

### On the Periodicity of Comet (Denning) 1881 V.\*)

Communicated by permission of Prof. *E. C. Pickering*, Director of Harvard College Observatory.

I desire to communicate the following particulars with reference to my determination of the periodical character of Comet 1881 V, announced in circular No. 19 of the Science Observer, under date of Nov. 2, 1881.

The investigation was based on two observations made by Mr. O. C. Wendell of this Observatory, on the 18. and 27. of Oct., joined with that made at Marseilles on the 5. of October. A correction was applied to the Marseilles position on account of the position of the comparison star used, as given in the Comptes Rendus of Oct. 10, 1881. The Authority there given is the B. A. Catalogue place, which is founded on Bradley, Piazzini and Taylor. As the star occurs also in Schjellerup's Catalogue, I have used the mean position:

$$B. A. C. 3272 = Schj. 3525 \quad \begin{matrix} \alpha \text{ 1881.0} & \delta \text{ 1881.0} \\ 9^h 29^m 22^s 66 & + 14^{\circ} 54' 33'' 8 \end{matrix}$$

The places of the comparison stars used here on the 18. and 27. Oct. are respectively

$$\begin{matrix} W. I. 9^h 11^m 17^s & \begin{matrix} \alpha \text{ 1881.0} & \delta \text{ 1881.0} \\ 9^h 56^m 9^s 70 & + 14^{\circ} 54' 45'' 5 \end{matrix} \\ W. I. 10 170 & \begin{matrix} 10 12 2.96 & + 14 31 41.3 \end{matrix} \end{matrix}$$

The resulting apparent positions of the comet employed in the orbit are: —

1881	app. Place	
	$\alpha$	$\delta$
Oct. 5 <sup>d</sup> 17 <sup>h</sup> 5 <sup>m</sup> 42 <sup>s</sup> Marseill. m. t.	9 <sup>h</sup> 25 <sup>m</sup> 27 <sup>s</sup> 80	+ 14 <sup>o</sup> 41' 18'' 2
18 16 58 5 Cambridge »	9 54 2.31	14 48 47.8
27 16 37 1 »	10 10 46.45	14 41 39.9

The correction for differential refraction is inappreciable. After correcting for parallax and aberration by my first elements (Science observer circular No. 18), an attempt was made to compute a satisfactory parabola, but without success. Having reasonably assured myself, by comparison of the above with other observations made on Oct. 10 and

11 by myself, on Oct. 20, 25 and 26 by Mr. Wendell and the Dun Echt position of Oct. 9, that the deviations could not be attributed to errors of observation, I calculated the following elliptic elements, which assign a period of about eight and one third years.

$$\begin{matrix} T = 1881 \text{ Sept. } 12.83437 \text{ Wash. m. t.} \\ \pi = 18^{\circ} 10' 5'' \\ \Omega = 66 \ 9 \ 2 \\ i = 6 \ 53 \ 26 \end{matrix} \left. \vphantom{\begin{matrix} T \\ \pi \\ \Omega \\ i \end{matrix}} \right\} 1881.0.$$

$$\begin{matrix} \log q = 9.8596448 \\ e = 0.8240335 \\ a = 4.11353 \\ \mu = 425'' 289 \end{matrix}$$

Period 8.343 years, or 3047.34 days.

These elements furnish the equatorial coordinates, for the mean equinox 1881.0:

$$\begin{matrix} \log x = \log r + 9.9973687 + \log \sin(108^{\circ} 0' 50'' 4 + v) \\ \log y = \phantom{\log r} + 9.9533585 + \phantom{\log \sin} (21 \ 6 \ 42.1 + v) \\ \log z = \phantom{\log r} + 9.6562274 + \phantom{\log \sin} (5 \ 28 \ 14.8 + v) \end{matrix}$$

and the computation, by means of these, of the comet's place for the three observations from which the elements are derived gives the following differences:

	C — O	
	$\Delta\alpha$	$\Delta\delta$
Oct. 5	+ 0 <sup>s</sup> 34	— 0'' 4
» 18	+ 0.23	— 1.3
» 27	+ 0.28	— 0.8

which, under the circumstances, seemed sufficiently small, to make it not worth while to carry the approximation farther.

Harvard College Observatory, Nov. 4 1881.

*S. C. Chandler jr.*

\*) Es dürfte nunmehr zulässig sein, den Cometen Denning (f) mit V und den Cometen Barnard (e) mit VI dieses Jahres zu bezeichnen. *Kr.*

### Zur Bahnbestimmung des Cometen 1877 I, A. N. 2391.

Von Dr. *Fr. Deichmüller*, Observator der Sternwarte zu Bonn.

Die hiesige Beobachtung des genannten Cometen Februar 23 (A. N. 2126), bezog sich auf einen noch nicht bestimmten Vergleichstern, der, wie aus Herrn Kaplan Thraen's Ephemeride folgt, nicht DM. + 77<sup>o</sup> 915, sondern 916 war. Da die fragliche Beobachtung innerhalb 8 Tagen die einzige überhaupt bekannt gewordene Beobachtung jenes schwierig zu beobachtenden und wenig beobachteten Cometen ist, so habe ich den Vergleichstern im Meridian bestimmt. Die erhaltenen Positionen dieses und des gleichzeitig mitbestimmten Sternes DM. + 77<sup>o</sup> 919 sind die folgenden:

Epoche 1881.775, Mittl. Aeq. 1877.0:  
 Kr.O. 23<sup>h</sup> 35<sup>m</sup> 14<sup>s</sup> 23 78<sup>o</sup> 2' 24'' 4 | 23<sup>h</sup> 37<sup>m</sup> 8<sup>s</sup> 64 78<sup>o</sup> 6' 52'' 8  
 » W. 14.09 23.4 | 8.48 53.7  
 Hiernach wird  $\alpha \text{ app.} = 23^h 35^m 11^s 23$   $\delta \text{ app.} = 78^{\circ} 2' 33'' 3$ .  
 Nach den a. a. O. gegebenen Differenzen  $\sphericalangle$  — \* wird dann die Cometenposition:

$$23^h 36^m 15^s 20 + 78^{\circ} 3' 6'' 5$$

und verglichen mit Herrn Thraen's Ephemeride:  
 B—R.  $\Delta\alpha = + 0^s 61$   $\Delta\delta = + 0'' 5$ .  
 Bonn 1881, Nov. 4. *Fr. Deichmüller.*