La dernière colonne donne l'intensité observée de la Lumière Zodiacale aux différentes distances angulaires au Soleil¹⁾.

Le coefficient de proportionalité est déterminé de façon à rendre égaux les derniers chiffres de cette table.

Paris, 1914 Avril 11.

Nous voyons ainsi que l'hypothèse de la poussière due à la désagrégation des comètes explique d'une façon très satisfaisante le phénomène de la Lumière Zodiacale dans tout son ensemble.

B. Fessenkoff.

¹⁾ «La Lumière Zodiacale». Thèse de doctorat p. 102. A. N. Bd. 196.

The Comet of 1858 III.

This was a small and insignificant comet discovered by *Tuttle* at Harvard 1858 May 2, and last seen June 1. Its elements were computed by *Watson, Hall* and *Schulhof*. The last assigned to it an elliptical orbit with an eccentricity of 0.673676, and a period lying between 5.8 and 7.5 years. It has never been recognized since the year of its discovery.

In the writers Statistical Investigation of Cometary Orbits

H. A. 61, he noted, on page 295, that the orbit bore a marked resemblance to that of the very faint comet of 1907 III. The latter was observed through a period of only 11 days, and a parabolic orbit from the observations of the first 7 days was assigned to it by *Strömgren*. The longitudes and latitudes of the aphelia of these comets and the elements of their orbits are as follows:

No.	Year	λ	β	T	ω	Ω	i	$\log q$
259	1858 III	20°0	-8°3	May 2 ^d 97	25°7	175°1	19°5	0.0604
476	1907 III	19.4	-9.4	" 31.20	39.6	160.9	14.8	0.0924
476-259:		-0.6	-1.1	+28.23	+13.9	-14.2	-4.7	0.0320

Since the inclinations are small, the change of 14° in the values of ω and Ω are not excessive. Indeed they are not so great in proportion to the interval of time elapsed as in the case of some other comets of unquestioned identity. Thus in seventeen years, between 1869 and 1886 the elements of the orbit of *Winnecke's* comet changed as follows: $d\omega = +9.6$, $d\Omega = -9.5$, $di = +3.7$, $d\log q = 0.0643$. The fact that the positions of the aphelia of the two comets are practically identical corroborates our opinion as to their identity.

The computed period of 1858 III is 6.61 years. Assuming eight revolutions to have taken place between the two appearances, the period would be 6.13 years, and the following perihelion passage would have occurred July 19, 1913. If only seven revolutions had taken place, the period would be 7.01 years, and the following perihelion passage would have been June 4, 1914. As noted in the volume above mentioned, «an examination of the periodic times of Jupiter's family (of comets) shows that from 5.60 to 5.99 years there are seven comets, from 6.00 to 6.39 there are none, from 6.40 to 6.79 there are ten, and from 6.80 to 7.19 there are five. The gap from 6.00 to 6.39 is clearly marked,

and we may therefore eliminate the assumed period of 6.13 years, and adopt that of 7.01». The fact that the comet was not detected in 1913 corroborates this conclusion.

A search ephemeris for the comet has consequently been computed based on the elements of 1907 III, using the period of 7.01 years. As deduced from this period and $\log q$, the eccentricity is found to be 0.6622.

Search Ephemeris.

1914	α	δ	1914	α	δ
May 11	8 ^h 44 ^m	+23°5	June 12	10 ^h 45 ^m	+22°1
15	8 58	+23.8	16	11 0	+21.4
19	9 12	+23.8	20	11 18	+20.6
23	9 27	+23.7	24	11 33	+19.7
27	9 42	+23.6	28	11 50	+18.5
31	9 56	+23.4	July 2	12 6	+16.9
June 4	10 11	+23.0	6	12 20	+15.0
8	10 27	+22.6			

Assuming that the comet is twenty-four days ahead of or behind its computed ephemeris, its position in the sky is given below for certain dates, together with its deviation from the position indicated above.

Ephemeris of Comet if 24^d ahead of, or behind its computed place.

1914	α_A	$\alpha_A - \alpha$	δ_A	$\delta_A - \delta$	α_B	$\alpha_B - \alpha$	δ_B	$\delta_B - \delta$
May 11	10 ^h 19 ^m	+1 ^h 35 ^m	+31°7	+8°2	7 ^h 54 ^m	-0 ^h 50 ^m	+20°0	-3°5
June 4	12 1	+1 50	+27.3	+4.3	9 8	-1 3	+20.4	-2.6
" 28	13 16	+1 26	+18.6	+0.1	10 37	-1 13	+18.3	-0.2

Whether the comet is actually found at this return or not, the writer feels little doubt but that it is identical with 1907 III, and thinks it should be looked for at future returns. Since its period exceeds seven times that of the Earth by

such a small amount, at each successive return it will be slightly more distant than at its predecessor. An early identification is therefore particularly desirable.

Mandeville, Jamaica, W. I., 1914 April 16.

William H. Pickering.