

quickness of thought, to be transferred to the earth, from whence the very same eclipse would be seen a second time. As long as the little satellite is shining it radiates a stream of light across the vast space between Jupiter and the earth. When the eclipse has commenced, the little orb is no longer luminous, but there is, nevertheless, a long slender stream of light on its way, and until all this has poured into our telescopes we still see the little satellite shining as before. If we could calculate the moment when the eclipse really took place, and if we could observe the moment at which the eclipse is seen, the difference between the two gives the time which the light occupies on the journey. At both extremities of the process there are characteristic sources of uncertainty. The occurrence of the eclipse is not an instantaneous phenomenon. The little satellite is large enough to require an appreciable time in crossing the boundary which defines the shadow, so that the observation of an eclipse is not sufficiently precise to form the basis of an important and accurate measurement. Still greater difficulties accompany the attempt to define the true moment of the occurrence of the eclipse as it would be seen by an observer in the vicinity of the satellite. For this we would require a far more perfect theory of the movements of Jupiter's satellites than is at present attainable. This method of finding the sun's distance holds out no prospect of a result accurate to the one thousandth part of its amount.

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