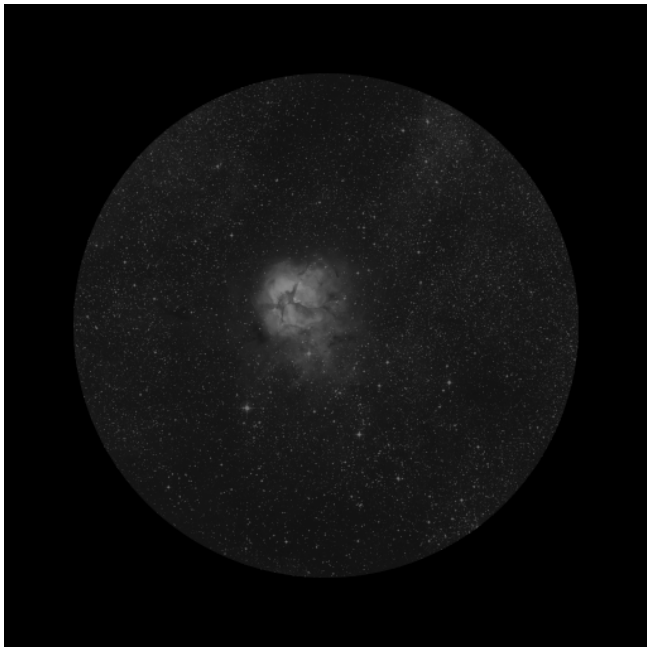
Data of the sky region at the time of the observation.....**SQM-L 21.6 IR -17º Temperature 12º**
Data of the night.....**Sun alt: -25.0º Moon alt: -30.1º**
Data of the object .....**Alt: 26.6º Az: 161.4º**
Telescope .....**Stargate 18"**



Nagler 31mm (70x - 1º 10' - 6.6mm)

The field of M20 is rich in stars, but the nebula is so striking that one hardly notices what is around it.

It is so large that it occupies more than 1/5 of the eyepiece, and its shape is round with non-uniform edges.

In the telescope it is so bright that it stands out clearly, and it is enough to have some observing experience to see the black rivers that divide the famous lobes of the nebula. As a detail to highlight there are three stars that are clearly defined in the center of the nebula, just at the edge of one of the lobes. These stars can be used to observe the river much more clearly. Also striking is the reddish star at 6 o'clock in the nebula as there is undoubtedly a fainter cloudiness surrounding it. It is a cloudiness that I don't recall ever having observed visually and I am struck by its subtlety. I can't help remembering the beautiful images of this nebula in astrophotography with those two very different colors (red and blue).

I do not see any color although I clearly distinguish the nebulae as two regions of different brightness.

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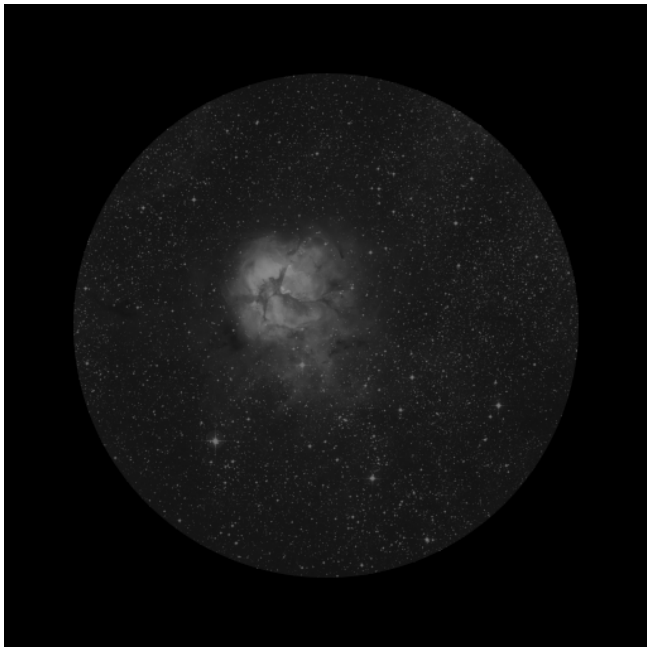
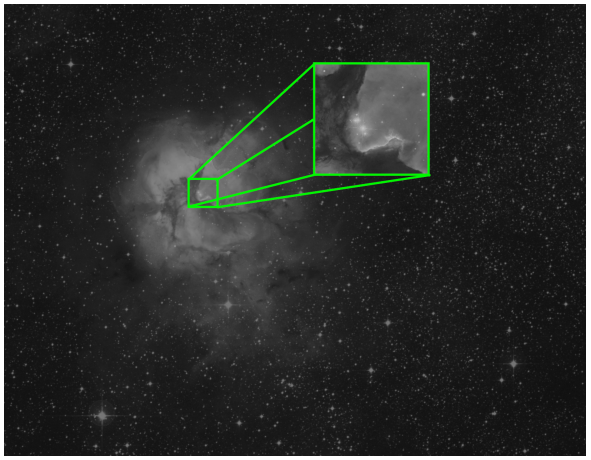


Nagler 22mm (98x - 50' - 4.7mm)

With the 22mm it is a wonderful thing. It is spectacular to observe the black rivers in its interior. The four zones of the nebula are perfectly distinguishable, well actually there are three of them (those corresponding to the north, east and south region of my eyepiece) that are very well appreciated and the fourth is a little dimmer because the river that divides it is smaller. It is the one that corresponds to the position of the 7 o'clock in my eyepiece. Nevertheless, all of them can be observed comfortably with this eyepiece.

As an extra detail, I distinguish not three but four stars in the central region of the nebula. It is a particularly beautiful area because it is very bright. By magnitude difference I first observe two stars clearly, both very bright. Then at 5 o'clock from these stars there is another star, much fainter but also easily observed. The most complicated to observe is the star at 12 o'clock from the first two stars. It is very hard to detect it and I have to use both averted vision and the old trick of hitting the eyepiece so that when it vibrates briefly my eye detects those areas with brightness variation. Thanks to these techniques I can verify the fourth star. In order to represent this grouping of stars I use a photograph attached to the card.



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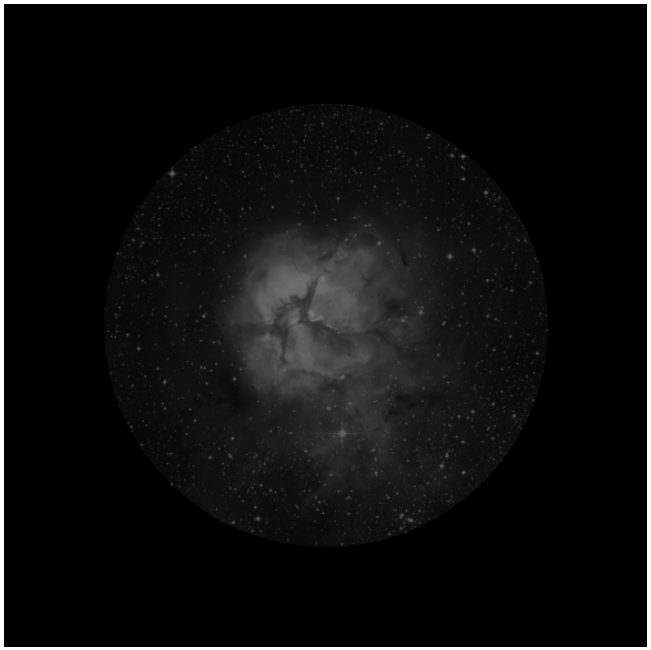

Delos 14mm (154x - 28' - 3mm)

This eyepiece never ceases to amaze me, the field has been totally reduced and the nebula now occupies practically the whole field, it is splendid. I confirm again the four stars that I saw previously in the most central part of the nebula. But what I focus my attention on most is the shape of the black river that divides the various areas of the nebula. I am very impressed by the deep black it shows, in contrast to the nebula it is beautiful, especially in some specific parts. I describe in my voice notes: The black river starts in the southern region and goes deep into the nebula to the area where the already described four stars are located. You can see perfectly how these stars are in the cloud and the river turns towards 1 0'clock, surrounding these stars, in a beautiful curve or '*meander*', very marked. Soon it turns again, this time to the left with a contrast also amazing, I think it is the most beautiful thing you can see in the nebula. And then the river continues separating into two branches, one at about 10 0'clock and the other at about 7 0'clock.

The hue of the river is jet black, blacker than the background of stars I observe around the nebula. To top off the impression, inside the river itself, near the bright stars where it makes the first turn, there is a pale but clearly visible star, inside the river itself. Mind-blowing.

I insist that it is especially in the first part of the river, that which is in the area furthest to the right of my eyepiece, that has the blackest contrast. Simply marvelous. A river of black ink.

Above the fainter nebulosity to the south is still visible with this eyepiece and perhaps has a cradle shape. I don't appreciate much more detail but it's still there.

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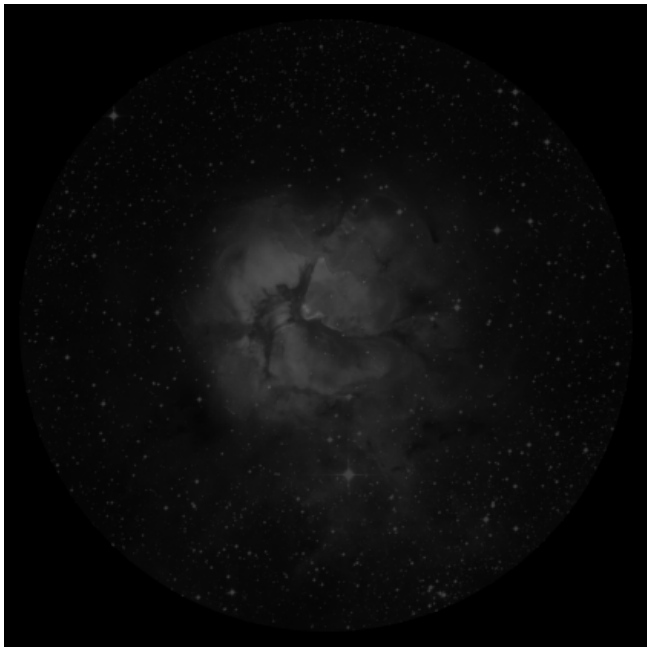
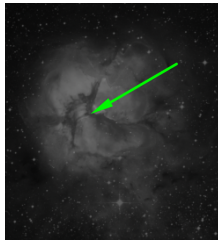


Ethos 10mm (216x - 27' - 2.1mm)

What a wonderful image! The contrast of the nebula has increased tremendously since I observed it with the 31mm. In this first eyepiece, the nebula was evident but pale, with the 10mm it is incredibly contrasted with the river that delimits each region as its main feature. In addition to all that I have already expressed (that in this eyepiece is only confirmed with greater detail, ease and beauty) I discover a new feature. In the central region of the nebula there are a pair of stars that are clearly visible. The second of these, the one that is more positioned to the north of my eyepiece serves as a reference for a new dark branch that seems to separate the central nebula into two parts. I cannot confirm if this dark line really divides the nebula because it is clearly visible in the region closest to the four stars that I have already described, like a protrusion that enters the nebula to split it in half. As I look along it I can see that it narrows and I cannot confirm if it connects with the other side of the river or not, really causing the division of the nebula into a central island.

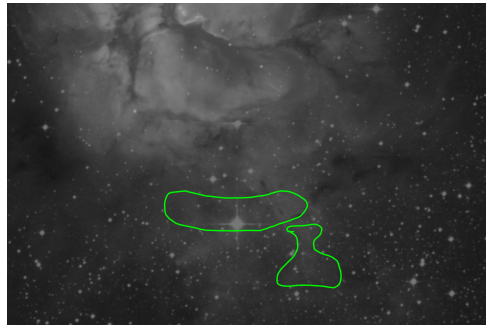


Sometimes I get the feeling that it does lead to a break and sometimes it does not. So I can't confirm this 100%.

More amazing detail from this eyepiece is the beautiful contrast between the black river and the edges of the nebula. I can't think of a better example to express myself than pyrography. For those of you who have practiced it you will have been amazed at the deep black that is achieved with enough pressure on the wood that it also pulls the wood back leaving the original layer elevated above the one that has been pyro-etched. I had the same feeling when I saw the rivers of the Trifid nebula. The black is such that it appears to be an abyss rushing into the depths of the nebula, causing the bright area to emerge like the edges of a cliff.

I reemphasize again in my voice notes the difference in intensity of the river in the 3 o'clock and 9 o'clock region. In the 3 o'clock region, where the four stars are, the degree of darkness of the river is extreme, while in the 9 o'clock region it is black but distinctly paler and does not contrast as much against the edges of the nebula.

Finally I look at the faint nebula around the bright star at 6 o'clock. I am struck by the shape of the nebula at 5 o'clock from the bright star. I have the feeling of seeing a kind of inverted triangular cup. That is, the nebula surrounds the bright star, but looking at 5 o'clock from the star I see an area without cloudiness to find again another fainter cloudiness, triangular in shape, already far away from the star. I highlight it with an extra image on the card.



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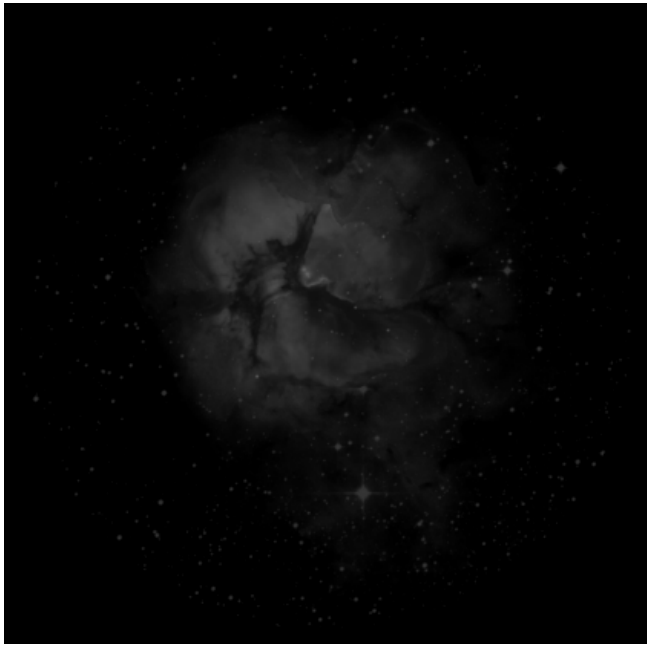

Ethos 8mm (270x - 22' - 1.7mm)

I think the view was better with the previous eyepiece. By switching to the 8mm, although I have gained in size I have also lost a percentage of light that makes the image, in general, pale.

It is also reduced in size, as the fainter areas outside the nebula have disappeared.

Anyway, this eyepiece serves me to verify everything already observed, even in the faint cloudiness surrounding the bright star at 6 o'clock I confirm the 5 o'clock zone with a pale glow and a new region of stellar dust that divides the nebula.

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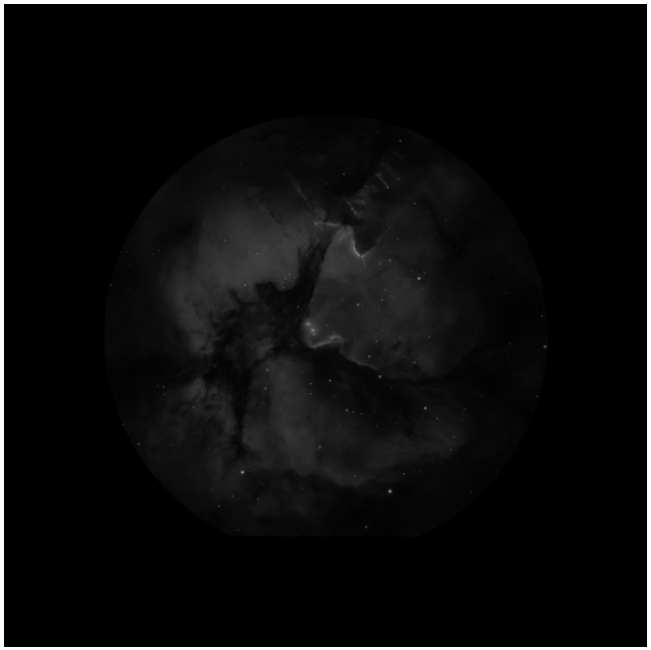

Delos 4.5mm (480x - 9' - 1mm)

It is worth going to these magnifications even though it may seem excessive.

The magnification is so high, and the apparent field so small, that the nebula is not fully visible in the eyepiece and I have to use the motors to go all the way through it.

The brightness of the nebula has been significantly reduced as well as its contrast, leaving only the brightest areas visible. But this is enough to get a different image of the nebula, or to be more precise, a more detailed image. For example, the central area of the nebula is now separated from the rest of the southern lobe by a small channel that is wide in the 3 o'clock zone but narrows as it goes deeper into the nebula and ends up joining the dark river in the opposite section.

The edges of the nebula are now impressive, they are full of inlets and protrusions, like inlets or headlands that make the river banks very irregular. In particular I pay attention to the area of the four bright stars, with the fifth star already outside the nebula in the black river itself. This area is very beautiful because of the strong contrast between the nebula and the stellar dust cloud, with also a widening of the dust cloud that splits upwards towards 12 o'clock and turns towards 9 o'clock. This area is wonderful and leaves me for several minutes stuck in the eyepiece with the faint star shining alone in the middle of the dark dust cloud.

At these magnifications I am also able to differentiate the two edges of the nebula, the edge that forms part of the lower lobe is smoother, melting away before the river of stardust, while its opposite edge, that of the lobe on the right are cliffs plummeting from a zone of brightness to a totally black area. In addition I see more individual stars on the smooth bank below, some of them again within the river of stardust. It's gorgeous, and I have a hard time imagining the nebula as a whole as I focus on specific regions.

I can't believe I'm looking at the same object I observed with the 31mm, it's as if I'm diving into the nebula and that makes it change completely. Before it was an important but faint nebula, now it is a world of different clouds with a multitude of details difficult to describe but differentiated here and there. Two different worlds without a doubt when observing the same object at low and high magnification.

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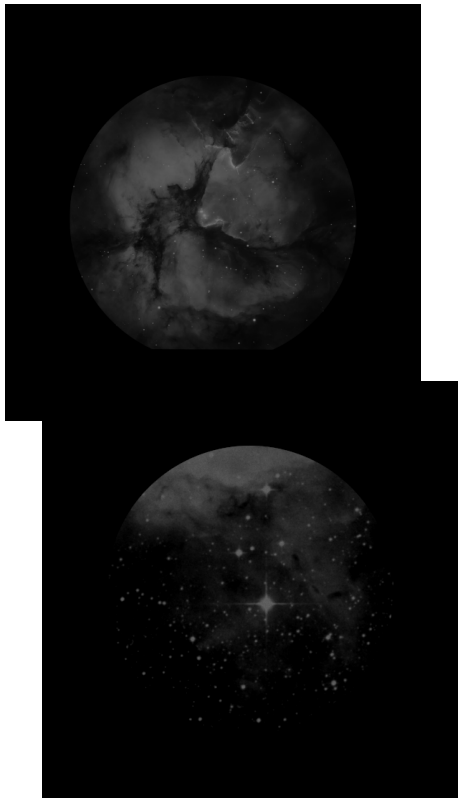

When I look at the region on the left the nebula disappears at the edge of the eyepiece without really appreciating where it ends. This region, along with the central island, is totally different from the area on the right. Here the river of stardust is narrower, with a shallower black and some patches of cloudiness here and there that I mistake for stars but identify as cloudiness as I don't see any pointillism. The central island of the nebula has two very distinct areas as well, the southern part has a similar brightness to the lobe from which it is detached but cut with a narrow black thread of stardust. However, the northern region of the island seems to be diluted, extending into the river of dust that appears clearly when contrasted with the southern edge of the northern lobe. It would even seem that the *island* extends with a pair of concentric arcs, like ripples that go into the dust river.

Finally I turn my gaze to the nebula around the star in the south of my eyepiece. I clearly distinguish how the zone of greatest brightness is at 9 and 3 o'clock from the star, appreciating no cloudiness between the star and the Trifid nebula. However, the 3 o'clock region rises to join the nebula. I also note the separation of the 5 o'clock triangular region by a black thread that I associate with another band of stellar dust in that nebula. Now everything is larger but the contrast is so low that I must spend more minutes observing to confirm every detail but there are certainly those differences in brightness with respect to the background of stars. It is very useful to perform the exercise of looking from the bright star to the Trifid and the other way around, to perceive that in that region there is nothing but stars (and no other cloudiness) as opposed to the area of the 3 o'clock where there is a pale cloudiness.