

## Two Messier spirals in Coma Berenices

*Telescope:* **ATC82/1670** (oil doublet)

*Eyepieces:*

**ATC40PEX** - ATC Plössl 40 (42×, 86')

**A-16** - Zeiss ZAO-I 16 (104×, 27')

*Time:* 2019/04/21 19:30-20:25UT

*Location:* Říčany

*Weather:* Good transparency with slight haze.

*Mount:* Zeiss Ib

*Accessories:* SkyWatcher 2" diagonal



This was a short session with just one goal to observe and draw a pair of Messier's galaxies M98 and M99 in Coma Berenices. I'm slowly working on a project of revisiting and sketching all objects in Messier's catalogue. The interest was sparkled recently by the wonderful views of brighter open clusters provided by my small refractors, in particular by my recent addition 60 mm refractor Takahashi FOA-60Q.

In the case of M98 and M99, my logbook contained only short old reports from 2011. This was a good chance to explore the two galaxies in more detail. Therefore I decided to take out my larger 82 mm refractor.

To have an unbiased record, I applied my usual practice and I did not look at the M98 and M99 images before going out. I just prepared in *Cartes du Ciel* a template map with brighter stars to make the drawing faster and more precise. In this way, I could concentrate on galaxies, which was a wise decision. There was definitely plenty to look at.

The two galaxies barely fitted the field of view of my only 2" eyepiece, 40 mm ATC Plössl, which was providing 86' FOV in this 1680 mm long refractor. I sketched a slightly larger area to obtain esthetically more pleasing result, see the result on next page.

Both galaxies were easily recognizable at low power view at 42×. **NGC 4192 (M98)** ( $9.8' \times 2.8'$ ,  $V=10.0$ ,  $PA155^\circ$ ) was fairly elongated misty glow. Estimated size from the sketch was  $11' \times 2'$ . Larger power of 104× revealed a brighter rounded core. The galaxy's long western edge was brighter than the eastern side. I also noticed quite faint star near

the galaxy's northern tip. Later at home, I found out that it was of visual magnitude  $V = 13.08$  (UCAC4 catalog).

Galaxy **NGC 4254 (M99)** ( $5.4' \times 4.7'$ ,  $V=9.7$ ) was visually more intriguing. The rounded misty patch was already mottling at 42× with a hint of a tip on northern side. Larger magnification of 104× revealed that the tip is attached to the main body from the west side. This was not an obvious feature. I spent at eyepiece considerable amount of time before I made my mind. There were two more brighter spots south of rounded core. There was a very faint star near one spot. The size of M99 estimated from the drawing is around  $4' \times 3'$ .

It is not usual for me to see such level of detail on galaxies from our light polluted backyard with 82 mm refractor. Of course, I eagerly consulted my observations with images. It looks like I catch indeed hints of two arms. The faint star was there as well. It was listed as  $V = 13.52$  in UCAC4 catalog. It is one of the faintest stars that I recorded with the 82 mm refractor. There was no obvious brightening on images in this area. It must had been probably a trick played to my (left) eye by an interference of faint star with the galaxy core.

I also compared my drawing with historical ones. Very impressive is Rosse's sketch of M99. Steinecke mentions in his excellent book *Observing and Cataloguing Nebulae and Star Clusters* that M99 was Rosse's third object with observed spiral structure, right after M51 and NGC 2903.

**Alexander Kupčo**

# M98 + M99

ATC82/1670

42x (ATC40PEX)

FOV: 125'



FOV: 27'



104x (A-16)

FOV: 27'



104x (A-16)

2019/04/21 19:30-20:25UT

Říčany, Tr. 4/5, Alexander Kupčo