

# Magical midsummer night

*Telescope:* **C63** (Zeiss C63/840 mm)

*Eyepieces:*

**ATC40** - ATC K40,  $f=40\text{mm}$ , ( $21\times$ ,  $2^\circ$ )

**H-25** - Zeiss H-25,  $f=25\text{mm}$ , ( $34\times$ ,  $90'$ )

**O-12.5** - Zeiss O-12.5,  $f=12.5\text{mm}$ , ( $67\times$ ,  $37'$ )

**O-10** - Zeiss O-10,  $f=10\text{mm}$ , ( $84\times$ ,  $30'$ )

**ATC8** - ATC f8E,  $f=8\text{mm}$ , ( $105\times$ ,  $38'$ )

*Time:* 2012/06/22 20:10-23:50UT

*Location:* Ondřejov

*Weather:* Exceptionally clear sky but no astronomical night. Very good seeing.

*Mount:* Alt-az. Astro-Tech Voyager

*Accessories:* Direct look, no zenithal accessories

After very good experience with AS80/1200, I started looking for its siblings. On Friday, my friend gave me his old tube with Zeiss C63/840 lens. A telescope he was using 30 years ago as a kid. OTA was very simple, just a plastic tube with basic 0.965" focuser and no diagonal.

I was lucky, the Friday night was also one of the best we had here in the center of Europe. This slightly compensated for brighter sky (no astronomical night around solstice here in Prague). On top of it I went to my observatory which provides darker skies than my small town backyard.

I took with me CZJ H-25, O-12.5, O-10, and ATC8 eyepieces. I forgot O-6 at home which was a shame at the end. I also took large 44mm threaded ATC40 Kellner. One could hold it in hand and this eyepiece was providing nice "wide" views at power of 21x.

Walking through the meadow toward the observatory, I noticed Moon crescent that was just setting down. I could not resist and I setup the telescope immediately. Every minute counts in such moments. Of course, the seeing was bad that low on horizon. But the view at  $34\times$  (H-25) had very nice silver patina - the same when I observe the Moon through AS80/1200 and H-40.

Then "serious" observation started. The first target was **Saturn**. I was increasing



magnification step by step and I was logging down what I could see. At  $84\times$ , I could see all basic features: two bright rings separated by the hints of Cassini division, ring "shadow" on planet (as one line, not two separate lines as in my larger telescopes), north equatorial belt, and shadow of planet on the ring. Very nice. Unfortunately, the largest magnification I had in hand was just  $105\times$  and the scope was bagging for more.

Star test showed perfect optics. I could not trace a hint of any aberration - of course, except a colour one. Amazing, better than my AS80/1200 which is showing slight undercorrection.

Waiting for darker skies, I spent a lot of time with doubles. I must say, once you crack them, the smaller the scope nicer the view. Probably because of nice large Airy

discs and steady diffraction rings. I had no problem with: Izar,  $\alpha$  Her,  $\varepsilon$  Lyr,  $\delta$  Ser, and  $\nu$  Sco (only 3 stars). I saw some prolongation of  $\xi$  UMa but I would need more magnification to be sure of what I saw.

I then checked **NGC 5194 (M51)** (8.5v,  $11' \times 7.8'$ , PA163°), to see how galaxies look through this small scope. At 34 $\times$ , it was an obvious pair with nice large round halo around the stellar nucleus of M51. **NGC 5195** (10.2v,  $5.8' \times 4.6'$ , PA79°) was very small but bright - almost stellar with small halo. No traces of arms at higher magnification, but the sky was still quite bright.

I spent big portion of time on globulars. I know it sounds crazy, but still the brightest ones were showing at least some stars in the halo and I could see some interesting features. I could detect at 84 $\times$  the dotted halo of **NGC 6205 (M13)** (5.8v, 17') with several tens of stars. Even the center was strongly mottled with several starlike brightenings. I noticed several stars and tip in **NGC 5904 (M5)** (5.7v, 23') following the NE-E edge of the core. **NGC 6121 (M4)** was already mottled at 34 $\times$ . I noticed slightly elongated core in north-south direction at 84 $\times$ . In the outer halo, there were also several tens of stars. Some of them just at the limit of visibility with direct vision! In case of **NGC 6266 (M62)** (6.4v, 14'), I noticed some brightening in NE part of halo. Even faint fuzzies, like **NGC 6144** (9.0v, 9.3'), were reasonably well visible. All and all surprisingly not bad for such small diameter.

Another interesting part of observation was browsing Milky Way around the galactic center. After few hours of observation with straight tube at high altitudes, it was quite necessary. I have never looked at this part of sky. It was something new. I started from M8 and I was following the chain of clusters plotted in Pocket Sky Atlas down to  $\gamma$  Sge. I was not changing magnification and I stayed all the time at 34 $\times$ . Telementor was providing me with one of the best views of Laguna, **NGC 6533 (M8)**, that I can remember. The nebulosity was so intense! In the same field of view, I have noticed open

cluster **NGC 6531 (M21)** (5.9v, 15').

Surprisingly, I had little problems with most of the clusters in the chain. All were very beautiful and delicate at 34 $\times$ . **NGC 6544** (7.5v, 8.9') was quite bright slightly peppered silver misty cloud with medium central condensation. **NGC 6553** (8.3v, 9.2') was just a small rounded spot, quite intense with averted vision. Globular cluster **NGC 6540** (10v, 11') looked more like an open cluster to me. It was prolonged in E-W direction with few stars sparkling on its edge. At that time of observation I had no idea, that this is somehow controversial object. Most of the catalogues are listing the cluster at visual magnitude of 14 which would put such object well outside of reach of 63mm telescope. Unfortunately I was not paying special attention to the object. Later on, when I was trying to see this object from the same place through larger 110mm refractor, I had indeed difficulties of seeing it. And I can't imagine that such thing could be spotted at 34 $\times$  in 63mm. Maybe, the night was simply just special with exceptional transparency as would the visibility of diffuse nebulae suggest. That low at horizon it counts even more. Next stop was nearby open cluster **NGC 6520** (7.6v, 6') bordered on western edge by dark nebula **B86** (5'). Finally, I ended up at **NGC 6522** (8.3v, 5.6'). It was just a silverish milky spot slightly elongated in north-south direction. I could not see its nearby companion **NGC 6528** (9.6v, 3.7') at 34 $\times$ . Later at home, I have found out that this is very interesting region of the sky. There is actually small, about the size of Moon, relatively clear window (Baade's Window) free of gas and dust that allows us to see the objects near the galactic center. We see NGC 6522 and NGC 6528 through this window. The two clusters are actually only about 2000 ly away from it. On top of that, NGC 6522 is the oldest known globular cluster in our Galaxy.

I have spent last part of the night with the "wide-field" eyepiece, ATC 40mm Kellner which was providing magnification of 21 $\times$  and 2 degrees field of view. I had to

hold it in my hands, there was no way how to attach it to the focuser. It would not even reach the focus. But still, the view of diffuse nebula North America **NGC 7000** ( $100' \times 60'$ ) was fabulous. I don't remember seeing such nice silky-like nebulosity. On the way from Deneb to NGC 7000, I easily noticed another nebular patch. It took me few seconds to realize that this is the head of Pelican nebula **IC 5070** ( $80'$ ). This nebula is kind of enigma for me. I saw it for the first and only time last year in 120/600 refractor from the same place. But I was trying to spot it for several years. Here, it was quite obvious even without UHC filter.

I made also one "*discovery*". When exploring the region around  $\gamma$  Cyg, I noticed bright and quite dense nebular patch with hints of stars. It was clear that it is open cluster. However, there was nothing plotted in its location in Pocket Sky Atlas. Luckily, I had Uranometria 2000.0 in my bag and I quickly identified it as open cluster **Cr421** ( $10.1v$ ,  $6'$ ). I'm surprised it went unnoticed at NGC/IC times. The cluster was far more obvious than some NGC ones.

Well, four hours has run quickly. I even did not feel an urge to pick-up Vixen 130ED SS from the corner and to switch to this bigger scope, which was also my new addition to my stable. Sounds silly as this refractor has about the same focal length as C63/840 lens but it collects four times more photons. But I did not want to spoil the magic with which the little telescope was enchanting the midsummer night.

**Alexander Kupčo**