

with another Milky Way, composed of nebulae. The former constitutes, according to Sir John Herschel's views, an annulus, that is to say, an independent zone, somewhat remote from our lenticular-shaped starry stratum, and similar to Saturn's ring. Our planetary system lies in an eccentric direction, nearer to the region of the Cross than to the diametrically opposite point, Cassiopeia.\* An imperfectly seen nebulous spot, discovered by Messier in 1774, appeared to present a remarkable similarity to the form of our starry stratum and the divided ring of our Milky Way.† The Milky Way composed of nebulae does not belong to our starry stratum, but surrounds it at a great distance without being physically connected with it, passing almost in the form of a large cross through the dense nebulae of Virgo, especially in the northern wing, through Comae Berenice, Ursa Major, Andromeda's girdle, and Pisces Boreales. It probably intersects the stellar Milky Way in Cassiopeia, and connects its dreary poles (rendered starless from the attractive forces by which stellar bodies are made to agglomerate into groups) in the least dense portion of the starry stratum.

We see from these considerations that our starry cluster, which bears traces in its projecting branches of having been subject in the course of time to various metamorphoses, and evinces a tendency to dissolve and separate, owing to secondary centers of attraction—is surrounded by two rings, one of which, the nebulous zone, is very remote, while the other is nearer, and composed of stars alone. The latter, which we generally term the Milky Way, is composed of nebulous stars, averaging from the tenth to the eleventh degree of magnitude,‡ but appearing, when considered individually, of very different magnitudes, while isolated starry clusters (starry swarms) almost always exhibit throughout a character of great uniformity in magnitude and brilliancy.

In whatever part the vault of heaven has been pierced by powerful and far-penetrating telescopic instruments, stars or luminous nebulae are every where discoverable, the former, in

\* Sir John Herschel, *Astronom.*, § 624; likewise in his *Observations on Nebulae and Clusters of Stars* (*Phil. Transact.*, 1833, Part ii., p. 479, fig. 25): "We have here a brother system, bearing a real physical resemblance and strong analogy of structure to our own."

† Sir William Herschel, in the *Phil. Trans.* for 1785, Part i., p. 257. Sir John Herschel, *Astron.*, § 616. ("The nebulous region of the heavens forms a nebulous Milky Way, composed of distinct nebulae, as the other of stars." The same observation was made in a letter he addressed to me in March, 1829.)

‡ Sir John Herschel, *Astron.*, § 585.