



Sunset Astronomical Society

The Sunset Gazette

Serving the Tri-Cities since 1975

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May 2015

Meeting information:

Meetings are now at the Delta Planetarium, Bay City. The meetings will usually be on the 2nd Saturday of each month at 6:00 PM. Watch the newsletter for changes in dates and times. Membership is not required to participate in meetings and activities. See last Page for this month's meeting site.

Membership

Information:

Our club has switched to e-mailing our newsletters. For those wishing to receive a hard copy mailed an additional dues of \$10.00 per year is required.

Membership Rates:

5\$ per Year (Individual)

10\$ per Year (Family)

Treasurer's address for renewals and subscriptions:

Laura Wade
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President's Corner

Greetings, Sunset Astronomers! April was a pretty good astronomy month. On April 11, club members gathered at the Geiger Road site for a Messier Marathon (replacing our regular meeting at the planetarium). It was a perfect night, neither too cold nor too humid. Venus (next to the Pleiades star cluster) setting over Saginaw bay was a beautiful sight! We had quite a range of instruments, from binoculars to my 14.5" Dob. Ed Sederlund and Mo Khan used the 11" Celestron club scope with good success; they observed approximately 25 Messier objects. The new site is dark enough to allow good deep sky viewing and even has a public restroom. Hopefully we'll be able to repeat this successful night in the not too distant future!

To continue with the good news, Delta College Planetarium has hired a new planetarium manager. His name is Mike Murray and he currently works at Clark Planetarium in Salt Lake City, UT. Garry Beckstrom indicated that Mike is very interested in working with the club. Mike will start his new job on June 1.

April also marked the 25th anniversary of the Hubble Space Telescope. On April 25, Delta College Planetarium hosted a free evening show with a panel of experts from local colleges and universities. The planetarium theatre was filled to the last seat; they even had to turn away about 25 people for lack of space. I used this opportunity to do some advertising for our club.

Our next meeting on May 9 will be held at the Planetarium as usual; however, we need to find an alternative meeting place for the months of June, July and August, since the Planetarium will be closed on Saturday evenings during the summer. We have two options (Midland Evangelical Free Church and Auburn City Hall) that we will discuss at the May meeting. For the summer, we are planning to do some telescope workshops where the more advanced club members will offer to teach beginners how to set up, collimate and use a telescope. Hope to see you all at the club meeting.

Clear skies,

Axel Mellinger

SAS President

A personal Journey to binocular observing - Part II

The first part of my report was mainly dedicated to equipment like tripod, fork mount, eyepieces and the binocular itself. In the second part I want to give a subjective view of my experience and performance of the equipment in the field. As mentioned the ease of set up and readiness for observation was one of the main drivers besides optical performance. The setup is indeed very quick: The tripod with the mounted fork mount is placed in the garden, then the binocular with the eyepieces and red dot finder inserted is placed on the mount, the clamps are closed and the

whole unit is ready for observation. All in all less in 5 minutes. The set up is still light enough to be carried around as a whole which gives me access to significant part of the sky despite some trees and house roofs blocking the view. Midland does have relative bright night skies with only a faint summer milky way visible in the zenith and barely visible at the southern horizon. The nights after a rain front has come through are often the best when there is less light scattering in the air. Observing after midnight is also better due to less light from surrounding houses. In addition the seeing improves a lot which is especially good for planetary observing. It may sound strange but I would judge the light pollution of Midland (ca 40,000 inhabitants) worse than at the southern suburban area of Munich were I come from (ca 2,000,000 inhabitants and only 25 min from the city center by public transport). Street lighting is very similar but Germany does not have these giant shopping malls surrounded by a sea of parking lots permanently lighted all night. Also billboard lighting with upwards directed lights is pretty much unknown. Were Michigan has the advantage is that north of Midland or on the Thumb and in-between the cities it gets dark pretty quickly. My impressions will therefore come from both a light polluted area followed by some observing done at the River Valley RV park during the Great Lake Star Gaze 2014.

The first look through the eyepieces was done with little bit of anxiety: is the instrument fully collimated and will the stars perfectly align? Well they did! The stars looked perfectly aligned through the 20 mm eyepieces which came with the binoculars. The eyepieces deliver 27.5x magnification and a 70 deg field of view but show increasing field curvature from about 1/3 of the fields out with the stars anything but pinpoint-like. Apparently these eyepieces are only there to enable immediate use of the instrument and give the viewer a first impression. But even with what these shortcomings the binoculars immediately impressed: Unlike my old 77 mm Miyauchi which showed violet hues especially at brighter objects at even lower magnification (20x) the stars were shown in their natural colours. A couple of weeks later I received the Docter UWAs which were to become my main observing eyepieces: At 12.5 mm they deliver 44x magnification and a 84 deg field of view. Field curvature is very small and the stars are very uniform over about 80 % of the field with some distortion at the edge. The 84 deg are still comfortable for viewing without having to strain your eyes to see objects at the edge of the field. The nearly 2 deg of actual view are more than enough to nicely frame most of the observed objects.

Selection of favourite objects observed:

Galaxies: Andromeda galaxy (M31) and companions M31 and M32: Stunning especially under really dark skies! Probably one of the best views I ever had of this galaxy. Pinwheel galaxy M33: In other scopes I often had problems detecting it because of its low surface brightness especially under Midland light polluted skies. But even there M33 was easily detectable, the best views of course are under dark skies where M33 stands out beautifully from the background with even a hint of spiral structure. Recently I tried a moon and sky glow filter (only monocular) to improve the visibility of fainter galaxies. They work like broadband filters and the contrast between background sky and the galaxy is improved and I can see an improvement when using the 15" Dobson but I was not so convinced if they work on the smaller aperture of the binoculars.

Open clusters: Very nice views of the clusters in Auriga (M38, 36, 37) and of course the Double Cluster in Perseus and the Pleiades. Both were beautifully framed in the 2 deg field of view and with nice variation of star colours in the Double Cluster and lots of bluish nebulosity visible around the brighter stars in the Pleiades (under Gladwin skies).

Globular cluster: The magnification of 44x is just enough to resolve the outer regions of the brighter globular clusters like M13, M3 and M22. Here a higher magnification would be definitely advantageous. More on that were I tried out a couple of shorter focal length eyepieces and in combination with the 2.5x TeleVue Powermate.

Nebulae: Here the Orion nebula and the nebulas in Sagitarius stand out. Especially the Sagitarius nebulae profited from the use of UHC filters when observed under Midland skies. The filters enhance the nebulosity but have the drawback of dimming the stars. A good example is the Lagoon nebula with the young open cluster NGC 6530 embedded in it which looses out when the UHC filters are used. A work around is to use only one filter and leave the other eyepiece without a

filter.

So is it a perfect instrument? Well not quite but close. Despite being a true ED doublet, the fast focus of f5.5 needed for wide field views has the drawback of introducing some field curvature with ultra wide field eyepieces especially at the edge of the field. The colour correction is also not as perfect as with my old 80 mm f7.5 triplet APO refractor. The famous chimney test with a clear sky as background at daylight very quickly showed that there definitely more residual colour at the same magnification. But the colour correction is good enough that for me personally it does not matter. The binocular can be conveniently used on planets and showed nice sharp views of Jupiter with only a hint of colour and the most prominent bands visible but for detailed studies like transits I would prefer the refractor. Same is true for observations of the Moon: Here a drawback of the much more complicated light path becomes easily visible with some reflexions when Moon observed directly but also when outside of the field of view. The refractor for example does not show any reflexions at all and when the Moon is outside the visible field it the sky literally turns black.

I did do some tests with shorter focal eyepieces like the Pentax XL 10.5 mm (52x) and 7 mm (79x) and a TeleVue Nagler 9 mm (61x) but only in monocular mode because I do not own doubles. All these eyepieces came into perfect focus and performed very well. The shorter focal eyepieces displayed pinpoint sharp star images near the edge of the field. I also tried out using a TeleVue Powermate 2.5x to reach higher magnifications. I liked the view with the 12.5 mm Doctor and Pentax XL 10.5 mm which magnified to 110x respectively 131x. The higher magnification was quite advantageous especially on globular clusters, some galaxies and planetary nebulae (e.g. Ring nebulae, Dumbbell and Little Dumbbell). The Pentax 7 mm / Powermate combination (196x) may have been too high, also I do not know if the images would still be aligned (the manufacturer guarantees up to 150x). The Powermate set up is a little bit more unstable because the point of gravity is further out and my Powermate still uses the old style barrel which leads to slight wobbles with the helical focuser clamp mechanism.

One draw back what has been termed finger nail-like reflections has been extensively discussed on the cloudy night binocular forum <http://www.cloudynights.com/topic/475296-apm-100-ed-apo-45%C2%B0-my-review/>. This problem seems to be one which is bothering a lot of 45 and 90 deg binoculars out there. To me the effect often looks like a faint edge on galaxies... If I understood it correctly and I am by no means an optics expert the fingernail reflexion is caused by small amounts of light seeping through the prisms outside the actual exit pupil (which is the round bright spot you see when you hold your binoculars against a bright background and look at the eyepieces from some distance). During day time observations it does not become apparent because your eyes pupil is very small, smaller than the exit pupil of your binocular. But during the night your eyes pupil becomes large and then it encompasses not only the exit pupil of the binocular but also the much fainter and smaller secondary crescent like 'exit pupil' generated by the light seeped through the prisms. This light stems brighter stars which are significantly outside the field of view. In addition your eyepiece has to have a large enough field lens similar to the clear aperture of the prisms at the eyepiece side to make the reflexion apparent. Only eyepieces with large field lenses show the crescent effect and it can be apparently suppressed by reducing the diameter of the field lens, e.g. screwing a filter-like circular blend into the filter thread of the eyepiece. In my opinion the effect is minor and only appears from time to time especially during faster sweeps of the sky.

This concludes my little review of the Lunt 100 mm 45 deg ED binoculars. All in all I am very satisfied with the instrument and the chosen set up because it comes very close to the observing tool I was always dreaming of!

Anyone who wants to talk about astronomical equipment (telescopes, binoculars, cameras, eyepieces, filters etc) is hereby invited to submit his or her experience! If you have recently (or not so recently) acquired a new piece and are being very satisfied (or not so satisfied) your are by all means invited to contribute!

The Messier Marathon pictures will be shown in the next issue of SAS newsletter!!!

SUNSET ASTRONOMICAL SOCIETY
THE SUNSET GAZETTE
SERVING THE TRI- CITIES SINCE 1975



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This issue can be accessed in color on the website of the SAS!!!

<http://www.sunsetastronomicalsociety.com>

SAS Meeting

Start: 6:00 PM

Saturday, May 9th 2015

**Delta Planetarium
Bay City**

1. Meeting Call to Order
2. Introduction of Guests
3. Treasurer's Report
4. Questions and Answers.
5. Pictures and Videos from the April 11 Messier Marathon
6. Information item: New Delta College Planetarium Manager
7. Motion to postpone indefinitely the proposal to sell the Celestron Nexstar 11" club telescope
8. Presentation: 4 Books by Bob Berman (Mary Buzzard) Break
9. Action item: Location of summer club meetings
10. Presentation: "iPad astronomy apps" (Lynn Dumbrille)
11. Other topics
12. Adjournment

What's up in the Sky

May 6 Morning: The Eta Aquarid meteor shower peaks before dawn but the still bright Moon will make observing it a challenge.

May 10 Morning: The last quarter Moon can be found 3 deg from 3rd magnitude star Beta Capricornis.

May 11: Last Quarter Moon

May 21 Evening: Venus can be found in Gemini to the west about 9 deg to the upper right of the waxing crescent Moon.

May 18: New Moon

May 23 Night: Very bright Jupiter can be found ca 6 deg north of the Moon. The Moon sets about Midnight.

May 25 Night: Regulus can be found ca 5 deg above 1st quarter Moon.

May 25: First Quarter Moon

May 27 Night: Double shadow transit on Jupiter from 10:01 pm to 12:18 am EDT.

May 30 Night: Look out for the Moon etching closer and closer to Spica over the night.

June 1 Night: Saturn can be found low in the southeast at dusk with the nearly full Moon a few deg away. Through the night the Moon draws away.

June 2: Full Moon

June 9: Last Quarter Moon

June 13 Dusk: Venus and Jupiter are 10 deg apart in west with the Beehive star cluster (M44) just below of brilliant Venus.

June 16: New Moon

June 19 Evening: Watch out for the thin crescent Moon below Jupiter and Venus.

June 21: Longest day in the norther hemisphere

June 21 Evening: Look out for the waxing crescent Moon 5 deg left of Regulus with Jupiter and Venus to the lower right.

June 24: First Quarter Moon

June 25 Night: Spic can be found about 4 deg southeast of the first quarter Moon, which sets after midnight.

June 27 Dusk: Venus and Jupiter are less than 2 deg apart for the next week. If weather permits you can watch them every evening drawing closer until their conjunction on the 30th.

June 28 Dusk: Saturn can be found only 2 deg away from the waxing gibbous Moon.

June 30 Dusk: After sunset look out for Jupiter and Venus low in the west just 1/3 deg apart.

UPCOMING EVENTS