time, therefore, before the beginning of his last and painful illness, led Bessel, the greatest astronomer of our time, to the conviction "that stars whose variable motion becomes apparent by means of the most perfect instruments, are parts of systems confined to very limited spaces in proportion to their great distances from one another." This belief in the existence of double stars, one of which is devoid of light, was so firmly fixed in Bessel's mind, as my long correspondence with him testifies, that it excited the most universal attention, partly on his account, and partly from the great interest which independently attaches itself to every enlargement of our knowledge of the physical constitution of the sidereal heavens. "The attracting body," this celebrated observer remarked, "must be very near either to the fixed star which reveals the observed change of position, or to the sun. As, however, the presence of no attracting body of considerable mass at a very small distance from the sun has yet been perceived in the motions of our own planetary system, we are brought back to the supposition of its *very small distance from a star*, as the only tenable explanation of that change in the proper motion which, in the course of a century, becomes appreciable."* In a letter (dated July, 1844) in answer to one in which I had jocularly expressed my anxiety regarding the spectral world of dark stars, he writes: "At all events, I continue in the belief that Procyon and Sirius are true double stars, consisting of a visible and an invisible star. No reason exists for considering luminosity an essential property of these bodies. The fact that numberless stars are visible is evidently no proof against the existence of an equally incalculable number of invisible ones. The physical difficulty of a change in the proper motion is satisfactorily set aside by the hypothesis of dark stars. No blame attaches to the simple supposition that the change of velocity only takes place in consequence of the action of a force, and that forces act in obedience to the Newtonian laws."

A year after Bessel's death, Fuss, at Struve's suggestion, renewed the investigation of the anomalies of Procyon and Sirius, partly with new observations with Ertel's meridian-telescope at Pulkowa, and partly with reductions of, and comparisons with, earlier observations. The result, in the opinion of Struve and Fuss,† proved adverse to Bessel's assertion

* Schum., *Astr. Nachr.*, Nos. 514–516.

† Struve, *Etudes d'Astr. Stellaire*, Texte, p. 47, Notes, p. 26, and 51–57; Sir John Herschel, *Outl.*, § 859 and 860.