

# Snake River

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

*Eyepieces:*

**ATC53P** - ATC 53P,  $f=53\text{mm}$ , ( $16\times$ ,  $2.4^\circ$ )

**TMB16** - TMB Monocentric 16,  $f=16\text{mm}$ , ( $53\times$ ,  $35'$ )

**Del10** - TeleVue Delos 10,  $f=10\text{mm}$ , ( $84\times$ ,  $52'$ )

**XO5** - Pentax XO5,  $f=5.1\text{mm}$ , ( $164\times$ ,  $16'$ )

*Time:* 2014/07/04 20:30-22:30UT

*Location:* Říčany

*Weather:* Good transparency with excellent seeing.

*Accessories:* Baader 1.25" zenith prism

I like unexpected turns during my observing sessions. That is why I don't strictly prepare a full observing program. Usually I have in mind one or two objects for a night and the rest is pretty random based on my current mood and atmospheric conditions.

For some reason, the most unexpected discoveries are happening when I'm using my smallest refractor, Telementor. It could have been just a bias, as this 63mm refractor is my mostly used telescope. But I like to think it is also, at least partially, due to a different perspective that the small lens provides with respect to its larger brothers.

This night, the different perspective was enhanced as I was using my recently acquired long focal 53mm Plössl. Small optical workshop ATC put for me this wonderful Plössl into a body with M44 thread, system used by Zeiss. Normally, they produce the eyepiece in standard 2-inch interface with more field of view not restricted to the 35mm field stop. Still, even in the M44 version, the eyepiece provides slightly more field of view than 40mm ATC Kellner that I'm using regularly with Telementor. This small 40% increase of the field of view area (from  $2.0^\circ$  to  $2.4^\circ$ ) played its role this evening.

Conditions were rather good, well for a small town backyard with street and railways lamps everywhere. In addition, I have noticed some NLC clouds towards the end

of the session. I decided to start with double stars as the sky was not fully dark yet.

I was teasing the Telementor with a hard pair for 63mm lens,  $\pi$  **Aql** ( $6.3+6.9$ ,  $1.4''$ ). Its optics fears nothing, and I saw at  $165\times$  nice tiny tail at  $PA\sim 110^\circ$  revealing the double nature of the star. Of course, for a star well below Dawes limit, I could not hope to see the fainter companion as a separate star.

Next stop was splendid colourful pair  $\alpha$  **Her** ( $3.5+5.4$ ,  $4.8''$ ). No problem with a clean split at  $84\times$ , and even at  $53\times$ , though the smaller power required quite concentrated effort. Main component was gold, the fainter companion was mostly white with small light blue tint.

Still the sky was not fully dark, and I decided to test the new wide-field eyepiece on rich star fields. The first candidate that came to my mind was wide pair  $\mathbf{o}_{12}$  **Cyg**. The eyepiece was providing very nice colour contrast between the bright stars and very rich field with plentiful brighter stars. I have noticed grouping of six medium bright stars north-east from  $\mathbf{o}_1$  **Cyg**. If the group was placed outside of the Milky Way, I'm sure it would have been quite striking. Nothing was plotted in its position neither in Uranometria 2000.0 (*U2000*) neither in Interstellarum Deep Sky Atlas (*DSA*).

Next group noticed in the field was asterism **O'Meara 3** (Alessi J20053+4732) introduced in excellent O'Meara's book *Secret*

Deep from his Deep Sky Companions series. It looked as a suspicious hazy spot with 6 stars. It was standing out of the star background very well with averted visions. Just about one fourth of the eyepiece field of view (30 – 40') in the NNE direction, I noticed another tiny suspicious grouping of 4 stars resembling an arrow elongated in the north-south direction. Again, nothing was plotted in this position in *U2000*, neither in *DSA*.

Then the events took unexpected turn. Still I had no firm plan what to look at next, except checking another wide pair  $\omega_{12}$  Cyg. While observing the  $o_{12}$  field, the hand driven Zeiss T-mount with tangential slow motions reached its limit. That means to turn the knob all the way the other direction, then loose the movement in the right accession and move back to the target. Doing that I run on another beautiful starry field with chain of brighter stars curling from west to the east like a river with deep meanders, so I call it **Snake river**.

The asterism was just fitting the field of view of the 53mm eyepiece. It was starting on the west with bright blue variable star V2140 Cyg, and then running through another bright blue star 59 Cyg towards orange 63 Cygni. Here the chain was forking into two making small rounded lake. On the eastern-most side, the lake was crowned by wide bright pair. Further on the east, I have noticed dark 40' large oval spot (PA $\sim$  0°) without stars. I have quickly identified it using ISDA as dark nebula **B361** (20').

Quick look into ISDA showed in the area many open cluster, asterisms, one reflection nebula and one planetary nebula. I decided to check some of them. From numerous open clusters and asterism, I could not see anything in place of NGC 7011, Calvet 1, and IC 1369 (V8.8, 5'). There was some small misty spot with one star blinking in and out with averted vision at 84 $\times$  in the place of asterism **Kronberger 14**.

Also, there was no obvious large open cluster at 16 $\times$  in the place of **NGC 6991**. But NW of bright star V2140 Cyg, I have noticed suspicious grouping of fainter equally bright stars located in the arc with

diameter of about 15'. The two atlases, *U2000* and *ISDA*, were showing this cluster differently. While there is one large cluster in *U2000*, *ISDA* was showing two small ones NGC 6991a and NGC 6991b. There was nothing in the place of NGC 6991a and only very inconspicuous denser spot with slightly brighter background. NGC/IC Project web pages contains interesting historical notes about the discrepancy between William and John Herschel observations of this cluster.

NGC 6991 also contains reflection nebula **IC 5076** (9'  $\times$  7') located just east of V2410 Cygni. But I have observed no sign of its presence at 53 $\times$  and 84 $\times$ .

The only suitable target for my small telescope in the area of the Snake River was planetary nebula **NGC 7026** (V10.9, 27"  $\times$  11"). It looked at 84 $\times$  like an interesting wide double star at PA $\sim$  260°, with the fainter component resembling with concentrated vision a tiny disc. Higher power of 165 $\times$  revealed medium bright rounded core (without any hint of ring structure) surrounded with faint halo which was stretching to about two-thirds of the distance to the nearby bright star.

The night was not clearly the best one as I could not see even the open cluster Cr 428 located in North America Nebula, a target that can the 63mm refractor show clearly under dark skies. So I checked the bright pair  $\omega_{12}$  Cyg and call it a night. The star field around was not so interesting as in case of  $o_{12}$  Cyg, but still it was quite pleasing. Also the bright stars were not showing the nice colour contrast as  $o_{12}$  Cyg. But I managed to see at least some colouring as  $\omega_1$  was clearly white,  $\omega_2$  slightly orange and the main component of nearby wide double S755 light blue.

According to my notes, I have already observed the area around the Snake River before in Telementor. In particular, the dark nebula B361. However I somehow missed the beauty of the field. I like to think that the different perspective and wider field of view of my new eyepiece helped me to discover it.

**Alexander Kupčo**