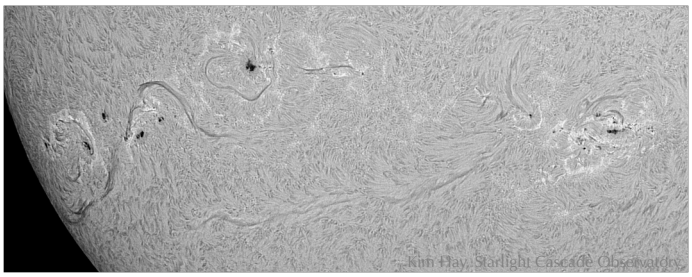
September 2024

Skyletter

RASC Kingston Centre

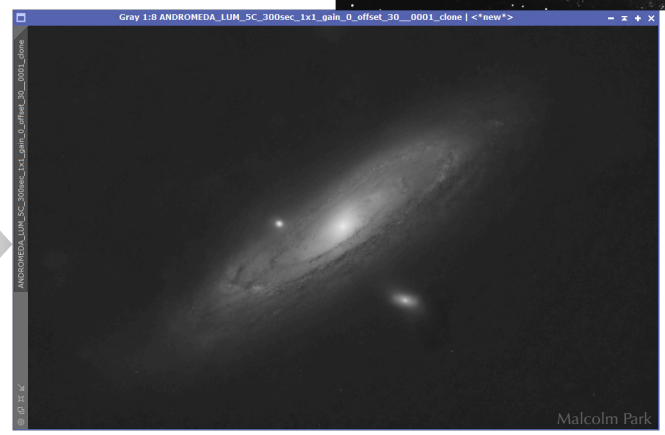


Mon/Tue, September 2/3

Susan (20:41): Start your engines!
Mark D (21:13): I am in, what to look at tonight.
Mark D (21:56): Lagoon Nebula, pretty wild [*above*].
Rose–Marie (22:28): Oh I had such plans...but cutting up that pine log and moving the blocks has left me out of gas. Better planning is in order, such as not tackling heavy chores when the night is clear. Being cooped up all summer does not leave one in good shape.

All is not lost however: I have set up the camera on the patio to run a series. Would be nice if it catches a meteor. Now WHY can't we have a night like this for auroras?
Mark D (23:19): Seyfert's Sextet, about 200 million light years away. Mag 14.39.
Malcolm (23:51): This one's closer, just 2 million LY. Single uncalibrated 5 minute luminance subframe stretched and stars removed because...well, just because!
Susan (00:10): I am in for the night, tea time now. I wish I could do the all–nighters but there you go. 9 degrees here.

The pressure is on Rose-Marie: we look forward to some nice pictures.
Malcolm (00:32): It's chilly!
Roger (01:02): It is getting cool. Here is M33. 49×30s. I thought I'd give SharpCap a try. No darks, flats or flat darks—luminance only, so no filters. 300mm aperture, 1900mm focal length, micro 4/3rds chip (ASI160MM).



Kim (06:11): Nice Mark. It is a beautiful nebula. Did you use a nebula filter? Has anyone used a filter on this? This is the one I was doing with the Seestar, and need to take panel images for a mosaic. It's huge. I finished what I could of my one project last night, now I need to wait for the spring.

Moving onto the next project to start.

Mark D (08:05): No filters. 8 sec exposure for 18 minute total integration [*135 frames*], no darks (forgot to take some). It is very big.

Malcolm, great Andromeda, I can never get any colour or much detail.

Roger, that's also a great pic except for the sat trail. There is a new feature in SharpCap that when you get a sat trail going through there is a unstack button you can hit and it will take off the last frame and remove the satellite. You have to be quick and watching and do it before the next frame comes in, but in your case that would have been 30 seconds.

Mark D (08:17): T CrB—Nothing to see here, everybody move on.

Tue/Wed, September 3/4

MarK: It was not as nice an observing night as Monday by a small amount. I noted that I was feeling chilly after observing until 0300 on Mon/Tue, but I did not feel cold this morning when I came in at about 0245. I guess those 15 minutes made all the difference. The sky was not quite as clear as the previous night and there was some wind.

While the camera ticks away, I look at the sky with my binoculars. I think I am beginning to understand why Malcolm, Steve and MarkD are not into using eyepieces. When we first moved to The Lake, the skies were dark. On a night like the past two, M33 would have been visible with out optics. The Milky Way would have stood out well from the background. Now it is tough to see M31 without binos and the Milky Way is only a pale imitation of its former self. Looking at things through the scope does not have the punch it did in the '80s. I know my eyeballs are forty years degraded from back then, but not any where near as much as the skies.

I also note that it is getting harder to observe to the wee hours and then get up and get at the chores. I cannot figure out why that is?

Cathy: Time warp is real.

Wednesday, September 4

Kim (14:58): Taking some solar images today, and have more to process, but I must say I really like the Powermate 2.5.

Attached is an Hα image from today [*below*]. Of course, now, there is not a full frame of the Sun, but I have also been playing around with ROI imaging and zeroing in on some sunspot groups.

Also attached is a WL image, colourized [*next page*].

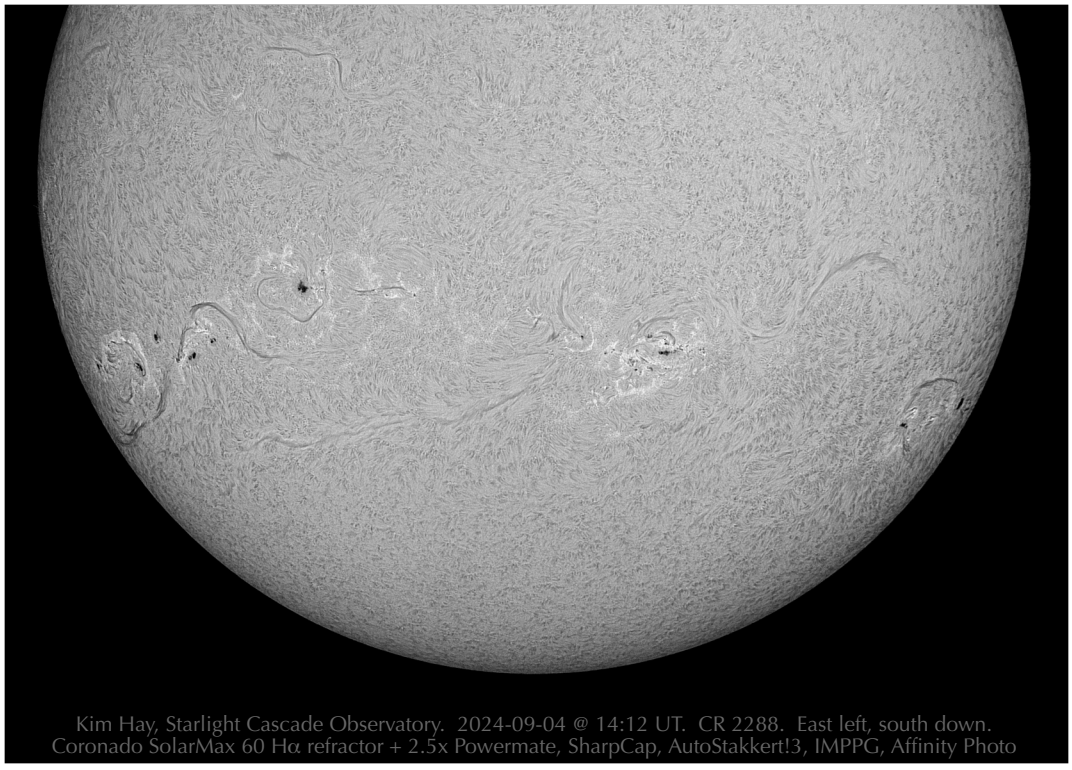
Stefan: Really nice detail on the Hα Sun. Really sharp and clear. Nice image.

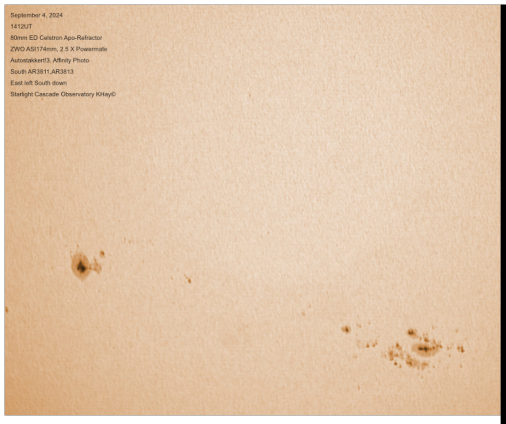
Shelley: Beautiful job on your solar image Kim. It's been a fantastic object to image this year.

Kim: Thanks Stefan. Still have a few issues with Affinity, but only use it for contrast. The IMPPG is getting better to use. Thanks again for the demos.

Thanks Shelley for your hospitality and demos too.

Susan: Wow, nice Kim.


Kim Hay, Starlight Cascade Observatory. 2024-09-04 @ 14:12 UT. CR 2288. East left, south down.
Coronado SolarMax 60 Hα refractor + 2.5x Powermate, SharpCap, AutoStakkert!3, IMPPG, Affinity Photo



Wed/Thu, September 4/5
T CrB Still Faint

Rick (21:49): Was out shortly ago and it was still around mag 10 (don't want to bias anyone else's estimates).
The AAVSO webinar about the star is at:
youtu.be/1Zfg67Q-szU?si=Ltz2FQXDy7UBVzE0
Elena: Thanks for this. I'm going to watch the video tonight.
MarK: Oh, I am surprised it did not blow as I forgot to have a look last night... It is tough for me now as it goes behind that darn Aspen.

Thursday, September 5

Kim (12:36): I am out now and the skies are a bit murky and the wind is interfering. Nice day though, I will take it.

Thu/Fri, September 5/6
Jupiter & Saturn

Kevin: Again serendipity strikes: outside at 04:00 EDT to image Jupiter and continue to test and commission the Celestron 9.25 with a 1.5x Barlow and Io (!) is very close to Jupiter and its shadow was starting a transit of Jupiter—right near the Great Red Spot! I did not have a clue in advance! Very nice. We imaged until it was too bright (dawn was approaching) and it was time for work. This is taken from the best of about 10 runs, consisting of the best 5% of 7200 frames with exposures of 3ms over a run of 60 seconds [*above*]. Jupiter's altitude was phenomenal: 58° high! The airmass was about 1.18, Jupiter's diameter was 39 arcseconds.

I am still working out the new annotation scripting to get all the details correct. This one missed the use of the 1.5x Barlow.

The ZWO ASI585MC 8 megapixel camera has a pixel count of 3840×2160 but I use an ROI (Region of Interest) of 800×800 pixels to speed up the frame rate. Autostakkert! v4 then "drizzles" at 1.5x to increase the image scale, resulting in this 1200×1200 image. Annotation is added to the bottom of the image, increasing the pixel count [*uncropped*] to 1200×1410.
Roger: That is a very nice image. I'm tempted to say is a (Damian) peach of picture!
Kim: Roger you just made his day!
Kevin: Also, a reminder that Saturn opposition 2024 is tonight/tomorrow and this is a good chance to get your best planetary observing/imaging of the season. At ~01:00 EDT Sunday, Saturn will be azimuth 177°, altitude 38°.

Of course the weather is not cooperating. I will try in any event and perhaps get some sucker holes to shoot through. I only need 30 or 60 seconds (!) for each imaging run.

This image [*above*] was from Friday morning just before dawn; unfortunately it was very, very low in the west, only 18° altitude. This makes for very poor seeing and also drops the effective magnitude. Saturn's diameter was 19 arcseconds and this is the best 10% of 7700 frames of 23ms each.
MarK: Do we have you to thank for the change in the weather? What happened to the Vixen? The past New Moon stretch was pretty grand; I did not get to bed before

0300 for four nights in a row and the overnight temperatures were definitely pleasant.

Our low overnight was 8.7C at 0430. I suppose that you had a small blizzard in Yarker. I note that it got down to 1C at Tremblant this morning. No snow visible on any of the web cams. I live in hope.

Kevin: The Vixen VC–200L remains but is in storage at the moment while we test and commission a Celestron C9.25 that was given to us last month, on the Sky–Watcher AZ-EQ6gt mount.

I have a plan to work our way up to 14" SCTs for planetary... maybe in a decade or so. Not too bad: I started with a 4" circa 2010 (?).

MarK: You should love this scope. The C9.25 is the optimum configuration for the Schmidt telescope according to Peter C.

Sat/Sun, September 7/8

Rose–Marie: 'Twas 7C at 6:30 this morning. That wind is a bit stiff; going to be a chilly day. Firewood chopping weather.

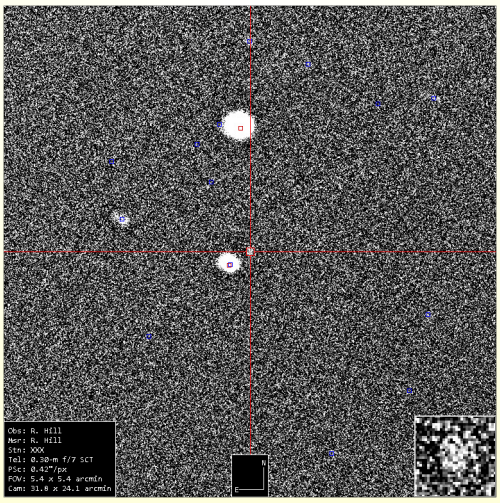
Asteroid (20021) Kevinkell

Roger (Sep 5): During the Wednesday Social on September 4th, Kevin asked if there was anyone who could image 17.5 magnitude objects. I raised my hand, and he then said that his namesake asteroid is at Opposition, at magnitude 17.5.

When I asked him, he said that the declination of the asteroid was about –28°, putting it, at best, 17° above the horizontal. This means that you'd have to look through a lot of air to see it, and making it considerably dimmer than magnitude 17.5. However, I decided that it was worth spending some time trying to find it.

I used Cartes du Ciel (CdC), and updated the asteroid listing by downloading the first 25000 entries in the Minor Planet Center's list. Sure enough, it would be about 16° above the horizontal. Using CdC to slew the telescope, and then plate solving using Astro-Photography Tool (APT), which then updated CdC with the actual position the scope was pointed at. There was another asteroid nearby as well, so I offset the telescope position by a few minutes of arc. It was a bit brighter than Kevin's namesake, so if I could not find the fainter object, but could detect the brighter, it would put some constraints on my technique.

I took 15 60-second exposures, and used the Tycho software to help find it. Once it had done a plate solve on all the calibrated exposures, it told me where (20021) Kevinkell should be, but there was nothing but noise at that location. I then had Tycho do virtual tracking where it looks for objects based on a range of theoretical speeds and directions. This is very compute–intensive and it took my Graphics Processing Unit quite a few minutes to do this task. Once it did though, and I had it show me the results for all known objects that were on the image I had taken (there were several), I selected Kevin's namesake. If the object is bright enough, it will show up as a short streak when all the stars are round, but I



wasn't that lucky. However, when I selected the option track on the asteroid and let the stars trail, the asteroid showed up as the stationary dot, just a touch brighter than the background, as you can see in the attached image. It's in the centre of the image, with a small central red box around it in the middle of some cross hairs. The blue boxes indicate where stars are, or should be if they are bright enough.

Incidentally, CdC says that the "bright" star next to it is 14th magnitude Gaia EDR3 2330990420688896128. So, according to CdC, the airmass to look through at an object 16° above the horizon at the time was 4.9, and should have added 1–2 magnitudes to the calculated magnitude of the asteroid from 17.5 to somewhere around 19th magnitude.

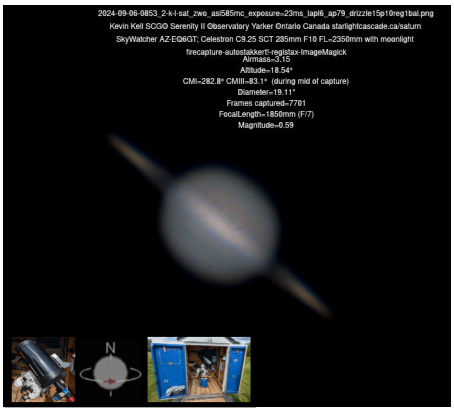
Because my 12" SCT is on a side–by–side mount with the guidescope beside it, when the telescope is on the west side of the pier, the guidescope is below the main optics, and was pointing at the wall of the observatory. As a result, I could not guide the 60-second exposures...I just had to hope the mount was tracking well enough. I had spent a fair bit of time earlier in the week refining my polar alignment using Astro-photography Tool (APT), which appears to have been time well spent. I had also re–collimated the scope using a tri-Bahtinov mask, so the entire system was working about as well as it can.

For (20021) Kevinkell, it was just enough.★

Fri/Sat, September 6/7

Kevin: This image was from Friday morning just before dawn, unfortunately very, very low in the west, only 18° altitude. This makes seeing very poor and also drops the effective magnitude.

Saturn's diameter was 19 arc seconds and this is the best 10% of 7700 frames of 23ms each.



Sun/Mon, September 8/9

Kevin: This happened at 00:07:33 EDT or 20240909 04:07:33 UTC. This was a 4 second event going from bottom left to top right, or SW to NE captured by AllSky2 (UWO10). AllSky1 did not capture this event.

Rose–Marie: Nice fireball. I did not know it was clear at midnight; was socked in clouds at 10:00 p.m. when I went to bed. Ya snooze, ya lose.

Mon/Tue, September 9/10

Kevin: Another early morning imaging session before work. This time a rebuilt styrofoam dew cap went over the heat strap on the front corrector plate of the C9.25 SCT. It worked! No dew or fog this time!

I am still using my old Regi-Stax wavelet settings, and I still have to sit down one day and work on new ones for the new optical setup. The coarse focuser has some issues, so I can't use the 3x, 2.5x or 2x Barlows. I'm still using the 1.5x Antares Barlow and it is a little softer in focusing and contrast, but still a pretty darn big image scale. Overall however, not too bad, considering that the seeing and transparency were both bad Tuesday morning.

This image [*below*] shows Jupiter (no Great Red Spot) and the moon Europa moving right to left behind Jupiter.

After rewatching (again!) the BBC Masterclass in imaging and doing some more research, I have found out what may turn out to be an even better method of ROI (region of interest), tracking, and

Jack Newton's
"Journey to the Stars"
youtube.com/watch?v=aQUed-qfIUY

This is a very nice production that has it all: great stories in Jack's own words, lots of astroimages and equipment shots (nobody has ever had more hardware than Jack!), and even original ambient music by the channel owner. My only criticism of this video is that it is way too short, and so only skims the surface of the remarkable lifetime work of Canada's greatest astroimager.—*Ed*

FPS (frames per second). Once I get caught up on sleep and get another clear morning I will try it out!

I also have to measure the outside diameter of the assembly so I can order a Bahtinov mask to aid in focusing.

Stefan: That's great. I am trying to find time to do some planetary. You guys are inspiring me.

Tue/Wed, September 10/11

Stephen (23:42): I was wondering why I was having a hard time acquiring my targets. I finally went out to check out the sky and my telescope. It really helps when I remember to connect my dew heater! A few minutes with the hair drier and all is well! Should have no more problems tonight.

Thursday, September 12

Malcolm (11:52): Kp 7.

Rose–Marie: Oh yes, just rub it in. Of course it wouldn't fire up at 2:30 a.m. when the sky cleared and after the Moon had set and Big-WetNose dragged me outside but nooo...it waits a few hours and now Europe is getting *MY* sparklies.

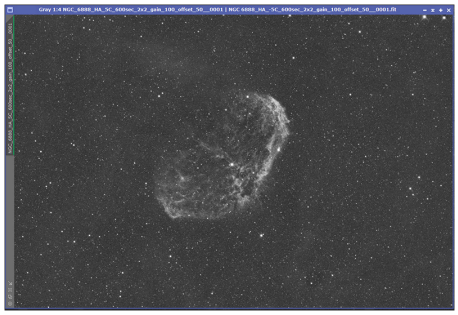
They are promising more auroras tomorrow. Yup. It's the Great Pumpkin, Charlie Brown!

Fri/Sat, September 13/14

Stephen (20:43): The smoke haze is not nearly as bad as last night. I got some good images last night in spite of the smoke. There is some cirrus to contend with for the next couple of hours. Then all should be good. I'm waiting for moonset anyway.

Sat/Sun, September 14/15

Malcolm (22:59): No words, just happiness!



NGC 6888: single frame 1 x 600s, Hα, –5C, 2x bin, uncalibrated, but BXT and gradient removal applied in Pixinsight. Astrotech 12" RC, ASI6200MM Pro.

Stefan: Nice to have skies that allow 10 minute subs. That is great Malcolm.

John: Glad everything works again. Good collimation is such a great thing.

Roger: Very nice, with tight, round stars across the entire field.

I'd like to know what the gizmo was that he printed, and I wonder if it can be scaled down to the M90 thread I have on the back of my 6" RC.

Malcolm: I had that in mind when I picked up the scope. I asked him if it was OK to record him while he explained his process and his tools. He agreed. I have the recordings on my phone.

Susan: Congratulations you *relentlessly patient* man! Two words seldom seen together.

Malcolm: Haha! Thanks. Never give up!

Roger: Never give up, never surrender! Going on a Galaxy Quest, Malcolm?

Malcolm: Yes indeed! We shall see how it goes. The Mach–1 is at its limit with a scope this heavy, but incredibly, 10 minute exposures (with an OAG) worked well last night. Seeing was pretty good though.

Roger: Do you not run the risk of a stray satellite or two going through the image with exposures

that long?
Malcolm: Calibration and stacking routines remove them.
Kevin: It was another nice clear morning to get up and out around 04:00, though I did not actually start imaging until 04:40 or so. But, the Sun is coming up so much later I was able to do imaging runs clear through until 06:33, so that is 33 runs of 3 minutes each with a 30 sec gap to allow the computer to catch up if needed.

In addition, I was using a feature of FireCapture that I have not used before: a Cut Out box, and it worked well, reducing my chances of having Jupiter drift out of the FOV and ruin that run.

In this image, on the upper right is Io, moving away from left to right. On the bottom left is Europa moving in left to right. And another serendipitous event: Europa shadow transit! Very nice.

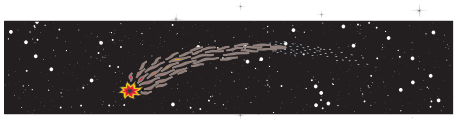
So far I am very happy with how this is working out. A dew heater is on the corrector plate and a dew cap is over that as well.

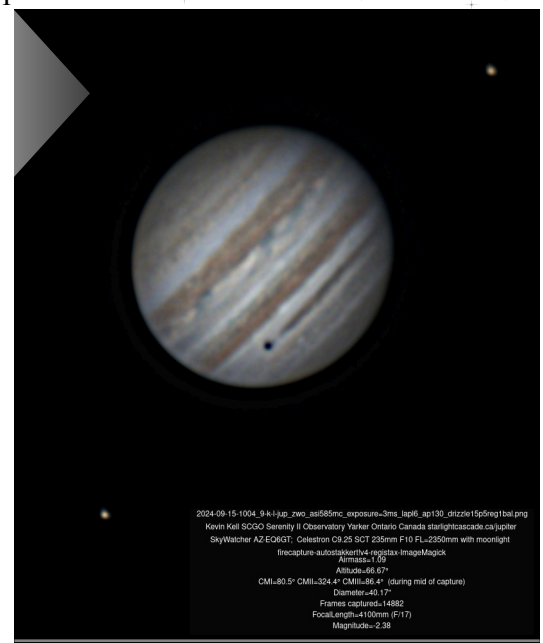
Sun/Mon, September 15/16

Kevin: And for the second 4 a.m. *getupandoutside* call in a row: Jupiter with great altitude at 57° and an airmass of only 1.2. This is the best 5% of 15k frames (3ms each) using FireCapture, ROI of 1200×1200, and a Cutout Box of 800×800. Io is the moon on the lower left, this time moving away from Jupiter right to left. Also nicely centred is the Great Red Spot.
Stefan: Nice. I guess the trick is to actually get up at that time, lol.
Susan: Can't believe how your images have improved! Very nice.

Mon/Tue, September 16/17

Malcolm (23:46): Sparklies are sparkling.
Rose-Marie (23:50): Kp 7.67. I took the camera out to see if it was picking anything up —nada. Moon is way too bright.
Roger (13:37): I posted a movie from overnight that clearly shows the aurora.





Tue/Wed, September 17/18

Observations of T CrB

Kim: For those who are following T CrB, have you visually or photometrically seen the magnitude changes? AAVSO observations have quite a few below 10th magnitude.

Tonight was kind of a washout because of the Moon, but there was no bright boom visible.
Susan: I have not observed for a couple of weeks now, but before that there was just the usual minimal wobble. I have gone out on occasion like you, to make sure I was not missing the big event.
Rick: I'm not seeing any significant changes. The CCD/CMOS obs are remaining quite consistent.

Partial Lunar Eclipse

MarK (22:10): The stoopid Moon has a bite out of it.
Malcolm (22:15): Bahaha.
Kim (22:26): Taking images of it right now, and looking through the Dob. Now the clouds need to stay away. Unprocessed image with the 80 mm refractor and ASI174MM [*previous page*].
Stan (22:58): In Philadelphia, USA—clouds.

Susan (07:32): Such a sad photo Stan, but not an unfamiliar sight around here.

I took a couple of shots but have not looked.
MarK: Totality took place behind our Hickory tree. I guess we will have to get that cut down too...
Walter: Wow, if I'd known you were having a total eclipse I would have driven to your place!
Rose–Marie: It was too cloudy here. Not really thick clouds but enough to interfere.
Rick: It was clear to clearish here through much of the eclipse. Many thanks to Kevin for having reminded me. I was subconsciously not expecting Full Moon for a couple of days yet so would have completely missed it. I had anticipated not observing last night since it was going to be on and off cloud. But with the eclipse visible from the Hankscope (*i.e.* not in the trees) I decided to open it up and take some pictures. And, while I'm opening it up I can see stars, so I might as well open up the Boltwood scope as well. I shot a series of 20ms red exposures every 10s of the Moon from 0052UT to 0354UT. There were some cloudy periods but generally things looked pretty good. The scope needs polar aligning again so I had to keep nudging it northward to maintain the Moon's position in the frame. As a result I nearly forgot to go out and look at it. But we both popped out a few times to take a quick peek at and after maximum eclipse.

By midnight it looked like thicker cloud was moving in so I shut down.

Now I have to figure out how to convert them all to jpgs, align them all accurately, adjust contrast and brightness, and string them into a movie.
Walter: I was out with my C8 to observe the eclipse and phoned it in to get my souvenir shot.

Do phones more modern than mine (which is most of them) do better Moon images? I've seen on YouTube that modern Samsung phones seem to do much better than iPhones. Visually, the contrast between the fully illuminated southern part of the Moon and the penumbral and umbral shaded areas was neat. I can't get over how white (and bright) the Moon is now without cataracts.

While I was out, I also observed Altair and am pleased to report that I can once again get a focused star image in the telescope with my left eye—something I couldn't do in August. Hopefully it will stay that way.
Susan: Good to hear you are happy with your outcome.

At one time I heard that the cataract surgery left a diffraction spike pattern, but I have not heard that recently. Anyone else have comments on this?

I guess if you are not using an eyepiece it does not matter.
Susan: This was my best photo. Cutting the exposure, *etc.* sure cut down on the glow from that thin cloud layer.

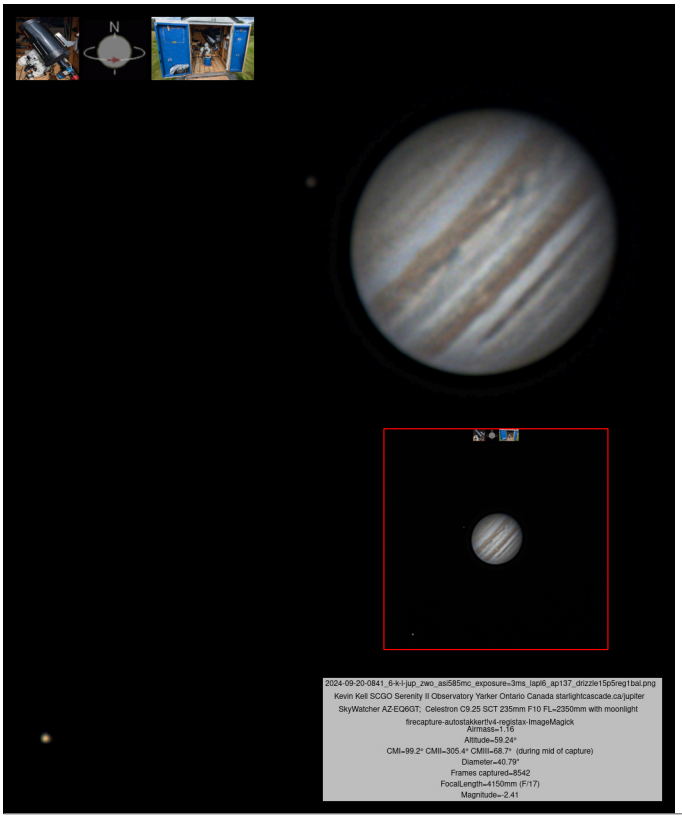
Kim: Great capture Susan! It was interesting to watch. I kept thinking my exposures were off, until checking the Dob and binoculars, yup that is the way it was.
MarK: Very moody. I like it!
Dieter: ...with a handheld point–and–shoot camera.

Thu/Fri, September 19/20

Kevin: And another run of Jupiter from this morning from about 04:30–05:30. It was nice: no mosquitoes! Lots of dew though, but the dew heater strap around the corrector and the foam dew cap continue to work well.

This is the best 5% of 8k frames at 3ms each over 180 seconds. Io can be seen in the lower left and Callisto to the upper left of Jupiter. This is also using the older workflow without cutout boxes—because I forgot. When you have a refined process that you have used for months if not years, it is tough to change and to remember the change. So this image is 1800 × 2000 pixels [*inset shows uncropped view*] that was drizzled/upscaled 1.5x.

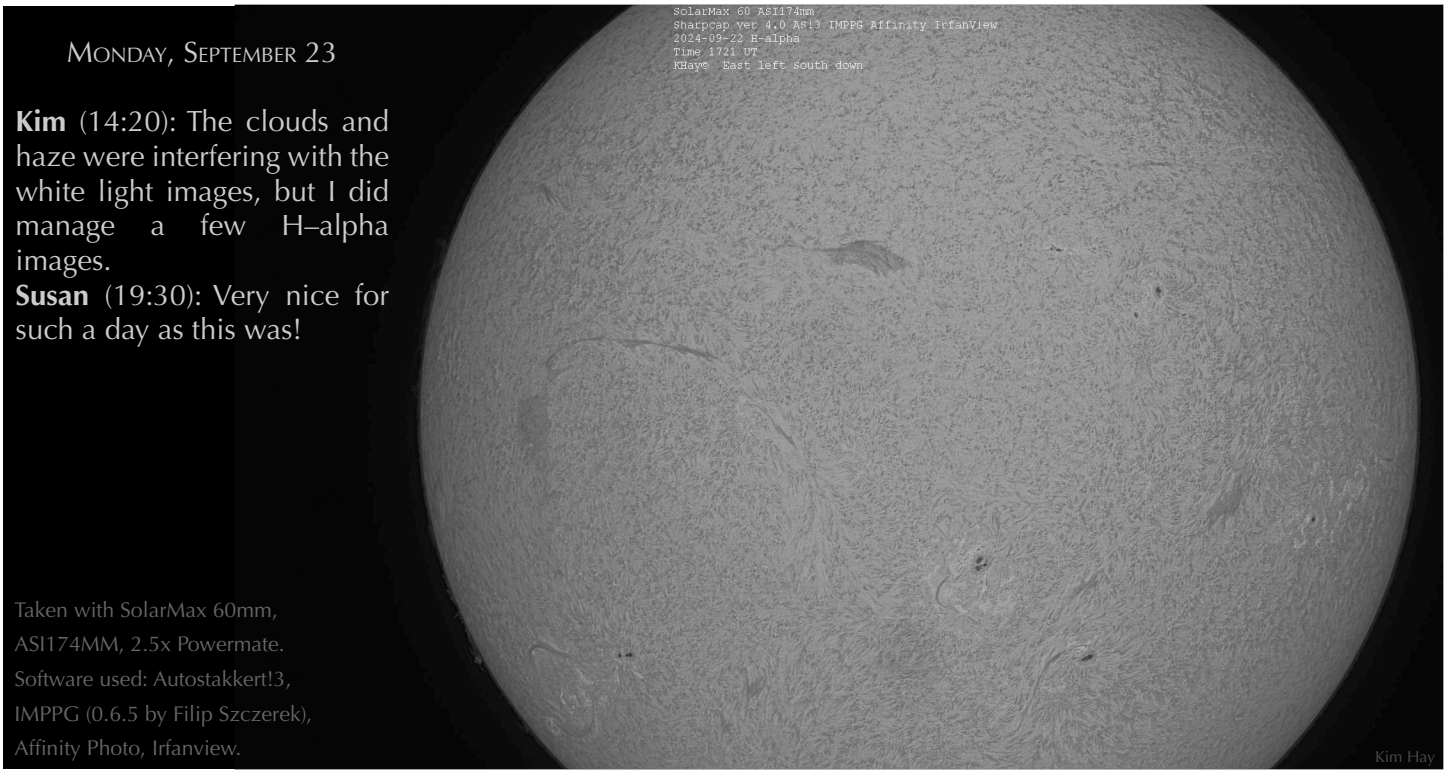
So the first 6 runs were the old workflow, without Cutout Box and this one [*right*] is the best of 13 runs using the Cutout Box [*inset shows uncropped view*]. This shows only the moon Callisto to the left of Jupiter.



Monday, September 23

Kim (14:20): The clouds and haze were interfering with the white light images, but I did manage a few H–alpha images.

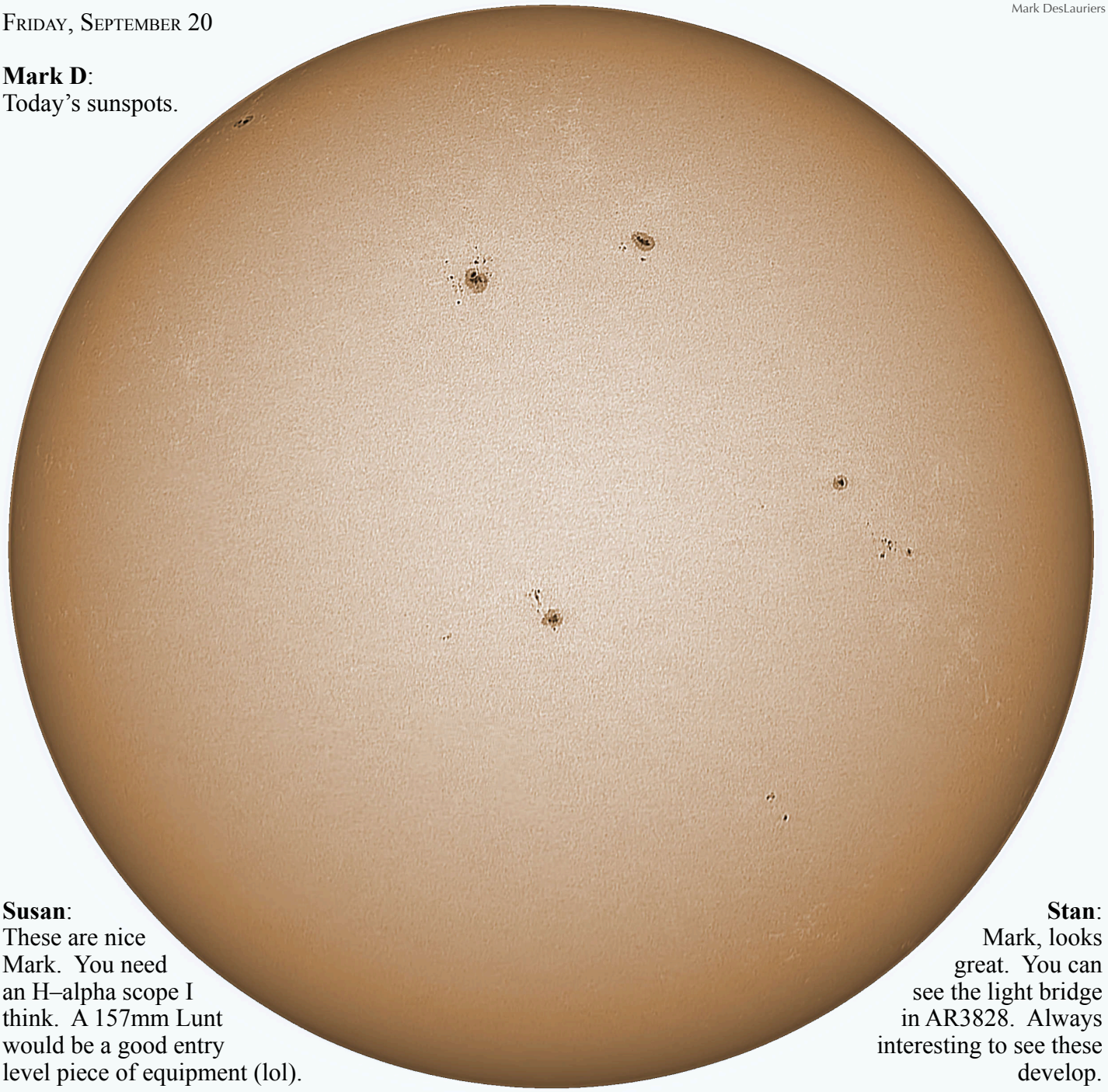
Susan (19:30): Very nice for such a day as this was!



Friday, September 20

Mark DesLauriers

Mark D:
Today's sunspots.

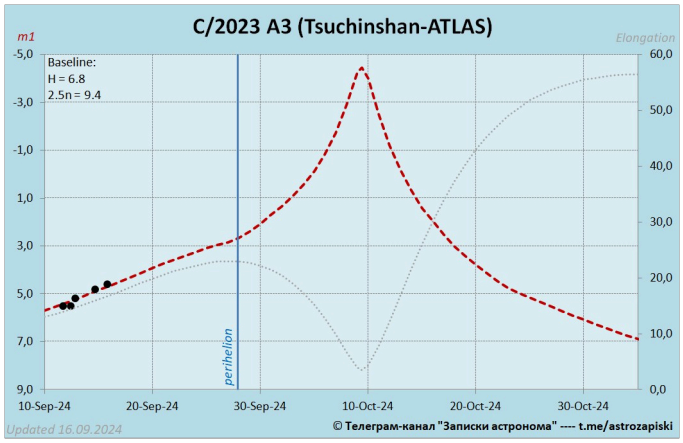


Susan:
These are nice Mark. You need an H–alpha scope I think. A 157mm Lunt would be a good entry level piece of equipment (lol).

Stan:
Mark, looks great. You can see the light bridge in AR3828. Always interesting to see these develop.

C/2023 A3
(Tsuchinshan-ATLAS)

Malcolm (Sep 16): New Moon in October may be fun!
Malcolm (*later*): Well this is silly. The comet is too near the Sun to be observed. Who cares if it's so bright if you can't even look at it? Am I right? Sheesh.



Kim (Sep 17): I set my SeeStar up to take an image of this comet yesterday morning. It's still on the SeeStar and I have not moved it yet.
Rick (Sep 18): Looking at predictions for brightness and its position in the sky, it will be very low in the

eastern dawn sky at the end of the month. It should be rising shortly after the start of nautical twilight. If it's really bright it might be quite spectacular—the tail may be visible rising well before the head. And the crescent Moon goes by during the best time. The comet very quickly moves into conjunction with the Sun, then appears in the evening sky, potentially still quite bright.

Wed/Thu, September 18/19

Malcolm (06:29): This morning in Chile... Rokinon 135mm and ASI2600MC Pro, 1×60s.

I had hoped to catch the tail rising, but that stoopid telescope was in the way. I have asked that it be moved (temporarily parked in a different position).

Thu/Fri, September 26/27
Mystery object near Regulus

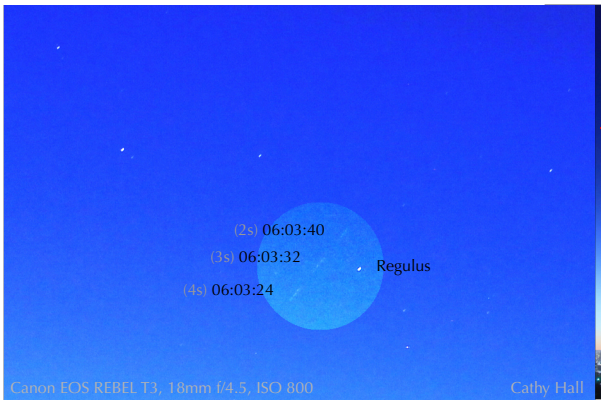
Cathy: Was out taking photos with my Canon DSLR and tripod on my balcony, both Friday morning, and again this morning.

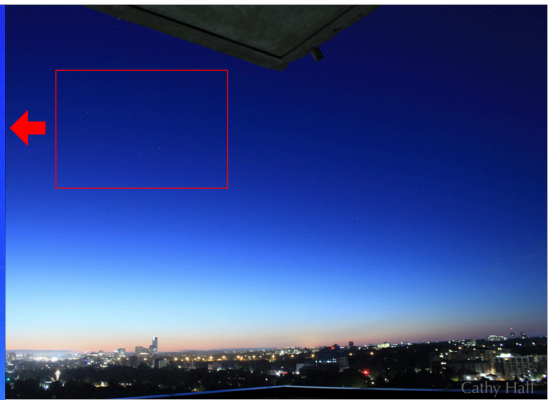
Eastern horizon was good, but couldn't see Comet Tsuchinshan–ATLAS, or with binoculars, or in my images. Ottawa city sky of course, but I still try. Nice mornings, getting a tad chilly.

However, I did find an unusual object in my photos. It's in 5 of my photos; these are the middle 3 shots. Checked my camera time to the NRC web clock, was out a bit, so corrected my camera time for future shots, have put the adjusted times below, within a couple seconds.

Am trying to identify the object. Not sure how well these show up in e–mail; on my originals you can see about half a dozen pieces much more clearly. My first thought was the obvious, but those are not matching up with pass positions on Heavens Above.

I notice that Kevin Fetter was mentioned on the Sky & Tel website talking about the Chinese 'Thousand Sails' project, Qianfan, and also debris from the Long





March 6A launch vehicle.

Ideas? Assistance would be appreciated.

Malcolm: Maybe try a little earlier like 5:45 a.m., before nucleus–rise, when its darker and see if you pick up the tail?

Rick: I tried shooting the comet Friday morning with the Hank-scope. With preparing to go to FnS and being in the middle of installing a new OS on my desktop computer I didn't have time to look at more than a couple of the images. On one of them I could definitely detect the comet and its tail. That's not saying much. Once I get things up and running again I'll take a closer look, do a stack if it's worthwhile. And I'll try shooting it again tomorrow morning. I'll be up and looking before it rises at 6 to try again with binoculars.

Rick (Sep 30): I tried imaging the comet this morning but got absolutely nothing. And I spent 20min on the dock with 8×42 and 15×70 binos. There were several times I thought I saw something in roughly the right place but was never able to confirm a sighting. The one benefit of being up so early (well OK it wasn't even a half hour earlier than normal) was a beautiful view of Kevin's earth–lit Moon above the orange glow of dawn.

Before I headed off to FnS I had checked a couple of the comet images from Friday morning and the comet was quite obvious on the first one. Turns out it was the only one. The next couple show the head of the comet as a very faint fuzzy blob and that was it. I guess I'll try again once it has moved into the evening sky.

Oh yeah, the mysterious object near Regulus. No idea, sorry. I didn't check the images carefully enough to see if there was any motion. They did look fuzzier than the stars, didn't they? Is there anything in the field that could cause an internal reflection?

Sat/Sun, September 28/29

Cathy: Low in NE 3.30 to 4.00 a.m. Sunday morning. OK... did anybody else see all these? Sky cams? For the whole half hour.. .30° to horizon.

MarK: Did you mean to post an image as well?

Cathy: No, was watching visually out my eastern window.

Cathy: If anyone can advise me on what these were, it would be appreciated.

I had the window open early this morning to get some fresh air, and heard a car door at 3:30 a.m. So, went to the living room to check out the parking lot down below. I was kicking myself that I hadn't checked the times for any ISS passes prior to the upcoming SpaceX linkup later today.

I looked up, saw a bright satellite, thought hey, maybe.

And then they kept coming... I counted (under my city sky) 31 satellites starting low in the NE from about 20° up, and heading to the horizon. They were not in a row. The magnitudes differed a lot, some were faint, some were easily magnitude 0 and brighter.

Some travelled in pairs about 5° apart. Some were on their own. Sometimes I waited for a handful of minutes between them, the timings between them were not uniform.

The neatest batch was a group of 4, about magnitude 2, spaced in a large vertical moving arc, each about 4° apart... and then one crossed back through the arc. This looked like a satellite ballet, it was weird. Obviously something related to perspective and point of view, but so cool.

And they kept coming... I went and got my folding observing stool to sit by the window. The last of the 31 satellite batch, all disappearing over downtown Ottawa, was about 4.00 a.m.

I watched for a while longer, then went back to bed. And yes, I checked the Heavens Above website... and nothing shows up for what I saw. These started low in the NE, about 20° up, and headed a bit further east down to the horizon.

It was amazing. Beautiful sky this morning, orange crescent Moon rising off to the east, planets up top... and this amazing cavalcade of unknown satellites in the sky...

Malcolm: Happens all the time now. Elon's madness. See them in Chile too.

Rick: Ah, satellites—your previous email didn't say what you were looking at. Or explain why you're up at 3:30AM. I was up shortly after 5 (both Sat and Sun) to try for C/2023 A3 but it was overcast both mornings. I will try again tomorrow morning—a thin crescent Moon may help point to the comet just a couple of degrees above the horizon at the end of nautical twilight. Maybe as bright as mag 0.5?

As MP says, these would have been Starlinks. You're undoubtedly seeing them as they begin to spread out into their individual orbits. Nice/lucky catch.

Because of the rumour that Russia might try to land a rocket on the moon during the total lunar eclipse of November 6–7, the A.L.P.O. sent out a circular urging all members to keep the moon under constant observation on that night.

—*Skyward*, November 1957