2020 June Observations from Big Woodchuck Observatory

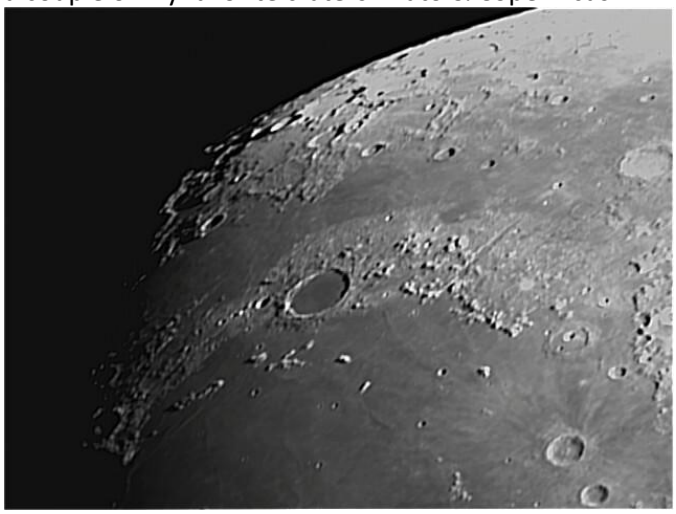
-------- Original Message --------
Subject:[ORAS] Further observations under a bright Moon
Date: Mon, 01 Jun 2020

hi all,
With an even bright Gibbous Moon overhead, Denny, Ed, and I were out imaging at our individual backyard observatories last night. We kept in-touch over the evening via a text chat, comparing notes to see what each other was imaging, what new equipment someone was trying out, or if the weather was holding up.
It was a fun way to get in a bit of virtual group observing in these social distancing times!!

While using my travel telescope that was setup outside for deep-sky imaging, I also spent time imaging the Moon with the observatory's permanently mounted 8" SCT LX200 @ f10 and my old 1/2" CCD StellaCam-3 analog videocam.
The technique that I used for lunar/planetary imaging is to use a very short exposure (~ 1/250 sec), capture an avi clip of around 20 seconds and then use Registax to align, stack and process the avi into a single image.
Here's the results: Gibbous Luna and my favorite Mare - Crisium:


(to capture the Gibbous phase, I used a .5x focal reducer on the camera, which I removed for the rest of the images)

a couple of my favorite craters: Plato & Copernicus:




And the large basin Clavius:

All of us tried a little galaxy imaging, and even with a washed-out sky if you stuck with high-surface brightness objects, you could still get a useful image. Here's my image of M81 & M82:

Both imaged using my 8" SCT/CGEM and ZWO ASI294MC camera with ROI=2072x1410, stack of 240 subs at 15 seconds each totaling a 1 hour exposure.

The clear sky conditions held for most of the night, but around 2:00am a cloud bank heading down from Lake Erie began pushing light haze ahead of it and that ended Denny's observing, and I called it a night a little after 3am.
(Ed put his telescope on 'auto' and went for a nap).
With the haze moving in, I switched over to imaging globular clusters as they tend to cut thru the muck better than galaxies. Here's a few of the brighter ones: M5, and M19:

M62, and M80:


(All four imaged using my 8" SCT/CGEM and ZWO ASI294MC camera with ROI=2072x1410, stack of 12 subs at 15 seconds each totaling a 3 minute exposure).
And here's the video from the evening: https://youtu.be/UdOeK504YG8
(Watch for the Milky-Way rising after the Moon sets behind the trees. Also watch at the top for my telescope as it slews from different objects)

if you want to see recent pictures of my observatory and equipment: http://www.stellar-journeys.org/starpartypictures.htm
Photos of Denny and Ed's observatories can be found here: http://www.stellar-journeys.org/kiskiastronomers/obs-HVO.htm and http://www.stellar-journeys.org/kiskiastronomers/obs-MMO.htm
Larry

-------- Original Message --------
Subject:[ORAS] More galaxies under Moonlight
Date: Mon, 08 Jun 2020

hi all,
After a beautiful Sunday afternoon with clear skies and not too hot of temperature, I felt compelled to get out and observe that evening, even with the near Full Moon. I also wanted to try out an old Canon zoom lens that I had lying about with one of my new ZWO cameras. Even though we're now into June, I just can't get enough of imaging galaxies! lol Here's the night's haul: M101, M63, and NGC4565:



(All three imaged using my 8" SCT/CGEM and ZWO ASI294MC camera with ROI=2072x1410, stack of 120 subs at 15 seconds each totaling a 30 minute exposure).

And now for the experiment with the zoom lens.
A few years back up at a Cherry Springs starparty, I picked-up an old Canon 25mm - 100mm zoom lens for C-mount video cameras. Played with it using my StellaCam analog cameras but never really utilized the lens. Now on my travel CGEM telescope that's currently setup in the backyard, I've been piggybacking an 80mm f6 refractor with my ZWO ASI290MC camera. The intent was to use it as a wide-field 'video-finder' for the main 8" SCT optical tube, but being that the ASI290MC has a small sensor chip, the setup wasn't really working out. So while rummaging thru my box of unused astrogoodies, I pulled out the Canon lens and decided to replace the 80mm refractor with it.

After locating the C-mount adapter for the ASI camera and using a small plastic spacer, I was able to get the lens to focus smoothly over its zoom range with the camera.

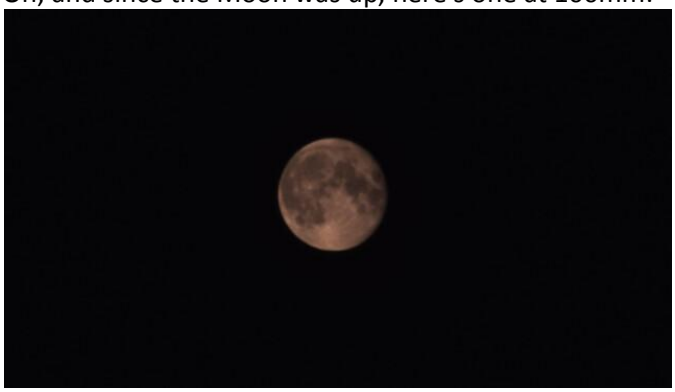
I already had an old pair of mounting rings for the lens, but I needed to jimmy up a mounting bracket for the lens rings to also carry the 60mm guidescope like the 80mm refractor. Had a couple of metal mounting brackets that I thought I could use, but the weren't wide enough so I utilized an old wooden mounting bracket that I also had in the goodie box. While not perfect, it will work until I get something to replace it. Here's a couple of pics showing the installation:

So while I was out last night, I tried a few images with the lens to see how wide of a field I could get.
Here's a pic of M81/M82 at 25mm and then at 100mm with both at f5.6

(got a few dust bunnies on the camera lens that I need to remove) the galaxy pair is barely visible in the oval circle in the 25mm shot)
ZWO ASI290MC camera with ROI=1936x1096, stack of 40 subs at 15 seconds each totaling a 10 minute exposure.

And here's a shot of M3 with the lens set to 100mm.

Oh, and since the Moon was up, here's one at 100mm:



So the results of the experiment is that the lens/camera combo gives a really, really wide field! It will be a good replacement for the 80mm refractor going forward.
In addition to being a video-finder, I plan on utilizing the Canon zoom for imaging large deep-sky objects such as dark nebula, the N. American or Veil nebula's, and hopefully Integrated Flux Nebula at a dark sky site.
No videos this time, that camera took the night off.
Larry

-------- Original Message --------
Subject:[ORAS] a few objects from Monday night
Date: Tue, 09 Jun 2020

hi all,
What looked like a promising evening was spoiled by waves of haze & light clouds pushed ahead of the tropical storm remnants working its way up thru the midwest. I was able to image a few bright galaxies thru the sucker holes, along with a comet, before moonrise illuminated all that cirrus and finished off the evening.

Galaxies M91 in Virgo and M94 in Coma Berenices:

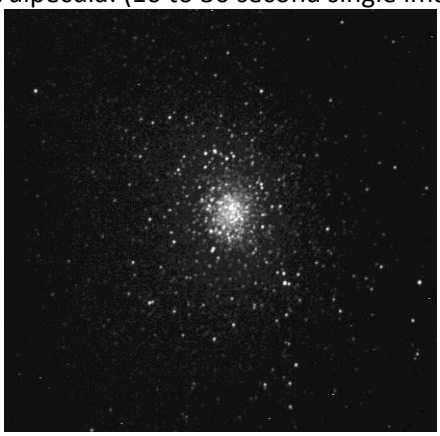
imaged using my 8" SCT/CGEM and ZWO ASI294MC camera with ROI=2072x1410, stack of 60 subs at 15 seconds each totaling a 15 minute exposure.

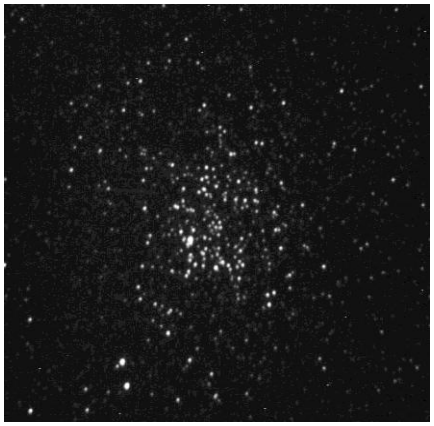
Comet PanSTARR (c/2017 T2):

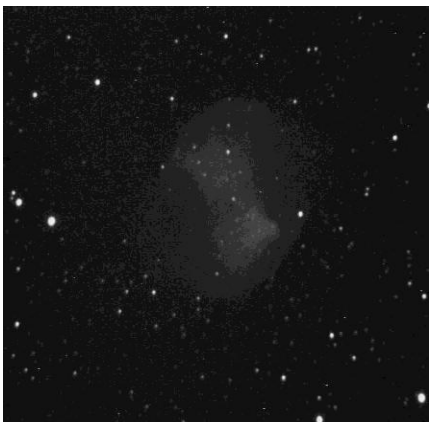
imaged using my 8" SCT/CGEM and ZWO ASI294MC camera with ROI=2072x1410, stack of 12 subs at 15 seconds each totaling a 3 minute exposure.
Larry

-------- Original Message --------
Subject:[ORAS] Wow! what a good night
Date: Fri, 12 Jun 2020

hi all,
Except for a few scattered clouds early, last night in the backyard was really good! Was out till 5am!
I had both telescopes going, the observatory 8" SCT LX200 @ f5 & StellCam-3 analog video camera, and my travel scope - 8" SCT/CGEM and ZWO cameras. With the 8" SCT LX200 @ f5 & StellCam-3, over the course of the evening, I visited several globular clusters including M5 in Serpens, along with open cluster M11 in Scutum, and planetary nebula M27 in Vulpecula: (10 to 30 second single images) M11 was also visited by one of Ed's satellites!



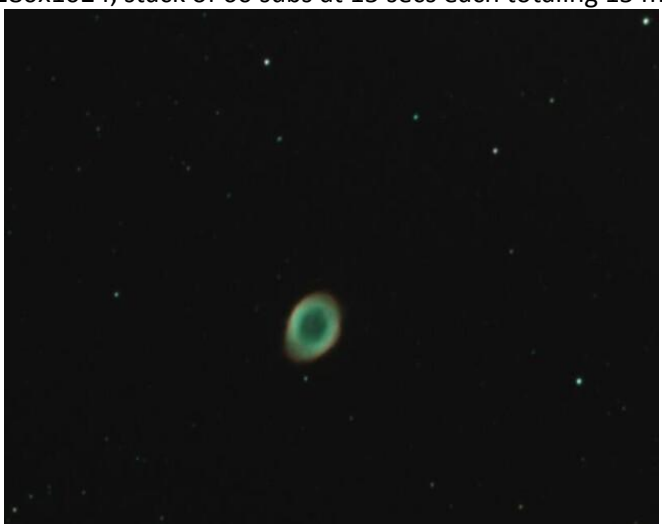




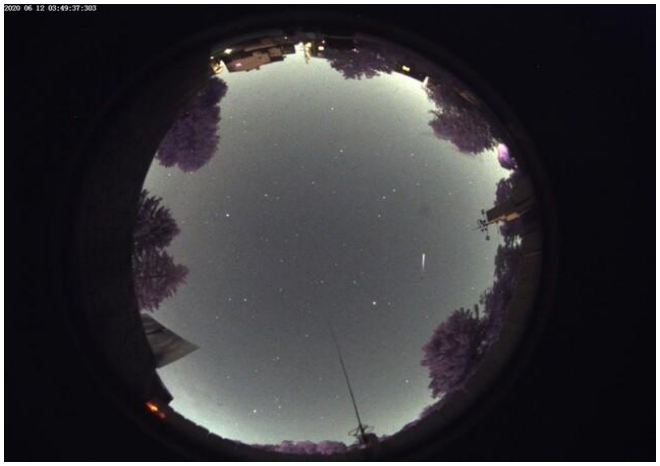
Also during the evening I did some test imaging with the Canon Zoom lens and ASI290MC camera piggybacked on the 8" SCT/CGEM: (ROI=1936x1096, stack of 180 subs at 15 seconds each totaling a 30 minute exposure) (Pelican Neb off the east-coast of the North American neb)

And with the ASI294MC main camera on the 8" SCT/CGEM: M5 & M102:


(M5=ROI=4144x2822, stack of 12 subs at 15 seconds each totaling a 3 minute exposure)
(M102=ROI=2072x1410, stack of 80 subs at 15 seconds each totaling a 20 minute exposure)
Also, I grabbed a couple of comparison images of M57 - Ring Nebula, the first one without a filter, and the second with my Optolong L-eNhance narrowband filter: (ROI=1280x1024, stack of 60 subs at 15 secs each totaling 15 min)

Then, the big test of the new filter: the western portion of the Veil Nebula - NGC6960

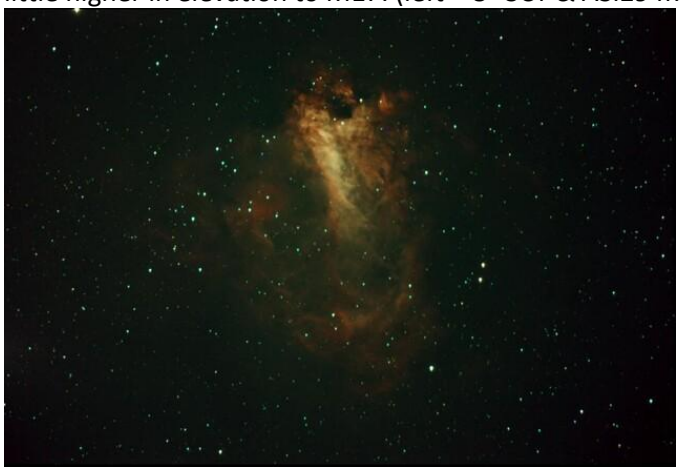
(ROI=4144x2822, stack of 120 subs at 15 seconds each totaling a 30 minute exposure) image taken with the Veil near zenith and a 3rd Quarter Moon in the southeastern sky! The green OIII really stands out with the filter. I'll need to shoot a much longer exposure some evening! Finally, here's the allsky cam (ASI224MC & fisheye lens) video for the evening: https://youtu.be/cypsLkZRBc4 (Watch for the observatory roof to fully open, a few small bugs that landed on the dome, when Arcturus first becomes visible in the clouds, lots of evening airplane traffic, Milky-Way, Jupiter & Saturn, and the Moon after I closed the observatory roof) About half-way thru the video, (at 11:49pm), I caught a nice meteor. (see still frame above)
After a nap, I'll be heading back out tonight! Larry

-------- Original Message --------
Subject:[ORAS] a fair night ending with clouds
Date: Sat, 13 Jun 2020

Hi all,
Well, last night wasn't as good as Thursday evening. The front dropping down from the NW pushed haze and an occasional cloud ahead of it, so the sky was a little soft. Still, it was a fair night for observing. I spent the evening 'focused' on the 8" SCT/CGEM & Canon Zoom lens with the ZWO ASI cameras.
Once it was astronomically dark, I slewed the telescope over to the bowel of the Big Dipper to hunt Comet PanSTARSS-T2. I wanted to see what that new narrowband filter on my ASI294MC camera and the 8" would show. As I somewhat expected, the filter was a bust on the comet. I actually got a better image with the Canon 100mm Zoom lens.
I then moved back to the Ring Nebula - M57, to take a longer exposure with the filter than from the night before. I also 'cropped' the field-of-view for a larger image.

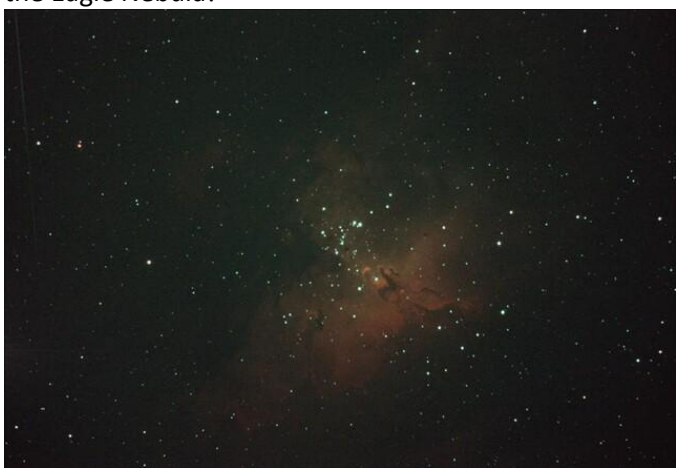
(ROI=1024x768 with additional post cropping, stack of 240 subs at 15 seconds each totaling a 60 minute exposure)

While waiting for the Sagittarius region of the Milky-Way to get higher above my horizon, I spent time on a couple of planetary nebula in Hercules, NGC6058 & Abell-39. Then it was time for the bright emission nebula! I planned to start off with M8, but the CGEM mount wasn't happy in that position and was giving me tracking errors, so I moved up just a little higher in elevation to M17: (left = 8" SCT & ASI294MC, right=Canon 100mm Zoom & ASI290MC, no filter)



(ROI=4144x2822, stack of 60 subs at 15 seconds each totaling a 15 minute exposure) (ROI=1936x1096, stack of 20 subs at 15 seconds each totaling a 5 minutes)

By now, (2am), a thick line of clouds was racing in from the northwest, so I had time for one last very brief image - M16 the Eagle Nebula!



(ROI=4144x2822, stack of 6 subs at 15 seconds each totaling a 1.5 minute exposure)
I could have used a lot more time on shooting M16, but the clouds covered the sky in a matter of minutes, and from the satellite radar, there looked to be rain embedded not far away. I quickly shutdown the equipment and covered up for the night. A short allsky cam video for the evening (ASI224MC & fisheye lens): https://youtu.be/IkRQITk9dwA Larry

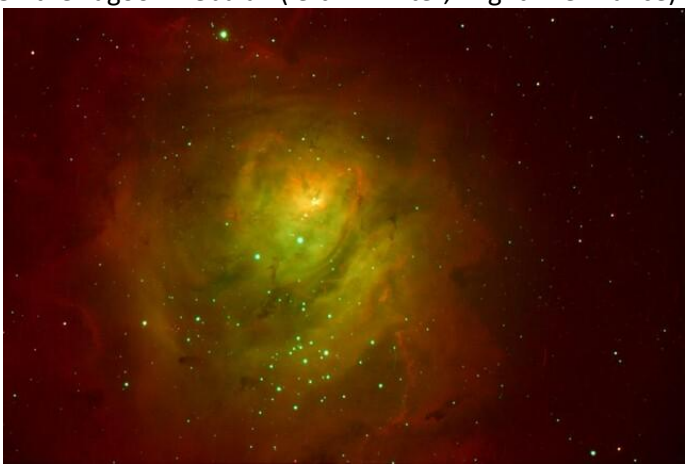
-------- Original Message --------
Subject:[ORAS] An unexpected good night
Date: Sat, 20 Jun 2020

hi all,
With all the storms passing thru the region late Friday afternoon and early evening, I wrote-off doing any observing and instead settled in for a night of TV and wine with my better-half. Then at 11pm, with both of us thinking about bed, I stepped outside on the patio for a moment. I could immediately see a few bright stars twinkling thru sucker holes. But as my eyes dark-adapted, I realized that the sky was completely clear and crisp! I quickly grabbed my red-flashlight, jacket, and a Coke and headed outback to the observatory.

As I was already 'late to the dance', I decided to only uncover the 8" Celestron SCT/CGEM and not bother with the 8" Meade observatory scope. I also uncovered the allsky cam. Within a minute of uncovering the skycam, the dome was covered with dew. Tonight the dew was going to be fierce! I left the endcaps on the main telescope and cranked-up its dew-heaters and let them run for several minutes while I setup the laptop inside. I then uncapped the scope and attached the dew shields and focused the cameras. I wanted to continue testing the Optolong L-eNhance narrowband filter, so I took a series of comparison images against deepsky objects that I'd imaged the previous year while up at Cherry Springs. I kept the current camera settings as close as possible to the prior year.

First up, approaching the meridian in the southern sky is M8 - the Lagoon Nebula: (left = IR filter, right=L-eNhance)

(ROI=4144x2822, stack of 80 subs at 15 secs for 20 min)

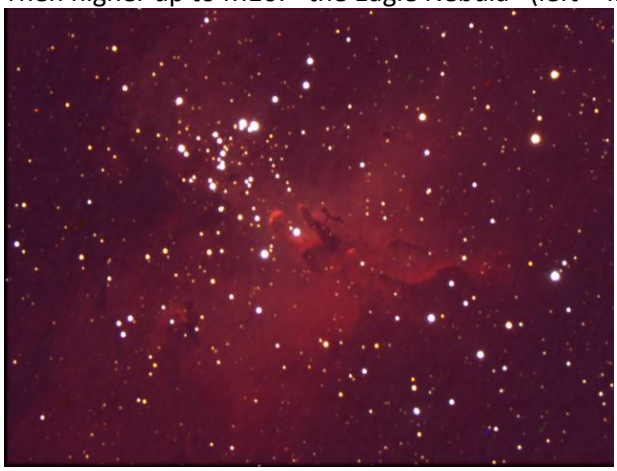


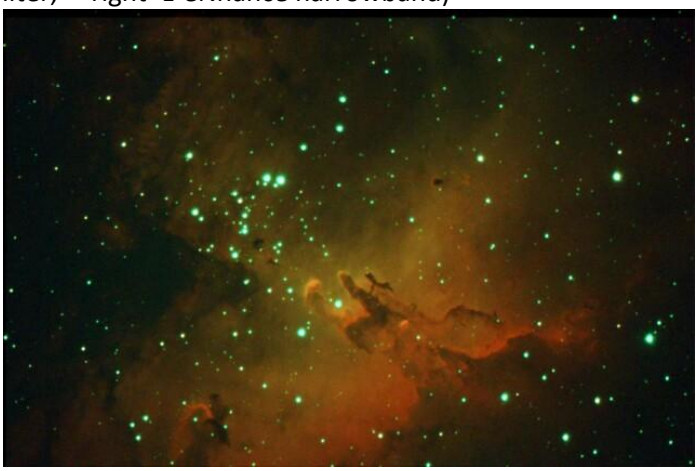
(ROI=4144x2822, stack of 40 subs at 30 secs for 20 min)

Then M20 - the Triffid Nebula: (left = IR filter, right=L-eNhance narrowband)

(ROI=4144x2822, stack of 13 subs at 15 secs for 3.25 min) (ROI=4144x2822, stack of 30 subs at 30 secs for 15 min)

Then higher up to M16: - the Eagle Nebula (left = IR filter, right=L-eNhance narrowband)





(ROI=1600x1200, stack of 60 subs at 15 secs for 20 min) (ROI=4144x2822, stack of 20 subs at 30 secs for 10 min)

And finally up over-head, M27: - the Dumbbell Nebula: (left = IR filter, right=L-eNhance narrowband*)

(ROI=1024x768, stack of 80 subs at 15 secsfor 20 min) (ROI=2072x1410, stack of 20 subs at 30 secs for 10 min)

** - my dew heater battery had given out, so there was a light sheen of moisture on the SCT's corrector plate.*

and one last widefield 'fun' image of M27 from the little Canon Zoom lens set to 100mm & ASI290MC camera:

(ROI=1936x1096, stack of 50 subs at 15 seconds for a 12.5 minute exposure)

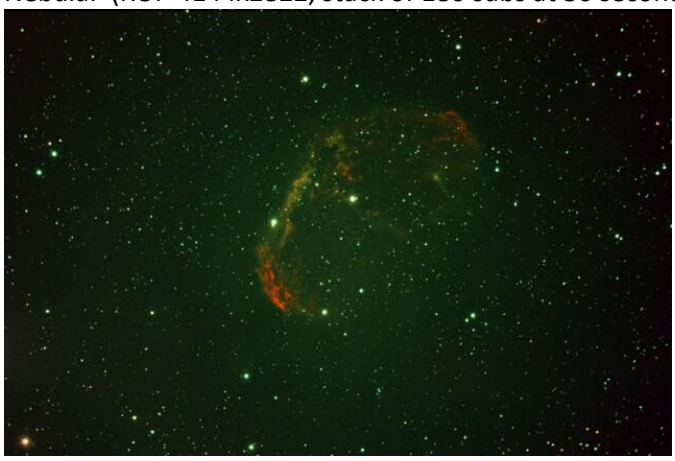
So my conclusion at this point is that the Optolong L-eNhance narrowband filter is a hit with emission & planetary nebula!! (reflection nebula, not so much, along with galaxies and star clusters. the Optolong L-pro light pollution filter is suppose to work for those, need to find that out!)
No allsky video tonight, the dome is still taking a bath.
Which reminds me, at the end of the observing session, ~ 3:00am, the SCT/CGEM telescope looked like someone took a garden hose to it! LOL Larry

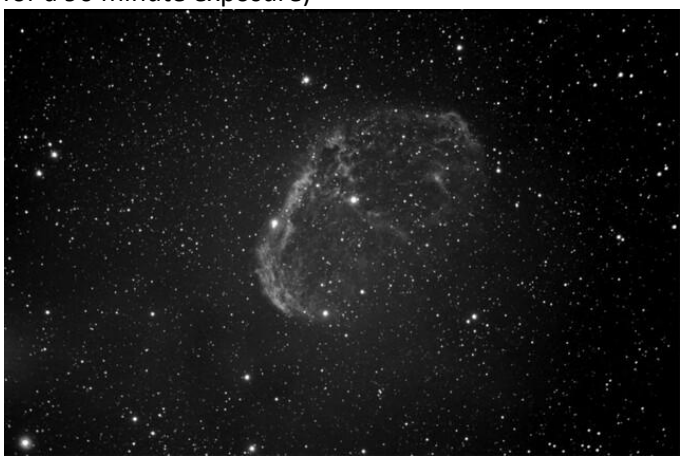
-------- Original Message --------
Subject:[ORAS] A Midsummer Night's Observations
Date: Sun, 21 Jun 2020

hi all,
After a little family dinner earlier in the evening, I was able to get some observing time in on the shortest night of the year. It was a warm session in the observatory where I had a box fan in the open door running practically for the entire night. (finally cooled off around 3am) Earlier that afternoon I did a little warm weather-proofing work on the home observatory flip-roof, (coated it in white RV paint), and I wanted to let it sit overnight and dry.
I also installed several additional fresh-air vents and a solar-powered exhaust fan to help with the interior air flow. Hoping to get the interior observatory temps more in line with outside ambient temp. So once again I only used the 8" SCT/CGEM telescope, along with the domecam to keep an eye on the sky. I also have an old Revolution R2 camera & lens mounted outside that I use to monitor the telescope as it slews and to see what's going on in the backyard. Last night I had plenty of fireflies dancing around, but I've occasionally watched deer passing thru the yard.

My plan was to spend the evening up in Cygnus imaging the Veil Nebula, but first I had to kill time waiting for the constellation to rise over a large maple tree. I went back to M16 - the Eagle Nebula to take a wider-field image using the narrowband filter: (ROI=4144x2822, stack of 60 subs at 30 seconds for a 30 minute exposure)

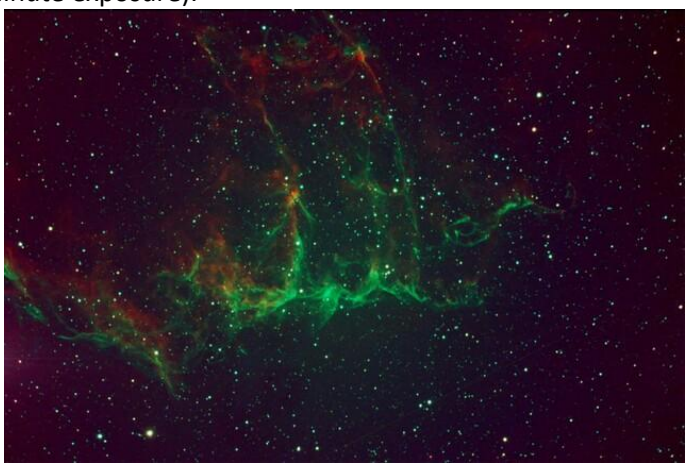
Then, with the center spine of the Northern Cross clearing the tree-top, I did an image of NGC6888 - the Crescent Nebula: (ROI=4144x2822, stack of 180 subs at 30 seconds for a 90 minute exposure)



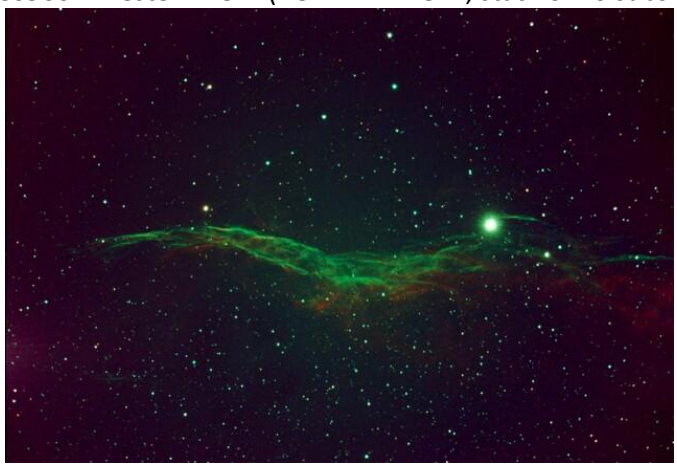


I was trying to get details from the middle of the nebula, but they barely showed even after 1.5 hours. I saved a copy of the image stack in mono which actually shows the interior detail better than in color. I think I'll need to spend an entire evening on just this deepsky object if I really want to pull-out that data.

And then finally the Veil was well placed for imaging: NGC6992 - Eastern Veil and NGC6995 - the Eastern 'tip' (ROI=4144x2822, stack of 20 subs at 60 seconds for a 20 minute exposure).



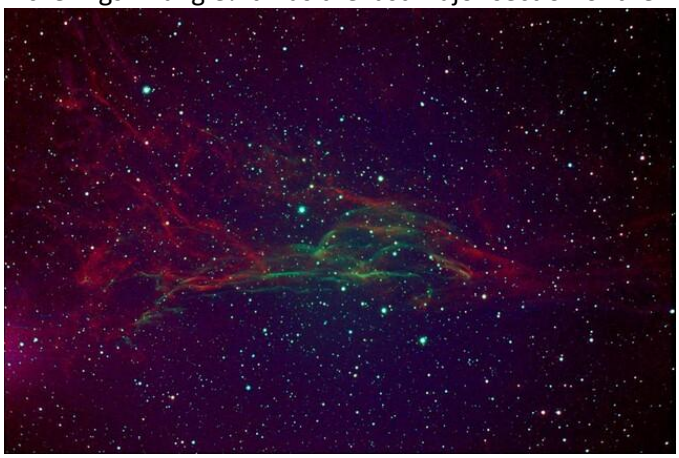
And back to the other side - NGC6960 - Western Veil: (ROI=4144x2822, stack of 20 subs at 60 sec for 20 min)



Wanted to also try for the "Pickerings Triangle" section of the Veil, but by then it was after 4am with the first light of dawn glowing in the eastern sky.
I called it quits, shutdown and covered-up the telescope and stumbled up to the house and bed.
While I did capture frames from the allsky, haven't had time to create a video.
Larry

-------- Original Message --------
Subject:[ORAS] From Dusk to Dewy Dawn
Date: Fri, 26 Jun 2020

hi all,
Spent Wednesday evening out in my backyard observatory (which is named after the fella who lives under it - Big WoodChuck). Was out early to open-up the observatory roof and uncover the outside telescope, (8" Celestron SCT on a CGEM mount), to let things cool off, along with starting the allsky camera.
But prior to dusk, dark clouds rolled over so I temporary closed up to wait it out. Then at 10:30pm the sky finally began clearing, so once again uncovered the telescope and powered up the mount and cameras and got down to business. First thing I needed to do was re-align the mount from having 'nudged' one of the CGEM's tripod legs earlier in the day with the lawnmower,,,,,, After a few more waves of clouds passed by, I went for the main target of the night, Pickerings Triangle! It was the last major section of the Veil Nebula that I was missing.



(8" SCT f6.3 & ASI294MC ROI=4144x2822, stack of 20 subs at 60 secs for 20 min using the narrowband L-enhance filter)

I then spent the middle evening testing the camera on several Shapless (SH) nebula in preparation of a new observing project that I'm getting ready to start. While doing that I also worked with the Canon 25-100mm Zoom lens & ASI290 camera on various wide-field objects. Here's an image of the North American Nebula (NGC7000): lens at 50mm, 60 frames at 30 seconds for a 30 minute total exposure. No filters used.

With the clock now past 3:30am, and imaging time for the night beginning to run low, I moved the telescope over to the final deep-sky object of the night - the 'Bubble Nebula', NGC7635 in Cassiopeia. I had to stop my first attempt half-way thru as a satellite photo bombed the middle of the image:

(ROI=4144x2822, stack of 12 subs at 60 seconds for a 12 minute exposure using the narrowband L-enhance filter)

The Bubble is embedded in a larger H-alpha area, which I was able to bring out with my second longer attempt at imaging. You can find it and the other sections of the 'Veil' on my website's 'Pretty Pictures' page: http://www.stellar-journeys.org/gallerytour.htm

Over the course of the evening, I was chatting/txting with Denny and Ed who were out imaging at their home observatories. Denny was also doing the Bubble and Ed was shooting M33 - Pinwheel Galaxy in Triangulum. So I asked if it was 'wrong' to be imaging Fall season objects at Mid-Summer. Denny replied that he's shot M8 in February! LOL. So as long as an object is above the horizon, it's fair game!

Finally, a little past 4:30am, another round of clouds interrupted my skies, and having stepped outside the warm observatory into the cool dewy air to see what was going on, noticed the first light of Dawn breaking over in the north east. It was time to call it a night.

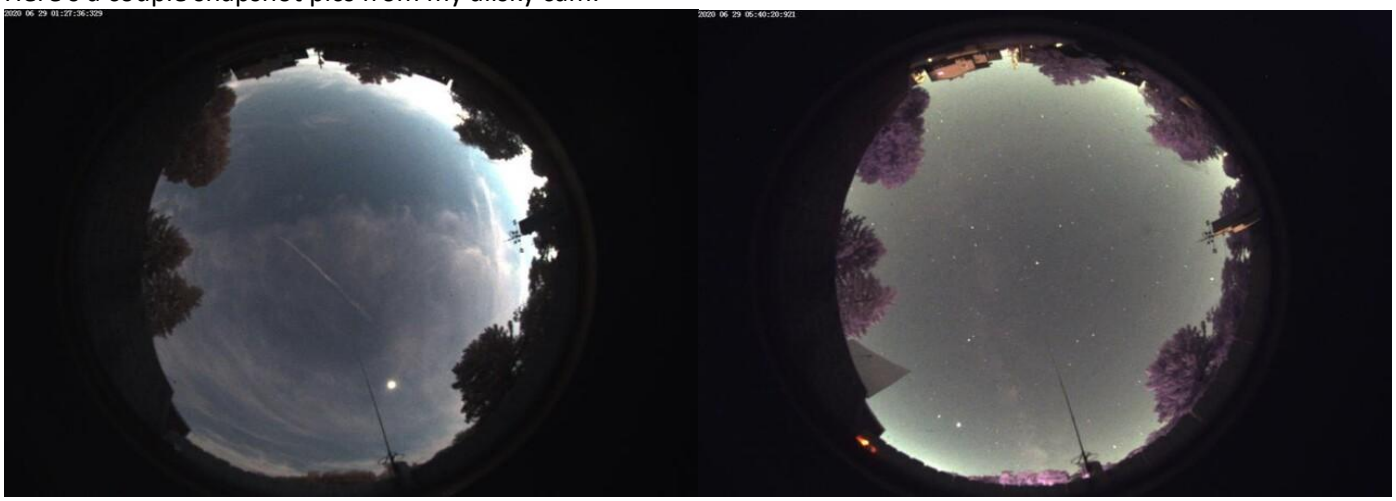
Here's the allsky cam video for the evening, titled "From Dusk Till Dewy Dawn" https://youtu.be/8sCC45yTT1g
Larry

-------- Original Message --------
Subject:[ORAS] A Night gone Good!
Date: Mon, 29 Jun 2020

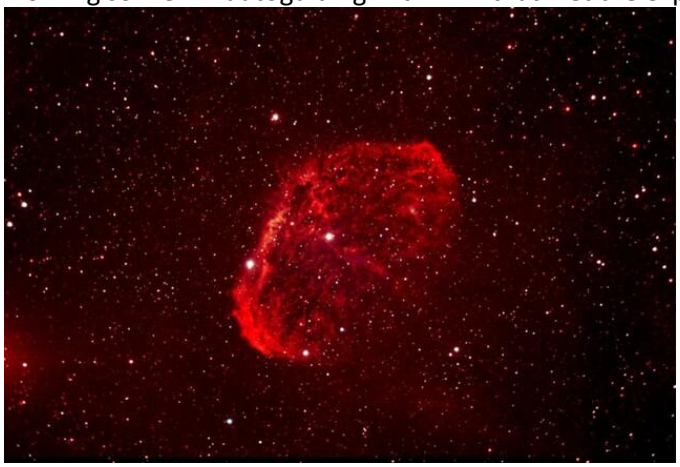
hi all,
Been looking forward to the next clear evening since last Wednesday to finally try-out my new mount (Orion Pro Atlas AZ/EQ-G) that will replace my Celestron CGEM. Having it setup inside my garage for the past week just isn't the same as under the night sky,,,,,,, I did get to use it briefly on Thursday evening, between sucker holes, but wasn't able to do much more than test the connections and polar align.

After a rainy Sunday afternoon, the sky began to clear in the early evening and the weather satellite looked very promising, so I headed out to the observatory to uncover.
For the first hour or so, we had scattered clouds and haze. The 1st Qtr Moon illuminated all that air junk! But by 11pm, the clearing line was finally south of Pittsburgh and I had decent skies to begin imaging.

Here's a couple snapshot pics from my allsky cam:



First thing I wanted to do was a much longer exposure of NGC6888 - "Crescent Nebula". So after connecting to the Atlas mount, I slewed the telescope over to that object and began a long run of two minute subs. The new mount was working so well in autoguiding with PHD that I let the exposure go for 90 minutes:



(8" SCT f6.3 on Atlas mount & ASI294MC, ROI=4144x2822, stack of 45 subs at 120 secs for 90 min using the narrowband L-enhance filter)

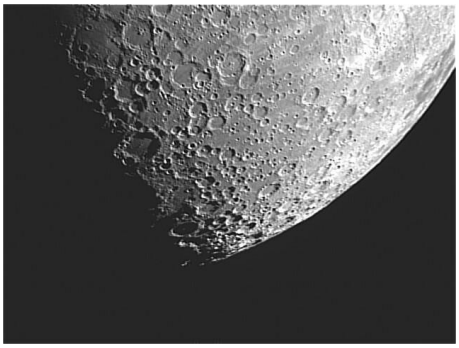
I then wanted to redo the shot of the 'Bubble Nebula' - NGC7635:

(8" Celestron SCT f6.3 on Atlas mount & ASI294MC, ROI=4144x2822, stack of 30 subs at 120 secs for 60 min using the narrowband L-enhance filter)

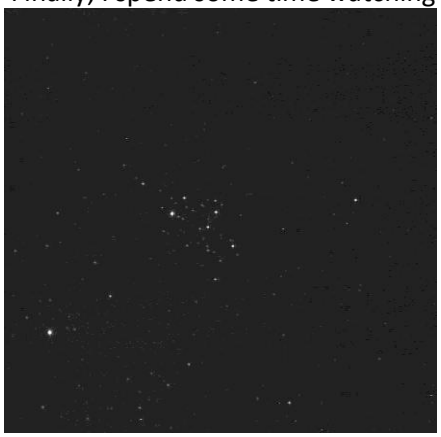
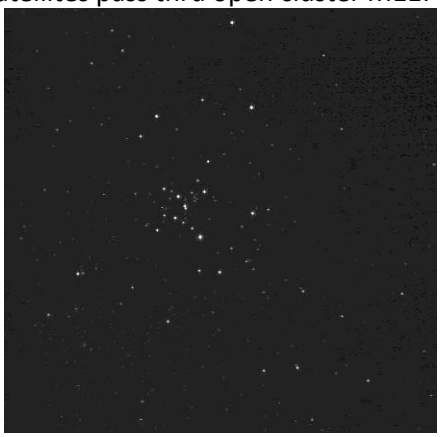
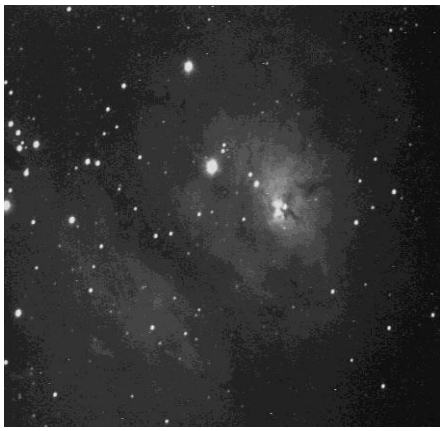
So, you might be wondering, what does Larry do with all that time while his outside telescope is taking images?
He uses his other telescope, a permanently installed Meade 8" LX200GPS SCT with a StellaCam-3 analog vidcam.

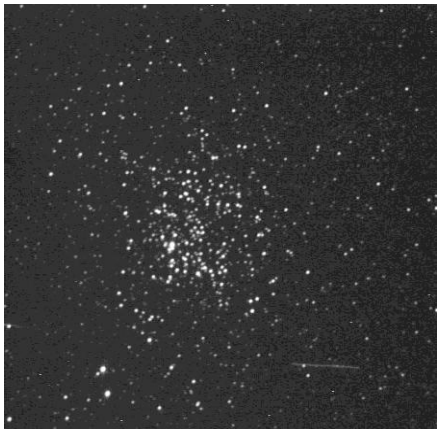
The 1st Qtr Moon made for a good early target: a couple of my favorite craters: Aristoteles & Eudoxus, my fav mountain range - Apennines, and a heavily crater region around Maurolycus (< 1 sec exp)





Once the Moon was down in the trees along my SW horizon, I switched over to hunting deep-sky objects with the Meade: First a couple of star clusters (M6 & M7 in Scorpius) using my old StellaCam-II on a 50mm refractor: (8 secs)
Then a few nebula: (M8 & M17 in Sagittarius): These were 30 second exposures using the SC-3 on the 8"
Finally, I spend some time watching satellites pass thru open cluster M11:

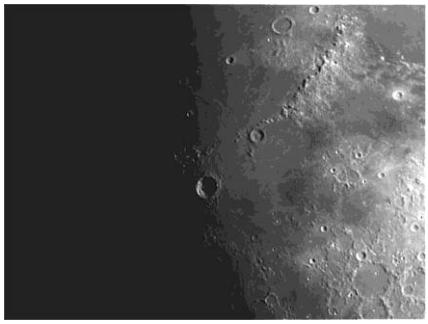
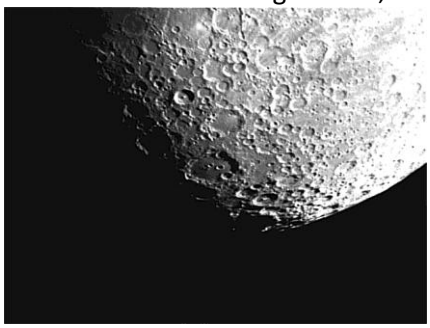


And that's how I keep busy! LOL
No allsky video tonight!
Larry

-------- Original Message --------
Subject:[ORAS] More fun under the Stars!
Date: Tue, 30 Jun 2020

hi all,
Was out again last night!
Early on, between the waxing Moon and a very slight haze, the sky was a bit 'soft' for imaging. It improved as the Moon set towards the western horizon. (Allsky domecam - ASI224MC camera and auto exp/gain/brightness ,,,,, I call the image to the left: "Moon on a Stick" ,,, lol that's my old shortwave vertical antenna)


So I started off using the Meade 8" SCT observatory telescope for a little Luna observing while waiting for better sky. It's always interesting to follow the terminator line to see what shows at a low sun angle. Here's the crater Copernicus at sunrise and Clavius: (Meade 8" LX200GPS SCT @ f5 with a StellaCam-3 analog vidcam, <1 second exposure)

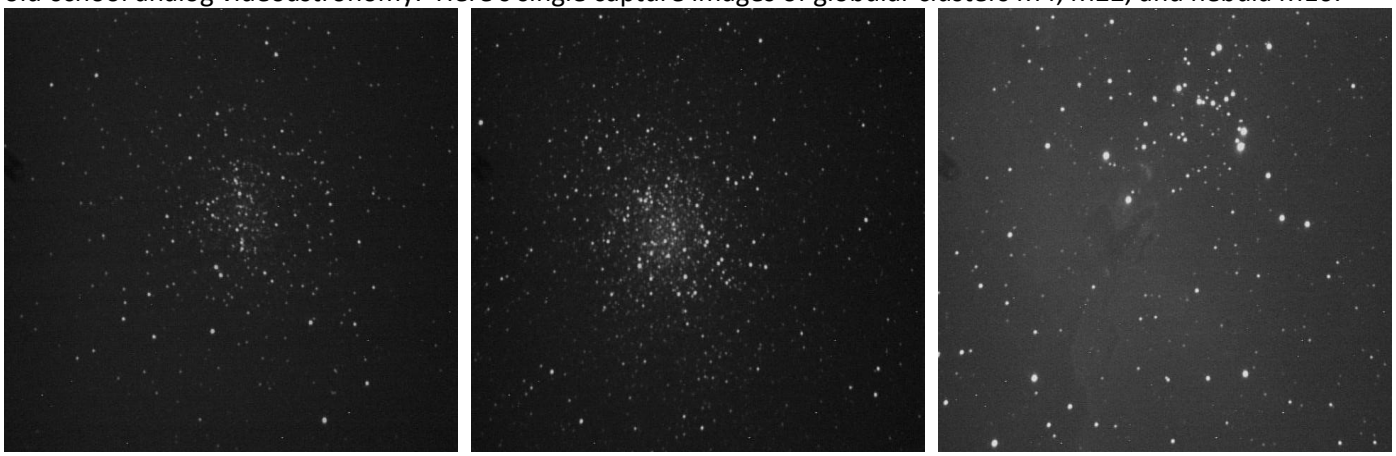
For Lunar/Planetary imaging, I use a different strategy than for deep-sky. I take a short, 10 to 20 second AVI clip, and then process with Registax to align & stack to a single frame.
For Deep-sky, I use SharpCap and it's Livestack feature to stack the sub exposures in real-time.

With the sky improving, I started a long 60 minute exposure of the open cluster & emission nebula NGC6820, also known as SH2-86. (8" Celestron SCT f6.3 on Atlas mount & ASI294MC)

(ROI=4144x2822, stack of 30 subs at 120 seconds for a 60 minute exposure using the narrowband L-enhance filter)

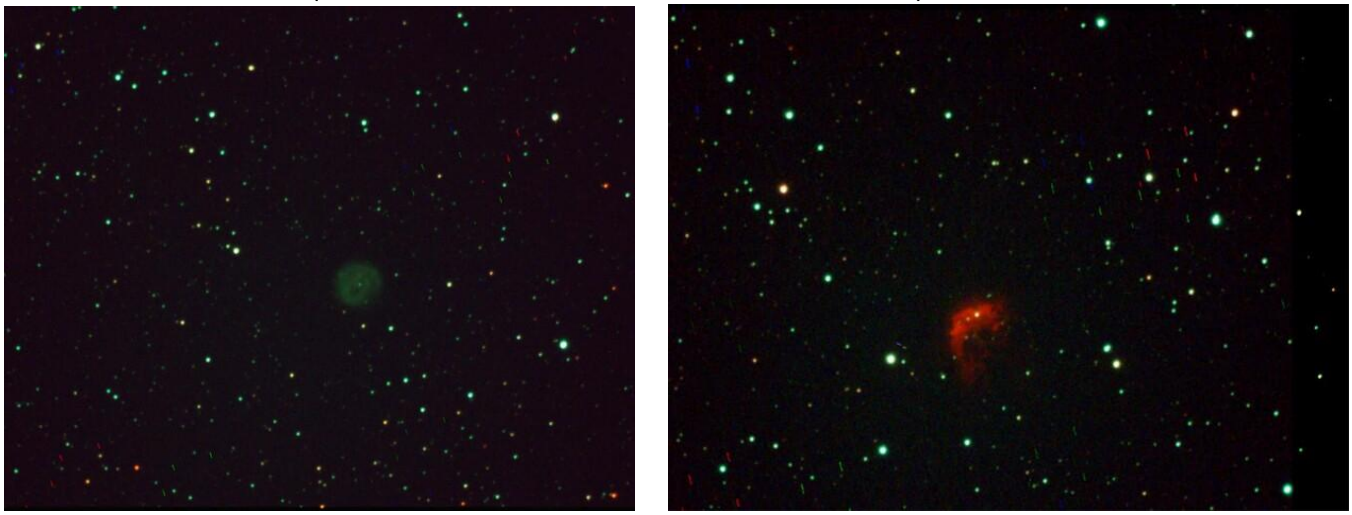
This is part of my new Sharpless Catalog observing project. Sharpless objects are generally emission nebula, some bright, but others fairly faint. There's also a few planetary nebula, supernova remnants, and I think a galaxy or two thrown in. Here's a cool website for more info: http://www.reinervogel.net/index_e.html?/Sharpless/Sharpless_e.html

While the 8" Celestron and ASI294 was collecting photons, I went back to the Meade 8" SCT & StellaCam-3 for more old-school analog videoastronomy. Here's single capture images of globular clusters M4, M22, and nebula M16:



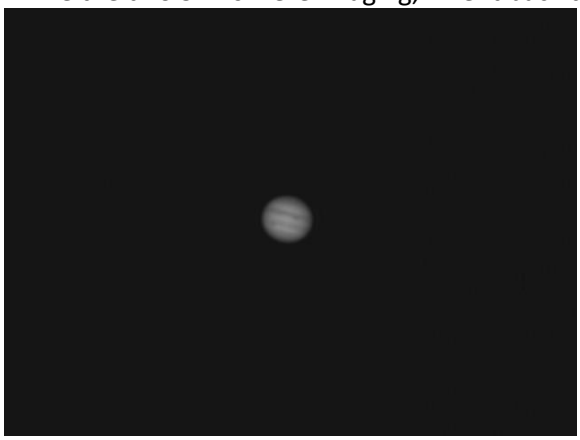
(the Globulars are 15 seconds and M16 (suffering from moonlight) is 30 seconds)

Using the Celestron, I then imaged a pretty planetary nebula in Vulpecula - NCG6842, also known as SH2-95, and emission nebula SH2-93. (8" Celestron SCT f6.3 on Atlas mount & ASI294MC)



ROI=4144x2822, stack of 30 subs at 60 seconds for a 30 minute exposure using the narrowband L-enhance filter)
S2-93 had some weird artifacts in the image stack, little red, green, blue streaks. Not sure what was up with that!

While the two SH2's were imaging, I went back to using the Meade 8" to do a little Jupiter viewing.



(StellaCam-3 analog vidcam, <1 sec exp. I really needed to pull the .5x focal reducer and image at f10 & use a barlow!)

So, as a follow-up to yesterday, you might be wondering, how does Larry use two telescopes at the same time? Inside the observatory, I have two desks on either side of the finished interior. (about an 8x8 ft square). I have an swivel office chair on wheels and sit in-between the two desks. Here's the Meade 8" SCT & StellaCam cameras and the old PC and video monitors That I use with it: (that's M22 on the monitors)

Here's the new Celestron 8" & Atlas mount, along with it's imaging laptop, the laptop for the allsky cam, and the little R2 monitor that I use to keep an eye on the telescope.

So during an observing session, I just 'swivel' from one side to the other, and can also roll over to the Meade telescope to make any tweaks! The only thing I have to worry about is falling out of the chair at 4 in the morning,,,, LOL - need a chair with arms. There's lots more photos of Big Woodchuck observatory over the years at: http://www.stellar-journeys.org/lemsolar/Bwwso1.htm

With the Moon is beginning to get a bit bright so I'll probably take the rest of the week off from observing. (besides, I need to attend to a few home chores that's been building up, and sleeping in half the day isn't helping,, LOL)

No allsky video for the night!

Larry