

boring heavens, are assigned as the causes of the remarkable blackness of this portion of the firmament. This opinion, which has been generally maintained since Lacaille's time,* has been especially confirmed by the "gauges" and "sweeps" made round the region where the Milky Way appears as if covered by a black cloud. The Coal-bag yielded from seven to nine telescopic stars for every sweep, but never an entirely blank field; while in a field of equal size the margins presented from 120 to 200 stars. This mode of explanation, which ascribes the darkness to contrast alone, did not, although perhaps incorrectly, appear quite satisfactory to me while I was in a tropical region, and remained under the vivid impression produced on my mind by the aspect of the southern heavens. William Herschel's considerations on wholly starless regions in Scorpio and Serpentarius, and which he has termed "openings in the heavens," led me to the idea that the starry strata lying behind one another in such regions may be less dense, or even wholly interrupted, and that our instruments being insufficient to penetrate to these last strata, "we look into the remote regions of space, as through tubes." I have already elsewhere noticed these openings,† and the effects of perspective on such interruptions in the starry strata have again been lately made the subject of earnest consideration.‡

The extreme and most remote strata of self-luminous cosmical bodies—the distances of nebulæ—all that has been considered in the last seven sidereal or astrognostic portions of this work, fill the imagination and the speculative mind of man with images of time and space surpassing his powers of comprehension.

* "Cette apparence d'un noir foncé dans la partie Orientale de la Croix du Sud, qui frappe la vue de tous ceux qui regardent le ciel austral, est causée par la vivacité de la blancheur de la voie lactée qui renferme l'espace noir et l'entoure de tous côtés." "The appearance of deep black in the eastern portion of the Southern Cross, which strikes all who observe the heavens in those regions, is owing to the intensity of the whiteness of the Milky Way surrounding the black space on every side."—Lacaille, in the *Mém. de l'Acad. des Sciences*, année 1755 (Paris, 1761), p. 199.

† *Cosmos*, vol. i., p. 152, and note.

‡ "When we see," says Sir John Herschel, "in the Coal-sack (near α Crucis) a sharply-defined oval space free from stars, it would seem much less probable that a conical or *tubular* hollow traverses the whole of a starry stratum, continuously extended from the eye outward, than that a *distant* mass of comparatively moderate thickness should be simply perforated from side to side."—*Outlines*, § 792, p. 532.