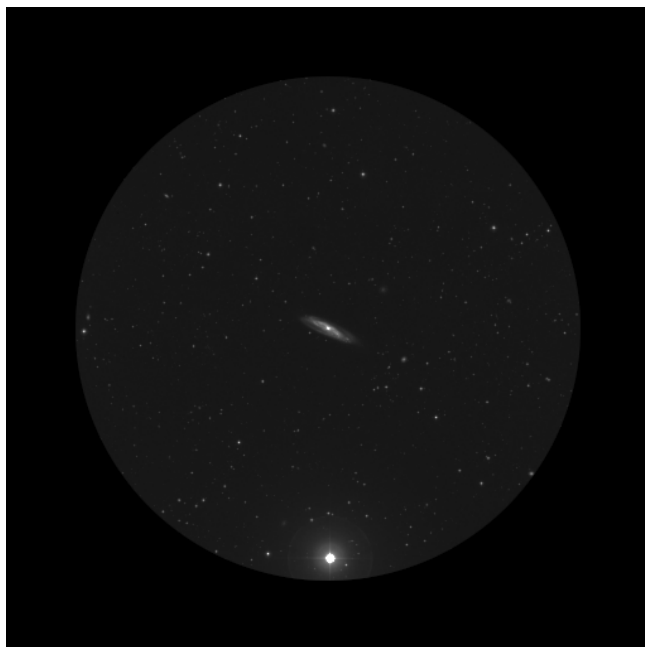


Data of the sky region at the time of the observation **SQM-L 21.5 IR -17° Temperature 15°**
Data of the night **Sun alt: -29,1° Moon alt: -37,5°**
Data of the object **Alt: 41.8° Az: 254,7°**
Telescope **Stargate 18"**

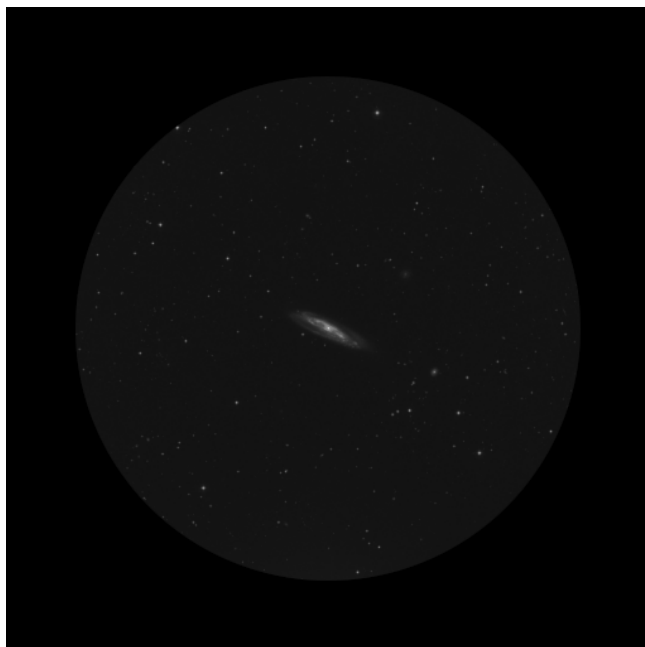


Nagler 31mm (70x - 1° 10' - 6.6mm)

At low magnification the galaxy is not very impressive. It is elongated, at first it is a little difficult to detect the nucleus but it is a matter of spending a few seconds, and begins to highlight an area of a slightly higher brightness in the central part of the galaxy. It also has a bright star at about 7 o'clock and another less bright

at 4 o'clock. Apart from the higher brightness in the central area I can not extract more detail, perhaps that the galaxy is somewhat *wide*, it is not as thin as other edge-on spiral galaxies that I have observed throughout my life.

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

Increasing the magnification is appreciated, the nucleus now appears much more punctual and with a second level of brightness different from the total length of the galaxy. In addition, the contrast with the background is greater. Regarding the different brightnesses of the galaxy what I observe is (from the outside to the inside starting from its longest axis which is horizontal), a region of very faint brightness, extensive, then a region of similar size much brighter and in the center of this region a very punctual nucleus that competes with the star that is at 7 o'clock in brightness.

The image is very suggestive because the galaxy has an important thickness and seems to be lying on the universe, not on its edge, but lying down. I don't know how to explain the difference, except for the fact that the thickness is different from other galaxies that are even more edge-on.

The main difference at this magnification is that I see a higher brightness level in the galaxy.

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

I'm very fond of this eyepiece. I don't know if it is the magnification jump itself, or the fact that the object is much more enclosed with an apparent field of 72°, but the truth is that the contrast increases in a spectacular way.

The image is even more beautiful than the previous one, the galaxy grows in width and begins to show more details. It is difficult for me to describe it because we must take into consideration that we are always talking about gray scales that are very faint, so do not wait to see it ten seconds after putting the eye in the eyepiece, please dedicate your time to it. But once you spend a few minutes observing the galaxy, you will notice that some arm structure of the galaxy is shown, it is as if this arm is surrounding it. That is, the galaxy at first sight, with these magnifications, shows a structure of three levels of brightness already explained above, however, below the central bright zone it seems that there is a band of dust and then an arm that rotates to the end of the galaxy. I

am willing to put more magnification to confirm this impression. But already at 154x, the image of the galaxy has changed completely. It has gone from being a somewhat dull object at low magnifications, with very little variation in brightness between the nucleus and the area of the arms to having three levels of brightness and on top of that a very suggestive arm structure. The width of the galaxy is also striking because it allows us to see these details.

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

How wonderful to be able to switch to this eyepiece. Everything I have seen before is confirmed. But I go further, I would say that the galaxy appears to my imagination as a tiny '*Andromeda galaxy*'. That image that one has, in dark skies of the Andromeda galaxy where the nucleus is enclosed in a very bright cloud, to then end up surrounded by an arm in which you can clearly distinguish the band of dust that is shown as a darker area than the rest of the galaxy but without being as dark as the sky background. That is the very same image I am seeing but, however, at a much smaller size. It is simply spectacular. I tell myself that it is even better than any photograph because I am seeing it live and direct through my own eye. The sense of reality when looking through the eyepiece is overwhelming and makes you not want to take your eye away from it, enjoying every second you spend looking.

I can't stop observing in detail that arm that I sense between the point nucleus, its brighter halo surrounding it and then the 7 o'clock star. It is there, as I thought I saw it in the previous eyepiece and now I observe it more clearly with the passing of the minutes in the eyepiece.

It is hard to follow it, I am not able to see how it *turns* at the end of the galaxy because it is confused with the faint glow at the end of it, but, although my eyesight does not confirm it, I have the feeling that my mind imagines it and completes the picture of this beautiful miniature Andromeda galaxy.

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

Although the galaxy continues to grow in size, the passage to higher magnifications also entails a loss of the faintest regions and therefore the zone farthest from the nucleus is blurred.

However, a new surprise appears that I will confirm with the following magnifications. The point nucleus seems to be ‘submerged’ in the galaxy. Let me explain better. The galaxy is still composed of these three different brightness levels with a structure of arms that surrounds it especially in its lower zone as seen in my telescope (between the galaxy and the bright star of the 7 o'clock). However, the two innermost brightnesses now appear much more complex, as the core, still point-like though a bit fuzzier, appears as if separated from the

bright halo by a pair of regions on either side (at 9 o'clock and 3 o'clock) darker than the core itself and the bright halo. This makes it look like the point nucleus sinks *inside* the galaxy.

It never ceases to amaze me the details that one is able to capture in an object with time and magnification, it is really a joy.

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

Buff what a CRAZY thing to do! Going down to the 4.5mm of the Delos is crazy really. The mount is not tracking well for me and complicates observing because I have to be continually correcting the image but I don't mind, the seconds I get of stability more than makes up for it.

Focusing is critical at the moment and I would like to have a better focuser, although at least the two speeds of the focuser help to try to get the best possible image of the galaxy. Fortunately, the 7 o'clock star serves as a reference for me and I use it to get the sharpest image possible. Which is not much, because perhaps *seeing* is not spectacular this night, and also the galaxy is already somewhat low on the horizon. But with all this against it, it is worth it to go up to the magnifications given by the 4.5mm eyepiece. I can practically only see the central part of the galaxy, but it is a pleasure. I confirm that the nucleus is *delimited* by two darker regions that make the nucleus *sink* into the galaxy and I also confirm that, below this bright region, there is an arm with a gap between it and the bright region. Now the arm does not blend with

the faint region but simply disappears at the end at 9 o'clock, but the image is very surprising. I do not believe that I am seeing the same galaxy that I saw with the 31mm as elongated, not totally edge-on but with a considerable thickness but with a nucleus that almost did not stand out from the rest of the brightness of the galaxy, a little bland at first glance.

Now it is a complex object, with a point nucleus, with less bright areas in its luminous halo surrounding the nucleus and an arm that starts at 3 o'clock and passes below the region where the nucleus of the galaxy itself is, separating from it until it disappears. And what is most impressive, no doubt at these magnifications, is the sensation of seeing a nucleus '*submerged*' in the interior of a galaxy, like a diamond (although now it is not precise because I do not get such a good focus) embedded in the bottom of a white cotton cushion. It is really complex to describe and to observe, but it is worth going that far.