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20.

Definitive elements of the orbit of Comet 1824 I.

By *W. Doberck.*

The first comet in 1824 was discovered by Rümker and observed only in Australia. Rümker's observations were made at Stargard with a telescope by Gilbert and a ring micrometer except on the 15th and 16th July when he observed by aid of the diaphragm of the telescope without any micrometer. The telescope had no parallactic motion and trembled in the wind. He had also a sextant and a chronometer but no other instruments. Sir Thomas M. Brisbane observed at Paramatta.

In order to obtain places of the comparison stars I attributed the following weights to the different catalogues:

Greenwich (1840-1850) 4, Greenwich (1864-1880) 8, Pulkowa 8, Albany 7, Schjellerup 4, Boss 8, Richardson 2, Gould's d'Agelet 2, Glasgow 6, Sievers 4, Munich 4, Yarnall 8, Piazzi 2, Bruxelles 5, Rümker 5, Baily's Lalande 2, Armagh 6, Radcliffe (1845 and 1860) 4, Radcliffe (1890) 5, Taylor 2, Bonn 4, Weisse's Bessel 3.

Below is given the observations of the stars reduced to 1824.0 and also for proper motion in both coordinates. The latter have been determined by the method of least squares and are exhibited below the mean positions of the stars.

No. 1.

Lalande	9 ^h 42 ^m 56 ^s .14	+ 3° 38' 37".8
Albany	55.90	32.1
Mean	9 42 55.95	+ 3 38 33.4

No. 2 (7 Sextantis).

Piazzi	9 43	7.09	+ 3 16	15.3
Lalande		6.74		13.7
Taylor		7.10		17.2
Armagh		7.26		16.5
Pulkowa		7.06		15.3
Radcliffe		7.13		15.2
Schjellerup		7.07		15.4
Bruxelles		6.99		13.9
Albany		7.00		15.8
Greenwich		7.09		15.0
Mean	9 43	7.07	+ 3 16	15.3
			(-0".0110, +0".077)	

No. 3.

Lalande	9 53	32.94	+ 4 30	56.5
Bessel		33.26		57.1
Albany		33.42		55.1
Munich		33.15		59.3
Mean	9 53	33.26	+ 4 30	56.7

No. 4.

Piazzi	9 ^h 54 ^m 28 ^s .93	+ 4° 49' 3".7
Lalande	28.99	2.9
Bessel	29.11	0.8
Taylor	29.27	2.8
Armagh	28.97	3.6
Glasgow	29.08	3.2
Albany	29.06	3.3
Munich	28.88	7.3
Glasgow	28.93	1.5
Mean	9 54 29.01	+ 4 49 3.3

No. 5.

Bessel	10 1 54.89	+ 6 6 46.1
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No. 6.

Bessel	10 2 34.98	+ 6 10 51.3
Munich	34.55	53.2
Mean	10 2 34.73	+ 6 10 52.4

No. 7 (19 Sextantis).

Piazzi	10 3 38.37	+ 5 28 52.8
Lalande	38.62	51.7
Bessel	38.79	48.6
Armagh	38.50	51.7
Pulkowa	38.47	51.3
Greenwich	38.57	51.2
Bruxelles	38.47	51.4
Glasgow	38.66	51.4
Mean	10 3 38.55	+ 5 28 51.3
		(-0".0064, -0".022)

No. 8.

Bessel	10 10 30.09	+ 7 4 29.6
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No. 9.

Bessel	10 11 19.31	+ 7 18 44.9
Bruxelles	19.17	43.1
Glasgow	19.19	42.9
Greenwich	19.15	42.8
Radcliffe	19.03	44.0
Mean	10 11 19.15	+ 7 18 43.3

No. 10 (43 Leonis).

Piazzi	10 ^h 13 ^m 47 ^s .55	+ 7° 25'	59".4
Lalande	47.39		60.2
Rümker	47.46		57.1
Armagh	47.62		56.6
Munich	47.49		58.0
Yarnall	47.53		57.1
Radcliffe	47.50		58.6
Greenwich	47.57		58.1
Glasgow	47.47		57.8
Greenwich	47.51		57.3
Radcliffe	47.49		59.6
Mean	10 13 47.52	+ 7 25	57.8
	(-0".0016, -0".098)		

No. 11.

Bessel	10 18 12.69	+ 8 6	33.6
Glasgow	12.29		35.9
Mean	10 18 12.42	+ 8 6	35.1

No. 12.

Lalande	10 19 54.94	+ 8 41	43.8
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No. 13 (q Leonis).

D'Agelet	10 23 32.23	+ 10 12	33.7
Lalande	32.09		38.8
Bessel	32.18		(95.0)
Richardson	(29.74)		42.5
Taylor	32.31		32.1
Rümker	32.20		32.9
Armagh	32.14		32.6
Greenwich	32.15		32.3
Radcliffe	32.25		33.6
Greenwich	32.20		32.8
Yarnall	32.19		32.9
Radcliffe	32.12		33.8
Greenwich	32.14		33.1
Glasgow	32.15		32.5
Greenwich	32.15		33.4
Boss	32.16		32.9
Greenwich	32.11		32.6
Glasgow	32.20		32.3
Radcliffe	32.15		33.9
Mean	10 23 32.16	+ 10 12	33.1

No. 14 (49 Leonis).

D'Agelet	10 25 47.07	+ 9 33	26.1
Piazzi	47.71		26.5
Lalande	47.59		25.1
Bessel	47.59		25.3
Taylor	48.02		25.4
Armagh	47.52		26.1
Pulkowa	47.48		25.2
Greenwich	47.53		26.0
Schjellerup	47.55		26.7
Bruxelles	47.50		25.6
Glasgow	47.54		25.6
Mean	10 25 47.54	+ 9 33	25.8
	(-0".0007, -0".046)		

No. 15.

Bessel	10 ^h 24 ^m 27 ^s .97	+ 9° 29'	27".1
Munich	28.07		27.8
Mean	10 24 28.03	+ 9 29	27.5

No. 16.

D'Agelet	10 30 28.52	+ 9 45	24.3
Piazzi	28.52		24.4
Lalande	28.65		24.7
Bessel	28.51		23.1
Taylor	28.30		25.2
Yarnall	28.51		24.3
Bruxelles	28.56		24.4
Glasgow	28.55		24.0
Mean	10 30 28.56	+ 9 45	24.2
	(-0".0046, -0".041)		

No. 17.

Lalande	10 35 9.18	+ 11 17	51.8
Bessel	9.58		52.8
Rümker	9.31		50.7
Sievers	9.42		51.2
Yarnall	9.32		51.2
Schjellerup	9.20		53.0
Glasgow	9.39		52.8
Armagh	9.36		50.7
Mean	10 35 9.33	+ 11 17	51.7
	(+0".0025, -0".088)		

No. 18.

Lalande	10 38 31.30	+ 11 22	11.0
Bessel	31.36		6.7
Rümker	31.11		4.0
Glasgow	31.23		6.7
Mean	10 38 31.23	+ 11 22	6.4

No. 19 (53 Leonis).

D'Agelet	10 39 59.36		—
Piazzi	59.86	+ 11 28	30.1
Lalande	59.95		28.0
Bessel	60.05		26.4
Taylor	59.90		27.5
Rümker	59.84		25.6
Armagh	59.79		28.0
Greenwich	59.78		25.6
Greenwich	59.90		25.1
Pulkowa	59.85		25.5
Radcliffe	59.87		26.3
Yarnall	59.91		25.4
Greenwich	59.90		25.1
Glasgow	59.90		25.0
Greenwich	59.88		25.7
Boss	59.85		25.1
Greenwich	59.86		24.8
Glasgow	59.84		24.4
Radcliffe	59.91		25.8
Mean	10 39 59.86	+ 11 28	25.7

No. 20.

Lalande	10 ^h 42 ^m 43 ^s .36	+12° 17' 25".5
Bessel	43.47	24.8
Rümker	43.24	21.7
Yarnall	43.37	23.9
Schjellerup	43.29	24.7
Glasgow	43.39	24.1
Mean	10 42 43.35	+12 17 23.9
	(-0°0023, -0°052)	

No. 21.

Lalande	10 41 52.75	+12 30 39.6
Bessel	52.96	39.9
Yarnall	52.73	39.1
Glasgow	52.92	39.9
Armagh	52.83	39.7
Mean	10 41 52.83	+12 30 39.6
	(-0°0045, -0°074)	

No. 22.

Piazzi	10 50 28.81	+12 38 43.1
Bessel	28.65	42.0
Taylor	29.13	42.9
Glasgow	28.79	42.7
Mean	10 50 28.81	+12 38 42.6
	(-0°0154, -0°012)	

No. 23.

Piazzi	10 55 18.46	+13 36 51.8
Bessel	18.49	45.6
Taylor	18.58	50.6
Armagh	18.36	50.1
Yarnall	18.46	50.9
Schjellerup	18.49	49.7
Glasgow	18.45	48.4
Mean	10 55 18.45	+13 36 49.6
	(-0°0046, -0°010)	

No. 24.

Bessel	10 56 36.27	+13 30 58.4
Glasgow	35.62	57.5
Mean	10 56 35.84	+13 30 57.8

No. 25.

D'Agelet	11 2 29.57	+15 21 19.8
Piazzi	29.54	20.5
Lalande	29.31	25.4
Bessel	29.32	19.1
Taylor	29.51	18.2
Rümker	29.29	16.5
Armagh	29.25	17.0
Bruxelles	29 21	16.9
Glasgow	29.24	18.4
Mean	11 2 29.31	+15 21 18.3

No. 26 (θ Leonis).

D'Agelet	11 ^h 4 ^m 59 ^s .65	+16° 23' 25".7
Piazzi	59.49	25.3
Lalande	59.90	24.1
Bessel	59.92	24.2
Taylor	59.80	25.4
Rümker	59.71	23.6
Armagh	59.54	23.3
Greenwich	59.68	24.3
Radcliffe	—	23.7
Bruxelles	59.79	24.5
Greenwich	59.70	25.5
Greenwich	59.68	24.8
Glasgow	59.71	23.7
Mean	11 4 59.70	+16 23 24.4
	(-0°0040, -0°102)	

No. 27.

D'Agelet	11 6 11.09	+16 4 16.3
Lalande	11.06	20.1
Bessel	10.88	19.8
Mean	11 6 10.99	+16 4 18.9

No. 28.

Lalande	11 15 12.31	+18 18 26.6
Rümker	12.39	27.6
Mean	11 15 12 37	+18 18 27.3

No. 29 (81 Leonis).

D'Agelet	11 16 25.40	+17 25 22.3
Piazzi	25.22	25.1
Lalande	24.74	22.7
Bessel	25.36	19.0
Taylor	25.56	24.7
Rümker	25.15	19.6
Armagh	25.06	22.7
Pulkowa	25.13	22.0
Bruxelles	25.11	22.0
Greenwich	25.19	22.3
Greenwich	25.22	22.4
Glasgow	25.14	21.9
Mean	11 16 25.17	+17 25 22.0
	(-0°0099, -0°019)	

No. 30 (71 Leonis).

D'Agelet	11 13 16.21	+18 24 6.1
Lalande	15.69	7.7
Rümker	15.66	3.0
Yarnall	15.81	5.0
Greenwich	15.80	5.6
Bruxelles	15.82	4.8
Glasgow	15.89	4.6
Greenwich	15.85	6.2
Armagh	15.84	5.7
Greenwich	15.87	5.5
Mean	11 13 15.83	+18 24 5.3
	(-0°0119, -0°036)	

No. 31.

D'Agelet	11 ^h 14 ^m 24 ^s 83	+18° 6' 24".2
Lalande	24.79	30.4
Pulkowa	24.95	24.2
Armagh	24.78	28.2
Mean	11 14 24.86	+18 6 26.2

(-0°0115, -0°012)

No. 32 (86 Leonis).

D'Agelet	11 21 17.33	+19 22 42.3
Piazz	16.93	43.1
Lalande	17.47	41.0
Bessel	17.22	38.7
Rümker	17.22	42.2
Armagh	17.13	41.1
Pulkowa	17.15	41.4
Yarnall	17.11	41.4
Greenwich	17.09	41.7
Bruxelles	17.06	42.7
Glasgow	17.03	42.1
Greenwich	17.09	42.2
Greenwich	17.01	41.5
Mean	11 21 17.13	+19 22 41.6

No. 33.

Bessel	11 24 2.16	+19 47 23.6
Rümker	1.90	24.9
Mean	11 24 2.00	+19 47 24.4

No. 34.

Lalande	11 24 16.88	+20 39 6.8
Rümker	17.33	2.0
Mean	11 24 17.20	+20 39 3.4

No. 35.

D'Agelet	11 36 12.95	+20 52 11.7
Lalande	12.56	4.8
Bessel	12.73	5.7
Rümker	12.83	5.3
Yarnall	12.76	7.7
Mean	11 36 12.77	+20 52 6.9

(+0°0018, -0°120)

No. 36 (93 Leonis).

D'Agelet	11 ^h 38 ^m 53 ^s 47	+21° 11' 50".3
Piazz	53.73	49.2
Taylor	53.94	47.9
Rümker	53.61	48.2
Armagh	53.67	48.3
Greenwich	53.63	49.0
Pulkowa	53.71	48.5
Bruxelles	53.68	48.5
Greenwich	53.63	48.7
Radcliffe	53.66	49.5
Mean	11 38 53.67	+21 11 48.7

(-0°0086, -0°023)

No. 37.

Lalande	11 25 51.86	+21 24 50.0
Bessel	52.42	48.6
Yarnall	51.99	47.6
Armagh	51.89	47.9
Mean	11 25 52.01	+21 24 48.1

No. 38.

D'Agelet	11 32 55.92	+23 11 18.5
Lalande	56.06	22.8
Bessel	55.97	20.8
Rümker	55.81	19.6
Yarnall	55.89	20.9
Bruxelles	55.91	20.9
Armagh	56.00	20.0
Mean	11 32 55.92	+23 11 20.7

(-0°0057, -0°049)

The observed positions of the comet were cleared for aberration and parallax and compared with Rümker's provisional elements. I excluded the declinations obtained on the 14th July (Paris time) and for the second epoch on the 19th. These were given only to the nearest minute. The observation made on the 23^d was excluded by Rümker himself. Rümker's declination for the second epoch on the 27th was also excluded. It is two minutes too large. Brisbane's observation of the 10th August was excluded. The comet was hardly visible. The observed position is some seven minutes in error. Thus I obtained the following normal places for 1824.0:

No.	Paris M. T.	$\alpha_o - \alpha_c$	$\delta_o - \delta_c$	α_o	δ_o	l_o	b_o
I	July 18.0	+2' 8".5	+15".5	152° 53' 12".4	+7° 13' 50".7	152° 14' 9".8	-3° 42' 3".5
II	" 22.5	+0 45.1	+6.5	159 58 6.9	+11 50 39.3	157 3 21.6	+3 8 31.0
III	" 28.0	+0 36.0	+12.7	165 57 56.8	+16 7 21.4	160 48 57.4	+9 19 19.3
IV	Aug. 1.0	+1 2.7	-16.5	169 8 26.0	+18 31 41.8	162 40 49.0	+12 43 52.7
V	" 5.5	+1 16.1	+20.2	171 56 39.9	+20 45 2.3	164 14 31.4	+15 49 59.1

The equations of condition were as follows:

July 18.0:	- 74.7	x	- 6.9	y	+ 21.9	z	+ 5.4	t	+ 149.8	u	- 112.9	= 0	$l_o - l_c = +20.0$
» :	- 305.5		- 179.2		+ 165.6		+ 25.1		- 83.0		- 60.9	= 0	$b_o - b_c = +17.2$
July 22.5:	- 13.8		+ 44.3		+ 9.6		- 7.7		+ 141.5		- 38.2	= 0	$l_o - l_c = -33.5$
» :	- 243.6		- 151.1		+ 161.2		- 25.0		- 81.7		- 23.1	= 0	$b_o - b_c = -12.1$
July 28.0:	+ 28.3		+ 85.2		- 3.8		- 27.5		+ 137.7		- 27.2	= 0	$l_o - l_c = -26.2$
» :	- 185.3		- 124.3		+ 149.1		- 83.3		- 78.0		- 25.5	= 0	$b_o - b_c = + 0.6$
Aug. 1.0:	+ 44.9		+ 105.2		- 11.9		- 41.6		+ 136.4		- 61.1	= 0	$l_o - l_c = +18.1$
» :	- 154.3		- 110.0		+ 139.1		- 119.4		- 74.5		- 9.0	= 0	$b_o - b_c = - 8.1$
Aug. 5.5:	+ 55.3		+ 121.7		- 19.8		- 55.6		+ 135.6		- 56.7	= 0	$l_o - l_c = +23.7$
» :	- 128.2		- 97.9		+ 128.3		- 153.9		- 70.4		- 48.2	= 0	$b_o - b_c = +35.6$

$$x = \frac{\Delta T}{0.005}, \quad y = \frac{\Delta \pi}{5'}, \quad z = \frac{\Delta \Omega}{5'}, \quad t = \frac{\Delta i}{10'}, \quad u = \frac{\Delta q}{0.0005}.$$

The equations of condition depending upon the longitude were multiplied with cosine of the longitude. Equal weight was attributed to the equations.

The normal equations (logarithmic) were:

$$\begin{aligned} +7.3782x + 7.1231y - 7.1004z + 5.8151t + 6.8232u + 6.4229 &= 0 \\ +7.1231x + 7.1046y - 7.0176z + 6.3797t + 6.9991u + 5.8276 &= 0 \\ -7.1004x - 7.0176y + 7.0514z - 6.6712t - 6.7644u - 6.4139 &= 0 \\ +5.8151x + 6.3797y - 6.6712z + 6.7143t + 5.9497u + 6.1984 &= 0 \\ +6.8232x + 6.9991y - 6.7644z + 5.9497t + 7.1090u - 6.4637 &= 0 \end{aligned}$$

From these were obtained:

$$\begin{aligned} \Delta T &= +0.005860 \\ \Delta \pi &= -1' 41.4'' \\ \Delta \Omega &= +1' 58.9'' \\ \Delta i &= +0' 55.4'' \\ \Delta \lg q &= +0.0002995 \end{aligned}$$

The errors left in the normal places are shown beside the equations of condition.

The new elements referred to 1824.0 are:

$$\begin{aligned} T &= \text{July } 11.525316 \text{ Paris M. T.} \\ \omega &= 334^\circ 6' 17.3'' \\ \Omega &= 234^\circ 21' 7.9'' \\ i &= 125^\circ 26' 36.4'' \\ \log q &= 9.7720806 \\ (\log m &= 0.3020067) \end{aligned}$$

The comparison with the observations is as follows:

Paris M T.	*	α_o	δ_o	α_c	δ_c	$\alpha_o - \alpha_c$	$\delta_o - \delta_c$	Observer
July 14.88565	1 & 2	146° 18' 51.0"	+ 3° 27'	146° 19' 3.6"	+ 3° 19' 25.9"	- 13"	(+454")	Rümker
15.88611	3 & 4	148 38 25.8	4 38 51.5	148 35 45.3	4 38 34.5	+ 160	+ 17	»
16.86939	5, 6, 7	150 42 44.5	5 54 15.9	150 40 27.2	5 52 46.3	+ 137	+ 90	»
17.89687	8 & 9	152 41 46.1	7 5 51.7	152 41 11.3	7 6 30.2	+ 35	- 38	»
18.88870	10, 11, 12	154 27 54.6	8 13 33.0	154 28 59.7	8 13 58.3	- 65	- 25	»
19.86962	13 & 14	156 6 57.3	9 17 18.0	156 7 48.2	9 17 12.9	- 51	+ 5	»
19.88391	15	156 8 33.1	9 19 30±	156 9 11.3	9 18 6.7	- 38	(+ 83)	»
20.86652	13	157 39 31.9	10 17 39.3	157 40 49.9	10 18 2.3	- 78	- 23	»
20.87681	14 & 16	157 41 11.5	10 18 23.3	157 41 45.2	10 18 38.9	- 34	- 16	»
21.86795	17, 18, 19	159 7 1.3	11 14 31.1	159 7 23.1	11 15 48.9	- 22	- 78	»
22.84875	19	160 25 38.1	12 9 39.0	160 26 0.4	12 9 19.4	- 22	+ 20	»
22.85109	20	160 25 32.6	12 10 44.2	160 26 11.2	12 9 26.8	- 39	+ 77	»
22.86106	21	160 26 19.0	12 9 58.0	160 26 57.4	12 9 58.6	- 38	- 1	»
23.90110	22	161 44 39.2	12 59 49±	161 44 11.8	13 3 33.2	(+ 27)	(- 224)	»
24.87025	23 & 24	162 50 41.3	13 51 15.0	162 51 4.6	13 50 45.4	- 23	+ 30	»
26.87346	25	164 55 8.8	15 21 13.3	164 55 31.9	15 20 42.0	- 23	+ 31	»
27.85740	26	165 50 29.9	16 1 21.8	165 50 39.6	16 1 26.6	- 10	- 5	Brisbane
27.87041	25	165 51 13.6	16 2 18.4	165 51 21.9	16 1 58.1	- 8	+ 20	Rümker
27.87357	26	165 50 50.5	16 4 4.5	165 51 32.2	16 2 5.7	- 42	(+ 119)	»
27.87413	27	165 50 38.9	16 2 43.0	165 51 34.0	16 2 7.1	- 55	+ 36	»
28.86448	26	166 42 47.5	16 41 2.7	166 43 29.5	16 41 1.3	- 42	+ 1	Brisbane
28.86759	26	166 43 47.2	+ 16 40 49.6	166 43 38.9	+ 16 41 8.3	+ 8	- 19	Rümker

Paris M. T.	*	α_0	δ_0	α_c	δ_c	$\alpha_0 - \alpha_c$	$\delta_0 - \delta_c$	Observer
July 30.86705	31	168° 18' 47".2	+17° 53' 52".6	168° 19' 2".6	+17° 53' 51".9	- 15"	+ 1	Brisbane
30.87006	28, 29, 31	168 19 11.9	17 53 54.2	168 19 10.8	17 53 58.1	+ 1	- 4	Rümker
31.86162	28	169 2 29.0	18 27 34.0	169 2 21.9	18 27 25.3	+ 7	+ 9	Brisbane
31.86813	28, 30, 31	169 3 18.4	18 25 53.4	169 2 38.4	18 27 38.1	+ 40	- 105	Rümker
Aug. 2.87138	32	170 23 23.2	19 30 49.0	170 22 48.8	19 30 30.1	+ 34	+ 19	Brisbane
3.86409	33	171 0 19.1	20 0 1.7	170 59 27.8	19 59 32.8	+ 51	+ 29	"
4.87487	34, 35, 36	171 34 53.0	20 28 25.5	171 34 56.6	20 27 48.3	- 4	+ 37	Rümker
5.85492	34 & 37	172 8 38.0	20 53 58.6	172 7 43.9	20 54 1.4	+ 54	- 3	"
5.86686	37	172 8 51.5	20 54 59.9	172 8 7.3	20 54 20.2	+ 44	+ 40	Brisbane
7.85664	37	173 11 5.5	21 44 26.2	173 10 20.0	21 44 15.3	+ 45	+ 11	"
10.86346	38	174 41 18.6	+22 54 7.3	174 35 14.7	+22 52 26.6	(+364)	(+101)	"

The epochs have been corrected for tempus lucis, and α_0 and δ_0 for parallax. A slight improvement could be effected if the observations could be corrected for refraction and proper motion of the comet.

Hongkong Observatory, 1895 April.

W. Doberck.

Meridian Observations of Comet comparison-stars

made at the Royal Observatory, Cape of Good Hope, in 1893 and 1894.

Star	α 1893.0	No.	δ 1893.0	No.	Star	α 1893.0	No.	δ 1893.0	No.
Stars observed with Comet 1892 VI. (See M. N. LIII p. 488; A. N. 3180).					BD. +19°589	4 ^h 10 ^m 46 ^s .95	3	+19° 24' 45".2	3
Cord. ZC. 15 ^h 3020	15 ^h 44 ^m 10 ^s .07	3	-41° 58' 33".0	3	BD. +19.698	4 13 14.94	3	+19 41 15.8	3
* No. 2	15 55 14.63	3	-42 5 27.3	3	BD. +21.707	4 42 22.47	3	+21 7 33.9	3
Cord. ZC. 16 ^h 1303	16 19 42.66	3	-42 13 28.2	3	BD. +21.740	4 51 39.00	3	+21 34 26.3	3
Cord. ZC. 16 ^h 2491	16 36 54.48	3	-42 11 23.1	3	BD. +21.751	4 56 41.95	2	+21 26 12.4	3
Cord. GC. 23959	17 34 45.19	3	-40 24 22.5	3	The two observations of BD. +18°565 are marked very faint and through cloud. Three measures with the equatoreal in 1893 gave 5' 42".3 as the difference in declination between this star and BD. +18°562.				
Cord. GC. 24328	17 49 22.30	4	-39 54 53.7	3	Star	α 1894.0	No.	δ 1894.0	No.
Cord. ZC. 17 ^h 3294	17 49 57.88	3	-39 49 31.7	3	Stars observed with Comet 1892 I. (See M. N. LII p. 568 and A. N. 3100).				
Cord. GC. 24431	17 53 5.39	3	-39 39 29.7	3	Stone 10436	19 ^h 7 ^m 52 ^s .78	3	-30° 0' 41".9	3
* No. 14	18 26 42.71	3	-36 27 31.1	3	Cord. ZC. 19 ^h 504	19 12 46.21	3	-29 12 48.0	3
* No. 15	18 32 48.53	3	-36 21 50.0	3	Cord. ZC. 19 ^h 599	19 14 58.40	3	-28 25 28.0	3
* e	18 32 58.73	3	-36 36 27.7	3	Cord. GC. 26690	19 23 27.40	3	-27 33 55.8	3
Cord. GC. 25523	18 35 22.30	3	-35 15 18.3	3	Cord. GC. 27096	19 41 9.62	3	-23 4 10.8	3
Cord. GC. 25565	18 37 9.33	3	-35 44 47.2	3	Cinc. 3321	19 54 20.25	2	-20 8 47.3	3
* No. 19	18 39 1.80	3	-32 18 15.9	3	Cinc. 3341	20 2 5.60	4	-19 6 35.9	4
* g	18 40 15.92	3	-31 51 12.0	3	BD. -18°5624	20 7 54.72	3	-17 59 42.8	3
* f	18 40 39.79	3	-32 40 34.7	3	Yar. 9046	20 16 14.09	3	-15 57 43.1	3
Stars observed with Comet Finlay 1893 III. (See A. N. 3188).					Sant. 1868	20 28 50.24	3	-12 48 34.7	3
Yarn. 10777	23 42 9.27	3	- 5 3 23.6	3	BD. -9°5563	20 39 2.77	3	- 9 39 47.4	3
29 Piscium	23 56 20.44	3	- 3 37 23.2	3	BD. -8°5490	20 44 41.40	1	- 8 35 49.5	1
Pi. 23 ^h 282	0 3 14.16	3	- 2 49 6.1	3	Lam ₃ 4043	20 49 49.96	3	- 6 26 18.9	3
BD. -1°42	0 18 25.09	4	- 0 51 11.0	3	Schj. 8465	20 58 6.39	3	- 4 19 35.3	3
BD. -1°44	0 20 15.88	3	- 1 20 34.5	3	Star observed with Comet 1892 VI.				
Lal. 4071	2 6 47.62	4	+ 9 49 33.4	4	* No. 21	18 37 46.81	3	-31 30 21.2	3
BD. +10°303	2 9 58.57	4	+10 16 28.4	4	This star was wrongly identified with Cord. ZC. 18 ^h 1807 in the M. N. LIII p. 488 and A. N. 3180; it is Cord. ZC. 18 ^h 2104.				
BD. +12.359	2 31 16.88	3	+12 26 18.3	3					
BD. +18.557	3 48 56.30	3	+18 16 30.6	3					
BD. +18.562	3 50 51.68	1	+18 31 43.4	2					
BD. +18.565	3 51 38.93	2	+18 37 31.0	2					
BD. +19.672	4 2 55.89	3	+19 19 33.3	4					