Data of the sky region at the time of the observation ....**SQM-L 21.20 IR +0.7° Temperature 20°**

Data of the night ....**Sun alt: -24.0° Moon alt: -22.2°**

Data of the object...**Alt: 28.8° Az: 176.3°**

Telescope ....**Stargate 18"**

Nagler 31mm (70x - 1° 10' - 6.6mm)

The star field in which M80 is located is a bit poor in stars, as those observed have a very faint magnitude. I describe that there are four or five stars of similar magnitude, highlighting one particularly close to the side of which the object is perfectly visible, making a nice pair, star and cluster.

The relative size of M80 in the 31mm eyepiece is small, I estimate that it occupies about a tenth of the entire field. But this makes it much more compact than other globular clusters in the Messier catalogue nearby.

Its shape is quite circular, with two brightness levels as is normal for globular clusters. Due to its small size it appears quite uniform with a nice balance between the size of the core and the outer halo.

Regarding relevant details I highlight in my notes that the stars in the outer halo can be easily resolved but I do not see any in the core. The stars in the outer halo would be counted by dozens. However, without resolving any stars in the core as I described before, there is the typical non-uniform lumpy shape of a surface made up of thousands of dots.

Its colour is a soft silvery colour with no other details.

Although the image looks satisfactory, it is not as impressive as other similar objects in the catalogue. At least at this magnification.

In short, M80 is nice to look at but does not stand out very much.

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Telescope ....**Stargate 18"**
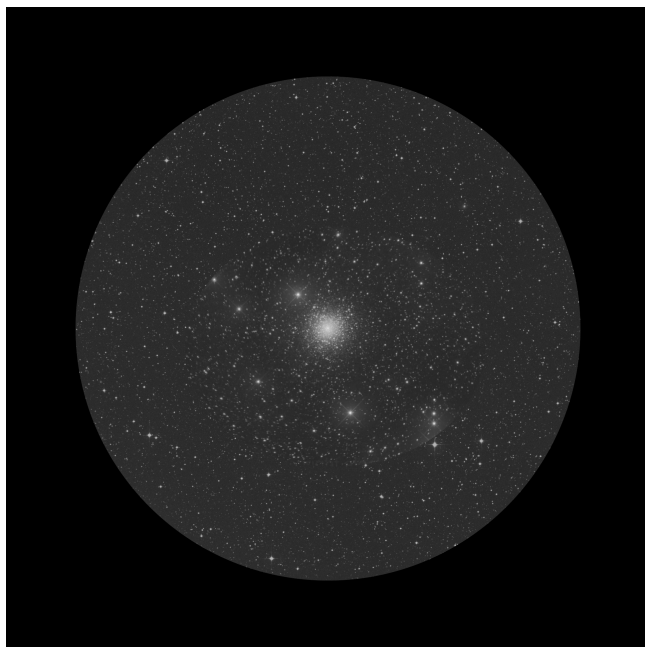

Nagler 22mm (98x - 50' - 4.7mm)

With the 22mm the object has not gained much detail. Perhaps now I can resolve the stars in the outer halo much better and therefore I pay more attention to their different magnitudes. There are some of them that form an outer triangle that makes me doubt whether they even belong to the cluster, as their brightness seems to be much higher than the rest of their companions.

I can't identify any colour in all the stars, I see them all with a whitish/bluish glow.

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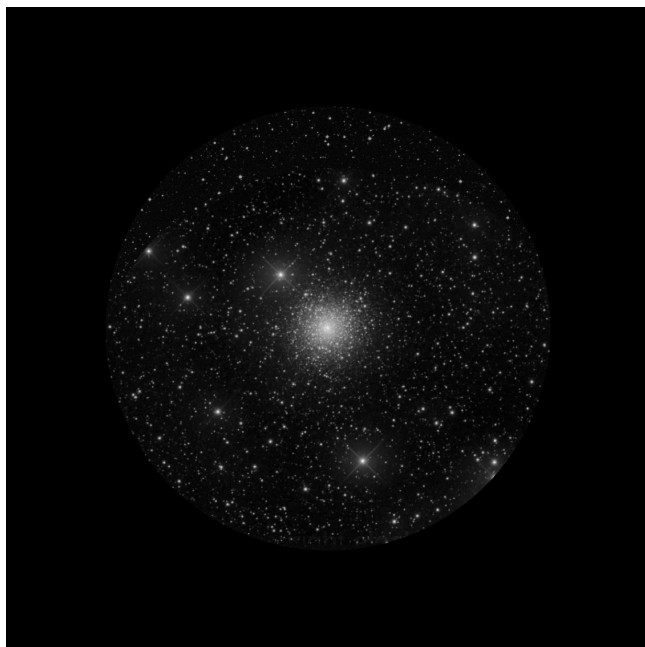
Delos 14mm (154x - 28' - 3mm)

With the 14mm the object starts to look more interesting. Its relative size has grown to almost a third of the eyepiece.

The main difference with the previous eyepieces is that the outer halo seems a little larger and the core more compact, and the stars are much more easily resolved. Now I can easily count up to fifteen of them and I am noticing clusters here and there.

Undoubtedly the most beautiful part is the outermost part of the outer halo, this is where you can count the most individual stars and the minutes pass peacefully trying to discover some special feature, but I think that the stars are distributed in such a chaotic and random way that I don't see any pattern or asterism worthy of being referenced.

The core seems to have become even more compacted and its brightness is even higher if you compare it with the outer halo, it seems that the brightness contrast is higher than in previous eyepieces. If before I imagined the core as a third of the object, now I think it would be less than a fifth, being mostly a random ball of stars in a large outer halo. All this taking into account that the object still appears small to the current view.

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Telescope ....**Stargate 18"**
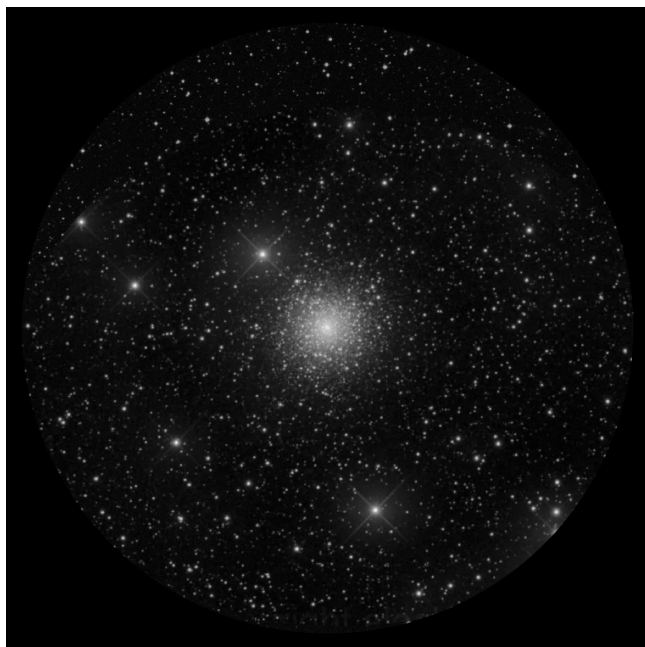
Ethos 10mm (216x - 27' - 2.1mm)

The object is surprising me because it seems that with the scaling of the eyepieces it is changing little by little. It is not a radical change but small differences that encourage you to continue observing it with a new magnification hoping to find some new detail that you had not appreciated before.

For example, now the cluster no longer looks uniform to me. Quite the opposite. The number of stars that can be resolved almost up to the innermost part of the cluster means that, although no patterns can be identified due to the chaotic distribution, clearly differentiated areas can be seen in the cluster.

It is a marvel to strain one's eyes as far as the individual stars one is able to resolve, reaching almost to the limits of the innermost part of the core, which still resists showing any detail and looks like a very bright cotton ball, although not really uniform but grainy.

The stars are also distinguished with a different magnitude. Although the background is not the same throughout the cluster, or perhaps because of it, the stars further in the cluster appear brighter than those in the outer halo. I can easily count between 25 and 30 randomly distributed stars, and there are probably many more that can be observed if one has the time and patience.

But I'm left with the overall impression that I'm liking it quite a lot. I can't wait to jump to the next eyepiece.

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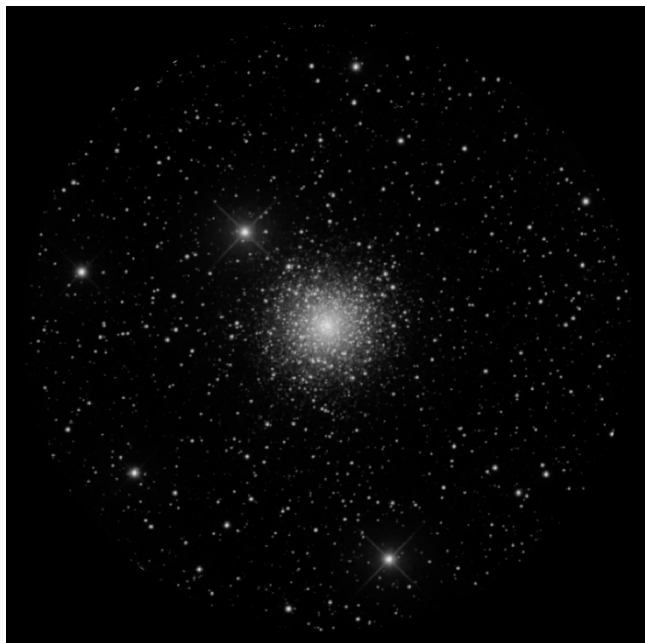

Ethos 8mm (270x - 22' - 1.7mm)

The best image of M80 I have got so far. It is magnificent how a cluster that at low magnifications was so lacking in detail and with such an unattractive first impression is showing itself with a captivating beauty.

Now the object is complex, very complex. The number of stars that are resolved and their groupings make me spend several minutes trying to find the right words to describe it. I would say that the fact of seeing several stars of similar magnitudes drawing a path reminds me of a kind of rivers of stars flowing from the inner halo. Some rivers are longer, some more curved, some more horizontal, so it is difficult to describe in a few words.

The contrast between the inner part of the cluster and the magnificent outer halo is beautiful. It reminds me of other clusters (such as M5) but much smaller.

The outer halo is what strikes me the most, perhaps because this is where the stars are best resolved and it has gone from being a faint blur with a few stars visible with the 31mm to a very large region of the cluster with complex structures and dozens and dozens of individual stars.

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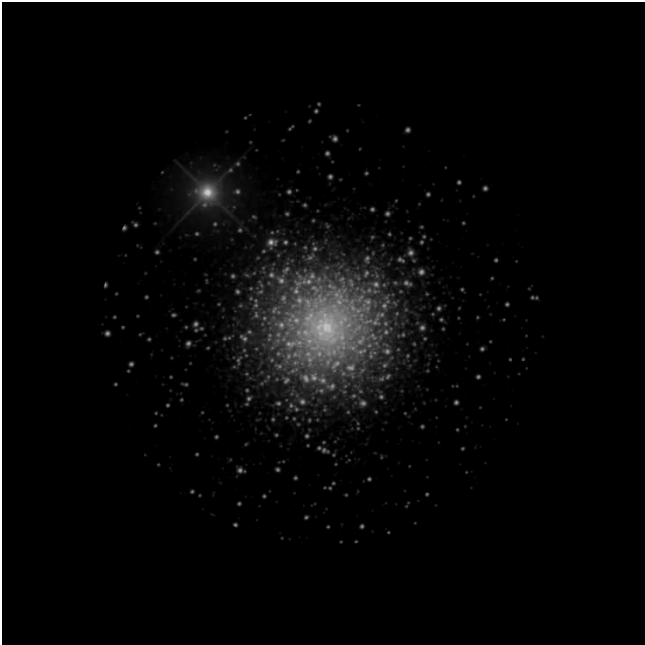
Delos 4.5mm (480x - 9' - 1mm)

Although with the 4.5mm I get a huge object size, occupying almost 50% of the eyepiece field, the seeing has deteriorated a bit and that, together with the difficulty to focus it, leads me to a picture that is not totally sharp.

So I can't extract more details than those already seen in previous eyepieces. I can imagine what this object must look like in a sky with a much darker sky than the one I have right now, and with a much better seeing. It must be spectacular, as it really looks like a very interesting globular cluster whose distance makes it so small.

It is worth the magnification in M80.