

## Cherry Springs Star Party - June, 2018

With the flipping of the wall calendar over to the new month, it was time to begin packing the camper and telescope for a trip north to the 2018 Cherry Springs Star Party. As usual in Western Pennsylvania, The weather forecast was 'iffy' at best. Before making the drive to Cherry Springs, fellow Kiski and ORAS member Denny H and I decided to first head up to the new ORAS observatory to do some installation work on the club's Meade 14" LX200 SCT.

### Sunday 6/10/2018:

Having worked late the night before, I wasn't out of bed and on the road till mid-morning. As Denny's drive was an hour shorter than mine, he waited till I sent him a text that I was on the road before he left for the ORAS site. The drive from Pittsburgh was uneventful, starting off in cloudy skies, but soon the clouds darken and began to rain. There was a particularly heavy downburst once past New Bethlehem that flooded Rt66 in spots, one of which nearly caused me to hydroplane off the road. Finally arrived at the observatory a little before noon to find Denny already there and having his loaner field tripod setup for the 14". During a lull in the rain, we moved the 14" out of the members building and lifted the mount/optical tube assembly onto the tailgate of Denny's truck, and he drove slowly up the gravel road with me sitting on the tailgate steadying the telescope. Once up at the observatory building we carried the telescope into the building and attached it to the field tripod. As it had started to rain again, all we could do was attach the few accessories that we had for the scope and power up the mount to make sure that it was functional.



We then headed out to Cherry Springs. Once we got back to I-80 and past Clarion, the weather started to dry and the clouds lifted a bit and it was a pleasant drive. Driving along Rt555 heading out of Benezette was interesting, as the mist and tattered low clouds in the valleys made the steep mountains appear to be burning. We arrived at the park late afternoon to find a small crowd of amateur astronomers already gathered on the observing field. Dennis from York, (and his wife), along with Nick and Jane from Eastern PA, and fellow Kiski Astronomer member Bob N were already there setup in our usual group space. Further down in the southern section of the observing field was Tony, Gary, Conrad, Elliot and others. From the incoming storm front that was slowly heading our way, it was obvious that there would be no observing that night, so Denny and I just focused on getting our campers squared-away and didn't bother to get out any telescope equipment or setup our tent canopies. Toward dusk, the rain began to settle-in, so we all headed in for the night. After a little reading and TV, I was off to bed by 11pm.



### Monday 6/11/2018:

Up by 8am, but as it was still gloomy and damp outside, took my time on going out. From the weather forecast, I knew that sunny skies were on the way and by mid-morning the field had begun to dry out. Denny and I had just begun to setup when the park maintenance crew showed up and began mowing the field. We quickly pulled back what we had started, moved the cars and the park guys were able to cut the grass nice and short around our campers and common area. Nice! Once our section of the field was done, we moved the cars back over beside the campers and re-set the canopies. After lunch, I assembled my telescope, an 8" SCT optical tube mounted on a CGem mount with an 80mm KSON Refractor and 60mm Antaries guidescope with StellaCam-3, SC-II, and ASI120MC cameras.



As I was having issues with my old XP laptop communicating with the telescope, Denny helped me transition from the XP machine to another laptop running Win-10. Also had to replace the USB-RS232 cable with a new spare that I had brought with me. With Denny's coaching, I got all the COM ports talking to the astro gear. During the afternoon, more amateurs arrived onsite and setup, including Gordon and Scott from Canada, Brian from Eastern PA, Mike M, Frank W, and Nate B from the Pittsburgh area.



At sunset, the puffy daytime clouds evaporated and we uncovered our telescopes and settled in waiting for the first sighting of Polaris. Soon Venus was shining on the western skies with Jupiter glowing in the south and Vega rising in the east. After sighting the pole star, I had my telescope mount aligned and moved on to initializing the GOTO. There I ran into an issue with the mounts hand-controller freezing up or executing runaway slews. Fortunately, Denny had brought his spare and I was able to switch out the controllers and finish the GOTO align. Having finally getting past the technical hardware issues, I started my Herschel Objects observing project. Spent most all of the evening over in the western sky around Bootes the Sheppard chasing faint fuzzy galaxies including NGC4567/68, 5622, 5696, 97, 98, 5702, 5714, 5730 & 31, and 5735.





NGC4567/4568



NGC5698



NGC5714

Around 1:30am, Denny called out asking what was going on with the Milky-Way over in the northeast. It was in the wrong place and brighter than it should be! It was an Aurora!!! But what a strange aurora it was. As we watched, the broad unmoving aurora glow began to gradually drift westward and shrink into a thin greenish beam or ray extending out of the trees up to Polaris. It looked like a frozen search-light! From following space weather, I immediately recognized the ray as the new aurora phenomena called 'STEVE' These objects use to be thought of as a 'proton ray' event, but that was recently disproven, so there's currently no settled explanation as to what 'STEVE' is. Still, whatever it was, it was pretty cool seeing one live. One of our co-campers, Mike M from Pittsburgh had the presence of mind to capture a great picture of 'STEVE' with his DSLR camera.



'Steve' by Mike Miller of PGH, posted on CloudyNights

After the aurora and the excitement had died down, I went back to the Herschel survey. By 3:30am, I had finished the last object that I needed in Bootes and decided to take a break from video-observing, pulled out a chair and just stargazed at the glowing arc of the Milky-Way now stretching from Cygnus overhead, down to Sagittarius in the southwest. Hearing Gordon and Brian talking, I walked over and visited with them and the three of us watched as the northeastern sky began to glow with the coming dawn. Soon the Milky-way began to fade leaving only the brighter stars to shine thru the quickly brightening sky. Said my goodnights and headed to bed at 4:30am.

## **Tuesday 6/12/2018:**

Slept in till 10am. While having a late 'brunch' I uncovered the telescope to let it dry from last night's dew. During the day, more folks arrived at the park, including our buddy Bob K of the Kiski Astronomers. The open camping spaces around our group was slowly beginning to fill.



Late afternoon, Bob K, Denny, and I drove down to Keeners Hardware store for ice-cream and to meet the new store owners. Was hoping to pick-up a new astronomy fridge magnet, T-Shirt or coffee mug, but didn't see anything that I didn't already have. We then headed back to the park and across the main road to see the latest infrastructure upgrades. In addition to installing a new concrete restroom, The park is in the middle of moving all the old domes across the road from the overnight astronomical observing field to the public side. It's an end of an Era!



After dinner, with the weather forecast going bad, we began packing away chairs and tightening down the tent canopies to make it thru the storms that were coming overnight and into the early morning. At sunset, with dark clouds covering the sky, I headed inside the camper to read. Headed to bed early that night and woke in the middle to hear the tapping of rain on the camper roof.

## **Wednesday 6/13/2018:**

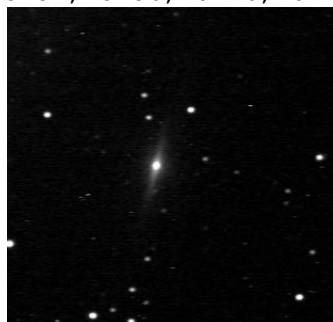
Woke to a cool damp morning. Overnight showers had moved thru. For now the weather radar showed calm, but thunderstorms were expected later in the day. After breakfast, Bob N packed-up and headed for home as he wasn't registered for the starparty. Denny, Bob K and I drove down to the Ben Franklin hardware store near Coudersport. All of us were looking for a few small items for our campers. I needed a new on/off knob for my fridge. Once back at the park, I dropped Bob and Denny off at camp and then headed down to Lyman Run Park to clean-up. Right at the entrance to Lyman Park, off of West Branch road, the state was replacing the old open grate bridge that crossed over the creek. Due to the construction there and elsewhere in the park region, there were a lot of tri-axle trucks on the narrow country roads. You had to keep an eye out when going around a curve. A pleasant surprise waiting at the shower house was a bright green 'Luna' moth clinging to the redwood side of the building. It's one of the largest moths of North America and only lives for about a week in this stage of its life cycle. A rare and pretty creature!



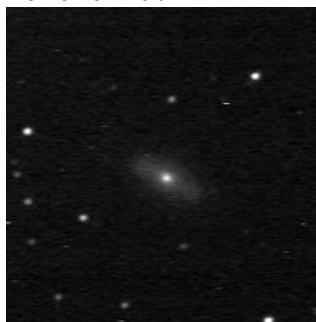
Had a late lunch and then spent time with the group sitting around and visiting. During the day the observing field really began to fill. Eric L, John O, and Mike from Niagara arrived and setup down in the southern section. There was probably well over 300 camper's setup on the field. The event was a sellout and it was beginning to look like all 500 were going to show up. Late afternoon, I pulled out my new homemade all-sky camera and mounted it on top of my camper. It's based on a Revolution-2 video camera and a small dummy security camera dome that I gutted the insides out and installed the R2 inside. The idea is to allow me to see what's going on overhead while I'm in under the camper tailgate doing video-observing with the telescope.

Around 7pm a strong line of heavy thunderstorms passed just to the north of the park. Denny and I had been out walking about the observing field, so we now hurried back to camp to stow our chairs and anything that might blow about. Everyone was hoping that the storms would skirt the field and not throw any rain our way, as the forecast for later in the evening was looking awesome! I was hoping to work Herschel Objects over in Virgo before they got too low in the southwest skies. But around 8:45pm, our luck ran out, as a heavy downpour and strong wind gusts hit the observing field. A particularly strong gust grabbed my camper's 'porch canopy' causing one of the supporting rods to rip thru the nylon canvas and collapsing it. After the storm finished, I removed what was left of the little canopy from around the camper door and then changed into my heavier, drier observing clothes.

By 9:30pm I had the telescope uncovered and powered up, ready for observing. I slewed over to Vega, did a GOTO sync and focused the cameras. While there I stopped in and paid a visit to the Ring Nebula - M57 and next door the Great Hercules Star Cluster - M13. I then sent the telescope across the meridian to Spica, and re-checked the focus for mirror flop. Then I started hunting Herschel Objects in Virgo. With a persistent breeze that had sprung up, I soon needed to remove the SCT's dew shield as it was acting like a sail. Cranked the dew heaters up to high and went back to work. Spent the next several hours video-capturing a number of Herschel galaxies in the Virgo / Corvus region. One of my favorites was the spindle galaxy NGC5170, along with NGC5084, 5087, 5111, 5129, 5134, 5136, 5146, 5147 and 5170.



NGC5084



NGC5134

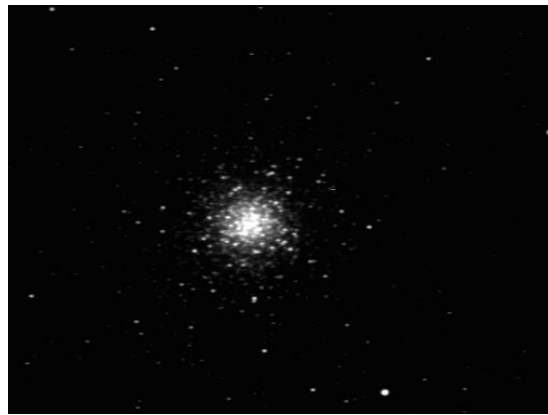
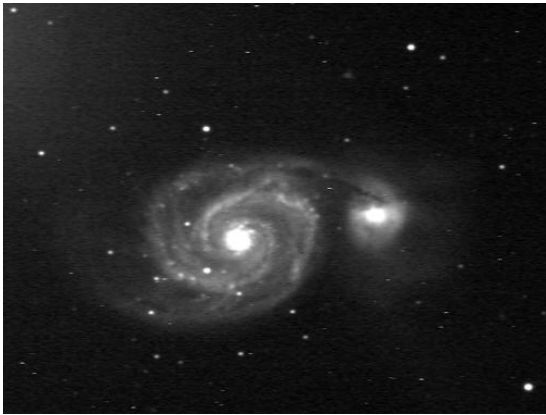


NGC5147



NGC5170

Around midnight, with Virgo sinking into the west, I slewed the telescope up overhead to Canes Venatici and would spend the remainder of the evening in that region of the sky. First stop was to a couple of my old Messier favorites, the 'Whirlpool Galaxy', M51.



I then began working the Herschel galaxies throughout the little dogs, occasionally venturing up toward the great bear. That included NGC5240, 5243, 5263, 5265, 5305, 5336, 5403, and 5410, and a number of others. Also stopped in to visit globular cluster M3.



NGC5403



NGC5410

During the evening, Denny had to work thru several technical issues with his telescope mount before finally getting to image galaxies. He captured a great stack of M51. Bob K had setup his little 72mm APO refractor and was doing widefield images. He showed me an awesome image of the North American Nebula that he got.

By now the time was heading past 2:30am, so I decided to stop the Herschel survey work for the night and go visit some of the other amateur astronomers. Walked down to the southern end of the field and stopped by Eric L's camp to see his latest camera, the Atik Horizon video camera. Very Nice setup!

I then headed over to Tony D's 24" Dob for a new experience. Tony had one of the new Tele-Vue Night Vision Devices that can directly attach to your telescope's eyepiece. Tony used it to show me views of a faint comet that was not visible naked eye thru the telescope and then a view of globular cluster M22 in Sagittarius that just knocked your socks off! But I think the really fun part was just using the NV device with its own internal lens at 1x and wonder about the Milky-Way. It was amazing to see all the faint nebula, (both bright and dark), that was visible thru it. My favorite view was that of the 'Dark Horse'. Finally headed back to camp around 4am, shut down the telescope and cameras and headed for bed as the sky began to brighten in the east from dawn's early rays,,,



### Thursday 6/14/2018:

Woke mid-morning to sunny skies and a light breeze that had dried off the field. After a late breakfast, spent the remainder of the morning visiting with Bob, Denny, and the rest of the group, comparing observing notes from the night. By noon, more folks began pulling into the park, and for the next several hours it was like a game watching new arrivals drive up and down the observing field roads looking for a spot to squeeze into. Fred K from PGH arrived and got the last space on Bob's side of our row, and two of the group of high-school astronomers from Lancaster that we met several years ago, Matt and Josh, took the remaining space to my north. They still had the C8 SCT group telescope given to them by their school. Both of the guys were now in college. All day amateur astronomers flowed into the park. The starparty was sold out, and I would say that most of them were already there for the first day of the convention.



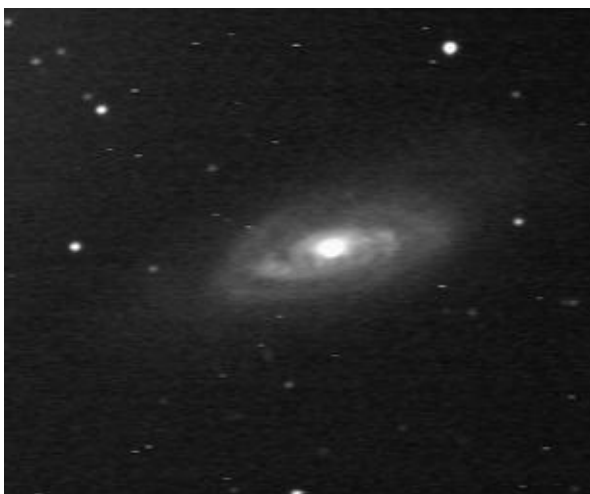
Once the vender's tent opened for business, Denny, Bob, and I visited our friend Jeff of CCTS and purchased a few items for the 14" SCT's at the ORAS observatory. During the afternoon, the breeze picked-up, sending chairs tumbling and tipped over a few unsecured easy-up tents. Everyone was hoping that it and the puffy clouds that had formed would die down at sunset; otherwise it wouldn't be a good night for imaging. After a mid-afternoon lunch, I practiced my presentation one last time and then went for a long nap. Around 8pm, Bob, Denny, and I went for a stroll around the field to visit with some of the other amateurs, and to see all the equipment that was setup and being uncovered. It was amazing how full the observing field was. People were camped all along either side of the walking trail thru the northern edge of the park, and all the way to the southern split-rail fence. This was one of the largest crowds that I've seen there for years!



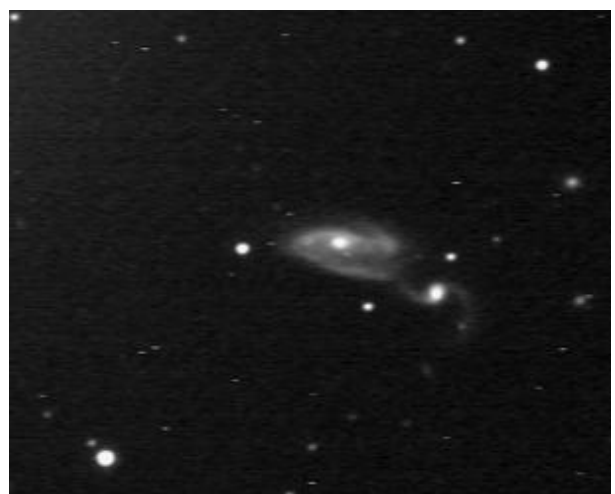




Once the Sun finally set, the stiff breeze finally died down and soon Venus and Jupiter were shining. Once Polaris appeared, I re-did my Polemaster align, which was a good idea, as the mount had 'settled' since Monday evening throwing it out of alignment. After a few tweaks to the guidescope and focuser, with the Milky-Way beginning to shine, I headed over to the North-West sky and began video-observing. Tonight I was hunting Arp Peculiar Galaxies, and started off with Arp76 (M90), along with Arp116 (M60) in Virgo.



M90



NGC5394/5395



I then headed up to Canes Venaciti for the 'Heron Galaxy' - Arp84 (NGC5394 & 5395) and the 'Whale Galaxy' - Arp281 (NGC4627 & 4631). The Whale was truly named as it filled the video-monitor. Using ECU planetarium program on my laptop, I then commanded the telescope over to Coma Berenices to "The Mice" - Arp242 (NGC4676A&B). The long 'tail' of NGC4676A really displayed nicely with a 2-minute exposure using the SC-3 video-camera.



NGC4676A/4676



NGC4627/4631

After picking up a number of other Arp galaxies, I headed up into the sky to Hercules circling overhead to chase down Arps embedded within the Hercules Galaxy Supercluster. Arp122 (NGC6040A&B), along with Arp71 and Arp 272 - (NGC6045 & 6050). Within the fields there were numerous other small NGC galaxies visible on the monitor.

With the time well past 1am, and mindful that I needed to present my talk the next day, I decided to observe just a few more objects and call it a night./ First I stopped over in Sagittarius to view my favorite Barnard Dark Nebula - B86 - "The Ink Spot". It filled the screen of the C8, even with it at f6.3. I then headed north to Draco for Markarian-205 in NGC4291, just rising above Polaris on the meridian.



Hercules Supercluster: NGC6045 - 6050



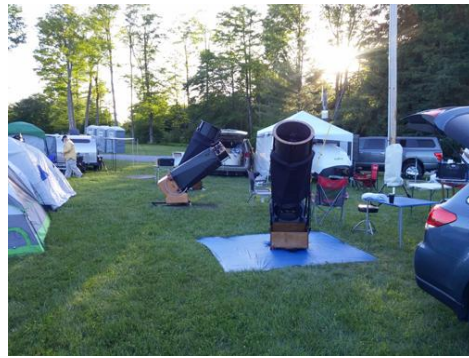
NGC4319 & Markarian-205

This was one of Arp's most controversial galaxies, showing what he thought was a bridge of material connecting two galaxies of greatly different redshifts.

With that observation, I powered down the telescope and cameras and headed in at 2:30AM.

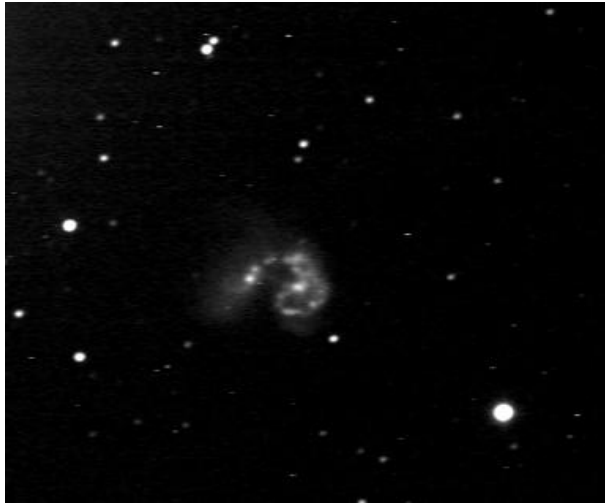
### Friday 6/15/2018:

Woke early to a sunny sky and slight breeze. The observing field was quiet, with most folks still asleep from a long night. After breakfast and a run to Lyman Park, I gathered up my talk notes and laptop and headed over to the pavilion. Had a full house for my presentation on E.E. Barnard and his Dark Nebula, with several good questions afterwards. Hopefully, there will be some astronomers out later this evening searching for those dark nebula. Later in the afternoon, we visited the vender's tent and the other amateurs gathered there. Bob and I fixed the issue that was affecting my mounts hand-controller. Turned out there was a broken wire inside that we re-soldered. A quick test afterwards proved it was back to 100%. Went in for a late afternoon nap and after waking, went for a walk about the observing field. It was packed!! Stopped in to visit along the way with Eric and Mike, Vince, Conrad, John O, Elliot, Tony, Roxanne, Doug, and others including John and Tom and the gang from the Hamilton Ontario club. Everyone was looking forward to a night of observing.





Back at camp, I uncovered my telescope and waited for darkness. Finally by 9:30PM, it was dark enough to check the polar-alignment and make a few slight adjustments. The repaired hand-controller worked flawlessly. After checking the focus, I quickly headed over to Corvus and waited for the western sky to darken. It was a game of timing! As the longer I waited for it to get dark, the lower Corvus and the Arp Galaxies that I intended to hunt sunk into the west. I finally decided that I couldn't delay any longer and video-captured M49 - Arp134, the 'Antenna Galaxy' - Arp244 (NGC4038 & 39), and a few others before I was forced to head for higher sky in Virgo.

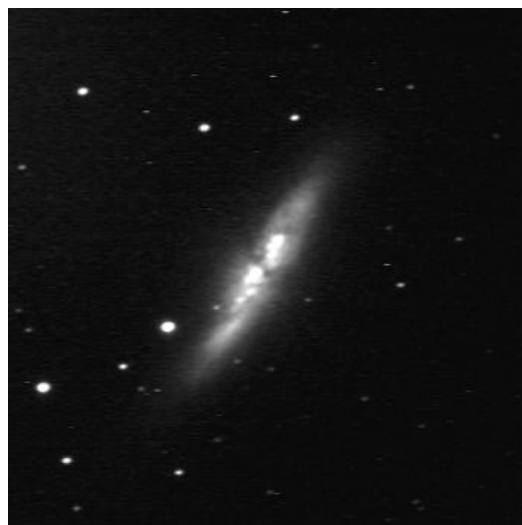


NGC4038 - 4039

There I continued the Arp hunt with Arp271 (NGC5426 & 27), and Arp286 (NGC5566). I then popped over to Ursa Major for a quick view of Arp337 - M82.



NGC5426 - 5427



M82

Matt and Josh stopped over and asked if I could lend a hand with collimating their C8, and after I got them started with Mike M stepping in to assist, Bob and Denny called me over to help confirm whether or not they had successfully imaged the black hole jet coming out of M87. Using the excellent finder charts in my "Arp Atlas of Peculiar Galaxies" book, we verified that they were successful. Getting a little hungry, I took a break and headed inside my camper for a snack and to warm up a bit from the cool night air. Once back outside and wearing a heavier coat, I then headed up higher in the west to Boötes, near Corona Borealis, where I video-captured Arp47, Arp64, and Arp96.

Around 1:30am, Denny and I walked over to the southern field to see Tony D and his NV device. Still an awesome experience just hand-holding the NV at 1x up to the sky! Especially all the dark and bright nebula over in Sagittarius. The 'Dark Horse', which was naked eye visible, was spectacular! Along with the bright clusters M6 & M7, the

globular M22 a tiny little bloated star, the Lagoon and Swan nebulas glowing softly amid the starclouds. Scanning overhead in Cygnus, the North American Nebula near Deneb stood out, and sliding down to the North-east, the Double-Cluster and the Alpha Persei Association looked great! After about a half-hour of passing around the NV, we gave our thanks to Tony and walked back.

Once back at camp, I put the Arp catalog away and went after several Herschel Object galaxies up in Draco - NGC2908, 4572, and 5989. With the clock going past 2:30am and the coffee beginning to lose its effect, I was finally running out of gas. As the transparency had gone very soft, fading the Milky-Way, I decided to head for bed at 3am.

### **Saturday 6/16/2018:**

Slept in till after 9:30am. While the sky was still sunny, it had a hazy overcast to it. The Clearsky Clock showed a white-out for the evening, and Accuweather was forecasting rain! Rather disappointing for all the starparty attendees and many began packing up to head home. Denny and I spent the morning down at the swap meet where he was able to sell an old field tripod that he had. We then took in one of the early afternoon speakers who gave a presentation on 18<sup>th</sup> century American Astronomer John Rittenhouse.

As all us old-timer Cherry Springer's know, the weather on the mountain can be quite fickle, as later that afternoon, the forecast flipped back to no rain and partly cloudy skies for the evening. By then a lot of folks had already left, including Mike, Fred, Bob, Scott and Gordon. Denny, Brian, and Matt and Josh decided to stick it out. Brian broke down his telescope and was just going to do naked-eye stargazing for the evening. I decided to dismount the 80mm and 60mm refractors and attached my Canon 25 - 100mm zoom CCTV lens instead. Wanted to try it out up at Cherry Springs for widefield video.

At 4pm, we sat in on the Park and Dark-Sky Fund updates and the doorprize raffle where I won a solar filter kit. (planning ahead for 2024!) For dinner, several of us went in on a pizza and sat around under Denny's tent canopy. I thought about taking down my canopy, but decided to leave everything up for one last night. I did decide to try one more telescope change and switched out the f6.3 reducer on the C8 optical tube to a f3.3 reducer. At dusk, while the sky remained partly cloudy with haze, I was able to focus and align the cameras. (found out that with the flip-mirror in place, there wasn't enough in-travel to achieve focus with the f3.3 reducer, so I had to remove the flip-mirror, which made alignment a bit of a pain). Spent the early evening video-observing the thin Crescent Luna, along with Jupiter and its Galilean Moons.

Around 11pm, we had a window of clear skies go over so I was able to get a number of test images of several objects with both the Canon zoom lens set to 100mm at f2.8 and the C8 SCT optical tube at f3.3. These included Hercules globular cluster M13, the planetary 'Dumbbell Nebula' - M27 in Vulpecula, open cluster M11 in Scutum, and the bright emission nebula the 'Lagoon Nebula' - M8 in Sagittarius. Overall, a successful test of both optical instruments.

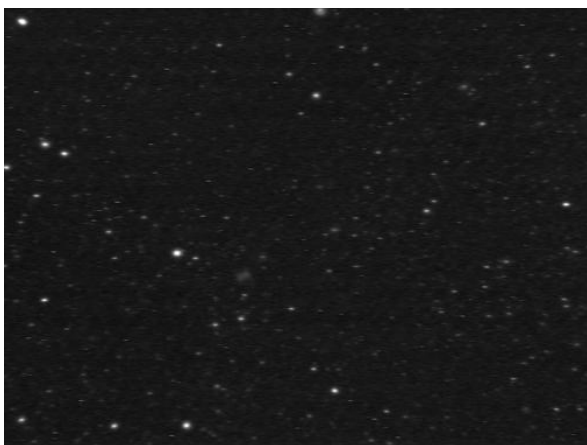


M13 with Canon 10mm CCTV @ f2.8



M13 with 8" SCT @ f3.3

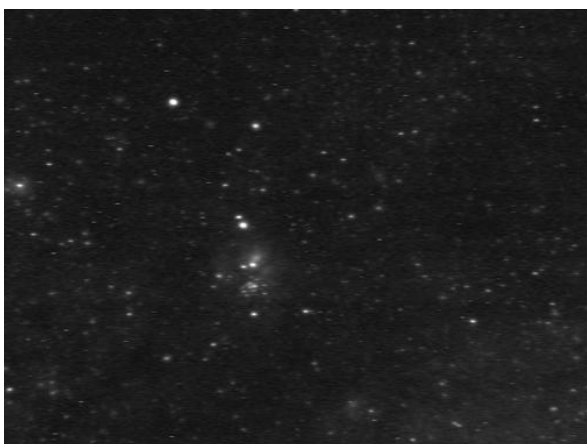




M27 with Canon 10mm CCTV @ f2.8



M27 with 8" SCT @ f3.3



M8 with Canon 10mm CCTV @ f2.8



M8 with 8" SCT @ f3.3

Around midnight, Denny, Matt & Josh all called it a night, but I held out for another hour for a few more clear openings. Finally at 1:30am, with a darker round of clouds going overhead, I decided to cover up the telescope and headed in for bed. Not the greatest of nights, but there was still a little Cherry Springs 'magic' in the air.

#### **Sunday 06/17/2018:**

Up at 7:30am to a sunny sky and the sounds of folks packing. The guys from Lancaster, along with Brian were up sooner and had already left for home. Denny was out and had started to break-down his equipment. After a quick breakfast, I disassembled my telescope and after another hour had the camping stuff all packed up and the camper hooked up to the car, ready to go. Made my goodbyes to Denny and set out for Pittsburgh and home.

Overall it was a pretty successful run of observing at the Cherry Springs Star Party. Out of a total of seven days, I was able to get in four good long nights of video-astronomy observing, and a couple of hours of chasing sucker holes on the last night. And as always, it was enjoyable being with my fellow amateur astronomers at Cherry Springs! I'll look forward to next year's CSSP!

Larry McHenry

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