

peat the explanations there given. The use which may be made of Venus as a stepping-stone on the way towards the great centre of our system, however, is there rather alluded to than explained; so that a few words on this subject will not be out of place here. The interval between Venus and the earth when nearest, is not more than one-fourth of the sun's distance, and its angular displacement when seen from opposite extremities of a diameter of our globe, therefore, four times as great as the sun's. Venus, however, is invisible in this situation, except on those very rare occasions (occurring at intervals alternating between eight years and upwards of a century) on which it passes between us and the sun, and is seen as a round black spot on its disc. In this state of things the face of the sun itself serves as a screen on which the planet is seen projected; and its circular outline serves as a celestial line of reference, across which the planet is seen to "transit," as it would across wires fixed in the focus of a telescope; or rather as it would across the circular outline of what astronomers call a "ring micrometer." The sun itself is thus transformed for the time into an astronomical instrument of that description, freed by nature from all the sources of fluctuation and instability which affect our instruments. And the whole observation is reduced to determining the precise moments of time at which the foremost and hindmost borders of the planet cross this

479, col. 1, line 52, of this last-mentioned Lecture as printed originally in "Good Words"—*For 16,071, read 6,071.* All the other numbers are right, as they there stand.