

{60,126d·7), and the Comet of Encke (3·3 years) with the Comet of 1680 (8814 years), observed by Gottfried Kirch at Coburg, Newton, and Halley. The distance of the fixed star nearest to our solar system (α Centauri) from the aphelion (point of greatest distance from the Sun) of the last-named comet is determined by Encke in an excellent treatise. The small velocity of its motion (ten feet in a second) in this outermost part of its orbit, the *greatest proximity* which the Comet of Lexell and Burckhardt (1770) has attained to the *earth* (six times the distance of the Moon), and the Comet of 1680 (and still more that of 1843) to the Sun, I have already treated of in *Cosmos*, vol. i., p. 109, and vol. iv., p. 53–55. The second comet of the year 1819, which appeared, in Europe, suddenly to break forth from out of the Sun's rays in considerable magnitude, passed, according to the calculation of its elements, *across the Sun's disk* on the 26th of June;* unfortunately, its passage was not observed. This must also have been the case with the Comet of 1823, which, besides the ordinary tail turned from the Sun, had also another turned directly toward it. If the tails of both comets had a considerable length, vaporous parts of them must have mixed with our atmosphere, as certainly often happens. The question has been raised as to whether the wonderful mists of 1783 and 1831, which *covered a great part of the Continent, were consequences of such an admixture?*†

While the quantity of radiant heat received by the Comets of 1680 and 1843 in such close proximity to the Sun has been compared to the focal temperature of a 32-inch burning mirror,‡ a highly-deserving§ astronomical friend of mine

* Galle, in the Supplement to Olbers's *Cometenbahnen*, p. 221, No. 130. (With respect to the probable passage of the two-tailed comet of 1823, see *Edinb. Rev.*, 1848, No. 175, p. 193.) The treatise shortly before quoted in the text, containing the true elements of the Comet of 1680, contradicts Halley's fantastic idea, according to which, with a presumed period of 575 years, it had appeared at all the great epochs of the human race: at the time of the Deluge according to Hebrew traditions, in the age of Ogyges according to Greek traditions, at the Trojan war, on the destruction of Nineveh, on the death of Julius Cæsar, &c. The period of revolution resulting from Encke's calculation is 8814 years. The least distance from the surface of the Sun was, on the 17th of December, 1680, only 128,000 geographical miles; consequently, 80,000 less than the distance of the Earth from the Moon. The aphelion is 853·3 times the distance of the Earth from the Sun, and the proportion of the smallest to the greatest distance from the Sun is as 1:140,000.

† Arago, in the *Annuaire* for 1832, p. 236–255.

‡ Sir John Herschel, *Outlines*, § 592.

§ Bernhard von Lindenau, in Schum., *Astr. Nachr.*, No. 698, p. 25.