

**Messier 17, the Omega Nebula**, also known as the Swan Nebula, Checkmark Nebula, and the Horseshoe Nebula is an H II region in the constellation Sagittarius. It was discovered by **Philippe Loys de Chéseaux** in 1745.

**Charles Messier** catalogued it in 1764. It is located in the rich starfields of the Sagittarius area of the Milky Way.

#### CHARACTERISTICS

The Omega Nebula is between 5,000 and 6,000 light-years from Earth and it spans some 15 light-years in diameter. The total mass of the Omega Nebula is an estimated 800 solar masses. The cloud of interstellar matter of which this nebula is a part is roughly 40 light-years in diameter and has a mass of 30,000 solar masses.

It is considered one of the brightest and most massive star-forming regions of our galaxy. **Its local geometry is similar to the Orion Nebula except that it is viewed edge-on rather than face-on.**

The open cluster NGC 6618 lies embedded in the nebulosity and causes the gases of the nebula to shine due to radiation from these hot, young stars; however, the actual number of stars in the nebula is much higher – up to 800, 100 of spectral type earlier than B9, plus over a thousand stars in formation on its outer regions. It is also one of the youngest clusters known, with an age of just 1 million years.

The luminous blue variable HD 168607, located in the south-east part of the Omega nebula, is generally assumed to be associated with it; its close neighbour, the blue hyper giant HD 168625, may be too. The Swan portion of M17, the Omega Nebula in the Sagittarius nebulosity, is said to resemble a barber's pole.

The first attempt to accurately draw the nebula (as part of a series of sketches of nebulae) was made by **John Herschel** in 1833, and published in 1836. He described the nebula as such:

*“The figure of this nebula is nearly that of a Greek capital omega, somewhat distorted, and very unequally bright. ... Messier perceived only the bright eastern branch of the nebula now in question, without any of the attached convolutions which were first noticed by my father. The chief peculiarities which I have observed in it are (1) the resolvable knot in the eastern portion of the bright branch, which is, in a considerable degree, insulated from the surrounding nebula; strongly suggesting the idea of an absorption of the nebulous matter; and (2) the much feebler and smaller knot at the northwestern end of the same branch, where the nebula makes a sudden bend at an acute angle.”*

A second, more detailed sketch was made during his visit to South Africa in 1837. The nebula was also studied by **Johann von Lamont** and separately by an undergraduate at Yale College, **Mr Mason**, starting from around 1836. When Herschel published his 1837 sketch in 1847, he wrote:

*“In particular the large horseshoe-shaped arc is represented as too much elongated in a vertical direction and as bearing altogether too large a proportion to the eastern streak and to the total magnitude of the object. The nebulous diffusion, too, at the western end of that arc, forming the western angle and base-line of the capital Greek omega, to which the general figure of the nebula has been likened, is now so little conspicuous as to induce a suspicion that some real change may have taken place in the relative brightness of this portion compared with the rest of the nebula; seeing that a figure of it made on June 25, 1837, expresses no such diffusion, but represents the arc as breaking off before it even attains fully to the group of small stars at the western angle of the Omega. ... Under these circumstances the arguments for a real change in the nebula might seem to have considerable weight....”*

AK, with Wikipedia Notes



FIG. 1.—J. HERSCHEL, 1833.

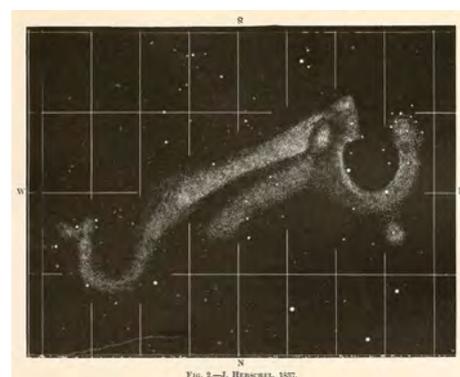


FIG. 2.—J. HERSCHEL, 1837.