ORAS Observatory Late April, 2025

For the April new Moon, occurring on Sunday, the 27th, our little traveling band of amateur astronomers Dean S, Gary S, Dean M, Denny H, and usually Ed K, (except Ed was at the Texas Star Party), were closely watching the weather forecast to decide where to go: south to Calhoun or the ORAS Observatory. After a bit of flopping around, we decided to head northwards to the ORAS Observatory.

Tuesday 04/22/2025:

Having pre-packed the camper and car the day before, all I needed to do was hookup. But, after seeing how much the grass had grown the past two days, I decided to cut the yard before I left, otherwise I'd be harvesting it when I got back. ☺
So by a quarter to twelve I was on the road northbound with an ETA of around 2:30pm. Once past Pgh, the traffic eased-up and the drive was easy-going. I stopped for lunch at the Rt8 and I80 Barkeyville interchange and met Dean M there for lunch. After stopping for gas, I arrived at the observatory a little before 3pm, with Dean M ahead of me by about 15 minutes. Dean S was already there setup by the west power pedestal. I headed over near the middle pedestal on the east field.



While setting up camp and telescope under a sunny sky, Chris T arrived to do visual using the Meade 14" SCT. As it had been nearly six months since I last setup my telescope in the field, it took me awhile to get everything assembled. Here's my usual EAA setup: 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 Antaries refractor guidescope with an ASI120MC camera. I also setup my DIY AllSky cam of an ASI224MC camera & fisheye lens in a Plexiglas dome attached to a tripod.



(The SeeStar S30 would wait for another night).

Around 6pm, we gathered over by Dean S's camp for a few snacks and beverages. Then after a quick phone-home at 7:30pm, I finished prepping the clamshell blackout tent and my observing notes for the evening. It was 'Galaxy Season', and they dominated my plans. Unfortunately, at sunset, hazy skies moved back in.

So after completing my polar alignment and getting the scopes focused, I went for the bright globular cluster M3 in Canes Venatici as my 'first light' of the camping season. Had to babysit the scope, stopping and starting the livestack as thicker clouds rolled over. But eventually I was able to complete the observation using both the 8" SCT and the 50mm EVOscope. Here's the EAA observation:

(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 15 second subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 10 minutes). (EVO50mm @ f4.2 ASI294MC camera & L-Pro filter, 15 sec subs, for 10 min).

By 11pm, the sky conditions had improved to the north so that I could go galaxy hunting in the Great Bear – Ursa Major.

First up was the galaxy pair of NGC3893 and NGC3896. I then followed that up with another galaxy pair – NGC4284 and NGC4290. (I love TwoFers!)

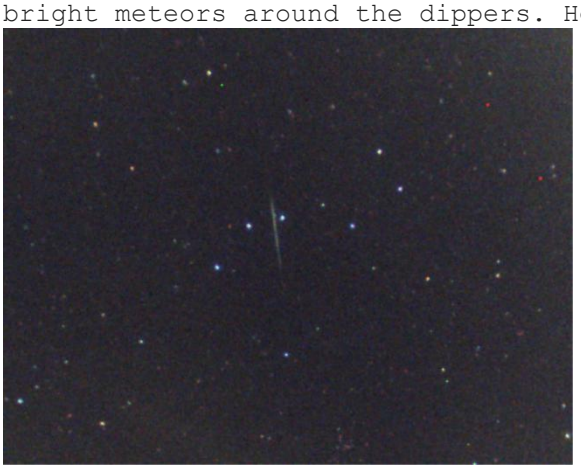
Here's the observations:

NGC3893 & NGC3896.

NGC4284 & NGC4290.

For both:
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 3 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 30 minutes).

During the evening, in addition to my visually seeing them, the AllSky cam caught several bright meteors around the dippers. Here's the best one from 12:10am on the 23rd.



While I was chasing galaxies, Dean S was imaging the 'Monkey Head Nebula' – NGC2174 in Orion. Chris had finished up his visual observing and closed the observatory up, and Dean M struggled thru the evening battling equipment issues.

Shortly after finishing the second pair of galaxies, the clouds came barreling back in.

I stuck it out till nearly 2am hoping for a clearing, but finally gave up and went to bed.

Wednesday 04/23/2025:

Slept in till near 9am. Gave Dean S a hand attaching the field roller to the club tracker. Dean then proceeded to roll both the west and north field.

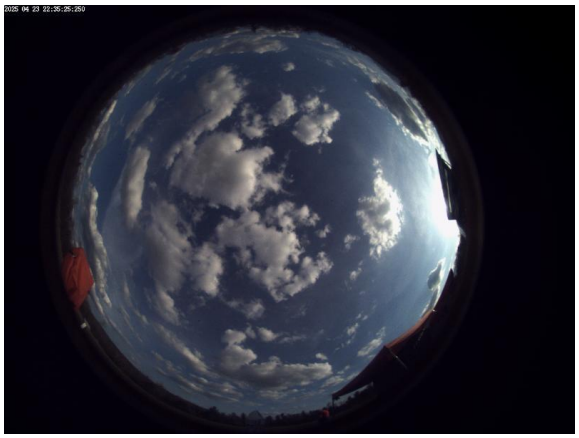
One of the things I wanted to do on this trip was continuing testing my solar battery/generator and solar panels with a full day and night usage. So after setting up the panels and generator, I unplugged from the power pedestal and went 'solar'.

The day was a bit hazy with patchy clouds, so as expected the panels weren't generating the 400 watts they were rated for, but I was getting enough juice to offset the camper draw. (Though running the microwave or flipping on the electric heater went thru a fair amount of wattage). I would have to be careful that evening with running my heaters.

After getting the solar squared away, I got out my SeeStar S30 smart telescope and setup for equatorial mode, (Alt-Az shown below), aligning the tripod and wedge best I could during daylight. Later that evening, once dark, I would complete the polar alignment.

Late afternoon, Dean M grilled BBQ chicken for dinner. Yum!

Denny H arrived with his camper around 7pm and setup on the East field by the first power pedestal. Denny didn't bring his scope as he was planning on getting trained on using the ASIAir that we setup earlier in the month on the C14. At sunset, the clouds began to dissipate, so I uncovered the 8" and started up the AllSky cam, along with attaching the blackout tent to the camper.



At dusk, under a clear sky, the Dean's and I hurried to get our scopes running and imaging before joining Denny up in the observatory where he was practicing using the ASIair app on his tablet to control the C14.

I quickly got my S30 polar aligned and pointed at M51 before walking over.
(didn't realize how bright the S30's power button would be, fixed that the next day).
We then spent the next couple of hours with Dean S leading us thru various ASIair app settings. Unfortunately, due to several technical issues with the equipment that we didn't resolve until the next day, we were unable to acquire any usable images from the C14. Also, Denny realized that the roof opener cable had started to unspool/tangle on the wench, so he needed to spend time fixing that.

During the training and repair session, I was able to walk over to the opened southern end of the observatory and wifi connect to the S30, monitoring its progress on M51 and then changing targets to M101.

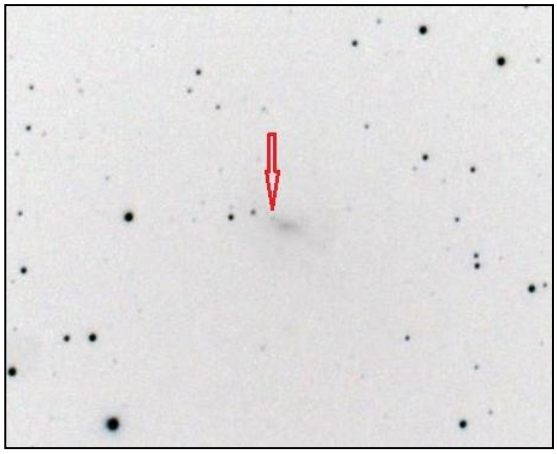
Here's the final observations of the Whirlpool Galaxy and the Pinwheel Galaxy:

(SeeStar S30, 30 second exposures in EQ mode with the IR filter, livestacked for about 90 minutes, then AI noise reduction applied in-app)

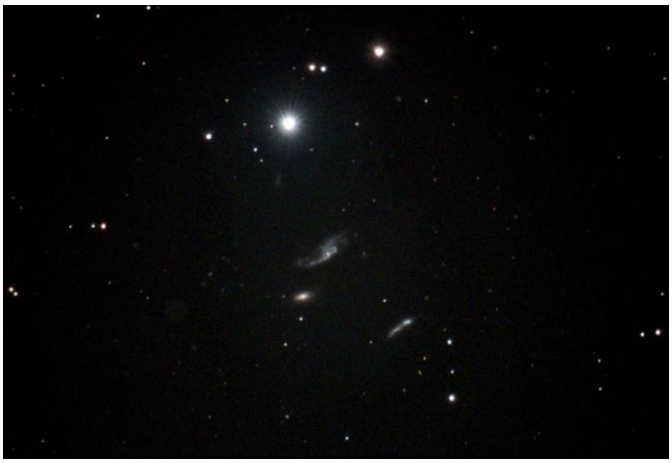
I’m still amazed at what this little 30mm scope can do!

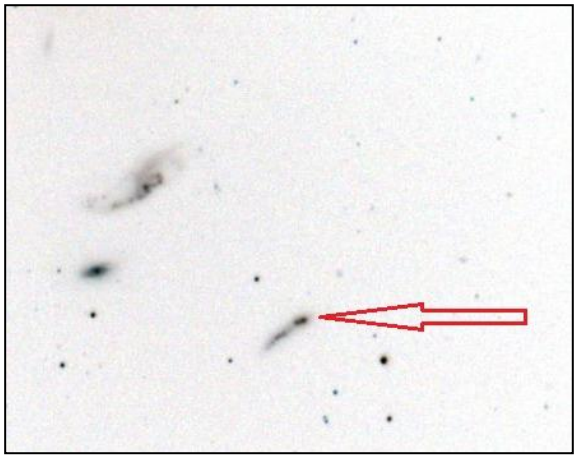
At the conclusion of the ASIAir training at midnight, I quickly headed back to camp. The sky was beautifully clear, and my 8” scope was warmed-up and waiting patiently. It was “galaxy o’clock” time! I pulled out my May Sky&Tel magazine and used the article on extragalactic HII starburst regions as my guide for the night. Several of the early evening galaxies mentioned had already set or were too low to the horizon, but Ursa Major was riding high in the north so I focused my hunting there. Using the article’s photos and descriptions I was able to identify the HII regions in galaxies UGC4499, the trio of galaxies NGC3991, NGC3994 and 3995, along with the large bright Messier galaxy M106.

Here’s the EAA observations. First up, UGC4499 in Ursa Major: (HII = Markarian 94)

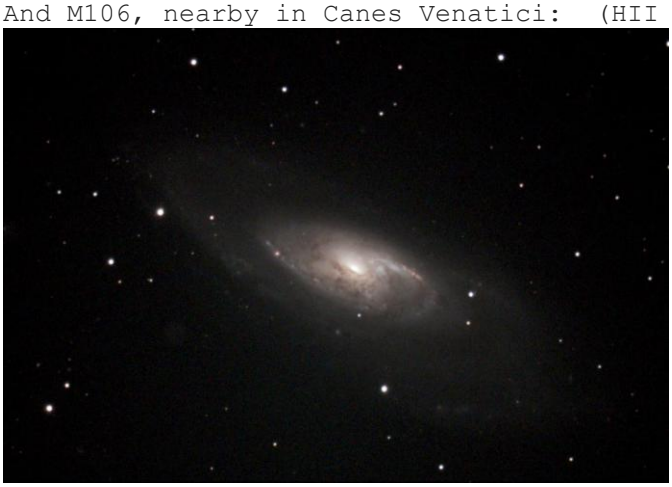


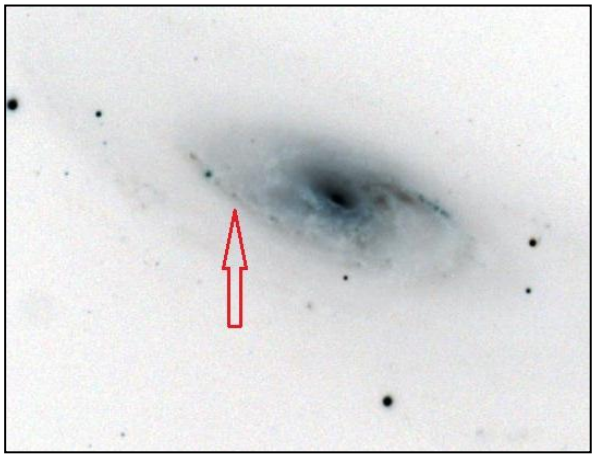
Next, NGC3991, with NGC3994 and NGC3995 in Ursa Major: (HII = Haro 5)



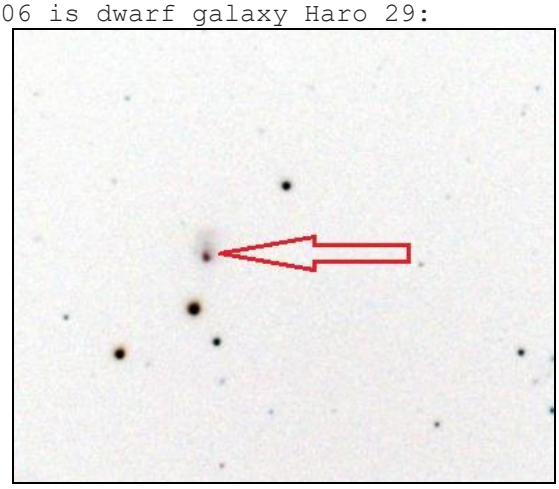


And M106, nearby in Canes Venatici: (HII = 74C)





Finally, just a short distance away from M106 is dwarf galaxy Haro 29:

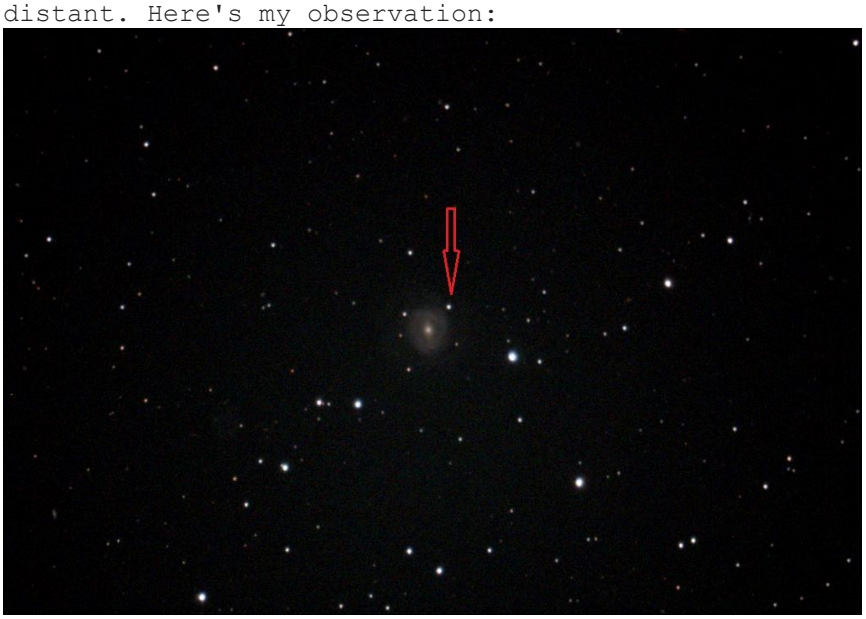


Pretty impressive to think I was seeing the combined light of giant gas clouds, OB Associations, and super star clusters in distant galaxies other than our own.

For all:
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 3 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 30 minutes).

With the clock going on 4am, and I was starting to run out of observing gas, I had one last deep-sky object that I wanted to observe. A week or so back, Kiski Astronomer John L alerted me to a new supernova. I was able to EAA capture the type 1a Supernova SN2025fvw in NGC5957 located in Serpens. Type 1a supernova occur in binary star systems when one of

the stars is a white dwarf that siphons off too much material from the other star to the point that the white dwarf's core becomes unstable and explodes, destroying the star. NGC5957 is a 75,000 light-year in diameter barred spiral / ring galaxy about 104 million light-years distant. Here's my observation:



(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 15 minutes).

With that task completed, I stepped outside to catch the summer Sagittarius Milky-Way rising in southeast. A beautiful sight to wrap up a long night of astronomy.

In bed around a quarter to five, am.

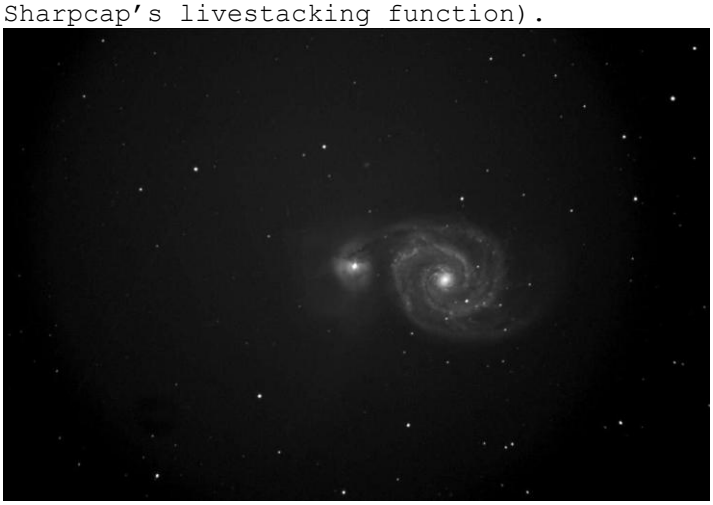
Here’s a timelapse from Wednesday night: https://youtu.be/bHoRhBdWXaY?si=kjO2xEqlHQFMxBMN

Thursday 04/24/2025:

After a restless short sleep of less than 6 hours, (kept waking concerned I was going to drain the battery from running the camper heater), I was up by 11am. While I was still sleeping, Denny completed the roof opener repair and the Dean’s drove over to the Cranberry shopping area to purchase a measuring wheel and stake/flags. Our project for the day was laying out the general location of the new classroom/garage/restroom building up by the observatory and getting the distance in feet of its location down to the Jones building for the electrical, water, and sewer lines that will need trenched. For the next couple hours, the four of us walked the field, planting stakes and taking measurements. Once we had that info, Dean M passed it along to Tim S and the contractor.

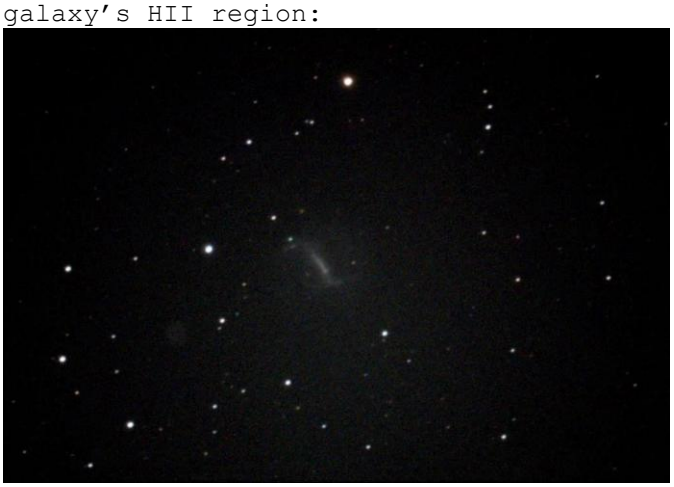
Then we headed back to the observatory where we corrected the C14 scope issues from the night before. We were now ready to make another attempt at taming the C14/ASIair that evening. With the chance of rain Friday morning in the weather forecast, I put away my solar panels and generator and plugged back into the power pedestal. Then I took a late afternoon nap. At dusk, we gathered back at the observatory.

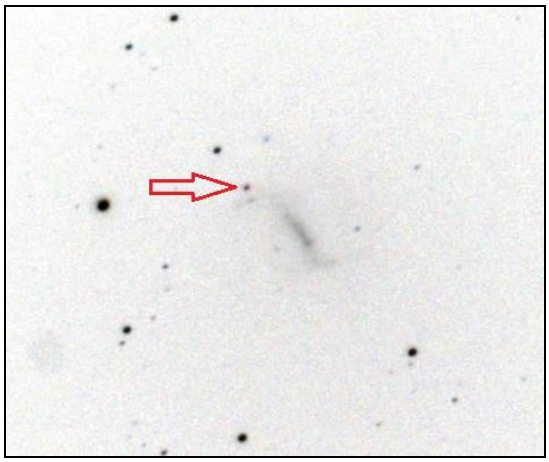
Within an hour with Denny in the driver seat, we had an image of M51 with the C14. (here's a version that I processed the next day: C14 & ASI2600MC, L-Pro filter, 10 three minute subs captured with ASIair, then re-stacked the next day by running then thru Sharpcap's livestacking function).



(C14" SCT @ f6.3 ASI2600MC Pro camera & L-Pro filter, 180 sec subs)

While working with the C14, clouds began rolling in. I hurried back to camp and after a struggle of finding sucker holes managed to EAA observe one other starburst galaxy from the May SKY&Tel article, NGC4204 in Coma Berenices. Here's the observation of the galaxy's HII region:





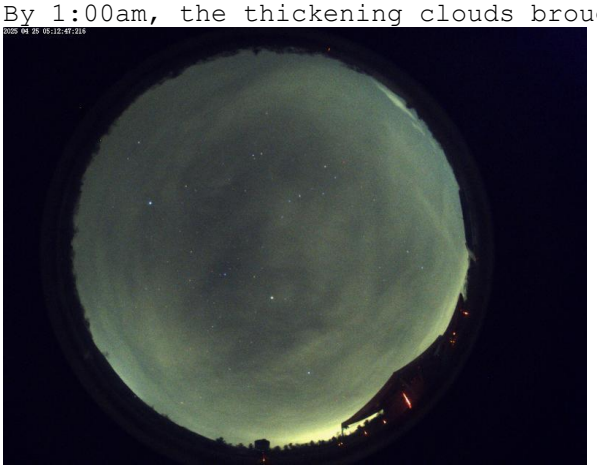
(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 30 minutes).

Denny spent a little more time working the C14, taking images of the Ring Nebula, M57, and the Blackeye Galaxy, M64. Dean S had his scope pointing at M51, and Dean M was chasing faint Local Group dwarf galaxy Leo I, located next to Regulus.

I also had the SeeStar S30 going, (now back in Alt-Az mode) and observed the globular clusters M13 in Hercules and M5 in Serpens:

(SeeStar S30, 20 second exposures with the IR filter, livestacked for about 15 minutes, then AI noise reduction applied in-app)

By 1:00am, the thickening clouds brought the observing night to an end.



With that I called it a night and after shutting down the scope, headed indoors to bed.

Friday 04/25/2025:
Slept till 9am. Denny had already hooked-up his camper and headed for home early to beat the incoming rain. Dean M had also left, but planed on returning later in the weekend.

After visiting with Dean S, I spent the day in the observatory using ASIair to make a new dark frame library for the C14 or back at my camper reading. Throughout the day, the thickening clouds threatened rain, but other than a few brief showers the heavy stuff held off.

Around 4pm, Gary S arrived and setup camp over in the west field by Dean. After visiting for a bit, I headed back to camp for dinner. Around 8pm, the heavy 'cats n dogs' rain began to move in, with an occasional thunderstorm in the mix. It continued raining hard till close to midnight, with my phone alerting me to flash flooding in the area.
I spent the evening reading and listening to the rain hitting the camper.
In bed by 1am.

Saturday 04/26/2025:
Woke to a dreary, cold morning. The rain had finally let up in the wee hours, but now the wind had picked up with strong gusts throughout the day. The outdoor temps went from the low 50's in the morning down to 44 deg for most of the afternoon. Overnight the temp is expected to drop down into the mid 30's. Birr!!

Spent the day indoors hibernating, reading and listening to music.
Around 4:30pm, Dean M returned, and a little later the group met for snacks in Dean's camper. Headed back to camp at 6:00 for dinner and spent the evening working up my earlier observations, surfing online and listening to the wind. An early night to bed.

Sunday 04/27/2025:
Woke to a sunny morning! The outdoor temps started off chilly, but was soon rising into the mid 50's, The weather forecast for tonight was very promising! Hopefully, the breeze will die down at sunset. After breakfast, spent some time cleaning off old observations from the SeeStar scope storage, while uncovering and letting the main 8" telescope & AllSky cam dry out in the sun. Got a little reading in too and watched the Dean's use the club tractor to roll the east observing field.

I then worked with my solar generator and panels testing the output from each individual panel and combined in parallel. The setup can easily cover the camper's electrical needs during the day. Tonight I am going to try running both the camper and telescopes off of the battery pack to see how far I can get thru the night. Suppose to be chilly overnight, so I'll probably plug the camper back into the power pedestal.

At 5pm, the Dean's, Gary, and I met for snacks & beverages over at Dean M's camp.
Headed back to my camp at 6pm to make dinner and phone home. At 7pm, I prepped my observing notes and readied the telescopes. The sky was looking really great! It might be another all-nighter! For a change in pace, I re-pointed the AllSky cam to the North and began collecting frames.

Once dusk had settled in, I powered-up the scope and slewed it over to Arcturus rising in the eastern sky. Was planning on a quick focus check and then galaxy hunting.

But that was not to be, the Scope Gremlins were visiting! The mount GoTo and plate solving was not accurate. After several attempts and checking the telescope for any cables that might be snagged, I realized that with all the wind and rain over the last several days, the tripod legs had sunken into the ground a little and shifted.
I had to redo the mount polar alignment routine. With that done, the scope settled down and performed as usual.

I started off working a number of galaxies around Polaris, based on a Sky&Tel article from last December. I apparently still had a few pesky Gremlins lurking as PHD wouldn't guide that close to the pole. So I went without guiding and was able to get most of what I wanted to observe. Here's the observations: NGC6251 & NGC6252 (left) in Ursa Minor:


NGC6251 is an elliptical galaxy with a central supermassive black hole. NGC6252 = spiral.

And NGC2336 with IC467 (right) in Camelopardalis:


NGC2336 also has a number of HII star forming regions.

(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 21 minutes for NGC6251 and 30 minutes for NGC2336).

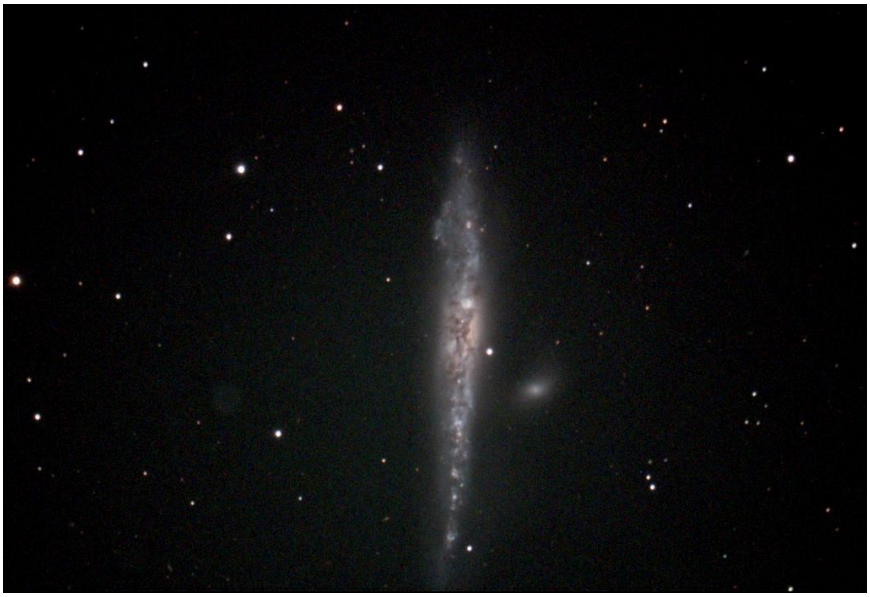
NGC2633, with nearby NGC2634 & 34A, also in Camelopardalis: (guiding was poor on this)

(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 15 minutes).

While I was having fun fixing issues and chasing deep-sky objects around the north, Dean S was shooting M100 in Coma Berenices, Gary S was doing an imaging run on IC2574 - Coddingtons Nebula, in Ursa Major, and Dean M was working on his Milky-Way dwarf galaxies project. Around 1am, I went for a stroll and delivered KitKats to Gary and Dean M. Dean S was already down for the night. The night temperatures kept dropping into the upper 30's, so at 2:30am I took a break and went inside my camper to warm up and make a hot cup of tea.

I slewed the telescope across the meridian to Ursa Major and continued hunting galaxies using both the 8" SCT and the 30mm SeeStar until nearly 4:30am.
Here's the EAA observation: NGC3184 in Ursa Major:

NGC4631 & 4627 – "Whale & Calf Galaxy" in Canes Venatici with the 8" SCT.
Also using the S30 for widefield which included NGC4656 & 4657 – "Hockey Stick & Puck"

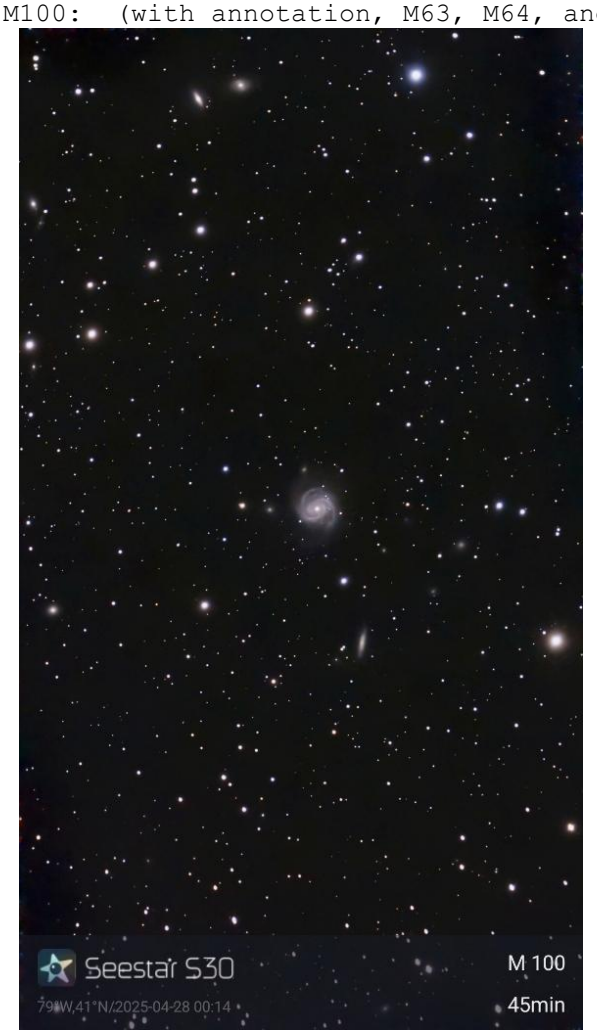


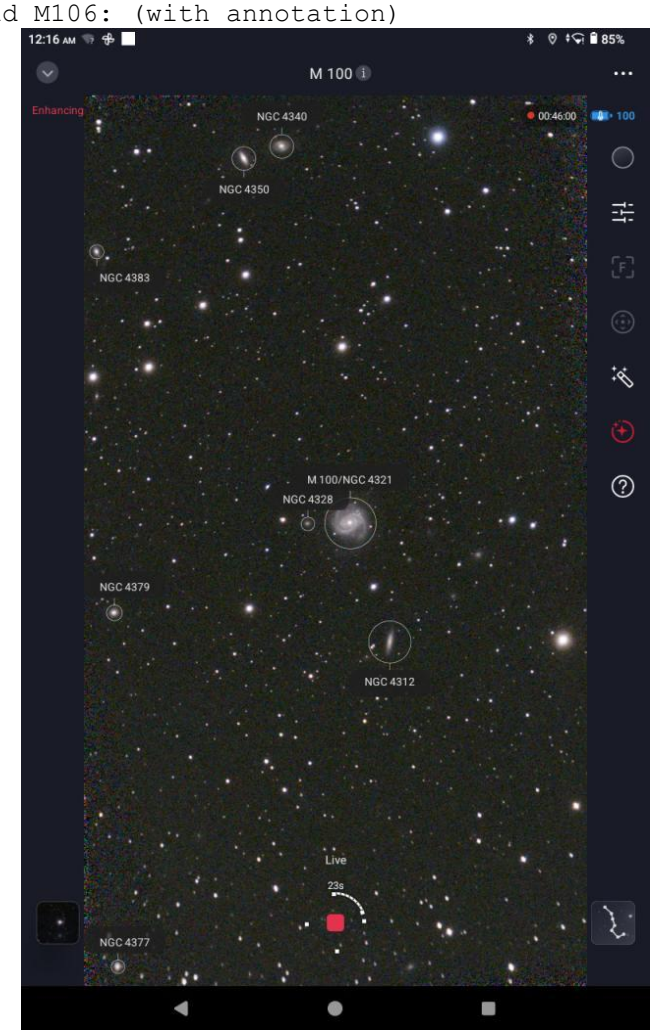
(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 30 minutes).
(SeeStar S30, 30 second exposures with the IR filter, Alt-Az mode, livestacked for about 30 minutes, then AI noise reduction applied in-app)

Then in Draco for the trio – NGC5481, 5482, and 5485:

(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 30 minutes).

Also using the SeeStar S30, I made the following observations:
M100: (with annotation, M63, M64, and M106: (with annotation)






Seestar S30
M 63
79°W,41°N/2025-04-28 02:49
45min


Seestar S30
M 64
79°W,41°N/2025-04-28 01:17
49min


Seestar S30
M 106
79°W,41°N/2025-04-28 01:54
30min


1:49 AM
71%
M 106
Enhancing
00:24:30
100
NGC 4346
M 106/NGC 4258
NGC 4248
NGC 4220
NGC 4217
Live
21s

(SeeStar S30, 30 second exposures with the IR filter, Alt-Az mode, livestacked for about 30 to 45 minutes depending on the object, then AI noise reduction applied in-app)

The outdoor temp was now hovering at 30 degrees and everything was covered with frost! My AllSky cam was loosing the battle, icing up.

Decided to call it a night.

Monday 04/28/2025:

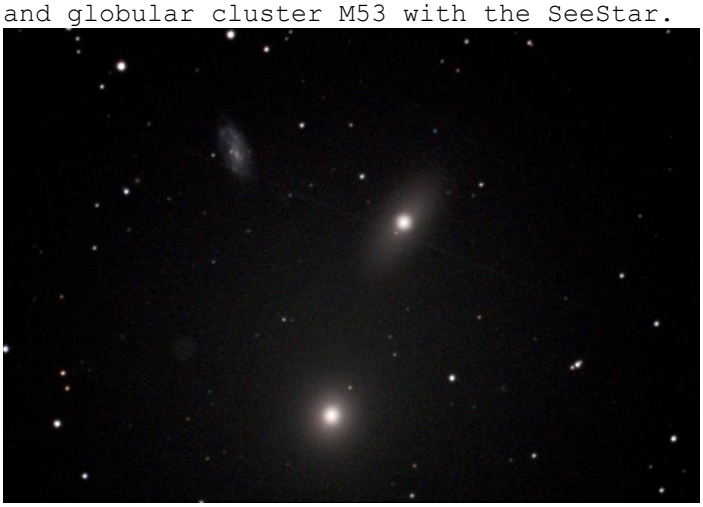
Slept in till 10am, about 5 hrs of sleep. Woke to a warm camper. Outside, the temp had risen back into the mid 50s and it was a sunny clear day.

Visited with the guys for awhile as we watched Dean S break camp and eventually leave for home around noon. I then continued experimenting with how to run my camp and telescope equipment off of solar. Think I finally have it figured out. When I go to the June Greenbank StarQuest, that will be a good test.
Throughout the afternoon, it was a beautiful day, clear sky and warm sunshine. Good to be outdoors.

Late afternoon, I packed away any unnecessary camping gear and put away the solar panels and generator. Got in a late afternoon nap for about an hour. At 5:30pm, Dean M, and I met over at Gary's camp for snacks. Dean then cooked a pack of brats that Gary had brought for dinner. Nice! While finishing dinner, ORAS member Chris T arrived to use the Observatory Meade 14", and stopped to visit with us.

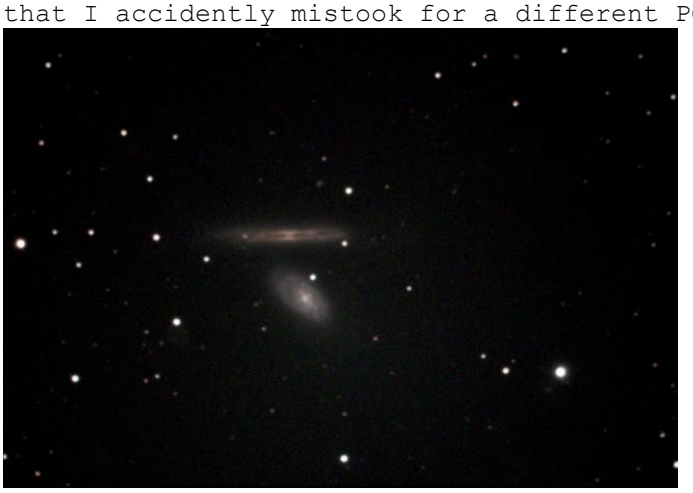
Back at camp, I readied my scope and observing notes, and phoned home for a chat with the better half. We all were optimistic for a clear evening, but we were let down by a layer of haze that moved in from the west. Gary stopped over to commiserate about the sky.

I did find a few bright galaxies to observe with the 8", including M105 with friends NGC3771 & 3733, and globular cluster M53 with the SeeStar.



(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 30 minutes).
(SeeStar S30, 20 second exposures with the IR filter, Alt-Az mode, livestacked for 15 minutes, then AI noise reduction applied in-app)

I then walked up to the Observatory to visit with Chris. While there, Gary also stopped in. Afterwards, the two of us walked over to visit with Dean. Around midnight a clearing went thru and I added several more galaxies to my capture list, the bright galaxy pair of NGC4298 & 4302, and a trio of fainter & smaller PGC galaxies PGC28274, PGC28281 & 28282 that I accidently mistook for a different PGC galaxy that I was hunting. LOL.



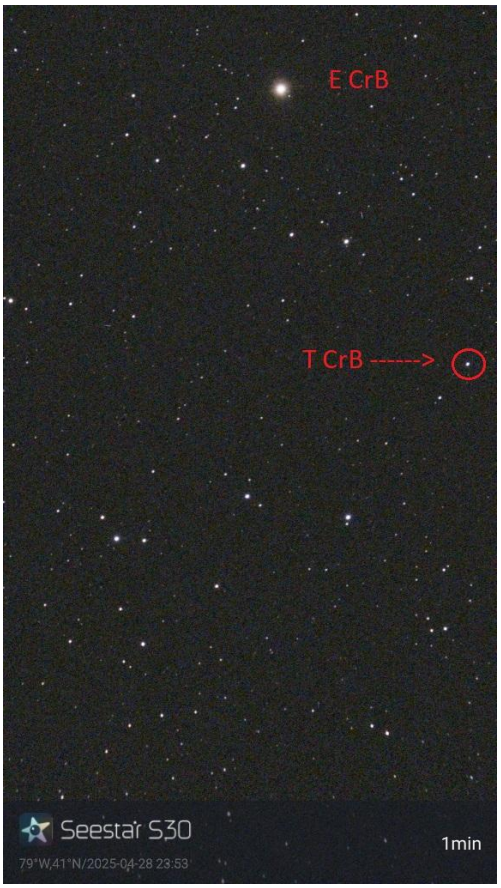
(8" SCT optical tube on an Atlas GEM, ASI294MC camera & L-Pro filter, 180 second subs livestacked in Sharpcap for 30 minutes for the NGC galaxies, 15 minutes for the PGC).

During this time, I was also putting the S30 to work for widefield galaxy hunting. Even with only 30mm of refractor, the tiny smart scope can still pull in all the bright Messier and NGC deep-sky objects!

Here's the EAA observations: M94, M109, and NGC4564:

(SeeStar S30, 30 second exposures with the IR filter, Alt-Az mode, livestacked for about 20 to 30 minutes, then AI noise reduction applied in-app)

Also used the SeeStar for a quick (10 second subs stacked for 1 minute) shot of the star T Coronae Borealis to see if it had “nova’d” yet. Nothing to see, LOL.



Around 1am, thicker haze and clouds moved back in, so I called it a night.

Here's a timelapse from Monday night: https://youtu.be/9bGjAufVF-M?si=QAFJUYrxpZ1ctWco

Tuesday 04/29/2025:

Up by 8am. Gary and Dean were already busy packing, and after a quick breakfast, I joined in the fun. Dean was the first to leave, with Gary following a little later and I was last man out by 10:30am.

Drive home was uneventful, though going thru downtown PGH during a weekday is a pain.
By a quarter after 1pm I was backing the camper into the driveway.
Got the camper and car unpacked, just in time, beating the late afternoon severe storms that knocked-out power for the next two days!

So, overall, it was another good astro-camping trip. Was able to get observing in on five out of seven nights, which included two all-nighters! And it's always good to spend time under the night sky with fellow amateur astronomers. Looking forward to the next trip.

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