

Regulus

2022 November

Newsletter of The Royal Astronomical Society of Canada - Kingston Centre
kingston.rasc.ca



**The JWST keeps on wowing!
Draggable Comparison: Webb MIRI/ NIRCam -
Pillars Of Creation at
Jwst.nasa.gov**

**NOTICE: Annual General Meeting
Wednesday 2022 November 9th,
7pm EST via Zoom videoconference**

RASC-KC Members: Register in advance for this meeting: (to be published in the November issue and emailed to each member). After registering, you will receive a confirmation email containing information about joining the meeting. Voting will be done within the zoom environment.

AGM AGENDA

1. Welcome. Notes on videoconferencing and voting procedures (RASC-KC members only, show of hands in video or participation windows)
2. Approval of Agenda
3. Approval of 2021 AGM 2021Nov10 minutes (in October newsletter)
4. Approval of Secretary's Annual Report
5. Approval of Treasurer's Annual Report (including auditor's report)
6. Centre Elections: Vice-President, Secretary, Editor, Librarian, National Council Rep
7. Election of Auditor
8. Questions regarding other published reports: President, Vice President, Librarian, Editor, NC Rep, Webmaster, Equipment Loan,
9. Adjourn with thanks

MEETINGS

RASC-KC Wednesday Weekly Social videoconference. 7pm Eastern all weeks except the 2nd Wednesday of the month. For members and their guests. Email list subscribers receive the link weekly 1 or 2 days beforehand. Next Socials: Wednesdays 2022 November 2,16,23,30

The next Regular Monthly Meeting (zoom) is Wednesday 2022 November 9th 7pm EDT, after the Annual General Meeting Format: Virtual via Zoom only. Guest Speaker: Dr. Kristine Spekkens (RMC/Queens)

RASC-KC Members will be emailed a zoom meeting registration link, others may watch on our Youtube channel.

In the November Issue

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- * **Regular Meeting Minutes Sept, Oct- Elena Zanetti**
- * **L&A Dark Sky renovations**
- * **Queens Observatory new Coordinators**
- * **Annual Reports from RASCKC Officers**
- Editor: Kevin Kell**

President's Nook - Kim Hay



At our Meeting on October 12th, we took a Poll to see who was up to meeting in person, or going out for a Christmas Gathering. Results were not favourable at this time, as things are still at a unstable rate. So our November and December meetings will be online using ZOOM, with the links going out at the appropriate times. We are having our Annual Meeting and Elections at the November 9th meeting. In order to vote at the Elections, you must be a member in good standing (meaning a paid up member). Our guest speaker will be Dr. Kristine Spekkens speaking on ""Galaxies, Cosmology, and the Biggest Radio Telescopes"

A reminder of the positions open for election this year, Vice President, Secretary, Newsletter Editor, Librarian and National Council Representative. We need you to help run our Centre, so if you would like to make change this is how it can be done!

The Executive held a meeting and our January meeting will be an "In person/hybrid meeting" Plans were also discussed to plan out the rest of the 2023 year.

If any member has a suggestion for topics for meetings a Speaker, or how they wish their meetings to be presented, please let the Executive know, or send a note off to the kingston@rasc.ca email with the Subject Line of item.

If you are not on the Centre's email list(Kingston Astronomy Chat), send along a note to get you setup on our Google Groups email list. This is one way to stay in astronomical contact with members, and know what it going on locally. This is also the only place we really send out the ZOOM Social link- a members only perk!

I cannot express enough the gratitude and appreciation that I have for our Executive and volunteers that do all the work that make the Centre run so smoothly. We have a great TEAM and wonderful members. I hope that this may encourage others to help out where they can or want, either a single event or on a committee - I like the term "TEAM" better.
Thank you from the bottom of my heart to you all.

Help Needed! - Kim Hay

Going into our 2022-2023 year, we will need Volunteer's to help out in various activities we are planning.

1) Help out at the Queen's Observatory Open House- The Centre has a telescope there, so no equipment is required. The dates are listed on the kingston.rasc.ca website. These are all on Saturday nights (3rd Saturday).

2) Help out at the 2023 Science Rendezvous. This is being held Saturday May 13. Help out for a couple of hours manning a table, operating a telescope, talk to the public about Astronomy.

3) Help out with Outreach for the Solar Eclipses. Momentum is picking up, and we will need help with handing out Solar Glasses, talking to the public, and helping out Queen's and RMC, and other local groups.

This list will be updated, as events come up! Stay tuned.

If you are interested in any of these events, please send a note to kingston@rasc.ca

Skyward November 2022 - David H. Levy



Goodbye, Wendee.

Dear readers,
What follows is the most difficult article I have ever written. On Friday, September 23, 2022, my wife Wendee died. She had been suffering from metastatic breast cancer for over a decade, but this past summer she was truly and clearly suffering.

We had an oncologist who was good clinically but who had no bedside manner, and a nurse practitioner who was very good, but a bit of a pollyanna. Therefore, when Wendee began to destabilize by the hour near the end of September, I was just not prepared for it.



Wendee and I were together for more than thirty years, and we were married for the last 25 of them. We got together as the result of a fix-up. When Wendee's Mom, Annette Wallach, and my Mom, Edith Paillet Levy, resumed their childhood friendship in 1985, my father has just died from Alzheimer's Disease. They got together in Montreal and immediately shared stories about their children. Wendee, it turned out, had just separated from her first husband and I was long since divorced from my "practice wife." They decided to try to bring us together. Wendee was the first to reject the idea: "I am a dog person; he is a cat person," she said; "I am an athlete, and he is a couch potato." (I could say that over time I became a dog person and Wendee became a couch potato, but I won't.)

I just ignored my Mom's suggestion. Every year, or two, Mom would repeat her idea. After seven years, Mom asked again, and when I still had not done anything, she annoyingly chastised me and said, "forget the whole thing. Forget I ever asked you." That was a challenge. On March 23, 1992 (one year to the day before I took the two photographs that led to the discovery of Comet Shoemaker-Levy 9 that would strike Jupiter in 1994) I typed out a post card to her in Las Cruces. She replied and we finally met that summer. After lunch and a conversation with her and her two sisters, I returned to Clyde and Patsy Tombaugh's house, where I was staying. When Patsy answered the door she asked "Well, how did your date go?" I looked at her and replied, "Patsy, I have just spent time with the three most beautiful women I have ever met!"

Early in our relationship, we were driving near Las Cruces. It was a clear dark night and we got out of the car. Wendee looked up and asked me, "What star is that?" "That bright star," I answered her, "is Vega." Just then Wendee recalled that her first husband, long since divorced, had warned her that he would never answer her questions more than once. Wendee then inquired of me, "David, if I were to ask you every night, looking at that same star, the same question, 'What star is that?' what would you do?" "I would explain to you, every night," I replied, "that star is Vega. "And I would never, ever, tire of it."

On another evening I was driving Clyde and Patsy Tombaugh back from a dinner engagement." Clyde was sitting up front with me, and Wendee was in the back seat with Patsy. "Clyde, I am going to take you home first and then I will take Wendee home." "David," why not just drop Wendee off on the way? It would be faster." "Clyde I may want to hug her and give her a big kiss." "That's okay. We'll wait!"

The group in the car got silent. I looked back towards Wendee, then to Clyde, and I said, "Clyde, I am taking you and Patsy home first." As Wendee and Patsy giggled in the back seat, Clyde said, "OK. Now that you explain it!"

Wendee And I were married in the Flandrau Science Center on March 23 (that magic date again)

1997. The reception at our home featured Comet Hale-Bopp and a lunar eclipse. Our first few months were difficult. Gene Shoemaker was killed in a car accident in Australia that July, and I had two cancer surgeries (prostate and right kidney) later that year. But as I recovered, our marriage became fun and interesting. We travelled everywhere. Possibly her favorite trip was to the outback near Alice Springs, where we observed over two thousand meteors on a single night in November 2001. Because for a short period we saw one meteor per second, I considered the Leonids that year a meteor storm.

We took three trips to Israel together, the last two of which were part of my doctoral work at the Hebrew University on the night sky in Shakespeare's time. I loved that particular period in my life, and Wendee and I had a lot of fun navigating the multitude of rules and regulations that the University appeared to make up as we went along. Near the end of that process, I wrote a routine question about the dimensions of the European paper I needed to use. The next morning I found Wendee looking at her email. "I need for you to read this message now," she said. "Is it good news?"

"I do think so." The letter was from the Hebrew University, announcing that the University Senate had just awarded my Ph. D. and that they hoped we would come to Israel to receive the degree in person. We spent the remainder of that happy day making flight arrangements.

Wendee served as director of our Jarnac Observatory, and I served as her assistant. I used it every clear night. During the 26 years we lived in our Vail home, I discovered only one comet, in 2006. The comet was confirmed by the Central Bureau for Astronomical Telegrams just as we returned home from the Yom Kippur services. I was so overwhelmed by the message that I printed it, and then without a word, cried as I walked back to the house and showed it to Wendee.

Wendee's greatest joy was not so much me, but our daughter Nanette and our grandchildren Summer and Matthew. One night, when she was a college student, our granddaughter Summer contacted us to inquire of a bright red star she noticed high in the southern sky. What followed was a wonderful conversation about Mars, Percival Lowell, and the possibilities of life somewhere on that distant world. Our grandson Matthew provided us with golden opportunities to show how, when he looks at the stars, he can escape the chatter of the nightly news and appreciate the big picture of the night sky and the Universe at our doorstep.

Our marriage gave me an opening to write some books, but my favorite book began when one morning I found Wendee reading intently. "You never told me you wrote a book about your dog when you were ten years old." She found that crazy old book the most delightful she had seen, and she wanted me to revise it.

By this time, around 2013, she had received her diagnosis of breast cancer. For years she did very well, until the end of last summer when she needed surgery to remove her ovaries. After that she began chemotherapy, which worked for a few months.

By the spring of 2022 all the treatments stopped working. Wendee insisted that I go to this year's Adirondack Astronomy Retreat, but she was obviously suffering. We made a 911 call in mid September, and a second one two weeks later. In between I presented her with the first copy of Clipper, my new book for children. She was able briefly to hold it up and examine the front and back covers. With that second 911, I was pretty certain she would never be coming home. Wendee died on Friday evening, September 23. She was 73 years old.

The night before her funeral, our son-in-law Mark, our grandson Matthew, and I were enjoying an evening in the observatory. Matthew saw a bright meteor, and as I questioned him on its direction, I saw a faint one. Mark saw a third meteor. I like to think that this minor outburst of the October Cygnid meteor shower – three meteors within a period of about 5 minutes – were Wendee's goodbye. Rest in peace, my sweet Wendee.

The Fine Print

Honourary President: David Levy
Webmaster: Walter MacDonald

The Royal Astronomical Society of Canada

RASC is a national, non-profit, charitable organization devoted to the advancement of astronomy and related sciences. [Founded](#) in 1868, The Royal Astronomical Society of Canada is Canada's leading astronomy organization, bringing together over 5,000 enthusiastic amateurs, educators, and professionals. In addition to many national services, our 30 Centres offer local programs across Canada.

We provincially incorporated as a not-for-profit corporation September 2005 and are a registered Charity with Revenue Canada since September 2006:

CRA Registration #827905720RR0001

The Royal Astronomical Society of Canada – Kingston Centre aka Kingston's Astronomy Club

We are Kingston's Astronomy Club, a local centre of The Royal Astronomical Society of Canada, founded on June 2nd, 1961. We hold monthly meetings, on the 2nd Wednesday of each month (September-June), via zoom videoconferencing and inperson before the pandemic and hopefully again soon in early 2023, from 7:00-9:00pm Eastern Time

* We do public outreach programs in the form of helping the Cubs and Guides, teachers, Science Fairs and many public Education and Public Outreach events.

* We help out our members with questions in astronomy and equipment use, and hold private observing sessions, and also with Queen's University Observatory Open House, on the second or third Saturday of each month, at Ellis Hall, Queen's University (which has been closed during the COVID pandemic).

* We support the local Frontenac, Lennox & Addington County Science Fair (FLASF) with a prize in astronomy.

* We are here to answer your questions on astronomy.

Board of Directors & Officers 2022

President: Kim Hay
Treasurer: Susan Gagnon
Secretary: Elena Zanetti
Vice President: Laurie Graham
Editor: Kevin Kell
Librarian: Kim Hay
NCRep: John Hurley

Benefits of Membership to the RASC- Kingston Centre

RASC Central based benefits:

- * annual print edition of the Observers Handbook
- * bi-monthly digital edition of the RASC Journal
- * monthly digital edition Bulletin of the RASC
- * 6 issues of Skynews Magazine (paper)

Centre provided benefits:

- * monthly Centre Newsletter – Regulus
- * weekly social videoconference chat (members and guests only)
- * monthly videoconference Meetings (open to the public)
- * equipment loan program

JOIN US: <https://kingston.rasc.ca/join>

Upcoming Meetings in 2022

November, December – remote zoom videoconference by default..

Current Centre Members as of 2022 Sept 01:

Total: 71
Youth: 1
Adult: 62
Life Members: 8

The Sky This Month - November Skies – Rick Wagner

Kingston Skies in November

Over November and December watch Mars move in retrograde through Taurus from between the horns to north of the Hyades.

01 Nov - First Quarter Moon
02 Nov - Jupiter will be visible with the shadows of 2 Galilean moons on its disk for about a half hour starting about 20:25EDT
05 Nov - S Taurid meteor shower peaks - a minor (~5/hour) but broad peak
06 Nov - Daylight Saving Time ends
02:00EDT - clocks fall back one hour
08 Nov - Full Moon 0602EST
08 Nov - Total Lunar Eclipse before dawn
09 Nov - Uranus at opposition
12 Nov - North Taurid meteor shower - a minor (5-10/hour) but broad peak
12 Nov - 27 Euterpe at opposition (mag 8.7)
16 Nov - Last Quarter Moon
18&19 Nov - Leonid meteor shower may experience two outbursts this year: normally displaying 10-15 meteors per hour slightly increased rates may be seen around 2AM on the 18th; around 1AM on the 19th there are predictions we may see an outburst of up to several hundred meteors per hour.
23 Nov - New Moon 17:57EST
29 Nov - minor planet 30 Urania at opposition (mag 9.6)
30 Nov - First Quarter Moon

Lunar Eclipse 2022-11-08 – Rick Wagner

On Tuesday morning the 8th November, before dawn in the western sky we will see a total lunar eclipse: the Full Moon will slide through the shadow of the Earth for several hours.

The Earth's shadow is divided into two parts – the umbra and the penumbra. The penumbra is the partial shadow where, viewed from the Moon, the Sun would be partially covered by the Earth – a partial solar eclipse for someone on the Moon. At the outer edge of the penumbra the Earth is just taking a small bite out of the Sun, its inner edge is where the Earth is just barely covering the whole disk of the Sun. The penumbra forms a ring, about one Moon wide, around the umbra.

The umbra is the central part of the shadow in which, again from the Moon, the Sun is fully

covered by the Earth. (Imagine that view from the Moon of what would be a total solar eclipse – the Earth appears 4 times as large in the sky as we see the Moon, totally black since as there is no moonlight when the Moon is in its shadow, it would be surrounded by a hair-thin ring of brilliant red sunsets.) The only reason the Moon is visible during totality is because sunlight gets bent into the Earth's shadow by our atmosphere. How dark the umbra is depends on how clean or dirty the Earth's atmosphere is at the time of the eclipse. The umbra is roughly three times the width of the Moon.

The eclipse officially begins at 03:02EST. This is when the Moon enters the penumbral shadow but it is this will not be visible. The outer penumbra is very faint and has a diffuse edge. Once the Moon is deep into the penumbra it should be quite obvious that the edge of the Moon closest to the umbra will be darker than the opposite edge.

At 04:08EST the Moon begins to enter the umbra – the first dark bite will appear on the limb of the Moon's disk. Over the next hour or so the Moon will gradually creep into the Earth's shadow, the dark bite becoming larger and larger. As the Moon is gradually covered it can be interesting to record the time that the shadow first covers specific craters. This data can be used to measure the size of the Earth's shadow. Hint – the shadow is measurably larger than we would expect!

When the Moon is about half-way in you will most easily be able to see the curvature of the Earth's shadow – note that it is much larger than the Moon. About this time you will also begin to notice the dark red colouring of the shadowed portion of the Moon. Binoculars will make this much easier to see.

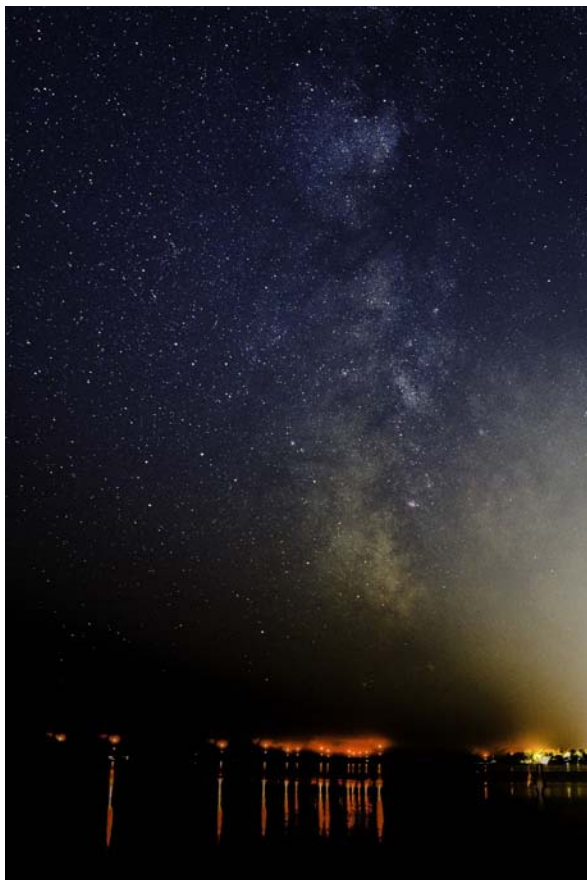
At 05:16EST the last of the Moon will fully enter the shadow and totality begins. Just as it enters is a particularly attractive phase – the deep red Moon contrasts with the last brilliant silver sliver which is still illuminated. This sliver will suddenly dim and become a bright yellow, shading through orange to the red of the rest of the disk. The view of the full disk of the red Moon in a sky flooded with stars is wonderful. Check it out naked eye, and with binoculars and a telescope if you can. Wonderful!

Over the next hour and 26 minutes is totality. The southern limb of the Moon will be closest

to the central darkest part of the Earth's shadow – you should be able to see that the northern limb is noticeably brighter and probably a somewhat less intense colour, shading to orange. In this eclipse the bright lunar highlands in the south will get the least light and the darker maria in the north will receive the most light, being closer to the edge of the shadow. This may tend to even out the brightness of the disk.

Unfortunately, while the Moon is in totality twilight will begin and the sky will gradually brighten. And throughout the eclipse the Moon will have been diving towards the horizon, Totality ends at 06:42EST but by then the sky will be very bright, less than a quarter hour before sunrise, and the Moon will be only 2° above the horizon. I predict that, depending on how dark the eclipse is, we will be unable to see the eclipsed Moon after about 6AM, about half-way through totality.

Notes From Members



The attached image is for Regulus which I showed at our RASK-KC chat on 26-Oct-2022.

This Milky Way image was photographed on 14-Oct-2022 at 8pm from the pier at Collins

Bay using a Nikon Z9 mirrorless camera and Nikon 24-70mm zoom at 24mm. This is a composite shot using 20 light frames and 40 dark frames processed using Starry Sky Stacker to reduce noise. Photoshop was used for some final exposure masking. The red lights are from the Amherst Island windmills. - Brian McCracken



2023 RASC Calendars Are Here!!! - Susan Gagnon

Your treasurer has received our order of 2023 Observer's Calendars and they are lovely. Please send your request asap so we can arrange the Annual Parking Lot Calendar Round-Up before it gets to cold. Some folks have already reserved. Email the chat list or kingston@rasc.ca, or let me know by signing into the Social Hour on Wednesdays. As always...\$20.



Embarrassing moments in asteroid tracking.

**Wednesday, September 14th,
2022**
**Minutes of The RASC-KC
Regular Monthly Meeting (via
ZOOM and live on YouTube)**

Starting at 7:00 p.m., Kim Hay welcomed all guests, new members, those joining us on YouTube and our 17 registered Zoom attendees.

Our patron, Queen Elizabeth II, passed away September 8th and we held a moment of silence in her honour. We wish King Charles III a long and successful reign.

Introduction of executive: Kim Hay – President, Laurie Graham - Vice President, Susan Gagnon – Treasurer, Kevin Kell – Editor, John Hurley – National Council Rep, Elena Zanetti – Secretary. Susan Gagnon: Fall’N’Stars update. Friday, September 23rd, starting at noon, we meet at the campsite at South Bay in PEC. We have 33 of 40 spots filled. Wednesday, Sept 21, is the cut-off for the pizza dinner. Registration form may be emailed or mailed to <https://rascbelleville.ca/fallinstars/2022FnSRegistration.pdf> and payment may be mailed in or by etransfer. Calendars have been ordered and send your request to kingston@rasc.ca

Kim Hay: Queens first open house is Sept 24th, 7-11 p.m. If anyone is not at Fall’N’Stars and would like to help out and represent our Centre, please attend; guest speaker is Nathalie Ouellette, “Unveiling the Universe with the Webb Telescope”. The observatory has two new coordinators, Akanksha Bij and Lawrence Faria. We wish Connor Stone well as he moves to Montreal to finish his PhD. The Third Crossing gathering is on the same day.

John Hurley: National Council update: From last Sunday’s National Council meeting. There has been a membership fee increase, if you feel for or against, please let National office know your opinion. The National Board will be reviewing how to inform news like this in future. In August, changes were made how SkyNews is distributed and issues should now be resolved. RASC GA will be held on May 5-8, 2023. The Annual meeting end of June 2023. The National Board that operates Societies meet once a month, will be publicizing their meeting dates and will allow Society representatives to interact directly. Report should be available soon on centres holding hybrid meetings – pros, cons, how-to.... Please let John know if you would like anything brought forward

to National. Skynews – a full time editor and publicist have been hired. Still waiting on the Federal Government on charitable status and its operation.

Guest speaker – Andrew Godefroy – “Alouette + 60 Years” Andrew is a historian, a strategic analyst for the DND and writes and lectures on topics related to the history of space. Author of 2 books on Canada’s space program and currently researching and writing a book on the history of the Canadarm. His talk this evening reflected on the Alouette program’s journey and long-term impact. Part of a larger space program, the Alouette satellite put Canada on the map and its legacy continues to further science. This lecture may be found on our RASC Kingston YouTube channel.

David Levy reads poetry: In honour of Queen Elizabeth II, David read from Macbeth.

Rick Wagner: Sky this month – September 2022

Local Events

Sept 23-25 Fall’n’Stairs

Sept 24 Queen’s U Observatory open house – first in 2 years

BAA Events

Sept 15 – Centre for Planetary Sciences: “Is there life on Mars?” Noon EDT

Oct 7 – Radio Astronomy Zoom – Samuel Lander “All About Magnetars”

AAVSO Webinars

Sept 24 – SuperStar Astronomers: Mike Grudic – “How to Make Stars on a Computer”

Oct 1 – How-To Webinar - TBA

L&A DSVAs

Sept 23-24 – Laser – guided stargazing tour

Oct 1 – Astrophotographers Assemble (reserve in advance)

Sky Events – September

Sept 16 – Neptune at opposition (mag 7.7)

Sept 17 – Last Quarter Moon

Sept 22 – equinox 21:04EDT

Sept 25 – New Moon 17:54EDT

Sept 26 – Jupiter at opposition (mag -2.9)

Sept 26 – DART impact on Dimorphos/Didymos

Sky Events – Early October

Oct 3 – First Quarter Moon

Oct 8 – Mercury GEW

Oct 8 – Jupiter 2degreesN of Moon

Oct 9 – Full Moon 16:55EDT

Oct 10 – S Taurids meteor shower

Asteroid Events

1282 Utopia occults TYC 2853-00432-1 on Oct 14 from 5h 43m to 6h 6m UT 5.7 sec dur 4.3

mag drop

Members Observing Sessions:

John Hurley: solar observing and watching Orion in morning sky along with a bright Jupiter. Laurie Graham: Perseids. Rick Wagner: variable stars. Susan Gagnon: enjoying variables with new scope. Bruce Elliott: outreach sessions at the cottage with neighbour kids and families who were excited by the moon, morning Venus and Jupiter with 10 to 15 people at 5 am attending. Andrew Godefroy: finishing up the Explore the Moon certificate and still working on the Herschel program. Upgrading equipment on his telescope with a new dew shield and eyepieces (will pass on old eyepieces if anyone needs them). Hans Behrmann: skies have been poor with moisture and clouds. Footings in for new observatory and wants to build a small radio interferometer on his 2 acre property. Mark DesLauriers: new dew shield and continued imaging. Mark Kaye: lots of visual observing. Peggy Hurley: organizing equipment in back yard. Roger Hill – dome renos. Keith Neumark: solar observing with no imaging. RoseMarie Burke: imaging the moon and star trails, perseids, frustrated with weather. Stefan and Shelly Jackson: enjoyed Starfest and now enjoying visual observing since moving to this area. Planning to build an observatory and looking for ideas for a roll off roof. Kevin Kell: OccultWatcher 5.0 demo, browsing through RASC centre websites for meeting dates and resources. Of note Queen's Observatory has started monthly events again. Kim Hay: mainly solar observing, Saturn and Jupiter when up in mornings.

Kim Hay closed with announcements: Our next Regular Meeting is Oct. 12th, 7 p.m., a Members Night. Bring your stories, pictures, what you did this summer, new equipment, show and tell. To join our Wednesday Members Social Zoom Time, let us know at kingston@rasc.ca We are looking for volunteers to run this weekly event. November 9th is our Annual Meeting and Election Night. Positions open are Secretary, Newsletter Editor, Librarian, and National Council Representative. Our guest speaker will be Kristine Spekkens from RMC.

On social media we are: Website at Kingston.rasc.ca. Facebook at RASC Kingston Centre Group. Twitter @AstroKingston. YouTube at RASC Kingston Centre with tonight's and past meetings located here.

Kim thanked all and the meeting adjourned at 8:57 pm.

Created by Elena Zanetti, Secretary.

Wednesday, October 12, 2022 Minutes of The RASC-KC Regular Monthly Meeting (via ZOOM and recorded for YouTube)

Starting at 7:02 p.m., Kim Hay welcomed all guests, new members, those joining us on YouTube, and our 22 registered guests on ZOOM for our annual Member's Night.

David Levy reads poetry: From Starlight Nights by Leslie Pelletier, first read by David in 1965. A copy of this book is in our Kingston Centre Library.

Announcements by Kim Hay: Queen's University is holding an open house on October 22nd, 7 to 11 p.m. From our Centre, Kevin and Rick will be speaking. Handouts and telescopes will be available on the deck.

John Hurley, National Council Rep: GA will be online first weekend in May. The AGM is now separate, online, and end of June, 2023. Our vote for our December 14th meeting: Dinner at Mandarin: 5 votes, dinner at Seniors Centre: 4 votes, in-house meeting Queen's University: 5 votes, continue with ZOOM: 3 votes. Inconclusive result and Kim will send out an email on our message board for more input before announcing. Our January meeting, 9 votes for in-house, possibly a hybrid.

Member's Night Speakers:

Brian McCracken: Using the Nikon Z9 Mirrorless Camera and Lightroom for Astrophotography. Newly purchased this summer, Brian initially bought this camera for Air Show, landscape and bird photography. Not long after, Brian realized these features worked well for Astrophotography: high resolution flip-out monitor on camera back (2.1 million dots), Starlight mode enhances light levels, and monitor can be set to red to preserve night vision. Brian shared images to highlight the improvements.

Kevin Kell: Live demo of Installing a Heating Element into the popular Telrad Finder. Part of this is available from workshop document by Gary Bennett, Starfest 2011. For this demo, Kevin used a 5 W 100 ohm resistor (2 W ideal). Follow along on YouTube, Oct. 22/22 starting at 24:00.

Rick Wagner: Sky this month – October 2022

Local Events

21 Oct – Queen's Physics, "New Space: Astronomical Opportunities from Suborbital and

Beyond"

22 Oct – Queen's observatory open house

28 Oct – Queen's Physics: Rene Doyon "The Extraordinary James Webb Space Telescope"
1330EDT

AAVSO Webinars

15 Oct – SuperStar Astronomers: Alex Filippenko
– "A New Surprise in the Accelerating Expansion of the Universe"

05 Nov – How-To Webinar – TBA

L&A DSVa

21-22 Oct – Laser-guided stargazing tour (reserve in advance)

NF DSP

15 Oct – Our Galaxy: the Milky Way

Sky Events – October and November

13 Oct – 1282 Utopia occults M34 star
(01:56EDT) mag 14.7 – 55km + 39mas diameter
- ~5% albedo – 13.6h rotation period – star: TYC
2853-431, mag 10.4, <5.7s duration

15 Oct – Jupiter with only one moon 00:35-
00:50EDT morning of the 16th

17 Oct – Last Quarter Moon

21 Oct – Orionid meteor shower

22 Oct – Venus at superior conjunction

23 Oct – for the next two weeks look for the zodiacal light

24 Oct – Moon <24 hours before new before sunrise in the east

24 Oct – Moon occults Mercury (daytime)

25 Oct – New Moon (06:49EDT)

01 Nov – First Quarter Moon

02 Nov – Jupiter with 2 moon shadows 19:29EDT

05 Nov – S Taurid meteor shower peaks

06 Nov – Daylight Saving Time ends 02:00EDT

08 Nov – Full Moon 06:02EST

08 Nov – Total Lunar Eclipse before dawn

09 Nov – Uranus at opposition

Member's Observing Reports:

Kevin Kell with a demo of syncing time on computer, finding an audio recorder then atomic clock for occultations. Will also help with submitting to IOTA. Mark DesLauriers enjoyed Fall'N'Stars.

Bruce Elliott enjoying his camera with his new telescope and viewing and the planets and the moon. Sharing his love of Astronomy with his grandson is a highlight.

Susan Gagnon working on variables with her new scope.

Hans Behrmann had mirrors resilvered, working on radio astronomy equipment and collecting antennas. Hans will have equipment running in his back field and a new observatory is planned.

Keith Neumark has turned the two units of his solar scope around and added a circular polarizer in-between, hoping to get rid of ghosts. Now waiting for clear skies.

Malcolm Park has an ongoing collimation project underway and shared images of his progress using CCD Inspector.

Mike Haynes discussed extending his pier and experiencing vibration that could not be fully resolved. A proper addition was made and welded in place with good results, photos were shared of his progress.

Roger Hill preparing his observatory for winter. Rosemarie Burke has enjoyed visual observing and remarked on seeing Orion and the winter looming ahead. Rosemarie is sometimes rewarded with a meteor display when taking her dog out in the middle of the night.

Stefan Jackson reports Shelley has been imaging every clear night and happy one of her photos of the comet with M13 is in the latest Journal. The observatory build is ongoing. Kevin Kell showed video of collimation trials of his Cassegrain and images of Saturn and Jupiter.

Kim Hay closed with announcements: Our next Regular Meeting is November 9th, 7 p.m. This is also our AGM and election night. Positions open are Vice President (one year term), Secretary, Newsletter Editor, Librarian, and National Council Representative, all two year terms. Our guest speaker, Dr. Kristine Spekkens, will be speaking on "Galaxies, Cosmology and The Biggest Telescopes". To join our Wednesday Members Social Zoom Time, let us know at kingston@rasc.ca We are looking for volunteers to run this weekly event.

On social media we are: Website at Kingston.rasc.ca. Facebook at RASC Kingston Centre Group. Twitter @AstroKingston. YouTube at RASC Kingston Centre with tonight's and past meetings located here.

Kim thanked all and the meeting adjourned at 8:59 pm.

Created by Elena Zanetti, Secretary.

Lennox and Addington Dark Sky Viewing Area Renovations 2022 October



There was a lot of excitement at Dark Sky, as a big expansion to the viewing platform was poured. This particular part of the project will provide additional room for telescope and camera set up so that more people can view our wonderfully clear skies.

A big thank you to Concrete Plus Cement Finishing for doing such a great job on this part of the project.

Just a reminder that we're still closed while the headlight barrier fence is under construction. We'll open as soon as we can, we promise!

From the L&A Dark Sky Viewing Area Facebook Page
<https://www.facebook.com/DarkSkyViewing>

Queens University Ellis Hall Observatory Update

Akanksha Bij is one of the new observatory coordinators at Queen's Observatory. She grew up in the Greater Toronto Area and always gravitated towards science, especially physics from a young age (no pun intended!). This fall, she is excited to start her PhD this fall under the supervision of Professor Kristine Spekkedns. Her research interests include understanding how matter grew in the early universe to form the galaxies we see today. In her free time, Akanksha likes to play tennis, cook, read and do yoga.

Laurence Faria is the other coordinator and we hope to get a blurb from him soon!



As a follow up to the last two year's tremendously successful RASCKC Annual Report - Year in Review Member images 2020 and 2021, I am putting the call out to members to submit their single best image of the calendar year (2022 for inclusion into an annual Year in Review compilation.

The idea is to record in history some of the activity and talent of our members into a permanent history. So far the idea is to put this into an electronic document (PDF) and make it available on our website. Layout will be one image per page with a couple of

paragraphs of text.

Resolution should be as large as possible (ie do not shrink it down) and preferably in lossless .png or .jpg format.

Please include a paragraph of technical details and a paragraph as to why you selected this particular image (ie any special meaning, etc).

Send your submission to me at kevin@starlightcascade.ca

AFTER 2022 December 14th but BEFORE or at noon Wednesday 2023 January 4th

The inspiration comes from The British Astronomical Association Annual Meeting, and the desire to keep more current activities/events in a recorded history.

You can see the previous publications here:

<https://kingston.rasc.ca/kc-gallery-2020>

and here:

<https://kingston.rasc.ca/kc-gallery-2021>

I am hoping for even MORE submissions this year!

Thanks!

Annual Presidents Report 2021-2022 - Kim Hay

We finished up our 2021-2022 year with a full slate of members helping on the board and on various committees and events. Though we were not meeting in public nor doing a lot of Outreach at this time, we did meet on ZOOM for our meetings and Social hour on Wednesday nights.

Our membership at the time of writing this report is at 72 and is up from 2020-2021 year. Every online event we had we had our Honourary President Dr. David Levy give us a poem or prose to start our meetings off .

We had four guest speakers and 4 members giving presentations throughout the year. At the time of writing, our December meeting will be online (ZOOM) and the guest speaker is yet to be confirmed.

The first public Outreach event was May 7, 2022 for Science Rendezvous. We setup with Queen`s Astronomy Department on One Tragically Hip Way, Leon's Centre. It was a great day, the Sun shone and it was warm. Thank you to all the Volunteers that day in person (Laurie G., Devon G-A., Hank B. Rick W. Kevin K., Kim H) and those behind the scenes with the online Events (Bruce E., Susan G., Kevin W., Graeme H.) We had telescopes setup for looking at the Sun in White light and H-alpha also a station for EAA on the Sun, and hand outs. The highlight of the day was Queen`s U Astronomy, putting on a Comet Display, lots of out gassing going on!

We met through the Summer for one Wednesday social hour at Lake Ontario Park for Bring your Own Dinner and chatting, since we do not hold Summer meetings. This was a very nice event, and I am sure we will continue this aspect going forward in 2023.

We had our Fall N Stars 2022 Star party at Johnson's RV Park with RASC Belleville on September 23-25th, which was a great success. Also starting up was the Queen's Observatory Open House's, with the Centre helping with Observing on the deck in October.

Ongoing behind the scene projects for the Centre. There is work on 2023/2024 Partial and Total Solar eclipse with Queen's, RMC and other interested Bodies. Bruce Elliot is our lead. Possible outings in Bellrock, Sharbot Lake, and perhaps a few Parks. Science Rendezvous 2023 will be happening and we will be there. Observing at the Queen's Observatory Deck for Open Houses.

I cannot express enough the gratitude and appreciation that I have for our Executive and volunteers that do the work that makes the Centre run so smoothly. We have a great TEAM and wonderful members. I hope that this may encourage others to help out where they can or want, either a single event or on a committee - I like the term "TEAM" better.

Thank you from the bottom of my heart to you all. It has been a wonderful year, and we can only look forward to the next!

RASC Kingston Centre Treasurer Financial Report for Executive Board and Auditor, October 14,2022 - Susan Gagnon

Summary as of 2022-10-01:

Income 56,379, Expenses \$5217 for a net gain of \$1,162, Total assets \$35,063.

Fund Status:

Cash	\$6.00
Fall'n'Stars	\$861.70
Observatory	\$22,587.77
Operating	\$9,607.80
Reserve	\$500.00
Special Projects	\$1,500.00

Membership at the time of reporting is 72.

Kingston Centre financials remain straight forward in this second year of Covid-19 barriers to gathering. The Fall'n'Stars account activity remains open as the account will generate a modest profit of \$361.70 to be split evenly between Kingston and Belleville Centres. The rebalancing of that account will happen after the Auditor's review and the passing of this report at the AGM.

Income

Kingston Centre membership income (\$1217) at a transfer rate of \$23 per member from National, is the Centre's second source of income exceeded this year by the generous donations of members (\$1500). Calendar sales (\$208) and Fall'n'Stars (profit 2021 \$172 and 2022 \$180) complete the major sources of income in any given year and this year in particular. GIC returns, as expected are minimal this year with the low interest rates, however next year will be better.

Expense

An unfortunate outcome of modern life is that our largest single expense is Director and Officer Insurance (\$432). As irritating as it is, the cost has remained the same. We had an uptick in Outreach spending with a return to participation in Science Rendezvous (\$38a). Along with the bulk purchase of SkyNews for local libraries and handouts, this spending included the printing of 2 beautiful posters created by Laurie Graham, to be used at future events.

Observatory spending was also up with a much needed update of various parts to the Venor. For years now Kevin Kell has taken stock of, maintained and reported the condition of various pieces of Centre equipment and this year he turned his attention to the Venor. We are grateful for these efforts to keep Centre assets on the radar if they are to realize their full potential in the future. Zoom was our main meeting venue again this year and for the use it has gotten, a bargain at the price of \$226 for the year. We also thank Doug Angle for transporting efforts related to the Venor over the years and Tessa Clark for the storage of the 16 foot dome for yet another year.

Banking details.

We remain with the RBC branch on Gardiner's Road, hours are good and the location convenient. We save fees by downloading e-statements, and the addition of e-transfers to the account has been popular.

Future fundraising.

As reported last year, a tripod and binocular set gifted to the Centre for the purpose of fundraising remains in limbo. Canada Helps shows some activity that seemed to have captured a random donation but it was anonymous so difficult to tell. Fundraising is not an all consuming issue right now as the hunt for Observatory land is not showing promise at this time. Enthusiastic fundraising seems to require a clear goal and timeline.

Notes for the Auditor

Financial year October 1 to September 30 (2021-2022)

Treasurer: current Susan Gagnon (2015-2022), past Kevin Kell (2010-2015)

Records: within the 2021-2022 Treasurer Deposit and Expense Binder please find the following,

- . AGM 2021 motion of 2021-11-10 nominating Michael Bird as Auditor.
- . General Ledger: Central spread sheet, all transactions.
- . Payments, all cheques (#329-#354) issued and deposit slips.
- . Reports: all monies received through RASC national through direct deposit to the Centre.
- . Bank: All e-statements received from RBC.
- . Investments: all statements referencing GIC status.
- . Papers submitted to the Canada Revenue Agency and the Province of Ontario.

In addition to the binder I have included: Profit and Loss (1 page), a sorted Ledger account (all transactions separated by Income vs. Expense), Balance Sheet reconciling the General Ledger accounting and the RBC chequing and GICs as well as the cash on hand.

Process

Four members of the executive have signing authority for the Centre. Two signatures are required for every cheque and one must be the Treasurer's. The Driven database at National is looking a bit more predictable now that the first full year of use has run its course. US dollar exchange on membership and donations remain more opaque but we press on. I look forward to the report from the Auditor and any feedback from the executive or membership.

The Royal Astronomical Society of Canada - Kingston Centre 2021- 2022 Secretary Report

Another year of virtual meetings kept our group engaged and energized. Ten Regular meetings were held in the past year with monthly presentations and guest speakers. Our members weekly socials by Zoom were well attended throughout the entire year.

Members and guests were welcome to all our Regular meetings with invitations to join us live by Zoom or livestreamed on our Kingston Centre YouTube channel where they now reside. With a variety of speakers, our regulars included David Levy with a poetry moment, Rick Wagner with What's Up in the Sky, Hank Bartlett with Hank's Sunspot, announcements by Kim Hay, and National Council updates from John Hurley. Invitations to meetings were given on Facebook, Twitter, the Rascals email list, and on our website.

We had four Executive Meetings this past year to discuss budget, EAA, outreach, and other Centre business.

December 8, 2021 – Al Ward, President of the RASC Sudbury Centre and President of Moonward Vacuum Coatings, "Testing of Astronomical Optics in the Astronomical Age". Rick Wagner gave a presentation on Siril. Malcolm Park and Rick Wagner presented images of Comet Leonard.

January 12, 2022 – Dr. Andrew Godefroy, RASC KC member and scholar, "Upper Atmospheric Research and the Origins of the Canadian Space Program". Planning started for in-person events at Science Rendezvous in May. Planning for the Frontenac Lennox & Addington Science Fair (FLASF) also commenced with Bruce Elliott taking the lead.

February 9, 2022 – Dr. Jennifer West, Research Associate at the Dunlap Institute for Astronomy & Astrophysics, "Inside the Galactic Tunnel in the Sky". Planning has started for Fall'N'Stars 2022, September 23-25, with Susan Gagnon taking the lead.

March 9, 2022 – Dr. Marcus Leech, President of the Canadian Centre for Experimental Radio Astronomy, "Hunting FRBs on a budget: The SIFT Telescope".

April 13, 2022 – Peter Pekurar, from Kitchener-Waterloo, "The Fun of Making Large Aperture Ultra-Fast Newtonians". Our Centre awarded this year's Leo Enright Prize in Astronomy at the again virtual FLASC to Chloe Jugroot, of King's Town School, with her presentation, "Project Martian", receiving a \$100 cash prize and the book, "Explore the Universe Guide". Thank you to Bruce Elliott, along with Graeme Hay and Elena Zanetti for reviewing submissions and awarding the prize. This month, our Centre began a new monthly segment, "Members Observing Reports – Round Table", where participants discuss what they observed, read, worked-on, and all things astronomy and was very well received.

May 11, 2022 – Dr. Richard Schmude, Professor at Gordon College in Barnsville, Georgia, "The Total Lunar Eclipse of May 15-16, 2022". On May 7th, our Centre participated in Science Rendezvous with 3 video presentations created by members of our Centre: a Star Hopping video by Susan Gagnon, Origin of the Universe video by Kevin Wenkoff, Graeme Hay and Francesco Ambrogi, and an Observing Ideas PDF by Bruce Elliott. About 350 people attended the RASC-KC tent with solar telescopes set up and video projection. Thank you to Hank Bartlett, Laurie Graham and Devin, Rick Wagner, Kim Hay and Kevin Kell. A great event.

June 8, 2022 – Richard Wagner, member of our Kingston Centre, Ottawa Centre, a life-member of the RASC, and a member of the Science Team of the RASC Remote Telescope in California, "(Not so) Basic Image Reduction".

July 13th and August 10th Summer meet-ups at Lake Ontario Park were held to finally have an in-person outdoor event.

September 14, 2022 – Dr. Andrew Godefroy, "Alouette +60 Years". Our patron, Queen Elizabeth II, passed away September 8th and a moment of silence was held in her honour.

Fall "N"Stars 2022 September 23-25, a joint camping event with the Belleville Centre was held in Prince Edward County. Members enjoyed two evenings of observing, a swap table, solar observing, short presentations and a catered dinner with door prizes.

October 12, 2022 – Member's Night: Brian McCracken, "Using the Nikon Z9 Mirrorless Camera and Lightroom for Astrophotography". Kevin Kell, "Live demo of Installing a Heating Element in the popular Telrad Finder".

October 22, 2022 – Queen's University Observatory open house. The first one we have participated in since the pandemic started. Presenters were our own Kevin Kell and Rick Wagner.

November 9, 2022 – Our Annual Meeting and Regular Meeting to follow with Dr. Kristine Spekkens, "Galaxies, Cosmology and The Biggest Telescopes".

December 14, 2022 – We will meet by Zoom and livestreamed on YouTube.

Hosting a meeting during COVID-19 is unpredictable and discussion is still on-going whether this be in-person at Queen's University, virtual or a combination of the two. A room has been booked for 2023 Regular meetings but current pandemic conditions in our community are being closely monitored and all options are on the table.

Prepared by Elena Zanetti for submission and approval by the Centre to then be forwarded to the National Society. October 24, 2022.

RASC Kingston Centre Editor Annual Report 2022 - Kevin Kell

This past 12 months we have published 12 issues of Regulus, the Newsletter of The RASC-KC.

Regulus Newsletter

Issue	pages
2021 Nov	21
2021 Dec	22
2022 Jan	16
2022 Feb	20
2022 Mar	17
2022 Apr	16
2022 May	20
2022 Jun	16
2022 Jul	14
2022 Aug	12
2022 Sep	10
2022 Oct	18
average	17
total	202

My thoughts on Regulus are that it is the only time tested, reliable method of retaining the history of the Centre. Websites come and go, information disappears in the ether, emails get deleted... I could go on. If it didn't get written up and published in Regulus it didn't happen!

So as a result the newsletter contains regular "columns" such as Minutes of Regular Monthly Meetings, a one page summary of the Centre and its status, operations, contact info, etc. Other items are mandated, like at least 30 days notice of the Annual General Meeting and Elections, the AGM agenda and the past AGM minutes.

It is also a venue/mechanism for members to receive recognition for their "work": observing, imaging, writing, outreach and many other possibilities, in astronomy.

We try to highlight a colourful member's image on the front page. When that is unavailable then

something from public media is used.

Regular columnists are a godsend and I wish to thank Hank Bartlett, Rick Wagner, Kim Hay, and David Levy for providing regular, consistent submissions over the past year. Stephen Craig's year long "Galaxy of the Day" image was a novel and highly popular addition. Did I mention consistency? He Did That.

Over the past decades, we have gotten away from longer written submissions and moved to more imagery, shorter submissions. At times submissions have been in such short supply that I went to read through other Centres newsletter looking for material to publish 😊

For editing and publishing Regulus, I have used LibreOffice writer, basically a word processor. Both of my predecessors Graeme and Walter published much better looking graphical layouts and design than I have managed and I congratulate them on that as well.

Our website kingston.rasc.ca also contains 356 (and counting!) issues of Regulus, under Library, Periodicals, Regulus. Our earliest issue is November 1973

History of Editors:

2020-2022 Kevin Kell
2019 Graeme Hay
2008-2018 Walter MacDonald
2007 Joe Benderavage
2005-2006 Doug Angle
vacant 2004
1996-2003 Kevin Kell
1995 Peter Kirk
1990-1994 Bill Broderick
1989 Mark Kaye
1978-1988 Leo Enright
1977 Doug Baker
1975-1976 Susan McDougall
1973-1975 Valerie Kirkwood

The Editor often participates in other editing/publishing projects such as "The RASC-Kingston Centre Member Image Gallery", now in its 3rd year. This provides a distinct publication of Member submitted best imagery of the year.

Other past projects have included "Expanding Their Universe (2002) by Laura Gagne, Worlds to Discover (2000) by Laura Gagne and Careers in Space (1999) by Laura Gagne.

It has been a privilege and honour serving as Editor. I will not be standing for re-election at the November AGM.

RASC Kingston Centre Equipment Coordinator Annual Report 2022 v3 - Kevin Kell

The RASC Kingston Centre maintains a collection of Equipment and Loan Equipment.

I have been the Coordinator for so many years I have forgotten what it is like not to be doing this. The Equipment Coordinator is an appointed position by the Board and was basically the way RASC-KC tries to keep track of items in our possession.

The lists are available in the members only section of the website kingston.rasc.ca : Members, Equipment.

The first two documents are the complete master list of equipment "Equipment-Inventory-2020-0929.pdf" (yes a little out of date) and "Equipment-LoanProgram-2020-0929.pdf" (also a little out of date).

It is a double edged sword, trying to protect the equipment from damage and loss, and keeping the Loan Equipment out in circulation. Over the last few years we have strayed too far into the protection and not enough into the circulation.

Other Centres have lost major pieces of Equipment (A 20cm Meade 1x200 comes to mind), but so far, we have not. In some cases the cause was theft, either from the Centre storage or from the member who loaned it. In others it was the member who loaned it, never to return it. Over time however, equipment depreciates and at some point in time the benefit outweighs the risk/cost.

We have adopted a policy of:

* Because of the expense/value of the telescopes marked with * only RASC-KC members who have been a member for at least one year, are known and trusted, and will take care of and return the equipment in a timely fashion are eligible.

In the meantime, over the next few months, I will be making a concerted effort to get the Loan Equipment out circulating again.

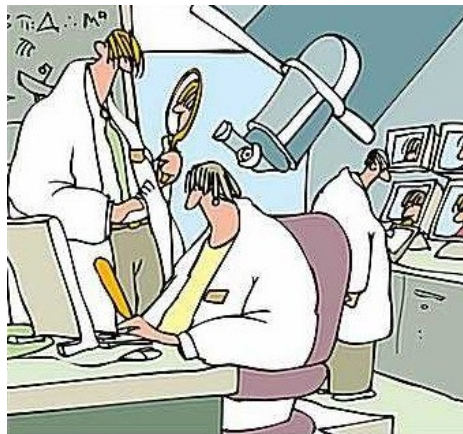
In 2013 the Centre purchased a storage shed that was assembled in our (Kim & Kevin) back yard. That purchase allowed the Equipment collection to be concentrated in one spot, rather than spread around our home, and other member homes, just sitting there. We started doing an annual audit as well with two members of the Board, but COVID stopped that. We hope to resume that in 2023, after we attempt to decant and downsize some more.

Our longterm hope is that if the Centre ever purchases/leases property the equipment can be relocated there.

Another duty of the job is equipment maintenance. This past year we (with help) have repainted the Tardis Observatory housing the Torus telescope and performed an overhaul of the 60cm Venor telescope. This overhaul included cleaning the primary and secondary mirrors, sanding down corrosion on electrical connections, replacing the telrad finder, installing a heating element into the telrad, replacing missing nuts from the primary mirror cell supports, adding a 2" to 5/4" adapter for eyepieces, adding a kit box for accessories, replacing the lead acid battery that powers the heating elements and primary mirror cooling fans with a lithium battery and more.

The 20cm f6.9 Fitzgerald Dob was also cleaned up and rekitted for its longterm stay at the Queens Ellis Hall Observatory. This is intended to be used by members performing Education and Outreach on the observing deck as well as any other participants (ie Queens volunteers) of the event.

The 20cm f4.5 Barney Dobsonian is under renovation and I hope that it is available for loan in the next few weeks.



Testing the Big Bangs theory