Data of the sky region at the time of the observation	SQM-L 21.95 IR -14° Temperature 12°
Data of the night	Sun alt: -42.9° Moon alt: -25,8°
Data of the object	
Telescope	Stargate 18"



Nagler 31mm (70x - 1° 10' - 6.6mm)

The first thing that surprises me at these low magnifications is the shape of the nebula. It is well known for its ring shape with a bright central part in addition to the outer ring, but this time, in addition to seeing it more luminous, what strikes me is its shape at the narrowest edges of the nebula. As is well known it has an oval shape, and if we look at the major axis of the oval, at its closure or turn there is a very bright star, at the opposite end I seem to see that the nebula is not uniform in that part, but it loses a little brightness when making the turn and also extends outward. It is like the image that causes the Saturn nebula, which has a kind of protrusions on both sides of the circle that is the nebula. Well, something like that but only at one of its ends. Like a small fainter halo protruding from the nebula at its end. In the area near the star the vision is similar, but here the bright star makes it difficult to see this fainter halo with attention. In addition both ends appear as if the ring did not close, that is, the shape of the nebula is clearly this ring, however the ring has a very defined brightness and thickness in the short axis but in the long axis of the oval

the ring seems to lose brightness and although it is perfectly visible it transmits the sensation that it does not end up closing with the same brightness, as if in that area the nebula was more



tenuous. In addition we have these '*extensions*' on the outer edges of the ring on its major axis that still gives it a more complex structure.

I am also very struck by the brightness of the interior of the ring, I had always seen it as significantly smaller and playing with the side view and direct vision, in my old Visac 200L I even made it disappear seeing only the ring. Now it is impossible, it is tremendously bright all the inside of the ring although no more detail is visible.

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The image does not vary much from the previous one, the object has obviously gained in size, but the image is still very similar. Perhaps now I see the edges of the nebula a little more complex, it gives me the feeling that it has a soft semi-transparent silk scarf above the brightest part of the edge of the ring, so that when this 'veil' protrudes from the bright area is seen as a kind of very faint wave that extends a little beyond the nebula, very little, almost half or even a quarter of the width of the bright area of the nebula that gives it its ring shape. It is most significant in the area farthest from the bright star near the nebula. I am also struck by the outline of the nebula because it appears surrounded by stars that I don't think I have ever seen before or not so closely. I try to describe it. First I see the bright star that in the position in which the object is and as I am seeing it is in my lower part of the nebula to the right, then in the upper part of the nebula and in the left zone I see as a first blurred point that when I focus a little better the view I discover are 2 stars close to the nebula. But in the same area to the left but further down, approaching the bright star, I see another star framing the nebula. It is only the *uppermost* part of the nebula where I do not see any star close to the nebula.

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

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

Incredible how the image is enhanced by adding magnification. First I am surprised by the 'surroundings' of the nebula. The two stars that I had trouble identifying in the previous eyepiece are evident here. To try to describe it better, in my voice notes I use the clock distribution, and I note: if we place the brightest star at 6 o'clock in the nebula the two nearby stars would be at their 10 and 11 o'clock, another new star appears at 3 o'clock, and another one, a little more separated from the ring at 8 o'clock. In addition I seem to see one more star in the area that indicated that the ring was as 'blurred', as at its 1 o'clock or near 12 o'clock, but this star is much fainter and is very close to the nebula.

Regarding the ring itself, in addition to confirming its oval shape, and that at the ends it is blurred, that is, without continuing with the same intensity of brightness, the outer part of the ring seems to me really complex. In particular in the zone that would be the 9 o'clock of the ring taking as reference the bright star at 6 o'clock, and the zone at 3 o'clock. The zone at 9 o'clock what I see (or I think I see) is that kind of wave that I commented

above as a very soft silk veil that protrudes a little more of the ring giving it an even more oval shape. But in the 3 o'clock zone what gives me the sensation is to see a double ring, much fainter the second one, of a minimum thickness, I would say a fifth of the thickness of the main ring, protruding from the main ring.



Regarding the interior of the ring, with these magnifications the brightness is not so intense and it seems to me that it is not uniform, so that some kind of granules appear inside it, that is, I am unable to see a flat and homogeneous surface of brightness inside the nebula, but rather a blur of different brightnesses but without being able to define it properly.

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Data of the object	
Telescope	Stargate 18"



With each jump of eyepiece I get more details. In addition, an exercise that I love when going from one eyepiece to another is that it forces you to want to see the differences and, therefore, you discover new details that you didn't see before or that you skipped. Each time the object is bigger and with this eyepiece, without losing field, I have gained in size. I still see more or less the same stars around the nebula but I don't see any extra detail to those already described.

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

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

It's beautiful to put more and more magnification on the object. Now the stars that I saw around the ring are really separated from the object because I have gained a lot of magnification, and I totally confirm the star that was at I or I2 o'clock, which is really faint but is confirmed very close to the ring. There also appears a new star that is more or less at 2 o'clock but more separated from the ring. Now I seem to be able to see the central star of the nebula as a tiny dot that appears brighter. I have to use the side view to confirm it but it is indeed there.

What strikes me with so many magnifications is that the outer areas of the ring have a kind of *'hairs'*, i.e. the outer edge of the ring does not seem to me to be uniform and completely straight, but has a number of imperfections that makes it difficult to indicate where EXACTLY the ring ends on the outside.

I also clearly observe how the size of the bright ring is much narrower at its 9 and its 3 than at its 6 or 12 (taking as reference this bright star), that is to say, the ring is clearly oval but it is that in addition, the thickness of the external bright ring varies according to the zone we see. The narrowest of all is the 9 o'clock region, then it would be the 3 o'clock region, then it is significantly wider at 12 o'clock (although blurred) and finally at 6 o'clock is where it shows its greatest width although again blurred and protruding a little towards the brightest star.

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

Although it might seem to me that I am over magnifying, it is impressive to see the ring at this magnification and at this size. It is much more difficult for me to focus the few stars that I can already see but the image is very worthwhile.

On the one hand, the faint star at 12 - 1 o'clock in the nebula catches my attention because it seems to me that the nebula is trying to catch it, that is, I think I see a kind of '*jet*' coming out of the nebula to try to reach this star. Although I doubt this image because the fact of having a star so close to the nebula sometimes distorts the image you see. But I would say that there is that extension of the nebula towards the star.

Another detail that strikes me with this eyepiece is the sense of volume that the nebula gives me. As I described with the previous eyepiece the thickness of the ring is not the same in all its path, added to this now I see the nebula bigger and a little more blurred in general (the focus is more complex and the seeing will affect more I guess) so the overall impression is more of volume than of a flat image, that is to say that it seems more 3D and that gives it a beautiful aspect.

I confirm everything described above, and I am delighted with this 3D image so suggestive.



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Delos 4.5mm + Powermate 2x (960x -4.5' - 0.5mm)

WHAT A CRAZY THING TO DO! I totally freaked out and put the Powermate on with the 4.5, just out of curiosity and I was STUNNED. It is AMAZING how the ring looks at such extreme magnifications. I highly recommend that you do this effort and this madness. Too bad the motors are not tracking the telescope well for me.

At these magnifications I have lost much of the brightness of the nebula, particularly in its most central part, but when I refer to the central part, it is not that it is simply the area inside the bright ring, but the central part of the area inside the ring. Because in the part that is close to the bright ring there are areas with brightness, and with such a gradient that it seems that I was seeing 'cliffs'. IT'S IMPRESSIVE. The ring is tremendously bright, and the inside of the ring its central zone is totally dark (removing the accumulation of brightness by the central star) and therefore it is very easy to delimit if there really is a sharp jump in brightness from a black to a practically white area. And that doesn't happen nearly as much, but there is a gradient, a gradient almost as thick as the ring itself or perhaps a little smaller but significantly larger. That gray gradient, anticipating the black zone, and coming from the bright region is a JOY, because it gives you that feeling of sinking into the depth of the nebula. As if you were

sailing into it and it is a simply SPECTACULAR image. The size of the object is BRUTAL. The outer structure I have not been able to define it better, but the image as a whole of the central area is incredible.



And the most impressive thing is that I have NEVER, EVER, NEVER seen the ring nebula like this. Now I have the feeling that before I only 'scratched' its image, now I really contemplate it in its real complexity and beauty. It is really amazing. I am very happy to have reviewed the Messier objects. What a sense of volume I have in the object and what a sense of depth. It's mindblowing. Also note that obviously the 18" telescope helps a lot to have this image by the amount of light it collects, but please, if you have the opportunity to use a telescope of considerable size with M57, put all the magnification you have. I think it is something that will make a mark on you. I have been amazed seeing M57 as I have never seen it before in my life. Before I had the feeling that I was seeing something somehow unreal, because it looked too flat in the eyepiece. With these magnifications it is as if I were flying over the nebula and everything becomes much more real. Undoubtedly it is because of that threedimensional feeling of the different brightness levels. Between the intense brightness of the ring that looks like a donut, or bull to be more precise, since it certainly has volume, and the area of *cliffs* or *slopes* that are not uniform but are of a faint gray that is crossed by darker lines that lead to a completely black central area, in which in the center there is a concentration of brightness that playing with direct and peripheral vision can be reduced to look like a dot. It is that set, occupying ALL your field of vision, which makes you hallucinate and see the nebula as you have never seen it before. What a marvel.