

Astronomische Nachrichten.

Nr. 2394.

Observations of Comets. By *A. Hall*.

(Communicated by Rear Admiral John Rodgers, Superintendent).

Faye's Comet.

Date	Wash. m. t.	$\Delta\alpha$	$\Delta\delta$	app. α	Par.	app. δ	Par.	Comp.	Star
1880									
Sept. 25	10 ^h 48 ^m 4 ^s 2	— 0 ^m 36 ^s 26	— 0' 8" 6	22 ^h 52 ^m 37 ^s 49	+ 0 ^s 03	+ 6 ^h 10' 43" 2	+ 4" 3	28.7	1
28	9 38 32.5	+ 1 47.67	+ 0 49.8	22 51 12.47	— 0.07	+ 5 36 34.0	+ 4.4	22.5	2
29	10 21 30.2	— 0 8.48	— 3 40.7	22 50 45.04	+ 0.01	+ 5 24 30.0	+ 4.4	24.6	3
30	9 37 35.8	+ 0 0.88	+ 1 38.1	22 50 20.66	— 0.06	+ 5 12 57.3	+ 4.5	28.6	4
Oct. 1	9 57 33.7	+ 1 46.75	+ 3 50.2	22 49 56.57	— 0.01	+ 5 1 8.7	+ 4.5	20.6	5
2	10 36 22.4	— 1 0.36	— 4 15.6	22 49 33.54	+ 0.07	+ 4 48 56.9	+ 4.5	20.6	6
3	10 17 18.5	— 3 30.90	— 1 49.8	22 49 12.99	+ 0.04	+ 4 37 17.0	+ 4.5	18.5	7
Nov. 1	8 28 51.6	— 0 38.78	— 2 55.2	22 52 52.54	+ 0.04	— 0 17 20.8	+ 4.8	20.7	8
2	8 29 9.5	— 1 1.58	+ 2 28.1	22 53 31.40	+ 0.05	— 0 24 32.5	+ 4.8	20.6	9
7	8 19 27.6	+ 0 29.91	+ 0 9.7	22 57 16.22	+ 0.05	— 0 56 32.9	+ 4.7	20.6	10
Dec. 1	6 46 34.8	— 1 59.42	— 2 25.8	23 26 3.38	+ 0.01	— 1 56 34.6	+ 4.3	16.5	11
2	6 25 39.0	— 0 28.02	— 1 39.0	23 27 34.77	— 0.02	— 1 55 47.9	+ 4.3	20.5	12
3	6 31 47.2	+ 1 6.50	— 0 37.8	23 29 9.28	— 0.01	— 1 54 44.7	+ 4.3	16.5	13
30	6 54 59.9	+ 1 47.56	+ 7 29.0	0 19 4.96	+ 0.10	— 0 4 53.7	+ 3.6	16.5	14
31	6 42 32.2	— 1 33.79	— 2 7.7	0 21 8.56	+ 0.08	+ 0 1 41.7	+ 3.6	16.5	15
1881									
Jan. 22	6 55 11.7	— 1 9.70	+ 0 15.5	1 9 55.15	+ 0.13	+ 3 0 21.7	+ 3.0	20.5	16
27	7 28 23.6	+ 1 46.40	clouds	1 21 42.41	+ 0.16	+ 2.9	4.0	17
28	6 46 55.6	— 0 47.92	+ 0 20.6	1 24 0.06	+ 0.13	+ 3 56 17.2	+ 2.9	20.5	18
Febr. 2	6 51 27.8	— 1 2.25	+ 0 54.9	1 35 58.15	+ 0.14	+ 4 44 30.1	+ 2.8	20.5	19
25	7 11 31.8	+ 0 15.49	+ 3 23.4	2 32 55.37	+ 0.16	+ 8 27 43.4	+ 2.4	18.5	20
Mar. 2	7 49 9.9	— 3 29.57	— 5 42.9	2 45 40.29	+ 0.19	+ 9 14 10.4	+ 2.4	10.4	21
24	7 54 46.8	+ 1 0.04	+ 0 44.0	3 42 10.81	+ 0.19	+ 12 15 1.3	+ 2.1	20.4	22
26	7 55 10.5	— 1 1.98	— 4 11.4	3 47 20.60	+ 0.19	+ 12 29 4.4	+ 2.1	16.4	23
27	7 45 26.7	— 0 55.16	— 1 5.0	3 49 54.47	+ 0.18	+ 12 35 53.1	+ 2.1	20.5	24

Comet ϵ 1880.

Date	Wash. m. t.	$\Delta\alpha$	$\Delta\delta$	app. α	log $p.A''$	app. δ	log $p.A''$	Comp.	Star
1880									
Dec. 1	9 ^h 8 ^m 33 ^s 2	— 0 ^m 39 ^s 39	+ 0' 43" 8	3 ^h 31 ^m 8 ^s 87	0.661 _n	+ 51 ^h 38' 5' 2	0.175 _n	22.5	1
3	8 3 48.9	— 2 51.39	+ 0 49.6	3 50 12.02	0.869 _n	+ 50 9 33.7	9.492 _n	14.5	2
6	8 21 29.0	— 0 24.12	— 2 9.0	4 15 0.87	0.837 _n	+ 47 41 20.2	8.772 _n	16.5	3
7	9 10 52.3	— 1 6.32	+ 5 38.0	4 22 21.64	0.712 _n	+ 46 49 12.7	9.736 _n	16.5	4
10	14 48 48.5	+ 1 5.10	+ 4 34.6	4 42 2.87	0.880	+ 44 6 19.0	0.009	15.5	5
11	15 50 50.4	+ 0 41.01	+ 1 32.6	4 47 30.07	0.941	+ 43 14 53.0	0.342	20.5	6
22	8 16 17.4	+ 1 46.43	+ 4 32.2	5 26 8.60	0.782 _n	+ 35 37 7.5	0.224	16.5	7
24	10 52 42.3	— 0 50.40	— 4 14.7	5 31 11.30	9.909 _n	+ 34 23 8.2	9.835	16.5	8
31	9 2 24.8	+ 0 31.60	+ 0 53.5	5 44 37.31	0.632 _n	+ 30 56 13.5	0.240	9.5	9
1881									
Januar 7	13 19 44.4	+ 0 14.75	— 0 57.6	5 55 21.83	0.693	+ 28 11 10.6	0.369	18.5	10

Mean positions of the stars of Comparison for
1880.0 and 1881.0.
Faye's Comet.

Star	α	δ	Authority
1	22 ^h 53 ^m 9 ^s 32	+ 6 ^o 10'22"7	Wash. Mer. Circ. 3 Obs.
2	22 49 20.39	+ 5 35 15.0	" 2 "
3	22 50 49.10	+ 5 27 41.5	" 3 "
4	22 50 15.37	+ 5 10 50.0	" 3 "
5	22 48 5.39	+ 4 56 49.4	1/3 [2 Bessel+Lalande].
6	22 50 29.49	+ 4 52 43.2	Wash. Mer. Circ. 3 Obs.
7	22 52 39.48	+ 4 38 37.4	" 3 "
8	22 53 27.11	- 0 14 53.9	" 3 "
9	22 54 28.77	- 0 27 28.8	1/3 [2Schjellerup+Bessel]
10	22 56 42.14	- 0 57 10.5	Wash. Mer. Circ. 3 Obs.
11 12 13	23 27 58.73	- 1 54 35.7	1/5 [2 Yarn.+2 Greenw.+ Wash. Mer. Circ.].
14	0 17 13.36	- 0 12 48.5	Bessel
15	0 22 38.31	+ 0 3 24.0	Bonn. Obs.
16	1 11 3.82	+ 3 0 1.7	"
17	1 19 54.99	+ 3 49 16.3	Schjell.; Bessel's α wrong.
18	1 24 46.94	+ 3 55 52.4	1/2 [Rümker + C. H. F. Peters].
19	1 36 59.35	+ 4 43 31.2	Bess 1
20	2 32 38.81	+ 8 24 16.8	"
21	2 49 8.77	+ 9 19 50.8	"
22	3 43 9.75	+ 12 14 16.4	1/3 [2 Rümker+Bess 1].
23	3 48 21.49	+ 12 33 14.9	"
24	3 50 48.54	+ 12 36 57.2	Bonn. Obs.

Comet ϵ 1880.

1	3 ^h 31 ^m 40 ^s 66	+ 51 ^o 37' 0"0	Wash. Mer. Circ. 3 Obs.
2	3 52 55.79	+ 50 8 25.7	Bonn. Obs.
3	4 15 17.46	+ 47 43 14.0	Wash. Mer. Circ. 3 Obs.
4	4 23 20.46	+ 46 43 20.7	" 3 "
5	4 40 50.41	+ 44 1 32.9	" 3 "
6	4 46 41.74	+ 43 13 9.8	" 3 "
7	5 24 15.21	+ 35 32 30.2	Bessel
8	5 31 54.78	+ 34 27 18.9	Lalande
9	5 43 58.93	+ 30 55 17.9	1/3 [2 Bess. 1+Lalande].
10	5 55 4.18	+ 28 12 8.3	Wash. Mer. Circ. 3 Obs.

The preceding observations were made with the 26 inch refractor, and generally a power of 383 was used in the observations of Faye's comet; but on December 30 and 31, and February 25, a power of 175 was used. All the observations have been corrected for differential refraction, but the corrections for parallax have not been applied.

The comet Faye was generally easy to observe, having a small and pretty well-defined nucleus; and since the change of brightness from March 2 to March 24 was not very great, this comet could have been observed several weeks longer. A single change has been made in the record. On Dec. 30 the coincidence of the wires was recorded as 93^r8, and this has been changed to 93^r3, to correspond to previous determina-

tions, although unfortunately this wire was broken out before the discordance was noticed. According to the record, the difference of declination would be +7'34"0.

The stars of comparison used before Dec. 30 have nearly all been observed with the Washington Meridian Circle, and the positions thus obtained have much improved the observations. These positions are not definitive, but have been computed by Professor Frisby in such a way as to make the right ascensions depend on Newcomb's fundamental stars, and the declinations on those of Boss. A comparison of these observations with the excellent ephemeris given by Professor Axel Möller, Berliner Jahrbuch 1882, p. [131], gives the following corrections of the ephemeris. To these are added the probable errors of a single comparison in right ascension $r_1 \alpha$; and in declination $r_1 \delta$.

Date	$\Delta\alpha$	$\Delta\delta$	$r_1 \alpha$	$r_1 \delta$
Sept. 25	- 1 ^s 46	- 2"9	\pm 0 ^s 087	\pm 0"35
28	1.31	3.4	0.077	0.37
29	1.38	3.8	0.083	0.58
30	1.47	2.0	0.097	0.31
Oct. 1	1.28	2.7	0.067	0.59
2	1.27	6.0	0.078	0.39
3	1.27	5.4	0.105	0.17
Nov. 1	1.04	3.0	0.073	0.22
2	0.91	4.4	0.105	0.64
7	0.86	3.7	0.074	0.38
Dec. 1	1.00	6.0	0.080	0.71
2	0.93	4.8	0.113	0.66
3	0.87	2.8	0.045	0.36
30	0.60	5.1	0.137	1.29
31	0.74	6.6	0.142	1.23
Jan. 22	0.28	0.7	0.076	1.68
27	0.20	...	0.111
28	0.61	8.9	0.100	0.03
Febr. 2	0.80	2.2	0.146	0.60
25	0.47	0.8	0.139	0.39
Mar. 2	0.50	10.2	0.256	1.37
24	0.25	5.3	0.131	0.76
26	0.30	4.6	0.130	0.93
27	- 0.32	- 3.3	\pm 0.131	\pm 1.27

On Dec. 1 a small nebula, or nebulous star, was found which at first was mistaken for the comet. A comparison on Dec. 2 with the star 12 gives for the position of this nebula 1880.0:

$$\alpha = 23^h 27^m 1^s 2 \quad \delta = - 1^o 57' 3.$$

Its magnitude I estimate as 14.

Comet ϵ 1880, discovered by Swift on Oct. 10, 1880, was a diffuse object, and the observations may be affected with systematic errors. A magnifying power of 175 was employed, and on Dec. 31 the observation was made by eye and ear, the cold being so great that the chronograph would not act. — This comet was