January–February 2021

Skyletter

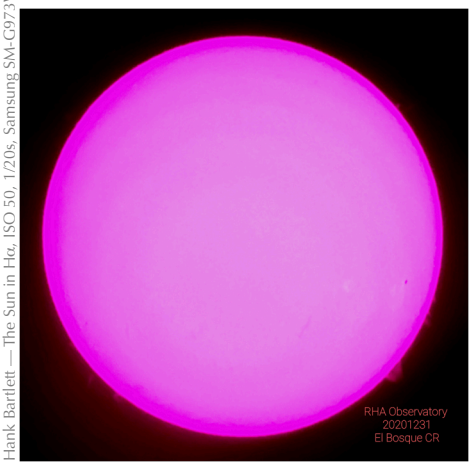
RASC Kingston Centre

Mark DesLauriers

Tue/Wed, December 29/30

Rose-Marie (00:08): Took Kerrie out for a walk around 11:00 p.m., quite the halo around the moon. GOTTA get the laptop set up to download from the camera.
Graeme (00:48): I managed to grab a quick Moon halo shot as well.

Graeme Hay — Moon Halo



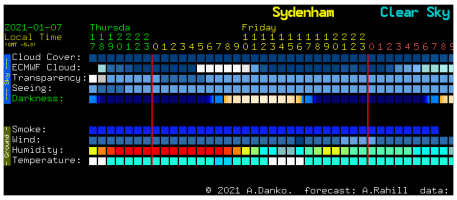
Hank Bartlett — The Sun in Hα, ISO 50, 1/20s, Samsung SM-G973W

Sat/Sun, January 2/3

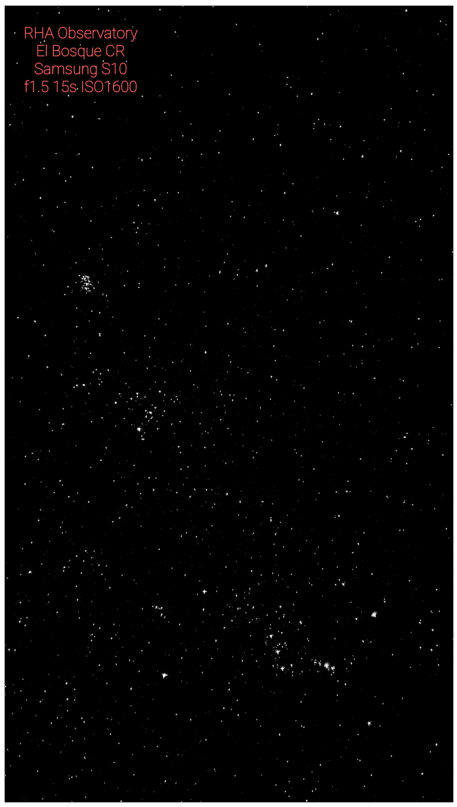
Stephen (18:53): So much for the first clear night of the year. The sucker hole is just getting smaller!
Malcolm (19:23): Ya, what the heck is going on here? So much for the meteors too.
Walter (19:35): Clearly neither of you looked at the satellite loop before starting. Rookie mistake.
Cloudy new year.
Malcolm: I didn't start because I used my eyeballs, lol.
Kim (19:37): My plan was Ceres tonight. We saw Jupiter and Saturn with binoculars. Then within 5 mins...gone.

Thu/Fri, January 7/8

Stephen (18:46): The cloud is taking its own sweet time clearing out. But I am still hopeful. It is a long night.
Malcolm (18:58): LIES!!!



Graeme (19:05): I was hoping to finish my mosaic tonight of the Orion Nebula...but it's still 100% clouds here... (Checked with the night vision camera too...not even a peak through the cloud layers.)
Steve (19:34): As of 7:30 I have stars! It's still scattered cloud but it looks hopeful.
Graeme (19:48): Getting dressed up for a cold, long night of imaging!
Stephen (20:46): The sucker hole is closing up. We may have to wait some time for clearing again. Oh well, at least I got one galaxy.
Hank (20:50): Cloudy here also, we have had only one very clear, very dark night here. See attached cell phone image:



Hank Bartlett — Orion & Taurus

Graeme (21:02): Sky of cloud, waiting and hoping!
Stephen (21:13): Cloud at 9:10. Now I wait. It is a long night yet.
Graeme (22:33): Still completely cloudy here, not sure if/when it will clear but I'm starting to look inward for the night...
Stephen (22:45): From the look of the satellite it may be a four hour wait. Not sure if I'm up for that. I'll probably give up and wait for tomorrow night.
Graeme (23:01): I drank a coke so I'm up...putting it to use and designing some adapters for my gear to 3D print tomorrow...(work in progress).

MarK (06:20): Is the resolution of the printer fine enough to do threads?
Graeme: Only large ones. This design does not have threads, rather I'm using TPU retaining rings to hold things together (plan B would be a clamshell design, but it's not as "clean" looking).
Kim (07:07): At 10 p.m. it was cloudy here and waking up CBC said cloudy in TO. Yup still cloudy and –9.2 C.
MarK: Steve, sure hope you did not wait all night for it to clear. It would be nice to get a halfway accurate forecast every once and a while.

Got to –9C overnight, but the Lake is still completely open and the swans are still swanning.
Steve: I pulled the plug at 11:30 and went to bed. I hope it will be better tonight!
Rick: Man, that didn't last long. I noticed it was clear at 8 p.m. so rushed out and got things running by 8:15. Last usable image was 8:53. However, it constitutes my first observing session for 2021. Following what I'm sure must be the longest dry (*i.e.* cloudy) spell I've had in over a year. I must say, I wasn't holding out much hope for tonight given that our "sunny day" today was dense cloud and very light snow while I was out walking this morning. Looks much more promising now.
Malcolm (12:24): Quick, call the cops, someone stole the clouds. Blue skies!

Fri/Sat, January 8/9

Steve (19:07): Finally the Weather Gods have agreed to give us a clear moonless night! I've been imaging since the end of twilight. At the moment in Camelopardalis. I see some cloud over Georgian Bay. I'm hopeful it will stay there.
Kevin W (19:31): Oh my gosh, what are all those twinkly things up there?
Rick (19:38): I too am imaging, since shortly before the end of nautical twilight. And it looks like clear skies in California for the [RASC] remote scope science night. I should finish the night with ~350 new images!

Also watching the Ottawa Centre meeting, just started.
Graeme (19:40): Already collecting. Guide camera seems pooched though; it may be too cold for the old thing...

Malcolm (20:47): Me too! This afternoon, I made the decision to change my setup over from visual with the Edge HD 9.25, to full–on CCD with my Astrotech AT65. It took a few hours before and after sunset. I had to go through many totes to find what I needed.

But after some frustration, which I am sure we have all experienced, the kit is up and running and imaging M81 and M82 with my QSI 683 and AT refractor.
Stephen (22:33): Seem to be doing nebulae tonight. I've already picked up two nice planetaries and a small reflection nebula.
Malcolm (23:58): Sequence aborted, guide star lost.
Stephen (01:14): I see a cloud formed over Kingston and points west. Luckily I'm far enough NE to have missed most of it. I could see the cloud to my SW. Now I'm imaging in Leo Minor well away from it.
Kim (08:03): Did it withhold Steve? I was up at 4 a.m. and though clear at zenith, there was cloud all around. Hoping to see a sunrise this morning and the moon. It was cloudy, still is.

The sunset last night was so beautiful. Wonderful colours and interesting cloud colours. We did see Jupiter, Saturn and Mercury. Kevin took pictures, I just noted it in my log book with binoculars. I could not see any moons of Jupiter, it was very bright. I did have a 100 mm SCT with me. But the sunset was beautiful.
Rose-Marie: I was up around 6:15 a.m., BigWetNose dragged me outside. Zenith was clear, but clouds to east and west. The waning crescent moon was shining through thin clouds. Dawdled around a bit hoping to see a sparkly, but none flew.
Rick: Well computer errors scotched my 'perfect night.' I awoke this morning shortly after 6 to a cloudy sky but on checking the images it had clouded over just as I completed my last image so I got a good 174 pics. However, CCD Commander on the remote scope threw an error about 3 a.m. and stopped. I restarted things after I got up but missed several hours. So I only got a rather disappointing 135 images for a night's total of 309. Still probably one of my most prolific nights ever.
Stephen: I was lucky! The sky

stayed clear here all night with just a bit of cloud in the south. I imaged from 6 p.m. until 6 a.m. I bagged three nebulae and three galaxies. It was a great night!

Graeme: I got enough cloud haze at ~1:30 a.m. to call it quits. I managed to finish capturing data for my mosaic of the Great Orion Nebula region and then jumped over to the Flame Nebula just as the clouds rolled in to get a bit of data just for fun.

Going to attempt a solar imaging session with the new filter then swapping over to the wide–field system before the next clear night to focus on imaging with filters as I try to run the gambit and see what they are capable of... finally.

Guide camera to be in–vestigated, it seems to still give a signal but I think something has happened as it would not pull out more than 1 'star' and even at that it was not great for most locations (fortunately I nailed polar align–ment with the Polemaster so I was able to do 60s subs with the EdgeHD 8). Maybe at f/5.7 it will perform better as the OTA @ f/10 was always pushing its capa–bilities.

Mark D: Looked last night for the Flame and Horsehead, but no luck. I am familiar with the area but my camera does not want to pick this up. My camera has a .33° by .22° FOV so it depends on how accurate my GOTOs are for the night. I did finally find the Crab Nebula last night but was unable to get Hubble–like images. I did get M36, M37 and M38; star clusters are easy with this camera as there are lots of stars for alignment in SharpCap, which sometimes is another problem with the small FOV of the ZWO 224 camera. I have a ZWO 294 on the way which has a much larger FOV so this should make things easier to find in the future.

Kevin: We searched out via google maps for a location with a good horizon to the SW (Bethel Road). Tonight was going to be the first clear evening in many days...

We stayed outside in the –4C to –6C temperatures for about an hour waiting for it to get dark enough. The sunset was at 16:45. The view was almost perfect to the horizon... almost.

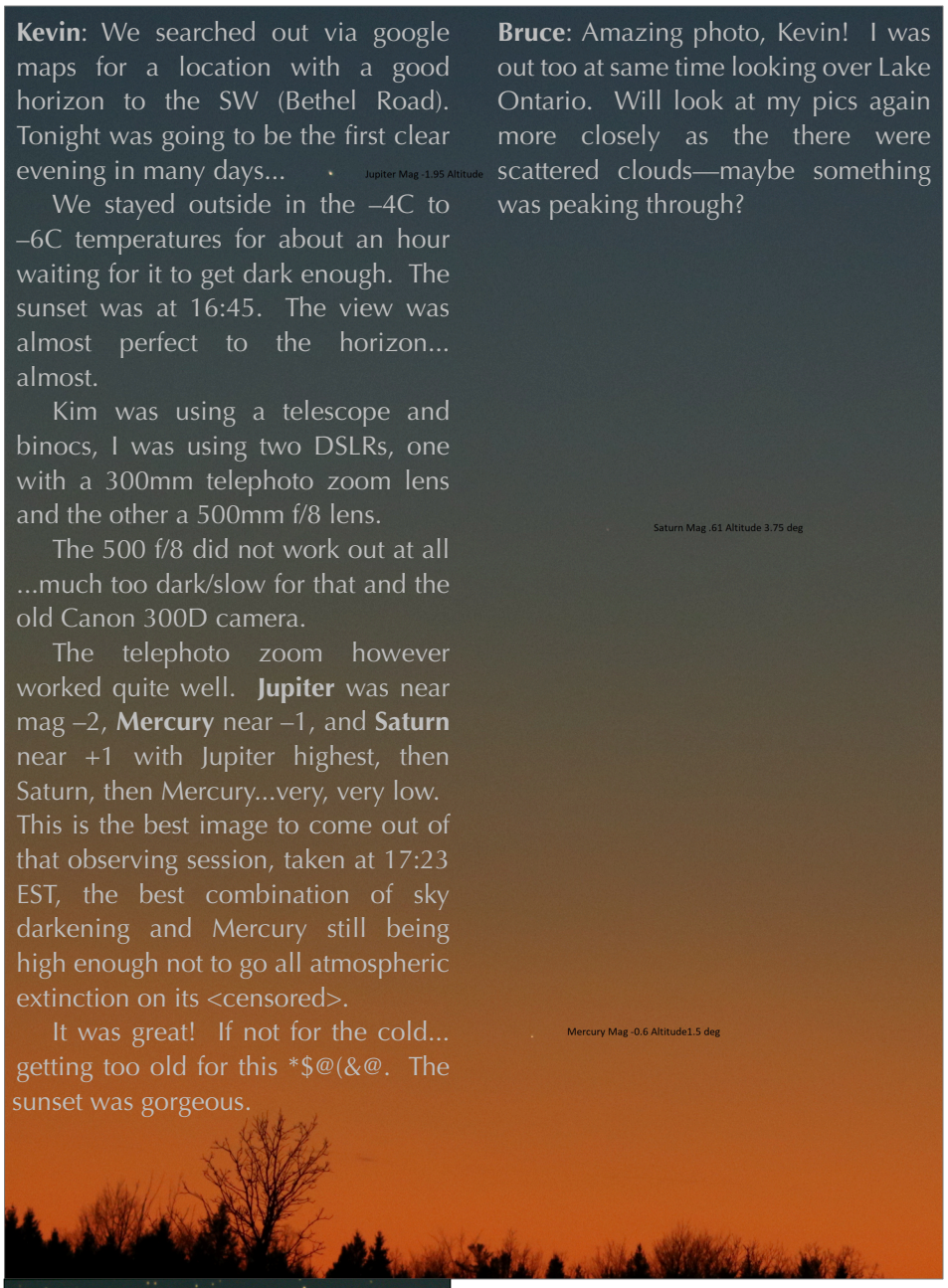
Kim was using a telescope and binocs, I was using two DSLRs, one with a 300mm telephoto zoom lens and the other a 500mm f/8 lens.

The 500 f/8 did not work out at all ...much too dark/slow for that and the old Canon 300D camera.

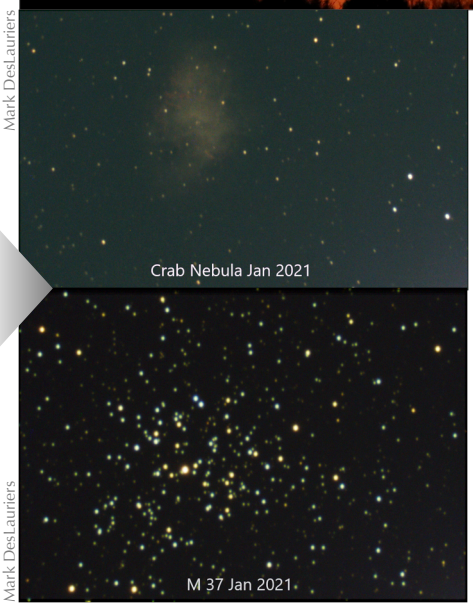
The telephoto zoom however worked quite well. **Jupiter** was near mag –2, **Mercury** near –1, and **Saturn** near +1 with Jupiter highest, then Saturn, then Mercury...very, very low. This is the best image to come out of that observing session, taken at 17:23 EST, the best combination of sky darkening and Mercury still being high enough not to go all atmospheric extinction on its <censored>.

It was great! If not for the cold... getting too old for this *$@(&@. The sunset was gorgeous.

Bruce: Amazing photo, Kevin! I was out too at same time looking over Lake Ontario. Will look at my pics again more closely as the there were scattered clouds—maybe something was peaking through?



Kevin Kell — Planets at Sunset



Mark DesLauriers

Mark DesLauriers

Hank: Looking good Mark, you are advancing quickly in this hobby. I hope astrophotography is satisfying your retirement activity need.

Susan: I also was looking at M1 last night for the first time in ? years. A snow and ice load on the roof resulted in a very stressful open and close.

Rick: I have a roof rake to clear snow off the observatory roof. I try to always do it before it gets a chance to melt and refreeze. Because I have a steel roof I notched the rake to fit over the ribs

(and made sure when I built the observatory that I used the same brand/model of roofing as on my previous observatory so I could still use the rake).

Susan: Yes, prevention is the key. I was too confident that it would clear itself as usual. I will keep a better eye on it from now on. I managed to get 95% off today and the roof moves freely. I'm all ready for clouds! Another problem most of you indoor observers do not have is cold fingers. I've been working on a better arrangement for maximum flexibility and maximum comfort. Just finished my latest design and can't wait to try it out. After clearing the roof I did enjoy a brief rest in the lawn chair in the sun.

Sat/Sun, January 9/10

Kim (16:50): The sun was marvellous today. No spots or groups, some prominences, but it felt so nice and warm.

MarK (16:50): Weather is a lot warmer and a lot more cloudy than the forecast said. It is presently 0C here and the predicted temperature was –4C. Fully cloudy too. I hope it clears. The forecast for the coming days has gone from pleasant to gray. Maybe they will get that wrong too?

Rick (10:22): I couldn't get to sleep last night so finally got up to read about 12:30. Found the sky was clear so I started up the observatory and got in almost an hour of imaging before it clouded over again. Then a couple of hours of reading and back to bed. The forecast does show some promise for this evening too.

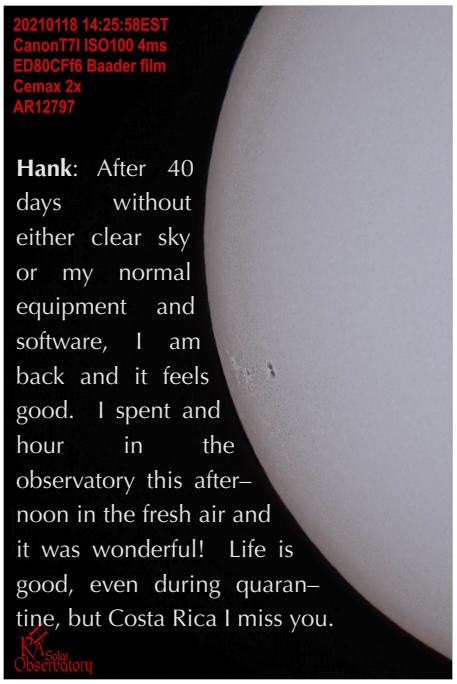
Thursday, January 14

Graeme: Well my computer access just got revoked (100% CPU). Working on my Great Orion Nebula mosaic and clicked "masked stretch" without thinking about it first...it's going to be a while...

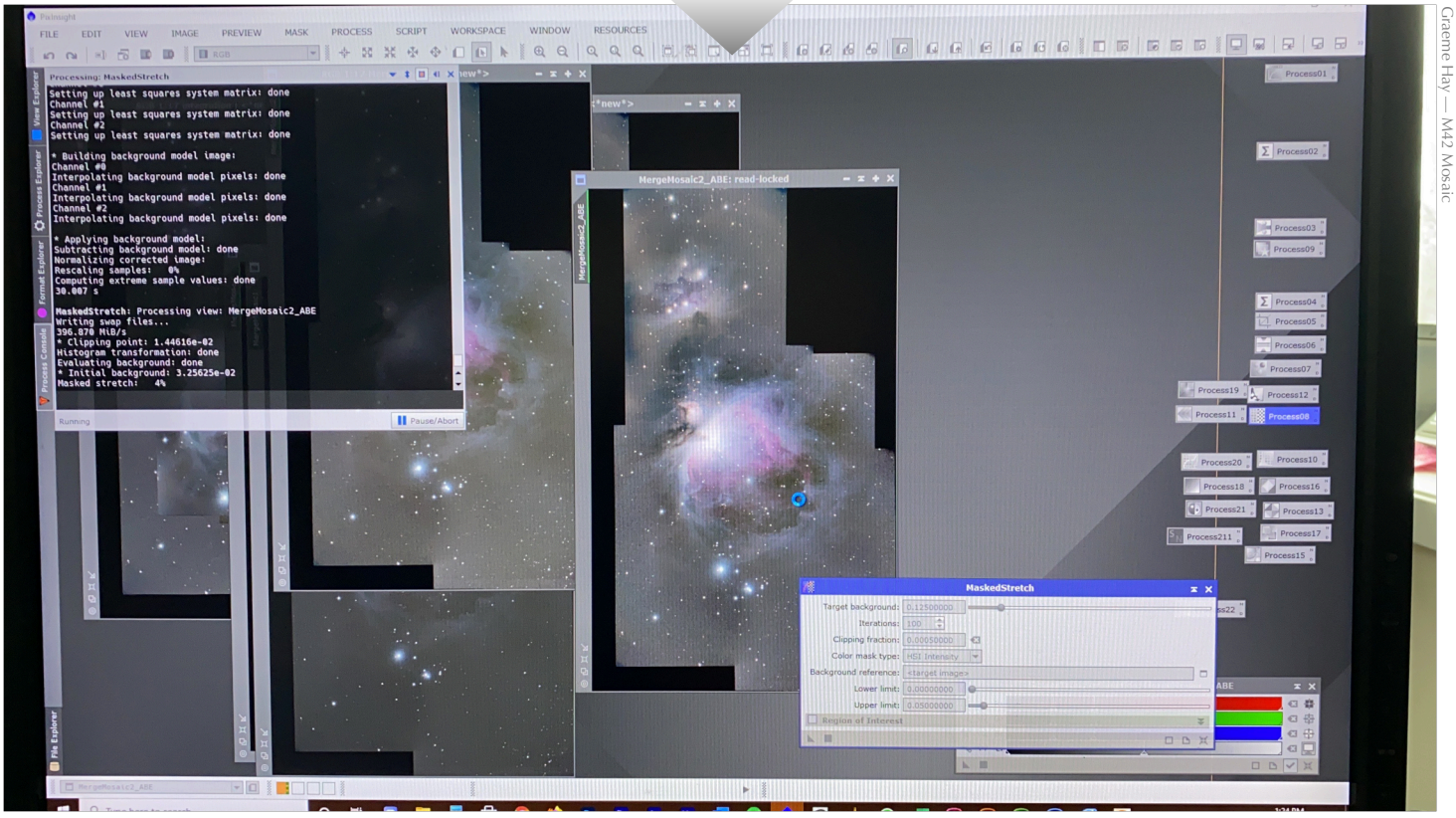
Graeme: It's back now, 1.5 hours later...and that was step 2 of 5 in me trying to make my first mosaic. Remind me next time not to do this (or at least make sure this silly guide camera is working so I'm not trying to handle hundreds of images per frame).

PS. Recommendations on guide camera welcomed.

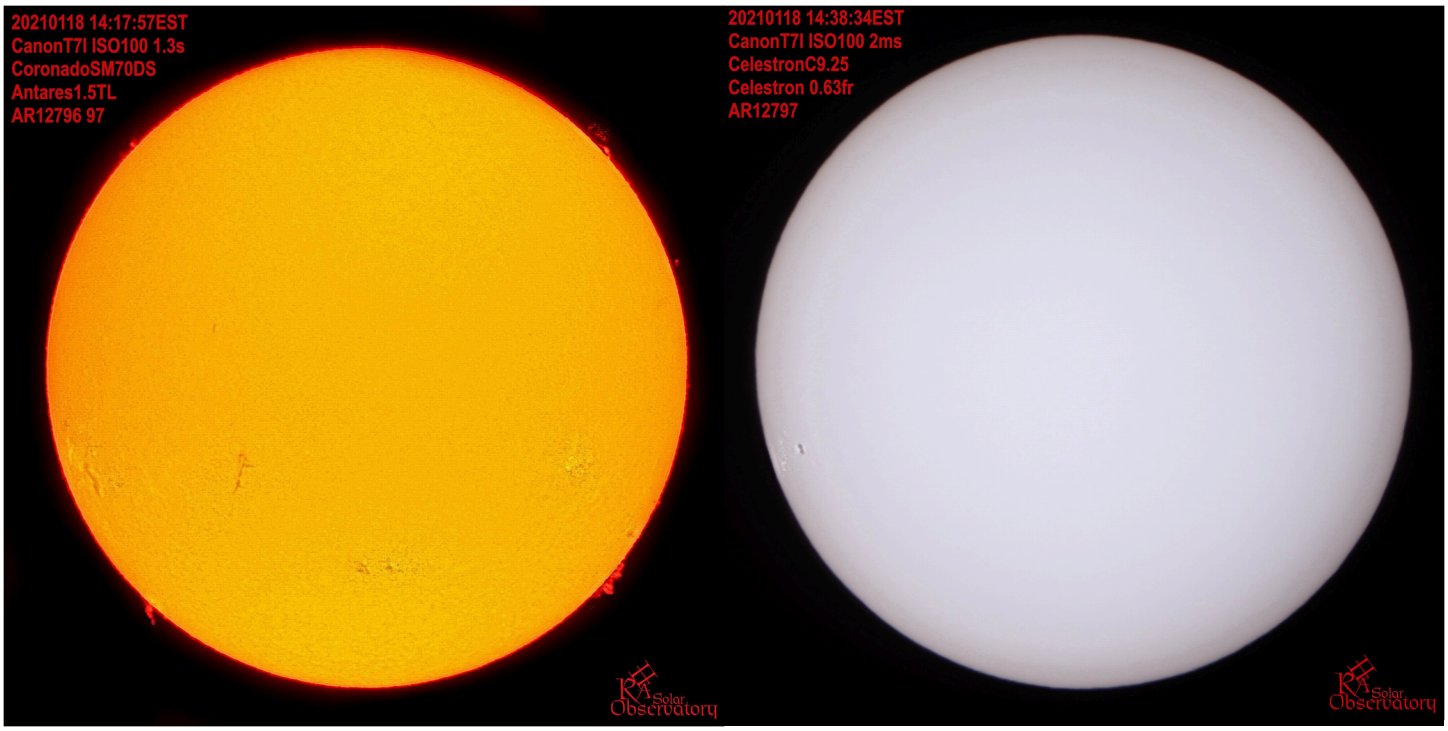
Monday, January 18



Hank Bartlett — Sun



Graeme Hay — M42 Mosaic



Hank Bartlett — Sun (both)

Mon/Tue, January 18/19

Rick: The weather held pretty well here for photometry imaging. The cloud was thin enough to get useful images through the whole evening and after I went to bed. I had to get up about 02:30 (to handle a possible scheduled power outage at the [RASC] remote scope) and found that my last two images were clouded out so I shut down my observatory at that time.

The power outage at the remote scope either didn't happen or the UPS/generator combo handled it so well that it was completely uneventful. Either way, the science team got a whole night of images from there. I have images from Friday of (5457) Queen's but they are quite poor: the asteroid is very faint and any sort of reasonably accurate photometry would not be possible. I took several images of (3269) Vibert-Douglas last night but haven't reduced/processed them yet. I expect similar results to 5457. I can try them both again when they next come to opposition.

Wednesday, January 20

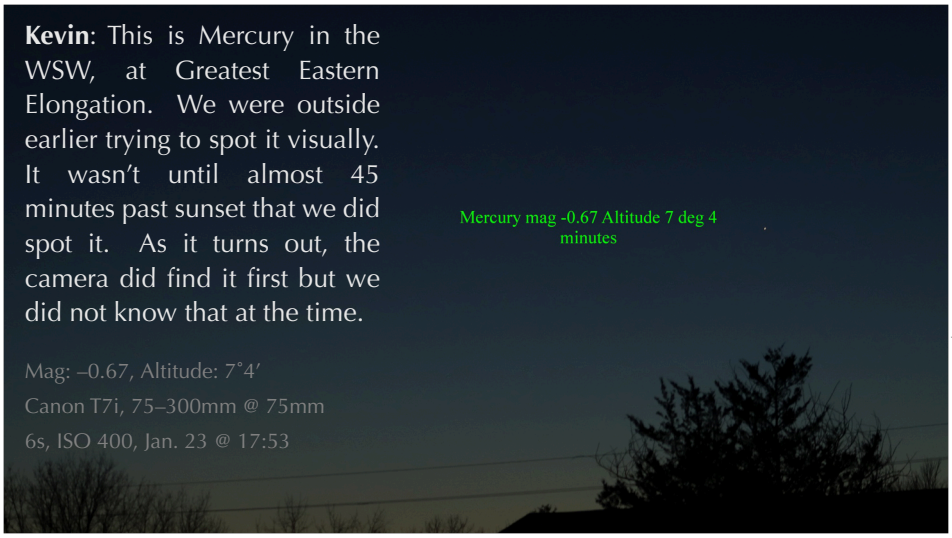
Hank (12:00): I got tricked by an early sucker hole, spent more time setting up than observing. Now all is clear, moving on to the C9.25 now. Seeing is crappy but workable at these shutter speeds.

Sat/Sun, January 23/24

Malcolm (17:35): I went out to the POD to see why my computer didn't show up on my AnyDesk as available. It showed offline, so I assumed it had powered off some–time over the last few weeks since the last clear night.

I went out to see, expecting to just have to push the power button as I've done many times in the past, but it wouldn't respond...it's as dead as a doorknob. I think the power supply has failed. I couldn't find this out at 1 p.m. when a run to Canada Computers was an option —noooo. Sigh.

Stephen (20:06): That's too bad. It's a good night in spite of the moon. This is my first night since the 8th. Everything is working well. It's a cold –13C outside. My electronics are a balmy +3C.



Kevin Kell — Mercury

MarK (20:24): I have a spare power supply if you want it.
Stephen (03:04): I had a major mount control failure. Suddenly the mount stopped tracking. Then it started slewing to strange places. I thought I was scuppered. But after cycling the power to the observatory a couple of times it went back to normal. I was relieved to say the least. Then a little later I had another controller problem. I lost my connection to the mount. That turned out to be a loose power connector to the mount.

It's been three hours now and no further problems. I'm just happy it wasn't anything more serious. Aside from that it's been a good night.
Kim (08:24): Too cold for the cables Steve? Do you monitor the temperature inside the observa–tory? It was –22C this morning.

Quite interesting last night. We went out to see Mercury which was a success. Tonight is its greatest elongation. The temperatures were back to –16C.

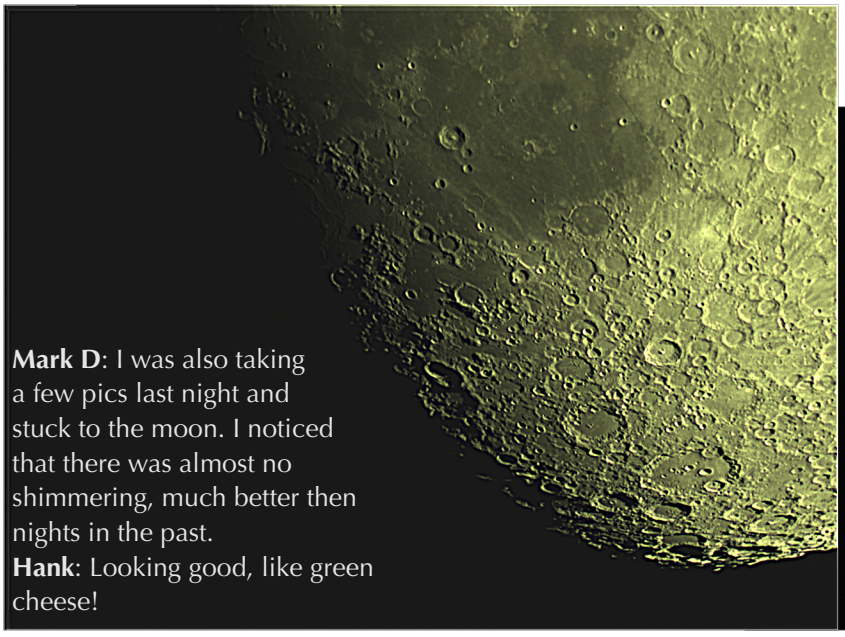
I was out for a bit more looking at Mars and Uranus, the moon, ISS (which I had not planned on—thanks for the heads up Kevin), and tried for M42 but the wall of the observatory was in the way. Came in as the moon was pretty bright and I was cold again (only my fingers). But the temperature had gone up to –13C. So I guess the cold snap has hit us.
Stephen: Yes, the cables were very stiff. The power cable was just loose enough to cause intermittent problems as the telescope moved. I'm glad I found it when I did. I was just about ready to give up, but I figured it was a long night so I might as well keep at it. I had five good hours after that.
Kim: That is great that you got it all fixed. It looks like it might be OK for tonight for awhile, though cloud is moving in to really muck up the works after midnight. Hopefully you will get in a few more hours and more galaxies.
Susan: I am sorry to have missed a chance to observe last night but I wimped out. Good for you folks who got out.
Walter: I wimped out too. It's easy when the fullish moon is up so high and the transparency is not the greatest. I did try to locate M41 in 7x50 binoculars from indoors but the sky was too milky. (I've done this successfully on better nights.)

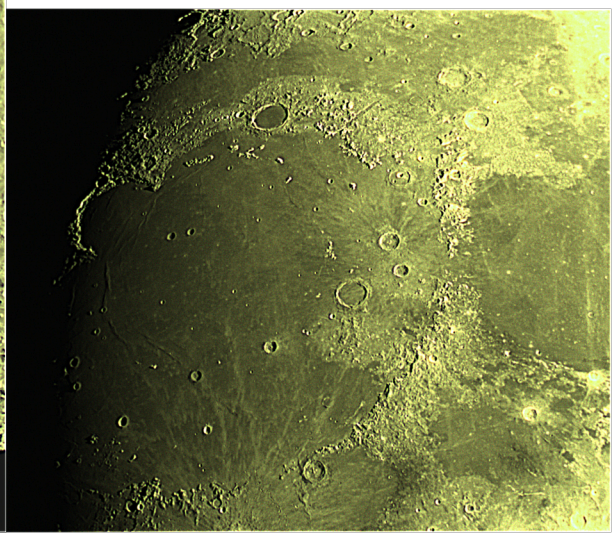
Sunday, January 24

Wednesday, January 27

Kim (10:43): We have a solar break today so looking at the sun in white light right now with the 1000 Oaks filter. I only see AR2797 and a new group in the north does not seem to be numbered yet, quite evident. However I am unable to see AR2799 which is right on the edge of going over. H-alpha not happening until the scope clears the door rail.

Yesterday SDO showed this same area with flaring happening. Has anyone seen AR2799 today?
Keith: Hi, Kim, it is right on the edge so what is showing is a prom and on the opposite side is lots of proms!
Kim: I tried to bring up the exposure to see any prominences.





Mark DesLauriers — Moon (both)

The Gong H-alpha showed nothing.

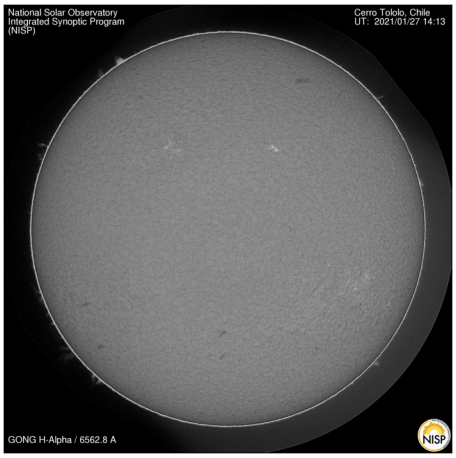
Hank: Unfortunately we had an appointment and other business and I was unable to get out in the clear part of the day.

Yes Keith, lots of proms so I am sad I missed them. Kim I do not understand your remark about "Gong H-alpha showed nothing." There were at least 10 visible in the 14:13UT (09:13EST) Chile image this morning, the ones in the SE are now bigger and bolder, but it is cloudy/hazy here.

What image were you looking at?

Kim: I was looking at Arizona, but looked at all of them.

Hank: I am not aware of an Arizona one. El Teide Spain is the worst, it seems to be consistently hazy there or the scope needs some maintenance. I find Cerro Tololo the best quality, especially for our time zone; I use the US ones when Chile is clouded or bad exposure. One has to keep in mind that although excellent equipment these are from the 1990s and only 28mm diameter.



Thursday, January 28

Kim (11:46): After talking about our iOptron mounts last night I got one set of images of the sun (I hope) before it decided it wanted to do a calibration. So it started, then died.

I have the heat cable around it and I am charging it up. Hank you said you take out a battery pack and plug it in and away you go. What type of battery pack have you got?

I see Chile today has some wonderful prominences.

Hank (12:04): I was just out about an hour ago and yes there are some nice looking prominences, as usual Chile has the best images to go from. Unfortunately both sun spot groups are too small to see in white light with the ED80 and it was too damn cold to mess with the C925 as I do not have power on it yet and that means by hand.

The mount performed well. I use the Celestron Power Tank Lithium and it has been good so far. Under normal conditions it last me about two months per charge. The mount like I said does groan a little deeper with the cold lube but it performs just as good as warm weather. I keep the power pack, controller, and camera indoors. The scope and mount are covered only with an extra large clear garbage bag to protect from any falling moisture meaning leaks or dew, the bottom of the bag is left fully open to allow air circulation.

Good luck if you get back out there.

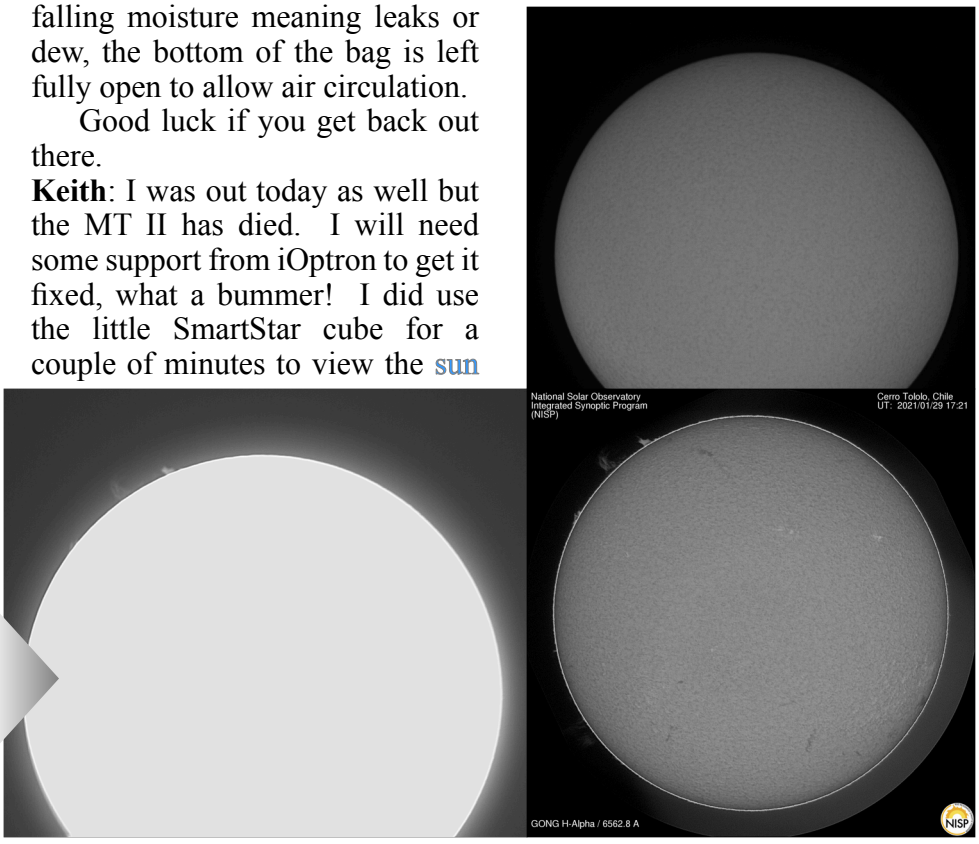
Keith: I was out today as well but the MT II has died. I will need some support from iOptron to get it fixed, what a bummer! I did use the little SmartStar cube for a couple of minutes to view the sun but the scope is way too heavy for it, but at least it worked even though it was in the observatory frozen.

Hank: That is too bad, Do you think it is electronic failure or is it possible that due to your higher moisture there it got some condensation and then ice in it? Do you think it might be worth opening it in the cold to investigate that? I hope you can get support to figure it out.

I am just starting to look over my images for selection and then processing. I should have gone back out at noon for peak altitude.

Keith: I brought the MT in a couple of days ago when it first broke down, so it could warm up. Everything seemed to work once warmed up.

I did take it out yesterday for a look and it did malfunction, but after a couple re–starts it seemed to run, but when I took it out today was a no–go, get an error message "Cannot communicate with DEC motor controller," also it thinks it is a equatorial mount and there is no



Kim Hay — Sun (top, bottom left)

Cathy: Couple sundog photos taken Friday morning. Opened the balcony door. Cold on bare toes...

EOS REBEL T3, 1/250s, EF-S 18-55mm f/3.5-5.6 IS II @ 55m f/10, ISO 100, Jan 29 @ 09:22:52

SM-A102W, 1/5155s, 2.9mm f/1.9, ISO 40, Jan 29 @ 08:13:30

Cathy Hall — Sundogs

option to change this and I cannot get the screen to light up in such a way so that I can read the darn thing.

Have contacted iOptron and am waiting for a response.

Friday, January 29

Kim: The main thing today was to make sure the mount was still working. The sky was so–so with clear patches so I got a few images of the sun in H-alpha and over exposed for the prominences. It was –9C at this point of the day, coming up from –23C in the morning.

I used the Solarmax 60 ZWO ASI120mm. There were no sun–spots. There were 600 images taken and I used AutoStakkert!3 to process the images with the best 50% used. I cannot get a full disk with this camera, and a 0.5 focal reducer causes focusing issues, and there is already enough of that.

These are black and white images. One step at a time, next would be to take them into more processing and add them together, that is for another day.

Saturday, January 30

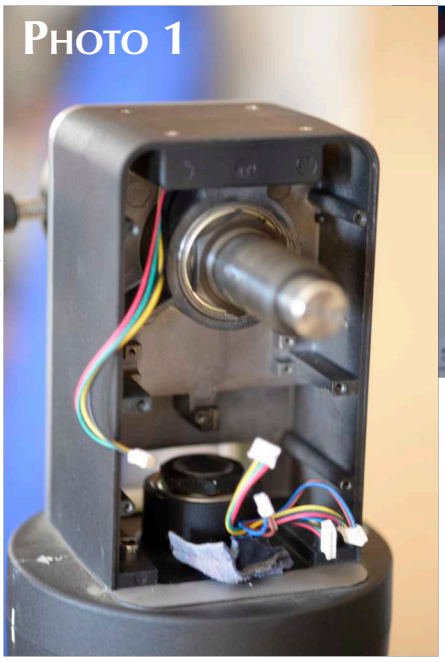
Kim (12:50): If you can get out, the prominence in the southern hemisphere is big.

Hank: Thanks, I did get out and I am just reviewing the few images I took now. Seeing was quite poor. I will post later on FB. Hope you got some good imagery.

Keith: I am working on the repair of the MT II (photo 1), looks like but not absolutely sure, the connector for the DEC motor has broken away from the circuit board and the mating plug was not completely home. So now the connector is reattached to the board. This is the DEC motor with some of the gear train showing (photo 2).

I will check everything else before I re-assemble. iOptron suggested to send back to them but I doubt they would find the trouble because they would test inside in the warm, not out in the cold, but they were kind enough to give suggestions for troubleshooting

Hank Bartlett — Sun (H-alpha)



Keith Neumark (both)

and a guide that they use to do so.

With a little luck I will have everything back together and ready for the next sunny day, but of course when I do that our weather will suck again because I will be ready.

Hank: Well thank you for the sacrifice of your downtime so the rest of us can have clear weather. I would never tackle such a job. You are a brave soul, but then it was your business to do such. I hope it all tests out fine and you are up and running soon.

I did get out today but I have not processed anything yet.

Keith: I have it all back together now, just have to align the two shafts and tighten, then test. So viewing could be in jeopardy. I have some heaters coming on Monday that should help, but if I got this right I may not need, fingers crossed!

I did get out to view also today, used the old equatorial manual mount. Lots of proms and some nice filaments, one very long one, I could see.

Kevin: Please pass on any info from iOptron to use as well please. We leave our iOptron mount outdoors all of the time as well...

Sunday, January 31

Hank: I think yesterday my brain had freezer burn or it is just being 68 and a little more *duh* than usual.

It was –12C when I went out to the RHA Obs. The sky was clear and there was little wind. I set up at noon and looked in the scope and all was well but seemed a little diffuse and harder to see than usual. I shot some images and then over the next 15 minutes or so the observing seemed worse and darker. There was bad seeing and it was moving fast in/out so it was very hard to get a focus. I adjusted the etalons, and the Richview and still could not get better resolution or brightness. My fingers were getting cold so I took what I had, shut down and started closing up. Last thing is to close the roof and that is when I saw the problem. I had not dropped the south wall; sun was at meridian when I started and likely it was just peeking over the wall from the scope's angle of view. With the shade on the scope I did not notice the sun was dipping back down and therefore the aperture of my view was getting smaller and smaller. Because the sun appeared in the eyepiece at the start (normally at this time of year the objective is in the shadow of the wall until I drop it) I forgot to drop the wall, DUH! Usually I am out about an hour earlier and the wall must be down. The sun is moving north and tricked me!

This image [*previous page*] had a lot of processing work to get it to what it is.

There is a nice bright bridge prominence in the SW today but the sky has already hazed over for today so it is unlikely I will go out unless it clears again.

Mike: Nice shot Hank! It is so nice to see prominences on the sun again.

Sun/Mon, Jan 31/Feb 1

Stephen (19:37): When I saw the clouds creeping in late this afternoon I thought, "Oh well that's it for tonight." Then after dinner it cleared out! I had time for a galaxy before moonrise. I picked up a nice little spiral in Cepheus. If it's still clear after moonrise I'll go after some star clusters in Monoceros.

Rick (20:30): I would be out observing but I've had some scope problems. Two mornings in a row the mount has blown the fuse on the dec motor line when parking the scope. I thought I had it fixed after the first time but apparently not. Then this morning I blew the RA fuse—my last one. I think the worm grease is getting too thick in the cold (though I've not had the problem before.). I've now re–duced the max current from the scope controller and hope that will cause the mount controller to just turn off the motors before blowing the fuses. Then, when it warms up I'll re–grease the worms/gears.

Until I can get to a Canadian Tire or something similar to pick up some new fuses I'm scopeless.

Malcolm (20:37): I'm doing a mosaic of the region around Eta Carinae. Nice and clear in Chile too.

Stephen (23:41): Got haze at 11:30. With the moonlight it's too much. Time to quit. There will be better nights to come.

Mon//Tue, February 1/2

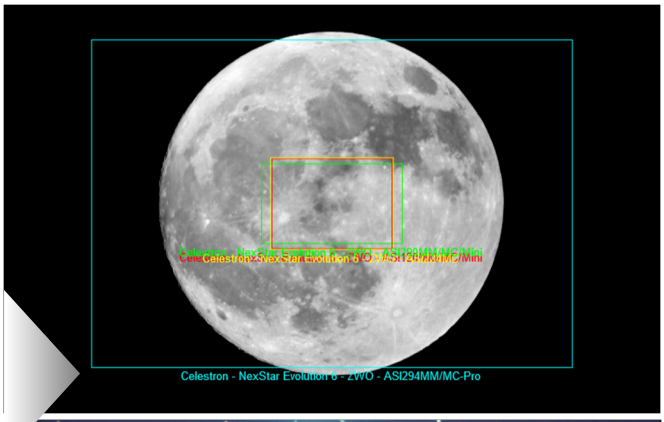
Mark D: Tried out my new camera last night. It has a much larger FOV compared to my ZWO 224. Makes it so easy to find things. I even found the Horsehead Nebula and M42 was not bad for 150s of imaging.
Malcolm: Nailed it.
Kevin: Wow. Here is the Astronomy Tools website FOV calculator visual results.

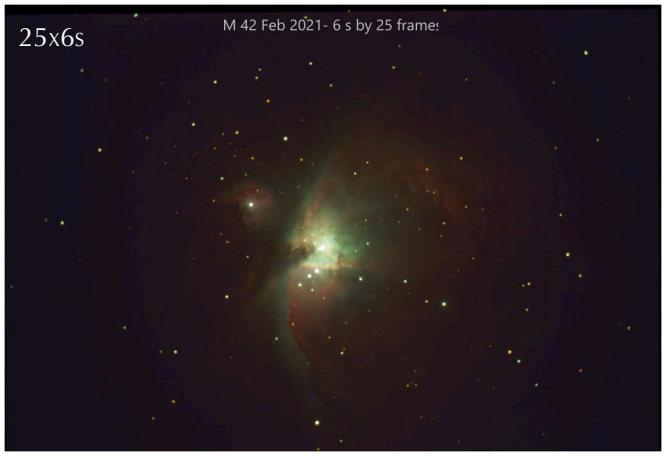
- Kim has a ZWO ASI 120MM, I have a ZWO ASI290MC.
- You had a ZWO ASI224 and now have a ASI294.

The first three cameras all have the tiny FOV in the middle of the moon. Your latest 294 is HUGE!
Mark D: The FOV is a real game changer for me. More real estate means more stars means much easier stacking. Makes finding the objects soooo much easier with my modest goto mount.

Wed/Thu, February 3/4

Stephen (20:54): Sorry I left the Zoom meeting so abruptly. My computer reset itself. I was going to leave early anyway though. There was a beautiful crystal clear sky calling me. Right now I'm doing a nice little galaxy cluster in Orion. Moonrise is at 12:30. I'll see what I can do before that. As it's close to quarter moon maybe I'll be able to get some galaxies in spite of it.
Kim (21:20): Good social. We went out and there was a lot of high haze and light pollution from Kingston but did what we wanted. Only –3C, not bad. Hope it stays clear for you Steve. Hope you got your scopes fixed Rick.





Thu/Fri, February 4/5

Rick (20:31): I too cut out early, in the middle of Bruce's item. He froze on my screen so I said 'oops Bruce is gone again' and then I noticed that everybody was frozen. So rather than fight with it only to get back connected after everybody had left I just took advantage of the interruption to get back to some photometry (Nova Per 2020) that I wanted to submit.

My fuses finally arrived this afternoon so, now that the string of great weather is over I'm back in operation. I didn't realize the new equipment curse worked in reverse—the weather turned good when my scope died. (Well actually I did get a few sessions in last week before the scope crapped out.) However, things look quite good this evening so I'm running until the cloud moves in.
Stephen (20:40): I managed to get a little stretch of clear sky this evening. My telescope controller failed as I was setting up and pointed the telescope at the floor. Luckily I picked up a spare in Ottawa yesterday and was quickly back in action. Tonight I have a nice pair of galaxies in Aries.
Rick: Something's wrong when you have to have extra scope controllers on hand. I hope they aren't too expensive. My SiTech controller was ~$900US as I recall so I don't keep extras in stock.

I still wonder if the power out here in the country is a problem. My iOptron mount

stopped working for a couple of days then seems to be fine. Once in a while the big mount suddenly forgets which direction is which and tries to do a meridian flip under the pole instead of over. Our electronic kettle is once again misbehaving for the third time—after a week or so it just fixes itself. Computers keep doing weird things, software suddenly stops working, drivers don't work...

I was thinking about building a little voltage meter using an Arduino—check the AC voltage ~100 times per second to be able to resolve the 60Hz, fit the voltages against a sine wave and flag errant voltages. But I couldn't find a circuit that would do the job.

Kevin (07:49): UPS UPS UPS. Not the postal service...battery backup, RFI filters, surge protection, brownout top–up. High winds out in rural areas can cause high voltage wires to touch or otherwise ground out on trees, etc. This causes a lot of noise in the waveform. Absolutely essential piece of kit in the observatory.

From our house, 50' extension cord to observatory. UPS with laptops and telescopes and SuperSIDs and 12Vdc chargers for deep cycle battery, then another 50' extension cord to the Tardis and another UPS there, then another 50' extension cord to Serenity. No UPS there as a lack of funds prevail at the moment.

Susan: What did you get for the Nova? It was out of reach for me last night. I think that the best I did in that field last night was 13.2 and it has been below 14, I think.

I got in a great estimate of an Auriga target and a practice hop for an Orion target just as the sky was blooming into white cloud and moonlight.

Still great to be out with minimal glove wearing. I had new handwarmers to test but it was not cold enough!

Closed up before 10 p.m. and got the outrigger cozies on for the next few days.

Rick: I measured it at 16.32. Someone has reported that a periodic variation at ~3.3 hours has been measured. It is quoted as an 'orbital period'—the orbital period of an accretion disk around the white dwarf I think?

Anyway, not going to see that with anything less than a 16". Oh wait, I have one, maybe I should try to actually see it once. Nah, just kidding—never look through your scope folks!

Susan: Yes, 16.32 is well beyond what I can do! All I get is a hole in the sky.

Friday, February 5

Susan: I recorded a note in my Jan 8 log that NGC 1647 was 'a nice!!!' OC with two pairs in the centre. So tonight I thought I'd check out some photos online. Most of the photo matches to my memory were questionable. Then I saw a drawing by Eric C. Graff posted on Cloudy Nights and there were my prominent pairs. This made so much sense. Visual compared to visual. I hope to remember to check these at other times when noteworthy aspects seem to elude the camera's eye.

Kim: That is a great idea Susan. I do like Cloudy Nights. I have been checking there for my solar scope image issues.

Sat/Sun, February 6/7

Kevin: This image is 3x20s, showing the ISS coming low out of the west, heading SSE. This is taken with a Canon T7i DSLR on a tripod, using a 2 second timer. It was about –8C with a good stiff wind.

Kim: I was using the Canon ELPH using 2 sec exposures, then moved up to 10 seconds after it moved into the S/SE. It was a nice pass. The stars were coming out nicely, though there was cloud.

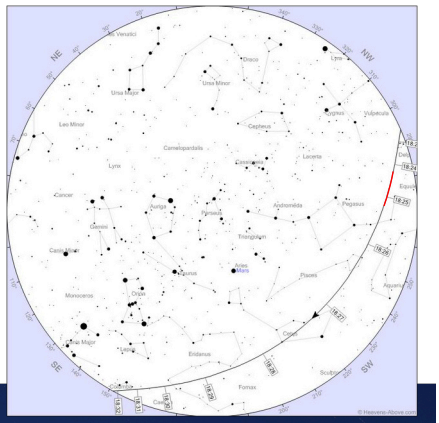


Chart from heavens-above.com

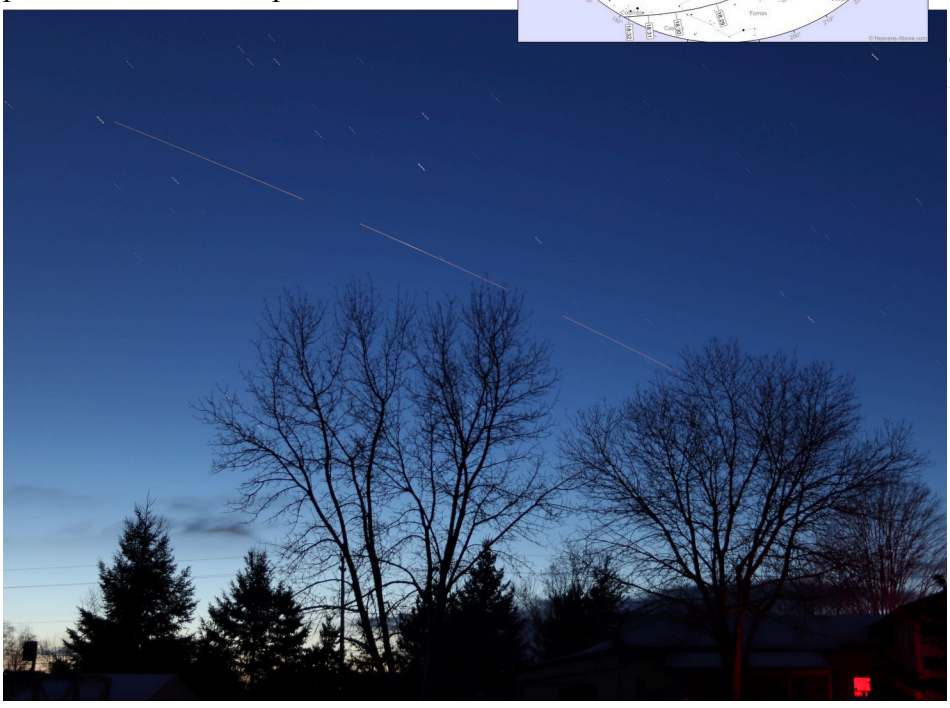
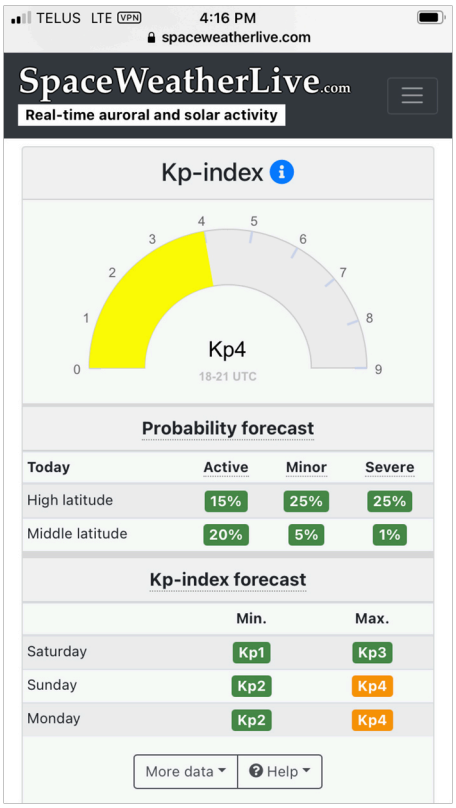


Image by Kevin Kell; L–R: Feb 6 @ 18:24:11, 18:24:40, 18:25:07; Canon T7i, 34mm f/4.5, 20s,

Malcolm (16:17): Kp4.
Hank (22:04): Wow, it must be cloudy.
Malcolm (05:13): Yup and it went to five.



Kim (06:45): After we watched the Kalamazoo scope at Arizona Village (where the skies were clear and we saw zodiacal light, great images) we checked out the Kp index—yes 5 and yes cloudy here.

We did watch the ISS go over at 6:24 p.m. though.

It was a full astronomy day with lots of talks, and observing.
Rose-Marie (16:55): Going to be partly cloudy this evening, dare we hope for another Kp 5? I have plans to go down Unity Rd to the marsh if it does.

Sun/Mon, February 7/8

Stephen (20:06): It was all clear when I set up. I got my first image run started at 7. Then the cloud rolled over. It took a half hour but finally it cleared and I was back on track. Judging by my guiding the wind is gusty. Hopefully that will die down soon. I'm doing galaxies in Aries and then later in Leo. It should be a good night!
Rick (20:17): Going strong here too, right from the end of twilight.

Not a bad week: Thursday, Friday in California, Saturday, and now Sunday. I think this is session 13 for me, though admittedly, there was a bunch of them that didn't last a whole hour.
Stephen (21:42): I decided to do Hubble's Variable Nebula (NGC 2261) in Monoceros. It's been over a year since I last imaged it. In my initial process I can't say that I see any variation from last year. I'll take a closer look after I complete my processing tomorrow.
Stephen (02:53): I decided to do galaxies in Leo Minor and Ursa Major as they looked interesting. One problem in that part of the sky is that it is largely devoid of stars which makes finding decent guide stars a problem. I had to pass on one nice looking spiral as there were no guide stars in the field of view.

Thursday, February 11

Mark D: After talking with Susan and Cathy after the Zoom social they suggested I make a custom mounting plate for my mount on my back deck. This is a Celestron 6SE.


Mark DesLauriers

I am hoping that it will be easier to take my mount out the patio doors onto my back deck minus the tripod legs.
Hank: Way to go Mark! Now build a removable box to go over it to seal it from the weather and you will have your first observatory!
Rose-Marie: Will you be standing or sitting? I'd be mounting a crossbar corner piece (supported to hold weight of telescope) so that I could fit my legs in the corner while sitting.
Hank: He will be sitting in the house with a wine, or outside with a cold beer at the patio table come summer.
Walter: How do you look in the other two directions? You'd have to get off the deck and perhaps stand on a stool. I'd be putting a pier in the middle of the deck for all-sky access. In the summertime you could attach a table to the top of the pier for non–astronomical use.
Mark D: I can see from the NE to the NW, 2 storey house behind me. For the North I just unscrew the plate from the mount and scope goes back on tripod—5 min job.

Almost all of my observing is EAA with a ZWO camera running a USB into my house, scope is controlled by wifi. As Hank says wine in the house while observing.
Rick: Who are these people who think telescopes are for looking through?! Telescopes are for attaching a camera and a computer then going away and letting them do their stuff.

This is very cool Mark. I may try something similar myself for setting up a scope for the coming solar max. It depends on which mount I put on my pier near the water. The intent is that it should be the Titan (carrying the Hankscope) leaving the iOptron for portable use and installation on

the deck. I haven't yet got the Titan working so the iOptron is currently mounted by the water primarily for use with the Sky90 refractor (for photometry and deep sky imaging) or with a camera/guider plate for wide-field pretty pictures.

Hank: Walter, don't be absurd: no one "LOOKS" in a scope anymore! Ha hahaha.

MarK: Find a 45° angle piece with threads on each end and you would very nearly be polar aligned, if you point north.

Thu/Fri, February 11/12

Stephen (18:54): It looks like it will be a good night. I'm already on my first target, a nice little spiral galaxy in Eridanus.

Walter (18:57): Just started here (20 minutes late). Got 231 variables queued up. It's +23C in the control room, a little colder outside...

Stephen (19:05): It's –10C here but +10C in my electronics warm box. It's a wonder what a 60W light bulb and a bit of insulation will do!

Kim (19:06): There seems to be cloud in the south. What is the temp there?

Rose-Marie (21:21): Of all the times for youse guys to fire me up to get out there...BRRRRR! The air hurts my face and the toes on my right foot are still numb.

So anyway... BigWetNose dragged me out earlier and I could see that it was clear and no breeze. So I lined up some constellation targets to revisit and officially make note of their bright stars that I was grumping about having missed. Dragged out my snowmobile pants and dusted them off, big felt–lined work boots, heavy coat, neck warmer, new nifty fisherman's hat with the ear flaps, gloves, gathered up notebooks and spinny and binocs and waddled out to the truck like the Michelin tire guy. Drove over to the cemetery, realize I forgot my flashlight. Drove back, waddled back into the house to grab two of them. Drove back over and parked at the back. They have paved most of that back lane, and they keep it clear so I had nice dry pavement, no slippery snow to tiptoe around on. Set about roaming the sky with naked eye and binocs. There's a bit of that cold damp haze, just enough that I couldn't make out the Milky Way. That's not necessarily a bad thing, one can easily find con–stellations under those conditions. Was out there for about 45 minutes, picked off 10 of 11 of my target species. Boötes is under the horizon; if I'm up later I can just walk out the driveway to get that one. Okay, now to sit down and try to make some neatness out of a winter's night scribbles.

Kevin W (04:48): That's devotion, and genuine old–school dressing for the weather. Maybe add a balaclava next time for your face? There are some creative knit designs such as this one.

Rose-Marie: Only one problem with that hat: my glasses would fog up, and it would difficult for them to ride the bridge of my nose. Well, two problems: I'd be competing with Rick, and I wouldn't want to upstage him with those braids. Just wondering where one would find a pattern for such an unusual garment.

Did a bit of a write up in my brand spankin' new notebook, was in the dollar store yesterday, needed a calendar planner book and saw the spiral bound sketch books so got one of those. Also spied a clipboard with the flat paper holder, doesn't stick way out like the old style ones with the big spring clasps. That came in handy to hold the loose sheets. That's another consideration when you're taking notes outdoors: any loose pages can be blown away by the breeze.

Will spend the morning sifting through earlier observations and adding part B to some of the constellations.

Bodily functions have a habit of interrupting one's sound sleep and forcing one to leave a nice warm nest, and so it was that I was up at 4:30 a.m. Even the BigWet–Nose was content to stay curled up on the couch. Stoked up the wood stove and then peered out our front window that faces east to see if I could find Venus, but there was a band of clouds up to about 15° above the horizon. I was not too disappointed in that as I was dearly wanting to crawl back under the covers.

Rick: Good for you Rose–Marie! That's dedication. I actually broke out the snowmobile suit and big snow boots last night. And I wasn't even actually "observing."

For the first time in a couple of months I set up the Sky90 refractor and QSI583 camera to shoot some pretty pictures but couldn't connect to the mount with the computer so no refined goto, no guiding. I shot some unfiltered 100s exposures of M46 and M47 that look pretty good—it's lovely field in the wide–field refractor. The planetary in M46 shows up nicely as a little smoke ring. (I still need biases, darks and flats for those before

stacking.) I tried some longer exposures to do some photometry but the cables were getting too stiff and the tracking went all to pot. I also put the DSLR and 100mm lens on my barn-door tracker and took an hour on Sh2-264 (it is barely detectable in the stacked image, going to need lots more exposure) and another hour intended to capture the Rosette, the Christmas Tree Cluster and the dark lane extending north from there but my aim was off a little so it cut off the north end of the dark lane. It wasn't actually very transparent last night so both pictures come out a little muddy. With all of that I probably spent a couple hours outside. And of course the Boltwood scope was imaging variable stars all night. I had hoped to bring out one of my Dobs to do some visual while the other three cameras were working and achieve my first session of four 'scopes' running simultaneously but the cameras and fractious iOptron kept me too busy.

Oh, I also started off the evening with ~1 hour on NGC 925 in the Boltwood scope—nice very open-armed barred spiral (SBd). I have yet to stack those. I'm sure Steve has already captured that one.

Susan: Good for you guys! I am disappointed in myself for not getting out. It was not perfect here but it is a shame not to be out in the night.

Stephen (05:02): Terminal cloud at 5 a.m. Time to quit.

Walter (09:31): I suffered half a dozen plate solve failures about 3 a.m. which halted the run. The sky had nice transparency earlier but by 3 a.m. was looking distinctly milky (confirmed by the satellite view) so I decided to pack it in. I still managed to image over 160 variables though.

Looks like that was our clear sky for the next week...

Mark DesLauriers—M67

Mark D: Tried out my new deck rail mounted MacGyver project last night. Worked well, imaged M 35, 46, 47, 48, 50, 65, 66 and 67.

Dieter: Nice shot. M67 brings back memories of my introduction to the Hertzsprung–Russell Diagram, and its role in showing stellar evolution.

M67 is an old open cluster, whose main sequence has "peeled down" to the F stars, hence more evolved and older than clusters still containing hotter stars on the main sequence. Wikipedia has a nice summary.

Interestingly, when I googled "M67," I also got links to a recoilless rifle and a hand grenade! But you probably knew all that already, and hope you will forgive me for reminiscing about my past.

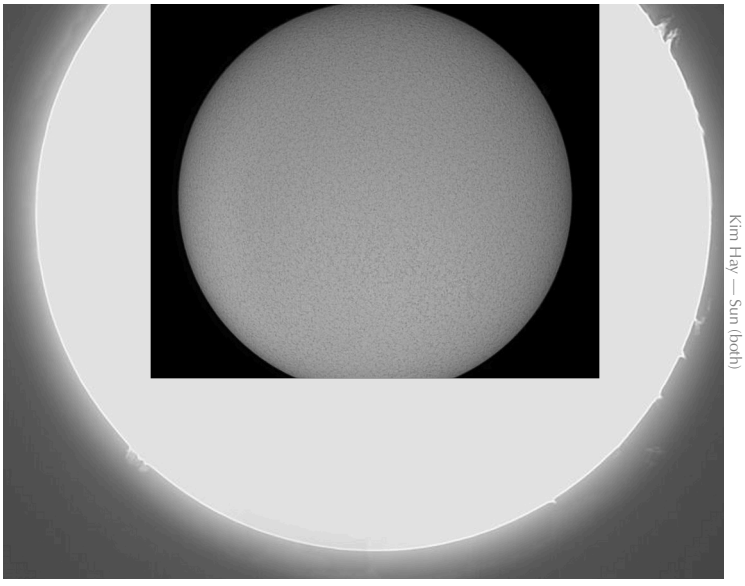
Mark D: I did get the hand grenades also. Stay safe.

MarK: When you get really worried is when you get links to print your own M67.

Susan: I hope there is some simplification of the process with the mini–pier.

Kim: We looked outside, it was cloudy, or possible light pollution to the south, and it was clear overhead, but at –14C and dropping...nope, could not do it. Speaking of light pollution, does anyone have history for a full year especially during winter if their skies were worse due to snow?

I did solar earlier in the day, and took some photos of the sun; the prominences had changed quite a bit from the day before but most



Kim Hay — Sun (both)

of the images seemed too washed out though on the screen they were OK.
Here is the picture [*previous page*] from Feb 10th showing the prominences and from yesterday [*inset*] with only surface detail.
Images taken by SM60 ZWO ASI1200mm, SharpCap, and AutoStakkert!3.

Fri/Sat, February 12/13

Stephen (21:47): Well it took a while but it finally cleared. There is still some high cirrus but I don't think that will bother me much. Tonight I'm imaging more galaxies in Lynx and Ursa Major.
Rick (22:24): Yeah, what's with that? All the forecasts I've seen are for cloudy but it's actually better out than last night when it was supposed to be clear. Whatever, I'm taking advantage of it. Though it is cold out. Glad I don't have to be out there.

In California however, it's cloudy once again so I'm shooting a bunch of bias and dark frames.
Rose–Marie (23:41): Currently defrosting my toes, gotta put on the bigger boots and the wool socks.

Lined up 4 more targets that I could get right out the back door. Set up the 15x70s just off the back deck, set a step stool out to sit on, and went about finding M35, M37, M47, and Kemble's Cascade. Got those 4 and then brought in tripod, binocs and stool and went down to stoke up the woodstove to warm up a bit.

Came up and thought 'oh, Boötes should be good tonight,' so went out the front driveway and admired that constellation. Came in and took a look at the sheets for what else might be a target, tried for the double in Boötes but it's just a tad too hazy on the horizon, plus the Glenburnie store must have put up more floodlights. Geez, it's like a ball park over there now, stupid lights are blinding. Glad I don't live directly across from that nonsense. Anyway, not finding the Boötes double I settled for the easy pickins of Mizar in the handle of the Big Dipper. Some of these doubles and clusters and whatnot will have to wait until warmer weather in spring. Still got some lunar targets to hit, hopefully get some clear weather when the moon is waxing full and beyond.

Still debating which is worse: mosquitoes or this brutal cold. I think the cold is winning on which torments me more.
Stephen (00:22): It's darned cold out there tonight. Outside my window it's reading –21.2C. Inside here it's a balmy +21.2C. I hope my scope is doing alright in the cold. So far no problems evident. My warm box is doing a good job. It's keeping my fibre optic transceiver at +3.5C. That's just with a little 60W light bulb. I was thinking back to my younger days staying out all night in the cold. I sure couldn't do that now even if I wanted to.
Stephen (02:47): Too much cloud. I'm falling asleep. I quit.

Tue/Wed, February 16/17

Stephen (20:27): It's a miracle! The sky cleared right at twilight. I wasn't expecting that until much later. I dug a path out to the observatory and cleared the snow off the roof, then opened up. I'm back to my galaxies!
Malcolm (21:27): Nice, good for you. I still haven't addressed my computer need in my POD and I'm now inclined to wait until the spring.
Rose–Marie (22:46): Thanks to Steve's email telling us the sky was clear I was suckered....er, rather inspired, to try a couple more targets for the Explore the Universe program. I'm glad I shovelled out around the back deck this afternoon.

So...went after stuff in Perseus, got Melotte 20, Alpha Persei Group, and the Double Cluster (NGC 869 & NGC 884) in the 7x50 binocs, then in the 15x70 Celestron.

Having got those I went in to see what else. Oh, Beehive Cluster between Regulus and Pollux, that's coming up over the house. Got it with the 7x50 but when I wanted to move the tripod, the quick release catch on my plate was coming loose, so some cursing as I had to get pliers to tighten it up. Delays in the house and then when I came back out and got binocs onto tripod it had hazed over, so some more un–ladylike language. I was want–ing to get the double star in Cepheus. I hate Cepheus. Of all the constellations I have a hell of a time finding Cepheus, and then all of a sudden I see it *right there* and am asking myself why I always have such trouble finding Cepheus. I think I found my double but not quite sure, will revisit this one later, now that I know where to find stupid Cepheus.

Stupid haze, coulda gone after the ones in Boötes and Leo. Moon is setting and clear sky woulda been nice. Now we'll have to suffer through this cycle of brighter moon but I've still got some lunar targets to go after.
Stephen (23:04): I've been watching some cloud approaching from the NW. Luckily they have largely evaporated. That caused a bit of haze for a while. That didn't adversely affect me very long. We should be good to go now for the rest of the night.

Rose–Marie, I'm happy you manage to get out. I'm glad to have helped.
Stephen (13:08): The temperature was down to –25C this morning with frost over everything but my telescope's corrector plate!

Rick: I finally noticed the clearing about 10 and went out to find...I had forgotten to get back out in the afternoon to pull the snow off the obsy roof, shovel the stairs, shovel the walk to the office...and while I was starting all that it clouded over. However, I persevered, expecting that the cloud was a small band. By the time the snow was cleared the sky was too. So it was a good night.

Sure wasn't expecting that –24C in the morning. Only 6 degrees below the forecast! And what a sky almost all day! Gotta love that blue—I know all you solar types were out doing good work. Weren't you? Sure wish I had a solar scope, eh Hank?

I find Cepheus is quite distinctive but, I've never heard anybody else mention it, I find that there are two of them! If you think of it as shaped like a child's drawing of a house, then there is also a roof line coming off the side of the true constellation. Delta Dra forms the peak of the false roof. On a couple of occasions I've picked the wrong one.

Sat/Sun, February 20/21

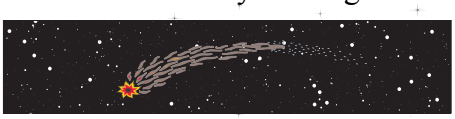
Stephen (21:07): The sky cleared sooner than was forecast. I had a technical problem but overcame that with a cable replacement. There is a bright moon out there and a bit of haze but it's not too bad. I'm imaging star clusters in Monoceros while I wait for moon set then I will do a couple of galaxies in Virgo.

Susan (21:56): Tonight was my best chance so far to evaluate the eyepiece I purchased soooo long ago. Wow! I just stood there staring at the moon. The Straight Wall really popped and when I checked some stuff on the *Virtual Moon Atlas* the note said 1 day after First Quarter was best for viewing. The seeing was good as the moon was so high.

My crazy little hand cozies worked well and as Mark K suggested I have put my chemical warmers in a jar to see if I can extend their life.

It was great to be out.

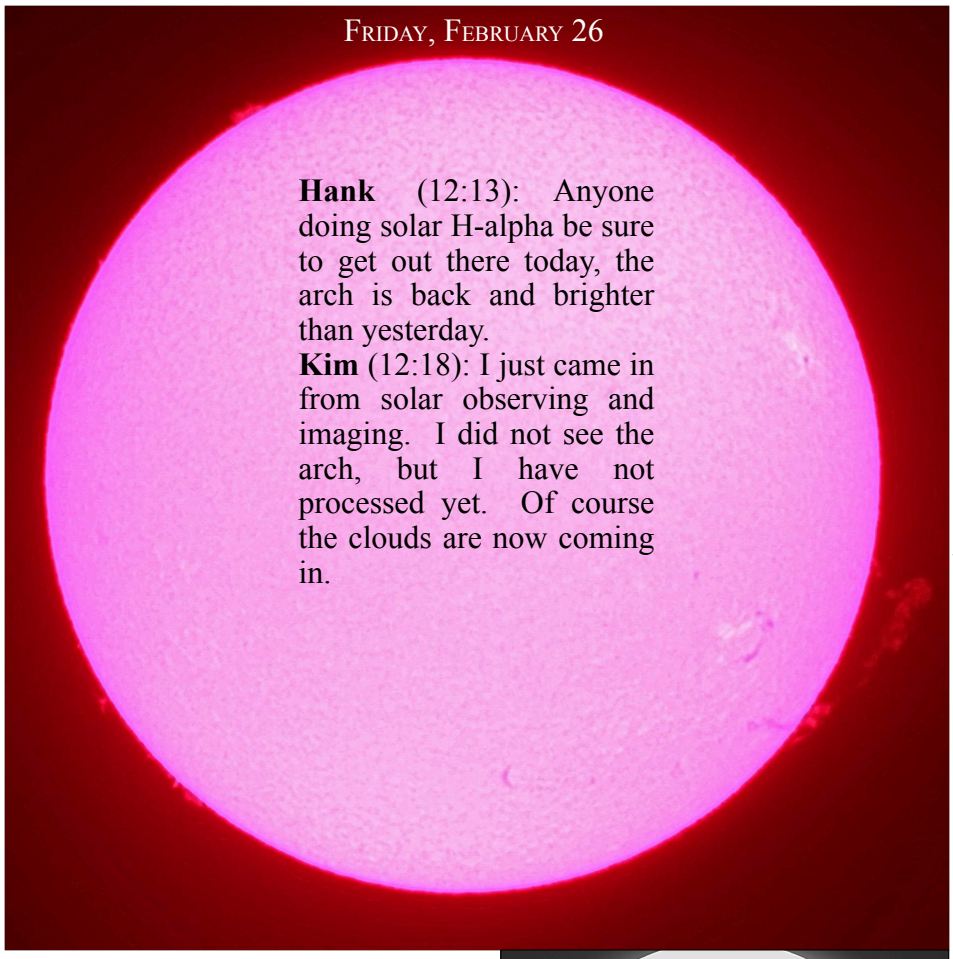
Have a good night all you remote folks with your long lists.



…Birds can also be observed against the sun's disk. Which reminds us of DeLisle Garneau's remark, "When I saw it flap its wings, I knew it wasn't a sun-spot."

—Skyward, October 1953

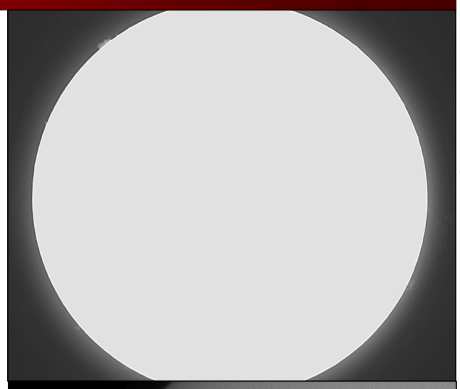
Friday, February 26



Hank (12:13): Anyone doing solar H-alpha be sure to get out there today, the arch is back and brighter than yesterday.

Kim (12:18): I just came in from solar observing and imaging. I did not see the arch, but I have not processed yet. Of course the clouds are now coming in.

Hank Bartlett — Sun (H-alpha)



Kim Hay — Sun (both)

I did also do a white light image, and as known I will need to get extension tubes to get the whole sun in, but this is my first attempt with the ASI120. This is **AR2804**. AR2805 was not visible in white light but it was in H-alpha.★