

dition of this important branch of astronomy. In 1820, Struve published his first Dorpat Table of double stars, 796 in number. This was followed in 1824 by a second, containing 3112 double stars, down to the ninth magnitude, in distances under $32''$, of which only about one sixth had been before observed. To accomplish this work, nearly 120,000 fixed stars were examined by means of the great Fraunhofer refractor. Struve's third table of multiple stars appeared in the year 1837, and forms the important work *Stellarum compositarum Mensuræ Micrometricæ*.* It contains 2787 double stars, several imperfectly observed objects being carefully excluded.

Sir John Herschel's unwearied diligence, during his four years' residence in Feldhausen, at the Cape of Good Hope, which, by contributing to an accurate topographical knowledge of the southern hemisphere, constitutes an epoch in astronomy,† has been the means of enriching this number by the addition of more than 2100 double stars (which, with few exceptions, had never before been observed). All these African observations were taken by a twenty-foot reflecting telescope; they were reduced for the year 1830, and are included in the six catalogues which contain 3346 double stars, and were transmitted by Sir John Herschel to the Astronomical Society for the sixth and ninth parts of their valuable *Memoirs*.‡ In these European catalogues are laid down the 380 double stars which the above celebrated astronomer had observed in 1825, conjointly with Sir James South.

We trace in this historical sketch the gradual advance made by the science of astronomy toward a thorough knowledge of *partial*, and especially of *binary systems*. The number of double stars (those both optically and physically double) may at present be estimated with some certainty at about 6000, if we include in our calculation those observed by Bessel with the excellent Fraunhofer heliometer, by Argelander§ at Abo (1827–1835), by Encke and Galle at Berlin

* Struve, *Mensuræ Microm.*, p. 40 and 234–248. On the whole, 2641+146, *i. e.*, 2787 double stars have been observed. (Mädler, in Schum., *Jahrb.*, 1839, s. 64.)

† Sir John Herschel, *Astron. Observ. at the Cape of Good Hope*, p. 165–303.

‡ *Ibid.*, p. 167 and 242.

§ Argelander, in order carefully to investigate their proper motion, examined a great number of fixed stars. See his essay, entitled "*DLX. Stellarum fixarum positiones mediæ, ineunte anno 1830, ex observ. Aboæ habitis (Helsingforsia, 1825)*." Mädler (*Astr.*, s. 625) estimates the