

ORAS - AstroBlast: October, 2024

With the end of September approaching, it was time to plan for the ORAS AstroBlast. This year was the 30th anniversary of the event, and the club was going all out, with plenty of presentations, activities, and contests. For 2024, the event was moved to the early October New Moon period. As one of the setup volunteers, I had originally planned on travelling up to the ORAS Observatory on Sunday, Sept 29th, but the rain remnants from hurricane Helene kept me home. Spent Sunday packing the car & camper between showers.

Monday 9/30/2024:

Monday morning, I waited till the rain had mostly stopped before hooking up the camper. Hit the road at 11am for the trip up to ORAS. The road trip was not fun today! The wind, rain, and big trucks kept pushing me around on the I79 highway. Once past the Zelienople exit, the rain let up, but the crosswinds on I79 kept pushing the camper to sway, so I had to keep the speed down to 55 or 60 mph. Once I made the right turn onto I80, the breeze became a tailwind letting me increase speed to close to 70.

Arrived at the Observatory at 1:30pm to find club members Dean S and Denny H setting up on the NE field. Susan P had been there earlier and left her camper van. I quickly pulled up across from Dean S and found a level spot to setup camp close to the run-out piers.



Not long after I had arrived Dean M pulled in and setup his camper on the western field. After visiting with everyone, I spent the next several hours setting up my camping canopy and gear, and then assembled my EAA telescope: 8" Celestron SCT optical tube @ f6.3 with a ZWO ASI294MC Pro camera, ZWO filter wheel & focuser, on an Atlas EQ GEM mount, along with a piggybacked Sky-Watcher EVO 50mm refractor with a ASI294MC camera (uncooled model), and a 60mm Antares refractor guidescope with an ASI120MC camera. Attached to the bottom rail of the main optical tube was my ASI290MC camera with a small Canon 5.5-55mm CCTV lens as a super-widefield finder. I deferred setting up the Allsky cam until drier weather. The sky looked like it could rain at any time.

Assisted help Dean S in determining the best locations for the dumpster and Porta-John delivery. Several folks from the ACEAP conference (Astronomy in Chile Educator Ambassadors Program) down the road at Camp Coffman stopped over to see the Observatory, Jason, Abbas, and Mike. Dean M gave them a tour of the observatory facilities.

At 5:00pm, the four of us met over inside the observatory for refreshments. Around 6pm, Debbie and Steve B arrived with their Tab camper and setup in the SE field.

Headed back to camp at 6:30 to make dinner. Too damp for a group dinner tonight. The sky was hopelessly cloudy, no chance of getting the scope aligned tonight.

Spent the evening reading indoors, visiting with folks before dark. Up late watching a sci-fi movie. In bed at 1am.

Tuesday 10/01/2024:

Slept in till 9am. Woke to a cloudy, damp day. After dressing and having breakfast, spent the next several hours helping to clean up the garage for overflow seating. Susan arrived back onsite and pitched in. Denny and ORAS member Jim L assembled the new big TV stand. Looks very nice. Dean S worked on getting the Observatory Wi-Fi up and running and Dean S helped get the multiple screens working in the classroom. Then all of us pitched in and assembled the clubs white pole tent.

The day remained gloomy and occasional drizzle went over the field. Still, several amateurs arrived for the start of the event, including Calhoun regular Dave A from Toledo Ohio, and local club member Eric S.

Around 1pm, the ORAS staff was invited by Tim S to lunch with the ACEAP (Astronomers in Chile Educator Ambassador Program) conference folks at Camp Coffman. Chicken and sides!

Afterwards Denny and I drove around the local roads, and placed AstroBlast signs at several intersections. Back at the observatory, the tent vendor had arrived and was assembling the large 20x40 tent that the club rented.



Marianne and Barb also were there and had the registration table opened up and were signing folks in and selling patches and pins.

With the drizzly weather, once again everyone did their own dinner. Around 8:30pm, we carried refreshments down to the activities building where Denny, Dave A, and I watched a little TV. Afterwards, after a dark walk back up to the observing field, I stayed up inside my camper reading till midnight.

Wednesday 10/02/2024:

Woken around 7:45am by rain hitting the camper roof. Rolled over and slept for another hour, lol. Once up and dressed, made a quick breakfast, then got out my laptop to download a revised registration form that Marianne sent me to be printed for use at the registration desk. With the sun coming out around noon, more attendees began arriving; Kevin VH, Rich C, Mike M, Geoff C from Pgh, and several others arrived late in the afternoon including Ray L and Ed K and his Meadowview Mobile Observatory. Also met CloudyNighter Dave from MA and his 16" Teeter Dob.

Around 1pm, we were again all invited by Tim S to a taco lunch with the ACEAP conference folks over at Camp Coffman. Susan arrived around 2pm and I helped her move the registration table out to the big tent.

Back at camp, I assembled the AllSky camera, (a ZWO ASI224MC & fisheye lens in DIY dome) uncovered the telescope and checked the balance and optimistically pre-assembled the sides to my blackout tent. Probably around 20 amateurs on the observing field by sunset.

After a quick dinner, I walked down to the activities building for the 6pm astrophotography share session lead by Dean M, with a slide show by Dean S.

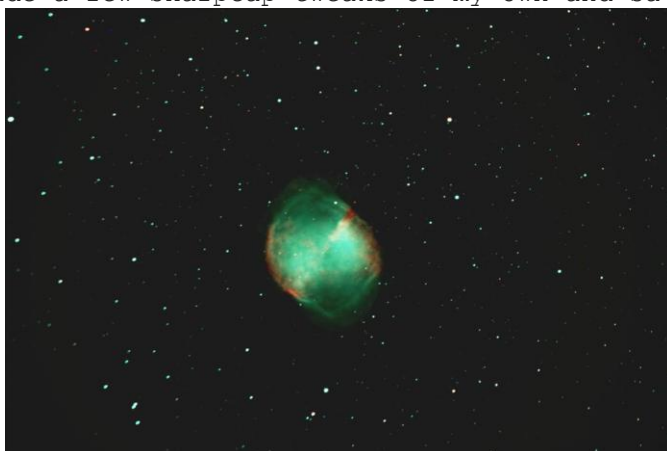


At sunset, the clear sky continued, and at dusk, the sky was beautifully transparent with the Milky-Way softly glowing overhead.



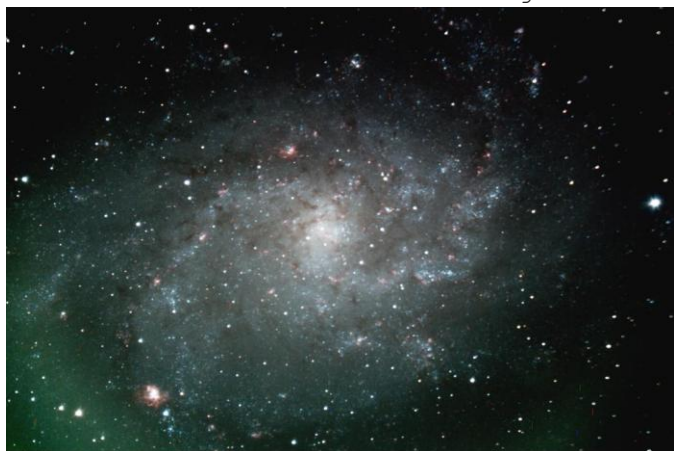
It was a busy evening, spent the early hours helping Dan and Denny get the C14 running. Tim S brought the ACEAP conference folks up to the observatory, where he demo'd the new Celestron Origin that was on loan to the club for AstroBlast and got the 30" running for visual views. In-between working with Dan on the EAA setup on the C14, I also helped get the Meade 14" SCT running. Took a break from the C14 to head back to camp to startup my telescope and cameras. Out on the observing field, there was heavy dew. The outdoor temp was down to 44 deg. After completing polar alignment with the Polemaster camera, and tweaking the focus on both the 8" SCT and the 50mm EVO refractor, I slewed the telescope over to Andromeda and the edge-on galaxy NGC891, known as the "Outer Limits Galaxy".

Once I had the livestack running I set Sharpcap to take an hour long stack and then headed back up to the observatory to continue helping out and working with the C14. While there, one of the ACEAP attendees pointed out the cubesat solar sail satellite go over, very cool! Denny was also at the observatory and was able to get the warm-room PC to work with the C14 and ZWO ASI2600MC camera and captured a nice image of M27 - the Dumbbell Nebula. I made a few Sharpcap tweaks of my own and saved the joint image.



C14" & ASI2600MC & L-eNhanse filter - 60sec subs livestacked for 10 minutes.

After Denny headed back to his camp, I worked on capturing an EAA observation of NGC891 with the C14 and later the Triangulum Galaxy - M33.



C14" SCT @ f6.3 ASI2600MC Pro camera & L-Pro filter, 180 sec subs livestacked using Sharpcap for 1 hour - M33, and 15 minutes - NGC891.

With my hour long livestack of NGC891 wrapping up, I turned the C14 back over to Dan and headed back to my camp. There I discovered that soon after I had left for the observatory, PHD guiding had encountered an error and guiding stopped, which stopped the livestack in Sharpcap. All I got was a single 3 minute exposure! Better than nuthin!



(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, a single 3 minute subframe capture)

Rather than spending more time trapped in the 'Outer Limits', I moved the scope southwards to the 'Silver Coin Galaxy' - NGC252 in Sculptor, now rising to the meridian. After starting another 3 minute, hour long stack, and sticking around for several subframes to verify that everything was running smoothly, I visited with Dean S and Denny who both were busy imaging. Ed K was working on a long imaging run of the Cocoon Nebula - IC5146 in Cygnus. In-between the visits, I would stop back at my workstation to confirm that NGC253 was nicely livestacking. Finally, down to the last 15 minutes, I stayed with the laptop and finished the observation at the one hour mark.



(8" SCT f6.3, L-Pro, 3 min subs for 1 hr)

By now it was after 1am, with Orion rising. The sky continued to look great!



But, I was running out of gas, so I decided to observe a couple of easy clusters in Perseus before calling it a night. Slew the telescope up to bright Alpha Persei, Mirfak, and captured the large OB Association called Melotte-20 using the Canon 25mm.

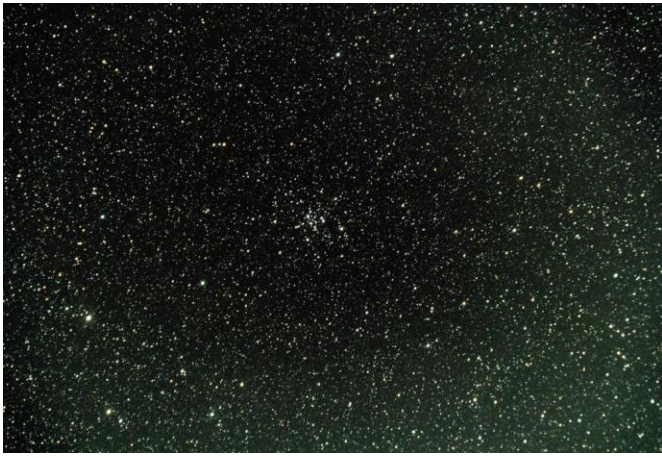


(Canon zoom set to 25mm, ASI290MC camera IR filter, 60 sec subs, stacked for 15 minutes).

I then moved over to Messier-34 and observed the cluster with all three cameras.



(Canon zoom set to 25mm, ASI290MC camera IR filter, 60 sec subs, for 15 min).



(EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 180 sec sub, for 15 min),
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, single 180 second sub),

At 2:30am, I shutdown the scope & laptop, covered up, and stumbled to bed.

Thursday 10/03/2024:

Slept in till a quarter after 9am.

Sunny, cool morning temps still hovering around 50 deg. After breakfast, I walked down to the activities building to take in part of Dean S talk on how to use Photoshop for working with your astrophotography images. Good useful info, such as how to calibrate your monitor.



I then headed to the Observatory to create new flats for the C14 for the L-Pro and L-eNhanse filters, using a white t-shirt. Afterwards, I headed back to my camper and laid down for a 1.5hr nap. The sky stayed sunny all day and the temps warmed into the low 70s. The warm camper woke me from my nap.

More amateurs rolled in during the afternoon, including Dan and Sharon H who setup camp just north of the runout beams. And one of the original club members - Pete J who now lived up north in New Hampshire. Zack and Eric from the Pgh club arrived and setup in the middle of the east field with Mike M. Late in the day, Gary S arrived and setup next to me. Also Susan P was staying the night with us in her camper van and setup her telescope. (Susan was joined by her husband John later on Friday). Tim S was also onsite helping out with preparations for the food café and presentations later in the week. By now there were around to 45 people camping on the field.

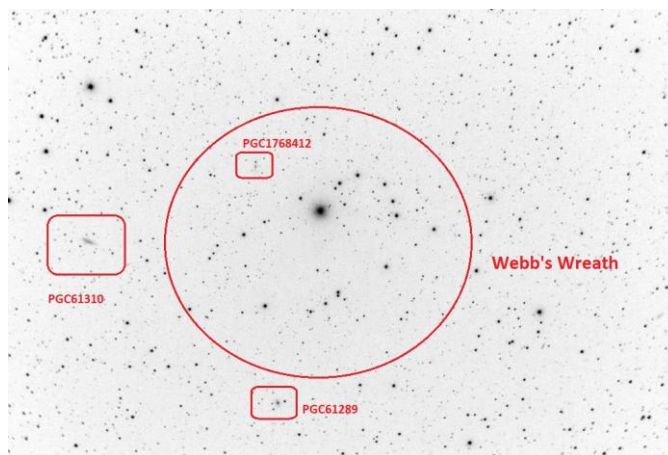
At 6pm, I headed down to the activities building to give my talk on visual deep-sky astro-sketching. A good half-dozen in attendance. Afterwards we did a group dinner in between Dean S's and my campsite. A little later towards sunset Barb joined us to visit for an hour, and Dan H stopped over to chat.

At dusk, I uncovered the telescope, assembled the blackout tent and powered-up the laptop and cameras, and prepared my observing list. Tonight I was going elephant hunting!

The early evening started off nice, but the transparency was not as good as Wednesday night. Still, it wasn't bad and there was less dew!

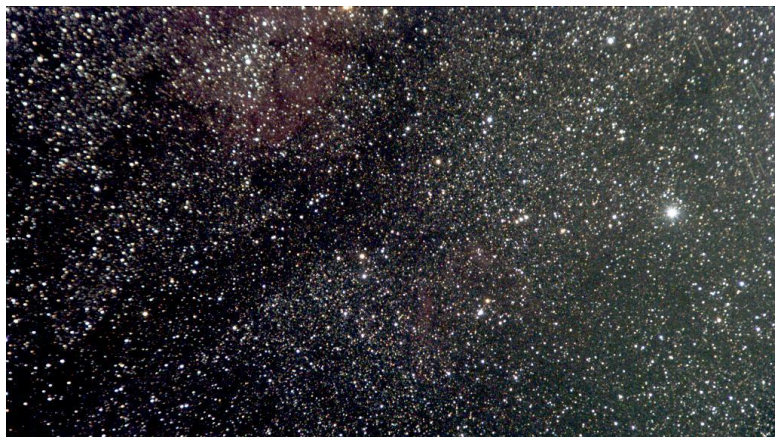


I started the night off with an asterism in Hercules called "Webb's Wreath", first observed by the British amateur Rev T.W. Webb and mentioned in his 1881 edition of "Celestial Objects for Common Telescopes". The asterism is a nice oval collection of about 20 stars with one bright 7th mag star. A pretty object. Here's the observation made with my 8" Celestron SCT optical tube @ f6.3 with a ZWO ASI294MC Pro camera and L-Pro filter on an Atlas EQ GEM mount: 15 second subs livestacked for 6 minutes: And here's a negative showing the small nearby PGC galaxies:



I then slewed the telescope over to Cepheus for the Elephant hunt. IC1396. My primary observing goal was the dark nebula that made up the 'Elephant Trunk Nebula', along with several Barnard dark nebulas. Here's the EAA view from all three cameras"

(Canon25mm - upper top left), and the EVO50mm).



Then the 'Elephant Trunk' in the 8" SCT.



And here's the Barnard Dark nebula using the EVO50mm refractor:
B160, B161, B162, B163, B199, B365, and B366. Good hunting grounds for dark nebula!



(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 180 sec subs livestacked using SharpCap for 30 min), (EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 180 sec subs, for 30 min), (Canon zoom set to 25mm, ASI290MC camera IR filter, 60 sec subs, for 30 min).

During the livestack, I briefly stepped outside from under the blackout canopy to walk over to see Dean S who was spending the evening doing a wide-field of the Andromeda Galaxy - M31. Dean showed me the subs he was getting on his iPad. Very nice.

I had just wrapped the elephant observations when around 10pm, waves of clouds began rolling off Lake Erie and going overhead.

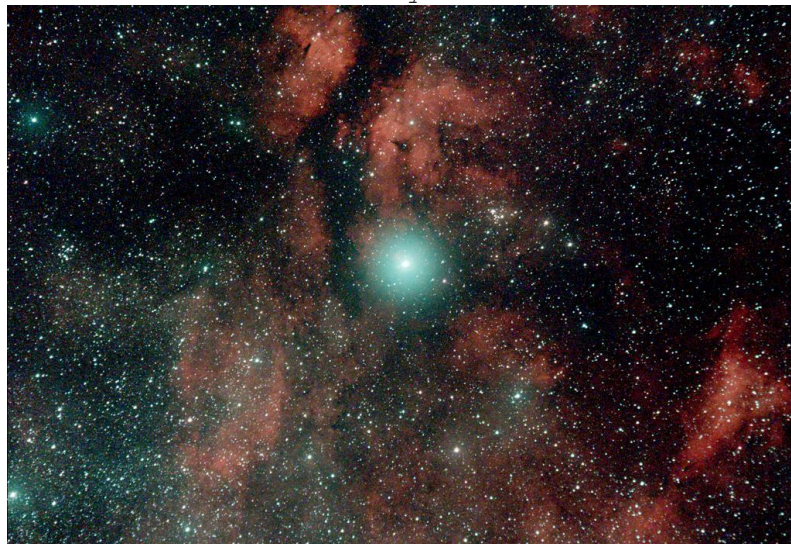


I adjusted my observing plan to take advantage of the larger sucker-holes by doing short exposures of several bright planetary nebula - NGC40 in Cepheus and NGC609 in Delphinus. Here's the observation: NGC40 - "Bow Tie Nebula", and NGC6905 - "Blue Flash Nebula"



(8" SCT @ f6.3 ASI294MC Pro camera & L-eNhanse narrowband filter, 15 second subs livestacked using SharpCap for 15 minutes),

I then slewed the telescope high overhead to the bright star Sadr in Cygnus for a widefield observation of IC1318 - "Butterfly Nebula".



(EVO50mm @ f4.2 ASI294MC camera & L-eNhanse filter, 180 second subs, for 30 minutes),

In the middle of the livestack, the clouds began thickening, causing me to pause the livestack several times. Being patient, I was eventually able to complete the EAA observation. With the Windy weather app showing clouds continuing throughout the rest of the night, I decided to make it a short night and closed down the equipment and headed to bed at midnight.

Friday 10/04/2024:

Slept in till 9am. Another sunny cool morning with the temps quickly rising into the low 70s. The hazy clouds from the previous evening had been replaced by puffy daytime heating clouds. I reviewed the AllSky camera captures, no overnight Aurora.

Dropped in on Gary S very detailed 'PixInsight' image processing workshop.



Several of us walked down to the ORAS 'Café' for lunch. I then headed back up the hill to give Dan a hand inside the Observatory with the C14 wiring, trying to bring a bit of order to the rats nest, lol.

More folks arrived. John K, Rich D, Chris T, Marianne H, John P, Al, Gary P, Tim S, Karen M, and many other ORAS Club members.

Headed back to the Jones Activities Building to listen to the 3:15 talk by Tiffany Wolbrecht on satellite impacts to astronomy.



After the talk, I stopped in to visit with Dean S at registration, and then several of us had an early dinner at the ORAS Café.



I then headed back up to camp to prepare for the evening. Killing time prior to sunset, I walked around the eastern observing field and took a few photos.





Right at sunset, thick clouds moved into the region. Attempted during the Green Laser constellation tour at 7:30, but was mostly shutdown by the early evening clouds. (Those attending did enjoy hearing the mythology).

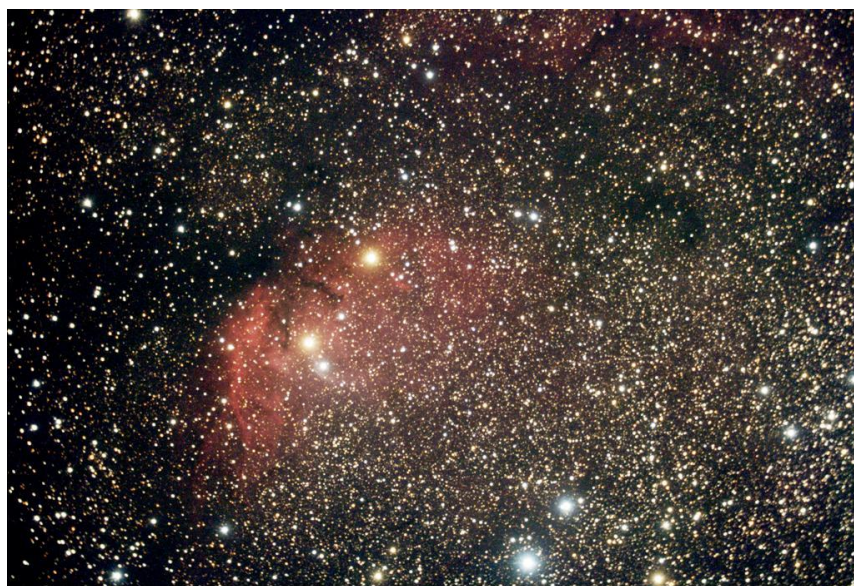


Back at camp, with the clouds persisting till nearly 10:30pm, there was nothing to do but get out the bag of KitKats and stroll around the eastern side of the observing field handling out a little cheer. I didn't make it over to the west side as the sky abruptly cleared and I rushed back to my telescope!

Having been doing EAA (videoastronomy as we use to call it eons ago), for quite some time, I like to occasionally look for more challenging objects beyond the bright Messier and NGC. Those that push both the telescope optics and my observing skills. Being at a dark-sky location, I went for a CloudyNights EAA Challenge object, Cygnus X1, that was recently being discussed observing it visually over in the CN Deep-Sky Observing forum: <https://www.cloudynights.com/topic/937965-cygnus-x-1-shockwave-visual-evidence-of-a-black-hole/>

The bow shock from the Cygnus X-1 black hole is visible in large amateur telescopes as an extended blue arc near the optical star companion of X-1. I figured that I had a good chance of seeing it via EAA with my 8" SCT optical tube & camera.

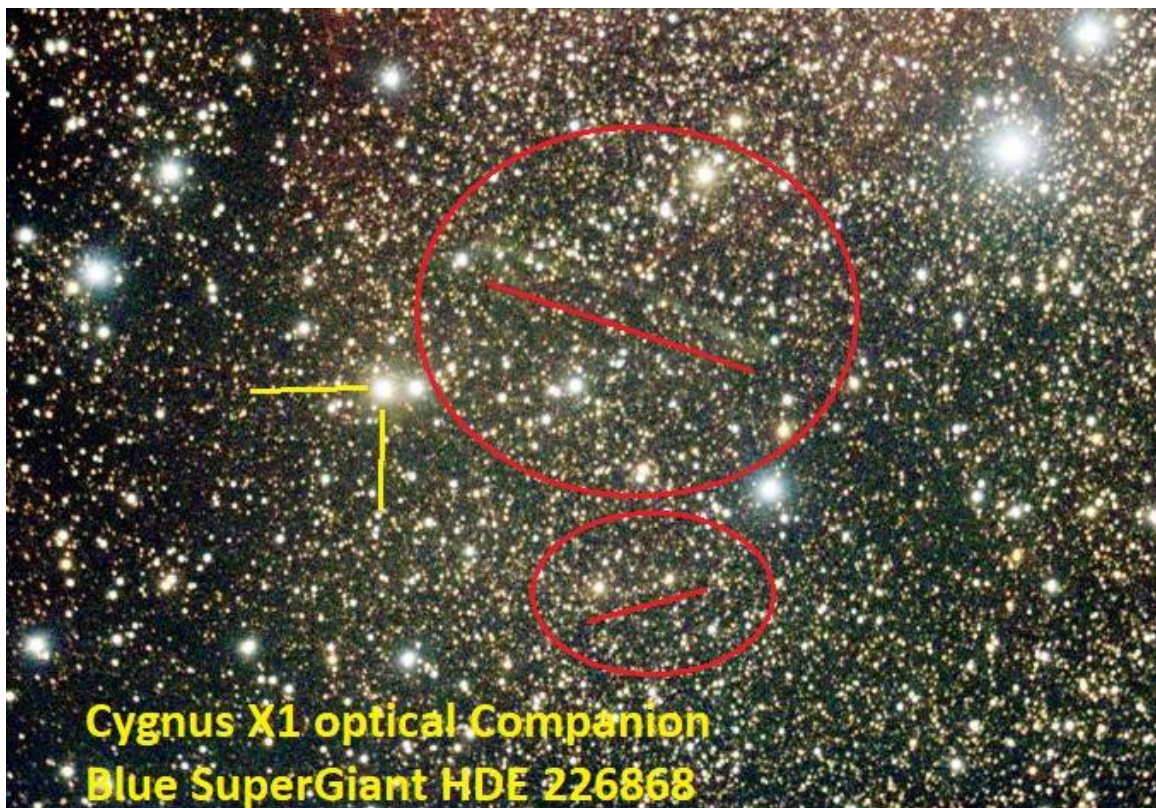
So I slewed the scope up overhead to Cygnus and the "Tulip Nebula", SH2-101, where the optical star is located nearby. I first paused at the Tulip emission nebula to observe the interesting HII region and its dark lanes that give it the Tulip nickname. Here are three views of the Tulip using my kit: (Canon25mm, the EVO50mm, the 8" SCT).



(Canon zoom set to 25mm, ASI290MC camera & IR filter, 60 second subs, for 30 minutes).
(EVO50mm refractor @ f4.2 ASI294MC camera & L-eNhance filter, 180 sec sub, for 30 min).
(8" SCT @ f6.3 ASI294MC Pro camera & L-eNhance filter, 180 sec subs stacked for 30 min).

I then moved on to finding Cygnus X1. I had previously tried this EAA observation of Cygnus X1 at the 2023 BFSP, but didn't have a good finder chart showing the location of the bow shock. I later learned that the bow shock arc is further away from the optical star than I thought and the arc was mostly out of the FOV. Tonight, at the ORAS dark-sky site, with Cygnus high overhead near the meridian, I made another attempt. Using my 2023 observation image as a 'finder chart', along with several online images from the CN Deep-Sky thread, I manually centered the telescope so that the bow shock would be centered and took a deep 5 minute exposure with the 8" SCT and livestacked those subs for 30 minutes.

There on the screen I could faintly see several sections of the arc! I was seeing the visual effects of a black hole!!! After tweaking the Sharpcap livestack histogram sliders and stretch settings, I saved the image and called it a success!! Here's the EAA observation of Cygnus X1 bow shock from a black-hole:



(8" SCT @ f6.3 ASI294MC Pro camera & L-eNhanche filter, 5 min subs stacked for 30 min).

I probably should have gone for a full 60 minute observation, but more objects were waiting their turn for me to observe,,,,,

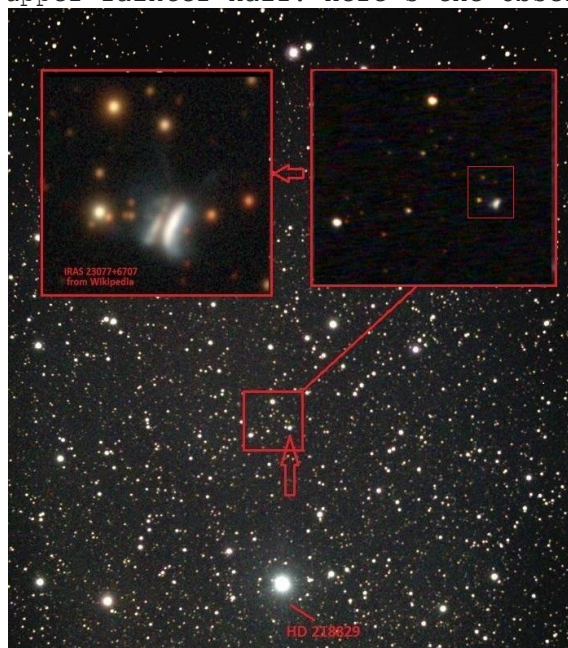
Dew was light tonight, and after the earlier clouds had departed the transparency was good. I was getting great tracking from the guidescope & PHD. With little wind to disperse it, a bit of ground-level fog would occasionally develop and roll downhill. My AllSky camera continued to be plagued by dew on the lower right side of the dome.



With the excitement of having EAA observed Cygnus X-1, I decided to redo an observation from last month's BFSP at Cherry Springs that wasn't quite successful. The protoplanetary nebula KN32, nicknamed - "Dracula's Chivito".

I had planned on using the observatory's C14, but with the high demand for it, I decided to make another attempt using my C8. Only this time, instead of using the ASI294 camera's full field size and long exposure, I treated the object more like how I would go after planetary nebula, livestacking a large number of very short exposures and using a tighter ROI, and the L-eNhance narrowband filter.

The field-of-view was much easier to find this time, with my using the previous EAA observation as a finder-chart. This session, I was a bit more successful in teasing out the oblong shape of the protoplanetary's brighter half, along with a hint of the small upper fainter half. Here's the observation:



(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-eNhance narrowband filter, 5 second subs, dark & flat calibration frames, PHD guided, 60 sub-frames livestacked using Sharpcap for 5 minutes).

It was now after 2am, and while I was getting a little tired, I wasn't ready to call it a night just yet. But I decided to go for easier targets - open clusters! Auriga the 'Charioteer' was now well placed, so I decided to observe it's trio of star clusters - M36, M37, and M38.



Once again I employed all three scopes/cameras for each object. Here's the observations starting with M36: (Canon25mm, and the EVO50mm, then the 8" SCT).



(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 180 sec subs livestacked for 15 min),
(EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 180 second sub, stacked for 15 min),
(Canon zoom set to 25mm, ASI290MC camera IR filter, 60 second subs, stacked for 15 min).

M37:



M38:



Both M37 & M38:

(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 180 sec subs livestacked for 15 min),
(EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 180 second sub, stacked for 15 min),
(Canon zoom set to 25mm, ASI290MC camera IR filter, 60 second subs, stacked for 15 min).

And I realized that with a little centering, I could get all three open star clusters in the Canon 25mm FOV! ☺



(Canon zoom set to 25mm, ASI290MC camera IR filter, 60 second subs, stacked for 5 min).

I was now well past my 'expiration date', so I called it quits at 3:30am.

Saturday 10/05/2024:

After the late night, I slept in late Saturday morning, till 10am.

Made a quick breakfast and walked down to catch the tail end of the swap meet. I Picked up a adapter camera ring. And bought a few door prizes raffle tickets for the drawing later that afternoon.

Sat in on the 12:30 talk on "UAP's and Information Science" by Dr Gretchen Stahlman, then stayed for the talk on "Stonehenge at the 2023 Winter Solstice" by Ed Ting.

Both very interesting presentations and Ed T's was especially fun.



After collecting the various contest entries at the registration desk, I headed back up to my camper to prepare the observing certificates. Then headed back down to the Jones Building for the group photo, pizza party, and door prize drawing. (no 'winners luck' this year for me, Dan H had all the luck, lol). Prior to the raffle, I handed out the certificates to the contest winners.



I then headed back to the observatory at dusk where I was able to give a successful laser tour of the constellations with a bit of nightsky mythology mixed-in under a clear sky.

It had been a nice warm sunny day, and with the falling temps and clear sky, the observing field was 'abuzz' with prospects for a great aurora happening that evening, so everyone was keeping a watchful eye northwards throughout the night. I had the AllSky cam running, and had removed the Canon lens from the main telescope, switched it to 5mm and mounted it on a tripod facing north.



After briefly helping out in the observatory with the C14, I headed over to camp and woke up the telescope. (I had everything powered on prior to doing the green laser tour). My first target of the night was a deep dive on the Triangulum Galaxy - M33.

Once I had the face-on galaxy centered and PHD guiding, I started a 5 minute exposure with the 8" and a companion 3 minute exp with the EVO50mm refractor. After watching the first few frames livestack and tweaking the settings, I let the cameras accumulate the stack for the next hour while I headed back to the observatory to help Dan and Gary with technical PC related issues with the C14 imaging equipment.

Once that was squared away I headed back to my scope to catch the last few subs livestacking and finished the capture.

Here's the result: (EVO50mm & 8" SCT)



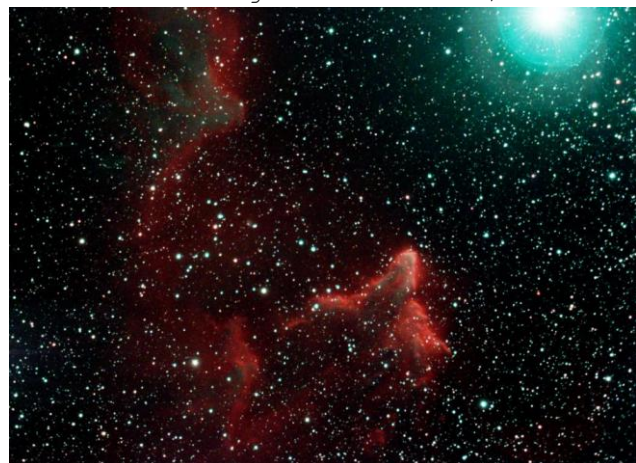
(EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 180 second sub, for 1 hour).
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 5 minute subs livestacked using Sharpcap for 1 hour).

I then decided to go after a couple of CloudyNights EAA October challenge objects. First up was the 'Ghost Nebula' in Cassiopeia - IC63, using the 8" and L-Pro filter. I've observed this object in the past using the L-eNhance, this time I wanted to see how much of a difference using the L-Pro filter made.

(10/05/2024 using the L-Pro)



10/28/2022 using the L-eNhance)



Definitely prefer the older observation using the L-eNhance filter.
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 5 min subs stacked for 10 minutes).

I then moved on to the next CN October challenge object - emission nebula and cluster IC1805, the 'Heart' of the 'Heart Nebula' in Cassiopeia. I continued using the 8" SCT & L-Pro filter, but also utilized the EVO50mm refractor which displays the full widefield heart shape of the deep-sky object.

Here's the IC1805 'Heart' observations: (EVO50mm & 8")



(EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 3 minute subs stacked for 1 hour
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 minute subs stacked for 1 hour).

Once again, I much prefer an older observation made with the EVO50mm using the narrowband L-eNhance filter over the broadband L-Pro filter for HII emission nebula.



(from 10/12/2023)

While IC1805 was stacking, I walked up to the observatory for a visit. In between EAA observations with the main scope, I kept an eye on the AllSky camera monitor and the Canon lens, but no signs of lights dancing in the sky. Apparently the aurora for the night was a bust. (I did read on spaceweather.com that the following night there was a nice auroral display).



During the evening, Dean M was imaging the North American nebula - NGC700 in Cygnus using his widefield kit. Ed K worked the Veil Nebula in Cygnus. Dean S spent time back on M33 and then later on M45 - the Pleiades in Taurus. Denny had his DSLR camera running doing star trails, and both he and Gary worked inside the observatory with Dan and the C14. When I last stopped-in, they were wrapping-up a session on M1 - Crab Nebula in Taurus. Very detailed and beautiful.

With the time going on 3am, I took one last look at the sky and then called it a night.



Sunday 10/06/2024:

Slept-in till about 8am, then after dressing, began to pack.

Soon the gang began pulling out, Ed first followed by Gary, and soon Dean S.

Denny took a little longer, but by 11am he was on the road, along with most of the other attendees. I pulled out for home a little past noon, one of the last to leave the observatory facility. The trip home was uneventful, good driving weather on I79 this time. Arrived back at the house in Pgh around 3pm, and then spent the next couple of hours unloading.

So we've had a run of several good nights here at ORAS. Four nights of EAA observing out of a total of six onsite, good odds!!
And. We had around 65 amateurs on the Field, largest crowd I've seen at the new location. It was a good time being with other fellow amateur astronomers, and sharing the October dark skies. Looking forward to next year!

Larry McHenry

Astronomical Webportal: <http://www.stellar-journeys.org/>