

Calhoun County Park, WV. November, 2021

For the November New Moon, I wanted to get in a dark-sky trip to one of the several good observing locations in our region. Poor weather forecast ruled-out both Cherry Springs and the ORAS Observatory facility. But Calhoun County Park in West Virginia looked to have enough clear skies to make the drive worthwhile. A plus is that it can be a good 5 to 10 degrees warmer at Calhoun's more southerly latitude.

It has been two years since I was last at Calhoun, and I looked forward to seeing the changes to the park that I have been reading about. Had the camper loaded by Saturday October 30th, but stayed home to help handout candy (KitKats of course), the next evening for Halloween.

Monday 11/01/2021:

Up early to finish loading the astro-equipment into the car and hitch-up the camper. Then, as Calhoun is normally only a 3.5 hour drive, I decided to mow the lawn before leaving. Was finally on the road a little before 12-noon, which should have given me plenty of time for the drive, arrive at the park, setup camp and telescope, and maybe even take a walk. Along the way, several areas of road construction along I-79 slowed me down, but nothing that couldn't be made-up by skipping one of the rest stops along the way. The weather was perfect for a fall drive, sunny skies, no wind, and still some fall colors in the trees, along with pretty mountain vistas.

Then around 1pm, as I was just a few short miles from the PA/WV state line, traffic on the interstate ground to a dead halt. As far as the eye could see, the southbound lanes were completely stopped, nothing was moving. Eventually, I learned that 2 miles ahead, a flat-bed semi-truck trailer carrying half of a manufactured home had caught on fire and was pulled over to the side of the road. The structure was a complete loss.

Someone was only going to get half a house delivered! ☹

After about an hour & 45 minutes delay, traffic on I-79 finally began to resume.

I was now way behind schedule and did not arrive at the park until a quarter after 5pm.



As I wasn't setting up in my old spot on the end of the ridge down between the play ground and pavilion just above the Red Barn, but instead was planning on setting up for the first time in the wide, flat middle section so there would be room for other ORAS/Kiski club members coming later in the week, it took me another 15 minutes to finally decided on a location and what direction to orient the camper. It was then a mad scramble to get both camp and the telescope setup before dark.

To help, I cut a few corners, such as not laying out the telescope ground tarp, or hanging the full blackout curtains on the back canopy that goes over the camper clam-shell hatch, and eating a slice of cold pizza for dinner. It also helped being the only one there on the ridge, so I could use bright lights as needed.

Fortunately, by the time Polaris was shining thru the twilight, I was ready. My travel telescope was assembled, 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 Canon CCTV 25-100mm zoom lens with ASI290MC camera, and a 60mm Antaries refractor guidescope with an ASI120MC camera, both piggybacked on top of the 8" SCT. After running a few cables, and powering-up my laptop, I was ready to begin physically polar aligning the mount using the Polemaster camera, followed by aligning the mount GOTO using EQMod. I then slewed the telescope over to Capella rising in the NE and focused all the cameras, and calibrated the PHD guider. Using my new 'dark filter' in the filter wheel, I took an initial set of dark frames to use and then pulled out my observing plan/notes and reference books. At that point my clear-sky luck ran out, as clouds rolled-in from the west and by 8pm, the sky was completely overcast before I could start any real observing. As the radar showed no rain nearby, I spent time taking additional dark frame exposures for my favorite ASI294MC camera's ROI (Region Of Interest) to use later in the week. Once done, I powered-down the equipment, covered up the telescope and headed inside the camper to warm-up and read a little. Stayed up till midnight, then crawled into bed.

Tuesday 11/02/2021:

Slept-in till nearly 8:30am, and finally woke to a gloomy, damp day. The outdoor temp had dipped into the low 40's overnight, with rain starting before dawn. With it still cold outside, I stayed indoors and enjoyed a leisurely breakfast, and finished reading the December 'Sky & Telescope' magazine which had a number of good observing articles that I planned to use. Tried scanning for any local over-the-air TV stations, but the indoor antenna couldn't pick anything up, and I didn't want to bother with the outdoor mast.

After lunch, with the temp finally warming under a partly clearing sky, I went for a drive back to the new southern observing field to see the progress the park has made. All I can say is "Wow!!!" First, here's a few picture of the work that's been done to timber and clear the tree-line along the southern edge of the observing field. It now has a tremendous view.



There's also a fresh water spigot about mid-way along the northern edge of the field, along with a new electrical transformer box and meter pedestal installed on the NW corner of the field near the location of the new cabin.

From talking with the park officials, the plan is to run the power further out into the field. Once the park gets the power turned on, this field will be my new observing location! The 'astronomy cabin' is also coming along, nearing completion sometime next year. Also, the foundation, PVC plumbing, and leech-bed for the new restroom/shower house are in place. Here are a few pictures:



Later in the week, I was able to go inside the cabin, But this is a good place in this report to show those photos as well:





Once the cabin is completed next year, I can easily see groups of amateur astronomers renting out the cabin for a new moon week and using it as a base-camp. This, along with having power and water, and a new restroom/shower house on the field will really entice the amateur astronomy community to utilize the park! Looking forward to that.

On the drive back to Camp, I stopped-off and checked-out the new 'bandstand' by the Red Barn. The park is using it for community events and concerts, with the audience sitting on the hillside leading up to the pavilion on the ridge. Looks nice!



Around 2:30pm, ORAS member Dean S from Butler arrived and setup camp across from me, and about an hour later, his brother Gary S from near DC also arrived and setup.



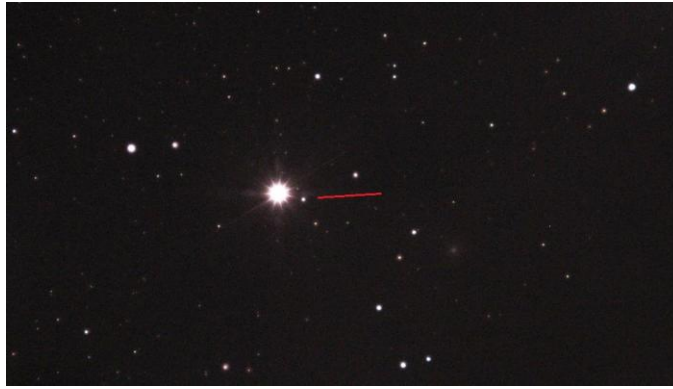
The weather during the afternoon remained cool and a little breezy, with an occasional break in the clouds for the Sun to shine and warm us up. The observing area on the ridge dried-out nicely. The forecast for the evening didn't look very promising, but you never know, and it pays to have your telescope equipment setup and ready to go.

Around 5pm, park official Roger J stopped by to say hello and filled us in on the activities going on around the park. Hopefully with Covid behind us by next spring, it will be a banner-year for Calhoun.

At dusk, the clouds slowly began to break-up, but it wasn't until a little after 9pm that it cleared enough for Dean and Gary to see Polaris and begin their alignment. I decided to wait till a little longer to let the remaining clouds move out before uncovering the telescope. At 10pm, I changed into heavier clothing and stepped outside to power-up the cameras and laptop. With the sky mostly now clear, my plan for the evening was galaxy hunting. Dean had already finished setup and had begun taking widefield images of the Veil Nebula in Cygnus, while Gary was still tweaking his alignment.

After turning on the Atlas mount and taking control with the laptop, as I had done the previous evening, I slewed the telescope over to Capella to focus the main camera. It wasn't very long afterwards though before the sky transparency began to decline, and a wave of new clouds came racing in from the west.

I knew there wouldn't be much time for the longer exposures that I wanted to take for the galaxies on my list, so instead I sent the telescope over to nearby Aldebaran in Taurus and went minor planet hunting. From the November Sky&Tel, the +7.6 mag asteroid Ceres would be passing close to the 'eye of the bull' over the next several nights. After confirming the field and location of the planetoid using the magazine chart, I captured a 15 second image using the Canon Zoom lens set to 100mm @ f5.6 and the attached ZWO ASI290MC camera. Here's a picture of the field, with the dwarf planet indicated.



I stayed on-target for another 20 minutes, before the clouds covered the eastern sky, grabbing another image that would hopefully show movement, but Ceres wasn't traveling fast enough over that short of time. After consulting with the weather satellite images, Dean and I decided to call it quits, powering down and covering our scopes, while Gary stayed out awhile longer taking his dark & flat calibration frames. I stayed up for about another hour, reading, before going to bed at midnight.

Wednesday 11/03/2021:

Up around 8am to a cold sunny morning. Outdoor temp was at 33 degrees. Decided to roll back in bed and sleep for another hour, LOL! Once I finally roused up and had had breakfast, I sat outside in the sunlight visiting with Dean and Gary. As long as you stayed in the Sun, it was warm, as the temp recovered into the mid to upper 40's. Other than an occasional cloud, throughout the day it stayed sunny and warm enough to be out. But when a cloud went over, you could really feel the difference. Winter is coming!! During the morning, we watched a school bus and several pickup trucks drive in and head back past the Red Barn. We figured it must be the high-school kids and instructors from the local Vo-Tec back working on the cabin. At Noon Dean and I walked back to visit, but we had missed them heading back on the bus to school. Back at camp, Dean and Gary went for a drive into Grantsville for supplies and I stayed back to watch over the camp.

While they were out, I setup the Allsky cam (ZWO ASI224MC & fisheye lens in a DIY dome), and my 'Guttercam' (Samsung SDC435 analog security camera & lens in a drain-gutter enclosure) that I use to monitor the main telescope as it slews. Also brought out and attached the canopy curtains.



On their way back, Dean and Gary drove over to the back field, and the school workers were back at the cabin. They got a tour of the inside of the cabin from the workers, who told them that it was close to being done and that they hoped to wrap it up before Christmas break.

Around 3pm, John D from Parkersburg arrived with his conversion cargo trailer/camper and setup down the ridge from us by the playground/pavilion.

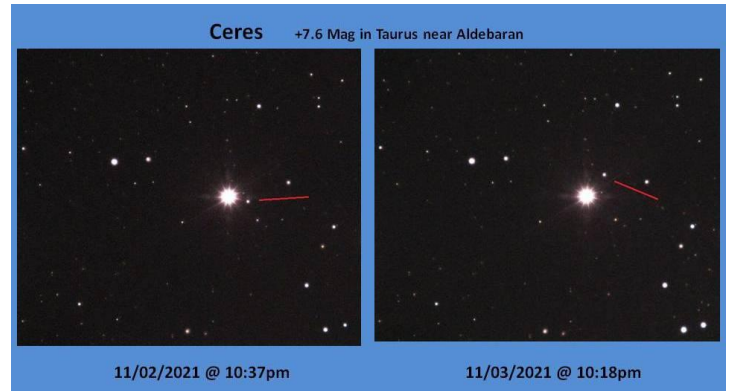
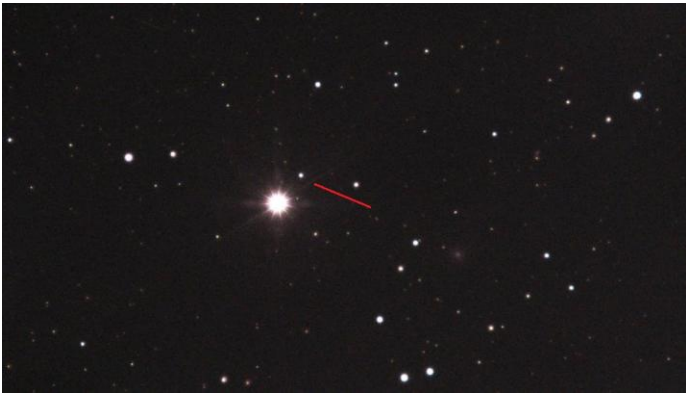


With the weather forecast greatly improving, we were expecting a number of amateur astronomers to come to the park over the next several days. With a little advice and help from Gary, I used an old white T-shirt wrapped around the front of my 8" SCT optical tube and built a flat frame calibration library to use with my EAA observing. (I was amazed at the difference it made in eliminating vignetting during my observing later that night). While taking the flats, I also started up the AllSky cam and began accumulating time-lapse frames.

At sunset, I arranged the canopy blackout curtains around the back hatch and prepared my observing notes and books for the evening session. Went inside for dinner and a quick 'phone home', after which I dressed for cold weather and headed outside. Didn't stay out for long, as just when I had finished uncovering the telescope, turning on the dew-heaters and powering the USB hub & cameras, a bank of clouds rolled in and covered most of the sky. From the satellite, they were going to be with us for a couple of hours, so I headed back indoors, leaving everything idling.



By 8:30pm, it had begun to clear, so I headed back outside. The outdoor temp had rapidly dropped into the low 30's, but under the canopy with the double layer of curtains drawn and with my propane heater going, it stayed in the comfortable mid 50's. After taking control of the telescope with the laptop, I began my planned observations. First up was another visit with Dwarf planet Ceres, to confirm the previous day's observation. Here's the 15 second image and comparison.



I then slewed the telescope a little higher in elevation to the Pleiades to observe the bright blue reflection nebula around the star Merope using the L-Pro broadband filter:



(60 second exposure for 10 minutes on the ASI294MC camera and 8" SCT @ f6.3)
(right-hand image was tweaked by Dean S for noise gradient & chromatic aberrations)

Then it was time for a little Messier galaxy hunting, starting in Pisces with the broadside view of spiral M74:



(60 second exposure for 10 minutes on the ASI294MC camera and 8" SCT @ f6.3)

After finishing the observation, I moved a little downward to the NE to pickup galaxy M77 in Cetus. While on the galaxy, spent some time trying out various combinations of dark and flat frames in order to pull out the galaxies very faint outer spiral arms. For some reason, I was having problems with hot pixels showing that the dark frame wasn't handling. After talking with Gary, I used a deeper exposed dark frame to solve the issue.



(60 second exposure for 40 minutes on the ASI294MC camera and 8" SCT @ f6.3)

While preparing for the next object on my list, I noticed that the AllSky cam computer screen display was froze, apparently the software had hung-up hours before and I had only just now noticed. So no time-lapse video for the night. But I was able to salvage a few subframes from the evening:



The outdoor temp continued to drop, going below freezing, and soon everything that had dew on it turned into a heavy frost. Fortunately, my dew-heaters were up to the task and kept all the optics clear. (still, I turned up the heater controller past midway). A little after midnight, I went indoors for a few minutes to warm-up and change socks. John D stopped over to see what I was observing, so I gave him a quick introductory demo of how to use Sharpcap's Livestack feature for doing EAA. Around 1am, both Gary and Dean called it a night, but I still had much more objects to go. It was such an excellent night that I was determined to 'go the distance' and stay up as late as I could.

It was now time to do a little 'comet hunting'. Comet 67/P Churyumov-Gerasimenko (the Rosetta mission comet), was now well placed in Gemini near the bright star Pollux. Using the planetarium program, (Earth Centered Universe), I executed a GOTO to the general area where the 9th mag comet should be, and quickly picked it up with the Canon Zoom lens, after which I centered the comet in the main optics. The comet showed a bright coma, but no signs of the nucleus or any jets or arcs. The tail extended about 15 arc minutes from the centered coma to the edge of the FOV, but no streamers, knots, or other features visible. There was a soft bluish glow ahead and slightly to the right of the coma which might have been from the ion tail. Here's the best image, photo-bombed by a faint satellite:



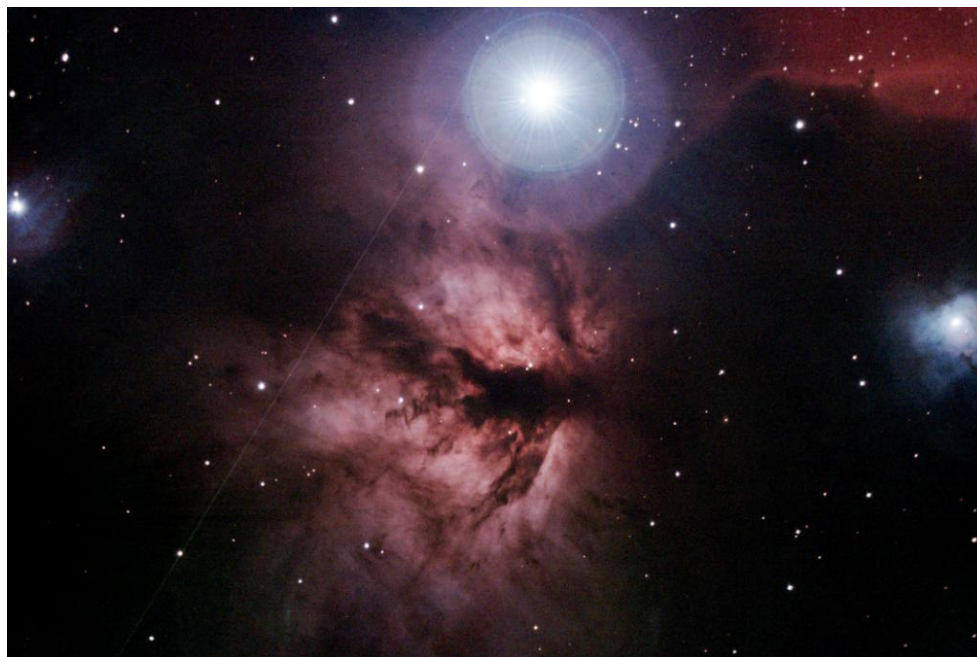
Made using my 8" SCT @ f6.3 on an Atlas GEM using a ZWO ASI294MC camera and Optolong L-Pro broadband filter. (60 second subs for 5 minutes, guided using stars)

I had some time to kill before Comet Leonard would rise high enough out of the near horizon haze to the NE, so I slewed over to Orion's belt and one of my favorite dark nebulae, B33 the "Horsehead Nebula".



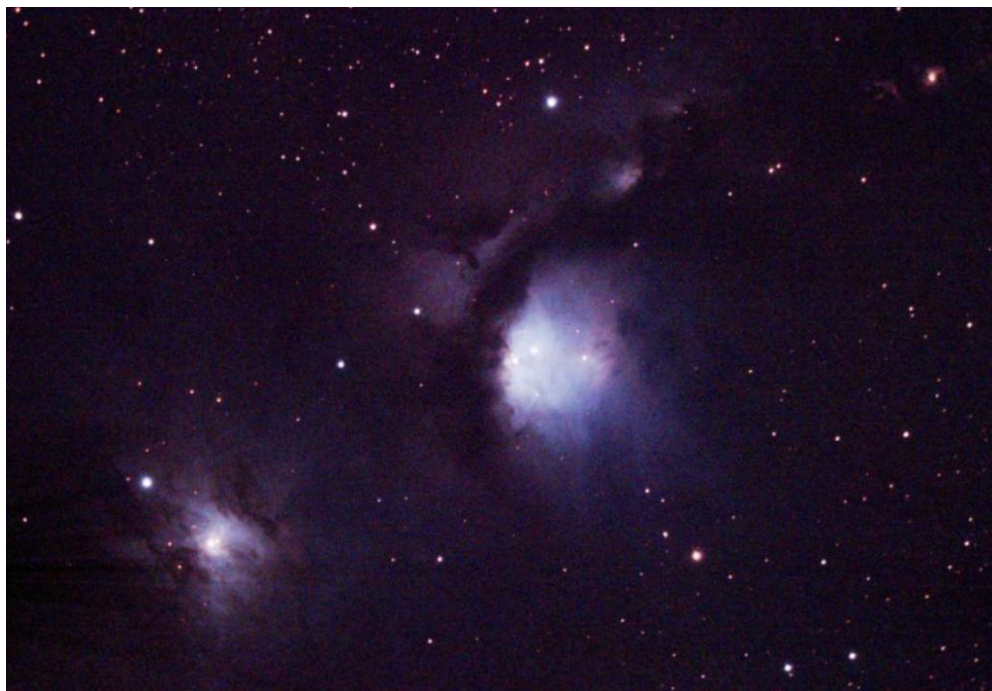
(60 second exposure for 40 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

I next visited the nearby 'Flame Nebula', NGC2024, a bright emission and embedded dark nebula within the glow of the bright belt star Alnitak.



(60 second exposure for 40 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

Followed that up with the bright blue reflection nebula M78, just a hop and skip away.



(60 second exposure for 40 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

Finally, at 4am, Comet Leonard was high enough to hunt. I pointed the telescope over to Cor Caroli in Canes Venatici and then moved to the comet's RA & Dec. After a quick exposure to confirm I had the comet, I settled into an EAA observation of the 10th mag comet. It sported a small, bright, bluish oval coma, with a stubby short tail of a few arc minutes in length extending away from the coma with a hint of a streamer.



(60 second exposure for 5 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

Having a satisfying observation of Comet Leonard, I decided to close down the telescope and laptop and call it a night. As the scope was nearly white from the heavy frost and there was no worries of rain, I left everything uncovered for the morning sun to melt. In bed by 4:30am.

Thursday 11/04/2021:

Slept in late, till ~ 11am. After 'brunch', I sat and visited with Gary and Dean out in the warm sunlight, discussing our observations from the night before. Then walked down the ridge to talk with John D. During the afternoon, I charged-up the telescope battery and processed the images from the night before. Around 4pm, I headed indoors for a nap.

While I was sleeping, Andrew arrived and setup his 22" f4 dob over on the new observing field, along with a couple of other folks from the Pgh area that I didn't to meet. And amateur astrophotographer Jeff B from Charleston arrived and setup next to John. After I roused from my nap and made Dinner, Ed K from the KISKI/ORAS club arrived and setup his mobile observatory just to my west.



Once done with dinner, I headed outside to prep for the night's observing. While out, Andrew stopped over for a visit with our group before sunset. I then headed indoors to change into heavier observing clothes as the temp tonight was predicted to drop into the upper 20's. While inside, Rob and Josh from the Hershey, PA area arrived pulling two small trailers with their 22" f3 and 25" f4 dobs stowed inside. They setup mid-way between Jon D and our camp and hurriedly setup in the dark. Later, John D came over to visit, and on the walk with him back to his camp, we stopped in to say hello. Rob gave us a view thru his 25" scope at a barred spiral in Pegasus. I forget what NGC# it was, but Rob called it the "Superman Galaxy" as its shape resembles Superman's logo. I hoped to get back over to visit the next day to take a few pictures of their gear, but they were like ghosts and gone with the sunrise. LOL.

My observing plan for the evening was to eventually focus on Hunting Arp galaxies, but I first wanted to make a few warm-up observations on M31 and its large Super StarCluster NGC206. Using the December Sky&Tel, I wanted to see if I could resolve some of the larger individual OB Association stars noted in the article. Here's the observation:



(60 second exposure for 15 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

I then moved back over to M74 in Pisces, wanting to use a new dark-frame and take a longer sub-frame stack of the face-on galaxy. Tonight's image came out much more cleanly:



(60 second exp for 30 minutes)

And, I wanted to visit with a couple of splashy near edge-on spirals, NGC891 in Andromeda, and NGC253 in Sculptor. I love their dust lanes!

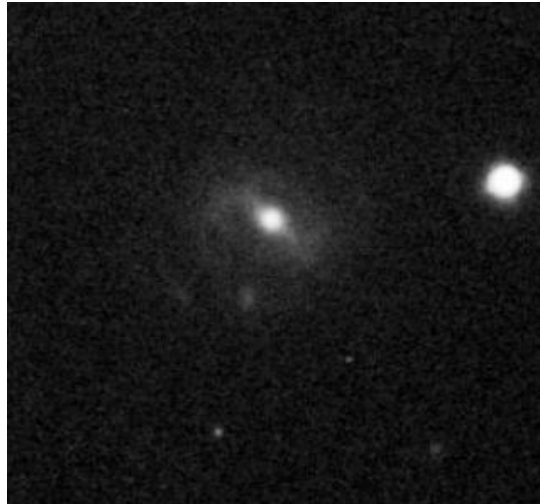
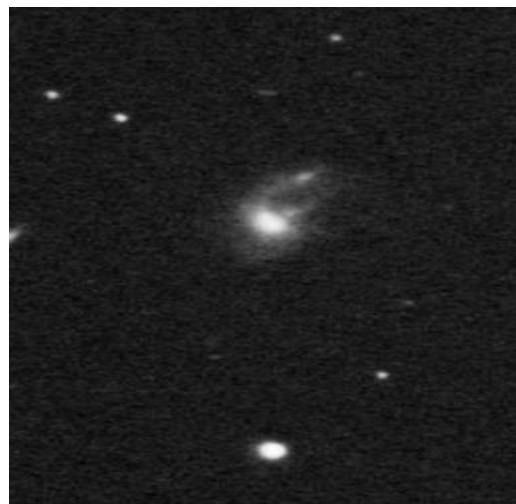


(60 second exposure for 30 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

Finally, I was ready to hunt Arp's, so I pulled out my Arp Peculiar Galaxy book and picked-up where I had left off the previous month in the Cetus/Pisces region of the sky.

As part of my EAA observing, (what use to be called videoastronomy), I like to take varying exposures and tweak Sharpcap's Livestack histogram feature to bring out the galactic features that make the galaxy 'peculiar'. Here's the best of the night:

UGC1775 (Arp10), and NGC702 (Arp75) in Cetus, UGC212 (Arp35), & UGC892 (Arp67) in Pisces.



Throughout the evening, the sky stayed crystal-clear, though it was another frosty night with temps hovering around or slightly below 30 deg.

Here's a frame from the AllSky camera early in the evening 'starring' Ed's camper dome, along with another frame from close to dawn showing the Zodiacal Light rising. (meteor).



The next day, I processed the AllSky frames into a time-lapse video. Here's the one for Thursday evening 11/4, into Friday morning 11/5. I had the AllSky camera aligned toward the south, so Polaris is stationary near the top. <https://youtu.be/TSQ0DIXkOSc>

(Made using a ZWO ASI224MC camera and fisheye lens in a Plexiglas dome controlled by Sharpcap. Auto Exposure & gain, one frame captured every 30 seconds. ~ 1,000 subframes. Watch for the late Summer Milky-Way wheeling into Fall and then Winter.

The planets Venus, Saturn and Jupiter setting into the SW.

Lots of air traffic! Ed's mobile observatory dome slewing around.

Orion and then Sirius rising in the SE.

Watch for the Zodiacal Light rising before Dawn in Virgo).

After bagging a half-dozen new Arp's, I then turned to hunting one of the few Local Group member galaxies still on my list, the Canis Major Dwarf. This little galaxy is located near the hind legs of the dog on the far side of the Milky-Way and is heavily obscured by our own galaxy's spiral arms. The observation was mostly identifying the correct field of view and noticing a slight variation in star density in the location of the dwarf galaxy. Here's the best I could do using both the Canon Zoom lens at 100mm and the main 8" SCT optical tube using the L-Pro filter.



With the clock now well past 3am and as the Canis Major Dwarf galaxy was somewhat underwhelming, I decided to finish the night with a deep, long exposure observation of big, bright Local Group Member M33 - the 'Triangulum Galaxy'.

Here's the image, 180 second subs for 75 minutes and L-Pro filter on the 8" SCT, f6.3:



Afterwards, I shutdown the telescope and cameras, and once again left the equipment uncovered, so the frost would melt away at sunrise. Headed indoor to bed at 5am.

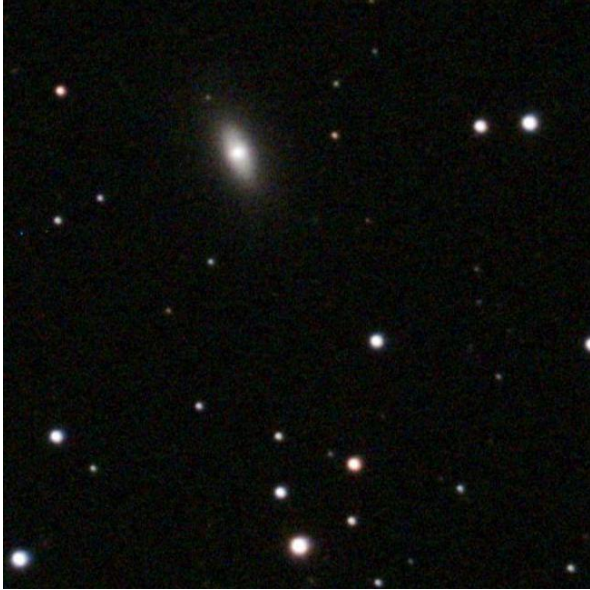
Friday 11/05/2021:

Slept in late again, and was woken by the camper becoming too warm. After dressing and having another brunch, I once again spent time sitting outdoors in the Sun with Dean, Gary, and John. John informed us that Rob and Josh had decided at sunrise to break-down their scopes for the day, and return later and head over to the southern field to join Andrew and several others they were expecting. (Bob J, James M, and Rob C with a couple of 20" dobs and a large refractor).

Spent the afternoon around camp, taking care of a little housekeeping activities, sweeping out the inside floor, refilling the water tank, and restocking the fridge. Also, charging the telescope and dew-heater batteries, along with processing images and writing up my observing notes from the night before. Even found time to read a little. The afternoon temperature rebounded nicely into the low 50's making it pleasant outdoors. Late in the afternoon, on walking back from the restroom at the Red Barn, I ran into Chris T from the ORAS club who had just arrived at the park and was staying for one night. This was Chris's first trip to Calhoun and he wanted to take advantage of the low southern horizons to galaxy hunt in Sculptor and Fornax. Chris had already stopped by our camp on the ridge and chatted with the gang there and was on the way back to the southern field to setup. I told Chris that if I got a chance this evening, I would walk back to visit. Back at camp, I decided that I really needed a nap, so I went indoors and lay down for about 45 minutes. Wasn't a very restful nap, and I knew I would wished for a better nap later in the evening. Awake at sunset to make dinner, and a little while later Ed knocked on my door with a batch of fresh made cookies from his camper kitchen! Yum!!

At sunset, the few stray clouds soon evaporated and the temp began to fall into the 40's. It was going to be another cold night! After cleaning up the dinner dishes, I prepared the back hatch observing station, bringing out my notes and powering up the laptop and telescope and AllSky camera dew heaters. The AllSky had been accumulating frames since late afternoon for another time-lapse, with it now pointing due west to take in more of Ed and Gary's activity later that evening. With dusk falling, I hurried indoors to change into heavy sweaters, boots, and jacket, and then headed back outside.

My observing plan for the evening included several small NGC galaxies in Pegasus, doing a deep, long exposure on the Andromeda Galaxy, and hunting several dark nebula in Cepheus mentioned in the December Sky&Tel. After checking the camera focus with the Bantinov mask on Capella, I commanded the telescope GOTO mount up to Pegasus for an observation of the small oval-shaped galaxy NGC16. The little galaxy display a bright central core embedded in the center of the oval, which itself was surrounded by a light haze of starlight. Using the camera's maximum FOV, I could also pull in the nearby faint spirals NGC1 and 2, along with PGC619. Here are both images:



(60 second exposure for 15 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

While in the process of making the observation, we were visited by a couple of folks who drove their car up on the ridge. This actually happened several times during the evening and is the main reason why I can't wait till there's power on the new field, as this nonsense won't be happening over there! ☹



As a consolation prize, I did get a cool image of Ed's dome illuminated with the Milky-Way and Jupiter glowing behind it. LOL!

Also during the evening we had a number of nice bolides and fainter meteors from the Southern Taurid meteor shower that was peaking. Here's two particularly bright ones that lit-up the sky with a few minutes of each other, at 7:35pm and 7:39 pm.



Around 9:30pm, I decided to talk a walk over to the new observing field to visit with the astronomers there and see how the view along the southern horizon was now that the park had clear-cut all the trees. But before I left, I slewed the telescope over to M31 and began a long 180 second exposure and let that stack while I was gone. I then grabbed my walking-stick and went for a night-time hike. Along the way, over at the far end of the park campground, I ran into Alexi (also from ORAS), who had his imaging rig setup beside his car. Alexi had driven in after dark and stopped along the road up to the observing field, as far as his extension cord could reach from the last campground power pedestal.

Once up on the field, I was surprised to see 8 or 9 folks there setup and doing visual observing. I headed over to the north end of the field to Andrew's tent, but the other guys told me that he was down for a nap and would be back up later in the evening. I then walked over to the far southern edge where I found Chris and his son Jeff there. Chris was working thru his southern galaxy observations and asked me to help validate the view thru the eyepiece and sketch that he had made. It was a pleasure helping Chris confirm his visual observations for NGC55 and NGC300 in Sculptor thru his telescope.

While there I spent a few minutes walking the field and checking the southern sight-lines. The new tree-less horizon was quite low, maybe even too low, as depending on where you were at on the field, the white blinking strobe-lights from a distant tower were visible, along with a fairly bright light-dome to the south-west. (cell phone picture)



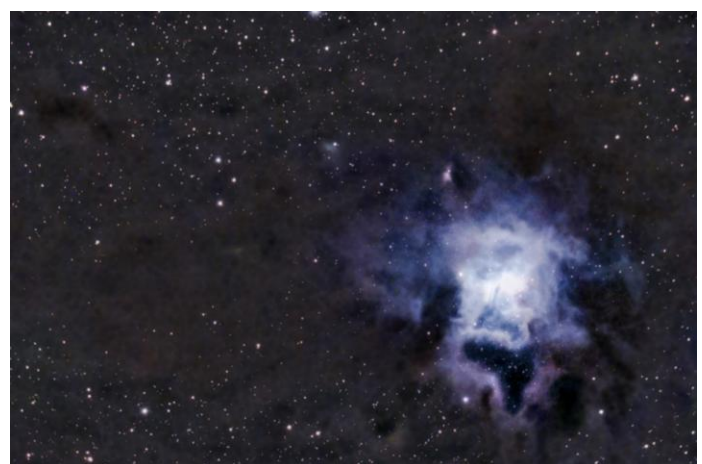
I later learned from John that the light-dome was from the local high-school's football stadium, and there was a home game that night. Gives new meaning to the old phrase "Friday Night Lights"! LOL!

Later in the weekend, Andrew was able to confirm for us that the offending light-dome was gone the next evening. Also, the next afternoon, I went back over to the field and couldn't visually see the tower along the horizon, so it must be fairly distant. Maybe in a few years when the father out trees grows a little, they will take care of the issue.

By now, I had been away from my telescope for over an hour, and was beginning to get cold. I decided to head back to camp, stopping mid-way at the Red Barn restroom to warm-up a little before hiking up the ridge. Once back under my canopy at 11pm, I fired-up the propane heater and checked my imaging run on Andromeda. I was happy to see a 90 minute stacked image with no satellite trails or eggy stars! I quickly hit the save button!



It was then time to pull-out the December Sky and Telescope magazine for the article on page-61 on observing 'Stellar Voids',,, (Dark nebula!) I moved the telescope over to the north and the bright star Alfirk, (Beta Cephei), rising toward the meridian in the constellation of Cepheus the 'King'. After a quick tweak of the camera focus, and syncing the mount GOTO, I slewed over to nearby NGC7023, known as the 'Iris Nebula'. The deep sky object is a combination of blue reflection nebula and dark nebula that long exposures give a brownish tinge to. The Field-Of-View also includes several Lynd Dark Nebula (LDN) including LDN1172, 1173, & 1174. After spending a few minutes taking test exposures and tweaking the camera & stack settings, I initiated a 3 minute subframe exposure and decided to let that stack for 60 minutes. While it was going, I headed indoors to put on dry socks, make a cup of tea, and get warmer. At the end of the hour, I pulled the boots back on and headed out to check the results. Below is my observation, along with another tweaked version by Dean S for noise gradient, & chromatic aberrations.



Dean uses Photoshop and its astro plug-in tools for his post processing work, while I generally only do minimal post-processing, such as cropping and resizing. I like to let SharpCap's livestack function do all the upfront processing while I observe the image build up to show the detail that I want. The goal in EAA is to observe the object in near-realtime, not necessarily produce a pretty picture. But, I think if I begin to utilize more of the livestack enhancement tool features, I can do both realtime viewing and save a better, prettier image. It's nice to have true astrophotographer friends to learn new tricks from! I've learned a lot from Gary and Dean this trip.

After finishing up the Iris Nebula, I moved over to nearby VdB142, known as the "Elephant Trunk Nebula", which is actually a part of the much larger emission and dark nebula complex of IC1396. By the time I had framed the nebula in the camera FOV, the object had passed over the meridian and I had only a short time before the mount would execute an auto meridian-flip move. I really wanted to avoid that as I had yet to sync on any stars to the west of the meridian using EQMod and I wasn't confident the mount would be successful with the flip. So here's a short image/observation of the 'Trunk'.



(180 second exposure for 6 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

I'll come back to VdB142 tomorrow night for another try. With the time now past 2am, I was beginning to run out of steam, getting cold and tired. (that short restless nap that afternoon was now coming back to bite me). So I decided to make one more observation and go to bed early. What better way to end the night than to look at a comet! So I slewed the telescope back over to Gemini for another look at Comet 67/P Churyumov-Gerasimenko.



(30 second exposure for 5 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)

The comet displayed much the same as from Wednesday evening. Bright coma and nice tail. I then quickly closed down the telescope & cameras, shutdown the laptop and headed to bed at 2:30am.

The next day, I processed the AllSky frames into a time-lapse video. Here's the one for Friday evening 11/5, into Saturday morning 11/6. AllSky camera aligned toward the west, <https://youtu.be/C57syJqyc7Y>

(Made using a ZWO ASI224MC camera and fisheye lens in a Plexiglas dome controlled by SharpCap. Auto Exposure & gain, one frame captured every 30 seconds. ~ 1,000 subframes. Watch for the Milky-Way, The planets, Air traffic! Ed's mobile observatory dome slewing and Gary's red light walking around, winter constellations, and the Zodiacal Light).

Saturday 11/06/2021:

Slept in till mid-morning, then up for breakfast. It was going to be a busy day at the park. A group of regional 'First Responders' were onsite at the Red Barn over the weekend to use the park in training Search And Rescue (SAR) service and cadaver dogs. The teams were also training in using GPS to find and log specific way-points that were scattered around the park, including a couple up near our camp. (Ed had a point set by the prep-team about 20 feet from the door to his mobile observatory). There were going to be multiple teams practicing throughout the day, along with a nighttime practice using flashlights. During a walk down to the Red Barn facilities, I stopped and talked with the SAR folks and invited them to stop by our campground that evening once they were finished practicing.

After lunch, I processed the observations from the night before, and visited with the guys. The day was warm and sunny with temps rising into the upper 50's. Nice! Went for a ride in the car over to the new field and was able to tour the inside of the cabin. (see above pictures included under Tuesday). Back at camp, I joined Ed, Dean, and Gary enjoying the warm sun. I then headed indoors for a good long nap, and was roused out at 5pm by Dean for a 'happy-hour' beer. We started out sitting in the Sun, discussing the astronomy problems of the world, but as the Sun dropped behind the trees to our west, long shadows soon fell on us, forcing everyone to put their jackets on.

Toward sunset, a lady who was a local retired science teacher, and who was an active amateur astronomer, drove up looking for other visual observers. After visiting with us for a bit, checking out our imaging kits and then walking over and talking with John, she headed back to the new field to join Andrew and the other visual folks setup over there. I understand she really enjoyed looking thru the big scopes.

Not wanting to get chilled, I soon headed indoors to make dinner and call home. After cleaning up from the meal, I dressed in my observing clothes and headed outside at dusk. While getting the equipment powered on, John walked over around 7pm and told us that the SAR group had invited us all down to the Red Barn for dinner. So after about 15 minutes, the four of us headed down the hill to a second dinner of pulled-pork sandwiches with pasta salad, chips, and bakery cookies for desert! We had a good time visiting with the SAR folks and talking with them on the various searches that they've been involved with over the years, and dog training, along with a little astronomy thrown in. When we got up to leave, we gave them a big 'Thank You' for inviting us. They then invited us back in the morning for biscuits and gravy!!! ☺

Once I waddled back up the hill to camp, I decided to change my observing plans and continue using the L-Pro broadband filter to finish working the dark and reflection nebula in Cepheus from the Sky&Tel article. I headed back over to the 'Elephant Trunk' - Vdb142 in Cepheus and made a deeper observation/image. I needed to use a widefield short focal-length refractor to get more of the larger IC1396 into the FOV.

I then moved on to nearby LDN1235, known as the "Dark Shark nebula". I was only able to fit the shark's 'head' into the camera FOV. Here's the observation. The bright star that marks the eye of the shark is 6th mag HD211300.



(Elephant - 180 second exp for 15 minutes. Shark Head - 180 second exp for 45 minutes)

Just outside the FOV of the Shark's 'Head' are a couple of small blue reflection nebulas: Vdb149 and VdB150. Here are images of 15 and 24 minutes respectively.



My last object from the magazine article is dark nebula B150 - the "Seahorse Nebula".

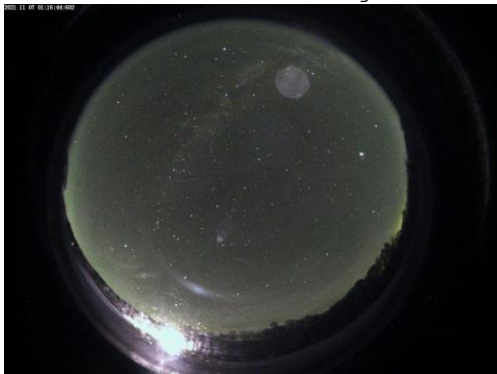


(180 second exposure for 15 minutes on the ASI294MC and 8" SCT @ f6.3 and L-Pro filter)
Right-hand image was tweaked by Dean S for noise gradient & chromatic aberrations.

For tonight, I had pointed the AllSky cam to the southeast, in the direction of the Red Barn and the SAR teams. It was interesting watching their lights come and go along the ridge as they practiced through the early evening.



A number of the local teams did leave for the night, with the camera briefly catching their headlights as they left the barn. But it wasn't bad, only lasting for a few seconds until they made it past the curve around the ridge.



Around 10pm, several of those staying overnight took me up on the offer to visit and walked up to our camp. Dean pulled-out his laptop and with Gary providing commentary, showed the group various deep-sky objects that he had imaged over the last few nights, including M45 - Pleiades, B33 - Horsehead, and M31 - Andromeda. As Dean went thru the images, I used a green laser to point out the location of the objects in their constellations, Taurus, Orion, and Andromeda, along with various other bright constellations and stars, and threw in a little mythology to go with them. I also pointed out how to use the Big Dipper (Ursa Major) to find the North Star - Polaris as a backup to their GPS. The SAR group was very happy with the impromptu sky-show that we put on!

After the SAR group headed in to the Red Barn for the evening, I switched the filter wheel over to the L-eNhanse narrowband filter and continued my Sharpless catalog project. As I was already in Cepheus, I stayed in that constellation and worked a number of SH2 HII emission nebula with the best being SH2-130 and SH2-135:



(60 second exposure for 30 minutes on the ASI294MC and 8" SCT @ f6.3, L-eNhanse filter)

The time was getting very early in the morning, and while I hated to lose the extra hour from Daylight Savings coming to an end, I was getting tired to the point that caffeine wasn't helping. So I decided to observe one more object for the night, NGC1501, a bright and pretty planetary nebula in Camelopardalis.



(60 second exposure for 5 minutes on the ASI294MC and 8" SCT @ f6.3, L-eNhanse filter)

Called it quits afterwards at 2:30am, powered down the scope and headed to bed.

The next day, I processed the AllSky frames into a time-lapse video. Here's the one for Saturday evening 11/6, into Sunday morning 11/7. AllSky camera aligned toward the east and Red Barn: <https://youtu.be/-9cKVt00rY0>

(Made using a ZWO ASI224MC camera and fisheye lens in a Plexiglas dome controlled by SharpCap. Auto Exposure & gain, one frame captured every 30 seconds. ~ 1,000 subframes. Watch for the late Summer Milky-Way wheeling into Fall and then Winter.

The planets Venus, Saturn and Jupiter setting into the SW.

Lots of air traffic! The lights from the SAR folks & Red Barn.

Winter constellations rising in the SE. Zodiacal Light rising before Dawn).

Sunday 11/07/2021:

Up early in time to head down to the Red Barn for eggs, biscuits, and gravy from the SAR team. Yum!! I joined John and Andrew and visited with them for a bit. Again, a big thank you to the SARs folks for inviting us to share breakfast with them.

Around noon, Gary packed-up his gear and headed for home. It was a warm, sunny day, in the mid-60's, T-shirt weather, so I sat around the camp visiting with Dean, Ed, and John, who also packed and headed home later that day. Andrew had also pulled out, leaving the new field empty of amateurs. Dean was going to stay one more night, while Ed and I planned to stay at the park thru Tuesday.

Went for a walk over to the new field to confirm that it does have much better cell phone reception than the ridge. 3 - 4 bars depending on where you are standing. No doubt a benefit from the tree cutting exposing that distant tower.

Once back at camp, it was time for a nap. Late in the day, Frank W from Pgh pulled-in and setup his imaging rig down the ridge about where John had been. Frank was going to spend just one night there at Calhoun.



Toward sunset, Dean declared it was 'happy-hour' and we enjoyed a beer while watching Venus and the Crescent Moon together in a crystal blue sky. As Dean was leaving the next morning, he cleaned out his fridge and grilled kielbasa and made Mac-n-Cheese for the three of us, while Ed made a batch of baked-beans. I supplied chips and chocolate. A local friend of Johns stopped by with a batch of home-made brownies and a jug of apple-cider, but having missed John, he gave it to our group!! (Thanks John!! ☺) At dusk, we cleaned up from our little group dinner and headed inside to change, as the outdoor temp began to fall.

My observing plan for the evening was to continue using the narrowband filter and work on my Sharpless catalog project. I started the evening out high in the northeast in Cassiopeia which was rising toward the meridian. I had to be smart about where the objects were located so as not to force a meridian flip when I slewed the telescope to them. But eventually, as the bulk of the constellation crossed over to the western side of the meridian, I gave in and slewed the telescope to that side too. Was pleasantly surprised that my worries were for nothing, as the mount stayed fairly aligned. I just needed to center the star that I moved to and sync the mount GOTO on it.

I ended up spending almost the entire evening in Cassiopeia; the Sharpless hunting was very good! I added a dozen new SH2 emission nebula to my list. Here's the best of the night: (Sh2-152/153, SH2-161, SH2-165, and SH2-169/170





(60 second exposure for 30 minutes on the ASI294MC and 8" SCT @ f6.3, L-eNhance filter)

While the various images were stacking, I would take a break from being under the canopy and walk over to visit and see what Ed or Dean was imaging. It was interesting watching Dean finesse a noisy image of the "Witch Head Nebula" into a great looking image.

This was the 5th straight night of great observing!! Around midnight, the sky transparency did go a little soft, but it was still a beautiful evening with the bright winter constellations rising high to the south, and the occasional meteor zipping overhead. Plus, it was a good 10 degrees warmer than the previous few nights, with little to do dew or frost.

Finally, around 2:30am, my feet became cold, so I decided to call it a night.

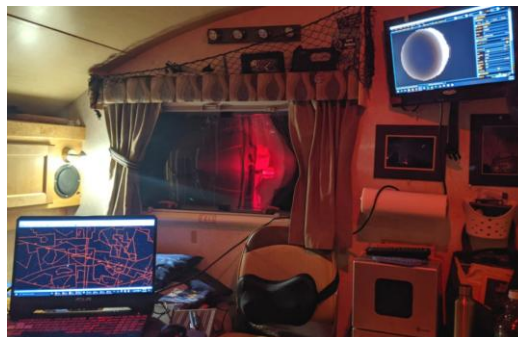
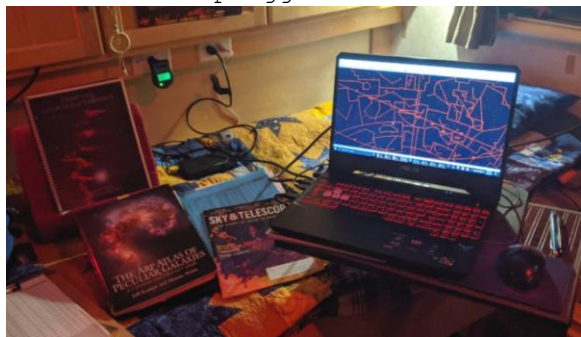


The next day, I once again processed the AllSky frames into a time-lapse video. Here's the one for Sunday evening 11/7, into Monday morning 11/8. AllSky camera aligned toward the south, <https://youtu.be/X1WNeI1HNI4> Hazier night, Moon washing out the sky until it sets. Watch for the Milky-Way and planets, and morning Zodiacal Light).

Monday 11/08/2021:

Up early to see Dean off on his trip home. With Frank having pulled out earlier that left just Ed and I as the only astronomers left at the park. I decided to pack up my outdoor camping items, including the rear hatch canopy. I wanted to try out a practice run of working from the inside of the camper should I make it back to Calhoun in December for Comet Leonard. It was pleasant sitting out in the Sun, another T-shirt day. After lunch, I headed inside for a nap. Couldn't sit outside anyways as hundreds of little orange lady-bugs were swarming the campsite, landing on everything. Even had to close the back hatch of the camper to keep them out.

Later in the afternoon, I headed back outside to enjoy the Sun and 65 deg temp, going for a stroll along the top of the ridge and visiting with Ed. Toward Sunset, I headed in early to get dinner out of the way so I could setup my laptop and observing notes inside the camper. I fished the USB cable that connects to the telescope and cameras thru the hatch's pass-thru cabinets, connected to the laptop, and was able to control everything from inside. Even plugged in the inside TV and used it as a second monitor.



Once it was dark enough, I walked outside and uncapped the telescope optics and installed the dew shields and headed back into the camper. It was nice not to have to wear all the heavy clothing, but instead kick-off the shoes and sit in a comfortable chair inside the warm camper, microwave and snacks at my fingertips. LOL!

After checking the camera focus, I slewed the telescope up to Camelopardalis, rising high in the northeast. My plan was to continue with the Sharpless Catalog, taking advantage of being at a dark sky site for one last night. Killed a little time waiting for the Moon to finally set, then I started off with SH2-207/208, followed by several other HII objects located in the giraffe.



I then headed over to nearby Perseus where I spent the next several hours hunting Sharpless Objects. Most of these were pretty faint and small, with the best ones there being SH2-209 and SH2-222 (NGC1579). (all images 60 second exposures for 30 minutes)



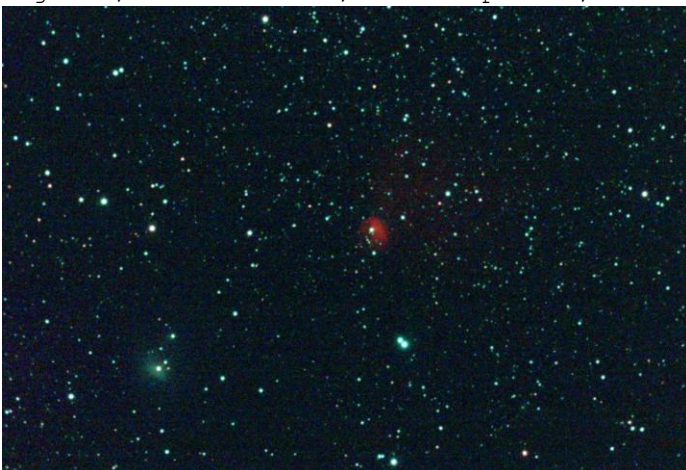
Well after midnight, I moved into Auriga and continued the Sharpless hunt, with SH2-229 (IC405), also known as the "Flaming Star Nebula" making for a very nice observation. A good mixture of HII emission and dark nebula with the L-eNhanse narrowband filter.



While I still had the AllSky camera running, I didn't really plan on making another time-lapse for the evening. But it was fun using the fisheye camera to keep an eye on the sky while I was indoors. Watching the airplanes go by, with the occasional meteor, and the winter constellation rising into the heavens. I did save off an occasional frame.



Shortly after finishing the Flaming Star, The sixth straight night of long observing sessions, staying up past 3 or 4am, caught up to me, and I became extremely tired. (or maybe it was just being indoors in a warm camper with the bed a few feet away,,,,) At any rate, my last observation, HII emission nebula SH2-241 with nearby reflection nebula VdB65, became a real struggle to get in. I was beginning to make silly mistakes, like accidentally clicking on camera settings when I shouldn't, along with a guiding/tracking issue that cropped-up which my sleepy mind couldn't focus clearly on how to resolve. So I saved what image that I had. Here's the last pitiful image of the objects, a one minute, 'ok' exposure, and a seven minute one with 'guide issues'.



Not the best, but still counts as an observation. (I'll re-do this fella another time). Pulled my shoes and jacket on, ran outside and powered off the equipment, capped the optics, and called it at night at 2am.

Tuesday 11/09/2021:

Would have liked to slept-in longer, but the brake noise of several trucks going down the hill on Rt-216, just outside of the park woke me up at 8am. I quickly finished stowing items inside the camper while eating breakfast. I then moved outside and disassembled the telescope and packed the cameras away. Ed was already up and finishing his packing, and after saying goodbye, hit the road shortly after 9am. By a quarter after 10am, I had everything ready for travel, and left the park for the drive home.

It was another beautiful warm fall day, but the sky soon became milky with haze. A definite signal that the streak of awesome observing weather had come to an end. The drive was thankfully uneventful and by 2:30pm, I had the camper backed into the driveway and unpacked.

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So this concludes my very successful November 2021 return to Calhoun County Park. Eight nights in total at the park, with great EAA observing on the last six. Even the first two nights were useful in getting the telescope up and running, along with a cool observation of Ceres. While the nights were cold, dropping into the low 30's, I stayed warm under the canopy during observing, and the warmer daytime temps over the weekend made for pleasant afternoons sitting and visiting or hiking around the park.

I observed an asteroid, planets, zodiacal light, two comets, and numerous new dark reflection, and emission nebula and peculiar galaxies. (SH2's, Arp's, LDN's, VdB's). It was a smorgasbord of the shallow and deep skies.

I hope to be back somewhere in "the wild" for deep-sky observing in the spring of 2022! And maybe one last December 'Comet' trip!!! ☺

Larry McHenry

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