

two of the smaller principal planets in our solar system, the eccentricity of the orbit of Pallas being 0.24, and that of Juno, 0.25.

If, with Encke, we consider one of the two stars in a binary system, the brighter, to be at rest, and on this supposition refer to it the motion of the companion, then it follows from the observations hitherto made that the companion describes round the principal star a conic section, of which the latter is the focus; namely, an ellipse in which the radius vector of the revolving cosmical body passes over equal superficial areas in equal times. Accurate measurements of the angles of position and of distances, adapted to the determination of orbits, have already shown, in a considerable number of double stars, that the companion revolves round the principal star considered as stationary, impelled by the same gravitating forces which prevail in our own solar system. This firm conviction, which has only been thoroughly attained within the last quarter of a century, marks a great epoch in the history of the development of higher cosmical knowledge. Cosmical bodies, to which long use has still preserved the name of *fixed stars*, although they are neither riveted to the vault of heaven nor motionless, have been observed to occult each other. The knowledge of the existence of partial systems of independent motion tends the more to enlarge our view, by showing that these movements are themselves subordinate to more general movements animating the regions of space.