

No.	Date of discov.	α 1890.0	δ 1890.0	Descriptions and remarks
91*	1887 May 29	18 ^h 36 ^m 16 ^s	+39° 56.4	eeF; vS; R; e diff.; sp of 2; in finder field with ϵ Lyrae. Edward.
92*	» » 29	18 36 20	+40 5.4	eeeF; eS; R; eee diff.; nf of 2; » » » » » Edward.
93	1890 Apr. 15	19 23 45	+49 4.0	eeF; vS; R; 2 B and 1 F * in line nr. f, nearest * nf close D with 300.
94*	1887 June 26	20 21 20	+58 1.0	eeF; pS; F * close p; 2 single and 2 D st. in line n point to it.
95	1889 Sept. 23	20 38 35	+15 11.5	eeeF; pL; R; in center of trap. of 4 st. eee diff.; in finder field with γ and δ Delphini.
96	» » 11	21 3 25	+12 2.0	eeF; eS; stellar; eF * attached.
97	» » 18	21 57 0	+19 13.2	eeF; pS; R; bet. 2 nr. F st. in meridian.
98	1889 Oct. 20	22 52 55	+14 25.6	eeeF; vS; R.
99	1887 » 15	23 19 5	+14 2.1	eeeF: pS; iR; 8 m. * f; F * nr. nf; not 4659.
100	1887 Aug. 19	23 54 25	+46 15.8	eF; pS; R; D * points to it.

Warner Observatory, Rochester N. Y., 1890 July.

Lewis Swift.

Observations of (181) Eucharis, and of some small stars near the path of Eucharis, and of a new nebula.

The following observations of (181) Eucharis were made at the request of Dr. de Ball of the Liege Observatory.

The comparison stars 1 and 2 were observed by Mr. Schaeberle with the Meridian Circle. Comparison star 1 can not be above the 10^m (DM. mag. = 9.5). It has a small 12 mag. star 5" or 10" preceding.

Some small stars were incidentally observed during the work, and as the places may prove valuable in the future, I give them below. The star *f* has a 13^m star 3" ± following and in the same decl.

One new nebula was discovered during these observations and was subsequently seen. I give its place also.

The singular group of exceedingly small and extremely faint nebulae N. G. C. 5940, 5941, 5942 and 5944 discovered by Swift, were run upon and my estimated positions and descriptions agreed essentially with those of Swift. They are quite difficult.

Filar Micrometer Observations of (181) Eucharis made with the 12 inch Equatorial of the Lick Observatory by E. E. Barnard.

1890	Mt. H. M. T.	$\Delta\alpha$	$\Delta\delta$	Cp.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
May 16	10 ^h 35 ^m 36 ^s	+2 ^m 33 ^s 34	— 0' 0" 9	12.8	15 ^h 23 ^m 30 ^s 55	9.143 _n	+7° 54' 15".7	0.639	+1 ^s 36 —4".7	1
17	12 5 19	+1 46.39	+ 1 51.7	22.8	15 22 43.61	8.732	+7 56 6.7	0.635	+1.37 —4.5	1
18	10 24 17	+1 5.70	+ 3 21.0	24.8	15 22 2.92	9.149 _n	+7 57 36.1	0.638	+1.37 —4.4	1
19	9 48 21	+0 23.33	+ 4 43.2	22.8	15 21 20 56	9.305 _n	+7 58 58.4	0.643	+1.38 —4.3	1
20	9 11 59	+2 31.28	— 2 2.6	18.9	15 20 38.29	9.415 _n	+8 0 8.4	0.649	+1.39 —4.1	2
21	9 43 56	+1 47.41	— 0 58.4	12.8	15 19 54.43	9.477 _n	+8 1 12.7	0.640	+1.40 —4.0	2
22	9 47 15	+1 4.88	— 0 6.8	18.8	15 19 11.91	9.255 _n	+8 2 4.4	0.637	+1.41 —3.9	2

Some Small Stars near the path of (181) Eucharis observed with the 12 inch Equatorial of the Lick Observatory by E. E. Barnard.

1890	Nr.	$\Delta\alpha$	$\Delta\delta$	Cp.	α 1890.0	δ 1890.0	Mag.	Red. ad l. app.	*
May 19	<i>a</i>	+0 ^m 20 ^s 00	+ 6' 9".4	2.1	15 ^h 21 ^m 15 ^s 85	+8° 0' 28".9	12 ^m	+1 ^s 38 —4".3	1
17	<i>b</i>	+1 30.77	+ 1 29.0	16.3	15 22 26.62	+7 55 48.6	12	+1.37 —4.6	1
15	<i>c</i>	—0 20.06	— 1 7.4	14.5	15 23 49.90	+7 52 45.5	11.5	+1.35 —4.8	<i>d</i>
18	<i>d</i>	+3 14.12	— 0 26.7	6.3	15 24 9.96	+7 53 52.9	10	+1.38 —4.5	1
11	<i>e</i>	—0 37.6	— 6 6.9	2.1	15 26 36	+7 44	12	+1.34 —5.5	3
11	<i>f</i>	—0 25.2	— 6 9.1	2.2	15 26 48	+7 44	12.5	+1.34 —5.5	3
11	<i>g</i>	—0 22.6	— 7 15.7	2.1	15 26 51	+7 43	13	+1.34 —5.5	3
11	<i>h</i>	—0 22.2	— 4 58.1	3.1	15 26 51	+7 45	12.2	+1.34 —5.5	3

New Nebula.

1890 May 15 $\Delta\alpha = -0^m 3^s 0$ $\Delta\delta = +4' 5''$ Cp. 2.1 α 1890.0 = 15^h 24^m 4^s 50 δ 1890.0 = +7° 57' 58" * *d*
Mag. 13 Description: vF, R, vgbM, 3/4' diam.; 11^m * 1' p.

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Adopted mean Places of the Comparison Stars.

#	α 1890.0	δ 1890.0	Authority
1	15 ^h 20 ^m 55 ^s .85	+7° 54' 19".5	J. M. Schaeberle with L. O. Meridian Circle (2 obs.)
2	15 18 5.62	+8 2 15.1	J. M. Schaeberle with L. O. Meridian Circle (2 obs.)
3	15 27 13	+7 51	DM. +7°29'6"

Mt. Hamilton 1890 June 13.

E. E. Barnard.

Beobachtungen des Cometen 1889 IV auf der Universitäts-Sternwarte in Kijef.

1889	M.Z. Kijef	$\Delta\alpha$	$\Delta\delta$	Vgl.	Bb.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
Aug. 3	10 ^h 24 ^m 41 ^s	-1 ^m 26 ^s .78	- 3' 47".0	4	F	14 ^h 33 ^m 48 ^s .59	9.556	- 2° 26' 6".6	0.832	+0 ^s .84 + 3".2	1
4	10 1 28	-0 34.08	- 2 36.7	10	»	14 40 2.52	9.533	- 0 24 36.7	0.839	+0.85 + 2.2	2
8	9 50 27	+0 5.25	- 3 58.8	11	K	15 2 14.38	9.517	+ 6 37 43.4	0.813	+0.88 + 5.2	3
8	10 29 13	+0 13.18	- 1 28.2	5	»	15 2 22.31	9.553	+ 6 40 14.0	0.820	+0.88 + 5.2	3
9	9 14 17	+0 38.96	+ 2 12.9	4	»	15 6 54.32	9.469	+ 8 5 34.6	0.800	+0.89 + 5.8	4
9	9 25 23	-1 21.51	- 0 3.1	5	»	15 6 56.84	9.486	+ 8 6 22.5	0.802	+0.89 + 5.8	5
9	9 48 17	-3 14.45	- 3 36.9	4	»	15 7 0.82	9.515	+ 8 7 15.4	0.806	+0.89 + 5.8	5.6
11	9 14 5	-0 45.55	- 6 23.7	12	»	15 15 53.15	9.451	+10 47 55.7	0.783	+0.89 + 6.9	7
13	9 10 42	+0 6.87	- 5 33.2	4	»	15 24 2.78	9.466	+13 8 45.5	0.787	+0.89 + 7.9	8
13	10 29 5	+0 20.54	-11 46.1	11	»	15 24 15.85	9.560	+13 13 19.4	0.797	+0.89 + 7.9	9
15	9 43 55	+0 1.87	- 1 39.0	8	»	15 31 36.71	9.518	+15 16 3.2	0.749	+0.88 + 8.8	10
15	10 1 53	+0 19.13	-11 42.8	6	»	15 31 39.66	9.540	+15 16 34.2	0.774	+0.88 + 8.8	11
17	9 22 30	-1 18.97	- 0 28.0	10	»	15 38 26.99	9.498	+17 4 57.2	0.746	+0.88 + 9.5	12
18	8 54 58	+0 12.28	+ 1 3.5	10	»	15 41 38.60	9.430	+17 54 0.4	0.722	+0.87 + 9.8	13
19	9 10 45	+1 4.16	+12 3.0	7	»	15 44 49.63	9.485	+18 41 18.4	0.728	+0.87 + 10.1	14
20	9 2 16	+1 53.17	- 5 45.8	5	»	15 47 49.81	9.472	+19 25 26.0	0.717	+0.86 + 10.5	15
20	9 39 15	+1 18.28	-11 1.9	6	»	15 47 54.45	9.528	+19 26 31.5	0.737	+0.86 + 10.5	16
22	9 17 37	+3 58.05	+ 8 41.9	8	»	15 53 40.11	9.506	+20 47 4.1	0.717	+0.85 + 11.0	17
23	9 8 48	-0 51.60	+12 4.5	8	»	15 56 23.96	9.498	+21 23 7.0	0.706	+0.84 + 11.2	18
24	9 33 34	-0 44.70	- 9 0.4	5	»	15 59 7.27	9.578	+21 59 44.0	0.795	+0.84 + 11.5	19
24	10 17 12	-3 21.83	- 6 43.1	5	»	15 59 12.64	9.590	+22 0 46.0	0.758	+0.84 + 11.5	20
24	11 14 28	-1 31.87	-10 0.8	4	»	15 59 18.70	9.608	+22 2 2.6	0.785	+0.84 + 11.5	21
26	9 40 21	+2 31.84	- 6 22.4	4	»	16 4 18.83	9.549	+23 4 30.8	0.720	+0.82 + 11.9	22
Sept. 2	8 51 32	-2 38.80	- 9 43.1	12	»	16 20 42.91	9.508	+26 4 16.5	0.639	+0.75 + 13.1	23
4	9 33 18	+1 39.41	- 0 49.9	10	»	16 25 4.92	9.571	+26 46 39.9	0.691	+0.73 + 13.4	24
15	9 27 55	+0 27.17	- 4 50.6	10	»	16 27 18.56	9.614	+29 41 27.2	0.702	+0.59 + 14.5	25
29	9 20 4	+0 34.44	- 7 55.1	10	»	17 13 54.60	9.625	+32 4 37.2	0.683	+0.40 + 15.2	26

Die Beobachtungen sind, mit Ausnahme der beiden ersten, von Prof. Khandrikoff angestellt, die beiden ersten von mir. Es wurde dabei ein Kreuzstabmikrometer angewendet, über welches eine spätere Mittheilung erfolgen wird.

Mittlere Oerter der Vergleichsterne für 1889.0.

#	α 1889.0	δ 1889.0	Autorität	#	α 1889.0	δ 1889.0	Autorität
1	14 ^h 35 ^m 14 ^s .52	- 2° 22' 22".8	Ll., W ₁ , Lm ₁ (die Decl. bei Lam ₁ fehlerhaft)	11	15 ^h 31 ^m 19 ^s .63	+15° 28' 8".3	7 year.
2	14 40 35.74	- 0 22 2.2	Ll., Lm ₁ , A.N., Gött., Karlsr.	12	15 39 45.07	+17 5 15.7	Pi., W ₂ , Lal.
3	15 2 8.25	+ 6 41 37.0	Lal., W ₁ (fehlerh.), Lam ₂ , Sj.	13	15 41 25.44	+17 52 47.1	W ₂
4	15 6 14.48	+ 8 3 16.0	Rü., Lam ₂	14	15 43 44.61	+18 29 5.4	Berl. Jahrb.
5	15 8 17.45	+ 8 6 19.8	Lal., W ₁ , Lam ₂ , BB.VI	15	15 45 55.78	+19 31 1.4	Lal., W ₂ , Rü. (W ₂ scheint in beiden Coord. fehlerhaft)
6	15 12 11.19	+ 8 15 13.1	Lal., W ₁ , Lam ₂	16	15 46 35.31	+19 37 23.0	Lal., W ₂
7	15 16 37.80	+10 54 12.5	Lal., W ₁	17	15 49 41.23	+20 38 11.4	Pi., Lal., W ₂ , Rü., Arm ₁ , Quet., Arm ₂
8	15 23 55.02	+13 14 10.8	Kijef Mer.	18	15 57 14.70	+21 11 51.3	W ₂ , BB.VI, (Lal. fehlerhaft)
9	15 23 54.41	+13 24 57.5	Arm ₂	19	15 59 51.12	+22 8 33.1	Kijef Mer.
10	15 31 33.94	+15 17 33.5	Arm ₂				

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