Observations of Comet Wolf 1898 IV

made at the Lick Observatory of the University of California by *William F. Hussey*.

1898-99	Mt. Ha. M. T.	$\Delta\alpha$	$\Delta\delta$	Cp.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
June 16	15 ^h 5 ^m 21 ^s	+1 ^m 25 ^s 77	+3' 13" 6	6.6	2 ^h 16 ^m 18 ^s 9.1	9.691 _n	+19° 42' 44" 1	0.669	+1 ^s 67 +8" 4	1
17	15 16 13	-0 45.87	-3 0.6	6.8	2 19 19.39	9.688 _n	+19 46 24.1	0.658	+1.69 +8.4	2
20	14 46 55	+0 26.39	-3 48.9	8.8	2 28 13.25	9.695 _n	+19 55 39.1	0.682	+1.76 +8.7	3
20	15 2 15	-0 20.40	+1 28.9	8.8	2 28 15.04	9.692 _n	+19 55 41.9	0.667	+1.76 +8.7	4
26	14 59 10	+0 15.18	-3 59.8	8.8	2 46 10.55	9.692 _n	+20 8 4.0	0.664	+1.86 +9.0	5
July 13	14 34 44	-0 9.80	+3 48.6	8.8	3 36 28.12	9.693 _n	+19 53 26.5	0.673	+2.19 +9.4	7
14	15 41 42	+2 53.67	+0 30.0	3.4	3 39 31.63	9.654 _n	+19 50 8.0	0.605	+2.23 +9.5	7
18	15 1 54	+0 24.46	+8 38.1	8.8	3 51 1.63	9.680 _n	+19 34 38.6	0.643	+2.31 +9.5	8
19	15 20 4	-0 44.49	-0 50.3	8.8	3 53 56.02	9.668 _n	+19 30 0.0	0.623	+2.31 +9.3	9
24	15 3 26	+0 16.91	+0 31.5	8.8	4 8 8.50	9.674 _n	+19 3 10.8	0.621	+2.39 +9.4	11
25	14 52 32	-0 8.98	-2 3.5	8.8	4 10 55.65	9.679 _n	+18 57 7.9	0.648	+2.41 +9.3	12
Aug. 15	15 5 37	+0 23.78	+1 23.5	8.8	5 6 58.73	9.645 _n	+15 49 6.6	0.635	+2.77 +8.7	14
Sept. 9	16 31 30	+0 10.75	+8 17.5	8.8	6 3 16.93	9.416 _n	+9 55 46.0	0.625	+3.10 +7.3	15
16	14 25 43	-0 8.81	+2 26.9	8.8	6 57 14.47	9.494 _n	-1 27 38.3	0.736	+3.60 +4.6	17
17	14 28 50	+0 14.81	+5 32.6	8.8	6 58 7.25	9.481 _n	-1 47 21.8	0.738	+3.62 +4.5	19
17	14 39 57	-0 5.89	+6 57.1	8.8	6 58 8.02	9.455 _n	-1 47 30.1	0.739	+3.62 +4.4	20
Nov. 13	14 3 29	-0 32.57	+2 3.3	8.8	7 8 42.22	9.264 _n	-10 14 19.8	0.804	+4.15 +2.3	21
Jan. 4	12 19 43	-0 8.65	+1 16.2	8.8	6 30 42.14	9.005	-16 50 32.9	0.849	+2.37 -2.9	23
5	12 10 33	-0 7.91	-2 2.0	8.8	6 29 49.12	8.964	-16 46 55.2	0.849	+2.37 -2.9	25
Mar. 10	9 39 7	-0 9.65	+4 57.6	8.8	6 23 0.80	9.459	-6 44 49.4	0.768	+1.34 -9.8	27

Mean Places for 1898-99.0 of Comparison Stars.

*	α	δ	Authority	*	α	δ	Authority
1	2 ^h 14 ^m 51 ^s 47	+19° 39' 22" 1	AG. Berlin A. 646	15	6 ^h 3 ^m 3 ^s 08	+9° 47' 21" 1	10 ^m connected with * 16
2	2 20 3.57	+19 49 16.3	AG. Berlin A. 671	16	6 3 1.12	+9 38 57.4	W ₁ 5 ^h 1566
3	2 27 45.10	+19 59 19.3	AG. Berlin A. 697	17	6 57 19.68	-1 30 9.8	9 ^m connected with * 18
4	2 28 33.68	+19 54 4.3	AG. Berlin A. 700	18	6 59 35.91	-1 31 11.8	Gött ₁ 2315-16
5	2 45 53.51	+20 11 54.8	10 ¹ / ₂ ^m connected with * 6	19	6 57 48.82	-1 52 58.9	Gött ₁ 2299-00
6	2 48 29.74	+20 8 59.4	AG. Berlin A. 780	20	6 58 10.29	-1 54 32.2	Gött ₁ 2303-04
7	3 36 35.73	+19 49 28.5	AG. Berlin A. 991	21	7 9 10.64	-10 16 25.4	8 ^m 8 connected with * 22
8	3 50 34.86	+19 25 51.0	AG. Berlin A. 1050	22	7 8 42.20	-10 20 0.4	Quet. 3009
9	3 54 38.20	+19 30 41.0	9 ¹ / ₂ ^m connected with * 10	23	6 30 48.42	-16 51 46.2	11 ^m connected with * 24
10	3 55 34.89	+19 31 27.2	AG. Berlin A. 1067	24	6 33 13.86	-16 55 31.6	BB. VI 6 ^h 110
11	4 7 49.20	+19 2 29.9	AG. Berlin A. 1112	25	6 29 54.66	-16 44 50.3	12 ^m connected with * 26
12	4 11 2.22	+18 59 2.1	10 ¹ / ₂ ^m connected with * 13	26	6 34 5.39	-16 47 2.1	Rad ₃ 1653
13	4 11 23.58	+19 6 13.6	AG. Berlin A. 1123	27	6 23 9.11	-6 49 37.2	12 ^m connected with * 28
14	5 6 32.18	+15 47 34.4	AG. Berlin A. 1426	28	6 23 10.23	-6 51 50.1	AG. Ottakring

Mt. Hamilton, California, 1899 Aug. 30.

William F. Hussey.

Observations of Tuttle's Periodic Comet 1899 III

made at the Lick Observatory of the University of California by *C. D. Perrine*.

1899	Mt. Ha. M. T.	$\Delta\alpha$	$\Delta\delta$	Cp.	Tel.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
Mar. 7	7 ^h 39 ^m 20 ^s	-0 ^m 6 ^s 63	-1' 45" 4	10.8d	12	1 ^h 24 ^m 51 ^s 29	9.732	+31° 7' 14" 0	0.591	+0 ^s 57 +9" 4	1
9	7 34 58	-0 32.12	+0 59.2	6.6d	12	1 32 27.93	9.728	+30 39 57.4	0.585	+0.60 +9.2	3
9	8 5 35	-3 56.20	+1 38.8	8.5	12	1 32 33.31	9.736	+30 39 31.6	0.637	+0.62 +9.2	5
10	7 31 31	+0 4.54	+3 59.1	10.8d	36	1 36 16.70	9.723	+30 25 56.2	0.582	+0.60 +9.1	6
April 4	8 10 29	+0 12.12	+6 37.2	10.8d	12	3 11 16.75	9.707	+22 52 5.5	0.683	+0.89 +5.4	8

1899	Mt. Ha. M. T.	$\Delta\alpha$	$\Delta\delta$	Cp.	Tel.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
April 5	7 ^h 58 ^m 12 ^s	-1 ^m 41 ^s 39	+3' 17.8	10.8	12	3 ^h 14 ^m 57 ^s 74	9.704	+22° 29' 58.3	0.672	+0.91 +5.2	9
10	8 33 42	+0 17.60	-1 48.5	10.8d	12	3 33 26.81	9.699	+20 33 27.0	0.716	+0.91 +4.3	10
11	8 0 18	-1 30.68	-1 3.8	10.8	12	3 37 0.54	9.697	+20 9 57.8	0.685	+0.92 +4.1	11
13	7 53 18	+0 9.18	+5 30.2	10.8d	12	3 44 14.90	9.695	+19 21 4.8	0.683	+0.93 +3.7	12
14	8 0 28	-2 26.84	-0 5.6	10.6	12	3 47 52.73	9.695	+18 55 56.7	0.699	+0.95 +3.5	13
19	7 53 8	+0 26.51	-7 31.6	10.8d	12	4 5 45.27	9.689	+16 47 17.5	0.693	+0.98 +2.7	14
20	8 2 32	-2 23.45	+0 6.8	10.6	12	4 9 19.11	9.689	+16 20 36.3	0.702	+0.98 +2.5	15
May 1	8 6 57	+0 9.44	+7 46.5	8.6d	12	4 47 36.21	9.680	+11 13 56.9	0.719	+1.01 +0.3	16

Mean Places for 1899.0 of Comparison Stars.

*	α	δ	Authority	*	α	δ	Authority
1	1 ^h 24 ^m 57 ^s 35	+31° 9' 22.3	Micr. comp. with * 2	10	3 ^h 33 ^m 8 ^s 30	+20° 35' 11.2	AG. Berlin B. 1084
2	1 19 57.66	+31 1 18.8	AG. Leiden Z. 128, 245	11	3 38 30.30	+20 10 57.5	1/2 (AG. Berl. B. 1117 + AG. Berlin A. 998)
3	1 32 59.45	+30 38 49.0	Micr. comp. with * 4	12	3 44 4.79	+19 15 30.9	AG. Berlin A. 1019
4	1 29 46.66	+30 46 15.7	AG. Leiden Z. 136, 247	13	3 50 18.62	+18 55 58.8	AG. Berlin A. 1049
5	1 36 28.89	+30 37 43.6	AG. Leiden Z. 128, 245	14	4 5 17.78	+16 54 46.4	AG. Berlin A. 1103
6	1 36 11.56	+30 21 48.0	Micr. comp. with * 7	15	4 11 41.58	+16 20 27.0	AG. Berlin A. 1124
7	1 38 19.61	+30 26 56.0	AG. Leiden Z. 128, 245	16	4 47 25.76	+11 6 10.1	W ₁ 4 ^h 975
8	3 11 3.74	+22 45 22.9	AG. Berlin B. 965				
9	3 16 38.22	+22 26 51.3	AG. Berlin B. 999				

Notes.

d indicates that $\Delta\alpha$ was measured directly by means of the micrometer. — March 9. Comet 11¹/₂ or 12 magnitude. Can see a faint stellar point at times. — March 10. Seeing 2. Wind swaying telescope. Comet rather diffuse, not brighter than 11¹/₂ or 12 magnitude. A fairly sharp nucleus of 16 magnitude is visible. Observations with 36 inch refractor. — April 4. Comet 10¹/₂ or 11 magnitude; 1' in diameter and has a faint nucleus. — April 5. Comet 10 magn.; 1¹/₂'-2' diameter; sharp condensation. Seeing 4. — April 11. Comet 10 magnitude; 2' diameter; round.

Mt. Hamilton, California, 1899 Sept. 20.

Faintest point in central condensation. Seeing good. — April 13. Comet easy to observe; 10 magnitude. Some haze and moonlight. — April 14. Comet fully 10 magnitude. There is a sharp nucleus 12-13 magnitude. Seeing 4. — April 19. Comet fully 10 magnitude and easily measured in the moonlight. Comet is about 2' in diameter with a well marked central condensation. — April 20. Some haze and smoke. Comet very faint towards the end of the measures. — May 1. Comet necessarily observed at a large hour angle. Seeing poor.

C. D. Perrine.

Beobachtungen der Planeten 1899 ES, ET und EU.

1899	M. Z. Wien	$\Delta\alpha$	$\Delta\delta$	Vgl.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
1899 ES.										
Nov. 1	9 ^h 18 ^m 53 ^s	+2 ^m 44 ^s 94	-0' 22.1	4	1 ^h 39 ^m 0 ^s 28	9.209 _n	+4° 58' 40.1	0.784	+4.83 +26.9	1
3	11 13 57	+1 10.14	-5 35.2	4	1 37 25.49	8.688	+4 53 27.3	0.782	+4.84 +27.2	1
6	9 4 41	-2 42.32	-2 23.5	4	1 35 18.51	9.167 _n	+4 46 59.2	0.784	+4.85 +27.2	2
9	10 52 44	-0 30.63	+3 36.5	6	1 33 11.62	8.778	+4 41 10.8	0.784	+4.84 +27.2	3
11	11 47 59	-0 43.06	-0 45.9	4	1 31 53.51	9.221	+4 38 3.7	0.786	+4.83 +27.2	4
Dec. 2	11 24 16	-1 20.65	-1 38.6	2	1 23 15.83	9.420	+4 37 30.8	0.792	+4.73 +26.6	5
3	11 29 40	-1 30.41	-0 8.0	3	1 23 6.07	9.439	+4 39 1.3	0.793	+4.73 +26.5	5
1899 ET.										
Nov. 1	8 59 17	-1 56.23	+2 11.3	4	1 35 52.17	9.274 _n	+6 40 51.7	0.772	+4.86 +27.5	6
3	11 31 24	-3 40.77	+2 53.5	4	1 34 7.64	8.926	+6 41 33.9	0.768	+4.87 +27.5	6
6	9 11 44	-0 38.07	+4 25.8	4	1 31 49.60	9.117 _n	+6 43 5.9	0.769	+4.86 +27.7	7
9	11 49 1	+0 1.10	-3 57.5	4	1 29 31.81	9.203	+6 45 30.0	0.770	+4.86 +27.8	8
11	11 15 11	-1 21.28	-2 2.7	4	1 28 9.43	9.080	+6 47 24.8	0.768	+4.86 +27.8	8
29	10 6 23	-3 34.79	-4 11.2	4	1 19 34.97	9.138	+7 22 32.7	0.764	+4.78 +27.5	9