m\ 37.50$ $\delta = +29°\ 24'\ 34''$ $k = -.018$ tang. $\delta = +.56$

$z = +\ 12\ 58\ 15$

1871-2 Nov. 29	+.290	1	4 38.28 +.162	+0.14	-2.12	-2.72	-4.68 +0.57	4 33.50 58	4 36.29 87
Dec. 1	+.385	1	4 36.82 +.215	+.20	-0.72	-2.70	-3.20 +0.59	.62 60	36.41 89
Dec. 2	+.373	1	4 36.05 +.209	+.19	+0.05	-2.69	-2.45 +0.60	.60 62	36.39 91
8 Dec. 6	+.370	1	4 33.57 +.207	+.19	+2.52	-2.66	+0.085 +0.63	.63 62	36.52 91
2.0 Dec. 17	+.376	1	4 25.27 +.210	+.19	+10.87	-2.55	+8.31 +0.74	.48 58	36.40 87
Dec. 20	+.328	1	4 23.48 +.183	+.17	+12.50	-2.51	+10.184 +0.78	.64 62	36.93 91
Dec. 27	+.350	1	4 17.21 +.196	+.18	+18.63	-2.41	+16.40 +0.88	.61 59	36.90 88
Jan. 21	+.376	1	4 30.18 +.210	+.19	+5.28	-2.06	+3.41 +1.23	.59 59	36.88 88

36.890
±.014

37 Ceti ✓ $\alpha = 1^h\ 7^m\ 57.09^s$ $\delta = -8°\ 36'\ 40''$ $k = -.016$ tang. $\delta = -.15$

$z = +\ 50\ 59\ 29$

1871-2 Nov. 29	+.290	1	7 56.90 -.043	-0.06	-2.12	-2.51	-4.69 +0.50	7 54.23 21	7 57.24 22
Dec. 12	+.387	1	7 50.02 -.058	-.07	+6.64	-2.41	+4.16 +0.60	.78 18	57.19 18
Dec. 20	+.328	1	7 44.18 -.049	-.07	+12.50	-2.34	+10.09 +0.67	.27 25	57.28 26
7 Dec. 27	+.350	1	7 37.88 -.052	-.07	+18.81	-2.26	+16.38 +0.75	.16 16	57.19 17
2.0 Dec. 28	+.458	1	7 37.06 -.068	-.08	+19.57	-2.25	+17.24 +0.76	.22 30	57.33 31
Jan. 2	+.380	1	7 32.05 -.057	-.07	+24.40		+24.82 +0.82	.67	57.20
Jan. 9	+.430	1	7 26.74 -.064	-.08	+29.69		+30.15 +0.90	.54	57.25

57.229
±.035

$\Delta\delta = +0.81$ $\Delta\delta =$

+20381

α Ursae Minoris

Star $\alpha = 1^h\ 11^m\ 57.61$ $\delta = +88°\ 37'\ 37''$ $k = -.038$ tang. $\delta = +41.83$

$z = -\ 46\ 14\ 48$

1871-2 Dec. 5	+.373	1	12 2.18 +15.602	+14.96	+1.74	-40.13 -23.43	-19.81	11 38.75	11 59.07
Dec. 11	+.371	1	11 53.03 +15.519	+14.88	+5.997	-36.30 -15.41	-15.98	37.58	57.90
Dec. 12	+.387	1	11 51.47 +16.188	+15.58	+6.65	-35.63 -13.43	-15.31	38.04	58.36
Dec. 17	+.376	1	11 43.26 +15.728	+15.09	+10.57	-31.38 -5.62	-11.06	37.64	57.56
9 Dec. 24	+.330	1	11 36.20 +13.504	+13.17	+16.77	-25.87 +4.07	-5.55	41.27	60.59
2.0 Jan. 9	+.430	1	11 1.56 +17.987	+17.35	+29.70		+8.62		57.23
Jan. 14	+.387	1	10 55.52 +16.188	+15.55	+29.95		+13.64		57.66
Jan. 21	+.376	1	11 17.84 +15.728	+15.09	+5.28		+19.75		57.96
Jan. 30	+.437	1	11 7.82 +18.287	+17.65	+6.39		+28.28		60.14

58.541
±.831

$\Delta\delta = +0.012$ $\Delta\delta = -1.34$

+24978

O Ceti $\alpha = 1^h\ 17^m\ 38.54^s$ $\delta = -8°\ 50'\ 40''$ $k = -.016$ tang. $\delta = -.16$

$z = +\ 51\ 13\ 29$

1871-2 Dec. 1	+.385	1	17 37.81 -.061	-0.08	-0.69	-2.54	-3.313 +0.48	17 34.50 48	17 37.50 48
Dec. 9	+.356	1	17 32.58 -.056	-.07	+4.52	-2.48	+1.986 +0.52	34.55 54	37.55 54
Dec. 17	+.376	1	17 26.35 -.060	-.08	+10.68	-2.41	+8.19 +0.69	34.55 54	37.55 54
7 Dec. 27	+.350	1	17 18.34 -.056	-.07	+18.642	-2.31	+16.24 +0.69	34.60 58	37.60 58
2.0 Jan. 8	+.420	1	17 7.91 -.067	-.08	+28.88	+0.82	+29.62 +0.82	37.53	53
Jan. 9	+.430	1	17 7.20 -.068	-.08	+29.70	+0.84	+30.46 +0.84	37.66	66
Jan. 21	+.376	1	17 31.37 -.060	-.08	+5.28	+0.98	+6.18 +0.98	37.55	55

37.554
±.032

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1872phae.proj1459.

$\frac{d\delta}{dt} = +19.22''$

+3.34 +19.218 28.77 Sin Z = +.13

Time — T'S Circle Read. Red. Corr. Nonius Circle Read. μ + logtyn −.11 −.19

B+T+γ

0.87600

$\delta_0 = +34\ 56\ 28.8''$

		°	′	″	″	′	″	′	″																		
55	28.11	+24.4	26	45.15	+26.78	27	11.93	+55	36.42	+	0.3041	−0	8.06	−.15	−.10	−.26	−2.280	−3.58	−0.65	+6.352	56	27.8
	29.01	−15.5	27	28.15	−17.01	27	11.14	55	37.21	+	2849		8.03	.07	.10	−.28	−2.320	−3.98	−0.47	+6.263		27.4
	30.32	+16.7	26	51.60	+18.33	27	9.93	55	38.42	+	2028		7.88	.07	.25	−.43	−2.360	−4.38	−0.62	+6.270		28.2
	30.10	+26.4	26	40.75	+28.98	27	9.73	55	38.62	+	3362		8.12	.18	.32	−.51	−2.370	−4.48	−0.70	+6.308		28.4
	29.87	+17.6	26	50.85	+19.31	27	10.16	55	38.19	+	2444		7.99	.08	.25	−.44	−2.370	−4.48	−0.63	+6.288		28.0
	30.25	+24.5	26	42.55	+26.89	27	9.44	55	38.91	+	4086		8.26	.16	.24	−.51	−2.370	−4.48	−0.70	+6.293		28.4
	28.94	+22.8	26	45.80	+25.02	27	10.82	55	37.53	+	3894		8.21	.14	.24	−.49	−2.350	−4.28	−0.68	+6.251		27.9
	36.32	+29.2	26	31.75	+32.05	27	3.80	55	44.55	+	1657	−0	7.81	−.22	−.20	−.53	−2.230	−3.08	−0.72	+5.558		28.5

±.015

28.08″
±0.27

+17.228
33.61

+3.29 $\delta_0 = +29\ 24\ 33.6''$ Sin Z = +.22 1.12250 +19.23 −.21 −.32

23	33.59	−26.9	59	31.45	−31.37	59	0.08	+23	48.27	+	0.3045	−0	14.22	−.19	−.27	−.67	−2.160	−2.37	−0.99	+6.352	24	34.2
	34.79	−27.7	59	31.25	−32.31	58	58.94	23	49.41	+	2889		14.24	.20	.18	−.59	−2.170	−2.47	−0.91	+6.389		35.7
	33.84	+18.4	58	38.45	+21.46	58	59.91	23	48.44	+	3537		14.38	.08	.14	−.43	−2.170	−2.47	−0.75	+6.412		35.0
	34.95	+26.2	58	28.25	+30.56	58	58.81	23	49.54	+	3241		14.28	.17	.14	−.52	−2.190	−2.67	−0.84	+6.51		34.3
	34.02	+22.1	58	33.70	+25.77	58	59.47	23	48.88	+	2638		13.89	.12	.45	−.78	−2.210	−2.87	−1.10	+6.270		33.7
	33.95	+21.6	58	34.30	+25.19	58	59.49	23	48.86	+	3381		14.33	.12	.46	−.79	−2.210	−2.97	−1.11	+6.308		33.6
	33.88	−18.1	59	21.00	−21.11	58	59.89	23	48.46	+	2656		14.10	.08	.60	−.89	−2.210	−2.87	−1.21	+6.288		33.2
	39.66	+23.6	58	26.80	+27.53	58	54.33	23	54.02	+	1660	−	13.77	−.15	−.44	−.80		−1.40	−1.12	+5.558		33.3

±.012

34.12″
±0.61

+3.01 $\delta_0 = -8\ 36\ 41.7''$ 1.45040 +19.18 −.72 −1.12

	+17.4	59	0.55	+23.03	59	23.58	−36	35.23	+	0.1800	−	1	13.93	.00	+.03	−.24	−.93	−11.60	+7.58	2.05	+6.352	36	40.1
	+19.4	58	57.05	+25.68	59	22.73	36	36.38	+	2824		1	15.69	.01	.03	.51	−1.20	−10.36	+8.82	2.32	+6.236		41.2
	+17.7	59	1.10	+23.43	59	24.53	36	36.18	+	3381		1	16.67	.01	.03	.52	−1.21	−9.65	+9.53	2.33	+6.308		42.0
	+21.5	58	59.20	+28.46	59	27.66	36	39.31	+	2655		1	15.40	.01	.04	.56	−1.24	−9.08	+10.10	2.36	+6.288		44.1
	+21.0	58	55.65	+27.79	59	23.44	36	35.09	+	1089		1	17.93	.01	.04	.55	−1.23	−9.00	+10.15	2.35	+6.293		42.8
	+21.3	58	57.35	+28.19	59	25.54	36	37.19	+	3845	−	1	17.49	.01	+.04	−.43	−1.11	+10.56	+10.56	2.23	+6.351		42.8

42.18″
±0.94

±.034

+19.092
36.93

+2.32 $\delta_0 = +88\ 37\ 36.9''$ Sin Z = −.72

±.019

+18.706
40.36

8.00 $\delta_0 = -8\ 50\ 40.4''$ Sin Z = +.78 1.45440 +18.71 −.72 −1.12

51	50.58	+14.6	13	2.70	+19.31	13	32.01	−50	33.66	+	0.3117	−	1	16.83	+.00	+.02	−.12	−.82	−11.31	+7.40	−1.94	+6.389	50	41.1
	50.54	+15.2	13	1.30	+20.11	13	21.41	50	33.06	+	3429		1	17.39	+.01	.02	.12	−.82	−10.49	+8.22	−1.94	+6.224		41.7
	51.54	+23.2	12	53.90	+30.68	13	24.58	50	36.23	+	2058		1	14.98	+.00	.05	.38	−1.05	−9.75	+8.96	−2.17	+6.270		41.7
	53.68	+16.5	13	3.95	+21.82	13	25.77	50	37.42	+	2677		1	16.06	+.01	.02	.43	−1.13	−8.84	+9.87	−2.25	+6.288		43.0
	54.60	−18.5	13	50.00	−24.47	13	25.53	50	37.18	+	3227		1	17.03	+.01	.03	.43	−1.12	+10.90	+10.90	−2.24	+6.06		41.5
	53.95	+16.8	13	4.60	+22.22	13	26.82	50	38.47	+	2170		1	15.18	+.01	.03	.34	−1.03	+10.93	+10.93	−2.15	+6.310		41.8
51	46.02	+19.9	12	53.40	+26.32	13	19.72	50	31.37	+	1667	−	1	19.31	+.00	+.04	−.38	−1.06	+11.47	+11.47	−2.18	+5.558		40.8

±.032

41.70″
±0.43

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1872phae.proj.1459.

Star ω Andromedae α = 1h 20m 0.38s δ = +44° 44′ 41″ k = −.021 tang δ = +.99
z = −2 21 52

Date	m	Ts	Tm	m tang δ	d.T.	Red. 1871.0	Sum	AR. 1871.0	AR. 1872.0
1871-2 Nov. 29	+.290	1	20 1.84	+.287	+0.27	−.0971 −3.14	−4.968 +0.38	1 19 56.88 61 20	0.40 38
Dec. 1	+.385	1	20 0.35	+.381	+.36	−.0971 −3.12	−3.457 +0.40	.90 88	0.42 40
Dec. 2	+.373	1	19 59.52	+.369	+.35	+.008 −3.11	−2.708 +0.41	.52 81	0.34 35
7 Dec. 17	+.376	1	19 48.70	+.372	+.35	+10.38 −2.90	+8.037 +0.62	.43 83	0.25 35
2.0 Jan. 8	+.420	1	19 30.00	+.415	+.39	+28.88 +1.02	+30.29 +1.02	0.29	0 .29
Jan. 9	+.430	1	19 29.16	+.425	+.40	+29.70 +1.04	+31.14 +1.04	0.30	0 .30
Jan. 21	+.376	1	19 53.48	+.372	+.35	+5.28 +1.30	+6.93 +1.30	0.41	0 .41

0.356
±.033

A Caeliophiae α = 1h 21m 44.35s δ = +69° 36′ 37″ k = −.040 tang δ = +2.69
z = −27 13 48

Date	m	Ts	Tm	m tang δ	d.T.	Red. 1871.0	Sum	AR. 1871.0	AR. 1872.0
1871-2 Dec. 1	+.385	1	21 44.48	+1.035	+0.99	−.0971 4.75	−4.457 −0.40	21 40.03 01 21	44.38 36
Dec. 11	+.371	1	21 37.35	+.997	+0.96	+5.98 −4.40	+2.554 −0.35	39.41 89	44.26 24
Dec. 12	+.387	1	21 36.79	+1.041	+1.00	+6.68 −4.37	+3.31 −0.32	40.10 10	44.75 45
9 Dec. 17	+.376	1	21 32.54	+1.011	+0.97	+10.68 −4.16	+7.49 +0.19	39.93 03	44.28 38
2.0 Dec. 27	+.350	1	21 24.18	+.941	+0.90	+18.642 −3.91	+15.81 +0.64	40.01 99	44.26 34
Dec. 28	+.458	1	21 22.87	+1.232	+1.19	+19.6058 −3.66	+17.13 +0.69	40.00 98	44.35 33
Jan. 2	+.380	1	21 18.00	+1.022	+0.98	+24.41 −3.41	+21.98 +0.94	39.98	44.33 33
Jan. 8	+.420	1	21 12.88	+1.130	+1.09	+28.88 −3.10	+26.87 +1.25	39.75	44.10 10
Jan. 9	+.430	1	21 12.20	+1.157	+1.12	+29.70 −3.05	+27.77 +1.30	39.97	44.32 32

Δα = +0.027
Δδ = −0.68

44.317
±.057

+3.1983
−38.141

* R Piscium α = 1h 24m 38.14s δ = +14° 41′ 6″ k = −.016 tang δ = +.26
z = +27 41 43

Date	m	Ts	Tm	m tang δ	d.T.	Red. 1871.0	Sum	AR. 1871.0	AR. 1872.0
1871-2 Dec. 1	+.385	1	24 38.25	+.100	+0.08	−.0971 2.68	−3.29 +0.52	24 34.96 94 24	38.16 14
Dec. 2	+.373	1	24 37.51	+.096	+.08	+.008 −2.68	−2.542 +0.52	34.97 99	38.17 19
Dec. 11	+.371	1	24 31.50	+.096	+.08	+5.98 −2.62	+3.464 +0.58	34.96 94	38.16 14
Dec. 12	+.387	1	24 30.87	+.100	+.08	+6.68 −2.61	+4.15 +0.59	35.02 02	38.22 22
10 Dec. 27	+.350	1	24 18.73	+.091	+.08	+18.642 −2.48	+16.278 +0.72	34.97 95	38.17 15
2.0 Dec. 28	+.458	1	24 17.73	+.119	+.10	+19.6058 −2.47	+17.270 +0.73	34.97 95	38.17 15
Jan. 1	+.398	1	24 13.82	+.103	+.09	+23.41 −2.42	+21.08 +0.78	34.90	38.10
Jan. 8	+.420	1	24 8.33	+.109	+.09	+28.88 −2.32	+26.65 +0.88	34.98	38.18
Jan. 9	+.430	1	24 7.47	+.111	+.10	+29.70 −2.31	+27.49 +0.89	34.96	38.16
Jan. 21	+.376	1	24 31.86	+.097	+.08	+5.28 −2.17	+3.19 +1.03	35.05	38.25

38.168
±.030

D Ĵ F 109
Rk 466 α = 1h 27m 12.30s δ = −37° 31′ 26″ k = −.020 tang δ = −.77
z = +79 54 15

Date	m	Ts	Tm	m tang δ	d.T.	Red. 1871.0	Sum	AR. 1871.0	AR. 1872.0
1871-2 Dec. 1	+.385	1	27 13.36	−.296	−0.32	−.0971 2.66	−3.079 +0.03	27 9.67 27	12.38 36
Dec. 2	+.373	1	27 12.62	−.287	−.31	+.008 −2.65	−2.988 +0.04	.72 74	12.41 43
Dec. 12	+.387	1	27 5.94	−.297	−.32	+6.68 −2.53	+3.83 +0.16	.77 77	12.46 46
7 Dec. 27	+.350	1	26 53.66	−.269	−.29	+18.642 −2.29	+16.064 +0.40	.70 70	12.41 39
2.0 Dec. 28	+.458	1	26 52.81	−.352	−.39	+19.6058 −2.28	+16.984 +0.41	.77 75	12.46 44
Jan. 8	+.420	1	26 43.36	−.323	−.34	+28.88 −0.60	+29.14 +0.60	12.50	12.50
Jan. 21	+.376	1	27 6.64	−.289	−.31	+5.28 +0.87	+5.78 +0.81	12.42	12.42

12.429
±.030

Δα = +0.045
Δδ = −0.12

+3.6456
−8.684

* ν Persei α = 1h 30m 8.68s δ = +47° 58′ 45″ k = −.022 tang δ = +1.11
z = −5 35 56

Date	m	Ts	Tm	m tang δ	d.T.	Red. 1871.0	Sum	AR. 1871.0	AR. 1872.0
1871-2 Dec. 1	+.385	1	30 8.78	+.429	+0.40	−.0870 3.33	−3.613 +0.32	30 5.17 15 30	8.52 80
Dec. 2	+.373	1	30 7.88	+.414	+.39	+.009 −3.32	−2.864 +0.33	.02 04	8.67 09
Dec. 11	+.371	1	30 1.90	+.411	+.39	+5.98 −3.21	+3.186 +0.44	.08 06	8.73 71
Dec. 12	+.387	1	30 1.24	+.429	+.41	+6.69 −3.20	+3.40 +0.45	.11 04	8.79 79
Dec. 17	+.400	1	29 57.16	+.444	+.42	+10.687 −3.11	+7.858 +0.54	.05 04	8.70 69
11 Dec. 27	+.350	1	29 49.03	+.388	+.37	+18.642 −2.93	+16.086 +0.72	.11 09	8.76 74
2.0 Dec. 28	+.458	1	29 47.91	+.508	+.49	+19.6058 −2.91	+17.187 +0.74	.10 08	8.75 73
Jan. 1	+.398	1	29 44.02	+.441	+.42	+23.42 −2.83	+21.01 +0.82	.03	8.68
Jan. 8	+.420	1	29 38.46	+.466	+.44	+28.88 −2.66	+26.66 +0.99	.12	8.77
Jan. 9	+.430	1	29 37.52	+.477	+.46	+29.70 −2.64	+27.53 +1.01	.05	8.70
Jan. 21	+.376	1	30 1.77	+.417	+.39	+5.29 −2.38	+3.30 +1.27	.07	8.72

8.729
±.030

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$\frac{d\delta}{dt} = +18.84''$

+3.52 $\delta_0 = +44^\circ\ 44'\ 40.0''$

Thu -75 Circle Read Red Rev. from Circle Read

$\mu + \log tg\, n$

$B + V + \gamma$

0.3760 $_n$

+.04 +.05

	′	″		′	″		′	″																	
+33.3	38	38.55	+31.67	39	10.22	+43	38.13	+	0.0052	+0	2.55	−.30	−.22	−.48	−23.72	−4.88	0.43	+63.52	44	38.9					
+22.1	38	47.65	+21.02	39	8.67	43	39.68	+	3117		2.55	.13	.15	−.24	−23.98	−5.14	0.19	+63.89		40.8					
+22.7	38	36.85	+31.10	39	7.95	43	40.40	+	3371		2.58	.30	.14	−.40	−24.10	−5.26	0.35	+64.12		41.5					
+24.8	38	42.25	+23.59	39	5.84	43	42.51	+	2058		2.49	.17	.48	−.61	−25.56	6.72	0.56	+62.70		40.4					
+30.3	38	36.70	+28.82	39	5.52	43	42.83	+	3227		2.56	.25	.40	−.61	−7.24	−7.24	0.56	+64.06		41.8					
+16.7	38	50.45	+15.88	39	6.33	43	42.02	+	2170		2.50	.09	.42	−.47	−7.21	−7.21	0.42	+63.10		40.0					
+32.2	38	28.10	+30.62	38	58.72	43	49.63	+	1667	+0	2.47	−.28	.45	−.69	−6.60	−6.60	0.64	+55.58		40.4					

±.024

40.54 ±0.64

+4.35 $\delta_0 = 69^\circ\ 36'\ 16.8''$

1.47140 $_n$ +18.71

+.42 +.65

−16.8	48	7.20	−7.84	47	59.36	+34	48.99	+	03129	+0	31.82	−.05	−.12	+.25	−7.80		+0.90	+63.89	36	17.8					
+36.5	47	37.25	+17.03	47	54.28	34	54.07	+	1863		30.90	.24	.34	−.16	−9.80		+0.49	+61.67		17.3					
+34.3	47	39.40	+16.01	47	55.41	34	52.94	+	2851		31.62	.20	.34	−.12	−10.00		+0.53	+62.36		17.5					
+43.9	47	34.10	+22.48	47	54.58	34	53.77	+	2068		31.05	.34	.34	−.26	−10.80		+0.39	+62.70		17.1					
+36.7	47	37.10	+17.12	47	54.22	34	54.13	+	2688		31.50	.24	.36	−.18	−12.00		+0.47	+62.88		17.0					
+31.3	47	41.75	+14.61	47	56.36	34	51.99	+	4098		32.54	.17	.38	−.13	−12.10		+0.52	+62.93		15.9					
+15.9	47	47.90	+7.42	47	55.32	34	53.03	+	3878		32.37	.04	.39	+.01	−12.60		+0.64	+63.51		16.8					
−24.3	48	4.00	−11.34	47	52.66	34	55.69	+	3236		31.90	.10	.34	+.02	−12.80		+0.63	+64.06		19.5					
+44.9	47	31.25	+20.95	47	52.20	34	56.15	+	2173	+0	31.13	−.35	−.27	−.20	−12.80		+0.45	+63.10		18.0					

±.020

17.44 ±0.60

+18.711
6.37

+3.28 $\delta_0 = +14\ 41\ 6.4$ $\sin z = +.46$ 1.48020 +18.71

−.42 −.67

40 2.67	+18.6	41	49.00	+24.09	42	13.09	+40	35.26	+	03130	−0	32.47	−.05	−.07	−.54	−17.50	+1.21	−1.21	+63.89	41	6.7				
1.00	+25.7	41	47.60	+26.81	42	14.41	40	33.94	+	3587		32.81	.06	.07	−.55	−17.50	+1.21	−1.22	+64.12		5.2				
4.06	+17.0	41	50.45	+22.02	42	12.47	40	35.88	+	1863		31.54	.04	.24	−.70	−17.30	+1.41	−1.37	+61.67		6.0				
3.30	+6.0	42	4.65	+7.77	42	12.42	40	35.93	+	2851		32.26	.01	.27	−.70	−17.30	+1.41	−1.37	+62.36		6.1				
2.22	+15.6	41	49.60	+24.09	42	13.69	40	34.66	+	2688		32.14	.05	.25	−.72	−16.80	+1.91	−1.39	+62.88		5.9				
2.02	+23.4	41	42.50	+30.31	42	12.81	40	35.54	+	4100		33.21	.07	.24	−.73	−16.70	+2.01	−1.40	+62.93		5.9				
1.23	+10.9	42	0.80	+14.12	42	14.92	40	33.43	+	2359		31.90	.02	.28	−.72		+2.10	−1.39	+63.09		5.3				
39 59.06	−14.1	42	34.70	−18.26	42	16.44	40	31.91	+	3236		32.55	.03	.27	−.72		+2.30	−1.39	+64.06		4.3				
40 1.45	+19.3	41	49.90	+24.99	42	14.89	40	33.46	+	2173	−0	31.76	−.05	−.20	.69		+2.30	−1.34	+63.10		5.8				

±.029

5.69 ±0.45

+2.69 $\delta_0 = -37\ 31\ 26.0$ 2.49131 +18.62

−.92 −1.42

+7.7	49	44.65	+8.17	49	52.82	−27	44.7	+	03144	−5	33.24	85	+.03	−.17	−1.08	−3.73	+1.89	−2.50	+63.89	51	22.3				
+17.3	49	33.70	+18.36	49	52.06	27	37.1	+	3606	5	36.80	88	.07	.18	−1.03	−3.55	+1.57	−2.45	+64.12		21.6				
+17.3	49	36.95	+18.37	49	55.32	27	6.97	+	2859	5	31.06	65	.07	.60	−1.45	−1.88	+1.74	−2.87	+62.36		22.4				
+22.9	49	38.00	+24.31	50	2.31	27	13.96	+	2698	5	29.83	.71	.14	.64	−1.42	−0.99	+1.73	−2.84	+62.88		26.8				
+13.1	49	36.55	+13.91	49	50.46	27	2.11	+	4101	5	40.66	.93	.04	.64	−1.52	−0.89	+1.73	−2.94	+62.93		26.0				
+23.7	49	36.45	+25.16	50	1.61	27	13.26	+	3245	5	34.01	.77	.15	.51	−1.28	+19.14	+1.44	−2.70	+64.06		29.2				
−7.8	50	10.95	−8.28	50	2.67	27	14.32	+	1674	−5	22.15	.75	+.03	−.05	−.92	+19.61	+1.61	−2.34	+55.58		24.1				
												48													

±.024

24.77 ±1.49

+18.403
42.92

+3.65 $\delta_0 = +47\ 58\ 42.9$ $\sin z = -.10$ 0.75150 $_n$ +18.41

+.08 +.14

57 44.40	−28.9	25	35.95	−25.90	25	10.05	+57	38.30	+	03144	+0	6.07	−.25	−.02	−.18	−23.80	−5.39	−0.04	+63.89	58	42.8				
44.44	+32.0	24	40.90	+28.67	25	9.57	57	38.78	+	3606		6.13	.28	.19	−.38	−24.00	−5.59	−0.24	+64.12		43.2				
47.53	+32.6	24	36.60	+29.21	25	5.81	57	42.54	+	1863		5.89	.30	.60	−.51	−25.10	−6.69	−0.67	+61.67		42.7				
47.80	+19.7	24	48.20	+17.65	25	5.85	57	42.50	+	2859		6.03	.11	.62	−.64	−25.20	−6.79	−0.50	+62.36		43.6				
47.50	+27.9	24	40.95	+25.40	25	5.95	57	42.40	+	2678		5.92	.21	.61	−.73	−25.70	−7.29	−0.59	+61.58		42.0				
46.76	+28.8	24	40.90	+25.81	25	6.71	57	41.64	+	2698		6.01	.23	.66	−.80	−26.40	−7.99	−0.66	+62.88		41.9				
46.39	−22.7	25	26.30	−20.34	25	5.96	57	42.39	+	4101		6.20	.14	.06	−.11	−26.50	−8.09	+0.03	+62.93		43.5				
47.53	+25.6	24	43.00	+22.94	25	5.94	57	42.41	+	2368		5.96	.18	.46	−.75		−8.20	−0.61	+63.09		42.7				
46.43	+22.2	24	47.45	+19.89	25	7.34	57	41.01	+	3245		6.08	.13	.53	−.57		−8.20	−0.43	+64.06		42.5				
47.70	+21.4	24	46.75	+19.18	25	5.93	57	42.42	+	2176		5.93	.12	.53	−.56		−8.20	−0.42	+63.10		42.8				
57 55.07	−10.6	25	8.60	−9.50	24	59.10	57	49.25	+	1674	+0	5.86	−.03	−.01	+.05		−7.80	+0.19	+55.58		43.1				

±.020

42.80 ±0.35

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10

T Andromedae α = 1h 33m 1.91s δ = +39° 55′ 41″ k = −.020 tang. δ = +.84
z = + 2 27 8

Date	m	T_s	T_m	m tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	Adj. 1872.0
1871-2 Dec. 11	+ .371	1h	32m 55.04s	+ .311	+ 0.29	+ 5.99	3.01	+ 3.49 + 0.50	1 32 58.33 31 33 1.84 82
Dec. 12	+ .387	1	32 54.42	+ .325	+ .31	+ 6.69	3.00	+ 4.06 + 0.51	42 42 1.93 93
Dec. 17	+ .400	1	32 50.44	+ .336	+ .32	+ 10.57	2.94	+ 7.05 + 0.57	41 39 1.92 90
7 Dec. 28	+ .458	1	32 41.20	+ .384	+ .36	+ 19.62	2.78	+ 17.27 + 0.73	40 37 1.41 88
2.0 Jan. 1	+ .398	1	32 37.28	+ .334	+ .31	+ 23.42	+ 0.79	+ 24.52 + 0.79	1.80 1. 80
Jan. 8	+ .420	1	32 31.75	+ .352	+ .33	+ 28.89	+ 0.91	+ 30.13 + 0.91	1.88 1. 88
Jan. 7	+ .430	1	32 30.86	+ .361	+ .34	+ 29.71	+ 0.93	+ 30.98 + 0.93	1.84 1. 84
			+31.165						1.864
			96.305						±.035

Δk = −0.014
ΔA.R. = +1.08

* L Pscium α = 1h 34m 46.30s δ = + 4° 50′ 20″ k = −.015 tang. δ + .08
z = + 37 32 29

Date	m	T_s	T_m	m tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	Adj. 1872.0
1871-2 Dec. 11	+ .371	1	34 39.73	+ .029	+ 0.01	+ 5.99	− 2.61	+ 3.39 + 0.57	34 43.12 34 46.24
Dec. 17	+ .400	1	34 35.09	+ .032	+ .02	+ 10.57	− 2.57	+ 8.042 + 0.55	11 46.25 23
Dec. 28	+ .458	1	34 26.04	+ .036	+ .02	+ 19.62	− 2.47	+ 17.144 + 0.65	18 46.30 30
7 Jan. 1	+ .398	1	34 22.10	+ .031	+ .02	+ 23.43	− 2.42	+ 21.03 + 0.70	13 46.25
2.0 Jan. 8	+ .420	1	34 16.62	+ .033	+ .02	+ 28.89	− 2.33	+ 26.58 + 0.79	20 46.32
Jan. 9	+ .430	1	34 15.79	+ .034	+ .02	+ 29.71	− 2.32	+ 27.41 + 0.80	20 46.32
Jan. 21	+ .376	1	34 40.14	+ .030	+ .02	+ 5.29	− 2.19	+ 3.12 + 0.93	26 46.38
			+31.614						46.291
			98.305						±.040

Δk = −0.141
ΔA.R. = − 0.12

* O Pscium α = 1h 38m 38.31s δ = + 8° 30′ 45″ k = −.016 tang. δ = +.15
z = + 33 52 4

Date	m	T_s	T_m	m tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	Adj. 1872.0
1871-2 Dec. 1	+ .385	1	38 38.37	+ .057	+ 0.04	− 0.68	− 2.71	− 3.37 + 0.45	38 35.02 00 38 38.18 16
Dec. 6	+ .370	1	38 35.26	+ .055	+ .04	+ 2.54	− 2.69	− 0.12 + 0.47	35.14 15 38.30 31
Dec. 11	+ .371	1	38 31.56	+ .055	+ .04	+ 5.99	− 2.66	+ 3.37 + 0.50	34.45 93 38.17 09
Dec. 17	+ .400	1	38 26.94	+ .060	+ .04	+ 10.57	− 2.61	+ 8.020 + 0.55	34.46 94 38.12 10
9 Dec. 28	+ .458	1	38 17.87	+ .068	+ .05	+ 19.62	− 2.51	+ 17.13 + 0.65	35.03 00 38.19 16
2.0 Jan. 1	+ .398	1	38 14.03	+ .059	+ .04	+ 23.43	− 2.48	+ 20.99 + 0.68	35.02 38.18
Jan. 8	+ .420	1	38 8.43	+ .063	+ .05	+ 28.89	− 2.39	+ 26.55 + 0.77	34.98 38.14
Jan. 9	+ .430	1	38 7.60	+ .064	+ .05	+ 29.71	− 2.37	+ 27.39 + 0.79	34.99 38.15
Jan. 21	+ .376	1	38 31.95	+ .056	+ .04	+ 5.29	− 2.25	+ 3.08 + 0.91	35.03 38.19
									38.164
									±.036

Pi I 170
B.D. 6.544 α = 1h 41m 6.00s δ = + 37° 18′ 54″ k = −.020 tang. δ = +.76
z = + 5 3 55

Date	m	T_s	T_m	m tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	Adj. 1872.0
1871-2 Dec. 1	+ .385	1	41 6.10	+ .292	+ 0.27	− 0.68	− 3.11	− 3.52 + 0.40	41 2.58 56 42 6.09 07
Dec. 2	+ .373	1	41 5.35	+ .283	+ .26	+ 0.09	− 3.10	− 2.77 + 0.41	.58 60 6.09 10
Dec. 6	+ .370	1	41 2.94	+ .281	+ .26	+ 2.54	− 3.07	− 0.27 + 0.44	.40 67 6.21 18
8 Dec. 11	+ .371	1	40 59.35	+ .281	+ .26	+ 5.99	− 3.03	+ 3.22 + 0.48	.59 57 6.10 08
2.0 Dec. 17	+ .400	1	40 54.78	+ .304	+ .28	+ 10.57	− 2.97	+ 7.08 + 0.54	.48 66 6.17 17
Dec. 28	+ .458	1	40 45.49	+ .348	+ .33	+ 19.62	− 2.82	+ 16.11 + 0.64	.62 60 6.13 11
Jan. 9	+ .430	1	40 35.18	+ .327	+ .31	+ 29.71	+ 0.86	+ 30.88 + 0.86	6.06 6.06
Jan. 21	+ .376	1	40 59.49	+ .285	+ .26	+ 5.29	+ 1.08	+ 6.63 + 1.08	6.12 6.12
									6.111
									±.031

X Ceti S α = 1h 43m 17.92s δ = − 11° 19′ 15″ k = −.016 tang. δ = −.20
z = + 53 42 4

Date	m	T_s	T_m	m tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	Adj. 1872.0
1871-2 Dec. 6	+ .370	1	43 15.22	− .074	− 0.07	+ 2.54	− 2.61	− 0.186 + 0.34	43 15.03 06 43 17.98 18.01
Dec. 11	+ .371	1	42 59.66	− .074	− .09	+ 5.99	− 2.58	+ 3.342 + 0.37	3.36
Dec. 17	+ .400	1	43 7.12	− .080	− .10	+ 10.57	− 2.53	+ 7.924 + 0.42	15.08 06 18.03 18.01
6 Dec. 28	+ .458	1	42 57.97	− .092	− .11	+ 19.62	− 2.43	+ 17.086 + 0.52	15.25 03 18.00 18.08
2.0 Jan. 1	+ .398	1	42 54.07	− .080	− .10	+ 23.43	+ 0.57	+ 23.90	17.97 17.97
Jan. 9	+ .430	1	42 47.68	− .086	− .10	+ 29.71	+ 0.66	+ 30.27	17.95 17.95
Jan. 21	+ .376	1	43 11.96	− .075	− .09	+ 5.29	+ 0.82	+ 6.02	17.78 17.78
									18.00
									±.031

chk.

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+3.51 $\delta_0 = +3\,9'\,55'\,41''$ $\quad \frac{d\delta}{dt} =$ μ + logtgn $+18''.42$ $\quad -.04 \; -.06$

Tm – TS Circle Read. Red. Horizon Circle Read. Corr. δ $B + T + \gamma$ 0.39160

s	′	″	″	′	″	′	″																		
																		Rm Ro	Rd to 187.0	Rd to 1.82	Rm + Ro + 10	± δ	15720		
																		″	″	″	″	″	″		
+25.5	27	36.70	+26.19.28	2.89	+54	45.46+	01863−	25.7		−.17	−.34	−.55	−23.48	−5.06	0.61	+61.67	55	38.9							
+24.7	27	37.75	+25.36.28	3.11	54	45.24+	2859	26.3		.17	.34	−.55	−23.56	−5.14	−0.61	+62.36		39.2							
+27.5	27	34.80	+28.23.28	3.03	54	45.32+	2178	25.8		.20	.34	−.58	−23.90	−5.48	−0.64	+61.58		38.2							
+19.1	27	43.05	+19.61.28	3.66	54	45.69+	4101	27.0		.10	.38	−.52	−24.38	−5.96	0.58	+62.93		39.4							
+18.8	27	43.55	+19.30.28	2.85	54	45.50+	2368	26.0		.10	.38	−.52	−6.00	−6.00	0.58	+63.09		39.4							
+18.1	27	46.20	+18.59.28	4.79	54	43.56+	3245	26.5		.09	.31	−.44	−6.95	−5.95	0.50	+64.06		38.5							
+25.0	27	38.25	+25.67.28	3.92	54	44.43+	2176−	25.9		−.17	−.29	−.50	−5.93	−5.93	0.56	+63.10		38.4							

±.027 $\quad +18.362$ $\quad 20.11$ $\quad$ 3886

+3.12 $\delta_0 = +4\;50\;20.1$ $\quad$ Rm z = +.61 $\quad$ 1.64540 +18.36 $\quad -.58 \; -.87$ $\quad$ ±0.38

+14.6	32	25.30	+19.47.32	44.77+	50	3.58+	01863−	46.14	−.01	−.31	−.90	−14.20	+4.16	−1.77	+61.67	50	21.5		
+22.6	32	17.90	+27.48.32	45.38	50	2.97+	2088	46.37	.02	.30	−.90	−13.80	+4.56	−1.77	+61.58		21.0		
+2.4	32	40.20	+ 4.53.32	44.73	50	3.62+	4104	48.48	.01	.38	−.97	−13.00	+5.36	−1.84	+62.93		21.5		
−9.3	31	57.50	− 9.74.32	47.76	50	0.59+	2369	46.67	.01	.27	−.86		+5.40	−1.73	+63.09		20.7		
+17.5	32	23.80	+23.34.32	47.14	50	1.21+	3256	47.64	.01	.26	−.85		+5.80	−1.72	+64.06		21.7		
+12.0	32	32.40	+16.01.32	48.41	49	59.94+	2176	46.46	.01	.27	−.86		+5.90	−1.73	+63.10		20.8		
+19.1	32	16.20	+25.48.32	41.68	50	6.67+	1678−	45.93	−.02	−.30	−.90		+6.60	−1.77	+55.58		21.1		

±0.40 $\quad$ 21.19 $\quad$ ±0.30

+18.261 $\quad$ 44.70

+3.16 $\delta_0 = +8\;30\;44.7$ $\quad$ Rm z = +.56 $\quad$ 1.57670 +18.26 $\quad -.52 \; -.80$

+15.1	52	7.25	+19.99.52	27.24+	30	21.11+	03371−	41.54	−.02	−.08	−.62	−15.70	+2.56	−1.42	+63.89	30	44.6		
+17.9	52	1.65	+23.70.52	25.35	30	23.00+	3277	41.64	.03	.08	−.63	−15.50	+2.76	−1.43	+62.51		45.2		
+22.6	51	56.95	+29.92.52	26.87	30	21.48+	1863	40.30	.05	.25	−.82	−15.30	+2.96	−1.62	+61.67		44.2		
+22.0	51	58.25	+29.12.52	27.37	30	20.98+	2088	40.51	.04	.25	−.81	−15.00	+3.26	−1.61	+61.58		43.7		
+22.3	51	57.45	+29.52.52	26.97	30	21.38+	4104	42.44	.04	.27	−.83	−14.40	+3.86	−1.63	+62.93		44.1		
+21.0	52	0.80	+27.80.52	28.60	30	19.75+	2387	40.76	.04	.28	−.84		+4.10	−1.64	+63.09		44.5		
+16.6	52	7.30	+21.89.52	29.19	30	19.16+	3294	41.61	.03	.23	−.78		+4.50	−1.58	+64.06		44.5		
+16.8	52	7.00	+22.24.52	29.24	30	19.11+	2179	40.60	.03	.23	−.78		+4.50	−1.58	+63.10		44.5		
+21.1	51	53.55	+27.73.52	21.48	30	26.87+	1678−	40.13	−.04	−.25	−.81		+5.20	−1.61	+55.58		45.9		

±.035 $\quad$ 44.58 $\quad$ ±0.40

+3.51 $\delta_0 = +37\;18\;52.5$ $\quad$ 0.70790 +18.13 $\quad -.08 \; -.13$

+17.1	4	33.25	+18.21.4	51.46	+17	56.89+	03371−	3.49	−.07	−.18	−.33	−21.61	−3.48	−0.46	+63.89	18	51.3		
+22.8	4	25.25	+24.38.4	49.53	17	58.82+	3640	5.55	.14	.18	−.40	−21.71	−3.58	−0.53	+64.12		53.3		
+25.4	4	21.00	+27.05.4	48.05	18	0.30+	3277	5.50	.16	.17	−.41	−21.93	−3.80	−0.54	+62.51		53.0		
+22.7	4	24.15	+24.17.4	48.32	18	0.03+	1863	5.33	.14	.17	−.39	−22.52	−4.39	−0.92	+61.67		51.1		
−13.6	5	4.05	−14.48.4	49.57	17	58.78+	2098	5.36	.05	.01	−.14	−22.92	−4.79	−0.77	+61.58		49.9		
+23.3	4	23.90	+24.81.4	48.71	17	59.64+	4107	5.61	.14	.62	−.84	−23.35	−5.22	−0.97	+62.93		50.8		
− 9.0	4	59.50	− 9.58.4	49.92	17	58.43+	3183	5.37	.03	.55	−.66	−5.21	−5.21	−0.79	+63.10		50.2		
+24.9	4	14.90	+26.51.4	41.41	18	6.94+	1681−	5.31	−.16	−.55	−.79	−4.74	−4.74	−0.92	+55.58		51.5		

±.025 $\quad$ 51.39 $\quad$ ±0.82

2.95 $\delta_0 = -11\;19\;14.2$ $\quad$ 1.49300 +18.05 $\quad -.25 \; -1.16$

+20.3	41	18.25	+26.65.41	44.90	−18	56.55+	03277−1	24.29	.01	+.04	−.05	−.76	−9.86	+8.19	−1.92	+62.51	19	12.1	
+18.7	41	28.55	+24.15.41	52.70	19	4.35+	1863 1	21.59	.01	.03	.20	−.92		−2.08+					
+21.5	42	17.55	−28.22.41	49.33	19	0.98+	2098 1	22.03	.00	.04	.30	−1.01	−8.66	+9.39	−2.17	+61.58		14.2	
+21.5	41	19.45	+28.22.41	48.17	18	59.82+	4107 1	25.92	.01	.04	.18	−.89	−7.60	+10.45	−2.05	+62.93		14.4	
+12.2	41	37.95	+16.02.41	53.97	19	5.62+	2386 1	22.57	.00	.01	.22	−.96	+10.76	+10.76	−2.12	+63.09		16.5	
+15.8	41	33.55	+20.74.41	54.29	19	5.94+	2182 1	22.19	.01	.02	.17	−.90	+11.35	+11.35	−2.06	+63.10		15.7	
+18.1	41	23.80	+23.76.41	47.56	18	59.21+	1681−1	21.25	.01	+.03	−.18	−.90	+12.03	+12.03	−2.06	+55.58		14.7	

±.030 $\quad$ 14.63 $\quad$ ±0.99

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1872phae.proj.1459.

11

o Star ζ Ceti S α = 1h 1m 15.53s δ = −10° 58′ 6″ K = −.016 tang. δ = −.19
z = +53 20 55

Date	m	Ts	T	m tang. δ	d.T.	Red. 1871.0	Sum	G.R. 1871.0	Red. 1872.0
	s		m s	s	s	s	s	h m s	h m s
1871-2 Dec. 1	+.385	1	45 8.92	−.073 −0.09	−0.6872	2.64	−3.43	+0.321 45 5.49	1 45 8.45
Dec. 2	+.373	1	45 8.29	−.070 −.09	+0.079	2.64	−2.64	+0.32	55 8.61
Dec. 6	+.370	1	45 5.86	−.070 −.09	+2.524	2.62	−0.18	+0.34	.69 8.65
Dec. 11	+.311	1	45 2.34	−.070 −.09	+5.99	2.59	+3.31	+0.37	.65 8.61
9 Dec. 17	+.400	1	44 57.66	−.076 −.09	+10.597	2.54	+7.96	+0.42	.60 8.56
2.0 Dec. 28	+.458	1	44 48.63	−.087 −.10	+19.620	2.43	+17.07	+0.53	.70 8.66
Jan. 1	+.398	1	44 44.76	−.075 −.09	+23.43	+0.56	+23.90	+0.56	8.66 8.66
Jan. 9	+.430	1	44 38.36	−.081 −.10	+29.71	+0.65	+30.26	+0.65	8.62 8.62
Jan. 21	+.376	1	45 2.61	−.071 −.09	+5.29	+0.81	+6.01	+0.81	8.62 8.62
									8.604 ±.042

Δα = +0.005
Δδ = −0.55

+3.2005
34.326

* β Aristis α = 1h 47m 34.33s δ = +20° 10′ 53″ K = −.016 tang. δ = +.37
z = +22 11 56

Date	m	Ts	T	m tang. δ	d.T.	Red. 1871.0	Sum	G.R. 1871.0	Red. 1872.0
1871-2 Dec. 1	+.385	1	47 34.40	+.142 +0.13	−0.6872	2.86	−3.43	+0.44 47 30.97	47 34.27
Dec. 2	+.373	1	47 33.71	+.138 +.12	+0.079	2.86	−2.65	+0.44	31.06 34.36
Dec. 6	+.370	1	47 31.28	+.137 +.12	+2.524	2.84	−0.18	+0.46	31.10 34.40
Dec. 11	+.311	1	47 27.70	+.137 +.12	+5.99	2.81	+3.30	+0.49	31.00 34.30
11 Dec. 17	+.400	1	47 23.06	+.148 +.13	+10.597	2.77	+7.93	+0.53	30.99 34.29
2.0 Dec. 28	+.458	1	47 14.01	+.169 +.15	+19.620	2.67	+17.08	+0.63	31.09 34.39
Jan. 1	+.398	1	47 10.04	+.147 +.13	+23.43	−2.62	+20.94	+0.68	30.98 34.28
Jan. 9	+.430	1	47 3.72	+.156 +.14	+29.71	−2.52	+27.33	+0.78	31.05 34.35
Jan. 21	+.376	1	47 27.96	+.139 +.12	+5.29	−2.37	+3.04	+0.93	31.03 34.30
Jan. 30	+.437	1	47 26.76	+.161 +.15	+6.39	+3.25	+	+1.00	34.30
Feb. 1	+.505	1	47 25.73	+.186 +.17	+7.40	−3.22	+	+1.10	34.40
									34.331 ±.039

λ Aristis α = 1h 50m 47.92s δ = +22° 58′ 14″ K = .017 tang. δ = +.42
z = +19 24 35

Date	m	Ts	T	m tang. δ	d.T.	Red. 1871.0	Sum	G.R. 1871.0	Red. 1872.0
1871-2 Dec. 1	+.385	1	50 48.14	+.161 +0.14	−0.6872	2.91	−3.47	+0.42 50 44.67	50 48.00
Dec. 2	+.373	1	50 47.36	+.156 +.14	+0.079	2.91	−2.68	+0.42 .68	48.01
Dec. 6	+.370	1	50 44.91	+.155 +.14	+2.524	2.89	−0.18	+0.44 .73	48.06
Dec. 11	+.311	1	50 41.34	+.155 +.14	+5.99	−2.86	+3.28	+0.47 .62	47.95
10 Dec. 17	+.400	1	50 36.64	+.168 +.15	+10.597	2.82	+7.90	+0.51 .54	47.87
2.0 Dec. 28	+.458	1	50 27.59	+.192 +.17	+19.680	−2.71	+17.06	+0.62 .65	47.98
Jan. 1	+.398	1	50 23.75	+.167 +.15	+23.43	−2.67	+20.91	+0.66 .66	47.97
" 24	+.343	1	50 41.28	+.144 +.13	+5.48	+0.97	+6.58	+0.97 47.86	47.86
" 30	+.437	1	50 40.33	+.183 +.17	+6.39	+1.06	+7.62	+1.06 47.95	47.95
Feb. 1	+.505	1	50 39.35	+.212 +.20	+7.40	+1.09	+8.69	+1.09 48.04	48.04
									47.971 ±.045

Δα = +0.045
Δδ = −0.58

+4.9764
32.898

* 50 Cassiopeiae α = 1h 52m 32.90s δ = +71° 48′ 1″ K = −.047 tang. δ = +3.04
z = −29 25 12

Date	m	Ts	T	m tang. δ	d.T.	Red. 1871.0	Sum	G.R. 1871.0	Red. 1872.0
1871-2 Dec. 1	+.385	1	52 33.36	+1.170 +1.12	−0.679	5.73	−5.30	−0.75 52 28.06	52 33.04
Dec. 6	+.370	1	52 29.85	+1.125 +1.08	+2.535	5.64	−2.01	−0.66 27.87	32.85
Dec. 11	+.311	1	52 26.36	+1.127 +1.08	+6.030	5.47	+1.61	−0.49 27.97	32.95
7 Dec. 17	+.400	1	52 21.49	+1.216 +1.17	+10.597	5.23	+6.52	−0.25 28.01	32.99
2.0 Jan. 9	+.430	1	52 1.18	+1.307 +1.26	+29.72	−4.07	+26.91	+0.91 28.09	33.07
Jan. 21	+.376	1	52 24.97	+1.143 +1.10	+5.29	−3.37	+3.02	+1.61 27.99	32.94
Jan. 24	+.343	1	52 24.46	+1.042 +1.00	+5.48	−3.19	+3.29	+1.79 27.75	32.73
									32.943 ±.081

ν Ceti S α = 1h 53m 58.46s δ = −21° 41′ 57″ K = −.017 tang. δ = −.40
z = +64 4 46

Date	m	Ts	T	m tang. δ	d.T.	Red. 1871.0	Sum	G.R. 1871.0	Red. 1872.0
1871-2 Dec. 2	+.373	1	53 58.36	−.149 −0.17	+0.0810	2.66	−2.73	+0.16 53 55.63	53 58.45
Dec. 28	+.458	1	53 38.60	−.183 −.20	+19.630	2.44	+16.97	+0.38 .57	.39
5 Jan. 30	+.437	1	53 51.42	−.175 −.19	+6.39	+0.83	+7.03	+0.83 58.15	.45
2.0 Feb. 1	+.505	1	53 50.54	−.202 −.22	+7.40	+0.86	+8.04	+0.86 58.58	.58
Feb. 7	+.387	1	53 47.90	−.155 −.17	+9.78	+0.95	+10.56	+0.95 58.46	.46
									58.466 ±.045

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+2.96 $\delta_0 = -10^\circ\ 58'\ 6.''2$

$\frac{d\delta}{dt} = +17.''98$

μ + log γ n

B + π + γ 1.88750

−.74 −1.16

$T_m - T_s$ s	Circle Read ′	″	Red. Hor. wire ″	Cor. Circle Read ′	″	′	″		″	f−γ	Rm	Rrs	R_m R_0 R_f	Red to 1870	Red to 1872 + Rf	I	δ 1872.0
16.73 +15.0	20	22.30	+19.72	20	42.02	−57	53.67+	03185 −1	23.05	.01 +	.02 −	.02	−.74	−10.60	+7.38 −1.90 +63.89	58	7.4
16.38 +15.8	20	20.00	+20.76	20	40.76	57	52.41+	3657	23.96	.01	.02	.02	−.74	−10.48	+7.50 −1.90 +64.12		6.7
14.61 −16.1	21	0.85	−21.16	20	39.69	57	51.34+	3283	23.24	.01	.02	.04	−.76	−10.02	+7.96 −1.92 +62.51		6.0
17.15 +5.2	20	37.75	+7.10	20	44.85	57	56.50+	1863	20.56	.01	.00	.08	−.82	−9.45	+8.53 −1.98 +61.67		8.8
16.65 +19.5	20	18.35	+25.62	20	43.97	57	55.62+	2108	21.02	.00	.03	.04	−.75	−8.80	+9.18 −1.91 +61.58		7.8
17.23 +20.0	20	14.45	+26.29	20	40.74	57	52.39+	4110	24.84	.01	.04	.02	−.73	−7.68	+10.30 −1.89 +62.93		5.9
17.65 −27.1	21	19.95	−35.61	20	44.34	57	55.99+	2395	21.55	.00	.07	.18	−.85	+10.65	+10.65 −2.01 +63.09		5.8
20.36 −12.3	21	3.60	−16.16	20	47.44	57	59.09+	2185	21.16	.01	.01	.11	−.84	+11.23	+11.23 −2.00 +63.10		7.9
13.29 +15.2	20	21.40	+19.98	20	41.38	−57	53.03+	1685−	20.23	.01 +	.02 −	.04	−.76	+12.09	+12.09 −1.92 +55.58		7.5

±0.41 7.09 ±0.79

+17.789
52.54

+3.30 $\delta_0 = +20\ 10\ 52.5$ Lvi z = +.38 1.37080 +17.79

−.35 −.54

$T_m - T_s$	′	″	Red. Hor. wire	′	″	′	″		″	f−γ	Rm	Rrs	Rm R0 Rf	Red to 1870	Red to 1872 + Rf	I	δ 1872.0
50.43 −8.1	12	42.70	−10.18	12	32.52	+10	15.83+	03186 −0	25.27	−.02	−.11	−.48	−17.80	−0.01	−1.02 +63.89	10	53.4
50.07 +19.8	12	7.70	+24.88	12	32.58	10	15.77+	3654	25.55	.07	.08	−.50	−17.80	−0.01	−1.04 +64.12		53.3
51.16 +18.4	12	8.60	+23.12	12	31.72	10	16.63+	3283	25.33	.06	.08	−.49	−17.90	−0.11	−1.03 +62.51		52.7
50.21 +20.2	12	7.90	+25.38	12	33.28	10	15.07+	1867	24.52	.07	.27	−.69	−18.00	−0.21	−1.23 +61.67		50.8
50.15 +22.4	12	5.05	+28.15	12	33.20	10	15.15+	2108	24.65	.08	.27	−.70	−18.00	−0.21	−1.24 +61.58		50.6
49.89 −5.8	12	39.55	−7.29	12	32.26	10	16.09+	4110	25.82	.07	.37	−.73	−17.90	−0.11	−1.27 +62.93		51.8
49.77 +24.3	12	2.85	+30.53	12	33.38	10	14.97+	2395	24.82	.10	.28	−.73		+0.00	−1.27 +63.09		52.0
46.57 +20.4	12	9.15	+25.63	12	34.78	10	13.57+	2186	24.70	.07	.23	−.65		+0.20	−1.19 +63.10		51.0
56.50 +22.6	11	58.65	+28.40	12	27.05	10	21.30+	1686	24.41	.09	.26	−.70		+0.80	−1.24 +55.58		53.0
10.39 +17.4	12	33.45	+21.86	12	11.59	10	36.76+	4384	25.98	.05	.34	−.74		+1.40	−1.28 +41.68		52.6
8.26 +24.5	12	44.80	+30.73	12	14.03	+10	34.33+	3877−	25.68	−.04	−.35	−.74		+1.60	−1.28 +42.78		51.7

±.037

+3.33 $\delta_0 = +22\ 58\ 14.3$ 1.30710 +17.75

−.32 −.48

51.99 ±0.65

$T_m - T_s$	′	″	Red. Hor. wire	′	″	′	″		″	f−γ	Rm	Rrs	Rm R0 Rf	Red to 1870	Red to 1872 + Rf	I	δ 1872.0
+20.4	24	49.45	+25.14	25	14.59	+57	33.76+	03184 −0	21.82	−.07	−.19	−.58	−18.44	−0.69	−1.06 +63.89	58	14.1
+19.6	24	49.40	+24.16	25	13.56	57	34.79+	3658	22.06	.07	.19	−.58	−18.47	−0.72	−1.06 +64.12		15.1
+20.2	24	48.15	+24.90	25	13.05	57	35.30+	3286	21.88	.07	.19	−.58	−18.59	−0.84	−1.06 +62.51		14.0
+23.1	24	44.90	+28.48	25	13.38	57	34.97+	1867	21.17	.09	.41	−1.02	−18.70	−0.95	−1.50 +61.67		13.0
+26.6	24	40.50	+32.79	25	13.29	57	35.06+	2109	21.29	.13	.61	−1.06	−18.78	−1.03	−1.54 +61.58		12.8
+20.2	25	48.60	+24.90	25	13.50	57	34.85+	4111	22.30	.07	.11	−.50	−18.75	−1.00	−0.98 +62.93		13.5
see dates + 7.7	25	5.35	+9.50	25	14.85	57	33.50+	2395	21.43	.02	.01	−.25		−0.99	−0.83 +63.09		13.3
+15.8	24	49.35	+19.09	25	8.44	57	39.91+	2596	21.53	.04	.62	−.98		+0.22	−1.46 +58.20		15.3
+20.7	25	18.60	+25.01	24	53.59	57	54.76+	4384	22.43	.08	.04	−.44		+0.54	−0.92 +41.68		13.6
+21.5	25	20.40	+25.98	24	54.92	+57	53.93+	3827−	22.15	−.08	−.04	−.44		+0.65	−0.92 +42.78		14.3

+17.708
0.71

±.041 13.90 ±0.59

4.98 $\delta_0 = +71\ 48\ 0.7$ Lvi z = −.49 1.51120 +17.71

+.45 +.70

$T_m - T_s$	′	″	Red. Hor. wire	′	″	′	″		″	f−γ	Rm	Rrs	Rm R0 Rf	Red to 1870	Red to 1872 + Rf	I	δ 1872.0
0.63 −21.5	36	31.50	−8.99	36	22.51	+46	25.84+	03198 +0	34.93	−.08	−.06	+.31	−24.50	−6.79	+1.01 +63.89	47	58.9
4.31 −26.9	36	30.10	−11.25	36	18.85	+46	29.50+	3292	35.00	.13	.06	+.26	−25.50	−7.79	+0.96 +62.51		60.2
6.88 +15.8	36	8.55	+6.61	36	15.16	+46	33.19+	1863	33.87	.04	.14	+.21	−26.70	−8.99	+0.97 +61.67		60.7
7.98 +46.8	35	54.40	+19.57	36	13.97	+46	34.38+	2119	34.07	.35	.12	−.02	−28.10	−10.39	+0.68 +61.58		60.3
9.34 +9.9	36	8.85	+4.14	36	12.99	+46	35.36+	2189	34.12	.02	.17	+.31		−13.50	+1.01 +63.10		60.1
16.62 +50.4	35	42.90	+21.07	36	3.97	+46	44.38+	1690	33.74	.41	.09	−.05		−13.90	+0.65 +55.58		60.4
14.88 −44.8	36	26.15	−18.73	36	7.42	+46	40.93+	2602+	34.45	−.32	−.18	−.05		−13.90	+0.65 +58.20		60.3

±.025 48 60.13 ±0.34

+2.82 $\delta_0 = -21\ 41\ 56.7$ 2.07090 $d\delta_0/dt$ = +17.66

−.83 −1.30

$T_m - T_s$	′	″	Red. Hor. wire	′	″	′	″		″	f−γ	Rm	Rrs	Rm R0 Rf	Red to 1870	Red to 1872 + Rf	I	δ 1872.0
+15.5	3	27.80	+19.28	3	47.08	−40	58.73+	03675 −2	8.13	−.04	+.04	−.14 −.93	−7.74	+9.52	−2.23 +64.12	41	55.1
+17.8	3	25.00	+22.14	3	47.14	−40	58.79+	4114	9.43	.05	.06	.48 −1.25	−4.21	+13.45	−2.35 +62.93		54.4
+15.5	3	51.70	+18.90	3	32.80	−40	44.45+	4384	10.24	.07	.04	.50 −1.29	+15.27	+15.27	−2.59 +41.68		60.4
+20.0	3	57.95	+24.39	3	33.56	−40	45.21+	3844	8.64	.05	.07	.52 −1.28	+15.26	+15.26	−2.58 +42.78		58.4
+20.0	3	56.75	+24.39	3	32.36	−40	44.01+	3452−	7.48	−.04	+.07	−.52 −1.28	+15.18	+15.18	−2.58 +41.71		57.2

±.042 57.10 ±1.78

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12

$\Delta\lambda = +0.036$ s
$\Delta\beta = -0.83$

+3.6582
hom 52.929

Star * γ Andromedae $\alpha = 1^h\ 56^m\ 2.93^s$ $\delta = +41°\ 42'\ 51''$ $k = -.020$ s tang $\delta = +.89$
$\gamma = +\ 0\ 39\ 58$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1871-2 Dec. 1	+.385		1 56 3.04	+.342 +0.32	−0.679 3.35	−3.72	+0.301	55 59.32	56 2.97
Dec. 2	+.373		1 56 2.19	+.331 +.31	+0.0812 3.35	−2.74	+0.30	.20	2.90
Dec. 6	+.370		1 55 59.83	+.329 +.31	+2.535 3.31	−0.45	+0.34	.38	3.03
Dec. 11	+.371		1 55 56.34	+.330 +.31	+6.026 3.28	+3.03	+0.37	.37	3.02
Dec. 17	+.400		1 55 51.58	+.356 +.34	+10.6058 3.23	+7.70	+0.43	.28	2.98
11 Dec. 28	+.458		1 55 42.44	+.409 +.39	+19.6361 3.06	+16.94	+0.59	.38	3.03
2.0 Jan. 1	+.398		1 55 38.49	+.354 +.33	+23.44 −3.00	+20.77	+0.65	.26	2.91
Jan. 9	+.430		1 55 32.12	+.382 +.36	+29.72 −2.86	+28.22	+0.79	.34	2.99
Jan. 21	+.376		1 55 56.36	+.334 +.31	+5.29 −2.64	+3.96	+1.01	.32	2.97
Jan. 30	+.437		1 55 54.94	+.388 +.37	+6.39 −2.45	+5.31	+1.20	.25	2.90
Feb. 7	+.367		1 55 51.51	+.344 +.32	+9.78 −2.30	+8.80	+1.35	.31	2.96
									2.965 ±.036

$\Delta\lambda = -0.211$ s
$\Delta\beta = +0.29$

+3.3474
57.676

* ζ Andromedae $\alpha = 1^h\ 59^m\ 57.68^s$ $\delta = +22°\ 51'\ 21''$ $k = -.017$ tang $\delta = +.42$
$\gamma = +\ 19\ 31\ 28$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1871-2 Dec. 1	+.385		1 59 57.74	+.161 +0.14	−0.679 2.98	−3.53	+0.39	59 54.21	59 57.58
Dec. 2	+.373		1 59 57.02	+.156 +.14	+0.0812 2.98	−2.74	+0.29	.28	57.55
Dec. 6	+.370		1 59 54.61	+.155 +.14	+2.535 2.96	−0.27	+0.41	.34	57.81
8 Dec. 28	+.458		1 59 37.34	+.192 +.17	+19.631 2.98	+17.00	+0.59	.34	57.91
20 Jan. 1	+.398		1 59 33.45	+.167 +.15	+23.44 −2.94	+20.35	+0.63	.30	57.67
Jan. 9	+.430		1 59 27.07	+.181 +.16	+29.72 −2.65	+27.23	+0.72	.30	57.67
Jan. 21	+.376		1 59 51.32	+.157 +.14	+5.29 −2.50	+2.93	+0.87	.25	57.62
Jan. 31	+.513		1 59 49.62	+.215 +.20	+6.87 −2.35	+4.72	+1.02	.34	57.91
									57.665 ±.034

* α Draconis L.C. $\alpha = 14^h\ 0^m\ 55.48^s$ $\delta = +64°\ 59'\ 17''$ $k = +.036$ tang $\delta = -2.14$
$\gamma = -72\ 37\ 55$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1871-2 Dec. 11	+.371		2 0 47.31	−.793 −0.76	+6.020 +0.98	+6.22	+2.60	53.53	00 55.15
Dec. 17	+.400		2 0 44.60	−.856 −0.82	+10.6058 +0.70	+10.46	+2.32		
Jan. 24	+.343		2 0 50.72	−.734 −0.70	+5.48 +0.33	+5.11	+1.95		
Jan. 30	+.437		2 0 50.38	−.925 −0.90	+6.39		−0.26		.61
Feb. 1	+.505		2 0 49.80	−1.080 −1.04	+7.40		−0.38		.78
Feb. 15	+.400		2 0 43.11	−.856 −0.82	+11.29		−1.45		

Rejected

$\Delta\lambda = +0.005$ s
$\Delta\beta = -0.19$

+3.5470
55.957

* β Trianguli $\alpha = 2^h\ 1^m\ 56.94^s$ $\delta = +34°\ 22'\ 50''$ $k = -.019$ tang $\delta = +.68$
$\gamma = +\ 7\ 59\ 59$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1871-2 Dec. 28	+.458		2 1 35.47	+.311 +0.29	+19.631 −2.98	+16.92	+0.572	1 52.39	1 55.94
Jan. 1	+.398		2 1 31.64	+.270 +.25	+23.44 −2.93	+20.76	+0.62	.48	55.95
5 Jan. 9	+.430		2 1 25.23	+.292 +.27	+29.72 −2.81	+27.18	+0.74	.41	55.96
2.1 Jan. 31	+.513		2 1 47.65	+.348 +.33	+6.87 −2.46	+4.74	+1.09	.39	55.94
Feb. 7	+.387		2 1 44.68	+.263 +.24	+9.78 −2.33	+7.69	+1.22	.37	55.92
									55.942 ±.009

$\Delta\lambda = +0.068$ s
$\Delta\beta = -0.56$

+4.6176
27.890

* 55 Cassiopeiae $\alpha = 2^h\ 4^m\ 27.89^s$ $\delta = +65°\ 55'\ 21''$ $k = -.037$ tang $\delta = +2.24$
$\gamma = -\ 23\ 32\ 32$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1871-2 Dec. 11	+.371		2 4 21.36	+.831 +0.79	+6.020 4.83	+1.96	−0.21	4 23.32	4 27.94
Dec. 28	+.458		2 4 7.09	+1.025 +.99	+19.631 4.33	+16.27	+0.29	.36	27.98
5 Jan. 1	+.398		2 4 3.21	+.891 +.85	+23.44 0.44	+24.73	+0.41	27.94	27.94
2.0 Jan. 14	+.387		2 4 23.22	+.806 +.83	+2.95 +0.97	+4.75	+0.97	27.97	27.97
Jan. 21	+.376		2 4 20.59	+.842 +.81	+5.29 +1.27	+7.37	+1.27	27.96	27.96
									27.958 ±.013

$\Delta\lambda = -0.001$ s
$\Delta\beta = +0.76$

+3.9480
56.191

* 6 Persei $\alpha = 2^h\ 5^m\ 6.19^s$ $\delta = +50°\ 28'\ 10''$ $k = -.024$ tang $\delta = +1.21$
$\gamma = -\ 8\ 5\ 21$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1872 Jan. 9	+.430		2 4 35.23	+.520 +0.50	+29.72 +0.73	+30.95	+0.73	5 6.23	5 6.23
3 Jan. 31	+.513		2 4 57.39	+.620 +.60	+6.87 +1.26	+8.73	+1.26	6.12	6.12
2.1 Feb. 7	+.387		2 4 54.54	+.468 +.44	+9.78 +1.46	+11.68	+1.46	6.22	6.22
									6.190

$\Delta\lambda = -0.026$ s
$\Delta\beta = -0.55$

+3.5452
42.638

* δ Trianguli $\alpha = 2^h\ 9^m\ 42.64^s$ $\delta = +33°\ 15'\ 14''$ $k = -.019$ tang $\delta = +.66$
$\gamma = +\ 9\ 7\ 35$

Date	m	T_0	T_m	m tang δ	Δ.T.	Red. 1871.0	Sum	A.R. 1871.0	m
	s		h m s	s	s	s	s	h m s	s
1871-2 Dec. 1	+.385		2 9 42.70	+.254 +0.23	−0.679 −3.21	−3.67	+0.34	9 39.03	9 42.58
Dec. 9	+.356		2 9 37.46	+.234 +.22	+4.553 −3.19	+1.56	+0.36	.02	42.57
6 Dec. 12	+.387		2 9 35.35	+.255 +.24	+6.71 −3.18	+3.77	+0.37	.12	42.67
2.0 Jan. 14	+.387		2 9 38.67	+.255 +.24	+2.95 −2.79	+0.40	+0.76	.07	42.62
Jan. 30	+.437		2 9 34.76	+.288 +.27	+6.39 −3.52	+3.14	+0.93	39.13	42.65
Feb. 7	+.387		2 9 31.40	+.255 +.24	+9.78 −3.39	+6.63	+1.16	39.03	42.58
									42.612 ±.032

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+17.485
50.93

+3.65 $\delta_0 = +41\ 42\ 50.9$ Spin z = +.01

$\frac{d\delta}{dt} = +17.49''$

Uranus

B + H + J

9.82500

Time – 7.5	Circle Read.	Red. Zenith	Corr.	Circle Read.																															
	s	′	″		″	′	″	′	″		″																								
50.05	+25.7	40	31.70	+25.68	40	57.38	+41	50.97	+	03198	−0	0.72		−.18	−.02	−.21	−21.40	−3.91	−0.23	+63.89	42	50.0													
50.66	26.0	41	22.70	−25.98	40	56.72	41	51.63	+	3675		0.73		.18	.06	−.25	−21.50	−4.01	−0.27	+64.12		50.7													
52.70	29.2	40	28.50	+29.18	40	54.68	41	53.67	+	3292		0.72		.23	.02	−.26	−22.00	−4.51	−0.28	+62.51		50.7													
52.76	+23.6	40	31.10	+23.58	40	54.68	41	53.67	+	1863		0.70		.15	.06	−.22	−22.50	−5.01	−0.24	+61.67		49.4													
54.49	+16.5	40	34.50	+18.49	40	52.99	41	55.36	+	2119		0.70		.09	.08	−.18	−23.10	−5.61	−0.20	+61.58		50.4													
52.97	+22.7	40	31.75	+22.68	40	54.43	41	53.92	+	4114		0.74		.14	.07	−.22	−23.90	−6.41	−0.24	+62.93		49.5													
53.49	+29.6	40	24.30	+29.57	40	53.87	41	54.48	+	2404		0.70		.23	.06	−.30		−6.50	−0.32	+63.09		50.0													
54.36	+19.4	40	33.75	+19.39	40	53.14	41	55.21	+	2184		0.70		.10	.05	−.16		−6.60	−0.18	+63.10		50.8													
1.79	+21.7	40	24.05	+21.68	40	45.73	42	2.62	+	1690		0.70		.13	.05	−.19		−6.70	−0.21	+55.58		50.6													
15.67	+10.5	40	42.50	−10.28	40	32.22	42	16.03	+	4384		0.74		.03	.09	−.13		−6.70	−0.15	+41.68		50.2													
13.74	+22.8	40	55.95	−22.33	40	33.62	42	14.73	+	3450	−	0.72		−.14	−.13	−.28		−6.60	−0.30	+41.71		48.8													

±.027

50.10
±0.45

+17.221
21.47

3.37 $\delta_0 = +22\ 51\ 21.5$ Spin z = +.33 1.30580 +17.23

18.56	+24.8	31	42.00	+25.66	32	7.66	+50	40.69	+	03212	−0	21.97		−.09	−.07	−.48	−17.90	−0.67	−0.96	+63.89	51	21.0													
17.86	+19.8	31	43.70	+24.42	32	8.12	50	40.23	+	3692		22.22		.08	.07	−.47	−17.90	−0.67	−0.95	+64.12		20.5													
20.76	+21.7	31	38.65	+26.77	32	5.42	50	42.93	+	3798		22.02		.09	.06	−.47	−18.10	−0.87	−0.95	+62.51		21.6													
20.88	+25.1	31	33.75	+30.96	32	4.71	50	43.64	+	4117		22.43		.12	.21	−.65	−18.30	−1.07	−1.13	+62.93		21.9													
21.15	+20.6	31	39.90	+25.41	32	5.31	50	43.04	+	2413		21.57		.09	.23	−.64		−0.90	−1.12	+63.09		22.5													
19.65	+21.9	31	39.95	+27.01	32	6.96	50	41.34	+	2192		21.47		.09	.18	−.59		−0.70	−1.07	+63.10		21.2													
27.91	+20.7	31	33.40	+25.53	31	5.93	50	19.42	+	1693		21.22		.09	.20	−.61		−0.20	−1.09	+55.58		22.5													
6.41	+25.7	32	16.50	−31.08	31	45.42	+51	29.93	+	3416	−	22.08		−.14	−.30	−.76		+0.80	−1.24	+42.06		22.9													

±.031

21.76
±0.62

+1.62 $\delta_0 =$ 2.25875 −17.33 +.88 +.55

+34.0		24.05	−19.24	(26)	4.81	+56	43.54	+	02607	+3	12.67	.15	+.24	−.																					
+36.3		30.95	−20.13	(25)	10.82	57	37.53	+	4389	3	20.72	.25	.27																						
+35.9		29.35	−19.91	(25)	9.44	+57	36.91	+	867	+3	18.35	.18	+.27	−.																					

+17.247
49.69

+3.53 $\delta_0 = +34\ 22\ 49.7$ Spin z = +.14 0.90800 +17.25

56.83	+24.0	1	14.35	+25.99	0	49.36	+22	08.01	+	04117	−0	8.90		−.12	−.06	−.30	−21.60	−4.35	−0.56	+62.93	22	49.5													
57.88	+19.3	0	26.45	+21.32	0	47.77	22	0.58	+	2413		8.55		.09	.06	−.27		−4.40	−0.53	+63.09		50.2													
57.07	+23.3	0	22.85	+25.74	0	48.59	21	59.76	+	2192		8.51		.14	.04	−.30		−4.50	−0.56	+63.10		49.3													
11.45	+23.0	0	52.80	−24.91	0	27.89	+22	36.46	+	3416	−	8.75		−.14	−.12	−.38		−3.70	−0.64	+42.06		49.4													
		0	34.00																																

±.007
±.009

49.50

+17.157
20.76

4.62 $\delta_0 = +65\ 55\ 21.0$ Spin z = −.40 1.39930 +17.16

25.53	+10.6	28	42.70	+5.79	28	48.49	+53	59.86	+	01863	+0	26.18		−.03	−.48	−.15	−25.50	−8.34	+0.42	+61.67	55	19.8													
27.45	+32.6	28	29.95	+17.80	28	47.75	54	0.60	+	4120		27.57		.23	.49	−.36	−27.50	−10.34	+0.21	+62.93		21.0													
26.97	+15.4	28	39.95	+8.41	28	48.36	54	0.94	+	2422		26.52		.05	.49	−.18		−11.60	+0.49	+63.09		19.5													
30.45	−32.9	29	2.55	−17.96	28	44.59	54	37.6	+	3784		27.36		.23	.44	−.31		−12.70	+0.26	+61.23		19.9													
38.24	+43.7	28	11.50	+23.86	28	35.36	+54	12.99	+	1696	+	26.07		−.40	−.42	−.46		−12.90	+0.11	+55.58		21.8													

±.005
3.95

+16.959
10.17

$\delta_0 = +50\ 28\ 10.2$ Spin z = −.14 0.91300 +16.96

20.40
±0.76

16.44	+26.6	55	17.45	+22.65	55	40.10	+27	8.25	+	02195	+0	8.61		−.19	−.03	−.10		−9.00	+0.10	+63.10	28	11.1													
36.72	+26.0	55	42.05	−21.72	55	20.33	27	28.02	+	3433		8.86		.13	.09	−.15		−8.70	+0.05	+42.06		16.3													
3.49	+31.2	55	45.45	−26.06	55	19.39	+27	26.96	+	3480	+	8.87		−.26	−.09	−.23		−8.10	−0.03	+41.71		11.4													

+16.886
13.73

0.96600 +16.89

3.55 $\delta_0 = +33\ 15\ 13.7$ Spin z = +.16

10.93

12.44	+24.1	7	59.00	+26.98	8	25.98	+14	22.37	+	03240	−0	9.96		−.15	−.12	−.41	−19.20	−2.31	−0.63	+63.89	15	13.4													
13.67	−23.3	8	50.40	−26.08	8	24.32	14	24.03	+	3514		10.03		.14	.19	−.47	−19.60	−2.91	−0.69	+62.24		12.6													
14.34	−25.0	8	51.80	−27.98	8	23.82	14	24.53	+	2920		9.89		.16	.14	−.44	−20.10	−3.21	−0.66	+62.36		12.1													
15.35	+19.4	8	0.75	+21.72	8	22.47	14	25.88	+	3807		10.10		.10	.33	−.57		−4.10	−0.79	+61.23		12.1													
±.027																																			
±.032	+3.1	8	6.10	−3.41	8	2.69	+14	46.66	+	3494	−	10.02		−.01	−.40	−.55		−2.90	−0.07	+41.71		14.7													

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13

$\Delta\alpha = +0.^{s}030$
$\Delta\delta = -0.''93$

+12.9878

Star * 67 Ceti $\alpha = 2^h\ 10^m\ 36.^s980$ 36.598 $\delta = -7°\ 0'\ 48''$ $K = -.016$ tang. $\delta = -.12$

$z = +49\ 23\ 37$

Date	m	T_s	T_m	m tang δ	d.T.	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
	s	h m s	s	s	s	s	s	h m s	m s
1871-2 Dec. 11	+.371	2 10 29.73	-.044	-0.06	+6.031	-2.72	+3.23	+0.27.2	10 32.96	10 35.95
Dec. 17	+.400	2 10 25.11	-.048	-.06	+10.6152	2.68	+7.85	+0.31	32.96	35.95
5- Jan. 21	+.376	2 10 30.13	-.045	-.06	+5.29	-2.33	+2.90	+0.66	33.03	36.02
2.0 Jan. 31	+.513	2 10 28.45	-.061	-.08	+6.87	-2.19	+4.60	+0.80	33.05	36.04
Feb. 1	+.505	2 10 27.95	-.060	-.08	+7.40	-2.17	+5.15	+0.82	33.10	36.09

36.010
±.045

$\Delta\alpha = +0.^{s}016$
$\Delta\delta = -0.''76$

+3.0258

* o Ceti $\alpha = 2^h\ 12^m\ 52.^s849$ 52.85 $\delta = -3°\ 3'\ 36''$ $K = -.015$ tang. $\delta = -.06$

$z = +45\ 56\ 25$

1871 Dec. 1	+.385	2 12 53.36	-.023	-0.04	-0.668	-2.77	-3.49	+0.26	12 49.87	12 52.90
2 Dec. 9	+.356	2 12 48.06	-.021	-.04	+4.553	-2.75	+1.74	+0.28	.80	52.83
2.0										

52.865

$\Delta\alpha = +0.^{s}197$
$\Delta\delta = -0.''05$

+41.8364

* i Cassiopeiae $\alpha = 2^h\ 18^m\ 32.^s863$ 32.86 $\delta = +66°\ 49'\ 29''$ $K = -.037$ tang. $\delta = +2.33$

$z = -24\ 26\ 40$

1871-2 Dec. 1	+.385	2 18 33.38	+.894	+0.86	-0.668	-5.35	-5.17	-0.51	18 28.21	18 33.05
Dec. 9	+.356	2 18 28.04	+.829	+0.79	+4.554	5.23	+0.10	-0.39	.14	32.98
Dec. 11	+.371	2 18 26.47	+.864	+0.83	+6.031	-5.19	+1.65	-0.35	.12	32.96
Dec. 17	+.400	2 18 21.61	+.932	+0.96	+10.6152	5.04	+6.45	-0.20	.06	32.90
11 Dec. 28	+.458	2 18 12.32	+1.067	+1.03	+19.642	-4.70	+15.95	+0.14	.27	33.11
2.0 Dec. 29	+.444	2 18 11.36	+1.034	+1.00	+20.532	-4.67	+16.85	+0.17	.23	33.04
Jan. 1	+.398	2 18 8.58	+.927	+0.89	+23.45	-4.55	+19.79	+0.29	.37	33.21
Jan. 6	+.375	2 18 4.53	+.873	+0.84	+27.27	-4.35	+23.76	+0.49	.29	33.13
Jan. 9	+.430	2 18 1.78	+1.002	+0.96	+29.73	-4.23	+26.46	+0.61	.24	33.08
Jan. 14	+.387	2 18 28.47	+.901	+0.86	+29.75	-4.08	+0.22	+0.81	.25	33.09
Jan. 21	+.376	2 18 25.84	+.876	+0.84	+5.29	-3.73	+2.40	+1.11	.24	33.08

33.060
±.056

$\Delta\alpha = +0.^{s}046$
$\Delta\delta = -0.''32$

+3.1806

* e Ceti $\alpha = 2^h\ 21^m\ 21.^s28$ $\delta = +7°\ 53'\ 6''$ $K = -.016$ tang. $\delta = +.14$

$z = +34\ 29\ 43$

1871-2 Dec. 1	+.385	2 21 21.61	+.053	+0.04	-0.668	-2.88	-3.52	+0.30	21 18.09	21 21.27
Dec. 9	+.356	2 21 16.42	+.049	+.03	+4.554	-2.86	+1.71	+0.32	.13	21.31
Dec. 11	+.371	2 21 14.79	+.051	+.03	+6.031	-2.86	+3.18	+0.32	.17	21.35
9 Dec. 17	+.400	2 21 10.31	+.056	+.04	+10.6152	2.83	+7.80	+0.35	.11	21.29
2.0 Dec. 29	+.444	2 21 0.36	+.062	+.05	+20.532	-2.76	+17.81	+0.42	.17	21.35
Jan. 1	+.398	2 20 57.44	+.055	+.04	+23.45	-2.73	+20.76	+0.45	.20	21.38
Jan. 5	+.392	2 20 54.08	+.054	+.04	+26.71	-2.68	+24.07	+0.50	.15	21.33
Jan. 6	+.375	2 20 53.52	+.052	+.04	+27.27	-2.67	+24.64	+0.51	.16	21.34
Jan. 21	+.376	2 21 15.35	+.052	+.04	+5.29	-2.51	+2.82	+0.67	.17	21.35

21.330
±.024

27 Aristie. $\alpha = 2^h\ 23^m\ 47.^s487$ $\delta = +17°\ 8'\ 11''$ $K = -.016$ tang. $\delta = +.31$

$z = +25\ 14\ 38$

1871-2 Dec. 1	+.385	2 23 48.77	+.119	+0.10	-0.668	-3.00	-3.58	+0.31	23 45.19	23 48.50
Dec. 9	+.356	2 23 43.55	+.110	+.09	+4.554	-2.98	+1.65	+0.33	.20	48.51
Dec. 11	+.371	2 23 42.16	+.115	+.10	+6.031	-2.98	+3.13	+0.33	.29	48.60
8 Dec. 17	+.400	2 23 37.43	+.124	+.11	+10.6152	-2.95	+7.75	+0.36	.18	48.49
2.0 Dec. 28	+.458	2 23 28.34	+.141	+.12	+19.642	-2.88	+16.86	+0.43	.20	48.51
Dec. 29	+.444	2 23 27.45	+.139	+.12	+20.532	-2.87	+17.77	+0.44	.22	48.53
Jan. 6	+.375	2 23 20.65	+.116	+.10	+27.27	+0.53	+27.90	+0.53	48.55	48.55
Jan. 21	+.376	2 23 42.47	+.116	+.10	+5.29	+0.71	+6.10	+0.71	48.57	48.57

48.532
±.027

o Ceti S $\alpha = 2^h\ 26^m\ 1.^s31$ $\delta = -15°\ 44'\ 24''$ $K = -.016$ tang. $\delta = -.28$

$z = +58\ 11\ 13$

1871-2 Dec. 1	+.385	2 26 1.94	-.107	-0.12	-0.668	-2.77	-3.57	+0.28	25 58.37	26 1.22
Dec. 9	+.356	2 25 56.79	-.099	-.12	+4.554	-2.74	+1.68	+0.11	.47	1.32
Dec. 17	+.400	2 25 50.56	-.112	-.13	+10.6152	-2.70	+7.76	+0.15	.32	1.17
7 Dec. 28	+.458	2 25 41.58	-.128	-.14	+19.642	-2.61	+16.88	+0.24	.46	1.31
2.0 Dec. 29	+.444	2 25 40.75	-.124	-.14	+20.532	-2.60	+17.79	+0.25	.54	1.39
Jan. 5	+.392	2 25 34.35	-.109	-.12	+26.71	+0.32	+26.91	+0.32	1.26	1.26
Jan. 24	+.343	2 25 55.36	-.096	-.11	+5.48	+0.57	+5.94	+0.57	1.30	1.30

1.281
±.051

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1872phae.proj:1459.

+2.99 $\delta_0 = -7\ 0\ 48.0$ (+16768, 48.03) Pri Z = +.76 $\frac{d\delta}{dt} = +16.77''$ Wyloytgn Corr. $B + T + \gamma$ 1.82620 −.69 −1.09

Tm − T's Circle Read. Red. for wire Circle Read.

	s		′	″		′	″		′	″		′	″	λγ−γ	Rm.	Rm	Rm Rm Rf	Red'n 1871.0	Red'n + Rm 1872.0 + Rf	I	δ	1872.0		
53.98	+16.8	23	9.65	+22.32	23	31.97	−0	43.62+	0	1863	−1	9.96	−.01	+.02	−.41	−1.08	−1.10	+6.67	−2.17	+61.67	0	47.1			
56.00	+14.4	23	14.40	+19.13	23	33.53	0	45.18+		2149	1	10.42	.00	.02	.42	−1.09	−9.50	+7.27	−2.18	+61.58		48.9			
57.15	+16.3	23	8.75	+21.66	23	30.41	0	42.06+		1700	1	9.70	.01	.02	.40	−1.07		+7.70	−2.16	+55.58		50.6			
39.83	+18.8	23	39.65	−24.49	23	15.16	0	26.81+		3451	1	12.56	.01	.02	.47	−1.14		+10.60	−2.23	+42.06		48.9			
40.75	+20.3	23	41.75	−26.44	23	13.37	0	24.96+		3907	−1	13.33	−.01	+.03	−.48	−1.14		+10.70	−2.23	+42.78		49.0			

±.045 4896 ±0.64

+3.03 $\delta_0 = -3\ 33\ 36.5$ (+16.535, 36.49) Pri Z = +.72 1.77380 +16.54 −.65 −1.03

34	43.56	+15.4	56	7.30	+20.57	56	27.87	−33	39.52+	0	32.40	−1	4.00	.01	+.01	−.04	−.68	−11.70	+4.84	−1.71	+63.89	33	36.5					
	42.90	−17.2	56	49.75	−22.98	56	26.77	−33	38.42+		3514	−1	4.41	.01	+.01	−.07	−.71	−11.00	+5.54	−1.74	+62.24		36.8					

36.65

+4.84 $\delta_0 = +66\ 49\ 27.0$ (+16.472, 27.05) Pri Z = −.41 1.41770 +16.48 +.39 +.59

58	39.54	+50.1	34	19.95	+26.38	34	46.33	+46	20.02+	0	3254	+0	28.20		−.51	−.17	−.49	−21.80	−5.32	+0.30	+63.89	49	29.1					
	33.55	+9.6	34	26.15	+16.64	34	42.79	48	8.56+		3523		28.38		.21	.18	−.00	−23.70	−7.22	+0.39	+62.24		29.5					
	34.27	+9.6	34	35.70	+5.06	34	40.76	48	7.59+		1863		27.31		.03	.60	−.24	−24.20	−7.72	+0.35	+61.67		29.2					
	36.23	+43.7	34	15.65	+23.02	34	38.67	48	9.68+		2159		27.50		.39	.56	−.56	−25.50	−9.02	+0.03	+61.58		29.8					
	35.60	+27.7	34	26.15	+14.59	34	40.74	48	7.61+		4126		28.77		.16	.62	−.39	−27.60	−11.12	+0.20	+62.93		28.4					
	36.87	+40.7	34	17.10	+21.43	34	38.53	48	9.82+		2933		27.66		.34	.60	−.55	−27.80	−11.32	+0.04	+62.38		28.9					
	36.23	+1.7	34	38.25	+0.89	34	39.14	48	9.21+		2440		27.07		.00	.65	−.26		−11.60	+0.33	+63.09		28.7					
	37.63	−46.2	35	2.05	−24.33	34	37.72	48	10.63+		2053		27.43		.43	.00	−.04		−12.20	+0.55	+61.73		28.1					
	38.55	−26.4	34	50.55	−13.90	34	36.65	48	11.70+		2201		27.52		.14	.53	−.28		−12.60	+0.31	+63.10		30.0					
	39.23	+52.9	34	8.85	+27.85	34	36.70	48	11.65+		3829		28.58		.55	.45	−.61		−13.00	−0.02	+61.23		28.4					
	45.53	+5.50	33	59.95	+28.98	34	28.91	+48	19.44+		1703+		27.21		−.60	−.52	−.73		−13.20	−0.14	+55.58		28.9					

±.022 +0.18 $\delta_0 = +7\ 53\ 5.8$ (+16.351, 5.78) Pri Z = +.57 1.59690 +16.35 −.53 −.81 2900 ±0.42

52	1.31	+16.3	29	42.60	+21.61	30	4.21	+52	44.14+	0	3267	−0	42.62		−.02	−.19	−.74	−14.20	+2.15	−1.55	+63.89	53	6.0					
	2.18	+18.5	29	38.55	+24.53	30	3.08	52	45.24+		3538		42.88		.03	.18	−.74	−13.90	+2.45	−1.55	+62.24		5.5					
	2.29	+19.8	29	37.90	+26.26	30	4.16	52	44.10+		1863		41.26		.04	.60	−1.17	−13.60	+2.55	−1.98	+61.67		5.2					
	1.91	+21.6	29	35.60	+28.65	30	4.25	52	44.10+		2159		41.55		.04	.60	−1.17	−13.50	+2.85	−1.98	+61.58		5.0					
	0.93	+20.7	29	37.00	+27.45	30	4.45	52	43.90+		2931		42.29		.04	.64	−1.21	−12.80	+3.55	−2.02	+62.38		5.5					
51	57.90	+19.9	29	39.55	+26.39	30	5.94	52	42.41+		2449		41.82		.04	.65	−1.22		+3.70	−2.03	+63.09		5.3					
52	1.47	−10.8	30	20.35	−14.32	30	6.03	52	42.32+		1388		40.81		.01	.03	−0.57		+4.00	−1.38	+61.75		5.9					
	1.96	−16.8	30	27.15	−22.28	30	4.87	52	43.48+		2059		41.45		.03	.04	−0.60		+4.00	−1.41	+61.73		6.3					
	5.36	+18.7	29	36.45	+24.80	30	1.25	+52	47.10+		1707−		41.11		−.03	−.60	−1.16		+4.80	−1.97	+55.58		4.4					

±.024 5746 ±0.38

+3.31 $\delta_0 = +17\ 8\ 11.6$ 1.43360 +16.23 −.39 −.62

	+15.2	14	52.45	+19.45	15	11.90	+7	36.45+	0	3267	−0	29.26		−.03	−.20	−.62	−15.80	+0.43	−1.24	+63.89	8	10.3						
	+16.1	14	48.40	+20.60	15	9.00	7	39.35+		3533		29.44		.03	.19	−.61	−15.84	+0.39	−1.23	+62.24		11.3						
	+20.6	14	45.45	+26.54	15	11.99	7	36.36+		1863		28.33		.07	.61	−1.07	−15.84	+0.39	−1.69	+61.67		8.4						
	+15.1	14	51.55	+19.32	15	10.87	7	37.48+		2159		28.53		.04	.62	−1.05	−15.81	+0.42	−1.67	+61.58		9.3						
	−9.0	15	21.60	−11.52	15	10.08	7	38.27+		4129		29.84		.02	.05	−.46	−15.61	+0.62	−1.08	+62.93		10.9						
	+21.1	14	44.60	+27.02	15	11.60	7	36.75+		2937		29.04		.07	.66	−1.12	−15.59	+0.64	−1.74	+62.38		9.0						
	+20.2	14	45.30	+25.85	15	11.15	7	37.20+		2059		28.46		.06	.52	−.97	+0.86	+0.86	−1.59	+61.73		9.7						
	+22.0	14	36.45	+28.15	15	4.60	7	43.75+		1707−		28.23		−.08	−.60	−1.07	+1.45	+1.45	−1.69	+55.58		10.9						

±.026 997 ±0.79

+2.85 $\delta_0 = -15\ 48\ 26.7$ 1.96596 +16.12 −.79 −1.23

	−20.2	11	18.70	−26.02	10	44.68	−47	56.33+	0	3267	−1	39.68	.02	+.06	−.05	−.78	−5.19	+6.93	−2.01	+63.89	48	27.0						
	+7.8	10	34.45	+18.05	10	44.50	47	56.15+		3533		40.30	.02	.01	.02	−.80	−7.98	+8.14	−2.03	+62.24		28.1						
	−5.9	10	56.00	−7.60	10	48.40	48	0.05+		2469	1	37.20	.01	.00	.12	−.91	−6.46	+9.26	−2.14	+61.58		28.6						
	+15.1	10	24.80	+19.45	10	44.35	47	56.00+		4129	1	41.68	.02	.03	.06	−.82	−5.46	+10.66	−2.05	+62.93		26.2						
	+16.6	10	28.70	+21.38	10	50.08	48	1.73+		2937	1	38.93	.02	.04	.07	−.82	5.34	+10.78	−2.05	+62.38		29.6						
	−20.5	11	19.50	−26.79	10	52.71	48	4.36+		1388	1	35.46	.01	.06	.14	−.87		+11.48	−2.10	+61.75		25.7						
	−17.3	11	9.60	−22.29	10	47.31	−47	58.96+		2629	−1	38.23	.02	+.04	−.14	−.89		+13.02	−2.12	+58.20		28.1						

±0.70 2807

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Jan 5 Ure. Minor at L.C. α = 14 h 27 m 49.40 s δ = +76° 15′ 52″ −61 21 20 K = +.065 tang. δ = −4.09

	Date	n	T_s	T_m	n tang. δ	d.T	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2	Dec. 9	+ .356		2h 27m 42.14s	−1.456	−1.39	+4.56	+4.20	+ 7.35	+3.99 2h 27m 49.49s	27m 47.28s
	Dec. 11	+ .371		2 27 40.75	−1.517	−1.45	+6.08	+4.09	+ 8.65	+3.88 .40	49.19
	Dec. 18	+ .350		2 27 36.08	−1.421	−1.37	+11.47	3.62	+13.71	+3.41 .19	49.58
8	Dec. 28	+ .458		2 27 28.92	−1.873	−1.81	+19.65	2.84	+20.66	+2.63 .58	49.37
2.0	Jan. 1	+ .398		2 27 25.47	−1.627	−1.56	+23.46	2.50	+24.40	+2.29 .87	49.66
	Jan. 21	+ .376		2 27 15.05	−1.537	−1.47	+5.29	+0.60	+ 4.42	+0.39 .47	49.26
	Jan. 24	+ .343		2 27 45.14	−1.402	−1.34	+5.45	+0.30	+ 4.44	+0.09 .58	49.37
	Feb. 7	+ .387		2 27 42.23	−1.582	−1.52	+9.79	−4.11	+ 7.16	−1.32 .39	49.18
	Δh = −0.010										
	$\Delta\alpha$ = +0.76										

+3.3938 h m 33.112 s 49.361 ±.121

L Arietis α = 2 h 31 m 33.11 s δ = +21° 24′ 22″ z = + 20 58 27 K = −.017 tang. δ = +.39

	Date	n	T_s	T_m	n tang. δ	d.T	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2	Dec. 9	+ .356		2 31 28.12	+.138	+0.12	+4.56	−3.08	+ 1.59	+0.31 31 29.71	31 33.10
	Dec. 17	+ .400		2 31 22.11	+.156	+.14	+10.62	−3.04	+ 7.70	+0.35 .81	33.20
	Dec. 18	+ .350		2 31 21.10	+.136	+.12	+11.48	−3.04	+ 8.56	+0.35 .65	33.04
9	Dec. 28	+ .458		2 31 12.84	+.178	+.16	+19.66	−2.99	+ 16.80	+0.40 .64	33.13
2.0	Dec. 29	+ .444		2 31 12.03	+.173	+.16	+20.54	−2.98	+ 17.71	+0.41 .74	33.13
	Jan. 1	+ .398		2 31 9.13	+.155	+.14	+23.46	−2.95	+ 20.65	+0.44 .78	33.17
	Jan. 5	+ .392		2 31 5.74	+.152	+.14	+26.72	−2.91	+ 23.95	+0.48 .79	33.08
	Jan. 6	+ .375		2 31 5.18	+.146	+.13	+27.7	−2.90	+ 24.50	+0.49 .68	33.07
	Jan. 14	+ .387		2 31 29.45	+.150	+.13	+2.95	−2.82	+ 0.26	+0.57 .71	33.10
	Δh = −0.041										
	$\Delta\alpha$ = −0.40										

+.3071 h m 55.401 s 33.102 ±.038

S Cetti α = 2 h 32 m 55.40 s δ = −0° 13′ 30″ z = + 42 36 19 K = −.015 tang. δ = −.00

	Date	n	T_s	T_m	n tang. δ	d.T	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2	Dec. 9	+ .356		2 32 50.60	−.000	−0.01	+4.56	−2.84	+ 1.70	+0.23 32 52.30	32 55.37
	Dec. 17	+ .400		2 32 44.58	−.000	−.02	+10.62	2.81	+ 7.77	+0.26 .35	55.42
6	Dec. 18	+ .350		2 32 43.62	−.000	−.01	+11.48	2.80	+ 8.66	+0.27 .28	55.35
2.0	Dec. 28	+ .458		2 32 35.38	−.000	−.02	+19.63	2.75	+ 16.86	+0.32 .24	55.31
	Jan. 24	+ .343		2 32 49.31	−.000	−.01	+3.48	−2.47	+ 3.00	+0.60 .31	55.38
	Feb. 7	+ .387		2 32 44.76	−.000	−.02	+9.79	−2.27	+ 7.50	+0.80 .26	55.33
	Δh = −0.015										
	$\Delta\alpha$ = +0.41										

+4.0593 h m 28.021 s 55.360 ±.028

D Persei α = 2 h 35 m 28.02 s δ = +4° 41′ 6″ z = − 6 18 17 K = −.023 tang. δ = +1.13

	Date	n	T_s	T_m	n tang. δ	d.T	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2	Dec. 6	+ .385		2 35 28.10	+.435	+0.41	−0.65	3.95	− 4.21	+0.11 35 23.89	35 27.95
	Dec. 9	+ .356		2 35 23.02	+.402	+.38	+4.56	−3.93	+ 1.00	+0.13 24.02	28.08
	Dec. 17	+ .400		2 35 16.74	+.452	+.43	+10.62	3.87	+ 7.16	+0.19 23.90	28.06
8	Dec. 18	+ .350		2 35 15.98	+.395	+.37	+11.48	3.86	+ 7.98	+0.20 23.96	28.02
2.0	Jan. 5	+ .392		2 35 0.42	+.442	+.42	+26.72	−3.61	+ 23.53	+0.45 23.95	28.01
	Jan. 6	+ .375		2 34 59.85	+.423	+.40	+27.28	−3.59	+ 24.09	+0.47 23.94	28.00
	Jan. 14	+ .387		2 35 24.03	+.437	+.41	+2.95	−3.45	− 0.09	+0.61 23.94	28.00
	Feb. 7	+ .387		2 35 16.64	+.437	+.41	+9.79	−2.87	+ 7.33	+1.19 23.97	28.03
	Δh = +0.26										
	$\Delta\alpha$ = +1.16										

+3.1024 h m 40.784 s 28.026 ±.026

γ Cetti α = 2 h 36 m 40.18 s δ = +2° 41′ 41″ z = + 39 41 8 K = −.015 tang. δ = +.04

	Date	n	T_s	T_m	n tang. δ	d.T	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2	Dec. 17	+ .400		2 36 29.31	+.016	+0.00	+10.62	−2.84	+ 7.76	+0.26 36 37.07	36 40.17
	Dec. 28	+ .458		2 36 20.25	+.018	+.00	+19.64	−2.79	+ 16.85	+0.31 .10	40.20
	Dec. 29	+ .444		2 36 19.30	+.017	+.00	+20.54	−2.78	+ 17.76	+0.32 .06	40.16
6	Jan. 1	+ .398		2 36 16.47	+.015	+.00	+23.47	−2.75	+ 20.72	+0.35 .19	40.29
2.0	Jan. 24	+ .343		2 36 34.17	+.013	−.00	+5.48	−2.50	+ 2.98	+0.60 .15	40.25
	Feb. 7	+ .387		2 36 29.60	+.015	−.00	+9.79	−2.30	+ 7.49	+0.80 .09	40.19

40.210 ±.037

T Eridani α = 2 h 39 m 7.94 s δ = −19° 6′ 57″ z = + 61 29 46 K = −.016 tang. δ = −.35

	Date	n	T_s	T_m	n tang. δ	d.T	Red 1871.0	Sum	A.R. 1871.0	A.R. 1872.0
1871-2	Dec. 17	+ .400		2 38 57.23	−.140	−0.16	+10.62	−2.73	+ 7.71	+0.04 39 4.94	39 7.71
	Dec. 18	+ .350		2 38 56.36	−.122	−.14	+11.48	−2.72	+ 8.61	+0.05 4.97	7.74
	Dec. 28	+ .458		2 38 48.20	−.160	−.18	+19.64	−2.64	+ 16.82	+0.13 5.02	7.79
18	Dec. 29	+ .444		2 38 47.33	−.155	−.17	+20.54	−2.64	+ 17.73	+0.13 5.06	7.83
2.0	Jan. 5	+ .392		2 38 41.00	−.137	−.15	+26.72	−0.21	+ 26.78	+0.21 7.78	7.78
	Jan. 6	+ .375		2 38 40.49	−.131	−.15	+27.28	−0.23	+ 27.36	+0.23 7.85	7.85
	Jan. 14	+ .387		2 39 4.70	−.135	−.15	+2.95	−0.32	+ 3.12	+0.32 7.82	7.82
	Jan. 24	+ .343		2 39 1.97	−.120	−.14	+5.48	−0.47	+ 5.81	+0.47 7.78	7.78

7.786 ±.032

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-0.21 (2)

$\delta_0 = +103° 14′ 7.5″$ $\frac{d\delta}{dt} = +16.05″$

u + log tg n

B + T + J

2.02116

+.87 +.80 (1.26)

Margin	Tm − TS	Circle Read ′	″	Red. Hor. Wire	Corr. Circle Read ′	″	′	″	B+T+J	′ ″	M-S	Rm	Rs	Rm Rs Rf	Red. 1871.0	Red. to 1872.0 + Ref. + Rm + I	δ 1872.0 ′	″
2.0	s	′	″	″	′	″	′	″		′ ″				″				″
	+6.1	41	35.80	−1.94	41	33.86+	41	14.49+	0.3542+1	53.91	.17	+.01	−.06	+.82	+23.10	+7.05+2.08+62.24	44	58
	+21.1	41	35.05	−6.72	41	28.33	41	20.02+	1863	1 49.60	.08	.06	.21	+.72	+23.70	+7.65+1.98+61.67		56
	+30.0	41	33.95	−9.55	41	24.40	41	23.95+	1634	1 49.02	.06	.12	.20	+.79	+25.90	+9.85+2.05+61.98		7.2
	−66.4	41	11.90	+21.13	41	33.03	41	15.32+	4132	1 55.48	.15	.57	.17	+1.27	+28.70	+12.65+2.53+62.93		3.8
	+15.0	40	58.80	−4.77	40	54.03	41	54.32+	2458	1 51.11	.06	.03	.14	+.76		+13.70+2.02+63.09		6.9
	+76.0	41	39.55	−24.18	41	15.37	41	32.98+	1710	1 49.21	.07	.74	.22	+1.39		+17.10+2.65+55.58		3.4
	−25.0	41	9.65	+8.02	41	17.67	41	30.68+	2634	1 51.56	.13	.08	.14	+.81		+17.40+2.07+58.20		5.3
	+72.7	40	38.65	+22.68	41	01.33	+41	47.02+	3536	53.90	+.11	+.68	−.08	1.47		+18.00+2.73+41.71		7.5

+15.806
2247

±.029 · 5.69

+3.39 $\delta_0 = +21\ 24\ 22.5$ Rin z = +.36 1.34370 +15.81 −.33 −.51 ±1.05

Margin	Tm − TS	Circle Read ′	″	Red. Hor. Wire	Corr. Circle Read ′	″	′	″	B+T+J	″	Rm	Rs	Rf	Red. 1871.0	Red. to 1872.0 + Ref. + I	δ 1872.0 ′	″
23 22.41	+22.6	58	33.60	+28.17	59	1.77	+23	46.58+	0.3542−0	23.94	−.09	−.14	−.56	−16.30	−0.49−1.07+62.24	24	23.3
24.49	+18.4	58	37.20	+22.93	59	0.13	23	48.22+	2179	23.20	.06	.47	−.86	−16.40	−0.59−1.37+61.58		24.6
21.98	+14.0	58	45.50	+17.45	59	2.95	23	45.40+	1634	22.91	.03	.48	−.84	−16.40	−0.59−1.35+61.98		22.5
23.63	+23.8	58	30.20	+29.66	58	59.86	23	48.49+	4132	24.27	.10	.49	−.92	−16.50	−0.69−1.43+62.93		25.0
21.19	+21.0	58	36.80	+26.17	59	2.97	23	45.38+	2940	23.61	.08	.50	−.91	−16.40	−0.59−1.42+62.38		22.1
20.73	+23.4	58	34.50	+29.17	59	3.67	23	44.68+	2458	23.35	.10	.50	−.93		−0.60−1.44+63.09		22.4
21.44	+19.2	58	38.75	+23.93	59	2.68	23	45.67+	1399	22.78	.06	.40	−.79		−0.60−1.30+61.75		22.7
22.06	+18.0	58	39.70	+22.43	59	2.13	23	46.22+	2064	23.14	.06	.41	−.80		−0.60−1.31+61.73		22.9
23.58	+21.0	58	34.00	+26.17	59	0.17	+23	48.18+	3873−	24.12	−.08	−.40	−.81		−0.40−1.32+61.23		23.6

±.035 · 23.23
±0.71

+15742
3038

+3.07 $\delta_0 = -0\ 13\ 30.4$ Rin z = +.68 1.72360 +15.74 −.63 −.97

Margin	Tm − TS	Circle Read ′	″	Red. Hor. Wire	Corr. Circle Read ′	″	′	″	B+T+J	″	Rm	Rs	Rf	Red. 1871.0	Red. to 1872.0 + Ref. + I	δ 1872.0 ′	″
24 35.92	−19.5	36	52.85	−26.11	36	26.74	−13	38.39+	0.3542−0	57.41	+.00	−.12	−.75	−11.50	+4.24−1.72+62.24	13	31.0
36.31	+10.5	36	14.80	+14.06	36	28.86	13	40.51+	2179	55.64	.	.16	−.79	−10.90	+4.84−1.76+61.58		31.5
36.86	+10.0	36	15.70	+13.39	36	29.09	13	40.74+	1634	54.95	.	.17	−.80	−10.70	+5.04−1.77+61.98		30.4
36.97	−15.3	36	47.35	−20.48	36	26.87	13	38.52+	4132	58.20	.	.25	−.88	−9.90	+5.84−1.85+62.93		29.8
33.9	+16.7	36	3.60	+22.36	36	25.96	13	37.61+	2634	56.23	.	.13	−.76		+7.50−1.73+58.20		29.9
20.33	+16.4	36	32.60	+21.52	36	11.08	−13	22.73+	3536−	57.40	+.00	−.10	−.83		+8.10−1.80+41.71		32.1

+15.518
6.29

±.028 · 30.78

+4.06 $\delta_0 = +48\ 41\ 6.3$ Rin z = −.11 0.80360 +15.51 +.09 +.15 ±0.69

Margin	Tm − TS	Circle Read ′	″	Red. Hor. Wire	Corr. Circle Read ′	″	′	″	B+T+J	″	Rm	Rs	Rf	Red. 1871.0	Red. to 1872.0 + Ref. + I	δ 1872.0 ′	″
40 6.49	−18.9	43	5.20	−16.70	42	48.50	+39	59.85+	0.3295+0	6.86	−0.10	−.12	−.13	−19.20	−3.69+0.02+63.89	40	6.9
8.83	+28.3	42	21.10	+25.01	42	46.11	40	2.24+	3552	6.90	.21	.10	−.22	−20.60	−5.09−0.07+62.24		6.2
13.60	+32.7	42	11.95	+28.90	42	40.85	40	7.50+	2189	6.69	.30	.29	−.50	−21.80	−6.29−0.35+61.58		9.1
10.60	+22.7	42	23.85	+20.06	42	43.91	40	4.44+	1643	6.61	.14	.21	−.26	−21.90	−6.39−0.21+61.98		6.4
13.48	+30.5	42	14.00	+26.96	42	40.96	40	7.39+	1410	6.57	.24	.24	−.39		−8.40−0.24+61.75		7.1
11.25	+27.4	42	19.10	+24.22	42	43.32	40	5.03+	2070	6.67	.20	.25	−.36		−8.50−0.21+61.73		4.7
17.03	+25.8	42	18.10	+22.80	42	40.90	40	7.45+	3897	6.96	.18	.25	.34		−8.90−0.19+61.23		6.5
	~~+7.8~~	~~42~~	~~31.50~~	~~+6.35~~	~~42~~	~~37.85~~	~~+40~~	~~10.50+~~	~~3550+~~	~~6.90~~	~~−.02~~	~~.25~~	~~26~~		−8.50		

±.017 · 6.70
±0.78

+15.403
41.37

+3.10 $\delta_0 = +2\ 41\ 41.4$ Rin z = +.64 1.67870 +15.41 −.60 −.91

Margin	Tm − TS	Circle Read ′	″	Red. Hor. Wire	Corr. Circle Read ′	″	′	″	B+T+J	″	Rm	Rs	Rf	Red. 1871.0	Red. to 1872.0 + Ref. + I	δ 1872.0 ′	″
103 7.67	+18.6	40	55.50	+24.87	41	20.37	+41	27.98+	0.2189−0	50.19	−.00	−.12	−.72	−11.30	+4.11−1.63+61.58	41	41.8
36.33	+22.4	40	49.45	+29.96	41	19.41	41	28.94+	4135	52.49	.01	.11	−.72	−10.60	+4.81−1.63+62.93		42.6
35.48	+18.9	40	56.40	+25.27	41	21.67	41	26.68+	2944	51.07	.00	.13	−.73	−10.50	+4.91−1.64+62.38		41.3
36.48	+5.8	41	13.45	+7.76	41	21.21	41	27.14+	2467	50.51	.00	.17	−.77		+5.10−1.68+63.09		43.1
40 40.04	+19.7	40	51.15	+26.34	41	17.49	41	30.86+	2640	50.71	.00	.11	−.71		+6.60−1.62+58.20		43.3
41 55.66	+26.7	41	35.70	+35.00	42	00.70	+41	47.65+	3550−	51.78	−.01	−.21	.82		+7.20−1.73+41.71		43.1

±.037 · 42.53

+2.77 $\delta_0 = -19\ 6\ 58.0$ 2.02328 +15.41 −.82 −1.26 ±0.62

Margin	Tm − TS	Circle Read ′	″	Red. Hor. Wire	Corr. Circle Read ′	″	′	″	B+T+J	″	M-S	Rm	Rs	Rf	Red. 1871.0	Red. to 1872.0 + Ref. + I	δ 1872.0 ′	″
√	+17.5	28	42.50	+22.14	29	4.64	−6	16.29+	0.2189−1	50.96	.01	+.05	−.48	−1.25	−5.89	+9.52−2.51+61.58	6	58.7
	+11.6	29	5.05	+14.67	29	19.72	6	31.37+	1652	49.60	.01	.02	.53	−1.33	−5.67	+9.74−2.59+61.98		(71.8)
	+15.5	28	39.40	+19.60	28	59.00	6	10.65+	4138	56.16	.04	.04	.52	−1.30	−4.49	+10.92−2.56+62.93		63.3
	+19.1	28	41.45	+24.16	29	5.61	6	17.26+	2947	52.91	.03	.06	.52	−1.28	−4.17	+11.24−2.54+62.38		59.1
	+17.1	28	45.50	+21.63	29	7.13	6	18.78+	1420	49.01	.01	.05	.42	−1.19	+12.03	+12.03−2.45+61.75		56.5
	+18.9	28	43.00	+23.90	29	6.90	6	18.55+	2076	50.67	.03	.06	.41	−1.17	+12.13	+12.13−2.43+61.73		57.8
	+17.5	28	37.85	+22.13	28	59.98	6	11.63+	3919	55.47	.05	.05	.40	−1.17	+12.88	+12.88−2.43+61.23		55.4
	+11.6	28	47.85	+14.64	29	2.49	−6	14.14+	2645−	52.13	.04	+.02	−.49	−1.29	+13.56	+13.56−2.55+58.20		58.1

±.030 · 57.16
±1.09

1872phae.proj:1459.
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1872phae.proj.1459.

15

$\Delta\alpha = -0.002^s$
$\Delta\delta = +0.33''$

+3.5130

Stan ✱ 41 Aristie

$\alpha = 2^h\ 42^m\ 27.17^s$ $\quad \delta = +26°\ 43'\ 52''$ $\quad K = -.017^s$ $\quad$ tang $\delta = +.50$

$z = +15\ 38\ 57$

	Date	n_α	τ_α	τ_m	n tang δ	d.T.	Red. 1871.0	Sum	AR 1871.0	AR 1872.0
		α		α	α	α	α	α	$h\ m\ s$	$m\ s$
71-2	Dec. 17	+.400		2h 42m 16.07s	+.200 +0.18	+10.630	3.21	+7.57 +0.30	2 42 23.64	42 27.15
	Dec. 18	+.350		2 42 15.26	+.175 +.16	+11.487	3.21	+8.42 +0.30	.68	27.19
	Dec. 28	+.458		2 42 6.95	+.229 +.21	+19.664	3.16	+16.69 +0.25	.64	27.15
	Dec. 29	+.444		2 42 6.07	+.222 +.21	+20.554	3.15	+17.60 +0.36	.67	27.18
	Jan. 1	+.398		2 42 3.12	+.199 +.18	+23.47	0.39	+23.04 +0.39	27.56	27.16
10	Jan. 5	+.372		2 41 59.87	+.196 +.18	+26.72	0.43	+27.33 +0.43	.20	27.20
2.0	Jan. 6	+.375		2 41 59.27	+.187 +.17	+27.28	0.44	+27.89 +0.44	.16	27.16
	Jan. 14	+.387		2 42 23.50	+.194 +.18	+2.95	0.54	+3.67 +0.54	.17	27.17
	Jan. 24	+.343		2 42 20.86	+.171 +.15	+5.48	0.67	+6.30 +0.67	.16	27.16
	Feb. 14	+.290		2 42 14.72	+.145 +.13	+11.32	1.01	+12.46 +1.01	.18	27.18

$\Delta\alpha = +0.044^s$
$\Delta\delta = +0.41''$

27.170
±.012

+4.2087

✱ T Persei

$\alpha = 2^h\ 45^m\ 17.61^s$ $\quad \delta = +52°\ 14'\ 11''$ $\quad K = -.025$ $\quad$ tang $\delta = +1.29$

$z = -9\ 51\ 22$

	Date	n_α	τ_α	τ_m	n tang δ	d.T.	Red. 1871.0	Sum	AR 1871.0	AR 1872.0
		α		α	α	α	α	α	$h\ m\ s$	$m\ s$
1871-2	Dec. 9	+.356		2 45 6.66	+.459 +0.43	+4.545	4.19	+0.79 +0.02	45 7.45	45 11.66
	Dec. 17	+.400		2 45 0.56	+.516 +.49	+10.630	4.12	+6.97 +0.09	.53	11.74
	Dec. 18	+.350		2 44 59.68	+.451 +.43	+11.487	4.11	+7.79 +0.10	.47	11.68
	Dec. 28	+.458		2 44 51.24	+.590 +.56	+19.664	3.99	+16.21 +0.22	.45	11.66
	Dec. 29	+.444		2 44 50.28	+.572 +.55	+20.554	3.98	+17.11 +0.23	.39	11.60
11	Jan. 1	+.398		2 44 47.41	+.513 +.49	+23.47	0.29	+24.25 +0.29	11.66	11.66
2.0	Jan. 5	+.372		2 44 44.08	+.505 +.48	+26.72	0.37	+27.57 +0.37	.65	11.65
	Jan. 6	+.375		2 44 43.48	+.483 +.46	+27.29	0.39	+28.14 +0.39	.62	11.62
	Jan. 10	+.394		2 44 39.96	+.588 +.48	+31.66	0.47	+31.61 +0.47	.57	11.57
	Jan. 12	+.405		2 45 8.00	+.522 +.50	+2.69	0.50	+3.69 +0.50	.69	11.69
	Jan. 14	+.387		2 45 7.68	+.499 +.47	+2.95	0.56	+3.98 +0.56	.66	11.66

$\Delta\alpha = +0.004^s$
$\Delta\delta = +1.65''$

+7.6414

11.654
±.029

✱ 47 Cephei (H)

$\alpha = 2^h\ 49^m\ 10.53^s$ $\quad \delta = +74°\ 54'\ 32''$ $\quad K = -.079$ $\quad$ tang $\delta = +5.10$

$z = -36\ 31\ 43$

	Date	n_α	τ_α	τ_m	n tang δ	d.T.	Red. 1871.0	Sum	AR 1871.0	AR 1872.0
		α		α	α	α	α	α	$h\ m\ s$	$m\ s$
1871-2	Dec. 9	+.356		2 49 6.55	+1.816 +1.74	+4.545	-9.95	-3.66 -2.31	49 2.89	49 10.53
	Dec. 17	+.400		2 48 59.86	+2.040 +1.96	+10.630	-9.61	-2.95 -1.97	.81	10.45
	Dec. 18	+.350		2 48 59.33	+1.785 +1.71	+11.487	-9.56	-3.62 -1.92	.95	10.59
9	Jan. 5	+.392		2 48 42.54	+1.999 +1.92	+20.72	-8.32	-20.32 -0.68	.86	10.50
2.0	Jan. 6	+.375		2 48 41.98	+1.912 +1.83	+21.28	-8.24	-20.87 -0.60	.85	10.49
	Jan. 10	+.394		2 48 38.12	+2.009 +1.93	+30.66	-7.90	-24.69 -0.26	2.81	10.45
	Jan. 13	+.367		2 49 5.88	+1.974 +1.90	+2.92	-7.65	-2.83 -0.01	3.05	10.69
	Jan. 15	+.350		2 49 5.62	+1.785 +1.71	+3.02	-7.45	-2.72 +0.19	2.90	10.54
	Feb. 4	+.445		2 49 57.52	+2.270 +2.19	+8.71	-5.45	+5.45 +2.19	.97	10.21

$\Delta\alpha = -0.091^s$
$\Delta\delta = +1.64''$

-0.2481

10.539
±0.55

✱ β Ursae Minoris

$\alpha = 14^h\ 51^m\ 6.06^s$ $\quad \delta = +74°\ 40'\ 42''$ $\quad K = +.057$ $\quad$ tang $\delta = -3.65$

$-62\ 56\ 30$

	Date	n_α	τ_α	τ_m	n tang δ	d.T.	Red. 1871.0	Sum	AR 1871.0	AR 1872.0
		α		α	α	α	α	α	$h\ m\ s$	$m\ s$
1871-2	Dec. 18	+.350		2 50 52.45	-1.277 -1.22	+11.487	+.368	+13.94 +.43	51 6.39	51 6.94
	Dec. 29	+.444		2 50 44.55	-1.620 -1.56	+20.554	+.299	+21.97 +2.14	6.52	6.27
7	Jan. 1	+.398		2 50 41.48	-1.452 -1.39	+23.47	+2.51	+24.59 +2.26	6.07	6.82
2.0	Jan. 10	+.394		2 50 35.06	-1.438 -1.38	+30.66	+1.81	+30.09 +1.56	6.15	6.90
	Jan. 23	+.360		2 51 1.20	-1.314 -1.26	+5.40	+.070	+4.84 +0.45	6.04	6.49
	Jan. 24	+.343		2 50 1.25	-1.251 -1.19	+5.48	+.061	+4.90 +0.36	6.15	6.50
	Feb. 14	+.290		2 50 57.48	-1.058 -1.00	+11.32	+1.30	+11.02 +1.05	7.10	(6.50)

$\Delta\alpha = +0.014^s$
$\Delta\delta = +2.17''$

+3.1285

6.970
±.145

✱ α Cetei

$\alpha = 2^h\ 55^m\ 35.38^s$ $\quad \delta = +3°\ 35'\ 9''$ $\quad K = -.015$ $\quad$ tang $\delta = +.06$

$z = +38\ 47\ 39$

	Date	n_α	τ_α	τ_m	n tang δ	d.T.	Red. 1871.0	Sum	AR 1871.0	AR 1872.0
		α		α	α	α	α	α	$h\ m\ s$	$m\ s$
1871-2	Dec. 9	+.356		2 55 30.69	+.021 +0.01	+4.576	-2.95	+1.62 +0.18	55 32.31	55 35.44
	Dec. 18	+.350		2 55 23.71	+.021 +.01	+11.487	-2.93	+8.56 +0.20	.27	35.40
	Dec. 29	+.444		2 55 14.64	+.026 +.01	+20.554	-2.90	+17.66 +0.23	.30	35.43
	Jan. 1	+.398		2 55 11.63	+.023 +.01	+23.48	-2.87	+20.62 +0.26	.25	35.38
11	Jan. 5	+.372		2 55 8.36	+.023 +.01	+26.73	-2.84	+23.90 +0.29	.26	35.39
2.0	Jan. 6	+.375		2 55 7.78	+.022 +.01	+27.29	-2.83	+24.47 +0.30	.25	35.38
	Jan. 10	+.394		2 55 4.37	+.023 +.01	+30.67	-2.79	+27.89 +0.34	.28	35.41
	Jan. 23	+.360		2 55 29.50	+.021 +.01	+5.40	-2.64	+2.77 +0.49	.27	35.40
	Feb. 4	+.445		2 55 26.01	+.026 +.01	+8.71	-2.47	+6.25 +0.66	.26	35.39
	Feb. 14	+.290		2 55 23.21	+.017 +.00	+11.32	-2.33	+8.99 +0.80	.20	35.33
	Feb. 22	+.400		2 55 21.45	+.024 +.01	+12.98	-2.21	+10.78 +0.92	.23	35.36

35.392
±.019

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1872phae.proj.1459.

+15.098
52.13

+3.51 $\delta_0 = +26° 43' 52.1''$ Rm z = +.27 corr $\frac{d\delta}{dt} = +15.10''$ μ + log lamp B + T4 γ 1.20750 −25 −.39

	Tm − Ts		Circle Read	Red. Nonius	Circle Read			B+T4γ	″	Rm	Rno	Rp Rf	Red to 1870	Red to 1870 +Rno	Rf	Σδ		1872.0
42	52.56	+24.7	39 8.70	+29.53	39 38.23	+43	10.12+	02199 −0	16.96	−.13	−.53	−.97	−16.90	−1.80	−1.30	+61.58	43	51.6
	52.70	+28.6	39 4.05	+34.20	39 38.25	43	10.10+	1652	16.75	.18	.52	−.95	−17.00	−1.90	−1.34	+61.98		52.1
	51.68	+22.2	39 11.70	+26.54	39 38.24	43	10.11+	4138	17.74	.10	.59	−.94	−17.40	−2.30	−1.33	+62.93		51.7
	53.35	+19.5	39 13.75	+23.32	39 37.07	43	11.28+	2947	17.26	.08	.59	−.92	−17.40	−2.30	−1.31	+62.38		52.8
	51.64	+23.4	39 10.95	+27.98	39 38.93	43	9.42+	2476	17.07	.12	.59	−.96		−2.30	−1.35	+63.09		51.8
	53.38	+20.5	39 13.25	+24.51	39 37.76	43	10.59+	1420	16.06	.09	.46	−.80		−2.30	−1.19	+61.75		52.2
	52.71	+18.6	39 15.95	+22.24	39 38.19	43	10.16+	2076	16.91	.08	.46	−.79		−2.30	−1.18	+61.73		51.5
	55.21	+18.4	39 12.95	+22.00	39 34.95	43	13.40+	3919	17.65	.08	.46	−.79		−2.30	−1.18	+61.23		53.5
42	57.37	+19.6	39 9.80	+23.43	39 33.23	43	15.12+	2645	17.14	.08	.53	−.86		−2.10	−1.25	+58.20		52.8
45	14.44	−22.5	(38 50.15)	+26.37	40 16.52	+42	31.83+	1841−	16.80	−.10	−.49	−.84		−1.00	−1.23	+41.76		54.6

±0.11 52.46 ±0.70

+15.045
11.08

+4.21 $\delta_0 = +52° 14' 11.1''$ Rm z = −.17 1.00010n +15.05 +.16 +.24

	Tm − Ts		Circle Read	Red. Nonius	Circle Read			B+T4γ	″	Rm	Rno	Rp Rf	Red to 1870	Red to 1870 +Rno	Rf	Σδ		1872.0
13	12.85	+32.8	9 19.00	+26.89	9 45.89	+13	2.46+	03571 +0	10.86	−.30	−.17	−.31	−20.40	−5.35	−0.07	+62.24	14	10.1
	16.87	+23.9	9 21.70	+19.59	9 41.29	13	7.06+	2211	10.52	.15	.56	−.59	−21.80	−6.75	−0.31	+61.58		12.1
	15.80	+36.7	9 11.95	+30.08	9 42.03	13	6.32+	1660	10.39	.36	.55	−.75	−21.90	−6.85	−0.51	+61.98		11.3
	16.80	+37.2	9 11.50	+30.50	9 42.00	13	6.35+	4143	11.00	.36	.19	−.79	−23.30	−8.25	−0.55	+62.93		11.5
	16.85	−34.0	10 9.75	−27.88	9 41.87	13	6.48+	2952	10.70	.31	.02	−.17	−23.40	−8.35	+0.07	+62.38		11.3
	16.60	+29.7	9 17.15	+24.35	9 41.50	13	6.85+	2485	10.59	.24	.60	−.68		−8.60	−0.44	+63.09		11.5
	18.44	+24.9	9 19.20	+20.41	9 39.61	13	8.74+	1430	10.34	.17	.47	−.48		−9.00	−0.24	+61.75		11.6
	17.71	+32.9	9 13.50	+26.97	9 40.47	13	7.88+	2080	10.49	.30	.46	−.60		−9.10	−0.36	+61.73		10.6
	19.52	+1.7	9 37.40	+1.39	9 38.79	13	9.56+	2004	10.47	.00	.51	−.35		−9.40	−0.11	+62.76		13.3
		+32.1	9 12.55	+26.33	9 38.88	+13	9.47+	3540+	10.95	−.27	−.46	−.57		−9.70	−0.33	+61.23		11.6

±.018 11.49 ±0.47

+14.827
31.69

+7.64 $\delta_0 = +78° 54' 31.7''$ Rm z = −.59 1.62960n +14.84 +.54 +.85

	Tm − Ts		Circle Read	Red. Nonius	Circle Read			B+T4γ	″	Rm	Rno	Rp Rf	Red to 1870	Red to 1870 +Rno	Rf	Σδ		1872.0
53	3.52	+34.2	29 4.95	+8.82	29 57.71	+52	50.58+	03571 +0	46.27 (44.28)	−.14	−.19	+.21	−21.40	−6.56	+1.06	+62.24	54	33.6
	39.41	+79.5	29 31.80	+20.49	29 52.29	52	56.06+	1660	44.28	.64	.59	−.69	−24.00	−9.16	+0.16	+61.98		33.3
	42.57	+88.6	29 25.70	+22.83	29 48.53	52	59.82+	1430	44.04	−.81	.48	−.75		−13.40	+0.10	+61.75		32.3
	42.19	+93.1	29 25.55	+24.02	29 49.55	52	58.80+	2080	44.71	.89	.48	−.83		−13.50	+0.02	+61.73		31.8
	44.11	+90.9	29 24.10	+23.43	29 47.53	53	0.82+	2004	44.63	.85	.48	−.79		−14.10	+0.06	+62.76		34.2
	45.54	+87.2	29 22.65	+22.47	29 45.12	53	3.23+	964	43.57	.98	.48	−.72		−14.50	+0.13	+60.73		33.2
53	43.22	+29.1	29 43.10	+7.51	29 50.61	52	57.74+	3416	46.11	.11	.52	−.09		−14.70	+0.76	+63.34		33.2
54	7.54	+87.0	29 46.40	+21.99	29 24.41	+53	23.94+	2366+	45.00	−.78	−.62	−.86		−16.20	−0.01	+42.34		35.0

±.010 33.34 ±0.64

−14.761
42.14

−0.25 $\delta_0 = +74° 40' 42.1''$ (+195 19 17.9) Rm z = −.89 2.04975n −14.76 +.82 +.76 (+1.27)

	Tm − Ts		Circle Read	Red. Nonius	Circle Read			B+T4γ	″	Rm	Rno	Rp Rf	Red to 1870	Red to 1870 +Rno	Rf	Σδ		1872.0
			~~6 7.60~~	~~−24.08~~	~~5 39.5~~	~~+17~~	~~8.83+~~	~~01669 +1~~	~~38.53~~	.01	+	−.14				~~+61.98~~		
18	22.58	+58.1	6 46.60	−20.54	6 26.06	16	22.29+	2956 +1	60.04	.03	.46	.25 +1.03	−26.90	+12.14	+2.30	+62.38	19.	14.9
17.	25.38	+78.2	6 50.00	−27.65	6 22.35	16	26.00+	2494	58.77	.01	.85	.25 +1.42		−12.90	+2.69	+63.09		17.7
	26.27	−54.3	6 0.65	+19.20	6 19.85	16	28.50+	2011	57.45	.02	.41	.11 +1.12		−15.10	+2.39	+62.76		16.0
	36.66	+51.3	6 27.05	−18.14	6 8.91	16	39.41+	1834	36.98	.03	.35	.19 +0.98		−17.20	+2.25	+57.25		18.7
		~~[illegible]~~						~~2157~~						~~−17.20~~		~~+36.00~~		
														~~−18.40~~	~~+2.54~~	~~+41.76~~		16.82

±.038

+14.342
8.90

+3.13 $\delta_0 = +3° 35' 8.9''$ Rm z = +.63 1.66500 +14.34 −.59 −.90

	Tm − Ts		Circle Read	Red. Nonius	Circle Read			B+T4γ	″	Rm	Rno	Rp Rf	Red to 1870	Red to 1870 +Rno	Rf	Σδ		1872.0
34	5.16	+20.4	47 25.60	+27.26	47 52.86	+34	53.49+	03581 −0	50.21	−.02	−.10	−.71	−11.60	+2.74	−1.61	+62.24	35	8.6
	6.08	+13.6	47 35.70	+18.17	47 53.87	34	54.48+	1669	48.05	.01	.34	−.94	−10.90	+3.44	−1.84	+61.98		10.0
	6.48	+18.8	47 26.90	+25.12	47 52.02	34	56.33+	2956	49.49	.02	.24	−.95	−10.00	+4.34	−1.85	+62.38		11.7
	4.46	+18.6	47 29.70	+24.85	47 54.55	34	53.80+	2494	48.97	.02	.35	−.96		+4.50	−1.86	+63.09		10.6
	4.79	+17.5	47 32.10	+23.38	47 55.48	34	52.87+	1441	47.80	.01	.27	−.87		+4.80	−1.77	+61.75		9.8
	4.06	+18.9	47 28.25	+25.20	47 53.50	34	54.85+	2086	48.51	.02	.26	−.87		+4.80	−1.77	+61.73		11.1
	5.95	+14.2	47 34.70	+18.97	47 53.67	34	54.68+	2011	48.43	.02	.29	−.89		+5.00	−1.79	+62.76		12.2
	11.55	+15.6	47 27.40	+20.84	47 48.24	35	0.11+	1834	48.23	.01	.22	−.92		+5.80	−1.82	+57.25		13.1
	24.71	+15.9	47 59.75	+24.76	48 24.49	35	13.36+	2378	48.84	.02	.29	−1.00		+6.40	−1.90	+42.34		11.4
±.019	25.80	+9.2	47 46.70	+12.05	47 34.65	36	13.70+	1841	48.24	.00	.36	−.95		+6.80	−1.85	+41.76		12.2
		~~+9.5~~	~~47 27.75~~	~~+12.44~~	~~47 ... 35.31~~	~~35~~	~~33.04~~	~~1717−~~	~~48.10~~	~~.00~~	~~.17~~	~~−.76~~		~~+6.90~~	~~−1.66~~	~~+24.14~~		(14.3)

11.07 ±0.94

The observations of Feb. 22 are rejected for southern stars, as there is entire uncertainty [illegible]

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1872phae.proj.1459.

$\Delta\alpha = -0.^{s}035$
$\Delta\delta = -0.''04$

+3.8197

Gam * 2 Persei α = 2 h 56 m 58.82 s δ = +38° 20′ 33″ K = −.020 tang. δ = +.79
z = + 4 3 16

Date	n	7's	7″	m	s	Δδ	s	s	s	s	s	Dm	s	m	s
1871-2 Dec. 9	+ .356	2	56	53.79	+.281	+0.26	+1.76	3.64	+ 1.18	+0.18	2	56	54.97	56	58.79
Jan. 1	+ .398	2	56	34.69	+.314	+.29	+2.48	+ 0.30	+24.07	+0.30			58.76		58.76
Jan. 10	+ .394	2	56	27.37	+.311	+.29	+3.67	+ 0.42	+31.38	+0.42			.75		58.75
Jan. 13	+ .387	2	56	55.12	+.305	+.29	+2.92	+ 0.46	+ 3.67	+0.46			.79		58.79
8 Jan. 23	+ .360	2	56	52.55	+.284	+.26	+5.40	+ 0.61	+ 6.27	+0.61			.82		58.82
2.0 Jan. 24	+ .343	2	56	52.40	+.270	+.25	+5.48	+ 0.63	+ 6.36	+0.63			.76		58.76
Feb. 12	+ .338	2	56	46.41	+.267	+.25	+11.76	+ 1.00	+12.41	+1.00			.82		58.82
Feb. 14	+ .290	2	56	46.22	+.229	+.21	+11.32	+ 1.05	+12.58	+1.05			.80		58.80

$\Delta\alpha = -0.^{s}008$
$\Delta\delta = -0.''03$

+3.8763

58.786
±.020

* B Persei α = 2 h 59 m 50.80 s δ = +40° 27′ 38″ K = −.020 tang. δ = +.85

z = + 1 55 11

Date	n	7's	7″	m	s	Δδ	s	s	s	s	s	Dm	s	m	s
1871-2 Dec. 1	+ .385	2	59	50.99	+.327	+0.31	−0.64	3.72	− 4.07	+0.16	59	46.92		59	50.80
Dec. 9	+ .356	2	59	45.83	+.302	+.28	+4.56	3.72	+ 1.12	+0.16			.95		50.83
Dec. 18	+ .350	2	59	38.80	+.297	+.28	+11.98	3.69	+ 8.07	+0.19			.97		50.75
Dec. 29	+ .444	2	59	29.60	+.377	+.36	+20.56	3.63	+17.28	+0.25			.88		50.76
Jan. 1	+ .378	2	59	26.72	+.338	+.32	+23.48	+ 0.28	+24.08	+0.28			50.80		50.80
11 Jan. 5	+ .372	2	59	23.37	+.333	+.31	+26.73	+ 0.33	+27.37	+0.33			.74		50.74
2.0 Jan. 6	+ .375	2	59	22.82	+.318	+.30	+27.29	+ 0.34	+27.93	+0.34			.75		50.75
Jan. 10	+ .394	2	59	19.51	+.334	+.31	+30.67	+ 0.40	+31.38	+0.40			.89		50.89
Jan. 12	+ .405	2	59	17.33	+.344	+.32	+2.69	+ 0.43	+ 3.44	+0.43			.77		50.77
Jan. 13	+ .387	2	59	17.13	+.328	+.31	+2.92	+ 0.44	+ 3.67	+0.44			.80		50.80
Jan. 23	+ .360	2	59	14.55	+.306	+.29	+5.40	+ 0.61	+ 6.30	+0.61			.85		50.85

$\Delta\alpha = -0.^{s}065$ $\Delta\delta = +0.''71$

+7.3471

50.795
±.033

* 48 Cephei (K) α = 3 h 4 m 10.06 s δ = +77° 15′ 37″ K = −.069 tang. δ = +4.42

z = − 34 52 48

Date	n	7's	7″	m	s	Δδ	s	s	s	s	s	Dm	s	m	s
1871-2 Dec. 18	+ .350	3	3	56.69	+1.547	+1.48	+11.98	9.07	+ 3.89	−1.33	4	2.57		4	9.92
Dec. 29	+ .444	3	3	45.87	+1.962	+1.89	+20.56	8.55	+13.89	−.21			.76		10.00
Jan. 1	+ .378	3	3	45.81	+1.759	+1.69	+23.48	− 1.02	+24.15	−1.02					9.96
8 Jan. 5	+ .372	3	3	42.45	+1.732	+1.66	+26.73	− 0.77	+27.62	−.77					10.07
2.0 Jan. 6	+ .375	3	3	41.70	+1.657	+1.59	+27.29	− 0.70	+28.18	−0.70					9.88
Jan. 10	+ .394	3	3	38.06	+1.741	+1.67	+30.67	− 0.43	+31.91	−0.43					9.97
Jan. 13	+ .387	3	4	5.70	+1.710	+1.64	+2.92	− 0.21	+ 4.35	−0.21					10.05
Feb. 4	+ .445	3	3	57.79	+1.966	+1.90	+8.71	+ 1.63	+12.24	+1.63					10.03

$\Delta\alpha = -0.^{s}028$ $\Delta\delta = -0.''70$

+34.194

9.997
±.059

* S Aristis α = 3 h 4 m 18.78 s δ = +19° 14′ 27″ K = −.016 tang. δ = +.35

z = + 23 8 22

Date	n	7's	7″	m	s	Δδ	s	s	s	s	s	Dm	s	m	s
1872 Jan. 23	+ .360	3	4	12.72	+.126	+0.11	+5.40	+ 0.57	+ 6.02	+0.51				4	18.74
Jan. 24	+ .343	3	4	12.65	+.120	+.10	+5.48	+ 0.52	+ 6.10	+0.52					18.75
4 Feb. 1	+ .505	3	4	10.55	+.176	+.16	+7.42	+ 0.64	+ 8.22	+0.64					18.77
2.0 Feb. 14	+ .290	3	4	6.49	+.101	+.09	+11.32	+ 0.84	+12.25	+0.84					18.74

Pi #12
= BAC 1.97

18.750
±.007

12 * Eridani α = 3 h 6 m 38.04 s δ = −29° 29′ 33″ K = −.018 tang. δ = −.57

z = + 71 52 22

Date	n	7's	7″	m	s	Δδ	s	s	s	s	s	Dm	s	m	s
1872 Jan. 24	+ .343	3	6	32.66	−.195	−0.21	+5.48	+ 0.20	+ 5.47	+0.20				6	38.13
3 Feb. 1	+ .505	3	6	19.01	−.287	−.31	+7.42	+ 0.34	+ 7.43	+0.34					(36.46)
2.0 Feb. 14	+ .290	3	6	26.52	−.165	−.18	+11.32	+ 0.59	+11.73	+0.59					38.25

38.190
±.006

ζ Eridani α = 3 h 9 m 8.73 s δ = −9° 17′ 49″ K = −.016 tang. δ = −.16

z = + 51 40 38

Date	n	7's	7″	m	s	Δδ	s	s	s	s	s	Dm	s	m	s
1871-2 ~~Dec. 29~~	+ .444	3	8	58.03	−.071	−0.09	~~+20.56~~	~~−.283~~	+17.64			9	15.67	9	~~18.58~~
Jan. 5	+ .372	3	9	10.21	−.062	−.08	+26.74	+ 0.13	+26.79	+0.13					37.00
Jan. 6	+ .375	3	9	9.69	−.060	−.08	+27.29	+ 0.15	+27.36	+0.15					37.05
5 Jan. 13	+ .387	3	9	33.93	−.061	−.08	+2.92	+ 0.21	+ 3.05	+0.21					36.98
2.0 Jan. 15	+ .356	3	9	33.88	−.056	−.07	+3.02	+ 0.24	+ 3.19	+0.24					37.07
Jan. 24	+ .343	3	9	31.30	−.054	−.07	+5.48	+ 0.35	+ 5.76	+0.35					37.06

37.032
±.032

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1872phae.proj.1459.

+14.267
32.66n

+3.82 $\delta_0 = +38\ 20\ 32.7$ Rmz = +.07 $\frac{d\delta}{dt} = +14.27$ "

Uranoglyph

$B + 17 + \gamma$

0.60900

−.06 −.10

	Tm − TS	Circle Read.	Red. Horizon	Corr. Circle Read.																															
	s	′	″	″	′	″	′	″																											
29.33.48	+16.2	2	53.30	+17.01	3	10.31	+19	38.04	+	03881	−0	4.41	−.08	−.12	−.26	−17.50	−3.23	−0.36	+62.24	20	32.3														
34.25	+20.6	2	47.65	+21.63	3	9.25	19	39.07	+	2494		4.31	.12	.39	−.57		−5.30	−0.67	+63.09		31.9														
35.54	−9.7	3	16.35	−10.19	3	8.16	19	40.19	+	2011		4.26	.03	.36	−.45		−5.80	−0.55	+62.76		32.2														
38.22	+25.2	2	39.05	+26.46	3	5.51	19	42.84	+	9.98		4.16	.16	.30	−.52		−5.90	−0.62	+60.73		32.9														
41.28	+16.1	2	45.50	+16.91	3	2.41	19	45.94	+	1834		4.24	.07	.35	−.48		−6.00	−0.58	+57.25		32.4														
44.97	+25.9	2	36.40	+27.20	3	3.60	19	44.75	+	2657		4.32	.17	.34	−.57		−6.00	−0.67	+58.20		32.0														
20 48.73	+26.1	3	12.70	+26.87	2	48.83	20	2.52	+	1299		4.19	.18	.42	−.66		−5.80	−0.76	+42.37		34.1														
20 1.61	+29.1	3	16.00	+29.96	2	46.04	20	2.31	+	1841	−	4.24	−.23	−.43	−.72		−5.90	−0.82	+41.76		33.1														

±.016

+14.193
37.82

+3.88 $\delta_0 = +40\ 27\ 37.8$ Rmz = +.03 0.28560 +1420 ″

−.03 −.05

26 35.02	+28.9	55	41.55	+29.43	56	10.98	+26	37.37	+	03350	−0	2.09	−.23	−.03	−.29	−1660	−2.40	−0.34	+63.89	27	36.4														
38.10	+31.0	55	36.30	+31.57	56	7.87	26	40.48	+	3590		2.10	.26	.02	−.31	−1770	−3.50	−0.36	+62.24		36.8														
38.75	+27.4	55	39.40	+27.91	56	7.31	26	41.04	+	1678		2.01	.20	.08	−.31	−1680	−4.60	−0.36	+61.98		36.0														
41.03	+25.9	55	38.60	+26.38	56	4.98	26	43.37	+	2959		2.07	.18	.09	−.30	−1980	−5.60	−0.35	+62.38		37.7														
39.37	+26.8	55	39.35	+27.29	56	6.64	26	41.71	+	2503		2.05	.20	.09	−.32		−5.80	−0.37	+63.09		36.6														
41.97	+25.7	55	37.95	+26.18	56	4.13	26	44.22	+	1452		2.00	.18	.07	−.28		−5.80	−0.33	+61.75		37.8														
40.50	+26.9	55	38.15	+27.40	56	5.55	26	42.80	+	2091		2.03	.20	.07	−.30		−6.10	−0.35	+61.73		36.0														
40.90	+25.9	55	38.70	+26.38	56	5.08	26	43.27	+	2018		2.02	.18	.07	−.28		−6.40	−0.33	+62.76		37.3														
42.88	+28.6	55	33.05	+29.13	56	2.18	26	46.14	+	1240		1.99	.23	.07	−.33		−6.40	−0.38	+61.78		34.2														
43.61	+25.3	55	37.35	+25.77	56	3.12	26	45.23	+	1031		1.98	.17	.07	−.27		−6.50	−0.32	+60.73		37.2														
47.64	+23.1	55	34.95	+23.53	55	58.48	+26	49.57	+	1838	−	2.01	−.14	−.08	−.25		−6.70	−0.30	+57.25		38.1														

±.025

+13.853
37.03

+7.24 $\delta_0 = -+77\ 15\ 37.0$ Rmz = −.57 1.60290 +1386 ″

+.58 +.82

14 42.18	+85.2	8	21.40	+25.74	8	46.54	+14	1.81	+	01687	+0	41.66	−.85	−.44	+.76	−2230	−8.44	+0.06	+61.98	15	37.1														
44.57	+86.3	8	19.90	+25.46	8	45.36	14	2.99	+	2962		42.91	.87	.46	−.80	−2510	−11.24	+0.02	+62.38		37.1														
45.45	+68.1	8	24.25	+20.09	8	44.34	14	4.01	+	2512		42.46	.54	.08	−.49		−12.00	+0.33	+63.09		37.9														
46.80	+79.4	8	18.45	+23.43	8	41.88	14	6.47	+	1463		41.45	.76	.36	−.59		−12.80	+0.23	+61.75		34.1														
46.94	+88.6	8	16.05	+26.14	8	42.19	14	6.10	+	2096		42.06	.92	.36	−.75		−13.00	+0.07	+61.73		37.0														
47.51	+63.2	8	23.35	+18.65	8	42.00	14	6.35	+	2025		41.99	.46	.37	−.30		−13.80	+0.52	+62.76		37.8														
50.68	+67.1	8	18.05	+19.80	8	37.85	14	10.50	+	1064		41.07	.53	.36	−.36		−14.20	+0.46	+60.73		38.6														
15 11.83	+82.8	8	41.55	−23.95	8	17.60	14	30.38	+	2402	+	42.36	−.80	−.48	−.75		−16.20	+0.07	+42.34		39.3														

±.013

+13.925
26.90

+3.42 $\delta_0 = -+19\ 14\ 26.9$ Rmz = +.39 1.39090

−.36 −.57

13 29.19	+22.1	8	25.05	+27.93	8	52.98	+13	55.37	+	01842	−0	25.66	−.08	−.44	−.88		+0.20	−1.45	+57.25	14	25.7														
29.30	+21.3	8	25.45	+26.92	8	52.37	13	55.98	+	2667		26.16	.08	.44	−.88		+0.20	−1.45	+58.20		26.8														
43.41	+21.5	9	3.95	−26.64	8	37.31	14	17.04	+	4085		27.02	.08	.53	−.97		+0.40	−1.54	+42.78		25.7														
44.79	+17.1	8	58.50	−21.19	8	37.31	14	18.04	+	1873	−	25.68	−.05	−.52	−.93		+1.00	−1.50	+41.76		26.6														

±.007

2620

+2.52 $\delta_0 = -29\ 29\ 31.5$ 2.23941 +1376 ″

−.88 −1.37

+18.5	50	6.50	+21.55	50	28.05	−27	39.70	+	02667	−3	4.53	.14	+.08	−.01	−.81	+15.72	+15.72	−2.18	+58.20	29	32.6														
+19.0	50	36.95	−21.70	50	15.25	−27	26.90	+	1873	−3	1.20	.12	+.08	−.08	−.88	+16.27	+16.27	−2.25	+41.76		32.4														

±.005

3250

+2.91 $\delta_0 = -9\ 17\ 48.7$ 1.86060

−.73 −1.12

+20.1	36	58.75	+26.55	37	25.30	−14	36.95	+	02466	−1	17.67	.01	+.04	−.08	−.97				−2.09	+															
+18.4	40	6.00	+24.30	40	30.30	17	41.95	+	1474	1	15.85	.00	.03	.01	−.71	+8.18	+8.18	−1.83	+61.75	17	48.9														
+11.7	40	14.60	+15.46	40	30.06	17	41.71	+	2102	1	16.14	.01	.01	.02	−.74	+8.28	+8.28	−1.86	+61.73		49.7														
+17.7	40	7.10	+23.38	40	30.48	17	42.13	+	1094	1	14.40	.00	.03	.01	−.71	+8.96	+8.96	−1.83	+60.73		48.7														
−6.4	40	36.50	−8.45	40	28.05	17	39.70	+	3436	1	18.53	.01	.01	.07	−.79	+9.13	+9.13	−1.91	+63.34		47.7														
+17.9	40	2.30	+23.65	40	25.95	−17	37.60	+	2673	−1	17.15	.01	+.03	−.00	−.70	+9.78	+9.78	−1.82	+58.20		48.7														

48.74
±0.41

±.031

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17

Jan. κ Ceti α = 3h 12m 39.388s δ = +2° 53′ 52″ k = −.015 tang δ = +.05
z = +39 28 57

	Date	n	T_s	T_m	n tang δ	α T.	Red. 1871.0	Sum	A.R. 1871.0	Δα. 1872.0
1871-2	Dec. 18	+.350	3h	12m 27.32s	+.017	+0.00	+11.50 −3.50	+8.49 +0.12	3h 12m 35.81s	12m 38.93s
	Dec. 27	+.350	3	12 20.17	+.017	+.00	+18.70 −2.97	+15.73 +0.15	.90	39.02
	Dec. 29	+.444	3	12 18.29	+.022	+.01	+20.57 −2.97	+17.61 +0.15	.90	39.02
	Jan. 5	+.392	3	12 12.03	+.019	+.00	+26.74 +0.21	+26.95 +0.21		38.98
	Jan. 6	+.375	3	12 11.44	+.018	+.00	+27.29 +0.22	+27.51 +0.22		38.93
11	Jan. 13	+.387	3	12 35.79	+.019	+.00	+5.92 +0.28	+3.20 +0.28		38.99
2.0	Jan. 15	+.350	3	12 35.70	+.017	+.00	+3.82 +0.30	+3.32 +0.30		39.02
	Jan. 24	+.343	3	12 33.15	+.017	+.00	+5.48 +0.40	+5.88 +0.40		39.03
	Jan. 30	+.477	3	12 32.18	+.021	+.01	+6.39 +0.48	+6.88 +0.48		39.06
	Feb. 1	+.505	3	12 31.06	+.025	+.01	+7.42 +0.50	+7.93 +0.50		38.99
	Feb. 4	+.445	3	12 29.73	+.022	+.01	+8.71 +0.55	+9.27 +0.55		39.00
										38.999

Δα = −0.097 Δδ = −0.″02 +4.2494 1.2698 ±.025

* 2 Persei α = 3h 15m 1.170 δ = +49° 24′ 11″ k = −.023 tang δ = +1.17
z = −7 1 22

	Date	n	T_s	T_m	n tang δ	α T.	Red. 1871.0	Sum	A.R. 1871.0	Δα. 1872.0
1871-2	Dec. 18	+.350	3	14 59.73	+.409	+0.39	+11.50 −4.23	+7.65 +0.02	15h 7.38s	15m 11.63s
	Dec. 27	+.350	3	14 52.56	+.409	+.39	+18.70 −4.18	+14.86 +0.07	.42	11.67
	Dec. 29	+.444	3	14 50.51	+.519	+.50	+20.76 −4.16	+16.90 +0.09	.41	11.66
	Jan. 1	+.398	3	14 47.59	+.465	+.44	+23.49 +0.12	+24.05 +0.12		11.69
	Jan. 5	+.392	3	14 44.14	+.458	+.44	+26.74 +0.18	+27.36 +0.18		11.50
12	Jan. 13	+.387	3	15 7.91	+.452	+.43	+2.92 +0.29	+3.64 +0.29		11.55
2.0	Jan. 15	+.350	3	15 7.81	+.409	+.39	+3.02 +0.34	+3.75 +0.34		11.56
	Jan. 24	+.343	3	15 5.22	+.401	+.38	+5.48 +0.52	+6.38 +0.52		11.60
	Jan. 30	+.477	3	15 4.04	+.511	+.49	+6.39 +0.67	+7.55 +0.67		11.59
	Feb. 1	+.505	3	15 2.89	+.590	+.57	+7.42 +0.72	+8.71 +0.72		11.60
	Feb. 4	+.445	3	15 1.58	+.520	+.50	+8.71 +0.79	+10.00 +0.79		11.58
	Feb. 14	+.290	3	14 58.94	+.339	+.32	+11.32 +1.05	+12.69 +1.05		11.63
										11.601

Δα = +0.209 Δδ = +0.″64 +3.2206 5.5618 ±.033

* O Tauri α = 3h 17m 55.762s δ = +6° 34′ 35″ k = −.016 tang δ = +.15
z = +33 48 14

	Date	n	T_s	T_m	n tang δ	α T.	Red. 1871.0	Sum	A.R. 1871.0	Δα. 1872.0
1871-2	Dec. 18	+.350	3	17 43.92	+.052	+0.04	+11.50 −3.08	+8.45 +0.14	17h 52.37s	17m 55.59s
	Dec. 27	+.350	3	17 36.79	+.052	+.04	+18.70 −3.07	+15.62 +0.15	.41	55.63
	Dec. 29	+.444	3	17 34.86	+.066	+.05	+20.76 −3.08	+17.53 +0.14	.39	55.61
	Jan. 5	+.392	3	17 28.63	+.058	+.04	+26.74 +0.21	+26.99 +0.21		55.62
10	Jan. 6	+.375	3	17 28.08	+.056	+.04	+27.29 +0.22	+27.55 +0.22		55.63
2.0	Jan. 15	+.350	3	17 32.21	+.052	+.04	+3.02 +0.30	+3.36 +0.30		55.57
	Jan. 24	+.343	3	17 49.72	+.051	+.04	+5.48 +0.40	+5.92 +0.40		55.64
	Jan. 30	+.477	3	17 48.68	+.065	+.05	+6.39 +0.49	+6.93 +0.49		55.61
	Feb. 4	+.445	3	17 46.35	+.066	+.05	+8.72 +0.56	+9.33 +0.56		55.68
	Feb. 14	+.290	3	17 43.63	+.043	+.03	+11.32 +0.71	+12.06 +0.71		65.69
										55627

Δα = +0.140 Δδ = +0.″80 +3.2253 1.3896 ±.024

* ε Tauri α = 3h 20m 13.890s δ = +9° 17′ 41″ k = −.016 tang δ = +.16
z = +33 5 45

	Date	n	T_s	T_m	n tang δ	α T.	Red. 1871.0	Sum	A.R. 1871.0	Δα. 1872.0
1871-2	Dec. 18	+.350	3	20 2.34	+.056	+0.04	+11.50 −3.10	+8.43 +0.14	20h 10.77s	20m 14.01s
	Dec. 27	+.350	3	19 53.15	+.056	+.04	+18.70 −3.09	+15.60 +0.15	.75	13.99
	Dec. 29	+.444	3	19 52.23	+.071	+.05	+20.76 −3.08	+17.53 +0.16	.76	14.01
	Jan. 6	+.375	3	19 46.54	+.060	+.04	+27.30 +0.21	+27.55 +0.21		14.09
7	Jan. 13	+.387	3	20 10.84	+.061	+.05	+2.92 +0.27	+3.24 +0.27		14.08
2.0	Jan. 15	+.350	3	20 10.67	+.056	+.04	+3.02 +0.29	+3.35 +0.29		14.02
	Feb. 4	+.445	3	20 4.74	+.071	+.05	+8.72 +0.55	+9.32 +0.55		14.06
										14036

Δα = −0.169 Δδ = +0.″50 −0.1354 57.129 ±.032

∴ * 9 Orionis L.C. α = 5h 20m 57.13s δ = +7° 17′ 22″ k = +.050 tang δ = −.13
−65 17 50

	Date	n	T_s	T_m	n tang δ	α T.	Red. 1871.0	Sum	A.R. 1871.0	Δα. 1872.0
1872	Jan. 1	+.398	3	21 31.95	−1.245	−1.20	+23.49 +2.69	+24.98 +2.69		21m 56.93s
	Jan. 24	+.343	3	20 51.27	−1.073	−1.02	+5.48 +1.11	+5.57 +1.11		56.64
5	Jan. 30	+.477	3	20 51.16	−1.367	−1.32	+6.39 +0.63	+5.70 +0.63		56.86
2.0	Feb. 14	+.290	3	20 47.11	−.907	−.86	+11.32 −0.54	+9.92 −0.54		57.03
	Feb. 22	+.400	3	20 46.53	−1.252	−1.20	+12.98 −1.17	+10.61 −1.17		57.14
										56960

±.094

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18772phae.proj.1459.

+3.12 $\delta_0 = +2\,53\,57.2$ — $\mu + \log y_\mu + 13.38$ — $-.60 - .91$

Thm – 7'S Circle Read. Red. Mering. Corr. Circle Read. — $\beta + \pi + \gamma$ 1.67560

s	′	″	″	′	″	′	″		′	″	λ-γ	Rm	Rs	Rm	Rs	Rm	Rs	Rm	Rs		
														28.71.0		28.72.0				I δ 18720	
+14.7	28	46.20	+19.65	29	5.85	+53	42.50+	01696	− 0	49.27		−.00	−.49	−1.09	−10.14	+3.24	−2.00	+61.98	53	56.4	
+23.2	28	33.80	+31.32	29	4.82	53	43.53+	2884		50.63		.01	.49	−1.10	−9.44	+3.94	−2.01	+62.88		57.7	
+18.1	28	39.60	+24.20	29	3.80	53	44.55+	2966		50.73		.00	.51	−1.11	−9.30	+4.08	−2.02	+62.38		58.3	
+18.4	28	41.25	+24.60	29	5.85	53	42.50+	1472		49.01		.00	.41	−1.01	+4.56	+4.56	−1.92	+61.75		57.9	
+17.4	28	41.70	+23.26	29	4.96	53	43.39+	2102		49.73		.00	.41	−1.01	+4.63	+4.63	−1.92	+61.73		58.1	
+17.5	28	42.85	+23.40	29	6.25	53	42.10+	1095		48.59		.00	.41	−1.01	+5.09	+5.09	−1.92	+60.73		57.4	
+14.7	28	44.55	+19.65	29	4.20	53	44.15+	3436		51.28		.00	.41	−1.01	+5.22	+5.22	−1.92	+63.34		59.5	
+18.8	28	36.90	+25.13	29	2.03	53	46.32+	2673		50.39		.01	.48	−1.09	+5.72	+5.72	−2.00	+58.20		56.8	
+11.9	29	0.55	−15.60	28	44.95	54	3.40+	4384		52.41		.00	.52	−1.12	+6.03	+6.03	−2.03	+41.68		56.7	
+22.0	29	16.45	−28.84	28	47.61	54	0.74+	4102		52.08		.01	.56	−1.17	+6.11	+6.11	−2.08	+42.78		56.5	
+18.4	29	11.65	−24.12	28	47.53	+54	0.82+	2414	−	50.09		−.00	−.55	−1.15	+6.25	+6.25	−2.06	+42.34		57.3	

57.51 ±0.69

±.025

+13.146
11.27

+4.25 $\delta_0 = +49\,24\,11.3$ — $\sin z = -.12$ — 0.85080 — +13.15 — +.10 +.17

23 13.49	+30.2	59	15.05	+26.31	59	41.36	+23	6.99+	01705	+ 0	7.38		−.24	−.56	−.70	−15.90	−5.75	−0.53	+61.98	24	10.1
14.24	+22.5	59	20.75	+19.60	59	40.35	23	8.00+	2895		7.58		.14	.60	−.64	−20.20	−7.05	−0.47	+62.88		10.9
16.22	+20.6	59	21.05	+17.94	59	38.99	23	9.26+	2969		7.60		.12	.62	−.64	−20.40	−7.25	−0.47	+62.38		11.6
15.92	+29.2	59	13.70	+25.43	59	39.13	23	9.22+	2530		7.52		.23	.59	−.72		−8.10	−0.55	+63.09		11.2
24.72	+41.0	58	54.25	+35.73	59	29.98	23	18.37+	1485		7.34		.45	.54	−.89		−8.50	−0.72	+61.75		(18.2)
19.55	+26.1	59	12.70	+22.74	59	35.44	23	12.91+	1131		7.28		.18	.46	−.54		−8.80	−0.37	+60.73		11.7
16.67	+22.4	59	19.25	+19.51	59	38.76	23	9.59+	3441		7.68		.13	.47	−.50		−8.90	−0.33	+63.34		11.4
22.81	+9.1	59	24.55	+7.93	59	32.48	23	15.87+	2678		7.54		.03	.59	−.50		−9.40	−0.33	+58.20		11.9
38.67	+7.4	59	23.15	−6.32	59	16.73	23	31.62+	4384		7.85		.03	.59	−.50		−9.60	−0.33	+41.68		11.2
37.66	+24.8	59	38.90	−21.18	59	17.72	23	30.63+	4125		7.80		.17	.60	−.67		−9.60	−0.50	+42.78		11.1
38.67	+28.7	59	40.85	−24.51	59	16.34	23	32.01+	2426		7.50		.23	.61	−.74		−9.60	−0.57	+42.34		11.7
38.38	+31.6	59	42.50	−26.99	59	16.51	+23	31.84+	1905+		7.41		−.26	−.61	−.79		−9.40	−0.60	+41.76		11.0

11.25 ±0.32

±.021

+12.942
35.33

+3.22 $\delta_0 = +8\,34\,35.3$ — $\sin z = +.56$ — 1.58570 — +12.95 — −.52 −.80

38 31.99	+16.7	48	13.75	+22.10	48	35.85	+34	12.50+	01705	− 0	40.06		−.03	−.42	−.97	−11.00	+1.95	−1.77	+61.98	34	34.6
33.32	+16.9	48	11.00	+22.37	48	33.37	34	14.98+	2895		41.18		.03	.45	−1.00	−10.50	+2.45	−1.80	+62.88		37.3
32.09	+21.6	48	5.95	+28.59	48	34.54	34	13.81+	2969		41.25		.04	.43	−.99	−10.40	+2.55	−1.79	+62.38		35.7
32.33	+17.4	48	12.75	+23.03	48	35.78	34	12.57+	1485		39.86		.03	.35	−.90		+2.80	−1.70	+61.75		35.6
32.55	+17.6	48	11.70	+23.29	48	34.99	34	13.36+	2107		40.43		.03	.35	−.90		+2.90	−1.70	+61.73		35.9
30.25	+20.0	48	9.55	+26.47	48	36.02	34	12.33+	3441		41.70		.04	.34	−.90		+3.30	−1.70	+63.34		35.6
34.90	+19.9	48	5.70	+26.34	48	32.04	34	16.31+	2678		40.97		.04	.40	−.96		+3.70	−1.76	+58.20		35.8
35.42	+2.7	48	(33.35)	−3.50	48	29.85	34	18.50+	4384		42.61		.00	.47	−.99		+4.00	−1.79	+41.68		(19.8)
50.92	+18.5	48	40.20	−24.01	48	16.19	34	32.16+	2426		40.73		.03	.48	−1.03		+4.20	−1.83	+42.34		36.1
52.40	+21.8	48	43.45	−28.29	48	15.16	+34	33.19+	1925−		40.27		−.04	−.48	−1.04		+4.60	−1.84	+41.76		37.4

35.97 ±0.59

±.024

+12.810
5.91

13.24 $\delta_0 = +9\,17\,3.9$ — $\sin z = +.55$ — 1.57400 — +12.81 — −.50 −.78

16 1.92	+23.6	5	36.00	+31.18	6	7.18	+16	41.17+	01705	− 0	39.00		−.05	−.08	−.64	−11.00	+1.81	−1.42	+61.98	17	4.5
2.19	+21.2	5	37.95	+28.01	6	5.96	16	42.39+	2895		40.08		.04	.08	−.63	−10.60	+2.21	−1.41	+62.88		6.0
15 59.52	+19.9	5	41.35	+26.29	6	7.64	16	40.71+	2969		41.05		.04	.10	−.65	−10.50	+2.31	−1.43	+62.38		2.9
16 1.93	+19.6	5	41.05	+25.89	6	6.94	16	41.41+	2107		39.36		.04	.08	−.63		+2.60	−1.41	+61.73		6.0
3.27	−19.0	6	31.50	−25.10	6	6.40	16	41.95+	1131		38.49		.03	.16	−.70		+3.00	−1.48	+60.73		5.7
15 59.17	+19.1	5	43.25	+25.23	6	8.48	16	39.87+	3441		40.59		.03	.08	−.62		+3.10	−1.40	+63.34		4.3
16 19.65	+19.3	6	13.85	−24.99	5	48.86	+16	39.49+	2426−		39.65		−.03	−.16	−.70		+3.90	−1.48	+42.34		4.6

4.71 ±0.66

±.032

−12.814
22.08

−4.14 $\delta_0 = +72\,17\,22.1$ — $\sin z = -.91$ — 2.09528 — −12.81 — +.84 +1.31

		42	37.5																		
41 49.28	−5.0	42	53.85	+20.37	43	16.22	+39	32.13+	02530	+ 2	12.07	.02	+.40	−.27	+0.97		−12.00	+2.28	+63.09	42	37.5
53.90	−38.2	42	51.25	+15.56	43	6.81	39	41.54+	2678	2	12.45	.05	.33	.37	+0.70		−17.50	+2.01	+58.20		36.7
42 13.08	−25.6	43	3.05	−10.23	42	52.82	38	55.53+	4384	2	17.76	.08	.11	.40	+0.55		−18.40	+1.86	+41.68		38.5
12.87	+5.58	42	23.75	+22.28	42	46.03	40	232+	1905	2	10.12	.04	.50	.31	+1.03		−19.60	+2.34	+41.76		37.0
~~42 1.12~~	~~+34.5~~	~~42~~	~~22.85~~	~~+12.18~~	~~42~~	~~32.02~~	~~+40~~	~~15.22+~~	~~1753~~	~~+2~~	~~19.66~~	~~.05~~ .03	~~+.15~~	~~−.16~~	~~+0.83~~		~~−19.70~~	~~+2.14~~	~~+42.14~~		~~34.6~~

37.42

±0.29

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1872phae.proj 1459.

18 $\Delta\alpha = -0^{s}.036$ $\Delta\delta = -0''.30$ +3.3842

h m 48.521

Star ✱ of Tauri $\alpha = 3\ 23\ 48.52$ $\delta = +12°\ 29'\ 46''$ $k = -.016$ tang. δ +.22

$z = +29\ 53\ 8$

Date	n	T_s	T_m	n tang. δ	ΔT	Red. 1871	Sum Red. 1872	A.R. 1871.0	A.R. 1872.0
	s	h	m s	s	s	s	s	h m	s
1872 Jan. 6	+.375	3	23 20.95	+.082	+0.07	+2.730	+0.21	+27.58 +0.27	3 23 48.53
Jan. 13	+.387	3	23 45.16	+.085	+.07	+2.92	+0.27	+3.26 +0.27	48.42
Jan. 15	+.350	3	23 45.10	+.077	+.06	+3.02	+0.29	+3.37 +0.29	48.47
Jan. 23	+.360	3	23 42.64	+.079	+.06	+5.48	+0.37	+5.83 +0.37	48.49
7 Jan. 24	+.343	3	23 42.58	+.075	+.06	+5.48	+0.38	+5.92 +0.38	48.50
2.0 Feb. 4	+.445	3	23 39.17	+.097	+.08	+8.72	+0.54	+9.34 +0.54	48.51
Feb. 14	+.290	3	23 36.45	+.064	+.05	+11.32	+0.68	+12.05 +0.68	48.58
									48.485
									±.026

$\Delta\alpha = +0^{s}.057$ $\Delta\delta = -0''.41$ +28226

h m 54.017

✱ ε Eridani $\alpha = 3\ 26\ 54.02$ $\delta = -9°\ 53'\ 36''$ $k = -.016$ tang. δ = -.17

$z = +52\ 16\ 25$

1871-2 Dec. 27	+.350	3	26 35.47	-.059	-0.08	+18.7166	-28.4	+15.78	-0.02	26 51.20	54.02
Dec. 29	+.444	3	26 33.61	-.075	-.09	+2058	-28.4	+17.64	-0.02	51.25	54.07
Jan. 5	+.392	3	26 27.41	-.066	-.08	+2674	+0.05	+26.71	+0.05	26	54.12
8 Jan. 6	+.375	3	26 26.78	-.063	-.08	+2730	+0.06	+27.28	+0.06		54.06
2.0 Jan. 13	+.387	3	26 51.10	-.065	-.08	+2.92	+0.12	+2.96	+0.12		54.06
Jan. 24	+.343	3	26 48.43	-.058	-.07	+5.48	+0.25	+5.66	+0.25		54.09
Jan. 30	+.437	3	26 47.44	-.074	-.09	+6.39	+0.34	+6.64	+0.34		54.08
Feb. 14	+.290	3	26 42.26	-.049	-.06	+11.32	+0.57	+11.83	+0.57		54.09
											54.074
											±.020

$\Delta\alpha = -0^{s}.021$ $\Delta\delta = -0''.59$ +51395

h m 4.024

✱ Groom. 716 $\alpha = 3\ 31\ 4.02$ $\delta = +6°\ 2'\ 47''$ 1872 $k = -.034$ tang. δ = +1.95

$z = -20\ 25\ 6$

1871-2 Dec. 27	+.350	3	30 45.18	+.682	+0.65	+18.7166	0.34	+18.97		31 4.15	31 4.15
Dec. 29	+.444	3	30 42.96	+.865	+.83	+2058	-0.33	+2.07		4.03	4.03
Jan. 1	+.378	3	30 39.87	+.776	+.74	+2350	-0.25	+2.99		3.86	3.86
9 Jan. 5	+.392	3	30 36.73	+.764	+.73	+2674	-0.17	+2.30		4.03	4.03
2.0 Jan. 6	+.375	3	30 36.09	+.731	+.70	+2730	-0.14	+2.86		3.95	3.95
Jan. 13	+.387	3	31 0.26	+.754	+.72	+2.92	+0.04	+3.68		3.94	3.94
Jan. 15	+.350	3	31 0.33	+.682	+.65	+3.02	+0.19	+3.76		4.09	4.09
Jan. 24	+.343	3	30 57.49	+.608	+.63	+5.48	+0.37	+6.48		3.97	3.97
Feb. 14	+.290	3	30 51.01	+.565	+.53	+11.32	+1.15	+13.00		4.01	4.01
											4.053
											±.059

$\Delta\alpha = +0^{s}.010$ $\Delta\delta = +0''.65$ +4.2391

49.129

✱ S Persei $\alpha = 3\ 38\ 49.13$ $\delta = +47°\ 22'\ 32''$ 1872 $k = -.022$ tang. δ = +1.09

$z = -4\ 59\ 43$

1871-2 Dec. 27	+.350	3	33 30.16	+.381	+0.36	+18.7166	0.00	+19.02		4.18 33	49.18
Jan. 1	+.398	3	33 25.18	+.433	+.41	+2350	+0.04	+23.95			49.13
Jan. 5	+.392	3	33 21.89	+.427	+.41	+2675	+0.08	+27.24			49.13
9 Jan. 6	+.375	3	33 21.30	+.408	+.39	+2731	+0.09	+27.79			49.09
2.0 Jan. 13	+.387	3	33 45.62	+.421	+.40	+2.92	+0.19	+3.51			49.13
Jan. 15	+.350	3	33 45.54	+.381	+.36	+3.02	+0.23	+3.61			49.15
Jan. 30	+.437	3	33 41.80	+.476	+.45	+6.39	+0.52	+7.36			49.16
Feb. 1	+.505	3	33 40.62	+.550	+.53	+7.43	+0.57	+8.53			49.15
Feb. 4	+.445	3	33 39.32	+.485	+.46	+8.72	+0.63	+9.81			49.13
											49.139
											±.017

h m s

S Eridani ✓ $\alpha = 3\ 37\ 7.02$ $\delta = -10°\ 11'\ 54''$ 1872 $k = -.016$ tang. δ = -.18

$z = +52\ 34\ 43$

1872 Jan. 5	+.392	3	36 40.44	-.070	-0.09	+2675	0.00	+26.66		37	7.09
Jan. 13	+.387	3	37 4.26	-.069	-.08	+2.92	+0.06	+2.90			7.18
Jan. 15	+.350	3	37 4.07	-.062	-.08	+3.02	+0.08	+3.02			7.09
7 Jan. 30	+.437	3	37 0.53	-.078	-.09	+6.39	+0.26	+6.56			7.09
2.0 Feb. 1	+.505	3	36 59.48	-.090	-.11	+7.43	+0.29	+7.61			7.09
Feb. 4	+.445	3	36 58.11	-.080	-.10	+8.72	+0.34	+8.96			7.07
Feb. 22	+.400	3	36 53.60	-.072	-.09	+12.98	+0.63	+13.52			7.12
											7.101
											±.020

$\Delta\alpha = +0^{s}.023$ $\Delta\delta = +0''.36$ +3.5528

h m 52.695

✱ η Tauri $\alpha = 3\ 39\ 52.70$ $\delta = +23°\ 42'\ 26''$ $k = -.017$ tang. δ = +.44

$z = +18\ 40\ 23$ 1872

1872 Jan. 5	+.392	3	39 25.61	+.172	+0.16	+2675	+0.16	+27.07		39	52.68
Jan. 6	+.375	3	39 25.05	+.165	+.15	+2731	+0.16	+27.62			52.67
Jan. 8	+.420	3	39 23.27	+.185	+.17	+2903	+0.17	+29.37			52.64
8 Jan. 13	+.367	3	39 49.41	+.170	+.15	+2.92	+0.20	+2.27			52.68
2.0 Jan. 15	+.350	3	39 49.31	+.154	+.14	+3.02	+0.23	+3.39			52.70
Feb. 1	+.505	3	39 44.66	+.222	+.20	+7.43	+0.45	+8.08			52.74
Feb. 4	+.445	3	39 43.34	+.195	+.18	+8.72	+0.50	+9.40			52.74
Feb. 22	+.400	3	39 38.79	+.176	+.16	+12.98	+0.80	+13.94		52.698	52.93 ±.027

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1872phae.proj.1459.

+3.30 $\delta_0 = +12\ 29\ 46.3$ (+12.616 / 46.27") Prin Z = +.50 $\frac{d\delta}{dt} = +12.62$ " Polygon

Tm – 775 Circle Read, Red. Morning Circle Read. Corr. $B + V + J$ 1.51940 Rt Rso Rm Red to 1871.0 Corr Red to 1872.0 +Rso +Rf. I δ 1872.0

	s	′	″	″	′	″	′	″		″	″	″	″	″	″	′	″
28 43.37	+18.5	53	5.70	+24.18	53	29.88	+29	18.47+	02113	−0	34.72	−.04	−.34	−.84	+1.60 − 1.56 + 61.73	29	45.5
44.75	+20.2	53	2.85	+26.40	53	29.25	29	19.10+	1164		33.97	.05	.32	−.84	+1.90 − 1.56 + 60.73		46.2
47.12	+18.6	53	8.75	+24.31	53	30.06	29	18.29+	3446		3580	.03	.34	−.83	+2.00 − 1.55 + 63.34		46.3
49.10	+20.2	52	57.90	+26.40	53	24.30	29	24.05+	1856		3451	.05	.39	−.90	+2.30 − 1.62 + 57.25		47.5
45.89	+17.1	53	4.50	+22.35	53	26.85	29	21.50+	2684		35.18	.07	.40	−.89	+2.30 − 1.61 + 58.20		45.2
29 1.34	+16.7	53	33.40	−21.40	53	12.00	29	36.35+	2438		34.98	.03	.46	−.90	+2.70 − 1.67 + 42.34		44.7
29 − 2.70	+18.7	53	34.55	−23.96	53	10.59	+29	37.76+	1927−		34.57	−.03	−.46	−.95	+3.10 − 1.67 + 41.76		46.4

±.025 — 45.97 ±0.65

2.82 $\delta_0 = -9\ 53\ 35.6$ (+12.440 / 25.63) Prin Z = +.79 1.87060 +12.40 −.73 −1.14

53 43.32	+16.9	15	49.50	+22.29	16	11.79	−53	23.44+	02906	−1	19.37	−.01	+.03	−.53	−1.23	−5.70 + 6.70 − 2.37 + 62.88	53	35.6
44.96	+22.7	15	43.40	+29.93	16	13.33	53	24.98+	2973		19.50	.01	.05	.52	−1.20	−5.60 + 6.80 − 2.34 + 62.38		37.6
44.19	+20.4	15	48.75	+26.90	16	15.65	53	27.30+	1195		16.83	.00	.04	.09	−.78	+7.70 − 1.92 + 61.75		36.6
44.03	+17.5	15	51.30	+23.07	16	14.37	53	26.02+	2113		1793	.01	.03	.10	−.80	+7.80 − 1.94 + 61.73		36.4
43.09	+16.5	15	53.30	+21.76	(16)	15.06	53	26.71+	1164		16.25	.00	.03	.21	−.91	+8.60 − 2.05 + 60.73		35.7
48.54	+16.6	15	48.95	+21.89	16	10.84	53	22.49+	2684		1897	.01	.03	.10	−.80	+9.60 − 1.94 + 58.20		35.6
26.67	+14.3	16	11.25	−18.49	15	52.76	53	4.41+	4343		22.11	.01	.02	.16	−.87	+9.90 − 2.01 + 44.68		39.0
24.25	+23.8	16	24.60	−29.73	15	54.87	−53	6.52+	1921−		17.59	.01	+.05	−.18	−.86	+10.60 − 2.00 + 41.76		33.8

±.020 — 36.04 ±0.78

+5.14 $\delta_0 = +62\ 47\ 55.3$ (+12.192 / 55.26) Prin Z = −.35 1.33100 +12.20 +.32 +.49

46 59.12	+36.2	35	49.60	+22.15	36	11.75	+46	36.60+	02916	+0	22.92	−.29	−.11	−.08	−21.00 − 8.80 + 0.41 + 62.88	47	54.0
47 0.64	+33.6	35	49.75	+20.56	36	10.81	46	38.04+	2576		22.95	.24	.11	−.03	−21.30 − 9.10 + 0.46 + 62.38		54.7
1.18	+47	36	6.85	+28.88	36	9.73	46	38.62+	2548		22.72	.01	.15	+.16	−9.60 + 0.65 + 63.09		55.5
8.05	+46.6	35	39.40	+28.51	36	7.91	46	40.44+	1606		22.18	.49	.08	−.25	−10.30 + 0.24 + 61.75		54.3
3.10	+36.0	35	45.45	+22.03	36	7.48	46	40.87+	2118		22.50	.29	.08	−.05	−10.50 + 0.44 + 61.73		55.0
5.14	+37.1	35	42.15	+22.70	36	4.85	46	43.50+	1198		22.03	.31	.07	−.07	−11.60 + 0.42 + 60.73		55.1
2.61	+38.6	35	44.90	+23.62	36	8.52	46	39.83+	3451		23.20	.34	.03	−.10	−11.90 + 0.39 + 63.34		54.9
7.73	+48.9	35	32.90	+29.92	36	2.82	46	45.53+	2689		22.80	.54	.06	−.28	−12.90 + 0.21 + 58.20		53.8
25.67	+14.3	35	53.30	− 8.58	35	44.72	+47	3.63+	1937+		22.41	−.05	−.12	+.15	−13.70 + 0.64 + 41.76		54.7

±.027 — 54.67 ±0.37

+4.24 $\delta_0 = +47\ 22\ 32.3$ (+11.883 / 32.33) Prin Z = −.09 0.70140 +11.69 +.08 +.12

23 36.12	+33.7	0	46.60	+30.54	1	17.14	+21	31.21+	02927	+0	5.38	−.32	−.11	−.35	−18.20 − 6.31 − 0.23 + 62.88	22	32.9
36.85	+28.4	0	51.00	+25.74	1	16.74	21	31.61+	2557		5.34	.23	.13	−.28	−6.80 − 0.16 + 63.09		33.1
38.66	+27.1	0	50.05	+24.56	1	14.61	21	33.74+	1517		5.21	.20	.09	−.21	−7.30 − 0.09 + 61.75		33.3
38.13	+7.0	1	9.00	+ 6.35	1	15.35	21	33.00+	2124		5.28	.03	.12	−.07	−7.40 + 0.05 + 61.73		32.7
40.08	+21.7	0	53.55	+19.67	1	13.22	21	35.13+	1231		5.15	.13	.10	−.15	−8.10 − 0.03 + 60.73		32.9
37.52	+20.7	0	57.30	+18.76	1	16.06	21	32.29+	3454		5.45	.12	.10	−.14	−8.20 − 0.02 + 63.34		32.9
22 6.93	+21.0	1	11.35	−18.65	0	52.70	21	8.65+	4383		5.50	.12	.16	−.20	−9.20 − 0.08 + 41.68		33.6
21 59.28	+8.1	1	1.65	− 7.20	0	54.45	21	53.90+	4164		5.54	.03	.13	−.08	−9.20 + 0.04 + 42.78		33.1
21 59.10	+26.3	1	17.60	−23.37	0	54.23	+21	54.12+	2462+		5.33	−.18	−.17	−.27	−9.30 − 0.15 + 42.34		32.3

±.012 — 32.98 ±0.24

+2.88 $\delta_0 = -70\ 11\ 54.1$ 1.47540 +11.71 −.73 −1.14

	+14.8	34	13.60	+ 19.50	34	33.10	−11	44.75+	01517	−1	17.72	.00	+.02	−.46	−1.17 + 7.53 + 7.53 − 2.31 + 61.75	11	55.5
	+19.7	34	8.50	+25.95	34	34.45	11	46.10+	1231		17.22	.00	.04	.45	−1.14 + 8.39 + 8.39 − 2.28 + 60.73		56.5
	+19.9	34	5.45	+26.22	34	31.67	11	43.32+	3456		2128	.01	.04	.45	−1.14 + 8.59 + 8.59 − 2.28 + 63.34		55.0
	−11.2	33	56.65	+ 14.46	34	11.11	11	22.76+	4343		23.03	.02	.01	.51	−1.23 + 9.80 + 9.80 − 2.37 + 41.68		56.7
	+11.5	34	26.45	− 14.85	34	11.60	11	22.25+	4184		2265	.01	.01	.57	−1.29 + 9.92 + 9.92 − 2.43 + 42.78		54.6
	+18.8	34	39.50	− 24.28	34	15.22	11	26.87+	2462		19.43	.01	.03	.61	−1.31 + 10.08 + 10.08 − 2.45 + 42.34		56.3
	+17.8	34	22.25	− 22.99	33	59.26	−11	10.91+	1789−		18.21	.01	+.03	−.30	−1.00 + 10.57 + 10.57 − 2.14 + 24.14		56.6

±.020

+3.55 $\delta_0 = +23\ 42\ 25.9$ (+11.466 / 25.95) Prin Z = +.32 1.28900 +11.47 −.30 −.46 — 55.84 ±0.66

41 26.89	+20.4	40	36.15	+25.01	41	1.16	+41	47.19+	01527	−0	20.15	−.08	−.07	−.45	−1.50 − 0.91 + 61.75	42	26.4
27.24	+20.3	40	35.65	+24.88	41	0.53	41	47.82+	2130		20.43	.08	.07	−.47	−1.50 − 0.93 + 61.73		26.7
24.56	−15.1	41	21.05	− 18.51	41	2.54	41	45.81+	3445		21.06	.05	.14	−.44	−1.60 − 0.95 + 64.06		26.3
28.10	+20.0	40	35.55	+24.52	41	0.07	41	48.28+	1264		20.03	.08	.07	−.45	−1.60 − 0.91 + 60.73		25.5
24.26	+22.4	40	35.40	+27.46	41	2.86	41	45.49+	3451		2106	.10	.07	−.47	−1.60 − 0.93 + 63.34		25.2
45.58	+19.5	41	5.55	−23.43	40	42.13	42	6.23+	4203		2143	.08	.14	−.52	−1.50 − 0.98 + 42.78		25.2
45.25	+18.1	41	4.05	−21.75	40	42.30	42	6.05+	2174		20.52	.07	.14	−.51	−1.40 − 0.97 + 42.34		25.4
40.50	+16.0	40	43.24	−19.22	40	23.98	+42	24.37+	1789−		20.27	−.05	−.05	−.40	−0.90 − 0.86 + 24.14		26.5

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19

Star T Eridani ✓ α = 3h 42m 9.39s δ = −24° 16′ 24″ K = −.017 tang δ = −.45
z = +66 39 13

Date	n	T_s	T_m	n tang δ	Δ.T.	Red 1872 (1872)	Sum	A.R. 1872
	s	h	m s	s	s	s	s	h m s
1872 Jan. 5	+ 392	3	41 43.08	−.176	−0.19	+2.75	−0.20	+2.36	3 42 9.44
Jan. 6	+ 375	3	41 42.57	−.168	−.19	+2.71	−0.19	+2.93	9.50
5 Jan. 8	+ 420	3	41 40.82	−.189	−.21	+2.83	−0.17	+2.65	9.44
2.0 Jan. 13	+ 387	3	42 6.80	−.174	−.19	+2.92	−0.11	+2.62	9.42
Jan. 30	+ 437	3	42 3.25	−.196	−.21	+6.39	+0.12	+6.30	9.55
									9.476 ±.038

Pi III 1855 q.
B.A.C. 1199 α = 3h 43m 52.54s δ = −38° 0′ 41″ K = −.020 tang δ = −.78
z = +80 23 30

1872 Jan. 8	+ 420	3	43 24.34	−.327	−0.35	+2.93	−0.45	+2.23	43 52.57
4 Jan. 30	+ 437	3	43 46.64	−.340	−.36	+6.39	−0.05	+5.98	52.62
2.1 Feb. 1	+ 505	3	43 45.64	−.393	−.41	+7.43	−0.01	+7.01	52.65
Feb. 1	+ 505	3	43 45.64	−.393	−.41	+7.43	−0.01	+7.01	52.65
Δδ = −0.126″ Δδ = −1.60″									52.622 ±.027

* 9 Canis Majoris α = 3h 46m 14.35s (+50614, +14354) δ = +60° 43′ 51″ K = −.031 tang δ = +1.78
z = −18 21 2

1872 Jan. 8	+ 420	3	45 44.74	+.747	+0.72	+2.94	−0.15	+2.61	46 14.35
Jan. 13	+ 387	3	46 10.80	+.688	+.66	+2.92	−0.07	+3.51	14.31
Jan. 15	+ 350	3	46 10.79	+.623	+.59	+3.02	−0.03	+3.58	14.37
6 Jan. 30	+ 437	3	46 6.69	+.777	+.75	+6.39	+0.41	+7.55	14.24
2.0 Feb. 1	+ 505	3	46 5.47	+.898	+.87	+7.44	+0.48	+8.79	14.26
Feb. 22	+ 400	3	45 59.56	+.712	+.68	+12.98	+1.22	+14.88	14.44
Δδ = −0.010″ Δδ = +0.87″									14.328 ±.054

* 5 Velei ✓ α = 3h 46m 5.70s (+3.7562, −5400) δ = +31° 30′ 4″ K = −.018 tang δ = +.61
z = +10 52 45

1872 Jan. 6	+ 375	3	45 37.70	+.228	+0.21	+2.32	+0.13	+2.66	46 5.36
2 Feb. 4	+ 445	3	45 35.93	+.271	+.25	+8.73	+0.51	+9.49	5.42
2.0									5.390 ±
Δδ = +0.358″ Δδ = −0.38″									

* 5 Ursae Min. L.C. α = 15h 41m 40.40s (−2.3029, −40405) δ = +71° 11′ 13″ (−59 25 59) K = +.075 tang δ = −4.78

1872 Jan. 5	+ 392	3	48 12.35	−1.873	−1.80	+2.76	+3.63	+2.59	48 40.94
Jan. 15	+ 350	3	48 36.24	−1.673	−1.60	+3.02	+2.78	+4.20	40.44
6 Jan. 30	+ 437	3	48 35.33	−2.088	−2.01	+6.39	+1.30	+5.68	41.01
2.1 Feb. 1	+ 505	3	48 34.89	−2.413	−2.34	+7.44	+1.09	+6.19	41.08
Feb. 18	+ 417	3	48 31.44	−1.993	−1.92	+11.99	−0.84	+9.23	40.67
Feb. 22	+ 400	3	48 30.58	−1.912	−1.84	+12.98	−1.28	+9.86	40.44
Δδ = +0.080″ Δδ = −0.34″									40.763 ±.230

* 8 Velei α = 3h 49m 16.04s (+40014, −16042) δ = +39° 31′ 15″ K = −.020 tang δ = +.83
z = +2 44 34

1872 Jan. 6	+ 375	3	48 48.39	+.311	+0.29	+2.32	+0.07	+2.68	49 16.04
Jan. 8	+ 420	3	48 46.70	+.348	+.33	+2.04	+0.09	+2.46	16.16
4 Jan. 13	+ 387	3	49 12.81	+.321	+.30	+2.92	+0.13	+3.35	16.16
2.0 Feb. 4	+ 445	3	49 6.54	+.369	+.35	+8.73	+0.48	+9.56	16.10
									16.122

? 2

τ Eridani ✓ α = 3h 52m 3.47s δ = −13° 52′ 26″ K = −.016 tang δ = −.25
z = +56 15 18

1871-2 Dec. 27	+ 350	3	51 45.15	−.087	−0.10	+18.67	−0.17	+15.61	52 3.55
Jan. 6	+ 375	3	51 36.49	−.093	−.11	+2.32	−0.10	+2.11	3.60
Jan. 8	+ 420	3	51 34.75	−.105	−.12	+2.04	−0.09	+2.83	3.58
7 Jan. 13	+ 387	3	52 0.75	−.096	−.11	+2.92	−0.05	+2.76	3.57
2.0 Jan. 15	+ 350	3	52 8.69	−.087	−.10	+3.02	−0.03	+2.89	3.58
✓ Feb. 22	+ 400	3	51 50.04	−.100	−.12	+12.98	+0.62	+13.48	3.58
✓ Feb. 26	+ 372	3	51 49.95	−.093	−.11	+13.04	+0.73	+13.66	3.64
									3.564 ±.027

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+2.57 $\delta_0 = -2^\circ\ 16'\ 18''$ $\frac{d\delta}{dt} =$ " $u + \log\lg \sin + 11.35$ −.85 −1.32

Tm −7.5 Circle Read. Red. Tor. wire Corr. Circle Read. $B + T + J$ 2.12177 $\lambda_{\odot}-\gamma$ Bm Rm Rf Rm Redt Rm Rm Rm $I\ \delta$ 1872.0

s	′	″	″	′	″	′	″		′	″	″	″	″	″	″	″	″	″	″	″	″	″
−10.9	38	15.65	−13.30	38	2.35	−15	14.00+	0152.7	−2	17.10	.03	+.02	−.35	−1.18	+10.74	−2.50	+61.75	16	21.1			
+15.9	37	42.90	+19.40	38	2.30	15	13.95+	2130.	2	19.02	.05	.05	.30	−1.10	+10.89	−2.42	+61.73		21.8			
+13.0	37	48.10	+12.20	38	0.30	15	11.95+	3445.	2	23.29	.06	.02	.31	−1.14	+11.20	−2.46	+64.06		22.5			
+7.3	37	56.85	+8.91	38	5.76	15	17.41+	1266.	2	16.27	.03	.02	.32	−1.15	+11.92	−2.47	+60.73		23.5			
+21.6	38	3.70	−25.84	37	37.86	−14	49.51+	4343	−2	26.42	.11	+.10	−.40	−1.15	+13.73	−2.47	+41.68		23.1			

±.035 22.40 ±0.72

+2.21 $\delta_0 = -38^\circ\ 0'\ 43''.7$ 2.51151 +11.22 −.92 −1.43

−4.1	18	59.95	−4.82	18	55.63	−56	7.28+	03445	−5	53.53	−.82	+.01	−.44	−1.35	+14.07	−2.78	+64.06	0	14.3			
+14.9	18	54.75	−16.41	18	39.34	55	50.99+	4363	5	59.20	−1.20	.06	.51	−1.37	+16.54	−2.80	+41.68		(55.7)			
+28.7	19	7.15	−29.68	18	37.47	55	49.12+	4203	−5	57.72	−1.10	+.23	−.52	−1.22	+16.98	−2.65	+42.78		50.8			
+21.4	19	7.15	−22.13	18	45.02	−55	56.67		−5	57.72	−1.10				+16.88	−2.60	+42.78		(58.4)			

±.021 47.55

+11.050
51.4221

+5.06 $\delta_0 = +60^\circ\ 43'\ 57''.4$ $\sin z = -.31$ 1.28100 +11.06 +.29 +.45

42 55.45	+41.5	39	45.50	+27.16	40	12.66	+42	35.69+	03456	+0	20.68		−.40	−.52	−.63	−10.10	−0.18	+64.06	43	53.1		
43 0.31	+37.9	39	42.05	+24.80	40	7.685	42	46.50+	1297.		19.68		.34	.53	−.58	−10.90	−0.13	+60.73		50.9		
42 56.00	+33.6	39	50.25	+21.99	40	12.24	42	36.11+	3467		20.68		.26	.53	−.50	−11.20	−0.05	+63.34		48.9		
43 19.18	+9.6	39	55.80	−6.16	39	49.64	42	58.71+	4323		21.13		.02	.64	−.37	−12.70	+0.08	+41.68		47.9		
43 20.40	+30.4	40	8.25	−19.50	39	48.75	42	59.60+	4224		21.05		.20	.01	+.08	−12.90	+0.53	+42.78		51.1		
43 37.39	+33.5	39	51.75	−21.49	39	36.26	+43	18.09+	1797+		19.90		−.26	−.34	−.31	−13.30	+0.14	+24.14		49.0		

±.026 49.82 ±0.82

11.034

+3.76 $\delta_0 = +31^\circ\ 30'\ 3''.93$ $\sin z = +.19$ 1.04380 +11.04 −.17 −.27

29 7.41	+20.4	53	5.60	+23.29	53	28.89	+29	19.46+	02135	−0	11.62		−.09	−.34	−.60	−3.60	−0.87	+61.73	30	5.1		
26.80	+21.7	53	33.55	−24.28	53	9.27	+29	39.08+	2487.		11.71		−.11	−.46	−.74	−4.20	−1.01	+42.34		4.5		

4.80

−10.888
13.33

−2.30 $\delta_0 = +78^\circ\ 11'\ 13''.3$ $\sin z = -.86$ 1.9741 −10.88 +.31 +1.25

101 48 46.7

47 53.63	+67.2	35	54.20	−18.42	36	35.78	+46	12.57+	01538	1	40.65	.01	+.60	−.10	+1.21	−12.50	+2.46	+61.75	48	44.9		
22.74																						
19.23	−42.8	36	24.65	−11.50	36	13.15	46	35.20+	4383	1	47.46	.05	.21	.18	+.84	−18.30	+2.09	+41.68		48.2		
22.73	+7.0	36	13.20	+1.88	36	15.08	46	32.27+	4224.	1	47.07	.04	.01	.16	+.66	−18.60	+1.91	+42.78		45.8		
	−32.4	36	16.55	−8.71	36	7.84	46	40.51+	2190	1	42.17	.02	.12	.09	+.84	−20.20	+2.09	+45.03		44.6		
	~~−34.0~~	~~35~~	~~56.55~~	~~−8.46~~	~~35~~	~~48.49~~	~~+46~~	~~39.86+~~	~~1797~~	~~+1~~	~~41.25~~	~~.02~~	~~+.09~~	~~−.07~~	~~+.83~~	~~−20.40~~	~~−2.08~~	~~+24.14~~		~~47.0~~		

±.047 47.05

+10.808
14.62

+4.00 $\delta_0 = +39^\circ\ 38'\ 14''.6$ $\sin z = +.05$ 0.44036 +10.81 −.04 −.07

37 18.66	+21.4	45	4.60	+22.06	45	26.66	+37	21.69+	02135	−0	2.90		−.12	−.01	−.17	−5.50	−0.24	+61.73	38	14.8		
10.41	−8.1	45	37.20	−8.35	45	28.85	37	19.50+	3456		2.99		.03	.07	−.14	−5.70	−0.21	+64.03		14.6		
19.52	+19.9	45	5.35	+20.52	45	25.87	37	22.48+	1297		2.84		.11	.01	−.16	−6.10	−0.23	+60.73		14.0		
38.47	+23.6	45	30.60	−23.85	45	6.75	+37	41.60+	2487−		2.92		−.15	−.06	−.25	−7.00	−0.32	+42.34		13.7		

14.28

+10.53

+2.79 $\delta_0 = -13^\circ\ 52'\ 27''.6$ 1.93397 ~~+10.62~~ −.17 −1.20

+14.4	14	33.10	+18.71	14	51.81	−52	3.46+	02960	−1	31.95	.01	+.03	−.64	−1.38	+6.61	−2.58	+62.88	52	28.5			
−26.2	15	26.65	−34.05	14	52.60	52	4.25+	2141	1	30.24	.01	.09	.04	−1.72	+8.01	−1.92	+61.73		26.7			
+14.5	14	35.00	+18.86	14	53.86	52	5.51+	3465	1	33.03	.01	.03	.51	−1.25	+8.26	−2.45	+64.06		28.7			
+18.9	14	30.75	+24.56	14	55.31	52	6.96+	1331	1	28.57	.00	.05	.49	−1.21	+8.88	−2.41	+60.73		28.3			
+18.6	14	27.25	+24.17	14	51.42	52	3.07+	3472	1	33.04	.01	.05	.48	−1.20	+9.10	−2.40	+63.34		26.1			
# ~~+17.6~~	~~14~~	~~39.10~~	~~−22.42~~	~~14~~	~~16.68~~	~~51~~	~~28.33+~~	~~1106~~	~~1~~	~~29.55~~	~~.01~~	~~.04~~	~~.32~~	~~−1.06~~	~~+11.43~~	~~−2.26~~	~~+24.14~~		~~24.1~~			
+13.2	14	35.45	−16.82	14	18.63	−51	30.28+	3117−	1	32.29	.01	+.02	−.32	−1.07	+11.43	−2.27	+25.33		25.1			

27.73 ±0.83

±.026

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$\Delta\alpha = +0^{s}.009$ $\Delta\delta = -0''.17$ +3.3162

Star ✱ λ Tauri $\alpha = 3^h\ 58^m\ 25^s.44$ $\delta = +12°\ 7'\ 35''$ $k = -.016$ tang. δ +.21

$z = +30\ 15\ 14$

	Date	n	T_m	n tang δ	d.T	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s (1872)	s	h m s
1871-2	Dec. 27 + .350	3	53	16.65 +.073	+0.06	+18.67 +0.04	+18.77	3 53 35.42
	Jan. 5 + .392	3	53	8.58 +.082	+.07	+26.76 +0.07	+26.90	35.48
	Jan. 8 + .420	3	53	6.26 +.088	+.07	+29.04 +0.08	+29.19	35.45
	Jan. 12 + .405	3	53	32.67 +.085	+.07	+2.70 +0.11	+2.88	35.55
8	Feb. 1 + .505	3	53	27.54 +.106	+.09	+7.44 +0.32	+7.85	35.39
2.1	Feb. 4 + .445	3	53	26.28 +.093	+.08	+8.73 +0.37	+9.18	35.46
	Feb. 18 + .417	3	53	22.83 +.087	+.07	+11.99 +0.58	+12.64	35.47
	Feb. 22 + .400	3	53	21.69 +.084	+.07	+12.98 +0.64	+13.69	35.38
								35.450
								±.036

λ Persei ✓ $\alpha = 3^h\ 57^m\ 3^s.40$ $\delta = +50°\ 0'\ 4''$ $k = -.024$ tang. δ +.19

$z = -7\ 37\ 15$

	Date	n	T_m	n tang δ	d.T	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s (1872)	s	h m s
1871-2	Dec. 27 + .350	3	56	44.43 +.416	+0.39	+18.67 −0.15	+18.47	57 3.34
	Jan. 5 + .392	3	56	36.26 +.466	+.44	+26.76 −0.09	+27.11	3.37
	Jan. 8 + .420	3	56	33.87 +.499	+.48	+29.04 −0.05	+29.47	3.34
	Jan. 12 + .387	3	57	0.00 +.460	+.44	+2.92 +0.02	+3.38	3.38
9	Jan. 15 + .350	3	56	57.80 +.416	+.39	+3.02 +0.05	+3.46	3.26
2.1	Feb. 1 + .505	3	56	54.99 +.600	+.58	+7.44 +0.38	+8.40	3.39
	Feb. 4 + .445	3	56	53.70 +.529	+.50	+8.73 +0.45	+9.68	3.38
	Feb. 18 + .417	3	56	50.16 +.496	+.47	+11.99 +0.81	+13.27	3.43
	Feb. 22 + .400	3	56	49.02 +.476	+.45	+12.98 +0.92	+14.35	3.37
								3.362
								±.030

$\Delta\alpha = +0^{s}.057$ $\Delta\delta = +0''.63$ +4.3309

✱ C Persei $\alpha = +3^h\ 59^m\ 22^s.50$ $\delta = +47°\ 2'\ 4''$ $k = .022$ tang. δ +1.08

$z = -4\ 59\ 15$

	Date	n	T_m	n tang δ	d.T	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s (1872)	s	h m s
1871-2	Dec. 27 + .350	3	59	36.68 +.378	+0.36	+18.67 −0.12	+18.91	59 22.59
	Jan. 5 + .392	3	58	55.49 +.423	+.40	+26.76 −0.05	+27.11	22.60
	Jan. 8 + .420	3	58	53.08 +.453	+.43	+29.04 −0.02	+29.45	22.53
	Jan. 12 + .405	3	59	19.42 +.437	+.41	+2.70 +0.03	+3.14	22.56
10	Jan. 13 + .387	3	59	19.21 +.417	+.40	+2.92 +0.04	+3.36	22.57
2.1	Jan. 15 + .350	3	59	19.09 +.378	+.36	+3.02 +0.09	+3.47	22.56
	Jan. 30 + .437	3	59	15.39 +.471	+.45	+6.39 +0.32	+7.16	22.55
	Jan. 31 + .513	3	59	14.75 +.554	+.53	+6.90 +0.34	+7.77	22.52
	Feb. 4 + .445	3	59	12.87 +.480	+.46	+8.73 +0.43	+9.62	22.49
	Feb. 18 + .417	3	59	9.44 +.450	+.43	+11.99 +0.75	+13.17	22.61
								22.558
								±.025

Gi III 249
B.A.C. 1272 $\alpha = 4^h\ 0^m\ 39^s.72$ $\delta = +16°\ 59'\ 47''$ $k = -.016$ tang. δ +.31

$z = +25\ 23\ 2$

	Date	n	T_m	n tang δ	d.T	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s (1872)	s	h m s
1872	Jan. 30 + .437	4	0	33.06 +.135	+0.12	+6.39 +0.28	+6.79	0 39.85
3	Feb. 1 + .505	4	0	31.89 +.156	+.14	+7.44 +0.30	+7.88	39.77
2.1	Feb. 22 + .400	4	0	26.00 +.124	+.11	+12.98 +0.62	+13.71	39.71
								39.777

p Tauri ✓ $\alpha = 4^h\ 3^m\ 2^s.32$ $\delta = +26°\ 5'\ 44''$ $k = .017$ tang. δ +.49

$z = +16\ 14\ 5$

	Date	n	T_m	n tang δ	d.T	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s (1872)	s	h m s
1871-2	Dec. 27 + .350	4	2	43.41 +.171	+0.15	+18.67 +0.02	+18.84	3 2.28
	Jan. 5 + .392	4	2	35.35 +.192	+.17	+26.76 +0.05	+26.98	2.33
	Jan. 13 + .387	4	2	59.07 +.189	+.17	+2.92 +0.10	+3.19	2.26
	Jan. 15 + .350	4	2	59.11 +.171	+.15	+3.02 +0.12	+3.29	2.40
8	Jan. 30 + .437	4	2	55.51 +.214	+.20	+6.39 +0.29	+6.88	2.39
2.1	Jan. 31 + .513	4	2	54.92 +.251	+.23	+6.90 +0.30	+7.43	2.35
	Feb. 18 + .417	4	2	49.52 +.204	+.19	+11.99 +0.60	+12.78	2.30
	Feb. 22 + .400	4	2	48.53 +.196	+.18	+12.98 +0.67	+13.83	2.36
								2.320
								±.036

$\Delta\alpha = +0^{s}.008$ $\Delta\delta = -0''.15$ +2.9253

✱ o Eridani $\alpha = 4^h\ 5^m\ 37^s.12$ $\delta = -7°\ 10'\ 24''$ $k = .016$ tang. δ −.12

$z = +49\ 33\ 13$

	Date	n	T_m	n tang δ	d.T	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s (1872)	s	h m s
1871-2	Dec. 27 + .350	4	5	18.65 −.042	−0.06	+18.67 −0.14	+18.47	5 37.12
	Jan. 5 + .392	4	5	10.53 −.047	−.06	+26.76 −0.11	+26.59	37.12
8	Jan. 13 + .387	4	5	34.35 −.046	−.06	+2.92 −0.05	+2.81	37.16
2.1	Jan. 15 + .350	4	5	34.20 −.042	−.06	+3.02 −0.04	+2.92	37.12
	Jan. 31 + .513	4	5	30.22 −.061	−.08	+6.90 +0.15	+6.97	37.19
	Feb. 4 + .445	4	5	28.24 −.053	−.07	+8.73 +0.21	+8.87	37.11
	Feb. 18 + .417	4	5	24.50 −.050	−.07	+11.99 +0.42	+12.34	37.14
	Feb. 22 + .400	4	5	23.67 −.048	−.06	+12.98 +0.48	+13.40	37.17
								±.023
								37.129

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1872phae.proj.1459.

+10.489 35.4h

$\frac{d\delta}{dt} = +10.49''$

+3.32 $\delta_0 = +12\ 7\ 35.4$ sin z = +.50 α + log γ n −.46 −.73

Tm − TS | Circle Read. | Red. Horizon | Corr. Circle Read. | $B + H + \gamma$ 1.52590 | λ_{f-8} | R_m | R_a | Red to Rm 1872.0 | Rm − Rs + Rf | I | δ 1872.0

	s	′	″	″	′	″	′	″		′	″		″	″	″		″	″	″	′	″
33.55	−19.1	16	3.70	−25.00	15	38.70	+7	9.65+	0.2760	−0	35.93	−.03	−.14	−.63	+0.90	−1.36	+62.88	7			36.1
32.28	+22.1	15	12.30	+28.93	15	41.23	7	7.12+	1549		34.78	.04	.02	−.52	+1.30	−1.25	+61.75				34.1
30.63	−11.3	15	56.05	−14.79	15	41.26	7	4.09+	3465		36.35	.01	.10	−.57	+1.40	−1.30	+64.06				34.9
35.06	+13.8	15	20.60	+18.06	15	38.66	7	.969+	1290		34.58	.02	.03	−.51	+1.50	−1.24	+61.78				37.1
57.39	+18.8	15	43.95	−24.12	15	19.83	7	28.82+	4244		37.01	.03	.09	−.58	+2.20	−1.31	+42.78				35.2
50.70	+17.6	15	44.60	−22.58	15	22.02	7	26.33+	2499		35.55	.03	.05	−.54	+2.40	−1.27	+42.34				34.3
8.11	+16.2	15	45.35	−20.78	15	24.57	+7	23.78+	2185−		35.30	−.02	−.05	−.53	+2.80	−1.26	+45.03				35.2
		15	(26.45)	24.12																	

±.036 — 35.24 ±0.69

4.44 $\delta = +50\ 0\ 4.6$ 0.88670 n +10.25'' +.12 +.19

	+29.9	23	23.75	+25.73	23	49.48	+58	58.87+	0.2971	+0	8.25	−.24	−.48	−.60	−6.06	−0.41	+62.88	0			3.8
	+28.7	23	22.20	+24.70	23	46.90	59	1.45+	1560		7.99	.23	.37	−.48	−7.37	−0.29	+61.75				3.5
	+31.3	23	22.10	+26.87	23	48.97	58	59.38+	3474		8.35	.26	.37	−.51	−7.76	−0.32	+64.06				3.7
	+32.0	23	17.50	+27.53	23	45.03	59	3.32+	1364		7.95	.27	.36	−.51	−8.38	−0.32	+60.73				3.3
	+28.8	23	22.80	+24.78	23	47.58	59	0.77+	3477		8.35	.23	.37	−.48	−8.59	−0.29	+63.34				3.6
	+27.7	23	48.80	−23.36	23	25.44	59	22.91+	4264		8.50	.21	.49	−.58	−9.99	−0.39	+42.78				3.8
	+26.9	23	47.55	−22.69	23	24.86	59	23.49+	2511		8.16	.20	.49	−.57	−10.12	−0.38	+42.34				3.5
	+28.1	23	49.95	−23.70	23	26.25	59	22.10+	2189		8.10	.21	.26	−.35	−10.32	−0.16	+45.03				4.7
	+28.2	23	30.05	−23.79	23	6.26	+59	42.09+	1815+		8.03	−.21	−.25	−.34	−10.24	−0.15	+24.14				3.9

±.019 — 3.76 ±0.34

+10.027 4.46

+11.33 $\delta = +47\ 22\ 4.5$ sin z = −.09 0.70130 n +10.03'' +.08 +.12

21	7.82	+26.2	1	19.95	+25.57	1	45.52	+21	28.3+	0.2971	+0	5.38	−.21	−.18	−.31	−15.70	−5.67	−0.19	+62.88	22	5.2
	6.99	−24.8	2	5.65	−22.48	1	43.17	21	5.18+	1560		5.21	.17	.23	−.32		−6.80	−0.20	+61.75		5.1
	7.44	−8.3	1	53.65	−7.63	1	46.12	21	2.23+	3474		5.45	.03	.21	−.16		−7.20	−0.04	+64.06		4.5
	12.17	+25.2	1	18.20	+22.85	1	41.05	21	7.30+	1295		5.18	.17	.14	−.23		−7.60	−0.11	+61.78		6.5
	11.78	+23.2	1	20.45	+21.03	1	41.48	21	6.87+	1364		5.19	.14	.14	−.20		−7.70	−0.08	+60.73		5.0
	10.04	−29.9	2	10.40	−27.11	1	43.29	21	5.06+	3477		5.45	.23	.24	−.39		−7.90	−0.27	+63.34		5.7
	30.63	+25.7	1	45.35	−22.84	1	22.51	21	25.84+	4383		5.19	.18	.32	−.32		−9.10	−0.20	+41.68		3.4
	31.77	+21.7	1	41.00	−19.29	1	21.71	21	26.64+	3760		5.48	.13	.22	−.27		−9.20	−0.15	+42.06		4.8
	31.56	+23.5	1	42.65	−20.89	1	21.76	21	26.59+	2511		5.32	.14	.32	−.28		−9.40	−0.16	+42.34		4.7
21	30.22	+24.2	1	44.65	−21.51	1	23.14	+21	25.21+	2189+		5.29	−.16	−.12	−.20		−9.50	−0.08	+45.03		6.0

±.017 — 5.09 ±0.54

+3.43 $\delta = +16\ 59\ 44.3$ 1.43620 +9.98'' −.39 −.62

	−14.7	22	56.55	+18.44	23	14.99	+59	33.36+	4383	−80	30.20	−.04	−.38	−.81	+0.46	−1.43	+41.68	59			43.9
	+24.5	23	42.90	−25.73	23	17.17	59	31.18+	4264		30.12	.06	.48	−.93	+0.50	−1.55	+42.78				42.8
	+17.5	23	21.10	−21.96	22	59.14	+59	49.21+	1815−		28.47	−.05	−.23	−.67	+1.22	−1.29	+24.14				44.6

43.77

?

3.64 $\delta = +26\ 8\ 41.3$ 1.22430 +9.80'' −.25 −.41

	+23.8	14	20.10	+28.60	14	48.70	+7	59.65+	0.2971	−0	17.95	−.12	−.60	−.97	−1.88	−1.38	+62.88	8			41.3
	+19.5	14	25.05	+23.43	14	48.48	7	59.87+	1560		17.38	.07	.48	−.80	−2.18	−1.21	+61.75				40.9
	+14.8	14	30.00	+17.79	14	47.79	8	0.56+	1364		17.29	.04	.49	−.78	−2.39	−1.19	+66.73				40.4
	+18.7	14	26.50	+22.47	14	48.97	7	59.38+	3477		18.16	.06	.48	−.79	−2.43	−1.20	+63.34				40.9
	+20.3	14	51.50	−23.91	14	27.59	8	20.76+	4581		18.63	.07	.64	−.96	−2.58	−1.37	+41.68				39.9
	+22.4	14	52.60	−26.39	14	27.21	8	21.14+	3762		18.28	.08	.64	−.97	−2.58	−1.38	+42.06				41.0
	+19.1	14	53.55	−22.50	14	31.05	8	17.30+	2489		17.63	.06	.24	−.65	−2.36	−1.06	+45.03				41.3
	+21.2	14	34.95	−24.97	14	9.98	+7	38.37+	1815−		17.48	−.08	−.32	−.65	−2.29	−1.06	+24.14				41.7

±.032 — 40.92 ±0.36

+9.679 24.07

+12.93 $\delta = -7\ 10\ 24.6$ sin z = +.76 1.52860 +9.68'' −.70 −1.09

11	30.05	+18.9	32	40.75	+25.10	33	5.85	−10	17.50+	0.2982	−1	12.18	.01	+.02	−.38	−1.06	+4.80		−2.15	+62.88	10	24.2
	29.77	+19.1	32	42.60	+25.37	33	7.97	10	19.62+	1571	1	9.87	.00	.02	.30	−.98	+5.80		−2.07	+61.75		24.0
	30.83	+15.9	32	44.75	+21.12	33	5.87	10	17.52+	3482	1	13.02	.01	.02	.30	−.98	+6.70		−2.07	+62.34		22.6
12	1.17	+17.7	33	10.15	−23.05	32	47.10	9	58.75+	3779	1	13.52	.01	.03	.42	−1.09	+6.30		−2.18	+42.06		24.1
	14.13	+18.2	33	14.35	−22.69	32	50.66	10	2.31+	2523	1	11.42	.01	.03	.42	−1.09	+5.50		−2.18	+42.34		25.1
±.023		+15.9	33	15.20	−20.70	32	54.50	10	6.15+	2193	1	10.88	.01	.02	.22	−.90	+5.70		−1.99	+45.03		25.3
#		+17.8	32	53.35	−23.18	32	38.17	−9	41.82+	1824+	1	10.28	.00	+.03	−.20	−.87	+8.66		−1.96	+24.14		21.3

±0.60 — 24.22

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Star o^2 Eridani ✓ α = 4 h 9 m 22.85 s δ = −7° 51′ 15″ k = −.016 tang δ −.14

z = +50 14 4

Date	n	T's	T_m	n tang δ	d.T.	Sum	A.R. 1872
1871-2 Dec. 27	+ .350	4 h	9 m 4.38 s	−.049	0.06	+18.67 −0.15	+15.93	4 h 9 m 22.54
Jan. 5	+ .392	4	8 56.36	−.054	−.07	+26.76 −0.12	+22.93	9 22.93
Jan. 8	+ .420	4	8 54.01	−.058	−.07	+29.04 −0.11	+28.86	22.87
7 Jan. 15	+ .350	4	9 20.06	−.049	−.07	+5.02 −0.06	+2.89	22.97
2,1 Feb. 4	+ .445	4	9 14.01	−.062	−.08	+8.73 +0.18	+8.83	22.84
Feb. 18	+ .417	4	9 10.54	−.058	−.07	+11.99 +0.39	+12.31	22.85
Feb. 22	+ .400	4	9 9.44	−.056	−.07	+12.98 +0.46	+13.37	22.81
								22.870 ±.036

Δα = +6.06 s Δδ = −1.11″ +34066 / 30642

※ γ Tauri α = 4 h 12 m 30.64 s δ = +15° 18′ 59″ k = −.016 tang δ +.27

z = +27 3 50

1871-2 Dec. 27	+ .350	4	12 11.88	+.094	+0.08	+18.67 −0.01	+18.75	12 30.63
Jan. 5	+ .392	4	12 3.79	+.105	+.09	+26.77 +0.01	+26.87	30.66
Jan. 8	+ .420	4	12 1.51	+.118	+.10	+29.05 +0.02	+29.17	30.68
9 Jan. 12	+ .405	4	12 27.77	+.109	+.09	+2.70 +0.04	+2.83	30.60
2,1 Jan. 15	+ .350	4	12 27.53	+.094	+.08	+3.02 +0.05	+3.15	30.68
Jan. 31	+ .513	4	12 22.44	+.138	+.12	+6.90 +0.21	+7.23	30.67
Feb. 4	+ .445	4	12 21.54	+.120	+.10	+8.73 +0.27	+9.10	30.64
Feb. 18	+ .417	4	12 18.11	+.112	+.10	+11.99 +0.48	+12.54	30.68
Feb. 22	+ .400	4	12 16.97	+.108	+.09	+12.98 +0.55	+13.62	30.59
								30.648 ±.026

Δα = +0.54 s Δδ = −0.50″ +34602 / 33241

(1).

※ δ Tauri α = 4 h 15 m 33.24 s δ = +17° 14′ 24″ k = −.016 tang δ +.31

z = +25 8 25

1871-2 Dec. 27	+ .350	4	15 14.53	+.108	+0.09	+18.68 −0.01	+18.76	15 33.29
Jan. 8	+ .420	4	15 4.14	+.130	+.11	+29.04 +0.01	+29.16	33.30
Jan. 12	+ .405	4	15 30.44	+.125	+.11	+2.70 +0.03	+2.84	33.28
9 Jan. 15	+ .350	4	15 30.14	+.108	+.09	+3.02 +0.05	+3.16	33.30
2,1 Jan. 30	+ .477	4	15 26.61	+.147	+.13	+6.34 +0.19	+6.66	33.27
Jan. 31	+ .513	4	15 26.07	+.159	+.14	+6.90 +0.20	+7.24	33.31
Feb. 4	+ .445	4	15 24.21	+.134	+.12	+8.73 +0.26	+9.11	33.32
Feb. 18	+ .417	4	15 20.73	+.129	+.11	+11.99 +0.47	+12.57	33.30
Feb. 22	+ .400	4	15 19.66	+.124	+.11	+12.98 +0.54	+13.63	33.29
								33.295 ±.011

64. ✓ Tauri ✓ α = 4 h 16 m 43.09 s δ = +17° 8′ 44″ k = −.016 tang δ +.31

z = +25 14 5

1871-2 Dec. 27	+ .350	4	16 24.36	+.108	+0.09	+18.68 −0.10	+16.23	16 43.03
Jan. 8	+ .420	4	16 13.88	+.130	+.11	+29.04 +0.00	+29.15	43.03
Jan. 15	+ .350	4	16 39.78	+.108	+.09	+3.02 +0.04	+3.15	43.13
8 Jan. 30	+ .477	4	16 36.45	+.147	+.13	+6.34 +0.19	+6.66	43.11
2,1 Jan. 31	+ .513	4	16 35.93	+.150	+.14	+6.90 +0.20	+7.24	43.17
Feb. 4	+ .445	4	16 33.96	+.134	+.12	+8.73 +0.26	+9.11	43.07
Feb. 18	+ .417	4	16 30.58	+.129	+.11	+11.99 +0.47	+12.57	43.15
Feb. 22	+ .400	4	16 29.49	+.124	+.11	+12.98 +0.54	+13.63	43.12
								43.101 ±.040

23^3 Eridani o α = 4 h 19 m 13.83 s δ = −34° 18′ 56″ k = −.019 tang δ −.68

z = +76 41 45

1872 Jan. 8	+ .420	4	18 45.65	−.285	−0.30	+29.05 −0.57	+28.18	19 13.83
Jan. 10	+ .394	4	18 43.98	−.267	−.29	+30.71 −0.53	+29.87	13.85
Jan. 30	+ .477	4	19 8.18	−.324	−.34	+6.32 −0.24	+5.76	13.94
7 Feb. 4	+ .445	4	19 5.57	−.302	−.32	+8.73 −0.14	+8.27	13.94
2,1 Feb. 18	+ .417	4	19 1.90	−.283	−.30	+11.99 +0.16	+11.85	13.75
Feb. 22	+ .400	4	19 0.86	−.272	−.29	+12.98 +0.25	+12.94	13.80
Feb. 24	+ .400	4	19 0.41	−.272	−.29	+13.30 +0.29	+13.30	13.71
								13.817 ±.050

Δα = +0.014 s Δδ = −0.53″ +34954 / 8651

ε Tauri α = 4 h 21 m 8.65 s δ = +19° 53′ 39″ k = −.016 tang δ +.34

z = +29 29 10

1872 Jan. 10	+ .394	4	20 37.87	+.133	+0.12	+30.71 +0.00	+30.83	21 8.70
Jan. 12	+ .405	4	21 5.80	+.137	+.12	+2.70 +0.00	+2.82	8.62
7 Jan. 15	+ .350	4	21 5.48	+.119	+.10	+3.02 +0.03	+3.15	8.63
2,1 Feb. 4	+ .445	4	20 59.55	+.151	+.13	+8.73 +0.24	+9.10	8.65
Feb. 12	+ .338	4	20 57.04	+.114	+.10	+11.71 +0.35	+11.62	8.66
Feb. 18	+ .417	4	20 56.20	+.141	+.13	+11.99 +0.45	+12.57	8.77
Feb. 22	+ .400	4	20 55.01	+.136	+.12	+12.98 +0.51	+13.61	±.035 8.62
								8.65

1872phae.proj.1459.

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1872phae.proj.1459.

$\frac{d\delta}{dt} = +9''.31$

+2.91 $\delta_0 = -7^\circ\ 51'\ 13''.8$ — Log. Circle Read. Red. to Circle Read. — $\mu + \lambda + \gamma$ — $B + T + \gamma$ — 1.83910 — $-.71 - 1.11$ — Red to 18720 .72 — Log. $\Sigma\delta$ 18720

(−13.8 s)	14′	11″.70	−18″.80	13′	53″.40	−51′	5″.05+	02993	−1′	13″.96	.01	+.02	−.59	−1.28	+4.69		−2.39	+62.88	51′	138″
+16.7	13	35.15	+22.15	13	57.30	51	6.95+	1582	1	11.60	.00	.03	.40	−1.08	+5.81		−2.19	+61.75		152
+17.1	13	32.35	+22.68	13	55.03	51	6.68+	3492	1	14.82	.01	.03	.29	−1.07	+6.15		−2.18	+64.06		135
+19.1	13	21.80	+25.33	13	54.13	51	5.78+	3487	1	11.81	.01	.03	.39	−1.07	+6.99		−2.18	+63.34		125
+15.6	13	38.00	−20.28	13	37.72	50	19.37+	2535	1	13.19	.01	.02	.54	−1.21	+8.61		−2.32	+42.34		138
+16.6	14	4.60	−21.58	13	43.02	50	34.67+	2198	1	12.62	.01	.03	.29	−.97	+9.20		−2.08	+45.03		151
(+23.1	13	48.80	−30.81	13	17.99	−50	29.34+	1833	−1	12.02	.01	+.05	−.37	−.73	+9.30		−2.04	+24.14		(102)

±.036 +9.050 59.12 — 14.00 ±0.72

+3.41 $\delta_0 = +15^\circ\ 18'\ 59''.1$ — Lin z = +.45 — 1.46840 +9.06 — −.42 −.65

17 57.13	+22.2	3	50.45	+28.66	4	19.11+	18	29.24+	02993	−0′	31″.50	−.07	−.54	−1.03	−8.90	+0.16	−1.68	+62.88	18	591
56.00	+21.2	3	54.00	+27.37	4	21.37	18	26.98+	1582		30.49	.06	.43	−.91		+0.30	−1.56	+61.75		570
57.02	+21.1	3	53.05	+27.49	4	20.54	18	27.81+	1306		30.30	.06	.43	−.91		+0.50	−1.56	+61.78		582
56.32	+21.9	3	51.40	+28.27	4	19.67	18	28.68+	3487		31.86	.07	.43	−.92		+0.60	−1.57	+63.34		592
55.39	+24.5	4	30.90	−31.01	3	59.89	18	48.46+	3797		32.09	.08	.60	−1.10		+0.90	−1.75	+42.06		576
15.30	+19.7	4	26.10	−24.93	4	1.17	18	41.18+	2535		31.17	.05	.57	−1.04		+1.00	−1.69	+42.34		577
12.02	+20.2	4	30.60	−25.56	4	5.04	18	43.31+	2198		30.93	.05	.31	−.78		+1.30	−1.43	+45.03		593
	+25.6	4	13.95	−32.40	3	41.55	+19	6.80+	1833	−	30.67	−.09	−.24	−.80		+1.30	−1.45	+24.14		607

±.025 +8.799 24.26 — 58.01 ±0.64

+3.46 $\delta_0 = +17^\circ\ 14'\ 24''.3$ — Lin z = +.42 — 1.43150 +8.80 — −.39 −.61

13 20.70	+18.9	8	34.00	+24.16	8	58.16+	13	30.19+	03004	−0′	28″.94	−.05	−.50	−.95	−9.00	−0.20	−1.55	+62.88	14	224
20.78	+9.6	8	45.60	+12.27	8	57.87	13	30.48+	3491		29.27	.02	.41	−.82		+0.00	−1.43	+64.06		238
23.85	+16.6	8	35.00	+21.22	8	56.22	13	32.13+	1311		27.84	.04	.40	−.83		+0.00	−1.44	+61.78		246
23.41	+19.3	8	30.55	+24.67	8	55.22	13	33.13+	3492		29.27	.06	.39	−.84		+0.10	−1.45	+63.34		258
40.75	+19.8	9	1.85	−24.82	8	37.03	14	11.32+	4551		29.99	.06	.52	−.97		+0.30	−1.58	+41.68		217
42.74	−10.1	8	23.00	+12.66	8	35.66	14	12.69+	3814		29.19	.02	.44	−.85		+0.30	−1.46	+42.06		241
41.56	+20.3	9	3.00	−25.44	8	37.56	14	10.79+	2547		28.64	.06	.53	−.98		+0.40	−1.59	+42.34		233
38.80	+21.2	9	7.35	−26.57	8	40.78	14	7.57+	2202		28.41	.07	.29	−.75		+0.70	−1.36	+45.03		235
14 0.72	+22.7	8	47.55	−28.45	8	19.10	+14	29.25+	1842	−	28.18	−.08	−.27	−.74		+0.70	−1.35	+24.14		246

±.010 23.76 ±0.81

3.44 $\delta_0 = +17^\circ\ 8'\ 43''.2$ — 1.43340 +8.73 — −.39 −.62

+19.4	14	13.35	+24.82	14	38.17	+8	10.18+	03004	−0′	29″.07	−.06	−.59	−1.04	−0.23		−1.66	+62.88	8	421
+21.2	14	12.45	+27.12	14	39.57	8	8.78+	3501		29.40	.07	.46	−.92	−0.09		−1.54	+64.06		418
−15.2	14	57.15	−19.44	14	37.71	8	10.64+	3492		29.40	.04	.54	−.97	−0.03		−1.59	+63.34		430
+15.2	14	36.80	−19.06	14	17.74	8	30.61+	4551		30.12	.04	.60	−1.03	+0.23		−1.65	+43.15		422
+16.5	14	38.50	−20.69	14	17.81	8	30.54+	3814		29.62	.04	.60	−1.03	+0.25		−1.65	+42.06		416
−11.4	15	4.75	+14.30	15	19.05	7	29.30+	2547		28.76	.02	.01	−.42	+0.32		−1.04	+42.34		422
−17.8	13	59.25	+22.32	14	21.57	8	26.78+	2202		28.54	.05	.28	−.72	+0.60		−1.34	+45.03		425
+23.1	14	29.50	−28.97	14	0.53	+8	47.82+	1842	−	28.30	−.08	−.31	−.78	+0.68		−1.40	+24.14		429

±.038 42.29 ±0.35

+2.25 $\delta_0 = -34^\circ\ 18'\ 56''.6$ — 2.37580 +8.54 — −.90 −1.40

+7.4	38	30.10	+8.18	38	38.28	−15	49.93+	03491	−4′	17″.46	−.37	+.03	−.39	−1.26	+11.20		−2.66	+64.06	18	551
−23.4	39	9.95	−25.87	38	44.08	15	55.73+	2141	4	9.41	.21	.14	.45	−1.21	+11.62		−2.61	+62.76		586
+17.7	38	36.00	−19.18	38	16.82	15	28.47+	4383	4	22.80	.56	.08	.47	−1.29	+14.71		−2.69	+43.15		567
+19.4	38	47.65	−21.03	38	26.62	15	38.27+	2547	4	11.93	.36	.09	.44	−1.30	+10.21		−2.70	+42.34		557
−19.3	38	12.15	+20.92	38	33.07	15	44.72+	2202	4	9.93	.23	.09	.22	−1.03	+10.97		−2.43	+45.03		563
# ~~+24~~	~~38~~	~~21.75~~	~~−21.77~~	~~37~~	~~59.96~~	~~−15~~	~~11.61+~~	~~1842~~	~~−~~	~~7.87~~	~~.21~~	~~.10~~	~~.24~~	~~−1.04~~	~~+10.06~~		~~−2.44~~	~~+24.14~~		~~(412)~~
+21.6	38	45.30	−23.41	38	21.89	−15	33.54+	0093	−3	57.07	−.01	+.12	−.26	−1.04	+10.06		−2.44	+23.47		535

±.041 +18.366 39.44 — 55.15 ±1.00

+3.50 $\delta_0 = +18^\circ\ 58'\ 39''.4$ — Lin z = +.40 — 1.39400 +8.37 — −.36 −.57

52 37.77	−21.3	30	11.20	−26.97	29	44.23+	53	4.12+	2110	−0′	26″.25	−.08	−.52	−.46		−0.50	−1.03	+62.76	53	391
38.46	+20.7	29	17.35	+26.22	29	43.57	53	4.78+	1317		25.77	.08	.47	−.91		−0.50	−1.48	+61.78		388
37.99	+12.6	29	22.45	+22.29	29	42.74	53	5.61+	3497		27.10	.05	.47	−.88		−0.50	−1.45	+63.34		399
52 56.32	+16.3	29	45.10	−20.24	29	24.86	53	23.49+	2534		26.52	.04	.61	−1.01		−0.30	−1.58	+42.34		374
57.17	+16.7	29	46.45	−20.73	29	24.72	53	23.63+	1365		25.80	.05	.61	−1.02		−0.20	−1.59	+42.37		384
55.14	−10.5	29	13.55	+13.04	29	26.57	53	21.76+	2207		26.31	.02	.29	−.67		+0.00	−1.24	+45.03		392
±.033 53 16.42	+21.3	29	31.90	−26.45	29	5.45	+53	42.90+	1851	−	26.09	−.08	−.31	−.75		+0.00	−1.32	+24.14		376

±0.56 38.91

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22

$\Delta\alpha = -0.112^s$ $\Delta\delta = +12.''07$

+4.7247

Star * 1 Camelopardi 209 per Ai h m 54.095 L = 4 21 54.09 S = +53° 37' 46" K = -.025 tang S = +1.36

Z = -11 14 57

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 8	+ .420			4 21 24.66	+.571 +0.55	+29.05	-0.25	+29.25	4 21 54.01
Jan. 30	+ .477			4 21 46.90	+.648 +.62	+6.34	+0.12	+7.08	53.98
Jan. 31	+ .513			4 21 45.35	+.697 +.67	+6.90	+0.14	+7.71	(53.06)
9 Jan. 31	+ .513			4 21 46.26	+.697 +.67	+6.90	+0.14	+7.71	52.97
2.1 Feb. 1	+ .505			4 21 45.64	+.686 +.66	+7.44	+0.19	+8.29	53.93
Feb. 24	+ .400			4 21 38.44	+.544 +.52	+13.30	+0.81	+14.63	(53.07)
Feb. 24	+ .400			4 21 39.41	+.544 +.52	+13.30	+0.81	+14.63	54.04
Feb. 26	+ .372			4 21 39.53	+.505 +.48	+13.04	+0.87	+14.39	53.92
Feb. 28	+ .438			4 21 39.68	+.595 +.57	+12.85	+0.93	+14.35	54.03
									53.983 ±.034

88 Tauri h m s L = 4 22 50.82 S = +15° 21' 19" K = -.016 tang S = +.27

Z = +27 1 30

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 10	+ .394			4 22 19.98	+.106 +0.09	+30.72	-0.02	+30.79	22 50.77
Jan. 30	+ .477			4 22 44.22	+.128 +.11	+6.34	+0.15	+6.60	50.82
6 Feb. 12	+ .338			4 22 39.24	+.091 +.08	+11.17	+0.33	+11.58	50.82
2.1 Feb. 22	+ .400			4 22 37.19	+.108 +.09	+12.98	+0.49	+13.56	50.75
Feb. 26	+ .372			4 22 37.06	+.100 +.08	+12.84	+0.56	+13.68	50.74
Feb. 28	+ .438			4 22 37.31	+.118 +.10	+12.85	+0.59	+13.54	50.85
									50.792 ±.035

85 Tauri h m s L = 4 24 33.20 S = +15° 34' 29" K = -.016 tang S = +.28

Z = +26 48 20

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 10	+ .394			4 24 2.43	+.110 +0.09	+30.72	-0.03	+30.78	24 33.21
Jan. 15	+ .350			4 24 30.10	+.098 +.08	+3.02	+0.01	+3.11	33.21
6 Jan. 30	+ .477			4 24 26.50	+.133 +.12	+6.34	+0.15	+6.61	33.17
2.1 Feb. 1	+ .505			4 24 25.37	+.141 +.12	+7.45	+0.17	+7.74	33.11
Feb. 4	+ .445			4 24 24.15	+.124 +.11	+8.74	+0.21	+9.06	33.21
Feb. 12	+ .338			4 24 21.59	+.094 +.08	+11.17	+0.32	+11.57	33.16
									33.178 ±.030

Q Tauri ✓ h m s L = 4 26 35.26 S = +14° 34' 22" K = -.016 tang S = +.26

Z = +27 48 27

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 10	+ .394			4 26 4.44	+.102 +0.09	+30.72	-0.04	+30.77	26 35.21
Jan. 15	+ .350			4 26 32.04	+.091 +.08	+3.02	+0.01	+3.11	35.15
6 Jan. 30	+ .477			4 26 28.66	+.124 +.11	+6.34	+0.13	+6.58	35.24
2.1 Feb. 1	+ .505			4 26 27.41	+.131 +.12	+7.45	+0.15	+7.72	35.13
Feb. 4	+ .445			4 26 26.10	+.115 +.10	+8.74	+0.19	+9.03	35.13
Feb. 12	+ .338			4 26 23.62	+.089 +.07	+11.17	+0.30	+11.54	35.16
									35.170 ±.034

$\Delta\alpha = +0.225^s$ $\Delta\delta = +0.''24$

-0.1487

h m -.11460

* X Dracons 2.6 L = 16 28 14.46 S = +69° 2' 46" K = +.040 tang S = -2.61

-68 34 30

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 30	+ .477			4 28 7.94	-1.244 -1.20	+6.34	+1.64	+6.78	28 14.72
4 Feb. 15	+ .400			4 28 3.67	-1.044 -1.00	+11.31	+0.62	+10.93	14.60
2.1 Feb. 24	+ .400			4 28 2.56	-1.044 -1.00	+13.30	+0.03	+12.33	14.89
Feb. 26	+ .372			4 28 2.52	-.970 -0.93	+13.04	-0.10	+12.01	14.53
									14.685

$\Delta\alpha = -0.020^s$ $\Delta\delta = -0.''97$

+3.4360

h m 34.645

* L Tauri L = 4 28 34.64 S = +16° 14' 59" K = -.016 tang S = +.29

Z = +26 7 50

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 10	+ .394			4 28 38.24	+.114 +0.10	+30.72	-0.04	+30.78	28 34.64
Jan. 15	+ .350			4 28 31.53	+.101 +.09	+3.02	-0.01	+3.10	34.63
8 Feb. 1	+ .505			4 28 26.92	+.146 +.13	+7.45	+0.13	+7.71	34.63
2.1 Feb. 4	+ .445			4 28 25.51	+.129 +.11	+8.74	+0.18	+9.03	34.54
Feb. 12	+ .338			4 28 23.14	+.098 +.08	+11.17	+0.29	+11.54	34.68
Feb. 18	+ .417			4 28 22.12	+.120 +.10	+12.00	+0.39	+12.49	34.61
Feb. 22	+ .400			4 28 21.06	+.116 +.10	+12.98	+0.46	+13.54	34.60
Feb. 28	+ .438			4 28 21.16	+.127 +.11	+12.85	+0.55	+13.51	34.67
									34.625 ±.030

$\Delta\alpha = +0.019^s$ $\Delta\delta = -0.''48$

+2.9918

55.282

* L Eridani L = 4 29 33.38 S = -3° 36' 58" K = -.015 tang S = -.06

Z = +45 59 47

Date	n	Vs	Vm	h m s	α tang S	α.T.	Red 1872	Sum	A.R. 1872 h m s
1872 Jan. 10	+ .394			4 29 24.96	-.023 -0.04	+30.72	-0.14	+30.54	29 55.50
Jan. 30	+ .477			4 29 49.15	-.028 -.04	+6.34	+0.03	+6.33	55.48
7 Feb. 12	+ .338			4 29 44.12	-.020 -.04	+11.17	+0.20	+11.33	55.45
2.1 Feb. 15	+ .400			4 29 43.96	-.024 -.04	+11.31	+0.25	+11.52	55.48
Feb. 24	+ .400			4 29 41.76	-.024 -.04	+13.30	+0.40	+13.66	55.42
Feb. 26	+ .372			4 29 42.08	-.022 -.04	+13.04	+0.43	+13.43	±.025 55.51
Feb. 28	+ .438			4 29 42.26	-.026 -.04	+12.85	+0.51	+13.32	55.48

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$\frac{d\delta}{dt} =$ "

+8.314
45.65

$\delta_0 = +53^\circ\ 37'\ 45.6$ Rin Z = −.19 ∫ μ+loytgn

Tan − 73 Circle Read Red. Ha-wire Tan Circle Read. ∫ β+γ+γ

1.05+10 m

	s	′	″	″	′	″	′	″			″		″	″	″									
45 40	+26.6	45	49.95	+21.11	46	11.06	+36	37.29+	02511	+0	12.39		−.19	−.09	−.11		−7.90	+0.16	+64.06	37	46.0			
15.9	+31.8	46	9.75	−24.75	45	45.00	37	3.35+	4383		12.64		.26	.14	−.23		−10.60	+0.04	+43.15	37	48.6			
36.01	+2.0	46	40.15	−15.56	46	24.59	36	23.76+	3832		12.49		.00	.21	−.04		−10.70	+0.23	+42.06	(37	7.8)			
	+3.0	46	40.15														−10.70		+41.00					
14.78	+24.8	46	5.20	−19.30	45	45.90	37	24.5+	4343		12.63		.16	.14	−.13		−10.80	+0.14	+42.78	37	47.9			
40.57	+45.0	45	52.60	−35.01	45	17.59	37	30.76−	0080		11.41		.54	.06	−.43		−11.70	−0.16	+23.47	(37	53.8)			
38.26	+36.6	45	52.60	+28.48	46	21.08	36	27.27−	0080		11.41		.36	.06	−.25		−11.70	+0.02	+23.47	37	50.5			
31.55	+15.0	45	38.65	−11.67	45	26.98	37	21.34+	3122		12.28		.06	.04	+.07		−11.70	+0.34	+25.33	37	47.6			
36.44	+10.0	46	37.10	−7.78	45	29.82	+37	19.03+	2116+		12.00		−.03	−.16	−.02		−11.60	+0.25	+26.73	37	46.4			

±.020 47.72 ±1.13

$\delta_0 = +15^\circ\ 21'\ 19.3''$ 1.46770 +8.25

+4.0	1	53.40	+51.61	58.56	+20	49.79+	02118	−0	30.82		−.00	−.21	−.63	+0.35		−1.28	+62.76	21	20.8					
+16.1	1	59.85	−20.38	1	37.47	21	8.88+	1365		30.30		.03	.36	−.71	+1.02		−1.36	+42.37		20.6				
+19.8	1	45.30	−25.05	1	20.25	21	2.10+	1851		30.63		.05	.12	−.59	+1.22		−1.24	+24.14		21.6				
+13.5	1	37.85	−17.08	1	20.77	21	27.58+	3122		31.54		.03	.11	−.56	+1.31		−1.21	+25.33		21.5				
+10.7	1	35.85	−14.80	1	21.05	+21	27.30+	2116−		30.82		−.02	−.16	−.60	+1.35		−1.25	+26.73		23.3				

±.034 21.56 ±0.68

$\delta_0 = +15^\circ\ 34'\ 29.9''$ 1.46360 +8.11

+16.7	48	29.85	+21.53	48	51.38	+33	56.97+	02118	−0	30.53		−.03	−.39	−.84	+0.29		−1.49	+62.76	34	28.0				
+21.2	48	22.85	+27.97	48	50.82	33	57.53+	3497		31.52		.06	.37	−.85	+0.38		−1.50	+63.34		28.2				
−1.1	48	27.75	+1.39	48	29.14	34	19.21+	4384		32.17		.00	.44	−.86	+0.68		−1.51	+43.15		29.4				
+15.3	48	50.05	−19.34	48	30.71	34	17.64+	4343		32.14		.03	.49	−.94	+0.70		−1.59	+42.78		27.4				
+18.6	48	55.00	−23.51	48	31.49	34	16.86+	2559		30.84		.05	.51	−.98	+0.78		−1.63	+42.34		27.5				
+25.8	49	5.40	−32.61	48	32.79	+34	15.56+	1365−		30.01		−.09	−.53	−1.04	+0.94		−1.69	+42.37		27.2				

±.029 27.95 ±0.54

$\delta_0 = +14\ 34\ 23.6$ 1.48220 +7.95

−11.0	49	10.30	−14.25	48	56.06	+33	52.30+	02118	−0	31.87		−.02	−.46	−.92	+0.49		−1.59	+62.76	34	22.1				
+15.2	48	35.65	+19.69	48	55.34	33	53.01+	3497		32.90		.03	.40	−.87	+0.62		−1.54	+63.34		22.5				
+13.8	48	51.05	−17.53	48	33.52	34	14.83+	4541		33.70		.03	.50	−.97	+0.96		−1.64	+43.15		23.6				
+23.8	49	4.85	−30.23	48	3.46.2	34	13.73+	4343		33.54		.08	.53	−1.05	+1.00		−1.72	+42.78		22.2				
−20.7	48	9.25	+26.29	48	35.54	34	12.81+	2559		32.19		.06	.40	−.90	+1.06		−1.57	+42.34		22.4				
+22.3	49	5.45	−28.32	48	37.13	+34	11.22+	1365−		31.32		−.07	−.53	−1.04	+1.25		−1.71	+42.37		21.8				

±.033 −7.782 41.64

−0.15 $\delta_0 = +11057\ 18.4$ Rin Z = −.93 2.16259 +.86 +1.33 22.43 ±0.37

56 55.06	+14.5	28	27.05	+6.81	28	33.86	+54	14.49+	04389	+2	40.44	+.13	+.04	−.44	+.46		−1.80	+1.79	+43.15	57	22.6			
48.99	+15.3	28	22.10	+7.18	28	29.28	54	19.07+	2172	2	30.42	.09	.04	.23	+.67		−2.060	+2.00	+43.73		14.3			
57 13.16	+56.7	27	33.30	+27.55	28	0.85	54	47.50−	0069	2	25.18	.00	.65	.17	+1.34		−2.30	+2.67	+23.47		17.5			
57 9.21	−9.2	28	19.60	−4.32	28	15.28	+54	33.07+	3123	+2	36.25	+.10	.02	−.23	+.65		−2.40	+1.98	+25.33		15.3			

17.42

+7.624
58.99

+3.44 $\delta_0 = +16\ 14\ 59.0$ Rin Z = +.44 1.45070 −.40 −.63

14 56.12	+23.4	7	52.20	+30.07	8	22.27	+14	26.08+	02125	−0	29.65		−.07	−.22	−.79		+0.10	−1.42	+62.76	14	57.9			
56.07	+17.5	7	58.20	+25.06	8	23.26	14	25.09+	3502		30.60		.05	.32	−.78		+0.20	−1.41	+63.34		58.6			
15 19.68	+14.1	8	18.10	−17.76	8	1.34	14	48.01+	4263		31.21		.03	.43	−.86		+0.50	−1.49	+42.78		58.6			
15.62	+15.0	8	22.05	−18.90	8	3.15	14	45.20+	2571		29.95		.03	.44	−.87		+0.60	−1.50	+42.34		56.7			
14.22	+24.2	8	34.30	−30.49	8	3.81	14	43.54+	1369		29.13		.08	.47	−.95		+0.60	−1.58	+42.37		56.6			
13.12	+14.4	8	23.35	−18.14	8	5.21	14	43.14+	2211		29.71		.03	.24	−.67		+0.80	−1.30	+45.03		58.0			
36.04	+20.0	8	7.25	−25.20	7	42.05	15	6.30+	1363		29.47		.05	.22	−.67		+0.80	−1.30	+24.14		60.5			
32.47	+19.6	8	10.60	−24.69	7	45.91	+15	2.44+	2153−		29.66		−.05	−.32	−.77		+1.00	−1.40	+26.73		59.1			

+7.665
57.61

±.029 +2.99 $\delta_0 = -3\ 36\ 57.6$ Rin Z = +.42 1.77460 −.66 −1.03 58.02 ±0.93

38 4.87	−10.1	60	4.20	−12.49	59	50.71	−37	2.36+	02125	−1	2.49	−.01	+.00	−.01	−.67		+4.70	−1.70	+62.76	36	59.1			
37 46.91	+15.5	59	47.10	−20.30	59	28.80	36	40.45+	4344	1	5.83	.01	.00	.62	−1.28		+6.50	−2.31	+43.15		58.9			
47.11	−15.4	59	13.30	+20.18	59	33.48	36	45.13+	1369	1	1.42	.00	.00	.55	−1.21		+7.20	−2.24	+42.37		59.2			
46.41	−10.8	59	17.75	+14.14	59	31.89	36	43.54+	2172	1	2.56	.01	.00	.30	−.96		+7.30	−1.99	+43.73		57.1			
37 26.49	−12.4	58	58.90	+16.24	59	15.14	36	26.79−	0069	0	50.42	.00	.00	.24	−.94		+7.60	−1.97	+23.47		57.1			
37 17.0		59	34.50	−22.26	59	12.24	36	23.80+	3123	1	3.45	.01	.00	.32	−.98		+7.60	−2.01	+25.33		56.9			
[illegible]		[illegible]		[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		+7.70	−2.11	+26.73		56.5			

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1872phae.proj:1459.

Star 53 Eridani ✓ α = 4h 32m 19s.13 δ = −14° 33′ 22″ k = −.016 tang. δ = −.26
z = +56 56 11

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	AR 1872.0
		s		h m s	s	s	s	s	h m s
1872	Jan. 10	+ 394	4	31 48.80	−.102	0.12	+30.72	−0.26	+30.34	4 32 19.14
	Jan. 30	+ 477	4	32 13.05	−.124	−.14	+6.34	−0.07	+6.13	17.18
	Feb. 1	+ 505	4	32 11.59	−.131	−.15	+7.45	−0.04	+7.26	17.15
7	Feb. 12	+ 338	4	32 7.96	−.087	−.10	+11.18	+0.13	+11.21	19.17
2.1	Feb. 24	+ 400	4	32 5.58	−.104	−.12	+13.31	+0.33	+13.52	19.10
	Feb. 26	+ 372	4	32 5.88	−.096	−.11	+13.04	+0.37	+13.30	19.18
	Feb. 28	+ 438	4	32 6.05	−.113	−.13	+12.85	+0.40	+13.12	19.17
										19.156
										±.020

Δα = +0.043 Δδ = +0.″67

+3.5925
h m 33.833

\# T Tauri α = 4h 34m 33s.83 δ = +22° 42′ 32″ k = −.017 tang. δ = +.42
z = +19 40 17

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	AR 1872.0
		s		h m s	s	s	s	s	h m s
1872	Jan. 10	+ 394	4	34 3.06	+.165	+0.15	+30.72	−0.05	+30.82	34 33.88
	Jan. 30	+ 477	4	34 27.30	+.200	+.18	+6.34	+0.11	+6.63	33.93
	Feb. 12	+ 338	4	34 22.29	+.141	+.12	+11.18	+0.28	+11.58	33.87
7	Feb. 14	+ 290	4	34 22.11	+.122	+.11	+11.32	+0.32	+11.75	33.86
2.1	Feb. 24	+ 400	4	34 19.92	+.168	+.15	+13.31	+0.49	+13.95	33.87
	Feb. 26	+ 372	4	34 20.18	+.156	+.14	+13.04	+0.52	+13.70	33.88
	Feb. 28	+ 438	4	34 20.27	+.183	+.17	+12.85	+0.55	+13.57	33.84
										33.876
										±.017

Δα = −0.045 Δδ = +0.″24

+4.9708
h m 20.940

\# 4 Camelopardi α = 4h 37m 20s.94 δ = +56° 31′ 35″ k = −.027 tang. δ = +1.51
z = −14 8 46

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	AR 1872.0
		s		h m s	s	s	s	s	h m s
1872	Jan. 10	+ 394	4	36 49.93	+.594	+0.57	+30.72	−0.40	+30.89	36 20.82
	Jan. 12	+ 405	4	37 18.01	+.611	+.58	+2.71	−0.38	+2.91	20.92
	Jan. 30	+ 477	4	37 13.93	+.720	+.69	+6.34	−0.05	+6.98	20.91
8	Feb. 12	+ 338	4	37 8.94	+.510	+.48	+11.18	+0.29	+11.95	20.89
2.1	Feb. 14	+ 290	4	37 8.82	+.438	+.41	+11.32	+0.35	+12.08	20.90
	Feb. 24	+ 400	4	37 6.40	+.604	+.58	+13.31	+0.66	+14.55	20.95
	Feb. 26	+ 372	4	37 6.59	+.561	+.53	+13.04	+0.73	+14.30	20.89
	Feb. 28	+ 438	4	37 6.61	+.661	+.63	+12.85	+0.79	+14.27	20.88
										20.895
										±.022

Δα = −0.031 Δδ = +0.″58

+3.0001
h m 6.240

\# μ Eridani α = 4h 39m 6s.24 δ = −3° 29′ 29″ k = −.015 tang. δ = −.06
z = +45 52 18

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	AR 1872.0
		s		h m s	s	s	s	s	h m s
1872	Jan. 10	+ 394	4	38 35.72	−.023	−0.04	+30.72	−0.17	+30.51	39 6.23
	Jan. 30	+ 477	4	38 57.93	−.028	−.04	+6.34	−0.021	+6.28	6.21
	Feb. 12	+ 338	4	38 54.94	−.020	−.04	+11.18	+0.15	+11.29	6.23
7	Feb. 14	+ 290	4	38 54.75	−.017	−.03	+11.32	+0.19	+11.48	6.23
2.1	Feb. 24	+ 400	4	38 52.55	−.024	−.04	+13.31	+0.36	+13.63	6.18
	Feb. 26	+ 372	4	38 52.79	−.022	−.04	+13.04	+0.39	+13.39	6.18
	Feb. 28	+ 438	4	38 52.97	−.026	−.04	+12.85	+0.42	+13.23	6.20
										6.209
										±.017

Δα = +0.174 Δδ = −0.″20

9

\# 8 Camelopardi α = 4h 41m 20s.21 δ = +66° 7′ 17″ k = −.037 tang. δ = +2.26
z = −23 44 28

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	AR 1872.0
		s		h m s	s	s	s	s	h m s
1872	Jan. 10	+ 394	4	40 49.64	+.890	+0.85	+30.73	−0.82	+30.76	41 20.45
	Jan. 12	+ 405	4	41 17.58	+.915	+0.88	+2.71	−0.79	+2.80	.38
	Jan. 30	+ 477	4	41 13.27	+1.078	+1.04	+6.34	−0.30	+7.08	35
7	Feb. 12	+ 338	4	41 8.23	+.763	+0.73	+11.18	+0.19	+12.10	33
2.1	Feb. 14	+ 290	4	41 8.26	+.655	+0.62	+11.32	+0.28	+12.22	48
	Feb. 24	+ 400	4	41 5.42	+.904	+0.87	+13.31	+0.72	+14.50	32
	Feb. 28	+ 438	4	41 5.68	+.989	+0.95	+12.85	+0.91	+14.71	38
										20.385
										±.043

3

π Orionis ✓ α = 4h 47m 53s.62 δ = +6° 44′ 7″ k = −.016 tang. δ = +.12
z = +35 38 42

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	AR 1872.0
		s		h m s	s	s	s	s	h m s
1872	Jan. 30	+ 477	4	42 17.19	+.057	+0.04	+6.34	+0.02	+6.40	42 53.59
	Feb. 12	+ 338	4	42 42.16	+.040	+.02	+11.18	+0.19	+11.39	53.55
6	Feb. 15	+ 400	4	42 42.04	+.048	+.03	+11.31	+0.24	+11.58	53.62
2.1	Feb. 22	+ 400	4	42 40.18	+.048	+.03	+12.99	+0.34	+13.36	53.54
	Feb. 24	+ 400	4	42 39.84	+.048	+.03	+13.31	+0.37	+13.71	53.55
	Feb. 28	+ 438	4	42 40.26	+.052	+.04	+12.85	+0.43	+13.32	53.58
									±.023	53.570

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$\delta_0 = -14^\circ\ 33'\ 22.8''$

$\frac{d\delta}{dt} = +7.49''$

$u + lg\,t\,g\,n$

$B + T + J$

1.94509

-.78 -1.21

Thm – TS	Circle Read		Red Horizontal	Corr. Circle Read					$J_y - \delta$	Rm	Rn	R–	Red to 1872.0	Red. to 1872.0 + Rm + Rss	I δ 1872.0	
s	'	"	"	'	"			' "		"			"	+Red	'	"
+19.6	55	19.55	+25.29	55	44.94	-32	56.59+	02125 -1 32.54	-.02	+.05	-.03	-.76	+7.09	-1.97+62.76	33	21.3
+19.5	55	49.65	-24.77	55	24.88	32	36.53+	4384 1 37.48	.03	.05	.10	-.83	+9.49	-2.04+43.15		23.4
+21.0	55	50.00	-26.67	55	23.33	32	34.98+	4363 1 37.43	.08	.06	.11	-.83	+9.67	-2.04+42.78		22.0
+19.9	55	56.25	-25.28	55	30.97	32	42.62+	1367 1 30.94	.01	.05	.12	-.85	+10.47	-2.06+42.37		22.8
+16.6	55	34.40	-21.08	55	13.32	32	24.97-	0069 1 27.98	.00	.04	.04	-.78	+10.95	-1.99+23.47		20.5
+18.1	55	31.50	-22.99	55	8.51	32	20.16+	3123 1 34.69	.02	.04	.03	-.47	+10.97	-1.98+25.33		20.6
+9.2	55	26.35	-11.69	55	14.66	-32	26.31+	2133 -1 32.56	-.02	+.01	-.04	-.81	+10.99	-2.02+26.73		23.2

±.019   21.97 ±0.91

+3.59 $\delta_0 = +22^\circ\ 42'\ 31.9''$ (+7.279, 31.93)   Rin z = +.34   1.31340   -.32 -.49

41 32.17	+22.5	40	26.65	+27.78	40	54.43	+41	53.92+	02132 -0	21.61	-.10	-.04	-.46	-1.40-0.95+62.76	42 32.7
53.32	+20.3	40	56.65	-24.58	40	32.07	42	16.28+	4384	22.76	.08	.12	-.52	-1.70-1.01+43.15	34.0
51.65	+23.4	41	3.55	-28.32	40	35.23	42	13.12+	1374	21.24	.10	.13	-.55	-1.70-1.04+42.37	31.5
51.80	+21.0	41	0.15	-25.42	40	34.73	42	13.62+	2112	21.60	.09	.13	-.54	-1.60-1.03+41.76	31.2
42 11.50	+19.3	40	39.55	-23.36	40	16.19	42	32.16-	0058	20.55	.07	.04	-.43	-1.50-0.92+23.47	32.7
11.00	+18.9	40	37.90	-22.77	40	15.13	42	33.22+	3124	22.11	.07	.04	-.43	-1.50-0.92+25.33	34.0
7.70	+14.6	40	36.60	-17.67	40	18.93	+42	29.42+	2149 -	21.62	-.04	-.06	-.42	-1.50-0.91+26.73	32.1

±.016   32.60 ±0.78

+4.97 $\delta_0 = +56^\circ\ 31'\ 34.8''$ (+6.919, 34.82)   Rin z = -.24   1.16170   +.22 +.34

30 38.96	+32.7	52	0.00	+24.14	52	24.14	+30	24.21+	02132 +0	15.24	-.27	-.22	-.27	-8.20+0.07+62.76	31 34.1
46.90	+29.4	51	58.25	+21.70	52	19.95	30	28.40+	1328	14.96	.24	.22	-.24	-8.50+0.10+61.78	36.7
31 4.05	+29.2	52	20.95	-21.13	51	59.82	30	48.53+	4384	16.05	.23	.30	-.31	-11.20+0.03+43.15	36.6
5.12	+30.1	52	19.45	-21.78	51	57.67	30	50.68+	1373	14.97	.23	.30	-.31	-12.30+0.03+42.37	35.7
3.42	+23.7	52	23.95	-24.39	51	59.56	30	48.79+	2112	15.23	.29	.31	-.38	-12.50-0.04+41.76	33.2
24.19	+32.9	52	2.05	-23.81	51	38.24	31	10.11-	0057	14.49	.27	.14	-.19	-12.80+0.15+23.47	35.4
21.47	+31.2	52	4.65	-22.58	51	42.07	31	6.28+	3124	15.59	.25	.15	-.18	-12.50+0.16+25.33	34.6
19.71	+11.3	51	51.85	-8.18	51	43.67	+31	4.68+	2149+	15.25	-.03	-.19	.00	-12.80+0.34+26.73	34.2

±.012   35.06 ±0.94

+3.00 $\delta_0 = +3^\circ\ 29'\ 29.1''$ (+6.910, 29.08)   Rin z = +.72   1.77280   -.66 -1.03

30 34.67	-23.7	52	48.10	-27.66	52	20.44	-29	32.09+	02139 -1	2.26	-.01	+.02	-.31	-.95	+4.40-1.98+62.76	29 29.2
16.39	+14.6	52	18.00	-19.12	51	58.88	29	10.53+	4384 1	5.56	.01	.01	.30	-.95	+6.20-1.98+43.15	28.7
15.68	+13.0	52	19.55	-17.03	52	2.52	29	14.17+	1378 1	1.17	.00	.01	.30	-.95	+7.00-1.98+42.37	28.0
15.07	+7.8	52	11.10	-10.20	52	0.90	29	12.55+	2128 1	2.24	.01	.00	.29	-.95	+7.10-1.98+41.76	27.9
29 57.67	+14.9	52	6.20	-19.52	51	46.68	28	58.33-	0046 0	50.20	.00	.01	.15	-.80	+7.40-1.83+23.47	28.5
58.93	+7.6	51	53.40	-9.95	51	43.45	28	55.10+	3125 1	3.69	.01	.00	.13	-.79	+7.40-1.82+25.33	27.9
30 2.38	+18.7	52	12.70	-24.49	51	48.21	-28	59.86+	2166 -1	2.30	-.01	+.01	-.22	-.87	+7.50-1.90+26.73	29.8

±.017   28.50 ±0.48

+5.91 $\delta_0 = +66^\circ\ 7'\ 16.9''$ (+6.768, 16.88)   Rin z = -.40   1.40310   +.37 +.57

6 24.31	+42.9	16	26.35	+23.25	16	49.60	+5	58.75+	01333 +0	26.09	-.38	-.15	-.16	-9.90+0.41+61.78	7 17.1
47.47	+13.6	16	35.85	-7.23	16	28.62	6	19.73+	4384	27.98	.03	.21	+.13	-13.20+0.70+43.15	18.4
48.60	+46.5	16	50.50	-24.71	16	25.79	6	22.56+	1378	26.11	.44	.23	-.30	-14.70+0.27+42.37	16.6
46.95	+58.3	16	58.10	-30.98	16	27.12	6	21.23+	2128	26.57	.69	.26	-.58	-14.80-0.01+41.76	14.8
7 7.76	+49.1	16	31.35	-26.09	16	5.26	6	43.09-	0047	25.27	.49	.11	-.23	-15.40+0.34+23.47	16.8
4.25	+35.7	16	29.25	-18.97	16	10.28	+6	38.07+	2166 +	26.59	-.26	-.15	-.04	-15.50+0.53+26.73	16.4

1.61540   +6.62   -.54 -.84   16.68 ±0.69

±.017 $\delta_0 = +6^\circ\ 44'\ 9.3''$

+15.7	38	58.75	-20.45	38	38.30	+44	10.05+	04384 -0	45.63	-.01	-.51	-1.06	+3.18 -1.90+43.15	44 8.8
-6.3	38	33.10	+8.21	38	41.31	44	7.04+	1378	42.58	.00	.46	-1.00	+3.68 -1.84+42.37	8.7
✓ +24.3	38	54.90	-31.67	38	23.23	44	25.12+	2223	43.41	.04	.27	-.85	+3.75 -1.69+43.73	(27.5)
+20.6	38	48.80	-26.85	38	21.95	44	26.40+	1878	43.07	.03	.27	-.84	+3.92 -1.68+24.14	9.7
+3.8	38	29.10	-4.95	38	24.15	44	24.20-	0047	41.20	.00	.25	-.79	+3.96 -1.63+23.47	8.8
±.023 -12.0	38	9.60	+15.64	38	25.24	+44	23.11+	2166 -	43.36	-.01	-.31	-.86	+4.02 -1.70+26.73	8.8

±0.30   8.96

1872phae.proj.1459.

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Star 1 Orionis δ α = 4 h 45 m 18 s 17.58 δ = −14° 2′ 6″ K = −.016 tang δ = +.25

z = +28 20 43

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
			h m s	s	s	s	s	h m s
1872 Jan. 30	+.477	4	45 11.13	+.119	+0.10	+6.34	+0.04	+6.48	4 45 17.61
Feb. 15	+.400	4	45 6.02	+.100	+.08	+11.31	+0.25	+11.64	17.66
5 Feb. 22	+.400	4	45 4.15	+.100	+.08	+12.99	+0.36	+13.43	17.58
2.1 Feb. 24	+.400	4	45 3.79	+.100	+.08	+13.31	+0.39	+13.78	17.57
Feb. 26	+.372	4	45 4.04	+.093	+.08	+13.04	+0.43	+13.55	17.59
									17.602
									±.024

Δα = −0.021 s Δδ = −0.″54 +3.8971 h m 39.602 / 39.60

✱ 6 Aurigae α = 4 h 48 m 40 s δ = +32° 57′ 39″ K = −.019 tang δ +.65

z = +9 25 10

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Jan. 10	+.394	4	48 8.77	+.256	+0.24	+30.73	−0.14	+30.83	48 39.60
Jan. 12	+.405	4	48 36.80	+.263	+.24	+2.71	−0.14	+2.81	39.61
7 Jan. 30	+.477	4	48 32.91	+.310	+.29	+6.34	+0.02	+6.65	39.56
2.1 Feb. 22	+.400	4	48 25.96	+.260	+.24	+12.99	+0.40	+13.63	39.59
Feb. 24	+.400	4	48 25.62	+.260	+.24	+13.31	+0.44	+13.99	39.61
Feb. 26	+.372	4	48 25.81	+.241	+.22	+13.04	+0.47	+13.73	39.54
Feb. 28	+.438	4	48 25.94	+.284	+.26	+12.85	+0.51	+13.62	39.56
									39.581
									±.022

Δα = −0.023 s Δδ = −0.″93 +5.3108 h m 2.467

✱✱✱ 10 Camelopardi α = 4 h 52 m 2.47 δ = +60° 15′ 5″ K = −.031 tang δ +1.75

z = −17 52 16

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Jan. 10	+.394	4	51 31.56	+.689	+0.66	+30.73	−0.62	+30.77	52 2.33
Jan. 12	+.405	4	51 59.56	+.708	+.68	+2.71	−0.60	+2.79	2.35
5 Jan. 30	+.477	4	51 55.47	+.834	+.80	+6.34	−0.25	+6.89	2.36
2.1 Feb. 26	+.372	4	51 48.04	+.651	+.62	+13.04	+0.60	+14.26	2.30
Feb. 28	+.438	4	51 48.12	+.766	+.74	+12.85	+0.67	+14.26	2.38
									2.344
									+.022

Δα = +0.077 s Δδ = +0.″16 +4.2906 h m 4.57.150

✱ 5 Aurigae α = 4 h 52 m 4.715− δ = +43° 37′ 52″ K = −.021 tang δ +.95

z = −1 15 3

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Feb. 22	+.400	4	52 33.54	+.380	+0.36	+12.99	+0.40	+13.76	52 47.29
3 Feb. 24	+.400	4	52 33.10	+.380	+.36	+13.31	+0.45	+14.12	47.22
2.1 Feb. 28	+.438	4	52 33.38	+.416	+.39	+12.85	+0.55	+13.79	47.17
									47.227

Δα = +0.030 s Δδ = −0.″72 +4.1813 h m 31.998

✱ 3 Aurigae α = 4 h 53 m 32.00 δ = +40° 53′ 10″ K = −.020 tang δ +.87

z = +1 29 39

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Jan. 30	+.477	4	53 25.24	+.414	+0.39	+6.34	−0.03	+6.70	53 31.94
Feb. 15	+.400	4	53 20.16	+.348	+.33	+11.31	+0.25	+11.89	32.05
5 Feb. 22	+.400	4	53 18.32	+.348	+.33	+12.99	+0.39	+13.71	32.03
2.1 Feb. 24	+.400	4	53 17.87	+.348	+.33	+13.31	+0.44	+14.08	32.05
Feb. 26	+.372	4	53 18.24	+.323	+.30	+13.04	+0.49	+13.83	32.07
									32.028
									±.032

Requires check 28 Jan. s.m.

Δα = −0.014 s Δδ = +0.″34 +3.5802 h m 26.779

✱ 1 Lauri α = 4 h 55 m 26.78 δ = +21° 24′ 17″ K = −.017 tang δ = +.39

z = +20 58 32

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Jan. 10	+.394	4	54 56.00	+.153	+0.14	+30.74	−0.13	+30.75	55 26.75
Jan. 30	+.477	4	55 20.24	+.186	+.17	+6.34	+0.00	+6.51	26.75
6 Feb. 7	+.387	4	55 16.72	+.150	+.13	+9.85	+0.10	+10.08	26.80
2.1 Feb. 8	+.352	4	55 16.28	+.137	+.12	+10.22	+0.11	+10.45	26.73
Feb. 26	+.372	4	55 13.24	+.145	+.13	+13.14	+0.39	+13.56	26.80
Feb. 28	+.438	4	55 13.34	+.170	+.15	+12.85	+0.42	+13.42	26.76
									26.765
									±.020

Δα = −0.007 s Δδ = −0.″91 −6.3877 h m 59.923−

✱ 8 Theae minoris α = 16 h 59 m 59.93 δ = +82° 14′ 38″ / −55 22 34 K = +.113 tang δ −7.35

Date	m	T_s	T_m	m tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Jan. 10	+.394	4	58 35.45	−2.895	−2.78	+30.74	+6.30	+34.26	59 9.71
Jan. 12	+.405	4	59 3.97	−2.976	−2.86	+2.71	+6.13	+5.98	9.95
Jan. 30	+.477	4	59 3.02	−3.505	−3.39	+6.34	+4.16	+7.11	10.13
9 Feb. 7	+.387	4	58 59.96	−2.844	−2.73	+9.85	+3.08	+10.20	10.16
2.1 Feb. 8	+.352	4	58 59.00	−2.587	−2.47	+10.22	+2.94	+10.69	9.69
Feb. 22	+.400	4	58 59.03	−2.940	−2.83	+12.99	+0.79	+10.95	9.78
Feb. 26	+.372	4	58 59.20	−2.734	−2.62	+13.04	+0.13	+10.55	9.75
Feb. 28	+.438	4	59 0.15	−3.219	−3.11	+12.85	−0.19	+9.55	9.70
Mar. 11	+.398	5	00 1.43	−3.325	−3.21	+12.99	[illegible]	[illegible]	[illegible]
									±.163

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$\delta_0 = +14^\circ\ 2'\ 6''$ $\qquad \frac{d\delta}{dt} = +6.42''$

Tom – 75 Circle Read, Red. Norine Circle Read. $\qquad$ Norine $\qquad$ $B + W + \gamma$ $\qquad$ $-.44 - .68$

1.49190

	+17.3	21	12.70	−22.02	20	50.68	+ 1	5.67	+	4384	− 0	34.33	−.14	.16	−.64	+1.114	−1.32	+43.15	2	6.2
	+23.9	21	24.35	−30.43	20	53.92	1	54.43	+	2249	− 0	32.69	−.04	−.10	−.58	+1.24	−1.26	+43.73		5.5
	+18.1	20	56.40	−23.04	20	33.36	2	14.99	+	1886	− 0	22.42	.08	.06	−.58	+1.36	−1.26	+24.14		6.8
	+20.2	21	0.30	−25.72	20	34.58	2	13.77	−	0037	− 0	31.01	.05	.07	−.56	+1.40	−1.24	+23.47		6.4
	+19.3	20	58.65	−24.57	20	34.08	+ 2	14.27	+	3126	− 0	33.35	−.05	−.09	−.58	+1.44	−1.26	+25.33		6.4

± 0.23 $\qquad$ 6.26 ± 0.30

+6.131
38.77

+3.90 $\delta_0 = +32\ 57\ 38.8$ $\qquad$ Lin z = +.16 0.98000 $\qquad$ −.15 −.23

56	39.52	+22.3	25	32.45	+26.16	25	58.61	+56	49.74	+	02146	− 0	10.03	−.14	−.05	−.34	−3.60		−0.57	+62.76	57	38.2
	41.77	+22.9	25	29.70	+26.84	25	56.54	56	51.81	+	1339		9.85	.14	.05	−.34	−3.70		−0.57	+61.78		39.5
57	0.49	+20.6	25	59.75	−22.68	25	37.07	57	11.28	+	4341		10.56	.10	.13	−.38	−4.70		−0.61	+43.15		38.6
	19.20	− 8.2	25	10.10	+ 9.04	25	19.14	57	29.21	+	1886		9.97	.03	.01	−.19	−5.20		−0.42	+24.14		37.8
	19.45	+23.1	25	44.60	−25.43	25	19.17	57	29.18	−	0037		9.54	.14	.05	−.34	−5.20		−0.57	+23.47		37.3
	18.64	+18.0	25	39.15	−19.82	25	19.33	57	29.02	+	3126		10.26	.08	.04	−.27	−5.20		−0.50	+25.33		38.4
	16.67	+20.7	25	43.60	−22.14	25	21.46	+ 57	26.89	+	2183	−	10.04	−.11	−.07	−.33	−5.20		−0.56	+26.73		37.8

± 0.18 $\qquad$ 38.23 ± 0.47

+5.853
5.09

+5.31 $\delta_0 = +60\ 15\ 5.1$ $\qquad$ Lin z = −.31 1.26860n $\qquad$ +.21 +.44

121	9.08	+43.4	8	29.10	+28.83	8	57.93	+13	50.42	+	02133	+ 0	19.50	−.45	−.39	−.55	−8.30		−0.11	+62.76	15	4.3
	8.14	+37.0	8	34.85	+24.58	8	58.63	13	49.72	+	1345		19.14	.32	.40	−.43	−8.70		+0.01	+61.78		2.0
	33.87	+46.1	9	4.00	−33.02	8	33.98	14	14.37	+	4384		20.53	.50	.53	−.74	−11.70		−0.30	+43.15		6.0
	51.93	+6.4	8	20.20	− 4.18	8	16.02	14	35.23	+	3121		19.94	.01	.23	+.05	−14.00		+0.19	+25.33		4.0
	51.07	+0.5	8	16.80	−0.32	8	16.48	+14	37.87	+	2199	+	19.52	−.00	−.32	−.03	−14.00		+0.41	+26.73		4.5

$\pm .011$ $\qquad$ 4.16 ± 0.57

+5.795
51.77

+4.29 $\delta_0 = +43\ 37\ 51.8$ $\qquad$ Lin z = −.02 0.09390n $\qquad$ +.02 +.02

37	35.59	+24.2	45	36.85	−22.99	45	13.86	+37	34.49	+	01895	+ 0	1.30	−.16	−.04	−.18	−8.80		−0.16	+24.14	37	51.0
	36.58	+25.8	45	37.30	−24.51	45	12.79	37	35.56	−	0026		1.24	.18	.04	−.20	−8.70		−0.18	+23.47		51.4
	35.16	+ 2.3	45	16.65	− 2.18	45	14.47	+37	33.86	+	2199	+	1.31	−.00	−.03	−.01	−8.70		+0.01	+26.73		53.2

51.87

+5.726
10.06

+4.18 $\delta_0 = +40\ 53\ 10.1$ $\qquad$ Lin z = +.03 0.17600 $\qquad$ −.02 −.03

52	34.14	−10.7	30	1.90	+ 10.62	30	12.52	+52	35.83	+	04493	− 0	1.66	−.03	−.00	−.05	−6.40		−0.08	+43.15	53	10.3
	33.76	+ 3.9	30	16.85	− 3.87	30	12.98	52	35.37	+	2274		1.58	.01	.02	−.05	−7.80		−0.08	+43.73		9.6
	51.71	−11.1	29	43.70	+ 11.01	29	54.71	52	53.24	+	1895		1.57	.03	.33	−.38	−8.00		−0.41	+24.14		7.8
	53.99	+1.7	29	54.55	− 1.69	29	52.86	52	55.49	−	0026		1.50	.00	.34	−.36	−8.10		−0.39	+23.47		9.0
	52.83	+21.1	30	14.70	−20.93	29	53.77	+52	54.58	+	3127	−	1.62	−.12	−.01	−.15	−8.10		−0.18	+25.33		10.0

$\pm .024$ $\qquad$ 9.34 ± 0.72

+5.534
16.84

+3.58 $\delta_0 = +21\ 24\ 16.8$ $\qquad$ Lin z = +.36 1.34370 $\qquad$ −.33 −.51

23	16.15	−14.9	59	27.05	−18.57	59	8.48	+23	39.87	+	02153	− 0	23.19	−.04	−.49	−.86	−1.20		−1.37	+62.76	24	14.9
23	59.68	+17.2	59	8.65	−21.03	58	47.62	24	0.73	+	4493		24.47	.05	.53	−.91	−1.40		−1.42	+43.15	24	16.6
	37.75	− 9.9	58	32.90	+12.09	58	45.99	24	2.36	+	3870		24.12	.02	.47	−.82	−1.40		−1.33	+41.71		17.2
	36.62	+14.0	59	4.55	−17.11	58	47.44	24	0.91	+	3156		23.73	.03	.53	−.89	−1.40		−1.40	+42.81		17.2
	54.68	−17.5	58	5.85	+23.83	58	29.68	24	18.67	+	3127		23.71	.06	.22	−.61	−1.30		−1.12	+25.33		17.9
	52.68	−22.6	58	4.45	+27.62	58	32.07	+24	16.28	+	2199	−	23.21	−.08	−.31	−.72	−1.30		−1.23	+26.73		17.3

$\pm .019$ $\qquad$ 17.8 ± 0.26

−5.279
38.13

+6.39 $\delta_0 = +57\ 45\ 21.9$ $\qquad$ Lin z = −.82 1.91980n $\qquad$ +.76 +1.17 +.37

44	27.71	−10.1	39	30.20	+18.07	39	48.27	+43	0.08	+	02160	+ 1	27.38	+.01	+.78	−.49	+1.00	−10.90		+2.17	+62.76	45	21.5
	28.63	+11.5	40	5.00	−18.68	39	46.32	43	2.03	+	1350	1	25.76	.00	+.92	.00	+1.67	−11.50		+2.84	+61.78		20.9
	56.88	+10.7	39	5.70	+18.35	39	24.05	43	24.44	+	4383	1	32.18	.02	.77	.33	+1.00	−16.60		+2.17	+43.15		25.9
	56.37	+12.2	39	1.20	+22.32	39	23.52	43	24.83	+	3884	1	30.92	.01	1.13	.52	+1.37	−16.30		+2.54	+41.71		21.4
45	9.32	− 4.8	39	28.45	− 8.46	39	19.99	43	28.36	+	3162	1	29.42	.01	.12	.59	+.34	−16.50		+1.57	+42.81		23.8
	~~[illegible]~~	~~+12.5~~	~~38~~	~~41.50~~	~~+23.09~~	~~39~~	~~4.59~~	~~43~~	~~43.76~~	~~+~~	~~1904~~	~~+~~	~~26.86~~	~~.01~~	~~.21~~	~~.26~~	~~+.71~~	~~−20.40~~		~~+2.88~~	~~+24.14~~		~~(18.5)~~
	14.18	+12.5	38	41.65	+22.80	39	4.45	+43	43.40	+	3128	1	29.35	.01	1.14	.26	+1.68	−20.70		+2.85	+25.33		20.7
	26.48	+10.3	38	41.70	+19.16	39	0.86	43	47.49	+	2215	1	27.48	.01	.84	.37	+1.23	−20.80		+2.40	+26.73		23.3
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		+1.57	+25.32		25.1

±1.42

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25

$\Delta\lambda = +0.^{s}001$ $\Delta\delta = +0.''37$ +2.8711

h m 1.329

Stu ✱ λ Eridani α = 5 3 1.33 δ = −8° 55′ 13″ K = −.016 tang δ = −.16

z = + 51 18 2

Date	m	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Jan. 10	+.394	5h	2m 30.97s	−.063	−0.08	+30.74	−0.30	+30.36	5h 3m 1.33
Jan. 30	+.477	5	2 55.34	−.076	−.09	+6.34	−0.17	+6.08	1.42
5 Feb. 7	+.387	5	2 51.58	−.061	−.08	+9.85	−0.07	+9.70	1.28
2,1 Feb. 22	+.400	5	2 48.21	−.064	−.08	+12.99	+0.16	+13.07	1.28
Feb. 26	+.372	5	2 48.15	−.059	−.08	+13.04	+0.23	+13.19	1.34
									1.330 ±.038

$\Delta\lambda = -0.^{s}029$ $\Delta\delta = -0.''44$ +4.0965

h m 40.292

✱ μ Aurigae α = 5 4 40.29 δ = +38° 19′ 48″ K = −.020 tang δ = +.79

z = + 4 8 1

Date	m	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Jan. 10	+.394	5h	4m 9.52s	+.311	+0.29	+30.74	−0.23	+30.80	4h 40.32
Jan. 12	+.405	5	4 37.51	+.319	+.30	+2.91	−0.23	+2.98	40.29
7 Jan. 30	+.477	5	4 33.68	+.376	+.36	+6.34	−0.09	+6.61	40.29
2,1 Feb. 7	+.387	5	4 30.13	+.305	+.28	+9.85	+0.02	+10.15	40.28
Feb. 8	+.352	5	4 29.72	+.278	+.26	+10.22	−0.04	+10.52	40.24
Feb. 26	+.372	5	4 26.46	+.293	+.27	+13.04	+0.38	+13.69	40.15
Mar. 11	+.398	5	4 25.56	+.314	+.29	+13.74	+0.68	+14.71	40.27
									40.263 ±.036

$\Delta\lambda = -0.^{s}092$ $\Delta\delta = +0.''07$ 4.4251

h m 14.182

✱ ζ Aurigae α = 5 7 14.18 δ = +41° 57′ 53″ K = −.022 tang δ = +1.03

z = − 3 29 4

Date	m	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Jan. 10	+.394	5h	6m 43.25s	+.405	+0.38	+30.74	−0.33	+30.79	7h 14.04
Jan. 12	+.405	5	7 11.28	+.417	+.40	+2.91	−0.33	+2.78	14.06
Jan. 30	+.477	5	7 7.41	+.491	+.47	+6.34	−0.15	+6.66	14.07
9 Feb. 7	+.387	5	7 3.87	+.398	+.38	+9.85	−0.03	+10.20	14.07
2,1 Feb. 8	+.352	5	7 3.54	+.362	+.34	+10.22	−0.00	+10.56	14.10
Feb. 26	+.372	5	7 0.32	+.383	+.36	+13.04	+0.38	+13.78	14.10
Feb. 27	+.416	5	7 0.42	+.428	+.41	+12.92	+0.41	+13.74	14.16
Mar. 3	+.356	5	7 0.49	+.366	+.34	+12.53	+0.33	+13.60	14.09
Mar. 11	+.398	5	6 59.29	+.409	+.39	+13.74	+0.70	+14.83	14.12
									14.090 ±.024

$\Delta\lambda = +0.^{s}005$ $\Delta\delta = +0.''40$ +2.8815

h m 28.231

✱ β Orionis α = 5 8 23.23 δ = −8° 21′ 6″ K = −.016 tang δ = −.15

z = + 50 43 45

Date	m	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Jan. 10	+.394	5h	7m 52.97s	−.059	−0.07	+30.74	−0.32	+30.35	8h 23.32
Jan. 30	+.477	5	8 17.16	−.071	−.09	+6.34	−0.19	+6.06	23.22
Feb. 7	+.387	5	8 13.51	−.058	−.07	+9.85	−0.09	+9.69	23.20
7 Feb. 8	+.352	5	8 13.14	−.052	−.07	+10.22	−0.08	+10.07	23.21
2,1 Feb. 26	+.372	5	8 10.09	−.055	−.07	+13.04	+0.20	+13.17	23.26
Feb. 27	+.416	5	8 10.16	−.062	−.08	+12.92	+0.21	+13.05	23.21
Mar. 11	+.398	5	8 9.13	−.059	−.08	+13.74	+0.44	+14.10	23.23
									23.236 ±.030

$\Delta\lambda = +0.^{s}003$ $\Delta\delta = -0.''20$ +2.9140

h m 28.548

✱ τ Orionis α = 5 11 28.55 δ = −6° 5′ 9″ K = −.016 tang δ = −.12

z = + 49 21 54

Date	m	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Jan. 30	+.477	5h	11m 17.49s	−.057	−0.07	+6.34	−0.19	+6.08	11h 23.57
Feb. 7	+.387	5	11 13.84	−.046	−.06	+9.85	−0.09	+9.70	23.54
Feb. 15	+.400	5	11 12.26	−.048	−.06	+11.31	+0.01	+11.26	23.52
7 Feb. 22	+.400	5	11 10.46	−.048	−.06	+12.99	+0.13	+13.06	23.52
2,1 Feb. 26	+.372	5	11 10.39	−.044	−.06	+13.04	+0.19	+13.17	23.56
Feb. 27	+.416	5	11 10.57	−.049	−.06	+12.92	+0.20	+13.06	23.63
Mar. 11	+.398	5	11 9.41	−.047	−.06	+13.74	+0.43	+14.11	23.52
									23.551 ±.026

h m s

✱ Lepus ✓ α = 5 14 3.265 δ = −12° 26′ 56″ K = +.016 tang δ = −.22

z = + 54 49 45

Date	m	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Jan. 30	+.477	5h	13m 56.82s	−.104	−0.12	+6.34	−0.25	+5.97	14h 2.79
Feb. 7	+.387	5	13 53.09	−.085	−.10	+9.85	−0.15	+9.60	2.69
6 Feb. 15	+.400	5	13 51.60	−.088	−.10	+11.31	−0.03	+11.18	2.78
2,1 Feb. 22	+.400	5	13 49.75	−.088	−.10	+12.99	+0.08	+12.97	2.72 ±.041
Feb. 26	+.372	5	13 49.63	−.081	−.10	+13.04	+0.15	+13.09	2.72
Mar. 3	+.356	5	13 49.93	−.078	−.09	+12.73	+0.26	+12.90	2.88

2.755

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1872phae.proj.1459.

+41.904
13.45

+2.87 $\delta_0 = -8\ 55\ 13.5$ (° ′) rin z = +.48 μ+loylyn dd/dt = " −.72 −1.12

Tm − TS Circle Read Red Rmin Circle Read Con. B+T+γ 1.85560 γ-8 Rm Rio Rm Red to Rm 18720 Rm +Rio +Rb I δ 18720

56 19.31	+18.4	17	27.70	+24.24	17	52.04	−55	3.69+	02160	−1	15.37	−.01	+.03	−.27	−.96	+4.70	−2.08	+62.76	55	13.7			
0.53	+16.9	17	51.10	−21.91	17	29.19	54	40.84+	4383	1	19.33	.01	.03	.38	−1.07	+7.00	−2.19	+43.15		12.2			
0.43	+3.0	17	33.90	−3.89	17	30.01	54	41.66+	3884	1	18.42	.01	.00	.24	−1.06	+7.70	−2.18	+41.71		12.9			
	+20.4	17	41.70	−26.45	17	15.25	54	26.90+	1904	1	14.92	.01	.04	.19	−.87	+8.40	−1.99	+24.14		11.3			
55 45.63	+19.1	17	41.50	−24.76	17	16.74	−54	28.39+	3128	−1	17.07	−.01	+.03	−.19	−.88	+8.60	−2.00	+25.33		13.5			

±.038 13.08

4.726
4800

+4.10 $\delta_0 = +38\ 19\ 48.0$ rin z = +.07 0.61020 −.06 −.10

18 47.91	+22.6	3	31.90	+23.73	3	55.63	+18	52.72+	02167	−0	4.28	−.14	−.39	−.59	−4.40	−0.69	+62.76	19	46.1				
52.18	+21.6	3	28.75	+22.68	3	51.43	18	56.92+	1355		4.21	.14	.39	−.59	−4.60	−0.69	+61.78		49.2				
19 11.26	+22.9	3	55.50	−23.57	3	31.93	19	16.42+	4383		4.51	.14	.51	−.71	−6.10	−0.81	+43.15		48.1				
11.84	+24.9	3	57.00	−25.63	3	31.37	19	16.98+	3898		4.46	.13	.51	−.74	−6.50	−0.84	+41.71		46.9				
11.92	+24.8	3	53.85	−22.44	3	31.41	19	16.94+	3168		4.38	.13	.51	−.70	−6.60	−0.80	+42.81		48.0				
28.99	−9.6	3	4.85	+9.88	3	14.73	19	33.62+	3129		4.38	.03	.22	−.31	−7.30	−0.41	+25.33		46.9				
29.75	+22.1	3	36.60	−22.75	3	13.85	+19	34.50+	1957	−	4.26	−.13	−.36	−.65	−7.20	−0.65	+25.32		47.8				

±.028 47.56 ±0.72

+4.156
62.82

+4.42 $\delta_0 = +45\ 51\ 52.8$ rin z = −.06 0.54470m +.05 +.09

50 53.48	−5.1	32	3.05	−4.75	31	58.30	+50	50.05+	02167	+0	3.68	−.02	−.23	−.20	−5.60	−0.11	+62.76	51	50.8				
51 17.04	+22.2	31	55.10	−20.29	31	34.81	+51	13.54+	4383		3.88	.13	.25	−.33	−8.00	−0.24	+43.15		52.3				
19.55	+4.8	31	36.80	−4.39	31	32.41	+51	15.94+	3898		3.83	.01	.24	−.17	−8.80	−0.08	+41.71		52.6				
18.99	+21.6	31	52.50	−19.74	31	32.76	51	15.59+	3168		3.77	.13	.24	−.32	−8.90	−0.23	+42.81		53.0				
36.91	+7.0	31	21.50	−6.40	31	15.10	51	33.25+	3129		3.77	.02	.09	−.06	−9.80	+0.03	+25.33		52.6				
38.54	+13.5	31	25.70	−12.34	31	13.36	51	34.99+	2565		3.72	.03	.14	−.12	−9.80	−0.03	+26.34		52.2				
36.90	−25.0	30	52.00	+22.85	31	14.85	51	33.50+	1857		3.66	.17	.09	−.21	−9.90	−0.12	+26.27		53.4				
37.45	−5.5	31	9.40	+5.04	31	12.44	+51	33.91+	1957+		3.67	−.02	−.11	−.08	−9.70	+0.01	+25.32		53.2				

±.017 52.89 ±0.73

+4.464
6.31

+2.88 $\delta_0 = -8\ 21\ 6.3$ rin z = +.77 1.84670 −.72 −1.11

22 11.33	+16.9	43	23.10	+22.38	43	45.48	−20	57.13+	02167	−1	13.85	−.01	+.03	−.57	−1.06	+4.50	−2.17	+62.76	21	5.9			
21 54.08	+12.6	43	41.90	−17.66	43	24.24	20	35.89+	4383	1	17.72	.01	.02	.48	−1.18	+6.90	−2.29	+43.15		5.9			
52.25	+14.3	43	41.85	−18.57	43	23.28	20	34.93+	3898	1	16.85	.01	.02	.48	−1.18	+7.50	−2.29	+41.71		4.9			
53.91	+3.6	43	30.90	−4.67	43	26.23	20	37.88+	3166	1	15.57	.01	.00	.45	−1.17	+7.50	−2.28	+42.81		5.4			
37.22	+19.0	43	34.50	−24.67	43	9.83	20	21.48+	3129	1	15.51	.01	.03	.25	−.94	+8.40	−2.05	+25.33		5.3			
40.63	−14.3	42	55.60	+18.57	43	14.17	20	25.82+	2565	1	14.53	.01	.02	.29	−.99	+8.40	−2.10	+26.34		7.7			
38.44	+17.9	43	36.20	−23.24	43	12.96	−20	24.61+	1957	−1	13.50	−.00	+.03	−.36	−1.05	+8.60	−2.16	+25.32		6.3			

±.030 5.91 ±0.56

+4.197
5.40

+2.91 $\delta_0 = -6\ 59\ 5.4$ rin z = +.76 1.82570 −.69 −1.09

59 53.94	+15.7	21	46.45	−20.45	21	28.00	−58	39.65+	4383	−1	14.07	−.01	+.02	−.23	−.90	+6.30	−1.99	+43.15	59	6.2			
52.58	+15.9	21	46.15	−20.71	21	27.44	58	39.09+	3412	1	13.27	.01	.02	.23	−.90	+6.80	−1.99	+41.71		5.8			
55.47	+21.4	22	0.90	−27.58	21	33.02	58	44.67+	2351	1	10.68	.01	.03	.14	−.80	+7.40	−1.89	+43.73		6.1			
32.39	+17.7	21	33.90	−23.05	21	10.85	58	22.50+	1922	1	9.99	.01	.02	.11	−.78	+7.70	−1.87	+24.14		2.5			
37.11	+20.0	21	39.45	−26.05	21	13.40	58	25.05+	3130	1	11.96	.01	.03	.12	−.78	+7.90	−1.87	+25.33		5.7			
38.78	+18.8	21	40.40	−24.48	21	15.92	58	27.57+	2574	1	11.05	.01	.02	.17	−.84	+7.90	−1.93	+26.34		6.3			
59 38.19	+19.3	21	41.50	−25.14	21	16.36	−58	28.01+	1957	−1	10.04	−.00	+.03	−.17	−.83	+8.10	−1.92	+25.32		6.5			

1.91050 +3.99 −.76 −1.17

±.026 5.60 ±0.83

$\delta_0 = -12\ 26\ 55.0$

+15.6	49	22.85	−19.99	49	2.86	−26	14.51+	4383	−1	3.10	−.02	+.03	−.57	−1.30	+7.60	−2.47	+43.15	26	56.3				
+16.1	49	24.70	−20.63	49	4.07	26	15.72+	3912	1	2.70	.01	.03	.57	−1.30	+8.41	−2.47	+41.71		57.2				
−11.9	48	54.20	+14.25	49	8.45	26	20.10+	2351	1	2.98	.01	.02	.27	−1.01	+9.04	−2.18	+43.73		55.5				
+12.5	49	9.80	−22.93	48	47.37	25	59.02+	1922	1	2.14	.01	.04	.19	−1.01	+9.13	−2.18	+24.14		52.7				
+19.8	49	15.40	−25.38	48	50.02	26	1.67+	3130	1	2.54	.01	.04	.19	−1.01	+9.59	−2.18	+25.33	56.40	56.5				
+15.0	49	12.70	−19.22	48	53.48	−26	5.13+	1872	1	2.04	−.01	+.03	−.12	−1.15	+9.76	−2.32	+26.27		56.5				

±.040 ±0.38

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24

Star m Orionis ✓ $\alpha = 5^h\ 16^m\ 6^s.40$ $\delta = +3°\ 25'\ 7''$ $z = +38\ 57\ 42$ $k = -.015$ tang $\delta = +.06$

	Date.	m ÷	T_s	T_m	m tang δ	d.T	Red 1872.0	Sum	A.R. 1872.0
									h m s
1872	Jan. 30	+.477	5h	16m 0.26s	+.028	+0.01	+6.34	−0.15	+6.20	5 16 6.46
	Feb. 7	+.387	5	15 56.67	+.028	+.01	+9.85	−0.06	+9.80	6.47
	Feb. 10	+.402	5	15 53.02	+.024	+.01	+11.31	+0.04	+11.36	6.38
6	~~Feb. 18~~	~~+.417~~	~~5~~	~~16 9.75~~	~~+.025~~	~~+.01~~	~~+12.01~~	~~+0.09~~	~~+12.11~~	~~21.86~~
22	Feb. 26	+.372	5	15 53.22	+.022	+.01	+13.04	+0.21	+13.26	6.48
	Feb. 27	+.416	5	15 53.33	+.024	+.01	+12.92	+0.23	+13.16	6.49
	Mar. 3	+.356	5	15 53.40	+.021	+.01	+12.73	+0.31	+13.05	6.45
	$\Delta\alpha = -0^s.017$	$\Delta\delta = +1''.04$		+3.7888						6.455 ±.026

β Tauri $\alpha = +5^h\ 18^m\ 12^s.09$ $\delta = +28°\ 29'\ 47''$ $z = +13\ 53\ 2$ $k = -.018$ tang $\delta = +.54$

1872	Jan. 30	+.477	5	18 5.65	+.251	+0.24	+6.34	−0.13	+6.45	18 12.10
	Feb. 7	+.387	5	18 2.08	+.208	+.19	+9.85	−0.03	+10.01	12.09
	Feb. 8	+.352	5	18 1.68	+.190	+.17	+10.22	−0.02	+10.37	12.05
8	Feb. 15	+.400	5	18 0.49	+.216	+.20	+11.31	+0.07	+11.58	12.07
22	Feb. 18	+.417	5	17 59.74	+.225	+.21	+12.01	+0.13	+12.35	12.09
	Feb. 26	+.372	5	17 58.58	+.200	+.18	+13.04	+0.27	+13.49	12.07
	Feb. 27	+.416	5	17 58.68	+.224	+.21	+12.92	+0.29	+13.42	12.13
	Mar. 3	+.356	5	17 58.76	+.192	+.17	+12.73	+0.38	+13.28	12.04
										12.076 ±.017

ζ Orionis $\alpha = 5^h\ 20^m\ 7^s.95$ $\delta = +2°\ 58'\ 59''$ $z = +39\ 23\ 50$ $k = -.015$ tang $\delta = +.05$

1872	Jan. 30	+.477	5	20 1.81	+.023	+0.01	+6.34	−0.17	+6.18	20 7.99
	Feb. 7	+.387	5	19 58.14	+.019	+.00	+9.85	−0.08	+9.77	7.91
	Feb. 8	+.352	5	19 57.76	+.017	+.00	+10.22	−0.07	+10.15	7.91
7	Feb. 26	+.372	5	19 54.68	+.018	+.00	+13.04	+0.19	+13.23	7.91
22	Feb. 27	+.416	5	19 54.78	+.020	+.00	+12.92	+0.21	+13.13	7.91
	Mar. 3	+.356	5	19 54.86	+.017	+.00	+12.73	+0.30	+13.03	7.89
	Mar. 11	+.398	5	19 53.73	+.019	+.00	+13.74	+0.43	+14.17	7.90
										7.917 ±.021

$\Delta\alpha = -0^s.116$ $\Delta\delta = +0''.77$ +7.9831

Groombridge 966 $\alpha = 5^h\ 22^m\ 37^s.27$ $\delta = +44°\ 57'\ 13''$ $z = -32\ 34\ 24$ $k = -.059$ tang $\delta = +.72$

1872	Jan. 30	+.477	5	22 30.88	+1.774	+1.72	+6.34	−1.56	+6.50	22 37.38
	Feb. 5	+.460	5	22 27.67	+1.711	+1.65	+9.16	−1.25	+9.56	37.23
	Feb. 7	+.387	5	22 27.18	+1.439	+1.38	+9.85	−1.14	+10.09	37.27
9	Feb. 8	+.352	5	22 26.74	+1.300	+1.25	+10.22	−1.08	+10.39	37.13
22	Feb. 18	+.417	5	22 24.28	+1.551	+1.49	+12.01	−0.34	+13.16	37.44
	Feb. 26	+.372	5	22 23.61	+1.383	+1.32	+13.04	+0.11	+14.47	37.08
	Feb. 27	+.416	5	22 22.69	+1.547	+1.49	+12.92	+0.18	+14.59	37.28
	Mar. 3	+.356	5	22 22.56	+1.324	+1.26	+12.73	+0.55	+14.54	37.10
	Mar. 11	+.398	5	22 21.06	+1.480	+1.42	+13.74	+1.15	+16.31	37.37
										37.253 ±.095

$\Delta\alpha = -0^s.042$ $\Delta\delta = +0''.71$ +3.0669

ι Orionis $\alpha = 5^h\ 25^m\ 28^s.12$ $\delta = -0°\ 23'\ 47''$ $z = +42\ 46\ 36$ $k = -.015$ tang $\delta = -.01$

1872	Feb. 8	+.352	5	25 18.02	−.004	−0.02	+10.22	−0.11	+10.09	25 28.11
	Feb. 15	+.400	5	25 16.84	−.004	−.02	+11.31	−0.02	+11.27	28.11
	Feb. 18	+.417	5	16.02	−.004	−.02	+12.01	+0.02	+12.01	28.03
7	Feb. 22	+.400	5	25 15.00	−.004	−.02	+12.99	+0.08	+13.05	28.05
22	Feb. 26	+.372	5	25 14.95	−.004	−.02	+13.04	+0.15	+13.17	28.12
	Feb. 27	+.416	5	25 15.03	−.004	−.02	+12.92	+0.17	+13.07	28.10
	Mar. 3	+.356	5	25 15.07	−.004	−.02	+12.73	+0.25	+12.96	28.03
										28.079 ±.033

ζ Leporis ✓ $\alpha = 5^h\ 27^m\ 8^s.74$ $\delta = -17°\ 54'\ 57''$ $z = +60\ 17\ 46$ $k = -.016$ tang $\delta = -.32$

1872	Feb. 7	+.387	5	26 55.69	−.123	−0.14	+0.86	−0.26	+9.46	27 5.15
	Feb. 15	+.400	5	26 54.16	−.128	−.14	+11.31	−0.14	+11.03	5.19
7	Feb. 22	+.400	5	26 52.82	−.128	−.14	+12.99	−0.02	+12.83	5.15
22	Feb. 26	+.372	5	26 52.18	−.119	−.14	+13.04	+0.05	+12.95	5.13
	Feb. 27	+.416	5	26 52.33	−.133	−.15	+12.92	+0.07	+12.84	5.17
	Mar. 3	+.356	5	26 52.40	−.113	−.13	+12.73	+0.16	+12.76	5.16
	Mar. 11	+.398	5	26 51.19	−.127	−.14	+13.74	+0.32	+13.92	5.11
										5.151 ±.018

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1872phae.proj.1459.

$\delta_0 = +3° 25' 8.4''$ $\frac{d\delta}{dt} = +4.82''$ u + log tang −.59 −.90

	Thm − TS	Circle Read ′	″	Red. Micr.	Corr. Circle Read		″	B+T+γ 1.66750	″	λf−γ	Rm	Rn	Rf Rm Rn	Red to 1872.0	Rm + Rn + Rf	I	δ 1872.0 ′	″
	s	′	″	″	′ ″	′	″	′	″		″	″	″	″	″	″	′	″
	+15.8	57	52.55	−20.70	57 31.85	+25	16.50+	4384 − 0	51.44		−.00	−.38	−.97	+3.56	−1.87	+43.15	25	9.9
	+14.9	57	51.80	−19.52	57 32.28	+25	16.07+	3926	50.90		.00	.38	−.97	+3.97	−1.87	+41.71		9.0
	+25.1	58	9.95	−32.87	57 37.08	+25	11.27+	2377	49.12		.01	.22	−.82	+4.31	−1.72	+43.73		8.5
	~~+19.5~~	~~56~~	~~(34.75)~~	~~−25.15~~	~~56 9.60~~	~~+26~~	~~38.75+~~	~~2247~~	~~48.97~~		~~.01~~	~~.11~~	~~−.71~~		~~−1.61~~	~~+45.03~~		
	+17.5	57	40.60	−22.92	57 17.68	+25	30.67+	3131	49.98		.00	.19	−.78	+4.63	−1.68	+25.33		9.0
	+18.5	57	43.75	−24.23	57 19.52	+25	28.83+	2583	49.35		.00	.27	−.86	+4.65	−1.76	+26.34		8.7
	+15.3	57	39.90	−20.04	57 19.86	+25	28.49+	1887 −	48.57		−.00	−.27	−.86	+4.73	−1.76	+26.27		9.2
±.026																		9.05 ±0.29

+3.443
47.05

$\delta_0 = +28° 29' 47.1''$ Ini z = +.24 1.15310 −.22 −.34

	Thm − TS	Circle Read ′	″	Red. Micr.	Corr. Circle Read		″	B+T+γ	″	λf−γ	Rm	Rn	Rf	Red to 1872.0	Rm + Rn + Rf	I	δ 1872.0 ′	″
29 9.25	+20.0	53	45.20	−22.41	53 22.79	+29	25.56+	4384 − 0	15.74		−.09	−.48	−.74	−3.20	−1.13	+43.15	29	48.6
9.93	+22.6	53	48.30	−26.06	53 22.24	+29	26.11+	3926	15.57		.12	.49	−.83	−3.50	−1.17	+41.71		47.6
8.73	+22.1	53	49.20	−25.49	53 23.71	+29	24.64+	3180	15.31		.11	.49	−.82	−3.50	−1.16	+42.81		47.5
8.44	+12.4	53	38.90	−14.30	53 24.60	+29	23.75+	2377	15.03		.03	.25	−.50	−3.80	−0.84	+43.73		47.8
7.01	+22.0	53	51.35	−25.37	53 25.98	+29	22.37+	2247	14.98		.11	.27	−.60	−3.90	−0.94	+45.00		47.4
27.58	+22.8	53	31.40	−26.30	53 5.10	+29	43.25+	3131	15.29		.13	.25	−.60	−4.00	−0.94	+25.33		48.2
26.80	+20.9	53	30.10	−24.10	53 6.00	+29	42.35+	2583	15.10		.10	.35	−.67	−4.00	−1.01	+26.34		48.5
27.51	+19.2	53	27.70	−22.15	53 5.55	+29	42.80+	1887 −	14.86		−.08	−.35	−.65	−4.00	−0.99	+26.27		49.1
±.015																		48.09 ±0.47

$\delta_0 = +2° 58' 57.2''$ 1.67430 +3.47 −.59 −.91

	Thm − TS	Circle Read ′	″	Red. Micr.	Corr. Circle Read		″	B+T+γ	″	λf−γ	Rm	Rn	Rf	Red to 1872.0	Rm + Rn + Rf	I	δ 1872.0 ′	″
	+20.1	24	7.75	−26.34	23 41.41	+59	6.94+	4384 − 0	52.26		−.00	−.53	−1.12	+3.59	−2.03	+43.15	58	59.4
	+14.0	24	1.05	−18.35	23 42.70	59	5.65+	3926	51.71		.00	.52	−1.11	+4.03	−2.02	+41.71		57.7
	+17.7	24	7.30	−23.20	23 44.10	59	4.25+	3180	50.83		.00	.53	−1.12	+4.08	−2.03	+42.81		58.3
	+15.3	23	48.20	−20.05	23 28.15	59	20.20+	3131	50.77		.00	.27	−.86	+4.71	−1.77	+25.33		57.7
	+19.1	23	54.55	−25.03	23 29.52	59	18.83+	2583	50.13		.00	.39	−.98	+4.73	−1.89	+26.34		57.9
	+1.1	23	31.80	−1.44	23 30.36	59	17.99+	1887	49.34		.00	.35	−.94	+4.81	−1.85	+26.27		57.9
	+7.0	23	39.10	−9.17	23 29.93	+59	18.42+	1958 −	49.42		−.00	−.36	−.95	+4.86	−1.86	+25.32		57.3
±.021																		58.03 ±0.42

+3.275
12.61

$\delta_0 = +44° 57' 12.6''$ Ini z = −.54 1.56540n +.50 +.77

	Thm − TS	Circle Read ′	″	Red. Micr.	Corr. Circle Read		″	B+T+γ	″	λf−γ	Rm	Rn	Rf	Red to 1872.0	Rm + Rn + Rf	I	δ 1872.0 ′	″
56 43.85	+45.6	27	0.20	−15.53	26 44.67	+56	3.68+	0443 + 0	40.72		−.29	−.26	−.05	−13.60	+0.72	+43.15	57	14.7
45.88	+36.0	26	52.90	−12.27	26 40.63	56	7.72+	2122	38.60		.19	.25	+.06	−14.90	+0.83	+42.19		14.4
44.07	+57.6	27	3.45	−19.63	26 43.82	56	4.53+	3940	40.25		.45	.26	−.21	−15.20	+0.56	+41.71		11.8
44.92	+55.0	27	1.05	−18.74	26 42.31	56	6.04+	3186	39.56		.42	.26	−.18	−15.40	+0.59	+42.81		13.6
44.49	+57.1	27	1.45	−19.46	26 41.99	56	6.36+	2252	38.72		.45	.14	−.09	−16.90	+0.68	+45.03		13.9
57 03.45	+20.3	26	31.15	−6.92	26 24.23	56	24.12+	3132	39.51		.05	.18	+.32	−17.70	+1.09	+25.33		12.3
3.41	+61.1	26	44.15	−20.82	26 23.33	56	25.02+	2592	39.02		.50	.13	−.13	−17.80	+0.64	+26.34		13.2
3.92	+52.4	26	40.15	−17.86	26 22.29	56	26.06+	1902	38.41		.38	.17	−.05	−18.10	+0.72	+26.27		13.4
4.81	+24.3	26	30.05	−8.28	26 21.77	+56	26.58+	1959 +	38.46		−.08	−.15	+.27	−18.30	+1.04	+25.32		13.1
±.025																		13.38 ±0.62

+2.970
46.61

$\delta_0 = ~~+~~ -0° 23' 46.6''$ Ini z = +.68 1.72590 −.63 −.98

	Thm − TS	Circle Read ′	″	Red. Micr.	Corr. Circle Read		″	B+T+γ	″	λf−γ	Rm	Rn	Rf	Red to 1872.0	Rm + Rn + Rf	I	δ 1872.0 ′	″
24 31.76	+18.8	46	47.30	−24.67	46 22.63	−23	34.28+	03186 − 0	57.25		+.00	−.23	−.86	+5.00	−1.84	+42.81	23	45.6
34.59	+18.6	46	51.00	−24.41	46 26.59	23	38.24+	2402	56.22		.00	.13	−.76	+5.40	−1.74	+43.73		47.1
36.24	+18.8	46	53.10	−24.67	46 28.43	23	40.08+	2252	56.03		.00	.13	−.76	+5.50	−1.74	+45.03		47.3
12.53	+19.1	46	30.20	−25.06	46 5.14	23	16.79+	1940	55.63		.00	.11	−.74	+5.70	−1.72	+24.14		44.3
15.77	+16.4	46	28.35	−21.52	46 6.83	23	18.48+	3132	57.18		.00	.11	−.74	+5.80	−1.72	+25.33		46.2
16.37	+19.2	46	33.30	−25.20	46 8.10	23	19.75+	2592	56.47		.00	.15	−.78	+5.80	−1.76	+26.34		45.8
15.60	+15.8	46	28.95	−20.73	46 8.22	−23	19.87+	1902 −	55.58		+.00	−.15	−.78	+5.90	−1.76	+26.27		45.0
±.033																		45.90 ±0.76

$\delta_0 = -17° 54' 56.5''$ 2.00202 +2.87 −.84 −1.25

	Thm − TS	Circle Read ′	″	Red. Micr.	Corr. Circle Read		″	B+T+γ	″	λf−γ	Rm	Rn	Rf	Red to 1872.0	Rm + Rn + Rf	I	δ 1872.0 ′	″
	+17.8	17	5.85	−22.23	16 43.62	−53	55.27+	03954 − 1	50.04	−.03	+.06	−.27	−1.02	+9.34	−2.27	+41.71	54	56.6
	−10.6	16	35.40	+13.23	16 48.63	54	0.28+	2428 1	46.24	.03	.02	.11	−.90	+10.12	−2.15	+43.73		54.8
4	~~+17.0~~	~~16~~	~~47.45~~	~~−21.23~~	~~16 26.22~~	~~53~~	~~37.87+~~	~~1949 1~~	~~45.08~~	~~.02~~	~~.05~~	~~.13~~	~~−.89~~	~~+10.60~~	~~−2.14~~	~~+24.14~~		~~(50.4)~~
	+14.5	16	48.50	−18.11	16 30.39	53	42.04+	3133 1	47.98	.03	.03	.18	−.91	+10.81	−2.16	+25.33		56.1
	+15.0	16	53.10	−18.73	16 34.37	53	46.02+	2601 1	46.67	.03	.04	.19	−.96	+10.86	−2.21	+26.34		57.7
	+17.3	16	56.00	−21.60	16 34.40	53	46.05+	1917 1	45.00	.02	.05	.19	−.95	+11.04	−2.20	+26.27	56.37	56.0
±.017	+19.6	16	59.05	−24.48	16 34.57	−53	46.22+	1960 − 1	45.10	−.02	+.07	−.20	−.94	+11.16	−2.19	+25.32		57.0
																		±0.68

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27

$\Delta\alpha = +0.023^s$ $\Delta\delta = -0.91''$ +3.0443

Jan. * ε Orionis $\alpha = 5^h\ 29^m\ 43.16^s$ $\delta = -1°\ 17'\ 9''$ $K = -.015$ tang. $\delta = -.02$

h m s 43.158 $z = +43\ 39\ 58$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 5	+.460	5h	29m 34.22s	−.009	−0.02	+9.16	−0.16	+8.98	5 29 43.20
Feb. 7	+.387	5	29 33.52	−.008	−.02	+9.86	−0.14	+9.70	43.22
Feb. 8	+.352	5	29 33.17	−.007	−.02	+10.22	−0.13	+10.07	43.24
7 Feb. 18	+.417	5	29 31.15	−.008	−.02	+12.01	+0.00	+11.99	43.14
2,1 Feb. 26	+.372	5	29 30.05	−.007	−.02	+13.04	+0.13	+13.15	43.20
Feb. 27	+.416	5	29 30.03	−.008	−.02	+12.92	+0.15	+13.05	43.08
Mar. 3	+.356	5	29 30.25	−.007	−.02	+12.73	+0.23	+12.94	43.19

43.181 ±.038

$\Delta\alpha = +0.071^s$ $\Delta\delta = -1.23''$ +3.0089

h m 19.222

* o Orionis $\alpha = 5^h\ 32^m\ 19.22^s$ $\delta = -2°\ 40'\ 34''$ $K = -.015$ tang. $\delta = -.05$

$z = +45\ 3\ 23$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 5	+.460	5	32 10.35	−.023	−0.04	+9.17	−0.19	+8.94	32 19.27
Feb. 7	+.387	5	32 9.59	−.019	−.03	+9.86	−0.17	+9.66	19.25
7 Feb. 8	+.352	5	32 9.30	−.018	−.03	+10.23	−0.16	+10.04	19.34
2,1 Feb. 18	+.417	5	32 7.31	−.021	−.04	+12.02	−0.02	+11.96	19.27
Feb. 26	+.372	5	32 6.17	−.019	−.03	+13.04	+0.10	+13.11	19.28
Feb. 27	+.416	5	32 6.29	−.021	−.04	+12.92	+0.12	+13.00	19.29
Mar. 3	+.356	5	32 6.43	−.018	−.03	+12.73	+0.20	+12.90	19.33

19.293 ±.021

$\Delta\alpha = +0.040^s$ $\Delta\delta = +0.59''$ +4.6413

h m 59.087

* o Aurigae $\alpha = 5^h\ 35^m\ 59.09^s$ $\delta = +49°\ 46'\ 0''$ $K = -.023$ tang. $\delta = +1.18$

$z = -7\ 23\ 11$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Jan. 31	+.513	5	35 52.02	+.605	+0.58	+6.91	−0.39	+7.10	35 59.12
Feb. 5	+.460	5	35 49.76	+.542	+.52	+9.17	−0.32	+9.37	59.13
6 Feb. 7	+.387	5	35 49.15	+.456	+.43	+9.86	−0.29	+10.00	59.15
2,1 Feb. 8	+.352	5	35 48.69	+.415	+.39	+10.23	−0.27	+10.35	59.14
Feb. 26	+.372	5	35 45.56	+.438	+.41	+13.04	+0.13	+13.58	59.14
Mar. 3	+.356	5	35 45.78	+.420	+.40	+12.73	+0.27	+13.40	59.18

59.127 ±.028

$\Delta\alpha = +0.144^s$ $\Delta\delta = +1.88''$ −0.3581

h m 42.111

* ω Draconis $\alpha = 17^h\ 37^m\ 42.11^s$ $\delta = +68°\ 48'\ 59''$ $K = +.039$ tang. $\delta = -2.58$

$-68\ 48\ 12$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 5	+.460	5	37 31.94	−1.187	−1.15	+9.17	+2.24	+10.26	42.20
Feb. 8	+.352	5	37 30.75	−0.908	−0.87	+10.23	+2.07	+11.43	42.18
6 Feb. 18	+.417	5	37 29.78	−1.075	−1.04	+12.02	+1.51	+12.49	42.27
2,2 Feb. 26	+.372	5	37 29.09	−0.959	−0.92	+13.04	+1.02	+13.14	42.23
Feb. 27	+.416	5	37 29.76	−1.073	−1.03	+12.92	+.96	+12.85	42.61
Mar. 11	+.398	5	37 29.17	−1.026	−0.99	+13.74	+.12	+12.87	42.04

42.255 ±.113

h m s

ζ Leporis ✓ $\alpha = 5^h\ 41^m\ 10.94^s$ $\delta = -14°\ 52'\ 18''$ $K = -.016$ tang. $\delta = -.26$

$z = +57\ 15\ 7$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 2	+.522	5	41 1.89	−.135	−0.15	+8.03	−0.35	+7.53	41 9.42
Feb. 8	+.352	5	40 59.62	−.091	−.11	+10.23	−0.28	+9.84	9.46
6 Feb. 18	+.417	5	40 57.59	−.108	−.12	+12.02	−0.14	+11.76	9.35
2,1 Feb. 22	+.400	5	40 56.55	−.104	−.12	+13.00	−0.08	+12.80	9.35
Mar. 3	+.356	5	40 56.68	−.092	−.11	+12.73	+0.11	+12.73	9.41
Mar. 11	+.398	5	40 55.47	−.103	−.12	+13.74	+0.26	+13.88	9.35

9.390 ±.037

$\Delta\alpha = +0.099^s$ $\Delta\delta = -2.19''$ +4.1538

h m 37.077

* ι Aurigae $\alpha = 5^h\ 42^m\ 37.08^s$ $\delta = +37°\ 6'\ 30''$ $K = -.020$ tang. $\delta = +.81$

$z = +3\ 16\ 19$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Jan. 31	+.513	5	42 30.13	+.415	+0.39	+6.91	−0.30	+7.00	42 37.13
Feb. 5	+.460	5	42 27.91	+.372	+.35	+9.17	−0.24	+9.28	37.19
Feb. 8	+.352	5	42 26.90	+.285	+.27	+10.23	−0.20	+10.30	37.20
7 Feb. 22	+.400	5	42 23.91	+.324	+.30	+13.03	+0.04	+13.34	37.25
2,1 Feb. 26	+.372	5	42 23.71	+.301	+.28	+13.04	+0.12	+13.44	37.15
Feb. 27	+.416	5	42 23.78	+.336	+.32	+12.92	+0.14	+13.38	37.16
Mar. 3	+.356	5	42 23.92	+.288	+.27	+12.73	+0.23	+13.23	37.15

37.176 ±.043

$\Delta\alpha = +0.121^s$ $\Delta\delta = +0.67''$ −1.0873

h m 53.061

Auto

* ψ Draconis 2.6 $\alpha = 17^h\ 44^m\ 13.06^s$ $\delta = +72°\ 12'\ 39''$ $K = +.049$ tang. $\delta = -3.12$

$-65\ 24\ 33$

Date	n.	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Jan. 31	+.513	5	44 4.82	−1.600	−1.55	+6.91	+2.89	+8.25	44 13.07
Feb. 2	+.522	5	44 4.10	−1.628	−1.58	+8.03	+2.78	+9.23	13.33
5 Feb. 8	+.352	5	44 1.56	−1.098	−1.05	+10.23	+2.42	+11.60	13.16
2,1 Feb. 18	+.417	5	44 0.68	−1.301	−1.25	+12.02	+1.79	+12.56	13.24
Mar. 11	+.398	5	44 0.37	−1.241	−1.19	+13.74	+0.19	+13.74	13.11

13.182

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+2.632
9.48

$\delta_0 = -1^\circ\ 17'\ 9.5$ sin z = +.68 μ + log ρ n $\frac{d\delta}{dt} =$ −.64 −.99

Tm − TS	Circle Read.	Red. Norm.	Corr. Circle Read.																										
	s	′	″	″	′	″	′	″			″																		
17	52.10 + 22.5	40	14.30	−29.52	39	44.78	−16	56.43 +	2131	−0	57.64		+.00	−.03	−.67	+4.80		−1.66	+42.19	17	8.7								
	54.60 + 19.5	40	8.50	−25.58	39	42.92	16	54.57 +	3954		60.11		.00	.01	−.65	+5.00		−1.64	+41.71		9.6								
	53.41 + 19.8	40	10.65	−25.98	39	44.67	16	56.32 +	3192		59.06		.00	.03	−.67	+5.00		−1.66	+42.81		9.2								
	59.86 + 17.0	40	12.70	−22.30	39	50.40	17	2.05 +	2256		57.80		.00	.01	−.65	+5.50		−1.64	+45.03		11.0								
	40.02 + 14.9	39	49.00	−19.55	39	29.45	16	41.10 +	3123		58.98		.00	.34	−.98	+5.80		−1.97	+25.33		10.9								
	48.77 + 18.0	39	54.00	−23.62	39	30.38	16	42.03 +	2601		58.27		.00	.49	−1.13	+5.80		−2.12	+26.34		10.3								
	43.30 + 16.3	39	55.20	−21.39	39	33.81	−16	45.46 +	1917	−	57.35		+.00	−.49	−1.13	+5.90		−2.12	+26.27		12.8								

±.038

+2.398
32.88

$\delta_0 = -2^\circ\ 40'\ 33.9$ sin z = +.71 1.76040 −.65 −1.02 10.36 ±0.95

41	21.36 + 19.1	3	33.80	−25.04	3	8.76	−40	20.41 +	2131	−0	60.49	−.01	+.01	−.46	−1.10	+5.20		−2.12	+42.19	40	35.6								
	20.26 + 19.4	3	31.50	−25.43	3	5.07	40	16.72 +	3954		63.09	.01	.01	.45	−1.09	+5.30		−2.11	+41.71		34.9								
	22.23 + 18.7	3	32.65	−24.52	3	8.13	40	19.78 +	3192		61.99	.01	.00	.45	−1.10	+5.40		−2.12	+42.81		35.7								
	24.68 + 18.5	3	36.35	−24.25	3	12.10	40	23.75 +	2256		60.07	.01	.00	.25	−.90	+6.00		−1.92	+45.03		35.3								
	4.84 + 17.7	3	14.25	−23.20	2	51.05	40	2.70 +	3123		61.91	.01	.00	.22	−.87	+6.10		−1.89	+25.33		35.1								
	5.89 + 19.1	3	17.80	−25.04	2	52.76	40	4.41 +	2601		61.15	.01	.01	.33	−.97	+6.30		−1.99	+26.34		34.9								
	5.30 + 18.3	3	17.10	−23.99	2	53.11	−40	4.76 +	1917	−	60.20	−.01	+.00	−.23	−.98	+6.40		−2.00	+26.27		34.3								

±.021

+2.065
0.33

$\delta_0 = +49^\circ\ 46'\ 0.3$ sin z = −.13 0.87310 m +.13 +.18 35.11 ±0.32

45	26.64 + 35.0	37	58.65	−29.67	37	28.98	+45	19.37 +	04040	+0	8.19		−.33	−.39	−.59	−8.50		−0.41	+42.06	45	60.7								
	28.23 − 34.9	36	57.80	+29.58	37	27.38	45	20.97 +	2129		7.84		.33	.25	−.45	−9.10		−0.27	+42.19		61.6								
	27.16 + 34.1	37	57.65	−28.97	37	28.68	45	19.67 +	3968		8.18		.31	.38	−.56	−9.40		−0.38	+41.71		59.8								
	27.65 − 15.9	37	14.90	+13.48	37	28.38	45	19.97 +	3198		8.04		.07	.29	−.23	−9.50		−0.05	+42.81		61.3								
	48.24 + 23.1	37	29.40	−19.58	37	9.82	45	38.43 +	3134		8.02		.14	.17	−.18	−11.10		−0.07	+25.33		60.8								
	46.14 + 28.5	37	33.70	−24.16	37	9.54	+45	38.81 +	1932	+	7.81		−.22	−.26	−.35	−11.40		−0.17	+26.27		61.3								

−1.644
59.92

±.018

$\delta_0 = +11^\circ\ 11'\ 0.1$ sin z = −.93 2.16759 m +.86 +1.34 49.92 ±0.45

10	33.82 − 2.30	15	0.05	−10.92	14	49.13	+7	39.22 +	02129	+2	32.48	+.05	+.09	−.00	+.95	−17.70		+2.29	+42.19	10	60.5								
	31.64 + 44.3	14	3.85	+21.01	14	54.86	7	53.47 +	3198	2	38.33	.04	.08	.37	.59	+.64	−18.20	+1.98	+42.81		58.5								
	33.41 + 39.3	14	30.65	+18.64	14	49.29	7	59.06 +	2261	2	34.95	.06	.28	.31	+.83	−20.40		+2.17	+45.03		60.9								
	57.73 − 38.8	14	53.75	−18.40	14	35.35	8	13.00 +	3134	2	38.10	.10	.27	.34	+.79	−21.60		+2.13	+25.33		57.1								
	51.90 + 37.7	14	14.70	+17.88	14	32.58	8	15.77 +	2610	2	36.20	.09	.26	.42	+.70	−21.70		+2.04	+26.34		58.7								
	54.68 − 20.2	15	(37.20)	−9.58	14	27.62	+8	20.73 +	1961	+2	33.89	+.05	+.07	−.06	+.87	−22.70		+2.21	+25.32		59.5								

±.041

$\delta_0 = -14^\circ\ 52'\ 18.1''$ 1.95035 +1.65 −.98 −1.21 59.20 ±1.02

	+20.2	14	42.20	−25.62	14	16.58	−51	28.23 +	04028	−1	39.23	−.03	+.05	.61	−1.34	+7.54		−2.55	+41.76		20.7								
	+19.7	14	42.20	−23.72	14	18.48	51	30.13 +	3204	1	36.03	.02	.05	.61	−1.34	+8.27		−2.55	+42.81		17.6								
	+13.5	14	41.90	−17.12	14	24.78	51	36.43 +	2265	1	33.97	.02	.03	.33	−1.08	+9.20		−2.29	+45.03		18.5								
	~~−7.6~~	~~13~~	~~55.10~~	~~+9.64~~	~~14~~	~~04.44~~	~~51~~	~~13.50 +~~	~~1967~~	~~1~~	~~33.33~~	~~.01~~	~~.01~~	~~.27~~	~~−1.04~~	~~+9.48~~		~~−2.25~~	~~+24.14~~		~~14.4~~								
	+17.5	14	26.80	−22.20	14	6.60	51	18.25 +	1947	1	33.28	.02	.04	.45	−1.19	+9.95		−2.40	+26.27		17.7								
	+17.5	14	26.60	−22.20	14	4.40	−51	16.05 +	1961	−1	33.32	−.02	+.04	−.44	−1.18	+10.11		−2.39	+25.32		16.3								

+1.565
30.40

±.036

$\delta_0 = +39^\circ\ 6'\ 30.4$ sin z = +.06 0.51700 −.05 −.09 18.16 ±1.10

5	52.28 + 23.2	17	15.65	−23.63	16	52.02	+5	56.33 +	04058	−0	3.61		−.14	−.30	−.49	−5.80		−0.58	+42.06	6	28.4								
	52.47 + 21.4	17	13.80	−21.79	16	52.01	5	56.34 +	2148		3.46		.12	.29	−.46	−6.30		−0.55	+42.19		28.2								
	52.63 − 9.9	16	41.85	+10.08	16	51.93	5	56.42 +	3204		3.54		.03	.22	−.30	−6.50		−0.39	+42.81		28.8								
6	11.26 − 11.9	16	21.40	+12.12	16	33.52	6	14.83 +	1962		3.44		.04	.09	−.18	−7.40		−0.27	+24.14		27.9								
	10.26 + 22.6	16	57.30	−23.02	16	34.28	6	14.07 +	3135		3.54		.14	.18	−.32	−7.60		−0.41	+25.33		27.8								
	10.08 + 20.7	16	55.55	−21.08	16	34.47	6	13.88 +	2619		3.49		.12	.19	−.36	−7.70		−0.45	+26.34		27.6								
	9.43 − 8.7	16	26.45	+8.86	16	35.31	+6	13.04 +	1947	−	3.44		−.03	−.14	−.22	−7.80		−0.31	+26.27		27.8								

−1.646
39.09

±.033

$\delta_0 = +10^\circ\ 47'\ 20.9$ sin z = −.91 2.09673 m +.84 +1.30 28.28 ±0.30

46	51.18 − 21.4	38	22.70	−8.58	38	14.12	+44	34.23 +	04058	+2	17.19	+.06	+.07	−.44	+.47	−15.90		+1.77	+42.06	47	19.4								
	50.60 − 20.7	38	24.75	−8.30	38	16.45	44	31.90 +	4628	2	19.00	.07	.07	.44	+.47	−16.40		+1.77	+41.76		18.1								
	53.04 − 12.9	38	14.65	−5.17	38	9.48	44	36.87 +	3204	2	14.52	.04	.03	.42	+.45	−19.10		+1.75	+42.81		18.9								
	56.12 + 16.1	37	45.95	+1.08	38	4.03	44	44.32 +	2265	2	11.64	.03	.02	.19	+.97	−20.20		+2.27	+45.03		23.1								
	±.024 + 45.0	37	23.60	+18.04	38	41.64	+45	6.71 +	1962	+2	10.12	.02	+.02	−.14	+.92	−22.70		+2.22	+25.32		21.7								

4776.03 ±1.63

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1872phae.proj.1459.

Star β Columbae α = 5h 46m 27.88s δ = −35° 49′ 4″ K = −.019 tang δ = −.72
z = +78 11 53

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Jan. 31	+.513	5h	46m 21.14s	−.369	−0.39	+6.92	−0.73	+5.80	5h 46m 26.94s
	Feb. 5	+.460	5	46 18.66	−.331	−.35	+9.17	−0.65	+8.17	26.83
4	Feb. 8	+.352	5	46 17.66	−.253	−.27	+10.23	−0.60	+9.36	27.02
2.1	Feb. 22	+.400	5	46 14.58	−.288	−.31	+13.00	−0.32	+12.37	26.95
										26.935

Δα = +0.021s Δδ = +1.34″

# 2 Orionis α = 5h 48m 14.55s + 3.2478 = 48m 17.547s δ = +7° 22′ 50″ K = −.016 tang δ = +.13
z = +34 59 59

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Jan. 30	+.477	5h	48m 8.34s	+.062	+0.05	+6.39	−0.26	+6.18	48h 14.52m
	Jan. 31	+.513	5	48 7.96	+.066	+.05	+6.92	−0.25	+6.72	14.68
6	Feb. 2	+.522	5	48 6.69	+.067	+.05	+8.04	−0.24	+7.85	14.54
2.1	Feb. 5	+.460	5	48 5.55	+.059	+.04	+9.17	−0.21	+9.00	14.55
	Feb. 8	+.352	5	48 4.55	+.045	+.03	+10.23	−0.18	+10.08	14.63
	Feb. 18	+.417	5	48 2.49	+.054	+.04	+12.02	−0.16	+12.00	14.49
										14.568 ± .054

Δα = −0.091s Δδ = −0.05″ +4.4018 = 8.453s

# 6 Aurigae α = 5h 50m 8.45s δ = +44° 55′ 52″ K = −.021 tang δ = +1.00
z = −2 33 3

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Jan. 30	+.477	5h	50m 1.98s	+.477	+0.46	+6.29	−0.40	+6.45	50h 8.43m
	Jan. 31	+.513	5	50 1.42	+.513	+.49	+6.92	−0.39	+7.02	8.44
	Feb. 1	+.505	5	50 0.70	+.505	+.48	+7.78	−0.38	+7.88	8.28
6	Feb. 2	+.522	5	50 0.20	+.522	+.50	+8.04	−0.37	+8.17	8.37
2.1	Feb. 4	+.445	5	49 59.40	+.445	+.42	+8.77	−0.34	+8.85	8.25
	Feb. 5	+.460	5	49 59.12	+.460	+.44	+9.17	−0.33	+9.28	8.40
										8.362 ± .060

Δα = +0.013s Δδ = +0.55″ +4.0909 = 59.589s

# 8 Aurigae v α = 5h 50m 59.59s δ = +37° 12′ 3″ K = −.020 tang δ = +.76
z = +5 10 46

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Feb. 8	+.352	5h	50m 49.35s	+.267	+0.25	+10.23	−0.24	+10.24	50h 59.59m
	Feb. 15	+.400	5	50 48.11	+.304	+.28	+11.31	−0.13	+11.46	59.57
5	Feb. 22	+.400	5	50 46.40	+.304	+.28	+13.00	−0.01	+13.27	59.67
2.1	Mar. 3	+.356	5	50 46.42	+.270	+.25	+12.73	+0.17	+13.15	59.57
	Mar. 19	+.382	5	50 44.62	+.290	+.27	+14.22	+0.50	+14.99	59.61
										59.602 ± .028

# 9 Columbae α = 5h 52m 59.89s δ = −35° 17′ 59″ K = −.019 tang δ = −.71
z = +77 40 48

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Jan. 30	+.477	5h	52m 54.82s	−.338	−0.36	+6.39	−0.76	+5.27	52h 60.09m
	Jan. 31	+.513	5	52 54.35	−.364	−.38	+6.92	−0.74	+5.80	60.15
5	Feb. 5	+.460	5	52 51.83	−.326	−.35	+9.17	−0.67	+8.15	59.98
2.1	Feb. 22	+.400	5	52 47.33	−.284	−.30	+13.00	−0.35	+12.35	59.90
	Mar. 3	+.356	5	52 47.72	−.252	−.27	+12.73	−0.12	+12.34	60.06
										60.036 ± .072

# 11 Orionis α = 5h 55m 20.48s δ = +9° 34′ 44″ K = −.016 tang δ = +.17
z = +32 44 5

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Jan. 30	+.477	5h	55m 14.37s	+.081	+0.07	+6.29	−0.29	+6.17	55h 20.54m
	Jan. 31	+.513	5	55 13.85	+.087	+.07	+6.92	−0.28	+6.71	20.56
	Feb. 2	+.522	5	55 12.68	+.088	+.07	+8.04	−0.26	+7.85	20.53
6	Feb. 5	+.460	5	55 11.52	+.078	+.06	+9.17	−0.23	+9.00	20.52
2.1	Mar. 14	+.366	5	55 7.14	+.062	+.05	+12.95	+0.30	+13.30	20.44
	Mar. 19	+.382	5	55 5.85	+.064	+.05	+14.22	+0.39	+14.66	20.57
										20.517 ± .025

Pi V 327
~~B.A.C. 1746~~ α = 5h 58m 6.28s δ = −26° 17′ 12″ K = −.017 tang δ = −.49
z = +68 40 1

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	R.A. 1872.0
1872	Jan. 30	+.477	5h	58m 0.49s	−.233	−0.25	+6.39	−0.60	+5.54	58h 6.03m
	Feb. 22	+.400	5	57 53.67	−.196	−.21	+13.00	−0.26	+12.53	6.20
5	Feb. 26	+.312	5	57 53.61	−.182	−.20	+13.04	−0.18	+12.66	6.27
2.1	Mar. 14	+.366	5	57 53.32	−.179	−.20	+12.95	+0.17	+12.92	6.24
	Mar. 19	+.382	5	57 51.98	−.187	−.20	+14.22	+0.28	+14.30	6.28
										6.204 ± .068

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$\delta_0 = -35^\circ\ 49'\ 4.9''$ $\qquad \frac{d\delta}{dt} = +1.19''$ $\qquad$ $\mu + \lg\lg g\,n$ $\qquad$ $-.91 - 1.41$

Tm − TS Circle Read Red Hour Circle Read (Corr.) $\qquad$ $B + T + J$ $\qquad$ RS Rm Red to Rs 18720 $\qquad$ 8 Rm + Rso

s	′	″	″	′	″		″	′	″	″	″	″	″	″	″	″	″	″	″
										2.42657									I S 1872.0
+23.5	8	21.60	−25.01	7	56.59	−45	8.24+	03208	−4	47.51	−.46	+.14	−.43	−1.20	+12.08	−2.61	+42.81	49	3.8
~~+17.2~~	~~7~~	~~51.00~~	~~−18.30~~	~~7~~	~~32.70~~	~~−44~~	~~44.35+~~	~~1976~~	~~−4~~	~~39.47~~	~~−.47~~	~~+.09~~	~~−.20~~	~~1.04~~	~~+13.90~~	~~−2.45~~	~~+24.14~~	~~(48~~	~~41.2)~~
											.52								3.80

$\delta_0 = +7^\circ\ 2'\ 2.504$ $\qquad$ +1.028 / 5.413 $\qquad$ Rin z = +.57 $\qquad$ 1.60510 $\qquad$ $-.53 - .82$

22 9.57+15.2	60	13.95	−19.78	59	54.17	+22	54.18+	04363	−0	44.56	−.02	−.03	−.58	+2.10	−1.40	+41.68	22	52.0
9.17+13.6	60	12.60	−17.70	59	54.90	22	53.45+	4074	0	44.24	.01	.03	−.57	+2.10	−1.39	+42.06		52.0
7.59+16.3	60	17.10	−21.21	59	55.89	22	52.46+	4631	0	41.81	.02	.04	−.59	+2.20	−1.41	+41.76		50.2
8.64−25.1	59	24.10	+32.67	59	56.77	22	51.58+	2157	0	42.33	.04	.57	−1.14	+2.30	−1.96	+42.19		51.8
8.10+23.1	60	26.85	−30.06	59	56.79	22	51.56+	3205	0	43.37	.04	.05	−.62	+2.40	−1.44	+42.81		52.0
6.10+16.7	60	21.50	−21.73	59	59.77	+22	48.58+	2269	−0	42.44	−.02	−.02	−.57	+2.80	−1.39	+45.03		52.6
			+0.853 / 62.35																51.77
±.053																			±0.46

$\delta_0 = +44^\circ\ 5'\ 52.3$ $\qquad$ Rin z = −.05 $\qquad$ 0.40960 n $\qquad$ $+.04 + .06$

55 17.82+23.7	27	54.15	−22.02	27	33.83	+55	15.52+	4383	+0	2.84 / ~~2.58~~	−.16	−.38	−.50	−6.80	−0.44	+41.68	55	52.8
15.61+28.3	28	1.25	−26.29	27	34.96	55	13.39+	4074	0	2.82	.21	.39	−.56	−6.90	−0.50	+42.06		50.9
17.19+18.9	27	51.10	−17.56	27	33.54	55	14.81+	4621	0	2.86	.10	.38	−.44	−7.00	−0.38	+42.78		53.1
17.21−13.5	27	21.10	+12.54	27	33.64	55	14.71+	4631	0	2.86	.05	.31	−.32	−7.10	−0.26	+41.76		52.0
17.18−15.8	27	18.55	+14.63	27	33.53	55	14.82+	2729	0	2.73	.07	.30	−.33	−7.40	−0.27	+42.34		52.2
17.98−17.9	27	16.05	+16.63	27	32.68	+55	15.67+	2157	+0	2.70	−.09	−.30	−.35	−7.50	−0.29	+42.19		52.8
			+0.679 / 2.66																52.30
±.043																			±0.56

$\delta_0 = +37\ 12\ 2.6$ $\qquad$ Rin z = +.09 $\qquad$ 0.71750 $\qquad$ $-.08 - .14$

11 25.62+23.2	11	40.80	−24.25	11	16.55	+11	31.80+	03208	−0	5.62	−.14	−.22	−.44	−5.80	−0.58	+42.81	12	2.6
25.63+25.3	11	43.35	−26.45	11	16.90	11	31.45+	2505		5.53	.17	.12	−.37	−6.30	−0.51	+43.73		2.8
46.27+22.0	11	19.40	−23.10	10	56.40	11	51.95+	1976		5.46	.13	.09	−.30	−6.70	−0.44	+24.14		3.5
44.85+26.0	11	24.90	−27.18	10	57.72	11	50.63+	1961		5.46	.18	.14	−.40	−7.20	−0.54	+26.27		3.7
45.50+23.8	11	22.05	−24.88	10	57.17	+11	51.18+	1612	−	5.42	−.15	−.07	−.30	−7.50	−0.44	+25.57		3.4
																			3.20
±.022																			±0.38

$\delta_0 = -35\ 17\ 55.1$ $\qquad$ 2.40826 $+0.61$ $\qquad$ $-.91 - 1.40$

+19.3	37	7.25	−20.67	36	46.58	−13	58.23+	04384	−4	43.21	−.66	+.09	−.27	−1.09	+10.02	−2.49	+41.68	17	52.9
−4.2	36	46.80	+4.50	36	51.30	14	2.95+	4092	4	41.31	.63	.01	.23	−1.13	+10.22	−2.53	+42.06		55.1
+19.4	37	2.80	−20.78	37	3.02	14	14.67+	2162	4	29.08	.26	.09	.31	−1.13	+11.17	−2.53	+42.19		53.2
+21.5	36	57.75	−23.03	36	34.72	13	46.37+	1985	4	27.99	.29	.12	.13	−.92	+12.58	−2.32	+24.14		(39.2)
+23.8	37	16.35	−25.49	36	56.86	−14	2.51+	1976	−4	27.93	−.41	+.15	−.23	−.99	+14.42	−2.39	+26.27		52.4
											.29								52.40
±.059																			

$\delta_0 = +9\ 38\ 41.3$ $\qquad$ 1.56800 $+0.41$ $\qquad$ $-.51 - .78$

+18.4	44	31.80	−23.81	44	7.99	+38	40.36+	04384	−0	40.91	−.03	−.59	−1.13	+1.49	−1.91	+41.68	3	40.7
+19.1	44	34.50	−24.71	44	9.79	38	38.56+	4092		40.64	.03	.60	−1.14	+1.53	−1.92	+42.06		39.6
+21.4	44	36.65	−27.69	44	8.86	38	39.49+	1634		41.15	.04	.60	−1.15	+1.60	−1.93	+41.76		39.8
+17.3	44	35.25	−24.97	44	10.28	38	38.07+	2166		38.87	.03	.60	−1.14	+1.69	−1.92	+42.19		41.2
+17.3	44	10.95	−22.38	43	54.57	38	53.78+	2216		38.91	.02	.21	−.75	+2.16	−1.53	+26.80		42.3
+16.9	44	18.50	−21.86	43	56.64	+38	51.71+	2185	−	38.89	−.03	−.21	−.75	+2.14	−1.53	+25.57		39.0
																			40.43
±.025																			±0.88

$\delta_0 = -26^\circ\ 17'\ 10.5''$ $\qquad$ 2.16439 $+0.17$ $\qquad$ $-.86 - 1.34$

+16.0	38	20.85	−18.83	38	2.02	−15	13.67+	04384	−2	41.52	−.13	+.05	−.44	−1.25	+8.53	−2.59	+41.68	17	77
# ~~+22.2~~	~~38~~	~~17.55~~	~~−26.12~~	~~37~~	~~48.43~~	~~15~~	~~6.08+~~	~~1994~~	~~2~~	~~32.87~~	~~.06~~	~~.10~~	~~.23~~	~~−.98~~	~~+11.70~~	~~−2.32~~	~~+24.14~~		
+18.4	38	15.15	−21.65	37	53.50	15	5.15+	3137	2	36.95	.10	.07	.23	−1.02	+12.05	−2.36	+25.33	17	72
+21.2	38	24.40	−24.94	37	59.46	15	11.11+	1136	2	27.88	.03	.09	.31	−1.11	+12.83	−2.45	+26.80		38
−24.2	37	32.55	+28.48	38	1.03	−15	12.68+	1648	−2	31.66	−.06	+.12	−.18	−.87	+12.85	−2.21	+25.57		8.2
																			6.72
±.061																			

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29

$\Delta\alpha = +.007$ $\Delta\delta = -0.014$

Star * 1 Orionis $\alpha = 6^h\ 0^m\ 15.849$ (+.34271) $\delta = +14°\ 46'\ 53''$ $z = +27°\ 35'\ 56''$ $K = -.016$ tang $\delta = +.26$

	Date	n = 7s	7'm			n tang δ	d.T.	Red. 1872	Sum.	A.R. 1872
		s	h	m	s	s	s	s	s	h m s
1872	Jan. 30	+.477	6	0	9.65	+.124	+0.11	+6.39	−0.29	+6.21	6 0 15.86
	Feb. 2	+.522	6	0	7.96	+.135	+.12	+8.04	−0.27	+7.86	15.85
	Feb. 5	+.460	6	0	6.85	+.119	+.10	+9.17	−0.24	+9.03	15.88
8	Feb. 8	+.352	6	0	5.79	+.091	+.08	+10.23	−0.21	+10.10	15.89
2,1	Feb. 12	+.338	6	0	4.75	+.087	+.07	+11.19	−0.18	+11.08	15.83
	Mar. 1	+.467	6	0	2.93	+.121	+.10	+12.77	+0.06	+12.93	15.86
	Mar. 14	+.366	6	0	2.53	+.095	+.08	+12.95	+0.29	+13.32	15.85
	Mar. 19	+.382	6	0	1.17	+.099	+.08	+14.22	+0.36	+14.66	15.83

15.856 ± .015

θ Columbae $\alpha = 6^h\ 3^m\ 58.93^s$ $\delta = -37°\ 14'\ 11''$ $z = +79°\ 37'\ 0''$ $K = -.020$ tang $\delta = -.76$

1872	Jan. 30	+.477	6	3	3.14	−.362	−0.38	+6.39	−0.85	+5.16	3 8.30
	Feb. 5	+.460	6	3	0.36	−.349	−.37	+9.17	−0.76	+8.04	8.40
	Feb. 8	+.352	6	2	59.14	−.267	−.29	+10.23	−0.77	+9.23	8.37
6	Feb. 12	+.338	6	2	58.08	−.256	−.28	+11.19	−0.64	+10.27	8.35
2,1	Mar. 14	+.366	6	2	53.07	−.278	−.30	+12.95	+0.08	+12.73	8.40
	Mar. 18	+.424	6	2	54.36	−.322	−.34	+14.20	+0.18	+14.04	8.40

$\Delta\alpha = +0.274^s$ $\Delta\delta = +0.92''$

8.370 ± .028

* 22 Hercules $\alpha = 6^h\ 4^m\ 44.18^s$ (+6.6200) $\delta = +69°\ 21'\ 37''$ $z = -26°\ 58'\ 48''$ $K = .040$ tang $\delta = +.265$

1872	Jan. 30	+.477	6	4	38.11	+1.264	+1.22	+6.39	−1.49	+6.12	4 44.23
	Jan. 31	+.513	6	4	37.40	+1.359	+1.32	+6.92	−1.47	+6.77	44.17
	Feb. 1	+.505	6	4	36.88	+1.388	+1.30	+7.49	−1.44	+7.35	44.23
	Feb. 2	+.522	6	4	36.38	+1.383	+1.34	+8.04	−1.42	+7.96	44.34
10	Feb. 8	+.352	6	4	34.44	+0.932	+0.89	+10.23	−1.26	+9.86	44.30
2,1	Feb. 12	+.338	6	4	33.32	+0.895	+0.86	+11.19	−1.10	+10.95	44.27
	Feb. 14	+.290	6	4	33.30	+0.768	+0.73	+12.32	−1.02	+11.03	44.33
	Mar. 1	+.467	6	4	30.58	+1.237	+1.20	+12.77	−0.31	+13.66	44.24
	Mar. 14	+.366	6	4	30.00	+0.964	+0.93	+12.95	+0.36	+14.24	44.24
	Mar. 19	+.382	6	4	28.37	+1.012	+0.97	+14.22	+0.63	+15.82	44.19

$\Delta\alpha = +0.211^s$ $\Delta\delta = +0.74''$

44.254 ± 0.30

η Geminorum $\alpha = 6^h\ 7^m\ 9.07^s$ (+3.6224) $\delta = +22°\ 32'\ 29''$ $z = +19°\ 50'\ 20''$ $K = -.017$ tang $\delta = +.41$

1872	Jan. 30	+.477	6	7	2.85	+.195	+0.18	+6.39	−0.32	+6.25	7 9.10
	Feb. 2	+.522	6	7	1.21	+.214	+.20	+8.04	−0.31	+7.93	9.14
	Feb. 5	+.460	6	7	0.00	+.188	+.17	+9.17	−0.28	+9.06	9.06
	~~Feb. 8~~	~~+.352~~	~~6~~	~~6~~	~~58.99~~	+.144	+.13	+10.23	−0.25	+10.11	9.10
8	Feb. 12	+.338	6	6	57.95	+.138	+.12	+11.19	−0.22	+11.09	9.04
2,1	Feb. 14	+.290	6	6	57.88	+.119	+.10	+11.32	−0.19	+11.23	9.11
	Mar. 1	+.467	6	6	56.10	+.191	+.17	+12.77	+0.03	+12.97	9.07
	Mar. 14	+.366	6	6	55.68	+.150	+.13	+12.95	+0.27	+13.35	9.03
	Mar. 19	+.382	6	6	54.35	+.156	+.14	+14.22	+0.36	+14.72	9.07

9.080 ± .026

κ Orionis $\alpha = 6^h\ 9^m\ 15.46^s$ (5.7) $\delta = +12°\ 18'\ 20''$ $z = +30°\ 4'\ 54''$ $K = -.016$ tang $\delta = +.22$

1872	Jan. 30	+.477	6	9	9.23	+.104	+0.09	+6.39	−0.33	+6.15	9 15.38
	Feb. 5	+.460	6	9	6.37	+.101	+.08	+9.17	−0.29	+8.96	15.33
	Feb. 8	+.352	6	9	5.34	+.077	+.06	+10.23	−0.27	+10.02	15.36
7	Feb. 12	+.338	6	9	4.36	+.074	+.06	+11.19	−0.23	+11.02	15.38
2,1	Feb. 14	+.290	6	9	4.30	+.064	+.05	+11.32	−0.20	+11.17	15.47
	Mar. 1	+.467	6	9	2.55	+.102	+.09	+12.77	+0.01	+12.87	15.42
	Mar. 14	+.366	6	9	2.12	+.080	+.06	+12.95	+0.22	+13.23	15.35

15.384 ± .030

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−0.043
52.55

δ₀ = +14° 46′ 52.6   Ri z = +.46   u+lg(g…) dδ/dt = ″   −.44 −.66

	Tr − TS	Circle Read.		Red. Hor. wire	Corr. Circle Read				B+π+γ			λ−γ	Rm	Ro	Rf	Red to 1872.0	Rm+Ro+Rf	I	δ 1872.0	
	s	′	″	″	′	″	′	″	1.47830	′	″		″	″	″	″	″	″	′	″
	+21.8	36	31.85	−27.66	36	4.19	+46	44.16	+ 04384	−0	33.28		−.07	−.20	−.91	+0.30.	−1.37	+41.68	46	51.5
	+18.7	36	26.95	−23.73	36	3.22	46	45.13	+ 4637		33.47		.05	.18	−.67	+0.30	−1.33	+41.76		52.4
	+23.2	36	35.30	−29.44	36	5.86	46	42.49	+ 2175		31.62		.07	.21	−.72	+0.40	−1.38	+42.19		52.1
✓	+12.3	36	26.05	−15.61	36	9.44	46	43.91	+ 3220		32.40		.02	.18	−.64	+0.40	−1.30	+42.81		53.4
	+19.7	36	30.70	−25.08	36	5.70	46	42.65	+ 1435		31.09		.05	.20	−.69	+0.40	−1.35	+42.37		53.0
	+15.1	36	11.05	−19.16	35	51.89	46	56.46	+ 3109		32.31		.03	.12	−.59	+0.50	−1.25	+27.47		50.9
	+18.1	36	11.95	−22.91	35	49.04	46	59.31	+ 1136		30.88		.04	.06	−.54	+0.40	−1.20	+26.80		54.4
	+17.8	36	12.80	−22.58	35	50.22	+46	58.13	+ 1648	−	31.25		−.04	−.06	−.54	+0.40	−1.20	+25.57		51.6

52.41
±.015   ±0.80

δ₀ = −37° 14′ 4.6   2.47067 −0.27   −.92 −1.42

	Tr − TS	Circle Read.		Red. Hor. wire	Corr. Circle Read				B+π+γ			λ−γ	Rm	Ro	Rf	Red to 1872.0	Rm+Ro+Rf	I	δ 1872.0	
										′	″	−1.08								
	+12.5	32	28.15	−13.06	32	15.09	−9	26.74	+ 4384	−5	33.82	−.94	+.05	−.33	−1.20	+9.64	−2.62	+41.68	14	12.9
	~~+16.2~~	~~32~~	~~51.80~~	~~−16.93~~	~~32~~	~~34.87~~	~~9~~	~~46.52~~	~~+ 2875~~	~~5~~	~~22.42~~	~~.43~~	~~.07~~	~~.28~~	~~−1.23~~	~~+10.85~~	~~−2.65~~	~~+42.19~~		~~17.0~~
	+19.4	32	46.95	−20.27	32	26.68	9	38.33	+ 3220	5	24.99	.65	.10	.36	−1.18	+11.42	−2.60	+42.81		12.2
	+38.6	33	18.80	−40.33	32	38.47	9	50.12	+ 1435	5	11.90	.25	.40	.43	−.95	+12.10	−2.37	+42.37		10.2
	+21.4	32	46.75	−22.36	32	24.39	9	36.04	+ 1136	5	9.72	.78 21	.12	.14	−.94	+14.98	−2.36	+26.80		6.5
	−22.4	31	50.80	+23.40	32	14.20	−9	25.85	+ 2403	−5	18.94	−.50 60	+.13	−.09	−.88	+15.02	−2.30	+26.32		6.4

−0.525
36.79
9.64
±.022   ±2.42

δ₀ = +69 21 36.8   Ri z = −.45   1.46710 m   +.42 +.65

	Tr − TS	Circle Read.		Red. Hor. wire	Corr. Circle Read				B+π+γ			λ−γ	Rm	Ro	Rf	Red to 1872.0	Rm+Ro+Rf	I	δ 1872.0	
							′	″		′	″									
21 5.60	+8.2 (+67.8)	2	10.65	+3.79	2	14.44	20	33.91	04384	+0	32.43		−.45	−.29	−.32	−11.00	+0.33	+41.68	21	37.4
	~~+96.6~~	~~2~~	~~4.90~~	~~−44.67~~	~~1~~	~~20.23~~	~~21~~	~~28.12~~	~~+ 4126~~		~~32.24~~		~~+.47~~	~~.27~~	~~−1.74~~	~~−14.30~~	~~−1.09~~	~~+42.06~~		
6.09	+65.1	2	44.10	−30.31	2	13.79	20	34.56	+ 4682		32.65		.77	.35	−.70	−11.50	−0.05	+42.78		38.4
5.88	+49.6	2	37.25	−22.95	2	14.30	20	34.05	+ 4640		32.62		.45	.34	−.37	−11.70	+0.28	+41.76		37.0
6.85	+1.1	2	13.30	−0.51	2	12.79	20	35.56	+ 3226		31.58		.00	.29	+.13	−13.10	+0.78	+42.81		37.6
8.58	−20.3	2	0.35	+9.39	2	9.74	20	38.61	+ 1439		30.30		.07	.26	+.09	−13.70	+0.74	+42.37		38.3
7.97	+52.0	2	34.50	−24.05	2	10.45	20	37.90	+ 2251		30.88		.47	.34	−.39	−14.10	+0.26	+41.76		36.7
25.66	+46.4	2	14.85	−21.46	1	53.39	20	54.96	+ 3118		31.50		.38	.22	−.18	−16.40	+0.47	+27.47		38.0
28.10	−17.4	1	42.15	+8.06	1	50.21	20	58.14	+ 1151		30.10		.05	.09	+.28	−17.30	+0.93	+26.80		38.7
28.13	+43.5	2	10.35	−20.12	1	50.23	+20	58.12	+ 1664	+	30.46		−.34	−.11	−.03	−17.50	+0.62	+25.57		37.3

−0.627
28.80
37.71
±.021   ±0.41

δ₀ = +22° 32′ 28.8   Ri z = +.34   1.31730   −.32 −.49

	Tr − TS	Circle Read.		Red. Hor. wire	Corr. Circle Read				B+π+γ			λ−γ	Rm	Ro	Rf	Red to 1872.0	Rm+Ro+Rf	I	δ 1872.0	
										′	″									
31 50.82	+18.9	50	57.25	−22.91	50	34.34	+32	14.01	+ 04383	−0	22.97		−.07	−.13	−.52	−1.60	−1.01	+41.68	32	30.1
48.64	+20.5	51	1.25	−24.85	50	36.40	32	11.95	+ 4640		23.10		.08	.13	−.53	−1.60	−1.02	+41.76		28.8
50.20	+18.8	50	58.90	−22.78	50	36.12	32	12.23	+ 2184		21.83		.07	.13	−.52	−1.70	−1.01	+42.19		29.9
	~~+22.8~~	~~51~~	~~3.65~~	~~−27.64~~	~~50~~	~~36.01~~	~~32~~	~~12.34~~					~~.11~~	~~.13~~	~~−.56~~		~~−1.05~~	~~+42.81~~		
49.68	+19.8	51	1.00	−24.00	50	37.00	32	11.35	+ 1437		21.46		.08	.13	−.53	−1.80	−1.02	+42.37		29.4
49.25	+23.6	51	5.60	−28.61	50	36.99	32	11.36	+ 2250		21.87		.10	.14	−.56	−1.90	−1.05	+41.76		28.2
32 4.29	−13.5	50	5.35	+16.36	50	21.71	32	26.64	+ 3118		22.31		.03	.01	−.36	−2.20	−0.85	+27.47		28.7
8.64	+19.9	50	42.40	−24.12	50	18.28	32	30.07	+ 1151		21.32		.08	.03	−.43	−2.50	−0.92	+26.80		32.0
7.60	+19.7	50	42.95	−23.88	50	19.07	+32	29.28	+ 1666	−	21.57		−.08	−.03	−.43	−2.50	−0.92	+25.57		29.8

29.54
±.024   ±0.85

δ₀ = +12° 18′ 20.5   1.52280 −0.81   −.46 −.72

	Tr − TS	Circle Read.		Red. Hor. wire	Corr. Circle Read				B+π+γ			λ−γ	Rm	Ro	Rf	Red to 1872.0	Rm+Ro+Rf	I	δ 1872.0	
										′	″									
	+19.1	4	58.45	−24.49	4	33.96	+18	14.39	+ 04384	−0	36.87		−.04	−.15	−1.15	+0.78	−1.87	+41.68	18	18.1
	−15.4	4	15.55	+19.75	4	35.30	18	13.05	+ 2193		35.06		.02	.55	−1.03	+0.93	−1.75	+42.19		19.4
	+21.2	5	4.40	−27.18	4	37.22	18	11.13	+ 3232		35.90		.05	.01	−.52	+0.99	−1.24	+42.81		17.8
	+21.0	5	4.10	−26.93	4	37.17	18	11.18	+ 1444		34.45		.05	.01	−.52	+1.05	−1.24	+42.37		18.9
	+20.7	5	3.10	−26.54	4	36.56	18	11.79	+ 2266		35.11		.05	.01	−.52	+1.08	−1.24	+41.76		18.3
	−19.6	3	54.70	+25.13	4	19.83	18	28.52	+ 3127		35.81		.04	.39	−.89	+1.17	−1.61	+27.47		19.3
	+17.4	4	41.55	−22.30	4	19.25	+18	29.10	+ 1174	−	34.24		−.03	−.33	−.72	+1.14	−1.44	+26.80		21.4

19.09
±.029   ±0.85

1872phae.proj.1459.
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1872phae.proj.1459.

20 $\Delta\alpha = -0.164^s$ $\Delta\delta = +0.''52$ $-19.40\,48$

Star ✱ S Ms. Minoris $\alpha = 1^h\ 13^m\ 37^s.54$ $\delta = +86°\ 36'\ 23''.4$ $k = +.258$ tang. $\delta = -16.86$

$-61\ 00\ 49$

$\delta = 51\ 01$

	Date	n	T_s	T_m	n tangs	d.T.	Red 1872	Sum	A.R. 1872
1872	Jan. 30	+.477	6h	13m 24.68s	-8.042	-7.78	+6.39	+13.93	+12.52	13m 37.20s
	Jan. 31	+.513	6	13 25.59	-8.649	-8.39	+6.92	+13.71	+12.24	37.83
	Feb. 1	+.505	6	13 24.44	-8.514	-8.26	+6.19	+13.51	+12.74	37.18
	Feb. 2	+.522	6	13 25.15	-8.801	-8.54	+6.64	+13.31	+12.81	37.96
	Feb. 5	+.460	6	13 23.22	-7.756	-7.50	+9.17	+12.76	+14.43	37.65
	Feb. 8	+.352	6	13 20.67	-5.935	-5.68	+10.23	+12.13	+16.68	37.35
	Feb. 12	+.338	6	13 20.58	-5.699	-5.44	+11.19	+11.03	+16.78	37.36
15	Feb. 14	+.290	6	13 20.50	-4.889	-4.63	+11.32	+10.45	+17.14	37.64
2.1	Feb. 22	+.400	6	22.28	-6.744	-6.49	+13.10	+8.27	+14.78	37.06
	Feb. 26	+.372	6	13 23.08	-6.272	-6.07	+13.04	+6.91	+13.94	37.02
	Feb. 27	+.416	6	13 25.44	-7.014	-6.76	+12.92	+6.58	+12.74	38.18
	Mar. 1	+.467	6	13 26.76	-7.874	-7.62	+12.77	+5.58	+10.73	37.49
	Mar. 11	+.398	6	13 26.15	-6.710	-6.45	+13.74	+2.17	+9.46	35.61
	Mar. 14	+.366	6	13 29.62	-6.171	-5.91	+12.95	+1.08	+8.12	37.74
	Mar. 18	+.424	6	13 30.24	-7.149	-6.89	+14.20	-0.22	+7.09	37.33
	~~Mar. 19~~	~~+.382~~	~~6~~	~~13 29.97~~	~~-6.441~~	~~-6.18~~	~~+14.22~~	~~-0.61~~	~~+7.43~~	~~37.40~~
	Mar. 28	+.306	6	13 31.70	-5.159	-4.90	+15.33	-3.91	+6.52	36.22
										37.313 ±.021

β Canis Majoris $\alpha = 6^h\ 17^m\ 03^s.90$ $\delta = -17°\ 53'\ 39''$ $k = -.016$ tang. $\delta = -.32$

$z = +60\ 16\ 28$

	Date	n	T_s	T_m	n tangs	d.T.	Red 1872	Sum	A.R. 1872
1872	Feb. 8	+.352	6	16 54.27	-.112	-0.13	+10.23	-0.46	+9.64	17 3.91
	Feb. 12	+.338	6	16 53.12	-.108	-.12	+11.19	-0.41	+10.66	3.78
5	Feb. 14	+.290	6	16 53.09	-.093	-.11	+11.32	-0.39	+10.82	3.91
2.1	Feb. 26	+.372	6	16 51.20	-.119	-.13	+13.04	-0.20	+12.71	3.91
	Mar. 14	+.366	6	16 50.93	-.117	-.13	+12.95	+0.10	+12.92	3.85
										3.872 ±.043

Di VI 110

B.A.C. 2079 $\alpha = 6^h\ 19^m\ 34^s.76$ $\delta = -26°\ 38'\ 33''$ $k = .019$ tang. $\delta = -.74$

$z = +79\ 1\ 22$

	Date	n	T_s	T_m	n tangs	d.T.	Red 1872	Sum	A.R. 1872
1872	Jan. 30	+.477	6	19 29.60	-.352	-0.37	+6.39	-0.89	+5.13	19 34.73
	Feb. 8	+.352	6	19 25.85	-.260	-.28	+10.23	-0.77	+9.18	34.83
	Feb. 12	+.338	6	19 24.44	-.250	-.27	+11.19	-0.70	+10.22	34.66
7	Feb. 14	+.290	6	19 24.42	-.214	-.23	+11.32	-0.67	+10.42	34.84
2.1	Mar. 1	+.467	6	19 22.64	-.345	-.36	+12.77	-0.34	+12.07	34.71
	Mar. 14	+.366	6	19 22.00	-.270	-.29	+12.95	-0.02	+12.64	34.64
	Mar. 18	+.424	6	19 20.66	-.313	-.33	+14.20	+0.08	+13.95	34.61
										34.717 ±.065

ι Geminorum $\alpha = 6^h\ 21^m\ 21^s.74$ $\delta = +20°\ 17'\ 26''$ $k = -.016$ tang. $\delta = +.37$

$z = +22\ 5\ 23$

	Date	n	T_s	T_m	n tangs	d.T.	Red 1872	Sum	A.R. 1872
1872	Jan. 30	+.477	6	21 15.58	+.176	+0.16	+6.39	-0.37	+6.18	21 21.76
	Feb. 8	+.352	6	21 11.74	+.130	+.11	+10.23	-0.32	+10.02	21.76
6	Feb. 12	+.338	6	21 10.74	+.125	+.11	+11.19	-0.28	+11.02	21.76
2.1	Feb. 14	+.290	6	21 10.64	+.107	+.09	+11.32	-0.26	+11.15	21.79
	Mar. 14	+.366	6	21 8.53	+.135	+.12	+12.95	-0.18	+12.25	21.78
	Mar. 28	+.306	6	21 5.95	+.113	+.10	+15.33	+0.49	+15.92	21.87
										21.786 ±.023

Di VI 136

B.A.C. 2109 $\alpha = 6^h\ 23^m\ 25^s.54$ $\delta = -32°\ 30'\ 1''$ $k = .019$ tang. $\delta = -.64$

$z = +74\ 52\ 50$

	Date	n	T_s	T_m	n tangs	d.T.	Red 1872	Sum	A.R. 1872
1872	Jan. 30	+.477	6	23 20.21	-.305	-0.32	+6.39	-0.81	+5.26	23 25.47
	Feb. 2	+.522	6	23 18.68	-.334	-.35	+8.05	-0.77	+6.93	25.61
	Feb. 8	+.352	6	23 16.17	-.225	-.24	+10.23	-0.70	+9.29	25.46
8	Feb. 14	+.290	6	23 15.13	-.185	-.20	+11.32	-0.61	+10.51	25.64
21	Mar. 1	+.467	6	23 41.43	-.298	-.32	+12.77	-0.30	+12.15	(53.58)
22.	Mar. 14	+.366	6	23 12.76	-.234	-.25	+12.95	-0.02	+12.68	25.44
	Mar. 18	+.424	6	23 11.44	-.271	-.29	+14.20	-0.08	+13.83	25.27
										25.482 ±.085

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$\delta_0 = +98° \; 23' \; 36.6''$ (above: +1.210, 23.42″)   sin z = −.87   Cor.   + log tg z $\frac{d\delta}{dt}$ =   +.81 +1.11

Thm − T's	Circle Read		Red. Hor. wire	Circle Read		δ		B+T+γ 1.85140			γ δ	Rm	Rn	Rf Red to 1872.0				I	δ 1872.0	
s	′	″	″	′	″	′	″		′	″	″	″	″	″	″	″	″		′	″
6.07 +123.1	0	51.55				21	47.06 +	04384	+1	18.57	.05	+ .51	− .12	+1.20	−13.70	+2.31	+41.68		23	36.0
5.50 +112.8	0	52.55				21	47.03 +	4144	1	18.13	.05	+ .11	.12	+1.10	−13.90	+2.21	+42.06			35.6
5.69 −224.4	1	21.25				21	44.56 +	4702	1	19.15	.05	+1.63	.17	+2.27	−14.10	+3.38	+42.78			35.8
5.87 −249.6	1	22.75				21	45.03 +	4643	1	19.01	.05	+2.01	.18	+2.64	−14.30	+3.75	+41.76			35.3
5.92 13.1	0	(56.05)				21	51.30 +	2195	1	14.71	.02	.01	.12	+0.70	−15.10	+1.81	+42.19			34.9
							+	37												
22.91 +161.7	0	42.20				21	53.57 +	2264	1	14.82	.04 +	.84	− .09	+1.56	−17.50	+2.67	+41.76			35.4
−218.1	0	56.70				22	18.63 +	2012	1	14.39	.02	1.54	.06	+2.29	−19.20	+3.40	+24.14			
32.28 −119.9	0	42.20				22	15.48 +	3139	1	16.35	.04	.46	.05	+1.22	−20.00	+2.33	+25.33			39.5
24.84 −81.6	0	40.35				22	14.35 +	2667	1	10.27	.04	.22	.04	+.99	−20.10	+2.10	+26.34			33.0
−147.5	0	29.55				22	18.80 +	3127	1	16.33	.04	.70	.05	+1.46	−20.50	+2.57	+27.47			
32.69 −183.4	0	45.30				22	17.32 +	1966	1	14.32	.02	1.10	.07	+1.84	−21.60	+2.95	+25.32			38.3
28.76 −75.8	0	33.95				22	15.62 +	1174	1	12.97	.01	.19	.03	+.97	−21.80	+2.08	+26.80			35.7
30.74 160.0	0	46.00				22	14.80 +	2433	1	15.12	.03	.83	.04	+1.60	−21.90	+2.71	+26.32			37.1
+306.0	1	8.75					+	1684	+1	13.83	+.02	+3.02	−.04	10.82		+4.93	+25.57			

36.06 ±1.10

3 ±.001

$\delta_0 = -17° \; 53' \; 40.0''$ 2.00167   −1.49   −.81 −1.25

+19.2	15	52.15	−23.98	15	28.17	−52	39.82 +	03238	−1	48.16	−.03	+ .06	− .12	− .87	+7.72	−2.12	+42.81	53 39.6
+16.6	15	53.85	−20.73	15	33.12	52	44.77 +	1448	1	43.79	.01	.04	.12	− .89	+8.25	−2.14	+42.37	40.1
+21.8	15	54.85	−27.22	15	27.13	52	38.78 +	2282	1	46.80	.08	.07	.12	− .86	+8.49	−2.11	+41.76	36.5
+19.5	15	36.30	−24.35	15	11.95	52	23.60 +	3140	1	47.91	.03	.06	.04	− .79	+9.65	−2.04	+25.33	38.6
+19.2	15	40.75	−23.98	15	16.77	−52	28.42 +	1193	−1	43.18	−.01	+ .05	− .03	− .79	+10.52	−2.04	+26.80	36.3

38.22 ±1.00

±.041

$\delta_0 = -36° \; 38' \; 33.4''$ 2.45677   −1.71   −.91 −1.42

+11.0	57	1.80	−11.58	56	50.22	−34	1.87 +	4384	−5	16.67	−.92	+ .03	− .26	−1.14	+8.57	−2.56	+41.68	38 31.8
+21.4	57	27.00	−22.53	57	4.47	34	16.12 +	3238	5	8.43	.55	.11	.32	−1.12	+10.45	−2.54	+42.81	34.4
+12.2	57	26.80	−12.85	57	13.95	34	25.60 +	1448	4	55.97	.23	.04	.32	−1.19	+11.19	−2.61	+42.37	30.8
+24.4	57	31.25	−25.70	57	5.55	34	17.20 +	2282	5	1.71	.61	.15	.33	−1.09	+11.54	−2.51	+41.76	28.7
+23.5	57	14.80	−24.75	56	50.05	34	1.70 +	3136	5	7.70	.63	.15	.22	−0.98	+13.69	−2.40	+27.47	31.3
+18.1	57	20.20	−19.06	57	1.14	34	12.79 +	1193	4	54.24	.19	.08	.12	−0.95	+14.54	−2.37	+26.80	28.2
+19.2	57	11.65	−20.19	56	51.46	−34	3.11 +	2449	−5	2.87	−.51	+ .09	− .21	−0.93	+14.70	−2.35	+26.32	27.8

30.43 ±1.72

±.061

$\delta_0 = +20° \; 17' \; 26.7''$ 1.36850   −1.86   −.35 −.54

+15.9	5	55.30	−19.57	5	35.73	+17	12.62 +	04384	−0	25.84		− .04	− .12	− .51	−0.89	−1.05	+41.68	17 26.5
+12.5	5	54.10	−15.39	5	38.71	17	9.64 +	3244		25.17		.03	.12	− .50	−1.05	−1.04	+42.81	25.2
+25.1	6	10.05	−30.89	5	39.16	17	6.19 +	1453		24.16		.11	.16	− .62	−1.12	−1.16	+42.37	25.6
+17.7	5	59.50	−21.78	5	37.72	17	10.63 +	2298		24.63		.06	.13	− .54	−1.16	−1.08	+41.76	25.5
+20.7	5	46.65	−25.48	5	21.17	17	27.18 +	1212		24.02		.08	.04	− .47	−1.74	−1.01	+26.80	27.2
+19.0	5	44.60	−23.38	5	21.22	+17	27.13 +	1669	−	24.25		− .06	− .01	− .42	−1.95	−0.96	+24.77	24.7

25.70 ±0.56

.023 ±.122

$\delta_0 = -32° \; 30' \; 1.5''$ 2.32013   −2.04   −.90 −1.39

+25.9	50	17.65	−28.67	49	48.98	−27	0.63 +	04384	−3	51.19	.37	+ .17	− .04	− .77	+7.92	−2.16	+41.68	30 39.6
−24.8	49	17.40	+27.45	49	44.85	26	56.50 +	4649	3	52.61	.35	.16	.56	−1.30	+8.56	−2.69	+41.76	37.1
+21.6	50	19.60	−23.91	49	55.69	27	7.34 +	3244	3	45.20	.22	.12	.04	− .82	+9.74	−2.21	+42.81	43.1
+14.5	50	14.90	−16.05	49	58.85	27	10.50 +	2298	3	40.35	.24	.06	.03	− .87	+10.79	−2.26	+41.76	30 41.6
√ +16.2	52	(26.25)	−17.93	(52	10.32)	29	21.97 +	3145	3	44.69	.26	.07	.25	−1.08	+12.88	−2.47	+27.47	
+5.5	49	58.30	−6.09	49	52.21	27	3.86 +	1212	3	34.91	.08	.07	.00	−0.89	+13.74	−2.28	+26.80	30 0.6
−9.5	49	33.85	+10.53	49	44.38	−26	56.03 +	2464	−3	41.19	.20	+ .02	− .23	−1.10	+13.86	−2.49	+26.32	29 59.7

30 0.15

±.074

1872phae.proj.1459.

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31

Star 13 Monocerotis $\alpha = 6^h\ 25^m\ 57^s.3899$ $\delta = +7°\ 25'\ (7)$ $K = .016$ tang. $\delta = +.13$

$\zeta = +36\ 57\ 42$

	Date	m	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872	Jan. 30	+.477	6	25 52.93	+.062	+0.05	+6.39	−0.39	+6.05	6 25 58.98
	Feb. 5	+.460	6	25 50.10	+.059	+.04	+9.18	−0.36	+8.86	58.96
	Feb. 8	+.352	6	25 49.08	+.045	+.03	+10.23	−0.34	+9.92	59.00
8	Feb. 12	+.338	6	25 48.08	+.043	+.03	+11.19	−0.30	+10.92	59.00
2,1	Feb. 14	+.290	6	25 47.96	+.037	+.02	+11.32	−0.29	+11.05	59.01
	Mar. 14	+.366	6	25 45.89	+.047	+.03	+12.95	+0.13	+13.11	59.00
	Mar. 18	+.424	6	25 44.51	+.055	+.04	+14.20	+0.28	+14.52	59.03
	Mar. 28	+.306	6	25 43.30	+.039	+.02	+15.33	+0.25	+15.70	59.00

Pi VI 164

B.A.C. 2147 $\alpha = 6^h\ 27^m\ 5^s.51.93$ $\delta = -31°\ 56'\ 15''$ $K = .018$ tang. $\delta = -.62$ 58.997 ±.011 ±.011

$\zeta = +74\ 19\ 4$

1872	Feb. 5	+.460	6	27 42.46	−.285	−0.30	+9.18	−0.75	+8.13	27 57.59
	Feb. 12	+.338	6	27 41.33	−.209	−.23	+11.19	−0.64	+10.32	51.65
4	Feb. 14	+.290	6	27 41.24	−.180	−.20	+11.32	−0.62	+10.50	51.74
2,1	Mar 18	+.424	6	27 37.59	−.263	−.28	+14.20	+0.06	+13.98	51.57

51.638

$\Delta\alpha = +0.041$ $\Delta\delta = -1''.21$

γ Geminorum $\alpha = 6^h\ 30^m\ 19^s.019$ (13.4670) $\delta = +16°\ 30'\ 22''$ $K = .016$ tang. $\delta = +.30$

$\zeta = +25\ 52\ 27$

1872	Feb. 5	+.460	6	30 10.07	+.138	+0.12	+9.18	−0.37	+8.93	30 19.00
	Feb. 8	+.352	6	30 9.11	+.106	+.09	+10.24	−0.34	+9.99	19.10
	Feb. 12	+.338	6	30 8.10	+.111	+.09	+11.19	−0.31	+10.97	19.07
6	Feb. 14	+.290	6	30 8.01	+.087	+.07	+11.32	−0.29	+11.10	19.11
2,1	Mar. 1	+.467	6	30 6.27	+.140	+.12	+12.77	−0.09	+12.80	19.07
	Mar. 14	+.366	6	30 5.86	+.110	+.09	+12.95	+0.11	+13.15	19.07
	Mar. 28	+.306	6	30 3.23	+.092	+.08	+15.33			

19.060
±.034 ±.033

ν^4

55 Aurigae $\alpha = 6^h\ 33^m\ 45^s.97$ $\delta = +44°\ 34'\ 40''$ $K = .021$ tang. $\delta = +.99$

$\zeta = -2\ 15\ 51$

1872	Feb. 8	+.352	6	33 35.97	+.348	+0.33	+10.24	−0.54	+10.03	33 46.00
	Feb. 12	+.338	6	33 34.97	+.334	+.31	+11.19	−0.53	+11.00	45.97
6	Feb. 14	+.290	6	33 34.87	+.287	+.27	+11.32	−0.48	+11.11	45.98
2,2	Mar. 14	+.366	6	33 33.53	+.362	+.34	+12.95	+0.02	+13.31	45.84
	Mar. 18	+.424	6	33 31.15	+.419	+.40	+14.20	+0.15	+14.75	45.90
	Mar. 28	+.306	6	33 29.90	+.302	+.28	+15.33	+0.43	+16.04	45.94

$\Delta\alpha = -0.669$ $\Delta\delta = +1''.80$

κ Cephei $\alpha = 6^h\ 39^m\ 44^s.74$ (30.3259 / 45.742) $\delta = +82°\ 14'\ 14''$ $K = .317$ tang. $\delta = +20.77$ 45.938 ±.042 ±.036

$\zeta = -44\ 51\ 25$

1872	Jan. 30	+.477	6	39 44.74	+9.583	+9.57	+6.39	−17.57	−1.59	39 43.15
	Jan. 31	+.513	6	39 44.55	+10.629	+10.34	+6.93	−17.36	−0.09	44.46
	Feb. 1	+.505	6	39 42.47	+10.464	+10.18	+7.51	−17.16	+0.53	43.00
	Feb. 2	+.522	6	39 42.67	+10.816	+10.53	+8.05	−16.98	+1.60	44.27
	Feb. 5	+.460	6	39 42.64	+9.531	+9.23	+9.18	−16.51	+1.90	44.54
	Feb. 8	+.352	6	39 42.81	+7.293	+7.00	+10.24	−15.95	+1.29	44.10
	Feb. 12	+.338	6	39 40.21	+7.003	+6.71	+11.19	−14.81	+3.09	43.30
	Feb. 14	+.290	6	39 41.01	+6.009	+5.70	+11.32	−14.17	+2.85	43.86
19	Feb. 19	+.430	6	39 37.23	+8.910	+8.61	+12.48	−12.83	+8.26	45.49
2,1	Feb. 22	+.400	6	39 35.21	+8.288	+7.99	+13.03	−11.98	+9.01	44.21
	Feb. 26	+.372	6	39 32.84	+7.708	+7.41	+13.04	−9.31	+11.14	43.98
	Feb. 27	+.416	6	39 32.83	+8.619	+8.32	+12.92	−10.04	+11.20	44.03
	Feb. 28	+.438	6	39 32.78	+9.075	+8.78	+12.84	−9.67	+11.95	44.73
	Mar. 1	+.467	6	39 30.85	+9.676	+9.38	+12.77	−8.96	+13.19	44.04
	Mar. 3	+.356	6	39 32.75	+7.376	+7.08	+12.43	−8.31	+11.50	43.25
	Mar. 11	+.398	6	39 27.90	+8.247	+7.95	+13.74	−5.13	+16.56	44.46
	Mar. 14	+.366	6	39 27.95	+7.584	+7.29	+12.45	−3.84	+16.90	44.35
	Mar. 18	+.424	6	39 24.00	+8.785	+8.49	+14.20	−2.35	+20.34	44.34
	Mar. 28	+.306	6	39 20.42	+6.340	+6.03	+15.33	+2.08	+23.41	43.83

44.073
±.386 ±.019

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$\delta_0 = +7°\ 25'\ 28''.7$ $\quad \frac{dy}{dt} = -2.27''$

Tom – 75 Circle Read. Red Rowin Corr Circle Read. $\quad$ μ + log lyn $\quad$ B + V + γ $\quad$ 1.60440 $\quad$ −.53 −.82

	s	′	″	″	′	″	′	″			′	″	Δy−1	Rm	Rs	Rf Rm Red to Rm 1872.0		Rm + Rs + Rf		I δ 1872.0	
	+20.7	57	46.00	−26.94	57	19.06	+25	29.29 +	6438	−0	44.49		−.03	−.36	−.92	+1.67		−1.74	+41.68	25	26.4
	−13.6	57	35.55	+17.70	57	21.25	25	27.10 +	2211		42.32		.02	.26	−.81	+1.95		−1.63	+42.19		27.3
	+20.5	57	45.10	−26.67	57	18.43	25	29.92 +	3244		43.33		.03	.35	−.91	+2.08		−1.73	+42.81		29.7
	+24.4	57	56.00	−31.75	57	24.25	25	24.10 +	1453		41.58		.04	.38	−.95	+2.22		−1.77	+42.37		25.3
	+22.1	57	51.00	−28.76	57	22.24	25	26.11 +	2298		42.40		.03	.38	−.94	+2.30		−1.76	+41.76		26.0
	+19.0	57	30.65	−24.72	57	5.93	25	42.42 +	1212		41.35		.03	.12	−.68	+2.68		−1.50	+26.80		29.0
	+20.2	57	31.65	−26.29	57	5.36	25	42.99 +	2464		42.56		.03	.12	−.68	+2.65		−1.50	+26.32		27.9
	−11.4	56	51.15	+14.84	57	5.79	+25	42.36 +	1619	−	41.74		−.01	−.01	−.55	+2.52		−1.37	+24.77		26.5
																					272.6
±.011																					±1.10

$\delta_0 = -31°\ 56'\ \cancel{15.7}\ 13.7''$ $\quad$ 2.30417 $\quad$ −2.43 $\quad$ −.91 −1.39

	+18.9	16	38.85	−21.05	16	17.80	−53	28.55 +	0221	−3	32.01	−.12	+.08	−.21	−1.02	+8.86		−2.41	+42.19	56	13.0
	−4.3	16	17.35	+4.79	16	22.14	53	33.91 +	1457	3	28.32	.08	.01	.17	−1.05	+10.16		−2.44	+42.37		12.1
	+27.9	16	46.35	−31.07	16	17.28	53	28.93 +	2314	3	32.48	.21	.18	.23	−.94	+10.56		−2.33	+41.76		11.6
	~~+22.7~~	16	27.85	−25.28	16	2.57	−53	14.22 +	2300	−3	32.41	−.15	+.13	−.07	−.83	+13.69		−2.22	+26.32		9.0
																					114.2

−2.694
21.59

$\delta_0 = +16\ 30\ \cancel{21.6}$ $\quad$ Rin z = +.44 $\quad$ 1.44580 $\quad$ −.40 −.63

29	39.46	+19.6	53	3.70	−24.66	52	39.04	+30	9.31 +	0219	−0	29.37		−.08	−.40	−.88	−0.10		−1.51	+42.19	30	20.5
	38.43	+17.9	53	1.90	−22.52	52	37.38	30	8.97 +	3250		30.08		.07	.39	−.86	−0.10		−1.49	+42.81		20.1
	39.72	+21.4	53	6.20	−26.93	52	39.27	30	9.08 +	1457		28.86		.10	.40	−.90	−0.10		−1.53	+42.37		21.0
	37.45	+20.8	53	7.15	−26.17	52	40.98	30	7.37 +	2314		29.44		.08	.40	−.88	−0.20		−1.51	+41.76		18.0
	54.30	+17.4	52	45.60	−21.90	52	23.70	30	24.65 +	3153		30.01		.06	.28	−.74	−0.30		−1.37	+27.47		20.4
	56.99	+17.7	52	44.70	−22.27	52	22.43	30	25.92 +	1231		28.72		.07	.14	−.61	−0.50		−1.24	+26.80		22.3
		~~−6.8~~	~~52~~	~~14.50~~	~~+8.55~~	~~52~~	~~23.05~~	~~+30~~	~~25.30 +~~	~~1629~~	~~−~~	~~28.98~~		~~−.01~~	~~−.02~~	~~−.43~~						203.8
±.033																						±0.82

$\delta_0 = +44\ 38\ 40.8$ $\quad$ .35780 $\quad$ −2.94 $\quad$ +.03 +.05

	+27.7	45	12.95	−25.86	44	47.09	+38	12.6 +	0326	+0	2.45		−.21	−.03	−.21	−6.92		−0.16	+42.81	38	39.4
	+20.8	45	5.85	−19.42	44	46.43	38	19.2 +	1462		2.36		.12	.01	−.10	−7.32		−0.05	+42.37		39.3
	+32.9	45	17.65	−30.72	44	46.93	38	14.2 +	2330		2.40		.30	.04	−.31	−7.53		−0.26	+41.76		37.8
	+24.4	44	48.80	−22.78	44	26.02	38	23.33 +	1240		2.35		.16	.24	−.37	−10.10		−0.32	+26.80		41.1
	+22.6	44	49.35	−21.10	44	28.45	38	19.90 +	2495		2.42		.14	.24	−.35	−10.28		−0.30	+26.32		38.1
	+23.1	44	47.90	−21.56	44	26.34	+38	22.01 +	1639	+	2.37		−.14	−.05	−.16	−10.57		−0.11	+24.77		38.5
				−3.540																	390.3
±.030				14.21																	±0.83

$\delta_0 = +87\ 14\ 14.2$ $\quad$ Rin z = −.70 $\quad$ 1.75740 $\quad$ +.65 +1.01

13	42.55	−22.49	10	7.43																					
			~~9~~	~~52.20~~	+14.23	10	7.43	+12	40.92 +	4344	+1	3.27		−1.33	−.01	−0.69	−11.70		+0.32	+41.68	14	14.5
	43.33	+46.37	10	31.70	−29.31	10	2.39	12	45.96 +	4230	1	3.06		−5.68	.06	−5.04	−11.90		−4.03	+42.06		15.1
	42.42	+42.45	10	28.10	−23.09	10	5.01	12	43.34 +	4800	1	3.89		−4.75	.06	−4.16	−12.20		−3.15	+42.78		14.7
	43.93	+27.75	10	23.60	−17.58	10	6.02	12	42.34 +	4657	1	3.67		2.02	.05	−1.42	−12.40		−0.41	+41.76		14.9
	45.65	+163.7	10	14.00	−10.37	10	3.63	12	44.72 +	3262	1	1.66		0.70	.03	−.08	−14.10		+0.93	+42.81		16.0
	59.46	+155.1	9	49.30	+7.13	9	56.43	12	51.62 +	1466	0	59.16		0.62	.02	−.59	−15.20		+0.42	+42.37		13.7
	40.82	−196.1	9	49.85	+12.42	9	52.27	12	49.05 +	2346	0	60.37		1.01	.02	−.98	−15.70		+0.03	+41.76		17.5
	47.87	+116.1	10	7.85	−7.35	10	0.50	12	47.85 +	2347	0	60.38		.35	.01	+.29	−16.80		+1.30	+45.21		12.9
		+306.7	10	−1.40	−19.43	9	41.97	13	6.38 +	~~2066~~	0	~~56.99~~		~~2.47~~	.00	−1.22	−17.80		−0.81	~~+24.14~~		—
	14 6.56	+159.7	9	52.50	−10.22	9	42.28	13	6.07 +	3145	0	61.50		.67	.34	−.36	−18.90		+0.65	+25.33		14.7
	5.76	+160.8	9	52.50	−10.18	9	42.32	13	6.03 +	2719	0	60.90		.68	.44	−.52	−18.60		+0.49	+26.34		15.2
	6.8	+423.1	10	4.15	−26.80	9	37.35	13	11.00 +	2492	0	60.58		4.70	.01	−4.06	−18.80		−3.05	+26.73		16.5
	7.49	+336.1	10	0.75	−21.29	9	39.46	13	8.89 +	3171	0	61.53		2.97	.00	−2.32	−19.00		−1.31	+27.47		17.6
	7.47	+328.8	9	58.90	−20.83	9	38.07	13	10.28 +	2294	0	60.03		2.4	.00	−2.19	−19.30		−1.18	+26.27		16.9
	12.03	−102.1	9	29.45	+6.46	9	35.91	13	12.44 +	1971	0	59.86		0.27	.00	+.38	−20.60		−1.39	+25.32		15.6
	9.18	+277.1	9	53.60	−17.55	9	36.05	13	12.30 +	1269	0	58.90		2.02	.00	−1.37	−20.80		−0.36	+26.80		16.8
	8.09	+267.9	9	55.95	−16.97	9	38.98	13	9.37 +	2510	0	60.60		1.88	.00	−1.23	−21.00		−0.22	+26.32		15.1
	10.79	+238.4	9	50.60	−15.10	9	35.50	+13	12.85 +	1659	+0	59.43		−1.49	−.00	−.84	−21.50		+0.17	+24.77		15.7
																						160.4
±.019																						±.086

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Star α Canis Majoris α = 6h 39m 30.38s δ = −16° 32′ 32″ k = −.016 tang δ = −.30
z = +58 55 21

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
			h m s	s	s	s	s	h m s
1872 Feb. 26	+ .372		6 39 17.80	−.112	−0.13	+13.04	−0.21	+12.70	6 39 30.50
Feb. 27	+ .416		6 39 17.84	−.125	−.14	+12.92	−0.19	+12.59	30.43
7 Feb. 28	+ .438		6 39 17.95	−.131	−.15	+12.84	−0.18	+12.51	30.46
2.2 Mar. 3	+ .356		6 39 17.97	−.107	−.12	+12.74	−0.12	+12.50	30.47
Mar. 14	+ .366		6 39 17.56	−.110	−.13	+12.95	+0.09	+12.91	30.47
Mar. 18	+ .424		6 39 16.26	−.127	−.14	+14.20	+0.16	+14.22	30.48
Mar. 28	+ .306		6 39 14.85	−.092	−.11	+15.33	+0.36	+15.58	30.43
									30.463
									±.018

∴ 75 Aurigae α = 6h 41m 42.342s δ = +41° 55′ 15″ k = −.020 tang δ = +.90
z = +0 27 34

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Feb. 26	+ .372		6 41 29.70	+.335	+0.32	+13.04	−0.32	+13.04	41 42.74
Feb. 28	+ .438		6 41 29.86	+.394	+.37	+12.84	−0.28	+12.93	42.79
4 Mar. 14	+ .366		6 41 29.45	+.329	+.31	+12.95	+0.02	+13.28	42.73
2.2 Mar. 28	+ .306		6 41 28.07	+.275	+.25	+15.33	+0.29	+15.87	42.44
									42.753

Δα = +0.106s Δδ = +3.9604 / 29.0021

✱ θ Geminorum α = 6h 44m 21.00s δ = +34° 6′ 46″ k = −.019 tang δ = +.68
z = +8 16 3

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Feb. 28	+ .438		6 44 8.19	+.297	+0.28	+12.84	−0.24	+12.88	44 21.07
2 Mar. 28	+ .306		6 44 5.21	+.208	+0.19	+15.33	+0.42	+15.94	21.16
2.2									21.110

Δα = −0.040s Δδ = +1.06″ +5.2167 / 17.183

✱ 15 Lyncis α = 6h 46m 11.18s δ = +58° 35′ 12″ k = −.029 tang δ = +1.64
z = −16 12 23

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Feb. 27	+ .416		6 45 58.34	+.682	+0.65	+12.92	−0.58	+12.99	46 11.33
Feb. 28	+ .438		6 45 58.16	+.718	+.69	+12.84	−0.57	+12.96	11.12
4 Mar. 1	+ .467		6 45 58.20	+.765	+.74	+12.77	−0.55	+12.96	11.16
2.2 Mar. 28	+ .306		6 45 54.98	+.501	+.47	+15.33	+0.19	+15.99	10.97
									11.145

O Canis Majoris α = 6h 48m 49.29s δ = −24° 1′ 31″ k = −.017 tang δ = −.45
z = +66 24 20

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Feb. 27	+ .416		6 48 36.97	−.187	−0.20	+12.92	−0.39	+12.33	48 49.30
~~Feb. 28~~	~~+ .438~~		~~6 48 19.26~~	~~−.197~~	~~−.21~~	~~+12.84~~	~~−0.38~~	~~+12.25~~	~~31.51~~
3 Mar. 1	+ .467		6 48 37.17	−.210	−.23	+12.77	−0.34	+12.20	49.39
2.2 Apr. 4	+ .220		6 48 34.62	−.099	−.12	+14.52	+.034	+14.74	49.36
									49.343

50 Draconis L.C. α = 18h 50m 29.32s δ = +75° 16′ 53″ k = +.060 tang δ = −3.80
z = −62 20 19

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Feb. 27	+ .416		6 50 15.50	−1.581	−1.52	+12.92	+2.76	+14.16	50 29.66
Feb. 28	+ .438		6 50 15.82	−1.664	−1.60	+12.84	+2.69	+13.93	29.75
4 Mar. 3	+ .356		6 50 15.66	−1.353	−1.29	+12.74	+2.37	+13.82	29.48
2.2 Mar. 28	+ .306		6 50 15.07	−1.163	−1.10	+15.33	+0.27	+14.50	29.57
									29.615

ε Canis Majoris α = 6h 53m 35.73s δ = −28° 47′ 08″ k = −.018 tang δ = −.55
z = +71 10 47

Date	m	Ts	Tm	m tang δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
1872 Feb. 27	+ .416		6 53 23.66	−.228	−0.25	+12.92	−0.46	+12.21	53 35.87
Feb. 28	+ .438		6 53 23.74	−.240	−.26	+12.84	−0.45	+12.13	35.87
4 Mar. 3	+ .356		6 53 23.70	−.195	−.21	+12.74	−0.37	+12.16	35.86
2.2 Apr. 3	+ .218		6 53 21.07	−.119	−.14	+14.58	+0.28	+14.72	35.79
									35.850

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$\frac{d\delta}{dt} = -3.44''$

$\delta_0 = -16^\circ\ 32'\ 31''$ — μ + log(γ n) — −.80 − 1.23

Tom – TS | Loiselle Head | Red Nonsuch | Loiselle Head | β + T' + γ | 1.97830 | Red to 1872.0

	°	′	″	″	′	″	′	″			′	″	″																	
+18.4	54	35.85	−23.15	54	12.70	−31	24.35	+	03144	−	1	42.27	−.02	+.05	−.32	−1.09	+10.60	−2.30	+25.33	32	33.0									
+18.0	54	37.25	−22.64	54	14.61	31	26.26	+	2711		1	41.26	.02	.04	.46	−1.22	+10.70	−2.45	+26.34		33.0									
+21.6	54	42.85	−27.17	54	15.68	31	27.33	+	2492		1	40.74	.02	.07	.47	−1.20	+10.70	−2.43	+26.73		33.1									
+17.2	54	38.20	−21.64	54	16.56	31	28.21	+	1269		1	37.94	.01	.04	.23	−.99	+11.60	−2.22	+26.80		30.0									
+19.7	54	39.50	−24.79	54	14.71	31	26.36	+	2510		1	40.79	.02	.05	.33	−.98	+11.70	−2.21	+26.32		31.4									
+5.0	54	23.65	−6.29	54	17.36	−31	29.01	+	1659	−	1	38.83	−.01	+.00	−.04	−.84	+11.80	−2.07	+24.77		33.3									

±.017 — 32.30 ± 0.99

$\delta_0 = +41^\circ\ 55'\ 45''.4$ — 9.65000 − 3.63 — −.00 − .01

											′	″																		
+24.9	27	46.00	−24.31	27	21.69	+55	26.66	+	03144	−	0	0.48	−.17	−.20	−.37	−7.83		−0.38	+25.33	55	43.8									
+11.5	27	33.05	−11.23	27	21.82	55	26.53	+	2492			0.47	.04	.25	.29	−8.01		−0.30	+26.73		44.5									
+8.2	27	28.50	−8.01	27	20.49	55	27.86	+	1269			0.46	.03	.13	.16	−9.14		−0.17	+26.80		44.9									
~~+8.8~~	~~27~~	~~44.65~~	~~−0.79~~	~~27~~	~~40.86~~	~~+55~~	~~7.49~~	~~+~~	~~1659~~	~~−~~		~~0.46~~	~~−.00~~	~~−.03~~	~~−.03~~	~~−9.69~~		~~−0.04~~	~~+24.77~~											

44.23

−3.886
46.30

$\delta_0 = +34\ 6\ 46.3$

~~−26.6~~	~~15~~	~~−46.00~~																												
~~+18.1~~	~~16~~	~~3.225~~																												

−4.165
12.011

$\delta_0 = +58\ 35\ 12.0$ — sin z = −.28 — 1.22370 — +.25 + .40

											′	″																		
34 58.27	+22.3	48	22.70	−15.25	48	7.45	+34	40.90	+	02721	+	0	17.82	−.11	−.34	−.20	−12.40		+0.20	+26.34	35	12.9								
58.06	−20.8	47	53.40	+14.23	48	7.63	34	40.72	+	2509			17.73	.10	.29	−.14	−12.50		+0.26	+26.73		12.9								
58.36	+29.1	48	27.35	−19.90	48	7.45	34	40.90	+	3189			18.01	.20	.35	−.30	−12.80		+0.10	+27.47		13.7								
35 2.38	+34.2	48	26.45	−23.40	48	3.05	+34	45.30	+	1659	+		17.39	−.28	−.03	−.06	−14.90		+0.34	+24.77		12.9								

13.10

$\delta_0 = -24\ 1\ 32.7$ — 2.11663 − 4.24 — −.85 − 1.32

											′	″																		
+7.8	22	46.45	−9.34	22	37.11	−59	48.76	+	02721	−	2	19.26	−.06	+.01	−.28	−4.12	+10.19		−2.44	+26.34	1	34.0								
+17.6	22	56.35	−21.10	22	35.25	59	46.90	+	3179			20.74	.06	.07	.29	−4.07	+10.51		−2.39	+27.47		32.1								
+23.9	23	9.50	−28.65	23	40.85	−59	52.50	+	1192	−	2	14.44	−.02	+.12	−.03	−.76	+11.81		−2.08	+25.43		31.8								

32.63

$\delta_0 = 104\ 43\ 6.8$ — 2.03862 — +.82 +~~.75~~ +1.27

42 56.09	−21.2	41	56.00	−9.41	41	46.59	+41	1.76	+	02721	+	1	56.37	+.04	+.11	−.19	+.7	−20.10		+2.01	+26.34	43	6.4							
57.93	+24.5	41	38.00	+8.18	41	46.18	41	2.17	+	2509		1	55.80	.04	.08	.16	+.74	−20.30		+2.01	+26.73		6.5							
58.68	−18.7	41	50.55	−6.24	41	44.31	41	4.04	+	2110		1	54.74	.03	.05	.18	+.69	−21.20		+1.96	+27.27		5.8							
43 3.68	+25.2	41	29.90	+8.41	41	38.31	+41	10.04	+	1659	+	1	53.56	+.01	+.08	−.01	+.89	−23.30		+2.16	+24.77		7.2							

6.48

$\delta_0 = -28\ 47\ 58.1$ — 2.22229 — −4.65 — −.87 − 1.37

											′	″																		
+8.6	8	31.50	−9.89	8	21.61	−45	33.26	+	02730	−	2	57.64	−.13	+.02	−.35	−1.20	+10.91		+2.57	+26.34	47	56.9								
+18.3	8	44.60	−21.04	8	23.56	45	35.21	+	2525		2	56.80	.12	.08	.37	−1.16	+11.00		+2.53	+26.73		56.9								
+21.3	8	50.95	−24.49	8	26.46	45	38.11	+	2125		2	55.18	.09	.10	.38	−1.15	+11.44		+2.52	+26.27		57.2								
−21.6	8	5.70	+24.84	8	30.54	−45	42.19	+	1008	−	2	50.73	−.03	+.10	−.03	−.80	+11.62		+2.17	+24.61		58.9								

57.50

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23 $\Delta\alpha = +0^{s}.033$ $\Delta\delta = -0''.57$ (2.2)

Star # 5 Geminorum $\alpha = 6^h\ 56^m\ 30^s.97$ (3.5634, 30.969) $\delta = +20°\ 45'\ 20''$ $K = -.016$ tang. $\delta = +.38$

$z = +21\ 37\ 29$

Date	m	T_s	T_m	m tang. δ	dT	Red. 1872	Sum	A.R. 1872.0
								$h\ m\ s$
1872 Mar. 1	+ .467		6 56 18.33	+.177	+0.16	+12.76	−0.24	+12.68	6 56 31.01
Mar. 3	+ .356		6 56 18.34	+.135	+.12	+12.74	−0.21	+12.65	30.99
6 Mar. 21	+ .460		6 56 16.44	+.174	+.16	+14.32	+0.08	+14.56	31.00
2.2 Mar. 28	+ .306		6 56 15.36	+.116	+.10	+15.33	+0.19	+15.62	30.98
Apr. 3	+ .218		6 56 16.06	+.082	+.07	+14.58	+0.31	+14.96	31.02
Apr. 4	+ .220		6 56 16.09	+.083	+.07	+14.52	+0.33	+14.92	31.01

31.002 ± .011

Blanc Majoris $\alpha = 6^h\ 57^m\ 58^s.08$ $\delta = -15°\ 26'\ 45''$ $K = -.016$ tang. $\delta = -.28$

$z = +57\ 49\ 34$

1872 Feb. 27	+ .416	6	57 45.71	−.116	−0.13	+12.92	−0.37	+12.42	57 58.13
Mar. 1	+ .467	6	57 45.78	−.130	−.15	+12.76	−0.34	+12.27	58.05
Mar. 3	+ .356	6	57 45.75	−.099	−.11	+12.74	−0.29	+12.34	58.09
6 Mar. 28	+ .306	6	57 42.67	−.085	−.10	+15.33	+0.16	+15.39	58.06
2.2 Apr. 3	+ .218	6	57 43.36	−.061	−.08	+14.58	+0.26	+14.76	58.12
Apr. 4	+ .220	6	57 43.33	−.061	−.08	+14.52	+0.28	+14.72	58.05

58.083 ± .028

$\Delta\alpha = -0^{s}.016$ $\Delta\delta = -0''.51$

63 Aurigae $\alpha = 7^h\ 2^m\ 50^s.89$ (+4.1384, 50.891) $\delta = +39°\ 31'\ 36''$ $K = -.020$ tang. $\delta = +.82$

$z = +2\ 51\ 13$

1872 Feb. 24	+ .400	7	2 37.64	+.328	+0.31	+13.33	−0.46	+13.18	2 50.82
Mar. 3	+ .356	7	2 38.23	+.291	+.27	+12.74	−0.35	+12.66	50.89
4 Mar. 19	+ .382	7	2 36.40	+.313	+.29	+14.22	−0.03	+14.48	50.88
2.2 Mar. 21	+ .460	7	2 36.32	+.377	+.36	+14.32	+0.01	+14.69	50.91

50.875

Blanc Majoris $\alpha = 7^h\ 3^m\ 11^s.25$ $\delta = -26°\ 11'\ 28''$ $K = -.017$ tang. $\delta = -.49$

$z = +68\ 34\ 17$

1872 Feb. 19	+ .430	7	2 59.52	−.210	−0.23	+12.49	−0.60	+11.66	3 11.18
Feb. 28	+ .438	7	2 59.13	−.214	−.23	+12.84	−0.46	+12.15	11.28
Mar. 1	+ .467	7	2 59.19	−.228	−.24	+12.76	−0.43	+12.09	11.28
6 Mar. 28	+ .306	7	2 56.08	−.149	−.17	+15.33	+0.10	+15.26	11.26
2.2 Apr. 3	+ .218	7	2 56.64	−.106	−.12	+14.58	+0.22	+14.68	11.32
Apr. 4	+ .220	7	2 56.66	−.107	−.12	+14.52	+0.24	+14.64	11.30

11.270 ± .031

22 Monocerotis $\alpha = 7^h\ 5^m\ 20^s.19$ $\delta = -0°\ 16'\ 58''$ $K = -.015$ tang. $\delta = -.01$

$z = +42\ 39\ 47$

1872 Feb. 24	+ .400	7	5 6.65	−.004	−0.02	+13.33	−0.36	+12.95	5 19.60
Feb. 27	+ .416	7	5 7.15	−.004	−.02	+12.92	−0.32	+12.58	19.73
Mar. 1	+ .467	7	5 7.23	−.005	−.02	+12.76	−0.28	+12.46	19.69
9 Mar. 3	+ .356	7	5 7.17	−.004	−.02	+12.74	−0.26	+12.46	19.65
2.2 Mar. 11	+ .398	7	5 6.09	−.004	−.02	+13.71	−0.14	+13.55	19.64
Mar. 19	+ .382	7	5 5.45	−.004	−.02	+14.22	−0.01	+14.19	19.64
Mar. 21	+ .460	7	5 5.41	−.005	−.02	+14.32	+0.02	+14.32	19.73
Apr. 3	+ .218	7	5 4.90	−.002	−.02	+14.58	+0.24	+14.80	19.70
Apr. 4	+ .220	7	5 4.89	−.002	−.02	+14.52	+0.26	+14.76	19.65

19.668 ± .036

$\Delta\alpha = -0^{s}.017$ $\Delta\delta = -0''.91$

64 Aurigae $\alpha = 7^h\ 9^m\ 8^s.01$ (+4.1846, 8.011) $\delta = +41°\ 6'\ 29''$ $K = -.020$ tang. $\delta = +.87$

$z = +1\ 16\ 20$

1872 Feb. 19	+ .430	7	8 55.76	+.374	+0.35	+12.19	−0.59	+12.25	9 8.01
Mar. 1	+ .467	7	8 55.30	+.406	+.39	+12.76	−0.44	+12.71	8.01
Mar. 3	+ .356	7	8 55.28	+.309	+.29	+12.74	−0.41	+12.62	7.90
7 Mar. 11	+ .398	7	8 54.22	+.346	+.33	+13.71	−0.24	+13.80	8.02
2.2 Mar. 19	+ .382	7	8 53.55	+.332	+.31	+14.22	−0.08	+14.45	8.00
Mar. 21	+ .460	7	8 53.36	+.400	+.38	+14.32	−0.04	+14.66	8.02
Mar. 24	+ .420	7	8 52.84	+.365	+.35	+14.79	+0.02	+15.16	8.00

7.994 ± .027

$\Delta\alpha = -0^{s}.012$ $\Delta\delta = -0''.98$

λ Geminorum $\alpha = 7^h\ 10^m\ 44^s.16$ (+3.4529, 44.159) $\delta = +16°\ 46'\ 8''$ $K = -.016$ tang. $\delta = +.30$

$z = +25\ 36\ 41$

1872 Feb. 28	+ .438	7	10 31.55	+.181	+0.11	+12.84	−0.32	+12.63	10 44.18
Mar. 3	+ .356	7	10 31.60	+.107	+.09	+12.74	−0.27	+12.56	44.16
7 Mar. 11	+ .398	7	10 30.51	+.114	+.10	+13.71	−0.16	+13.65	44.16
2.2 Mar. 19	+ .382	7	10 29.89	+.115	+.10	+14.22	−0.03	+14.29	44.18
Mar. 21	+ .460	7	10 29.69	+.138	+.12	+14.32	+0.00	+14.44	44.13
Apr. 3	+ .218	7	10 29.28	+.065	+.05	+14.58	+0.22	+14.85	44.13
Apr. 4	+ .220	7	10 29.35	+.066	+.05	+14.52	+0.24	+14.81	44.16

44.15 ± .03

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1872phae.proj.1459.

-4.597
20.27

$\delta_0 = +20\ 45\ 20.3$ $\sin z = +.37$ $\mu + \lg\tau\,\lg z_1$ $\frac{df}{dt} =$ " -.33 -.53

Corr.

7hr -7'.5 Circle Read, Red Normin Circle Read. $\beta + \gamma + \delta$ 1.35 ±1.0

	s		′	″		″	′	″	′		″		′		″		″		″		″		″		″		′	″
14	54.84	+17.5	37	50.10	−	21.47	37	28.63	+45	19.72	+	0.3188	− 0		2454		−.06	−.28	−.69	−1.50		−1.20	+27.47	45	20.0	+
	56.26	+20.2	37	52.55	−	24.79	37	27.76	45	20.59	+	2125			2395		.07	.39	−.69	−1.60		−1.22	+26.27		21.1	
	54.83	− .52	37	22.50	+	6.38	37	28.88	45	19.47	+	3134			2452		.00	.12	−.45	−2.10		−0.98	+28.45		20.3	
	56.70	+17.3	37	49.10	−	21.28	37	27.87	45	20.48	+	1669			2370		.05	.03	−.41	−2.30		−0.94	+24.77		18.3	
	58.15	+20.9	37	52.40	−	25.65	37	26.75	45	21.60	+	1008			2334		.08	.03	−.44	−2.50		−0.97	+24.61		19.4	
	57.03	+19.5	37	51.70	−	22.98	37	27.77	+45	20.58	+	1207	−		2345		−.07	−.03	−.43	−2.50		−0.96	+25.43		19.1	

±.010 19.70 ±0.71

$\delta_0 = -15\ 26\ 45.6$ 1.95983 − 5.02 −.79 −1.22

														′	″													
		+17.3	48	52.20	−	21.88	48	30.32	− 25	41.97	+	0.2739	− 1		37.10	−.02	+.04	−.39	−1.14	+8.17		−2.36	+26.34	26	46.9	
		−20.7	48	4.05	+	26.19	48	30.24	25	41.89	+	3197	1		38.13	.02	.06	.31	−1.04	+8.33		−2.26	+27.47		46.5	
		+ 5.5	48	37.20	−	6.96	48	30.24	25	41.86	+	2140	1		35.77	.02	.00	.36	−1.15	+8.57		−2.37	+26.27		45.2	
		+10.4	48	45.00	−	13.16	48	31.84	25	43.49	+	1679	1		34.76	.02	.01	.04	−.82	+9.61		−2.04	+24.77		45.9	
		− 3.6	48	29.90	+	4.55	48	34.45	25	46.10	+	1027	1		33.35	.01	.00	.03	−.82	+9.46		−2.04	+24.61		48.4	
		+18.1	48	56.65	−	22.90	48	33.75	−25	45.40	+	1222	− 1		33.77	−.01	+.04	−.04	−.79	+9.43		−2.01	+25.43		46.3	

±.027 -5.412 35.86 46.37 ±0.52

$\delta_0 = +39\ 31\ 35.9$ $\sin z = +.05$ 0.45660 −.05 −.08

31	16.89	−13.5	51	12.80	+	13.66	51	26.46	+31	21.89	+	00201	− 0		2.87		−.05	−.08	−.18	−6.40		−0.26	+23.47	21	35.8	
	15.45	−10.0	51	19.60	+	10.13	51	29.73	31	18.62	+	2140			3.01		.03	.13	−.21	−7.20		−0.29	+26.27		39.4	
	19.30	− 3.0	51	22.95	+	3.04	51	25.99	31	22.36	+	1827			2.99		.00	.07	−.12	−8.40		−0.20	+25.57		36.3	
	15.12	+21.8	51	52.00	−	22.06	51	29.94	+31	18.41	+	3143	−		3.07		−.13	−.09	−.27	−8.50		−0.35	+28.45		39.4	

35.35

$\delta_0 = -26\ 11\ 30.1$ 2.16245 − 5.46 −.86 −1.34

														′	″													
		+16.8	32	57.65	−	19.78	32	38.07	− 9	49.72	+	02400	− 2		33.27	−.06	+.06	−.20	−1.00	+10.96		−2.34	+45.21	11	29.2	
		+18.7	32	41.45	−	22.02	32	19.43	9	31.08	+	2557	2		34.18	.09	.08	.27	−1.05	+10.24		−2.39	+26.73		30.8	
		+15.6	32	37.15	−	18.37	32	18.78	9	30.43	+	3206	2		36.50	.12	.07	.05	.26	−1.07	+10.46	−2.41	+27.47		31.5	
		+22.0	32	50.00	−	25.91	32	24.09	9	35.74	+	1683	2		31.11	.04	.10	.03	−.79	+12.30		−2.13	+24.77		31.9	
		+15.9	32	43.95	−	18.72	32	25.23	9	36.88	+	1046	2		28.91	.03	.05	.03	−.84	+12.23		−2.18	+24.61		31.2	
		+12.7	32	39.75	−	14.96	32	24.79	−9	36.44	+	1237	− 2		29.56	−.02	+.03	−.03	−.86	+12.21		−2.20	+25.43		30.6	

±.028 30.87 ±0.62

$\delta_0 = -0\ 16\ 57.4$ 1.72410 − 5.64 −.63 −.98

														′	″													
		+20.2	39	45.25	−	26.51	39	18.74	−16	30.39	+	00212	− 0		53.24		+.00	−.33	−.96	+4.28		−1.94	+23.47	16	57.8	
		+21.7	39	46.50	−	28.48	38	20.02	15	31.67	+	2748			56.44		.00	.48	−1.11	+4.42		−2.09	+26.34		59.4	
		+15.2	39	40.10	−	19.94	39	20.16	16	31.81	+	3206			57.05		.00	.47	−1.10	+4.54		−2.08	+27.47		58.9	
		+17.1	39	43.35	−	22.44	39	20.91	16	32.56	+	2155			55.68		.00	.47	−1.10	+4.62		−2.08	+26.27		59.4	
		+16.9	39	42.40	−	22.18	39	20.22	16	31.87	+	1975			55.44		.00	.47	−1.10	+4.83		−2.08	+25.32		60.2	
		+17.7	39	44.75	−	23.23	39	21.52	16	33.17	+	1845			55.28		.00	.24	−.87	+4.93		−1.85	+25.57		59.8	
		+19.3	39	46.15	−	28.30	39	20.85	16	32.52	+	3152			56.97		.00	.24	−.87	+4.93		−1.85	+28.45		58.0	
		−12.9	39	5.35	+	16.93	39	22.28	16	33.93	+	1046			54.27		.00	.04	−.67	+4.76		−1.65	+24.61		60.5	
		+19.7	39	46.25	−	25.85	39	22.40	−16	34.05	+	1237	−		54.51		+.00	−.05	−.68	+4.75		−1.66	+25.43		60.0	

59.22 ±0.60

±.036 -5.939 28.67

$\delta_0 = +41\ 6\ 28.7$ $\sin z = +.02$ 0.10660 −.02 −.03

														′	″													
5	47.84	+23.2	17	21.80	−	22.94	16	58.86	+ 5	49.49	+	02418	− 0		1.35		−.14	−.16	−.32	−6.10		−0.35	+45.21	6	26.8	
6	7.85	+21.7	17	0.25	−	21.46	16	38.79	6	9.56	+	3215			1.38		.13	.20	−.25	−7.30		−0.38	+27.47		28.0	
	9.24	+1.0	16	38.60	−	0.99	16	37.61	6	10.74	+	2173			1.34		.00	.16	−.18	−7.50		−0.21	+26.27		28.0	
	10.28	+4.5	16	41.00	−	4.45	16	36.55	6	11.80	+	1975			1.34		.01	.17	−.20	−8.20		−0.23	+25.32		27.3	
	11.25	−1.3	16	34.40	+	1.29	16	35.69	6	12.66	+	1863			1.33		.00	.08	−.10	−8.80		−0.13	+25.57		28.0	
	8.40	+22.5	17	0.60	−	22.25	16	38.35	6	10.00	+	3161			1.37		.13	.10	−.25	−9.00		−0.28	+28.45		27.8	
	12.25	+13.2	16	47.65	−	13.05	16	34.60	+6	13.75	+	2678	−		1.36		−.05	−.09	−.16	−9.20		−0.19	+25.34		28.3	

±.020 -6.130 8.31 27.76 ±0.33

$\delta_0 = +16\ 46\ 8.3$ $\sin z = +.43$ 1.44060 −.40 −.63

														′	″													
45	41.89	+13.3	36	53.70	−	16.71	36	36.99	+46	11.36	+	02573	− 0		29.26		−.02	−.19	−.61	−0.10		−1.24	+26.73	46	7.5	
	42.72	+19.9	37	1.40	−	26.01	36	36.39	46	11.96	+	2170			28.99		.05	.20	−.65	−0.20		−1.28	+26.27		7.8	
	43.56	+16.8	36	56.80	−	21.11	36	35.69	46	12.66	+	1975			28.86		.05	.19	−.64	−0.40		−1.27	+25.32		7.4	
	44.38	+19.2	36	59.15	−	24.12	36	35.03	46	13.32	+	1863			28.79		.05	.10	−.55	−0.70		−1.18	+25.57		8.2	
	39.58	− .1	36	30.10	+	8.92	36	39.02	46	9.32	+	3163			29.66		.02	.07	−.49	−0.70		−1.12	+28.45		6.3	
	43.60	+17.9	36	58.70	−	22.49	36	36.21	46	12.14	+	1065			28.46		.06	.02	−.48	−1.10		−1.11	+24.61	7.33	6.3	
	44.61	− 0.7	36	34.45	+	0.88	36	35.33	+46	13.02	+	1252	−		28.39		−.00	−.02	−.42	−1.20		−1.05	+25.43		7.8	

±0.65

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34.

$\Delta\alpha = +0.017^s$ $\Delta\delta = -0.89''$ +3.5909

Star ζ Geminorum α = 7 h 12 m 28.62 s δ = +22° 12′ 56″ K = −.017 tang. δ = +.41

z = +20 9 53

Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		h	m s	h	s	s	s	hr s
1872 Feb. 19	+ 430	7	12 16.40	+.176	+0.16	+12.49	−0.45	+12.20	12 28.60
Mar. 1	+ 467	7	12 16.00	+.191	+.17	+12.76	−0.33	+12.60	28.65
5 Mar. 11	+ 398	7	12 14.94	+.163	+.15	+13.71	−0.18	+13.68	28.62
2.2 Mar. 19	+ 382	7	12 14.32	+.156	+.14	+14.22	−0.04	+14.32	28.64
Mar. 21	+ 460	7	12 14.20	+.188	+.17	+14.32	−0.01	+14.48	28.68
									28.638
									±.021

$\Delta\alpha = +0.133^s$ $\Delta\delta = +0.72''$ +0.0338

ζ Draconis L.6. α = 19 h 12 m 31.15 s δ = +67° 26′ 10″ K = +.038 tang. δ = −.240

z = −70 11 02

Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 28	+ 438	7	12 17.25	−1.051	−1.01	+12.84	+2.24	+14.07	12 31.32
Mar. 3	+ 356	7	12 17.20	−0.854	−0.82	+12.74	+2.05	+13.94	31.17
4 Mar. 24	+ 420	7	12 16.55	−1.008	−0.97	+14.79	+0.87	+14.69	31.24
2.2 Apr. 3	+ 218	7	12 17.03	−.523	−0.49	+14.58	+0.27	+14.36	31.39
									31.280

66 Aurigae α = 7 h 15 m 16.45 s δ = +40° 54′ 59″ K = −.020 tang. δ = +.87

z = +1 27 50

Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 19	+ 430	7	15 4.25	+.374	+0.35	+12.49	−0.62	+12.22	15 16.47
Mar. 3	+ 336	7	15 3.71	+.309	+.29	+12.74	−0.43	+12.60	16.31
Mar. 19	+ 382	7	15 2.63	+.232	+.21	+14.22	−0.12	+14.41	16.44
8 Mar. 21	+ 460	7	15 1.78	+.400	+.38	+14.32	−0.08	+14.62	16.40
2.2 Mar. 24	+ 420	7	15 1.29	+.365	+.35	+14.79	−0.02	+15.12	16.41
Mar. 27	+ 330	7	15 0.82	+.287	+.27	+15.30	+0.05	+15.62	16.44
Apr. 3	+ 218	7	15 1.42	+.189	+.17	+14.58	+0.20	+14.95	16.37
Apr. 4	+ 220	7	15 1.50	+.197	+.17	+14.52	+0.22	+14.91	16.41
									16.406
									±.030

$\Delta\alpha = -0.027^s$ $\Delta\delta = -0.54''$ +3.7368

ι Geminorum α = 7 h 17 m 46.50 s δ = +28° 3′ 0″ K = −.018 tang. δ = +.53

z = +14 19 49

Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 19	+ 430	7	17 34.32	+.227	+0.21	+12.49	−0.50	+12.20	17 46.52
Mar. 3	+ 356	7	17 33.90	+.188	+.17	+12.74	−0.36	+12.56	46.46
Mar. 11	+ 398	7	17 32.72	+.210	+.19	+13.71	−0.23	+13.67	46.39
7 Mar. 19	+ 382	7	17 32.15	+.202	+.18	+14.22	−0.10	+14.30	46.45
2.2 Mar. 24	+ 420	7	17 31.54	+.222	+.20	+14.79	+0.00	+14.99	46.53
Mar. 27	+ 330	7	17 30.98	+.174	+.16	+15.30	+0.05	+15.51	46.49
Apr. 3	+ 218	7	17 31.61	+.115	+.10	+14.58	+0.19	+14.87	46.48
									46.474
									±.032

η Canis Majoris α = 7 h 19 m 1.94 s δ = −29° 3′ 17″ K = −.018 tang. δ = −.55

z = +71 26 6

Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
Feb. 28	+ 438	7	18 49.95	−.240	−0.26	+12.84	−0.57	+12.01	19 1.96
Mar. 3	+ 356	7	18 49.96	−.195	−.21	+12.74	−0.50	+12.03	1.99
Mar. 11	+ 398	7	18 48.93	−.218	−.24	+13.71	−0.35	+13.12	2.05
7 Mar. 19	+ 382	7	18 48.18	−.210	−.23	+14.22	−0.19	+13.80	1.98
2.2 Mar. 21	+ 460	7	18 48.16	−.253	−.27	+14.32	−0.15	+13.90	2.06
Apr. 3	+ 218	7	18 47.43	−.119	−.14	+14.58	+0.13	+14.57	2.00
Apr. 4	+ 220	7	18 47.46	−.121	−.14	+14.52	+0.15	+14.53	1.99
									2.004
									±.025

$\Delta\alpha = +0.031^s$ $\Delta\delta = -0.74''$ +3.2584

β Canis ~~Majoris~~ Minoris α = 7 h 20 m 13.50 s δ = +8° 32′ 42″ K = −.016 tang. δ = +.15

z = +33 50 7

Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Feb. 19	+ 430	7	20 0.48	+.064	+0.05	+12.49	−0.46	+12.08	20 12.56
Mar. 1	+ 467	7	20 0.06	+.070	+.05	+12.76	−0.35	+12.46	12.52
4 Mar. 19	+ 382	7	19 58.40	+.057	+.04	+14.22	−0.09	+14.17	12.57
2.2 Mar. 27	+ 330	7	19 57.12	+.049	+.03	+15.30	+0.04	+15.37	12.49
									12.535

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$\delta_0 = +22^\circ\ 12'\ 56.3$ (−6.245, 5.627) sin z = +.34 $\frac{d\delta}{dt} =$ " u plgtgn. −.32 −.50

Tm −75 Circle Read. Red. Nov. Com. Circle Read. B+T+J 1.32500 Rf Rm Red to Rm 18720 Rm ±Rf ±Rs I 5 1872.0

	S	′	″	″	′	″	′	″		′	″	″	″	″	″	″	″	″		″	″	
12	14.35	+18.0	10	33.45	−21.87	10	11.58	+12	36.77+	02418	−0	22.34	−.05	−.03	−.40	−2.30	−0.90	+45.21	12	56.4		
	30.79	+20.0	10	19.00	−24.30	9	54.70	12	53.65+	3215		22.76	.07	.03	−.42	−2.80	−0.92	+27.47		54.6		
	33.13	−21.7	9	26.20	+26.36	9	52.56	12	55.79+	1975		22.12	.10	.04	−.36	−3.20	−1.36	+25.32		54.4		
	34.55	+15.7	10	10.85	−19.17	9	51.68	12	56.67+	1863		22.06	.05	.01	−.38	−3.50	−0.88	+25.57		56.6		
	31.64	+21.8	10	20.35	−26.49	9	53.86	+12	54.49+	3161−		22.73	−.10	−.02	−.44	−3.60	−0.94	+28.45		55.7		

±.020 55.38 ±0.66

$\delta_0 = +112\ 33\ 49.8$ (+6.298, 11.23) sin z = −.94 21892 n +.87 +1.35

31	38.63	−15.4	52	5.15	−7.75	51	57.40	+30	50.95+	02573	+2	47.75	.09	+.05	−.21	+.71	−1.90	+2.06	+26.73	33	48.2	
	40.97	+13.0	51	46.95	+6.55	51	53.50	30	54.85+	2470	2	46.20	.07	.03	.18	+.72	−2.030	+2.07	+26.27		49.2	
	45.99	−9.3	51	55.20	−4.69	51	50.51	30	57.84+	2678	2	48.15	.07	.02	.09	+.80	−2.300	+2.15	+25.34		50.6	
	44.52	−18.8	51	55.40	−9.46	51	45.94	+31	2.41+	1065	+2	42.02	.03	+.08	−.02	+.93	−2.320	+2.28	+24.61		48.2	

49.05

$\delta_0 = +40\ 54\ 59.0$ 0.16720 −6.47 −.02 −.03

	+23.7	28	51.90	−23.50	28	28.40	+54	19.95+	02436	−0	1.55	−.15	−.27	−.44	−5.93	−0.47	+45.21	54	57.2			
	+24.3	28	31.80	−24.09	28	7.71	54	40.64+	2185	0	1.54	.15	.35	−.52	−7.39	−0.55	+26.27		57.3			
	+33.7	28	29.15	−23.50	28	5.65	54	42.70+	1881	0	1.54	.15	.17	−.34	−8.81	−0.37	+25.57		57.4			
	+22.4	28	31.15	−22.21	28	8.94	54	39.41+	3169		1.58	.13	.17	−.32	−8.95	−0.35	+28.45		57.0			
	+6.0	28	11.65	−5.95	28	5.70	54	42.65+	2680		1.56	.02	.16	−.20	−9.14	−0.23	+25.34		57.1			
	+21.3	28	26.55	−21.12	28	5.43	54	42.92+	1870		1.53	.12	.03	−.17	−9.30	−0.20	+25.01		56.9			
	−7.9	27	57.25	+7.84	28	5.09	54	43.26+	1084	0	1.51	.02	.03	−.07	−9.59	−0.10	+24.61		56.7			
✓	+23.4	28	23.95	−23.20	28	0.75	+54	47.60+	1267	−0	1.51	−.14	−.03	−.19	−9.62	−0.22	+25.43		56.6			

±.023 57.01 ±0.20

$\delta_0 = +28\ 3\ 0.4$ (−6.763, 0.41) sin z = +.25 1.16750 −.22 −.35

2	17.65	+2.15	20	40.20	−24.90	20	15.30	+2	33.05+	02436	−0	15.55	−.10	−.05	−.27	−2.90	−0.72	+45.21	2	59.1		
	39.47	+3.2	19	57.60	−3.70	19	53.90	2	54.45+	2185		15.47	−.00	.49	−.71	−3.50	−1.06	+26.27		60.7		
	40.00	+1.6	19	55.30	−1.85	19	53.45	2	54.90+	1976		15.39	−.00	.49	−.71	−4.00	−1.06	+25.32		59.8		
	40.53	+6.0	19	45.75	+6.95	19	52.70	2	55.65+	1881		15.36	−.00	.24	−.46	−4.40	−0.81	+25.57		60.6		
	40.56	+19.3	20	14.60	−22.35	19	52.25	2	56.10+	4.80		15.64	−.09	.01	−.32	−4.70	−0.67	+25.34		60.1		
	39.68	+20.5	20	17.15	−23.74	19	53.41	2	54.94+	1870		15.35	−.09	.00	−.21	−4.80	−0.66	+25.01		59.1		
	40.74	+24.3	20	20.80	−28.14	19	52.66	+2	55.69+	1084		15.18	−.13	−.00	−.25	−5.10	−0.70	+24.61		59.9		

±.028 59.87 ±0.55

$\delta_0 = -29\ 3\ 1.0$ 2.22851 −6.78 −.37 −1.37

	+25.3	24	8.55	−29.02	23	39.53	−0	51.18+	02589	−2	59.64	.13	+.15	−.41	−1.13	+10.19	−2.50	+26.73	3	16.5		
	+19.5	24	4.70	−22.37	23	42.33	0	53.98+	2185	2	57.98	.09	.09	.41	−1.19	+10.74	−2.56	+26.27		17.6		
	+14.7	24	1.00	−16.86	23	44.14	0	55.79+	1881	2	56.73	.09	.05	.20	−1.25	+12.28	−2.39	+25.57		17.0		
	−10.2	23	28.45	+11.70	23	40.15	0	51.80+	3169	2	62.06	.14	.02	.17	−1.21	+12.41	−2.39	+28.45		15.5		
	+25.9	24	18.50	−29.71	23	48.79	1	0.44+	1084	2	53.52	.04	.16	.04	−.75	+12.83	−2.12	+24.61		18.7		
	+20.6	24	11.50	−23.52	23	47.98	−0	59.63+	1267	−2	54.25	.04	+.09	−.04	−.82	+12.84	−2.19	+25.43		17.8		

±.022 17.18 ±.079

$\delta_0 = +8\ 32\ 42.3$ (+6.927, 12.32) sin z = +.56 1.58620 −.52 −.80

31	56.58	−11.0	49	56.70	+14.27	50	10.97	+32	27.35+	02436	−0	40.79	−.01	−.00	−.53	+1.90	−1.33	+25.21	32	42.4		
32	12.40	+18.3	50	18.10	−23.75	49	54.35	32	54.00+	3224		41.54	.03	.03	−.58	+2.10	−1.38	+27.47		40.6		
	15.41	−11.7	49	37.25	+15.18	49	52.43	32	55.92+	1881		40.27	−.01	.23	−.76	+2.00	−1.56	+25.57		41.6		
	16.13	+19.6	50	17.35	−25.43	49	51.92	+32	56.43+	1870−		40.26	−.04	−.00	−.56	+1.90	−1.36	+25.01		41.7		

41.58

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85

$\Delta\alpha = +0.046^s$ $\Delta\delta = +0.20''$ +3.8678

Star # 2 Geminorum $\alpha = 7^h\ 20^m\ 52.372^s\ 52.51$ $\delta = +32°\ 2'\ 11''$ $k = -.019$ tang. $\delta = +.63$

$z = +10\ 20\ 38$

	Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872	Feb. 24	+ 400	7	20 39.51	+.252	+0.23	+13.33	−0.50	+13.06	7h 20m 52.57s
	Mar. 3	+ 356	7	20 40.00	+.224	.21	+12.74	−0.40	+12.55	52.55
6	Mar. 21	+ 460	7	20 38.07	+.290	.27	+14.32	−0.10	+14.49	52.56
2.2	Mar. 24	+ 420	7	20 37.59	+.264	.25	+14.79	−0.04	+15.00	52.59
	Apr. 3	+ 218	7	20 37.63	+.137	.12	+14.58	+0.16	+14.86	52.49
	Apr. 4	+ 220	7	20 37.77	+.138	.12	+14.52	+0.18	+14.82	52.59
										52.558 ± .023

6 Canis Minoris $\alpha = 7^h\ 22^m\ 40.20^s$ $\delta = +12°\ 16'\ 11''$ $k = -.016$ tang. $\delta = +.22$

$z = +30\ 6\ 38$

	Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872	Feb. 19	+ 430	7	22 28.17	+.094	+0.08	+12.49	−0.46	+12.11	7h 22m 40.28s
	Feb. 24	+ 400	7	22 27.25	+.088	.07	+13.33	−0.42	+12.98	40.23
	Mar. 1	+ 467	7	22 27.78	+.102	.09	+12.76	−0.35	+12.50	40.28
	Mar. 3	+ 356	7	22 27.76	+.078	.06	+12.74	−0.32	+12.48	40.24
10	Mar. 11	+ 366	7	22 26.71	+.080	.06	+13.74	−0.18	+13.81	40.30
2.2	Mar. 19	+ 382	7	22 26.07	+.084	.07	+14.22	−0.10	+14.19	40.26
	Mar. 21	+ 460	7	22 25.91	+.101	.08	+14.32	−0.06	+14.34	40.25
	Mar. 24	+ 420	7	22 25.41	+.092	.08	+14.79	−0.01	+14.86	40.27
	Mar. 27	+ 330	7	22 24.85	+.072	.06	+15.30	+0.04	+15.40	40.25
	Apr. 3	+ 218	7	22 25.42	+.047	.03	+14.58	+0.16	+14.77	40.19
										40.255 ± .023

$\Delta\alpha = +0.197^s$ $\Delta\delta = -1.80''$ +3.8391

$\Delta\alpha = -0.199$ $\Delta\delta = +1.82$

$\alpha_1 - \alpha_2$ Geminor. $\alpha = 7^h\ 26^m\ 25.566^s\ 26.56$ $\delta = +32°\ 10'\ 0''$ $k = -.019$ tang. $\delta = +.63$

$z = +10\ 12\ 49$

	Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872	Feb. 19	+ 430	7	26 13.59	+.271	+0.25	+12.49	−0.58	+12.16	7h 26m 25.75s
	Feb. 24	+ 400	7	26 12.77	+.252	.23	+13.33	−0.53	+13.03	25.80
	Mar. 1	+ 467	7	26 13.22	+.294	.27	+12.76	−0.46	+12.57	25.79
	Mar. 11	+ 398	7	26 12.16	+.250	.23	+13.71	−0.31	+13.63	25.79
	Mar. 19	+ 382	7	26 11.11	+.240	.22	+14.22	−0.18	+14.26	25.37
17	Mar. 19	+ 382	7	26 11.51	+.240	.22	+14.22	−0.18	+14.26	25.77
2.2	Mar. 21	+ 460	7	26 10.90	+.290	.27	+14.32	−0.14	+14.45	25.35
	Mar. 21	+ 460	7	26 11.29	+.290	.27	+14.32	−0.14	+14.45	25.74
	Mar. 24	+ 420	7	26 10.40	+.264	.25	+14.79	−0.08	+14.96	25.36
	Mar. 24	+ 420	7	26 10.76	+.264	.24	+14.79	−0.08	+14.965	25.721
	Mar. 27	+ 330	7	26 9.88	+.208	.19	+15.30	+0.03	+15.46	25.34
	Mar. 27	+ 330	7	26 10.26	+.208	.19	+15.30	−0.03	+15.46	25.72
	Apr. 3	+ 218	7	26 10.60	+.137	.12	+14.58	+0.11	+14.81	25.41
	Apr. 3	+ 218	7	26 11.00	+.137	.12	+14.58	+0.11	+14.81	25.81
										25.762 ± .031
										25.3661
										.596

O Geminorum $\alpha = 7^h\ 30^m\ 49.45^s$ $\delta = +34°\ 5'\ 37''$ $k = -.019$ tang. $\delta = +.70$

$z = +7\ 30\ 12$

	Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872	Feb. 19	+ 430	7	30 36.33	+.301	+0.28	+12.50	−0.62	+12.16	7h 30m 48.49s
	Feb. 24	+ 400	7	30 35.41	+.280	.26	+13.34	−0.57	+13.03	48.44
6	Mar. 11	+ 398	7	30 34.90	+.279	.26	+13.71	−0.35	+13.62	48.52
2.2	Mar. 19	+ 382	7	30 34.19	+.267	.25	+14.22	−0.20	+14.27	48.46
	Apr. 3	+ 218	7	30 33.56	+.153	.13	+14.58	+0.09	+14.80	48.36
	Apr. 4	+ 220	7	30 33.67	+.154	.14	+14.52	+0.11	+14.77	48.44
										48.452 ± .031

$\Delta\alpha = +0.008^s$ $\Delta\delta = +1.45''$ +3.1390

2 Canis Minoris $\alpha = 7^h\ 32^m\ 35.97^s$ $\delta = +5°\ 33'\ 3''$ $k = -.016$ tang. $\delta = +.10$

$z = +36\ 49\ 46$

	Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872	Feb. 19	+ 430	7	32 23.96	+.043	+0.03	+12.50	−0.49	+12.04	7h 32m 36.00s
	Feb. 24	+ 400	7	32 23.09	+.040	.02	+13.34	−0.45	+12.91	36.00
	Mar. 1	+ 467	7	32 23.61	+.047	.03	+12.76	−0.39	+12.40	36.01
	Mar. 3	+ 356	7	32 22.59	+.036	.02	+12.74	−0.37	+12.39	35.98
10	Mar. 11	+ 398	7	32 22.48	+.040	.02	+13.71	−0.25	+13.48	35.96
2.2	Mar. 14	+ 366	7	32 23.25	+.037	.02	+12.93	−0.21	+12.74	35.99
	Mar. 19	+ 382	7	32 21.88	+.038	.02	+14.22	−0.13	+14.11	35.99
	Apr. 3	+ 218	7	32 21.28	+.022	.01	+14.58	+0.10	+14.69	35.97
	Apr. 4	+ 220	7	32 21.32	+.022	.01	+14.52	+0.12	+14.65	35.97
	Apr. 10	+ 187	7	32 22.60	+.019	.00	+13.12	+0.21	+13.33	35.93
										35.980 ± .018

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-6.743
10.82

$\delta_0 = +32^\circ\ 2'\ 10.8$ Rin z = +.18 $\frac{d\delta}{dt} =$ ″ ++ lylyn -.16 -.26

	Tm − TS	Circle Read.		Red. Horizon	Corr. Circle Read.			B+T+J			$\lambda_{\gamma-\delta}$	Rm	Rs	Rf	Red to 1872.0	Rm + Rs + Rf	I δ 1872.0	
	s	′	″	″	′ ″	′	″	1.02120	′	″		″	″	″	″		′	″
15.66	+21.9	21	10.30	−24.36	20 45.94	+2	2.41+	00234	−0	10.56		−.11	−.08	−.35	−4.10	−0.61+23.47	2	10.6
49.98	+24.4	21	14.20	−27.14	20 47.06	2	1.29+	2185		11.04		.15	.12	−.43	−4.80	−0.69+26.27		11.0
49.32	+15.7	21	5.10	−17.47	20 47.63	2	0.72+	3169		11.29		.06	.08	−.27	−6.00	−0.53+28.45		11.3
52.64	+18.6	21	5.10	−20.69	20 44.41	2	3.94+	2680		11.17		.08	.05	−.29	−6.10	−0.55+25.34		11.5
53.35	+14.9	21	0.75	−16.58	20 44.17	2	4.18+	1083		10.77		.05	.01	−.22	−6.50	−0.48+24.61		11.0
52.31	+19.7	21	7.05	−21.92	20 45.13	+2	3.22+	1267	−	10.81		−.09	−.01	−.26	−6.60	−0.52+25.43		10.7

±.019 — 11.02 ±0.29

$\delta_0 = +12\ 16\ 9.7$ 1.52330 −7.08 −.46 −.72

	Tm − TS	Circle Read.		Red. Horizon	Corr. Circle Read.			B+T+J			Rm	Rs	Rf	Red to 1872.0	Rm + Rs + Rf	I δ 1872.0	
	+19.1	7	15.00	−24.49	6 50.51	+15	57.84+	02454	−0	35.31	−.03	−.15	−.64	+1.09	−1.36+45.21	16	7.5
	+19.8	6	55.65	−25.39	6 30.26	16	18.09+	0244		33.55	.04	.13	−.63	+1.09	−1.35+23.47		7.7
	+18.1	6	56.45	−23.21	6 33.24	16	15.11+	3233		35.94	.03	.19	−.68	+1.08	−1.40+27.47		6.3
	+17.6	6	53.75	−22.57	6 31.18	16	17.17+	2200		35.10	.03	.19	−.68	+1.07	−1.40+26.27		8.0
	+17.8	6	53.35	−22.83	6 30.52	16	17.83+	1401		34.46	.03	.19	−.68	+0.98	−1.40+25.32		8.3
	+19.4	6	56.90	−24.87	6 32.03	16	16.32+	1899		34.86	.04	.10	−.60	+0.83	−1.30+25.57		6.6
	+9.6	6	44.85	−12.31	6 32.54	16	15.81+	3178		35.90	.01	.09	−.56	+0.79	−1.28+28.45		7.9
	+22.4	6	59.95	−28.72	6 31.23	16	17.12+	2682		35.49	.04	.10	−.60	+0.72	−1.32+25.34		6.3
	+19.4	6	55.05	−24.87	6 30.18	16	18.17+	1880		34.84	.03	.02	−.51	+0.64	−1.23+25.01		8.7
	+18.9	6	56.05	−24.23	6 31.82	+16	16.53+	1103	−	34.22	−.03	−.02	−.51	+0.46	−1.23+24.61		6.1

±.023 — 7.25 ±0.65

+7.461
0.02

$\delta_0 = +32\ 10\ 0.0$ Rin z = +.18 1.01588″ −.16 −.25

	Tm − TS	Circle Read.		Red. Horizon	Corr. Circle Read.			B+T+J			Rm	Rs	Rf	Red to 1872.0	Rm + Rs + Rf	I δ 1872.0	
9 17.42	+24.9	13	47.20	−27.66	13 19.54	+9	28.81+	02454	−0	10.97	−.15	−.27	−.58	−3.50	−0.83+45.21	9	−58.7
39.97	+19.0	13	18.75	−21.11	12 57.64	9	50.71+	0244		10.43	.08	.23	−.47	−3.90	−0.72+23.47		−59.1
36.73	+19.0	13	21.15	−21.11	13 0.04	9	48.31+	3233		11.17	.08	.33	−.57	−4.40	−0.82+27.47		−59.4
39.31	+18.7	13	18.55	−20.77	12 57.78	9	50.57+	1977		10.85	.08	.33	−.57	−5.40	−0.82+25.32		−58.8
39.29	+22.7	13	23.15	−25.22	12 57.93	9	50.42+	1899		10.83	.13	.17	−.46	−5.80	−0.71+25.57		58.6
36.98	+20.6	13	23.15	−22.88	13 0.27	9	48.08+	1899		10.83	.10	.12	−.43	−5.80	−0.68+25.57		−56.3
37.07	+28.4	13	31.30	−31.55	12 59.75	9	48.60+	3178		11.16	.19	.18	−.53	−5.90	−0.78+28.45		59.2
39.36	+26.0	13	31.30	−28.88	13 2.42	9	45.93+	3178		11.16	.16	.18	−.50	−5.90	−0.75+28.45		−56.6
39.39	+23.9	13	24.20	−26.55	12 57.65	9	50.70+	2680		11.03	.14	.17	−.47	−6.10	−0.72+25.34		57.2
37.65	+22.0	13	24.20	−24.47	12 59.73	9	48.62+	2680		11.03	.11	.17	−.44	−6.10	−0.69+25.34		−56.1
38.65	+21.8	13	22.90	−24.20	12 58.70	9	49.65+	1880		10.83	.11	.03	−.30	−6.20	−0.55+25.01		57.1
41.73	+24.3	13	22.90	−27.00	12 55.90	9	52.45+	1880		10.83	.14	.03	−.33	−6.20	−0.58+25.01		−59.8
9 41.47	+14.3	13	14.80	−17.42	12 57.38	9	50.97+	1104		10.64	.05	.03	−.24	−6.50	−0.49+24.61		57.9
	+16.8	13	14.80	−18.66	12 56.14	9	52.21+	1104	−	10.64	−.07	−.03	−.26	−6.50	−0.51+24.61		−59.2

58.22
58.20

$\delta_0 = +34\ 52\ 36.5$ 0.87970 −7.74 −.11 −.19

	Tm − TS	Circle Read.		Red. Horizon	Corr. Circle Read.			B+T+J			Rm	Rs	Rf	Red to 1872.0	Rm + Rs + Rf	I δ 1872.0	
	+22.4	31	13.55	−24.12	30 49.43	+51	58.92+	02472	−0	8.02	−.12	−.08	−.31	−4.04	−0.31+45.21	52	31.6
	+22.3	30	52.95	−24.01	30 28.94	52	19.41+	0255		7.63	.12	.06	−.29	−4.54	−0.31+23.47		30.4
	−18.4	30	8.95	+19.81	30 28.76	52	19.59+	1979		7.93	.08	.01	−.20	−6.00	−0.27+25.32		30.7
	+14.0	30	43.25	+15.07	30 28.18	52	20.17+	1917		7.92	.05	.04	−.20	−6.62	−0.24+25.57		31.0
	+14.1	30	42.15	−15.18	30 26.97	52	21.38+	1122		7.78	.05	.01	−.17	−7.52	−0.24+24.61		30.5
	+20.2	30	49.60	−21.74	30 27.86	+52	20.49+	1297	−	7.81	−.10	−.01	−.22	−7.57	−0.29+25.43		30.3

±025 — 30.77 ±0.39

−8.776
309

$\delta_0 = +5\ 33\ 3.1$ Rin z = +.60 1.63420 −.56 −.86

	Tm − TS	Circle Read.		Red. Horizon	Corr. Circle Read.			B+T+J			Rm	Rs	Rf	Red to 1872.0	Rm + Rs + Rf	I δ 1872.0	
32 15.76	+17.5	50	9.85	−22.86	49 46.99	+33	1.36+	02472	−0	45.59	−.00	−.01	−.57	+2.70	−0.86+45.21	33	2.8
40.03	+16.5	49	46.20	−21.55	49 24.65	33	23.70+	0255		43.33	.00	.34	−.90	+2.90	−0.86+23.47		5.9
34.56	+14.7	49	46.10	−19.20	49 26.90	33	21.45+	3241		46.41	.00	.48	−1.04	+3.10	−0.86+27.47		4.9
35.22	+17.4	49	50.05	−22.73	49 27.32	33	21.03+	2215		45.33	.00	.48	−1.04	+3.10	−0.86+26.27		4.2
37.23	−23.8	48	54.55	+31.09	49 25.64	33	22.71+	1979		45.08	.01	.39	−.96	+3.20	−0.87+25.32		5.3
38.74	+19.9	48	50.90	−25.99	48 24.91	33	23.44+	1420		44.50	.01	.19	−.76	+3.20	−0.87+26.80		(8.1)
36.98	+17.6	49	49.10	−22.99	49 26.11	33	22.24+	1917		45.02	.00	.24	−.80	+3.20	−0.86+25.57		5.1
37.35	+15.2	49	46.60	−19.85	49 26.75	33	21.60+	1122		44.20	.00	.05	−.61	+3.00	−0.86+24.61		4.1
37.65	+18.9	49	50.95	−24.69	49 26.26	33	22.09+	1297		44.38	.01	−.05	−.62	+3.00	−0.87+25.43		6.3
35.07	−13.1	49	12.85	+17.11	49 29.96	+33	18.39+	0286	−	43.36	−.00	+.04	−.60	+2.90	−0.86+26.40		3.5

±.018 — 4.54 ±0.72

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36 26

Jan # Monocerotis L = 7 h 35 m 27.90 s δ = −9° 15′ 16″ k = −.016 tang δ = −.16
z = +51 38 5

Date	n	T's	T	n tang δ	d.T.	Red 1872	Sum	A.R. 1872
	s		m s	s	s	s	s	h m s
1872 Feb. 24	+ 400		7 34 55.15	−.064	−0.08	+13.34	−0.51	+12.75	7 35 7.90
Mar. 3	+ 356		7 34 55.77	−.056	−.07	+12.74	−0.42	+12.25	8.02
Mar. 14	+ 366		7 34 55.34	−.058	−.07	+12.93	−0.26	+12.60	7.94
7 Mar. 18	+ 424	✓	7 34 53.96	−.067	−.08	+14.20	−0.20	+13.92	7.92
2.2 Mar. 19	+ 382		7 34 53.98	−.061	−.08	+14.22	−0.18	+13.96	7.94
Apr. 3	+ 218		7 34 53.31	−.034	−.05	+14.58	+0.07	+14.60	7.91
Apr. 4	+ 220		7 34 53.37	−.035	−.05	+14.52	+0.08	+14.55	7.92
Δα = +0.015 s Δδ = +0.40 ″			+36.15						7.934 ±.025

# 13 Geminorum L = 7 h 37 m 28.836 s δ = +25° 19′ 59″ k = −.018 tang δ = +.54
z = +14 2 50

1872 Feb. 19	+ 430		7 37 16.75	+.232	+0.21	+12.50	−0.57	+12.14	37 28.89
Feb. 24	+ 400		7 37 15.88	+.216	+.20	+13.34	−0.53	+13.01	28.89
Mar. 3	+ 356		7 37 16.38	+.192	+.17	+12.74	−0.45	+12.46	28.84
Mar. 11	+ 398		7 37 15.33	+.214	+.20	+13.71	−0.33	+13.58	28.91
11 Mar. 14	+ 366		7 37 16.00	+.197	+.18	+12.93	−0.28	+12.83	28.83
2.2 Mar. 18	+ 424		7 37 14.65	+.228	+.21	+14.20	−0.22	+14.19	28.84
Mar. 19	+ 382		7 37 14.64	+.206	+.19	+14.22	−0.20	+14.21	28.85
Mar. 24	+ 420		7 37 13.96	+.226	+.21	+14.79	−0.12	+14.88	28.84
Apr. 3	+ 218		7 37 14.10	+.117	+.10	+14.58	+0.06	+14.74	28.84
Apr. 4	+ 220		7 37 14.07	+.118	+.10	+14.52	+0.08	+14.70	28.77
Apr. 10	+ 187		7 37 15.43	+.100	+.08	+13.12	+0.23	+13.43	28.86
									28.851 ±.023

4 ~~Puppis~~ Mavis L = 7 h 40 m 3.25 s δ = −14° 14′ 43″ k = −.016 tang δ = −.25
z = +56 37 32

1872 Feb. 24	+ 400		7 39 50.57	−.100	−0.12	+13.34	−0.56	+12.66	40 3.23
Mar. 3	+ 356		7 39 51.11	−.089	−.11	+12.74	−0.46	+12.17	3.28
6 Mar. 18	+ 424		7 39 49.43	−.106	−.12	+14.20	−0.24	+13.84	3.27
2.2 Mar. 19	+ 382		7 39 49.41	−.095	−.11	+14.22	−0.22	+13.89	3.30
Apr. 3	+ 218		7 39 48.71	−.054	−.07	+14.58	+0.04	+14.55	3.26
Apr. 4	+ 220		7 39 48.69	−.055	−.07	+14.52	+0.06	+14.51	3.20
									3.257 ±.025

o ~~Puppis~~ Mavis L = 7 h 42 m 46.00 s δ = −25° 37′ 17″ k = −.017 tang δ = −.48
z = +68 0 6

1872 Feb. 24	+ 400		7 42 33.40	−.192	−0.21	+13.34	−0.72	+12.41	42 45.81
Mar. 3	+ 356		7 42 34.00	−.170	−.19	+12.74	−0.56	+11.99	45.99
Mar. 14	+ 366		7 42 32.60	−.175	−.19	+12.93	−0.38	+12.36	45.96
6 Mar. 18	+ 424		7 42 32.30	−.203	−.22	+14.20	−0.31	+13.67	45.97
2.2 Mar. 19	+ 382		7 42 32.26	−.183	−.20	+14.22	−0.29	+13.73	45.99
Apr. 3	+ 218		7 42 31.52	−.104	−.12	+14.58	−0.01	+14.45	45.97
Δα = +0.323 s Δδ = +0.11 ″			+7.3161						45.948 ±.042

# Groom. 1374 L = 7 h 44 m 49.21 s δ = +74° 15′ 19″ k = −.055 tang δ = +3.54
z = −31 52 30

1872 Feb. 24	+ 400		7 44 37.67	+1.416	+1.36	+13.34	−2.76	+11.94	49.61
Mar. 18	+ 424		7 44 35.42	+1.500	+1.44	+14.20	−1.59	+14.05	49.47
6 Mar. 19	+ 382		7 44 35.48	+1.352	+1.30	+14.22	−1.52	+14.00	49.48
2.2 Apr. 3	+ 218		7 44 34.72	+0.771	+0.72	+14.58	−0.53	+14.77	49.49
Apr. 4	+ 220		7 44 34.70	+0.779	+0.72	+14.52	−0.46	+14.78	49.49
Apr. 10	+ 187		7 44 35.96	+0.661	+0.61	+13.12	−0.04	+13.69	49.63
									49.530 ±.062

o Geminorum L = 7 h 45 m ~~40~~ 39.67 s δ = +27° 5′ 44″ k = −.017 tang δ = +.51
z = +15 17 5

1872 Mar. 3	+ 356		7 45 27.25	+.181	+0.16	+12.74	−0.49	+12.41	45 39.66
Mar. 18	+ 424		7 45 25.50	+.216	+.20	+14.20	−0.27	+14.13	39.63
5 Mar. 24	+ 420		7 45 24.91	+.214	+.20	+14.79	−0.18	+14.81	39.72
2.2 Apr. 3	+ 218		7 45 24.96	+.111	+.09	+14.58	−0.00	+14.67	39.63
Apr. 4	+ 220		7 45 24.98	+.112	+.10	+14.52	+0.02	+14.64	39.62
Δα = +0.071 s Δδ = +1.19 ″			−0.1712						39.652 ±.028

ε Draconis L.C. L = 19 h 48 m 35.702 s δ = +69° 56′ 30″ k = +.041 tang δ = −.74
−67 40 42

1872 Mar. 3	+ 356		7 48 21.24	−.945	−0.92	+12.74	+2.77	+14.58	48 35.82
3 Mar. 14	+ 366	✓	7 48 21.55	−1.002	−0.96	+12.93	+2.18	14.15	35.70
2.2 Mar. 18	+ 424		7 48 20.78	−1.161	−1.12	+14.20	+1.94	15.02	35.80
									35.773

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$\delta_0 = -9^\circ\ 15'\ 15.9''$ Rin z = +.78 $\frac{d\delta}{dt} = -8.09''$ 1.+ log y = -.73 -1.12

Tm -TS Circle Read. Red. Nr. mr Corr. Circle Read. B + T + γ 1.76060 Rf Rm Ro Rm Red to Rm 18720 +Ro +Rf I δ 18720

	s	′	″		′	″	′	″		′	″	″	″	″	″	″	″	″	″		′	″		
	+18.4	37	43.35	−23.83	37	19.52	−14	31.17	+	01266	−1	12.99	−.00	+.03	−.19	−.89	+5.80	−2.02	+23.47	15	16.9		
	+17.2	37	41.90	−22.28	37	19.62	14	31.27	+	2230	1	16.36	.01	.03	.37	−.97	+6.49	−2.09	+26.27		17.0		
	+20.5	37	46.70	−26.55	37	20.15	14	31.80	+	1429	1	14.97	.00	.04	.14	−.83	+7.14	−1.95	+26.80		14.8		
	+7.9	37	28.00	−10.23	37	17.77	14	29.42	+	2649	1	17.11	.01	.01	.13	−.85	+7.29	−1.97	+26.32		14.9		
	+15.4	37	41.10	−19.95	37	21.15	14	32.80	+	1935	1	15.85	.01	.02	.13	−.84	+7.31	−1.96	+25.57		14.7		
	+16.8	37	42.90	−21.76	37	21.14	14	32.79	+	1133	1	14.46	.00	.03	.03	−.73	+7.50	−1.85	+24.61		14.0		
	+20.8	37	46.75	−26.94	37	21.81	−14	33.46	+	1312	−1	14.77	−.00	+.04	−.03	−.72	+7.50	−1.84	+25.43		17.1		

±.026 −8.334 58.82 16.49 ±0.85

$\delta_0 = +28\ 19\ 58.8$ Rin z = +.24 1.15840 −.22 −.34

19 16.40	+21.2	3	38.85	−24.49	3	14.36	+19	33.99	+	02490	−0	15.25	−.09	−.25	−.56	−2.40		−0.90	+25.21	19	60.6		
39.36	+20.9	3	18.35	−24.14	2	54.21	19	54.14	+	0266		14.46	.09	−.23	−.54	−2.80		−0.88	+23.47		59.5		
35.52	+24.4	3	25.05	−28.18	2	56.87	19	51.48	+	2230		15.16	.14	−.34	−.70	−3.30		−1.04	+26.27		58.2		
37.74	+15.6	3	13.20	−18.02	2	55.18	19	53.17	+	1979		15.06	.05	−.22	−.59	−3.90		−0.93	+25.32		58.6		
38.78	+23.2	3	21.20	−26.80	2	54.40	19	53.95	+	1429		14.88	.12	−.17	−.51	−4.10		−0.85	+26.80		60.9		
36.63	+18.9	3	16.60	−21.83	2	54.77	19	53.58	+	2649		15.31	.08	−.16	−.46	−4.30		−0.80	+26.32		59.5		
38.43	+23.4	3	21.60	−27.03	2	54.57	19	53.78	+	1937		15.06	.12	−.17	−.51	−4.40		−0.85	+25.57		59.0		
39.33	+14.9	3	10.70	−17.21	2	53.49	19	52.86	+	2687		15.32	.05	−.16	−.43	−4.70		−0.77	+25.34		59.4		
40.04	+19.2	3	15.60	−22.18	2	53.42	19	52.93	+	1132		14.78	.08	−.03	−.33	−5.20		−0.67	+24.61		58.9		
38.51	+23.6	3	22.10	−27.26	2	54.84	19	53.51	+	1312		14.84	.13	−.03	−.38	−5.30		−0.72	+25.43		58.1		
32.36	−1.4	3	5.90	+1.62	2	55.52	+19	52.83	+	0302	−	14.50	−.00	+.03	−.19	−5.50		−0.53	+26.40		58.7		

±.020 59.22 ±0.61

$\delta_0 = -14\ 15\ 14.8$ 1.94013 −8.48 −.78 −1.20

	+19.2	37	28.05	−24.42	37	3.63	−14	15.28	+	00277	−1	27.68	−.00	+.05	−.17	−.90	+6.58	−2.10	+23.47	15	15.0		
	+21.8	37	32.20	−27.73	37	4.47	14	16.12	+	2245	1	31.74	.01	.07	.25	−.96	+5.45	−2.16	+26.27		16.3		
	+17.4	37	25.75	−22.13	37	3.62	14	15.27	+	00266	1	22.63	.01	.04	.12	−.86	+8.54	−2.06	+26.32		15.1		
	+16.2	37	26.70	−20.61	37	6.09	14	17.74	+	1953	1	31.13	.01	.03	.12	−.87	+8.59	−2.07	+25.57		16.8		
	+10.8	37	19.75	−12.70	37	7.05	14	18.70	+	1151	1	29.47	.00	.01	.02	−.79	+8.94	−1.99	+24.61		16.6		
	+17.3	37	29.35	−22.01	37	7.34	−14	18.99	+	1327	−1	29.83	−.00	+.04	−.02	−.76	+8.95	−1.96	+25.43		16.4		

±.024 16.03 ±0.62

$\delta_0 = -25\ 37\ 15.7$ 2.14992 −8.69 −.81 −1.34

	+17.5	58	29.60	−20.71	58	8.89	−35	20.54	+	00277	−2	22.13	−.00	+.06	−.25	−1.05	+9.05	−2.39	+23.47	37	12.5		
	+21.4	58	32.50	−25.32	58	8.18	35	19.83	+	2245	2	28.72	.06	.09	.35	−1.12	+9.43	−2.46	+26.27		15.4		
	+21.8	58	37.15	−25.80	58	11.35	35	23.00	+	1458	2	26.05	.04	.10	.18	−.94	+10.73	−2.28	+26.80		13.8		
	+19.4	58	36.20	−22.96	58	7.24	35	18.89	+	2669	2	30.16	.07	.08	.17	−.95	+11.10	−2.29	+26.32		14.0		
	+19.4	58	33.45	−22.96	58	10.49	35	22.14	+	1953	2	27.72	.06	.08	.18	−.96	+11.18	−2.30	+25.57		15.5		
	+20.3	58	37.45	−24.02	58	13.43	−35	25.08	+	1164	−2	25.06	−.02	+.08	−.24	−.82	+11.86	−2.16	+24.61		13.8		

±.038 −8.890 18.77 14.50 ±0.99

$\delta_0 = +27\ 5\ 18.8$ Rin z = −.53 1.55382 +.49 +.76

15 5.98	+20.8	8	25.50	−7.47	8	18.03	+14	30.28	+	00277	+0	36.02	−.06	−.24	+.19	−12.70		+0.95	+23.47	15	18.0		
	8.41	−4.6	8	16.20	+1.64	8	17.84	14	31.51	+	2669		38.06	.00	−.16	+.23	−17.10		+1.07	+26.32		18.7		
	9.76	−4.0	8	14.45	+1.42	8	16.87	14	32.28	+	1953		37.44	.00	−.16	+.23	−17.30		+1.09	+25.57		19.3		
	11.73	+53.7	8	32.05	−19.13	8	12.92	14	35.43	+	1164		36.76	.42	−.04	+.03	−19.00		+0.79	+24.61		18.6		
	11.88	−0.8	8	12.95	+0.29	8	13.24	14	35.11	+	1327		36.90	.00	−.03	+.46	−19.10		+1.22	+25.43		19.6		
		+9.1	8	27.25	−34.58	7	52.67	+14	55.68	+	0318	+	36.06	−		+.03	+			+26.40				

±.023 18.88 ±0.43

$\delta_0 = +27\ 5\ 41.9$ 1.19680 −8.92 −.24 −.38

	+22.5	17	39.90	−26.29	17	13.61	+5	34.74	+	02260	−0	16.57	−.10	−.26	−.60	−2.81		−0.98	+26.27	5	40.6		
	−2.0	16	47.45	+2.33	17	18.82	5	37.53	+	2679		16.73	.10	.09	−.43	−3.82		−0.81	+26.32		42.5		
	+16.2	17	31.75	−18.92	17	11.83	5	36.52	+	2692		16.74	.05	.12	−.41	−4.18		−0.79	+25.34		40.2		
	−25.1	16	41.05	+29.32	17	10.37	5	37.98	+	1181		16.17	.14	.02	−.40	−4.72		−0.78	+24.61		40.9		
	−12.4	16	55.70	+14.48	17	17.18	+5	38.17	+	1341	−	16.23	−.03	−.02	−.29	−4.76		−0.67	+25.43		41.9		

±.025 +9.146 36.01 41.22 ±0.74

$\delta_0 = +110\ 3\ 29.9$ Rin z = −.93 2.14318 +.56 +1.33

3 18.39	+1.7	21	55.55	+0.76	21	56.31	+0	52.04	+	02260	2	26.48	+.06	+.00	−.19	+.67	−18.80		+2.00	+26.27	3	28.1		
	+18.5	22	5.70	+8.33	22	17.03	0	31.32	+	1477	2	23.86	.02	.07	.11	+.82	−21.10		+2.15	+26.80				
22.70	+21.5	21	43.95	+9.68	21	53.63	+0	54.72	+	2685	2	27.92	+.06	+.08	−.08	+.86	−21.70		+2.19	+26.32		27.5		

28.80

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37 $\Delta\alpha = -0.812^s$ $\Delta\delta = -0.88''$ -59.7049

Star ✱ λ Ursae Minoris $\alpha = 19^h\ 52^m\ 18.960^s$ $\delta = +88°\ 55'\ 2.89''$ $k = +.814^s$ tang. $\delta = -52.91$

$-48\ 41\ 48$

Date	n	Ts	T	m	tang. δ	d.T	kcd 1872	Sum	A.R. 1872
1872 Feb. 24	+ 400		7h	51m 37.18s	−21.192	−20.38	+13.34	+49.18	+42.14	52m 19.32s
Feb. 27	+ 416	52.98	7	51 40.06	−22.040	−21.23	+12.92	+14.87	+38.56	18.62
Feb. 28	+ 438		7	51 41.90	−23.205	−22.39	+12.84	+47.09	+37.54	19.44
Mar. 14	+ 366		7	51 47.45	−19.368	−18.55	+12.93	+33.84	+28.22	15.67
Mar. 18	+ 424		7	51 54.05	−22.438	−21.63	+14.20	+30.40	+22.97	17.02
11 Mar. 19	+ 382	52.92	7	51 53.10	−20.215	−19.40	+14.22	+29.56	+24.38	17.48
2.2 Apr. 24	+ 420		7	52 1.45	−22.226	−21.41	+14.79	+24.50	+19.88	19.33
Apr. 3	+ 218		7	51 58.40	−11.532	−10.72	+14.58	+14.24	+18.10	17.50
Apr. 4	+ 220		7	52 1.12	−11.638	−10.82	+14.52	+13.18	+16.88	18.00
Apr. 10	+ 187	52.90	7	52 9.26	−9.892	−9.08	+13.12	+6.17	+10.21	19.48
Apr. 11	+ 185		7	52 8.87	−9.786	−8.97	+12.77	+5.09	+8.89	17.76

18.148
± 0.89

ε Naris

~~Antigue~~ $\alpha = 8^h\ 2^m\ 5.61^s$ $\delta = -23°\ 56'\ 11''$ $k = -.017$ tang. $\delta = -.44$

$z = +66\ 19\ 0$

1872 Mar. 18	+ 424	8	1	51.94	−.186	−0.20	+14.20	−0.39	+13.61	2m 5.55s
Mar. 19	+ 382	8	1	51.46	−.168	−.19	+14.22	−0.37	+13.66	5.62
4 Apr. 4	+ 220	8	1	51.37	−.096	−.11	+14.52	−0.08	+14.33	5.70
2.2 Apr. 10	+ 187	8	1	52.52	−.082	−.10	+13.12	+0.04	+13.06	5.58

5.612

5 η Cancri pr. $\alpha = 8^h\ 4^m\ 52.15^s$ $\delta = +18°\ 1'\ 55''$ $k = -.016$ tang. $\delta = +.33$

$z = +24\ 20\ 54$

1872 Mar. 14	+ 366	8	4	38.50	+.120	+0.10	+12.93	−0.40	+12.63	4m 52.13s
Mar. 18	+ 424	8	4	38.14	+.139	+.12	+14.20	−0.34	+13.98	52.12
Mar. 19	+ 382	8	4	38.15	+.126	+.11	+14.22	−0.33	+14.00	52.15
7 Apr. 3	+ 218	8	4	37.62	+.071	+.06	+14.58	−0.10	+14.54	52.16
2.3 Apr. 4	+ 220	8	4	37.68	+.072	+.06	+14.52	−0.08	+14.50	52.18
Apr. 10	+ 187	8	4	38.95	+.061	+.04	+13.12	+0.02	+13.18	52.13
Apr. 11	+ 185	8	4	39.28	+.061	+.05	+12.77	+0.04	+12.86	52.14

52.144
± 0.14

20 Naris

~~20 Antlie~~ $\alpha = 8^h\ 7^m\ 27.03^s$ $\delta = -15°\ 24'\ 17''$ $k = -.016$ tang. $\delta = -.28$

$z = +57\ 47\ 6$

1872 Mar. 18	+ 424	8	7	13.26	−.118	−0.13	+14.20	−0.37	+13.70	7m 26.96s
Mar. 19	+ 382	8	7	13.26	−.106	−.12	+14.22	−0.35	+13.75	27.01
4 Apr. 10	+ 187	8	7	13.92	−.052	−.07	+13.12	+0.02	+13.07	26.99
2.3 Apr. 11	+ 185	8	7	14.33	−.051	−.07	+12.77	+0.03	+12.73	27.06

27.0025

$\Delta\alpha = +0.008^s$ $\Delta\delta = -0.94''$ $+3.2592$

✱ β Cancri $\alpha = 8^h\ 9^m\ 34.334^s\ 34.33^s$ $\delta = +9°\ 8'\ 41''$ $k = -.016$ tang. $\delta = +.17$

$z = +32\ 48\ 8$

1872 Mar. 14	+ 366	8	9	21.76	+.062	+0.05	+12.93	−0.42	+12.56	9m 34.32s
Mar. 18	+ 424	8	9	20.45	+.072	+.06	+14.20	−0.36	+13.90	34.35
5 Mar. 19	+ 382	8	9	20.44	+.064	+.05	+14.22	−0.35	+13.92	34.36
2.2 Apr. 10	+ 187	8	9	21.21	+.031	+.02	+13.12	−0.01	+13.13	34.34
Apr. 11	+ 185	8	9	21.55	+.031	+.01	+12.77	+0.01	+12.79	34.34

34.342
± .009

$\Delta\alpha = +0.136^s$ $\Delta\delta = +0.20''$ $+1.8966$

✱ K Cephei L.6. $\alpha = 20^h\ 13^m\ 9.228^s\ 9.23^s$ $\delta = +77°\ 19'\ 27''$ $k = +.070$ tang. $\delta = -4.45$

$-60\ 17\ 43$

1872 Mar. 14	+ 366	8	12	54.11	−1.628	−1.56	+12.93	+3.72	+15.09	13m 9.20s
Mar. 19	+ 382	8	12	53.29	−1.699	−1.63	+14.22	+3.38	+15.97	9.26
5 Apr. 2	+ 235	8	12	53.99	−1.046	−0.98	+11.41	+2.13	+15.56	9.55
2.3 Apr. 10	+ 187	8	12	55.73	−0.832	−0.76	+13.12	+1.36	+13.72	9.47
Apr. 11	+ 185	8	12	56.05	−0.823	−0.75	+12.77	+1.27	+13.29	9.34

9.364 ± .010

w Naris

~~Antlie~~ $\alpha = 8^h\ 16^m\ 20.84^s$ $\delta = -32°\ 38'\ 54''$ $k = -.019$ tang. $\delta = -.64$

$z = +75\ 1\ 43$

1872 Mar. 18	+ 424	8	16	7.26	−.271	−0.29	+14.20	−0.52	+13.39	16m 20.65s
4 Mar. 19	+ 382	8	16	7.22	−.244	−.26	+14.22	−0.50	+13.46	20.68
2.3 Apr. 10	+ 187	8	16	7.76	−.119	−.14	+13.12	−0.05	+12.93	20.69
Apr. 11	+ 185	8	16	8.06	−.118	−.14	+12.77	−0.03	+12.60	20.66

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1872phae.proj.1459.

$\delta_0 = 91\ 04\ 36.1$ (+9.463 / 0 ' 23.93 ") sin z = −.75 u, Layton dl/dt = " B + V + J 1.81570

Tan TS Circle Read Red. Nov. Circle Read. Corr.

s	'	"	"	'	"	'	"		'	"	λ−γ	Rm	Rm"			Rf.	Rm Red to	Rm Rm"	I = 18720		
28.60 +286.0	19	23.10	+7.20	19	30.30	+3	18.05		+1	10.02		+.84	−.31	+1.22		+.69	+1.08	18720 −1500.	+41.08	+23.47	4	37.6
																		−15.80		+26.34		
	19	(26.7a)						+	2687	+1	9.60	+.01	+.04	−.32	+.4					+1.49 +2073		
28.47 +63.6	19	25.80	+1.60	19	27.40	3	20.95	+	1496	1	7.71	.00	.03	−.22	+.50	−1930			+1.58	+26.80	4	37.7
26.89 +54.4	19	27.50	+1.37	19	28.87	3	19.48	+	2696	+	9.61	.01	.03	−.22	+.50	−1990			+1.58	+26.32		37.1
28.85 +153.1	19	24.15	+3.87	19	28.02	3	20.33	+	1988	1	8.48	.01	.24	−.22	+.71	−2000			+1.79	+25.57		36.2
26.90 +314.1	19	21.95	+7.91	19	29.86	3	18.49	+	2694	1	9.60	.01	1.02	−.22	+1.49	−2090			+1.57	+25.34		34.1
33.32 −21.8	19	22.80	−0.55	19	22.25	3	26.10	+	1200	1	7.25	.00	.01	−.04	+.66	−2170			+1.74	+24.61		35.0
32.29 +306.8	19	16.75	+7.73	19	24.48	3	23.87	+	1356	1	7.49	.00	.97	−.04	+1.67	−2190			+1.70	+25.43		37.6
32.16 −16.6	19	22.60	−0.42	19	22.18	+3	26.17	+	349	1	5.95	.00	.00	+.04	+.73	−2200			+1.81	+26.40		38.3
	18	(46.4a)						+	1058	+1	7.08	+.00	+.		+.05					+32.02		

±.002 36.95 ±0.90

$\delta_0 = -23\ 56\ 12.7$ 2.11458 −10.18 −.85 −1.32

(+24.1)	17	37.75	−28.91	17	8.84	−54	20.49	+0.02711	−2	18.68	−.06	+.13	−.13	−.85	+10.36	−2.17	+26.32	56	47.1
+19.1	17	41.70	−23.27	17	18.43	54	30.08	+ 2006	2	16.44	.04	.08	−.13	−.90	+10.44	−2.22	+25.57		12.8
+17.6	17	41.90	−21.11	17	20.79	54	31.44	+ 1371	2	14.46	.02	.07	−.03	−.81	+11.35	−2.13	+25.43		11.3
+22.7	17	54.60	−27.23	17	27.37	−54	39.02	+ 365	−2	11.39	−.01	+.11	+.03	−.71	+11.45	−2.03	+26.40		14.6

12.90

$\delta_0 = +18\ 1\ 54.5$ 1.41560 −10.39 −.37 −.58

30.09 +19.1	21	14.90	−23.83	20	51.07	+1	5728	+ 01534	−0	26.97	−.06	−.06	−.49	−0.53		−1.07	+26.80	1	53.5
28.87 +21.3	21	18.20	−26.58	20	51.62	1	5673	+ 02726		27.72	.08	−.06	−.51	−0.70		−1.09	+26.32		53.5
30.05 +23.3	21	19.95	−29.07	20	50.88	1	5547	+ 2024		27.28	.08	−.06	−.51	−0.75		−1.09	+25.57		53.9
29.98 −10.5	20	36.55	+13.10	20	51.65	1	5670	+ 1238		26.79	.02	−.01	−.40	−1.42		−0.95	+24.61		52.1
30.87 +17.0	21	11.75	−21.21	20	50.54	1	5781	+ 1386		26.88	.05	−.01	−.43	−1.47		−1.01	+25.43		53.9
29.79 +19.2	21	16.20	−23.96	20	52.24	1	5611	+ 381		26.27	.06	+.01	−.42	−1.12		−1.00	+26.40		53.5
25.15 +17.6	21	18.40	−21.96	20	56.44	+1	5191	+ 1126	−	26.72	−.05	+.01	−.41	−1.76		−0.99	+32.02		54.5

±.013 53.84 ±0.64

$\delta_0 = -15\ 24\ 15.6$ 1.95916 −10.59 −.79 −1.21

+17.2	46	19.40	−21.75	45	57.65	−23	9.30	+ 2726	−1	36.92	−.02	+.04	−.07	−.82	+8.45	−2.03	+26.32	24	13.5
+22.0	46	25.85	−25.30	46	0.55	23	12.20	+ 2024	1	35.37	.02	.05	−.07	−.81	+8.51	−2.02	+25.57		15.5
+17.2	46	29.10	−21.76	46	7.34	23	18.99	+ 381	1	31.83	.01	.04	+.01	−.74	+9.18	−1.95	+26.40		17.2
+17.5	46	32.00	−22.14	46	9.86	−23	21.51	+ 1126	−1	33.41	−.01	+.04	+.02	−.73	+9.18	−1.94	+32.02		15.7

15.48

−10.790
41.08

$\delta_0 = +9\ 34\ 41.1$ sin z = +.54 1.56910 −.51 −.78

34 14.92 +18.5	48	18.75	−23.94	47	54.81	+34	53.54	+ 00 1553	−0	38.43	−.03	−.16	−.70	+1.80		−2.48	+26.80	34	41.2
13.33 +19.1	48	20.05	−24.72	47	55.33	34	53.02	+ 3741		39.49	.03	−.17	−.71	+1.80		−2.49	+26.32		39.2
14.46 +20.5	48	21.35	−26.53	47	54.82	34	53.53	+ 2042		38.86	.04	−.17	−.72	+1.80		−2.50	+25.57		39.5
14.76 +19.7	48	21.65	−25.49	47	56.16	34	52.19	+ 397		37.42	.04	+.03	−.52	+1.30		−2.30	+26.40		40.2
9.57 +13.0	48	17.55	−16.82	48	0.73	+34	47.62	+ 1145	−	38.07	−.01	+.03	−.49	+1.30		−2.27	+32.02		40.6

+11.506
28.70

±.009 40.14 ±0.60

$\delta_0 = +77\ 19\ 31.3$ sin z = −.87 2.00208 +.81 +1.24

40 24.33 +7.21	43	47.55	+21.06	44	8.61	+38	39.74	+ 00 1553	+1	44.14	+.01	+.63	−.14	+1.26	−19.70		+2.49	+26.80	40	37.5
23.72 −10.3	44	12.75	−2.98	44	9.77	38	38.58	+ 0 3042	1	45.32	.02	.01	−.21	+.61	−20.60		+1.85	+25.57		30.7
27.24 +16.9	44	0.70	+4.87	44	5.57	38	42.78	+ 1683	1	44.45	.01	.04	−.04	+.81	−22.40		+2.05	+24.76		37.7
24.97 +65.7	43	46.40	+18.93	44	5.33	38	49.02	+ 397	1	41.40	.00	.51	+.04	+1.36	−23.00		+2.60	+26.40		36.4
18.24 +68.1	43	54.25	+19.62	44	13.87	+38	34.48	+ 1145	+1	43.17	+.01	+.54	+.04	+1.39	−23.10		+2.63	+32.02		29.2

±.024 31.10 ±1.13

$\delta_0 = -32\ 38\ 55.9$ 2.32456 −11.24 −.90 −1.39

+22.0	58	57.15	−24.31	58	32.84	−35	43.49	+ 00 2757	−3	44.98	−.23	+.11	−.20	−.99	+11.51		−2.38	+26.32	38	54.1
+19.1	58	57.60	−21.11	58	36.49	35	48.14	+ 2060	3	41.39	.18	.08	−.20	−1.02	+11.63		−2.41	+25.57		54.5
+21.5	59	11.00	−23.76	58	47.24	35	58.89	+ 413	3	33.15	.03	.10	+.04	−.76	+13.28		−2.15	+26.40		54.5
+17.3	59	11.10	−19.12	58	51.92	36	3.63	+ 1164	−3	26.87	−.03	+.07	+.04	−.79	+13.29		−2.18	+32.02		57.4

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$\Delta\alpha = +0^{s}.011$ $\Delta\delta = +1''.42$ $+5^{s}.0452$

Star ✱ o Theas Majoris $\alpha = 8^{h}\ 19^{m}\ 36^{s}.63$ $\delta = +61°\ 8'\ 35''$ $k = -.032$ tang. $\delta = +.181$

$z = -18\ 45\ 46$

Date	n	T_s	T_m	n tang. δ	d.T.	Ra. 1872.0	Sum	AR. 1872.0
								19^{m}
1872 Mar. 18	+ 424	8^{h}	19 22.87	+.767	+0.73	+14.20	−1.16	+13.77	36.64
Mar. 19	+ 382	8	19 22.86	+.691	+.66	+14.22	−1.13	+13.75	36.61
6 Mar. 27	+ 330	8	19 21.63	+.597	+.56	+15.30	−0.87	+14.99	36.62
2.3 Apr. 2	+ 235	8	19 22.54	+.425	+.39	+14.41	−0.66	+14.14	36.68
Apr. 10	+ 187	8	19 23.66	+.338	+.31	+13.12	−0.39	+13.04	36.70
Apr. 11	+ 185	8	19 23.91	+.334	+.30	+12.77	−0.36	+12.71	36.62
									36.645 ±.026

B.A.C. 2846 $\alpha = +8^{h}\ 22^{m}\ 28^{s}.76$ $\delta = -25°\ 42'\ 32''$ $k = -.017$ tang. $\delta = -.48$

$z = +68\ 5\ 21$

1872 Mar. 18	+ 424	8	22 14.35	−.203	−0.22	+14.20	−0.49	+13.49	22 27.84
Mar. 19	+ 382	8	22 14.23	−.183	−.20	+14.22	−0.47	+13.55	27.76
Mar. 21	+ 460	8	22 14.19	−.220	−.24	+14.25	−0.44	+13.57	27.76
7 Mar. 27	+ 330	8	22 12.95	−.158	−.17	+15.30	−0.34	+14.79	27.74
2.2 Apr. 2	+ 235	8	22 13.69	−.112	−.13	+14.41	−0.23	+14.05	27.74
Apr. 10	+ 187	8	22 14.73	−.089	−.11	+13.12	−0.08	+12.93	27.66
Apr. 11	+ 185	8	22 15.20	−.088	−.11	+12.77	−0.06	+12.60	27.80
									27.760 ±.036

$\Delta\alpha = -0^{s}.018$ $\Delta\delta = -0''.40$ $+3^{s}.4796$

✱ η Cancri $\alpha = 8^{h}\ 25^{m}\ 18^{s}.26$ $\delta = +20°\ 52'\ 27''$ $k = -.016$ tang. $\delta = +.38$

$z = +21\ 30\ 22$

1872 Mar. 18	+ 424	8	25 4.39	+.161	+0.14	+14.20	−0.47	+13.87	25 18.26
Mar. 27	+ 330	8	25 3.18	+.125	+.11	+15.30	−0.34	+15.07	18.25
5 Apr. 2	+ 235	8	25 3.98	+.089	+.07	+14.41	−0.24	+14.24	18.22
2.3 Apr. 10	+ 187	8	25 5.18	+.071	+.06	+13.12	−0.12	+13.06	18.24
Apr. 11	+ 185	8	25 5.54	+.070	+.05	+12.77	−0.10	+12.72	18.26
									18.246 ±.011

B.A.C. 2887 $\alpha = 8^{h}\ 28^{m}\ 47^{s}.97$ $\delta = +53°\ 50'\ 44''$ $k = -.025$ tang. $\delta = +1.37$

$z = -11\ 27\ 55$

1872 Mar. 18	+ 424	8	28 34.15	+.580	+0.55	+14.20	−0.96	+13.79	28 47.94
Mar. 27	+ 330	8	28 33.01	+.452	+.43	+15.30	−0.74	+14.99	48.00
6 Apr. 2	+ 235	8	28 33.81	+.321	+.30	+14.41	−0.59	+14.12	47.93
2.3 Apr. 3	+ 218	8	28 33.69	+.298	+.27	+14.55	−0.56	+14.26	47.95
Apr. 10	+ 187	8	28 35.02	+.256	+.23	+13.12	−0.37	+12.98	48.00
Apr. 11	+ 185	8	28 35.34	+.253	+.23	+12.77	−0.34	+12.66	48.00
									47.970 ±.025

S Hydrae $\alpha = 8^{h}\ 30^{m}\ 35^{s}.284$ $\delta = +6°\ 8'\ 55''$ $k = -.016$ tang. $\delta = +.11$

$z = +36\ 13\ 54$

1872 Mar. 18	+ 424	8	30 38.96	+.046	+0.03	+14.20	−0.44	+13.79	30 52.75
Mar. 21	+ 460	8	30 38.88	+.050	+.03	+14.25	−0.40	+13.88	52.76
6 Mar. 24	+ 420	8	30 38.31	+.046	+.03	+14.80	−0.36	+14.47	52.78
2.2 Mar. 27	+ 330	8	30 37.69	+.036	+.02	+15.31	−0.32	+15.01	52.70
Apr. 2	+ 235	8	30 38.54	+.025	+.01	+14.41	−0.24	+14.18	52.72
Apr. 11	+ 185	8	30 40.00	+.020	+.00	+12.76	−0.10	+12.66	52.66
									52.728 ±.022

6 Hydrae $\alpha = +8^{h}\ 33^{m}\ 57^{s}.66$ $\delta = -12°\ 1'\ 27''$ $k = -.016$ tang. $\delta = -.21$

$z = +54\ 24\ 16$

1872 Mar. 18	+ 424	8	33 44.41	−.089	−0.10	+14.20	−0.47	+13.63	33 57.64
Mar. 21	+ 460	8	33 43.95	−.096	−.11	+14.25	−0.43	+13.71	57.66
5 Mar. 24	+ 420	8	33 43.38	−.088	−.10	+14.80	−0.39	+14.31	57.69
2.2 Mar. 27	+ 330	8	33 42.73	−.069	−.09	+15.31	−0.34	+14.88	57.61
Apr. 11	+ 185	8	33 44.97	−.038	−.05	+12.76	−0.11	+12.60	57.57
									57.634 ±.034

γ Cancri $\alpha = 8^{h}\ 35^{m}\ 52^{s}.0$ $\delta = +21°\ 55'\ 38''$ $k = -.017$ tang. $\delta = +.40$

$z = +20\ 27\ 11$

1872 Mar. 21	+ 460	8	35 38.60	+.184	+0.17	+14.25	−0.48	+13.94	35 52.54
Mar. 27	+ 330	8	35 37.53	+.132	+.12	+15.31	−0.40	+15.03	52.58
6 Apr. 2	+ 235	8	35 38.39	+.094	+.08	+14.41	−0.31	+14.18	52.57
2.3 Apr. 3	+ 218	8	35 38.29	+.087	+.07	+14.53	−0.29	+14.33	52.57
Apr. 10	+ 187	8	35 39.58	+.075	+.06	+13.12	−0.18	+13.00	52.58
Apr. 11	+ 185	8	35 39.90	+.074	+.06	+12.76	−0.16	+12.66	52.56
									52.567 ±.009

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$\delta_0 = +61\ 8\ 34.6$ (−11.617, 24.58) $\varepsilon_{m\,z} = -.32$ $\mu + l g + \gamma n$ $\frac{d\delta}{dt} =$ " $+.30 + .45$

Tm. −75 Circle Read. Red. Km. Circle Read. Koon. $B + H + \gamma$ 1.29130_n $\Delta f - \delta$ R_m R_{ro} $R_m - R_{ro}$ to 1872.0 $R_m + R_{ro}$ $\Sigma\delta$ 1872.0

s	′	″	″	′	″	′	″			″	″	″	″	″	″		″	′	″
21.74 +25.9	15	3.70	−16.41	14	47.29	+8	1.06	+002757	+0	20.84	−.16	−.00	+.14	−1300	+0.59	+26.32	8	35.8	
22.52 +42.5	15	12.85	−26.93	14	45.92	8	2.43	+ 2060		20.51	.41	−.01	−.12	−1320	+0.33	+25.57		35.6	
24.76 +27.5	15	1.30	−17.42	14	43.88	8	4.47	+ 1973		20.47	.18	−.00	+.12	−1420	+0.57	+25.01		36.3	
24.99 +30.9	15	3.05	−19.58	14	43.47	8	4.88	+ 1696		20.34	.23	−.00	+.07	−1480	+0.52	+24.76		35.7	
24.73 +40.4	15	8.60	−25.60	14	43.00	8	5.35	+ 413		19.74	.36	+.00	−.06	−1560	+0.39	+26.40		36.3	
19.21 +38.2	15	13.10	−24.20	14	48.90	+7	59.45	+ 1164	+	20.09	−.33	+.00	−.03	−1570	+0.42	+32.02		36.3	

±.011 — 36.00 ±.025

$\delta_0 = -25\ 42\ 36.9$ 2.15198 -11.68 $-.86$ -1.34

+18.4	3	51.20	−21.76	3	29.44	−40	41.09	+002772	−2	31.25	−.07	+.07	−.19	−.98	+10.24	−2.32	+26.32	42	38.2
+20.8	3	57.15	−24.59	3	32.56	40	44.21	+ 2080	2	28.86	.05	.09	−.20	−.97	+10.35	−2.31	+25.57		35.5
+18.3	3	51.00	−21.64	3	29.36	40	41.01	+ 3265	2	32.98	.08	.07	−.19	−.98	+10.56	−2.32	+28.45		37.4
+12.5	3	46.80	−14.78	3	32.02	40	43.67	+ 1973	2	28.49	.05	.03	−.04	−.87	+11.09	−2.21	+25.01		38.3
+20.9	3	58.65	−24.71	3	33.94	40	45.59	+ 1696	2	27.55	.04	.09	−.04	−.81	+11.98	−2.15	+24.76		38.1
+13.0	3	55.15	−15.37	3	39.78	40	51.43	+ 429	2	23.31	.00	.03	+.04	−.79	+11.79	−2.13	+26.40		35.7
+13.0	3	57.75	−15.37	3	42.38	−40	54.03	+ 1183	−2	25.82	−.01	+.03	+.04	−.79	+11.81	−2.13	+32.02		38.2

±.032 — 38.49 ±.049

$\delta_0 = +20\ 52\ 26.6$ (−11.920, 26.58) $\varepsilon_{m\,z} = +.37$ 1.38860 − $-.33$ $-.52$

2.94 +18.9	30	46.35	−23.18	30	23.17	+52	25.18	+002772	−0	24.17	−.06	−.04	−.43	−1.30		−0.95	+26.32	52	25.1
3.95 +18.4	30	43.15	−22.56	30	20.59	52	27.76	+ 1983		23.74	.06	−.01	−.40	−1.80		−0.92	+25.01		26.3
5.10 +20.9	30	45.30	−25.63	30	19.57	52	28.78	+ 1709		23.59	.08	−.01	−.42	−2.10		−0.94	+24.76		26.9
2.53 +17.6	30	44.45	−21.58	30	22.87	52	25.48	+ 429		22.90	.06	+.01	−.38	−2.50		−0.90	+26.40		25.6
54.38 +19.5	30	50.50	−23.91	30	26.59	+52	21.76	+ 1183	−	23.32	−.07	+.01	−.39	−2.50		−0.91	+32.02		27.0

±.010 — 26.18 ±.062

$\delta_0 = +53\ 50\ 41.8$ 1.06730_n -12.12 $+.17$ $+.28$

+24.4	32	53.90	−18.88	32	35.02	+50	13.33	+002787	+0	12.45	−.15	−.15	−.13	−1.061		+0.15	+26.32	50	41.6
+29.9	32	55.45	−23.14	32	32.31	50	16.04	+ 1993		12.22	.23	−.03	−.09	−1.193		+0.19	+25.01		41.5
+29.9	32	55.00	−23.14	32	31.86	50	16.49	+ 1713		12.14	.23	−.03	−.09	−1.267		+0.19	+24.76		40.9
+31.5	32	55.95	−24.38	32	31.57	50	16.78	+ 1314		12.03	.26	−.03	−.12	−1.278		+0.16	+24.61		46.8
+31.3	32	55.25	−24.22	32	31.03	50	17.32	+ 0445		11.80	.25	+.03	−.05	−1.346		+0.23	+26.40		42.3
+13.0	32	47.20	−10.06	32	37.14	+50	11.21	+ 1201	−	12.00	−.04	+.03	+.16	−1.355		+0.44	+32.02		42.1

±.016 — 41.53 ±.043

$\delta_0 = +6\ 8\ 54.8$ 1.62480 -12.27 $-.54$ $-.85$

+19.2	14	0.10	−25.05	13	35.05	+9	13.30	+002757	−0	44.94	−.02	−.20	−.76	+2.95		−0.61	+26.32	8	57.0
+17.6	14	0.65	−22.96	13	37.68	9	10.66	+ 3274		45.45	.01	−.20	−.75	+2.92		−0.60	+28.45		56.0
+16.9	13	57.75	−22.05	13	35.70	9	12.65	+ 2706		44.86	.01	−.20	−.75	+2.89		−0.60	+25.34		55.4
+18.2	13	59.20	−23.75	13	35.45	9	12.90	+ 1993		44.13	.01	−.04	−.59	+2.85		−0.44	+25.01		56.2
+8.8	13	48.90	−11.48	13	37.42	9	10.93	+ 1713		43.85	.01	−.04	−.59	+2.73		−0.44	+24.76		54.1
+13.3	14	2.75	−17.35	13	45.40	+9	2.95	+ 1201	−	43.33	−.01	+.04	−.51	+2.49		−0.36	+32.02		58.8

±.032 — 55.42 ±.091

$\delta_0 = -12\ 1\ 27.5$ 1.90420 -12.48 $-.75$ -1.17

+17.5	23	46.15	−22.46	23	23.69	−0	35.34	+002803	−1	25.75	.01	+.04	−.19	−.90	+7.38		−2.07	+26.32	1	27.0
+17.0	23	46.50	−24.62	23	24.68	0	36.33	+ 3282	1	26.50	.01	.03	−.19	−.91	+7.56		−2.08	+28.45		28.9
+17.1	23	45.50	−21.95	23	23.55	0	35.20	+ 2709	1	25.37	.01	.03	−.19	−.91	+7.71		−2.08	+25.34		27.6
+18.9	23	49.50	−24.26	23	25.24	0	36.89	+ 2004	1	23.99	.01	.04	−.04	−.73	+7.85		−1.92	+25.01		29.9
+23.6	24	6.15	−30.36	23	35.79	−0	47.44	+ 1220	1	22.49	.00	+.06	+.04	−.65	+8.19		−1.82	+32.02		31.6

±.033 — 29.88 ±.064

$\delta_0 = +21\ 55\ 37.9$ 1.33170 -12.61 $-.32$ $-.50$

+19.2	27	36.95	−23.37	27	13.58	+55	34.77	+ 03282	−0	23.15	−.06	−.13	−.51	−1.57		−1.01	+28.45	55	37.5
+21.5	27	37.25	−26.17	27	11.08	55	37.27	+ 2004		22.48	.09	−.03	−.44	−1.96		−0.94	+25.01		36.1
+14.4	27	28.50	−17.53	27	10.97	55	37.38	+ 1786		22.34	.03	−.03	−.38	−2.35		−0.88	+24.76		36.6
+19.0	27	34.85	−23.13	27	11.72	55	36.63	+ 1324		22.13	.06	−.03	−.41	−2.42		−0.91	+24.61		35.7
+20.6	27	37.20	−25.08	27	12.12	55	36.23	+ 0461		21.69	.08	+.03	−.37	−2.84		−0.87	+26.40		37.2
+16.0	27	28.15	−12.17	27	15.98	+55	32.37	+ 1220	−	22.08	−.02	+.03	−.31	−2.90		−0.81	+32.02		38.6

±.008 — 37.10 ±.04

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$\Delta\mu = +0.013^s$ $\Delta\delta = -0.60''$

Star # S Cancri $\alpha = 8^h\ 37^m\ 24.51^s$ (+3.4199, $h\ m\ 24.509$) $\delta = +18°\ 37'\ 22''$ $z = +23\ 45\ 27$ $K = -.016$ tang. $\delta = +.34$

Date.	n	T_s	T_m	μ tang δ	d.T.	Red. 1872	Sum	A.R. 1872
1872 Mar. 24	+ 420	8	37 10.05	+.142 +0.13	+14.80	−0.42	+14.51	37 24.56
Mar. 27	+ 330	8	37 9.45	+.112 +.10	+15.31	−0.38	+15.03	24.48
6 Apr. 2	+ 235	8	37 10.33	+.079 +.06	+14.41	−0.29	+14.18	24.51
2.3 Apr. 3	+ 218	8	37 10.19	+.074 +.06	+14.55	−0.28	+14.33	24.52
Apr. 10	+ 187	8	37 11.57	+.063 +.05	+13.12	−0.18	+12.99	24.56
Apr. 11	+ 185	8	37 11.85	+.062 +.05	+12.76	−0.16	+12.65	24.50
								24.522
								±.023

$\Delta\mu = +0.013^s$ $\Delta\delta = +0.50''$

ε Hydrae $\alpha = 8^h\ 39^m\ 59.78^s$ (+3.1843, $h\ m\ 59.780$) $\delta = +6°\ 53'\ 12''$ $z = +35\ 29\ 37$ $K = -.016$ tang. $\delta = +.12$

1872 Mar. 27	+ 330	8	39 44.86	+.039 +0.02	+15.31	−0.38	+14.95	39 59.81
3 Apr. 2	+ 235	8	39 45.63	+.028 +.01	+14.41	−0.28	+14.14	59.77
2.3 Apr. 10	+ 187	8	39 46.84	+.022 +.01	+13.12	−0.17	+12.96	59.80
								59.793

Q Hydrae $\alpha = 8^h\ 41^m\ 39.13^s$ $\delta = +6°\ 18'\ 33''$ $z = +36\ 4\ 16$ $K = -.016$ tang. $\delta = +.11$

1872 Mar. 21	+ 460	8	41 25.27	+.050 +0.03	+14.25	−0.45	+13.83	41 39.10
Mar. 27	+ 330	8	41 24.16	+.036 +.02	+15.31	−0.37	+14.96	39.12
5 Apr. 2	+ 235	8	41 24.92	+.025 +.01	+14.41	−0.29	+14.13	39.05
2.3 Apr. 10	+ 187	8	41 26.14	+.020 +.00	+13.12	−0.18	+12.94	39.08
Apr. 11	+ 185	8	41 26.45	+.020 +.00	+12.76	−0.16	+12.60	39.05
								39.080
								±.023

35 Lyncis $\alpha = 8^h\ 43^m\ 32.93^s$ $\delta = +44°\ 12'\ 2''$ $z = -1\ 49\ 13$ $K = -.021$ tang. $\delta = +.97$

1872 Mar. 21	+ 460	8	43 6.98	+.446 +0.42	+14.25	−0.77	+13.90	43 20.88
Mar. 27	+ 330	8	43 5.99	+.320 +.30	+15.31	−0.67	+14.94	20.93
5 Apr. 3	+ 218	8	43 6.70	+.211 +.19	+14.55	−0.51	+14.23	20.93
2.3 Apr. 10	+ 187	8	43 7.96	+.181 +.16	+13.12	−0.39	+12.89	20.85
Apr. 11	+ 185	8	43 8.31	+.179 +.16	+12.76	−0.37	+12.55	20.86
								20.890
								±.029

$\Delta\mu = +0.078^s$ $\Delta\delta = +0.57''$

57 Cancri Red. $\alpha = 8^h\ 46^m\ 25.74^s$ (+3.6755, $h\ m\ 25.740$) $\delta = +31°\ 8'\ 47''$ $z = +11\ 19\ 2$ $K = -.018$ tang. $\delta = +.60$

1872 Mar. 21	+ 460	8	46 11.93	+.276 +0.26	+14.25	−0.61	+13.90	46 25.83
4 Mar. 27	+ 330	8	46 10.85	+.198 +.18	+15.31	−0.51	+14.98	25.83
2.3 Apr. 2	+ 235	8	46 11.67	+.141 +.12	+14.41	−0.42	+14.11	25.78
Apr. 3	+ 218	8	46 11.57	+.131 +.11	+14.55	−0.40	+14.26	25.83
								25.818

$\Delta\mu = -0.028^s$ $\Delta\delta = +0.69''$

ζ Hydrae $\alpha = 8^h\ 48^m\ 37.61^s$ (+3.1783, $h\ m\ 37.608$) $\delta = +6°\ 2'\ 55''$ $z = +35\ 56\ 58$ $K = -.016$ tang. $\delta = +.11$

1872 Mar. 21	+ 460	8	48 23.80	+.050 +0.03	+14.25	−0.48	+13.80	48 37.60
4 Mar. 27	+ 330	8	48 22.67	+.036 +.02	+15.31	−0.39	+14.94	37.61
2.3 Apr. 2	+ 235	8	48 23.44	+.025 +.01	+14.41	−0.32	+14.10	37.54
Apr. 3	+ 218	8	48 23.32	+.023 +.01	+14.55	−0.31	+14.25	37.57
								37.580

$\Delta\mu = -0.003^s$ $\Delta\delta = +0.08''$

i Ursae Majoris $\alpha = 8^h\ 50^m\ 26.01^s$ (+4.1397, $h\ m\ 26.010$) $\delta = +48°\ 32'\ 32''$ $z = -6\ 10\ 43$ $K = -.023$ tang. $\delta = +1.13$

1872 Mar. 21	+ 460	8	50 12.16	+.519 +0.50	+14.25	−0.92	+13.83	50 25.99
Mar. 27	+ 330	8	50 11.18	+.373 +.35	+15.31	−0.80	+14.86	26.04
7 Apr. 1	+ 261	8	50 11.94	+.294 +.27	+14.44	−0.68	+14.03	25.97
2.3 Apr. 2	+ 235	8	50 12.02	+.265 +.24	+14.41	−0.66	+13.99	26.01
Apr. 3	+ 218	8	50 11.89	+.246 +.22	+14.55	−0.64	+14.13	26.02
Apr. 6	+ 140	8	50 12.31	+.158 +.14	+14.14	−0.59	+13.68	25.99
Apr. 21	+ 058	8	50 15.41	+.065 +.04	+10.81	−0.24	+10.61	26.02
								26.027
								±.016

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-12.955
22.38

$\delta_0 = +18\ 37\ 22.4$ rin z = +.40 $\frac{d\delta}{dt} =$

Thm - TS Circle Read. Red. Non-inv. Circle Read. Corr. Wyllyn $\beta + 77 z$ 1.40370 -.37 -.58

	°	′	″	″	′	″	′	″		′	″	″	″	″	″	″	″	″	″						
57.75	+26.5	45	56.45	−32.9645	23.49	+37	24.86	+	0270.9	− 0	26.96	−.11	−.04	−.52	−0.70		−1.10	+25.34	37	21.8					
58.70	+.63	45	30.95	− 7.8445	23.11	37	25.24	+	2004		26.53	.01	−.00	−.38	−0.90		−0.96	+25.01		21.8					
59.54	− 7.3	45	13.35	+ 9.0845	22.43	37	25.92	+	1736		26.37	.01	−.00	−.38	−1.20		−0.96	+24.76		22.1					
37 0.93	+6.0	45	28.75	− 7.4645	21.29	37	27.06	+	1324		26.12	.01	−.00	−.38	−1.30		−0.96	+24.61		23.3					
36 58.36	−14.6	45	6.20	+18.1645	24.36	37	23.90	+	0461		25.60	.03	+.00	−.40	−1.60		−0.98	+26.40		22.2					
36 50.35	−21.8	45	4.75	+27.1145	31.86	+37	16.49	+	1220	−	26.06	−.08	+.00	−.45	−1.60		−1.03	+32.02		19.8					
																				21.78					

±.022

-12.912
12.42

$\delta_0 = +6\ 53\ 12.4$ rin z = +.58 1.61310 -.53 -.53

245.58	+16.7	29	41.50	−21.76	29	19.74	+53	28.61	+	0201.4	− 0	42.97	−.01	−.05	−.59	+2.70		−0.42	+25.01	53	12.9				
46.83	+10.9	29	32.95	−14.20	29	18.75	53	29.60	+	1749		42.71	.01	−.05	−.59	+2.50		−0.42	+24.76		13.7				
44.91	+18.5	29	47.40	−25.41	29	21.99	+53	26.36	+	0467	−	41.47	−.03	+.05	−.51	+2.30		−1.34	+26.40		12.2				
																					12.93				

$\delta_0 = +6\ 18\ 32.5$ 1.68220 -.54 -.85

+17.2	4	24.10	−22.43	4	1.67	+18	46.68	+	0329.1	− 0	46.25	4.20	−.02	−.72	−.78	+2.94		−1.63	+28.45	18	31.2				
+12.8	4	14.40	−16.70	3	5.70	18	50.65	+	2014		44.91	4.89	.01	−.04	−.59	+2.86		−1.44	+25.01		33.2				
+3.6	4	3.75	− 4.70	3	5.05	18	49.30	+	1749		44.63	4.64	.00	−.04	−.58	+2.73		−1.43	+24.76		30.7				
+18.9	4	26.55	−24.65	4	1.90	18	46.45	+	0467		43.35	4.36	.03	+.04	−.53	+2.52		−1.38	+26.40		30.6				
+15.4	4	27.95	−20.09	4	7.86	+18	40.49	+	1239	−	44.11	43.11	−.02	+.04	−.52	+2.48		−1.37	+32.02		30.5				
																					31.64				

±.023

$\delta_0 = +44\ 12\ 3.3$ 0.26680 +.02 +.04

+42.1	10	51.55	−39.60	10	11.95	+11	36.40	+	0329.1	+ 0	1.99	−.48	−.04	−.60	−7.87		−0.46	+28.45	11	(58.3)					
−1.03	10	55.20	+ 9.69	11	4.89	11	43.46	+	2014		1.94	.03	−.00	−.01	−8.66		+0.03	+25.01		61.8					
~~−3.71~~	~~11~~	~~24.95~~	~~+34.49~~	~~11~~	~~57.54~~	~~11~~	~~48.54~~	~~+~~	~~1354~~		~~1.91~~	~~.37~~	~~−.00~~	~~−.35~~	~~−9.48~~		~~−0.31~~	~~+24.61~~							
+14.4	11	16.85	−13.54	11	3.31	11	45.04	+	0477		1.87	.05	+.00	−.03	−10.19		+0.01	+26.40		63.1					
+27.3	11	35.40	−25.68	11	9.72	+11	38.63	+	1239	+	1.90	−.20	+.00	−.18	−10.28		−0.14	+32.02		62.1					
																			11	62.33					

±.021

-13.336
44.13

$\delta_0 = +31\ 3\ 44.1$ rin z = +.20 1.06150 -.17 -.28

24.07	+10.9	19	26.85	−12.25	19	14.60	+ 3	33.75	+	0329.8	− 0	12.43	−.03	−.22	−.42	−4.50		−0.70	+28.45	3	45.1				
15.41	+20.8	19	35.10	−23.38	19	11.72	3	36.43	+	2025		12.07	.10	−.05	−.32	−4.59		−0.60	+25.01		44.4				
26.61	+ 5.7	19	16.10	− 6.41	19	9.69	3	38.66	+	1763		12.00	.01	−.04	−.22	−5.14		−0.50	+24.76		45.8				
24.56	+24.6	19	39.35	−27.65	19	11.70	3	36.65	+	1374	−	11.89	−.15	−.05	−.37	−5.23		−0.65	+24.61		43.5				
																					44.70				

-13.466
51.33

$\delta_0 = +6\ 25\ 51.3$ rin z = +.59 1.62030 -.54 -.54

22.42	+18.1	57	4.40	−23.60	56	40.80	+26	7.35	+	0329.8	−	45.01	−.01	−.11	−.66	+2.90		−1.50	+28.45	25	52.4				
26.26	+12.0	56	54.00	−15.65	56	38.35	26	10.00	+	2025		43.71	.01	−.02	−.57	+2.90		−1.45	+25.01		52.7				
26.27	+17.4	57	2.30	−22.69	56	39.61	26	8.74	+	1763		43.44	.01	−.02	−.57	+2.80		−1.45	+24.76		51.4				
25.88	+ 8.1	56	50.15	−10.57	56	39.58	+26	8.77	+	1374	−	43.06	−.01	−.02	−.57	+2.70		−1.45	+24.61		51.6				
																					52.02				

-13.846
31.61

$\delta_0 = +48\ 32\ 31.6$ rin z = −.11 0.79350 +.09 +.15

11.92	+32.6	51	9.40	−26.58	50	42.82	+32	5.53	+	0329.8	+ 0	6.71	−.26	−.06	−.23	−8.70		−0.08	+28.45	32	31.9				
16.57	+32.7	50	57.90	−19.72	50	38.18	32	10.17	+	2025		6.51	.14	−.01	−.06	−10.10		+0.09	+25.01		31.7				
15.21	+24.9	50	58.05	−21.63	50	36.42	32	11.93	+	1645		6.46	.17	−.01	−.09	−10.20		+0.06	+24.39		32.6				
16.01	~~+16.8~~	50	~~53.85~~	~~+22.85~~	50	36.70	32	~~11.65~~	+	1763		6.47	.10	−.01	−.02	−10.40		+0.13	+24.76		32.6				
16.05	+24.7	51	0.00	−21.46	50	38.54	32	9.81	+	1374		6.42	.17	−.01	−.09	−10.50		+0.06	+24.61		30.4				
17.06	+22.5	50	57.01	−19.46	50	37.54	32	10.81	+	1285		6.40	.14	−.01	−.06	−10.80		+0.09	+24.69		31.2				
9.58	+24.3	51	5.95	−21.11	50	44.84	+32	3.51	−	2117	+	6.19	−.15	+.03	−.03	−12.30		+0.12	+33.84		31.4				
																					31.69				

±.011 ±.071

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40

Star 12 Years Cat. 1879 α = 20h 53m 19.06s δ = 80° 4′ 14″ (−57 32 58) K = +.088 tang. δ = −5.72

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Mar. 21	+ 460	8h	53m 2.22s	−.2631	−2.54	+14.25	+5.27	+16.98	53 19.20
	May. 27	+ 330	8	53 0.95	−.1887	−1.80	+15.31	+4.67	+18.18	19.13
6	Apr. 1	+ 261	8	53 2.13	−.1492	−1.40	+14.44	+1.14	+17.18	19.31
23	Apr. 2	+ 235	8	53 1.78	−.1344	−1.26	+14.41	+1.03	+17.18	18.96
	Apr. 3	+ 218	8	53 1.84	−.1246	−1.16	+14.55	+3.92	+19.31	19.15
	Apr. 6	+ 140	8	53 2.36	−.0801	−0.71	+14.14	+3.56	+16.99	19.35
										19.183
	Δα = +0.250	Δδ = +0.63		+4.1246						±.096

K Ursae Majoris L = 8h 54m 52.47s δ = +47° 39′ 38″ (z = −5 16 49) K = −.022 tang. δ = +.109

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Mar. 21	+ 460	8	54 38.74	+.501	+0.48	+14.25	−0.94	+13.79	54 52.53
	Apr. 2	+ 235	8	54 38.61	+.256	+.23	+14.41	−0.70	+13.94	52.55
4	Apr. 3	+ 218	8	54 38.42	+.237	+.21	+14.55	−0.68	+14.08	52.50
23	Apr. 17	+ 150	8	54 41.12	+.163	+.14	+11.62	−0.37	+11.39	52.51
										52.522
	Δα = +0.088	Δδ = +0.92		+5.3751						

o² Ursae Majoris L = 8h 59m 5.80s δ = +67° 39′ 5″ (z = −25 16 16) K = −.038 tang. δ = +2.43

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Mar. 21	+ 460	8	58 52.50	+1.118	+1.08	+14.25	−1.97	+13.36	59 5.86
	Mar. 27	+ 330	8	58 51.54	+0.802	+0.76	+15.31	−1.76	+14.31	5.85
	Mar. 28	+ 306	8	58 51.73	+0.743	+0.71	+15.28	−1.71	+14.28	6.01
9	Apr. 1	+ 261	8	58 52.44	+.634	+.60	+14.44	−1.56	+13.48	5.92
23	Apr. 2	+ 235	8	58 52.47	+.571	+.53	+14.41	−1.52	+13.42	5.89
	Apr. 6	+ 140	8	58 52.74	+.340	+.30	+14.14	−1.35	+13.09	5.83
	Apr. 17	+ 150	8	58 54.80	+.364	+.33	+11.62	−0.87	+11.08	5.88
	Apr. 21	+ 058	8	58 55.66	+.140	+.10	+10.81	−0.70	+10.21	5.87
	Apr. 29	+ 045	8	58 57.18	+.109	+.07	+8.92	−0.32	+8.67	5.85
										5.885
										±.032

κ Cancri δ L = 9h 0m 49.74s δ = +11° 10′ 56″ (z = +31 11 53) K = −.016 tang. δ = +.20

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Apr. 1	+ 261	9	0 34.64	+.052	+0.04	+14.44	−0.41	+14.07	0 48.71
5	Apr. 2	+ 235	9	0 34.70	+.047	+.03	+14.41	−0.40	+14.04	48.74
23	Apr. 6	+ 140	9	0 34.94	+.028	+.01	+14.14	−0.34	+13.81	48.75
	Apr. 17	+ 150	9	0 37.21	+.030	+.01	+11.62	−0.19	+11.44	48.65
	Apr. 21	+ 058	9	0 38.10	+.012	+.01	+10.81	−0.13	+10.69	48.79
										48.728
										±.036

P(78) 265
B.A.C. 3121 L = 9h 2m 26.25s δ = −25° 20′ 33″ (z = +67 43 22) K = −.017 tang. δ = −.47

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Apr. 1	+ 261	9	2 11.96	−.122	−0.14	+14.44	−0.44	+13.86	2 25.82
2	Apr. 2	+ 235	9	2 11.88	−.110	−.13	+14.41	−0.42	+13.86	25.74
23										25.780

e Mali L = 9h 4m 31.03s δ = −29° 50′ 40″ (z = +72 13 29) K = −.018 tang. δ = −.57

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Apr. 1	+ 261	9	4 17.16	−.148	−0.17	+14.44	−0.47	+13.80	4 30.96
	Apr. 2	+ 235	9	4 17.16	−.133	−.15	+14.41	−0.46	+13.80	30.96
5	Apr. 6	+ 140	9	4 17.40	−.080	−.10	+14.14	−0.39	+13.65	31.05
23	Apr. 17	+ 150	9	4 19.66	−.085	−.10	+11.62	−0.19	+11.33	30.99
	Apr. 21	+ 058	9	4 20.42	−.033	−.05	+10.81	−0.12	+10.64	31.06
										31.004
	Δα = −0.002	Δδ = +0.59		+3.1265						±.038

θ Hydrae L = 9h 7m 42.22s δ = +2° 51′ 10″ (z = +39 31 39) K = −.015 tang. δ = +.05

	Date	n	τs	τm	n tang δ	d.T	Red 1872	Sum	A.R. 1872.0
1872	Apr. 1	+ 261	9	7 28.22	+.013	−0.00	+14.44	−0.44	+14.00	7 42.22
	Apr. 2	+ 235	9	7 28.25	+.011	−.00	+14.41	−0.42	+13.99	42.24
7	Apr. 6	+ 140	9	7 28.46	+.007	−.01	+14.14	−0.37	+13.76	42.22
23	Apr. 17	+ 150	9	7 30.82	+.007	−.01	+11.62	−0.22	+11.39	42.21
	Apr. 21	+ 058	9	7 31.59	+.002	−.01	+10.81	−0.16	+10.64	42.23
	Apr. 23	+ 065	9	7 32.19	+.003	−.01	+10.20	−0.14	+10.05	42.24
	Apr. 29	+ 045	9	7 33.34	+.002	−.01	+8.92	−0.05	+8.86	42.20
										42.223
										±.010

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1872phae.proj.1459.

$\delta_0 = +99\ 55\ 43.0$ — Moon — $w + l + y + n$ — $+.79\ +1.24$

Tim – TS Circle Read. Sed. Horizne Circle Read. — $B + T + \gamma$ — 1.955530_m

	s	′	″		″	′	″	′	″		′	″													
+27.3	28	48.00	+	6.19	28	54.19	+53	54.16	+	0330.7	+1	37.35	+.02	+.07	−.19	+.67	+18.90	+1.88	+28.45	55	43.0
−29.1	28	52.15	−	6.60	28	45.55	54	2.80	+	2035	1	34.54	.02	.08	−.04	+.83	+20.10	+2.04	+25.01		44.3
+35.2	28	37.05	+	7.98	28	45.03	54	3.32	+	1645	1	33.70	.02	.11	−.04	+.86	+20.80	+2.07	+24.39		42.7
+37.1	28	34.55	+	8.41	28	42.96	54	5.39	+	1776	1	33.98	.01	.13	−.04	+.88	+21.00	+2.09	+24.76		48.2
+35.0	28	34.95	+	8.62	28	43.57	54	4.78	+	1393	1	33.16	.01	.14	−.04	+.89	+21.10	+2.10	+24.61		43.6
+14.7	28	37.75	+	3.33	28	41.08	+54	7.27	+	1291	+1	32.94	+.01	+.02	−.04	+.77	+21.50	+1.98	+24.69		45.4

Rm Red to Rm 18720 — Rm ± Res Mg. — ± 5 18720

±.016 — −13.959 — 37.62 — 44.03 — 41.587 — ±.086

$\delta_0 = +47\ 39\ 37.6$ — $\sin z = -.09$ — 0.72600_m

39 18.72 −33.1	43	14.50	+	3.04	43	34.91	+39	13.44	+	0330.7	+0	5.74	−.30	−.16	−.38	−8.40	−0.25	+28.45	39	39.0
23.72 +25.5	43	52.50	−	22.54	43	27.96	39	18.39	+	1776		5.54	.17	−.04	−.13	−10.00	−0.00	+24.76		38.7
23.15 +2.1	43	32.40	−	1.86	43	30.54	39	17.81	+	1393		5.50	.12	−.04	−.08	−10.10	+0.05	+24.61		37.9
15.57 +24.7	43	59.90	−	21.83	43	38.07	+39	10.28	+	0757	+	5.42	−.17	+.04	−.05	−11.70	+0.08	+23.27		37.4

−14.201 — 5.07 — 38.25

$\delta_0 = +67\ 39\ 5.1$ — $\sin z = -.43$ — 1.43410_m

38 49.73 +35.0	44	44.95	−	17.47	44	27.48	+38	20.87	+	0331.6	+0	29.33	−.34	−.23	−.08	−13.10	+0.53	+28.45	39	6.1
53.73 +46.2	44	45.75	−	23.11	44	22.64	38	25.41	+	2045		28.48	.41	−.05	−.07	−14.20	+0.54	+25.01		5.5
55.69 +37.6	44	39.45	−	18.76	44	20.69	38	27.66	+	1881		28.36	.28	−.05	+.06	−14.40	+0.67	+24.77		7.1
52.73 −7.8	44	18.15	+	3.64	44	21.79	38	26.56	+	1645		28.22	.01	−.04	+.34	−13.10	+0.95	+24.39		5.0
55.50 +48.7	44	44.95	−	24.30	44	20.65	38	27.70	+	1789		28.31	.46	−.05	−.12	−15.30	+0.49	+24.76		6.0
56.35 +38.8	44	36.60	−	19.36	44	19.24	38	29.11	+	1296		27.99	.30	−.05	+.04	−15.80	+0.65	+24.69		6.6
48.54 +46.6	44	50.05	−	23.26	44	26.79	38	21.56	+	0776		27.66	.43	+.05	+.01	−17.10	+0.62	+33.27		6.0
46.15 +4.9	44	29.75	−	2.46	44	27.29	38	21.06	+	0187		27.05	.00	+.04	+.43	−17.40	+1.04	+33.84		5.6
46.56 +21.1	44	38.10	−	10.54	44	27.56	+38	20.79	+	0891	+	27.73	−.09	+.13	+.43	−17.80	+1.04	+34.23		6.0

5.99 — ±.037

±.012

$\delta_0 = +11\ 10\ 54.6$ — 1.54220 — $-.48\ -.75$

+19.8	12	6.75	−	25.49	11	43.26	+11	5.09	+	01645	−0	36.19	−.04	−.02	−.54	+1.46	−1.29	+24.39	10	53.5
+15.6	12	3.70	−	20.08	11	43.62	11	4.73	+	1789		36.31	.02	−.02	−.52	+1.42	−1.27	+24.76		53.3
+17.0	12	6.00	−	21.89	11	44.11	11	4.24	+	1296		35.91	.03	+.02	−.49	+1.23	−1.24	+24.69		53.0
+12.6	12	14.00	−	21.37	11	52.63	+11	55.72	+	0776	−	35.48	−.03	+.02	−.49	+0.76	−1.24	+33.27		53.0

53.20

±.035

$\delta_0 = -25\ 20\ 38.1$ — 2.14413 — $-.86\ -1.33$

−6.8	41	24.25	+	8.05	41	33.30	−18	43.95	+	01645	−2	24.74	−.05	+.01	−.01	−.86	+10.82	−2.19	+24.39	20	35.7
−9.9	41	19.70	+	11.73	41	31.63	−18	43.28	+	1802	−2	25.26	−.04	+.02	−.01	−.85	+11.90	−2.18	+24.76		34.1

34.90

$\delta_0 = -29\ 50\ 40.2$ — 2.24832 — $-.88\ -1.37$

+18.7	11	17.50	−	21.29	10	56.61	−48	8.26	+	01645	−3	3.98	−.09	+.08	−.01	−.81	+11.59	−2.18	+24.39	50	38.5
−1.3	10	54.50	+	1.48	10	55.98	48	7.63	+	1803	3	4.65	.06	.00	−.01	−.89	+11.69	−2.26	+24.76		38.2
+28.0	11	33.95	−	31.88	11	2.07	48	13.72	+	1301	3	2.53	.04	.18	−.02	−.72	+12.04	−2.09	+24.69		41.6
+10.4	11	22.00	−	11.84	11	10.16	48	21.81	+	0795	2	0.42	.02	.03	+.01	−.84	+12.71	−2.21	+33.27		37.5
+18.0	11	33.60	−	20.50	11	13.10	−48	24.75	−	0173	−2	56.44	−.03	+.08	+.02	−.78	+12.84	−2.15	+33.84		36.7

38.70 — ±1.10

±.033 — −111.970 — 9.87 — 9.9

$\delta_0 = +2\ 51\ 9.9$ — $\sin z = +.64$ — 1.67630 — $-.59\ -.91$

50 44.22 +16.6	31	36.60	−	21.78	31	14.82	+51	33.53	+	01645	−0	44.29	−.00	−.02	−.61	+4.00	−1.52	+24.39	51	11.1
43.24 +18.3	31	39.60	−	23.99	31	15.61	51	32.74	+	1802		44.47	.01	−.02	−.62	+4.00	−1.53	+24.76		10.5
44.37 +2.5	31	18.35	−	3.28	31	15.07	51	33.28	+	1301		45.70	.00	−.01	−.60	+4.00	−1.51	+24.69		10.6
50.99 +17.9	31	47.50	−	23.46	31	24.04	51	24.31	+	0795		45.33	.01	+.02	−.58	+3.70	−1.49	+33.27		11.5
35.71 +12.1	31	41.25	−	15.86	31	25.39	51	22.96	−	0173		47.27	.00	+.02	−.57	+3.60	−1.48	+33.84		11.6
37.35 (−12.7)	31	11.95	+	16.65	31	28.60	51	19.75	+	0887		48.44	.00	+.04	−.55	+3.50	−1.46	+34.45		8.7
33.10 +18.4	31	50.95	−	24.12	31	26.83	+51	21.52	+	0907	−	48.46	−.01	+.05	−.55	+3.30	−1.46	+34.23		9.1

±.010 — ±.08 — 10.46

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$\Delta\alpha = +0.073^s$ $\Delta\delta = -1.''66$ +3.7536

Star 38 Lyncis $\alpha = 9^h\ 10^m\ 52.268^s$ $\delta = +37°\ 20'\ 34''$ $k = -.020^s$ tang. $\delta = +.76$

$z = +\ 5\ 2\ 15$

Date	n	T3	Tm	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 1	+ 261	9h	10m 38.41s	+.198	+0.18	+14.44 − 0.66	+13.96	9h 10m 52.37s
Apr. 2	+ 235	9	10 38.43	+.178	+.16	+14.41 − 0.64	+13.93	52.36
Apr. 6	+ 140	9	10 38.73	+.106	+.09	+14.14 − 0.58	+13.65	52.38
7 Apr. 17	+ 150	9	10 41.01	+.114	+.09	+11.62 − 0.40	+11.31	52.32
23 Apr. 21	+ 058	9	10 41.84	+.044	+.02	+10.81 − 0.32	+10.51	52.35
Apr. 23	+ 065	9	10 42.38	+.049	+.03	+10.20 − 0.29	+9.94	52.32
Apr. 29	+ 045	9	10 43.53	+.034	+.01	+8.92 − 0.17	+8.76	52.29
								52.341
								±.025

$\Delta\alpha = -0.058^s$ $\Delta\delta = -1.''04$ +3.3582

83 Cancri $\alpha = 9^h\ 11^m\ 50.113^s$ $\delta = +18°\ 04'\ 47''$ $k = -.016^s$ tang. $\delta = +.33$

$z = +\ 24\ 8\ 2$

1872 Apr. 1	+ 261	9	11 36.05	+.086	+0.07	+14.44 − 0.51	+13.90	11 50.05
Apr. 2	+ 235	9	11 36.09	+.077	+.06	+14.41 − 0.50	+13.97	50.06
4 Apr. 17	+ 150	9	11 38.67	+.049	+.03	+11.62 − 0.29	+11.36	50.03
23 Apr. 23	+ 065	9	11 40.06	+.021	+.01	+10.20 − 0.19	+10.02	50.08
								50.055

$\Delta\alpha = +0.022^s$ $\Delta\delta = -0.''51$ +3.6721

40 Lyncis $\alpha = 9^h\ 13^m\ 15.034^s$ $\delta = +34°\ 55'\ 53''$ $k = -.019^s$ tang. $\delta = +.70$

$z = +\ 7\ 26\ 54$

1872 Apr. 1	+ 261	9	13 1.10	+.183	+0.16	+14.44 − 0.65	+13.95	13 15.05
Apr. 2	+ 235	9	13 1.10	+.164	+.15	+14.41 − 0.63	+13.93	15.03
5 Apr. 6	+ 140	9	13 1.43	+.098	+.08	+14.14 − 0.57	+13.65	15.10
23 Apr. 21	+ 058	9	13 4.48	+.041	+.02	+10.81 − 0.32	+10.51	14.99
Apr. 23	+ 065	9	13 5.16	+.046	+.08	+10.20 − 0.28	+9.95	15.11
								15.056
								±.038

h Mali o $\alpha = 9^h\ 15^m\ 49.74^s$ $\delta = -25°\ 25'\ 19''$ $k = -.017^s$ tang. $\delta = -.47$

$z = +\ 67\ 48\ 8$

1872 Apr. 6	+ 140	9	15 36.05	−.065	−0.08	+14.14 − 0.43	+13.63	15 49.68
Apr. 19	+ 173	9	15 38.80	−.081	−.10	+11.11 − 0.21	+10.80	49.60
4 Apr. 21	+ 058	9	15 39.03	−.027	−.04	+10.81 − 0.12	+10.65	49.68
23 Apr. 29	+ 045	9	15 40.80	−.021	−.04	+8.92 + 0.04	+8.92	49.72
								49.670

$\Delta\alpha = +0.368^s$ $\Delta\delta = +1.''08$ +9.1204

12 Draconis (*) $\alpha = 9^h\ 18^m\ 38.088^s$ $\delta = +81°\ 53'\ 20''$ $k = -.108^s$ tang. $\delta = +7.02$

$z = -\ 39\ 30\ 31$

1872 Mar. 28	+ 306	9	18 27.22	+2.148	+2.04	+15.28 − 5.89	+11.43	18 38.65
Apr. 1	+ 261	9	18 27.61	+1.832	+1.72	+14.44 − 5.44	+10.72	38.33
Apr. 2	+ 235	9	18 27.90	+1.649	+1.54	+14.41 − 5.33	+10.62	38.52
7 Apr. 6	+ 140	9	18 28.37	+0.982	+0.87	+14.14 − 4.88	+10.13	38.50
23 Apr. 19	+ 173	9	18 29.56	+1.214	+1.11	+11.11 − 3.23	+8.99	38.55
Apr. 21	+ 058	9	18 30.12	+.407	+0.30	+10.81 − 2.98	+8.13	38.25
Apr. 29	+ 045	9	18 31.17	+0.315	+0.21	+8.92 − 1.91	+7.22	38.39
								38.456
								±.104

$\Delta\alpha = +0.231^s$ $\Delta\delta = -0.''30$ +2.9492

2 Hydrae $\alpha = 9^h\ 21^m\ 17.827^s$ $\delta = -8°\ 6'\ 18''$ $k = -.016^s$ tang. $\delta = -.14$

$z = +\ 50\ 29\ 7$

1872 Apr. 2	+ 235	9	21 3.84	−.032	−0.05	+14.41 − 0.45	+13.91	21 17.75
Apr. 6	+ 140	9	21 4.24	−.019	−.03	+14.14 − 0.41	+13.70	17.94
4 Apr. 21	+ 058	9	21 7.26	−.008	−.02	+10.81 − 0.20	+10.59	17.85
23 Apr. 29	+ 045	9	21 9.08	−.006	−.02	+8.92 − 0.09	+8.81	17.89
								17.858

$\Delta\alpha = -0.054^s$ $\Delta\delta = +0.''02$ +5.4331

d Ursae Maj. $\alpha = 9^h\ 23^m\ 7.420^s$ $\delta = +70°\ 23'\ 27''$ $k = -.043^s$ tang. $\delta = +2.81$

$z = -\ 28\ 0\ 38$

1872 Mar. 28	+ 306	9	22 53.58	+.859	+0.82	+15.28 − 2.37	+13.73	23 7.31
Apr. 1	+ 261	9	22 54.37	+.733	+.69	+14.44 − 2.20	+12.93	7.30
Apr. 2	+ 235	9	22 54.45	+.660	+.62	+14.41 − 2.16	+12.87	7.32
7 Apr. 6	+ 140	9	22 54.94	+.393	+.35	+14.14 − 1.98	+12.51	7.45
23 Apr. 17	+ 150	9	22 56.81	+.421	+.38	+11.62 − 1.44	+10.56	7.37
Apr. 19	+ 173	9	22 57.12	+.486	+.44	+11.11 − 1.34	+10.21	7.33
Apr. 21	+ 058	9	22 57.79	+.162	+.12	+10.81 − 1.24	+9.69	7.48
								7.366
								±.053

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1872phae.proj.1459.

$\delta_0 = +37^\circ\ 20'\ 34.0$ — −14.925 / 32.99 — sin z = +.09 — 4+lyr 3 — −.08 −.13

Tm − 75 Circle Read. Red Morning Circle Read. — Corr. — B+17+8 — 0.70520 — λ−γ — Rm Ro — Rf Rm Red to Ro 18720 — Rm + Ro + Rf. — I δ 1872.0

	s	′	″	″	′	″	″	″	″	″	″	″	″	″	″	′	″		
20	15.08 +22.1	2	50.90	−23.05	2	27.85	+20	20.50 +	01645	−0	5.27	−.12	−.03	−.23	−6.40	−0.36	+24.39	20	32.9
	14.27 +25.6	2	53.30	−26.71	2	28.59	20	19.76 +	1815		5.29	.17	−.03	−.28	−6.50	−0.41	+24.76		32.4
	14.18 +22.6	2	52.35	−23.58	2	28.77	20	19.58 +	1307		5.23	.14	−.03	−.25	−6.90	−0.38	+24.69		31.8
	7.44 +21.9	2	58.50	−22.85	2	35.65	20	12.70 +	0814		5.17	.12	+.03	−.17	−8.00	−0.30	+33.27		32.6
	6.20 +17.4	2	55.20	−18.15	2	37.05	20	11.30 −	0159		5.05	.08	+.03	−.13	−8.30	−0.26	+33.84		31.5
	7.33 −18.1	2	20.10	+15.75	2	35.85	20	12.50 +	0915		5.18	.06	+.07	−.07	−8.50	−0.20	+34.45		33.0
	+3.2	2	39.55	+3.34	2	42.89	+20	5.46 +	0923	−	5.18	−.00	+.08	.00					

32.93 ±.045

±.020

$\delta_0 = +18\ 14\ 47.3$ — −15.029 / 47.31 — sin z = +.41 — 1.41140 — −.37 −.58

14	23.36 +10.7	8	11.50	−13.34	7	58.16	+14	50.19 +	01645	−0	26.78	−.02	−.03	−.42	−0.60	−1.00	+24.39	14	46.2
	23.66 +6.4	8	5.75	−7.98	7	57.77	14	50.58 +	1815		26.88	.01	−.02	−.41	−0.60	−0.99	+24.76		46.9
	15.42 +18.7	8	29.95	−23.31	8	6.64	14	41.71 +	0814		26.27	.05	+.03	−.39	−1.50	−0.97	+33.27		46.2
	14.21 +11.2	8	21.85	−13.96	8	7.89	+14	40.46 +	0915	−	26.33	−.02	+.10	−.29	−1.90	−0.87	+34.45		45.8

46.27

$\delta_0 = +34\ 55\ 53.5$ — −14.980 / 55.46 — sin z = +.13 — 0.57640 — −.11 −.19

55	36.69 +16.3	27	21.30	−17.54	27	3.76	+55	44.59 +	01645	−0	7.81	−.07	−.02	−.20	−5.50	−0.39	+24.39	55	55.3
	36.52 −4.2	26	59.45	+4.52	27	3.97	55	44.38 +	1815		7.84	.00	−.02	−.13	−5.60	−0.32	+24.76		55.4
	36.28 −19.8	26	42.80	+31.40	27	4.20	55	44.15 +	1307		7.75	.10	−.02	−.23	−6.00	−0.42	+24.69		54.8
	28.26 −9.5	27	2.35	+10.23	27	12.58	55	35.77 −	0159		7.50	.03	+.02	−.12	−7.40	−0.31	+33.84		54.4
	−2.7	27	19.15	+22.27	27	41.42	+55	6.93 +	0915	−	7.68	−.11	+.07	−.15	−7.60	−0.34	+34.45		

54.95

±.031

$\delta_0 = -25\ 25\ 18.8$ — 2.1453 — −.86 −1.33

	+18.8	46	40.85	−22.23	46	18.62	−23	30.27 +	01312	−2	21.20	−.02	+.08	−.02	−.80	+11.03	−2.13	+24.69	25	20.9
	+20.9	46	53.85	−24.72	46	29.13	23	40.78 +	0505	2	21.54	.02	.09	+.02	−.75	+11.73	−2.08	+34.37		18.3
	+16.8	46	50.90	−19.87	46	31.03	23	42.68 −	0145	2	19.44	.01	.06	+.02	−.78	+11.79	−2.11	+33.84		18.8
	−22.3	46	4.00	+26.38	46	30.38	−23	42.03 +	0939	−2	22.96	−.01	+.10	+.03	−.73	+11.85	−2.06	+34.23		21.0

19.70

$\delta_0 = +81\ 53\ 19.9$ — −15.291 / 19.92 — sin z = −.64 — 1.67600n — +.60 +.91

		84	47.25												16.4				
53	11.95 +12.95	30	49.05	−23.76	30	25.29	+52	23.06 +	01645	+0	49.26	−.36	−.01	+.23	−17.00	+1.14	+24.39	53	20.8
	11.95 +12.5	30	47.70	−22.30	30	25.58	52	22.77 +	1828		49.46	.37	−.01	+.32	−17.20	+1.23	+24.76		21.0
	12.56 +9.4	30	41.05	−18.47	30	22.55	52	25.81	1312		48.88	.11	−.01	+.48	−17.90	+1.39	+24.69		22.9
53	5.00 +5.0	30	40.35	−9.28	30	31.07	52	17.18 +	0520		48.00	.19	+.01	+.42	−19.50	+1.33	+34.37		21.4
	4.19 +6.4	30	42.25	−11.19	30	31.06	52	17.19 −	0145		47.26	.27	+.01	+.34	−19.70	+1.25	+33.84		19.8
	4.58 +3.8	30	39.25	−7.19	30	32.06	+52	16.22 +	0939	+	48.46	−.11	+.01	+.50	−20.20	+1.41	+34.23		20.1

21.00 ±.071

±.015

$\delta_0 = -8\ 6\ 18.4$ — −15.396 / 18.13 — sin z = +.77 — 1.43000 — −.71 −1.11

6	6.53 −7.6	28	14.30	+9.87	28	24.17	−5	35.82 +	01841	−1	12.69	−.00	+.01	−.03	−.73	+6.90	−1.84	+24.76	6	18.7
	4.69 −2.4	28	15.60	+9.61	28	25.21	5	36.86 +	1318	1	11.81	.00	.01	−.03	−.73	+7.00	−1.84	+24.69		18.8
	5.78 +15.9	28	57.40	−24.66	28	36.74	5	48.30 −	0131	1	9.45	.00	.02	+.04	−.65	+7.10	−1.76	+33.84		18.9
	(+12.4)	28	30.10	−16.11	28	13.99	−5	25.64 +	0955	−	11.21	.00	+.01	+.11	−.59	+6.90	−1.70	+34.23	(5	17.4

18.73

$\delta_0 = +70\ 23\ 26.9$ — −15.476 / 26.87 — sin z = −.47 — 1.48580n — +.44 +.67

23	14.95 +17.5	60	13.05	−7.71	0	5.34	+22	43.01 +	01921	+0	31.99	−.05	−.00	+.39	−13.80	+1.06	+24.77	23	27.0
	16.19 +44.6	60	23.25	−19.65	0	3.60	22	44.75 +	1645		31.79	.35	−.00	+.09	−14.60	+0.76	+24.39		27.1
	15.88 −7.8	59	31.35	+32.07	0	3.42	22	44.93 +	1841		31.93	.93	−.05	−.54	−15.10	+0.13	+24.76		26.6
	17.12 −12.6	59	57.20	+5.55	0	2.75	22	45.60 +	1318		31.55	.03	+.00	+.46	−15.40	+1.08	+24.69		27.5
	10.58 +44.6	60	30.40	−21.85	0	8.55	22	39.80 +	0852		31.21	.42	+.00	+.01	−17.10	+0.68	+33.27		27.9
	8.77 +21.5	60	19.95	−9.47	0	10.48	22	37.87 +	0535		30.98	.08	+.00	+.36	−17.30	+1.03	+34.37		27.0
	7.71 +16.2	60	18.25	−7.14	0	11.42	22	37.24 −	0131	+	30.51	−.04	+.00	+.40	−17.60	+1.07	+33.84		25.1

26.89 ±.053

±.017

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$\Delta_1 = +0.010^s$ $\Delta\delta = +0.17''$ +0.7990

Star * B Cephei 26 $\alpha = 21^h\ 26^m\ 39.98^s$ $\delta = 69°\ 59'\ 56.9''$ $k = +.041$ tang $\delta = -2.75$

$-67\ 37\ 16$

	Date	n	T_s	T_m	m tang δ	d.T.	Red 1872.0	Sum	R.R. 1872.0
1872	Mar. 28	+ 306		9h 26m 42.55s	−.841	−0.80	+15.28 + 3.00	+17.48	9h 26m 60.03s
	Apr. 1	+ 261		9 26 43.49	−.717	−.68	+14.44 + 2.76	+16.52	60.01
	Apr. 2	+ 235		9 26 43.47	−.646	−.61	+14.41 + 2.70	+16.50	59.97
8	Apr. 6	+ 140		9 26 43.62	−.385	−.34	+14.14 + 2.47	+16.27	59.89
2.3	Apr. 17	+ 150		9 26 44.99	−.412	−.37	+11.62 + 1.82	+13.07	60.06
	Apr. 19	+ 173		9 26 47.69	−.475	−.43	+11.11 + 1.67	+12.35	60.04
	Apr. 21	+ 058		9 26 47.72	−.159	−.12	+10.81 + 1.55	+12.24	59.96
	Apr. 29	+ 045		9 26 50.08	−.123	−.08	+8.92 + 1.01	+9.85	59.93
									59.986 ± .044

42 Lyncis $\alpha = 9^h\ 30^m\ 27^s.88$ $\delta = +40°\ 49'\ 8''$ $k = -.020$ tang $\delta = +.86$

$z = +\ 1\ 33\ 41$

1872	Mar. 28	+ 306		9 30 7.12	+.263	+0.24	+15.28 − 0.90	+14.62	9 30 21.74
	Apr. 1	+ 261		9 30 7.93	+.224	+.20	+14.44 − 0.84	+13.80	21.73
	Apr. 2	+ 235		9 30 7.90	+.202	+.18	+14.41 − 0.83	+13.76	21.66
6	Apr. 17	+ 150		9 30 10.71	+.129	+.11	+11.61 − 0.56	+11.16	21.87
2.3	Apr. 19	+ 173		9 30 11.08	+.148	+.13	+11.10 − 0.52	+10.71	21.79
	Apr. 21	+ 058		9 30 11.38	+.049	+.07	+10.80 − 0.48	+10.39	21.77
									21.760 ± .046

i Hydrae $\alpha = 9^h\ 33^m\ 19^s.17$ $\delta = -0°\ 33'\ 52''$ $k = .015$ tang $\delta = -.01$

$z = +\ 42\ 56\ 41$

1872	Mar. 28	+ 306		9 33 4.45	−.003	−0.02	+15.28 − 0.58	+14.68	9 33 19.13
	Apr. 1	+ 261		9 33 5.18	−.003	−.02	+14.44 − 0.53	+13.89	19.07
	Apr. 2	+ 235		9 33 5.20	−.002	−.02	+14.41 − 0.52	+13.87	19.07
7	Apr. 6	+ 140		9 33 5.46	−.001	−.02	+14.14 − 0.48	+13.64	19.10
2.3	Apr. 17	+ 150		9 33 7.82	−.001	−.02	+11.61 − 0.34	+11.25	19.07
	Apr. 18	+ 160		9 33 7.90	−.002	−.02	+11.49 − 0.32	+11.15	19.05
	Apr. 29	+ 045		9 33 10.42	−.000	−.01	+8.91 − 0.18	+8.72	19.14
									19.090 ± .026

$\Delta_1 = -0.007^s$ $\Delta\delta = -0.17''$ +3.2080

* O Leonis $\alpha = 9^h\ 34^m\ 19^s.03$ $\delta = +10°\ 28'\ 2''$ $k = .016$ tang $\delta = +.18$

$z = +\ 31\ 54\ 25$

1872	Apr. 1	+ 261		9 34 5.09	+.046	+0.03	+14.44 − 0.56	+13.91	9 34 19.00
	Apr. 6	+ 140		9 34 5.40	+.025	+.01	+14.14 − 0.51	+13.64	19.04
4	Apr. 17	+ 150		9 34 7.77	+.027	+.01	+11.61 − 0.37	+11.25	19.02
2.3	Apr. 18	+ 160		9 34 7.88	+.028	+.01	+11.49 − 0.36	+11.14	19.02
									19.020

φ Leonis $\alpha = 9^h\ 36^m\ 45^s.54$ $\delta = +14°\ 36'\ 22''$ $k = .016$ tang $\delta = +.26$

$z = +\ 27\ 46\ 27$

1872	Apr. 1	+ 261		9 36 31.64	+.067	+0.05	+14.44 − 0.60	+13.89	9 36 45.53
	Apr. 2	+ 235		9 36 31.65	+.061	+.05	+14.41 − 0.59	+13.87	45.52
	Apr. 6	+ 140		9 36 31.91	+.036	+.02	+14.14 − 0.54	+13.62	45.53
7	Apr. 17	+ 150		9 36 34.25	+.039	+.02	+11.61 − 0.40	+11.23	45.48
2.3	Apr. 18	+ 160		9 36 34.41	+.041	+.02	+11.49 − 0.39	+11.12	45.53
	Apr. 21	+ 058		9 36 35.07	+.015	−.00	+10.80 − 0.35	+10.45	45.52
	Apr. 29	+ 045		9 36 36.89	+.011	−.01	+8.91 − 0.24	+8.66	45.50
									45.523 ± .014

$\Delta_1 = +0.013^s$ $\Delta\delta = -0.53''$ +34.180

* ε Leonis $\alpha = 9^h\ 38^m\ 34^s.91$ $\delta = +24°\ 2'\ 48''$ $k = .017$ tang $\delta = +.45$

$z = +\ 18\ 1\ 5$

1872	Mar. 28	+ 306		9 38 20.29	+.137	+0.12	+15.28 − 0.72	+14.68	9 38 34.97
	Apr. 1	+ 261		9 38 21.06	+.117	+.10	+14.44 − 0.67	+13.87	34.93
	Apr. 2	+ 235		9 38 21.08	+.105	+.09	+14.41 − 0.66	+13.84	34.92
8	Apr. 6	+ 140		9 38 21.32	+.063	+.05	+14.14 − 0.61	+13.58	34.90
2.3	Apr. 17	+ 150		9 38 23.74	+.067	+.05	+11.61 − 0.46	+11.20	34.94
	Apr. 18	+ 160		9 38 23.78	+.072	+.05	+11.49 − 0.45	+11.09	34.87
	Apr. 21	+ 058		9 38 24.51	+.026	+.01	+10.80 − 0.40	+10.41	34.92
	Apr. 29	+ 045		9 38 26.31	+.020	+.00	+8.91 − 0.29	+8.62	34.93
									34.929 ± .018

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+15.705
55.64

$\delta_0 = 110\ 00\ 41'$ sin z = −.92 μ + lytyn +.86 +1.33

Com. B + 747 2.14199m

Pm – TS	Circle Read.			Red. Normal	Circle Read.																															
	s	′	″		″	′	″		″	′	″		″		″		″		″		″		″		″		″		″		″		″		″	
5.07	+19.7	25	7.50	+	8.84	25	16.34	+57	32.01	+	01921	+2	24.95	+.04	+.07	−.00	+.93	−1.10	+2.26	+24.77	0	49														
55.09	+14.3	25	10.95	+	6.42	25	17.37	57	30.98	+	1645	2	24.03	.05	.03	−.00	+.89	1.80	+2.22	+24.39		1.9														
57.32	−46.7	25	34.05	−	18.27	25	15.78	57	32.57	+	1843	2	24.68	.04	.29	−.00	+1.15	2.00	+2.48	+24.76		4.5														
56.44	+5.2	25	12.55	+	2.33	25	14.88	57	33.47	+	1318	2	22.95	.02	.01	−.00	+.87	2.60	+2.20	+24.69		2.7														
4.98	+45.0	25	6.95	+	20.20	25	21.15	57	27.20	+	0852	2	21.42	.01	.35	+.00	+1.21	2.80	+2.54	+33.27		2.6														
5.90	−58.2	24	47.40	+	26.12	25	21.28	57	25.07	+	0535	2	20.39	.02	.42	+.00	+1.28	3.40	+2.61	+34.37		2.7														
45.56	+17.5	25	13.25	+	7.86	25	21.11	57	27.24	−	0131	2	18.26	.01	.05	+.00	+.91	2.90	+2.24	+33.84		(57.7)														
48.77	+38.8	25	4.20	+	17.41	25	21.61	+57	26.74	+	0955	+2	21.76	+.00	+.27	+.00	+1.13	2.30	+2.46	+34.23		3.0														

±.015 3.19 ±0.80

$\delta_0 = +40\ 48\ 47.8$ 0.19670 −.02 −.04

	−11.0	34	8.05	+	10.93	34	18.98	+46	29.37	+	01931	−0	1.65		−.03	−.04	−.09	−6.07	−0.13	+24.77	48	46.3														
	−8.7	34	17.10	+	0.69	34	17.79	48	30.56	+	1645		1.63		.00	−.04	−.06	−6.64	−0.10	+24.39		46.6														
	−12.5	34	5.65	+	12.41	34	18.06	48	30.29	+	1845		1.64		.05	−.04	−.11	−6.79	−0.15	+24.76		46.5														
	+22.1	34	(46.90)	−	21.95	34	24.95	48	23.10	+	0872		1.61		.13	+.04	−.11	−8.67	−0.15	+33.27		46.2														
	+26.9	34	52.55	+	26.71	34	25.84	48	22.57	+	0550		1.59		.20	+.05	−.17	−8.89	−0.21	+34.37		46.2														
	+25.0	34	50.00	−	24.82	34	25.18	+48	23.17	−	0117	−	1.57		−.17	+.05	−.14	−9.10	−0.18	+33.84		46.2														

±.035 46.33 ±0.12

$\delta_0 = -0\ 33\ 47.3$ 1.72840 −.62 −.98

	+21.0	56	34.90	−	26.24	56	8.66	−33	20.31	+	01941	−0	55.95		+.00	−.02	−.65	+4.97	−1.63	+24.77	33	48.2														
	+25.8	56	42.55	−	33.86	56	8.69	33	20.34	+	1645		55.57		.00	−.02	−.65	+4.99	−1.63	+24.39		48.2														
	+17.1	56	31.30	−	22.45	56	8.86	33	20.51	+	1868		55.86		.00	−.02	−.65	+5.00	−1.63	+24.76		48.2														
	+18.4	56	33.50	−	24.14	56	9.36	33	21.01	+	1329		55.16		.00	−.02	−.65	+5.01	−1.63	+24.69		48.5														
	+15.8	56	38.15	−	20.73	56	17.42	33	29.07	+	0891		54.62		.00	+.02	−.61	+4.85	−1.59	+33.27		47.2														
	+2.2	56	20.80	−	2.89	56	17.91	33	29.56	+	0563		54.20		.00	+.01	−.62	+4.83	−1.60	+33.19		47.3														
	+18.2	56	42.05	−	23.87	56	18.18	33	29.83	+	0987	−	54.74		+.00	+.05	−.58	+4.49	−1.56	+34.23		47.4														

±.026 47.80 ±0.39

−16.172
23.82

$\delta_0 = +10\ 28\ 23.8$ sin z = +.53 1.55410 −.49 −.76

58.32	+21.0	54	38.55	−	25.81	54	12.74	+28	35.61	+	01645	−0	37.20		−.04	−.05	−.54	+2.10	−1.34	+24.39	28	23.6														
58.71	+16.6	54	34.10	−	21.42	54	12.68	28	35.67	+	1329		36.93		.03	−.05	−.57	+1.90	−1.33	+24.69		24.0														
50.00	+20.3	54	48.00	−	26.20	54	21.80	28	26.55	+	0891		36.56		.04	+.05	−.48	+1.40	−1.24	+33.27		23.5														
50.35	+5.5	54	25.85	−	7.10	54	21.75	+28	26.60	+	0563	−0	36.29		−.00	+.04	−.45	+1.30	−1.21	+33.19		23.6														

23.65

$\delta_0 = +14\ 36\ 21.2$ 1.41150 −.44 −.67

	+21.1	46	47.80	−	26.79	46	21.01	+36	27.34	+	01645	−0	31.47		−.06	−.02	−.52	+1.02	−1.19	+24.39	36	20.1														
	+19.7	46	45.50	−	25.01	46	20.49	36	27.86	+	1868		31.63		.05	−.02	−.51	+0.96	−1.18	+24.76		20.8														
	−3.8	46	15.75	+	4.82	46	20.57	36	27.78	+	1329		31.24		.00	−.01	−.45	+0.73	−1.12	+24.69		20.8														
	+16.7	46	50.90	−	21.21	46	29.69	36	18.60	+	0891		30.93		.04	+.02	−.46	+0.06	−1.13	+33.27		19.5														
	+19.3	46	(53.15)	−	24.51	46	28.64	36	19.71	+	0563		30.70		.05	+.01	−.48	+0.00	−1.15	+33.19		21.0														
	+18.3	46	52.60	−	23.24	46	29.36	36	18.90	−	0103		30.23		.04	+.02	−.46	−0.18	−1.13	+33.84		21.3														
	+19.7	46	48.95	−	18.67	46	30.28	+36	18.07	+	0987	−0	31.00		−.04	+.05	−.43	−0.72	−1.10	+34.23		19.5														

±.014 20.49 ±0.51

−16.380
44.04

$\delta_0 = +24\ 21\ 44.0$ sin z = +.31 1.27240 −.29 −.44

20.92	+17.8	1	29.05	−	21.28	1	7.77	+21	40.58	+	01941	−0	19.58		−.07	−.01	−.37	−1.40	−0.81	+24.77	21	43.6														
22.02	+14.2	1	23.80	−	16.97	1	6.83	21	41.52	+	1645		19.45		.04	−.01	−.34	−1.70	−0.78	+24.39		44.0														
20.98	+21.4	1	33.30	−	25.58	1	7.72	21	40.63	+	1868		19.54		.09	−.02	−.40	−1.80	−0.84	+24.76		43.2														
20.60	+18.7	1	30.70	−	22.36	1	8.34	21	40.01	+	1329		19.31		.08	−.02	−.39	−2.20	−0.83	+24.69		42.4														
13.46	+17.3	1	36.40	−	20.68	1	15.72	21	32.63	+	0891		19.11		.06	+.02	−.33	−3.10	−0.77	+33.27		42.9														
15.23	+22.4	1	44.85	−	26.78	1	14.07	21	34.28	+	0563		18.97		.10	+.02	−.37	−3.20	−0.81	+33.19		44.5														
14.67	+5.6	1	21.70	−	6.69	1	15.01	21	33.34	−	0103		18.68		.00	+.01	−.28	−3.40	−0.72	+33.84		44.4														
13.72	+7.4	1	24.35	−	8.84	1	15.51	+21	32.84	+	0987	−	19.15		−.01	+.04	−.26	−4.10	−0.70	+34.23		43.7														

±.016 43.51 ±0.55

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43

$\Delta\alpha = -0.094^s$ $\Delta\delta = +1.52''$ +0.8058

Stan. ✱ 11 Cephei L.6. $\alpha = 21^h\ 40^m\ 25.354^s$ $\delta = +70°\ 43'\ 7.99''$ $k = +.044$ tang. $\delta = -2.84$

−66 53 52

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	δ R. 1872.0
1872	Mar. 28	+ 306	9h	39m 44.42s	−.869	−0.82	+15.28 +3.24	+17.70	9h 41m 2.12
	Apr. 1	+ 261	9	39 45.47	−.741	−.70	+14.44 +3.02	+16.76	2.23
5	Apr. 18	+ 160	9	39 49.34	−.454	−.41	+11.49 +2.02	+13.10	2.44
2.3	Apr. 21	+ 058	9	39 49.68	−.164	−.12	+10.80 +1.82	+12.50	2.18
	Apr. 29	+ 045	9	39 52.22	−.127	−.08	+8.91 +1.28	+10.11	2.33
									2.260 ±.094

$\Delta\alpha = -0.041^s$ $\Delta\delta = +0.96''$ +4.3289

✱ 7 Ursae Majoris $\alpha = 9^h\ 41^m\ 52.106^s$ $\delta = +59°\ 38'\ 20''$ $k = -.030$ tang. $\delta = +1.70$

$z = -17\ 15\ 31$

1872	Mar. 28	+ 306	9	41 37.92	+.520	+0.49	+15.28 −1.62	+14.15	41 52.07
	Apr. 1	+ 261	9	41 38.80	+.444	+.41	+14.44 −1.52	+13.33	52.13
4	Apr. 2	+ 235	9	41 38.78	+.399	+.37	+14.41 −1.50	+13.28	52.06
2.3	Apr. 6	+ 140	9	41 39.05	+.238	+.21	+14.14 −1.40	+12.95	52.00
									52.065

9 Ursae Majoris $\alpha = 9^h\ 43^m\ 23.00^s$ $\delta = +54°\ 39'\ 39''$ $k = -.026$ tang. $\delta = +1.41$

$z = -12\ 16\ 50$

1872	Apr. 2	+ 235	9	43 9.55	+.331	+0.30	+14.41 −1.30	+13.41	43 22.96
	Apr. 18	+ 160	9	43 12.12	+.226	+.20	+11.49 −0.93	+10.76	22.88
4	Apr. 21	+ 058	9	43 12.92	+.081	+.06	+10.80 −0.85	+10.01	22.93
2.3	Apr. 29	+ 045	9	43 14.50	+.063	+.04	+8.91 −0.64	+8.31	22.81
									22.895

$\Delta\alpha = +0.031^s$ $\Delta\delta = -0.66''$ +3.4236

✱ 11 Leonis $\alpha = 9^h\ 45^m\ 28.739^s$ $\delta = +26°\ 36'\ 31''$ $k = -.017$ tang. $\delta = +.50$

$z = +15\ 46\ 18$

1872	Apr. 1	+ 261	9	45 14.94	+.130	+0.11	+14.44 −0.73	+13.82	45 28.76
	Apr. 2	+ 235	9	45 14.98	+.117	+.10	+14.41 −0.72	+13.79	28.77
6	Apr. 6	+ 140	9	45 15.22	+.070	+.05	+14.14 −0.67	+13.52	28.74
2.3	Apr. 17	+ 150	9	45 17.65	+.075	+.06	+11.61 −0.51	+11.16	28.81
	Apr. 18	+ 160	9	45 17.74	+.080	+.06	+11.49 −0.50	+11.05	28.79
	Apr. 29	+ 045	9	45 20.17	+.022	+.01	+8.91 −0.34	+8.58	28.75
									28.770 ±.018

$\Delta\alpha = +0.093^s$ $\Delta\delta = +0.24''$ +5.5236

✱ Groom. 1586 $\alpha = 9^h\ 46^m\ 52.987^s$ $\delta = +73°\ 29'\ 10''$ $k = -.053$ tang. $\delta = +3.37$

$z = -31\ 6\ 21$

1872	Apr. 1	+ 261	9	46 40.90	+.879	+0.83	+14.44 −3.05	+12.22	46 53.12
	Apr. 6	+ 140	9	46 41.27	+.472	+.42	+14.14 −2.81	+11.76	53.02
	Apr. 17	+ 150	9	46 42.28	+.505	+.45	+11.61 −2.21	+9.85	53.13
8	Apr. 18	+ 160	9	46 43.30	+.539	+.49	+11.49 −2.15	+9.83	53.13
2.3	Apr. 19	+ 173	9	46 43.38	+.583	+.53	+11.10 −2.09	+9.54	52.92
	Apr. 21	+ 058	9	46 44.14	+.195	+.14	+10.80 −1.98	+8.96	53.10
	Apr. 26	− 030	9	46 45.22	−.101	−.15	+9.76 −1.68	+7.93	53.15
	Apr. 27	+ 040	9	46 45.01	+.135	+.08	+9.60 −1.62	+8.06	53.07
									53.080 ±.041

B.A.C. 3398 $\alpha = 9^h\ 49^m\ 38.76^s$ $\delta = +9°\ 32'\ 20''$ $k = -.016$ tang. $\delta = +.17$

$z = +32\ 50\ 29$

1872	Apr. 1	+ 261	9	49 24.88	+.044	+0.03	+14.44 −0.63	+13.84	49 38.72
	Apr. 2	+ 235	9	49 24.96	+.039	+.02	+14.41 −0.62	+13.81	38.77
	Apr. 6	+ 140	9	49 25.13	+.023	+.01	+14.14 −0.58	+13.57	38.70
7	Apr. 17	+ 150	9	49 27.55	+.025	+.01	+11.61 −0.45	+11.17	38.72
2.3	Apr. 18	+ 160	9	49 27.61	+.027	+.01	+11.49 −0.44	+11.06	38.67
	Apr. 19	+ 173	9	49 28.00	+.029	+.01	+11.10 −0.42	+10.69	38.69
	Apr. 26	− 030	9	49 29.30	−.005	−.02	+9.76 −0.33	+9.41	38.71
									38.711 ±.020

σ^2 Hydrae $\alpha = 9^h\ 58^m\ 53.52^s$ $\delta = -12°\ 26'\ 40''$ $k = -.016$ tang. $\delta = -.22$

$z = +54\ 49\ 29$

1872	Apr. 17	+ 150	9	58 42.40	−.033	−0.05	+11.61 −0.45	+11.11	58 53.51
	Apr. 18	+ 160	9	58 42.51	−.035	−.05	+11.49 −0.44	+11.00	53.51
6	Apr. 23	+ 065	9	58 43.81	−.014	−.03	+10.19 −0.38	+9.78	53.59
2.3	Apr. 27	+ 040	9	58 44.25	−.009	−.03	+9.60 −0.32	+9.25	53.50
	Apr. 29	+ 045	9	58 44.94	−.009	−.02	+8.91 −0.30	+8.59	53.53
	Apr. 30	+ 055	9	58 45.04	−.012	−.03	+8.71 −0.28	+8.40	53.44 ±.028

53.513

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+16.510
19.94

$\delta_0 = +70^\circ\ 42'$ (+109 16 40.1) — Sin z = −.92 μ + lgtg z — +.85 +1.32

Tim −7.5 | Circle Read | Red. Horizon | Circle Read. | B+17+γ 2.12657n | Nr−γ | Rm | Rio | RF Rm Red to Rio 18720 | Rm +Rio Adj. | I δ 18720

	s	′	″	″	′	″	″	″	″	″	″	″	″	″	″	′	″
32.14	−19.5	8	44.80	−8.45	8	36.35	+14	12.00+	01951	+2	20.08	+.03	+.07	−.04	+.88	−18.30	+2.20 +24.77	16	40.8
31.19	−25.0	8	47.20	−10.83	8	36.37	14	11.98+	1645	2	19.10	.04	.11	−.04	+.92	−19.00	+2.24 +24.39		38.8
22.96	+17.6	8	33.60	+7.63	8	41.23	14	7.12+	0581	2	15.73	.01	.06	+.04	+.95	−21.30	+2.27 +33.19		37.0
21.93	−21.7	8	49.60	−9.40	8	40.20	14	8.15−	0089	2	13.65	.01	.08	+.04	+.97	−21.50	+2.29 +33.84		36.4
25.10	−21.2	8	49.70	−9.19	8	40.51	+14	7.84+	1003	+2	17.06	.01	+.08	+.11	+1.04	−21.80	+2.36 +34.23		39.7

3854
±0.40

±.031

−14.719
19.81

$\delta_0 = +59\ 38\ 19.8$ — sin z = −.30 — 1.25250n — +.27 +.42

38.59	−14.7	44	51.45	+9.75	45	1.20	+37	47.15+	01951	+0	18.71	−.05	−.05	+.17	−10.40	+0.59	+24.77	38	20.8
6.17	−11.4	44	53.30	+7.56	45	0.86	37	47.49+	1645		18.57	.03	−.05	+.19	−11.10	+0.61	+24.39		20.0
6.69	+23.9	45	16.20	−15.86	45	6.34	37	48.01+	1881		18.68	.14	−.00	+.13	−11.30	+0.55	+24.76		20.7
8.22	+35.1	45	21.55	−23.29	44	58.26	+37	50.09+	1334	+	18.44	−.29	−.00	−.02	−12.00	+0.40	+24.69		21.6

2099

$\delta_0 = +54\ 39\ 39.0$ — 1.09410n — +.19 +.30

−14.3	43	26.45	+10.83	43	37.28	+39	11.07+	01881	+0	13.09	−.05	−.04	+.10	−9.99	+0.40	+24.76	39	39.3
+28.5	44	3.75	−21.62	43	42.13	39	6.22+	0581		12.70	.24	+.04	+.02	−12.50	+0.32	+33.19		39.9
+26.5	44	(3.80)	−20.10	43	43.70	39	4.65−	0099		12.51	.18	+.04	+.05	−12.86	+0.35	+33.84		38.5
+25.6	44	2.30	−19.42	43	42.88	+39	5.47+	1003	+	12.83	−.17	+.12	+.14	−12.73	+0.44	+34.23		39.2

3922

−16.752
30.68

$\delta_0 = +26\ 36\ 30.7$ — sin z = +.27 — 1.21110 — −.25 −.39

36.9.02	+18.2	46	43.70	−21.35	46	22.35	+36	26.00+	01645	−0	16.89	−.07	−.02	−.34	−2.10	−0.73	+24.39	36	30.7
2.96	+19.3	46	45.95	−22.64	46	23.31	36	25.04+	1894		16.98	.08	−.02	−.35	−2.20	−0.74	+24.76		29.9
8.24	+18.8	46	45.30	−22.06	46	23.24	36	25.11+	1340		16.77	.08	−.02	−.35	−2.60	−0.74	+24.69		29.7
0.64	+19.1	46	53.45	−22.41	46	31.04	36	17.31+	0929		16.61	.08	+.02	−.31	−3.70	−0.70	+33.27		29.6
1.31	+18.2	46	51.85	−21.35	46	30.50	36	17.85+	0599		16.49	.07	+.02	−.30	−3.60	−0.69	+33.19		30.1
1.08	+20.2	46	54.30	−23.70	46	30.60	+36	17.75+	1020	−	16.65	−.08	+.06	−.27	−4.60	−0.66	+34.23		30.1

−16.807
10.39

±.016 $\delta_0 = +73\ 29\ 10.4$ — sin z = −.52 — 1.54060n — +.48 +.74

3802
±0.26

	−29.7	54	15.15	+35.04	54	(40.17)	+28	8.16+	01645	+0	36.06	−.14	−.04	+.20	−13.90	+1.04	+24.39		
29.0.27	+27.5	54	33.75	−10.03	54	23.72	28	24.63+	1340		35.81	.12	−.05	+.31	−14.90	+1.05	+24.69	29	11.3
52.84	+17.8	54	37.65	−6.64	54	31.01	28	17.34+	0960		35.50	.05	+.05	+.48	−16.80	+1.22	+33.27		10.5
53.32	+25.1	54	39.55	−9.36	54	30.19	28	18.16+	0599		35.20	.09	+.05	+.44	−16.90	+1.18	+33.19		10.8
51.65	+21.6	54	40.55	−8.07	54	32.48	28	15.87+	0595		35.20	.07	+.05	+.46	−17.10	+1.20	+34.37		9.4
51.19	−26.3	54	(21.95)	+9.79	54	31.74	28	16.61−	0076		34.66	.12	+.04	+.40	−17.80	+1.14	+33.84		8.5
53.16	+68.1	54	53.65	−25.46	54	28.19	28	20.16−	1498		33.55	.69	+.14	−.07	−17.90	+0.67	+35.08		11.6
53.64	+58.0	54	50.85	−21.64	54	29.21	+28	19.14+	1697	+	34.86	−.50	+.14	+.12	−18.00	+0.86	+35.45		12.3

1063
±0.91

±.012

$\delta_0 = +9\ 32\ 20.3$ — 1.56990 — −.51 −.78

	+16.2	50	37.70	−20.96	50	16.74	+32	31.61+	01645	−0	38.58	−.02	−.01	−.54	+2.60	−1.32	+24.39	32	18.7
	+17.2	50	38.70	−22.26	50	16.64	32	31.71+	1894		38.80	.03	−.01	−.55	+2.56	−1.33	+24.76		19.0
	+18.9	50	42.00	−24.46	50	17.54	32	30.81+	1340		38.31	.03	−.01	−.55	+2.40	−1.33	+24.69		18.8
	+15.8	50	46.50	−20.45	50	26.05	32	22.30+	0960		37.98	.02	+.01	−.52	+1.88	−1.30	+33.27		17.2
✓	+17.7	50	49.95	−22.91	50	27.04	32	21.31+	0599		37.66	.03	+.01	−.53	+1.83	−1.31	+33.19		17.4
✓	+23.1	50	58.21	−29.96	50	28.25	32	20.10+	0595		37.66	.05	+.01	−.53	+1.78	−1.33	+34.37		17.3
	−17.6	50	8.05	+22.77	50	30.82	+32	17.53−	1498	−	35.88	−.03	+.00	−.54	+1.39	−1.32	+35.08		16.8

17.96
±0.61

±.020 $\delta_0 = +12\ 26\ 40.6$ — 1.91080n — −.76 −1.17

✓	+13.1	49	6.05	−16.79	48	49.26	−26	0.91+	00968	−1	23.39	−.50	+.01	+.04	−.71	+8.32	−1.88	+33.27	26	44.5
	+12.3	49	0.90	−22.17	48	48.73	26	00.38+	0635	1	22.65	.00	.02	+.04	−.69	+8.33	−1.86	+33.19		43.3
	+15.6	49	8.35	−19.99	48	48.36	26	0.01+	1139	1	23.61	.00	.03	+.12	−.61	+8.38	−1.78	+34.45		42.6
	+17.1	49	15.10	−21.92	48	53.18	26	4.83+	0189	1	21.80	.00	.04	+.13	−.59	+8.39	−1.76	+35.48		44.6
	+17.7	49	13.65	−22.68	48	50.97	26	2.62+	1053	1	23.45	.00	.04	+.13	−.59	+8.37	−1.76	+34.23		45.2
±.027	+17.7	49	13.90	−22.68	48	51.22	−26	2.87+	0644	−1	22.67	−.00	+.04	+.13	−.59	+8.36	−1.76	+35.06		43.8

4402
±0.69

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14

$\Delta\alpha = -0.003^s$ $\Delta\delta = -0.''06$ +32791

Star ✱ Leonis $\alpha = 10^h\ 0^m\ 21.^s08$ $\delta = +17°\ 23'\ 9''$ $k = -.016$ tang. $\delta = +.31$

$z = +24°\ 59'\ 40''$

Date		n	T_s	T_m	n tang. δ	Δδ	Δ.T.	Red 1872	Sum	AR 1872
		s	h	m s	s	s	s	s	s	h m s
1872	Apr. 17	+ 150	10	0 9.97	+.046	+0.03	+11.61	−0.54	+11.10	10 0 21.07
	Apr. 18	+ 160	10	0 10.06	+.049	+.03	+11.49	−0.53	+10.99	21.05
	Apr. 23	+ 065	10	0 11.36	+.020	+.00	+10.19	−0.47	+9.72	21.08
7	Apr. 26	− 030	10	0 11.77	−.009	−.02	+9.76	−0.43	+9.31	21.08
23	Apr. 27	+ 040	10	0 11.92	+.012	−.00	+9.60	−0.42	+9.18	21.10
	Apr. 29	+ 045	10	0 12.56	+.013	−.00	+8.91	−0.39	+8.52	21.08
	Apr. 30	+ 055	10	0 12.72	+.017	+.00	+8.71	−0.38	+8.33	21.05
										21.073 ±.01.32

$\Delta\alpha = -0.003^s$ $\Delta\delta = -1.''37$ +3.2019

✱ 2 Leonis $\alpha = 10^h\ 1^m\ 33.^s18$ $\delta = +12°\ 35'\ 30''$ $k = -.016$ tang. $\delta = +.22$

$z = +29°\ 47'\ 19''$

1872	Apr. 17	+ 150	10	1 22.07	+.033	+0.02	+11.61	−0.51	+11.12	1 33.19
	Apr. 18	+ 160	10	1 22.15	+.035	+.02	+11.49	−0.50	+11.01	33.16
	Apr. 23	+ 065	10	1 23.47	+.014	−.00	+10.19	−0.44	+9.75	33.22
8	Apr. 25	+ 070	10	1 23.54	+.015	−.00	+10.05	−0.42	+10.63	33.17
23	Apr. 26	− 030	10	1 23.80	−.006	−.02	+9.76	−0.41	+9.33	33.13
	Apr. 27	+ 040	10	1 23.99	+.009	−.01	+9.60	−0.39	+9.20	33.19
	Apr. 29	+ 045	10	1 24.68	+.009	−.01	+8.91	−0.37	+8.53	33.21
	Apr. 30	+ 055	10	1 24.80	+.012	−.00	+8.71	−0.36	+8.35	33.15
										33.177 ±.023

λ Hydrae $\alpha = 10^h\ 4^m\ 20.^s96$ $\delta = -11°\ 43'\ 19''$ $k = -.016$ tang. $\delta = -.21$

$z = +54°\ 6'\ 8''$

1872	Apr. 23	+ 065	10	4 11.26	+.013	−0.00	+10.19	−0.40	+9.79	4 21.05
	Apr. 25	+ 076	10	4 11.25	+.015	−.00	+10.05	−0.38	+10.67	20.92
5	Apr. 26	− 030	10	4 11.46	−.006	−.02	+9.76	−0.37	+9.37	20.83
23	Apr. 27	+ 040	10	4 11.65	+.008	−.01	+9.60	−0.35	+9.24	20.89
	Apr. 30	+ 055	10	4 12.46	+.011	−.01	+8.71	−0.31	+8.39	20.85
										20.908 ±.059

32 Ursae Maj. $\alpha = 10^h\ 8^m\ 42.^s70$ $\delta = +65°\ 44'\ 40''$ $k = -.037$ tang. $\delta = +.222$

$z = -23°\ 21'\ 55''$

1872	Apr. 18	+ 160	10	8 32.51	+.355	+0.32	+11.49	−1.78	+10.08	8 42.59
	Apr. 21	+ 058	10	8 33.30	+.128	+.09	+10.80	−1.62	+9.27	42.57
	Apr. 22	+ 020	10	8 33.56	+.044	+.01	+10.52	−1.59	+8.94	42.56
8	Apr. 23	+ 065	10	8 33.84	+.144	+.11	+10.19	−1.55	+8.75	42.59
23	Apr. 25	+ 070	10	8 33.94	+.155	+.12	+10.05	−1.48	+9.69	42.63
	Apr. 27	+ 040	10	8 34.33	+.089	+.05	+9.60	−1.40	+8.25	42.58
	Apr. 29	+ 045	10	8 34.90	+.099	+.06	+8.91	−1.32	+7.65	42.55
	Apr. 30	+ 055	10	8 35.08	+.122	+.08	+8.71	−1.28	+7.51	42.59
										42.575 ±.025

$\Delta\alpha = -0.021^s$ $\Delta\delta = -0.''10$ +36444

✱ λ Ursae Majoris $\alpha = 10^h\ 9^m\ 22.^s07$ $\delta = +43°\ 33'\ 8''$ $k = -.021$ tang. $\delta = +.95$

$z = -1°\ 10'\ 19''$

1872	Apr. 21	+ 058	10	9 12.06	+.055	+0.03	+10.80	−0.82	+10.01	9 22.07
	Apr. 22	+ 020	10	9 12.28	+.019	−.00	+10.52	−0.80	+9.72	22.00
5	Apr. 23	+ 065	10	9 12.60	+.061	+.04	+10.19	−0.78	+9.45	22.05
23	Apr. 25	+ 070	10	9 12.74	+.066	+.04	+10.05	−0.75	+10.34	22.08
	Apr. 30	+ 055	10	9 13.96	+.052	+.03	+8.71	−0.66	+8.08	22.04
										22.048 ±.021

22 Leptantie $\alpha = 10^h\ 11^m\ 16.^s16$ $\delta = -7°\ 25'\ 50''$ $k = -.016$ tang. $\delta = -.13$

$z = +49°\ 48'\ 39''$

1872	Apr. 18	+ 160	10	11 5.26	−.020	−0.04	+11.49	−0.50	+10.95	11 16.21
	Apr. 21	+ 058	10	11 5.85	−.007	−.02	+10.80	−0.47	+10.31	16.16
	Apr. 23	+ 065	10	11 6.50	−.008	−.02	+10.19	−0.44	+9.73	16.23
7	Apr. 25	+ 070	10	11 6.65	−.009	−.03	+10.05	−0.42	+10.60	16.25
23	Apr. 27	+ 040	10	11 7.02	−.005	−.02	+9.60	−0.39	+9.19	16.21
	Apr. 29	+ 045	10	11 7.70	−.005	−.02	+8.91	−0.37	+8.52	16.22
	Apr. 30	+ 055	10	11 7.86	−.007	−.02	+8.71	−0.36	+8.33	16.19
										16.210 ±.018

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1872phae.proj.1459.

-17.378
8.59

$\delta_0 = +17^\circ\ 23'\ 86''$ sin z = +.42 φ+lytg n -.39 -.61

Tm — 7's Circle Read. Red. Minus Circle Read. Corr. B+V+γ 1.42870 Rf Run Red to Rio 18720 Qm +Rg +Rf

	s	′	″	″	′	″	′	″															
22 36.65	+17.3	60	5.85	−21.67	59	44.18	+23	4.17+	00968	−0	27.44	−.05	+.00	−.44	-0.40	-1.05	+33.27	23	8.5				
36.03	+19.3	60	9.20	−24.17	59	45.03	23	3.32+	0635		27.23	.06	.00	−.45	-0.50	-1.06	+33.19		7.7				
36.01	+11.4	59	59.20	−14.28	59	44.92	23	3.43+	1139		27.55	.02	.15	−.26	-0.90	-0.87	+34.45		8.0				
33.49	+23.3	60	18.00	−29.18	59	48.82	22	59.53−	1448		25.96	.09	.01	−.47	-1.10	-1.08	+35.08		6.5				
34.77	+19.1	60	10.50	−23.92	59	46.58	23	1.77+	0189		26.95	.06	.01	−.44	-1.10	-1.05	+35.45		8.1				
39.86	−7.4	59	31.85	+9.27	59	41.12	23	7.23+	1053		27.49	.05	.12	−.27	-1.30	-0.88	+34.23		11.8				
	+5.8	60	(12.40)	−7.870		5.13	22	43.22+	0644		27.23	−.01	+.01	−.39	-1.30	-1.00	+35.06						

853
±1.08

+.012
+.025

-17.417
30.17

$\delta_0 = +12\ 35\ 30.2$ sin z = +.50 1.51780 -.46 -.71

34 56.68	+14.5	47	36.55	−18.57	47	17.98	+35	30.37+	00968	−0	33.69	−.03	+.02	−.46	+1.10	-1.17	+33.27	35	29.9				
56.13	+14.1	47	36.85	−18.06	47	18.79	35	29.76+	0635		33.43	.03	.03	−.46	+1.00	-1.17	+33.19		29.1				
54.13	+2.2	47	23.30	−2.82	47	20.48	35	27.87+	1139		33.82	.00	.07	−.39	+0.70	-1.10	+34.45		28.1				
55.94	+16.1	47	39.90	−20.62	47	19.28	35	29.07+	0303		33.18	.03	.08	−.41	+0.60	-1.12	+33.61		29.0				
53.42	+18.3	47	46.55	−23.44	47	23.11	35	25.24−	1448		31.86	.04	.08	−.42	+0.50	-1.13	+35.08		27.8				
54.03	+16.1	47	41.90	−20.62	47	21.28	35	27.07+	0189		33.09	.03	.08	−.41	+0.50	-1.12	+35.45		28.5				
	+7.7	47	(12.00)	−9.85	(47	2.15)	35	40.20+	1053		33.75	.01	.07	−.40	+0.30	-1.11	+34.23						
54.67	+18.8	47	44.35	−24.08	47	20.27	+35	28.08+	0644−		33.44	−.05	+.08	−.43	+0.30	-1.14	+35.06		28.9				

±.023

28.80
±0.44

$\delta_0 = -11\ 43\ 20.8$ 1.89940 -.75 -1.17

+17.5	5	51.95	−22.49	5	29.46	−42	41.11+	01166	−1	21.48	.00	+.03	+.02	−.70	+8.20	-1.87	+34.45	43	21.8				
+17.2	5	53.55	−22.10	5	31.45	42	43.10+	0310	.1	19.89	.00	.03	.03	−.69	+8.20	-1.86	+33.61		23.0				
+21.9	6	4.90	−28.12	5	36.78	42	48.43−	1423	.1	16.79	.01	.04	.03	−.68	+8.19	-1.85	+35.08		23.8				
+17.9	5	56.50	−23.01	5	33.49	42	45.14+	0200	.1	19.69	.00	.03	.03	−.69	+8.19	-1.86	+35.45		23.0				
+17.4	5	54.45	−22.36	5	32.09	−42	43.74+	0669	−1	20.55	.00	+.03	+.03	−.69	+8.18	-1.86	+35.06		22.9				

±.058

2290
±0.41

$\delta_0 = +65\ 44\ 43.3$ 1.39560 +.36 +.57

+38.5	39	11.10	−20.74	38	49.36	+43	38.99+	00653	+0	25.24	−.30	+.04	+.10	−14.25		+0.67	+33.19	44	43.8				
+28.3	39	4.55	−15.24	38	49.31	43	39.04−	0034		24.85	.16	.04	+.34	−14.71		+0.91	+33.84		43.9				
+42.5	39	13.70	−22.89	38	50.81	43	37.54+	0743		25.30	.37	.13	+.12	−14.86		+0.69	+34.33		43.0				
+21.6	39	2.10	−11.64	38	48.46	43	39.89+	1167		25.54	.10	.13	+.39	−15.00		+0.96	+34.45		43.8				
+46.1	39	13.80	−24.83	38	48.97	43	39.38+	0310		25.04	.43	.13	+.06	−15.28		+0.63	+33.61		43.4				
+38.5	39	10.95	−24.70	38	50.25	43	38.10+	0200		24.98	.30	.13	+.19	−15.53		+0.76	+35.45		43.8				
+22.4	39	2.05	−12.10	38	49.95	43	38.40+	1069		25.48	.10	.13	+.39	−15.76		+0.96	+34.23		43.3				
+39.5	39	9.45	−21.28	38	48.67	+43	39.68+	0669+		25.25	−.31	+.13	+.18	−15.87		+0.75	+35.06		44.9				

±.010

43.74
±0.35

-17.850
4.92

$\delta_0 = +43\ 33\ 4.9$ sin z = −.02 6.0711 cm +.02 +.02

32 42.26	−10.9	49	56.45	+10.34	50	7.29	+32	4.06−	00040	+0	1.18	−.03	+.05	+.04	-8.70	+0.06	+33.84	33	7.4				
42.46	−13.8	49	54.05	+13.13	50	7.18	32	4.17+	0769		1.20	.05	.14	+.11	-8.90	+0.13	+34.33		7.9				
42.72	−15.0	49	52.65	+14.27	50	6.92	32	4.43+	1195		1.21	.06	.14	+.10	-9.00	+0.12	+34.45		8.2				
42.99	−10.0	49	57.15	+9.51	50	6.66	32	4.60+	0317		1.19	.03	.14	+.13	-9.20	+0.15	+33.61		7.4				
42.90	+6.3	50	12.65	−6.00	50	6.65	+32	4.70+	0695+		1.20	−.01	+.14	+.02	-9.80	+0.04	+35.06		8.2				

7.82
±0.32

±.015

$\delta_0 = -7\ 25\ 51.0$ 1.43260 -.91 -1.10

−13.2	47	51.50	+17.17	48	8.67	−25	20.32+	00671	−1	9.07	−.00	+.01	+.04	−.66	+7.02	−1.76	+33.19	25	50.9				
+16.6	48	33.20	−21.60	48	11.60	25	23.25−	0020	.1	7.98	.00	.02	.05	−.64	+7.02	−1.74	+33.84		52.1				
+17.5	48	32.00	−22.77	48	9.23	25	20.88+	1195	.1	9.91	.00	.03	.11	−.57	+7.01	−1.67	+34.45		51.0				
+16.9	48	32.65	−21.97	48	10.68	25	22.33+	0317	.1	8.51	.00	.03	.11	−.57	+7.00	−1.67	+33.61		51.9				
+17.5	48	35.50	−22.77	48	12.73	25	24.38+	0211	.1	8.35	.00	.03	.11	−.57	+6.98	−1.67	+35.45		52.0				
−17.3	47	48.55	+22.52	48	11.07	25	22.72+	1085	.1	9.73	.00	.03	.08	−.60	+6.93	−1.70	+34.23		53.0				
+12.2	48	26.55	−15.88	48	10.67	−25	22.32+	0695−	1	9.11	−.00	+.01	+.11	−.59	+6.91	−1.69	+35.06		51.2				

±.018

5173
±0.55

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1872phae.proj.1459.

Oth 7 Leonis M.V. L = 10h 12m 54.78s δ = +20° 29′ 1″ k = −.016 tang δ = +.37
z = + 21 53 31

Date	n	T	T_m	∆ tang δ	∆T	Red 1872	Sum	JR 1872
1872 Apr. 18	+ 160	10h	12m 43.81s	+.059	+0.04	+11.49 − 0.62	+ 10.91	10h 12m 54.72s
Apr. 22	+ 020	10	12 44.91	+.007	−.01	+10.52 − 0.57	+ 9.94	54.85
Apr. 23	+ 065	10	12 45.22	+.024	+.01	+10.19 − 0.56	+ 9.64	54.86
8 Apr. 25	+ 070	10	12 45.26	+.026	+.01	+10.05 − 0.53	+ 10.53	54.79
23 Apr. 26	− 030	10	12 45.59	−.011	−.03	+9.76 − 0.52	+ 9.21	54.80
Apr. 27	+ 040	10	12 45.65	+.015	−.00	+9.60 − 0.50	+ 9.10	54.85
Apr. 29	+ 045	10	12 46.36	+.016	−.03	+8.91 − 0.48	+ 8.43	54.79
Apr. 30	+ 055	10	12 46.51	+.020	+.00	+8.71 − 0.47	+ 8.24	54.85
			+36.005					
∆α = −0.027s ∆δ = −0.42″			46.726					54.789 ± .033

* 41 Ursae Majoris L = 10h 14m 47.43s δ = +42° 8′ 32″ k = −.021 tang δ = +.90
z = + 0 14 17

Date	n	T	T_m	∆ tang δ	∆T	Red 1872	Sum	JR 1872
1872 Apr. 18	+ 160	10	14 30.94	+.144	+0.12	+11.49 − 0.89	+ 10.72	14 41.66
Apr. 21	+ 058	10	14 31.70	+.051	+.03	+10.80 − 0.83	+ 10.00	41.70
Apr. 22	+ 020	10	14 32.04	+.018	−.00	+10.52 − 0.81	+ 9.71	41.75
9 Apr. 23	+ 065	10	14 32.26	+.058	+.04	+10.19 − 0.80	+ 9.43	41.69
23 Apr. 25	+ 070	10	14 32.40	+.063	+.04	+10.05 − 0.77	+ 10.32	41.72
Apr. 26	− 030	10	14 32.74	−.027	−.05	+9.76 − 0.75	+ 8.96	41.70
Apr. 27	+ 040	10	14 32.79	+.036	+.01	+9.60 − 0.73	+ 8.88	41.67
Apr. 29	+ 045	10	14 33.44	+.041	+.02	+8.91 − 0.70	+ 8.23	41.67
Apr. 30	+ 055	10	14 33.67	+.049	+.03	+8.71 − 0.68	+ 8.06	41.73
								41.699 ± .021

7 Antliae L = 10h 17m 52.68s δ = −29° 0′ 4″ k = −.018 tang δ = −.55
z = + 71 22 53

Date	n	T	T_m	∆ tang δ	∆T	Red 1872	Sum	JR 1872
1872 Apr. 21	+ 058	10	17 52.37	−.031	−0.05	+10.80 − 0.53	+ 10.22	18 2.59
Apr. 22	+ 020	10	17 52.70	−.011	−.03	+10.52 − 0.51	+ 9.98	2.68
Apr. 23	+ 065	10	17 53.02	−.035	−.05	+10.19 − 0.50	+ 9.64	2.66
7 ~~Apr. 25~~	~~+ 070~~	~~10~~		~~−.038~~	~~−.06~~	~~+10.05 − 0.47~~	~~+ 10.52~~	
23 Apr. 26	− 030	10	17 53.25	+.016	−.03	+9.76 − 0.45	+ 9.31	2.56
Apr. 27	+ 040	10	17 53.48	−.022	−.04	+9.60 − 0.44	+ 9.12	2.60
Apr. 29	+ 045	10	17 54.14	−.024	−.04	+8.91 − 0.41	+ 8.46	2.60
Apr. 30	+ 055	10	17 54.31	−.030	−.05	+8.71 − 0.39	+ 8.27	2.58
								2.610 ± .031

∆α = −0.040s ∆δ = +0.16″ +34.913 28.525

* 31 Leonis Minoris L = 10h 20m 28.53s δ = +37° 21′ 34″ k = −.020 tang δ = +.76
z = + 5 1 15

Date	n	T	T_m	∆ tang δ	∆T	Red 1872	Sum	JR 1872
1872 Apr. 18	+ 160	10	20 17.74	+.121	+0.10	+11.49 − 0.85	+ 10.74	20 28.48
Apr. 22	+ 020	10	20 18.74	+.015	−.01	+10.52 − 0.79	+ 9.72	28.46
Apr. 23	+ 065	10	20 19.05	+.049	+.03	+10.19 − 0.78	+ 9.44	28.49
8 Apr. 25	+ 070	10	20 19.11	+.053	+.03	+10.05 − 0.75	+ 10.33	28.44
23 Apr. 26	− 030	10	20 19.53	−.023	−.04	+9.76 − 0.74	+ 8.98	28.51
Apr. 27	+ 040	10	20 19.62	+.030	+.01	+9.60 − 0.72	+ 8.89	28.51
Apr. 29	+ 045	10	20 20.26	+.034	+.01	+8.91 − 0.69	+ 8.23	28.49
Apr. 30	+ 055	10	20 20.44	+.041	+.02	+8.71 − 0.67	+ 8.06	28.50
								28.485 ± .018

2 Antliae L = 10h 21m 17.79s δ = −30° 25′ 7″ k = −.018 tang δ = −.59
z = + 72 47 56

Date	n	T	T_m	∆ tang δ	∆T	Red 1872	Sum	JR 1872
1872 ~~Apr. 22~~	~~+ 065~~	~~10~~	~~21 8.28~~	~~−.038~~	~~−0.06~~	~~+10.19 − 0.52~~	~~+ 9.61~~	~~21 17.99~~
Apr. 27	+ 040	10	21 8.76	−.024	−.04	+9.60 − 0.46	+ 9.10	17.86
3 Apr. 29	+ 045	10	21 9.35	−.026	−.04	+8.91 − 0.43	+ 8.44	17.79
23 Apr. 30	+ 055	10	21 9.46	−.032	−.05	+8.71 − 0.41	+ 8.25	17.71
			+5.3066					17.787

∆α = −0.161s ∆δ = +1.02″ h m 9.037

* 9 Lacaeae (N) L = 10 24 9.04 δ = +76° 22′ 15″ k = −.065 tang δ = +4.12
z = − 33 59 26

Date	n	T	T_m	∆ tang δ	∆T	Red 1872	Sum	JR 1872
1872 Apr. 17	+ 150	10	24 0.23	+.618	+0.55	+11.61 − 3.57	+ 8.59	24 8.82
Apr. 18	+ 160	10	24 0.26	+.659	+.59	+11.49 − 3.51	+ 8.57	8.83
Apr. 19	+ 173	10	24 0.66	+.712	+.65	+11.10 − 3.44	+ 8.31	8.97
Apr. 22	+ 020	10	24 1.43	+.082	+.02	+10.52 − 3.26	+ 7.28	8.71
10 Apr. 23	+ 065	10	24 1.52	+.267	+.20	+10.19 − 3.19	+ 7.20	8.72
23 Apr. 24	+ 077	10	24 1.66	+.319	+.25	+10.09 − 3.12	+ 7.22	8.88
Apr. 25	+ 070	10	24 1.72	+.288	+.22	+10.05 − 3.04	+ 8.23	8.95
Apr. 26	− 030	10	24 2.37	−.123	−.16	+9.76 − 2.97	+ 6.63	8.78
Apr. 27	+ 040	10	24 2.20	+.164	+.10	+9.60 − 2.89	+ 6.81	9.01
Apr. 30	+ 055	10	24 2.70	+.226	+.16	+8.71 − 2.68	+ 6.19	8.89 ± .075

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1872phae.proj.1459.

$\delta_0 = +20^\circ\ 29'\ 17''.1$

μ + log log n
B + T + J
1,36420

Tm − TS	Circle Read.	Red Hor.	Corr. Circle Read.																				
s	′	″	″	′	″	′	″			″													
+19.1	54	2.55	−23.48	53	39.07	+29	9.28+	00671	−0	23.49	−.06	+.04	−.37	−1.16	−0.90	+3319	29	16.9
+17.6	54	2.15	−21.63	53	40.52	29	7.83+	0769	.	23.54	.06	.12	−.29	−1.51	−0.82	+3433		16.3
+15.8	53	59.30	−19.42	53	39.88	29	8.47+	1195	.	23.78	.04	.12	−.27	−1.60	−0.80	+3445		16.7
+18.3	54	1.90	−22.49	53	39.41	29	8.94+	0317	.	23.30	.06	.12	−.29	−1.77	−0.82	+3361		16.4
+22.3	54	9.55	−27.41	53	42.14	29	6.21−	1398	.	22.40	.08	.12	−.31	−1.86	−0.84	+3508		16.2
+17.7	54	3.55	−21.76	53	41.79	29	6.56+	0211	.	23.24	.06	.12	−.29	−1.95	−0.82	+3545		16.0
+24.0	54	10.45	−29.50	53	40.95	29	7.40+	1089	.	23.72	.10	.12	−.33	−2.11	−0.86	+3423		14.9
+16.7	54	1.65	−20.53	53	41.12	+29	7.23+	0695	−	23.50	−.05	+.12	−.28	−2.19	−0.81	+3506		15.8
			−17.969															
			31.61															

±.031

$\delta_0 = +42\ 8\ 31.6$ Rin 2 = +.00 9.37900

−.00 −.01

16.19
±0.42

8 6.71 +25.0	15	5.55	−24.32	14	41.23	+8	7.12+	00671	−0	0.24	−.17	+.00	−.17	−7.80	−0.18	+3319	8	32.1
5.18 +20.7	15	3.05	−20.14	14	42.91	8	5.44−	0020	.	0.24	.12	.00	−.12	−8.20	−0.13	+3384		30.7
4.20 +23.3	15	6.45	−22.67	14	43.78	8	4.57+	0769	.	0.24	.14	.01	−.13	−8.00	−0.14	+3433		30.5
6.65 +17.5	14	58.55	−17.03	14	41.52	8	6.83+	1195	.	0.25	.08	.15	+.07	−8.40	+0.06	+3445		32.7
5.81 +21.4	15	3.00	−20.82	14	42.18	8	6.17+	0317	.	0.24	.12	.00	−.12	−8.70	−0.13	+3361		30.7
5.36 +23.3	15	5.30	−22.67	14	42.63	8	5.72−	1398	.	0.23	.14	.01	−.13	−8.80	−0.14	+3508		31.6
4.62 +21.3	15	4.10	−20.72	14	43.38	8	4.97+	0211	.	0.24	.12	.01	−.11	−8.90	−0.12	+3545		31.2
5.12 +23.8	15	6.00	−23.16	14	42.84	8	5.51+	1089	.	0.25	.15	.01	−.14	−9.20	−0.15	+3423		30.1
5.40 +18.9	15	1.00	−18.39	14	42.61	+8	5.74+	0695	−	0.24	−.10	+.00	−.10	−9.30	−0.11	+3506		31.1

±.016

3.19
±0.57

$\delta_0 = -29\ 0\ 5.3$ 2.22744

−.87 −1.37

+24.3	21	18.85	−27.89	20	50.96	−58	2.61−	00006	−2	40.50 −.02	+.14	+.01	−.72	+12.16	−2.09	+3384	0	7.5
+28.0	21	19.60	−32.17	20	47.43	57	5.98+	0796	. 2	51.95 .02	.18	.04	−.65	+12.23	−2.02	+3433		6.5
+16.8	21	4.90	−19.29	20	45.61	57	7.26+	1223	. 2	53.65 .03	.07	.03	−.77	+12.30	−2.14	+3445		6.3
										43.58 .00								
+23.2	21	27.30	−26.63	21	0.67	58	12.32−	1373	. 2	43.58 .06	.13	.04	−.70	+12.50	−2.07	+3508		10.4
+17.1	21	15.10	−20.78	20	54.32	58	3.97+	0222	. 2	49.69 .01	.08	.04	−.75	+12.56	−2.12	+3545		9.8
+21.5	21	12.60	−24.68	20	47.92	57	9.57+	1101	. 2	53.16 .02	.10	.04	−.73	+12.66	−2.10	+3423		8.0
+20.3	21	12.10	−23.30	20	48.80	−57	0.45+	0720	− 2	51.65 −.00	+.09	+.04	−.74	+12.71	−2.11	+3506		6.4

±.027

7.84
±1.23

−18.295
113.46

$\delta_0 = +37\ 21\ 48.5$ Rin 2 = +.09 0.70370

−.08 −.13

21 16.75 +21.8	1	49.10	−22.74	1	26.36	+21	21.99+	00689	−0	5.14	−.12	+.02	−.18	−6.90	−0.31	+3319	21	42.8
15.15 +22.7	1	51.65	−23.68	1	27.97	21	20.38+	0796	.	5.15	.14	.06	−.16	−6.61	−0.29	+3433		42.7
17.38 +16.2	1	42.65	−16.90	1	25.75	21	22.60+	1223	.	5.20	.07	.05	−.10	−6.74	−0.23	+3445		44.9
17.11 +25.8	1	52.95	−26.91	1	26.04	21	22.31+	0324	.	5.09	.17	.06	−.19	−6.98	−0.32	+3361		43.5
17.24 +27.2	1	54.45	−28.37	1	26.08	21	22.27−	1373	.	4.90	.19	.06	−.21	−7.10	−0.34	+3508		45.0
16.23 +20.3	1	46.15	−21.17	1	26.98	21	21.37+	0222	.	5.08	.11	.05	−.14	−7.22	−0.27	+3545		44.2
16.28 +14.4	1	41.90	−15.62	1	26.88	21	21.47+	1101	.	5.19	.05	.05	−.08	−7.45	−0.21	+3423		42.8
15.79 +21.8	1	50.10	−22.74	1	27.36	+21	20.99+	0720	−	5.14	−.12	+.06	−.14	−7.56	−0.27	+3506		43.4

±.014

43.62
±0.72

$\delta_0 = -30\ 25\ 0.1$ 2.26314

−.88 −1.37

~~−19.8~~	~~45~~	~~9.50~~	~~+15.62~~	~~45~~	~~35.12~~	~~22~~	~~36.77+~~	~~01251~~	~~−3~~	~~8.65~~	~~.05~~	~~+.05~~	~~.00~~	~~.83~~	~~−2.20~~			
−15.6	45	13.55	+21.05	45	34.60	22	46.25+	0233	. 3	4.28	.02	.03	.01	−.79	+12.83	−2.16	+3545	25	4.4
+13.3	45	41.10	−15.05	45	26.05	22	37.70+	1117	. 3	8.07	.02	.04	.02	−.82	+12.96	−2.19	+3423		0.8
−16.7	45	10.10	+18.90	45	29.00	−22	40.65+	0745	− 3	6.46	.01	+.07	+.01	−.80	+13.01	−2.17	+3506		1.3

−18.359
15.27

$\delta_0 = +76\ 22\ 15.3$ Rin 2 = −.56 1.58870

+.52 +.80

2.13

57.27 +73.3	1	52.65	−22.49	1	30.16	+21	18.19+	01044	+0	39.73	−.67	+.02	−.13	−15.40	+0.67	+3319	22	16.5
54.50 +64.8	1	51.80	−20.04	1	30.76	21	17.59+	0707	.	39.42	.53	.02	+.01	−15.60	+0.81	+3433		15.4
56.07 +65.6	1	51.50	−20.33	1	31.17	21	17.18+	0686	.	39.42	.55	.02	−.01	−15.80	+0.79	+3497		16.0
54.47 +71.5	1	52.95	−22.12	1	30.83	21	17.52+	0822	.	39.53	.64	.06	−.06	−16.30	+0.74	+3423		15.8
56.38 +82.8	1	56.80	−25.92	1	30.88	21	17.47+	1251	.	39.92	.88	.06	−.29	−16.40	+0.51	+3445		15.9
57.16 −52.0	1	14.00	+16.04	1	30.04	21	18.31+	0403		39.15	.34	.04	+.22	−16.60	+1.02	+3371		15.6
57.33 −12.6	1	26.25	+3.88	1	30.13	21	18.22+	0331	.	39.09	.02	.04	+.54	−16.70	+1.34	+3361		15.6
59.57 +65.3	1	46.10	−20.20	1	25.90	21	22.45−	1348	.	37.60	.53	.05	+.04	−16.90	+0.84	+3508		19.1
5.89 +63.0	1	49.50	−19.49	1	30.01	21	18.34+	0237	.	39.00	.50	.05	+.07	−17.00	+0.87	+3545	16.29	16.7
±.018 +64.2	1	49.90	−19.86	1	30.04	+21	18.31+	0745	+	39.46	−.53	+.05	+.04	−17.40	+0.84	+3506		16.3

±.062

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L16

$\Delta\delta = +0.066\ \Delta\delta = -0.62$ +3.1621

Stan X Q Leonis $\alpha = 10^h\ 26^m\ 4.13^s$ $\delta = +9°\ 57'\ 52''$ $k = -.016$ tang. $\delta = +.18$

$z = +32\ 24\ 57$

	Date	n.	T_s	T_m	mtang. δ	d.T.	Red. 1872	Sum	of R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 17	+ 150	10	25 53.20	+.027	+0.01	+11.61	−0.63	+10.99	10 26 4.19
	Apr. 18	+ 160	10	25 53.29	+.028	+.01	+11.49	−0.62	+10.88	4.17
	Apr. 19	+ 173	10	25 53.66	+.031	+.01	+11.10	−0.60	+10.51	4.17
	Apr. 22	+ 020	10	25 54.33	+.003	−.01	+10.52	−0.57	+9.94	4.29
	Apr. 23	+ 065	10	25 54.55	+.011	−.01	+10.19	−0.56	+9.62	4.17
10	Apr. 24	+ 077	10	25 54.66	+.013	−.00	+10.09	−0.55	+9.54	4.20
23	Apr. 25	+ 070	10	25 54.66	+.012	−.00	+10.05	−0.54	+9.51	4.17
	Apr. 26	− 030	10	25 54.98	−.005	−.02	+9.76	−0.53	+9.21	4.19
	Apr. 27	+ 040	10	25 55.14	+.007	−.01	+9.60	−0.52	+9.07	4.21
	Apr. 30	+ 055	10	25 55.97	+.009	−.01	+8.71	−0.48	+8.22	4.19
										4.193 ±.017

48 Leonis ✓ $\alpha = 10^h\ 28^m\ 7.27^s$ $\delta = +7°\ 36'\ 43''$ $k = -.016$ tang. $\delta = +.13$

$z = +34\ 46\ 6$

	Date	n.	T_s	T_m	mtang. δ	d.T.	Red. 1872	Sum	of R. 1872.0
1872	Apr. 17	+ 150	10	27 56.30	+.019	+0.00	+11.61	−0.63	+10.98	28 7.28
	Apr. 18	+ 160	10	27 56.45	+.020	+.00	+11.49	−0.62	+10.87	7.32
	Apr. 19	+ 173	10	27 56.79	+.022	+.01	+11.10	−0.61	+10.50	7.29
	Apr. 22	+ 020	10	27 57.38	+.002	−.01	+10.52	−0.57	+9.94	7.32
	Apr. 23	+ 065	10	27 57.70	+.008	−.01	+10.19	−0.56	+9.62	7.32
10	Apr. 24	+ 077	10	27 57.84	+.010	−.01	+10.09	−0.55	+9.53	7.37
23	Apr. 25	+ 070	10	27 57.77	+.009	−.01	+10.05	−0.54	+9.50	7.27
	Apr. 26	− 030	10	27 58.11	−.004	−.02	+9.76	−0.53	+9.21	7.32
	Apr. 27	+ 040	10	27 58.26	+.005	−.01	+9.60	−0.52	+9.07	7.33
	Apr. 30	+ 055	10	27 58.96	+.007	−.01	+8.71	−0.48	+8.22	7.18
										7.300 ±.032

226 B Cephei 2.6 $\alpha = 22^h\ 30^m\ 1.09^s$ $\delta = +75°\ 34'\ 00''$ $k = +.061$ tang. $\delta = +3.67$

	Date	n.	T_s	T_m	mtang. δ	d.T.	Red. 1872	Sum	of R. 1872.0
					−62	3	12		
1872	Apr. 17	+ 150	10	29 45.86	+.580	−0.52	+11.61	+3.80	+14.89	30 0.75
	Apr. 19	+ 173	10	29 46.87	+.669	−0.61	+11.10	+3.65	+14.14	1.01
	Apr. 21	+ 058	10	29 46.90	+.224	−0.16	+10.80	+3.50	+14.14	1.04
7	Apr. 22	+ 020	10	29 47.39	+.077	−0.02	+10.52	+3.43	+13.93	1.32
23	Apr. 23	+ 065	10	29 47.56	+.251	−0.19	+10.19	+3.35	+13.35	0.91
	Apr. 25	+ 070	10	29 48.02	+.271	−0.21	+10.05	+3.19	+13.03	1.05
	Apr. 27	+ 040	10	29 48.77	+.154	−0.09	+9.60	+3.02	+12.53	1.30
										1.054 ±.013

Q Hydrae ✓ $\alpha = 10^h\ 32^m\ 20.78^s$ $\delta = -16°\ 12'\ 45''$ $k = -.016$ tang. $\delta = -.29$

$z = +58\ 35\ 34$

	Date	n.	T_s	T_m	mtang. δ	d.T.	Red. 1872	Sum	of R. 1872.0
1872	Apr. 17	+ 150	10	32 9.82	−.043	−0.06	+11.60	−0.61	+10.93	32 20.75
	Apr. 21	+ 058	10	32 10.56	−.016	−.03	+10.79	−0.56	+10.20	20.76
	Apr. 22	+ 020	10	32 10.89	−.006	−.02	+10.51	−0.55	+9.94	20.88
8	Apr. 23	+ 065	10	32 11.29	−.018	−.03	+10.18	−0.54	+9.61	20.90
23	Apr. 24	+ 077	10	32 11.35	−.022	−.04	+10.09	−0.53	+9.52	20.87
	Apr. 25	+ 070	10	32 11.33	−.020	−.04	+10.04	−0.52	+9.48	20.81
	Apr. 26	− 030	10	32 11.57	+.008	−.01	+9.75	−0.51	+9.23	20.80
	Apr. 27	+ 040	10	32 11.73	−.011	−.03	+9.59	−0.50	+9.06	20.79
										20.814 ±.035

Dc X 135

B.A.C. 2665 $\alpha = 10^h\ 36^m\ 1.06^s$ $\delta = +46°\ 52'\ 30''$ $k = -.022$ tang. $\delta = +1.07$

$z = -4\ 29\ 41$

	Date	n.	T_s	T_m	mtang. δ	d.T.	Red. 1872	Sum	of R. 1872.0
1872	Apr. 17	+ 150	10	35 50.37	+.160	+0.14	+11.60	−1.16	+10.58	36 0.95
	Apr. 18	+ 160	10	35 50.46	+.171	+.15	+11.48	−1.15	+10.48	0.94
	Apr. 19	+ 173	10	35 50.81	+.185	+.16	+11.09	−1.13	+10.12	0.93
9	Apr. 21	+ 058	10	35 51.21	+.062	+.04	+10.79	−1.09	+9.74	0.95
23	Apr. 22	+ 020	10	35 51.56	+.021	−.00	+10.51	−1.08	+9.43	0.99
	Apr. 23	+ 065	10	35 51.72	+.069	+.05	+10.18	−1.06	+9.17	0.89
	Apr. 24	+ 077	10	35 51.85	+.082	+.06	+10.09	−1.04	+9.11	0.96
	Apr. 26	− 030	10	35 52.29	−.032	+.05	+9.75	−1.00	+8.80	1.09
	Apr. 27	+ 040	10	35 52.37	+.042	+.02	+9.59	−0.98	+8.63	1.00
										0.967 ±.048

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$\delta_0 = +9^\circ\ 57'\ 57.6$ (−18.403, 51.61) — $\sin z = +.54$ — μ + log tg z — −.49 − .77

Tm − TS	Circle Read	Red Horizon	Corr. Circle Read																											
	s	′	″	′	″	′	″	″	′	″																				
5) 17.39	+16.5	25	14.85	−21.33	24	53.52	+57	54.83	+	01044	−0	37.42																		
17.10	+20.4	25	20.45	−26.37	24	54.08	57	54.27	+	0707		37.13																		
15.59	+15.8	25	16.05	−20.42	24	55.63	57	52.72	+	0685		37.11																		
16.79	+19.5	25	19.50	−25.20	24	54.30	57	54.05	+	0822		37.23																		
15.76	+18.2	25	18.50	−23.53	24	54.97	57	53.38	+	1251		37.60																		
16.27	+16.6	25	16.65	−21.46	24	55.19	57	53.16	+	0403		36.87																		
16.36	+16.9	25	17.00	−21.84	24	55.16	57	53.19	+	0331		36.81																		
14.39	−18.3	24	35.00	+23.65	24	58.65	57	49.70	−	1348		35.42																		
14.24	+17.4	25	19.85	−22.49	24	57.36	57	50.99	+	0233		36.73																		
16.32	+15.7	25	15.15	−20.29	24	54.86	+57	53.49	+	0745	−	37.16																		

Tm − TS	Corr. Red to Rm	Rm Red to Rm 1872.0	Rm + Rm 1872.0	Rf. ± δ 1872.0		
	″	″	″	″		
5)	−.02	+.00	−.51	+2.40	−1.28 + 33.27	57 51.8
	.04	.00	−.53	+2.30	−1.30 + 33.19	51.3
	.02	.00	−.51	+2.20	−1.28 + 34.37	50.9
	.04	.01	−.52	+2.10	−1.29 + 34.33	52.0
	.03	.01	−.51	+2.00	−1.28 + 34.45	50.4
	.03	.01	−.51	+1.90	−1.28 + 33.71	50.6
	.03	.01	−.51	+1.90	−1.28 + 33.61	50.6
	.03	.14	−.38	+1.80	−1.15 + 35.08	50.0
	.03	.01	−.51	+1.70	−1.28 + 35.45	50.1
	−.02	+.01	−.50	+1.60	−1.27 + 35.06	51.7

±.017 — 50.99 ± 0.55

$\delta_0 = +7\ 36\ 43.0$ — 1.60141 — −.53 − .82

−3.2	45	55.75	+4.16	45	59.91	+36	48.44	+	01064	−0	40.93	−.00	+.01	−.52	+3.04	−1.34	+33.27	36	42.5
+18.0	46	22.70	−23.41	45	59.29	36	49.06	+	0735		40.62	.02	.01	−.54	+2.99	−1.36	+33.19		43.3
+19.3	46	26.35	−25.11	46	1.24	36	47.11	+	0700		40.59	.03	.01	−.55	+2.94	−1.37	+34.37		42.5
+16.9	46	22.45	−21.98	46	0.47	36	47.88	+	0849		40.73	.02	.04	−.51	+2.78	−1.33	+34.33		42.9
+15.9	46	20.90	−20.67	46	0.23	36	48.12	+	1279		41.13	.02	.04	−.51	+2.73	−1.33	+34.45		42.8
+16.7	46	23.45	−21.59	46	1.86	36	46.49	+	0426		40.33	.02	.04	−.51	+2.68	−1.33	+33.71		41.2
+17.3	46	22.95	−22.50	46	0.45	36	47.90	+	0338		40.25	.02	.04	−.51	+2.62	−1.33	+33.61		42.5
+19.5	46	31.05	−25.36	46	5.69	36	42.66	−	1323		38.74	.02	.05	−.51	+2.56	−1.33	+35.08		40.2
+17.0	46	24.55	−22.11	46	2.44	36	45.91	+	0245		40.17	.02	.04	−.51	+2.51	−1.33	+35.45		42.4
−9.3	45	52.45	+12.09	46	2.54	+36	45.81	+	0771	−	40.65	−.01	+.02	−.52	+2.35	−1.34	+35.06		41.2

±.032 — 42.15 ± 0.70

$\delta_0 = +104\ 25\ 59.1$ — 2.03332 — +.82 +1.26

+23.9	58	48.75	+7.82	58	56.57	+23	51.78	+	01064	+1	50.65	+.00	+.08	+.00	+.94	−18.60	+2.20	+33.27	25	59.3
+20.0	58	51.20	+6.54	58	57.74	23	50.61	+	0700	1	49.73	.01	.05	.04	+.91	−18.90	+2.17	+34.37		58.0
−44.9	58	(8.25)	−14.70	58	53.55	23	52.80	+	0022	1	48.03	.00	.29	.03	+1.14	−19.20	+2.40	+33.84		59.9
+33.9	58	49.15	+11.09	59	0.24	23	48.11	+	0849	1	50.11	.00	.16	.11	+1.09	−19.30	+2.35	+34.33		55.6
+60.3	58	39.55	+19.72	58	59.27	23	49.08	+	1279	1	51.20	.01	.49	.11	+1.42	−19.50	+2.68	+34.45		57.9
+29.8	58	37.80	+9.75	58	47.55	24	60.80	+	0338	1	48.82	.00	.12	.11	+1.05	−19.70	+2.31	+33.61		(65.8)
+57.9	58	35.55	+18.94	58	54.49	+23	53.86	+	0245	+1	48.59	+.00	+.45	+.11	+1.38	−19.90	+2.64	+35.45		60.6

±.023 — 58.55 — 34 1.45 ± 1.14

$\delta_0 = -16\ 12\ 45.6$ — 1.97274 — −.80 −1.23

+14.5	34	58.00	−18.25	34	39.75	−11	51.40	+	01064	−1	36.27	−.01	+.03	+.05	−.72	+9.12	−1.95	+33.27	12	47.2
+4.0	34	47.30	−5.04	34	42.26	11	53.91	+	0022	1	33.99	.00	.00	.05	−.75	+9.28	−1.98	+33.84		46.8
+23.5	35	10.65	−29.61	34	41.04	11	52.69	+	0849	1	35.79	.01	.07	.01	−.72	+9.32	−1.95	+34.33		46.8
+19.0	35	3.90	−23.94	34	39.96	11	51.61	+	1279	1	36.74	.00	.05	.00	−.75	+9.35	−1.98	+34.45		46.5
+19.3	35	6.10	−24.32	34	41.68	11	53.33	+	0426	1	34.86	.00	.05	.01	−.74	+9.38	−1.97	+33.71		47.1
+17.7	35	4.30	−22.30	34	42.00	11	53.65	+	0338	1	34.67	.00	.04	.01	−.75	+9.41	−1.98	+33.61		47.3
+17.3	35	10.85	−21.80	34	49.05	12	0.70	−	1323	1	31.12	.01	.04	.01	−.75	+9.44	−1.98	+35.08		49.3
+16.0	35	5.05	−20.16	34	44.89	−11	56.54	+	0245	−1	34.47	−.00	+.03	+.00	−.77	+9.46	−2.00	+35.45		48.1

±.034 — 47.39 ± 0.60

$\delta_0 = +46\ 52\ 32.6$ — 0.65580 — +.07 +.11

+28.8	31	11.50	−25.84	30	45.66	+52	2.49	+	01083	+0	4.63	−.28	+.01	−.15	−8.97	−0.04	+33.27	52	32.6
+21.1	31	5.15	−18.92	30	46.23	52	2.12	+	0743		4.61	.10	.01	−.02	−8.12	+0.09	+33.19		31.9
+29.6	31	11.75	−26.54	30	45.21	52	3.14	+	0715		4.60	.25	.01	−.17	−8.29	−0.06	+34.37		33.8
+23.5	31	6.40	−21.07	30	45.33	52	3.02	+	0036		4.53	.14	.01	−.06	−8.61	+0.05	+33.84		32.8
+21.7	31	5.65	−19.46	30	46.19	52	2.16	+	0875		4.62	.11	.03	−.01	−8.97	+0.10	+34.33		32.4
+22.3	31	5.50	−19.99	30	45.51	52	2.84	+	1307		4.67	.11	.03	−.01	−8.92	+0.10	+34.45		33.1
+23.2	31	6.00	−20.80	30	45.20	52	3.15	+	0449		4.57	.13	.03	−.03	−9.07	+0.08	+33.71		32.4
+27.5	31	8.15	−24.66	30	43.49	52	4.86	−	1298		4.39	.18	.03	−.08	−9.37	+0.03	+35.08		35.0
+24.8	31	8.20	−22.24	30	45.96	+52	2.39	+	0256	+	4.50	−.15	+.03	−.05	−9.51	+0.06	+35.45		32.9

±.033 — 32.99 ± 0.59

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1872phae.proj.1459.

47

$\Delta\delta = -0.052^s$, $\Delta\delta = -0.34''$ +.126

+3.3532

h m 44.590

Star # 42 Leonis Min. α = 10 38 44.59 δ = +31° 21′ 20″ k = −.018 tang. δ = +.61

z = + 11 1 29

Date	n	T_s	T_m	n tang. δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
								10 h 38 m
1872 Apr. 17	+ 150	10 h	38 m 33.72 s	+.091	+0.07	+11.60	−0.87	+10.80	44.52
Apr. 18	+ 160	10	38	33.81	+.097	+.08	+11.48	−0.86	+10.70	44.56
Apr. 19	+ 173	10	38	34.19	+.105	+.09	+11.09	−0.85	+10.23	44.52
Apr. 21	+ 058	10	38	34.52	+.035	+.02	+10.79	−0.83	+9.98	44.50
Apr. 22	+ 020	10	38	34.83	+.012	−.01	+10.51	−0.82	+9.68	44.51
10 Apr. 23	+ 065	10	38	35.07	+.039	+.02	+10.18	−0.80	+9.40	44.47
2.3 Apr. 24	+ 077	10	38	35.21	+.046	+.03	+10.09	−0.79	+9.33	44.54
Apr. 25	+ 070	10	38	35.33	+.043	+.03	+10.04	−0.78	+9.29	44.62
Apr. 26	− 030	10	38	35.62	−.018	−.04	+9.75	−0.77	+8.94	44.56
Apr. 27	+ 040	10	38	35.73	+.024	+.01	+9.59	−0.75	+8.85	44.58
										44.538 ± .030

6′ Hydrae ✓ α = 10 h 40 m 35.91 s δ = −16° 37′ 19″ k = −.016 tang. δ = −.30

z = + 59 0 8

Date	n	T_s	T_m	n tang. δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
								40
1872 Apr. 17	+ 150	10	40 24.93	−.045	−0.06	+11.60	−0.65	+10.89	35.82
Apr. 18	+ 160	10	40 25.09	−.048	−.06	+11.48	−0.64	+10.78	35.87
Apr. 19	+ 173	10	40 25.44	−.052	−.07	+11.09	−0.63	+10.39	35.83
9 Apr. 21	+ 058	10	40 25.74	−.017	−.03	+10.79	−0.61	+10.15	35.89
2.3 Apr. 22	+ 020	10	40 26.08	−.006	−.02	+10.51	−0.60	+9.89	35.94
Apr. 24	+ 077	10	40 26.41	−.023	−.04	+10.09	−0.57	+9.48	35.89
Apr. 25	+ 070	10	40 26.50	−.021	−.04	+10.04	−0.56	+9.44	35.94
Apr. 26	− 030	10	40 26.69	+.009	−.01	+9.75	−0.55	+9.19	35.88
Apr. 27	+ 040	10	40 26.93	−.012	−.03	+9.59	−0.54	+9.02	35.95
									35.893 ± .036

$\Delta\delta = -0.006^s$ $\Delta\delta = -0.74''$ +3.1590

h m 31.663

l Leonis α = 10 42 31.66 δ = +11° 13′ 18″ k = −.016 tang. δ = +.20

z = + 31 9 31

Date	n	T_s	T_m	n tang. δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
								42
1872 Apr. 17	+ 150	10	42 20.76	+.030	+0.01	+11.60	−0.72	+10.89	31.65
Apr. 18	+ 160	10	42 20.90	+.032	+.02	+11.48	−0.71	+10.79	31.69
Apr. 19	+ 173	10	42 21.31	+.035	+.02	+11.09	−0.70	+10.41	31.72
Apr. 21	+ 058	10	42 21.51	+.012	−.00	+10.79	−0.68	+10.11	31.62
9 Apr. 22	+ 020	10	42 21.84	+.004	−.01	+10.51	−0.67	+9.83	31.67
2.3 Apr. 24	+ 077	10	42 22.22	+.015	−.00	+10.09	−0.66	+9.43	31.65
Apr. 25	+ 070	10	42 22.26	+.014	−.00	+10.04	−0.64	+9.40	31.66
Apr. 26	− 030	10	42 22.52	−.006	−.02	+9.75	−0.63	+9.10	31.62
Apr. 27	+ 040	10	42 22.67	+.008	−.01	+9.59	−0.62	+8.96	31.63
									31.657 ± .042

$\Delta\delta = +0.081^s$ $\Delta\delta = +1.31''$ +2.1163

h m 7.669

i Bootis L.C. α = 22 45 7.67 δ = +65° 31′ 38″ k = +.036 tang. δ = −.19

−72 05 24

Date	n	T_s	T_m	n tang. δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
								45
1872 Apr. 18	+ 160	10	44 53.92	−.350	−0.31	+11.48	+2.47	+13.64	7.56
Apr. 21	+ 058	10	44 54.64	−.127	−.09	+10.79	+2.33	+13.03	7.67
Apr. 22	+ 020	10	44 55.11	−.043	−.01	+10.51	+2.28	+12.78	7.89
7 Apr. 23	+ 065	10	44 55.38	−.142	−.11	+10.18	+2.23	+12.30	7.68
2.3 Apr. 24	+ 077	10	44 55.64	−.168	−.13	+10.09	+2.18	+12.14	7.78
Apr. 26	− 030	10	44 55.90	+.065	+.10	+9.75	+2.08	+11.93	7.83
Apr. 27	+ 040	10	44 56.27	−.087	−.05	+9.59	+2.03	+11.57	7.84
									7.757 ± .013

W Ursae Majoris ✓ α = 10 h 46 m 36.21 s δ = +43° 52′ 15″ k = −.021 tang. δ = +.96

z = − 1 29 26

Date	n	T_s	T_m	n tang. δ	d.T.	Red 1872.0	Sum	A.R. 1872.0
								46
1872 Apr. 17	+ 150	10	46 25.58	+.144	+0.12	+11.60	−1.16	+10.56	36.14
Apr. 19	+ 173	10	46 26.09	+.166	+.14	+11.09	−1.12	+10.11	36.20
Apr. 22	+ 020	10	46 26.74	+.019	−.00	+10.51	−1.06	+9.45	36.19
8 Apr. 23	+ 065	10	46 27.00	+.062	+.04	+10.18	−1.04	+9.18	36.18
2.3 Apr. 24	+ 077	10	46 27.08	+.073	+.05	+10.09	−1.03	+9.11	36.19
Apr. 25	+ 070	10	46 27.12	+.067	+.05	+10.04	−1.01	+9.08	36.20
Apr. 26	− 030	10	46 27.56	−.028	−.05	+9.75	−0.99	+8.81	36.37
Apr. 27	+ 040	10	46 27.63	+.038	+.02	+9.59	−0.98	+8.63	36.26
									36.204 ± .047

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-18853
19.92

$\delta_0 = +31^\circ\ 21'\ 19.9$ Lin z = +.19 μ + lg lg μ

Tm – 7'S Circle Read Red. Nonius. Com. Circle Read. β + 7 + γ 1.04980 -17 +.27

	s	'	"	"	'	"	'	"	'	"														
20 52.33	+13.7	1	59.85	−15.35	1	44.50	+21	3.85	+	01083	−0	11.50	−.04	+.02	−.19	13.60	−0.46	+33.27	21	21.6	+			
52.48	+19.1	2	5.80	−21.41	1	44.39	21	3.96	+	0743		11.41	.09	.02	−.24	13.70	−0.51	+33.19		21.5				
53.04	+23.1	2	11.40	−25.89	1	45.51	21	2.84	+	0715		11.40	.13	.02	−.28	13.80	−0.55	+34.37		21.5				
52.03	+19.7	2	7.10	−22.07	1	45.03	21	3.32	+	0036		11.22	.09	.02	−.24	14.00	−0.51	+33.84		21.4				
51.54	+16.0	2	3.30	−17.93	1	45.37	21	2.98	+	0879		11.44	.06	.06	−.17	14.20	−0.44	+34.33		21.2				
51.73	+15.7	2	2.65	−17.59	1	45.06	21	3.29	+	1307		11.56	.06	.06	−.17	14.30	−0.44	+34.45		21.4				
51.58	+19.3	2	7.05	−21.63	1	45.42	21	2.93	+	0449		11.33	.08	.06	−.19	14.40	−0.46	+33.71		20.4				
52.17	+21.3	2	8.70	−23.87	1	44.83	21	3.52	+	0345		11.31	.10	.06	−.21	14.50	−0.48	+33.61		20.8				
50.79	+22.0	2	11.30	−24.66	1	46.64	21	1.71	−	1298		10.88	.11	.07	−.21	14.70	−0.48	+35.08		20.7				
21 9.05	+14.7	2	2.50	−16.47	1	46.03	+21	2.32	+	0257	−	11.28	−.05	+.06	−.16	14.80	−0.43	+35.45		21.3				

±.026 21.18 ±0.25

$\delta_0 = -16\ 37\ 20.20$ 1.97934 -.80 -1.24

+14.4	59	32.15	−18.11	59	14.04	−36	25.69	+	01102	−1	37.92	−.01	+.05	+.05	−.70	+9.19	−1.94	+33.27	37	23.1				
+17.8	59	35.50	−22.38	59	13.12	36	24.77	+	0761	1	37.15	.01	.08	.05	−.67	+9.24	−1.91	+33.19		21.4				
+21.2	59	42.00	−26.66	59	15.34	36	26.99	+	0730	1	37.08	.01	.10	.05	−.65	+9.29	−1.89	+34.37		22.3				
+16.1	59	37.55	−20.25	59	17.30	36	28.95	+	0050	1	35.57	.00	.06	.05	−.69	+9.35	−1.93	+33.84		23.3				
+16.7	59	38.25	−21.00	59	14.25	36	25.90	+	0902	1	37.46	.01	.07	.14	−.59	+9.39	−1.83	+34.33		21.5				
+20.4	59	41.75	−25.65	59	16.10	36	27.75	+	0472	1	36.51	.00	.09	.14	−.57	+9.46	−1.81	+33.71		22.9				
+15.8	59	36.00	−19.87	59	16.13	36	27.78	+	0351	1	36.24	.00	.06	.14	−.60	+9.50	−1.84	+33.61		22.7				
+18.0	59	45.75	−22.64	59	23.11	36	34.76	−	1273	1	32.71	.01	.08	.14	−.58	+9.53	−1.82	+35.08		24.7				
+16.5	59	40.10	−20.75	59	19.35	−36	31.00	+	0267	−1	36.05	−.00	+.07	+.14	−.59	+9.55	−1.83	+35.45		23.9				

±.068 23.87 ±0.71

−18938
1808

$\delta_0 = +11\ 13\ 18.1$ Lin z = +.52 1.54150 -.48 -.75

12 42.61	+16.8	9	50.70	−21.62	9	29.08	+13	19.27	+	01102	−0	35.68	−.03	+.05	−.46	+2.40	−1.21	+33.27	13	18.0				
43.16	+15.3	9	49.50	−19.69	9	29.81	13	18.54	+	0761		35.41	.02	.05	−.45	+2.30	−1.20	+33.19		17.4				
42.06	+18.7	9	53.00	−24.07	9	30.93	13	17.42	+	0730		35.38	.03	.05	−.46	+2.20	−1.21	+34.37		17.4				
43.24	+17.4	9	52.70	−22.40	9	30.30	13	18.05	+	0050		34.83	.03	.05	−.46	+2.10	−1.21	+33.84		17.9				
42.30	+17.9	9	56.35	−25.62	9	30.73	13	17.62	+	0896		35.52	.04	.14	−.38	+2.00	−1.13	+34.33		17.3				
43.75	+15.5	9	49.50	−19.95	9	29.55	13	18.80	+	0472		35.17	.02	.14	−.36	+1.90	−1.11	+33.71		18.1				
42.93	+15.8	9	50.80	−20.34	9	30.46	13	17.89	+	0351		35.08	.02	.14	−.36	+1.80	−1.11	+33.61		17.1				
40.81	+19.1	9	58.45	−24.58	9	33.87	13	14.48	−	1273		33.78	.03	.14	−.37	+1.70	−1.12	+35.08		16.4				
40.57	+16.0	9	53.45	−20.60	9	32.85	+13	15.50	+	0267	−	35.01	−.02	+.14	−.36	+1.70	−1.11	+35.45		16.5				

±.041 17.34 ±0.42

+18855
38.10

$\delta_0 = +\ 114\ 28\ 21.9$ Lin z = −.95 2.24494 +.88 +1.37

22 33.9	−16.8	57	55.05	−9.15	57	45.90	+25	2.45	+	00779	+2	58.95	.02	+.06	+.02	+.97	−17.40	+2.34	+33.19	28	19.6			
10.9.0	−2.8	57	42.85	−1.53	57	41.32	25	7.03	+	0074	2	56.07	.03	.00	.03	+.91	−17.50	+2.28	+33.84		21.4			
0.28	+12.9	57	41.35	+7.02	57	48.37	24	5.98	+	929	2	59.57	.02	.03	.08	+.99	−17.50	+2.36	+34.33		18.7			
59.15	+17.5	57	38.15	+9.52	57	47.67	25	6.68	+	1363	2	61.37	.02	.06	.08	+1.02	−17.60	+2.39	+34.45		21.9			
4.47	+45.9	57	20.60	+24.98	57	45.58	25	2.77	+	0495	2	57.78	.00	.45	.07	+1.40	−17.40	+2.77	+33.71		18.9			
23.29	+32.1	57	(16.45)	+17.47	(57	33.92)	25	14.43	−	1248	2	50.79	.07	.21	.07	+1.16	−17.40	+2.53	+35.08		24.5			
6.70	+36.9	57	24.30	+24.08	57	44.38	+25	3.97	+	0278	+2	56.90	.01	+.29	+.07	+1.24	−18.50	+2.61	+35.45		20.4			

±.005 20.59 ±1.32

$\delta_0 = +43\ 52\ 14.1$ 0.17650 +.02 +.03

+23.6	31	24.20	−22.32	31	1.88	+51	46.47	+	01122	+0	1.54	−.16	+.01	−.13	−6.65	−0.10	+33.27	52	14.5					
+23.5	31	25.50	−22.22	31	3.28	51	45.07	+	0744		1.53	.16	.01	−.13	−6.98	−0.10	+34.37		13.9					
+24.0	31	26.25	−22.70	31	3.55	51	44.80	+	0929		1.53	.16	.04	−.10	−7.47	−0.07	+34.33		13.1					
+24.0	31	25.10	−22.69	31	2.41	51	45.94	+	1363		1.55	.16	.04	−.10	−7.62	−0.07	+34.45		14.2					
+25.1	31	24.80	−23.73	31	1.07	51	47.28	+	0494		1.52	.17	.04	−.11	−7.78	−0.08	+33.71		14.6					
+24.4	31	24.70	−23.07	31	1.63	51	46.72	+	0357		1.50	.16	.04	−.10	−7.93	−0.07	+33.61		13.8					
+24.4	31	24.95	−23.07	31	1.88	51	46.47	−	1248		1.46	.16	.04	−.10	−8.08	−0.07	+35.08		14.9					
+24.6	31	25.05	−23.26	31	1.79	+51	46.56	+	0289	+	1.51	−.17	+.04	−.11	−8.22	−0.08	+35.45		15.2					

±.034 14.27 ±0.47

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1872phae.proj.1459.

48

Star 54 Leonis ✓ α = 10h 48m 40s.80 δ = +25° 25′ 55″ k = −.017 tang δ = +.48
z = +16 56 54

Date	n	T′s	T′m	n tang δ	d.T.	K.d.1872	Sum	A.R.1872
	s	h m s	s	s	s	s	s	h m s
1872 Apr. 17	+ 150	10 48 29.89	+.071	+0.05	+11.60	−0.86	+10.79	10 48 40.68
Apr. 18	+ 160	10 48 30.96	+.077	+.06	+11.48	−0.84	+10.70	40.78
Apr. 19	+ 173	10 48 30.37	+.086	+.07	+11.09	−0.83	+10.33	40.70
7 Apr. 23	+ 065	10 48 31.35	+.031	+.01	+10.18	−0.79	+9.40	40.75
23 Apr. 24	+ 077	10 48 31.42	+.036	+.02	+10.09	−0.78	+9.33	40.75
Apr. 26	− 030	10 48 31.74	−.014	−.03	+9.75	−0.76	+8.96	40.70
Apr. 27	+ 040	10 48 31.90	+.019	+.00	+9.59	−0.74	+8.85	40.75
								40.729 ±.027

Pi X 199 ~~B.A.C. 3755~~ α = 10h 50m 45s.25 δ = −36° 27′ 19″ k = −.019 tang δ = −.74
z = + 78 50 8

1872 Apr. 17	+ 150	10 50 34.71	−.111	−0.13	+11.60	−0.79	+10.68	50 45.39
Apr. 22	+ 020	10 50 35.75	−.015	−.03	+10.51	−0.73	+9.75	45.50
Apr. 23	+ 065	10 50 35.96	−.048	−.07	+10.18	−0.71	+9.40	45.36
6 Apr. 24	+ 077	10 50 36.16	−.056	−.07	+10.09	−0.70	+9.32	45.48
23 Apr. 26	− 030	10 50 36.26	+.022	+.02	+9.75	−0.67	+9.08	45.34
Apr. 27	+ 040	10 50 36.41	−.029	−.05	+9.59	−0.65	+8.89	45.30
								45.395 ±.059

L Crateris ✓ α = 10h 53m 32s.41 δ = −17° 37′ 3″ k = −.016 tang δ = −.32
z = + 59 59 52

1872 Apr. 17	+ 150	10 53 21.51	−.048	−0.06	+11.60	−0.70	+10.84	53 32.35
Apr. 18	+ 160	10 53 21.66	−.051	−.07	+11.48	−0.69	+10.72	32.38
Apr. 19	+ 173	10 53 21.94	−.055	−.07	+11.09	−0.68	+10.34	32.28
Apr. 21	+ 058	10 53 22.26	−.018	−.03	+10.79	−0.66	+10.10	32.36
9 Apr. 22	+ 020	10 53 22.65	−.006	−.02	+10.51	−0.65	+9.84	32.49
23 Apr. 23	+ 065	10 53 22.96	−.020	−.04	+10.18	−0.64	+9.50	32.46
Apr. 24	+ 077	10 53 22.88	−.024	−.04	+10.09	−0.63	+9.42	32.40
Apr. 26	− 030	10 53 23.18	+.009	−.01	+9.75	−0.61	+9.13	32.31
Apr. 27	+ 040	10 53 23.40	−.013	−.03	+9.59	−0.60	+8.96	32.36
								32.377 ±.045

Δα = −0.078 Δδ = +0″.10 +37.620

✱ L Ursae Majoris α = 10h 55m 48s.56 δ = +62° 26′ 28″ k = −.033 tang δ = +1.92
z = − 20 3 39

1872 Apr. 17	+ 150	10 55 38.65	+.288	+0.26	+11.60	−2.03	+9.83	55 48.48
Apr. 18	+ 160	10 55 38.73	+.307	+.27	+11.48	−2.01	+9.74	48.47
Apr. 19	+ 173	10 55 39.14	+.332	+.30	+11.09	−1.97	+9.42	48.56
Apr. 21	+ 058	10 55 39.56	+.111	+.08	+10.79	−1.92	+8.95	48.51
10 Apr. 22	+ 020	10 55 39.81	+.038	+.01	+10.51	−1.89	+8.63	48.44
23 Apr. 23	+ 065	10 55 40.01	+.124	+.09	+10.18	−1.86	+8.41	48.42
Apr. 24	+ 077	10 55 40.11	+.147	+.11	+10.09	−1.83	+8.37	48.48
Apr. 25	+ 070	10 55 40.12	+.134	+.10	+10.04	−1.80	+8.34	48.46
Apr. 26	− 030	10 55 40.62	−.057	−.09	+9.75	−1.77	+8.07	48.59
Apr. 27	+ 040	10 55 40.56	+.076	+.04	+9.59	−1.74	+7.89	48.45
								48.478 ±.027

Δα = +0.006 Δδ = +0″.76 +30.971

✱ χ Leonis α = 10h 58m 24s.80 δ = +8° 1′ 38″ k = −.016 tang δ = +.14
z = + 34 21 11

1872 Apr. 18	+ 160	10 58 14.08	+.022	+0.01	+11.48	−0.74	+10.75	58 24.83
Apr. 22	+ 020	10 58 15.05	+.002	−.01	+10.51	−0.71	+9.79	24.84
Apr. 23	+ 065	10 58 15.36	+.009	−.01	+10.18	−0.70	+9.47	24.83
7 Apr. 24	+ 077	10 58 15.42	+.010	−.01	+10.09	−0.70	+9.38	24.80
2.3 Apr. 25	+ 070	10 58 15.43	+.009	−.01	+10.04	−0.69	+9.34	24.77
Apr. 26	− 030	10 58 15.75	−.004	−.02	+9.75	−0.68	+9.05	24.80
Apr. 27	+ 040	10 58 15.89	+.005	−.01	+9.59	−0.67	+8.91	24.80
								24.810 ±.018

4 β Leonis ✓ α = 11h 0m 22s.37 δ = +2° 38′ 59″ k = −.015 tang δ = +.05
z = + 39 43 50

1872 Apr. 17	+ 150	11 0 11.54	+.007	−0.01	+11.60	−0.75	+10.84	0 22.38
Apr. 18	+ 160	11 0 11.75	+.008	−.01	+11.48	−0.74	+10.73	22.48
Apr. 19	+ 173	11 0 12.06	+.008	−.01	+11.09	−0.73	+10.35	22.41
Apr. 21	+ 058	11 0 12.36	+.002	−.01	+10.79	−0.71	+10.07	22.43
10 Apr. 22	+ 020	11 0 12.72	+.001	−.01	+10.51	−0.70	+9.80	22.52
2.3 Apr. 23	+ 065	11 0 13.02	+.008	−.01	+10.18	−0.69	+9.48	22.48
Apr. 24	+ 077	11 0 13.11	+.003	−.01	+10.09	−0.69	+9.39	22.50
Apr. 25	+ 070	11 0 13.11	+.003	−.01	+10.04	−0.68	+9.35	22.46
Apr. 26	− 030	11 0 13.33	−.001	−.02	+9.75	−0.67	+9.06	22.39
Apr. 27	+ 040	11 0 13.51	+.002	−.01	+9.59	−0.66	+8.92	22.43
								22.448 ±.036

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1872phae.proj.1459.

$\delta_0 = +25^\circ\ 25'\ 54''.0$ — u + log tg u — −.77 −.42

Tm — 78 Circle Read. Red Horizon. Circle Read. (Com.) — B + 17 + γ — 1.24410 — λ−γ — Rm — Rio — RF Rm Red to Rio 18720 — Rm + Rio — Ref. I 5 18720

S	'	"	"	'	"	'	"			"		"	"	"	"	"	"		
+18.1	57	29.00	−21.45	57	7.55	+25	40.80	+	01122	−	18.00		−.07	+.02	−.32	−1.48	−0.74	+33.27	25 53.8
+20.0	57	31.60	−23.70	57	7.90	25	40.45	+	0778		17.85		.08	.03	−.32	−1.60	−0.74	+33.19	53.4
+19.7	57	32.80	−23.34	57	9.46	25	38.89	+	0744		17.84		.08	.03	−.32	−1.72	−0.74	+34.37	53.0
+23.9	57	29.15	−28.34	57	0.81	25	42.54	+	1363		18.10		.12	.07	−.32	−2.18	−0.74	+34.45	(61.0)
+3.2	57	11.00	−3.79	57	7.21	25	41.14	+	0494		17.74		.00	.07	−.20	−2.30	−0.62	+33.71	54.2
+20.9	57	35.00	−24.76	57	10.24	25	38.11	−	1248		17.04		.09	.08	−.28	−2.52	−0.70	+35.08	52.9
+17.9	57	29.45	−21.21	57	8.24	+25	40.11	+	0289	−	17.66		−.07	+.07	−.27	−2.63	−0.69	+35.45	54.6

±.024 — 53.65 ±0.51

$\delta_0 = -36\ 27\ 58?$ — 2.44990 — −.91 −1.41

+17.2	46	3.65	−18.16	45	45.49	−22	57.14	+	01122	−	4 49.15	−.13	+.07	+.01	−.83	+12.36	−2.24	+33.27	26 63.0
+16.7	46	3.70	−17.63	45	46.07	22	57.72	+	0929		4 47.87	.15	.07	.03	−.81	+13.03	−2.22	+34.33	60.6
+22.9	46	6.60	−24.21	45	42.39	22	54.04	+	1363		4 50.76	.22	.14	.03	−.79	+13.15	−2.15	+34.45	59.6
+22.1	46	11.25	−23.33	45	47.92	22	59.57	+	0494		4 45.00	.03	.12	.04	−.75	+13.27	−2.16	+33.71	59.8
+21.3	46	29.20	−22.49	46	6.71	23	18.36	−	1248		4 33.16	.24	.11	.05	−.75	+13.49	−2.16	+35.08	65.3
+20.9	46	15.20	−22.07	45	53.13	−23	4.78	+	0289	−	4 43.66	−.03	+.11	+.04	−.76	+13.59	−2.17	+35.45	61.6

±.047 — $\delta_0 = -17\ 37\ 38$ — 1.99692 — −.81 −1.25 — 61.65 ±1.53

+19.3	59	14.20	−24.14	58	50.06	−36	1.71	+	01141	−1	41.94	−.00	+.06	+.04	−.71	+9.29	−1.96	+33.27	37 3.0
+16.9	59	11.75	−21.14	58	50.61	36	2.26	+	00996	1	41.18	.01	.05	.04	−.72	+9.35	−1.97	+33.19	2.8
+19.6	59	18.45	−24.52	58	53.93	36	5.58	+	0759	1	41.04	.01	.07	.04	−.70	+9.40	−1.95	+34.37	4.8
+13.6	59	12.60	−17.01	58	55.59	36	7.24	+	0077	1	39.47	.00	.03	.04	−.74	+9.50	−1.95	+33.84	5.4
+19.6	59	17.90	−24.52	58	53.38	36	5.03	+	0955	1	41.50	.01	.07	.13	−.61	+9.55	−1.86	+34.33	4.5
+20.3	59	17.00	−25.39	58	51.61	36	3.26	+	1391	1	42.52	.01	.09	.13	−.61	+9.59	−1.86	+34.45	3.6
+17.9	59	15.45	−22.39	58	53.06	36	4.11	+	0517	1	40.48	.00	.06	.13	−.62	+9.64	−1.87	+33.71	3.7
+18.7	59	(28.00)	−23.29	(59	4.61)	36	16.26	−	1223	1	36.54	.01	.06	.13	−.62	+9.72	−1.87	+35.08	—
+17.5	59	19.50	−21.89	58	57.61	−36	9.26	+	0290	−1	39.96	−.00	+.05	+.13	−.63	+9.75	−1.88	+35.45	5.9

±.043 — −19.360 28.46 — 4.21 ±0.85

$\delta_0 = +62\ 26\ 28.0$ — sin Z = −.34 — 1.32260 — +.32 +.49

26 4.56	+33.0	57	25.18	−20.04	57	5.14	+25	43.21	+	01141	+	21.58	−.25	+.07	+.09	−10.80	+0.58	+33.27	26 27.8
4.60	+31.5	57	24.10	−19.13	57	4.97	25	43.38	+	0996		21.41	.21	.02	+.13	−11.00	+0.62	+33.19	27.6
3.87	+34.2	57	26.40	−20.77	57	5.63	25	42.72	+	0759		21.39	.26	.02	+.08	−11.20	+0.57	+34.37	27.8
5.37	+10.3	57	10.40	−6.26	57	4.14	25	44.21	+	0077		21.06	.02	.02	+.32	−11.50	+0.81	+33.84	28.4
5.81	+34.1	57	24.55	−20.71	57	3.84	25	44.51	+	0955		21.49	.26	.07	+.13	−11.70	+0.62	+34.33	29.2
5.11	+31.1	57	23.70	−18.89	57	4.81	25	43.54	+	1391		21.71	.31	.07	+.18	−11.90	+0.67	+34.45	28.5
6.40	+34.2	57	23.80	−20.77	57	3.03	25	45.32	+	0517		21.27	.26	.07	+.13	−12.10	+0.62	+33.71	28.8
6.46	+10.0	57	9.10	−6.07	57	3.03	25	45.32	+	0364		21.19	.01	.06	+.37	−12.20	+0.86	+33.61	28.8
6.60	+34.0	57	22.65	−20.65	57	2.00	25	46.35	−	1223		20.44	.26	.07	+.13	−12.40	+0.62	+35.08	30.1
4.99	+34.3	57	25.15	−20.83	57	4.32	+25	44.03	+	0290	+	21.15	−.26	+.07	+.13	−12.60	+0.62	+35.45	28.6

±.012 — −19.393 37.83 — 28.56 ±0.48

$\delta_0 = +8^\circ\ 1'\ 37.8$ — sin Z = +.56 — 1.59470 — −.52 ±.81

1.30 4	+18.6	21	29.40	−24.17	21	5.23	+1	43.12	+	00814	−	40.06	−.03	+.01	−.54	+3.40	−1.35	+33.19	1 38.3
3.02	+19.5	21	30.45	−25.34	21	5.11	1	43.24	+	0982		40.23	.04	.05	−.51	+3.20	−1.32	+34.33	39.2
2.76	+16.6	21	26.55	−21.57	21	4.98	1	43.37	+	1419		40.63	.03	.05	−.50	+3.10	−1.31	+34.45	39.0
3.17	+15.4	21	25.40	−20.01	21	5.39	1	42.96	+	0540		39.82	.02	.05	−.49	+3.00	−1.30	+33.71	38.5
2.78	+20.3	21	32.30	−26.38	21	5.92	1	42.43	+	0371		39.67	.03	.05	−.50	+3.00	−1.31	+33.61	38.1
0.26	+17.8	21	32.00	−23.13	21	8.87	1	39.48	−	1198		38.25	.02	.05	−.49	+2.90	−1.30	+35.08	37.9
2.15	+16.6	21	28.20	−21.57	21	6.63	+1	41.72	+	0301	−	39.60	−.02	+.05	−.49	+2.80	−1.30	+35.45	39.1

±.018 — 1.67950 — 38.59 ±0.40

$\delta_0 = +2\ 38\ 59.5$ — −.60 −.92

+21.9	44	5.15	−28.71	43	36.44	+39	11.91	+	01160	−	49.10	−.01	+.04	−.57	+4.81	−1.49	+33.27	38 59.4
+24.2	44	9.50	−31.73	43	37.77	39	10.58	+	0814		48.71	.02	.04	−.58	+4.78	−1.50	+33.19	58.3
+20.4	44	6.25	−26.74	43	39.51	39	8.84	+	0774		48.67	.01	.04	−.57	+4.75	−1.49	+34.37	57.8
+4.8	43	44.50	−6.29	43	38.21	39	10.14	+	0091		47.91	.00	.04	−.56	+4.68	−1.48	+33.84	56.3
+16.3	43	58.65	−21.37	43	37.28	39	11.07	+	0987		48.90	.00	.12	−.48	+4.64	−1.40	+34.33	59.7
+18.7	44	0.20	−24.52	43	35.68	39	12.67	+	1419		49.39	.00	.12	−.48	+4.61	−1.40	+34.45	60.9
+15.8	43	57.75	−20.71	43	37.04	39	11.31	+	0540		48.41	.00	.12	−.48	+4.57	−1.40	+33.71	59.8
+15.9	43	59.00	−20.84	43	38.16	39	10.19	+	0371		48.21	.00	.12	−.48	+4.54	−1.40	+33.61	58.7
±.036 +16.5	44	3.90	−21.63	43	42.27	39	6.08	−	1198		46.50	.00	.12	−.48	+4.50	−1.40	+35.08	57.8
+15.4	43	59.80	−24.19	43	39.61	+39	8.74	+	0301	−	48.14	−.00	+.12	−.48	+4.46	−1.40	+35.45	59.1

59.08 ±0.66

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$\Delta\alpha = -0^s.010$ $\Delta\delta = +0''.29$ +3.3976

h m s

Star ✱ Ψ Theras Majoris α = 11 02 27.49 δ = +45° 11′ 32″ k = −.022 tang. δ = +1.01

z = −2 48 43

Date	m	17/5	7/m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0 h m s
1872 Apr. 17	+.150	11	2 17.55	+.151	+0.13	+11.60	−1.29	+10.44	11 2 27.49
Apr. 18	+.160	11	2 17.15	+.161	+.14	+11.48	−1.28	+10.34	27.49
Apr. 19	+.173	11	2 17.48	+.174	+.15	+11.09	−1.26	+9.98	27.46
Apr. 21	+.058	11	2 17.90	+.058	+.04	+10.79	−1.23	+9.60	27.50
10 Apr. 22	+.020	11	2 18.26	+.020	−.00	+10.51	−1.22	+9.29	27.55
23 Apr. 23	+.065	11	2 18.41	+.065	+.04	+10.18	−1.20	+9.02	27.43
Apr. 24	+.077	11	2 18.53	+.077	+.06	+10.09	−1.19	+8.96	27.49
Apr. 25	+.070	11	2 18.58	+.070	+.06	+10.04	−1.18	+8.91	27.49
Apr. 26	−.030	11	2 18.93	−.030	−.05	+9.75	−1.17	+8.53	27.46
Apr. 27	+.040	11	2 19.01	+.040	+.02	+9.59	−1.15	+8.46	27.47
									27.483 ± .020

B Crateris ✓ α = 11 h 5 m 22.00 s δ = −22° 7′ 39″ k = −.017 tang. δ = −.41

z = +64 30 28

1872 Apr. 18	+.160	11	5 11.24	−.066	−0.08	+11.48	−0.76	+10.64	5 21.88
Apr. 19	+.173	11	5 11.55	−.070	−.09	+11.09	−0.75	+10.25	21.80
Apr. 21	+.058	11	5 11.86	−.023	−.04	+10.79	−0.73	+10.02	21.88
8 Apr. 22	+.020	11	5 12.23	−.008	−.03	+10.51	−0.72	+9.76	21.99
23 Apr. 23	+.065	11	5 12.54	−.026	−.04	+10.18	−0.71	+9.43	21.97
Apr. 24	+.077	11	5 12.58	−.031	−.05	+10.09	−0.70	+9.34	21.92
Apr. 25	+.070	11	5 12.60	−.029	−.05	+10.04	−0.69	+9.30	21.90
Apr. 27	+.040	11	5 13.01	−.016	−.03	+9.59	−0.67	+8.89	21.90
									21.905 ± .036

$\Delta\alpha = +0^s.034$ $\Delta\delta = -0''.20$ +3.2023

h m s

✱ S Leonis α = 11 7 17.87 δ = +21° 13′ 28″ k = −.017 tang. δ = +.39

z = +21 9 21

1872 Apr. 18	+.160	11	7 7.23	+.062	+0.04	+11.48	−0.88	+10.64	7 17.87
Apr. 19	+.173	11	7 7.62	+.067	+.05	+11.09	−0.87	+10.27	17.89
Apr. 21	+.058	11	7 7.94	+.022	+.01	+10.79	−0.85	+9.95	17.89
Apr. 22	+.020	11	7 8.25	+.008	−.01	+10.51	−0.84	+9.66	17.91
9 Apr. 23	+.065	11	7 8.54	+.025	+.01	+10.18	−0.83	+9.36	17.90
23 Apr. 24	+.077	11	7 8.56	+.030	+.01	+10.09	−0.83	+9.27	17.83
Apr. 25	+.070	11	7 8.66	+.027	+.01	+10.04	−0.82	+9.23	17.89
Apr. 26	−.030	11	7 9.05	−.012	−.03	+9.75	−0.81	+8.91	17.96
Apr. 27	+.040	11	7 9.16	+.015	−.00	+9.59	−0.80	+8.79	17.95
									17.899 ± .024

n not R

R Leonis ✓ α = 11 h 9 m 10.07 s δ = +14° 0′ 18″ k = −.016 tang. δ = +.25

z = −+28 22 31

1872 Apr. 18	+.160	11	8 59.40	+.040	+0.02	+11.48	−0.83	+10.67	9 10.07
Apr. 19	+.173	11	8 59.75	+.043	+.03	+11.09	−0.83	+10.29	10.04
Apr. 21	+.058	11	9 0.01	+.014	−.00	+10.79	−0.81	+9.98	9.99
Apr. 22	+.020	11	9 0.43	+.005	−.01	+10.51	−0.80	+9.70	10.13
9 Apr. 23	+.065	11	9 0.64	+.016	+.00	+10.18	−0.79	+9.39	10.03
23 Apr. 24	+.077	11	9 0.72	+.019	+.00	+10.09	−0.78	+9.31	10.03
Apr. 25	+.070	11	9 0.85	+.017	+.00	+10.04	−0.77	+9.27	10.12
Apr. 26	−.030	11	9 1.04	−.007	−.02	+9.75	−0.77	+8.96	10.00
Apr. 27	+.040	11	9 1.20	+.010	−.01	+9.59	−0.76	+8.82	10.02
									10.048 ± .036

$\Delta\alpha = +0^s.125$ $\Delta\delta = -0''.86$ +3.2135

h m s

✱ ε^{10} Ursae Majoris α = 11 11 20.89 δ = +32° 14′ 56″ k = −.019 tang. δ = +.63

z = +19 7 53

1872 Apr. 17	+.150	11	11 10.31	+.094	+0.07	+11.60	−1.04	+10.63	11 20.94
Apr. 18	+.160	11	11 10.51	+.101	+.08	+11.48	−1.03	+10.53	21.04
Apr. 19	+.173	11	11 10.81	+.108	+.09	+11.09	−1.02	+10.16	20.97
10 Apr. 21	+.058	11	11 11.24	+.036	+.02	+10.79	−1.00	+9.81	21.05
23 Apr. 22	+.020	11	11 11.53	+.012	−.01	+10.51	−0.99	+9.51	21.04
Apr. 23	+.065	11	11 11.83	+.040	+.02	+10.18	−0.98	+9.22	21.05
Apr. 24	+.077	11	11 11.85	+.048	+.03	+10.09	−0.97	+9.15	21.00
Apr. 25	+.070	11	11 11.92	+.044	+.02	+10.04	−0.96	+9.10	21.02
Apr. 26	−.030	11	11 12.29	−.019	−.04	+9.75	−0.95	+8.76	21.05
Apr. 27	+.040	11	11 12.36	+.025	+.01	+9.59	−0.94	+8.66	21.02
									21.018 ± .025

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-19.506
31.94

$\delta_0 = +45° \; 11' \; 31.9$ — sin z = -.05 u+ly tg.n — +.05 +.07

Tm — T's		Circle Read.	Red. Hor. wire	Circle Read.	Corr.		B+T+γ	0.45150	"	λf-γ	Rm	Ro	Rf Rm Ro	Red to 1872	Rm - Ro + Rf	Iδ 1872.0	
s	'	"	"	'	"	'	"		"		"	"	"	"	"	'	"
4.71 +24.5	12	9.05	-22.66	11	46.39+	11	1.96+	01160+	2.90		-.17	+.02	-.10	6.20	-0.03+33.27	11	31.9
6.24 +24.5	12	7.50	-22.66	11	44.84	11	3.51+	0814	2.88		.17	.02	-.10	-6.40	-0.03+33.19		33.1
4.14 +20.5	12	5.95	-18.96	11	46.99	11	1.36+	0774	2.88		.12	.02	-.05	-6.60	+0.02+34.37		32.0
4.77 +25.7	12	10.00	-23.76	11	46.24	11	2.11+	0091	2.83		.18	.02	-.11	-6.90	-0.04+33.84		31.8
3.59 +22.8	12	8.65	-21.08	11	47.57	11	0.78+	0982	2.89		.14	.06	-.03	-7.10	+0.04+34.33		30.9
5.65 +24.1	12	7.80	-22.28	11	45.52	11	2.83+	1419	2.92		.16	.06	-.05	-7.20	+0.02+34.45		33.0
5.90 +23.0	12	6.50	-21.27	11	45.23	11	3.12+	0540	2.86		.14	.06	-.03	-7.40	+0.04+33.71		32.3
5.99 +24.6	12	7.85	-22.75	11	45.10	11	3.25+	0371	2.85		.17	.06	-.06	-7.50	+0.01+33.61		32.2
5.80 +26.4	12	9.60	-24.42	11	45.18	11	3.17-	1198	2.75		.18	.06	-.17	-7.70	-0.10+35.08		33.2
4.20 +19.8	12	5.25	-18.31	11	46.94+	11	1.41+	0301+	2.84		-.11	+.06	-.00	-7.90	+0.07+35.45		31.9

±.014 — 32.23 ± 0.47

$\delta_0 = -22 \; 7 \; 38.7$ — 2.07919 — -.84 -1.30

+20.3	29	32.90	-24.68	29	8.22-	6	19.87+	00832 -2	2.33	-.02	+.07	+.05	-.72	+10.08	-2.02+33.19	7	41.0
+21.0	29	36.55	-25.54	29	11.01	6	22.66+	0789 2	2.20	.02	.07	.05	-.72	+10.16	-2.02+34.37		42.4
+16.1	29	31.30	-19.58	29	11.72	6	23.37+	0105 2	0.29	.00	.05	.05	-.74	+10.31	-2.04+33.84		41.5
+19.5	29	31.60	-23.71	29	6.89	6	18.54+	1009 2	2.82	.02	.07	.13	-.64	+10.38	-1.94+34.33		38.6
+19.6	29	30.75	-23.83	29	6.92	6	18.57+	1448 2	4.07	.02	.07	.13	-.64	+10.45	-1.94+34.45		39.7
+23.6	29	38.45	-28.70	29	9.75	6	21.40+	0563 2	1.57	.01	.12	.14	-.59	+10.51	-1.89+33.71		40.6
+19.8	29	35.15	-24.07	29	11.08	6	22.73+	0378 2	1.05	.00	.07	.13	-.64	+10.58	-1.94+33.61		41.5
+19.2	29	35.40	-23.34	29	12.06-	6	23.71+	0312 -2	0.87	-.00	+.06	+.13	-.65	+10.71	-1.95+35.45		40.4

±.033 — 40.71 ± 0.80

-19.677
27.96

$\delta_0 = +21 \; 13 \; 28.0$ — sin z = +.36 — 1.34780 — -.33 -.52

55.70 +18.9	9	53.05	-23.12	9	29.93+	13	18.42+	00832-	22.71		-.06	+.05	-.34	+0.20	-0.86+33.19	13	28.2
53.94 +19.4	9	55.45	-23.74	9	31.71	13	16.64+	0789	22.69		.06	.05	-.34	+0.10	-0.86+34.37		27.6
55.32 +20.2	9	55.40	-24.71	9	30.69	13	17.66+	0105	22.32		.07	.05	-.35	-0.10	-0.87+33.84		28.2
54.51 +14.8	9	49.25	-18.11	9	31.14	13	17.21+	1009	22.80		.04	.14	-.23	-0.20	-0.75+34.33		27.8
54.64 +16.0	9	50.15	-19.57	9	30.58	13	17.77+	1448	23.03		.04	.14	-.23	-0.30	-0.75+34.45		28.1
54.85 +20.1	9	55.60	-24.59	9	31.01	13	17.34+	0563	22.56		.07	.14	-.26	-0.40	-0.78+33.71		27.3
53.0 +17.4	9	51.95	-21.28	9	30.67	13	17.68+	0378	22.47		.05	.14	-.24	-0.50	-0.76+33.61		27.6
53.05 +19.0	9	56.95	-23.25	9	33.70	13	14.65-	1173	21.68		.06	.14	-.25	-0.60	-0.77+35.08		26.7
52.50 +17.2	9	52.55	-21.05	9	31.50+	13	16.85+	0312-	22.44		-.05	+.14	-.24	-0.70	-0.76+35.45		28.4

±.022 — 27.76 ± 0.37

$\delta_0 = +14 \; 0 \; 19.3$ — 1.49260 — -.44 -.68

+17.8	22	56.15	-22.66	22	33.49+	0	14.86+	00850-	31.71		-.04	+.03	-.45	+2.10	-1.13+33.19	0	17.8
	~~22~~	~~59.50~~	~~-24.44~~	~~22~~	~~35.11~~	~~0~~	~~13.24+~~	~~0804~~	~~31.64~~						~~+34.37~~		
+17.3	22	56.15	-22.02	22	34.13	0	14.22+	0119	31.18		.04	.03	-.45	+1.86	-1.13+33.84		17.6
+18.9	22	56.30	-24.06	22	32.24	0	16.11+	1035	31.84		.05	.04	-.40	+1.77	-1.08+34.33		19.3
-2.5	22	29.95	+3.17	22	33.12	0	15.23+	1475	32.16		.00	.04	-.35	+1.69	-1.03+34.45		18.2
+16.9	22	55.05	-21.52	22	33.53	0	14.82+	0586	31.52		.04	.04	-.39	+1.61	-1.07+33.71		17.5
+12.2	22	47.90	-15.53	22	32.37	0	15.98+	0385	31.37		.02	.04	-.37	+1.53	-1.05+33.61		18.7
+18.0	21	59.85	-22.92	22	36.93	0	11.42-	1148	30.28		.04	.08	-.40	+1.44	-1.08+35.08		16.6
+17.2	21	57.20	-21.92	22	35.28+	0	13.07+	0323-	31.32		-.04	+.08	-.40	+1.36	-1.08+35.45		17.5

±.035 — 17.84 ± 0.60

-20.189
56.36

$\delta_0 = +32 \; 14 \; 56.4$ — sin z = +.18 — 1.01230 — -.16 -.25

25.87 +4.8	8	17.25	-5.33	8	11.92+	14	36.43+	01198-	10.58		-.01	+.03	-.14	-2.30	-0.39+33.27	14	56.4
24.65 +19.5	8	34.80	-21.64	8	13.16	14	35.19+	0850	10.49		.09	.04	-.21	-2.50	-0.46+33.19		54.9
24.26 +22.0	8	37.95	-24.41	8	13.54	14	34.81+	0804	10.48		.11	.04	-.23	-2.60	-0.48+34.37		55.6
24.31 +19.7	8	35.55	-21.86	8	13.69	14	34.66+	0119	10.30		.09	.04	-.21	-2.90	-0.46+33.84		54.8
24.25 +16.4	8	31.80	-18.20	8	13.60	14	34.75+	1035	10.54		.07	.11	-.12	-3.00	-0.37+34.33		55.2
25.43 +21.2	8	35.80	-23.52	8	12.28	14	36.07+	1475	10.64		.11	.11	-.16	-3.10	-0.41+34.45		56.7
25.63 +22.6	8	37.40	-25.08	8	12.32	14	36.03+	0586	10.42		.13	.11	-.18	-3.30	-0.43+33.71		55.6
25.70 +19.3	8	33.70	-21.41	8	12.29	14	36.06+	0385	11.38		.09	.11	-.14	-3.40	-0.39+33.61		55.5
24.33 +20.9	8	37.20	-23.19	8	14.01	14	34.34-	1148	10.02		.10	.11	-.15	-3.60	-0.40+35.08		55.4
24.35 +19.5	8	35.30	-21.64	8	13.66+	14	34.69+	0323-	10.36		-.09	+.11	-.14	-3.70	-0.39+35.45		55.7

±.022 — 55.50 ± 0.35

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Star δ Crateris α = 11h 12m 45s.557 δ = −14° 5′ 10″ k = −.016 tang. δ = −.25
z = + 56 27 59

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 21	+ .058	11h	12m 46s.52	−.014	−0.03	+10.79 −0.74	+10.02	11h 12m 56s.54
Apr. 22	+ .020	11	12 46.87	−.005	−.02	+10.51 −0.73	+9.76	56.63
4 Apr. 24	+ .077	11	12 47.22	−.019	−.03	+10.09 −0.72	+9.34	56.56
23 Apr. 26	− .030	11	12 47.42	+.007	−.01	+9.75 −0.70	+9.04	56.46
								56.547

Δα = −0.30 Δδ = −0.52

+2.0961

# o Leonis α = 23h 14m 32.11 δ = +6° 42′ 49″ k = −.016 tang. δ = +.12
z = + 35 39 0

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 23	+ .065	11	14 22.70	+.007	−0.01	+10.18 −0.78	+9.39	14h 32.09
Apr. 25	+ .070	11	14 22.81	+.008	−.01	+10.04 −0.76	+9.27	32.08
4 Apr. 26	− .030	11	14 23.10	−.003	−.02	+9.75 −0.75	+8.98	32.08
23 Apr. 27	+ .040	11	14 23.24	+.004	−.01	+9.59 −0.74	+8.84	32.08
								32.082

λ Crateris α = 11h 17m 1s.36 δ = −14° 51′ 36″ k = −.016 tang. δ = −.33
z = + 60 27 25

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 21	+ .058	11	16 51.20	−.019	−0.03	+10.79 −0.76	+10.00	17h 1.20
Apr. 22	+ .020	11	16 51.58	−.006	−.02	+10.51 −0.76	+9.73	1.31
Apr. 23	+ .065	11	16 51.88	−.021	−.04	+10.18 −0.75	+9.39	1.27
7 Apr. 24	+ .077	11	16 51.89	−.025	−.04	+10.09 −0.74	+9.31	1.20
23 Apr. 25	+ .070	11	16 51.95	−.023	−.04	+10.04 −0.73	+9.27	1.22
Apr. 26	− .030	11	16 52.12	+.010	−.01	+9.75 −0.72	+9.02	1.14
Apr. 27	+ .040	11	16 52.41	−.013	−.03	+9.59 −0.71	+8.85	1.26
								1.229 ±.040

γ Crateris α = 11h 18m 29s.93 δ = −16° 58′ 51″ k = −.016 tang. δ = −.30
z = + 59 21 40

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 21	+ .058	11	18 19.33	−.017	−0.03	+10.79 −0.77	+9.99	18h 29.32
Apr. 22	+ .020	11	18 19.69	−.006	−.02	+10.51 −0.76	+9.73	29.42
Apr. 23	+ .065	11	18 20.02	−.019	−.04	+10.18 −0.75	+9.39	29.41
6 Apr. 24	+ .077	11	18 20.08	−.023	−.04	+10.09 −0.74	+9.31	29.39
23 Apr. 25	+ .070	11	18 20.07	−.021	−.04	+10.04 −0.73	+9.27	29.34
Apr. 26	− .030	11	18 20.26	+.009	−.01	+9.75 −0.72	+9.02	29.28
								29.300 ±.041

ι Leonis α = 11h 21m 21s.27 δ = +3° 33′ 40″ k = −.015 tang. δ = +.06 ±.043
z = + 38 49 9

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 21	+ .058	11	21 11.27	+.003	−0.01	+10.79 −0.80	+9.98	21h 21.25
Apr. 22	+ .020	11	21 11.65	+.001	−.01	+10.51 −0.80	+9.70	21.35
Apr. 23	+ .065	11	21 11.91	+.003	−.01	+10.18 −0.79	+9.38	21.29
6 Apr. 24	+ .077	11	21 11.99	+.004	−.01	+10.09 −0.75	+9.30	21.29
23 Apr. 25	+ .070	11	21 12.01	+.004	−.01	+10.04 −0.77	+9.26	21.27
Apr. 26	− .030	11	21 12.25	−.001	−.02	+9.75 −0.76	+8.97	21.22
								21.278 ±.029

Δα = −0.06 Δδ = +1.91

+3.6405

λ Gracomi α = 23h 46m 46s.74 δ = +70° 2′ 14″ k = −.041 tang. δ = +2.75 ±.051
−27 39 26

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 21	+ .058	11	23 38.79	+.159	+0.12	+10.79 −3.06	+7.83	23h 46.62
Apr. 22	+ .020	11	23 39.21	+.055	+0.11	+10.51 −3.02	+7.50	46.71
6 Apr. 24	+ .077	11	23 39.30	+.211	+0.17	+10.09 −2.96	+7.30	46.60
23 Apr. 25	+ .070	11	23 39.40	+.192	+0.15	+10.04 −2.92	+7.27	46.67
Apr. 26	− .030	11	23 40.03	−.082	+0.12	+9.75 −2.87	+6.76	46.79
Apr. 29	+ .045	11	23 40.41	+.123	+0.08	+8.90 −2.77	+6.21	46.62
								46.668 ±.017

ε Hydræ ~~Pl XI x 13~~ ~~Bot. 6 3928~~ α = 11h 26m 42s.64 δ = −31° 8′ 51″ k = −.018 tang. δ = −.60
z = + 73 31 40

Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
1872 Apr. 21	+ .058	11	26 32.67	−.035	−0.05	+10.79 −0.87	+9.87	26h 42.54
Apr. 24	+ .077	11	26 33.44	−.046	−.06	+10.09 −0.84	+9.19	42.63
6 Apr. 25	+ .070	11	26 33.44	−.042	−.06	+10.04 −0.83	+9.15	42.59
23 Apr. 26	− .030	11	26 33.46	+.018	−.00	+9.75 −0.82	+8.93	42.39
Apr. 27	+ .040	11	26 33.78	−.024	−.04	+9.59 −0.81	+8.74	42.52
								42.534 ±.052 ±.060

1872phae.proj.1459.

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1872phae.proj-1459.

$\delta_0 = -14^\circ\ 5'\ 10.8''$ — u+ly.tyn. — −.77 −1.20

Tm 75 Circle Read. Red. Ha. Mir. Circle Read. — B+T+J — 1.93753

+18.2	27	38.10	−23.17	27	14.93	× 4	26.58+	00113	−	86.83	−.00	+.04	+.03	−.70	+8.68	−1.90	+33.84	5	12.8
+19.2	27	35.35	−24.44	27	10.91	4	22.56+	1035		88.69	.00	.05	.08	−.64	+8.71	−1.84	+34.33		10.0
+17.3	27	34.60	−22.02	27	12.58	4	24.23+	0586		87.88	.00	.04	.08	−.65	+8.78	−1.85	+33.71		11.5
+15.5	26	54.60	+19.73	27	14.33	− 4	25.98−	1148	−	84.35	−.01	+.03	+.06	−.68	+8.85	−1.88	+35.08		(8.3)

11.43

$\delta_0 = +6\ 43\ 49.4$ — sin z = +.58 1.61560 — −.54 −.83

12.50 +17.2	39	15.70	−22.42	38	53.28	+43	55.07+	0475	−	42.69	−.01	+.13	−.42	+3.80	−1.23	+34.45	43	49.4
12.60 +17.7	39	17.30	−23.06	38	54.24	43	54.11+	0385		41.63	.01	.13	−.42	+3.70	−1.25	+33.61		48.5
11.13 +16.5	39	18.65	−21.50	38	57.15	43	51.20−	1148		40.19	.01	.13	−.42	+3.60	−1.25	+35.08		49.1
11.53 −18.0	39	31.90	+23.46	38	55.36	+43	52.99+	0323	−	41.58	−.01	+.13	−.42	+3.50	−1.25	+35.45		49.5

48.85

$\delta_0 = -18\ 4\ 36.4$ — 2.00494 — −.81 −1.25

−16.6	26	6.25	+20.72	26	26.97	− 3	38.62+	00133	−1	41.45	−.00	+.04	+.01	−.76	+9.46	−2.01	+33.84	4	38.8
+16.3	26	43.70	−20.34	26	23.36	3	35.01+	1062	1	43.65	.01	.04	.05	−.72	+9.51	−1.97	+34.33		36.8
+20.8	26	46.05	−25.95	26	22.10	3	33.75+	1603	1	44.70	.01	.08	.05	−.68	+9.57	−1.93	+34.45		36.4
+17.7	26	46.60	−22.09	26	24.51	3	36.16+	0609	1	42.57	.00	.06	.05	−.70	+9.62	−1.95	+33.71		37.3
+14.6	26	44.85	−18.22	26	26.63	3	38.28+	0392	1	42.06	.00	.04	.05	−.72	+9.67	−1.97	+33.61		39.0
+18.5	26	54.40	−23.09	26	31.31	3	42.96−	1123	1	38.56	.01	.06	.06	−.69	+9.72	−1.94	+35.08		38.7
+17.7	26	50.25	−22.08	26	28.17	− 3	39.82+	0334	−1	41.92	−.00	+.06	+.06	−.69	+9.76	−1.94	+35.45		38.5

37.93
±0.86

±.038

$\delta_0 = -16\ 58\ 54.0$ — 1.98598 — −.80 −1.24

+17.2	21	8.25	−21.59	20	46.66	− 57	58.31+	00133	−1	37.12	−.00	+.05	+.01	−.74	+9.25	−1.98	+33.84	58	54.3
+19.5	21	7.70	−24.48	20	43.22	57	54.87+	1062	1	39.22	.01	.06	.02	−.71	+9.30	−1.95	+34.33		52.4
+19.1	21	6.55	−23.98	20	42.57	57	54.22+	1503	1	40.23	.01	.06	.02	−.71	+9.35	−1.95	+34.45		52.6
+16.3	21	6.35	−20.46	20	45.89	57	57.54+	0609	1	38.19	.00	.04	.02	−.73	+9.40	−1.97	+33.71		54.6
+17.5	21	8.00	−21.97	20	46.03	57	57.68+	0392	1	39.70	.00	.05	.03	−.72	+9.44	−1.96	+33.61		54.3
+16.4	21	14.45	−20.59	20	53.86	− 58	55.1−	1123	−1	34.35	−.01	+.04	+.04	−.72	+9.48	−1.96	+35.08		57.8

54.50
±1.10

$\delta_0 = +3\ 33\ 39.9$ — 1.66540 — −.59 −.90

±.041 +14.4	49	17.60	−18.86	48	58.74	+33	49.61+	00147	−	46.44	−.00	+.04	−.53	+4.76	−1.45	+33.84	33	40.3
+19.4	49	23.90	−25.41	48	58.49	33	49.86+	1088		47.45	.01	.12	−.47	+4.72	−1.37	+34.33		40.1
+15.8	49	17.95	−20.69	48	57.26	33	51.09+	1531		47.94	.00	.13	−.46	+4.67	−1.36	+34.45		40.9
+16.2	49	19.40	−21.22	48	58.18	33	51.17+	0632		46.96	.00	.12	−.46	+4.63	−1.36	+33.71		40.2
+17.2	49	22.55	−22.53	49	0.02	33	48.33+	0399		46.71	.00	.12	−.46	+4.58	−1.36	+33.61		38.5
+16.4	49	25.45	−21.48	49	3.97	+33	44.38−	1098	−	45.12	−.00	+.13	−.46	+4.54	−1.36	+35.08		37.5

$\delta_0 = +70\ 2\ 13.6$ — sin z = −.46 — 1.47960 — +.86 +1.38

±.029 +49.2	21	49.80	−21.97	20	27.83	+ 1	20.52+	00147	+	30.27	+.42	+.05	+1.30	−11.40	+2.63	+33.84	2	15.9
50.23 +47.7	21	50.75	−21.34	20	29.41	1	18.94+	1088	+	30.94	.39	.05	+1.30	−11.60	+2.63	+34.33		15.2
50.32 +45.5	21	47.95	−20.36	21	27.59	1	20.76+	0632	+	30.61	.36	.05	+1.27	−12.00	+2.60	+33.71		15.7
51.78 +45.6	21	47.90	−20.40	21	27.50	1	20.85+	0399	+	30.45	.36	.05	+1.27	−12.30	+2.60	+33.61		15.2
51.67 +47.4	21	48.75	−21.21	21	27.54	1	20.81−	1098	+	29.42	.39	.05	+1.30	−12.40	+2.63	+35.08		15.5
52.18 +45.6	21	48.05	−20.40	21	27.65	+ 1	20.70+	1279	+	31.07	+.36	+.05	+1.27	−13.10	+2.60	+34.23		15.5

15.50
±0.18

$\delta_0 = -31\ 8\ 58.9$ — 2.28264 — −.88 −1.38

±.017 +24.2	29	46.25	−27.18	29	19.07	− 6	30.72+	00147	−3	12.36	−.01	+.14	+.05	−.69	+11.42	−2.07	+33.84	8	59.9
+23.9	29	43.85	−26.85	29	17.00	6	28.65+	0632	3	15.02	.02	.14	.14	−.60	+11.78	−1.98	+33.71		60.2
+20.6	29	40.15	−23.14	29	17.01	6	28.66+	0399	3	13.48	.01	.10	.13	−.64	+11.90	−2.02	+33.61		58.7
+19.6	29	52.25	−22.01	29	30.24	6	41.89−	1098	3	6.92	.06	.09	.14	−.65	+12.02	−2.03	+35.08		(63.8)
+20.0	29	40.60	−22.47	29	18.13	− 6	29.78+	0345	−3	13.24	−.01	+.09	+.14	−.65	+12.12	−2.03	+35.45		57.5

±.052

59.08

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Star B.A.C. 3934 L = 11h 28m 7.650 δ = −32° 9′ 12″ z = +74 31 37 k = −.019 tang. δ = −.63

	Date	n	T_s	T_m	n tang. δ	d.T.	Red. 1872	Sum	A.R. 1872	
		s	h	m s	s	s	s	s	h m	s
1872	Apr. 21	+.058	11	28 6.65	−.036	−0.05	+10.79	−0.88	+9.86	11 28 16.51
	Apr. 25	+.070	11	28 7.45	−.044	−.06	+10.04	−0.84	+9.14	16.59
5	Apr. 26	−.030	11	28 7.55	+.019	−.00	+9.75	−0.83	+8.92	16.47
23	Apr. 27	+.040	11	28 7.84	−.025	−.04	+9.59	−0.82	+8.73	16.57
	Apr. 29	+.045	11	28 8.48	−.028	−.05	+8.90	−0.80	+8.05	16.53
										16.534 ± .034

Δα = +0.024 Δδ = −1.23″

+.30707

* 6 Leonis L = 11h 30m 23.686 δ = 0° 7′ 3″ z = +42 29 52 k = −.015 tang. δ = −.00

1872	Apr. 21	+.058	11	30 13.79	−.000	−0.01	+10.79	−0.82	+9.96	30 23.75
	Apr. 24	+.077	11	30 14.47	−.000	−.02	+10.09	−0.81	+9.26	23.73
	Apr. 25	+.070	11	30 14.48	−.000	−.01	+10.03	−0.80	+9.22	23.70
7	Apr. 26	−.030	11	30 14.75	+.000	−.02	+9.74	−0.79	+8.93	23.68
23	Apr. 27	+.040	11	30 14.95	−.000	−.01	+9.58	−0.78	+8.79	23.74
	Apr. 29	+.045	11	30 15.56	−.000	−.02	+8.89	−0.77	+8.10	23.66
	May 20	+.050	11	30 18.07	−.000	−.01	+6.24	−0.54	+5.59	23.71
										23.710 ± .023

Δα = +0.109 Δδ = +0.47″

+.24016

* 7 Cephei L.C. L = 23h 34m 6.658 δ = +76° 55′ 4.3 k = +.069 tang. δ = −4.30

					−.40	−.42	.08			
1872	Apr. 21	+.058	11	33 51.04	−.249	−0.18	+10.79	+5.15	+15.76	34 6.80
	Apr. 24	+.077	11	33 51.95	−.331	−.26	+10.09	+4.95	+14.78	6.73
6	Apr. 25	+.070	11	33 52.26	−.301	−.23	+10.03	+4.88	+14.60	6.94
23	Apr. 26	−.030	11	33 52.07	+.129	+.20	+9.74	+4.80	+14.74	6.81
	Apr. 27	+.040	11	33 52.43	−.172	−.10	+9.58	+4.72	+14.20	6.63
	Apr. 29	+.045	11	33 53.34	−.193	−.12	+8.89	+4.58	+13.35	6.69
	May 20	+.050	11	33 57.23	−.215	−.15	+6.19	+2.75	+8.79	6.02
										6.767 ± .077

B.A.C. 3973 L = 11h 36m 50.34s δ = +42° 26′ 0″ z = −0 3 11 k = −.021 tang. δ = +.91

1872	Apr. 20	+.085	11	36 40.56	+.077	+0.06	+10.97	−1.37	+9.66	36 50.22
	~~Apr. 24~~	~~+.077~~	~~11~~	~~37 8.25~~	+.070	+.05	+10.09	−1.32	+8.82	
	Apr. 25	+.070	11	36 41.47	+.063	+.04	+10.03	−1.31	+8.76	50.23
5	Apr. 26	−.030	11	36 41.85	−.027	−.05	+9.74	−1.30	+8.39	50.24
23	Apr. 27	+.040	11	36 41.85	+.036	+.01	+9.58	−1.29	+8.30	50.15
	Apr. 29	+.045	11	36 42.55	+.040	+.02	+8.89	−1.26	+7.65	50.20
										50.208 ± .025

Δα = −0.074 Δδ = +0.82″

+3.1973

\# X Ursae Majoris L = 11h 39m 17.00 δ = +48° 29′ 20″ z = −6 6 31 k = −.028 tang. δ = +1.13

1872	Apr. 20	+.085	11	39 7.54	+.096	+0.07	+10.97	−1.57	+9.47	39 17.01
	Apr. 25	+.070	11	39 8.35	+.079	+.06	+10.03	−1.51	+8.58	16.93
5	Apr. 26	−.030	11	39 8.73	−.034	−.06	+9.74	−1.50	+8.18	16.91
23	Apr. 27	+.040	11	39 8.74	+.045	+.02	+9.58	−1.48	+8.12	16.86
	May 22	−.060	11	39 11.30	−.067	−.09	+6.77	−1.05	+5.63	16.93
										16.928 ± .032

Δα = −0.303 Δδ = −0.67″

+3.0655

\# 3 Leonis L = 11h 42m 31.745 δ = +15° 17′ 15″ z = +27 5 34 k = −.016 tang. δ = +.27

1872	Apr. 20	+.085	11	42 21.68	+.022	+0.01	+10.97	−0.94	+10.04	42 31.72
	Apr. 24	+.077	11	42 22.61	+.020	+.00	+10.09	−0.91	+9.18	31.79
7	Apr. 25	+.070	11	42 22.65	+.019	+.00	+10.03	−0.91	+9.12	31.77
23	Apr. 26	−.030	11	42 22.91	−.008	−.02	+9.74	−0.90	+8.82	31.73
	Apr. 27	+.040	11	42 23.06	+.011	−.01	+9.58	−0.90	+8.67	31.73
	May 20	+.050	11	42 26.22	+.013	−.03	+6.24	−0.70	+5.54	31.78
	May 22	−.060	11	42 25.67	−.016	−.03	+6.77	−0.68	+6.06	31.78
										31.743 ± .018

42.554 ± .060

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$\delta_0 = -3^\circ\ 9'\ 12''.3$ w+ly tyn −.90 − 1.39

	Tm − T's	Circle Read		Red. Micrometer	Cor. Circle Read				2.31151		Δf−f	Rm	Ro	Ref Rm Red. to −Ro 1872		Rm + Ro + Rf		I δ	1872.0
	s	′	″	″	′	″	°	″		″	″	″	″	″	″	″	″	′	″
	+22.5	29	44.60	−25.00	29	19.60	−6	31.25+	00161 −3	25.17	−.01	+.14	+.05	−.71	+11.52	−2.10	+33.84	9	13.2
	+21.5	29	45.00	−23.89	29	21.11	6	32.76+	0406 3	26.34	.01	.12	.14	−.64	+12.02	−2.03	+33.61		15.5
	+19.3	29	52.30	−21.45	29	30.85	6	42.50−	1073 3	19.43	.08	.10	.14	−.66	+12.14	−2.05	+35.08		16.8
	+19.3	29	41.55	−21.45	29	20.10	6	31.75+	0357 3	26.10	.01	.10	.14	−.66	+12.25	−2.05	+35.45		12.2
	+21.2	29	39.70	−23.56	29	16.14	−6	27.79+	1295 −3	30.60	−.05	+.11	+.14	−.65	+12.47	−2.04	+34.23		13.8
±0.29																			14.30 ±1.40

−19.846
2.66

$\delta_0 = -0\ 7\ 27$ sin z = +.68 1.72180 −.62 −.97

	Tm − T's	Circle Read		Red.	Cor. Circle Read						Δf−f	Rm	Ro						
41.26	+19.5	30	2.30	−25.59	29	36.71	−6	48.36+	00161 −	52.90		+.00	+.00	−.62	+5.70	−1.59	+33.84	7	3.3
42.05	+14.1	29	55.55	−18.51	29	37.04	6	48.69+	0655	53.50		.00	.14	−.48	+5.60	−1.45	+33.71		4.3
41.73	+18.0	30	0.50	−23.62	29	36.88	6	48.53+	0406	53.20		.00	.00	−.62	+5.60	−1.59	+33.61		4.1
44.61	+16.5	30	3.20	−21.65	29	41.55	6	53.20−	1073	51.41		.00	.00	−.62	+5.60	−1.59	+35.08		5.5
43.50	+16.9	30	0.90	−22.18	29	38.72	6	50.37+	0357	53.18		.00	.00	−.62	+5.50	−1.59	+35.45		4.1
41.91	+17.7	29	59.35	−23.23	29	36.12	6	47.77+	1295	54.29		.00	.15	−.47	+5.50	−1.44	+34.23		3.8
59.64	+5.8	29	4.50	−7.61	28	56.89	−6	8.54−	1238 −	51.22		+.00	+.12	−.50	+5.70	−1.47	−6.53		2.1
±.023																			3.89 ±0.64

+20.069
4.32

$\delta_0 = +10\ 04\ 55.6$ sin z = −.87 2.04921n +.81 +1.26

	Tm − T's	Circle Read		Red.	Cor. Circle Read						Δf−f	Rm	Ro						
4 35.19	−4.5	19	57.10	−1.34	19	55.76	+2	52.59+	00175 +1	42.55	+.00	+.00	+.05	+.86	−14.90	+2.12	+33.84	4	56.2
34.01	+26.2	19	50.55	+7.76	19	58.31	2	50.04+	0678 1	43.75	.00	.08	.14	+1.03	−15.60	+2.29	+33.71		54.2
35.00	+67.7	19	37.10	+20.06	19	57.16	2	51.19+	0413 1	43.12	.00	.55	.14	+1.50	−15.80	+2.76	+33.61		54.9
35.26	+68.0	19	33.35	+20.15	19	53.50	2	54.85−	1048 1	39.71	.01	.55	.14	+1.50	−15.90	+2.76	+35.08		56.5
34.91	+61.6	19	39.80	+18.25	19	58.05	2	58.30+	0368 1	43.01	.00	.46	.14	+1.41	−16.20	+2.67	+35.45		55.2
34.19	−6.9	20	1.55	−2.10	19	59.45	2	48.90+	1311 1	45.27	.01	.01	.00	+.82	−16.40	+2.08	+34.23		54.1
18.35	+25.0	19	2.00	+7.44	19	9.44	+3	38.91−	1252 +1	39.24	+.00	+.08	+.12	+1.01	−18.50	+2.27	−6.53		55.4
±.018																			55.21 ±0.64

$\delta_0 = +42\ 26\ 56.2$ 5.70100n +.00 ±.00

	Tm − T's	Circle Read		Red.	Cor. Circle Read						Δf−f	Rm	Ro						
	+23.7	57	42.85	−22.95	57	19.90	+25	28.45−	00224 +	.05		−.15	+.03	−.12	−4.21	−0.12	+32.96	25	57.1
	+16.3	57	34.65	−15.78	57	18.87	25	29.48+	0413	.05		.08	.08	−.00	−5.16	−.00	+33.61		58.0
	+22.5	57	42.15	−21.79	57	20.36	25	27.99−	1048	.05		.13	.08	−.05	−5.34	−0.05	+35.08		57.7
	+21.5	57	41.50	−20.82	57	20.68	25	27.67+	0369	.05		.12	.08	−.04	−5.52	−0.04	+35.45		57.6
	+21.3	57	40.95	−20.58	57	20.37	+25	27.98+	1311 +	.05		−.12	+.08	−.04	−5.88	−0.04	+34.23		56.3
25 ±.018																			57.34 ±0.49

−19.976
19.76

$\delta_0 = +48\ 29\ 19.8$ sin z = −.11 0.78870n +.09 +.15

	Tm − T's	Circle Read		Red.	Cor. Circle Read						Δf−f	Rm	Ro						
28 52.35	+28.4	54	26.65	−24.69	54	1.96	+28	46.39−	00203 +	6.14		−.22	+.04	−.09	−5.50	+0.06	+32.96	29	20.0
52.90	+25.8	54	24.10	−22.46	54	1.64	28	46.71+	0419	6.22		.18	.13	+.04	−6.50	+0.19	+33.61		20.2
53.49	+25.1	54	22.65	−21.82	54	0.83	28	47.52−	1023	6.01		.17	.13	+.05	−6.70	+0.20	+35.08		22.1
51.84	−15.1	53	49.65	+13.13	54	2.78	28	45.57+	0379	6.21		.06	.12	+.15	−6.90	+0.30	+35.45		20.6
29 37.76	+24.2	53	37.70	−21.04	53	16.66	+29	31.69−	0323 +	6.11		−.15	+.11	+.05	−10.80	+0.20	−7.18		20.0
±.021																			20.58 ±0.59

−20.097
14.77

$\delta_0 = +15\ 17\ 14.8$ sin z = +.46 1.46900 −.42 −.65

	Tm − T's	Circle Read		Red.	Cor. Circle Read						Δf−f	Rm	Ro						
16 39.29	+16.9	5	1.10	−21.39	(5)	39.71	+17	8.64−	00203 −	29.31		−.04	+.00	−.46	+2.50	−1.11	+32.96	17	13.7
39.64	+12.2	4	54.35	−15.44	(5)	38.91	17	9.44+	0701	29.52		.02	.14	−.30	+2.10	−0.95	+33.71		14.4
40.25	+16.7	5	59.50	−21.14	(5)	38.36	17	9.99+	0419	29.73		.04	.03	−.43	+2.00	−1.08	+33.61		14.8
37.22	+16.7	6	3.50	−21.14	(5)	42.36	17	5.99−	1023	28.76		.04	.03	−.43	+1.90	−1.08	+35.08		13.1
37.86	+17.2	6	2.55	−21.77	(5)	40.78	17	7.57+	0379	29.70		.04	.03	−.43	+1.80	−1.08	+35.45		14.0
22.54	+16.2	5	17.65	−20.50	4	57.15	17	51.20−	1206	28.64		.03	.01	−.44	−0.30	−1.09	−6.53		14.6
22.81	+16.6	5	17.30	−21.01	4	56.2[illegible]	+17	52.06−	0323 −	29.20		−.03	+.01	−.44	−0.50	−1.09	−7.18		14.1
±.017																			14.10 ±0.39

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$\Delta\alpha = +0.037^s$ $\Delta\delta = +0.''18$

Star ✱ B Virginis $\alpha = 11^h\ 44^m\ 1.61^s$ (+.31247, +.1609) $\delta = +2°\ 29'\ 9''$ $K = -.015$ tang. $\delta = +.04$

$z = +39°\ 53'\ 40''$

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 20	+.085	11	43 51.55	+.003 −0.01	+10.97 −0.90	+10.06		11 44 1.61
	Apr. 25	+.070	11	43 52.54	+.002 −.01	+10.03 −0.88	+9.14		1.68
5	Apr. 26	−.030	11	43 52.78	−.001 −.02	+9.74 −0.88	+8.84		1.62
23	Apr. 27	+.040	11	43 52.99	+.001 −.01	+9.58 −0.87	+8.70		1.69
	May 22	−.060	11	43 55.55	−.002 −.02	+6.77 −0.67	+6.08		1.63
									1.646 ± .030

$\Delta\alpha = -0.085^s$ $\Delta\delta = +0.''68$

✱ γ Ursae Majoris $\alpha = 11^h\ 47^m\ 5.31^s$ (+3.1589, +.31311) $\delta = +54°\ 24'\ 23''$ $K = -.026$ tang. $\delta = +1.40$

$z = -12°\ 1'\ 34''$

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 20	+.085	11	46 56.05	+.119 +0.09	+10.97 −1.89	+9.17		47 5.22
	Apr. 24	+.077	11	46 56.80	+.108 +.08	+10.09 −1.82	+8.35		5.15
	Apr. 25	+.070	11	46 56.90	+.098 +.07	+10.03 −1.81	+8.29		5.19
7	Apr. 26	−.030	11	46 57.39	−.042 −.04	+9.74 −1.79	+7.88		5.27
23	Apr. 27	+.040	11	46 57.34	+.056 +.03	+9.58 −1.78	+7.83		5.14
	May 20	+.050	11	47 0.54	+.070 +.10	+6.24 −1.32	+4.82		5.36
	May 22	−.060	11	46 59.83	−.084 −.11	+6.77 −1.27	+5.39		5.22
									5.226 ± .048

Groom. 4163 $\alpha = 23^h\ 4^m\ 37.77^s$ $\delta = +43°\ 41'\ 52.3''$ $K = +.054$ tang. $\delta = -.342$

$-63°\ 55'\ 20''$

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 20	+.085	11	48 22.52	−.290 −0.24	+10.97 +4.43	+15.16		48 37.68
	Apr. 24	+.077	11	48 23.54	−.263 −.21	+10.09 +4.21	+14.09		37.63
5	Apr. 25	+.070	11	48 23.64	−.239 −.18	+10.03 +4.16	+14.01		37.65
23	Apr. 26	−.030	11	48 23.62	+.103 +.16	+9.74 +4.10	+13.00		37.62
	Apr. 27	+.040	11	48 24.48	−.137 −.08	+9.58 +4.04	+13.54		38.02
									37.820 ± .113

6 Virginis ✓ $\alpha = 11^h\ 53^m\ 23.52^s$ $\delta = +4°\ 22'\ 5''$ $K = -.015$ tang. $\delta = +.08$

$z = +38°\ 0'\ 44''$

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 20	+.085	11	53 13.46	+.006 −0.01	+10.97 −0.93	+10.03		53 23.49
	Apr. 24	+.077	11	53 14.35	+.006 −.01	+10.09 −0.91	+9.17		23.52
5	Apr. 25	+.070	11	53 14.45	+.005 −.01	+10.03 −0.90	+9.12		23.57
23	Apr. 26	−.030	11	53 14.69	−.002 −.02	+9.74 −0.90	+8.82		23.51
	Apr. 27	+.040	11	53 14.93	+.003 −.01	+9.58 −0.89	+8.68		23.61
									23.540 ± .038

67 Ursae Majoris $\alpha = 11^h\ 55^m\ 36.37^s$ $\delta = +43°\ 45'\ 20''$ $K = -.021$ tang. $\delta = +.96$

$z = -1°\ 22'\ 31''$

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 20	+.085	11	55 26.92	+.081 +0.06	+10.97 −1.50	+9.53		55 36.45
	~~Apr. 24~~	~~+.077~~	~~11~~	~~54 50.32~~	~~+.073 +.05~~	~~+10.09 −1.46~~	~~+8.68~~		~~59.00~~
	Apr. 25	+.070	11	55 27.78	+.067 +.05	+10.03 −1.45	+8.63		36.41
6	Apr. 26	−.030	11	55 28.14	−.028 −.05	+9.74 −1.44	+8.25		36.39
23	Apr. 27	+.040	11	55 28.26	+.038 +.02	+9.58 −1.43	+8.17		36.43
	Apr. 30	+.055	11	55 29.11	+.052 +.03	+8.69 −1.39	+7.33		36.44
	May 22	−.060	11	55 30.77	−.057 −.08	+6.77 −1.08	+5.61		36.38
									36.417 ± .022

$\Delta\alpha = -0.021^s$ $\Delta\delta = -0.''48$

✱ O Virginis $\alpha = 11^h\ 58^m\ 41.30^s$ (+.30595, +.41301) $\delta = +9°\ 26'\ 38''$ $K = -.016$ tang. $\delta = +.17$

$z = +32°\ 56'\ 11''$

	Date	n	T_s	T_m	n tang δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
		s	h	m s	s	s	s	s	h m s
1872	Apr. 20	+.085	11	58 31.26	+.014 0.00	+10.97 −0.97	+10.00		58 41.26
	Apr. 25	+.070	11	58 32.24	+.012 −.00	+10.03 −0.95	+9.08		41.32
5	Apr. 26	−.030	11	58 32.44	−.005 −.02	+9.74 −0.94	+8.78		41.22
23	Apr. 27	+.040	11	58 32.69	+.006 −.01	+9.58 −0.94	+8.63		41.32
	May 22	−.060	11	58 35.28	−.010 −.03	+6.77 −0.74	+6.00		41.28
									41.280 ± .030

± .060'

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-20.274
8.88

$\delta_0 = +2^\circ\ 29'\ 8.9$ sin z = +.64 μ + lytg n −.60 −.92

Hour	75	Circle Read.	Red. Nonius	Corr	Circle Read.																															
28 32.69	+1.2	53	30.00	−1.56	53	28.44	+29	19.91	−	0.0203	−	47.86	−.00	+.04	−.56	+5.30	−1.49	+32.96	29	8.8
31.66	+1.26	53	48.70	−20.45	53	28.25	29	20.10	+	0416		48.53	.00	.11	−.49	+5.20	−1.41	+33.61		8.9
28.92	−9.2	53	20.50	+12.06	53	32.56	29	15.79	−	1023		46.97	.00	.10	−.50	+5.20	−1.42	+35.08		7.7
30.79	+16.7	53	51.05	−21.89	53	29.16	29	19.16	+	0379		48.51	.00	.11	−.44	+5.20	−1.41	+35.45		9.9
14.91	−11.5	52	30.70	+15.08	52	45.78	+30	25.7	−	0323	−	47.73	−.00	+.19	−.53	+3.80	−1.45	−7.18		10.0

±.030.

9.06
±0.68

-20.025
22.53

$\delta_0 = +54\ 24\ 22.5$ sin z = −.21 1.08860 m +.19 +.29

23 55.76	+0.6	59	5.30	−0.46	59	4.84	+23	43.51	−	00192	+	12.21	−.00	+.04	+.23	−6.50	+0.52	+32.96	24	22.7
55.75	+27.9	59	26.30	−21.30	59	5.00	23	43.35	+	0722		12.47	.20	.13	+.12	−7.40	+0.41	+33.71		22.6
57.56	+5.7	59	7.65	−4.36	59	3.29	23	45.06	+	0425		12.38	.00	.12	+.31	−7.60	+0.60	+33.61		24.0
55.93	+28.6	59	26.15	−21.83	59	4.32	23	44.03	−	0999		11.99	.22	.13	+.10	−7.80	+0.39	+35.08		23.7
55.27	+28.4	59	27.05	−21.68	59	5.37	23	42.98	+	0389		12.37	.21	.13	+.11	−8.00	+0.40	+35.45		23.2
41.16	−0.3	58	19.05	+0.23	(58)	19.28	24	29.07	−	1190		11.93	.00	.10	+.29	−11.80	+0.58	−6.53		23.2
23 48.66	+25.0	59	37.70	−19.08	59	18.62	+23	29.73	−	0308	+	12.17	−.16	+.14	+.17	−12.10	+0.46	−7.18		23.1

±.027

23.21
±0.32

$\delta_0 = +106\ 18\ 8.7$ 2.06797 m +.83 +1.31

+25.7	6	49.60	+9.46	6	59.06	+15	49.29	−	00192	+1	56.43	+.01	+.10	+.02	+.95	−14.00	+2.26	+32.96	18	6.9
+14.4	6	56.45	+5.30	7	1.75	15	46.60	+	0722	1	58.90	.01	.03	.06	+.92	−14.80	+2.23	+33.71		6.6
+17.5	6	53.80	+6.41	7	0.21	15	48.14	+	0425	1	58.09	.00	.05	.06	+.94	−15.00	+2.25	+33.61		7.1
+20.9	6	47.20	+7.69	6	54.89	15	53.46	−	0999	1	54.28	.02	.07	.05	+.95	−15.10	+2.26	+35.08		10.0
+21.5	6	53.00	+7.91	7	0.91	+15	47.44	+	0389	+1	58.00	+.00	+.07	+.06	+.96	−15.30	+2.27	+35.45		7.9

±.032

7.70
±0.94

$\delta_0 = +4\ 22\ 5.5$ 1.65290 −.58 −.88

+20.2	1	1.60	−26.43	0	35.17	+22	13.18	−	00172	−	44.79	−.02	+.01	−.59	+5.14	−1.47	+32.96	22	5.0
+15.3	0	54.15	−20.02	0	34.13	22	14.22	+	0745		45.74	.01	.03	−.56	+4.96	−1.44	+33.71		5.7
+12.0	0	50.20	−15.70	0	34.50	22	13.85	+	0432		45.41	.01	.03	−.56	+4.91	−1.44	+33.61		5.5
+16.2	0	58.90	−21.20	0	37.70	22	10.65	−	0974		43.96	.01	.03	−.56	+4.85	−1.44	+35.08		5.2
+17.6	0	59.20	−23.03	0	36.17	+22	12.18	+	0401	−	45.38	−.01	+.03	−.56	+4.79	−1.44	+35.45		5.6

±.038

5.40
±0.23

$\delta_0 = +43\ 45\ 20.4$ 0.14020 m +.02 +.03

+23.8	38	22.55	−22.54	38	0.01	+44	48.34	−	00172	+	1.38	−.16	+.03	−.11	−3.43	−0.08	+32.96	45	19.2
~~−44.9~~	~~34~~	~~(41.20)~~	~~+42.53~~	~~35~~	~~23.79~~	~~47~~	~~24.21~~	+	~~0745~~		~~1.40~~	~~−.55~~								
+21.8	38	20.00	−20.65	37	59.35	44	49.00	+	0432		1.39	.13	.10	−.01	−4.45	+0.02	+33.61		19.6
+23.7	38	22.00	−22.45	37	59.55	44	48.80	−	0974		1.35	.16	.10	−.04	−4.65	−0.01	+35.08		20.6
+22.7	38	21.55	−21.50	38	0.05	44	48.30	+	0401		1.39	.14	.10	−.02	−4.84	+0.01	+35.45		20.3
+24.5	38	20.70	−20.36	38	0.34	44	48.01	+	1126		1.42	.13	.10	−.01	−5.11	+0.02	+35.06		19.1
+23.0	37	37.05	−21.79	37	15.26	+45	33.09	−	0293	+	1.37	−.14	+.08	−.04	−8.95	−0.01	−7.18		18.3

±.015

19.52
±0.68

-20.18
37.98

$\delta_0 = +9\ 36\ 38.0$ sin z = +.64 1.57140 −.51 −.78

26 1.88	+13.0	56	26.15	−16.83	56	9.32	+26	39.03	−	00152	−	37.15	−.01	+.01	−.51	+4.20	−1.29	+32.96	26	37.7
1.60	+17.1	56	30.25	−22.13	56	8.12	26	38.23	+	0439		37.65	.03	.05	−.49	+3.90	−1.27	+33.61		37.8
0.33	+16.2	56	32.55	−20.97	56	11.58	+26	36.77	−	0949		36.47	.02	.05	−.48	+3.80	−1.26	+35.08		37.9
25 59.31	+15.8	56	31.90	−20.45	56	11.45	26	36.90	+	0412		37.62	.02	.05	−.48	+3.70	−1.26	+35.45		37.2
25 43.62	+15.0	55	47.15	−19.42	55	27.73	+26	20.62	−	0278	−	37.03	−.02	+.05	−.48	+1.70	−1.26	−7.18		36.8

±.030

37.50
±0.36

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52

Star α Lyrae ✓ α = 12h 1m 49s δ = −24° 0′ 53″ k = −.017 tang. δ = −.45
z = + 66 23 42

Date	n	T	T m	s	n tang. δ	d.T.	Red. 1872.0	Sum	A.R. 1872.0
	s		h	m	s	s	s	s	h m s
1872 Apr. 20	+ .085	12	1	38.86	−.038	−0.06	+10.97		
Apr. 25	+ .070	12	1	39.85	−.031	−.05	+10.03		
Apr. 26	− .030	12	1	39.96	+.013	−.00	+9.74		
Apr. 27	+ .040	12	1	40.31	−.018	−.03	+9.58		
Apr. 30	+ .055	12	1	41.11	−.024	−.04	+8.69		

ε Lyrae ✓ α = 12h 3m 33s δ = −21° 54′ 28″ k = −.017 tang. δ = −.40
z = + 64 17 17

1872 Apr. 20	+ .085	12	3	22.62	−.034	−0.05	+10.97		
Apr. 25	+ .070	12	3	23.63	−.028	−.04	+10.03		
Apr. 26	− .030	12	3	23.76	+.012	−.01	+9.74		
Apr. 30	+ .055	12	3	24.93	−.022	−.04	+8.69		

Δα = −0.15s Δδ = +1.28″ +28.064
10.171

✱ 4 Draconis H α = 12h 6m 10.47 δ = +74° 19′ 39″ k = −.016 tang. δ = +.83
z = − 35 56 50

1872 Apr. 20	+ .085	12	6	5.11	+.410	+0.33	+10.97	−6.14	+5.16	12 6	10.27
Apr. 25	+ .070	12	6	5.99	+.338	+.26	+10.03	−5.88	+4.41		10.40
5 Apr. 26	− .030	12	6	6.70	−.115	−.22	+9.74	−5.83	+3.69		10.39
23 Apr. 30	+ .055	12	6	6.96	+.265	+.19	+8.69	−5.58	+3.30		10.26
May 22	− .060	12	6	7.84	−.289	−.36	+6.77	−3.97	+2.44		10.28

10.320

+.060

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$\delta_0 =$ 41 + lg 4 n. −.85 −1.32

Tom 78 Circle Head Red. Horizon Circle Head. Com. B + W + J 2.11659

	°	′	″		′	″			″	″	″	″	″	″									
+19.5	22	36.75	−23.28	22	13.37	−	.0132	−1	10.34	−.01	+.08	+.03	.	.	.				+32.96	.	″		
+19.9	22	37.70	−23.86	22	13.84	+	0439	2	12.12	.00	.08	.08	.						+33.61				
+17.5	22	42.40	−20.98	22	21.42	−	0949	2	7.97	.02	.07	.08	.						+35.08				
+17.5	22	37.40	−20.98	22	16.12	+	0412	2	12.04	−.00	.07	.08	.						+35.45				
+15.2	22	31.30	−18.22	22	13.08	+	1151	−2	14.31	−.01	+.05	+.08	.						+35.06				

2.07496 −.83 −1.30

+19.8	16	23.55	−24.11	15	59.44	−	0132	−1	58.48	−.01	+.07	+.01	.						+32.96				
+15.6	16	17.25	−19.50	15	58.25	+	0446	2	00.07	.00	.04	.04	.						+33.61				
+18.2	16	27.00	−22.16	16	4.84	−	0924	1	56.34	.02	.06	.04	.						+35.08				
+19.2	16	22.15	−23.38	15	58.77	+	1176	−2	2.10	−.01	+.06	+.04	.						+35.06				

−20.034
39.42

$\delta_0 = +78\ 19\ 39.4$ $\sin z = .9162020$ +.54 +.84

19 15 24	+63.1	4	31.05	−16.74	4	14.31	−	0132	+	41.58	−.43	+.05	+.16	−9.30	+1.00	+32.96	19	40.2					
15 41	+94.0	4	38.85	−24.93	4	13.92	+	0446		42.14	1.21	+.15	+1.16	−10.50	+1.00	+33.61		40.7					
15 52	−34.5	4	4.50	+ 9.15	4	13.65	−	0924		40.83	.13	.12	+.53	−10.70	+1.37	+35.08		41.3					
15 06	+82.5	4	37.40	−21.89	4	15.51	+	1176		42.85	.77	.14	+.63	−11.70	+1.47	+35.06		40.5					
−10.5		2	(9.60)	+ 2.78	3	12.38	−	0263	+	41.46	.01	+.09	+.62	−15.70	+1.46	7.58		40.70					

δ′ δ′

18 34.04 −
18 34.43
18 34.70
18 32.84
19 35.97

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Approximate values of the index error I.
to be applied to the circle readings for south zenith distances.

From Oct. 9 1871 to Jan 29, 1872 $I = -1.0'$
From Jan 30 1872 to Feb. 29, 1872 $I = -0.7$
From Mar 1 1872 to End of L.C. $I = -0.4$

$\pm .060'$

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