ORAS Observatory, PA – June, 2022

For the June New Moon period I headed up to the ORAS club observatory near Clarion. I had signed-up to give a presentation on the 25th at the club public starparty, along with volunteering at the members only evening the night before, so I decided to camp there from Thursday, 23rd till the 29th or 30th. Several other ORAS club members were also planning on making a long weekend of it including Dean S and his brother Gary.

Thursday 06/23/2022:

Left Pittsburgh shortly after 12 Noon. After about a 40 minute delay for road construction on I80, I arrived at the observatory site just after 3pm to find Dean S mowing the observing field with the club tractor.

Also present was Marianne H, who was putting a new coat of stain on the observatory wood deck and railing. (looks very nice). After stopping to say 'hello', Dean went back to finishing our section of the field, and we then both pulled our campers out into the lawn and setup camp. Marianne finished-up her staining, worked a little on the picnic table to the rear of the observatory, then headed home, leaving the site to just dean and I.
After visiting with Dean, we both assembled our telescope. My usual EAA setup consists of an 8" Celestron SCT optical tube @ f6.3 with a ZWO ASI294MC Pro camera and filter wheel on an Atlas EQ GEM mount, along with a piggybacked Canon CCTV 25-100mm zoom lens with ASI290MC camera, and a 60mm Antaries refractor guidescope with an ASI120MC camera.
I then setup my DIY Allsky cam, a ZWO ASI224MC & fisheye lens, inside a new metal casing & dome that I had recently purchased, replacing the cheap plastic dome that I had it in.

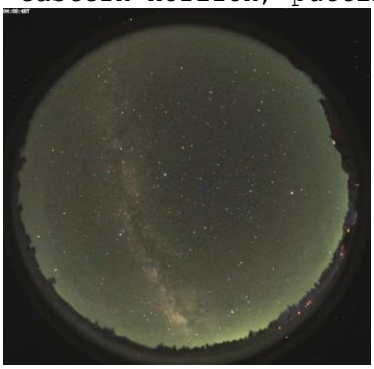
Finally, I piut together my "Guttercam", an old Samsung SDC435 security vidcam & widefield lens housed inside a section of drain gutter. I use it mainly to monitor my telescope at night during meridian flips and GOTO slews, but it also doubles in watching

for any four-legged 'critters' that might take an interest in the back of my camper when the clamshell hatch is open. Finally, I assembled my new clam hatch tent that covers the back of the camper, keeping any stray light from my laptop/monitors contained.

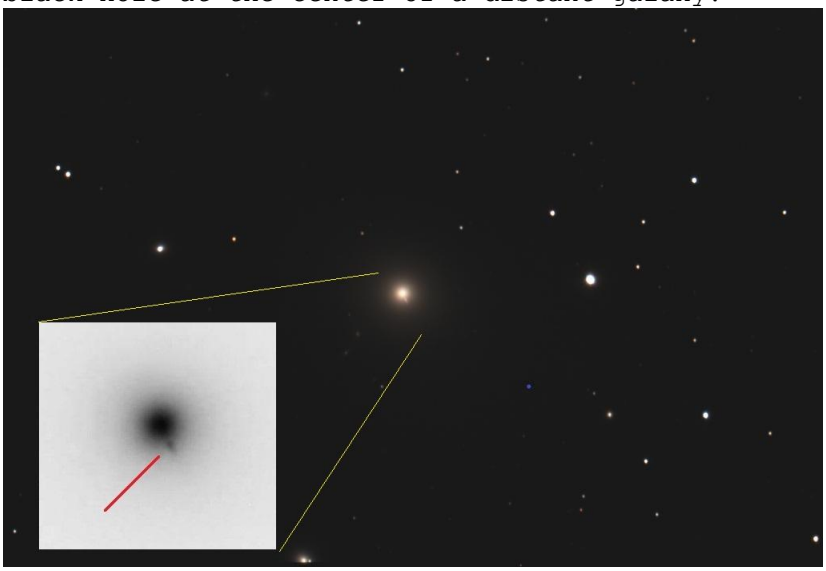
At dusk, Dean M arrived for the evening and gave Dean S and I a refresher on the changes that the observatory committee had made over the winter for opening the observatory roof. Dean M was planning on spending the evening with the observatory Meade 14" LX200GPS telescope to try out a new OAG camera guider that he had been modifying. Dean S and I planned on spending the evening outside with our equipment. (Dean M eventually closed up the observatory around 1am and headed home).

Once Polaris was visible, I quickly polar aligned and then GOTO aligned the Atlas mount. With the Milky-Way just beginning to shine, my first deep-sky object of the night was the great globular cluster in Hercules – M13! I next dropped in on globular M4 over by Antaries in Scorpius. (L-Pro filter, 15 second subs, livestacked 5 minutes).

The Milky-Way was now well above the eastern horizon, putting on a show.



I then crossed the meridian to Virgo and the galaxy M87 with its superluminal jet. Pretty cool knowing that you can observe such a feature extending out from a massive black hole at the center of a distant galaxy!



Once done with my EAA observation of M87, my plan was to then hunt Abell Planetary Nebula, starting over in Ophiuchus, so I slewed the telescope back over the meridian to Antaries where I spun the filter wheel to the L-eNhance narrowband filter and refocused the camera and adjusted its settings for the different filter. I also had to re-sync the GOTO as for some reason it was now a little off. After consulting my observing notes and references, I then slewed the telescope to the location of Abell40. After taking a quick test image, I discovered that the nebula was not in the field-of-view. My GOTO was definitely having issues tonight, even though it started out just fine. After panning around the general area, stopping to take test images to look for the faint planetary, I eventually found the nebula and centered it.

With heavy dew coating everything and fog beginning to form on the field, my camera now decided to also act-up. Once I had taken the first couple of 3 minute subs, I noticed that there was a 'halo' developing around the center of the image. Stepping out from under the tent canopy I discovered that the power cable to the camera had become tangled, (probably from one of the meridian slews), and had come loose, cutting the cooler power. The camera had started to warm up too quickly in the humid night air. This was probably what was also causing my GOTO pains.

After plugging the cooler back in, the camera tried to immediately take the camera back down to the -10c temp that I had set, which only made the frost halo worse. I had to now slowly warm the camera back up to ambient temperature and then try to cool it back down without re-frosting it. This can take awhile. Unfortunately, at this point with the fog building around the telescope, there was too much condensation in the air and on the CMOS chip's protective glass window for it to dry out, so it once again quickly frosted when I tried to cool the camera down. At this point, even the AllSky camera was struggling with the heavy dew, it was like someone had sprayed the dome down with a hose!

I decided to throw in the towel with EAA observing and shutdown the equipment for the night. So I grabbed my binoculars and chair and spent a little time doing armchair visual astronomy, touring the bright Milky-Way starclouds now arching overhead. With the day's travel and setup catching up to me, I called it a night around 2:30am and headed inside the camper to bed.

Friday 06/24/2022:

Woke up at 9am to sunny skies. The outdoor temp quickly warmed from the upper 50's overnight into the upper 60's by mid-morning. The forecast was calling for hot day. After breakfast, Dean and I worked on field maintenance: Dean drove the club tracker and mowed the rest of the eastern side of the field and then drove over and moved the western side and cleared a wide area around the western power pedestal and down along the drainage ditch to the road crossing. I worked on weed-whacking close around all four power pedestals, and then around the entire observatory building, including all the space in-between the roof runoff rails out to the picnic table. I then gave the interior observatory floor a good sweeping. At noon, we wrapped-up the work detail and sat in the shade under Dean's RV awning and enjoyed cold popsicles that I brought out from my fridge. Refreshing!!

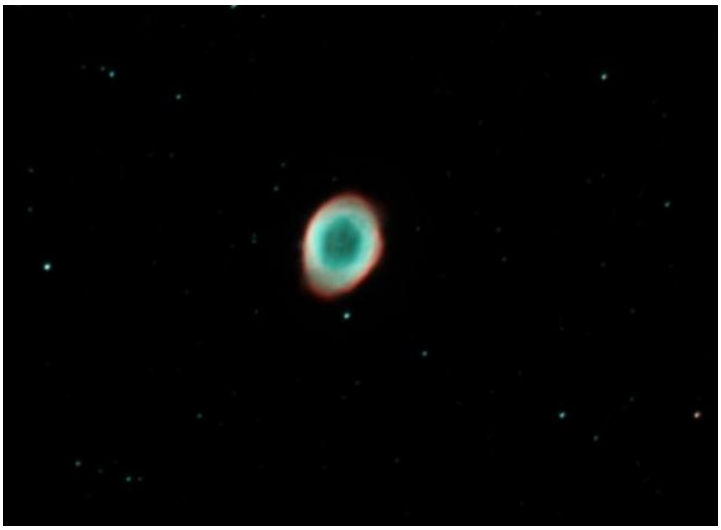
By now it had become rather hot, with the temps in the upper 80's. Fortunately, the inside of the camper (with all the windows and screen door open and roof fan running), was still somewhat cool, so I made a few minor processing tweaks to the image-observations from last night, and then laid down for a mid-afternoon nap.
Once I was back vertical, around 5pm, I setup the clam hatch tent and organized my observing notes for the evening, powered on the laptop and started capturing frames with the AllSky cam.

During my nap, Dean's friend Glen arrived and joined Dean over at his RV, where Glen setup several cameras and tripods. And club member Susan P and her husband John pulled in and headed over to the freshly cut space around the western power pedestal. Susan setup a nice size truss-tube dob for visual observing. Their plan was to spend the night observing, catch a little sleep in their car, and head home at first light.

For dinner, Dean got out his grill and cooked a package of hotdogs for Glen and me. We then relaxed under the awning, visiting and enjoying a few adult beverages.

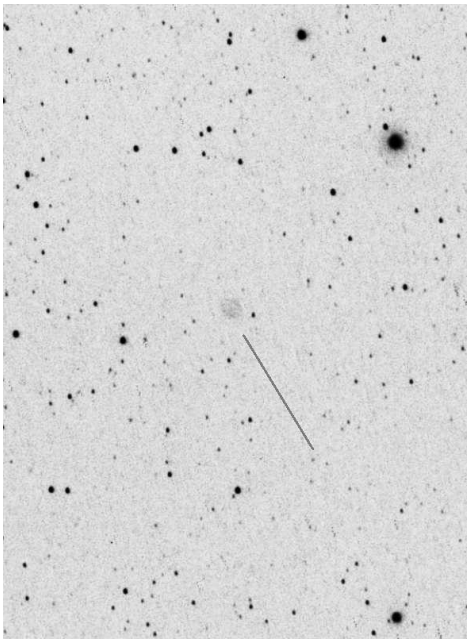
At sunset, Dean M arrived to spend the evening again using the observatory 14" Meade SCT with his camera project. While waiting for dusk to settle, I powered-on the telescope, and cameras, and turned on the dew heaters for the telescope and AllSky cam. The roofs of the camper and car were already getting moist from the humidity in the air. Much to my surprise, I soon discovered that my AllSky cam had stopped functioning. After multiple attempts to troubleshoot the problem, including unplugging/re-plugging USB cables, restarting the laptop, and finally detaching the camera from its tripod and plugging directly into the laptop, I had to conclude that the camera was dead. After reviewing the camera's last saved text-file of its settings, I noticed that the internal camera temp had peaked well over 50 degrees above ambient before dying. It had severely overheated, probably caused by the new metal dome enclosure heating up from the Sun during the day. So I put the AllSky camera away, hoping that after it cooled down overnight, it would come back to life.

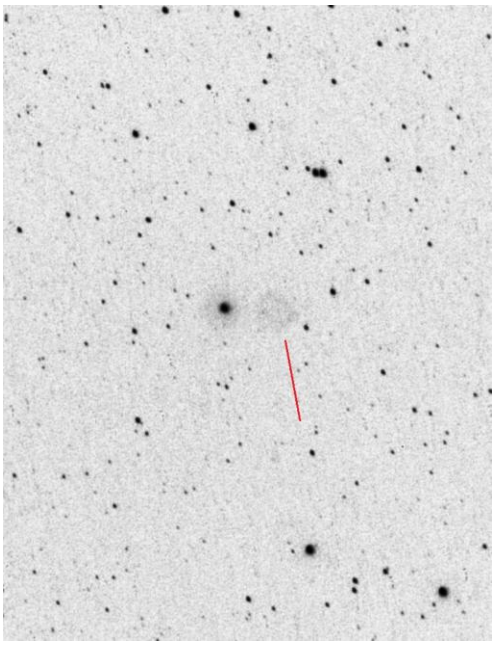
Once it was fully dark, I started off EAA observing planetary nebula using the L-eNhance narrowband filter, which does amazing things with nebula. My first target of the night was the 'Ring Nebula' – M57, now rising high towards the meridian in Lyra. As this planetary is so bright, I had to shorten my exposure time so as not to blow-out the observation on the laptop's screen. In addition to the ring annulus, the central star was visible, along with striations across the darker center. M57 is always a fun object!
I then moved over to medium bright planetary NGC6210 "the Turtle Nebula" in Hercules, where I was able to see several of the turtle's 'legs'.



(8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-eNhance filter, 60 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 30 minutes).

I then turned to my Abell Planetary survey project and began working these elusively faint objects in Ophiuchus and Serpens. The best two being Abell40 and Abell42 in Oph.





(8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-eNhance filter, 180 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 15 minutes).

Around midnight, Susan stopped over for a visit and to see my EAA setup in action under the hatch and watched while I hunted Abells. (was observing Abell42 at the time).
While still in Ophiuchus, I decided to do a little shallow-Sky observing, flipped the filter-wheel back to the L-Pro filter and dropped in on Comet Panstarrs K2.
The dirty ice-ball didn't appear much different from last month at Cherry Springs, a bright star-like nucleus surrounded by a bright blue coma, with a hint of a tail.

(8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 180 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 9 minutes).

With the clock now past 1:30am, the ground, telescope, and everything around the camper were soaked by the heavy dew. Even the hatch tent fabric felt damp. The cooling temps, into the 50's, also brought ground fog rolling downhill across the observing field from the northern tree-line, occasionally rising above the telescope.

After capturing a few more Abell planetaries using the L-eNhance filter, I decided it was time to wrap-up the evenings observing. So I abandoned the fog drenched lower regions of the sky and slewed the telescope high up for the last deep-sky object of the night. In keeping with the planetary nebula theme, I chose the "Dumbbell Nebula" – M27 in Vulpecula.

(8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-eNhance filter, 60 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 30 minutes).

While the livestack was building, I went for a walk down to the activities building for a restroom break, and at the bottom of the road I experienced a "close-encounter",,,,
There, crossing the road about 10ft in front of me was what I at first thought was an ugly groundhog. But, after the fella flashed its back quills at me, I realized that what I was seeing was a porcupine!! My first live encounter with one!! ☺
I paused for a long-moment and let the 'creature' continue on his way.

Back at camp, I finished saving the observation of M27, noting the "X" shaped dumbbell, within the larger football shaped structure and the faint outer extensions from the ends. I then powered-down the equipment, dissembled the hatch tent and headed inside the RV. In bed at 3am. Overall a decent night.

Saturday 06/25/2022:

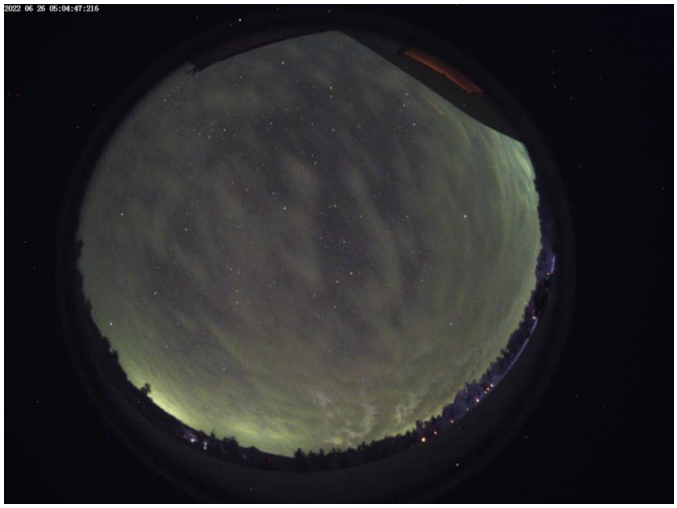
Up at 9am from the inside of the camper getting to warm. The weather forecast called for another hot day, with temps into the low 90's. Opened all the camper's windows and kicked the fan to high. Spent the morning outside sitting in the shade visiting with Dean and Glen. (Susan and John had left early morning, and Dean M during the night)
Dean S and I then headed up to the observatory where we straightened up the inside for tonight's starparty, prepped the telescopes for the night, and then practiced using the Meade 14" SCT and the 30" Dob. After that, both Dean and Glen work on processing their images in the warm room using the big monitor screens.

For the last two nights, Dean S had been using his widefield 51mm 'Spacecat' refractor to image a number of before 'test' objects, (M8 & M20, M101), in preparation of later in the week switching optical tubes to a 6"RC that he borrowed from Ed K.
Later that afternoon, we headed down to the activities building where we also straightened up the classroom and arranged the chairs for the presentation on 'Stargazing and Myths) that I was giving that evening. While there, I discovered that we couldn't use the projector in the activities building, my laptop only had HDMI and the projector only had VGA. Ended up using a 32" monitor that Dean S had brought with him to donate to the club. We put it on top of the fridge and placed the chairs in a half-circle facing it. (also cleaned off the sink to look more presentable, lol)

After Dean, Glen, and I had shared dinner, we headed down to the activities building. Before long, Marianne H and Susan P arrived to help out with the presentation portion of the starparty, along with Dean M returning for the night to help inside the observatory and operate the Celestron 14" SCT on the Orion HDX pier mount. Just in time for the 7:30pm presentation, several new members - Mary and Jenn showed up. And recently new member John H arrived later that evening for observing.

All things considered, the starparty went pretty well from an operational perspective. But, as it was, not a single non-member 'public' person showed up. It was just 7 club members there, but they all enjoyed the stargazing talk and we had a good time afterwards up at the observatory. Once it was dark enough, I gave a green-laser tour of the constellations. The Meade 14" with an eyepiece in it worked flawlessly. While we couldn't get the 30" Argo-Navis GOTO to successfully align, we just used it like a big push-pull Dob to find objects. (there were a number of technical issues with the C14 that took it out operation).

The sunny sky that we had all day had given way to a hazy sky, occasionally thickening in overcast, then partly clearing. So while the sky was kinda crappy, we were still able to find the brighter deep-sky objects, such as star clusters M3, M11, M13, the Ring Nebula – M57, and galaxies M51 and M101, and the three new members who attended enjoyed what we could show them and stayed till 1am, and went home happy. After we had closed the observatory, Dean M left for home, (Marianne and Susan did not stay for observing), leaving the observing field to just Dean, Glen, and I. After taking a glance at another wave of cloudy hazy moving in, the three of us called it a night.



Sunday 06/26/2022:
Once again, was up by 9am from the camper warming up inside. Another hot 90 deg day was in-store. Spent the morning visiting with Glen and Dean. Then assisted Dean in attaching the 6"RC loaner optical tube to his mount. Had to get a little creative in getting it balanced! LOL!

The sky was partly sunny throughout the day and the hot temps forced us indoors in the cooler observatory or activities building for shade. Around 3pm, Glen headed back home, leaving the observing facility to Dean and me. After dinner, I joined Dean over at his camp for a few drinks. By now, the sky had gone completely overcast and the temperature had actually cooled a bit. A line of storms was approaching the ORAS observatory from the southwest, so we pulled-out our chairs and watched the front move in.

A slow drizzle soon forced us under Dean's awning, but it increased to a steady rain that drove us indoors. Fortunately, there were no severe winds with the storm, just a short burst of heavy rain. I decided to lie down and sleep for a couple of hours and get back up a little after 11pm to see if there would be any clearing. After waking up and stepping outdoors and consulting the satellite images with Dean, who was also outside, we both determined that there would be no worthwhile clearing tonight, so both headed back indoors to our campers. I stayed up awhile longer reading, but was back bed by 12:30am.

Monday 06/27/2022:

Slept-in till 9am and woke to a cool sunny morning. The evening storms had all moved off to our east and it was shaping up to be a pleasant day. After breakfast, Dean made a resupply run into the Cranberry shopping area about 10 miles west of the observatory. I stayed back to watch the camp, and worked on re-doing my camera/focuser wiring harness in anticipation of my new ZWO electric filter wheel waiting for me back home.

Later in the day, I drove down to the spring past Camp Coffman to re-fill several water jugs for both Dean and my campers. I also worked on my AllSky cam, which having cooled off over the last few days had come back to life. I decided to add several layers of aluminum foil overtop the metal dome casing and planned to run the internal fan continuously when I uncovered the camera later that day. (once back home I switched the fan over from being powered by a single 9V battery to plug into the large battery that hangs underneath the tripod).

Took an afternoon nap and woke at 5pm to find Dean's brother Gary S had arrived from Maryland and was setting up his camp and telescope between Dean and I.

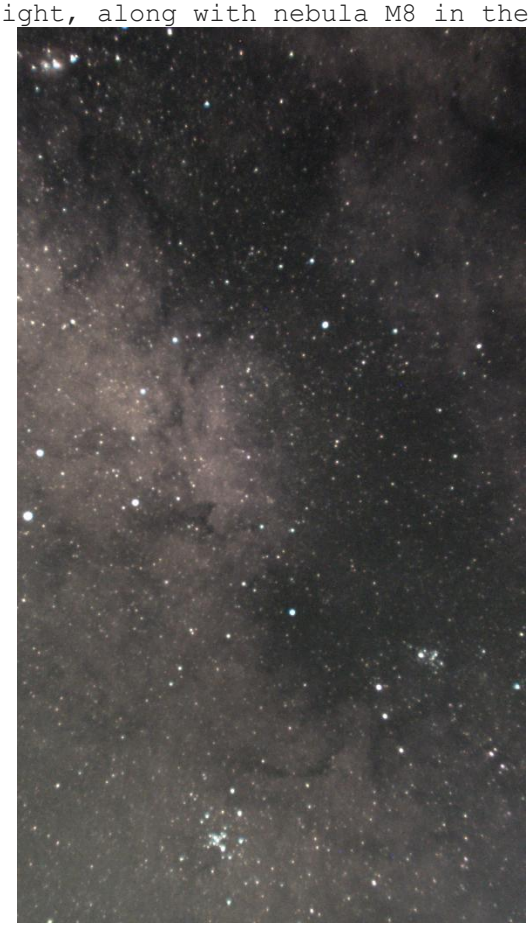
Also, ORAS members Jim L, Rich C, and Ray L were now on the observing field and setting up to my north. (sorry gents, I didn't get around to taking a picture of you & your telescopes). There was now six members setup on the observing field. The sky was a beautiful blue all day with more moderate temps in the low 70's. But there was a persistent breeze with occasional strong gusts. The weather forecast showed a promising clear night ahead.

After enjoying a late with Dean and Gary, at sunset I headed back to my camp and began assembling the hatch tent, uncovering the telescope, and powering up the equipment.

Once dusk had settled-in, with the Milky-Way rising, I started off the night with an observation of the great globular starcluster in the Teapot, M22. I think even with its low elevation, this is still my favorite globular.

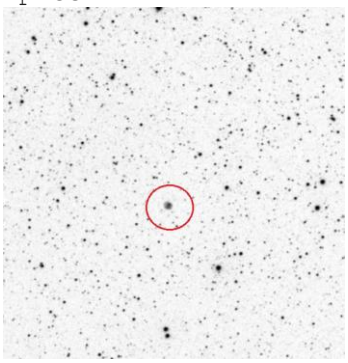
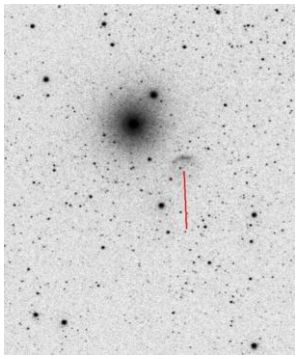
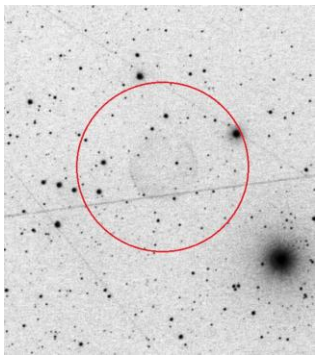
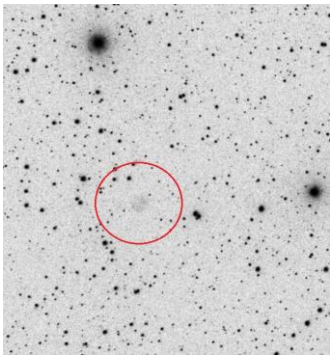
(8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-pro filter, 15 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 5 minutes).

I then EAA observed (but didn't save any images), several Barnard dark nebula in and around Sagittarius, and then slewed the telescope a short distance over to the teapot's "spout" where I used the Canon zoom lens, @25mm, and the ASI290MC camera to make a widefield observation of Baades Window, an area of thinner dust that allows us to observe deeper into the Milky-way's core. The field was large enough to include both M6 & M7 open clusters towards the bottom right, along with nebula M8 in the upper left corner.



(Canon lens at 25mm @ f5.6 on a Atlas Gem, ZWO ASI290MC camera with no filter, 30 second subs, livestacked using Sharpcap for 5 minutes).

After that diversion, I pulled-out my Abell Planetary nebula notes & reference book and went back to hunting those small and faint objects. These included Abell41 in Serpens, Abell59 in Sagitta, and Abell6 & Abell83 in Cassiopeia.
<pics>

(8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-eNhance filter, 180 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap from 6 minutes to 30 minutes).

While observing & hunting Abells, Gary stopped over and helped me figure out a guiding issue that I was having with PHD. Always good to have another set of eyes on a problem.

The addition of the aluminum 'shielding' to my AllSky camera earlier in the day did the trick, as it functioned flawlessly throughout the night.

Here's a timelapse video made from the evening: https://youtu.be/J5c7tKFykmQ

The night sky conditions had started-off very good, crystal clear, but around midnight, lake effect clouds began spreading from the north, eventually reaching us at the ORAS observatory. Spent the rest of the evening chasing large clearings around the sky. Finally around 3:30am, with a wave of thicker clouds barreling out of the north, I called it quits and powered down the scope. In bed by 4am.

Tuesday 06/28/2022:

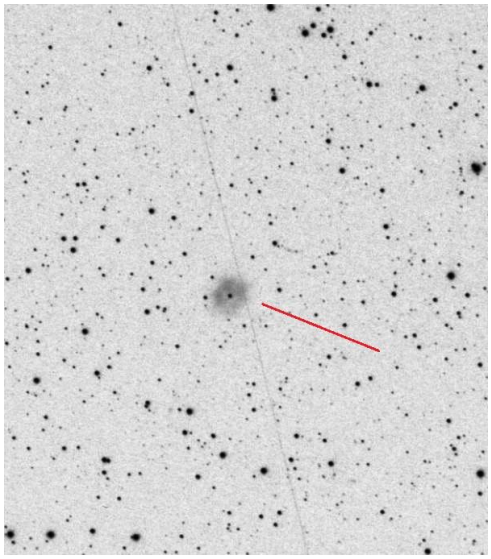
Slept in till near 10am and woke to a cool, pleasant mid-morning. The sky was partly cloudy with a slight breeze. Perfect weather! After a late breakfast, I consulted the forecast, and with clouds called for Wednesday night decided that tonight would be my last night here for this tip. (plus the temp was supposed to get back into the 90's again Wednesday and Thursday). So I began packing a few non-astro related camping gear.

During the day, I visited with Dean, Gary, John, and Rich. Ray had backed up early in the morning and had already left by the time I was awake. John came over to visit my camp and check-out my telescope and EAA setup in the back of my camper. During the afternoon, Several of Rich C's friends from Ohio dropped in to visit, including member Paul S, who

couldn't stay. Mid-afternoon, I headed indoors to get in a nap, as tonight was looking to be an all-nighter. After waking up, I packed a few indoor items and then joined Dean and Gary for dinner. It was a kind of 'clean out your fridge' night, with Dean combining several types of pasta leftovers into a delicious meal. Both Gary and I contributed to the sides.

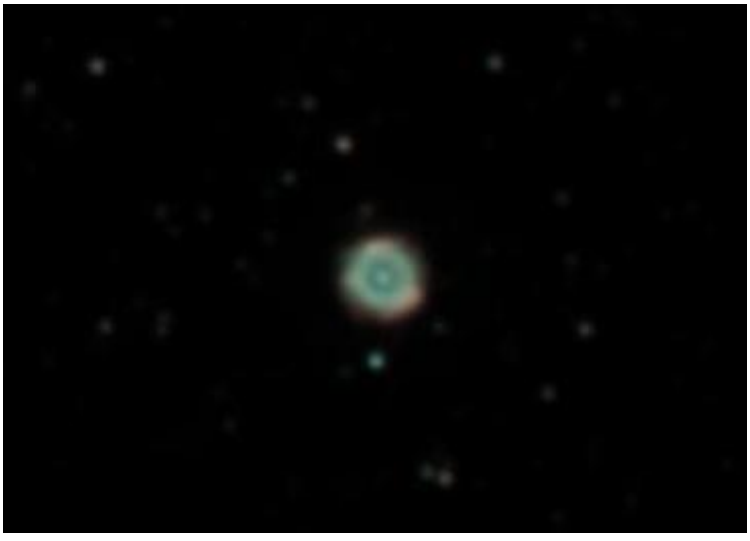
Afterwards, we sat around and Gary told us about his Sky&Tel sponsored trip over to Italy last month. Sounded like a fun time! At sunset, I headed back to my camp and prepared for the final night of observing, assembling the hatch tent, uncovering and powering on the telescope, and putting together an observing plan. I decided to finish-out the trip by continuing to focus on Abell Planetary nebula.

At dusk, I began cooling the camera down to minimize hot-pixels, opened up my Abell planetary reference book/finder charts. With the Milky-Way softly glowing in the eastern sky, I pointed the telescope to Lyra and began with EAA observing Abell46, I nice round nebula with a bright central-star. Here's the image:

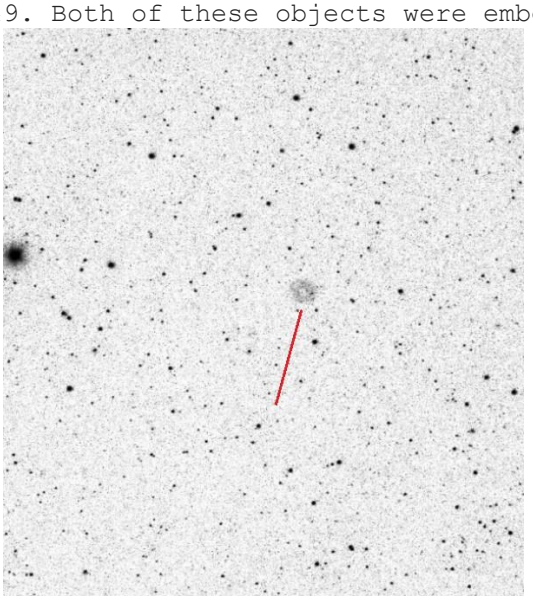


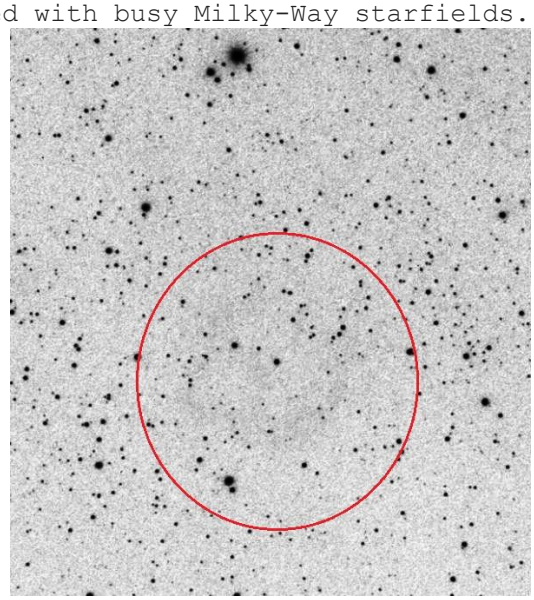
(all of tonight's observations made with a 8" SCT @ f6.3 on a Atlas Gem, ZWO ASI294MC camera with L-eNhance filter, 180 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 15 minutes).

I then dropped down to Aquila and observed a couple of bright NGC planetaries, NGC6751, which is quite small, but with a bright central star, and much larger NGC6772, which displayed good colorful interior details and the tiny pinprick of its central star.



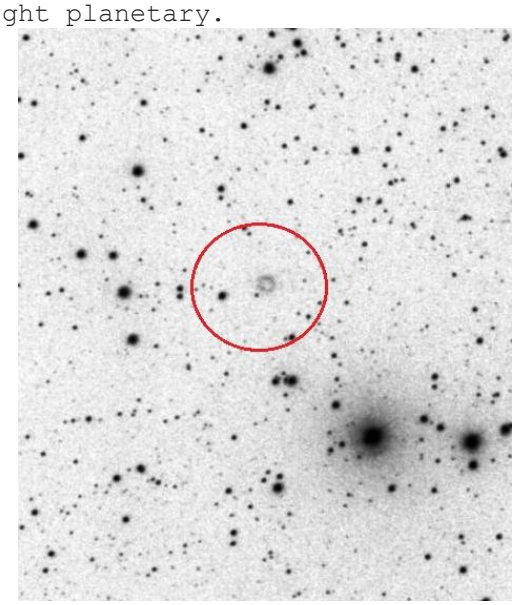
Additionally, I tracked down Abell48, a small ring shaped planetary, and then moved over to Scutum for Abell45, a large, very faint object, and then the small round glow of Abell49. Both of these objects were embedded with busy Milky-Way starfields.



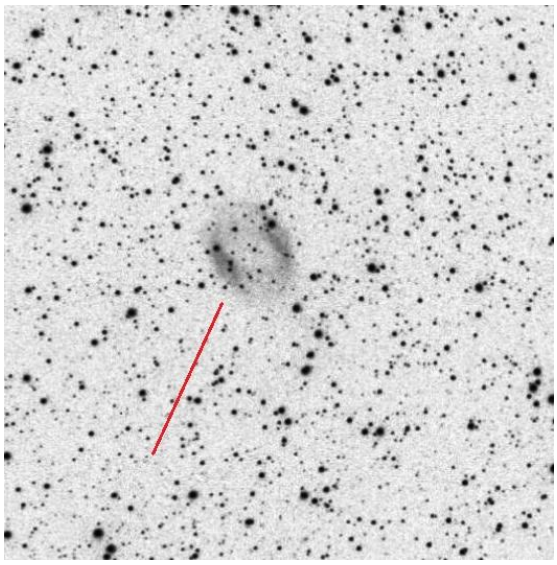


A little after midnight, I went for a walk and visited with both Dean and Gary, both busy with their imaging projects. The sky continued to stay clear, with naked-eye views of the Milky-Way looking excellent! While there was some dew, it wasn't like the baths of earlier in the week, and there was no fog.

Once back at camp, I then slewed the telescope up to Cygnus, now flying high above, for a number of Abells including Abell61, another large, very faint, ethereal object. And Abell69, another tiny little oval ring, and Abell71 which was a nice sized, uneven shaped, bright planetary.



With the clock half-past 3am, I decided to go for one more object, Abell80 in Lacerta. It's a broken ring planetary in another busy starfield.



With the glow of dawn beginning to shine in the eastern sky, I reluctantly powered-off the telescope and cameras and headed in for bed around 4:30am. This was the best night of the trip!!

Wednesday 06/29/2022:

Up early, after only about 4.5 hours sleep to begin breaking down the telescope & cameras before it became too hot. As it was I got slightly sunburned under the clear skies.
By noon, I was ready to go. (slight delay when my car wouldn't start, big thanks to John l for the battery jump). Made my goodbyes to Dean, Gary, Rich, and John, and started the drive back to Pittsburgh. Arrived in town by 3pm.

Once home, I unpacked the car and camper and cleaned-up.
A little bit exhausted, but still a happy camper!
I hope to be back to the ORAS Observatory in August for AstroBlast!

Larry McHenry
Astronomical Webportal: http://www.stellar-journeys.org/