**Observations on the comet.**



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# OBSERVATIONS ON THE COMET.

COMETS are large opaque bodies, which move in very eliptical orbits, and in all poſſible directions: ſome revolve from weſt to eaſt, ſome from eaſt to weſt, others from ſouth to north, others from north to ſouth. Some have conjectured, that comets were intended, by the all-wiſe Creator, to connect ſyſtems, and that each of their ſeveral orbits includes the ſun and one of the fixed ſtars. The figures of comets are very different; ſome of them emit beams on all ſides like hair, and are called hairy comets; other have long, fiery, tranſparent tails, projecting from that part which is neareſt to the ſun. Their magnitude alſo is very different; ſome appear no bigger than ſtars of the firſt magnitude; others larger than the moon. They are ſuppoſed to be ſolid bodies, and very denſe, for ſome of them, on their neareſt approach to the ſun, were heated, according to Sir Iſaac Newton's calculation, 2000 times hotter than red hot iron.

The preſent comet was firſt diſcovered in France, at the city of Viviers, on the 25th of March laſt, by M. de Flaugergues; and nearly about the ſame time, according to accounts, by the China fleet in the Indian ocean. It continued viſible till the fleet arrived at St Helena, about the end of May, when, from its approach to the ſun, it could no longer be ſeen. Shortly after, emerging from the rays of that luminary, it was obſerved by Bovard, at Paris, on the 21ſt of Auguſt, between three and four o'clock in the morning; its poſition then being nearly that laid down in the elements calculated by Buckhardt, a celebrated French Aſtronomer.

On the 26th of the ſame month, it was ſeen in Britain, by Mr Ferminger, late aſſiſtant aſtronomer to the Royal Obſervatory at Greenwich; and nearly at the ſame time, by M. Veitch, at Kelſhony, at 20 minutes paſt nine at night, in the N. N. W. quarter of the heavens.

Since which time, the *Rev. Mr Ure, of Glaſgow*, has, at favourable opportunities, with various inſtruments, made the following obſervations:—

The days of the obſervations were the 1ſt, 8th, 15th, 23d, and 30th of September. From theſe five, reduced to longitudes and latitudes, it was conceived that the elements of the orbit might be pretty correctly determined according to the celebrated formula in the *Mechanique Celeſte* of *La Place*. The taſk of obſerving continued frequently through the greater part of the night, as well as the labour of reducing and comparing the obſervations, made me gladly avail myſelf of the co-operation of Mr Croſs, my Mathematical Aſſociate in the Anderſonian Inſtitution. It is to this gentleman's familiarity with the tranſcendental calculus, and eminent facility of computation, that I am enabled, at the interval of above a month after our firſt view of the Comet, to announce the elements of its orbit being aſcertained. All that the firſt five obſervations, however accurate, can poſſibly give, is the approximated values of the quantities. I believe, however, that the following numbers will be found little removed from the truth, and whatever inaccuracy may exiſt will be corrected by ſubſequent obſervations.

*Perihelion diſtance*, or neareſt approaching of the Comet to the Sun, 94 millions 724 thouſand 260 miles—time of its Perihelion paſſage, 9th September.

Comet's diſtance from the earth, 13th September, 142 millions 500,000 miles.

Comet's diſtance from the ſun, on the 15th, 95 millions 258,840 miles.

Diſtance of the earth from the ſun at that time, 95 millions 505,932 miles.

Length of the tail 33 millions of miles.

Motion of the Comet retrogate, or its real motion from eaſt to weſt, being the reverſe of what it appears to be at preſent to a ſpectator on the earth.

The real ſize of the Comet, as deduced from its appearance in the grand Herſchelian teleſcope, is about that of our moon. The brilliant central mucleus is inviſible even in the 10 feet Herſchelian, and in every ſmaller inſtrument. The three other elements, beſides the Perihelion diſtance and time of the paſſage through this point, are neither intereſting nor intelligible to the general reader. For illuſtrating in a popular manner the real motion of the Comet, Mr Croſs is preparing a ſolid figure, by which its actual path, together with that of the earth, will be accurately repreſented. The orbit of this Comet differs entirely from that of 1661; nor does there ſeem, in any one of the 98 Comets whoſe orbits are calculated and recorded, ſufficient reſemblance to eſtabliſh identity between them.

*Angus, Printer.*