

Nova Notes

The Newsletter of the Halifax Centre of the Royal Astronomical Society of Canada

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PLUS ALL YOUR FAVOURITE REGULAR FEATURES!

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Cover Photos:

Main Photo:

Southwest edge of the Moon
Dec 13 by **David Hoskin**

Thumbnails (l-r):

St. Croix Observatory
drawing by
Mary Lou Whitehorne

Note: All photos and original works in this edition are the copyrighted property of the photographers, writers and artists. Permission to use any of their photos for other purposes must be obtained from the photographer.

From the Editor

Here we are, turning the page on yet another year...

While it is easy to lament over all the cloudy nights, we must not forget how amazing the wow moments were.

I never thought I'd see aurorae this far south, in New Jersey - and twice, to boot.

The solar eclipse was amazing (even for those of us who did not experience totality.)

The Moon certainly did not disappoint either.

And let's talk about that comet that obligingly stuck around for a while.

All these reasons to look up are great reminders that you never know what opportunities will arise.

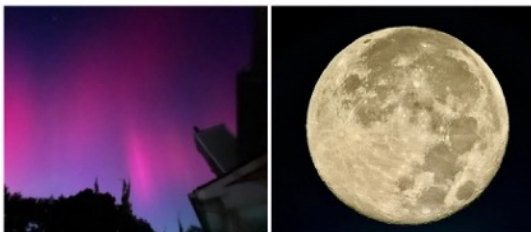
It's not just the moments that make it great but also the people you meet along the way.

Thank you to all who made *Nova Notes* what it was this year through your articles, photos, sketches, poems and more!

Special thanks to John McPhee and his "eagle eyes," as well as Judy and Jerry Black who help get *Nova Notes* to you.

Looking forward to being a part of your editorial team again in 2025.

Cheers! To all the astronomical adventures to come and chances to share it with our friends and family! Wishing you all the best in the new year.



2024 - so many reasons to look up!



With continued gratitude,


Lisa

Upcoming Meeting Dates

- January 11, 2025 - Charles Ennis - World Asterism Project
- February 1, 2025
- March 1, 2025- Robin Foret - RASC Awards
- April 5, 2025
- May 3, 2025
- June 7, 2025
- (no meetings July/August)
- September 6, 2025
- October 4, 2025
- November 1, 2025
- December 6, 2025 (+ AGM)

We are now hosting hybrid live/Zoom Members' Meetings. Halifax Centre meetings are usually held on the first Saturday of the month, except for July and August.

Come join us in-person in Room AT101 at Saint Mary's University or by pre-registering for the meeting on Zoom.

For information about the meeting and how to register for the Zoom session, please visit <https://halifax.rasc.ca/index.php/activities/rasc-events>

For past meeting replays, visit our YouTube Channel <https://www.youtube.com/c/raschalifax>

St. Croix Observatory

Part of your membership in the Halifax RASC includes access to our observatory, located in the community of St. Croix, NS. The site has expanded over the last few years and includes a roll-off roof observatory with electrical outlets, a warm-room, and toilet facilities. We welcome you to bring your own equipment or to use the Centre's 400-mm Dobsonian telescope, 100-mm binoculars, and the recently acquired SCT and gear for astro-imaging.

Enjoy dark pristine skies far away from city lights and the company of like-minded observers searching out those faint "fuzzies" in the night. Most clear Moon-free nights, you will find our keen observers out there! Announcements of members visiting SCO are made on the Centre's Discussion List. If you are not a key holder and would like to become one or need more information, please contact the SCO Manager, John Liddard, at scomanager@halifax.rasc.ca.

SCO is Open!

Go to our website (<https://halifax.rasc.ca>) for the latest SCO usage guidelines and conditions.



St. Croix Observatory
drawing by Mary Lou Whitehorne

NOTE: As of Fall 2023, the building has lights again!
(Thanks to Tony McGrath and Peter Hurley, the lights have been connected to 110v AC power.)

Halifax RASC Board of Directors, 2024

Elected	
President	Tony McGrath
Vice-President	Judy Black
Secretary	Peter Hurley
Treasurer	Gregg Dill
Director	Jeff Donaldson
Director	Matthew Dyer
Director	David Hoskin
Director	John Nangreaves
Director	Dave Robertson
Appointed	
Honorary President	Mary Lou Whitehorne
Auditor	TBD
Communications Committee, Chair	Judy Black
Dark-Sky Preserve Committee, Co-Chair	Peter Hurley
Dark-Sky Preserve Committee, Co-Chair	Tony Schellinck
Education & Public Outreach (EPO) Chair	David Hoskin
Governance Committee, Chair	Judy Black
Librarian	Jerry Black
National Council Representative	Judy Black
Nominating Committee, Chair	Peter Hurley
Nova Notes, Editor	Lisa Ann Fanning
Nova Notes, Copy Editor	John McPhee
Observing / EPO Chair	David Hoskin
St. Croix Observatory, Manager	John Liddard
Webmaster	Jerry Black

SAVE THE DATES FOR 2024!

Dark-Sky Weekend
August 15-17, 2025

New Moon August 23, 2025

Nova East Star Party
August 22-24, 2025



A Message from the President

As we complete another orbit of the sun and 2024 draws to a close, it is appropriate to take stock of our current situation and think about plans for the new year.

1. Halifax Plan - We have a plan for Halifax Centre. This plan is designed to address the desires of our membership as determined in the survey of January 2024. This plan must be refreshed every year, so now is a good time for everyone to have a look at the document, which is on our website, and let me know your comments and suggestions. If anything in the plan sparks your interest and you would like to help work on that item, please reach out to me.

2. SCO - St. Croix is the jewel of RASC Halifax. We are so fortunate to have such a facility in such a location. With the generous bequest of Dave & Michelle Lane, we are well underway to ensuring the money required to operate and maintain SCO well into the future is in place through the Dave Lane Memorial **St. Croix Observatory Property Endowment (SCOPE)**. As mentioned during the AGM, we will be operating a fundraising drive in the new year. Please stay tuned for the details.

3. Howard Telescope & KStars - The Howard 200mm EdgeHD Hyperstar telescope at SCO is up and running. Members now have the opportunity to start astro-imaging using very capable equipment and software with absolutely no financial investment! This is a huge benefit and I encourage those who have any interest or curiosity about the business of astro-imaging to give this a try. Just reach out to me or any member of the board and we will help get you started!

4. Laser Pointer - RASC Halifax Centre now has a program to provide training to interested members on the safe use of laser pointers for astronomical outreach. Anyone interested in receiving this training and certification should contact a member of the board.

5. Qilak Award - We are all very proud of our own Tony Schellinck, who was the recipient of this year's Qilak Award, a national award that recognizes Tony's outstanding contribution to the public understanding and appreciation of astronomy. Congratulations, Tony!

The board is very keen to hear from our members, so do not hesitate to reach out with any comments, ideas or suggestions.

Best Regards

Tony McGrath
president_AT_halifax.rasc.ca

Email the Centre Executive:
president@halifax.rasc.ca

Nova Notes: The Newsletter of the Halifax Centre of the RASC **PO Box 31011, Halifax, Nova Scotia B3K 5T9**

Nova Notes is published five times a year, in February, April, June/July, September/October and December.

The opinions expressed herein are not necessarily those of the Halifax Centre.

Articles on any aspect of astronomy and related activities will be considered for publication.

Asteroids with a Nova Scotia Connection

By Dr. Roy Bishop & Judy Black

Introduction

Judy Black approached Dr. Roy Bishop to suggest co-authorship of a Nova Notes series about asteroids with a Nova Scotia connection, to which he agreed. Roy is the lead author with Judy providing the non-science information. Peter Jedicke (London Centre) greatly assisted in locating the citations (even during a London Knights hockey game – thanks, Peter!).

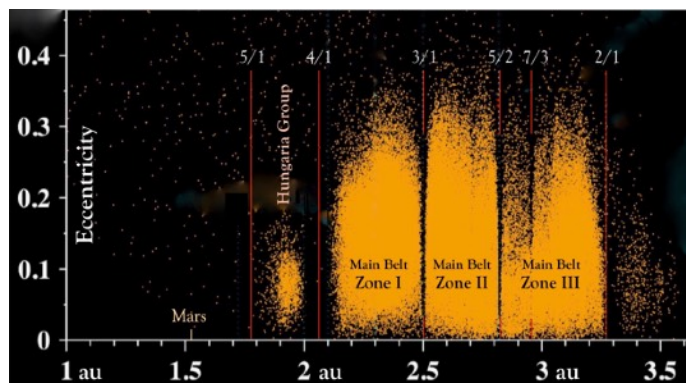
This is the second in a series of six articles being published in the RASC Halifax Centre newsletter. To find this and previous instalments, go to the Halifax Centre website (<http://halifax.rasc.ca/index.php/publications/17-nova-notes-newsletter>). Hope you enjoy and learn from the series.

Introduction to the Asteroid Belt (Instalment 2 of 6)

The region between the orbits of Mars and Jupiter (semi-major axes of 1.52 and 5.20 au, respectively) is huge, nearly four times wider than Earth's distance from the Sun. With a mass 3,000 times that of Mars, it is no wonder that Jupiter, the first planet to form in the solar nebula, has prevented the debris in that region from coalescing into a sizable planet. Jupiter's presence likely also is why Mars was able to accumulate only one-tenth the mass of Earth, ending up today as a small planet without plate tectonics, a protective magnetic field, or a substantial atmosphere.

The largest asteroid, (1) Ceres, also classed as a dwarf planet, is 940 kilometres in diameter (27% the diameter and 1.3% the mass of Earth's Moon) and contains approximately 1/3rd of the mass of all the asteroids. There are perhaps a million asteroids with diameters greater than one kilometre, and many more that are smaller.

The American astronomer Daniel Kirkwood (1814-1895) was the first to notice that the distribution of asteroids as a function of their mean distances (semi-major axes) from the Sun is not random. "Kirkwood gaps" occur, corresponding to resonant gravitational perturbations by Jupiter, similar to the influence of Mimas producing Cassini's division in Saturn's rings (a 2/1 resonance). Where the orbital periods of an asteroid and Jupiter are in the ratio of small integers such as 4/1, 3/1, or 5/2, there are gaps containing few if any asteroids.



A plot of the eccentricities versus semi-major axes of a few hundred thousand asteroids between Mars and Jupiter (adapted from a 2007 JPL/Caltech diagram by Alan Chamberlin.) * Mars is at 1.52 au (eccentricity not plotted), Jupiter at 5.20 au (off scale to the right). Four Kirkwood Gaps are obvious: at 2.06 au (4/1 resonance with Jupiter), 2.50 (3/1), 2.82 (5/2), and 2.96 (7/3). Two unlabelled gaps are less obvious: in Zone II 2.70 (8/3) and in Zone III at 3.03 (9/4). The main clusters are bounded on the left at 1.78 au (5/1) and on the right at 3.28 au (2/1). By Kepler's third law, the distance of a Kirkwood Gap from the Sun equals Jupiter's semi-major axis divided by the resonance ratio to the 2/3rd power.

*https://ssd.jpl.nasa.gov/images/dist_ae_ast.ps

Asteroids (con't)

Although obscured by the sheer number of asteroids in this two-dimensional diagram, in a three-dimensional, high-resolution diagram with orbital inclination on the third axis, several concentrations of asteroids appear highlighting orbits having almost the same semi-major axis, eccentricity, and inclination to the ecliptic (i.e., very similar orbits). Those concentrations are “Hirayama families,” first noted by the Japanese astronomer Kiyotsugu Hirayama (1874 – 1943). It is customary to name each family after the largest asteroid in the group.

Families of asteroids, of which about two dozen are known, apparently arise when a larger asteroid suffers a catastrophic collision in the not too distant past. Using the orbital elements for a particularly tight Hirayama family and taking orbital perturbations by the four gas giant planets (the largest orbit-changing effects during several million years) into account, a team of astronomers ran an orbital simulation *backward* in time. They found that the orbits of 13 asteroids were essentially identical 5.8 million years ago, linking the family to the breakup of a single asteroid at that time in the past.

In recent decades, advances in solar system dynamics enabled by the electronic computer have revealed that although Jupiter has the major influence on the asteroid belt, gravitational interactions with all the other planets perturb the asteroids. In the long term, these complex interactions can produce chaotic orbits, sending some asteroids inward on Earth-crossing orbits (the main source of random meteors striking Earth), or even deflecting some asteroids out of the still-evolving Solar System.

Next instalment: *The Inner Main Belt*

Double Your Dollars With SCOPE

By Mary Lou Whitehorne
Outgoing Honorary President Halifax RASC

Dave Lane was a leader in the inception, design, fundraising, and construction of SCO. A keen observer, he loved the observatory, appreciating its desirable dark sky location and other unique attributes. He spent many clear nights observing with friends at SCO, even when he had his own fully equipped backyard observatory.

SCO is a gem of an observatory for the Halifax Centre. We are fortunate to have this wonderful resource. Dave understood this at a deep level, and wished to ensure that his passion for astronomy would continue to thrive into the future, through other observers, at SCO. To this end, the Halifax Centre will be launching a year-long fund raising campaign in 2025. Monies raised will go to the endowment fund, income from which will support the observatory into the future.

Details will be made public at a later date so ... **watch this space!**



Support SCO with the Dave Lane
Memorial St. Croix Observatory
Property Endowment (SCOPE) Fund:
Matching Fund Opportunity

Centre Member Jeremy Kuzub Contributes to “STEVE” Research

By John McPhee

Aurora chasers and photographers have new online tools for their hobby.

A one-year collaboration between citizen scientists and researchers called the ARCTICS project (<https://collab.issibern.ch/arctics/>) has resulted in an aurora observing handbook and citizen science guides.

There are many open questions in aurora research that benefit from collaboration between researchers and observers, said Jeremy Kuzub, an RASC Halifax member who did a presentation on phenomena and aurora chasing for the centre last year.

“The resulting guide and handbook have just been published free and online here and may be worth sharing, since we are seeing the aurora further south in Nova Scotia during the solar maximum,” he said in a submission to Nova Notes. [Read more here.](#)

“While in Yellowknife in March 2023, I was able to capture an aurora-related phenomena (“STEVE”), the mauve arc next to the green aurora in this photo. STEVE is usually seen during geomagnetic storms and in more southern latitudes in Canada, making this sighting unusual. This led to a collaboration with researchers, led by Dr. Bea Gallardo of NASA Goddard, and including researchers at the University of Calgary and others.”



Photo of the STEVE sighting in Yellowknife
March 2023 by **Jeremy Kuzub**

“This citizen science observation was made with a custom designed camera system (AurorEye.ca), which allowed it to be synchronized with other science instruments on the ground and in space,” Jeremy said.

“Citizen scientist observations are an important part of aurora research, especially at mid-latitudes like Nova Scotia and southern areas of Canada during the solar maximum.”

The results were recently published in the Journal of Geophysical Research and were later selected for an editors’ highlight in that journal. (<https://eos.org/editor-highlights/unusual-occurrence-of-steve-an-aurora-like-glow>).

The research also has been shared at the 2024 American Geophysical Union Meeting including COSPAR in Korea and the COSPAR Scientific Assembly this fall in Washington, D.C.

Article link (open access): <https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2024GL110568>

Moonscapes: Mare Vaporum

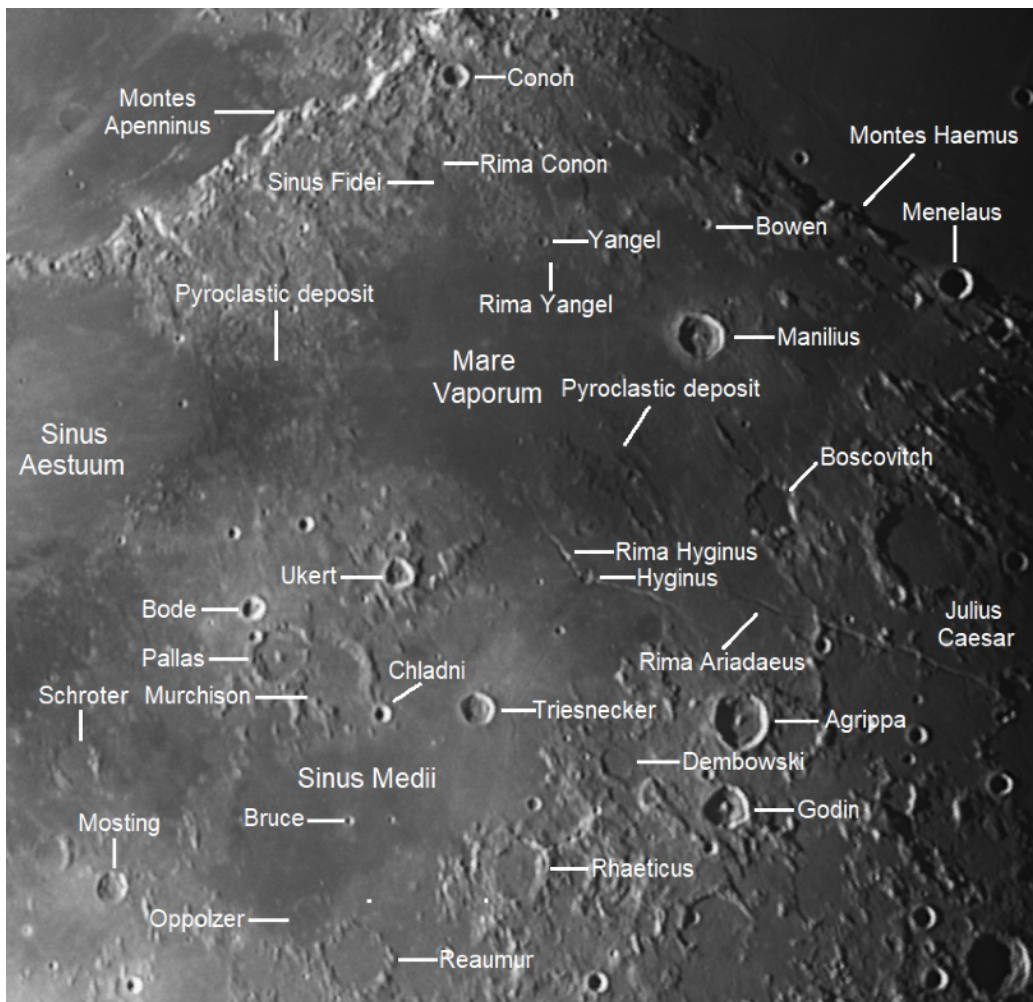
By David Hoskin

Mare Vaporum (Sea of Vapors – the circled area in the image) is a small, roughly circular mare that lies between Mare Serenitatis (Sea of Serenity) and Mare Tranquilitatis (Sea of Tranquility) to the east and Sinus Aestuum (Seething Bay) and Mare Insularum (Sea of Islands) to the west. To the north, Mare Vaporum is framed by the towering Montes Apenninus and more modest Montes Haemus. To the south, Mare Vaporum merges with Sinus Medii (Central Bay), where the Moon's equator meets its prime meridian. Mare Vaporum lies in an ancient basin that is part of the much larger Procellarum Basin, believed to have been created by a tremendous impact event early in the Moon's history.



Mare Vaporum is best observed on days 6 and 7 of the lunar cycle near the time of the Moon's first quarter phase. Despite its small size, Mare Vaporum can be seen without visual aids by a sharp-eyed observer. Mare Vaporum was named by Giovanni Riccioli, a 17th century Italian astronomer and Jesuit priest, who was noted for his maps of the Moon and their lunar nomenclature. It is thought that Mare Vaporum is considerably younger than neighbouring Mare Imbrium, as indicated by the relatively smooth surface of the basaltic lava plain and the finger-like projections of Montes Apenninus that extend into the mare.

The close-up image of Mare Vaporum shows the mare's major features, as well as prominent craters and "ghost craters" in nearby Sinus Medii. Manilius, with a diameter of 39 kilometres, is the largest crater in Mare Vaporum. A careful examination of the crater will reveal an outer rampart surrounded by debris, as well as internal terracing and a central peak formation. The interior of the crater has a greater albedo than the surrounding lava plain, causing Manilius to appear quite bright when the Sun is directly overhead. Manilius also possesses an extensive ray system that extends for more than 300 kilometres. To the southeast of prominent Manilius lies an almost completely eroded impact crater named Boscovitch, which is notable for the low albedo of the crater floor, as well as its internal rille system.



At the boundary between Mare Vaporum and Sinus Medii one finds Rima Hyginus, a magnificent 220 kilometre-long rille that contains several craterlets and passes through Hyginus, a well-defined 11 kilometre-wide crater. Other notable features located in and around Mare Vaporum include several wrinkle ridges, wide Rima Yangel to the south of the 8 kilometre-wide crater Yangel, and sinuous Rima Conon, which runs through Sinus Fidei (Bay of Trust) on the northern edge of the mare. An examination of the region of Mare Vaporum to the southwest of Manilius shows a large area that is darker than its surroundings. This is a pyroclastic deposit resulting from volcanic activity. Another large pyroclastic deposit is located at the boundary between Mare Vaporum and Sinus Aestuum.

Although some would say that Mare Vaporum is small and unimpressive, lacking the lunar “gems” found in larger mare, a telescope with modest aperture will reveal several interesting formations within and around the mare that are well worth the observer’s attention.

Sources

Lunar Maria: A Complete Guide to the Seas of the Moon by Ezzy Pearson and Iain Todd, *BBC Sky at Night Magazine*

Mare Vaporum - Wikipedia, en.wikipedia.org

Moon Observer’s Guide by Peter Grego, Firefly Books Limited

Virtual Moon Atlas 7 by Christian Legrand and Patrick Chevalley, 2020

And the winners are...

2024 Astroimaging Contest Winners Named

(Photos are the copyrighted property of the photographers. Permission to use any of their photos for other purposes must be obtained from the photographer.)

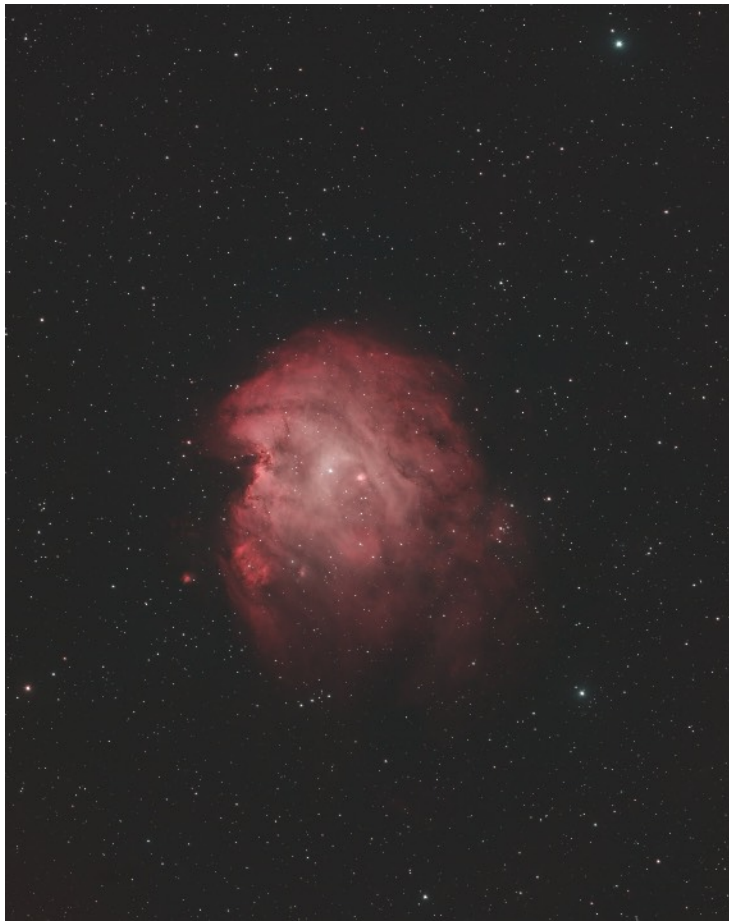
These photos are this year's winners. To view online, visit <https://halifax.rasc.ca/index.php/astro-images/2022-2024-astroimaging-contest?highlight=WyJjb250ZXN0I10=>

The winners will be able to claim their 12x18 canvas print from Atlantic Photo Supply. Allen Sutherland of APS will contact the winners with further instructions in January. We thank our local dealer of Astronomy equipment, Atlantic Photo Supply for their generous prizes.



**PEOPLES'S CHOICE AWARD
WINNER Jason Dain WF-05
Comet C2023 A3 and the Milky
Way** East Hants, NS - October 20,
2024 8-9pm. Nikon D850a with
Sigma 14mm f/1.8 Art Lens on
iOptron Skyguider Pro. Sky is
6x30s tracked shots at f/2,
ISO1600 and foreground is
untracked 30s f/2, ISO 1600. Sky
shots stacked in Sequator and
combined with long exposure
foreground in Adobe Photoshop.

Astrophotography winners (con't)



DEEP SKY WINNER *Jerry Black*
DS-10 NGC 2175 Monkey Head Nebula is an H II emission nebula located in the constellation Orion. 55@1200 sec (18.33 hours), ISO 3200, Nikon Z7 [8856 x 5504], Skywatcher Esprit 120mm Refractor, 840 mm focal length, Radian Triad Ultra Quad-Band Narrowband Filter, Phd2 using a ZWO 224MC on an Orion 60x240mm Guide scope, Images taken using Kstars on an Odroid-N2 (Raspberry Pi clone), Lower Sackville, Nova Scotia. 2022-03-27 and earlier sessions, PixInsight Processing:
WeightedBatchPreprocessing Script, Dynamic Crop, Dynamic Background Extraction, Image Solver Script, SpectrophotometricColorCalibration, BlurXTerminator, NoiseXTerminator, GeneralizedHyperbolicStretch, BlurXTerminator, CurvesTransformation.



WIDE FIELD AWARD WINNER *Jeremy Kuzub* **WF-06 Shields Down!** Auroral arc and Milky Ways during the Kp8 April 24, 2023 geomagnetic storm. Martinique Beach, Nova Scotia April 24, 3:23AM ADT (06:23UTC) Sony A7 III, ISO3200, 13second exposures, Laowa 15mm f/2.0 at f/ 2.0, Ball-head tripod, 10 images to form a panoramic, so 13s*10 = 130 seconds, Processing steps: Using Affinity Photo 2: 1. Stitching of out-of-camera JPGs, 2. unwarped to account for tripod skew, 3. global RGB curves adjustment, 4. global Saturation adjustment, 5. sharpening using global wide radius unsharp mask, 6. Gamma adjustment using Soft Light blend mode overlay of gaussian blurred greyscale version of image

Astrophotography winners (con't)



SOLAR SYSTEM AWARD WINNER

David Hoskin SS-01 Petavius crater

Petavius is one of the large impact craters that make up the “Gang of Four”. Petavius, located on the southeast side of the Moon, is 177 kilometers wide. Petavius has a prominent central mountain massif, extensively terraced walls, and an external network of ridges and furrows. Sinuous rilles extend across the crater’s floor, the most impressive of which is Rimae Petavius, which runs in a more or less straight line from the central mountains to the southwestern inner wall of Petavius. Rima Petavius, a fault feature formed by crustal tension, gives Petavius the appearance of a clock face with its hour hand at the 8 o’clock position. Captured at 9:13 pm on 20 November 2021 at Halifax, NS. Equipment consisted of a Celestron C8 200mm f/10 Schmidt-Cassegrain telescope with a 2X Barlow, SkyWatcher EQ6R Pro mount, and a ZWO ASI290MM CMOS camera (gain 200, 0.78-millisecond exposures, MONO16/SER format) with an IR 850nm pass filter at prime focus. SharpCap was used to capture 1005 frames of video. The best 10% of video frames were selected and stacked with AutoStakkert 3. Registax 6 was used for wavelets. Levels, sharpness, contrast, highlights and shadows were tweaked using Photoshop CS2 and Microsoft Photo.

Congratulations to David Hoskin who tied with himself in the category of “Solar System.”



SOLAR SYSTEM AWARD WINNER David Hoskin SS-02 Total solar eclipse photo montage

This is a montage of photographs obtained during the 8 April 2024 solar eclipse, from beginning to end. Images were captured in RAW format on 8 April 2024 at Rogersville NB, beginning at the start of the partial phase at 2:12 pm and continuing every 3 to 5 minutes until the end of the eclipse at 5:42 pm (clockwise from bottom centre; middle is a long exposure photograph at totality showing the corona). Equipment consisted of a Canon T3i DSLR on manual with a Canon 50-250mm lens fitted with a solar filter, all mounted on a SkyWatcher Star Adventurer tracking mount. Exposures at 250mm, f/8, ISO-100 ranged from 1/800 second to 1/50 second, depending on the phase of the eclipse. Images were captured in RAW format and converted to TIFF format using Canon’s Digital Photo Professional. False color was added to images of the partial phase using Photoshop.

Member News

Deep Sky Eye Observatory wins “Glamping Experience of the Year” Award

We are very excited to announce that member **Tim Doucette** and his Deep Sky Eye Observatory has been awarded Bespoke Glamping Experience of the Year by iGap travelguide!

The iGap Travel Awards acknowledges those businesses who are helping shape the traditional gap year travel experience. This all-encompassing awards programme scours the globe for hospitality, tour, and travel companies that are adding real value to their customer’s travel plans – making bucket-list adventures a reality.



Deep Sky Eye Observatory Photo Credit: <https://www.deepskyeye.com>

Members' Universe



Jerry Black captured NGC 6888 The Crescent Nebula

He writes: “The Crescent Nebula is an emission nebula in the constellation Cygnus, about 5000 light-years away from Earth. It was discovered by William Herschel in 1792. It is formed by the fast stellar wind from the Wolf-Rayet star WR 136 colliding with and energizing the slower moving wind ejected by the star when it became a red giant around 250,000 to 400,000 years ago. The result of the collision is a shell and two shock waves, one moving outward and one moving inward. - Wikipedia

Blair noted that the Soap Bubble Nebula, Ju 1 (also known as PN G075.5+01.7) planetary nebula is above and to the left of the Crescent Nebula nearer the top of the image in this orientation.”

Exposure 10@1200 sec (3.3) · ISO 3200 ·

Camera Nikon Z7 [8856 x 5504]

Optics Skywatcher Esprit 120mm Refractor, 840 mm focal length

Filter Optolong L-eNhance

Guiding KStars Internal guiding using a ZWO 224MC on an Orion 60x240mm Guide scope

Controller Images taken using Kstars on an Mele Quieter 3C under Ubuntu 24.04.3

Location. Lower Sackville, Nova Scotia · Date 2024-10-22

PixInsight Processing WeightedBatchPreprocessing Script, GraXpert, BlurXTerminator, NoiseXTerminator, HistogramTransformation, StarXTerminator, HDRMultiScaleTransform, CurvesTransformation

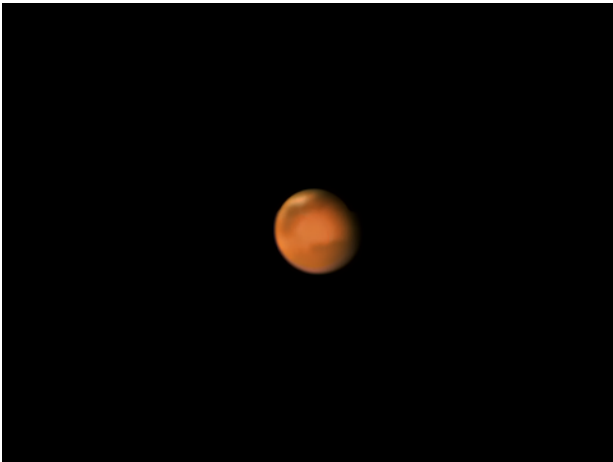
Members' Universe: David Hoskin's Universe



Jupiter on December 13, 2024
He writes "Jupiter imaged last night
(Celestron C8 SCT, ES 2x focal extender,
ZWO ASI224, EQ6R)."
Image by **David Hoskin**



David Hoskin created this cropped composite
image of Jupiter and its four Galilean moons.
Captured November 11, 2024 with his Canon T3i
DSLR and 102mm MCT on a tripod.



David Hoskin captured Mars on
December 7, 2024 as it continues to
brighten.

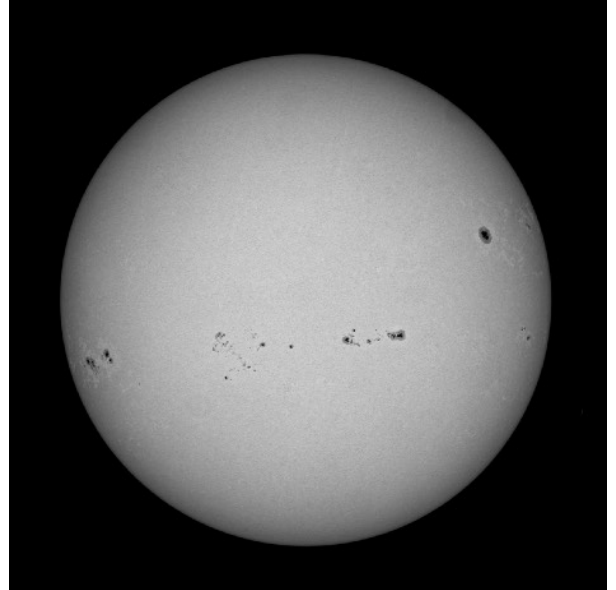


Waning crescent Moon and Venus in
conjunction on December 4, 2024
Image by **David Hoskin**

Members' Universe: David Hoskin's Universe



The close approach and occulting of Neptune by the waxing gibbous Moon. The top image is a composite of a short exposure photograph to capture the Moon and a long exposure photograph to reveal Neptune and HIP 117614. Image by **David Hoskin** November 11, 2024



David Hoskin captured Sunspots with white light filter on November 8, 2024



Tsuchinshan-ATLAS on October 18, 2024 by **David Hoskin** He writes "I needed binoculars to find comet C/2023 A3 tonight - definitely fainter than it was on 12 October. Photographed from Halifax at 8:20pm with my Canon T3i DSLR and RedCat51 on a tripod."



David Hoskin captured the Waning gibbous Moon on October 21, 2024

Members' Universe

Food for the Soul: The Poetry of Paul Heath

Nebulae

By Paul Heath

There was a mist upon the new formed Glass,
Unseen by Eye, a smug upon the unchanging sky.
Behind the Glass, eyes swept between the stars
Many a Glass, the wisps of Mist did find.
To lists those Mists did rest, lest fiery swords be missed.

With Glass enlarged, a search in earnest grew
To search the sky for more that was new,
Yet the Stars still held sway,
Unchanging at the close of day.

With measurement exactingly fine,
We stretched the void beyond the sky
The River of light we mapped,
A larger home within the Star littered realm, to claim.

Yet the Mists remained.
Nebulous and vague, within Star strewn lanes
Unmarked by measure, clouds afloat within the void,
Mere Smudges still upon the Eye,
As if set within the Glass itself.

Then, the Stars threw off their cloaks
The unchanging sky, now **mirid** hues of dancing light
Spoke of life and loss within the outstretched void
And as the ticking of a clock,
Each Heartbeat of a Star, was marked.

With measurements exacting and fine,
As ants the distant forests ending sought,
The void between the Stars
We set assured, Within our sights grasp to mark.

To see the Heartbeat of a Star,
A widened Glass would see so far.
But Mists uncloaked upon that widened Glass
Wonder, Stars within were found.

The largest Glass then swung,
The Mists with measurements exacting and fine begun,
To seek the distant whisps domain,
To find its place, within
The unyielding Stars of night.

But measurements, exacting and fine,
Did not, find a home within our Star lit sky.
For the Mists on Glass were far, far beyond.
Our Stars a mere island are,
Resting so close upon our Eyes.

The Mists, each its own island, full of Stars,
Floating so distant within the unfathomable void.
Uncountable steps, stretching out beyond the mind,
The Universe was pushed so far,
Its distance, a Mist lost to Time.

CROSS-EYED

By Paul Heath

Laughter fills the room
As Cross-Eyed our classmates stare,
Until, our turn to stare arrives.
A Balloon, floats upon the air.

Images from Eagles height
Paired upon the page,
With glass on stilts, we peered
Meticulous, to maps contours applied.

From air so thin, a camera whines
Mountain tops, on page aligned,
Hanging, the storms threat unmasked.
To ground, safety's warning passed.

But then to lights upon the Sky
Our desires, hopes aspired,
Stilted glass, safe landing sought
Our first steps on distant lands, to plot.

Distant cameras circle now
To seek the shape, the sky contains
And hopes, with laughter's memory held,
In far, far distant lands
Through stilted glass we'll see.
A Balloon, again afloat on air.

PUZZLE CORNER – Winter Sky

Unscramble

By Lisa Ann Fanning

Can you unscramble these winter astronomy terms? Solution will be in the next edition of *Nova Notes*.

C E E I I L _ N O R S S T T W
 A B E I L _ N N O O R U
 I I R S S U
 B C E E E E H _ I L R S T U V
 A E E G I I _ L N N R R T T W
 B C D E E L _ L O R S T U U
 E E I _ L L O P R T T
 A A C D L L _ N O O _ P R S T U X
 A A B D E E E H H _ L N O R S U
 A A A A D D E G L _ M N O R X Y
 A G I L M N R T U U
 A A C E I I O P S S

Answers to Last Edition's Puzzle

WORD SEARCH - AUTUMN SKY SOLUTION

M	E	4	O	W	E	E	E	O	E	C	A	B	R	4	T	B	L	P	4
W	1	3	W	I	B	R	'	R	P	O	A	M	E	I	4	1	O	E	W
I	A	3	L	'	T	O	V	I	R	W	R	S	T	X	M	R	T	R	I
A	N	G	C	5	9	8	S	O	R	S	C	R	S	D	I	'	L	S	W
L	D	3	L	L	U	C	M	N	U	*	Y	M	U	I	L	Q	U	E	U
P	R	*	U	X	E	B	T	I	H	G	3	I	L	S	O	Y	3	U	Z
H	O	'	S	S	I	M	R	D	F	Z	O	A	C	E	Q	P	Z	S	R
E	M	K	T	O	T	A	R	M	4	2	R	V	E	'	Q	T	E	T	'
R	E	U	E	L	U	R	W	E	L	O	3	E	L	X	K	E	S	I	Z
A	D	P	R	Q	M	A	V	T	Y	5	X	A	B	J	A	5	N	W	A
T	A	3	A	M	E	R	Q	E	O	T	*	P	U	T	L	M	G	I	3
Z	'	U	R	N	T	W	B	O	5	R	3	A	O	3	U	3	O	S	Z
C	W	3	M	M	1	5	'	R	K	I	A	L	D	E	B	A	R	A	N
M	M	M	U	O	T	O	W	S	1	A	W	E	4	Y	E	5	E	T	G
Z	P	X	M	A	U	B	Q	H	3	N	Z	M	3	3	N	M	1	U	C
3	C	E	T	U	S	Y	R	O	Q	G	X	Y	L	Z	L	5	Q	L	4
A	Q	'	T	U	3	O	W	W	O	U	W	T	A	E	U	3	E	V	5
B	P	Z	4	R	C	A	P	E	L	L	A	P	4	'	O	R	2	S	7
I	Q	X	Z	Q	U	V	Y	R	X	U	U	L	5	W	S	S	3	5	W
W	I	K	E	W	I	K	U	'	S	M	W	3	W	P	T	R	I	V	3

November 2, 2024 RASC Halifax Centre Meeting:

(32 attendees)

To watch a replay of the meeting, please visit: <https://www.youtube.com/watch?v=-vFBHAMFzIQ> on the RASC Halifax YouTube Channel.

Welcome - David Hoskin

RASC Halifax Director, Observing / EPO Chair and program emcee David Hoskin welcomed everyone to the monthly meeting, shared the Indigenous Land Acknowledgement and read the Centre's inclusivity and diversity statement.

David Hoskin - Photo Montage

David presented photographs and sketches from Centre members Jerry Black, Barry Burgess, Stewart Cameron, David Chapman, Jason Dain, Jeff Donaldson, Tim Doucette, Lisa Ann Fanning, Michael Gatto, Paul Gray, David Hoskin, Blair MacDonald, Fabian Pittman, Darren Talbot, and Kathy Walker.

Special Guest - Dr. Martin Connors - One Hundred Years Ago Galaxies Did Not Exist

"We take galaxies for granted, seeing beautiful images of them and knowing how remote they are. But only one hundred years ago, it was widely believed that our own Galaxy was the whole universe. The spiral forms observed were thought to be planet systems in formation. Since it is very difficult to find distances in astronomy, variable stars played a key role in Edwin Hubble's first great discovery, based on work done in 1924: that the Andromeda galaxy M51 was about two million light years away, well outside our own Milky Way."



Paul Heath - Food for the Soul - Nebulae

Paul presented his latest poem, *Nebulae*, which can be read on page 17 of this edition of Nova Notes. His poem was inspired by the topic of the day's talk.

News from the Board presented by Centre President, Tony McGrath

Nominations for National Awards are open until December 31, 2024. Winners will be announced at the General Assembly in May. Visit National's site for more information.

RASC Halifax AGM will be held December 7, 2024.

- There will be some amendments to the by-laws. Judy Black has sent those to the announce email list. Questions or comments can be directed to Judy.
- Reports and agenda will be forwarded closer to the meeting.
- Nominations for positions will be open.
- The speaker for the December meeting will be RASC Halifax Centre member, Lisa Ann Fanning, speaking on stereoscopy.

Silent Auction Fundraiser in support of SCO: Mak-Newt Telescope - Mary Lou Whitehorne

Roy Bishop's Mak-Newt Telescope will be up for (silent) auction at the next meeting (December 7, 2024) as part of a fundraiser for the SCO Maintenance Fund. Bids start at \$500.

David Hoskin (EPO/Observing Chair) - What's up in the November Night Sky

David reviewed highlights of the November sky. He highlighted the sun, solar activity, the Moon, and targets needed to check off for Explore the Universe, and when they can be viewed. He also highlighted planetary positions, constellations, stars (including double and multiple) and Deep Sky Objects. Each month, you can find David's presentations on the homepage at <http://halifax.rasc.ca>.

December 7, 2024 RASC Halifax AGM + Centre

Meeting:

(37 total (includes 3 non-members for the AGM)) To watch a replay of the meeting, please visit: <https://www.youtube.com/watch?v=PXSsmFufSXz8> on the RASC Halifax YouTube Channel.

Royal Astronomical Society of Canada - Halifax Centre Annual General Meeting (AGM) Saturday, December 7, 2023 – 1:00-1:45 PM Via Zoom - Meeting ID 849 0006 6600

Time	Item
	Agenda
1:00 PM	1. Welcome & Opening Remarks <ul style="list-style-type: none">a. Approval of 2024 Agenda (poll)b. Approval of AGM Minutes (December 2, 2023) (poll)c. Auction for Roy Bishops' Maksutov-Newtonian Telescope, Part 1d. Appointment of Auditor for 2024-2025
	2. Reports (attached) <ul style="list-style-type: none">a. Treasurer report – Dave Chapman for Gregg Dillb. Q&A regarding pre-circulated reportsc. Approval of reports as presented (with any amendments) (poll)<ul style="list-style-type: none">• President Report – Tony McGrath• VP Report – Judy Black• Secretary Report – Peter Hurley• National Council Representative Report – Judy Black• Dark-Sky Preserve Committee – Peter Hurley, Tony Schellinck• Education & Public Outreach (EPO) Chair Report – David Hoskin• Governance Committee Report – Judy Black• Nova East Report – Chris Young• Nova Notes – Lisa Ann Fanning, John McPhee• Observing Chair Report – David Hoskin• St. Croix Observatory (SCO) Report – John Liddard• Webmaster Report – Jerry Black• Auditor Report – TBD• Librarian Report – TBD
	3. Call for Nominations and Election of 2024 Board of Directors <ul style="list-style-type: none">a. Nominating Committee Report – Peter Hurley<ul style="list-style-type: none">• Nominations for Board of Directors• Elections for Officer and Director positions
	4. Call for Nominations for Appointed Positions <ul style="list-style-type: none">a. Nominations for Appointed Positions – Peter Hurley
1:45 PM	5. By-Law No. 1 Amendments <ul style="list-style-type: none">a. Governance Review Committee Overview of Suggested Amendmentsb. Special Resolution of Members
	6. Adjournment of AGM

1. Welcome and Opening Remarks

Judy Black welcomed the nine RASC Halifax Centre members meeting by Zoom and the 28 attending in-person), stating Halifax Centre welcomes all with an interest in astronomy, without prejudice, and that the stars belong to everyone. Halifax Centre also respectfully acknowledges that we live and observe on the unceded territory of the Mi'kmaq People. Quorum was met.

The agenda for the afternoon was explained, i.e., the AGM was held first followed by the regularly scheduled member's meeting. The word "poll" in some of the items listed meant there were votes to be

taken, such as approval of agenda, minutes, etc. Only members in good standing were allowed to vote.

a. Approval of 2024 Agenda

The agenda was presented for approval. It was explained the Treasurer, Nominating and By-Law Review reports would be addressed individually. The other reports cited had been pre-circulated and discussion for clarification purposes only would be held.

Judy Black invited members to participate at some level – on the Board, as the Chair and just as importantly as a member of a Committee. Governance review has been completed for another few years. She invited all to come have fun and be part of the Centre Team. She noted the acronym TEAM – Together Each Achieves More.

241207AGM-Mot01:

It was moved by Bob Russell and seconded by Blair MacDonald to approve the December 7, 2024, AGM agenda as circulated.

CARRIED unanimously.

b. Approval of 2023 AGM Minutes

The minutes of the December 2, 2023, AGM had been pre-circulated to members and were also available online for one year. No errors or omissions were noted.

241207AGM-Mot02:

It was moved by Mary Lou Whitehorne and seconded by Chris Young to approve the minutes of the December 2, 2023 AGM as posted on the RASC Halifax Centre website.

CARRIED unanimously with 1 abstention.

c. Auction for Roy Bishop's Maksutov-Newtonian Telescope, Part 1

Through social media and membership announce list, members were apprised of the features of the telescope gifted by Dr. Roy Bishop to Mary Lou Whitehorne in May, valued at approximately \$3,000.00. She decided to gift it to the Centre for a silent auction. The funds raised at the auction would go to the maintenance fund being set up for the St. Croix Observatory (SCO) in honour of Dave Lane. Roy's telescopes always have exquisite optics so encouraged bidding. Bidding is resuming at this meeting on Zoom and in the room; the winning bid will be announced at the end of this meeting.

Questions were asked about donating other scopes for this purpose. Mary Lou noted the Centre had a policy regarding donations that can be found on the Centre Website in "About Us".

d. Appointment of a New Auditor, 2024-2025 Fiscal Year

The Board had approached Dave Chapman to continue in his role as Auditor for 2024-2025. He had agreed.

241207AGM-Mot03:

It was moved by Paul Heath and seconded by Tony Schellinck to approve the appointment of David Chapman as the 2024-2025 Auditor.

CARRIED unanimously with 1 abstention.

2. Reports

(Note: Compiled reports will be included in the Jan/Feb 2025 edition of Nova Notes.)

Judy Black noted the reports from the Board and the appointed positions had been pre-circulated October 29, November 22, and December 3 so would not be read during this meeting.

a. Treasurer Report

Dave Chapman addressed the Treasurer report prepared by Gregg Dill. If there are any questions, we will send them to Gregg to address. Dave will conduct the 2023-2024 audit for presentation early in the coming year. This year and last year were a little unusual partly due to Nova East. The Nova East Star Party was cancelled last year; registration funds submitted by members showed as income; these funds were returned but cashing of refund cheques were not completed before end of fiscal year. Nova East this year was small possibly due to the weather so income was smaller. Hopefully next year will return to normal.

The **Comparative Income Statement** as of September 30, 2024, was presented with a few things highlighted. Generally speaking the numbers were similar to last year.

Royal Astronomical Society of Canada, Halifax Centre Comparative Balance Sheet Years Ending September 30, 2023 and September 30, 2024			
September 30, 2024 Activity to: September 30, 2024	Years Ended September 30		Amount of Increase or (Decrease) during 2024
	2024	2023	
Assets			
Cash	\$11,783.33	\$10,175.49	\$1,607.84
Investments	\$8,000.00	\$8,000.00	\$0.00
Accounts Receivable	\$485.97	\$282.22	\$203.75
Library Estimated	\$1,147.61	\$1,183.11	(\$35.50)
Observatory Equipment	\$8,263.10	\$9,178.78	(\$915.68)
Miscellaneous Estimated	\$13.00	\$0.00	\$13.00
Total Assets	\$29,693.01	\$28,819.60	\$873.41
Liabilities			
Accounts Payable	\$1,013.33	\$2,111.30	(\$1,097.97)
Capital			
Nova East Working Equity	\$5,000.00	\$5,000.00	\$0.00
Common Equity	\$23,679.68	\$21,708.30	\$1,971.38
Total Capital	\$28,679.68	\$26,708.30	\$1,971.38
Total Liabilities and capital	\$29,693.01	\$28,819.60	\$873.41

Income:

Membership fees were up a bit. There are 146 members with 18 Life members that do not pay memberships; however, many Life members do donate annually to the Centre. Donations are also received when Members renew their RASC membership. We managed to make a profit on items purchased for sale to members, e.g., calendar, ETU Guides and solar glasses.

Expenses:

Expenses for meetings was mostly due to costs associated to the Zoom

subscription. The value of depreciation and write-offs are cited. A revision to the value of the SCO buildings and their contents will be done in the coming so that a more accurate accounting of them will be seen next year.

There was a modest increase to the increase in property/liability Insurance. SCO operating expense was due to nominal tax expense.

The **Comparative Balance Statement** as of September 30, 2024, was presented.

Royal Astronomical Society of Canada, Halifax Centre Comparative Income Statement Years Ending September 30, 2023 and September 30, 2024			
	Years Ended September 30		Amount of Increase or (Decrease) during 2024
	2024	2023	
Revenue			
Membership Fees	\$3,463.88	\$3,364.77	\$99.11
Donations	\$704.00	\$350.00	\$354.00
Observatory Donations	\$140.00	\$0.00	\$140.00
Education & Outreach	\$0.00	\$0.00	\$0.00
Interest	\$449.81	\$63.14	\$386.67
Sales of Merchandise	\$1,325.00	\$340.00	\$985.00
Nova East (Net)	\$630.38	\$1,190.00	(\$759.62)
National Processing Fees (Income)	(\$12.87)	(\$4.91)	(\$7.96)
Miscellaneous	\$122.00	\$0.00	\$122.00
Total Revenue	\$6,622.20	\$5,303.00	\$1,319.20
Expenses			
Meetings	\$411.51	\$230.00	\$181.51
Depreciation and write offs	\$951.18	\$1,056.23	(\$105.05)
Equipment and Supplies	\$0.00	\$0.00	\$0.00
Purchase of merchandise	\$675.73	\$490.51	\$185.22
Office Administration	\$329.33	\$0.00	\$329.33
Educational Activities	\$0.00	\$35.80	(\$35.80)
Insurance	\$1,966.00	\$1,837.00	\$129.00
Awards and Donations	\$120.00	\$120.00	\$0.00
National Office Processing	\$96.92	\$106.53	(\$9.61)
Operating Expenses SCO	\$30.15	\$710.76	(\$680.61)
Miscellaneous (NE refunds)	\$70.00	\$1,190.00	(\$1,120.00)
Total Expenses	\$4,650.82	\$5,776.83	(\$1,126.01)
operational Surplus (Deficit)	\$1,971.38	(\$473.83)	\$2,445.21

Assets:

The Centre has \$11,783.33 in cash. Two GICs worth \$4000 each have the principal reinvested. Accounts payable reflects amount of money owed to the Centre.

D. Themelis noted the income from Nova East is cited but there are no expenses. Dave wondered if this was reflected in "NE Net" in the Comparative Statement.

T. Schellinck inquired how members can donate to the Centre. Judy Black noted the donation can be sent via e-transfer to the Treasurer, making note that it is a donation to the Centre. Dave reminded members that because the RASC Halifax Centre is not a charity, they would not receive a receipt for their donation.

241207AGM-Mot04:

It was moved by Blair MacDonald and seconded by Chris Young to approve the Financial Report as presented.

CARRIED unanimously with 1 abstention.

b. Written Pre-Circulated Reports

Judy Black asked if there were any questions regarding the remaining reports that had been circulated. None were received.

241207AGM-Mot05

It was moved by Mary Lou Whitehorne and seconded by Chris Young to approve the executive and appointed position reports as pre-circulated
CARRIED unanimously with 1 abstention.

3. Call for Nominations and Election of 2024 Board of Directors

Peter Hurley, Chair of the Nomination Committee, presented the nominations for the Board of Directors. He thanked his fellow members Tony McGrath and Judy Black. The slate of nominees for the 2025 Board of Directors was then presented as follows:

<u>Executive Committee</u>	<u>Directors</u>
President – Tony McGrath	Matthew Dyer
Vice-President – OPEN	David Hoskin
Secretary – Judy Black	Peter Hurley
Treasurer – Gregg Dill	Vincent Vallee
	1 OPEN position

Peter noted that according to our Centre's By-Law No. 1, there is a requirement for up to 10 directors; we are open to nominations for the two open positions. There were 3 calls for nominations from the floor and from the online members in attendance for the 2025 Board of Directors.

241207AGM-Mot06:

It was moved by Bob Russell and seconded by Gary Weber to close nominations.
CARRIED unanimously.

There being no further nominations, the 2025 Board of Directors positions were elected by acclamation. Congratulations to the newly elected Board. Peter noted the Board can approve nomination to the Board. He noted the position descriptions are on our website in *About Us*.

4. Call for Nominations for Appointed Positions

The Board had approved appointments at previous deliberations. There are a number of vacant positions.

Auditor, 2024-2025	Dave Chapman
Honorary President	Patrick Kelly
Governance review Committee	Judy Black
Education & Public Outreach (EPO), Chair	David Hoskin
Observing Chair	David Hoskin
Nova Notes, Editors	Lisa Ann Fanning, John McPhee
Webmaster	Webmaster
DSP Committee, Co-Chairs	Peter Hurley, vacant co-chair
Communications Chair	vacant
Librarian	vacant
Nominating Committee	vacant
Chair, Nova East Planning Committee	vacant
SCO Manager	vacant

Peter Hurley asked that members contact him or any other Board member regarding any further nominations or for volunteering. He stated the appointments would be approved by the incoming Board at their January 7, 2025, meeting.

Paul Heath asked if the Board and appointed lists as presented would be posted on our website. Jerry Black, Webmaster, agreed to post them on the Home page.

Dave Chapman inquired if a communications committee existed. Judy Black explained A communications plan had been developed by Judy Black, Dave Chapman and Melody Hamilton; this will be revised. She also noted the apology made in her Vice-President report for not having addressed this in the past year. One will be formed in January-February 2025 to review how and with whom we communicate. Any member can participate on this committee.

5. By-Law No. 1 (2024) Amendments

Judy Black noted the proposed changes and the rationale for the changes had been pre-circulated three times. She noted that all gender references were removed and the spelling of the by-law title was changed. She then outlined the process of approval:

- 1- Presented to Board of Directors for approval to forward to members (Oct. 29)
- 2- Circulation to members at least 30 days before the AGM (Oct. 29, Nov. 22, Dec. 3)
- 3- Presentation and discussion of changes at AGM
- 4- Proposed changes and amendments proposed at AGM approved by **Special Resolution of Members**
- 5- Documentation forwarded to the Registry of Joint Stock Companies (RJSC) for their review and approval.
- 6- Enactment of By-Law No. 1 (2024) as of date approved by the RJSC.

Judy then provided a quick outline of the changes. She noted there were no changes in general procedures; the proposed changes dealt more with clarification of roles and existing procedures. Our By-Law is also sent to the National Board to ensure there are no conflicts with RASC policy or By-Law No. 1.

Section 1: Definitions

Added "hybrid meeting" due to incorporation of Zoom meetings and changed to reference of "National member".

Section 5: Membership

5.1 Membership

- i. 5.1.2.4 now reflects the Society collects fees not the Centre
 - ii. 5.1.5 reflects the member must be in good standing to request to attend Board meetings
- Termination of Membership
- 5.3.3.3 changed to reflect those in attendance at a members or Board meeting duly called may terminate a membership.

Section 6: Board of Directors

6.3 Meetings of the RASC Halifax Centre Board of Directors

- i. The title was corrected to reflect the Centre's correct reference
- ii. 6.3.1 reflects the change in number of Board meetings required per annum.

Section 7: Officers and Directors

7.6 Duties of the President

- i. 7.6.1.2 clarifies which meetings the president does reside as Chair.
- ii. 7.6.1.3 adds his role as Privacy Officer.

7.8 Duties of the Secretary

- i. Removes the maintenance of the register of members as this the responsibility of the Society.

7.9 Duties of the Treasurer

- i. 7.9.1.3 Adds responsibility to submit RJSC reports as required.

Section 9: Meetings of the Centre

9.5 Proxies

- i. Section is deleted.

Consequent to the above deletion:

9.1 Annual General Meeting (AGM)

- i. Voting by Proxy was removed from 9.1.8 and 9.1.9

9.2 Halifax Centre Members' Meeting

- i. Voting by Proxy was removed from 9.2.8 and 9.2.9

9.3 Members' Meeting by Requisition

- i. Voting by Proxy was removed and clarification made of how a person may be considered 'present' at a meeting.

9.4 Conducting of Business

- i. 2 statements added (9.4.1 and 9.4.2) to allow for attendance other than in person.
- ii. 9.4.6 provided a better definition as to how votes were cast at meetings and what happens in the case of a tie.

There were no questions or concerns raised from the floor or from those attending on-line regarding the proposed changes. A Special Resolution of Members pre-circulated was proposed.

Special Resolution of Members

WHEREAS it is recognized that from time-to-time RASC terminology changes and advances in technology affect how the RASC Halifax Centre business is being conducted, and

WHEREAS the RASC policy changes may influence change; and

WHEREAS the By-Law Review Committee completed their mandate to revise the RASC Halifax Centre By-Law No. 1 on 29 October 2024; and

WHEREAS the RASC Halifax Centre By-Law No. 1 (2024) and the rationale for the changes were pre-circulated to RASC Halifax Centre members on 29 October 2024, 22 November 2024 and 3 December 2024 for consideration;

Be it resolved as a **Special Resolution of Members** that:

- RASC Halifax Centre By-Law No. 1 (2024) as presented in the revised By-Law No. 1 supported by the Rationale for Changes document be approved;
- RASC Halifax Centre By-Law No. 1 (2024) with the aforesaid revision be forwarded to the Registry of Joint Stock Companies (RJSC) for approval prior to enactment.

241207AGM-Mot07:

Moved by Gary Weber and seconded by Dave Chapman to adopt the Special Resolution of Members related to the adoption of the RASC By-Law No. 1 (2024).

CARRIED unanimously with one abstention.

6. Adjournment

241207AGM-Mot08:

Moved by Paul Gray and seconded by Blair MacDonald to adjourn.

CARRIED unanimously.

The meeting adjourned at 1:48 PM AST.

December 7, 2024 RASC Halifax Centre Meeting:

Welcome - David Hoskin

RASC Halifax Director, Observing / EPO Chair and program emcee David Hoskin welcomed everyone to the monthly meeting, and gave the update on the telescope auction. There was one bid at this point.

David Hoskin - Photo Montage

David presented photographs from Centre members David Chapman, Jason Dain, Jeff Donaldson, Tim Doucette, David Hoskin and Blair MacDonald. David explained that he obtains photos through the RASC Halifax Facebook page and announce list for the preceding month.

David also reminded guests that *Explore the Universe* guides are for sale.

Special Guest - Lisa Ann Fanning (Halifax Centre) Seeing Double: Art and Practical Application of Stereoscopy in space

Stereoscopy, or 3D imaging, is a technique that creates the illusion of depth in two-dimensional images - think View Master! Learn about the technique, as well as some of the works that are available for personal use. Additionally, learn how this technique is being used today in space and planetary exploration.

Outreach opportunities

David was not aware of any opportunities for January at this time, but if anyone is interested in helping with outreach, please reach out to David Hoskin.

Paul Heath - Food for the Soul - Cross-eyed

Paul presented his latest poem, *Cross-eyed*, which can be read on page 17 of this edition of Nova Notes. His poem was inspired by the topic of the day's talk.

News from the Board presented by Centre President, Tony McGrath

President Tony McGrath thanked the outgoing board and expressed looking forward to working with the incoming board in January.

He then acknowledged Dave Lane's legacy and welcomed Dave's wife, Michelle, who announced the establishment of the Dave Lane Memorial St. Croix Observatory Property Endowment (SCOPE) Fund. She announced an initial gift of \$10,000 with a matching fund opportunity of up to \$5,000 beginning on January 1, 2025.

David Hoskin (EPO/Observing Chair) - What's up in the December Night Sky

David reviewed highlights of the December sky. He highlighted the Sun, solar activity, the Moon, and targets needed to check off for *Explore the Universe*, and when they can be viewed. He also highlighted planetary positions, constellations, stars (including double and multiple) and deep sky objects. Each month, you can find David's presentations on the homepage at <http://halifax.rasc.ca>.

Winning Bid for the Bishop Telescope!

No additional bids were received during the meeting. Mary Lou Whitehorne announced the winning bid as a gift to Judy Black for Roy Bishop's telescope. The bid of \$550 donation will be made to the just announced SCOPE Fund.

Astroimaging Contest Winners

Blair MacDonald announced the winners of the various categories for the astro-imaging contest. Any RASC Halifax Centre member or any person residing in Nova Scotia is eligible to enter. This year, 28 images across three categories were presented for judging. Winners include Jerry Black for the Deep Sky category, David Hoskin won (tied with himself) for two entries in the Solar System category, and Jeremy Kuzub for Wide Field. Jason Dain won the category "People's Choice." Images can be viewed on pages 10-12.