

Dicoverry night - LeDrew 1

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

Eyepieces:

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

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

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

Time: 2013/09/28 19:00-21:40UT

Location: Říčany

Weather: Quite good sky with just a small haze.

Accessories: Baader 1.25" zenithal prism

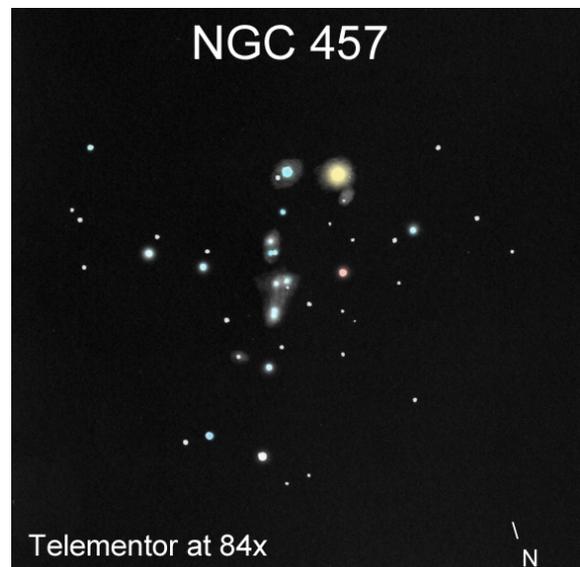
In the beginning, it looked like another ordinary night. The sky was quite clear but nothing special. As usual, I hadn't too many plans. I wanted to check visibility of star cloud NGC 206 in M31 in small 63mm refractor. And I wanted also to gain more experience with 10mm Delos, an eyepiece that I aquired just recently. At the end it turn out to be quite an exciting evening.

I started with visual estimate of brightness of **Nova Del 2013**. I have found it to be around $V = 8.9$.

After that, I jumped to galaxy **NGC 404** (10.2_v , $3.5' \times 3.5'$). It is a good test of atmospheric transparency as any haze would increase the halo around Mirach and made the galaxy to disappear in small telescopes. It was relatively an easy sign at $84\times$. The galaxy was slightly elongated in east-west direction with some very vague hints of stellar center. The galaxy's silver-like surface was in beautiful contrast with deep orange color of Mirach.

Encouraged by the success, I decided to check visibility of star cloud **NGC 206** (12.8_v , $4.2'$) in 63mm refractor. Being equipped with hand made detailed map, I could locate exactly the expected position of the object. Indeed, from time to time I detected at $84\times$ some misty very faint spot. However, it was happening so rarely that I was not able to localize it properly and to confirm its position.

Next target, open cluster **NGC 457**



(6.4_v , $13'$), was far more relaxing. I had been sketching this wonderful group just two days ago. I decided to repeat the sketch under the better sky. I was also paying more attention to the colors of stars. The bright star φ Cas was yellowish in the nice contrast with nearby bluish star. Most of the brighter members of NGC 457 were bluish as well except for one star south of φ Cas. This star was showing a weak reddish tint.

NGC 752 (5.7_v , $50'$) was at $21\times$ a lovely, rich cluster of about 40-50 brighter stars scattered on $40'$ area. The bright stars were forming a pattern resembling a running fountain, or in more prosaic way a number 3. In the place of blast tube, there was a trio of stars with a nice color contrast.

The brightest one was yellowish while the second star had bluish tint. The third one was wierd, its color was changing in time between red and blue. This cluster cought me by surprise. I was already observing it before several times but it did not impress me. I do not know why but this time it was very pleasent view. Or may be, my taste had evolved over time.

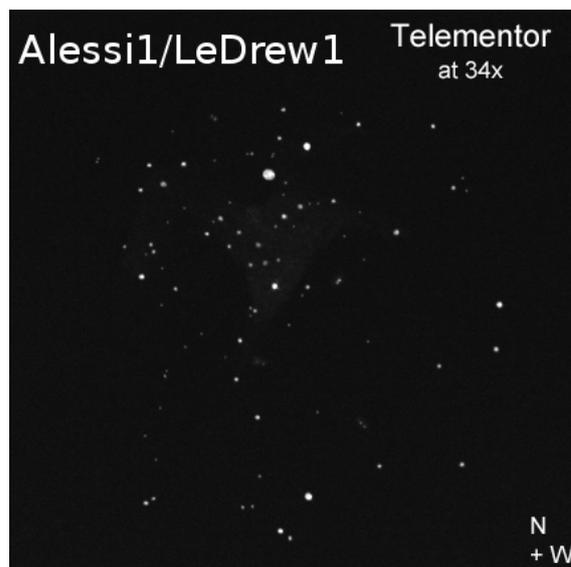
Then I switched to galaxies. **NGC 772** (10.4v, $7.2' \times 4.3'$, PA 130°) was at $53\times$ dim, almost rounded misty spot. It practically disappeared at $84\times$. Galaxy **NGC 628 (M74)** (9.5v, $11' \times 10'$, PA 25°) was very dim at power of $21\times$. It was quite large circular misty area with diameter around $8' - 10'$.

I'm not really sure that I saw galaxy **NGC 660** (11.4v, $8.3' \times 3.2'$, PA 170°). There was something popping in for short moments with averted vision at $53\times$ and $84\times$ but I could not properly localize it to confirm the observation. The misty spot was elongated roughly in north-south direction in agreement with real orientation.

Well known edge-on galaxy **NGC 891** (10.0v, $13.5' \times 2.5'$, PA 22°) was clearly visible at $53\times$ in short moments with averted vision as a thin line long about $9' - 12'$. Higher magnification of $84\times$ showed just central part which was exhibiting some small bulk.

Then I wanted to investigate two satellites of Great Galaxy in Andromeda: NGC 147 and NGC 185. My starting point was star *o* Cas. About two degrees NE, I noticed quite distinct group of stars that was standing out well above the starry background. It looked to me like an obvious open cluster. However, nothing was plotted in *Uranometria 2000.0* in that position.

I felt quite excited because I knew that I could have run on a new discovery. The excitation was rised even more at home as there was nothing plotted in *Cartes du Ciel* as well. Finally, with the help of databaze *Simbad* I learnt that this object is known. Not for a long time, Alessi and his colleagues identified this group of stars in 2001 as a posible candidate for open cluster by analyzing proper motions of stars from *Tycho-*



2 catalog. Later on I have learnt that the cluster was actually discovered visually even before that. As Glenn LeDrew wrote me, he run on this cluster in 1999 with his binocular 10×50 while he was doing the very same thing as me - looking for galaxies NGC 147 and NGC 185.

As for the two galaxies, **NGC 185** (9.3v, $12' \times 10'$, PA 35°) was with averted vision at $21\times$ relatively well visible oval misty spot long about $7'$ and with PA $\sim 45^\circ$. The galaxy was even more obvious at $53\times$ and was showing gradual central condensation. I could not locate **NGC 147** (9.6v, $13' \times 8'$, PA 25°), I guess this one requires darker skies. The last stop was galaxy **NGC 278** (11.5v, $2.1' \times 2.0'$) but I too failed to see it.

This September night will stay in my memory. I have already *discovered* several open clusters in past. But these were just not plotted in the atlas that I had with me in the field, usually *Pocket Sky Atlas* which I use heavily. Of course, with its 2000+ DSO objects, it is far from being complete. Every time, I quickly identified my new findings by looking into *Uranometria*. However this was my first *discovery* for which even the detailed and comprehensive *Uranometria* failed. I hope, one day I will run into something really new.

Alexander Kupčo