

Regulus

Newsletter of the RASC Kingston Centre

Vol. 53 No. 8

October, 2026



FALL 'N' STARS 2026



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Centre Events for October 2026:

- Oct 7: Zoom Social at 7pm.
- Oct 14: Pre-meeting get together at the Portsmouth Tavern, 96 Yonge Street, Kingston
- Oct 14 Monthly Public meeting 7pm at Queens Room 226, Ellis Hall, 58 University Avenue, Kingston
- Oct 21: Zoom Social at 7pm.
- Oct 28: Zoom Social at 7pm.
- Nov 4: Zoom Social at 7pm.





Greetings, members, I hope everyone is enjoying the fall so far.

Observing conditions have been great although mostly around the full moon.

This morning SpaceX flew Starship to orbit for the first time, carrying 26 Starlink V3 satellites. It was the vehicle's first orbital flight and its first operational payload. The mission was cut from roughly ten hours to three after a Raptor Vacuum engine shut down during ascent, though the satellites deployed successfully. A full Starship can carry 60 of them, about twenty times what a Falcon 9 manages. I don't know how to feel about this anymore, I think I'm numb!

Meanwhile NASA's Nancy Grace Roman Space Telescope has reached L2 and switched on its 300-megapixel infrared camera, which will survey dark energy, dark matter and exoplanets. Engineers now think it has fuel for more than twenty years, double its design life.

Planning for the 2027 RASC General Assembly is well under way. Kingston Centre will host the Society's first in-person General Assembly in eight years from Friday, June 4 to Monday, June 7, 2027, at the Ambassador Event Centre. The dates and venue are confirmed, the agreement is signed, and the National Board has given its approval.

The theme is Come Together. The program runs as a single stream over the weekend, opening with the Ruth Northcott Memorial Lecture on Saturday evening, free and open to the public, and closing with the Awards Banquet on Sunday. Sessions will be live-streamed for members who cannot travel, with French captions planned. Monday offers an excursion to Queen's University.

Registration opens in January 2027. Sponsorship and vendor outreach has begun, and the volunteer sign-up remains open on the GA website. Watch for further details in the coming months, and please save the dates.

Astronomy Quiz from the RASC-KC OAFTN course in 2005 Part 3

Section 6: The Moon and Eclipses

16. When can you best see a new moon?
- ☆ A. when the moon is highest up at midnight
 - ☆ B. a few days before or after a new moon
 - ☆ C. when it is rising at sunset
 - ☆ D. when it is setting at sunrise
17. An Annular solar eclipse is when:
- ☆ A. The moon completely covers the sun
 - ☆ B. The earth is between the sun and the moon
 - ☆ C. The moon covers only a partial portion of the moon
 - ☆ D. The moon completely covers the sun but is smaller than the sun
18. During a Total Lunar Eclipse, why can you see the moon if it is in the Earth's shadow?
- ☆ A. Because the moon has an atmosphere
 - ☆ B. Because light from the sun bounces off other planets
 - ☆ C. Because light from the sun refracts through and around the earth's atmosphere
 - ☆ D. Because light pollution on Earth's night side illuminates the moon
19. What is the path called that a solar eclipse traces on Earth?
- ☆ A. Path of Solar Eclipse Trace
 - ☆ B. Path of Totality
 - ☆ C. Path of Darkness
 - ☆ D. Path of No Sun
20. What is the name of the cycle used to predict eclipses?
- ☆ A. Saros Cycle
 - ☆ B. Bi Cycle
 - ☆ C. Helios Cycle
 - ☆ D. Thales of Miletus Cycle
21. They confirmed what famous scientific principle during a solar eclipse in 1919?
- ☆ A. Aristotle's theory of buoyancy
 - ☆ B. Carrington's Theory of Solar black Holes
 - ☆ C. Hubble's theory of the expanding galaxies in the universe
 - ☆ D. Albert Einstein's theory of general relativity

Answers can be found on the RASC-KC website at the bottom of the page:

<https://kingston.rasc.ca/weather/>



I'm not the only one around here with a new telescope.

In late August, ZWO announced that their Seestar S50 was being replaced with the S50 Pro model. The new one was scheduled to ship on September 15th, and for those people who were smart enough to order early, and thus save some money, were among the people who received theirs in the days that followed their arrival at Canadian dealers on September 23rd.

There will be some write-ups and images from the new owners of this spectacular telescope later in *Regulus*. I'm sure I won't be the only one who, after seeing what this little marvel can do, wonders what they were thinking in NOT ordering one when they were announced!

For my part, though, I may wait for a few months and pick one up on the used market, or wait for the next version (the rumoured S70), or perhaps the Dwarf Draco. Then again, I've got so much to do with my own new telescope, that I won't have enough time to spare for another scope and another climb up a learning curve.

I had a good, but not great time at Fall'n'Stars. I like to arrive on the Thursday afternoon of our local star party, giving me time to set up whatever telescope and mount I take. This year was different because Les Nagy could not make it, he was in Chile instead. Further, after the star party, I had to get the trailer ready to head off to Mont Tremblant National Park and Dark Sky Preserve with my wife as she and I were meeting another couple for a few days of camping.

The two couples had gone to Mont Megantic earlier in the summer, and while I had wanted to see their 1.6 meter (63") research instrument, the weather prevented this from happening. There are a few days every year when they swap out their cameras and instruments for an eyepiece, and these days are the only time when people can actually look through the research-grade instrument.

I had problems at Fall'n'Stars, though, because for some reason, I could not get my mount to work. It would slew in RA first one way, and then another, even if I told it to head east. This makes tracking difficult, and polar aligning virtually impossible. I'd also neglected to bring along a 120V power cord, and so I could power EITHER the mount OR the dew controller. Visiting Canadian Tire, both Dollaramas and Giant Tiger in Picton failed to turn up the extra cord I needed.

On Friday afternoon, Malcolm dropped by and asked if I had a spare 120V outlet he could use. Since Les was in Chile, I did have some spare amps for him. We both watched the lovely ISS pass on the Friday evening, but I have to admit that I still have not processed the images captured all night by my 8mm Rokinon lens. That will be a job for later this week, during the first few days of October. I would have done it by now, but the new scope has been taking up all my spare time.

Little by little, I'm getting to grips with how the 14" iOptron works.

It's a very different animal than an SCT. One of the biggest differences is that it's a truss tube, which means that until I have a shroud, I can't take flats. I was chatting with Les about this problem, and I told him that I might cobble together a shroud made of some thick black plastic contractor bags. He worried about out-gassing of the plastic getting on the pristine mirrors of the 'scope, which I must admit was not something I'd considered. I still think it's a good idea until a shroud arrives, but I'll have to use it only for the time when I'm actually taking the flat frames I'd like.

Collimation is a pain with an RC. I have a handy device called a OCAL. This device is essentially a Cheshire eyepiece, but with a camera instead of an eyeball. I'd always had issues with collimation of my 12" Meade SCT, and when this little device showed up on the market, I bought one (I think mine was the 350th one they sold) and it helped immensely. Of course, when I realized how easy it was to adjust by looking at an out-of-focus star image, I was tempted to just sell the OCAL. At the moment, though, I'm really glad I didn't.

There seem to be several schools of thought regarding RC collimation because unlike an SCT with its single adjustment (tipping and tilting the secondary mirror), my RC has three: The focuser, the primary mirror and the secondary. It does matter which one you do first and then second. So, it took me several hours and a couple of clear nights to reach the point where I'm very close. I used a tri-Bahtinov mask to check, and a star in the centre shows lovely spikes, although it's a little bit more complicated due to the presence of the secondary mirror spider.

I bought a Starizona Apex ED-L 0.65 focal reducer and field flattener for it a few months ago. Starizona claims that it works really well with RC's as well as F/7 apochromats and Celestron's Edge HD optics. I used it with my 80mm f/7 Barska triplet, and ended up with a lovely 360mm f/4.55 instrument.

The plan, though, is to use this wondrous glass with the RC, which means I should end up with an 1820 mm focal length 'scope operating at f/5.2 with 350mm of aperture. However, tests show that my spacing is not right, as I'm getting 1950mm of focal length, and some visible astigmatism. I'll need some time and another clear night or two to fix this issue. I might need a set of adjustment rings, as well, to get the distance between the focal reducer and the camera sensor to match the spec's that Starizona demands.

Clear skies to you!
Roger Hill



The Moon, a pond in France, and my Grandfather

As a child I always treasured a close relationship to my Dad's father, whom I loved to call Grampa (misspelling deliberate) Willie. Our closeness began during a visit in 1959 or 1960, when we both took his apartment building elevator to the roof. On that unforgettable evening we both looked through binoculars at the Sun, which had not quite set. There and then

we enjoyed a large group of sunspots on the Sun. A few years later, when he was away from his apartment, I went again to that roof to look for Comet Ikeya-Seki, the Great Comet of 1965. I wrote earlier about my visit to him in early 1967, the night he decided to purchase for me the 15cm f/4 richest field reflector which to this day is a telescope I use every clear night, and which is named Minerva.

After he died in 1973, I very much wanted a painting hanging on the wall of my grandfather's living room. To this day I am not certain of who the artist was, although the signature was close to that of the French painter Charles-François Daubigny. I knew it as "Grampa's pond" since it reminded me of the pond at his cottage at Jarnac, near Ripon, Quebec, which I have visited hundreds of times and after which Jarnac Observatory is named. I also know that the artist painted it on a humid day, as the painting shows a hint of a distant mountain hidden in haze.

I brought the painting with me when I settled in southern Arizona in 1979. On a return drive years later I was able to add the antique frame in which the painting was housed. Not long ago I tried to read the artist's name as Charles-François Daubigny, though the signature does not quite match. However, the pond matches fairly closely the ponds and riverbanks in France that he loved to paint over and over again.

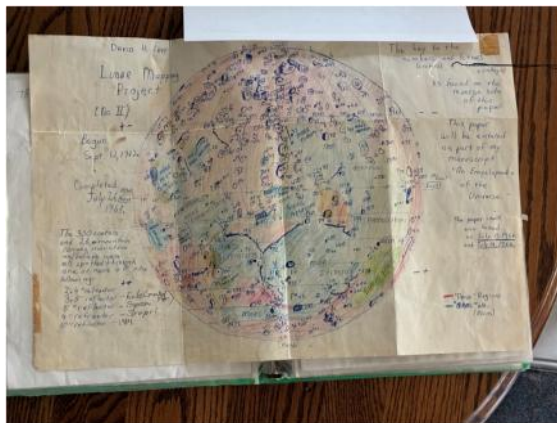
Daubigny apparently also loved painting the Moon, and although Grampa's painting does not show it, the artist has many evening pond paintings that do. To add to his selenographic love, I offer a lunar map I created in 1964 (I was 16 then) out of a Sky & Telescope lunar map that included numbered craters and lettered mountain ranges. My completion of the map on July 26, 1964, by the way, led a few weeks later to amateur astronomer David Zackon's lending me his 8-inch f/7 reflector (which I named Pegasus). Dad later purchased the telescope from him, and on 11 October 1987 I discovered my third comet, C/1987 T1, with it.

I will probably never know if Daubigny was the artist who painted the pond, or if it was another artist with a similar style. But I do know that there is a connection between me and the artist in that we both thoroughly enjoy the Moon. He loved painting it, just as I relish the tens of thousands of happy guises I have caught over more than half a century of moongazing. By far the easiest thing in the sky to find with almost any telescope, the Moon never disappoints. Just as it is a place on which twelve people have hiked and countless spacecraft have explored, it thoroughly rewards anyone who takes a few moments to take a deep breath, open an eye, and appreciate the splendor of the Moon's soft, commanding, and enchanted luster.



This was my grandfather's painting. I do not know if Daubigny was the artist but the style and subjects were clearly his.

I copied this map of the Moon from a Sky & Telescope map that I



purchased for 25 Canadian pennies in 1960. The idea was to spot all 300 numbered lunar craters and 26 lettered mountain ranges and other features numbered on that map. My version is

reproduced here by permission.

A Moonlit river landscape (1855) by Daubigny. The artist loved to



paint ponds and riverbanks, like this one and the one in my grandfather's painting.

The Moon apparently had a violent birth that involved at least one collision with Earth. Now it circles our planet in peace. Moon photos by Doveed.



Now circling in peace...

The Sky This Month: Rick Wagner

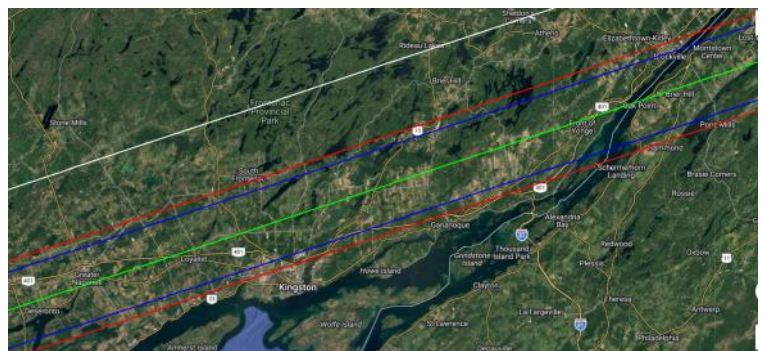
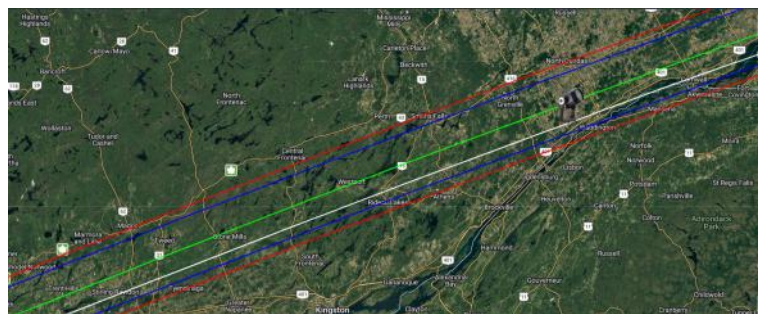
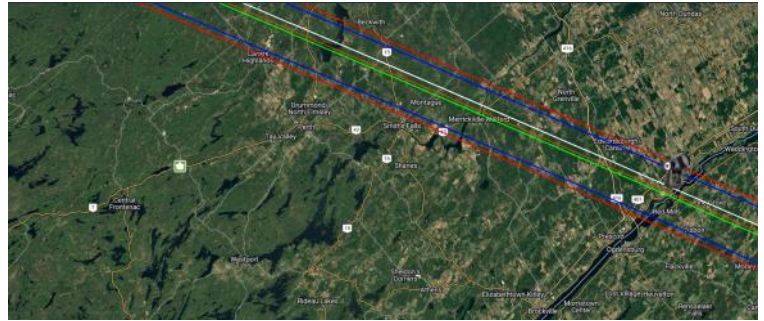


Any night of the week offers up a broad range of viewing wonders. A Past President of the Kingston Centre, Rick Wagner keeps an eye on the sky each month, sharing some of the best viewing opportunities as well as timings to catch your favourite night sky target at its best.

Astronomy This Month – October 2026

- 02 Oct – Partial occultation of Ganymede by Europa (06:10EDT)
- 03 Oct – Last Quarter Moon
- 04 Oct – Partial eclipse of Europa by Callisto (06:47EDT)
- 04 Oct – Saturn at opposition
- 05 Oct – Mars and Moon rise $2/3^\circ$ apart after midnight
- 05 Oct – Gegenschein visible high in the south at midnight under very dark skies for ~2 weeks
- 05 Oct – Double shadow transit on Jupiter (0330EDT)
- 06 Oct – total occultation of Io by Callisto (03:38EDT)
- 06 Oct – Moon occults Jupiter (0430EDT)
- 06 Oct – (2) Pallas (mag 8.2) at opposition
- 07 Oct – partial eclipse of Europa by Io (03:39EDT)
- 08 Oct – Zodiacal light before morning twilight for ~2 weeks
- 08 Oct – Draconid meteor shower peaks, best before midnight
- 10 Oct – S Taurid meteor shower maximum best after midnight
- 10 Oct – New Moon (1150EDT)
- 11 Oct – (21878) 1999 UF13 occults TYC 0760-02305-1 over Cardinal (05:25EDT)
- 12 Oct – Mercury (mag 0.0) GEE very low in W
- 13 Oct – (95945) 2003 MG5 occults UCAC4 613-008780 over east Kingston (20:25EDT)
- 14 Oct – partial eclipse of Europa by Io (05:51EDT), very close to Jupiter's disk
- 14 Oct – partial occultation of Callisto by Io (06:39EDT)
- 15 Oct – (3767) DiMaggio occults TYC 0741-00449-1 over Morrisburg (03:15EDT)
- 18 Oct – First Quarter Moon
- 21 Oct – Orionid meteor shower peaks; best after moonset
- 26 Oct – Full Moon (00:12EDT)
- 26 Oct – partial eclipse of Io by Europa (04:08EDT)
- 28 Oct – (18895) 2000 GJ108 occults UCAC4 458-003365 from Westport to Morrisburg (04:56EDT)
- 29 Oct – (35286) Takaoakihiro occults TYC 4697-00191-1 for north Kingston through Loughborough and Brockville (02:40EDT)
- 01 Nov – Daylight Saving Time ends (02:00EDT)

Images above are visibility maps of the asteroid occultation events listed, and are presented in the order in which they occur.





Most targets in Cygnus cluster about the main body of the swan and therefore should prove easy quarry. Unfortunately the rich starfield of the Milky Way can confuse star hopping efforts.

The colour blocking of the table roughly groups objects by location for breaking up such a long

list. The following information is just a small sample of what can be found. All objects can be located in Cartes du Ciel.

IC5146, the Cocoon nebula, is an emission/reflection nebula which also has an open cluster associated with it. The cluster has been rated by O'Meara as mag 7.2 and the nebula at 9.3 with a mag 9.5 star at its heart. The whole thing is embedded in the dark nebula Barnard 168. Burnham notes 'Lies in the east end of a dark streamer'.

Two complexes need a bit of sorting. The Veil nebula, a supernova remnant created about 15,000 year ago with the death of a single star, includes NGCs 6992, 6995 and 6960.

6992 and 6995 form the bulk of the eastern half of the nebula, with 6995 being a much fainter hook below 6992. 6960 provides an easier target as it aligns with 52 Cyg, a 4.22 magnitude star and forms the western half of the complex. This whole thing can benefit from an OIII filter.

The second complex is the North American nebula (NGC 7000) and the Daffy Duck nebula (Levy 403). Levy 403 is noted to form the northern limit of NGC 7000. It is a dark nebula and you can read about it and see it in a photo here... <https://www.denverastro.org/daffy-duck/>.

Deneb, Alpha Cygni, is the dimmest of the 3 stars that make up the summer triangle. But it is a supergiant and its absolute magnitude is probably -7.1.

NGC6888, the Crescent nebula, is an object much photographed by Kingston members. Mark Deslauriers has generously provided a photo for us. It is a nebulosity surrounding the Wolf-Rayet star HD192163. This nebulosity is thought to be material originally ejected post supergiant phase and then illuminated by further material streaming from the star at a very high speed.



Object	Description	Mag	RA hr/min	Dec degree/min
M 39	Messier OC	4.66	21 32	48 26
IC 5146	DSC/E/RN	See text	21 54	47 16
Deneb	ETU Bright star	1.25	20 41	45 17
NGC 7000	Finest Nebula	4	20 59	44 32
Levy 403	Daffy Duck neb	5.9	21 08	46 10
NGC 7027	Finest PN	10.4	21 07	42 14
61 Cyg	Double/bright/ wide /amber	5.3/6.1	21 07	38 46
PK 80-6.1	DSC/PN	13.5	21 02	36 42
M 29	Messier OC	7.3	20 24	38 30
NGC 6888(Crescent)	Finest Bright Neb	7.44	20 12	38 21
IC 1318	DSC/EN	? mag/large	20 26	40 30
NGC 6910	Levy/OC	7.4	20 23	40 47
Alberio	ETU Double 33"	3.4/4.7	19 31	27 58
M1-92	DSC/RN	11	19 36	29 33
PK64+5.1	DSC/ PN	9.6	19 35	30 31
NGC 6960a	Finest/Veil Neb.	7.0	20 46	30 36
NGC 6992/5b	Finest/ Veil Neb.	7.0/7.0	20 56	31 45
HR7529	Double/wide pr. Pale lemon and greenish white.(Double Stars for Small Telescopes)	6.4/7.0	19 46	36 05
NGC 6819	Finest/OC	8.2	19 41	40 11
HR 7294 aka... Struve 2486	Double/gold. Cartes du Ciel as HD 179957/HIP 94336/HR 7293*	6.5/6.7	19 12	49 51
16 Cyg	ETU double 39"	6.0/6.2	19 42	50 32
NGC 6826	Finest/(blinking PN)	10	19 45	50 32
U Cyg	Double/ HIP100219	Combined/7.6	20 20	47 54
Omicron Cyg /31 Cygni	ETU triple	3.8/7.7/4.8	20 14	46 44



Last night/this morning was my first all night imaging run with the RASC-KC ZWO Seestar S30Pro smart telescope.

The run lasted 10 hours (20:00-06:00). The internal battery is: 6000mAh, Battery Life: 6 hours (ZWO laboratory test data).

I connected a 5 year old external battery pack (6500mAh) on a long 0.5m cable (to avoid cable wrap). At the end of the run, the external battery was depleted and the internal had about 15% left. The dew heater was on all night (this can eat into you battery life at least 25%?)

It took a while to generate an imaging "plan" but once you got a few in the remaining went quickly.. I think maybe 10-15 minutes with charts and RA lists of Messier Objects and my spreadsheet of what I had imaged, is all it took for 22 objects.

At end of run 06:00 the open arm closed but the telescope stayed up. Note that there were *no* images stored to the Smartphone at all (in manual mode, you get the jpg on your phone in "my album"). So I connected the scope to my imaging computer and am moving 33GB of files (including all subs) in about 20 minutes (USB2? connection to the smart scope?).

Station mode wifi worked flawlessly. Set it up once days ago and the Seestar automatically taps into your house wifi and your phone or tablet connects easily if not automatically to it from anywhere within your house wifi range.

My targets overnight (in alphabetical, not imaging order) were:

M15, 17, 19, 22, 24, 30, 31, 32, 34, 36, 52, 72, 74, 8, 9, 110, NGC7331

Hmm. that only adds up to 17 target results? Looking closer it appears some of the plan targets were wrong, duplicated. The plan interface on a Smartphone is small and tricky. Will try that on a larger tablet next time.

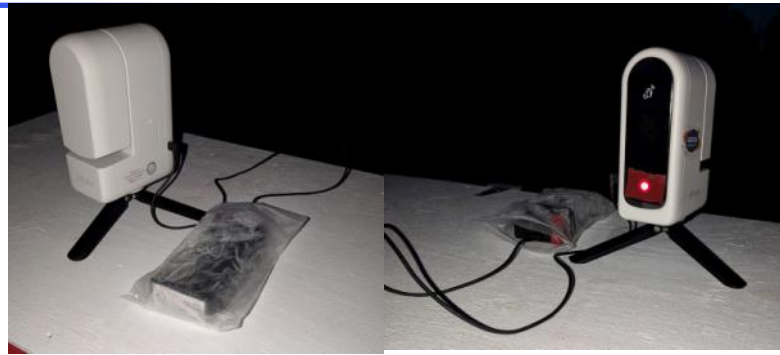
Next issue: No images were saved with the watermark showing the target name and time exposed. Not on the phone and not on the Seestar. The actual filename in each target folder does show how many images stacked, exp time, filter used (LP or IRCut) and date and time (local). In each folder was a single .FITS image and a full res JPG and a jpg thumbnail.

Let's look at some of the images: M8 (210sec=3.5min), M31 (2100sec=35min), M52(1120sec=18.7min). Not too bad at all. Very happy!

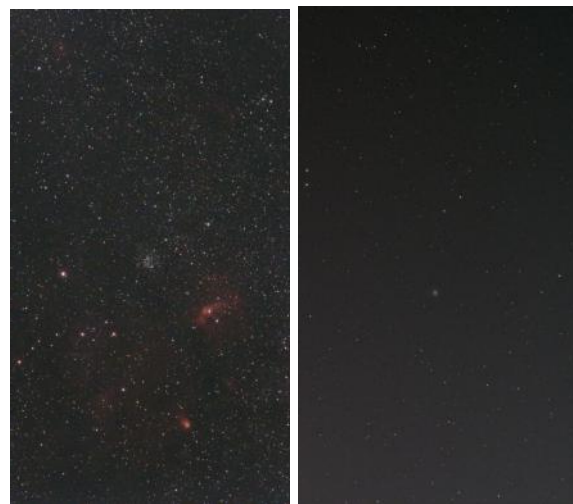
Other Messiers are very tiny (M19) and I look forward to trying them on a Seestar S50 (FL=250mm) (vs S30Pro FL=300mm). hmmm that seems backwards... they must also interact with the sensor specs to get bigger target sizes.

All attached images were reduced in size from 2160x3840 pixels to 800x600 pixels.

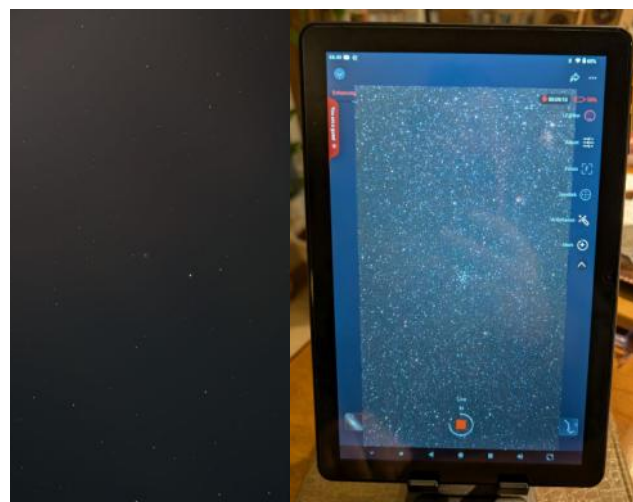
Two were hazed out by the moon (M30). I was surprised more were not as the moon is pretty big and bright!



M8, left
M31, right



M52, left
M12, right



M19, left

More Stuff from Kevin

Kevin Kell

Is your Dobsonian telescope getting heavier each year? Is your garage full of cars? Is your driveway gravel? Is this why your Dobsonian is full of spiderwebs? Well folks, here is what we came up with one day this summer...

A Dobsonian Observing Platform and Storage box/Observatory

This is an 8'x8' raised deck (on 4 deck blocks on gravel on fractured limestone), 2x6 framing and 5/4x6 PT decking. Inside are four 24"x30" patio stones (leftovers from around the yard), on gravel on fractured limestone and isolated from the deck, in case another person happens onto the deck and walks around. This will prevent any motion being transferred to the telescope and eyepiece.

The storage box is 1/2 plywood with 2x3 and 2x4 framing and a spare metal roof panel. Width is 72", height 48" and depth 24".

The telescope rests on a 5" tall dolly with four 3" wheels, two of which have brakes. There is ample room inside the box for a stool, folding table, eyepieces and heater kit.

I plan on using this setup for my RASC Exploring the Moon Observing Certificate as soon as the humungous quantity of little biting black flies have died off.

Previously the 20cm Dobsonian was in Kim's Observatory and there was not a lot of room inside to do much else. Often we had to take it outside to some patio stones outside the observatory to use it... and that's where the 1st paragraph of this article starts :)



The SCGO Allsky1 Camera System mount was rebuilt recently. The old mount was loosely attached to the Serenity II observatory and with a rolling building moving around, the mount itself was not all that stable. It suffered from vibration, leaning, rocking and light pollution from local direct sources. The camera mount itself was also loose and the whole system rotated in azimuth depending on which way the wind was blowing. The black case was also loosely hanging from the mount... all in all not a great build.

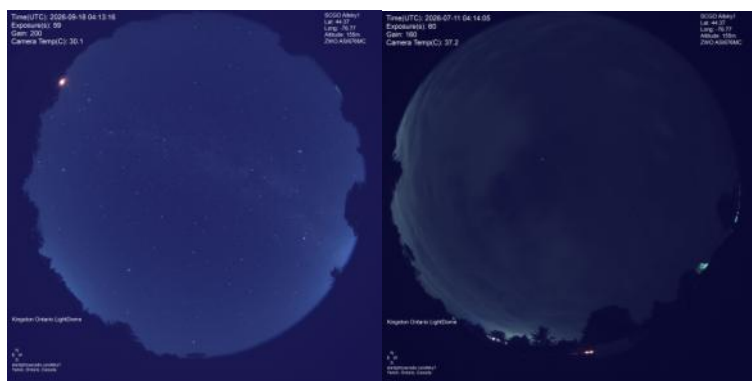
So it was removed and replaced. A newer 4x4 post was put onto a deck block. A shorter post so that it was easier to reach and maintain, and especially to wipe off the bird poop from the dome without a ladder. It was supported on two sides with ground stake braces. A white plastic bag over the black case was to help prevent from overheating. The 45 deg angle 2x2 near the dome is to give birds an alternate place to land and poop, rather than on the dome.

Two midnight images from the Allsky1 system are shown: July 11th showing neighbours house lights along the bottom and front driveway lights along the right side.

The other midnight image from Sept 18 shows the lower camera system now has most of the local light pollution blocked, by out-buildings, trees, shrubs, etc. In addition it is now better polar aligned (i.e. so that Polaris is in the middle of the image left-right).

The current system: inside the dome and white pipe is a ZWO ASI 676MC square aspect colour camera powered by a USB cable that runs down into the black box. In addition there is a resistive heater powered by a 12vdc source and its cable also runs down into the box.

Inside the box is an HP minicomputer running windows 10, all-sky software, a mechanical timer for the power supply of the dome heater, and the dome heater power supply.



ZWO Seestar S50 Pro

Back in August (at least) four members of Kingston Centre pre-ordered ZWO's latest addition to their Seestar line of telescopes – the S50 Pro. This is a replacement for, and a significant upgrade to, the S50 which was discontinued in the spring. Deliveries of the scopes were spread over only a few days in late September. Somehow we avoided the usual new scope cloudy skies curse and were blessed with some clear skies the first couple of nights with the new scopes. Unfortunately it was also just before full Moon so concentrated testing on the deep sky will have to wait a week or so.

Firstly, the scope has all the capabilities of the other members of the Seestar line, capabilities which derive from and have been improving steadily as its driving app gets upgraded. These include:

- Four imaging modes:
 - Wide-angle 'Milky Way' (only the two Pro versions)
 - Narrow-angle 'Stargazing',
 - 'Solar System' (mainly the Sun and Moon, the planets being too small really), and
 - 'Scenery'
- Automated mosaics of several different types
- Automated pointing to targets from a database of over 80,000 objects
- User-defined targets by inputting RA and Dec
- A catalog of favourite targets either selected from the database or input by the user
- In-app automated image enhancement
- Star trails
- Time lapses
- Automated nightscapes (aligning both the stars and the foreground in a single image)
- Plan mode to allow automated shooting of multiple targets through a whole night
- Runs in either alt-az or equatorial orientation.

The Seestars continue to automate precise GoTo pointing, plate solving, focusing, tracking and image capture, preserving the remarkably straightforward workflow that made the earlier Seestars so popular. The Seestars also have Alpaca drivers so they can be completely controlled using ASCOM-compatible software on any Windows computer same as any other imaging system.

The new S50 Pro is very slightly larger than its predecessor, about 10% heavier, and white rather than black making it much easier to see in the dark. The main ("telephoto" in ZWO parlance) lens has been upgraded to a four-element apo with a focal length increased slightly to 260mm. The chip has been changed to a much larger Omnivision OS08B10. This is a full 4K chip (2160 x 3840 x 2.9µm square pixels) giving a field of view of 1.38 x 2.45° (twice the S50) and pixel scale of 2.3 arcsec/pixel.

With the greater field of view larger objects like M31 and the Soul Nebula can be captured in their entirety in a single image.

Yet, with an unchanged pixel size and similar focal length the scope offers about the same resolution as its predecessor.

ZWO has added the wide-field camera from the S30 Pro – 3.4mm lens with 6mm focal length feeding a Sony IMX586 chip (also 4K) with a field of view of 28° x 48°. This camera is great for wide-field Milky Way shots as well as star trails, time-lapse sequences and wide-field nightscapes. The wide-field camera can be used to shoot even wider fields using The scope can image a target with both cameras simultaneously to give both detailed and contextual views. And the wide-field camera can be used as a finder scope to aid in centering targets in the telephoto camera.

Another important upgrade is the mechanical drive system. ZWO has incorporated a reduced-backlash drive that noticeably improves tracking smoothness and stability – I had very few dropped frames shooting 30s exposures in equatorial mode.

Finally, system memory has been doubled and battery capacity increased by 66%.



Telescopes Out and About — Continued



Editors note:

Rick Wagner requested images from the membership taken with a Seestar S50 Pro, and he sent along the Moon photo on the previous page, along with (top row) NGC 7023 (60x30s), NGC188 (20_x_30s), NGC 6940 (31x10s), and M27 (40x30s with the LPFilter).

Kevin Kell (sort of) sent along the bottom right image, saying “Ever see Magnum PI and the "Zen of the High speed chase"? episode. This could be "The Astronomers Zen Garden". Crop out the left stuff” So, since I had permission to edit the image...I did. Sorry, Kevin.

As equinox passes us by, our nights lengthen noticeably and the sky becomes clearer as it dries. It is a good time to be observing. Too bad it can get so cold. There are lots of things to share with friends and family this month. Meteors and the dance of the planets are all on display.

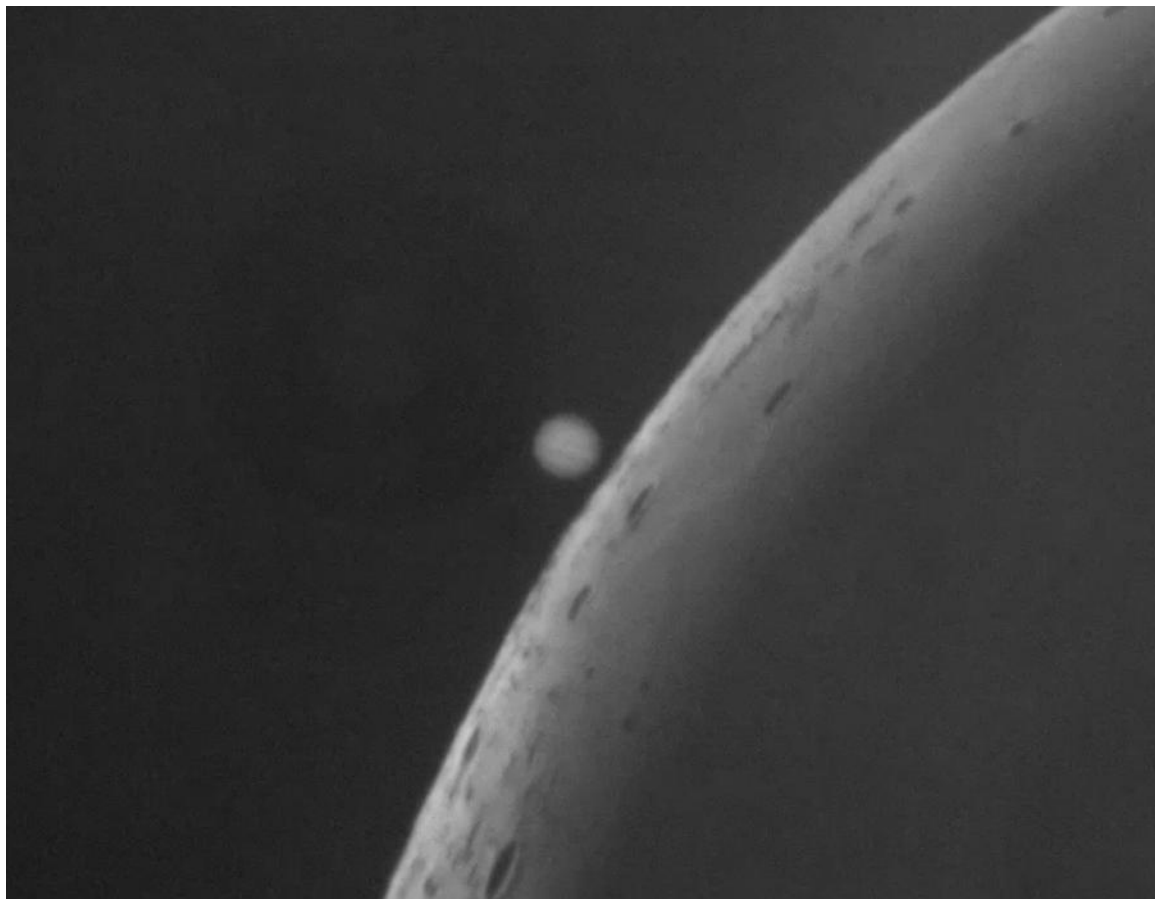
All of the naked eye visible planets can be seen for at least part of the month. Our inner planets, Mercury and Venus, are approaching the Sun, from Earth's point of view, and will not be safe to observe before the Sun has set. Searching could leave you open to eye damage if you find the Sun instead of the planet. Venus will be the first to be lost in the Sun's glare. Venus is extremely low in the WSW and lost in twilight before mid month. Mercury will follow. It is low in the WSW during evening twilight. Mars will be visible in the SE during the morning all month. Jupiter will be rising after 2 AM in the ENE and will be high in the E by dawn. Saturn will rise in the E before 7 PM during dusk. It will transit at Midnight and set in the W after 6 AM.

On the first of the Month, the Moon will be at perigee (it's closest approach to Earth). On the second, Venus will appear stationary. Gegenschein (an oval shaped patch of light directly opposite the Sun) may be visible high in the S at midnight over the next two weeks. On the 4th, Saturn will be at Opposition. (The Earth will appear in the middle of a line drawn between Saturn and the Sun), the Lunar Curtis X should be visible and you might be able to follow Sirius into the morning sky for the rest of the week. The Moon will occult Mars on the 5th but will not be visible in this part of Canada all we can see is a close pass. Mercury will be 5 degrees N of Venus. Galilean moon shadows crossing Jupiter at 7:03 PM and 3:24 AM would require a telescope. The Moon will occult Jupiter on the 6th at 4:33 AM and this should be visible to most of the country. The Moon will be at a waning crescent so Jupiter will disappear near the tip. Binoculars or a telescope would show if the planet disappears in a flash or lasts a few seconds. From the 8th through 22nd, Zodiacal light may be seen in the E before morning twilight.

New Moon is on the 10th and the S Taurid Meteor shower will peak. Best viewing is in the pre-dawn. Venus will be 3 degrees S of the Moon on the 11th. Two shadows will cross Jupiter (2:42 AM) and you might be able to see Vega (unaided) before sunset this week. Mercury will reach its greatest elongation from the Sun at 25 degrees on the 12th and be just 2 degrees N of the Moon. That should make it easier to find and observe. Jupiter will have shadow crossing at 9:12 PM. Venus will be at Opposition on the 13th. Antares, a large red star in Scorpius, will 0.4 degrees N of the Moon the next day. The Moon will be at apogee on the 16th and First Quarter on the 18th and the Lunar X should be visible. The Orionid Meteor shower peaks on the 21st, Venus at inferior conjunction (when an interior planet passes between the Earth and the Sun) the next day, and Mercury appears stationary on the 23rd. The Full Moon (animal fattening Moon) is on the 26th with the Moon at perigee on the 28th.

Hallowe'en is astronomical in its origin. It is a cross-quarter day, half way between Solstice and Equinox. The date was known as Samhain with the Celts and there are some monuments that mark this point in the calendar. As it was neither winter nor summer, mysteries developed around the date. Some places avoided travelling alone in winter because a 'hag' that lived in the sky would take their soul. You could protect yourself by carving a turnip or squash to look like a face and hanging it off your wagon at head level. Sound familiar?

Clear Skies.



Wednesday, September 9, 2026

Ellis Hall, Room 226, Queen's University, Kingston

The meeting began at 19:10 EDT with 29 in attendance. Malcolm welcomed Kingston Centre members and guests to our Member's Night

RASC Kingston Centre acknowledges that we are on the traditional homeland of the Anishinaabe, Haudenosaunee, and the Huron-Wendat, and we thank these nations for their care and stewardship over these lands.

Members' Speakers Night:

Bruce Murray shared images, mostly taken with a Radiant 75mm Refractor, Rotting Fish Nebula (LDN 1251), Fighting Dragons of Cepheus (LDN 1228 & LBN 552), Question Mark Nebula (NGC 7822), Sea Horse Nebula (Barnard 150), Clamshell Nebula (Sh 2-119), Wolf's Cave Nebula (VDB 152), and the Elephant's Trunk Nebula (IC 1396A), along with one of the partial Lunar eclipse of Aug 27/28.

Kevin Kell highlighted recent donations and repairs to the Equipment Loan Program. The Douglas and Barney Dobsonians are undergoing renovation before becoming available. The Fitzgerald Dobsonian mirror recoating is complete and will be returned to Queen's for our use at public open houses. The most recent donations: from the estate of Hein van Asperen, a long-time centre member, a Questar 3.5" Catadioptric Telescope and a 20 cm Dobsonian telescope, and from Don Fields, a Celestron Sky Prodigy 6SCT. Contact Kevin for the inventory list and guidelines available to members. Kevin@starlightcascade.ca

Kevin shared images taken over the last two months using a Celestron 9.25" SCT (D=235mm, F10, FL=2350mm), Antares x1.5 barlow (effective FL=3525 mm), Pegasus focuser, ZWO ASI585MC camera, and Skywatcher AZ-EQ6GT mount of Saturn with moons Enceladus, Rhea, Dione, Tethys, and Titan. Over the summer, Kevin and Kim built a dedicated Dobsonian platform, 8' x 8' deck with an isolated patio stone platform and 6'x4'x2' storage box, used for their 8" Skywatcher Dobsonian F6 FL=1200 mm on a 3" wheeled dolly.

Charles shared images taken with a ZWO SeeStar S50 and Affinity Photo for processing showcasing the Crab Nebula (M1), Helix Nebula (NGC 7293), Horsehead Nebula (Barnard 33), Ring Nebula (M57), Owl Nebula (M97), Pelican Nebula (ICG 5070), Crescent Nebula (NGC 6888), Cave Nebula (Sh2-155), North American Nebula (NGC 7000), Little Dumbbell Nebula (Messier 76), Butterfly Nebula (NGC 6302), Wizard Nebula (NGC 7380), Lion Nebula (NGC 2392), Iris Nebula (NGC 7023), Lobster Claw Nebula (Sh2-157), Soul Nebula (IC 1848), Tulip Nebula (Sh2-101), Elephant Trunk Nebula (IC 1396A), and the Andromeda Galaxy (M31), Bode's and Cigar Galaxies (M81 & M82), Whirlpool Galaxy (M51), M101 Pinwheel Galaxy (M101), the Hercules Cluster, partial eclipse of the Moon, and Comet 220P/McNaught.

An asteroid renamed to (10076) Roger Hill, has prompted Roger to an interest in photometry. A recently purchased iOptron Photron 14" RC Truss is now installed in his SkyShed Pod with help from Mark Kaye and Roger's son, Jonathan. Roger shared photos of the installation (lots of smiles in the photos!).

Rick Wagner: Astronomy This Month September 2026

BAA Events

None

Local Events

10 Sep – Yong Xu – Gravitational Waves
17 Sep – Keith McBride – PUEO, A Neutrino Balloon Experiment
19 Sep – QU Obsy Open House
24 Sep – Shaunak Modak – Dynamics and Galaxy Evolution
01 Oct – Elena Pinetti, Multimessenger Searches for Dark Matter
08 Oct – Will de Rocco – Ganymede and dark matter

AAVSO

21 Sep – Exoplanets SIG Mtg
14 Oct – Spectroscopy SIG Mtg
L&A DSVa
11-12 Sep – Laser-guided Tour of Night Sky
26 Sep – Up Close with the Moon
03 Oct – Astrophotographers Assemble
09-10 Oct – Laser-guided Tour of Night Sky

NFAP

11-13 Sep – Festival of Stars, New Moon, Saturn

Sky Events

09 Sep – zodiacal light visible in east before morning twilight for next two weeks
10 Sep – New Moon (23:37EDT)
18 Sep – First Quarter Moon
18 Sep – Venus at greatest illuminated extent (mag -4.8)
22 Sep – Autumnal equinox (20:05EDT)
25 Sep – Neptune (mag 7.8) at opposition (22:00EDT); Neptune 6.5 degrees right of Moon, Saturn (mag 0.4) 6.5 degrees below Moon
26 Sep – Full Moon (12:49EDT)

Sky Events – Oct

03 Oct – Last Quarter Moon
04 Oct – Saturn at opposition
05 Oct – Double Shadow transit on Jupiter (0330EDT)
06 Oct – Moon occults Jupiter (0430EDT)
08 Oct – Zodiacal light before morning twilight for about 2 weeks
10 Oct – S Taurid meteor shower maximum
10 Oct – New Moon (1150EDT)
12 Oct – Mercury (mag 0.0) GEE very low in W

T CrB

- Sets shortly after midnight
- Still faint

Major Planets

Mercury (mag -0.2) very low in W after sunset
Venus (mag -4.8) very low in W after sunset
Neptune (mag 7.9) up all night
Saturn (mag 0.4) up all night
Uranus (mag 5.8) rises mid-evening, transits before dawn
Mars (mag 1.2) rises after midnight
Jupiter (mag -1.8) low in east before morning twilight

Small Bodies

12 Sep – (456) Abnoba (mag 13.5) occults TYC 0494-02908-1 (mag 10.7) for 6.1s over Elgin and Athens (2205EDT)
15 Sep – (19643) Jacobrucker (mag 18.9) occults UCAC4420-148610 (mag 10.8) for 0.6s over Kingston, Cardinal, Morrisburg (01:45EDT)
16 Sep – (32526) 2001 OD98 (mag 18.5) occults HIP 88857 (mag 7.6) for 0.7s over Kingston (2120EDT)
06 Oct – (2) Pallas at opposition (mag 8.3)
13 Oct – (4) Vesta at opposition (mag 6.5)

Minutes, Continued and About Us

Rick attended Starfest in August and shared photos of the experience, highlighting vendors, homemade scopes, imaging setups, and talks.

At the beginning of the summer, Laurie Graham bought a Vespera Pro, and has begun collecting her Messier list. Images shared were of North American Nebula (NGC700), Helix Nebula (NGC 7293), Double cluster in Perseus (NGC 869+884), Crescent Nebula (NGC 6886), Crescent Moon, and Brocchi's Cluster Coathanger (Collinder 399). Laurie also discussed evidence of Black Hole Stars. On Friday, August 21, Devin, John H. and Laurie led an outreach event at the Museum of Lennox & Addington, with a mid-day talk with solar observing.

Alex van Nesesse, a visitor from the Netherlands, bought his first telescope, a Celestron Origin, a week ago. Alex shared images including one of the Pacman Nebula (NGC 281).

Bruce Elliott spent time in Tobermory and Snug Harbour and shared images taken with his ZWO SeeStar S30 Pro. Andromeda Galaxy (M31), Whirlpool Galaxy (M51), Fireworks Galaxy (NGC 6946), Hercules Star Cluster (M13), Orion Nebula (M 42), Waxing Moon (38%, 72%, 78%), Dumbbell Nebula (M27), Pacman Nebula (NGC 281), Sun, and Lunar Eclipse of Aug 27-28, as well as scenery shots.

Stefan Jackson shared images of Comet 220P/McNaught taken with his Stellarvue SV105, meteors using an all-sky cam, and the Phantom Nebula (Sh2-173) co-produced by Shelley and Stefan. Shelly's new deck and SkyShed POD were also featured.

General Assembly 2027 – June 4-7. Our Centre will again host the national gathering, the General Assembly, as we did 30 years ago, taking place at the Ambassador Event Centre in Kingston. Planned are four themed half-days under the banner 'Come Together' – the Elements, the Stars, The Cosmos, the Community, featuring invited talks, member presentations, lightning talks, a poster session, vendors, and swap tables. Registration opens in January 2027. Hotel rooms with a discount code will be held. We are looking for people to give a talk, for volunteers, and have people start looking for items to bring for the swap table. Hope to see you there.

The RASC Kingston Centre September edition of the monthly newsletter Regulus is available, thank you to our editor Roger Hill. It can be found on the RASC Kingston Centre website Kingston.rasc.ca. Other than meeting nights, we host Wednesday night Zoom Socials, with an invitation posted to the Centre's email list. On Facebook we are @RASC Kingston Centre, YouTube channel @RASC Kingston Centre. Join our group at secure.rasc.ca/membership.

Next meeting, in person at Queen's, October 14, 7 pm. Malcolm thanked all for attending and the meeting ended at 21:00 EDT. Elena Zanetti, Secretary.

Elena Zanetti, Secretary.

About Us

The Royal Astronomical Society of Canada, founded in 1868, is Canada's leading non-profit astronomy organization, connecting over 5,000 passionate amateurs, educators, and professionals. Across Canada, 30 local Centres deliver community programming alongside national initiatives.

The RASC Kingston Centre, Kingston's Astronomy Club, was established on June 2, 1961, is the region's local astronomy hub.

What We Do:

Public Outreach & Education: Host public sessions, support local schools, youth groups (Cubs & Guides), and regional events.

Partner with Queen's University Observatory Open Houses on the third Saturday of each month at Ellis Hall.

Science Fair Support: Award an annual astronomy prize at the Frontenac, Lennox & Addington County Science Fair (FLASF).

Observing & Mentorship: Offer private observing sessions and technical assistance with astronomical equipment.

Meetings & Gatherings:

Monthly on the 2nd Wednesday of each month (7:00–9:00 PM ET)

March–June and September–December at Queen's University;

In-Person: July and August at Lake Ontario Park starting at 4pm.

Zoom Only: January and February.

Weekly Informal Chat: Casual weekly videoconferences for members and guests.

Membership Benefits:

National Benefits include the annual Observer's Handbook; the bi-monthly Journal of the RASC (digital); Monthly national RASC Bulletin (digital).

Kingston Centre Benefits:

Monthly Centre newsletter (Regulus); Equipment loan program; and access to private observing sites and club events.

Directors for 2025-2026:

Laurie Graham, Roger Hill, John Hurley, Kevin Kell, Bruce Murray, Malcolm Park, Elena Zanetti

Officers for 2025-2026:

President	Malcolm Park
Vice President	Laurie Graham
Treasurer	Bruce Murray
Secretary	Elena Zanetti
Regulus Editor	Roger Hill
NC Rep	John Hurley
Equipment Coordinator	Kevin Kell
Librarian	Kim Hay
Equipment coordinator	Kevin Kell
Science Rendezvous/FLASF	Bruce Elliott
Annual Member Image Gallery	Brian McCracken
Queen's Open House coord	Laurie Graham
Web Team	Kevin Kell, Walter McDonald and Malcolm Park

Social Convenor	Mike Hanes
Email Chat List Moderator	Kim Hay
Facebook Team	Kim Hay
Membership Coordinator:	Kim Hay
Fall'N'Stars KC coordinator	Mike Hanes
Honourary President:	David H. Levy

The **Royal Astronomical Society of Canada Kingston Centre** was provincially incorporated as a Not-For-Profit Corporation in September 2005 and has been a registered Charity with the Canada Revenue Agency since September 2006. Our CRA Registration: 827905720RR0001