hours the lines are double, the fainter component of each having a greater wave length than the brighter component, and being, therefore, towards the red end of the spectrum. The lines then again become single, and after that, for the remainder of the period are again double, the fainter

components having shorter wave lengths, and being, therefore, towards the violet end of the spectrum.

This is the fourth spectroscopic binary of this class in which both components are bright, the others being ζ Ursae Majoris, β Aurigae and μ^1 Scorpii.

Harvard College Observatory, 1896 Nov. 17.

Edward C. Pickering.

New Elliptic Elements of Comet 1896... (Giacobini).

From normal places for Sept. 8.5 and Oct. 3.5, based on practically all of the published observations, and the mean of my two observations of Oct. 29, I have computed new elliptic elements of this comet.

With data as follows

Gr. M. T.	α (1896.0)	δ (1896.0)
1896 Sept. 8.5	17 ^h 18 ^m 28 ^s .03	— 8° 9' 57".6
Oct. 3.5	18 17 44.92	— 11 48 15.3
» 29.65763	19 36 56.79	— 13 44 19.8

I have found the elements:

Mount Hamilton, Calif., 1896 Nov. 24.

Epoch 1896 Sept. 5.5 Gr. M. T.

$$\begin{aligned} M &= 354^\circ 28' 7''.88 & \varphi &= 41^\circ 6' 29''.13 \\ \omega &= 139 29 6.34 & \log e &= 9.8178836 \\ \Omega &= 192 5 36.82 & \log a &= 0.6360428 \\ i &= 11 32 42.25 & \log \mu &= 2.5959424 \end{aligned}$$

Period = 3286 days = 9.00 years.

The residuals are (O — C):

$$\begin{aligned} \Delta\alpha &= +0''.01 & 0''.00 & 0''.00 \\ \Delta\delta &= +0''.2 & +0''.2 & -0''.1 \end{aligned}$$

Constants for the equator (1896.0):

$$\begin{aligned} x &= [9.9996178] r. \sin(v + 61^\circ 20' 27''.47) \\ y &= [9.9901669] r. \sin(v + 33^\circ 49' 24''.35) \\ z &= [9.3315231] r. \sin(v + 342^\circ 21' 19''.29) \end{aligned}$$

William F. Hussey.

Entdeckung eines neuen Cometen Perrine Dec. 8.

Am 10. Dec. 3 Uhr Morgens erhielt die Centralstelle das folgende Telegramm aus Cambridge Mass.: ,

»Holden telegraphs: A comet 8 magn. was discovered by Perrine Dec. 8.8540 Gr. M. T. RA. app. = 13° 6' 40" PD. app. = 83° 35' 8". Daily motion +1° 5' and +0° 30'. Well defined nucleus, tail <30'.
Pickering.«

Das Telegramm wurde an die Mitglieder der Centralstelle und die Sternwarten der Südhalbkugel weiter befördert.

Kiel 1896 Dec. 11.

H. Kreutz.

Beobachtungen des Cometen 1896... (Perrine Dec. 8).

1896	M. Ortszeit	$\Delta\alpha$	$\Delta\delta$	Vgl.	α app.	$\log p.\Delta$	δ app.	$\log p.\Delta$	Red. ad l. app.	*
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Auf der Sternwarte in München von Herrn W. Villiger.

Dec. 10	9 ^h 17 ^m 16 ^s	+8 ^m 40 ^s .04	— 9' 14".8	27.8	1 ^h 3 ^m 10 ^s .29	9.224	+ 5° 46' 32".9	0.777	+4 ^s .10 +27".5	1
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Am Heliometer der Sternwarte in Bamberg von Dr. E. Hartwig.

Dec. 10	9 38 29	—	—	4	1 3 16.74	—	+ 5 46 13.2	—	+4.16 +27.1	2
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Je vier Messungen in Abstand und Richtung. Beobachtung bei Mondschein und nicht reiner Luft mühsam und deshalb auch nicht sehr sicher. Comet verwaschen, 5' Durchmesser mit hier und da aufblitzendem Kern. Nach Untergang des Mondes trat plötzlich Nebel ein.

Telegramme an die Centralstelle.

Dec. 9	7 ^h 31 ^m .3	M. Z. Mt. Hamilton	AR. app. = 14° 32' 28"	PD. app. = 83° 55' 30"	Perrine.	Holden.
10	6 9.4	» » Strassburg	= 15 35 1	= 84 10 21	Kobold.	Becker.
10	9 22.0	» » Nizza	= 15 48 58	= 84 13 42	Favelle.	
11	9 15.7	» » Pola	= 17 33	= 84 38	Wilhelm.	Benko.
11	8 41.7	» » Edinburg	= 17 35 56	= 84 38 48	Halm.	

Mittlere Oerter der Vergleichsterne für 1896.0.

$$\begin{aligned} * 1 \quad \alpha &= 0^h 54^m 26^s.15 & \delta &= +5^\circ 55' 20''.2 & \text{Rad}_3 & 213 \\ * 2 \quad & 1 \quad 4 \quad 51.63 & & +4 \quad 46 \quad 25.1 & \text{AG. Alb.} & 315 \end{aligned}$$