

If we take into account the number of objects discovered, the accuracy of their telescopic investigation, and the generalization of views, the history of nebulous spots, like that of double stars, may be said to begin with William Herschel. Until his time there were not more than 120 unresolved nebulae in both hemispheres whose positions were determined, including even the results of Messier's meritorious labors; and in 1786 the great astronomer of Slough published the first catalogue, containing 1000. I have already fully pointed out, in an earlier portion of this work, that the bodies named *nebulous stars* (*νεφελοειδεῖς*) by Hipparchus and Geminus in the *Catasterisms* of the pseudo-Eratosthenes and in the *Almagest* of Ptolemy, are stellar clusters which appear to the naked eye with a nebulous luster.* This designation, Latinized *nebulosæ*, passed in the middle of the thirteenth century into the Alphonsine Tables, probably through the preponderating influence of the Jewish astronomer, Isaac Aben Sid Hassan, chief Rabbi of the wealthy synagogue at Toledo. The Alphonsine Tables were first printed in 1483 at Venice.

The first notice of a remarkable aggregation of innumerable *true nebulous spots*, blended with stellar swarms, dating from the middle of the tenth century, is in the writings of an Arabian astronomer, Abdurrahman Sufi, a native of the Persian Irak. The *White Ox*, which he saw shining with a milky light far below Canopus, was undoubtedly the larger Magellanic Cloud, which, with an apparent breadth of nearly twelve lunar diameters, extends over a portion of the heavens measuring forty-two square degrees. No mention is made by European travelers of this phenomenon until the beginning of the sixteenth century, although, 200 years earlier, the Normans had advanced as far along the western coasts of Africa as Sierra Leone ($8^{\circ} 30' N. Lat.$).† It might have been expected that a nebulous mass of such vast extent, which

* *Cosmos*, vol. iii., p. 91, and note, and 140, and note.

† Prior to the expedition of Alvaro Becerra. The Portuguese advanced beyond the equator in 1471.—See Humboldt's *Examen Critique de l'Hist. de la Géographie du Nouveau Continent*, tom. i., p. 290–292. In Eastern Africa the Lagides had availed themselves, for purposes of commerce, of the passage along the Indian Ocean, and, favored by the southwest monsoon (Hippalus), had passed from Ocelis in the Straits of Bab-el-Mandeb to the Malabar emporium of Muziris and to Ceylon (*Cosmos*, vol. ii., p. 172, and note). Although the Magellanic Clouds must have been seen in all these voyages, we meet with no record of their appearance.