ORAS Observatory May, 2023

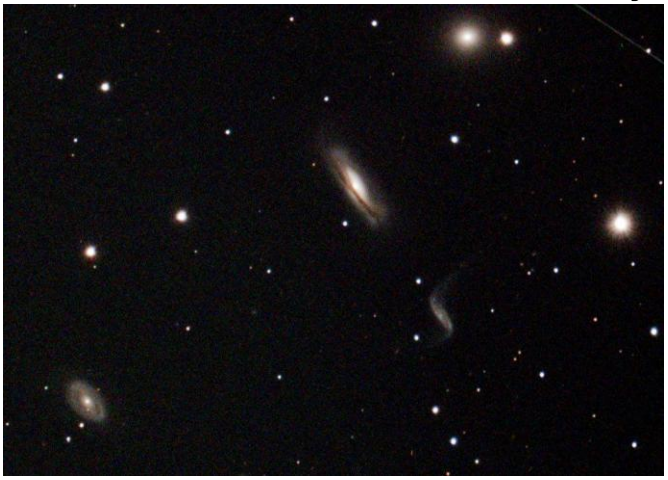
Hi all, here's my report of May's New Moon spent at the ORAS Observatory.

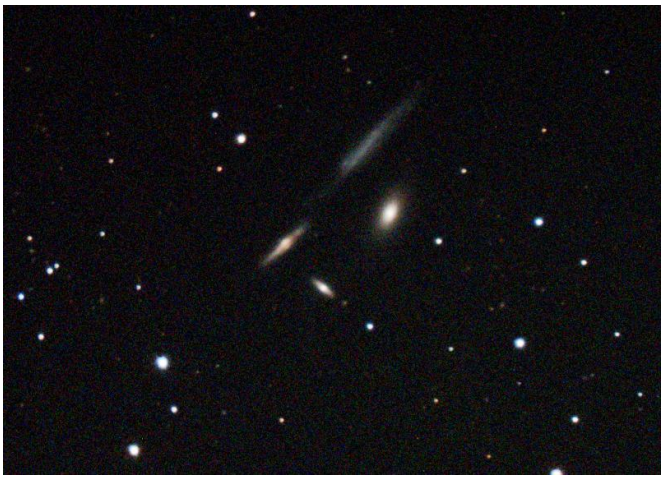
Monday 05/15/2023:

Waited till after the morning traffic rush ended in Pittsburgh before heading north thru the city and up I79 to I80, and then on to the ORAS facility. Arrived to find Denny H, Dean S, John & Kelly O, already there. Later Dean M and Ray L arrived. Here are a few pictures that I got a couple days later.

After getting camp squared away, I assembled my telescope: a 8" Celestron SCT optical tube @ f6.3 with a ZWO ASI294MC Pro camera, filter wheel and focuser on an Atlas EQ GEM mount, along with a piggybacked Sky-Watcher EVO 50mm refractor with ASI290MC camera, and a 60mm Antaries refractor guidescope with an ASI120MC camera. I also setup the Allsky cam, a ZWO ASI224MC & fisheye lens in a DIY dome. A little later, I setup the blackout tent off the back of the camper's clamshell.

A little before dusk, I started-up the AllSky cam and began capturing frames. Once dark enough to see Polaris, I quickly had the mount polar and goto aligned, and cameras focused. I pulled out my Hickson Galaxy Cluster project and began working objects over in Leo, eventually moving up into Coma Berenices. These included HCG38, 44, 46, 51, 53, 54, and 61. The best two for the night was HCG44 and HCG61:





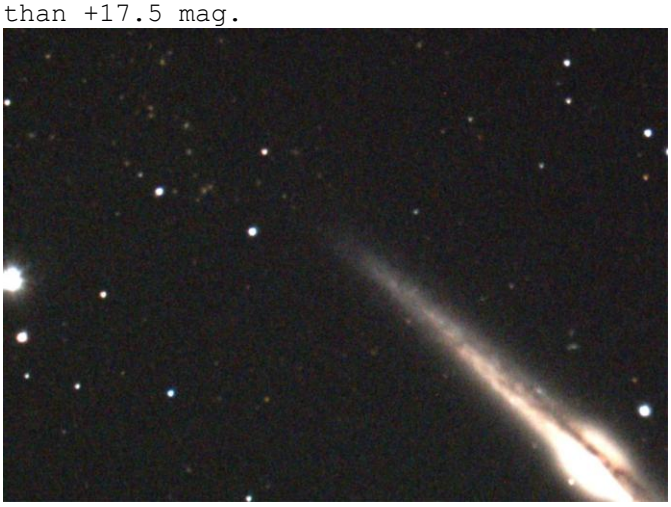
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 3 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 15 minutes).

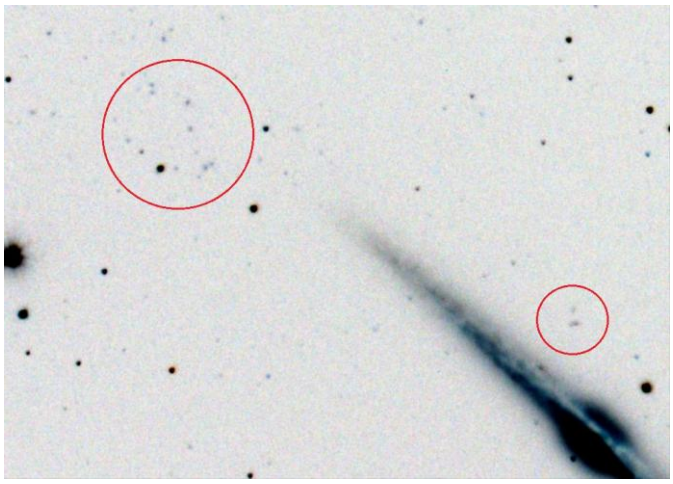
To see all of my Hickson Galaxy Cluster observations, please visit my project webpage on my Stellar-Journeys site: http://stellar-journeys.org/HicksonGalaxy.htm

Throughout the evening, I was zinged by satellite trails several times. Fortunately, Sharpcap can help with that by slowly fading them. The sky transparency remained good throughout the evening, even though there was a light haze from wildfire smoke coming from Alberta. The dew was mild for the night, no pesky bloodsucking bugs to speak up, and the outside temps stayed mild. During the evening, John O and Dean S dropped in to visit. Dean S spent the evening imaging Markarians Chain and M13, and Dean M worked on M81. Being the first time out since last September, Denny spent time getting re-acquainted with his telescope & imaging equipment.

Around 2am, I set aside the galaxy cluster project to make a deep observation of the edge-on galaxy NGC4565 in Coma Berenices. The May issue of Sky&Tel has a great article on page 20 by author Howard Banich about observing the bright spindle galaxy with its prominent dark-lane, along with all the little, faint background galaxies in the same general field. By real-time adjusting the livestack histogram levels and brightness within Sharpcap, I was able to observe the objects described within the article. Here's the main 'wide-field EAA observation of NGC4565 showing both the main galaxy and the brighter neighbor galaxies of +13.4 mag spiral NGC4562 south of and +16.9 mag irregular galaxy IC3571 to the north of the main galaxy. Also the small spirals IC3543 & IC3546 could be found a little distance away to the northwest of the big spiral.

But the real fun was pulling in the really faint smudges of +17.7 and +19 mag galaxies NGFP9 F378-0021738 & NGFP9 F378-0021761 just to the east of NGC4565's core, and a small galaxy cluster off the SE edge of NGC4565 spiral arms called RX J236.9+2550 all greater than +17.5 mag.





(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 5 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for one hour).

After wrapping up viewing NGC4565, I made one final observation for the night of inclined spiral galaxy NGC6118, which displayed a bright core and several nice spiral arms.
At 3:30am, I called it a night and crawled into bed.

Tuesday 05/16/2023:

Slept in till 9am. By the time I was up, Ray had left for home. John and Kelly O packed-up their camper and headed to Cherry Springs. Spent the early afternoon weed-whacking the tall grass around the observatory, and field power pedestals, then moved down along the main road to the gate, cleared around that, and then to Camp Coffman Road where I cleared the hillside around the ORAS sign. Afterwards, I enjoyed a cold coke back at camp.

Dean S mowed the field. Dean M painted the Jones building doors. Denny started the shed construction project with all of us pitching in to help. (see photos at end of report) Dan & Sharon arrived that afternoon and setup camp on the east side of the observatory.

Lots of wildfire smoke moving in overhead at dusk. Group dinner at Dean M's camp. Later Dan gave Denny and I a refresher course inside the observatory warm-room on using KStars with the C14. The Sky transparency was so bad from the smoke and light clouds that you couldn't even see Venus.

Headed back to the camper around 10pm where I worked on a few observations from the night before. Early to bed.

Wednesday 05/17/2023:

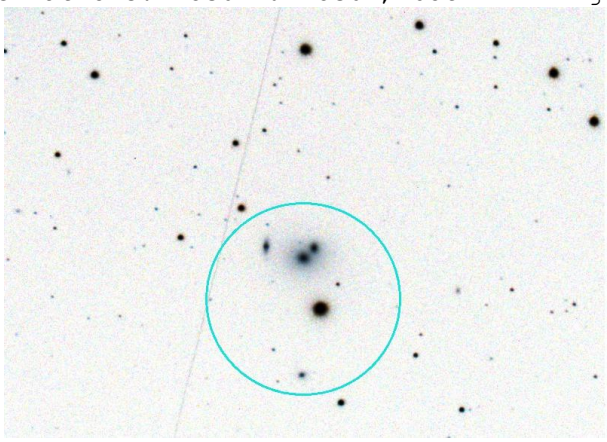
Slept in, woke to a cold 46 deg morning. After breakfast, I headed outside to give a hand to Denny and Dan who were working on the new telescope storage shed. Took a break at lunch, then back to the project. By end of day, Denny and Dan had all the frame walls up. During the day, the Dean's both worked on cutting the observing field grass.
Mid afternoon, Gary S arrived and setup next to his brother Dean, and then Susan P & her husband John arrived and setup over by me.

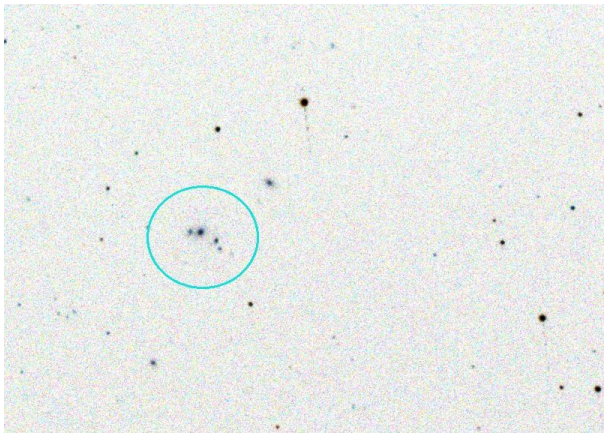
Late afternoon, I setup my dark canopy under the camper hatch and Susan came over for a tour. Denny then stopped over and I helped him with setting up how to plate-solve.
After dinner, I changed into heavier clothes, it was going to be an unseasonably cold evening, as the temps was expected to drop into the low 30's overnight.

At dusk, I started off with EAA observing Hickson galaxies, first in Virgo, then in Ursa Major and Ursa Minor (HCG60, 62, 64, 66, 67, & 84). Dan dropped in to visit, followed later by Gary. Walked back with Gary over to the western field and visited with Dean M, Denny, Dean S, and then back with Dan at the observatory warm-room.

While visiting with Dan, we attempted to use the C14 to make an observation of the 16th mag Palomar Compact Galaxy Cluster PGC0915+2130 in Cancer. After I had left to head back to camp, Dan was successful in imaging the galaxy cluster.

Throughout the evening, while the temps dropped into the low 40's to mid 30's, the sky remained mostly clear, with no dew, with a number of meteors visible.
Here's the best two Hickson Galaxy Cluster observations: HCG62 & HCG67, both in Virgo:



(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, Gary worked on imaging galaxy NGC4236 in Draco and then the Crescent in Cygnus, Dean S was on M101 – the Pinwheel, Dean M imaged both M81 & M82, and Denny shot both M100 and IC342. Mid-way thru the Hickson's, I took a break and made a nice deep EAA observation of a pair of interacting galaxies in Coma Berenices, "The Mice", NGC4676A & B. You could make out both pairs of "tidal tails" from the two galaxies.

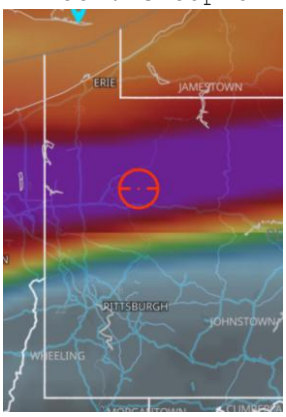
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 5 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for one hour).

By 1am, the outdoor temp was below freezing, and ice began to form on my car's windshield, and later on the telescope. The AllSky cam dome heater had a hard time keeping it clear. After bagging HCG66 in Ursa Major, I called it quits at 4am, powered-off the equipment, and headed indoors to a warm bed.

The next day, I processed the AllSky overnight captures into this video: https://youtu.be/QBV6BYnVORw

Thursday 05/18/2023:

Slept in till 10 am. Visited with the gang. Assisted with Denny and Dan who spent the day working on the shed project. Fixed up the Astrovid video-system on the Meade 14" SCT. Helped the Dean's clean out the observatory warm-room. Group dinner at Dan's & Sharon's.



Hazy sky from all the smoke. At dusk, I tried to observe a couple of Hickson galaxy's in Leo, but the sky was too milky. Only straight up in Ursa Major was clear. So, using another great article from the May Sky&Tel by KenHewitt-White on page-54, I observed galaxy M108 – "The Surfboard Galaxy", and planetary nebula M97 – "The Owl Nebula".

(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).

I then observed M3 in Coma Berenices, but the sky was too bad for anything else. Additionally, a light breeze had started, making guiding in the haze even more difficult for everyone. My AllSky camera was really picking up all the smoky haze, the horizon all around was a hot mess. Dean S, with his little scope kit imaged both M81 & M82).

(15 second subs, livestacked for 15 minutes).
Early night, called it quits at 1am. AllSky video: https://youtu.be/ZxnXjGKLj58

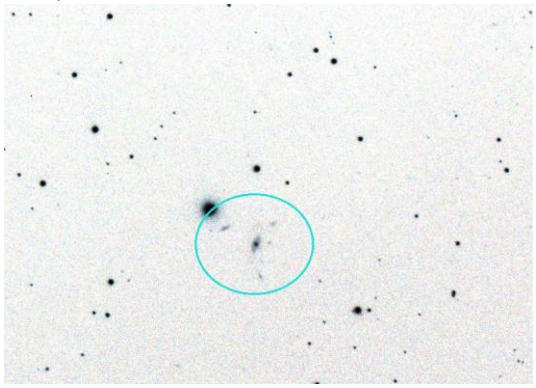
Friday 05/19/2023:
Up by 8:30am. Rain was on the way later in the day, so I put a few outdoor things away, took down my blackout tent, and added bungee cords to help secure the canopies.
Then I helped with the shed project before the rain sat in, and then worked with Dean and the others in straightening up the inside of the observatory. It was a rainy afternoon, with several good downpours, but fortunately no thunderstorms or high winds.
Dean M headed home for the evening to a family event, but left his camper and equipment setup as he was returning the next day.

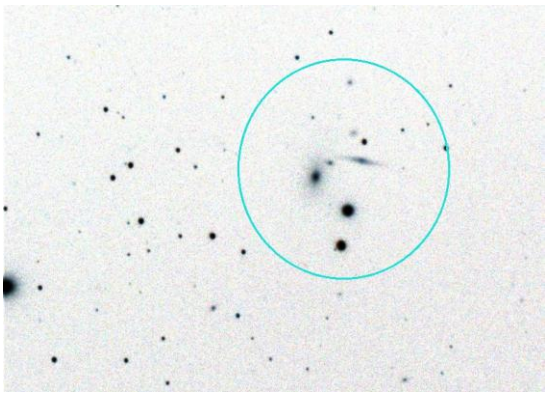
After dinner, the rain tapered-off and the evening was cloudy, so we all sat around Dean S's camp for adult beverages. Dean then came up with an image processing challenge for all of us. He would give each of us a copy of 34 subs of M81/82,band each of us would process it using our favorite software: Dan would use Siril, Gary - Pixinsight, Dean - Photoshop, Denny - Nebulously, and I would run it thru Sharpcap.
Judging the 'winner' would be by Sharon the next day.
Spent the evening inside the camper working on my challenge entry, then reading.

Saturday 05/20/2023:
Woke to a rainy day. The rain had started before dawn and kept up nearly continuously for the entire morning. At 11:30am, everyone gatherer in the observatory warm-room for the great M81/M82 Challenge shootout. There were 5 contestants, (Dan, Denny, Gary, Dean, and myself), with Sharon as the presiding judge. After carefully reviewing each submission, Dean's image was declared the winner. Good fun! Afterwards Dean was presented with a KitKat bar for winning first place.

Spent the afternoon in the camper working on images from earlier in the week, listening to the rain tapping on the camper roof and trying not to fall asleep. Received an email from Kiski Astronomer John L regarding a new supernova in M101. Shared that info with the rest of the group, and we all hoped to get a chance later that evening to capture an image of the galaxy.

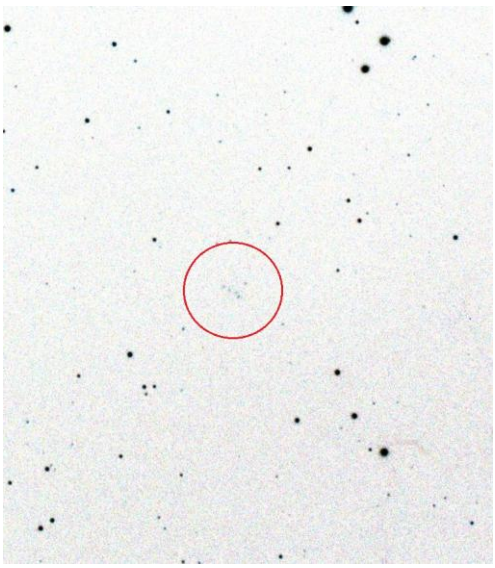
Around 4pm, the rain finally moved out of the region and the sky began to clear.
Soon Denny, Dan, and the crew were back to work on the new storage shed, rushing to get the doors built and hung. By then, Dean M and his better-half had also returned, and Alexi had also arrived in his minivan and setup his telescope imaging equipment.
By 7pm, the work was done, the tools put away, and the crew broke for dinner.
At dusk, the sky was mostly clear, except for the wildfire smoke which had returned, though not as bad as Thursday evening. As soon as it was dark enough, I returned to working the Hickson's, starting over in Cancer, for HCG36 & HCG37.



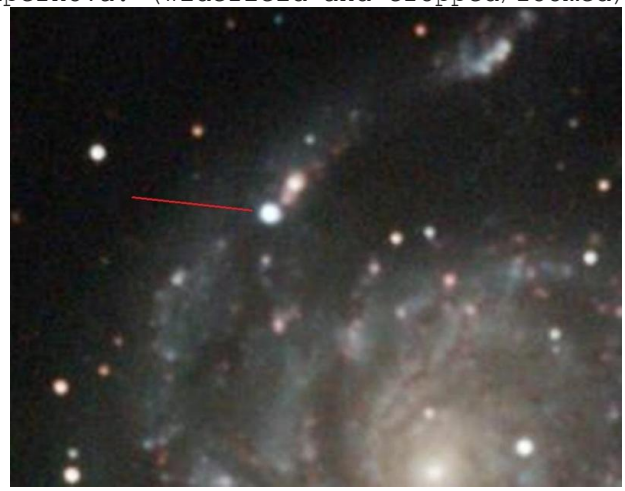
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 3 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 15 minutes).

Using the 8”, I then made an observation of the 16th mag Palomar Compact Galaxy Cluster PGC0915+2130 in Cancer than Dan and I had tried for earlier in the week using the C14. Here’s my EAA observation:

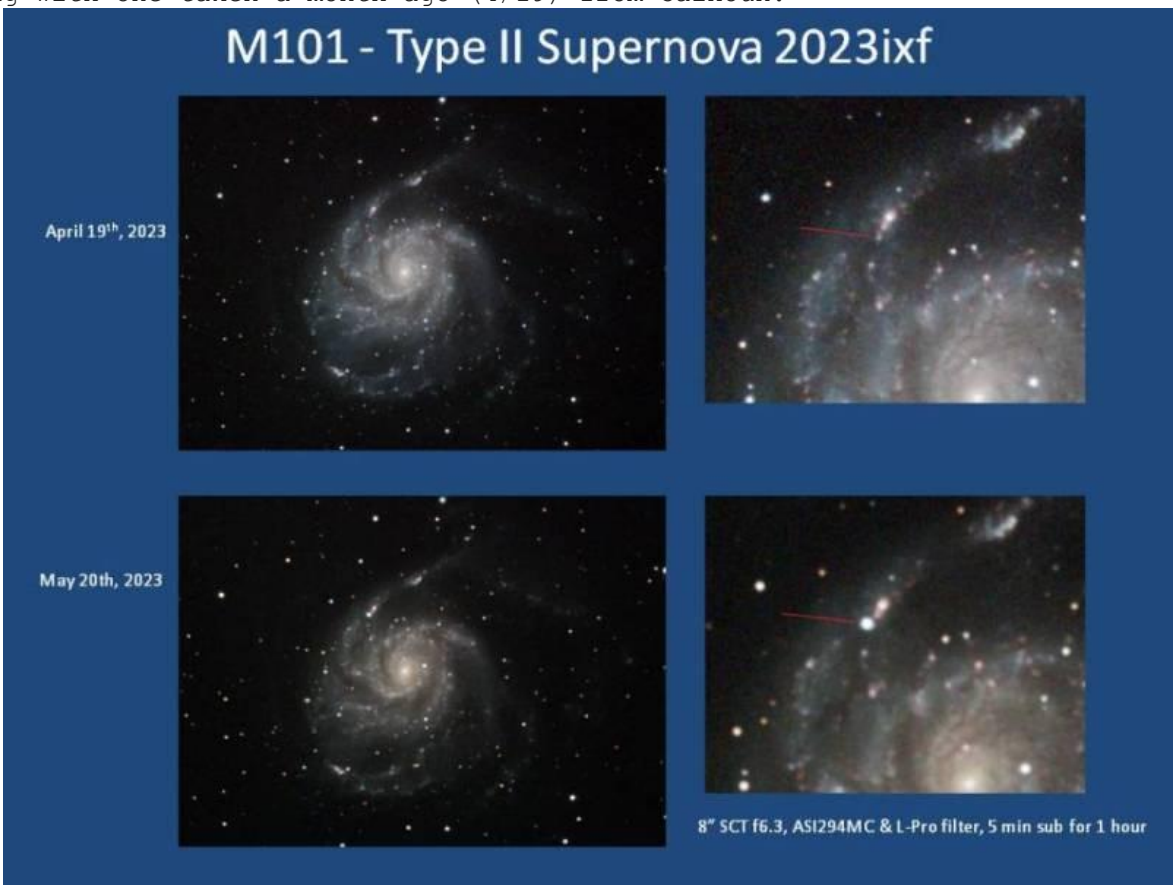
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 3 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 15 minutes).

I then pointed the telescope high overhead to M101 - "The Pinwheel Galaxy, just off the handle of the Big Dipper in Ursa Major. Thanks to the 'heads-up' from John L, I was able to image/EAA observe the newly discovered Type II supernova (2023ixf) in M101.
Using my 8" SCT @ f6.3 and my ZWO ASI294MC camera & L-Pro filter, the supernova was easily observable, even in the very first subframe.
Here's the EAA observation of the galaxy and supernova: (widefield and cropped/zoomed)

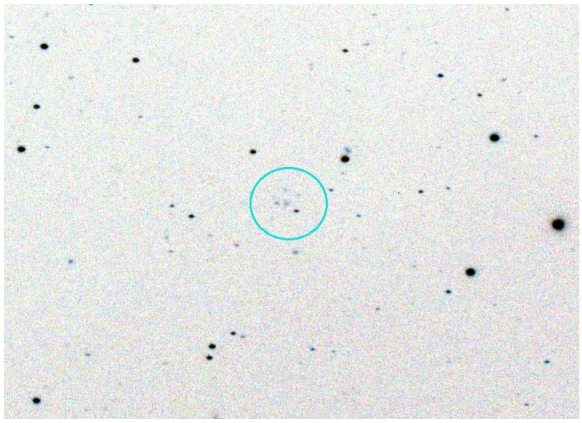
(5 minute subframes, livestacked for 1 hour).

I've put together a comparison between the observation of M101 from ORAS on Saturday evening with one taken a month ago (4/19) from Calhoun:



Both Dean S and Denny H were also able to image the supernova that evening.

I then spent the rest of the evening hunting Hickson cluster up in Ursa Major: HCG41, 45, 49 & 50. The most interesting was HCG50, which contains a +20th mag member galaxy that I was able to observe using my 8”!



(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 15 minutes).

At 3am, I decided to call it a night, shutdown the equipment and headed to bed.

Sunday 05/21/2023:

Up at 8:30am to begin disassembling the telescope & camera, and packing away the camping gear, getting the camper ready for travel back home. Everyone else was up and also packing, except for Alexi who was staying another night. Before long, Denny, Gary, Dan & Sharon left for home. Before we left, the two Dean’s and I painted the new storage shed.

By 1:30pm, the last of the paint was applied and I was on the road home. Arrived back in town by 4pm and unloaded camper and car.

Another successful observing trip at the ORAS Observatory! Four nights observing out of Six! While the western wildfire smoke did cause issues, I was still able to EAA observe a number of new Hickson Galaxy Clusters, along with a new supernova in M101.
Looking forward to making it back to ORAS in August for AstroBlast.

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

==========

Hi all,
Wanted to share a link to a photos folder that I created on our IO group of the construction project this past week at the ORAS Observatory.
https://groups.io/g/ORAS/album?id=286772

Master builder Denny H, along with Observatory Director Dan H, and assistance from club President Dean M, Vice-President Dean S, and members Gary S, and yours truly spent this past week onsite at the ORAS facility constructing a new storage shed alongside the observatory to hold several of the club's portable telescopes, making them more accessible/usable by club members. The shed has three separate 'rooms' that will each eventually contain a telescope and accessories. While the overall construction is finished, a few final details, (such as installing a ramp), need completed before the telescope storage shed officially opens.