



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Since ascertaining that this comet is periodic I have been led to notice more particularly a similarity which exists between its orbit and those of 1684 and 1785 I. Below are the approximate elements of the three comets for comparison;—

|               | $\omega$ | $\Omega$ | $i$   | $q$   |
|---------------|----------|----------|-------|-------|
| 1684          | 330°.3   | 268°.2   | 65°.4 | 0.958 |
| 1785 I        | 205 .7   | 264 .2   | 70 .2 | 1.143 |
| 1898 <i>b</i> | 47 .6    | 262 .5   | 72 .4 | 1.094 |

The agreement of the positions and dimensions ( $\Omega$ ,  $i$ , and  $q$ ) of the three orbits is sufficiently close to warrant the belief that the three comets belong at least to the same family. The differences in  $\omega$  are very large, too large to believe at first sight that the orbits all belong to the same comet—unless the discrepancies can be satisfactorily accounted for. It is to be noticed, however, that the variations in  $\omega$  are in the same direction. The intervals of 101 and 113 years do not agree well with the period found for the present comet, on an assumption that all three are appearances of the same object. The period of 305 years for the present comet must be considered uncertain to a large degree, however. All things considered, it looks more as if all three comets were members of one family than that they were appearances of the same body.

The comet of 1684 was discovered by BIANCHINI at Rome, and was visible to the naked eye. It was visible only a short time, the observations extending over the period July 1–17, only.

The comet of 1785 I was discovered by MESSIER at Paris. While it does not appear to have been so bright as the one of 1684, it was observed for some five weeks. C. D. PERRINE.

MT. HAMILTON, Cal., May 9, 1898.

#### COMETARY DISCOVERIES.

The total number of comets observed sufficiently well during the last thirty years (1868–1897) for their orbits to be calculated amounts to one hundred and thirty-five, but of these thirty-seven were returns of periodic comets which had been previously seen.

The average rate of apparition of new comets has, therefore, been 3.27 annually, and of new and periodic comets, 4.5 annually. In 1873, 1881, 1892, and 1896, seven comets were discovered; in 1872 not one was observed; and in 1875 the only two comets which appeared were known ones. The best months for the discovery of these objects appear to be July and August.

Of three hundred and twenty-eight comets discovered between the years 1782 and 1897, inclusive, the following are the numbers in the various months:—

|              |               |
|--------------|---------------|
| January, 22  | July, 37      |
| February, 21 | August, 43    |
| March, 24    | September, 25 |
| April, 27    | October, 26   |
| May, 20      | November, 34  |
| June, 22     | December, 27  |

These figures include every description of those objects. During the sixty years from 1782 to 1841 there were eighty-seven comets, averaging 1.45 per year; but during the fifty-six years from 1842 to 1897 there were two hundred and forty-one comets, averaging 4.30 per year.

W. F. DENNING.

*Knowledge*, April, 1898.

THE VARIABLE STAR *Z CENTAURI* AND THE NEBULA  
N. G. C. 5253.

In December, 1895, the Harvard College Observatory announced that from an examination of the DRAPER Memorial photographs taken at Arequipa, Peru, Mrs. FLEMING had discovered a "new star" in the constellation *Centaurus*. The variable character of this star has since been fully established, and it has received the definitive name *Z Centauri*.

No trace of the star has been found on the fifty-five photographs taken from May, 1889, to June, 1895, but it appears on those of July, 1895, having a brightness of 7.2 magnitude, and on that of December 19, 1895, as 11 magnitude.

In the latter part of December, Professor CAMPBELL estimated its magnitude at 11.2. During the two months following it decreased in brightness very slightly. On June 11, 1896, I found that it had decreased to 14.4 magnitude. Fifteen days later it was 15¼, and on July 9, nearly 16. Since then I have looked for it every month or two when within reach, and on all these occasions have found it either invisible in the large telescope or not brighter than the 16th magnitude. During this time, when visible, the star has been difficult on account of the faint nebula surrounding it. This nebula, when seen under the best conditions, has every appearance of being a part of the nebula N. G. C.