ORAS Observatory May, 2024

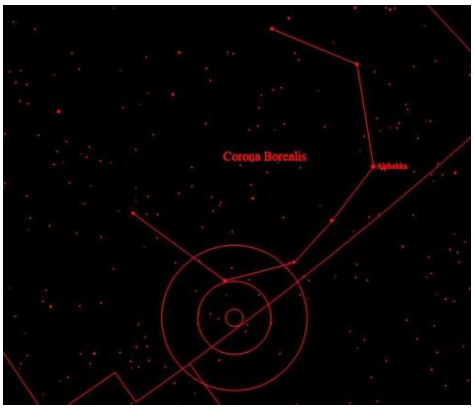
Hi all, here's my report of the 2024 May New Moon at the ORAS Observatory.
Didn't really take any 'people' or field photos nor write down a lot of notes, so this trip report will be shorter than usual.

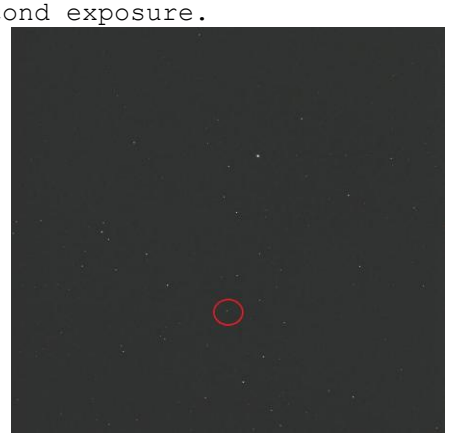
Monday 05/06/2024:
Originally planned on heading up to ORAS on Sunday, but with the forecast of severe storms I decided to wait. As it was, when I left Monday morning it was a dreary drive up to the observatory. I arrived onsite shortly after noon to find I was the first there. After picking a spot by the eastern power pedestal, and 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.

Before long, Dean S and his brother Gary arrived and setup by the north pedestal, followed soon by Dean M who setup to my south. It was good to see folk's in-person for the 1st time this year!

The sky was partly cloudy & windy for most of the afternoon, but cleared very little at dusk, but at least the wind died. Finally, around 10pm, it cleared enough to see Polaris. After struggling with getting polar aligned, (even with help from Dean S), taking much more time than normal, I finished the GOTO align and began my EAA observing program.

First up was the 10th magnitude eruptive variable star T Coronae Borealis, which is expected to blow anytime between now and September and become as bright as "Northern Crown's" alpha star – 2nd +mag Alphekka. Here's a finder chart showing the location of the variable T Coronae: (from ECU planetarium program), along with images using my Canon lens set to 5mm, and the EVO50mm refractor: Both a single 15 second exposure.



Not long after completing this observation, thick clouds rolled back in shutting us down for the night.

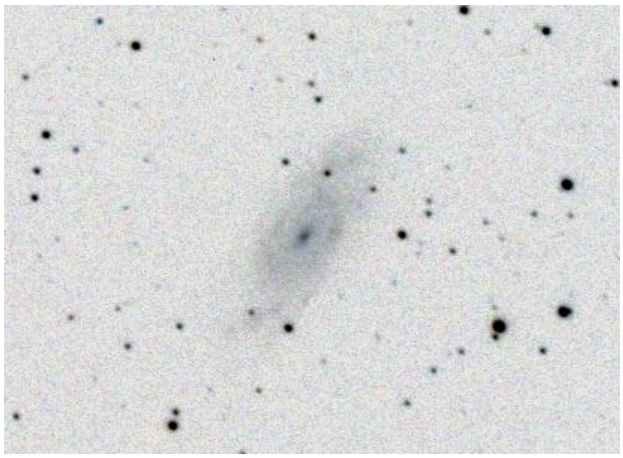
Tuesday 05/07/2024:
Tuesday was partly to mostly cloudy thru the day with an occasional raindrop, and stayed that way into early evening. Spent time visiting and assisting Dean M with balancing his telescope with new accessories. We thought about putting up the shade-sail behind the observatory, but decided it was too windy to make the attempt. At around 5pm, we gathered over at Dean S's camper for refreshments and pre-dinner snacks.
At 8pm, a downpour went thru giving the field a real soak. Around 9:30pm, a few stars struggled to shine thru the hazy sky. A couple of the guys stepped out, but I didn't bother, stayed indoors and read. Too wet and chilly for me.

Wednesday 05/08/2024:

After a soggy start, the skies on Wednesday were much clearer. Dean S was out mowing the observing field. Denny H arrived mid-afternoon and setup near Dean S, along with Dan & Sharon H who setup down by the Jones Building.

The sky was mostly clear and sunny all day, which along with a steady breeze helped to dry out the observing field. Our group again gathered over between Dean S & Gary S's campers for snacks. At dusk, I uncovered the telescope and assembled the blackout tent.

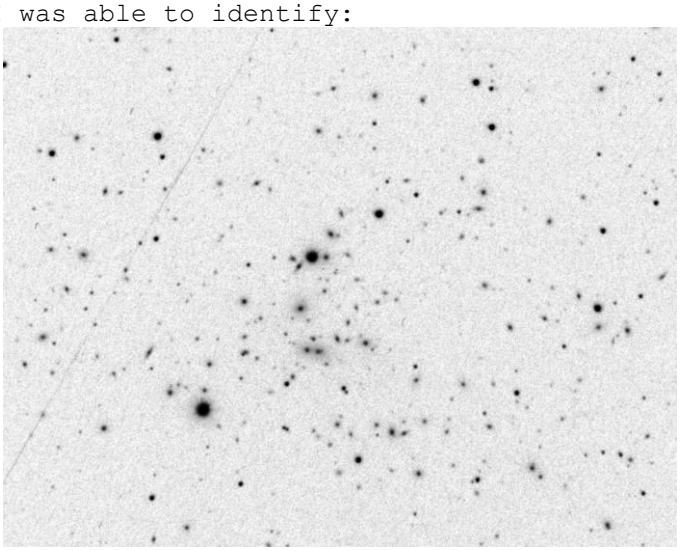
It was a great evening of EAA observing!
In addition to the Abell Galaxy Clusters, which I'll discuss below, I was 'able' to get in an observation of galaxy **NGC6118** in Serpens for an observers challenge project that I'm involved with. The "Blinking Galaxy" is considered by visual observers to be one of the most difficult objects in the Herschel 400 list. (there's a thread about it over in 'Deep Sky Observing' - https://www.cloudynights.com/topic/921381-a-deep-sky-devil-which-happens-to-be-a-galaxy/)
Of course for us EAA'ers, observing NGC6118 is not all that difficult.
Here's my observation of the little galaxy showing good spiral arm detail: (wide-field and cropped negative)



(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 moved on to the Abell Clusters, targeting **Abell2065** - "Corona Borealis Cluster", in Corona, **Abell2151** - "Hercules Cluster" in Herc, and **Abell1165** – "Coma Cluster" in Coma Berenices).

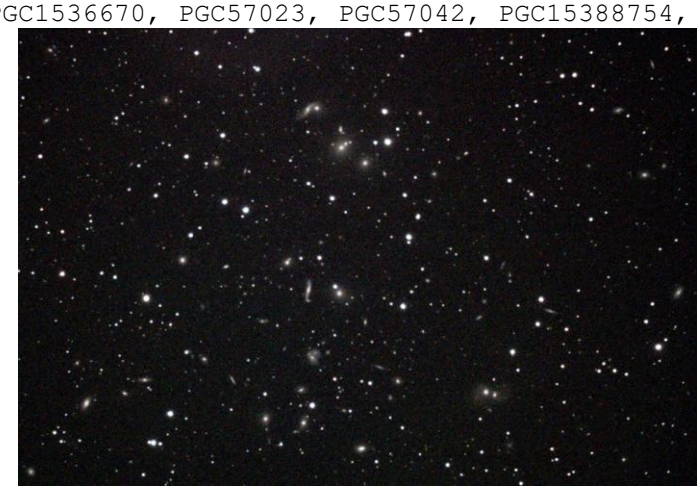
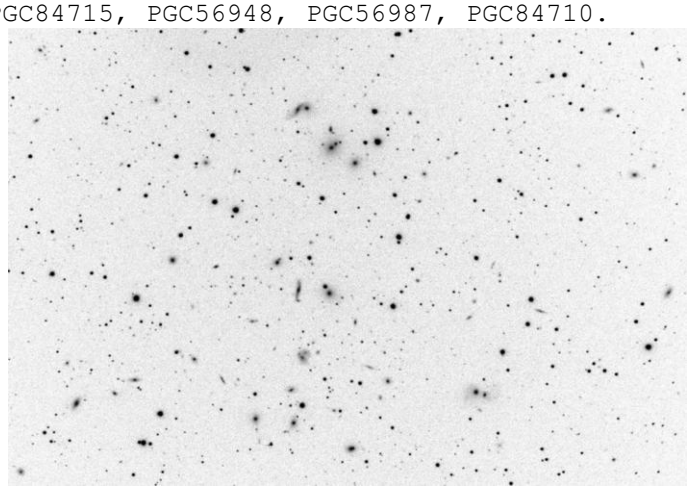
+15th magnitude **Abell2065** has a nice condensed core of galaxies. I was able to identify 32 individual galaxies out of a potential 109 that Alvin Huey lists in his guidebook. Here's the EAA observation of Abell2065, which includes the following member galaxies (PGC54876 being the brightest at +15.5) that I was able to identify:



PGC54876, PGC54875, PGC54868, PGC54890, PGC54084, PGC54888, PGC54892, PGC54883, PGC54870, PGC54891, PGC54881, PGC54894, PGC54874, PGC1817802, PGC1818375, PGC1816776, PGC1816480, PGC1815455, PGC1815593, PGC1814971, PGC1814649, PGC1814121, PGC1813849, PGC1813768, PGC1813774, PGC1812251, PGC1812549, PGC1812434, PGC1812057, PGC1811589, PGC1812442.

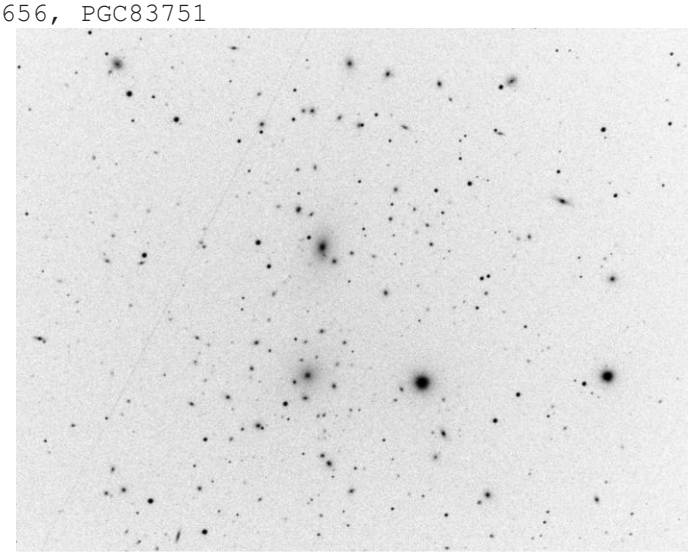
(8" SCT @ f6.3 on an Atlas Gem, ZWO ASI294MC camera with L-Pro filter, 3 minute subs, dark & flat calibration frames, PHD guided, livestacked using Sharpcap for 15 minutes).

Next was **Abell2151** in Hercules. This +13 mag cluster with 89 individual members is larger than my scope/camera's FOV, so I centered on the cluster core and dropped off the outliers. I was able to identify 33 individual members, (NGC6042 being the brightest at +13.9), including: NGC6042, NGC6056, NGC6044, NGC6054, NGC6050, NGC6045, NGC6047, NGC6043, NGC6040, NGC6041, IC1182, IC1183, IC1179, IC1185, IC1178, IC1181, PGC57060, PGC57070, PGC57055, PGC57064, PGC1542056, PGC57020, PGC84714, PGC1542301, PGC1536800, PGC1536670, PGC57023, PGC57042, PGC15388754, PGC84715, PGC56948, PGC56987, PGC84710.

(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).

Finally, Here's **Abell1656** - "Coma Cluster", in Coma Berenices, which includes the following member galaxies (NGC4889 being the brightest at +11.5) that I was able to identify: NGC4860, NGC4864, NGC4865, NGC4867, NGC4869, NGC4871, NGC4872, NGC4873, NGC4874, NGC4875, NGC4876, NGC4881, NGC4886, NGC4889,NGC4894, NGC4895, NGC4898, NGC4906, NGC4907, NGC4908, IC3949, IC3955, IC3957, IC3959, IC3963, IC3976, IC3998, IC4040, IC4041, IC4042, IC4051, PGC44537, PGC44784, PGC44809, PGC44667, PGC44771, PGC44699, PGC44704, PGC44519, PGC44636, PGC44662, PGC44652, PGC44656, PGC83751

(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 9 minutes).

Here's a time lapse video staring Wednesday afternoon into Thursday dawn.
https://youtu.be/7GnkOAAcwxA?si=2C8GKDc7BXnBTRNK

ORAS UAP!
During the evening, multiple club members spied a naked-eye unidentified aerial phenomena rising out the hazy southern horizon just below Corvus around 10:55pm and proceeded to slowly travel higher in elevation for about an hour until fading away just below and to the left of Arcturus in Bootes.

The object was a diffuse oval shape in binoculars, somewhat resembling the coma of a comet. But we were not aware of any current bright naked-eye comets and the object moved much too quickly to be a comet. Also, it was probably not a low-orbit satellite as it moved much too slowly than what the ISS or a SpaceX Starlink train (they generally pass from horizon to horizon in just a few minutes) would do. Even more 'down to Earth' clouds move quicker than what we observed with this UAP. Our best guess is perhaps some type of high altitude fuel dump from a rocket? Inquiring minds would like to know!
https://youtu.be/Z2Mw-LxKFB8?si=sJiz9xCrHRIp-P5o

Video taken using a ZWO ASI224MC camera and fisheye lens in a DIY dome controlled by Sharpcap. Auto Exposure (up to 30 seconds) & gain, one frame captured every 30 seconds. ~ 73 subframes, 1 per second of video.

Thursday 05/09/2024:
Slept-in late, missed Gary S who packed-up early and headed for home in Maryland for another commitment that afternoon. Later in the day Susan & John P arrived to visit and work with Dean S on a tech issue with their ASIAir. For dinner, we gather over at Dean M's camp for Burgers, Italian Sausage, and Braughts! Tim S stopped in and joined us.

After dinner, based on the weather radar showing a line of approaching storms, I held off on assembling the blackout tent and left the telescope covered up. A good decision as by 8:30pm, the sky was overcast and soon developed into a steady rain with occasional heavy downpours. A good evening to process and upload time-lapse videos from the night before. Took a break and visited with Denny & Dean, then watched TV till bed.

Friday 05/10/2024:
The day dawned foggy & damp, but soon the Sun was out drying off the field.
The Sun has been very active these last several days with multiple CME's erupting that are expected to impact the Earth Friday evening into Saturday.
NOAA has issued a G4 geomagnetic storm warning. There is potential for bright auroras visible as far south as Alabama! Peak activity is expected to be starting tonight between 03 to 09 UTC. (03 UTC = 11pm EST) We may begin seeing aurora as soon as it gets dark!

Currently, there are six of us camping on the observing field. (Susan & John had returned for the night, bringing their camper-van and pasta dinner for everyone!).
The rain is expected to stop by 2pm with skies clearing by 7pm. It should be a good night of deep-sky and perhaps aurora watching!

Night of the Aurora! The afternoon turned a little Rainy, with several late day showers soaking the field. Not long after sunset, fog began to develop on the observing field and soon obscured most of the sky. But as soon as it was dusk, the aurora was visible even thru the fog. It was so bright overhead that you didn't need a flashlight to see the ground or the tree-line in the distance. We could only imagine what it must have looked like under clear skies. Our group spent the next two hours watching the fog dimmed display, with curtains, arcs & rays visible leading overhead to a bright auroral corona, and various green & red glows in every direction.

In the pre-dawn hours, the fog lifted and the AllSky camera recorded the spectacular display that went thru the night, only fading with dawn.

Here's a time-lapse video from my AllSky camera: https://youtu.be/jhsz8saja8k

Video taken using a ZWO ASI224MC camera and fisheye lens in a DIY dome controlled by Sharpcap. Auto Exposure (up to 30 seconds) & gain, one frame captured every 15 seconds. ~ 1500 subframes.

Saturday 05/11/2024:

The day started off partly sunny, but cloud began to slowly gather. Looking at the weather radar & forecast, I had till around 1pm before rain settled in over the region for the rest of the day and that night. So I decided to pack everything away while it was still dry and completed that just in time for Dan & Sharon's group lunch on the barbe!

For Dinner, Tim brought the club member's pizza!!
At 7pm, we held our monthly club zoom meeting which was a hybrid this time as I gave a presentation from the Jones Building – "Charles Messer, the Ferret of Comets" to about a dozen attendees there in the building and another 10 to 12 online. Afterwards, with the cloudy/drizzly weather, we all headed back to our campers, where I spent the evening.

Sunday 05/12/2024:

Woke to a chilly, damp morning. Finished packing the camper interior hitched-up the SUV and was on the road home by 10am. Made it back to Pgh right before 1pm and after backing the camper down the driveway got everything unloaded.

So, six nights camping and only one good night of EAA observing. I would normally consider this a failed deep-sky trip, but perhaps it wasn't that bad,,,,
Looking forward to a warmer/drier trip up to Cherry Springs in June.

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