

Nebulous stars must not be confounded either with irregularly-shaped nebulous spots, properly so called, whose separate parts have an unequal degree of brightness (and which may, perhaps, become concentrated into stars as their circumference contracts), nor with the so-called planetary nebulae, whose circular or slightly oval disks manifest in all their parts a perfectly uniform degree of faint light. *Nebulous stars* are not merely accidental bodies projected upon a nebulous ground, but are a part of the nebulous matter constituting one mass with the body which it surrounds. The not unfrequently considerable magnitude of their apparent diameter, and the remote distance from which they are revealed to us, show that both the planetary nebulae and the nebulous stars must be of enormous dimensions. New and ingenious considerations of the different influence exercised by distance* on the intensity of light of a disk of appreciable diameter, and of a single self-luminous point, render it not improbable that the planetary nebulae are very remote nebulous stars, in which the difference between the central body and the surrounding nebulous covering can no longer be detected by our telescopic instruments.

The magnificent zones of the southern heavens, between 50° and 80° , are especially rich in nebulous stars, and in compressed unresolvable nebulae. The larger of the two Magellanic clouds, which circle round the starless, desert pole of the south, appears, according to the most recent researches,† as “a collection of clusters of stars, composed of globular clusters and nebulae of different magnitude, and of large nebulous spots

* The optical considerations relative to the difference presented by a single luminous point, and by a disk subtending an appreciable angle, in which the intensity of light is constant at every distance, are explained in Arago's *Analyse des Travaux de Sir William Herschel* (*Annuaire du Bureau des Long.*, 1842, p. 410-412, and 441).

† The two Magellanic clouds, Nubecula major and Nubecula minor, are very remarkable objects. The larger of the two is an accumulated mass of stars, and consists of clusters of stars of irregular form, either conical masses or nebulae of different magnitudes and degrees of condensation. This is interspersed with nebulous spots, not resolvable into stars, but which are probably *star dust*, appearing only as a general radiance upon the telescopic field of a twenty-feet reflector, and forming a luminous ground on which other objects of striking and indescribable form are scattered. In no other portion of the heavens are so many nebulous and stellar masses thronged together in an equally small space. Nubecula minor is much less beautiful, has more unresolvable nebulous light, while the stellar masses are fewer and fainter in intensity.—(From a letter of Sir John Herschel, Feldhuysen, Cape of Good Hope, 13th June, 1836.)