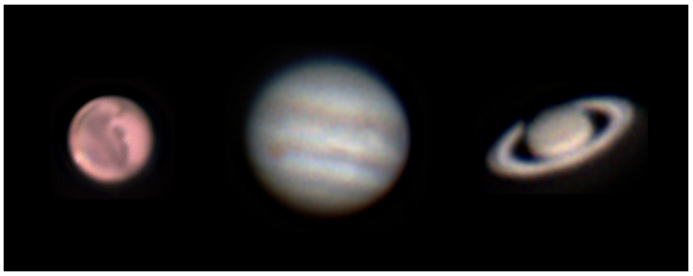
September 2020

Skyletter

RASC Kingston Centre



Kevin Kell

Mon/Tue, August 31/September 1

Rick (23:07): Well that's a POOP! Second night in a row, beautiful sunshine, deep blue sky all day long, then it clouds over just before sunset. Last night I decided not to fight it and went to bed. But tonight I was going to push through. The sunset cloud was moving off and thinning, the next band of cloud on the satellite images was several hours away. So I started up, got 4 or 5 images of MW Lyr and lost the guide star.

Sure enough, the cloud is in early—it expanded dramatically across srn Ontario to push in way early. So I decided to try some guiding tests—after all the cloud will have to get pretty darn thick so I can't guide on frigging Altair! Got about 2min guiding before Altair disappeared. I'm giving up and going to bed. Sheesh!

At least it's clear in California (not even too much smoke tonight.)

Susan: I had said to David at about 5 p.m., 'it is hard to see that this sky will all go away.' Silly.

Rose-Marie: I got to see the moon come over the trees and that was about it, though I got to see it near Jupiter and Saturn the past couple of nights.

Stephen: I got three good hours Sunday night. I saw cloud building in last night so I didn't even try.

Wed/Thu, September 2/3

Stephen (21:34): I'm right on the edge of the cloud: it is cloudy to the S, clear to the N. I'm imaging in Cygnus which is just far enough north to be in the clear. Hopefully it stays that way.

Mark D (21:43): Cloud seems to be drifting N so I have taken my scope down.

Stephen (21:50): Yes, I have cloud now too. I'll wait for a while to see how the night develops.

Stephen (22:42): Cleared up at 10:30. I'm back in business!

Rick: Cloud here got up to about 50° elevation in the S but never obstructed any of my targets, so I had a good night. Guiding was also much better than it has been for several weeks. Mars seemed like it was nearly overhead during nautical twilight. I'll have to try to get out to image it again. Then I'll have to learn how to process the silly things—I didn't have much success last time.

Susan: We had a thickish layer that I watched until 23:00 and gave up. This was consistent with Clear Outside, but not the more optimistic CSC. I really wanted to have a go at the moon with the new focuser.

Thu/Fri, September 3/4

Rick (21:57): I opened up just before the end of nautical twilight and got 6 images of MW Lyrae to nicely fill in part of a gap in my light curve. But it clouded over as expected so I've shut down, not realizing that the rain is only a few minutes behind the cloud edge. Unfortunately all the convection has collapsed and all we'll get is a brief period of rain. I was hoping for some lightning or at least thunder.

MarK: Roger and I attended a Hamilton Centre meeting and when it ended, I closed up the roof under mostly clear skies. I came downstairs and put my empty beer can away and then asked Linda, 'is that rain?' Sure enough, it started to pour. Thank goodness I had closed the roof! I was thinking about doing some more observing for a bit, so it was a good thing I closed up on the off chance I would not make it back up.

Fri/Sat, September 4/5

Stephen (20:45): Cloud rolled in just as I was setting up. The satellite shot shows the cloud shrinking. Hopefully it will not last long. Once it's gone it should be a good night.

Rick (21:21): I was all opened up and slewed to my first target when, fortunately, I checked the satellite image, which immediately prompted a look at the radar, which showed an area of light showers coming. I had to shut down *rapidement*! I'm hoping it will clear behind this puff of cloud, though the NOAA Band 16 images show what could be cloud or could just be cooler conditions behind the cloud. I'm keeping the camera cold and waiting to see what happens.

Stephen Craig — M57

Stephen (21:34): As of 9:30 I have stars! I just have to wait for the last of the muck to clear out and I'm back in business for the night.

Rick (21:55): Same here. GOES 16 is still showing most of Ontario a different colour than right along the lakes. I think it might just be the cooler ground but it's got me nervous.

Stephen (22:23): The sky is crystal clear here. Air temperature is falling quickly. I think you are just seeing cold ground.
Stephen (00:19): I suddenly lost my guide star. And I thought maybe Rick was right and there were clouds. Once outside I saw it was still crystal clear. My target was behind a tree! I'm now onto a target in Cygnus. No trees there!
Stephen (01:06): Cloud suddenly developed right overhead at 12:45. I'll have to wait and see what it does.
Stephen (01:51): Clear sky returned at 1:40. I hope it lasts. I lost an hour.
Rick (03:15): Cloudy here right now, shouldn't last too long. It's a small patch and thin enough that I seem to be able to image through it. More importantly I can (barely) guide through it, mainly through the gaps between the little puffies.

I find that once I lose a guide star Maxim always starts guiding off into the distance, so if the guide star is gone for more than ~20–30s it has moved out of the guider window and so is unrecoverable and all subsequent exposures are ruined.
Malcolm (04:15): A thunderstorm over the lake woke me up about 4:00 a.m. I saw a couple of flashes from the corner of my eye which tried to pull me out of my slumber and I thought at first it was one of my electronic devices, and tried to go back to sleep. Then it happened again, and I realized it was lightning but there was no thunder, the storm I guessed was moving away and it was almost over.

I looked at radar app to confirm. Then I looked out the window and saw a nice crawler across the sky over the lake, but far enough away that the moonlit sky was full of stars. I grabbed my camera, tripod, fresh battery, memory card, cable release, flashlight, got dressed, put on some shoes... The last flash I saw through the window was the last one, period.

Sucked in again.

Stoopid hobby.
Stephen (04:31): My targets in Cygnus and Vulpecula are sinking in the W. Pegasus and Andromeda are too close to the moon. It's almost the end of the night, so I am calling it quits.
Susan: A nice night. Cloudy periods allowed some chart browsing. I enjoyed the temp change in the observatory.
Rose-Marie: Well you weren't the only one sucked in [Malcolm]. I woke up around 2:00 a.m., then tossed and turned and couldn't sleep. Headed out to the living room, and since it was rather cool I decided to put a bit of fire on in the woodstove, then watched Star Trek Voyager on Netflix on my phone. Finished up an episode around 3:30 a.m., turned off the lights and curled up on the sofa, and *flash*.

Went to the window, and *flash* again, a nice crawler like you saw. Checked the radar and saw that a line of storm was going across just S of Kingston—I could see the top of the cumulus clouds just over the trees. Thought 'great!' Get my jeans and coat on, grab camera and head down to the dock. Got a couple of so-so shots; the best part of the storm had already passed. Argh!

I was down there til about 4:20, bit of a cool breeze coming down the lake. Headed back up and curled up on the sofa in the room that was by now nice and cozy.

Rose-Marie Burke—Lightning

Mark D: Looks like two eyes and a mouth just above white pine.
Malcolm: I finally looked at my pics from this night and this was taken about 3:48 a.m. I was hoping Orion would get higher, and that the storm would last longer. This is the only tendril of lightning I caught.

Looks naked without the POD.

Malcolm Park—9/5, 03:48, 24mm f/11, ISO500, 15s

Hank: I didn't even think of that: you are podless. You must be so sad and lost.
Malcolm: Not sad...looking forward to the next location, wherever it is. A little lost, but on the bright side I have Chile.

Sat/Sun, September 5/6

Stephen (21:25): I'm amazed! It's the start of the night and the sky is clearing! It looks like a good night. I wasn't really expecting it as I lay down for my nap at 7.
MarK (21:28): Do not get too excited. It was clear, but a bunch of clouds just rolled in from the west.
Graeme (23:04): Clear here now, there were clouds before. Waiting for the moon to clear my annoying tree line, then trying for that and likely Mars beside it?
Rick (23:12): Tonight's the night they are closest. In fact I think it was earlier this evening and now they're already getting further apart.
Stephen (23:07): I'm still clear as a bell. Looks like it will stay that way.

I lost an hour to a technical problem: my mount software lost track of where it was in the universe and wouldn't point at anything. I had to remember how to do a factory reset and re-enter my location, *etc*. All is well now and I am imaging in Cygnus.

Rick (23:10): From the satellite imagery that's just a small patch. I didn't notice the clearing until 10:15 but got started the moment I was aware (and our TV show was over anyway). I'm hoping for another all-nighter—this will be session number 101 for me this year.

Rick (23:16): While it's clear here, California is just smokin'. I pulled a night out of the fire last night—got a full night of data in spite of a quite murky sky with a decidedly brown colour to the west on the all-sky cams. Tonight they aren't even opening the roofs because of the threat of falling ash. Glad it was science night last night and not tonight.

Rose-Marie (05:30): BigWetNose just had me outside, I wondered if the red dot next to the moon was Mars.

Sun/Mon, September 6/7

Graeme (22:27): So I'm just here waiting for the moon to rise above the tree line so I can get some cool close-up imaging and somebody on the lake is playing Johnny Cash music really, really loudly…

Hank (22:32): Aren't you the lucky one. I hope it doesn't affect your imaging.

Graeme (22:36): I'm sitting in this big directional dome, and that makes for much louder-sounding speakers. Currently running a dark library...

Seeing is the pits and there are slight waves of clouds. I can't seem to catch a break doing lunar/planetary (my observatory isn't well placed for low horizon imaging as I normally point more "up").

Hank (22:38): I am processing solar from a real hazy morning session. It is working out, but the haze adds work to it all.

Graeme (23:28): I'm capturing Mars now, then I'll try 5x, then move to the moon...it's already really bouncing around in the camera, so I'm not sure how good it will be to get, and there is a cloud about to hit it too.

Graeme (23:36): At 5x a lot of red/green fringing—likely over sampling but 'why not' try?

Rick (00:55): I would think that Mars is still low enough that you're getting atmospheric dispersion. If you check the angles (*i.e*. rotate the image to alt-az instead of north up) you'll probably find that the green fringe is on the top and red fringe on the bottom.

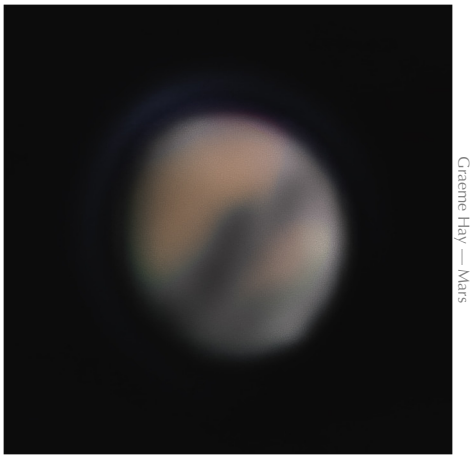
Looks like the cloud is nearly here. I had a major failure earlier this evening: the power supply to my main camera seems to have died (hopefully the camera still works; hopefully SBIG/Cyanogen still sells the old-model units.) So I had to switch to a camera that doesn't have a built-in guider chip, so no autoguiding. I expected this would be quite serious, however tracking tonight has actually been very good. It is not up to the most critical pretty-picture standards, but it is very acceptable—Maxim reporting flatness about 0.3 or better. If this holds up, it opens up all kinds of easy routes to automation. My main complaint with CCD Commander has been how it acquires a guide star, so if I don't need to guide I can start using CCD Commander for completely automated all-night imaging.

Rick (01:04): Oops, cloud has moved in—last image shows far fewer stars. Shutting down and heading to bed.

Graeme (02:00): Wind is picking up, so I've shut down. Apparently I have 109GB of data. Crap, planetary videos eat HD space!

Graeme (03:30): So with Rick's comment about atmospheric dispersion being a potential factor, I went back and imaged Mars before I shut down for the night.

With apologies to planetary imagers everywhere...I don't know how to process the image the "right" way—so this was just Photoshop. Yes, there appears to be a thin blue halo around the planet... not sure why... might be due to my processing technique.



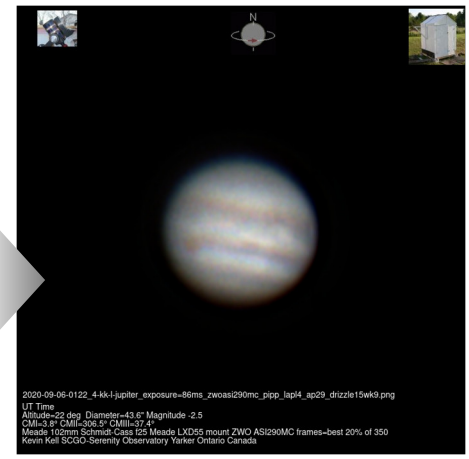
Graeme Hay — Mars

MarK: Mars has a ring. And you are its discoverer. You will be famous!

Stephen: I had a great night last night. I was expecting it to cloud over around midnight, but that didn't happen. I had a very brief interval of cloud just after 1 and then it was clear until 3:30! I had a look at the moon and Mars with the binoculars. Very cool!

Kevin: It has actually been just 2 or 3 weeks since my last imaging night with Jupiter. This is in the early evening, maybe an hour after sunset and before Jupiter hits the meridian.

This is actually the best image of the night—the very first 30s image (normally the 120s images are better).



Observing Power

Rick (Sept.8): I can't believe it. So the power supply to my SBIG camera died sometime in the past few days and wouldn't power the camera yesterday evening when I went to start up the observatory. So I switched in my QSI camera, downloaded and installed the latest driver and Maxim plugin, restarted the computer, and everything went swimmingly after that.

This evening I went to start the camera to take the required bias and dark frames and the camera driver has corrupted Windoze. The computer tries to start up, fails, tries again, fails, finally offers to attempt a repair. It does a restore point to yesterday before the driver installation and the computer boots. But the camera driver is gone. I tried installing the legacy driver—same result. WTF. Does nothing I own work the way it should without spending hours f-ing debugging?

Anybody want a free collection of telescopes and cameras and computers?

More seriously, I'm wondering if we have power problems at the house. Could the AC be bad (lots of spikes or brown-outs) that are causing my problems? Could this be tested for and how and who would do it? Could I do anything about it (whole-house power conditioner)?

Kevin: Have you, or anyone else on this list, considered a whole house surge protector on your main panel? I think it would be $300-400 but may require a spare/empty circuit breaker location.

Power to our observatory starts at the back deck on a GFCI jack, then a buried 50' 16 gauge extension cord to the observatory. Then a UPS to help bring up the voltage if need be. The rest of the observatory is powered through that (LED lights, white lights, telescopes, laptop, 12VDC battery, netbook, and SuperSID radio telescope).

Then *another* 50' extension cord (16 gauge?) out to the Tardis Observatory, where another UPS is there for support. That runs the Torus telescope, Torus computer, LED lighting, imaging laptop).

From there *another* 50' extension cord runs out to the Serenity Observatory. No UPS there—I ran out of them. It runs a laptop, the RadioJove radio telescope, and the telescope mount.

When we build *another* larger observatory out in the back, I think it will be about time to dig up the 16 gauge power cables and replace them with heavier 14 gauge or 12 gauge ones.

So, get a small UPS (you are not using it for long term power but rather filtering and support—brownouts and low voltage) when needed. You also get a software package that lets you log power events (serious ones, not minor noise), but in general there are RFI filters in the UPS as well.

John: I put in a whole home power surge protector a couple or four years ago and the number of noise events that my UPS recorded dropped after that. Yes, I did need an empty breaker to run it through. I bought one of the Mike Holmes approved packs that did electrical, phone and sat. I think I paid about $300 for the set, but not sure now.★

Fri/Sat, September 11/12

Stephen (22:35): I'm having a good night so far. Transparency and seeing are both good. Now that the moon is out of the way I'm back to imaging galaxies in Pegasus. Right now I'm on NGC 7469 and IC 5283, a pair of interacting galaxies also known as ARP 298.

Rick (22:38): Looks like a not bad night—the sky looked a little grey and murky at about sunset but there are stars out. I notice that the CSC is showing moderately good seeing for later tonight when Mars is near the meridian. I'll take a break from photometry to try some imaging with the one-shot colour camera.

Oh, and my SBIG camera is back online. This seems to be another one of those random temporary failures that we've been getting with all kinds of electronics. I brought the camera and power supply into the office,

checked the voltages on all the supply's output pins and they all looked good. OH NO I thought, that means the problem must be the camera. But I tried connecting it all up on the desk and it seems to work fine. So I reinstalled it in the observatory and it has been running about normal. Which is to say not very well—I think there is something wrong with the shutter. Every so often, shortly after starting an exposure with the main camera chip the guide star suddenly disappears. If I let the main exposure complete then it is very dim. So I think what is happening is that the shutter is closing ~30s into the exposure. If I terminate the exposure then the guide star reappears on its own. Hopefully this is a power issue.

We're going into Ottawa, on Monday probably, and I will buy a honking great UPS to see if it conditions power to everything in the observatory and corrects some of my problems. (There are also peculiar software problems that I can't explain, though how they could be the result of power problems I don't know.)

Rick (23:38): Looks on the satellite imagery like there may be cloud moving in earlier than I was hoping. I'm trying a run tonight with CCD Commander so, in theory, I can just go to bed now and when I arise in the morning (clear of eye, sharp of mind, fresh of breath) all the images will have been taken, the scope parked, and the camera warmed up. I just have to close the roof. On the other hand, if cloud moves in...

More disappointing will be if the cloud gets here before Mars hits the meridian and that's still a long time off.

Rose-Marie (00:30): Right now there's haze to the S, and I was wanting to look at some things in and above Sagittarius.

Stephen (01:57): The cloud seems to be largely evaporating as it comes. But we may get it before morning anyway.

Rick (06:21): Mars was very nice. I spent some time looking at it at up to 1300x which was still quite nice and steady. Tried imaging at 1911mm focal length, 3822mm, and 6880mm with the 178C colour camera. There was a little bouncing around and focus was rather difficult, but I hope I got some decent data—certainly it was spectacularly better than the last time I tried.

While I had the colour camera on the scope I tried some live stacking on a few objects using SharpCap. The camera is pretty messy even with 15s exposures but it's kind of fun watching the image build and get smoother. It's a sort of visual astronomy with a camera; in just a couple of minutes you can see quite a lot.

I'll see if I can get anything worth sharing from the GBs and GBs of data.

Kim: We were out in the early evening. Watched Mars rise, took a look through the Dob but it was still very murky.

Susan: Glad there was a good night for the photo gang. I was having a good time, but had to give up at 00:30 with cold feet! Guess it is time to get the winter boots out. Still, it was nice to have what I did.

Kim: Winter clothes were on last night. I had 10C in the observatory at 10 p.m. It was 6.6C in the back yard. This morning it was 1.2C in the back.

I did try something neat last night: with the small Canon I put the Star Analyzer in front of the lens and took a picture of Vega and Jupiter. Got spectra, but have not analyzed them yet.

Keith: I went out last night as well. Jupiter was bad, Saturn looked a little better, swung over to Mars which looked much better then started to go bad,

I checked the front glass—it was dewing up, so I put on the dew shield, turned on the heater, and everything was looking good. Then I used the flashlight to check the front glass and discovered the inside of the scope was full of spider webs—son of a &#$%. Have some major cleaning to do.

Sun/Mon, September 13/14

Graeme (19:32): I have cloud wisps to the SW. Not holding my breath, going for Monday night.

Rose-Marie (22:17): Cloud to the S here. I could look at stuff to the W and N but it's damp and cold out there tonight. Also going to wait for Monday.

Stephen (22:45): I'm getting some good images. Transparency isn't great, but it's workable. I'll class tonight as a success.

Stephen (03:18): I have cloud at 3:15. Well, that was a pretty good run considering it was supposed to be a cloudy night. I got in six good hours!

Malcolm: I wonder how much of that poor transparency is smoke?

Hank: It looks like all of it today, wow, HAZY.

Mon/Tue, September 14/15

Malcolm (20:22): Well, all my stuff is in totes except one thing:

my Canon 15 x 50IS binos!

I stepped out into the fresh twilight air for a look at the planets, and despite my poor eyes I made out the moons around Jupiter, and the rings on Saturn. What a difference image stabilisation makes.

Then, just for fun, I looked straight up at Albireo and easily resolved the gold and blue stars.

Well that was fun. I'll have to do it again.

MarK: Next thing we know, Malcolm will be buying eyepieces!

Malcolm: I have some somewhere.

Stephen (21:07): It's a very hazy night. Probably smoke from the western wildfires. I was going to image in Andromeda but it is too low in the muck. I'll have to wait for it to rise higher. It remains to be seen if tonight will be usable for what I want to image. I'm glad that I made use of last night!

Rose-Marie (22:53): Can't see much of the stars out here tonight, all the S is clouded over. Supposed to be fog developing after midnight. Argh.

Stephen (23:26): I'm getting some results in spite of the haze. I went for a couple of bright easy targets while waiting for Pegasus and Andromeda to rise higher. I got my best yet image of M27! Now I'm imaging SN2020ssf in NGC 7722. It's not obvious as it is right on top of the central core, but it is there.

Stephen (01:49): I quit. The haze is getting too thick. I can't see anything.

Kim (05:33): I was up at 3:30 a.m. and took a look. Very hazy on the lower 50° horizon and though there were stars, it was not very clear. The temperature this morning was 2.1C.

John: Lots of haze here last night for the lower half of the sky at around 0200.

Rick: We were 5C this morning when I finally dragged my backside out of bed at 7:30. The sun was a deep pink ball—clear indication of smoke.

The sky at the remote scope in California was a deep dark brown and the smoke drifting between the buildings was quite dense. The Creek Fire burned right past the site, leaving the peak on which they sit unscathed. However, apparently the site is now felt to be out of serious danger and, in fact, they think this might have been a good thing in some ways. They think the fuel in the surrounding area has been so thoroughly burnt that they don't expect any fire danger for the next several decades. But of course this has nothing to do with climate change —The Donald assures us that cooling will start soon!

Thu/Fri, September 17/18

Stephen (21:49): I'm off to a good start. I acquired my first target at 8:59, right at the end of evening twilight and started my image run. Transparency is a lot better than the other night, though seeing is not the best. There is no problem finding my faint targets tonight. I am working in Pegasus and Andromeda.

Stargazing at the L&A Dark Sky Viewing Area

The best stargazing weekend of September is upon us. If the skies are clear of clouds, head to the Dark Sky Viewing Area and take in a magnificent view The Milky Way, Jupiter, Saturn and other late-summer constellations. Bring a blanket and a camping chair to enjoy the most southerly dark sky site in Ontario.

The Lennox & Addington Dark Sky Viewing Area recently installed physical distancing circles on the viewing platform and the surrounding grass area.

The circles are a minimum of 2 metres apart from one another and can incorporate tripod set-up for most cameras and telescopes. Each circle should also be large enough for 1-2 camping chairs (if visitors within the circle are from the same household).

In total, there are 8 white physical distancing circles painted on the concrete platform, with 7 additional circles spaced out on the surrounding grassy area. The 8 circles on the concrete have a reflective coating for extra visibility during overnight hours.

We ask that casual stargazers (*i.e.* no telescopes or cameras) utilize the circles on the grassy areas in order to allow stargazers with tripods to set up on the concrete platform.

Please practice physical distancing by keeping 2 metres (6 feet) away from others while visiting. Sanitize your hands when entering and exiting the Dark Sky Viewing Area, and consider wearing a face covering or cloth mask. For more information about physical distancing and other health & safety measures, please visit Kingston, Frontenac, Lennox & Addington Public Health's website.

Also note that portable restroom facilities are not currently available at the Dark Sky Viewing Area.

The Lennox & Addington Dark Sky Viewing Area is located at 7980 County Road 41, 37 km north of Napanee. If you have questions, please don't hesitate to contact us. For more details, about the site, please visit DarkSkyViewing.com.★

Thu/Fri, September 17/18

Rose-Marie (20:22): I did find a site that says the ISS is to rise over the SW at 9:02 p.m. tonight, so...about to get camera and big binocs ready to get some actual astronomy observing in tonight.
Malcolm (20:42): Doing the same thing too! But I have cloud problems. I am only doing this because it's a bright pass.
Rick (21:08): Thanks for the alert! Jeanette and I went out on the deck to watch it and it was quite impressive. At its brightest it was, to our eyes, an almost exact twin to Jupiter in brightness and colour. As it faded high in the sky it became very red and finally faded away. I've never seen that before. Jeanette suggested, and I think she's probably correct, that it was probably the US west coast fires.
Hank (21:12): Just watched it, thanks Rose-Marie! I was out testing the collimation of the C4.5" and still a little off.
Malcolm (21:31): Interesting, I saw the red on my pic and wondered about that. Glad you can confirm it visually. Shame I couldn't get the whole pass but here's what I got:

Malcolm Park — ISS

Rose-Marie (00:37): I went down to the dock and set up the camera, wasn't sure where it was coming up. Got about 4 shots, different segments of it, will download tomorrow and see if there's any red colour.
Graeme (00:40): It was clear earlier tonight but now it's a sheet of clouds.
Rose-Marie (00:53): Good clear night here. Just before dusk I was cursing some stubborn clouds on the southern horizon, but when it got to be "true" dark they had finally moved off.

I set up on the patio with the view to the S, figured I'd get after objects around Sagittarius. The Lagoon Nebula is easy enough to pick out. I'm going to have to do some studying on the other muddled up bunch of stuff running up through the Milky Way. Scorpius looked good at the start but then the lowest S horizon hazed up. I took photos of Jupiter, Saturn, Sagittarius, and Scorpius.

One object I had picked out to aim for was the Hercules Cluster. Oh joy, oh joy. Couldn't find it in the 7x50s, went back up to the house and googled it up to see what I was looking for. Took the Celestron big binocs down and boom, there it was.

Canon Rebel T5, 18mm f/5.6, ISO 6400, 22s

Rose-Marie Burke — Summer Milky Way

Fri/Sat, September 18/19

Rose-Marie (23:02): So much for my lofty ideas of getting more observations. But...I did take the camera down to the dock and took a bunch of reference shots of the Milky Way at Sagittarius. It's a good thing Jupiter is right nearby—it provided the base for taking overlaps. These will help in sorting out objects, or so I hope.

Anyway, serendipity is when you're standing there holding the camera release cable and you see that a meteor streaks over the area you're pointed at. Did it catch it? Yes indeed. Not a spectacular meteor, but one easily visible naked eye.

Rose-Marie Burke — Canon T5, 18mm f/4.5, ISO 1600, 28s. Cropped, enlarged.

Rose-Marie Burke — Canon T5, 50mm f/1.8, ISO 3200, 5s

Kevin: Well, we did go outside at first dark Friday night. Kim saw the first ISS pass, I did not...

After building a new Hartmann mask, a new dew shield, a new tripod prop, I did a two-star alignment on Arcturus and Altair then went to Jupiter as it was nearing its highest altitude, due south.

I kept getting pesky Fire-Capture "capture failed" errors, probably due to a bad cable jack and plug connection. After the initial 30s run, it looked like seeing was poor (Jupiter was bouncing all over the place). The next 30s run with autoalign turned on still showed Jupiter bouncing around a lot, this time in the 'z' axis, *i.e.* towards and away.

I attempted the first 120s run of the night, had another "capture failed" and was frustrated enough to pack it in for the night. I parked the scope, closed the first roof part, and it banged up against the new dew shield. Arrg.

I removed the dew shield (rubber bands) and will cut it down

a bit in size for Saturday night's attempt.

The Talentcell Rechargeable 6000mAh Li-Ion Battery with Charger $46.99 (December 2017) continues to work great. I plug it in to charge after the session and plug it into the scope for the session.

I did update the images of the scope and the observatory that I use to annotate the image.

I downsized the original image just a tad and got a much smaller file size. The lack of enough frames really shows the noise, artifacts and no real detail.

Rick: What a great night last night. I've started shooting 2x2 binning with the Boltwood scope with no autoguiding (nice oval stars) which means I can go with shorter exposures, and automation with CCD Commander works much better. So that enabled me to get 125 images of my variables. And that includes the effect of having spent over an hour playing with my spectrograph.

I got the 3.8° prism yesterday in the mail so installed it with the SA200 on my ASI174MM Mini on the Boltwood scope. Got spectra of Vega, β Lyrae, RR Lyrae, Albireo, and a couple of Wolf-Rayet stars (they have really prominent emission lines, so make for exciting spectra).

And I had the Sky90/iEQ45/Canon 60Da running (though still couldn't get autoguiding working with either Windows or Linux computers) through the night to collect ~400x60s exposures of the western Veil Nebula and Pickering's Triangle, M33, M45, and M42. I have lots of processing to do.

One of the next couple of nights I may even break out the 12.5" dob for some visual observing.

Rose-Marie: 'twas a wonderful night. At least I was able to do some photography for a bit.

Sun/Mon, September 20/21

Stephen (20:10): I got all set up to image tonight and discovered that one of the cats chewed my cable to the observatory. I have a backup cable but I won't be able to string it until daylight.

Hank (22:51): I just finished processing my today image and it appears there is low but significant activity in the solar NE. The bright prom in the SE, the filaments, and one bright spot across the S are the only features I saw visually. It is looking good: there have been three decent x-ray spikes in the past two hours.

Francesco: Just to let you know, tonight I tested the 6" Dobsonian loaned from the club. This is also my first telescope and I am just astonished. Of course I started from the gas giants and I was perfectly able to see Saturn with the rings. If you don't touch the scope while observing you can even see the space between the planet and the rings. It was just mind blowing.

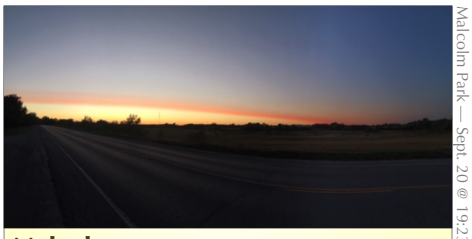
Only drawback: it is very difficult to look for objects in the sky because everything is upside down. I'll need me a lot of practice.

Very excited though. Thank you so much.

Hank: Very happy for you Francesco, there is nothing better than the wonderment of your first observing sessions, the WOW, the where do I go next. Congratulations.

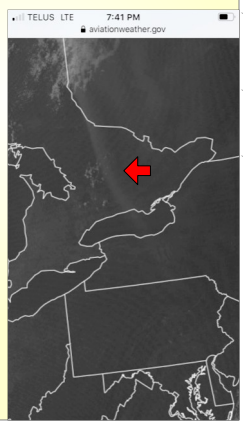
Susan: Getting your hands on a scope, timed with this weather is pretty much unheard of. Enjoy.

Kevin: Another night of imaging in the Serenity Observatory.



Malcolm Park — Sept. 20 @ 19:23, iPhone SE, ISO 100, 1/141s

Malcolm: Anybody else see this sunset? Pretty cool. It looked like a band of smoke.



Rose-Marie: We were admiring it out the window.

Keith: Yes, I saw it. Looked cool, very slow moving.

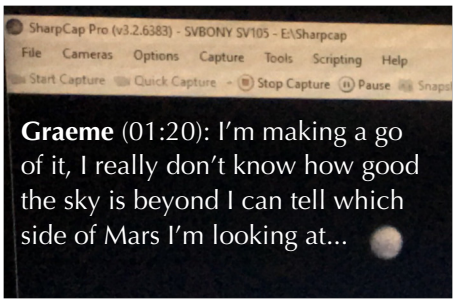
Mon/Tue, September 21/22

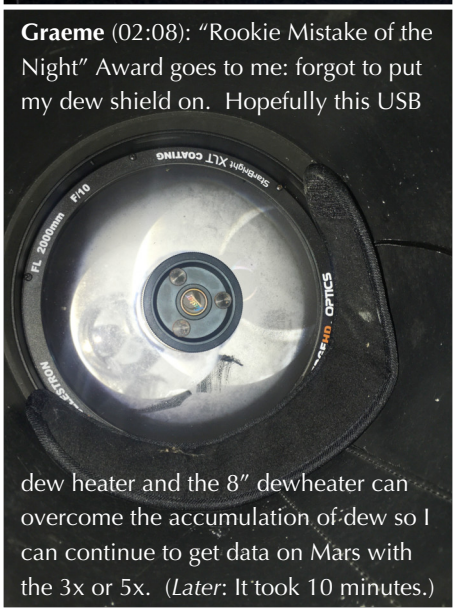
Stephen (21:36): I got my fibre optic cable run. (Always have a backup!) It was all set up by the end of twilight. Back to galaxies in Draco for a while. It looks like a good night.
Malcolm (05:06): I woke up to take pics of Orion. Very hazy and mucky sky.
Kim (06:05): Yes it was. I was out looking, and sketching Mars. Venus was in the E but very dim...and there was a large cloud area in the S.
Rose-Marie: The ol' bladder got me up at 4:00 a.m., then I stoked up the wood stove, and BigWetNose demanded to go out. I saw the sky was clear and Orion was up high enough that I could see it. Auriga, Taurus, Pleaides, and Mars from beside the garage.

So now that I was awake, I decided to drag out binocs and camera and get a few observations for my Observe the Universe project. I was out there til around 5:20, then headed in to transform my scribbles onto the work sheets. Took some wide angle shots of constellations and a few shots with the 300mm of the Orion Nebula.

Tue/Wed, September 22/23

Stephen (18:05): I'm a little concerned with some high smoke haze that I see. I hope it won't be a problem.
Rick (22:52): I had cloud go through for about an hour around 21:30, but that has moved on and things look good for the rest of the night.
Stephen (23:50): As of 23:50 I still have mostly scattered cloud. Transparency is sh*tty. I don't know how long to wait for it to decide to clear.





Rose-Marie: One nice thing about the windows facing S from the hill: one can see the moon clearly. Last evening's targets were lunar features: mare and impact craters. I realized that I didn't have to go outside, just set the spotting scope up by the window and sit in the warm.

Wed/Thu, September 23/24

Rick (22:48): Well, I got everything (iOptron iEQ45, QSI583WS, ASI120MC guide camera, Sky90 scope) hooked up again on the pier overlooking the water and it mostly works. Once I remembered that you have to connect the ASCOM Device Hub software to the mount and then connect the various pieces of software to the device hub (you can only connect one piece of software to a particular mount, or focuser, or camera, driver at a time so you have to have a 'hub' that can allow multiple simultaneous access) I was able to connect PHD2 guiding and ECU planetarium to the mount. However, when I tried to also connect Maxim there were errors and everything broke down. So I rebooted the computer, restarted all the hardware, hooked up device hub, PHD2, ECU and left it at that. Then connected PHD2 to the ASI guide camera and Maxim to the QSI583WS camera. Everything was working.

So I tried several 300s guided unfiltered exposures of M15 (it was there) and they all worked well. So I've now started a series of 300s, 100s, 30s and 10s unfiltered guided exposures of M31 (M110 in the field is the beginner challenge object this month for Ottawa Centre). M31 basically fills the field of view from corner to corner. So I'll shoot those until about 02:00 and then I'm going to switch over to NGC1049, hopefully with the Fornax Dwarf visible in the picture. It's way far south, only 10° above the horizon so I'm not sure what I'll get. I should leave this one for Chile, Malcolm, but I can't resist.
Malcolm (09:01): I knew it! Kp went to 5! Maybe it will go again tonight.
Kevin: Nothing on the AllSky cameras overnight. I was outside myself from 20:00–21:00 EDT and nothing then either. The moon was lighting up the southern half of the sky and transparency was below average as well.
Kim: Yes, but it was foggy.
Rick: So things went pretty well all night. The Boltwood scope did its thing under command of CCD Commander from twilight to twilight collecting ~175 images (though I'd like to get PEC working to improve the tracking.) The iOptron/QSI/Sky90 worked until I stopped it about 04:30. Images look good. I manually shot a dozen flats in morning twilight and then shut down.

When I went to take the laptop into the house I was rather dismayed to discover that some horrid little animal had bitten through the power cable. IN THREE PLACES!! Without a word of exaggeration, you couldn't have done a neater job with a high quality wire cutter. Nice long diagonal cuts—think french-cut beans. Too bad it was on the DC side otherwise the beast might have got what it deserved and what it will get if I see it. Had to spend an hour this morning soldering it all back together.

It never ends.

Kevin: Here is a result from last evening's imaging run after the weekly social chat video conference. The First Quarter moon was maybe 35° away from Jupiter, and the southern half of the sky was lit up by the moon with high haze. I was using new Firecapture 2.7 beta camera software with the ZWO ASI290MC camera.

Susan: The way you are chasing this goal I am sure that perfect night will not get past you.

I managed to keep myself busy in the observatory until midnight. The seeing was oddly better, but the transparency was poor. Enjoyable for planets though.

Variable studies progress. Star hopping was a challenge with the low transparency, but I managed to successfully complete estimates for five stars. I find it difficult to get out there with all the best charts I need. Perhaps I should just bite the bullet and print all available from the AAVSO site for each star. There is always a little gap in the comparison stars that I wish I had.

I then managed to give the scope a good whack while moving to Mars. The level of detail was nice...I think. I was definitely in need of collimation and since I had Mark's laser collimation tool I thought I'd check it out on the spot. With more practice I think I would be able to collimate at night, but I waited to do it today. Also today I screwed the new wheeled platform to the base of the scope. It was heavy and did not budge until I added the new focuser wt. Now it will not try to tip over if I move it too fast.

No wildlife to speak of although there was something big with long legs that flew between me and the scope at one point.

Walter: I had a great all-night variable imaging session (220 stars), until cloud moved in very suddenly six minutes before the end of astro twilight. I'm hoping to be able to get flat frames tomorrow night or Sunday night (based on current CSC).

Susan: I just did some quick math and I'll be able to reach your level of productivity as soon as we get into the longer nights. When do you think we will hit that 88 hour night?

Walter: Well, if you go far enough north there is a six-month night available. It tends to be rather cold though.

Rose-Marie: I was tired from cutting and moving firewood yesterday so was in bed by 9:00. The only observation for my explore the universe project was the quarter moon. Just too tired to try for impact craters.

The call of nature had me up at 2:00 a.m. and of course BigWet-Nose decided she had to go as well, so pants and sweater on, and out we went. And there was clear sky. Soooo...now that I'm up, may as well pick off a few items. I looked up double stars, two in the head of Draco, I figure that's easy enough. Now...try to pinpoint in my star chart book exactly where to look. There was a lot of cursing about nitwits who mark things with these silly heiroglyphs of Greek lettering and why can't they put the same damned name...grrr...as you can see I am not the most patient person during the wee hours. Finally get them figured out and go outside to discover that the head of the beast is now below the tree line.

So back in to see what else is on the list. Something in Cygnus. But at the top end. All I've got is the ass end of Big Bird. Oh the heck with it, just list some constellations, got yer Great Square of Pegasus, check; Cassiopeia, check; now figure out Aries and Andromeda, much peering at chart, sky, chart, sky...okay, got it. Back in to check doubles, oh good there's one in Taurus which has by now cleared the trees, so take little scope out and put it on tripod. More cursing while I try to adjust tripod to how I'm sitting in the chair and have to contort myself to see a target high overhead.

I was wanting to photograph and record the conjunction of Moon, Saturn, and Jupiter, but... clouds. Malcolm pointed out Kp was 5 last night, but I saw no green glow whatsoever.

Malcolm: Last night I had a look with my binoculars at the Moon, Jupiter, and Saturn. A little hazy but nice views.

Kevin W: Good old binoculars. I have defaulted to my binoculars lately—too lazy to set up and negotiate gently and patiently with the touchy and sensitive, but gifted, telescope.

For some reason my eyes keep catching the two double star

clusters just south of the first V in Cassiopeia. In the binoculars, I love the view of the large oblong star ring also beside them. Then, to my delight and surprise, what should appear on SkySafari Plus (besides a bit too much light on the phone even though it is at the lowest setting, sort of blinding my eyes) but two nebulae (nebulae's, -luses?), called the Heart Nebula and the Soul Nebula (unless you use one of their other various designations). Wow! Have I sort of found the heart and soul of the sky? Am I done? Is my search over?

Hank: Keep looking and finding Kevin, it is so different now with apps and digital maps to help compared to the old paper days.

Rick: Those are two extremely difficult objects—the technical term is XXXF (extremely, extremely, extremely, faint, sometimes written eeeF.) If you saw them, you definitely have seen the heart and soul. Only the brightest parts of these two even make the Deep Sky Challenge observing list. The rest is too challenging for a mere Challenge.

Thu/Fri, September 24/25

Malcolm: I drove up to Whitney last night, stayed in a motel with intention mainly of a morning drive into the park to look for wildlife and pretty fall colours. Woke up around 4 a.m. and saw Kp4 so I got up, drove into the park and hoped it would strengthen. But it fizzled.

Got to Lake of Two Rivers campground around 5 a.m. Parked on the beach. Mostly clear, some ground fog, and a little cloud on the horizon. No aurora visible naked eye or on camera, but a beautiful sky. Amazing zodiacal light with Venus into dawn. Milky Way, Mars, Orion, so many stars. What a place!

Rick: Wow, quite a trip. I would like to try for the gegenschein this fall. Never seen it before and LoTR campground sounds like a good place to try from.

Malcolm: Having a motel room helps. I have seen the gegenschein a couple of times in Chile only. It seems that the anti-solar point is often in the Milky Way so you must plan around that, and the moon, *etc*., *etc*.

Fri/Sat, September 25/26

Kevin: Lets hope the Kp5 level lasts until it gets dark! Possible aurora!

Malcolm: Stoopid Kp index. Europe always wins

Rose-Marie: Even if it does, the waxing moon would wash it out.

Malcolm: True. I feel better now.

Walter (21:17): Got my flat frames this evening and have an imaging run in progress. It's not the greatest night but it's just CVs tonight except for a few Miras in Gem/Mon at dawn.

Rick: So which CVs are you observing? I was doing some with the RASC remote scope in the spring and early summer—HP Lib, SW Sex. I've been thinking about getting back into it.

Walter: Probably over 100, all over the sky (I'll have to tally them sometime).

DW Cnc has had only 1 outburst in the 17 years I've been watching; PR Her only 2, so they are favourites to monitor. I have yet to catch BC UMa in outburst, but I keep hoping! Then there are others that are always visible and often bouncing around in brightness from night to night, and ones that just blow up real good for varying lengths of time. Such variety! TY Psc stays up for about 3 weeks and then there is HT Cam (I think that was the one) that when it explodes it is only bright for one night—and it better not be cloudy on that one night or you'll miss it all! (I gave up on it for that reason.)

There was one CV in Auriga (FS, I think) that it turned out Dave Lane and his collaborators had been studying, and I caught a mini-outburst that they had missed. It is a very active star and lots of fun if you get a run of clear nights.

Kevin (21:26): Sure is thick tonight. My normal exposure for Jupiter is 70ms. Now it is over 110ms. I'm waiting for Mars to clear the trees.

Stephen (21:41): I've had some problems with the connection to my mount crapping out. I suspected a bad USB cable, which I replaced today. Tonight will be mainly a testing night. So far so good! I'll see how things go until after moonset then I will try a few galaxies in Pisces.

Graeme (22:57): It's a mess here... so much fog/smoke/clouds... Whatever. Zzz.

Rose-Marie (23:25): Getting a bit hazy here. Managed to pick off a couple mare on the moon section of the list. Tried putting the camera on the adapter to the small scope, but for the life of me can't get sharp focus.

Malcolm (02:38): 2:30 a.m., Kp5. Nothing naked eye. Nothing on test shot. Back to bed.

Stephen (04:36): Well, the problem wasn't the USB cable. I was also starting to have problems with my guide camera hanging. I decided to move the USB cable to another USB port on the computer. That forced a reload of all the device drivers. Problem solved!

The sky is too hazy to do much with galaxies. I've been testing the system on star clusters. So far everything is back to normal.

Walter: It was a whitish sky today, but my session ran all night (about 110 vars) so the sky conditions weren't too bad for CCD (but would have been crap for visual).

Rick: Same here. I only shot 21 variables but averaged 8 shots each. Just trying to figure out how to do rough quick-look photometry on some of them with AstroImageJ.

Sat/Sun, September 26/27

Rick (22:47): Sheesh, I can't believe it cleared off. I thought the satellite image looked like any breaks would be very short at best, but here it is with at least a couple of clear hours. So the Boltwood scope is 45min into the first set of 4 RRLs in Cygnus (missed M13 and 3 RRLs in Lyra because they were already in the trees).

I've been observing 10 out of the past 12 nights—only one of those was a short night because of cloud, the others were all-nighters.

Rick (01:56): Well, got nearly 4 hours in, but it is clouding over so I've just shut down. Got my 6 Cygnus, 1 Pegasus, and 3 Lacerta variables done and one observation of each of two of my Andromeda variables. Session 113 for this year. At this rate I'm on schedule to break 150 before year-end.

Susan: The haze was so thick here that there was no point in doing visual. It was still a beautiful warm night without bugs to be out in the observatory.

Rick: I wish I could say there were no bugs but I was getting lots of mosquito bites (*i.e.* dozens) while at my lakeside site the night before last.

Sun/Mon, September 27/28

Rick (20:18): Another clear evening! I've got the scope running and collecting data for night 11 in the past 13.

Stephen (20:57): I didn't bother opening up tonight. I've run out of targets that I can do in the moonlight. I'll have to wait until well after Full Moon.

Rick (21:04): Well, there's something I never thought I'd hear!

Hank (21:24): How is everyone enjoying the invisible aurora?

Kim (21:32): Washed out from the moon. Saw 2 ISS passes. Jupiter Saturn, and Mars though still low in the muck, and sketched a couple of lunar craters.

It has been a good night.

Of course we have a Kp6 on a very bright moonlit night.

Rose-Marie (01:57): Had the alarm set for after moonset, woke up a half hour early. View from window: clouds. Went outside to double check: clouds.

I'm not liking it at all, Hank, just not liking it at all. Nice warm night with no bugs but we get squat.

Kim (05:30): K index still at 5. Went out, cloud, though there are openings at zenith. This was at 5:20 a.m.

Took some pictures in hopes of capturing some aurora...squat.

Susan: Air was not too steady but the GRS flickered into view a couple of times. I spent some time on the moon and Saturn as well. No bugs.

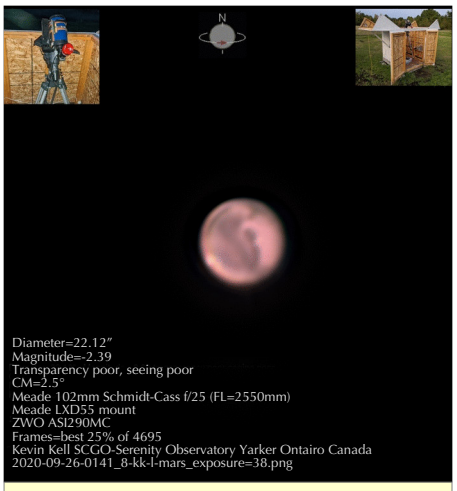
Bonus! Spouse appeared for 15 to 20 minutes for his 'once per decade' tour of the universe. Moon, Jupiter, Saturn, Ring Neb. He quite enjoyed himself. Sat in the observing chair, drove the scope and worked the focuser and declared himself a seasoned observer! It was great. First time observing with another human in 8 months.

I did not wait for Mars, as nature's lunar filter moved in.

Rose-Marie: George is content to observe from the comfort of the living room as I turn off lights and point out Saturn and Jupiter. He's not one to put on coats and boots and go outside.

Susan: I also went out to have a peek at Mars after 11 p.m. I was amazed how terrifically sharp detail would just pop out. Also, where a month ago I was getting a 'brightening' for the polar cap, last night it was a perfectly sharp disk.

Last night was also the first chance to sit and stare at the moon since a) new focuser and b) fresh collimation. Wow what a show! At about 200x it was super. Will be back to lunar sketching this week I think...if there are any clear nights.★



Kevin: Finally! After two years I had a great night of imaging Mars. (I had previously done a few back in June but Mars was much smaller then.) So this past Friday evening, I did my usual 30s run, then another 30s run with FireCapture's autoalign feature turned on, getting a record of the seeing that night. Then I immediately launched into a series of 180s runs—as many as I could before having to turn in for the night.

I am using the new FireCapture 2.7 Beta and am impressed. I have not yet figured out how to run a batch of runs. I used an ROI of about 600×600 pixels allowing for a faster frame rate, yet enough room for Mars to wiggle about the FOV.

My processing starts with running PIPP to centre and crop the video stream down to 500×500 pixels. Next is Autostakkert! 3 to stack the best 5%, 10% and 25% based on the analysis of quality done as the first step. It also expands the image resolution 1.5x to 740×750 pixels. At this point I stop and take a look at the images. Very disappointing and soft.

This image is the last of 11 runs.★