September–December 2019

Skyletter

RASC Kingston Centre

John Hurley

Wednesday, September 11

Stephen: I was having trouble with my mount glitching in RA several times a night. As well I was maxed out in the weight capacity. So today I bit the bullet and swapped the mount out for my backup. The only problem with the backup is a bad Dec backlash. The main advantage is it can carry more weight. I polar aligned it in pretty short order tonight and started testing. I had to do a couple of factory resets to get it to behave. I found that now my goto is a lot more accurate than the other mount. It took me a while to refine my guiding parameters in PHD to compensate for the backlash. But now my guiding is well within 0.5 arc seconds. So now I am happy. Always have a backup!
Hank: Glad you have a back up and know what to do with it. Looking forward to seeing your images.

Friday, September 13

Kim: With just a couple of weeks to go, we have 20 people registered to date for Fall'n'Stars..

Tue/Wed, September 24/25

Stephen: I was just putzing around last night while I waited for some scattered cloud to clear out and my main targets to rise higher in the sky. So I decided I may as well be imaging something. I chose the Ring Nebula in Lyra. I'm glad I did. I ended up with my best ever image of it! There is detail there that I have never seen before. It was the highlight of my night.
Hank: I ordered some Baader film from All-Star Telescopes a few weeks ago and today completed the new filter for the ES80. The film sheet is 20 cm x 30 cm and tax in, no shipping charge, it came to $56.48. To purchase a filter for this scope is over $120, and this way I still have enough film to make a new 70 mm for the Mak and leftover for the next project.

I used an old plastic jar lid and it appears to work well with a snug fit. I had to Dremel away the plastic threads and I cut a 90mm opening and attached the film with double-sided tape to the inside of the lid. The film goes right to the outer edge of the inside of the lid providing full coverage and the dew shield on the scope has about a 5 mm rim plus the scope aperture is 10 mm less than the filter.

I am amazed at how brighter the image is and how much sharper in clarity. I do not know if it is a new grade, it is OD 5.0, the old filter was purchased in February 2014 and may have been made a year or two prior to that for all we know. The old filter is only 70 mm but I do not think the size would make a noticeable difference in the image with the brightness of the sun.

Now I just need to make a slip cover to protect the filter when not in use as I leave it on all the time in the observatory, as well it would be best to keep it loosely covered when not actually observing.

Fri/Sat, October 4/5

Stephen: I had a good night last night. I'm imaging nebulae in the Sharpless catalogue. They tend to be very faint and hard to acquire. SH2-187, an interesting little nebula in Cassiopeia, took a lot of exposure and post processing to pull the detail out of the background.

Mon/Tue, October 7/8

Stephen: I'm still waiting for the last of the clouds to move out. It shouldn't be too much longer. I'll be imaging open clusters until moonset. Then I will go after some faint Sharpless targets until dawn. That is assuming I can find them.

Friday, October 18

John: You know Christmas is around the corner when the Observer's Handbooks start arriving in the mail. 352 pages of goodies and a back cover that is a WOW picture. I will not say any more and let you all experience it for yourself. The front is pretty good also.
Susan: Got my *Handbook* today as well. I look forward to taking it to Staples and having them slice it up!

Fri/Sat, October 18/19

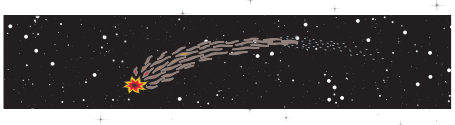
Stephen (23:10): I couldn't pass up a good night. There is a bright Moon out there so I'm sticking to star clusters. It's something at least. I have a long list to do. I might try a galaxy later just to see how it does with the moon. But I don't hold out much chance of success.
Susan: We are also clear here and cool at 0C with no wind. I know you are inside but you still have to go out to close up, it is mitten

season! Have a good one.
Stephen (01:01): The thermometer in the observatory reads –2C. Outside my window is +1.8. The Weather Network says 0. Any way you cut it it's getting cold! Seeing is excellent though! I'm having a good night.
Stephen (02:24): My attempt with a galaxy was a wash out, too much moonlight. Now I'm back onto star clusters with a nice little cluster, NGC1502 in Camelopardalis.
Stephen (14:51): I had a good night last night. I was imaging open star clusters until 6. I managed to get 7 in the bag. I am eagerly waiting for the moon to get out of the way so I can get back to galaxies and nebulae. This is my best shot of the night: NGC 1245 in Perseus. It is 3° SW of Mirfak and is easily seen in binoculars.

Stephen Craig — NGC 1245

Saturday, October 19

Rick: I'm in Las Cruces now for the AAVSO meeting. I had a great time at the RRL/Cep conference, made a bunch of professional contacts and have a couple of lists of stars to observe: characterising some confusing Cepheids and RR Lyraes for the GAIA team, and looking for low amplitude (possibly non-radial) modes in RRc stars for a researcher in the Czech Republic. I don't think the AAVSO meeting will be so exciting.



Sun/Mon, October 20/21

Stephen (21:22): We spent the afternoon in Ottawa for my granddaughter's birthday. Got home at 8:15 to find a nice clear sky. I quickly opened the observatory. Now I'm well into imaging a galaxy.
Graeme (21:26): I'm imaging the Iris Nebula (wide field) as we speak.
Malcolm (23:09): From the last lunar cycle to this one, my guiding has crapped out. I made no material changes to the hardware or software other than rotating the camera a smidgeon.

Last cycle, I imaged M31 with great success. This cycle, my guiding sucks, I can't get better than 7" RMS in RA or DEC and I tried everything, checked polar alignment, balance. It was 0.5" RMS last time I used it.

I spent about an hour running PEMPRO. I don't think it made a difference. Always hard to be sure. But the graphs look good. LOL. Seeing looks average but not a big issue tonight.

Nights like this are mind benders.
Stephen (03:35): My guiding is working remarkably well tonight. I must have my polar alignment dialled in pretty well. There is almost no guiding in Dec, maybe a Dec movement every 4 minutes or so. And with that the Dec RMS error is about 0.12 arc seconds. RA is pretty stable too with minimal guiding. Its RMS error is ranging around 0.32 arcseconds. It doesn't get much better than that!
Stephen (04:59): The fog rolled in at 4:45 so I had to quit a little early. But I have two galaxies and three open clusters in the bag. So it was a good night.
Rose-Marie (06:38): Hangdangitall....how am I supposed to see any Orionid sparklies with all this FOG?? Got up early cuz tomorrow's supposed to be cloudy and rainy.

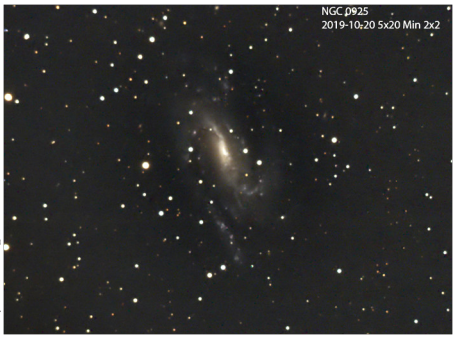
Greg: Fog started here before 10 p.m., but all I really planned on doing was recalibrate my focusing. Got that done by the time the first wisps made the neighbour's airport light glow through the trees. Was grateful for a bit of darkness and stars. Sorry about everyone else.
Graeme: I grabbed a wide shot of the Pleiades and the Iris Nebula before the moon rose tonight. My "ultra wide" project ran a bit of a snag—so I need to work out one kink before I start that project with earnest data. In the meantime, I'm going to continue to use the RedCat51.


Graeme Hay — Iris Nebula/Pleiades

Obviously this is the first night of many, as I'm hoping to go deep on the Iris Nebula again. Also need to work on gathering flats and darks—now that the weather is cooler my summer files will be out of calibration. I'm excited to see how the noise floor changes with the Z6 as we get closer to 0C evenings.
Hank: The images that you all present are amazingly beautiful. Digital imaging and processing has revolutionized this hobby.
Rick: Quite a difference in the noise level in these two images. From your web site it looks like the Iris should be cleaner at 19x150s vs 4x300s but it is clearly much poorer. Any idea why?
Graeme: Likely due to no darks and I suspect (to be tested further) that the Z6 noise is mostly A/D conversation rather than pixel creep at the low ISO settings I'm

running at the moment. I'll grab those on the second night as the camera actually ran out of power (the one big downside to the Z6 is I don't have a dummy battery for it and I forgot to charge the spare battery in advance).

Stephen: I've had a busy day after a long night. Only time to process one image. I imaged two galaxies and three star clusters. This one is NGC 925, a nice little galaxy in Triangulum. Now I'm off to bed to catch up on some sleep.



Stephen Craig — NGC 925

Wed/Thu, October 23/24

Malcolm (20:06): Anybody else imaging tonight? It's howling out there. Here's my theory:

It's so windy, and I'm shooting so wide (200mm) that it's like the car that goes super fast down a washboard gravel road. The faster you go, the smoother the ride. Similarly...the faster the wind, and the wider the FOV...the sharper the stars, no?

No effort will be made to guide tonight. All unguided. First test shot looks good at 300s unguided. Maybe it will work!

Stephen (20:15): I'm carefully monitoring the wind. My limit is about 20 km/h. If it goes under that I will open the observatory. Otherwise I wait for Friday.

Stephen (22:07): The last of the clouds cleared and the wind dropped to 10 km/h. Now it's a gentle breeze! I'm well into imaging galaxies.

Graeme (22:08): I'm also out imaging (because I saw the earlier email).

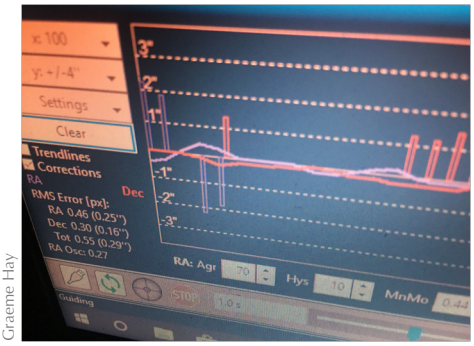
Malcolm (00:18): Still breezy but it's not as bad as it was. It's even a reasonable temperature.

Graeme (01:21): Kind of wish it was colder (uncooled mirrorless camera so in theory colder is better)—although I need an updated dark set) but otherwise here there is no wind (I've also picked a target where the half dome blocks the wind).

I see that Orion is up, I have about another hour before I hit the dome then I might turn the telescope that direction to finish off the night.

Stephen (01:53): My guiding is not nearly as accurate as it was the other night. Possibly it is because of wind gusts or possibly because the seeing is not very good. But it is adequate for the job tonight. It doesn't seem to have affected the images much. Guiding error is running at about 1.2 arcseconds. The guide star size is about 5 arc seconds. That's pretty poor seeing.

Graeme (01:57): I don't know how to read this data besides smaller RMS = good. I can tell you from where I am stars don't twinkle but the bumps in guiding feel like they correlate more towards when there is the occasional wind gust (which I think effects the air, not the scope, because it's sheltered by the observatory). Thoughts?



Graeme Hay

Stephen (02:25): My observatory roof is wide open so it's sensitive to the wind. The guider is doing a lot of guiding in Dec. On a good night guiding in Dec is almost non existent. Your RMS is good. It's what I like to see. I measure seeing by my HFD. Right now it's running about 5.5 to 6. Which is pretty poor. I like to see it at about 3 or lower. However I shouldn't complain about a clear moonless night. They are all too rare.

Graeme (02:27): About that "clear" part: the cloud front just reached me (Napanee) and it's solid to the horizon. Started my darks run, then turning in.

Stephen (02:52): Nuts! I just looked at the satellite shot. It will reach me soon. At least I'll be able to finish this image run.

Thu/Fri, October 24/25

Kim (04:57): [Geomagnetic K] Index of 6...and we have cloud.

Rose-Marie: Orionids clouded out... auroras clouded out... no sparklies. Argh.

Fri/Sat, October 25/26

Stephen (22:50): The sky cleared nicely at 8. I got in a few exposures. Then it clouded over at 10:44. The cloud deck appears to be breaking up. It remains to be seen if it will be enough to be useful.

Stephen (00:21): It cleared at 11. I got in another couple of exposures. Then it clouded over again at 12. I quit.

Malcolm: Good for you, it never cleared here.

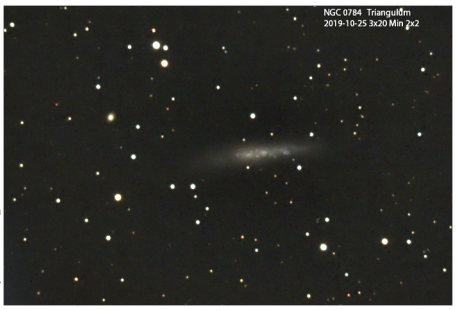
Graeme: Auriga is rising in the east and I decided to see how much I could get. There is quite a bit in this constellation, although I did start to see the limitation of using a regular camera as I was expecting a lot more red than blue, which is to say the Z6 is not sensitive to Hα, and from my research this region should have a lot more Hα, especially in the Flaming Star

Graeme Hay — Auriga

Nebula (IC 405).

Of particular note, this was the first night I left the setup to run on its own (my iPhone ran out of juice and I needed to head in to charge it and also grab a snack). Also it was the third night running on the battery on a single charge. Everything worked as expected so I'm getting pretty confident that the William Optics Setup is becoming very robust. Now I need to get the EdgeHD working similarly and maybe I can get some sleep while imaging...or perhaps a nap.

Stephen: I managed to get one image run done in between the clouds. This is NGC 784, a nice little galaxy in Triangulum.



Stephen Craig — NGC 784

Malcolm: Nicely done.

Susan: It is an odd thing. Seems to have very little substance. Nice to see these more obscure items.

Stephen: I've pretty well mined out the bright objects. Now I'm mostly going after the dim obscure stuff.

Rick: I find this one really looks like it is behind the stars. And it looks so soft compared with the stars.

Saturday, October 26

John: I took this at the Kingston airport this afternoon with my iPhone. There was also a larger bow outside this one.


John Hurley — Solar Halo

Malcolm: Nice catch!

Tim: Nice pic.

Rose-Marie: Nice. We didn't have enough cloud here for the arc but we did have sundogs either side of the sun. I took a couple shots of one reflected in the lake, still have to download and process.

Paul: That's a beaut, John! My daughter caught one yesterday.

Mon/Tue, October 28/29

Stephen (20:29): Finally I have a good clear night, all night! I got started for the end of twilight at 7:30 and I'll go until twilight at 6. I have a long list of galaxies to image.

Rick (23:36): Took me a little while to get going this evening—Maxim was acting up on the obs'y computer before I left for New Mexico, so I went ahead and did a complete restore/repair of windoze which meant reinstalling all my apps and drivers and config files. A few got missed this afternoon so there was a bit of scrambling after dark. However, everything seems to be up and running now and I'm collecting test images of some of my GAIA follow-up targets. And M31-V1 of course. I haven't tried any of my observing scripts yet, but I'm looking into switching to CCD Commander to replace all my hand-coded scripts, and also, the scripts aren't useful for the test shots I'm doing right now anyway.

I also have to do a new pointing model sometime in the near future. But I don't want to waste a clear dark night of good seeing.

Stephen (04:00): Just looked at the satellite shot. I see cloud coming in. I just hope I have another hour to finish my current image run,

Greg: My aspirations were quite modest: image M33 for a few hours. Save for a brief spate of clouds it seems successful. SGP is a nice tool and I thank Malcolm for introducing it. Finished a bit after midnight with clouds in the offing. Pretty much as my forecast predicted.

Keith: Well you were lucky Steve. I went out about 10:30, everything was dripping with dew, and the fog was just starting even though the sky looked lovely, so I just closed up and re-opened this morning to

let things dry out. Visibility Nil rears it head once again!

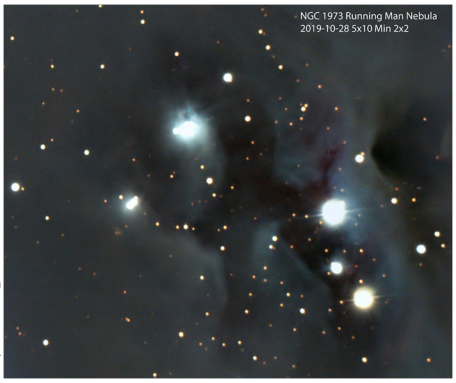
Susan: Discovered last night that we are moving into winter boots and long john weather. Good that some enjoyed that sky as I fear it is gone again.

MarK: Our Davis reported we got 0.3 mm of "rain" overnight because the dew was so heavy.

Stephen: I was lucky. The clouds held off. I was able to finish my final image at 5:45. Closed up the observatory and was in bed by 6. Everything outside was dripping wet, but my dew heater did a good job.

I had pretty good results from last night, several interesting galaxies. With NGC 672 I found that I had bagged three galaxies for the price of one! By 5 a.m. my targets were drifting too low in the west so I abandoned galaxies and did The Running Man Nebula in Orion. It turned out pretty well!

Stephen Craig — NGC 672 / IC 1727



Stephen Craig — NGC 1973

Susan: 3 for 1 [galaxies]. Lovely as it looks quite delicate.

Running Man: Someone will have to show me the correct orientation to see that, I never can see these things. Amazing for that big sucking vortex thing on the right. I do not recall seeing that before.

Nice job.

I looked for NGC 784 last night ...but did not see it.

Rick: Interesting that the two large galaxies both look disturbed/distorted, like they're interacting.

Wed/Thu, October 30/31

Malcolm: Finally, a cloudy night here so we can get some sleep and I won't force Brian to stay up past his bedtime.

Hank: Oh you are a nasty one Malcolm, seeing as you are not observing treat yourselves or someone else to a Pisco Sour and some relaxation. 50 mm of rain coming here in the next 24 hours.

Thu/Fri, Oct/Nov 31/1
Windstorm

Susan (03:42): Just up to check out the wind. I hope everyone's observatory is OK.

Kevin (04:50): Can't tell yet...lots of loud noises and can't sleep. Will have to wait until dawn arrives.

Hank (05:04): Pool cover is off one end, there are shingles on the deck, and strange noises coming from the roof. Peak wind so far here 58 km/h. Good news: the garbage can is still standing at the curb for pickup today and the observatory looks secure so far.

Kevin (06:19): 3 observatories, 3 roofs. All good. Will be windy past noon today...not over yet

Rose-Marie: Woke up about three times during the night; my old windows that rattle in the wind were banging loudly.

Greg: Fine out here. Got 80 km/h, swept the teak chairs off the front deck. Dome continues to ignore it. Looking towards Bath makes me think of the English channel in winter. Nice stars this morning, a pity it was hard to stand...

Graeme: As my dome isn't actually grounded yet I decided before the storm to toss camo netting over it and stake down the netting. Checked at 3 a.m. and it was fine.

Graeme Hay — Camo Dome

Paul: At least satellite surveillance won't detect your observatory, Graeme!

MarK: All the cameras are showing that The Observatory is okay; chairs blown around the yard, and the BBQ is blocking the front door, however. Will know for sure later on when I get back.

I hope Malcolm does not come home to any surprises; his location is going to take the brunt of any cross lake winds.

Greg: Here are the results of last week's brief window of clear sky, M33 (processing in PixInsight):

Greg Latiak — Willam Optics Z61, QHY183c, 100x120s

Susan: Lovely and crisp.
Hank: Very nice, soft and subtle, you should be pleased.
Malcolm: Very nice M33 Greg.

Fri/Sat, November 1/2

Malcolm (22:54): I looked at Jupiter and Saturn tonight, in a telescope with an eyepiece. I also looked at Mercury but it was very unstable and low.

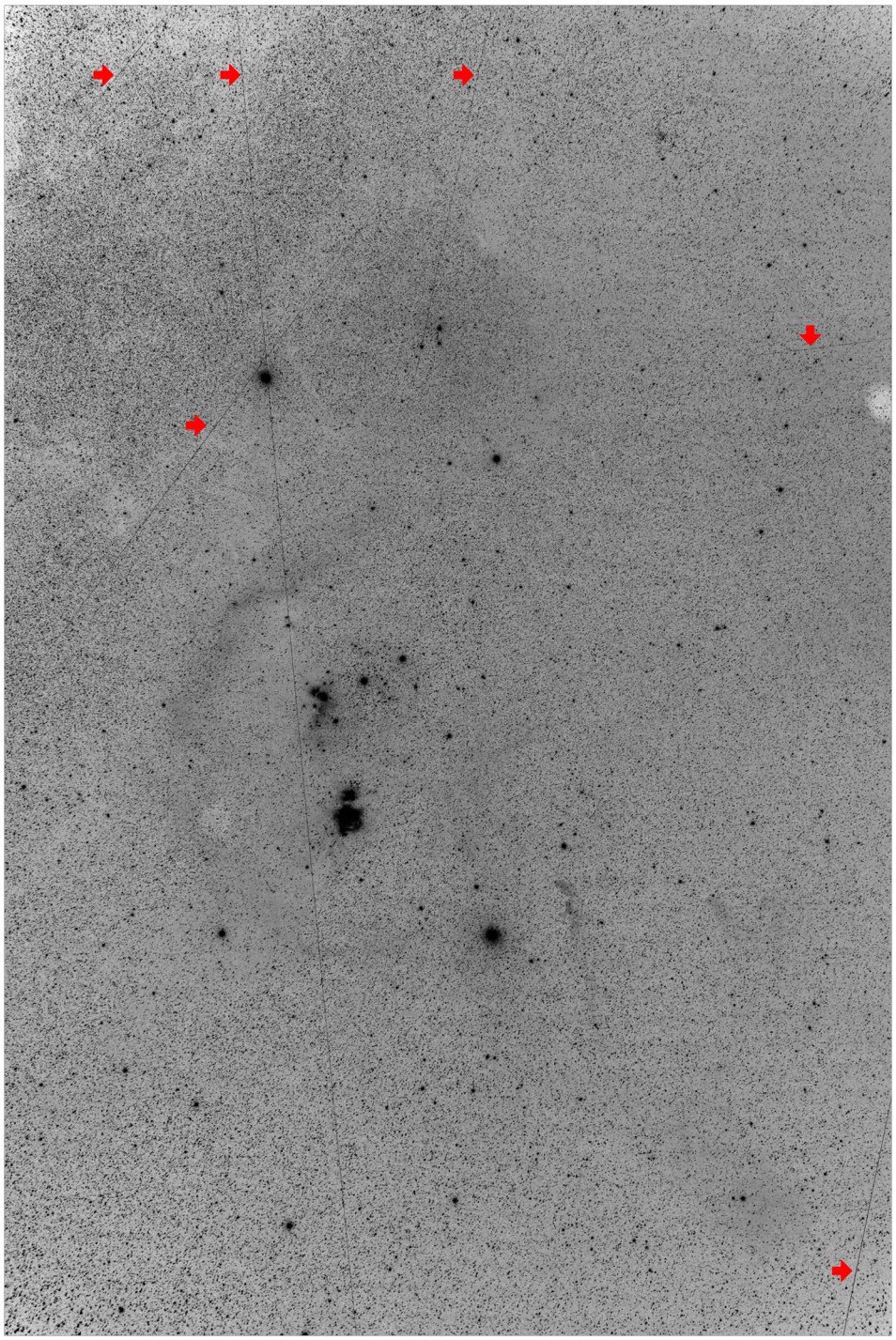
Tuesday, November 5

Kevin: Weeks ago, I noted that now (then) was a good time to get out and take some baseline wide-field astrophotographs, in anticipation of the oft-mentioned upcoming SpaceX Starlink satellite constellation launches. That was on the old email list and that launch was delayed and delayed...until now:

> *SpaceX test-fired a Falcon 9 rocket Tuesday at Cape Canaveral for the company's next launch. The rocket will take off no earlier than Nov. 11 with the next batch of SpaceX's Starlink broadband satellites, the company's first launch since early August.*

After launch sometime this Monday (Nov 11), there will be a large clump of satellites, slowly spreading out in the orbital plane, and perhaps other planes.

I am not sure how fast heavens-above.com will get the orbital elements so we can get predictions of passes, but then we can get out and also take wide-field images then as well. These images will be good for talks you may give in the future, say 5, 10 years ahead? "This was Orion back in the good ol' days! Nary a single satellite trail!"
Malcolm: Ah, the good old days. Orion. I remember it well.



Malcolm Park — Orion & Satellites

I count 6 trails in this one frame, Saturday morning [Nov 2] around 5 a.m.

Tue/Wed, November 5/6

Stephen (21:02): Well, it's clearing in Belleville. I'm hoping to open up in an hour or so.
Stephen (15:55): I had several hours before the clouds rolled back in at 1:30, so I got a couple of image runs done.

Kim (16:35): I was out at 4:30 a.m. and took some pictures. Saw a real nice –3 mag meteor. It was –2.2C —quite pleasant.

Fri/Sat, November 8/9

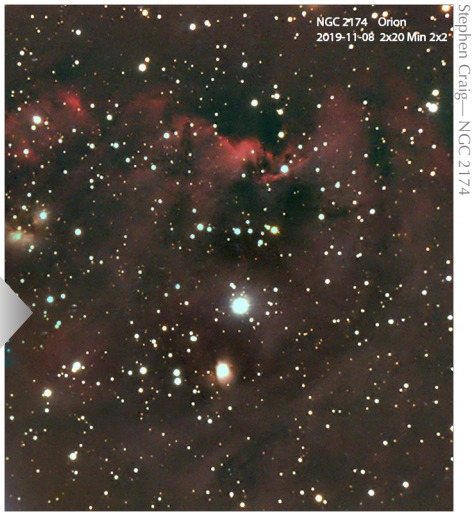
Stephen (23:12): I'm having a good night. My second all-nighter in a row! My email was offline last night so I couldn't post then. The weather is better tonight, though the moon is brighter. I have a long

list of star clusters to image while the moon is up. After moonset at 3:30 I'm working on a mosaic of the Monkey's Head Nebula. I did some tests on it last night with Composite Image Editor. It worked out pretty well! I'll do more mosaics of large objects in the future.

Hank (23:13): Looking forward to seeing these. Glad you are working remote/indoors.

Stephen (04:04): Darn! I waited all night for moonset so I could do the nebula, only to have clouds roll in. I guess that's it for nebulae until well after Full Moon.

Stephen: I had two good nights this week. I got 10 star clusters, a galaxy, and a nebula. I seem to be collecting star clusters like some people collect stamps. There are a lot out there! My highlight is NGC 2174, The Monkey's Head Nebula in Orion. I'm starting to build up a mosaic using Composite Image Editor. So far I've combined two images. I'll add to the mosaic once we get back into New Moon. But so far I'm happy with it. Composite Image Editor is dirt simple to use, but it does a great job!



Stephen Craig— NGC 2174

Hardware: the Latest

Paul: TeleVue is taking orders for a commemorative Apollo 11 11mm eyepiece. It's yours for only US $1,245. Oh—and it weighs 622g.

Al Nagler, TeleVue's founder, worked for NASA and most of TeleVue's eyepiece properties were inspired by the optical views astronauts could see during their journeys.

Graeme: And they say astrophotography is expensive.

Hank: I hope that includes the 622 gram counterweight!

Paul: I don't think so, Hank. For small refractors like yours ad mine, the intent is that we buy two of these eyepieces, and tie the second one to the dew shield as a counterweight.

I believe that once you start spending money on TeleVue stuff, you can never, ever stop.

Malcolm: Move over 60Da: the Canon EOS Ra, a mirror-less full frame astro-modded, off the shelf camera is coming...

Monday, November 11
Transit of Mercury

Kevin (07:30): Total cloud here. Watching the transit online.

Kim (08:39): Slooh coverage from the Canary Islands, plus also showing other live feeds interspersed.

Kim (08:42): Slooh is using Hα; there is a prominence coming onto view now.

Hank (11:05): The 10 a.m. window in Malcolm's CSC failed to thin enough for an observation in Newburgh, so sad. The solar glow in the cloud was quite defined but sadly in the ES80 it never showed any definition. I just checked the Starlight Cascade CSC and I might just as well go out and close the roof as it is grey all the way through. See you all Thursday.

Kevin (11:18): It was looking a little clearer north of Sault St. Marie...maybe only 14 hours drive...through winter snow.

I guess we'll just have to chalk it up as an attempt. We'll always have Mercury 2016 and Venus 2004 and 2012.

Dieter (12:42): I sent out close to 100 invitations (e-mail/by hand) to friends and neighbours to come view the transit on my circle. Clearly this has been a bust, but I have been interacting with some invitees as the transit has progressed, directing them to active live streams. Thank you, Kim, for the Canary Islands link.

Susan (12:53): There was a moment when I thought the clouds would have been thin enough for Venus, but I never would have caught Mercury.

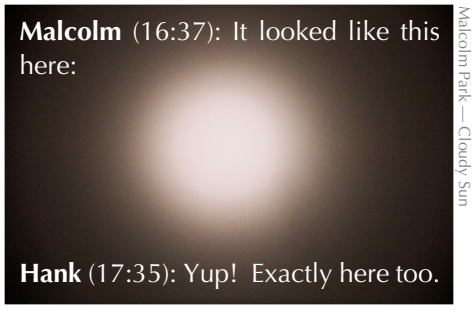
MarK (13:47): It looks like the reduction in solar radiation caused an extensive snow event here. (Not complaining about that, mind you.) We are looking at a good 10cm so far and it is just beginning to snow large flakes.

We likely have Malcolm who will have travelled some place clear to get us a fab video or image spread of the event...

Keith (14:49): I guess Malcolm and I jinxed it because we were both ready to view.

MarK: I cannot figure out why it is not clear as a bell as I accidentally left all my eyepieces with my small travel scope at The Observatory and I am back here in G'town with a beautiful 20cm dob and zero oculars.

Susan (16:14): Wow! That should have given us a full day of sun.



Malcolm Park — Cloudy Sun

Tue/Wed, November 12/13

Stephen (20:33): The Full Moon is sitting right where I would want to take images so there is not much point in opening the observatory. So I'm taking the opportunity to take cold temperature dark frames. Taking a full set of darks will take all night! But they will do for the rest of the month and well into December. Hopefully the temperatures will not go much below –13 for quite a while.

Rick (20:57): Wasn't the light fantastic last night? Fantastic in a rather horrific sort of way. Quite the change from just a couple of nights ago. The sky was quite murky—I think there was either some moisture or high very thin cloud. Or maybe it was just the combination of full Moon and new snow. In any case, you certainly didn't miss any good pretty picture imaging.

I spent the night doing photometry as usual but, other than M31_V1, tried to keep to some of the brighter targets. I'm working to incorporate a whole series of new targets for some of my Italian and Czech contacts.

Thursday, November 14

Kevin: This meteor event goes to show why keeping records online for a week or more is a good idea: I totally missed seeing this one! Saturday evening after sunset, 00:22:42 UTC (19:22:42 EST) overhead from E to W.

Pretty static brightness from it, normally they ramp up or down, sometimes blow up real good.

Hank: Quite nice for sure! You are right about keeping the records I am wondering about the some 20,000 solar images I have clogging my computer memory though. I think it is time to go through and just keep the best.

Fri/Sat, November 15/16

Stephen (01:16): The cats killed my computer so it's now in for repair and I'm using my backup computer. I didn't do a backup soon enough, so tonight I'm redoing my dark frames. Anyway the moon was still in the way of what I want to image and it was too windy to open the observatory. I'll get back at imaging tomorrow night.

Kevin: So sorry to hear about the varmint induced failure...we can relate and sympathize...and laugh a little on the inside as well. Definitely have backup computers ...and other parts.

Just had yet another Seagate 1TB failure. In the last decade I have had over 20 Seagate drives fail, so I am a Western Digital fan for now.

I'm a little worried: we have 3TB of astro-images on a single drive and no backup at the moment. I'm working on another solution.

Graeme: Seagate have failed on me more often than WD so I'm in the same boat. I'm a bit zany on backups (except for the multi-location options). I use a NAS (Network Array Storage) for back-up which has internal backup to ensure if a drive fails the data is secured.

UWO All-Sky Camera Network, Yarker (10A)

Sat/Sun, November 16/17

Stephen (22:17): I'm on a roll tonight! I got my software all set up on my backup computer and started imaging at the end of twilight. My guiding was terrible until I got all the guiding parameters set right. Now I'm guiding within a half arcsecond. That's not bad considering the seeing isn't great. Since the moon is still bright I'm continuing on my long list of star clusters. This autumn I've been collecting star clusters like some people collect stamps. I'll go until 6 in the morning and then have a good day's sleep before tomorrow night.

Susan (22:47): Have a good night! I was out earlier, first cold session, it is so easy to forget how fffast fffingers fffreeze when encountering cold metal. Still...a rewarding session.

Rose-Marie: I took the BigWet-Nose out for last call at 10:30 last night, thought I should stay out for a bit and watch for Leonids... nope! Doesn't take more than a couple minutes before the air hurts your face.

Tim: This is truly good Canadian air that we are breathing in now. My dog Matilda and I just love going out walking and breathing all of it in. We have discovered that brisk walking keeps us warm too. I could barely make out Orion because of the bright moon.

Sunday, November 17

Hank Bartlett — Sun in Ha, Canon RebelXs, SM60

Hank: While waiting for the sun to get higher I processed yesterday's image (taken in clear sky but very

bad seeing). The sun appeared to be a circular saw blade rotating so the teeth were just visible, I certainly hope today proves to be better.

There is increased activity on the W limb today but it is faint so I will have to see what I can capture.

Tue/Wed November 19/20

Stephen (20:33): I couldn't resist a clear evening. I wasn't going to open the observatory, but then I considered that even if it clouded over at 11 I still would have had as many imaging hours as I get all night in June or July. I'm taking advantage of a moonless sky to image some galaxies in Pisces.

Stephen (21:18): Clouded over at nine! Oh well, at least I got a couple of good hours. It's better than nothing. Maybe tomorrow night will be better.

Rose-Marie (06:32): BigWetNose dragged me out at 6:00 a.m., I was surprised to see clear sky. Auriga and Orion were lowering in the west and the moon was waning. I watched for several minutes hoping for a late Leonid, none seen. I did watch a white dot going from south to north through Orion, I'm assuming that's the space station.

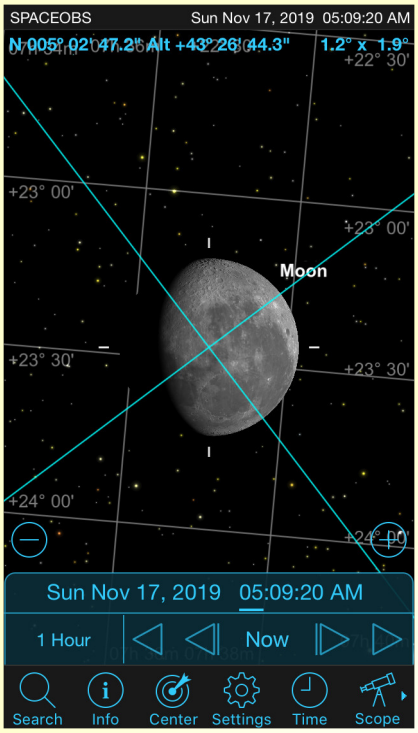
It's sooo nice that these new neighbours have all the lights OFF.

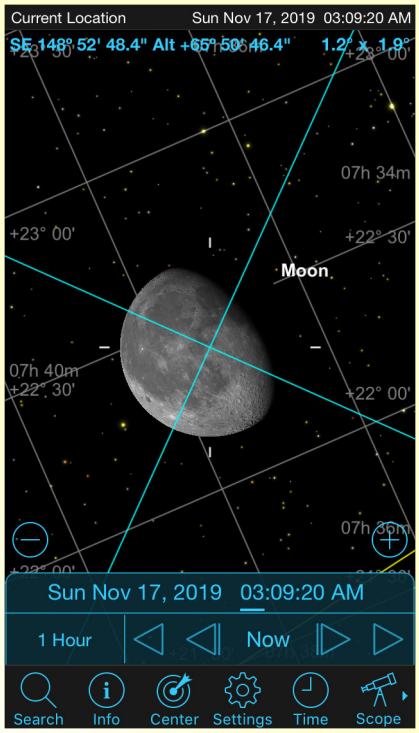
Wed/Thu, November 20/21

Stephen (21:38): Tonight is working out fairly well. The sky is clear. Transparency isn't great but the seeing is good. I'm running through my list of galaxies in Pisces and Triangulum until the moon rises. Then I'm onto star clusters in Auriga and Gemini.

Stephen (04:42): Cloud at 04:36. Still it was a great night!

Kim: I went outside after 5 p.m. to try and catch the planets. The scope was misaligned again, and the planets were sinking low into the trees. It was quite pleasant out. The roof is still cumbersome but manageable in these temps. It's a





Malcolm: I realize I'm preaching to the converted, but I was looking at the different way the moon is illuminated in Chile vs. here and I thought I would share my thoughts. But first an anecdote.

American astronaut Terry Virts was on British TV once with that nut job Piers Morgan and he was asked how he could prove the earth was not flat. Virts explained that his shuttle was launched heading east and quickly accelerated to 17,000 mph. If the earth was flat, he would have left the planet and never returned.

Here's my contribution to the "debate." If the earth was flat, the moon would look the same in both northern and southern hemispheres, but it doesn't. I'm sure there are other ways we can express this as well.

Greg: My favourite explanation is that if the earth were really flat the cats would have already pushed everything off the edge.

MarK: I have been confronted with this question at public observing nights. I am very careful at public observing nights, I know that I am potentially going to be dealing with idiots, so I resist the temptation to tell them what they are. Instead, I ask them a question, what proof would be good enough for me to convince them that they are wrong? The answer is, nothing. I would not be able to convince them. I do not have an argument that is not a conspiracy, an illusion or a lie. So I smile and show them the moon or a planet.

You could not pack them into a space ship and take them into orbit and show them, they would just say that you brainwashed them. Same deal with Apollo landing deniers. Their minds have been made up, there is not any amount of reason or evidence that could change their thinking. It would be impossible to show them the moon from both hemispheres at the same time, so it is not evidence. You are just trying to trick them.

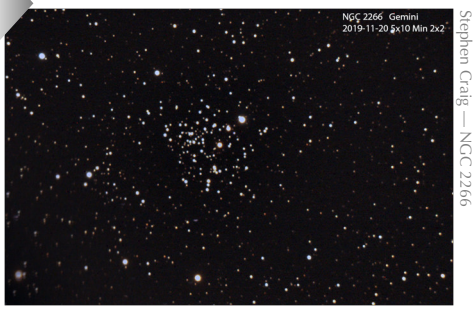
real bugger when it gets colder.

It was quite lovely out, then this white cloud started to appear and it covered the sky quite quickly. That was it.

Going to bed it was clear again, and when I was up at 2 a.m. the moon was rising, it was clear, but I did not see any meteors.

Stephen: I had a great night last night. I imaged three faint galaxies and four star clusters. Though I hate the cold and snow, these long nights are great! Here's a sample of what I got: NGC 925, a nice little spiral in Triangulum, and NGC 2266, a tight little cluster in Gemini. Now that the moon is out of the way I'll add some nebulae to my target list. I still have hundreds of possible targets!

Stephen Craig — NGC 925



Stephen Craig — NGC 2266

Thu/Fri, November 21/22

Cathy: Well, it stopped raining, was really pouring here earlier.

Obviously no alpha Mons locally...so got out my laptop, and cruised the all sky cam and live aurora webcam websites.

Didn't see anything in the way of meteors, but was interesting to look. Quite a variety of limiting mags on the cameras, some sites had far superior skies.

Kim: I was chatting with John Thompson of Ottawa and apparently Slooh was holding a live camera view.

The results are very low, not the hundreds that were expected.

Fri/Sat, November 22/23

Susan: Twitter had a fireball alert at 5:30. Did anyone see it? It was in the ESE "as bright as a porchlight" according to Ted Hsu.

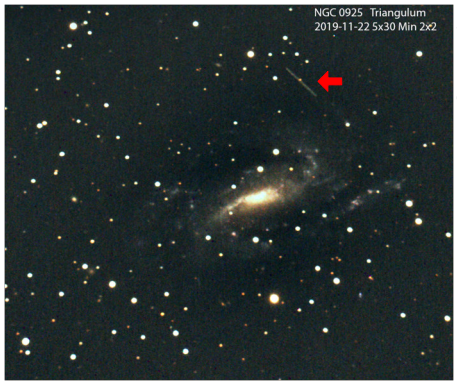
Tim: No. I was at a movie in the Screening Room then.

Graeme: I was curling, but I'm imaging now (waiting for what I hope is haze to clear).

Kevin: I did not see that one at 17:30 EST. ESE is in the trees from the AllSky2 meteor camera.

We did get a nice one a little later at 22:42:18 UTC (17:42:18 EST), not nearly so bright though and then another low in the S even later but much brighter at 2019 Nov 23 at 02:57:49 UTC.

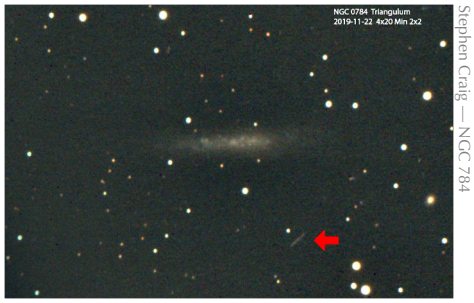
Stephen: I took a longer exposure of NGC 925 last night. It turned out pretty well. As I was taking the subs I noticed a little streak moving gradually through the images. It shows up in the stacked image as one streak. I have no idea what it is. It's either a very slow satellite or a very fast asteroid. The streak is over two and a half hours of exposure. Does anyone have any ideas?



Stephen Craig — NGC 925

Malcolm: Asteroid...? Satellite...? One or the other I suspect. I'd guess asteroid because of the speed (lack thereof).

Stephen: I have another streak! This one of NGC 784 was taken right after the other one. It was 80 minutes of exposure. It's odd that I should get two in the same night so close together in the sky. My thinking is that they are very slow satellites in high orbits. Possibly related? I really don't know.



Stephen Craig — NGC 784

Graeme: Could it be a hot pixel and your camera is slowly drifting? Does it show up on individual subs?

Stephen: I forgot to mention that I had rotated the image of NGC 925 90° clockwise. When I look at the original subs both streaks are oriented the same way. They can't be the same object though as there was not enough time for it to get to the second galaxy at the speed it was going.

[*Rick suggested using the IAU's Minor Planet Checker*.]

Stephen (*later*): The most likely candidate near NGC 925 is 2016 ES108, though it is rather dim at mag 21.4. The position and speed seem about right.

Stephen (*the next day*): I figured out how to use the Minor Planet Checker. They use a strange system to enter date and time. Here are the most likely candidates for my streak though they are rather faint:

The motions of these objects are consistent with my object, though I would wonder why I didn't record both of them. It still might be a high altitude satellite.

Stephen (*a short time later*): I

Near NGC 925: The following objects, brighter than V = 24.0, were found in the 10.0-arcminute region around R.A. = 02 27 21, Decl. = +33 34 55 (J2000.0) on 2019 11 23.22 UT:

Object designation	R.A.			Decl.			V	Offsets		Motion/hr		Orbit	Further observations?
	h	m	s	°	'	"		R.A.	Decl.	R.A.	Decl.		Comment (Elong/Decl/V at date 1)
(109412) 2001 QC186	02	27	15.7	+33	38	46	18.9	1.1W	3.8N	25-	21-	13o	None needed at this time.
(7124) Glinos	02	27	11.1	+33	38	44	15.8	2.1W	3.8N	22-	22-	24o	None needed at this time.

Near NGC 784: The following objects, brighter than V = 24.0, were found in the 10.0-arcminute region around R.A. = 02 01 18, Decl. = +28 50 32 (J2000.0) on 2019 11 23.33 UT:

Object designation	R.A.			Decl.			V	Offsets		Motion/hr		Orbit	Further observations?
	h	m	s	°	'	"		R.A.	Decl.	R.A.	Decl.		Comment (Elong/Decl/V at date 1)
(16671) Tago	02	01	32.6	+28	48	36	16.5	3.2E	1.9S	19-	21-	18o	None needed at this time.

found a possible match for my NGC 784 streak. It seems consistent as this one is a bit fainter. Maybe the mag 18.9 was too faint to be recorded.

Rick: I think you're right about the 18.9 being too faint. How accurately did you measure the positions—are the indicated offsets reasonable? I don't recall the units of the offsets. Arcmin? If arcsec, then these are definitely close enough. If degrees, well...

Stephen: Yes, the offsets are in arc minutes. I used astrometry.net to double check the position and measured the position on a printout. The location looks good and the motion is right. It looks pretty good. A bit of a fluke that I got two in a row.

Walter MacDonald — Planets

iPhone 8, ISO 200, 10.05s @ 1/3s

Sunday, November 24

Graeme: So... about those satellites that everyone is complaining about...many of the subs from last night's efforts had a bunch similar streaks pass through (I'm assuming this is the first batch of Starlink). Fortunately no real damage done, but for a moment I was like *WTF*?

The final image came out quite well for 28 minutes worth of exposures and no darks/flats/bias/dither (I know, I know...I should be doing them all the time), although I did 'cheat' on the Orion Nebula...

Sun/Mon, November 24/25

Malcolm: Speaking of satellites: Starlink rears its ugly head again. A Starlink train will be visible here in the morning; I just need a clear sky.

Kim: I hope you got a movie of the Starlink train. I went out to take some images of the E/SE horizon for Mars, and spotted one, then two, then they just kept coming. They were in a line, some were close together, one set had a race and the satellite behind overtook the one and sped ahead. They were bright. I got pictures.

I saw three meteors while waiting for the moon to come up, and I did see Mars rising. Lovely morning, love days off.

Mon/Tue, November 25/26

Malcolm (04:41): Looks like this morning's going to be my best chance for capturing a pass photographically, at least while it's still a novelty...gee only 198 more launches until the first 12,000 satellites are up. Weather seems to be cooperating and same with the moon.

I'm expecting Starlink train #2 to run NW to NE from approximately Aldeberan to just under Polaris to just above Vega at just after 6:00 a.m.

Graeme Hay — Orion Belt & Sword Regions

The camera is up and running for a time-lapse. I will be watching visually as well starting at 6:00 a.m. and will report what I see.

Kevin (06:07): (^*(&) cloud! here. Kim saw them yesterday, I still have not.

Malcolm (06:18): Watching them now. At first, breathtaking, then shocking, and ultimately maddening. I pointed my camera incorrectly. LOL

I may give it another try sometime, but I didn't realize they were brightest when they FIRST are illuminated with decreasing brightness as they head east. I pointed (correctly) to where I would get them in my field of view the longest...was thinking like an ISS pass which is a different beast.

These fade gradually as they move towards the sunrise. But they just don't stop. Some in pairs but mostly evenly spaced. Seems controlled but not perfectly.

I guess, if they only are illuminated when they are in sunlight at dawn, do we care? But is that the case?

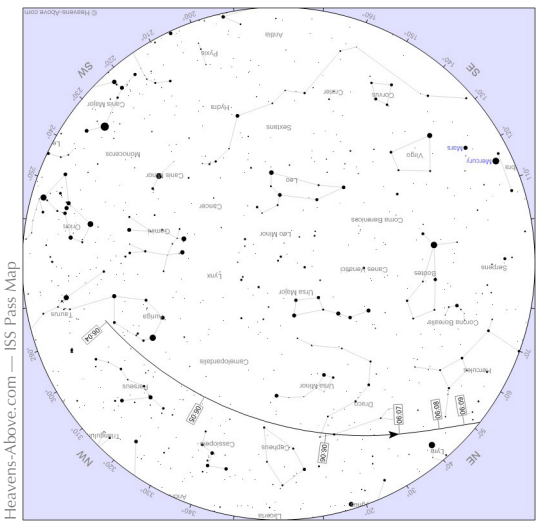
Tue/Wed, November 26/27

Kevin: Today, after sunset, there will be two ISS passes:

1. The first is a rather nice pass, 63° alt from the SW, starting at 17:03, ending 17:08 EST.
2. The second is a little less than 30° alt from the W, starting 18:39, ending 18:42.

Graeme: Anyone see the first pass?

Kevin: Unfortunately not. We were on the road. Pulled over after it was done and gone at orbital velocities. Did get some nice images of Saturn, Venus, and Jupiter though.



Susan: Yes, enjoyed it very much. It lasted so long I was sorry I did not get out some-thing to chase it with—even glasses would have been good.

Stephen (19:19): It's a clear night! At least for now. I'm imaging NGC 1579, the Northern Trifid Nebula. If I get at least one image run I'll be happy.

Graeme (22:32): I'm running an ISO test on Orion (similar/identical framing as last session so at the end of it all I'll be able to stack another 53 minutes worth of exposure assuming all goes well). After 53 minutes I'll have to think of some other target as Orion goes behind the radio tower...time to boot up Stellarium!

Stephen (22:59): I'm into Orion as well. I'm doing NGC 1788, the Fox Face Nebula. It's faint but I'll see how it goes.

Stephen (00:03): Decreasing signal to noise ratio tells me I'm imaging through cirrus cloud. The satellite shot says thicker cloud is not far away. I'll quit after this exposure. Oh well, it was a good night while it lasted.

Graeme (00:05): I think I see clouds moving in from the west as well...I may be turning in a few subs.

Friday, November 29

Malcolm: As some may have heard, Brian and I went to Chile at the end of October to San Pedro de Atacama. While its always a pleasure to visit, this was a mission to update the TEC140 platform.

We did some touring around too, too but the main task was to replace the Moravian G3 CCD with a new Moravian G4 16803 chip CCD camera. The new camera has a 2° field of view, 9 micron pixels and an image scale of 1.8 arcsec/pixel (vs 1.3 with the older G3).

The mission was a success, and we have since gathered enough data on our first object to create a pretty picture. IC 434 and region was processed entirely 100% in Pixinsight. Primarily, this image too was a test, but it passed with flying colours. We took 6 hours of Luminance binned 1x1, 6 hours of RGB (2 hours each filter) binned 2x2, 10 hours of Hα binned 1x1. We elected to bin RGB 2x2 as part of the test, and this worked out really nicely.

Calibration includes dark, flat bias and superbias. We are not bothering with flat-darks. The benefit is that we will be able to spend less time per object, and shoot more objects. Alnitak does overwhelm it a bit, but I like it. Still learning the tricks. The evolution continues...

Sunday, December 1

Cathy: Quiet here tonight. No snow yet, although the wind is picking up a bit.

Woke up early a couple mornings to try for Starlinks, but sky a bit too bright.

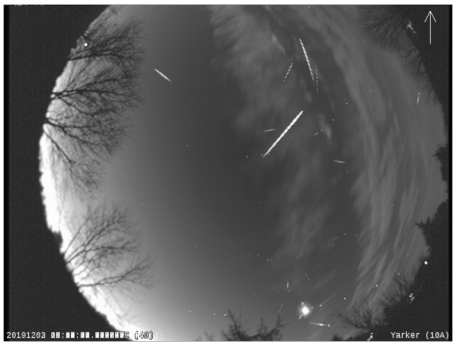
Saturday morning took my breath away though...ice pillars all across the sky from north to east, rising upwards from all the light sources.

They reached up to about 30°, and were really quite beautiful. They shimmered and changed a bit... although were always anchored to the light sources. They gradually faded as twilight set in...but it was an amazing sight.

Mon/Tue, December 2/3

Kevin: It must have been very clear last night (–18C at SCGO)

and maybe a meteor shower a'comin'... 14 meteor events were recorded overnight on the AllSky2 camera system:



Kevin Kell — Meteors

Tue/Wed, December 3/4

Stephen: I had a good night last night, clear all night. I was too busy imaging to email. My main goal was to get a composite image of NGC 2174. I took four shots to make the composite. They were 3 twenty minute images each. So that took me quite a while. I carefully processed each image the same way so they would seamlessly merge. It turned out pretty well. NGC 2174 is faint and very low contrast.

Stephen Craig — NGC 2174, Dec 2

Kim: Very nice image Steve. Very large nebula field.

You can't make this stuff up!

Meade (bought by a Chinese company in 2013) has filed for bankruptcy after losing an anti-trust case filed by Orion Telescopes & Binoculars.

Sat/Sun, December 7/8

Malcolm: There is a nice ISS pass tonight, mag –3.6.
Susan: Thank you Malcolm! I enjoyed that very much.

Got an hour in with the moon.

Unable to get the outriggers cleaned completely, so had to use a lot of brute force, opening and closing.
Kim: We saw it going overhead at the Napanee Santa Claus Parade.

Stephen: Well, my main computer is officially dead. They want too much to fix it. We will see if they can get my data off it. My last backup was the end of September so if they can't get my data I'm out a month of images. Oh well, it could be worse I guess. It pays to make frequent backups!

My backup computer is working well. Actually better than the other one. So I will stick with it for now. Tonight is a good night in spite of the moon. I'll add a few to my image tally!

Keith: Amazing that you could see sky there, mostly cloud here except about 3–4 in the morning, but only the brightest shone through.
Stephen: I had nice clear sky, in spite of the moon. I imaged seven open clusters until moonset at 3:30. Then it clouded over just as I was getting ready to image a nebula. I guess that will be it until after Full Moon.

Tuesday, December 10

Malcolm: My latest image is a two panel mosaic, processed mostly in PIX but I used PS CC to stitch the 2 panels and apply some final touch ups. Stars are fat, poor transparency the culprit. It's pointless to share the full resolution image which is 14k x 7k pixels. Images captured during the most recent lunar cycle: 15 hours of LRGB for each panel. Hα data is still to come. It will be interesting to see how that looks.

You can crop all the way down to as small as a 1920x1080 section and on the right object it looks wonderful. It's a shame as I scan through some of the data at full resolution that an image can't be presented that way. But smallish planetary nebulae or a galaxy can be imaged without the need to buy a Planewave. We found this to be the case, for example, with the Helix Nebula. The nebula at full resolution is small but when cropped it filled the screen. Unfortunately our data was insufficient (not enough signal) and it was very noisy. Learning!

Tue/Wed, December 10/11

Graeme: Was taking the puppies out for their bedtime routine and happened to look up...

Graeme Hay — Lunar Halo

Sun/Mon, December 15/16

Stephen (00:58): I got three image runs done this evening before it clouded up at midnight. I got a late start as we were in town this evening.
Susan: Good to hear someone did not waste a clear sky. I had plans but could not get warmed up inside the house, so I wimped out.

Saturday in the rain I finally made little tarps for my outriggers so I can avoid the clearing-off issues. They are still in place after a breezy day. I look forward to reaping the benefits later in the week.

Wed/Thu, December 18/19

Stephen (02:08): I'm having a good night after some setbacks. I got set up at the end of twilight just in time for the clouds. That cleared up after an hour of waiting, but the wind picked up. That made guiding rather ratty. But the wind eventually died down and I got some good images of M76.

Now that the moon is up, I'm onto several open clusters in Orion.
Stephen (03:48): At 3:45 it's a brutal –20 outside and a relatively balmy +19 inside. It reminds me why I invested in a remote link to the telescope. These old bones couldn't handle sitting outside for any length of time.
Susan: I think you still have to go out to close up, so you still get points for that.

Friday, December 20

Stephen: I've had a couple of good nights in spite of the numbing cold. My equipment worked well. I got a good image of the Little Dumbbell, M76. I was trying to bring out the faint nebulosity. It worked fairly well but blew out the bright centre a bit. I also went after a faint galaxy, NGC 973. I got five galaxies for the price of one! It looks much like a small version of NGC 891.

Stephen Craig — M76

Stephen Craig — NGC 973

Betelguese

Sun/Mon, December 22/23

Dave Chapman *on RASCals* posted a couple of excerpts from ATel #13341: The Fainting of the Nearby Red Supergiant Betelgeuse—

> "Photometry from this season shows the star has been declining in brightness since October 2019, now reaching a modern all-time low of V = +1.12 mag on 07 December 2019 UT."
>
> "Currently this is the faintest the star has been during our 25+ years of continuous monitoring and 50 years of photoelectric V-band observations."

Rick Huziak *on RASCals*: In the current observing season, Betelgeuse has dimmed by about 1 magnitude. However, looking at past behaviour, the fade *may* stop and turn around for the rest of the season...so let's see. The only way to know is to make observations and submit them to the AAVSO database. Since Betelgeuse is so bright and red, it is difficult to do photometry without saturation effects, though very short DSLR exposures might work. It is ideal for photoelectric photometry (PEP) work, though few do this anymore, thus we still know little about the brightest stars in the sky.

In the [AAVSO] light curve... Photometry is accurate, but if you averaged the visual observations, it is amazing to see that they, on the average, track the brightness changes well.

Anyway, keep watching Betelgeuse. Hope it explodes, though!

Kevin: Wow...I looked out at Betelgeuse last night and visually saw that it was dimmer than normal (for me). I compared it to the belt stars' magnitude!
Graeme (20:21): If you've ever heard the saying, don't try to do too many things at once...well tonight is mine.

1. Time-lapse of N sky to attempt to capture meteor shower. And I forgot to set the time-lapse to "on."

2. Trying to image Hα of Flame and Horsehead with Lumix Camera...all sorts of issues encountered. I'm getting data but can't seem to get the bulb/intravolt to behave properly.

The night is still young, and surprisingly warm for the first night of winter...hopefully I'll get some usable data before I pack it in.
Stephen (21:33): I'm taking good advantage of a moonless night. I started imaging right after twilight at 06:15. It's going to be a long night! It's all galaxies and nebulae tonight.
Hank (22:11): Way to go Steve, dark and deep!
Graeme (22:13): I seem to be plagued with issues so it's going to be interesting to see what I can salvage from the evening.
Stephen (22:25): I'm sorry to hear you are having issues. My equipment is working very well.
Graeme (22:30): Trying a bunch of things out tonight as it warmer than expected. My main imaging method is sound, it's just when you start imaging with different cameras and settings that's where things pop up and go wrong.

Right now I'm imaging 2 minute subs of Rosette with the Full Spectrum G5 (which bulb

Continues on page 12 ☞

Record Keeping

Graeme: I'm wondering if there is an observing template digital or print, that doesn't take a page per observation?

I'm looking at doing some visual observations while my primary system is imaging this winter for RASC Visual Observing programs but theirs are one observation per page and that's a lot of paper to print and keep in the observatory...

Thoughts?

Kevin: I've tried many things and have yet to settle on one that works. [*Example forms from RASC are cited that allow for one, two, or four observations per page*.] Kim uses a variant of this one [from ALPO] for her solar observing. I've also used spreadsheets, plain blank paper, and ruled paper, both in notebooks and 3-ring binders.

So the short answer is no, but if you find one, let the rest of us know!

Graeme: The 4-to-a-page is perfect—double sided I get 8.

Susan: I hope this is helpful. From your question I am not sure if you are new to recording observations or just looking for new ideas. I like to keep things pretty simple and I am very cheap!

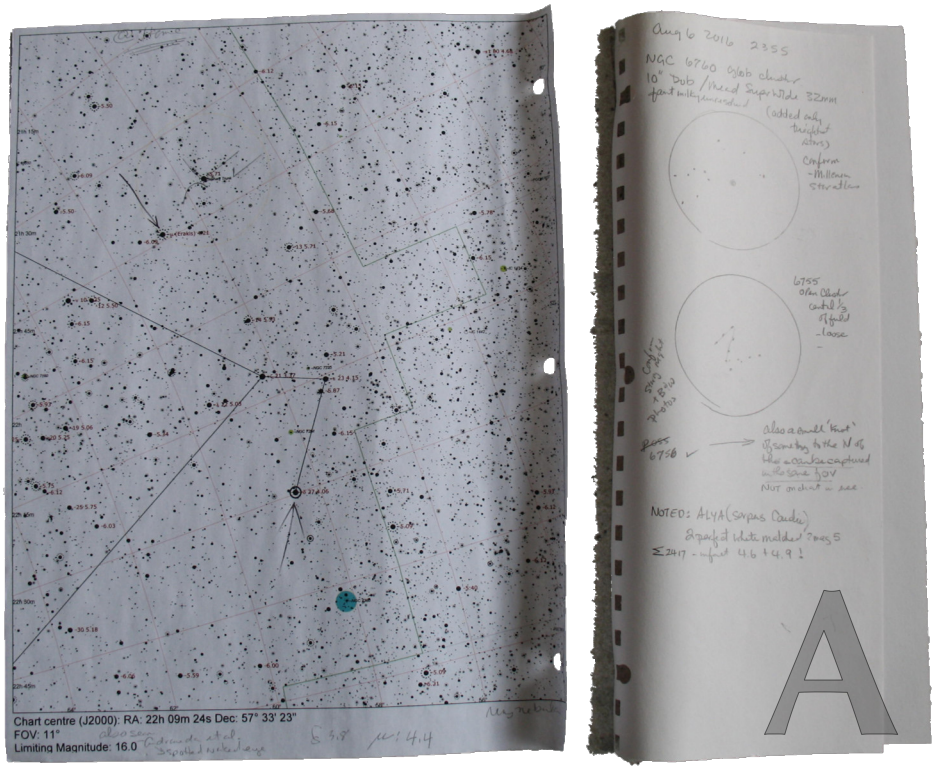
I would love to have a shelf of identical observing logs but alas it is a hodge-podge of whatever I liked at the time.

(A) I had always used a binder. I would print out my StarryNight charts and often write all I needed on them, or take just a half page for extra notes or a sketch. My sketches are not artistic renderings but memory aids! A clipboard works better for this than actually having the binder in the observatory.

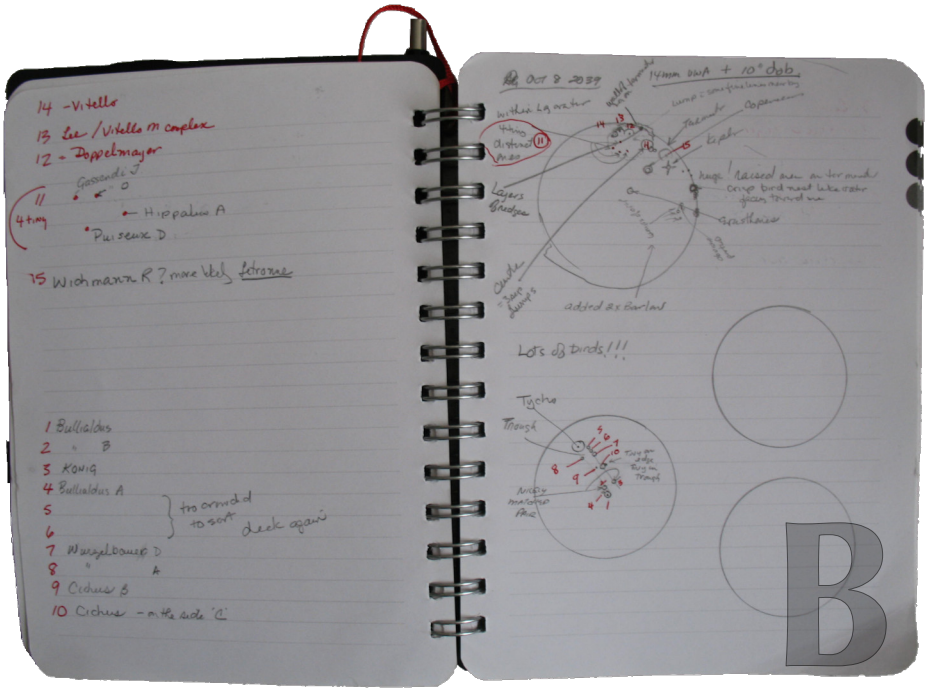
Have something handy to draw a circle if you do any kind of sketching.

I recommend keeping a check list handy for the various observing lists so you can record the dates you observed the object (C). You may wish to apply for a certificate at some time and find that you already have covered most of the objects. This works very well for the Messiers as someone locally will do your log review and you are not expected to follow a template, just be somewhat organized.

I may have put the 3-ring binder behind me at this point. When I began the moon I found that I needed to sketch to help with identification after the observing session. I have added a photo of

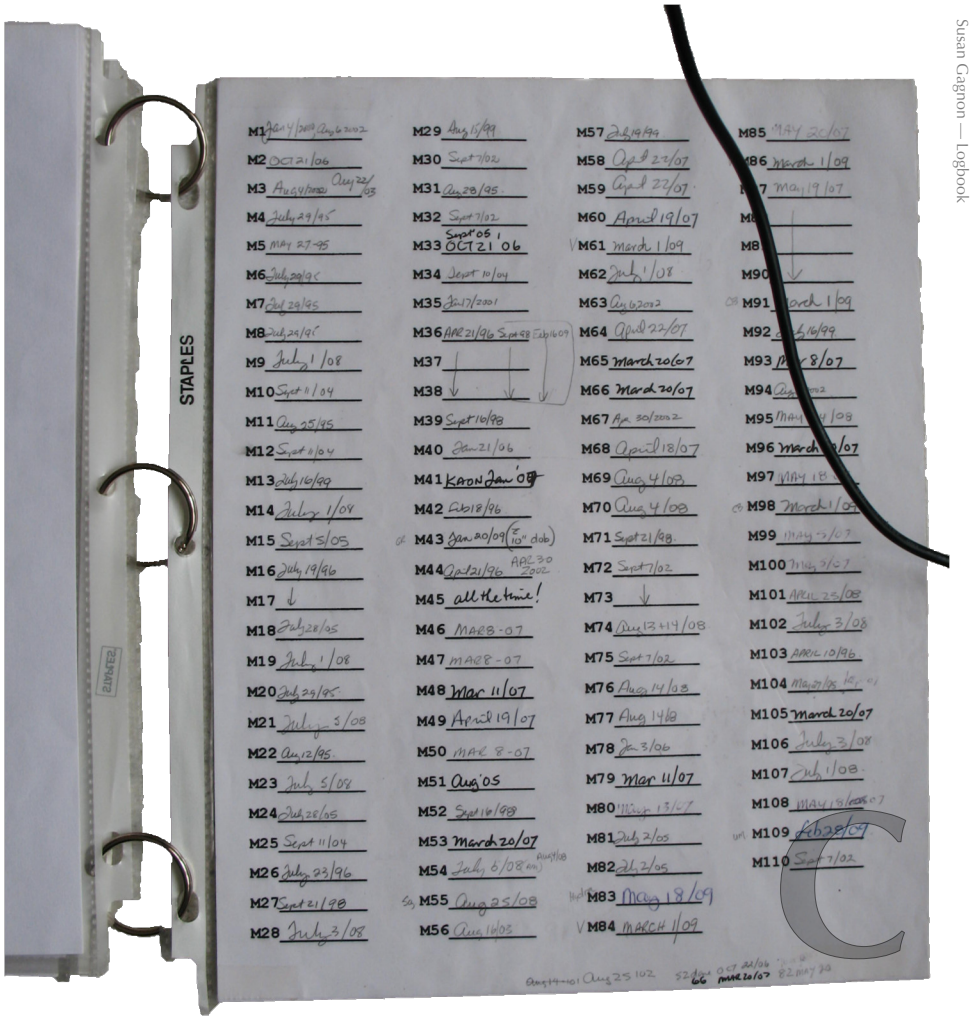


Susan Gagnon — Logbook



Susan Gagnon — Logbook

the small journal size book I am using for this (B). It has a sturdy spiral spine so I can fold it open. It has heavy cardboard covers front and back so that it is supported and easy to write (and erase) on. I sketch on one side and add post-obs notes on the facing page. This journal and several others have been given to me over the years and I had no use for them until now. I plan to press a second one into service for my variables and then transfer the data to the proper form after observing.



Susan Gagnon — Logbook

Kim: The AAVSO has a template per variable star. If that does not work, perhaps create your own for what you want to record.

Rick: I use a digital voice recorder at the telescope and do everything by description. Having the recorder allows me to get totally verbose and record all kinds of details. I then transcribe them into the computer in the morning. Images can be added to the log. Sketches are a little more difficult but I don't sketch much (should do more—it's a lot better than descriptions.)

If I have access to a free (colour especially) printer I sometimes even print out the whole year's observing log at the end of the year. It's generally somewhere about 50–80 pages but they have been up to about 200 pages. Very compact if you don't print them out.

...continued from page 10

seems to run until 128s before tossing in the towel, so 2-minute subs seems to solve the problem).

Testing the Z6's direct-to-4K movie mode indoors then once it's warm enough to stop dewing I'm sending it back out the door to get more than 1–2 second videos. (Ideally 10–20 seconds would be nice).

Stephen (22:59): I think I figured out my glitch (besides not "reading the manual") and I've got the camera back out there hopefully capturing any Ursids that might show up in the northern portion of the sky (180° fisheye lens).

Graeme (23:04): I don't know about others but the seeing last night wasn't particularly good. Tonight appears to be much much better.

Stephen (23:25): I couldn't make use of last night as I had to be up early this morning.

Tonight I have almost twelve hours of imaging time. That's good enough for me.

Kim (23:39): I hope you all have clear skies. I was just out looking at Betelgeuse taking images, and there is a lot of sky fog out there. Warm but transparency not great .

Betelgeuse is definitely not as bright or red as it was. It is closest to Alnilam which is mag 1.65.

Graeme (01:13): I've packed up for the evening (battery drained on imaging camera) but my target is going behind trees anyways.

Set the Z6 for a sunrise time-lapse test, will see how that goes (I have 1,1,2,8 second time-lapses I'll check out in the morning).

Kim is right, there are thin bands of clouds going by in my time-lapse; not a huge concern for DSO imaging (you lose a few subs) but definitely needs to be accounted for if you are doing anything scientific.

Stephen (01:28): I'm imaging in Orion. Transparency isn't great. There is some cirrus cloud moving

through. My SNR just fell off the table. I'll see how it goes.

Kim: I went out this morning, as there was a lovely crescent moon....and camera issues, however it was lovely, where out of the corner of my eye in SW position, the ISS went over with a very high pass [–3.3 mag pass peaking at 63° alt in the SE at 06:33:56.].

Graeme: I'll have to check my time-lapse: I might have nicked it (camera is pointing towards sunrise).

Malcolm: Hey Kevin et al—My wife was driving to work, N out of Bloomfield this morning and she saw the ISS. According to Heavens Above the pass was between 6:30 and 6:37.

She also reports that while noticing the ISS she saw a bright fireball slightly W of N. The sky was lightening at the time but I'm wondering if the all-sky camera picked anything up?

Kevin: Sad to report that nothing was caught here. AllSky2, the UWO fireball camera, does not extend too much into dusk, if at all. Your sighting was 06:30 EST = 11:30UTC on Dec 23. The last bright meteor the software picked out was at 09:02:25 UTC, over two hours earlier.

In addition to motion detection, it takes an image every 30 minutes. So it did not see or mark the meteor at 11:30–1137 UTC but it did take the last static image of the night at 11:39:41 and then shut down for the day sometime in the next 30 minutes.

Mon/Tue, December 23/24

Graeme (20:51): Okay, which of you opened your Christmas gift early? Clouds seem to be coming in from the NNW with some slight patches of clearance enough to show a few stars. Hopefully they will clear off later tonight as I want to continue to test various gear/setting during this period of warm weather.

Rick (21:59): I got caught last night—suckered right and proper. We were over at a neighbour's for dinner and when we were walking back home there were lots of stars out. A quarter hour later it was dead clear and the satellite images seemed to show it would last for a while. I opened everything up, got the camera cooling, mount synced to the sky and started a series of exposures of one of my targets. I got 1.5 images completed before the cloud moved in. The satellite image by this time showed its true colours—what I thought was clear sky NW of the obvious cloud was in fact low cloud of a similar temp to the ground. Still, I got one data point for that star as it stayed cloudy until minutes before sunrise.

Stephen (23:08): I was in the same boat. Saw it was clear, got all set up, started my first image, and then bang, cloud!

Malcolm (07:07): I didn't go out yesterday but I thought to look this morning thanks to your email:

Malcolm Park — Old Moon

Kevin (07:09): The old moon looked awesome this morning. Unfortunately the police frown upon drivers taking astro-images from a moving vehicle.

Kim (07:16): Nice image Malcolm. I just went out and took a couple of quick shots. The moon is 27.32 days old and a very pretty sight with the dawn.

Kevin: In other news, the new AllSkypi was finally dialled in to a least a coarse focus after work and this morning is clearly showing stars and constellations!

It seems limited to 60s exposures max and we still need to make a dark frame so it can remove a lot of hot pixels on the ASI 120MC (which is not cooled).

The old SBIG ST237A cooled AllSky camera system was set for about 80 or 90s exposures and was able to pull out the Milky Way.

Rick: You're just using the little lens that came with the 120 camera?

I was messing with my planetary/guider cameras yesterday to see if they work with the little ASI120 lens. They don't—can't reach focus on any but the 120. And, more worrying, the QHY5III178 didn't work at all. At least, my laptop doesn't recognize its existence. I have to try a different cable, possibly a different computer, different drivers (already tried updating the old drivers with no effect.)

Also, the other night I had to quit imaging early (2 a.m.) as the secondary mirror fogged over—that has only happened once before in all my years of imaging. So I dismounted my scope electronics control panel and did all the wiring to connect up the secondary heater that Paul built into the scope (but which I never hooked up since secondaries never dew up.) Re-assembled everything and re-installed it in the observatory. Works like a charm. Except that something bad seems to have happened because my focuser no longer responds to its hand paddle.

The focuser controller is on a separate board, separate power supply, separate cable to the scope, could not have been affected in any way by yesterday's changes. Nevertheless... Sigh, more debugging. The only good thing is that focus on the Boltwood scope is absolutely unchanging so, as long as I keep only to the B and V filters I can continue working. However, I can't refocus for unfiltered imaging which I need for a number of my fainter (17–20 mag) targets.

MarK: If it is not one darn thing, it is another. Two bugs squashed, one new one...

Kevin: As mentioned many times over the past many years... it is the voyage more often than the destination. I do get a lot of pleasure from troubleshooting and solving issues. Of course in the great scheme of things I would much prefer the)(@#&%@ tech to work the first time without any issues!

So yes, we are using the 2.1mm lens that came with the ZWO ASI120mc and after disassembling the all-sky housing, I took the camera over to another observatory, connected it to that computer with another cable and ran FireCapture so I could get near real time focusing. Aimed it at the furthest things I could: the cell tower in the backyard. Of course, it was extreme wide angle so the tower was very, very tiny. Got it as close as possible, reassembled the system and got it up and running over the night of the 23rd.

Boy is that camera (non-cooled) noisy on 60s exposures!

So the night of the 24th, we put a dark bag over the camera housing and took a dark frame. That got auto-processed into each image that night. Unfortunately it seemed to go overboard and subtract too much: the resulting images were dimmer and the text annotation messed up.

And now of course there are more nights of cloud, so no chance to work on fine-tuning. There is also still occasional condensation and frosting too.

Saturday, December 28

Kim (11:13): Out in the observatory looking at the quiet sun again. I did manage to see the two groups on Dec 23/24th, but they have fizzled. Nothing that I can detect in h-alpha either.

Kim (15:06): We are getting cloud in the SW for tonight's crescent moon and Venus show. So I thought I would find them early. I saw the crescent moon and got an afocal picture of Venus. Then some sundogs came out.

Graeme (15:23): If I don't get clouded out, I'll be taking advantage of the warm weather and swapping over to the EgdeHD and then use Venus or the Moon to adjust the focus on the camera and guide camera (always a pain to get those parfocal on just stars).

MarK: Glad you were able. I have been trying, but the haze and increasing cloud cover has made it impossible.

Hank: Certainly more than I have been able to do in some time; life is very complicated right now. Late, but Merry Christmas to all.

Kim Hay — Fire with Moon & Venus

Kim: With the fire and Moon and Venus.

Hank: Very nice!

Malcolm: Awesome.

Paul: Very interesting shot, Kim!

Malcolm: There was a small thin band of cloud moving in front of Venus just as I set up to shoot, which irritated me to no end until I saw the result, as I kind of like the diffuse look of Venus.

Anyway, here's what I saw. Cold but pretty:

Malcolm Park — Moon & Venus

"The Universe appears to be 13.8 billion years old, Earth is like four and a half billion years old. In another half billion years or so the sun will expand and probably evaporate the oceans and make life impossible on Earth, which means that if it had taken consciousness ten percent longer to evolve it would never have evolved at all...I wonder how many dead one-planet civilizations there are out there in the cosmos—that never made it to the other planets and ultimately extinguished themselves or were destroyed by external factors? Probably a few."

—Elon Musk, 2019