# Calhoun County Park, WV.  December, 2023

With the December New Moon falling mid-month, our little group of astro-travelers kept our campers out of winter storage for one last trip of the year. While we were open to going to any of our three dark-sky locations, Cherry Springs, ORAS, Calhoun, with its more southern (and warmer) location, we were hoping for Calhoun.

The weather forecasts for the weekend of the 8th were all over the place, flipping from clear, 50 deg weather to snow and high winds, back to clear, back to snow. It was hard to make travel plans! lol! But finally, the forecast started to settle down and the week of December 11th was looking really good for Calhoun.

**Monday 12/11/2023:**

It was a cold morning; lake effect snow squalls left a dusting of the white stuff on the house roofs and cars.

Waited till around 9:30am for the Pittsburgh rush-hour traffic to subside before leaving. The drive to Calhoun started off chilly and dreary. At Uniontown, snow squalls were still playing along the mountain ridges, leaving them glistening white. I hurried around the mountains southwards expecting a snow shower to hit at any moment. Fortunately, the road stayed dry. Once past Clarksburg, the sky began to lighten with an occasional peak of sunshine.

Arrived at the park at 2:15 pm.
The observing field was a little damp, but no puddles in our usual section. Alexi (from ORAS/Kiski clubs) was already here! Also several people had checked into the cabin.
A little later I learned that the cabin is rented out by imagers Dave and his friend Chris, both from the Toledo Ohio area, who we met at Calhoun last month. Each one had a pair of scopes with imaging kits setup.

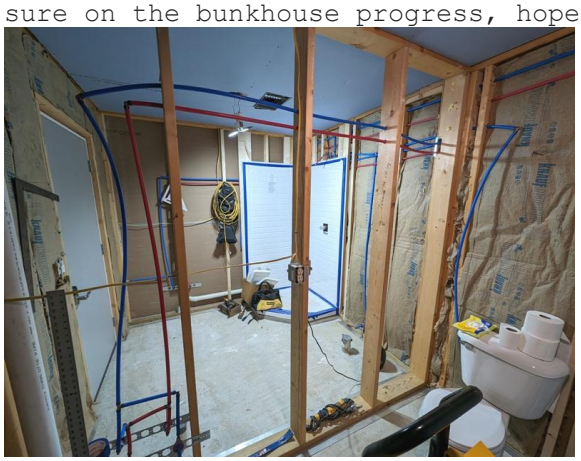
I quickly selected a spot on the field, leveled the camper, plugged into the power pedestal, and turned on the camper heater. After unpacking a few indoor items I headed back outside and setup my usual EAA astronomy equipment:

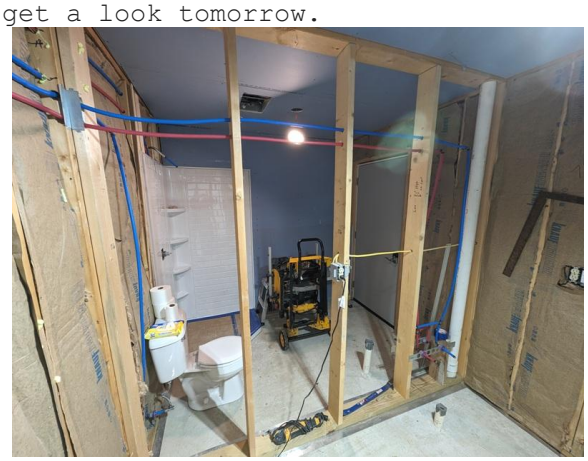
a 8” Celestron SCT optical tube @ f6.3 with a ZWO ASI294MC Pro camera, ZWO filter wheel & focuser, on an Atlas EQ GEM mount, along with a piggybacked on-top Sky-Watcher EVO50mm f4.8 refractor & ASI294MC camera (uncooled model), and a 60mm Antaries refractor guidescope with a ASI120MC camera, and piggybacked on the bottom rail of the scope a small Canon 5.5-55mm CCTV lens (set to 25mm) & ASI290MC camera as a super-widefield finder.
And I setup the Allsky cam, a ZWO ASI224MC & fisheye lens in a DIY dome.

The sky remained overcast and the observing field chilly and damp. Temps hovered around 36 deg and were expected to fall into the upper 20's overnight. Several times during telescope setup, I needed to head inside the now toasty camper to warm my fingers. Finally had everything attached and the scope balanced by 4pm. Then I moved back indoors to setup the laptop and test the connection to 5he scope and cameras. I planned to work inside the camper this trip.

Ed K and his portable observatory (ORAS/ Kiski club) arrived around 3:25pm and setup in his usual spot. A little while later Andrew from Ohio arrived and setup his big visual 22” dob to our north over near the bunkhouse.

Checked out the restroom building, no showers yet, just a little drywall installed. Not sure on the bunkhouse progress, hope to get a look tomorrow.

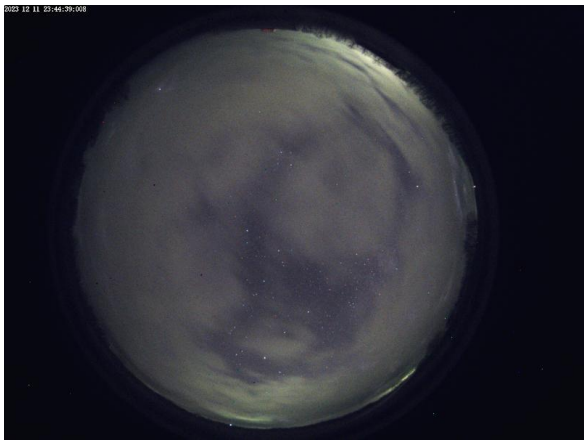




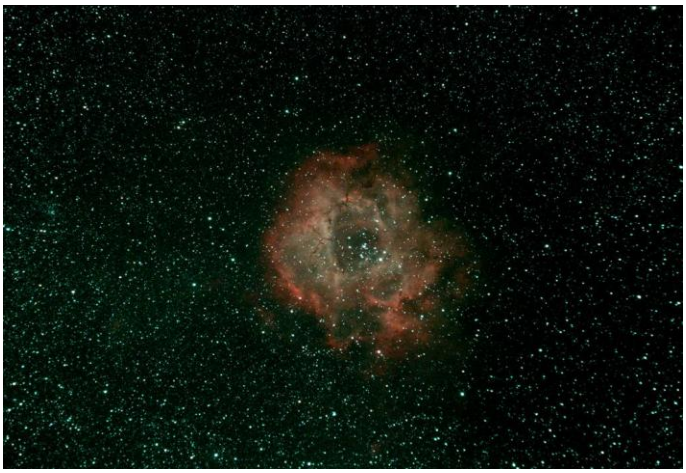
After fixing dinner and cleaning up, there was nothing to do but wait for the clearing line to reach central West Virginia, sometime after 8pm.

Alexi stopped over to visit for a few minutes. Around a quarter to 7, started seeing sucker holes on the AllSky camera. Walked over to visit with Ed, and took a container of cookies. I then dropped in on Alexi, Andrew and finally over to the cabin with Dave and Chris to share the cookie batch.

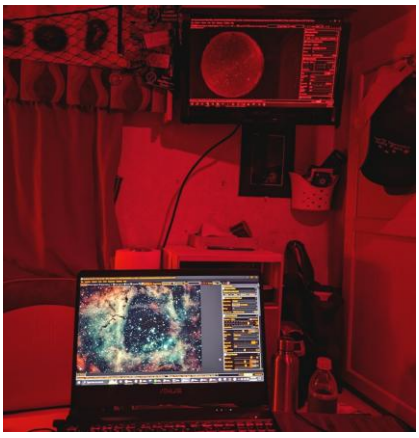
Headed back to my camper at 8:30pm, still no clear skies. Finally, a few minutes before 11pm, I could see the clearing line approaching from the SW in my AllSky!



By a quarter after 11, the sky was completely clear. Took awhile, but by 12:30am I was polar aligned and cameras focused. With it already being so late in the evening, most of my observing plan for the night was shot, so I decided to start off with a deep dive on the Rosette Nebula – NGC2264 in Monoceros, while I readied plan B.
I was quite happy with the deep observation bringing out a detailed view of the dark Bok Globules highlighted in front of the bright emission nebulosity. Here's the observation using both the EVO50mm & the 8" SCT optical tube:



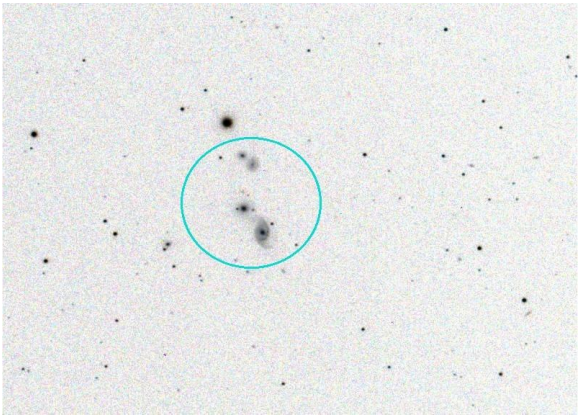
(EVO50mm @ f4.8 ASI294MC camera & L-eNhance narrowband filter, 3 min subs, livestacked using Sharpcap for 1 hour), (8" SCT @ f6.3 ASI294MC Pro camera & L-eNhance filter, 5 min subs livestacked for 1 hour)

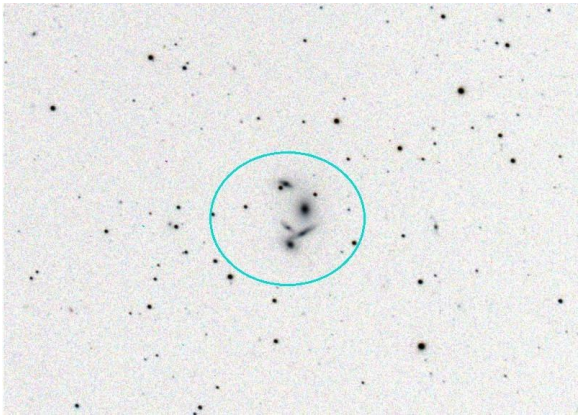


It was very comfortable being inside the camper with the laptop. Much warmer than if I had been outside using the hatch blackout tent. Didn't need to wear a heavy coat, just a light sweater. An added bonus, the microwave & snacks were just an arm-reach away. I could sit and enjoy a hot mug of tea and a KitKat bar while watching my EAA observation livestack, along with keeping an eye on the AllSky. ☺

By now, it was after 2am, and with Leo was riding high in the eastern sky, I was ready to begin observing Hickson Compact Galaxy clusters starting with HCG47 & HCG52. I then moved over to the southern sky for HCG39, HCG40, and HCG43 in Hydra and Sextons. The best two clusters were HCG47 in Leo and HCG40 (also known as Arp321) in Hydra.

Here's the observations flipped to a negative view, which makes faint detail easier to see, along with the HCG cluster being circled.

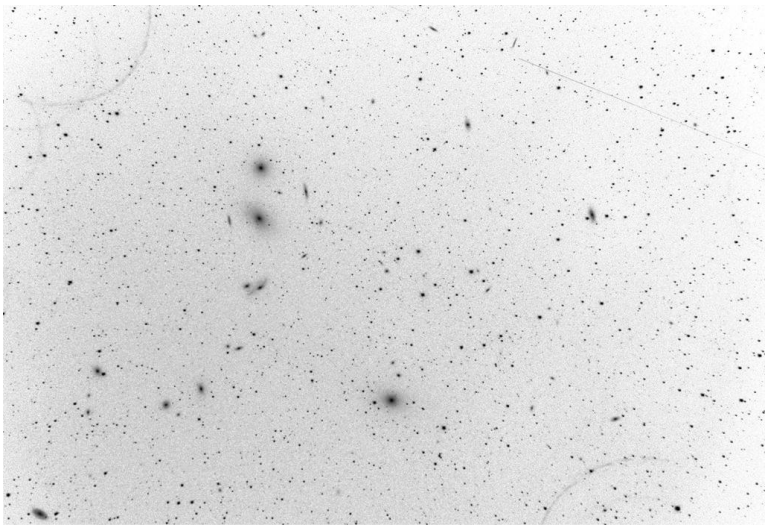


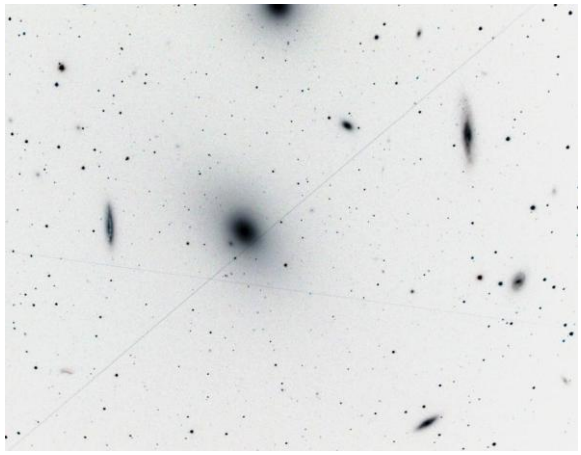


(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 15 minutes)

With the Virgo Galaxy cluster now well placed, I decided to make a widefield observation of the clustering of Messier galaxies at its core, so I pulled on my shoes and winter jacket and headed outdoors to switch the EVO50mm to its L-Pro broadband filter.
I discovered everything was heavily frosted. The Temp was at 25 deg! Fortunately, the dew heaters were keeping the scope optics nice and dry.

Once back indoors, I made the observation. Here's the widefield capture and also an earlier capture using the 8" SCT (from April at Calhoun), centered on M86:





(EVO50mm @ f4.8 ASI294MC camera & L-pro broadband filter, 3 min subs, livestacked using Sharpcap for 15 minutes), (8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs livestacked for 15 minutes)

As I was having trouble staying awake any longer, I called it a night at 5am.
Quickly parked the scope, powered off the cameras and laptop, and threw a cover over the scope. Then crawled in bed under the electric blanket!

**Tuesday 12/12/2023:**

Slept in till 10:30am. Took my time heading outdoors as it was still cold, temps at 35 deg. while sunny, a breeze had kicked up. Uncovered the telescope to let the overnight frost dry off, then had breakfast.

Around 11am, Frank W from PGH arrived and setup in the southeast corner, next to Ed.
About an hour later, Nate B, from Tennessee arrived and setup by Frank.

It was too cold and breezy, to sit outside, so I stayed in the camper, read a few magazines, and reviewed my observing plans for the night. Around 2:30pm, Dean S, from ORAS/Kiski pulled in and setup between Ed and Alexi.

Under Sunny sky, the afternoon temps warmed up to around 45 Degrees, but a cold gusty wind made it uncomfortable to be outdoors. Walked around for a bit and visited with everyone on the field.

Spent the afternoon working on the observations from the previous evening, rotating and cropping.

At 5pm, Dean and I gathered over at Ed's camper for happy hour. Later we were joined by Alexi. At 6pm, I headed back to my camper for dinner, stopping to first uncover the telescope and power on its dew heaters.

It was a great evening! The late fall Milky Way setting into the west while the winter Milky Way was rising in the east. I decided that tonight I wouldn't work on any observing projects. Instead, it would be a ‘pretty picture’ night of showcase objects.

My first observation of the night was a long EAA exposure of the Helix Nebula – NGC7293 in Aquarius using both the EVO50MM refractor and the 8" SCT with the L-eNhance narrow band filters. Lovely colors with lots of good detail visible around the planetary nebula!

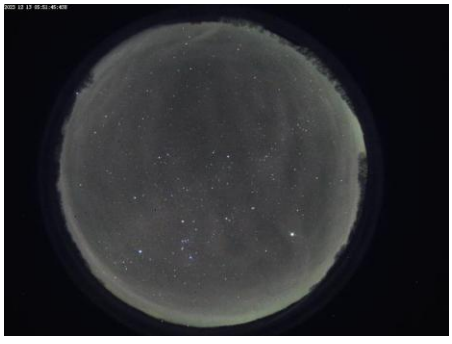
Here’s the observation:

(EVO50mm @ f4.8 ASI294MC camera & L-eNhance narrowband filter, 3 min subs, livestacked using Sharpcap for 1 hour), (8" SCT @ f6.3 ASI294MC Pro camera & L-eNhance filter, 5 min subs livestacked for 1 hour)

I then pointed the scope overhead to the northeast to the Bubble Nebula – NGC7635 in Cassiopeia, near open cluster M52. Here’s the observation using both the EVO50mm which also included M52 and SH2-157 ‘Lobster Claw Nebula’, and the high-res view of the bubble using the 8” SCT optical tube:

(EVO50mm @ f4.8 ASI294MC camera & L-eNhance narrowband filter, 3 min subs, livestacked using Sharpcap for 1 hour), (8" SCT @ f6.3 ASI294MC Pro camera & L-eNhance filter, 5 min subs livestacked for 1 hour)

While I was happily EAA’ing away, Dean worked on the Iris Nebula and the Tadpoles while Ed imaged the Crab. While taking a break outside to stretch my legs, a car drove up onto the field with its headlights on, sat for a minute by the cabin slowly sweeping the field with its light, then parked over by the bunkhouse. I didn't go over to talk to the person as I didn’t have anything polite to say to them. They were gone at sunrise.
From the AllSky cam, a very light haze had developed overhead, but outside, nothing was visible to the naked-eye.



At 8:30pm, we rendezvous at Ed's camper for refreshments & snacks.
Once back from Ed's, I worked on a couple of test images of Abell426 galaxy cluster. Didn't really save anything, as I already EAA captured this object back in November, just wanted to experiment with a couple of Sharpcap settings for later use. While in the middle of this, Andrew stopped by to say hello. Then Chris dropped in to see my camper setup. Later, Dean stopped over to visit. It was a busy evening of guests.

After Andrew had stopped by, I got in an EAA observation of a planetary nebula that he was interested in seeing, IsWe-1 located in Perseus. That was one big, really, really faint fella! Even after livestacking a 5 minute narrowband exposure for a full 30 minutes, and tweaking the various histogram & saturation sliders, there was barely anything visible. I had to go lookup an image online to verify that I was actually in the correct location. (and that online pic that I found was a 10 hour AP photo!).
Was going to show it to Andrew, but didn't realize he had already packed and headed to the Red Barn for the night. Anyway, here's my EAA attempt at IsWe-1:

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

I then did a long deep-dive EAA exposure of the Christmas Tree Nebula – NGC2264 in Monoceros using both the EVO50MM refractor and the 8" SCT with the L-eNhance narrow band filters. Lovely colors with lots of good detail visible around the nebula!
I like it when a single FOV contains multiple objects: the "Christmas Tree Nebula", "Cone Nebula", "Fox Fur Nebula", and "Snowflake Cluster"! Here's the observations:

(EVO50mm @ f4.8 ASI294MC camera & L-eNhance narrowband filter, 3 min subs, livestacked using Sharpcap for 1 hour), (8" SCT optical tube @ f6.3 ASI294MC Pro camera & L-eNhance filter, 5 min subs livestacked for 1 hour) (Atlas Gem mount)

Was getting a bit tired, so I called it an early night at 1am.

**Wednesday 12/13/2023:**

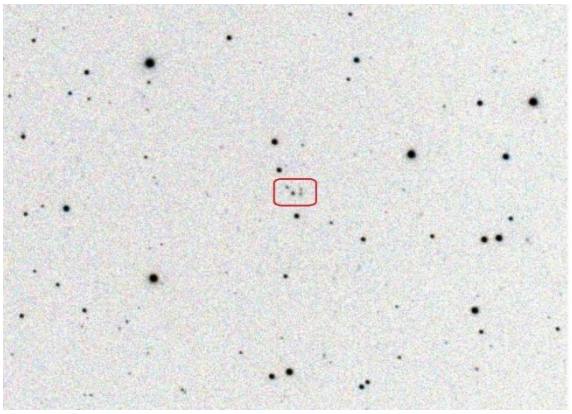
Slept in till close to 10am. Another sunny chilly morning. Temp got down to 29 deg. Andrew had an appointment to keep so he packed up and headed for home.

While the outdoor temps stayed cool, the sun was warm and made it tolerable to be outside in a light jacket or hoodie. Spent the day visiting with my neighbors.
Around 3pm Gary S from the ORAS club arrived and setup beside Alexi. Then a little while later, Geoff C from PGH pulled in and setup across from Garry.

There were now eight of us camping on the field, with two in the cabin. A nice grouping of amateur astronomers. The temp reached a peak of 43 deg, and began falling into the upper 30s as sunset approached. It was going to be a chilly, clear evening, with the temp eventually bottoming out at around 24 deg.

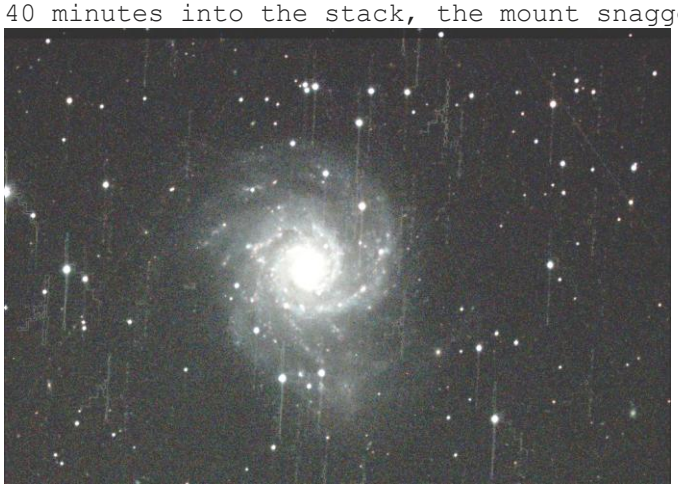
Dean S and Frank, and Nate setup DSLR cameras for the Geminids, while I started up my AllSky camera.

My observing plan for the night was all galaxies, all night! Started off with several small Palomar Compact Groups in Pisces, PGC2334+0037, PGC0011+544, AND PGC009+1958. Best observation was PGC0011+0544:

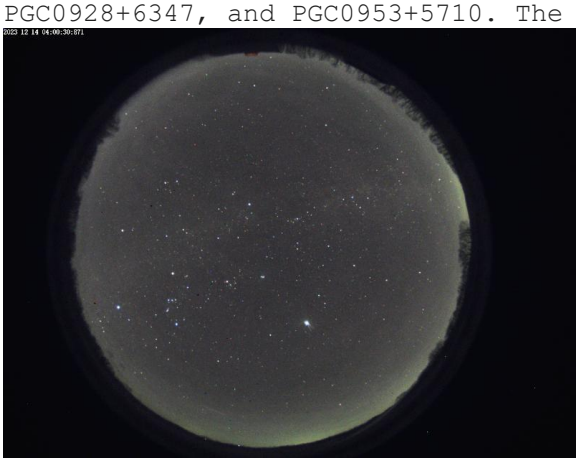


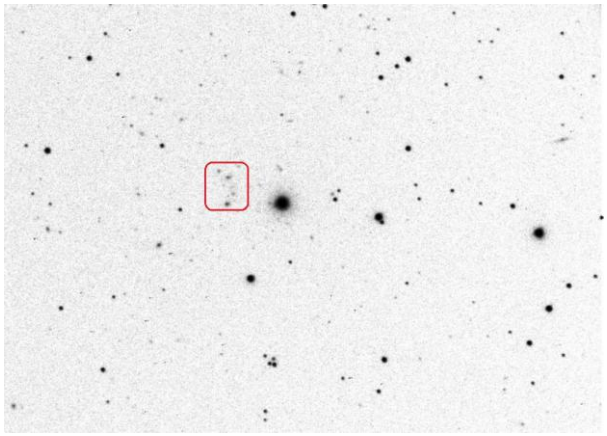
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 15 minutes)

At 8pm Dean, Gary, and myself gathered over at Ed's camper for late refreshments. While at Ed's, I left the scope pointed at galaxy M74 for a deep dive. Upon returning to my camper, I found that 40 minutes into the stack, the mount snagged a power cable,,Argh!



I continued to work on Palomar galaxy clusters while Dean imaged M78 and Ed worked on the Crab and California Nebula. Gary imaged the Tadpoles, IC410.
I observed PGC0904+4523 in Lynx, then moved into Ursa Major for PGC0854+4919, PGC0928+6347, and PGC0953+5710. The best observation was PGC0854+4919:





(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 15 minutes)

Caught several bright meteors visually when I would step outside to go check the telescope focus. The AllSky camera also recorded a number of shooting stars. From what I could tell from looking at my AllSky captures the next day, the meteor count started picking up around 3am till dawn, which agrees with the projected peak coming around 2pm Wednesday.

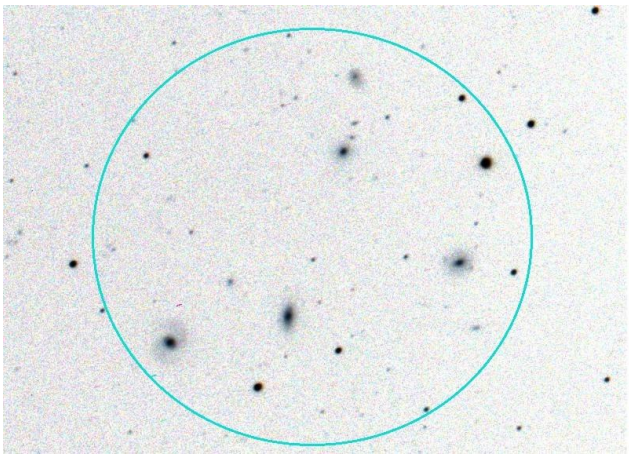
After finishing the last planned Palomar galaxy cluster for the night, I stepped away for a few minutes to visit Dean, who was continuing imaging IC410 – Tadpoles that he started last evening, and also iC1805 – Heart nebula.

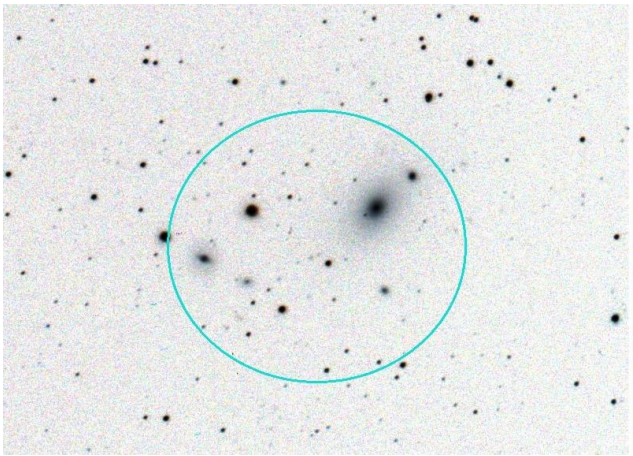
Once back in my camper, I decided that I needed a break from faint fuzzy galaxies, so I started a deep-dive - EAA observation of reflection nebula M78 in Orion. After viewing the first few stacked captures and tweaking the livestack histograms, I sat back and continued watching the image of M78 build, until a sudden spike in PHD guiding forced me to cut-off the 8" SCT livestack early, but I was able to pause the EVO50mm livestack and restart it after guiding had resettled. The 50mm caught a portion of Barnard's Loop, while in the main 8" optics, the blue reflection nebula highlighted the dark nebula swirls. So much more detail visible using EAA than what I could see visually years ago! Here's the observation:

(EVO50mm @ f4.8 ASI294MC camera & L-Pro filter, 3 min subs, for 60 min),
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 5 min subs livestacked using Sharpcap for 40 minutes)

With the time now past midnight, I began to work on my Hickson galaxy cluster project. I was down to the last half-dozen catalog objects, and after observing HCG58 & HCG59 in Leo, and HCG42 & HCG48 in Hydra, I realized that I could wrap-up this project by waiting close to dawn for the last galaxy clusters to rise in the southeast.

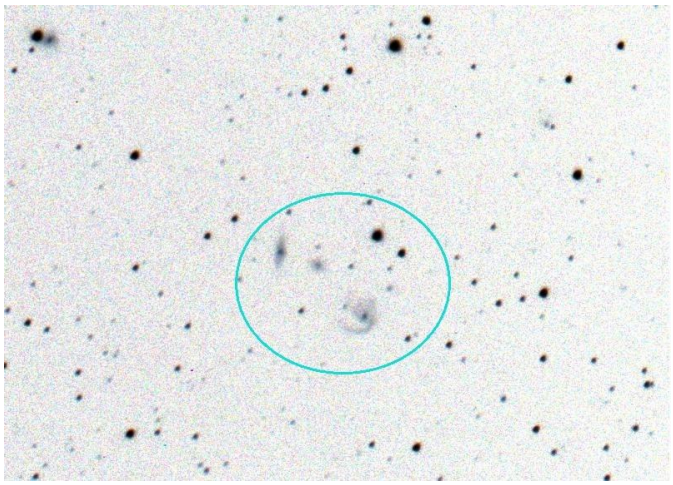
So I laid down at 2:00am and slept till 5:30am, then got back up and captured the last two Hickson Galaxy clusters; HCG65 in Hydra, and HCG63 in Centaurus. With the outside temp continuing to fall to a low of 29 degrees, the 8" focus had gone a little soft over the preceding 3 hours as I slept. But I didn't want to dress to go outside with the Bhantov mask, so I just used the autofocuser and made a slight tweak. Here's the best two observations from earlier in the evening, HCG58 in Leo, and HCG42 in Hydra:





(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 15 minutes)

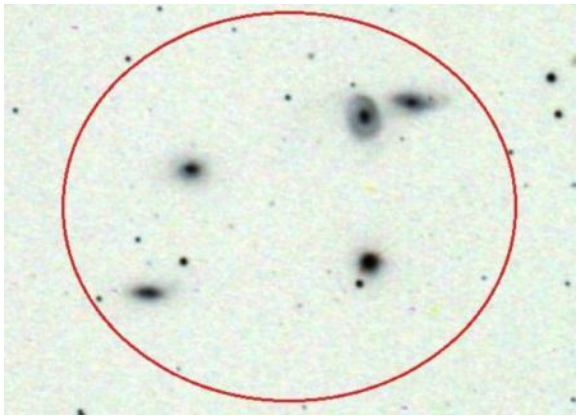
Along with the final 5:40am Hickson cluster observation of HCG63 in Centaurus:

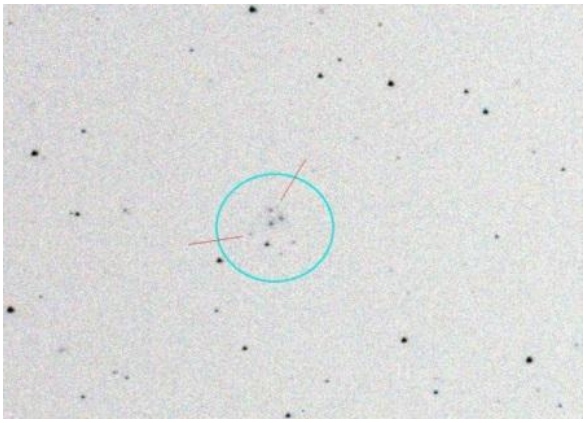


***Note:***
I have now completed EAA observing the entire Hickson Compact Galaxy Catalog.
100 galaxy cluster objects! You can find all the observations on my webpage here:
http://stellar-journeys.org/HicksonGalaxy.htm

Every observations was completed using an 8" SCT f6.3 optical tube mounted on an Atlas Gem, using a ZWO ASI294MC Pro camera with an L-Pro broadband filter. Except for a handful of exceptions (of sub exposure time & total stack length), all the observations are consistent, using the same ROI size of 2072x1410, 180 second subs livestacked using Sharpcap for 15 minutes.

This makes it easy for the viewer to compare the size & brightness of individual HCG clusters to one another. An example of this would be comparing the large, bright cluster HCG16 consisting of NGC galaxies, to HGC17 consisting of a small, faint cluster of PGC galaxies, several of magnitude +18 & +19.





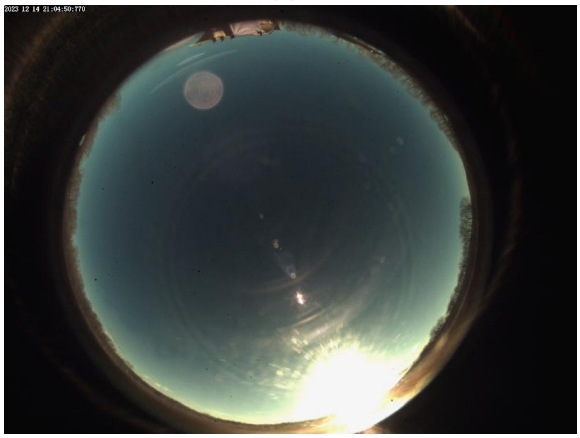
I hope other amateur astronomers find my completed Hickson project as interesting to review as it was for me to create. And I hope it inspires others to take on observing all 100 catalog members themselves, either visually or with EAA.

Having completed the final observation, I parked the scope, shutdown the cameras, but didn't go outside to cover anything. I then happily climbed back into the warm camper bed and went back to sleep,,, dreaming of Hickson's.

**Thursday 12/14/2023:**

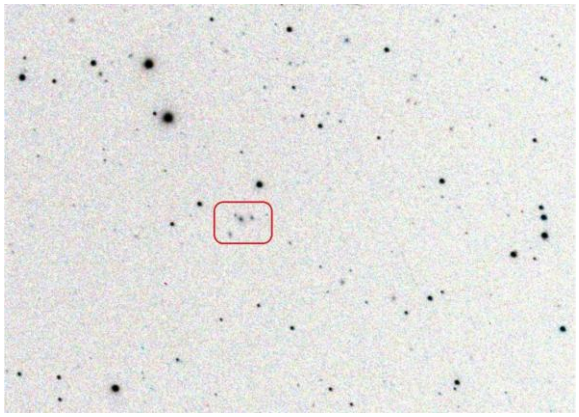
Slept in late, till 10:30am. Woke to a warmer sunny day. Dave and Chris in the cabin had already packed up their scopes and left for Toledo. Frank also packed his tent and telescope and headed back to PGH. Spent the noon hour going thru my AllSky frames looking for meteors. Caught about a dozen, with two nice ones. (see above). Made a time lapse video, but not happy with jerkiness caused by an hour long gap where the AllSky camera crashed at 8:30pm and I didn't notice it.

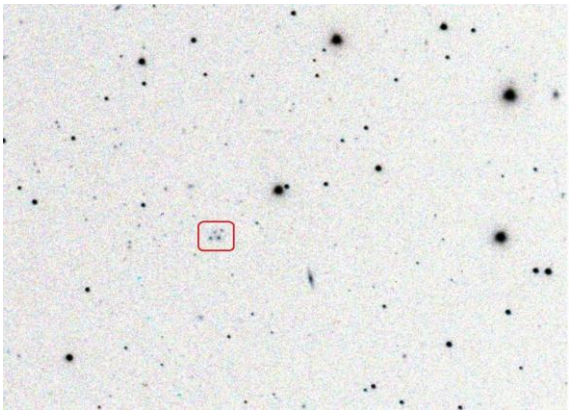
After visiting the Red Barn to cleanup, I took an afternoon nap, waking prior to sunset. At 5pm, we all gathered over at Ed's camper once again for snacks and libations.
On the walk over, I stopped to admire a nice display of EarthShine.



Once dusk arrived, the Milky-Way was soon glowing overhead. Tonight, we were in-store for the best evening of observing for the entire trip!

Back at camp, I powered up the laptop, telescope and cameras, slewed the scope over to the bright 2nd magnitude star Hamal in Aries and brought the optics to focus.
My observing plan for the night was to start off with several faint Palomar compact galaxy clusters located nearby in Aries - PCG0209+1039, and then PGC0127+1459 in Pisces.
Here's the observation:





(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 15 minutes)

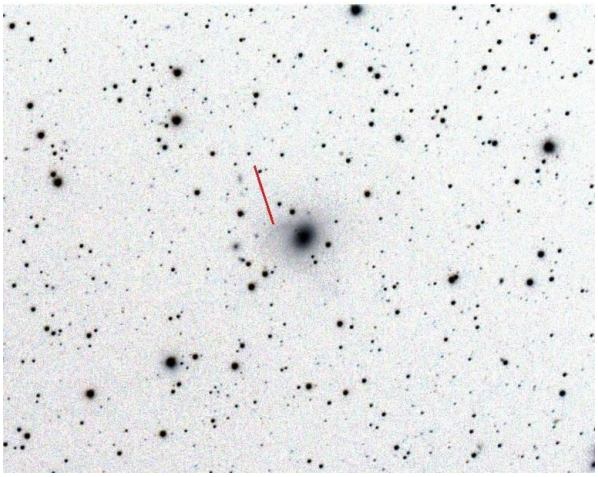
I then kicked-off another attempt at a deep dive livestack into galaxy M74 in Pisces using both the EVO50mm and the 8” SCT optics. With the 50mm, the galaxy was rather tiny, but you could still see several of the spiral arms winding around the galaxy core. In the 8”, there were good details of faint spurs coming off the main spiral arms, along with embedded Ha regions. I invited Geoff to stop over and I gave him a demo of using livestack within Sharpcap. Here’s the M74 observation:

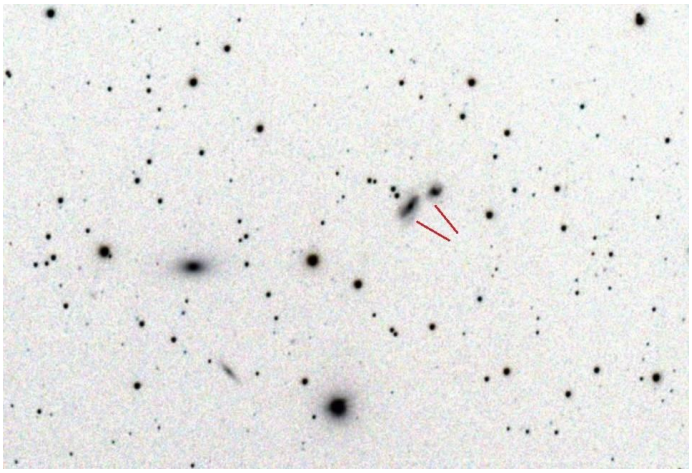
(EVO50mm @ f4.8 ASI294MC camera & L-Pro filter, 3 min subs, livestacked for 1 hour), (8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 5 min subs livestacked for 1 hour)

A number of meteors were visible on the AllSky throughout the evening. Most were faint, but there were a few nice bright ones. Dean visually caught a particularly bright Geminid around 10pm that left a smoke trail for a few seconds.

During my M75 observation, Ed was imaging the Rosette Nebula in Monoceros, while Dean was working on reflection nebula M78 in Orion.

After wrapping up M74, I then moved on to working brighter Arp peculiar galaxies in Draco, Gemini, and Cancer. The two best were Arp165 in Gemini and Arp 247 in Cancer:

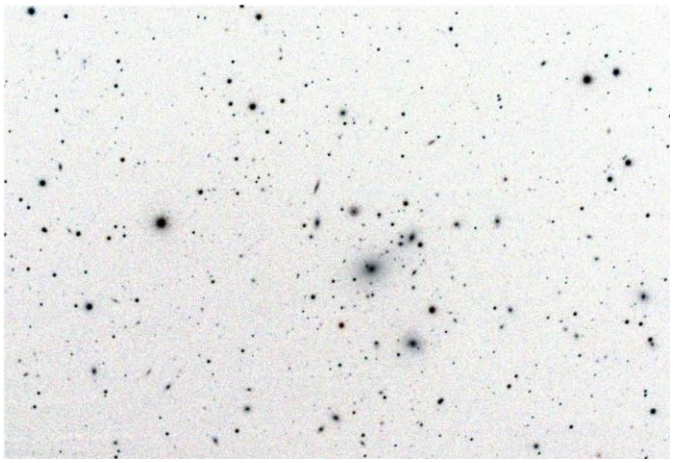


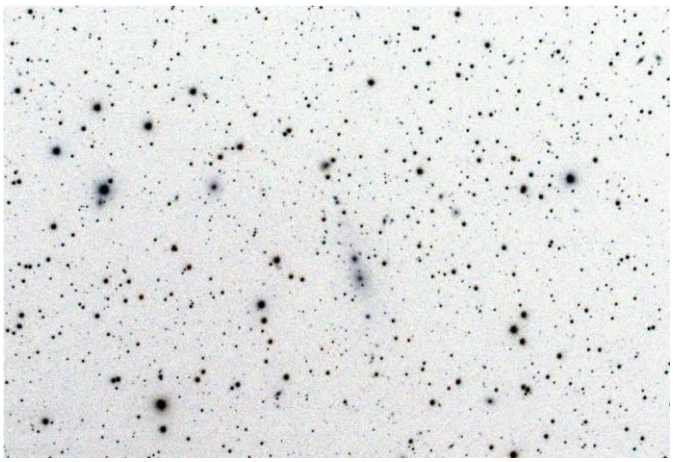


(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 30 minutes)

To see all of my Arp peculiar Galaxy EAA captures, please visit my webpage at:
http://stellar-journeys.org/arpgalaxy.htm

Then it was time to get in a few Abell Galaxy Cluster observations, with Abell671 in Cancer and then Abell592 in Canis Minor:





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

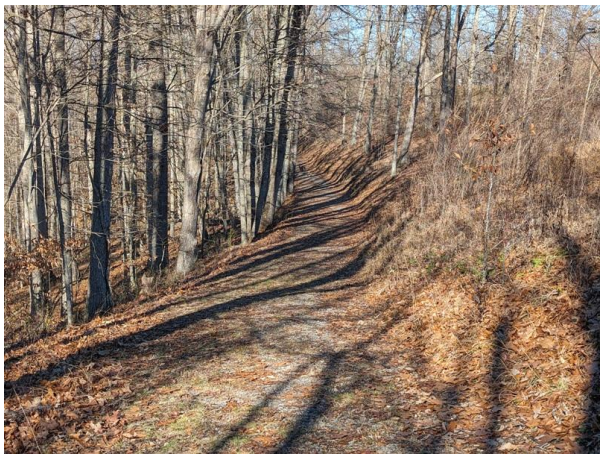
The time was now closing in on 3:30am, And I starting to fall asleep in my chair.
Pulled-on a jacket and stepped outside to power-off and cover up the telescope.
As I headed towards the back of the camper to retrieve the lens caps, I thought I heard something growl at me. Yikes!! I flipped my flashlight to high and shone it around the campsite, but didn't see anything. I quickly covered the scope and hurried back inside.
Was it just my half-awake brain or Wylie Coyote looking for a meal? LOL

Here's the AllSky time-lapse from Thursday evening:
https://youtu.be/CLWj6qZY0BE?si=PcWXKjL-WHmjvVd-

**Friday 12/15/2023:**
Slept in till 9:30. Woke under a sunny sky in time to see Nate finish packing and head out. Alexi also left shortly afterwards. Ed was already long on the road, leaving at 7:30am as he had a noon appointment.

After visiting with Dean, Gary, and Geoff, I headed indoors for breakfast. Roger and a couple of volunteers showed up to paint the inside of the bunkhouse.
The daytime outdoor temperature warmed into the mid 50s. Almost comfortable to sit out.

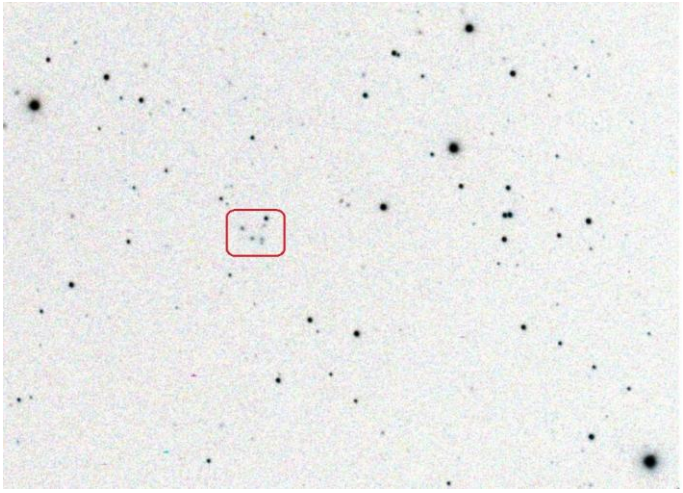
I went for a short hike from the tip of the observing field down to the small pond, and then down to the Red Barn. On the way back I stopped for a few minutes at the bench by the pond. There was a glaze of ice covering most of its surface, so no aquatic life to see this visit.

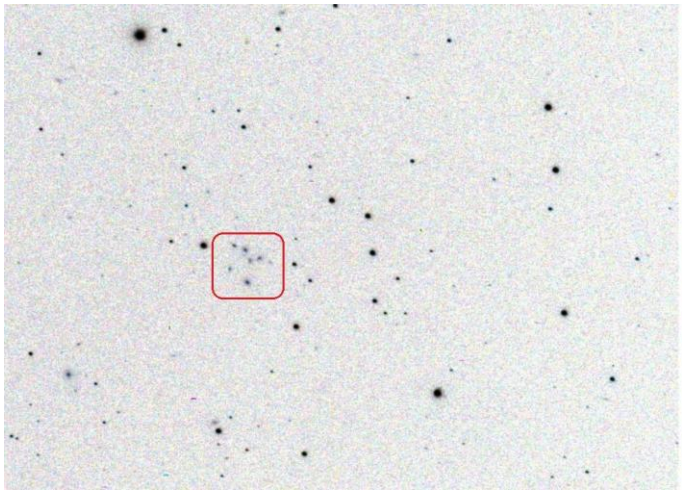


I stowed away the few camping items not needed, and took down the AllSky camera & tripod, packing it away. At sunset, hazy bands of cirrus began moving thru, slowly thickening around the Crescent Moon.

Everyone did their own thing for dinner to save on cleaning up.
But the four of us did gather for a bit over in Dean's camper one last time for snacks.

Once it was dark, and had the scope running, I worked PGC's and Abell galaxy clusters.
Both Dean and Gary were capturing NGC1333, a reflection nebula in Perseus.
From the weather satellite images, we knew that our observing time was going to be short, as thickening clouds were not far from our location. But, using the time that we had, I was able to observe Palomar clusters PGC0209+0452, PGC0250+0700, AND PGC0303+0847, all in Cetus. The best two were PGC0250+0700, AND PGC0303+0847:

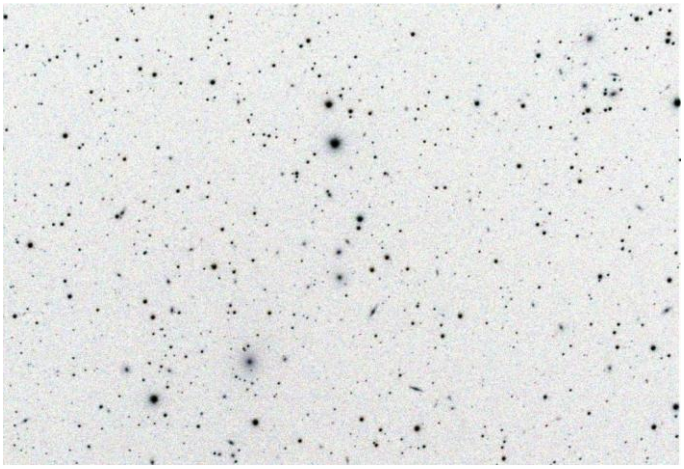


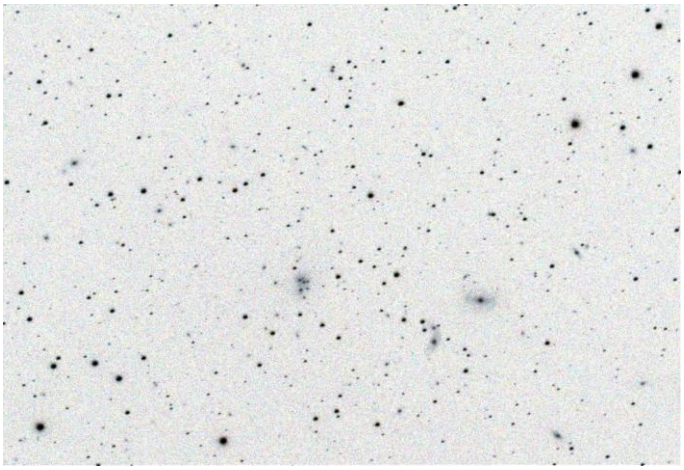


(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 3 min subs for 15 minutes)

To see all of my Palomar Compact Galaxy Cluster EAA captures, please visit my webpage at:
http://stellar-journeys.org/PalomarGalaxyTour.htm

As the southern sky was slowly engulfed by the haze, I slewed the telescope northwards to cleared skies in Perseus for Abell galaxy clusters Abell376, Abell507, and Abell539.
The best two observations were Abell376 & Abell407:





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

To see all of my Abell Galaxy Cluster EAA captures, please visit my webpage at:
http://stellar-journeys.org/AbellGalaxyTour.htm

By 10:30pm, the sky was mostly gone, covered by a soft haze. Gary & Dean had already called it a night, shutting down their scopes. But, there was a lingering clearing over in Orion, so I attempted one last observation of the Great Orion Nebula - M42.
After about 30 minutes of diminishing returns as the clear gap slowly glazed over, I finally threw in the towel at 11:15pm, saving the M42 observation, and powered off the equipment and shutdown the laptop. I then headed outside and packed away most of the telescope until my fingers went numb from the cold. Headed back indoors to bed.

Here's my final EAA observation of the year:

(Canon zoom set to 25mm, ASI290MC camera no filter, 15 second subs, for 30 minutes),
(EVO50mm @ f4.8 ASI294MC camera & L-Pro filter, 15 sec subs, livestacked for 30 min),
(8" SCT @ f6.3 ASI294MC Pro camera & L-Pro filter, 15 second subs, for 30 minutes)

**Saturday 12/16/2023:**

Up early at 8am. Packed the inside of the camper while having breakfast, and then moved outside to finish packing away the telescope.

Gary was first out, heading for home, and then followed a short time later by Dean.
I pulled out for home at 9:30am. Geoff was about half-packed and was planning on leaving late morning. The drive home was pleasant, but traffic was heavy in the Clarksburg / Fairmont corridor along I79. Back in Pittsburgh, I stopped at a carwash to hose off the camper. Home and unloaded by 2:30pm. Then winterized the camper in preparation of taking it to winter storage on Sunday morning.

This concludes my trip report for the December outing to Calhoun.
And this marks my 18th trip* to Calhoun Cty Park since my first visit in November 2012.
*(* overall, my 97th astro-camping trip over 24 years, starting back in 2000)*

We had a great run of early winter weather and enjoyed five mostly-clear nights of dark-sky observing. A rare occasion in this part of the country at this time of year.
Monday the sky stayed cloudy till near 11pm, but afterwards we had great skies. Tuesday, Wednesday, and Thursday nights were all excellent! Friday night was good for a few hours depending on what part of the sky your scope was pointed too.
Looking forward to returning to Calhoun in 2024!

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