

distance from each other than $32''$; at present, a hundred years later (thanks chiefly to the great labors of Sir William Herschel, Sir John Herschel, and Struve), about 6000 have been discovered in the two hemispheres. To the earliest described double stars* belong ζ Ursæ maj. (7th September, 1700, by Gottfried Kirch), α Centauri (1709, by Feuillée), γ Virginis (1718), α Geminorum (1719), 61 Cygni (1753) (which, with the two preceding, was observed by Bradley, both in relation to distance and angle of direction), ρ Ophiuchi and ζ Canori. The number of the double stars recorded has gradually increased from the time of Flamsteed, who employed a micrometer, down to the star-catalogue of Tobias Mayer, which appeared in 1756. Two acutely speculative thinkers, endowed with great powers of combination, Lambert (*Photometria*, 1760; *Kosmologische Briefe über die Einrichtung des Weltbaues*, 1761) and John Michell, 1767, though they did not themselves observe double stars, were the first to diffuse correct views upon the relations of their attraction in partial *binary systems*. Lambert, like Kepler, hazarded the conjecture that the remote suns (fixed stars) are, like our own sun, surrounded with dark bodies, planets, and comets; but of the fixed stars proximate to each other,† he believed, however much, on the other hand, he may appear inclined to admit the existence of dark central bodies, "that within a not very long period they completed a revolution round their common center of gravity." Michell,‡ who was not acquainted with the ideas of Kant and Lambert, was the first who applied the calculus of probabilities to small groups of stars, which he did with great ingenuity, especially to multiple stars, both binary and quaternary. He showed that it was 500,000 chances to 1 that the collocation of the six principal stars in the Pleiades did not result from accident, but that, on the contrary, they owed their grouping to some internal and reciprocal relation. He was so thoroughly convinced of the existence of luminous stars revolving round each other, that he ingeniously proposed to employ these partial star-systems to the solution of certain astronomical problems.§

* Mädler, *Astr.*, s. 477. † Arago, in the *Annuaire pour 1842*, p. 400.

‡ An Inquiry into the probable parallax and magnitude of the fixed stars, from the quantity of light which they afford us, and the particular circumstances of their situation, by the Rev. John Michell; in the *Philos. Transact.*, vol. lvii., p. 234-261.

§ John Michell, *ibid.*, p. 238. "If it should hereafter be found that any of the stars have others revolving about them (for no satellites by