

of the Catalogue of 1833) have a photosphere, whose diameter measures from 2' to 3'.*

The large nebulous masses of irregular configuration compose a class of nebulæ differing entirely from those we have described as *regular*, and which are, at all events, faintly defined. They are characterized by the most variously unsymmetrical forms, having indefinite and confused outlines. These bodies, which constitute mysterious phenomena *sui generis*, have mainly given occasion to the opinions advanced in reference to the existence of *cosmical clouds* and *self-luminous nebulæ*, supposed to be distributed through the regions of space, and to resemble the substratum of the zodiacal light. These *irregular* nebulæ, which cover a portion of the firmament several square degrees in extent, present a striking contrast with the smallest of all the *regular* isolated and oval nebulous disks, which is equal in luminous intensity to a telescopic star of the 14th magnitude, and is situated between the constellations Ara and Apus, in the southern hemisphere.† No two of the unsymmetrical, diffused nebulous masses resemble one another;‡ but, adds Sir John Herschel, from the experience of many years' observation, one thing observed in reference to them, and which gives them a peculiar character, is, that all are situated within or very near to the margins of the Milky Way, and may be regarded as offshoots from it. On the contrary, the regularly shaped and well-defined small nebulous spots are partly scattered over the whole heavens, and partly compressed together in special regions, far from the Milky Way, as, for instance, in the northern hemisphere, in the regions of Virgo and Pisces. Although the large irregular nebulous mass in the sword of Orion is certainly situated at a considerable distance from the visible margin of

* In other instances these nebulous stars are only of the eighth to the ninth magnitude; as Nos. 311 and 450 of the Catalogue of 1833, fig. 31 having photospheres of 1' 30". (*Outlines*, § 879.)

† *Observations at the Cape*, p. 117, No. 3727, pl. vi., fig. 16.

‡ We meet with remarkable forms of irregular nebulæ, as, for instance, the omega-shaped (*Observations at the Cape*, pl. ii., fig. 1, No. 2008), which has been investigated and described by Lamont, and by a meritorious North American astronomer, Mr. Mason, whose early loss is much to be lamented (*Mem. of the Amer. Philos. Society*, vol. vii., p. 117); a nebula having from 6 to 8 nuclei (*Observations at the Cape*, p. 19, pl. iii., fig. 4); the cometary tuft-like form in which the nebulous rays seem occasionally to expand, as from a star of the ninth magnitude (pl. vi., fig. 18, Nos. 2534 and 3688); a silhouette profile, or bust-like outline (pl. iv., fig. 4, No. 3075); a fissure-like opening, inclosing a filiform nebula (No. 3501, pl. iv., fig. 2; *Outlines*, § 883; *Observations at the Cape*, § 121).