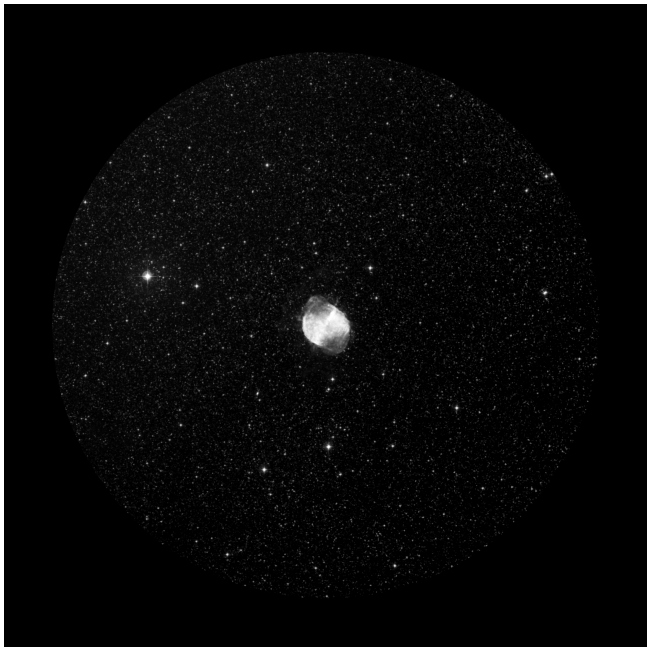
# Messier 27

**Vulpecula** 19h 59m +22º 43' *Dumbbell nebula*

Data of the sky region at the time of the observation ..... **SQM-L 21.45 IR -6º Temperature 18º**
Data of the night ..... **Sun alt: -40.9º Moon alt: -32.0º**
Data of the object ..... **Alt: 61.6º Az: 245.1º**
Telescope ..... **Stargate 18"**



**Nagler 31mm (70x - 1º 10' - 6.6mm)**

Magnificent Dumbell nebula in 18".

The field is beautiful, there are a multitude of stars that catch the eye and the nebula stands out intensely against the dark background.

The nebula is very large, despite the low magnification, since it occupies perfectly one fifth of the eyepiece.

It is bright, very bright, with two clearly distinguishable brightness zones but neither of them faint. The brighter part always reminds me of the weights used in gyms for one-handed so, in my opinion, its common name is very well assigned. While the fainter part of the nebula is shown as two lobes that complete the oval shape of the nebula in the north-south direction as I see it in my eyepiece. To highlight some detail I seem to see in the area of less brightness some kind of complex structure, such as clouds of varying density but still the object is too small.

It is also observed that the 6 o'clock zone of the nebula is fainter than its companion at 12 o'clock which is brighter, although it is a matter of subtleties because both zones are evident with this eyepiece.

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**Nagler 22mm (98x - 50' - 4.7mm)**

When I switch to the 22mm I decide to add the Optolong L-Enhance filter that I have recently acquired, but first I will describe the object without the filter.

The nebula gains a lot of presence with this eyepiece and now occupies almost a quarter of the field, so you can see more details. The first thing that strikes me are the stars that surround and frame it, especially one located at 1 o'clock that is very close to the edge. So much so that I take it as a great reference to know where the nebula ends. In addition, thanks to this star, I observe the first detail of the nebula. Below this star there is a kind of bay, that is, inside the brightest area, it is observed as a slightly less bright area that goes into the bright arc at 3 o'clock in the nebula.

Another star that I highlight in my notes is located at 5 o'clock and is so close to the Dumbbell that it helps me to delimit it. Regarding the difference in brightness I notice that the 9 o'clock and 3 o'clock zones (more in the 9 o'clock zone than in the 3 o'clock zone perhaps because the latter has a slightly fainter bay) end abruptly with a sudden rise in brightness, which causes a sensation that the nebula is enclosed in brackets by its right and left zones.

**Nagler 22mm (98x - 50' - 4.7mm) + Optolong L-Enhance**

To finish with this eyepiece without filter I think I discover a kind of faint arcs at both 6 and 12 o'clock slightly, very slightly brighter than those '*north*' and '*south*' regions of the nebula which are much fainter.

When I put on the Optolong it looks like I have changed the object. The background has darkened somewhat but overall the nebula has gained a surprising intensity and brightness. Everything looks tremendously brighter, both the faint areas and the bright areas themselves. It is a joy, almost blinding to the eye so much brightness coming from the nebula. It is impressive what the filter manages to bring out. However, I have to put a but that seems to me quite important. Although the nebula, its size and shape delimit it much better and I see it much better, I also see it poorer. I don't know very well why but without a doubt I have lost details in the nebula. It is as if it has homogenized and its finer details are lost in a background of more intense light. My recommendation is to observe the nebula with and without a filter.

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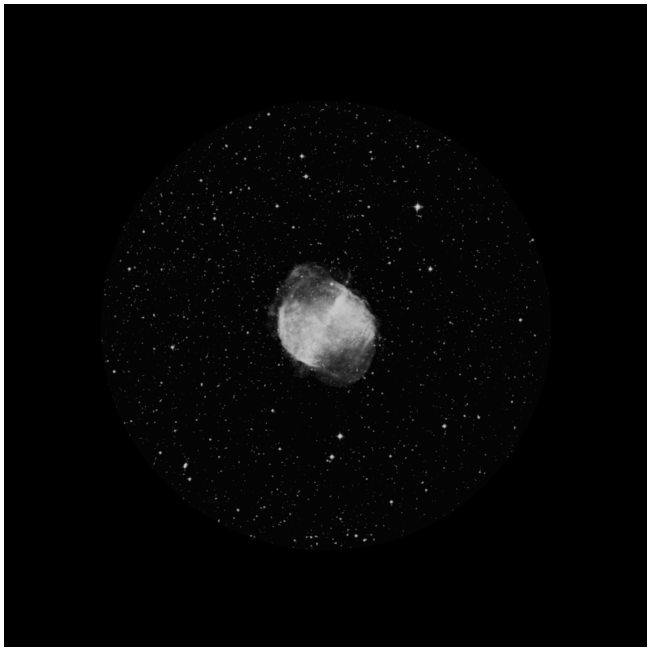
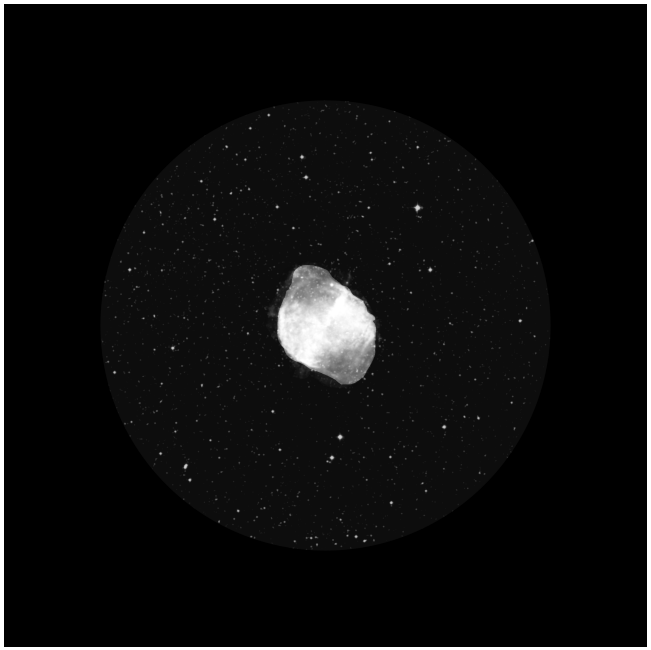


**Delos 14mm (154x - 28' - 3mm)**

How wonderful to add magnification. Now M27 occupies almost half of the eyepiece. The star field looks beautiful to me because a multitude of stars stand out and many are very close to the edge of the nebula, surrounding it. Sharp and low brightness stars enclose the nebula perfectly, creating a really beautiful image.

Regarding the brightness, I am again struck by the difference between the 9 o'clock and 3 o'clock regions. The outer arc of the 9 o'clock region is wonderful. Longer and better defined than its '*brother*' at 3 o'clock, which is shorter and not so clearly contrasted. It is beautiful to look at. But even more interesting is the southern part of the nebula. It is clearly seen as there is a very beautiful gradient between the bright zone and the faint zone. At first glance there are some kind of granules or layers of fainter brightness that gradually fades to a more homogeneous light gray background that ends with a new arc in the outermost part of the nebula. I spend minutes watching the complex structure that begins to show the planetary nebula. I see a star inside the nebula itself near the one that previously indicated at 1 o'clock. The peculiarity of this star is that from the bright zone of 3 o'clock seems to come out a branch of brightness that tries to '*capture*' it reaching almost to the very edge of the star. That area together with the bay explained with the previous eyepiece is worth observing in detail because. Also, after confirming it with other colleagues, I see that there is a filament coming out from the nebula towards the star at 1 o'clock, very faint but interesting.



**Delos 14mm (154x - 28' - 3mm) + Optolong L-Enhance**

With the filter I again have the same feeling as with the previous eyepiece. The nebula is tremendously bright with it. Areas that were difficult to see are now evident and I can delimit it much better, but I also lose some details or find them more complex to see. In addition there is not so much difference between the bright zone and the faint zone, both are so bright that I think it even saturates my sight. Another difference is that the 9 o'clock arc is less obvious because everything is more uniform. I would say that with this eyepiece the filter didn't do much for me.

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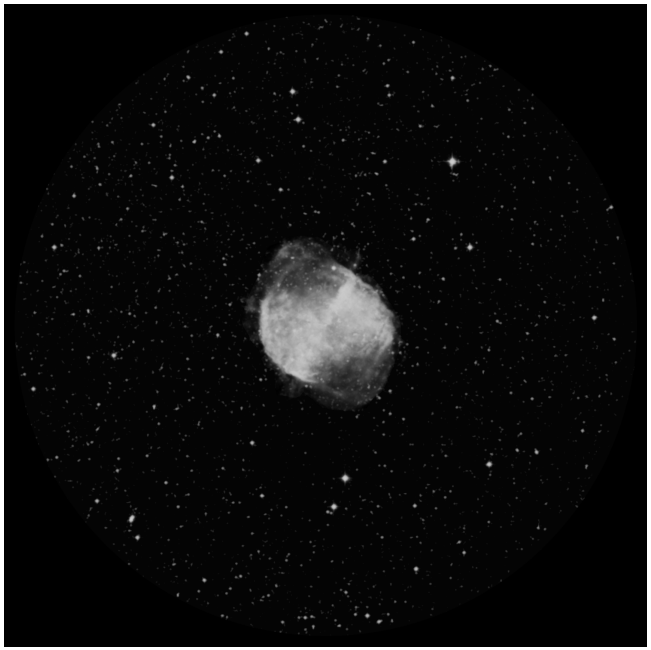
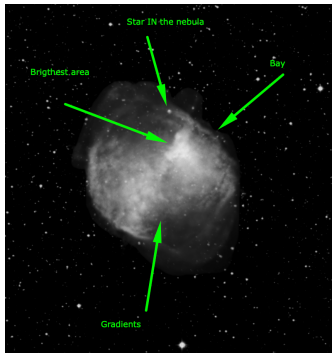
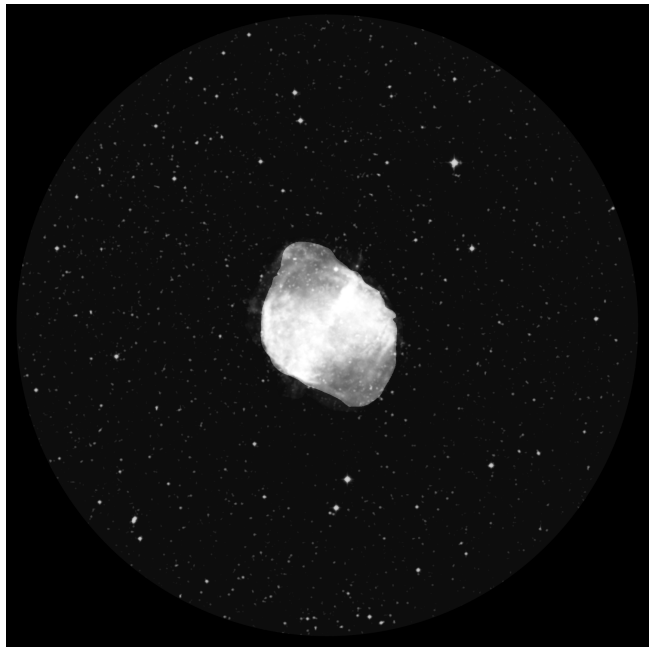


**Ethos 10mm (216x - 27' - 2.1mm)**

What a wonderful nebula. It shows such a series of details that it is even hard to describe it. This time I start with the filter on to see if I notice so many differences in detail when I take it off. The first thing I notice with this new eyepiece is that I clearly identify the brightest area of the whole nebula, it is located between the star inside the nebula at 1 o'clock and the bay I was talking about before. It is Y-shaped. I also discover that inside the bright zone, the central part, where the nebula narrows, is fainter than the rest of the brightest part of the dumbbell. There is a kind of hollow that is still brighter than the 6 and 12 o'clock zones, but it is clearly fainter than the 9 and 3 o'clock zones. The 9 o'clock zone, in the arc, also shows some kind of structure, or at least a clear differentiation with its innermost part. It is as if it were a toroid arch, with volume. Regarding the faint zones at 6 and 12 o'clock have a similar structure with its outermost zone brighter than the zone that is adjacent to the bright area of the nebula.



**Ethos 10mm (216x - 27' - 2.1mm) + Optolong L-Enhance**

In addition, this slightly brighter, outermost part of the nebula is also arc-shaped but, unlike the one at 9 o'clock, it does not appear to have volume but are simple, thinner arcs. It is curious that the same scheme is repeated in both lobes at 12 and 6 o'clock.

When I remove the filter it seems that the nebula is turned off. But I really gain in fine details. The gradients in the 6 o'clock area are wonderful. It is true that the fainter part of the nebula (lobes at 12 and 6 o'clock) are more complex to observe, and the arcs that I used to see clearly now are harder to see, but the nuances that emerge between the different brightnesses are much richer than before. In short, although it looks like a shadow of what I saw with the filter, its details are greater.

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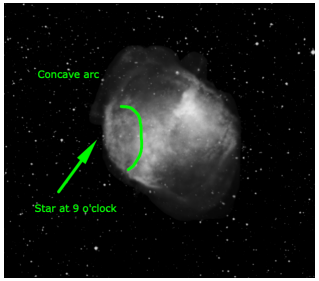
**Ethos 8mm (270x - 22' - 1.7mm)**

I repeat again first with the filter. The object is gradually losing light but it is still very bright given the magnification it has and that causes it to occupy more than half of the eyepiece. I start this time looking at the faintest areas of the nebula (regions 12 and 6) highlighting the 12 o'clock region that the arc that closes this region seems to be formed by two concentric arcs and its closure does not seem as evident as the one seen in the 6 o'clock region.

Looking at the 9 o'clock arc I clearly see a star that is right on the edge of it in the center of that arc. I love that star because it serves me perfectly to see the end of the arc and also it seems that in that area the arc is shown flat and not curved. But what strikes me most is the difference between the arc, its inner zone and the narrowing zone of the nebula before reaching the central zone with that gap in the brightness. Checking in detail that zone, specifically in that area between the 9 o'clock arc and the narrowing there is a fainter area of brightness with some structures. It seems to me a kind of inverse arc (concave instead of convex) in the very interior of the nebula. A joy.




When I remove the filter I again have the impression of having '*turned off*' the nebula, but the region that I have named as the brightest is now a marvel that stands out above everything else.

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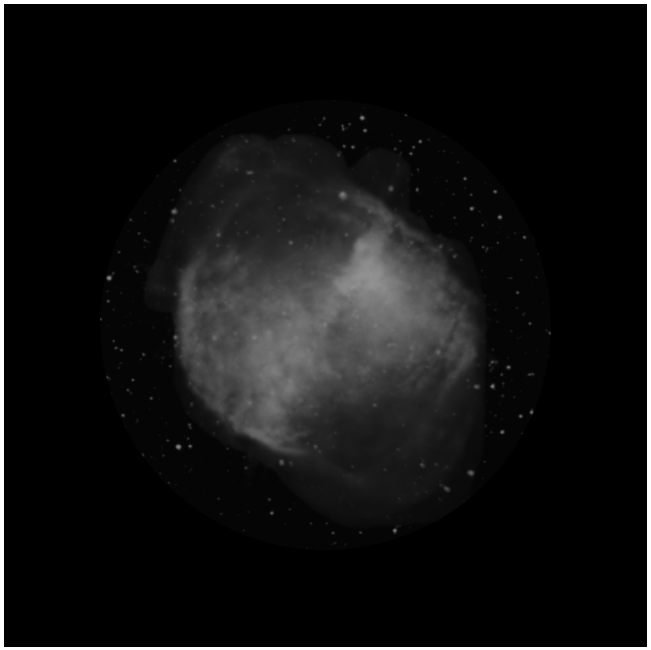
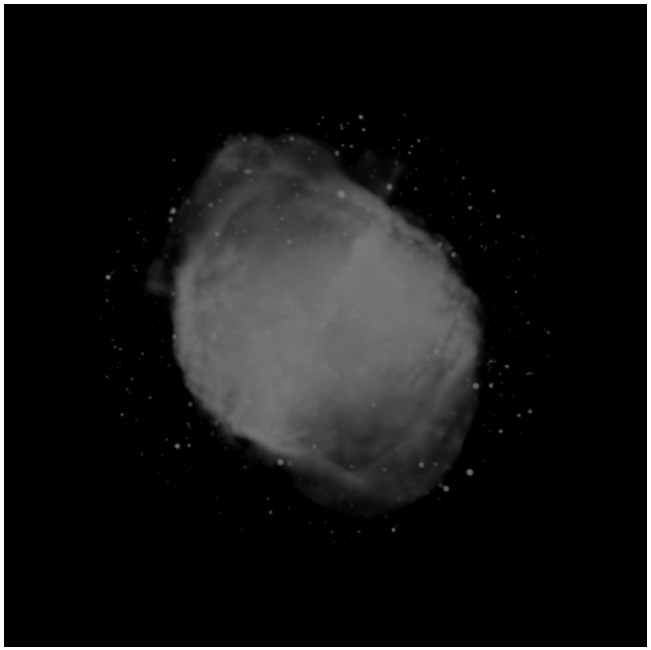


**Delos 4.5mm (480x - 9' - 1mm)**

To conclude, I start again without filter.

It is a brutality to put this eyepiece because all the field is completed with the nebula itself, I have almost no other view of the surrounding star field. Unfortunately the brightness has decreased a lot with the use of the 4.5mm without the filter. However, without the filter, I realized that I was missing several details of the nebula, in particular the stars inside it. Very nice are the row of three stars from the 9 o'clock arc to the center of the nebula. In the very center of the nebula there is also a faint star. Also at 7 o'clock there is a star but it is already at the outer edge of the nebula over which I now clearly distinguish a gap (in the previous eyepiece I think I did not describe it but it seemed to me that it was totally attached to the nebula, now, with higher magnifications, I even appreciate a separation). Near that star at 7 o'clock, but already inside the nebula, there is another star in the faint zone.

When I put the filter on, the nebula brightens and I see the fainter details again. In particular I see the double arc in the 12 o'clock region (very nice) and much more clearly the gradients in the 6 o'clock region. I can't provide much more information because I think everything has already been said. Perhaps that between the 9 o'clock arc with volume and the central area, where the row of stars is, with the Optolong filter a series of voluptuosities can be seen, like granules of different brightness, fainter than the arc and the area that follows.



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