

optician of New York, turning on Sirius a fine telescope of his own construction, noticed extremely near to it a minute star which had eluded all former observation. This *may be* the body in question. There is even some reason to suppose *it is*. Its apparent situation is stated to be at least not such as to be incompatible with such a connexion. Its *real existence has been verified*, and its apparent distance from Sirius measured, and found to be about seven seconds ; corresponding (if seen unforeshortened) to about forty-seven times the distance of the sun from the earth.

(40.) Another beautiful specimen of these binary sidereal systems is presented by the star No. 70 in Flamsteed's list of those in the constellation Ophiuchus, and therefore cited as 70 Ophiuchi. The ellipse described by the stars of this pair (the one a star of the fourth, the other of the sixth, magnitude) has been determined with much care and every probability of considerable precision. The period of their mutual circulation may be stated at about ninety-six years, and the semiaxis of their mutual ellipse *in angular measure* at  $4''\cdot 8$ . Of this elegant couple the parallax has been ascertained by M. Krüger, from observations made in 1858 and 1859, at  $0''\cdot 16$ . And from these data he concludes in the very same way:—First, their distance from our own system (1,272,000 semi-diameters of the earth's orbit) ; secondly, the mean distance of the stars from each other ( $30\frac{1}{2}$  such semi-diameters, so that here also their relative orbit is nearly equal to that of Neptune) ; and, thirdly, the total *mass* (equivalent to  $3\frac{1}{16}$  times that of the sun).