Nova Notes

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

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VOL 56 NO 2

FEATURING:

PLUS ALL YOUR FAVOURITE REGULAR FEATURES!

In this issue:

Cover Photos:

Main Photo:
Lunar eclipse March 14, 2025.
(Top) "Before and after" - Canon T3i DSLR and Orion 102mm MCT.
(Bottom) "Sequence" -Dwarf 2
by **David Hoskin**

Thumbnail:
St. Croix Observatory drawing by
Mary Lou Whitehorne

From the Editor

One of the things that fascinates me is the intersection of art and science. Just looking at our own Halifax Centre, we have members with such diverse talents, in addition to being wonderful astronomers and astrophotographers.

As I've gotten to know many of you better from across the miles (or kilometres, as it were), I've come to enjoy the talented painters, nature photographers, musicians (like my multi-talented co-editor, John McPhee) and our centre even has a resident poet, Paul Heath (you may enjoy his works each month) and most recently, I've been enjoying his newest book of poems.

Times are especially complicated these days, so it is nice to know where to turn to get some good distractions and be able to find "the good" in the world.

I've never been one to hide my emotions, and as I get older (and hopefully wiser,) the one emotion I continue to focus on each day is gratitude.

So this is just a note to affirm my gratitude not only for the work the centre does, but for the friendships that have blossomed and the joy that you bring me.

Thank you for making this centre such a great place!

It may seem cliché, but when I'm out observing, I often think about what some of my friends "up north" are doing, and I smile when I think of the gifts I've been given since I joined the centre one pandemic day.
Waxing Crescent Moon April 1, 2025
by Lisa Ann Fanning

With continued gratitude,

Lisa

Upcoming Meeting Dates

May 10 - Blair MacDonald - Black Holes
** Note this is the 2nd Saturday of May*
June 7 - Tony Schellinck - Women in Astronomy
(No meetings July / August)
Sept. 6 - David Hoskin - All-in-One Smart Telescopes
Oct 4 - TBD
Nov 1 - Pat Kelly - Telling time in Scotland: From Stones to Sundials
Dec 6 (+AGM) TBD

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, Tony McGrath, 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, 2025

Elected	
President	Tony McGrath
Vice-President	Peter Hurley
Secretary	Judy Black
Treasurer	Gregg Dill
Director	Jeff Donaldson
Director	Matthew Dyer
Director	David Hoskin
Director	Vincent Vallée

Appointed	
Honorary President	Patrick Kelly
Auditor	David Chapman
Communications Committee, Chair	TBD
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	TBD
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	Tony McGrath
Webmaster	Jerry Black

SAVE THE DATES FOR 2025!

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

Hello everyone and welcome to spring! Spring is a time of new beginnings and a great time to remember why we fell in love with astronomy in the first place - the awe of a sky full of stars, the thrill of spotting a new object in the eyepiece and the joy of learning about the universe.

If you would like to build your experience and observing skills, one of the best ways to do this is by working toward one of the RASC Observing Certificates. These programs are designed to guide and help you learn your way around the sky. Whether you're a beginner, intermediate or advanced observer there is a certificate for every level.

As you progress through a certificate program you'll gain confidence, build your knowledge base, develop your observing skills and get to know the constellations, stars, deep-sky objects and more - until the sky starts to feel like an old friend.

The rewards go far beyond the certificate itself. There's satisfaction in recognizing the constellations as they rise and set, knowing where to look for that faint fuzzy you've read about, and being able to share your knowledge with others - especially at our public events.

So if you've been wondering how to get started or take the next step in your observing journey, I invite you to consider starting one of the RASC observing certificate programs at the link below.

https://www.rasc.ca/certificate-programs

As a member of RASC Halifax Centre, you are part of a community that enjoys sharing knowledge and exploring the night sky. If you decide to start a certificate, let us know by posting a note to the RASC Halifax Discussion list. You may find someone who is also interested and with whom you can share your progress. Perhaps a small group might form and you can pursue the certificate in the company of others.

Best of luck with your certificate of choice and I look forward to seeing your name on the list of certificate recipients!

All the best
Tony McGrath
president_AT_halifax.rasc.ca

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

***Nova Notes*: The Newsletter of the RASC 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 RASC Halifax Centre.
Articles on any aspect of astronomy and related activities will be considered for publication.

Asteroids with a Nova Scotia Connection

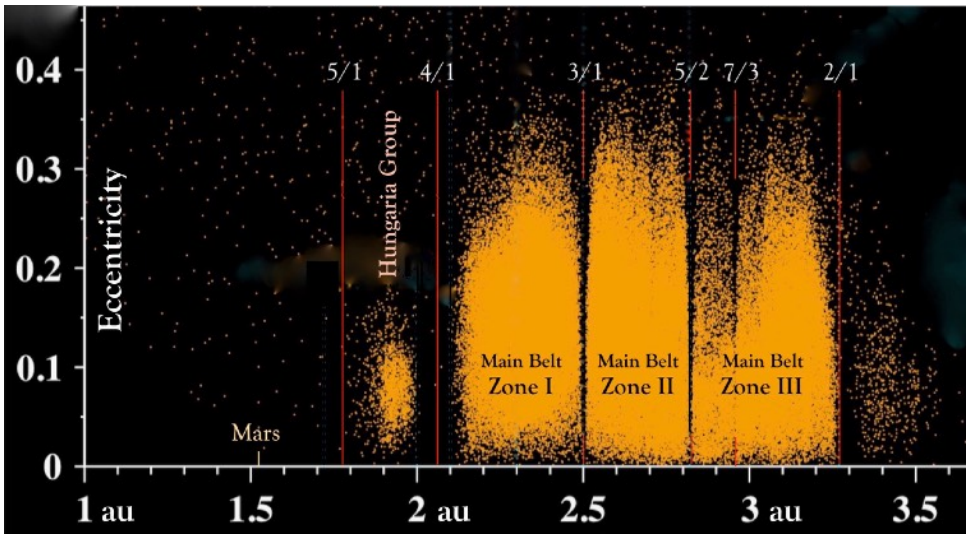
By Dr. Roy Bishop & Judy Black

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. Also want to extend our gratitude to Peter Jedicke (London Centre) who was of great assistance in locating the citations (even during a London Knights hockey game – thanks, Peter!).

This is the fourth in a series of 6 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.

Instalment 4 of 6 — The Main Belt, Zone I



Four of the fifteen NSAs are located in the Main Belt, Zone I, bounded by the Kirkwood gaps at the 4/1 (2.06 au) and 3/1 (2.50 au) resonances with Jupiter:

	a	e	i	T	diameter
(3314) Beals	2.218 au	0.045	7.41°	3.30 y	7 km
(20018) Paulgray	2.306 au	0.158	5.33°	3.510 y	4 km
(10047) Davidchapman	2.344 au	0.052	14.22°	3.59 y	5 km
(855) Newcombia	2.362 au	0.180	10.88°	3.63 y	12 km

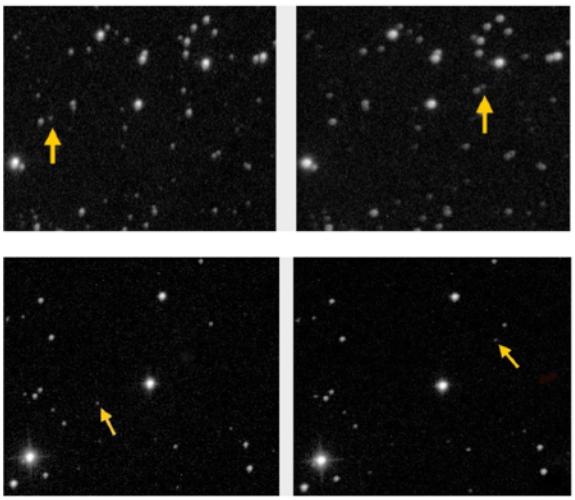
"a" is the size of the semi-major axis. "e" is eccentricity (how much the ellipse deviates from a circle). "i" is the inclination of the orbit. "T" is orbital period.

All four asteroids are well within Zone I, not near the bounding Kirkwood gaps. Also, amongst the fifteen Nova Scotia Asteroids (NSAs), none of these four has an unusually large or small eccentricity or inclination.

However, one of the four is the largest of the fifteen NSAs, 855 Newcombia has the brightest absolute magnitude* (11.79) and the largest diameter, approximately 12 km. That distinction is not surprising as it was the first of the fifteen NSAs to be discovered (in 1916).

*The absolute magnitude of an asteroid is the apparent magnitude it would have for an observer located at the Sun (!) if the asteroid were 1 au from the Sun.

Asteroids (con't)



Recently Dave Chapman used the 0.61-m robotic telescope at Saint Mary's Burke-Gaffney Observatory to take image pairs of (20018) Paulgray and (10047) Davidchapman. A few hours separate the images in each pair. In the order of increasing semi-major axes:

To conclude this instalment, in the order of increasing semi-major axes, here are the original citations that accompanied the naming of:

(3314) Beals (discovered 1981, named 1987)
Named in memory of Canadian astronomer Carlyle Smith Beals (1899-1979), fourth Dominion Astronomer and the only person who has been both President of the American Astronomical Society and the National President of the Royal Astronomical Society of Canada. Beals made important contributions to the observation and interpretation of emission lines in the spectra of hot stars, to the understanding of the nature of interstellar gas clouds, and to the development of instrumentation for astronomy. He also initiated a program to identify and study meteorite craters in Canada. Name proposed by the discoverer following a suggestion by P.M. Millman.
[*Minor Planet Circ.* 12210]

The above citation for (3314) Beals is silent concerning his connection to Nova Scotia. In brief: Beals was born in Canso, N.S., his primary and secondary education took place in Upper Canard, N.S., he graduated from Acadia University in physics, taught physics at Acadia for a year, married a lady from Annapolis Royal, and he is buried in Wolfville. (Like Newcomb was honoured, a lunar crater is named Beals.)

(20018) Paulgray (discovered 1991, named 2023)
Paul Michael Gray (b. 1972) is a Canadian amateur astronomer who has served as President of both the RASC Halifax Centre and the RASC New Brunswick Centre. He edited the RASC Observer's Calendar from 2013 to 2022. Gray was co-discoverer of SN 1995F, the first supernova discovered from Canada.
[Ref: *WGSBN Bull.* 3, #15, 7]

(10047) Davidchapman (discovered 1986, named 2021)
David Chapman (b. 1953) is a retired physicist who studied ocean acoustics at Canada's Defence Research Establishment Atlantic. He won the Royal Astronomical Society of Canada's Simon Newcomb Award in 1986 and an RASC Service award in 2015. He was editor of the Observer's Handbook (2012–2016) and led the establishment of Kejimkujik Dark Sky Preserve. [Ref: *WGSBN Bull.* 1, #10, 5]

(855) Newcombia (discovered 1916, named —)
[The original citation was not available. The paragraph below is adapted from one by the RASC.]
Named in honour of Simon Newcomb (1835 – 1909) an astronomer born in Wallace, Nova Scotia. He was a professor of mathematics and astronomy and director of the U.S. Nautical Almanac Office. Newcomb worked on cometary and planetary orbits and on the theory of the orbit of the Earth. He measured the velocity of light and determined the astronomical unit anew. He is also honoured by having a crater on both the Moon and Mars named Newcomb. He was elected an Honorary Member of the Astronomical and Physical Society of Toronto in 1891, one year after the founding of the Society now known as the RASC.

Next instalment: The Main Belt, Zone II

Paul Gray – a Jolly Good Fellow!

By Judy Black

One of the joys of being on the Board is having the opportunity to announce RASC Award winners. Our Members and Public Meeting of March 1, 2025, was such an opportunity.

As Robyn Foret informed us in his RASC Awards presentation, the Fellowship award is "intended to be the Society's most senior award and the highest honour the Society can pay to a member. The service and contributions to the Society must have had a significant positive impact on the work of the Society over an extended period beyond that of the Service Award, and they must have contributed to the Society's success in attaining its stated objectives, mission, and vision."

Paul Gray, FRASC, with Judy Black
Photo by David Chapman

At the national RASC Board of Directors meeting on February 26, the Society's Board **unanimously** approved the nomination of Paul Gray for the Fellow of the RASC award sent from me, 4 Fellows of the RASC (Mary Lou Whitehorne, James Edgar, Pat Kelly, Dave Chapman) and all my fellow Board members who also voted **unanimously** for this to go forward.

The Society's Board agreed our Centre could make the 'unofficial' announcement about Paul, one of our long-time members, on March 1. The 'official' announcement will be made at a later date when Paul could 'officially' use the designation of 'FRASC' after his name – a designation well deserved and a long time coming.

While waiting for Paul to come to the front of the room, I explained some of his RASC activity history that more than qualified him for the award.

Paul always gives freely of his time and his ever-growing expertise to further the objectives of the RASC. He became a RASC member at the age of 15 and became a member of our Centre in January 1988. He's a natural leader and an inspiring mentor to novice and experienced observers alike, including two of his own children who were recognized internationally for their discoveries of supernovae.

For the RASC Halifax Centre

In Halifax Centre, he has served as a director in 1997 and 2019, served as our President 2015-2018, and its Vice-President in 2020. He has served since 2015 on the Nova East Planning Committee where at various times he has been a speaker, lead organizer of the barbecue and the Astronomer's Breakfast, and liaison with Smileys Provincial Park where the event is still being held. He is very knowledgeable of our Centre's history, has a vision of what it can become, and takes pride in what has been accomplished to date (https://halifax.rasc.ca/index.php/about-us/history-of-the-rasc-halifax-centre). His love of observational astronomy is evidenced by the many presentations he has made at Member and Public meetings, including solar eclipses, the Draconids, dark nebulae, and observing variable stars.

In 1996, he drew the site plot for the St. Croix Observatory and was involved in the clearing of the land and construction of the buildings prior to its official opening on June 21, 1997. Over the years, he has assisted with site and building maintenance and, despite the distance from home, has also been present for the Annual SCO BBQ and occasionally for member observing nights.

Paul Gray (con't)

Paul continues to volunteer at the annual *Dark-Sky Weekend (DSW)* hosted by Kejimkujik National Park and National Historic Site and has been involved in the DSW planning and implementation.

For the RASC New Brunswick Centre

Paul had been a member of the New Brunswick Centre (2004-2011) where he served as President (2007-2008) editor of their newsletter, represented their Centre on National Council, and led efforts to successfully achieve Dark-Sky Preserve (DSP) status for both Mount Carleton Provincial and Kouchibouguac National Parks. He promoted and organized their first star party at Mactaquac Provincial Park in 2005 and was involved in organizing additional star parties at Fundy National park and Mount Carleton Provincial Park.

He served on the RASC General Assembly planning committees for the 2010 New Brunswick GA and was treasurer for the 2015 Halifax GA.

For the Society

Paul did not restrict his contributions to the Centre level! At the national level, his contributions included the following:

- Board pilot committee member, 2007
- Member of the RASC's first Board of Directors, 2013-2014
- RASC Observing Committee Chair, 2008 – 2010
- RASC Observing Committee member, 2013-2014
- Editor, *RASC Observer's Calendar*, 2012 – 2022
- Publications Committee member, 2012-2013
- GA advisory working group, 2012-2014
- Contributor, *RASC Observer's Handbook* (Dark Nebula) since 2004 – 22 editions! So far.

Paul Gray at 1993 RASC GA

Pictured behind the table Left to Right: David H. Levy (Northcott Lecturer), Mary Lou Whitehorne, Nat Cohen, Patrick M. Kelly, National President Peter Broughton, Mrs. Broughton, Dr. Murray Cunningham (RASC Halifax Centre Honorary President), Mrs. Cunningham

The nomination summary read as follows:

> "Paul's influence has been and continues to be felt across all aspects of our Society. For almost four decades, Paul has been an educator to many RASC members and non-members, a mentor to youth interested in astronomy and to novice amateur astronomers and a firm believer in the goals and mission of the RASC.
>
> Instead of promoting just the better-known aspects of astronomy, he chose to focus on meteors and meteor showers, planets, and dark nebula – to have an "oh wow" moment watching a fireworks-like display, to observe changing planetary appearance through the seasons (and their moons), and the latter to inspire members to look for, to understand, and to be in awe of these supposed empty spaces in our night skies.
>
> The RASC Halifax Centre is very proud to have him as one of our members. It was an award well deserved."

His nomination and approval for receipt of the FRASC was a total surprise to Paul, and as you can appreciate there was an emotional response. He thanked Judy Black, the Fellows of the Centre and the Board for the nomination. He stated this wasn't about what he had done but rather about the Centre and what the Centre has done. He accomplished what he accomplished because of mentors like Roy Bishop, Dave Chapman, Mary Lou Whitehorne, and the late Dave Lane. Nationally, there were mentors James Edgar who took Paul under his wing and Peter Jedicke in London. He stated the Halifax Centre is truly amazing because of its mentorship and the friendship that allows us to flourish as a group and as individuals. He thanked everyone for the support and the recognition.

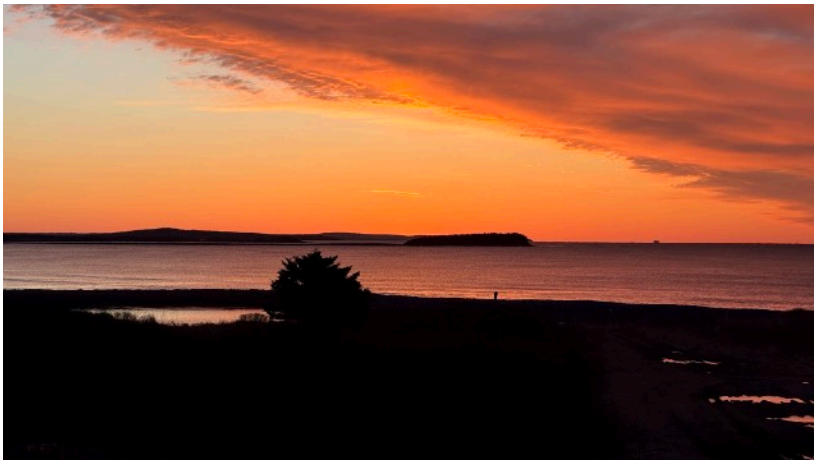
Congratulations, Paul Gray, FRASC!

Sunrise partial eclipse from Seaforth, NS

By Dave Chapman

I wanted to observe the eclipse riding over the ocean, so I intended to drive from my home in Dartmouth to Hartlen Point (20 mins). The Clear Sky Chart showed a band of cloud working its way up the coast from the southwest. I changed my mind and drove up the eastern shore to the small village of Seaforth. It was an extra 10 minutes travel, but I know people there and had a spot clearly in mind that has a good view.

I got there only minutes before sunrise and found a young couple in a truck already positioned there. I set up my camera and started to wait. There was cloud to the south but I could see that it was clear where the Sun was rising. It was going to be a close call!



The young couple were Veronica and Mike, who (of course) were unprepared to observe a partial eclipse, so (of course) I loaned them some viewers that I brought for that very purpose.

The left horn of the Sun rose at 7:00 ADT, treating me to a lovely point-like green flash (the others missed it). It was an incredible sight seeing the crescent Sun rise. In no time it was clear of the horizon.

I took dozens of photos with my Canon SL3 and zoom lens stopped down at various exposure times. I also observed in conventional viewers and a cool 6x30 Lunt solar binoculars.

Eclipse (con't)

Everything happened so fast. It was exciting to watch!

I shared my initial photos directly on social media, which earned some attention, but then I looked into processing them more.

I processed the RAW images on my camera and was able to improve the presentation. I used the tool to extend the dynamic range so that they were not over saturated.

Here are the best two:

7:17 ADT mid eclipse

7:06 ADT ten minutes earlier.

The clouds moved in at 7:30. I feel fortunate to have experienced the eclipse. Many others were clouded out.

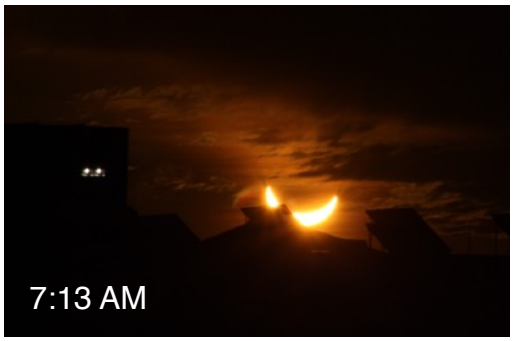
Partial Solar Eclipse from Dalhousie

By Michael Boschat

At 4am I awoke on March 29 and looked out the window: clouds but some breaks, then I saw a few stars in binoculars. I was deciding whether to try for the eclipse from my apartment back hallway window or bike to Dalhousie with my breathing problem.

I logged on and looked at the satellite IR images. Ughhh, clouds heading to Halifax and it would be a close call to see it. I was going to go back to bed but my gut (always listen to your gut!) said well, try going to the roof of our Physics Dunn building roof at Dal.

By 5am I had decided only to take a camera, tripod and my 300mm telephoto as too much weight would affect my breathing. So I biked over and got things ready by 6am. I sat around the office looking at satellite images and out the window.



I went to the roof about 6:50am and saw the NNE to NNW was clear but the edge of the main heavy cirrus was right over me and going toward the sunrise.

I set up anyway and the other professor working late, Stephen Payne, joined me with his eclipse glasses and binoculars.

Then we saw the brightening of the sunrise over a university building, which has four solar panels on its roof. Stephen was the first to see the tip of the eclipse horn by one panel. I started taking photos but used my live view on the Canon XSI. As the eclipsed sun rose, I fired off exposures with no filter at 1/4000 second, at my lowest f/29 and 400 ISO.

The wind picked up a bit from NW and was cool. I went through two batteries! The sky did not darken as hoped and the reddish sunrise faded.

We did get to see the maximum coverage just as the cloud started to cover the Sun.

All I can say is wow: Two eclipses seen in a month. What are the odds for Nova Scotia especially with our weather!

My Soviet-Russian amateur contacts were rained out, as was Zeljko in Croatia - they were glad that I managed to get to see some of it.

Save the Dates!

Save the Dates: Observing at SCO

Members may be found observing at the St. Croix Observatory on almost every clear, dark night. Once a month, we encourage members and their guests to congregate at SCO, at which time new members are particularly welcome.

Members are advised to sign up to the email discussion list to keep up to date on gatherings of fellow observers.The proposed dates for SCO Observing nights 2025 are below.

Friday 25 Apr. Penatmuiku's (Birds Laying Eggs Moon)
Friday 30 May Sqoljuiku's (Frogs Croaking Moon)
Friday 27 Jun. Nipniku's (Trees Fully Leafed Moon)
Friday 25 July Peskewiku's (Birds Shedding Feathers Moon)
Friday ~~22 Aug~~. Kisikewiku's (Berry Ripening Moon) - **NOTE: No session at SCO, but join us at Nova East!**
Friday 19 Sept. Wikumkewiku's (Mate Calling Moon)
Friday 17 Oct. Wikewiku's (Animal Fattening Moon)
Friday 21 Nov. Keptekewiku's (Rivers Starting to Freeze Moon)
Friday 19 Dec. Kesikewiku's or Kjiku's (Winter/Chief Moon)

* Check the email discussion list or our website (halifax.rasc.ca) for changes in schedule.

2025 Nova East

Nights of August 22-24, 2025
Smileys Provincial Park, Hants County

Theme?
Visual Observing

Meet fellow observers – novice and experienced

Bring your family!

Have fun! Make a sundial!

(More details to follow soon)

Walk the Solar System!

Join Pat on the Sherman Williams Walk!

Join us for breakfast (Saturday and Sunday)

Join us in the Astronomers' Lounge on Friday and Saturday night

Come look up with us at Nova East!

Moonscapes:
Mare Insularum and Mare Cognitum

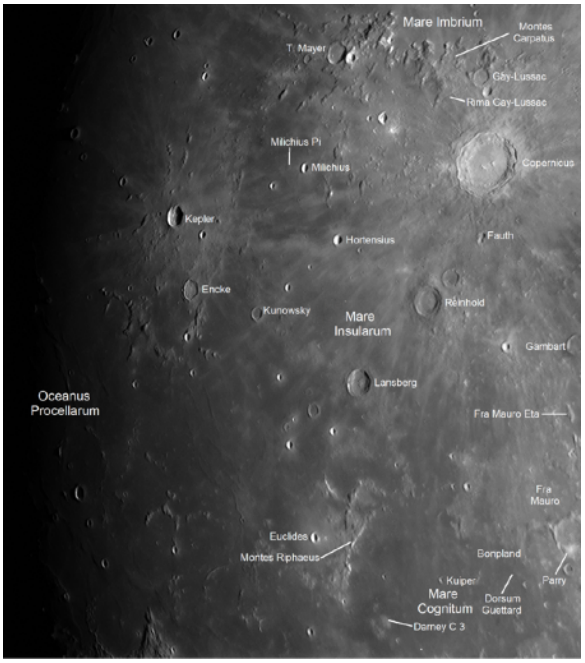
By David Hoskin

Mare Insularum (Sea of Isles – the upper circled area in the image to the right) and Mare Cognitum (Known Sea - the lower circled area in the image to the right) are two of the many fascinating maria that can be observed on the surface of the Moon. Mare Insularum is a relatively flat plain of basaltic lava located in the Insularum basin, which was created by a massive impact event during the Imbrian epoch sometime between 3.2 and 3.8 billion years ago. The mare is bordered to the north by the towering Montes Carpatus, to the east by the prominent (96 kilometres wide and 3.8 kilometres deep) impact crater Copernicus, and to the west by the smaller 31-kilometre-wide Kepler impact crater. To the southwest, Mare Insularum merges with Oceanus Procellarum and, to the south, joins with Mare Cognitum. A remnant of ancient volcanic activity, the broad lava plain of Mare Insularum covers tens of thousands of square kilometres, stretching about 900 kilometres from Kepler to Sinus Aestuum and Sinus Medii on the eastern side of Copernicus. Both Copernicus and Kepler are complex craters with central peaks, terraced walls and flat floors. The most notable feature of Mare Insularum is its numerous "islands" of ancient highland terrain that rise above the smooth surface of the younger lava plain, creating the illusion of scattered landmasses amidst an expanse of darker basalt.

South of Mare Insularum lies oval-shaped Mare Cognitum with a diameter of 376 kilometres The mare consists of basaltic material from the Upper Imbrium epoch, which sits in a basin of material from the pre-Nectarian period 4.5 to 3.9 billion years ago. The branching ridges of Montes Riphaeus, which are part of the rim of the buried impact basin, are 195 kilometres long from north to south and border the northwest part of the mare. To the south, Mare Cognitum merges with Mare Nectaris. The eastern edge of Mare Cognitum is bounded by several large, lava-flooded craters with low eroded walls. Mare Cognitum received its name in 1964 when it was selected as the “landing site” for the Ranger 7 impact probe. The soft landing of Surveyor 3 followed in 1967 at a location that was within walking distance of the landing site of Apollo 12’s lunar module. The varied terrain of Mare Insularum and Mare Cognitum is best observed on days 9 and 10 of the lunar cycle, between the first quarter and full moon phases.

The close-up image on the next page of Mare Insularum and Mare Cognitum shows the region’s major features, including intact and partly filled impact craters, wrinkle ridges, isolated peaks, and volcanic domes. Ejecta from the relatively recent impact event that formed Copernicus crater about 900 million years ago created a spectacular ray system that extends across both maria. The symmetrical ray system associated with Kepler crater only extends into Mare Insularum.

Moonscapes (con't)



Several impact craters of varying sizes mar Mare Insularum's lava plain. The largest of these craters are Reinhold, Lansberg, and Gambart (48, 39, and 25 kilometres in diameter, respectively). Both Reinhold and Lansberg have terraced inner walls but differ in their floor features as Reinhold contains only a few low hills whereas Lansberg boasts a prominent central multipeaked mountain. Gambart is sharp-rimmed and has a flat floor. A large spear-shaped mountain, Fra Mauro Eta, is located south of Gambart. Among the smaller craters are bowl-shaped Hortensius, Milichius, and Fauth (15, 13, and 12 kilometres wide, respectively). Fauth is a double-crater believed to have been created by the formation of Copernicus. Mare Insularum is notable for its large number of volcanic domes. For example, Milichius Pi is an isolated and easily observable 10-kilometre-wide dome located west of Milichius. An extensive field of at least a dozen similar sized domes, some of which have summit craterlets, can be found between Tobius (T.) Mayer and Milichius craters. Another collection of domes with summit craterlets is located near Hortensius.

Mare Cognitum is notable for the collection of large, lava-filled craters found on its eastern shore. Fra Mauro, Bonpland, and Parry (95, 60, and 48 kilometres wide, respectively) are a conjoined trio of walled plains. To the south lies Guericke, a 58-kilometre-wide disintegrated crater. The southern border of Mare Cognitum is the location of Darney, a small bowl-shaped crater with relatively high albedo that spans 15 kilometres and has a ray system extending 110 kilometres. North of the crater is Darney C 3, a teardrop-shaped dome that is unique for its composition of material that is brighter than the surrounding mare. A group of nearby hills also have a high albedo. The dome and hills may be all that remains of a submerged crater. A small bowl-shaped crater, Kuiper, lies at the centre of Mare Cognitum. Several narrow wrinkle ridges run across parts of the mare. One of these is 40-kilometres-long Dorsum Guettard, located southeast of Bonpland crater.

Although Mare Insularum and Mare Cognitum may not have the grandeur of some of the Moon's larger maria, their complex geological features and rich history of volcanic activity offer astronomers a fascinating glimpse into the Moon's ancient past. For Earth-bound observers with an interest in lunar geology, Mare Insularum and Mare Cognitum are must-see destinations on the Moon's surface.

Sources

Lunar Maria: A Complete Guide to the Seas of the Moon by Ezzy Pearson and Iain Todd, *BBC Sky at Night Magazine*, 2024

Mare Insularum - Wikipedia, en.wikipedia.org

Mare Cognitum - Wikipedia, en.wikipedia.org

Moon Observer's Guide by Peter Grego, Firefly Books Limited, 2004

The Moon and How to Observe It by Peter Grego, Springer-Verlag London Limited, 2005

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

Members' Universe
Food for the Soul: The Poetry of Paul Heath

Pencil Awaits

~ Paul Heath

He stood, the darkening sky previewed,
Moving, set his Glass for Time's encounter,
A binder upon, his small table did lay.

They met, with pale dusk folding into night,
Like apparitions, glimmering points of wonder appeared to sight.
Assorted Glass, amongst the eager crowd arrayed,
Small tables alongside, set with viewing aides.

Eyes uplifted, to glimmering jewels, their names declared.
A map of treasures passed, to new seeking Eyes
Wonders search, directed to each standing Glass.

Lessons of viewing and seeking taught,
New Eyes, widening at wonders sight.
With eyes alone, then hand-held Glass,
Then to standing Glass,
Awe filled new Eyes, unnamed hunger.

He stood, between each new Eyes viewing,
To look with hope, to Time's encounter waiting,
A small shift, to his Glass and table made

With first Eye viewings test complete,
Awe and wonder wide smiles, to faces leap,
Many their phones, an image rushed to keep.
Questions rising, laughter, words of awe
Amongst the stationed Glass, did abound,
As new questing Eyes, new wonders sought.

As the new Eyed crowd, with reluctance dispersed,
Those trapped by wonder, serious questions
To Glass keepers came,
The journey, unnamed, their Souls had claimed.

With a last skyward sweep, a last table shift,
He stood, a new viewing Eye he placed,
And swung his Glass, to Time's appointed hour.

His chair set, his Eye to view did bend,
Slight the adjustments made, then with knowing nod,
The binder, a blank page arrayed.

A sleeve of pencils forth he pulled,
From Glass to page his eye he swung,
With care, a duplicate of visions Glass held sight,
Upon the blank page, he drew.
Until, with a quiet smile, he claimed it true.

He stood, a last look to glimmering lights above,
Then bending, to the binders first page, did turn.
Drawing a thick pencil from the sleeve,
Upon the Last blank line, a wide check-mark he laid.

All Seasons Night

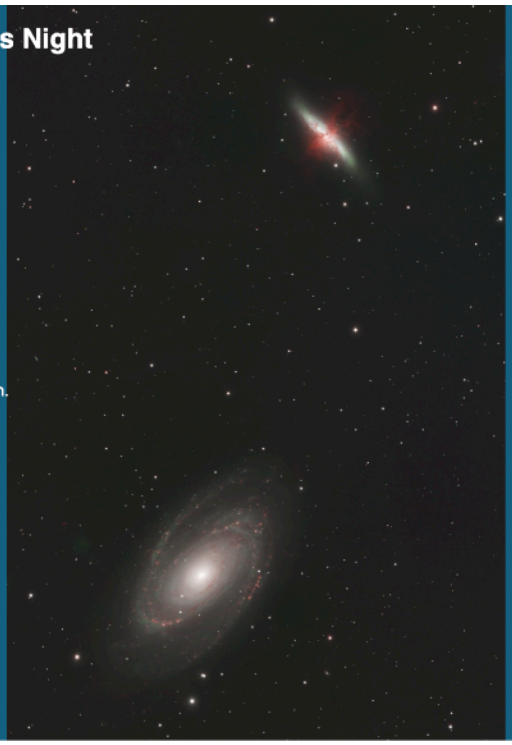
By Paul Heath

There is a race, we all can run
Held in darkness, hidden from the Sun.
Beneath a clear, Star lit sky,
Warm attire, and cushioned seat required.

The starters gun, the setting Sun.
Ending whistle, the rising Day begun.
Between, in darkness the race will be run,
Unlike the rabbit, a nap, the race may help to win.

From the First, a faint, distant spirals whisp,
Low upon nights twilight, darkening sits.
Till the Last, a faint sparkling ball of jewels,
Low within Suns twilight brightening sits.

A site exacting you must choose,
From oceans sharp edge to eagles' soar,
A sky unobstructed, your most essential need is.



An obstacle course, with clear planning set,
To gather fast, pale whisps and sparkling gems,
A full tally, of wonders held hidden from the Sun.

Up leap, the first flag to reach,
Rapid your pencil, the sight to keep,
On push, a tight fist of flags to grasp,
Small pause, then onward, the race to pace.

Mid darkness, a brief rest allowed,
As two seasons hold as one upon the sky.
Then quick again new flags to touch
Your pencil, the turning of the sky does track.

If all factors, from Sun set to Sun rise align,
And with exhausted joy, your race
Within one night through all Seasons has passed.
The prize, held firm, within your memories grasp,
The full tally, of Night's Sun hidden Wonders, now lie.

Photo, M81 & M82: Jerry Black

Member Mentions

Jeff Donaldson shared on March 17, “This is absolutely wild—I woke up to a private message from ZWO, the company that made the camera I’m using.

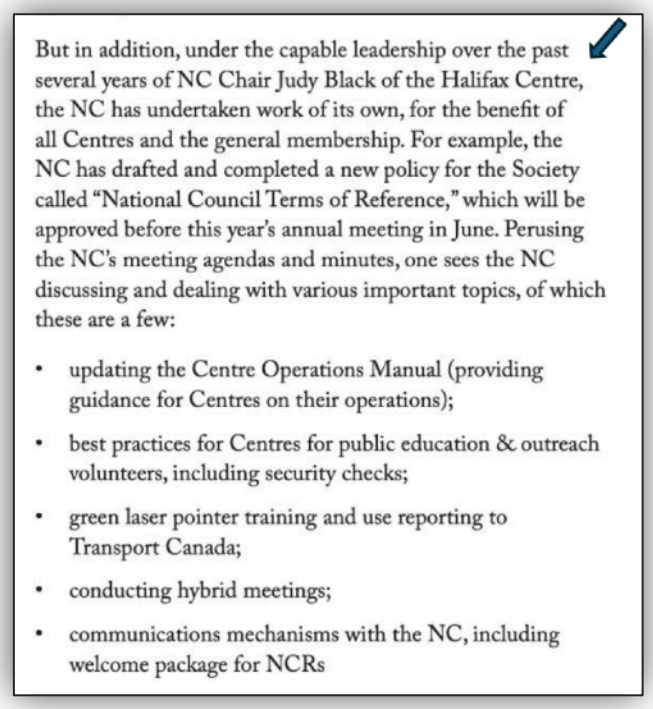
“Hi, we are absolutely blown away by your stunning lunar eclipse photo! 🌕✨ Your work truly captures the beauty of the night sky, and we’d love to feature it in our User Showcase Collection and display it at NEAF.”

I didn’t see this coming at all—I just love sharing my astrophotography. But I guess hard work (and a little moonlight magic) really does pay off!” Congratulations Jeff!

Judy Black is mentioned in the Presidents Message in the April edition of the JRASC.

She was acknowledged by President Michael Watson for her work on the National Council.

To view the complete article, please visit the April edition of the JRASC.



But in addition, under the capable leadership over the past several years of NC Chair Judy Black of the Halifax Centre, the NC has undertaken work of its own, for the benefit of all Centres and the general membership. For example, the NC has drafted and completed a new policy for the Society called “National Council Terms of Reference,” which will be approved before this year’s annual meeting in June. Perusing the NC’s meeting agendas and minutes, one sees the NC discussing and dealing with various important topics, of which these are a few:

- updating the Centre Operations Manual (providing guidance for Centres on their operations);
- best practices for Centres for public education & outreach volunteers, including security checks;
- green laser pointer training and use reporting to Transport Canada;
- conducting hybrid meetings;
- communications mechanisms with the NC, including welcome package for NCRs

Member Mentions

Also in the April edition of the JRASC, **Tony Schellinck**'s image of M33 is included and can be viewed on page 85.

The caption reads: "*Tony Schellinck of Halifax Centre writes: I used the Tele Vue Powermate for this shot of M33 on 2015 November 8 at Port Mouton, Nova Scotia, which is why the galaxy is clipped slightly -it is a big target. I have photographed this galaxy and M51 below several times as I think they are the most interesting and beautiful top-down spirals to photograph in the night sky. Each photo I take seems to paint a different picture of what these galaxies look like.*

46 240-second raw photos, 20 darks, flats, and dark flats, ISO 1600; Canon Tli, 8" Sky-Watcher Newtonian Astrograph, CGEM mount, TeleVue Powermate 2X, Sky-Watcher 80-mm ED and Orion Starshooter with PhD for guiding. Each photo stacked and processed initially in Images Plus. Stretched in IP Digital Development. Colour balanced and background neutralized. Star reduction app ni PI used to reduce star sizes. Image generously provided from the RASC Astroimager certificate program."

Our very own **Dave Chapman** was the featured guest on the April 13th edition of *The Sunday Night Astronomy Show*, hosted by Astronomy by the Bay on their Facebook and YouTube Channels. He spoke as "Professor Telescope, about his experience messing around with telescopes and the concept of "Telescope Medics.""

You can see the full interview here: https://www.youtube.com/watch?v=ieF4DA5kixI

Members' Universe: Blair MacDonald's M101

Blair MacDonald shared this stunning photo of M101 and writes: "With a clear New Moon evening I drove to SCO to get some more data on my M101 image. I've been able to increase the exposure from 90 minutes to four hours. The additional exposure allowed me to back off some of the noise reduction thus bringing out much more detail in the core as well as many faint field galaxies."

The details:

Object	M101 RA 14:03.2 Dec 54:21
Date	March 2025
Exposure	4 hours (24 X 10 minutes)
Conditions	Bortle 4 skies.
Gain	100
Camera	Zwo ASI2600MC-Pro
Optics	Prime focus of a SkyWatcher Esprit 120 f/7 APO refractor with a focal length of 840 mm
Filter	None
Location	St. Croix, Nova Scotia
Processing	This image was captured using Sequence Generator Pro. Noise reduced with Noise Exterminator, sharpened with Blur Exterminator. Starnet++ was used to split the image into a star layer and a nebula layer. GHS was used to stretch both image layers in PixInsight. Pixel Math was used to reduce the noise blobs in the background due to the short exposure. Saturation was increased in the star layer and a screen combine was used in pixel math to combine the layers. Final colour and contrast tweaks applied.

Members' Universe: David Hoskin's Universe

David Hoskin captured Messier 82, the Cigar Galaxy in Ursa Major, imaged over 3 nights from Halifax. This starburst galaxy is about 12 million light years from Earth. Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Optolong L-eNhance filter.

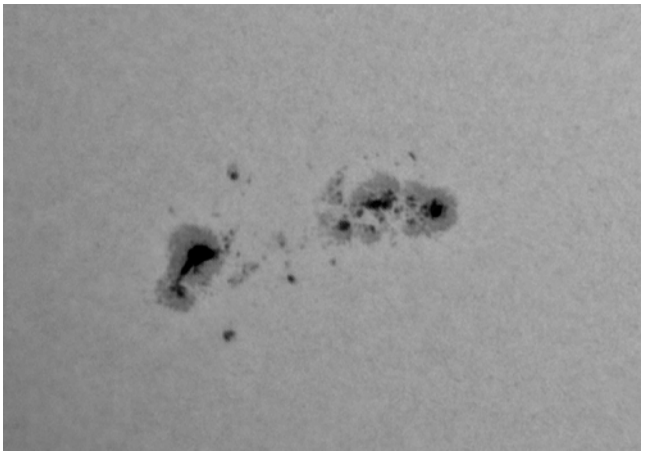
The Horsehead Nebula (B33) in Orion imaged from Halifax. Total Integration time was just under three hours. Image by **David Hoskin** Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Optolong L-eNhance filter.

On March 14, 2025, **David Hoskin** captured Crescent Venus imaged this evening with his Canon T3i DSLR and 102mm MCT.
The planet was quite low in the sky so the light is being refracted by the atmosphere acting like a prism. - Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Optolong L-Pro filter.

On March 29, 2025, **David Hoskin** captured the partial eclipse sunrise near Truro. Clouds rolled in before the end of the eclipse so Ihe didn't get the time lapse he was hoping for. Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Baader solar safety filter.

Members' Universe: David Hoskin's Universe

Hercules Globular Star Cluster (Messier 13) by **David Hoskin** Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Optolong L-Pro filter



Filtered image of the Sun captured earlier today. Large sunspot group AR4048 (close up image) has the potential to unleash X-class solar flares.by **David Hoskin** April 2, 2025

Waxing gibbous Moon (96.8% illuminated) imaged yesterday evening. Best 200 out of 500 frames of SER video (SkyWatcher 200mm f5 reflector and ZWO ASI533MC Pro camera with Optolong L-Pro filter) stacked with post-processing using Registax and Photoshop. Image by **David Hoskin** April 10, 2025 Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Optolong L-Pro filter

David Hoskin captured The Draco Group of Galaxies (NGC 5981, NGC 5982, NGC 5985) - a trio of galaxies with different morphologies that are located in the constellation Draco. April 14, 2025 Equipment: SkyWatcher 200mm f5 reflector with Baader coma corrector, ZWO ASI533MC camera with Optolong L-Pro filter

PUZZLE CORNER – ECLIPSE

Unscramble

By Lisa Ann Fanning

Can you unscramble these terms related to Eclipses?
Solution will be in the next edition of Nova Notes.

A	B	E	M	N	P	R	U						
A	A	L	N	N	R	U							
A	C	N	O	O	R								
A	C	C	I	L	N	O	O	T	T	U			
A	C	E	E	I	___	L	L	N	P	R	S	U	
A	I	L	O	T	T	T	Y						
A	D	D	G	I	I	M	___	N	N	O	R		
A	B	M	R	U									
A	C	C	F	I	___	N	O	R	S	T	T	T	
A	C	E	E	I	___	L	L	O	P	R	S	S	
A	D	H	O	S	W								
A	A	B	D	E	F	___	I	L	M	R			

Answers to Last Edition's Puzzle

A	A	A	B	E	I	___	L	O	O	R	R	R	S	U	AURORA BOREALIS
A	G	H	I	L	___	L	O	P	R	S	T				POLAR LIGHTS
A	C	D	E	E	___	M	N	R	R	R	S	Y			MERRY DANCERS
A	A	A	L	L	O	O	___	R	R	U	V				AURORAL OVAL
A	D	I	L	N	___	O	R	S	W						SOLAR WIND
A	E	E	E	G	H	M	N	O	P	R	S	T			MAGNETOSPHERE
A	C	C	I	R	T										ARCTIC
N	O	P	S	S	T	U									SUNSPOT
A	C	E	E	G	I	___	I	N	O	R	T	V			ACTIVE REGION
A	C	E	E	G	G	I	M	N	O	T					GEOMAGNETIC
A	C	N	O	O	R										CORONA
B	M	O	R	S	S	T	U								SUBSTORM

March 1, 2025 RASC Halifax Centre Meeting:

(29 attendees)
To watch a replay of the meeting, please visit: https://www.youtube.com/watch?v=iUnBze7zRrc 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 from Centre members Jerry Black, Michael Boschat, David Chapman, Jason Dain, Jeff Donaldson, Lisa Ann Fanning, David Hoskin, John McPhee, Norman Schneiderman, Quinn Smith, Troy Sweeney

Special Guest - Robyn Foret (Calgary Centre) - Everything you didn't know you need to know about National Awards
Judy Black introduced Robyn Foret, who has held many positions within the RASC, including former president. He has been RASC director for eight years and was president from 2020 to 2022. He's also a recipient of the Service Award 2019 and the Fellowship Award 2024.

Robyn outlined the various National Awards that exist within the RASC, including the Chant Medal, Fellowship Award, Ken Chilton Prize, President's Award, Qilak Award, Service Award, Young Astronomers Award and the Simon Newcomb Award.

Robyn Foret reviews the RASC's Major Awards
Photo by David Chapman

He reviewed the members of the Awards Committee, described the awards process and reviewed the detail behind each of the awards, as well as their respective 2024 recipients.

Following the talk, Dave Chapman remarked about how Halifax Centre has reared many award recipients, thanks to the mentorship of Roy Bishop. He also pointed out how in addition to someone who is worthy of receiving an award, a person or team of people are needed to write up the case for award winners.

2024 Fellow Award - Paul Gray
"The "Fellow of the RASC" is intended to be the Society's most senior award and highest honour for a member. It recognizes long-term, exemplary, and substantive service to the society, acknowledging members who have made significant and ongoing contributions. The award celebrates the contributions of individuals, while also advancing the visibility and prestige of astronomy groups and departments. It's a way to acknowledge the valuable work of RASC members and the broader field of astronomy."

Judy Black introduced the newest Fellow of the RASC, Paul Gray, who has been a member since the age of 15 and has served at both the National and Centre levels (New Brunswick and Halifax Centres.) Congratulations, Paul! Read more about his nomination on page 7.

Paul Heath - Food for the Soul - *Pencil Awaits*
Paul presented his latest poem, *Pencil Awaits*, which can be read on page 15 of this edition of Nova Notes. Paul's third book, *Food for the Soul: More Star Gazer Poems*, is available on Amazon.

Update from the Board presented by Vice-President Peter Hurley
Reminder: Deadline for submission for 2026 Awards is December 31, 2025. Visit https://rasc.ca/rasc-awards for more information.

Reminder the Jan/Feb edition of Nova Notes has been posted. The deadline for the March/April edition is April 15.

RASC Observers Calendar - submissions are being accepted for images taken between Jan. 1, 2025 to March 1, 2025. There have not yet been any submissions from the Maritimes. There is a limit of five photos per photographer. Initial image should be submitted in .jpeg format, followed by a .tiff if accepted.

Nova East will be held August 22-25 (The new Moon is August 23) at Smiley's - all welcome!

Dark-Sky Weekend (DSW) will be held August 15-18 at Kejimkujik National Park— all welcome!

SCO Observing nights are posted on the RASC Halifax website. Click on "Observing" > "Observe With Us."

The next Centre board of directors meeting is April 1, 2025.

The next Member & Public Meeting is April 5, 2025 - Speaker is David Turner: *The Crater near Indian Point on Mahone Bay*

Support SCO with the Dave Lane Memorial St. Croix Observatory Property Endowment (SCOPE) Fund - there are $10,000 worth of matching funds available thanks to Michelle Lane and Tony Schellinck. The final details are being worked out for a fundraising astroimage sale.

RASC National Council Update presented by Judy Black, Halifax Centre representative and chair-
Centres have one representative for every 200 members. It is the linkage among all 30 centres and the RASC.

If there are issues that any member feels should be addressed, please contact Judy.

There will be a change to the RASC National website. The website will be moving to WordPress (from Drupel 7.) Archived materials will be updated to Drupel 12.

Last year, the RASC had a matching fund goal which was reached ($20,000)
The campaign total was $90,000 ($80,000 are unrestricted donations.)

Education & Public Outreach (EPO) Committee led by Karim Jaffer
1. New Observers to Visual Observing (NOVA) has been revised with a trial run being held in the RASC Victoria Centre and soon RASC Montreal Centre.
Content is 12 components on various s aspects of astronomy. It can be delivered in-person or via Zoom.

2. Resources for new Student Clubs (high-school, University)

3. A Seasonal Beginners Observing Activity (focused on star-hopping exercises to provide knowledge of constellations and larger asterisms.)

4. International Astronomy Day (IAD) - May 3 will be centered around a larger in-person activity at the DDO in partnership with Explore Scientific and the Global Star Parties. Centres will be given details on timing and logistics. Participation is encouraged from coast to coast.

5. Workshop & Downhill on Citizen Science Initiatives - Feb 24, 2025 (recording is available) - four RASC Halifax Centre members attended.

The next National Council Meeting will be held Sunday, April 15, 2025.

RASC General Assembly will be the weekend of April 26-27, 2025.

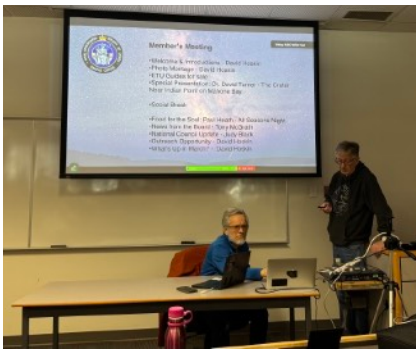
David Hoskin (EPO/Observing Chair) - What's up in the March Night Sky
David reviewed highlights of the March sky. He highlighted the Sun, solar activity, the Moon, and targets needed to check off for Explore the Universe, and when they can be viewed. He also highlighted planetary positions, constellations, stars (including double and multiple) and deep sky objects. Additionally, the upcoming eclipses were discussed. Each month, you can find David's presentations on the homepage at http://halifax.rasc.ca.

April 5, 2025 RASC Halifax Centre Meeting:

(50 attendees)
To watch a replay of the meeting, please visit: https://www.youtube.com/watch?v=D_NPzzQ9fR4&t=2s 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.

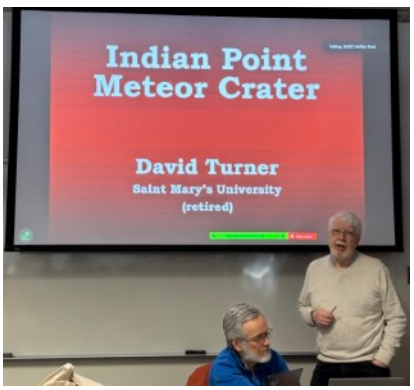
David Hoskin - Photo Montage
David presented photographs and a painting from Centre members Jerry Black, Michael Boschat, Stuart Cameron, David Chapman, Barry Burgess, Jason Dain, Jeff Donaldson, Lisa Ann Fanning, David Hoskin, Blair MacDonald, John Read, Bob Russell, Norman Schneiderman, Kathy Walker and Mary Lou Whitehorne.



Let's hear it for those who bring the meetings to us whether in person or afar…
Thank you to the team!
Photo by David Chapman

Special Guest - Dr. David Turner - *The Crater Near Indian Point on Mahone Bay*
A recently discovered impact site near Indian Point on Mahone Bay appears similar to the Whitecourt, Alberta astrobleme, but with much greater infilling. It also appears to bear a relationship to a few nearby features that may prove to be secondary impacts, as well as to the various impact structures located under the waters of Dalhousie Lake in the Annapolis Valley (see JRASC, 89, 111, 1995). If an impact origin is confirmed, the Indian Point site would be the only Nova Scotia astrobleme accessible without scuba gear!

David Turner is a retired Saint Mary's astronomer whose early career took him to Sudbury, site of the Sudbury and Lake Wanapitei impact structures, hence his interest in meteor craters. Better known for his work on the chancel ceiling stars at St. John's Church, Lunenburg, he also taught courses in planetary astronomy during his career, got asteroid 6898 named Saint-Marys during its 2002 bicentennial celebrations, and initiated the meteorite collection at Saint Mary's.



Jerry Black helps Dr. David Turner get ready for his presentation.
Photo by David Chapman

Paul Heath - Food for the Soul - *All Season's Night*
Paul presented his latest poem, *All Season's Night*, which can be read on page 15 of this edition of Nova Notes. His poem was based on impacts to the Earth.

Tony McGrath - SCOPE Fund
We are very fortunate to have an opportunity thanks to a couple of members, Michelle Lane and Tony Schellinck to raise funds for the matching of funds (up to $10,000) for the donations to the Dave Lane Memorial St. Croix Observatory Property Endowment (SCOPE) Fund.

News from the Board presented by Secretary, Judy Black
The Jan / Feb edition of *Nova Notes* has been posted.
The deadline for March / April edition is April 15, 2025 - send submissions to novanoteseditor@halifax.rasc.ca.

Dark-Sky Weekend (DSW) will be held August 15-18 at Kejimkujik National Park— all welcome!

Nova East will be held August 22-25 (The new Moon is August 23) at Smiley's - all welcome!

SCO Observing nights are posted on the RASC Halifax website. Click on "Observing" > "Observe With Us." (Note, the August date has been cancelled in lieu of Nova East).

The annual SCO BBQ & Observing night will be held Friday, Sept. 19 (new Moon, Sept. 21). Rain Date: Sept. 20. (Alternate dates if rained out both Sept.19 & 20 will be Friday, Sept. 26 (1st Quarter Moon) or Saturday, Sept. 27.

Tickets are now available for the RASC General Assembly 2025 will be April 26-27, 2025, online via Zoom. Visit rascga.2025.ca for more details. Two Halifax Centre members are speakers at this year's GA - Jeremy Kuzub (aurora and citizen science) and Tim Doucette (with Stéphane Picard) will be discussing ecotourism.

NASA has issued a Design Challenge - with prizes worth $1,225 USD - Design a Zero Gravity Indicator (ZGI) - a small object that visually signals when a spacecraft enters microgravity - for NASA's upcoming Artemis II mission around the Moon.

- Prize will be awarded for adults (13), K-5 (2), 6-8 classrooms (2), K-5 classrooms (2), 6-8 Individuals (2), 9-12 classrooms (2) and 9-12 individuals (2)
- There will be a Webinar April 8 (need to register).
- Submission deadline May 25, 2025 at 5 p.m. Eastern
- For details, see the RASC email (April 1, 2025) - *RASC Monthly Bulletin*

Reminder: Deadline for submission for 2026 Awards is December 31, 2025. Visit https://rasc.ca/rasc-awards for more information.

Have your personal details changed? Remember to update your information on your RASC account. Secure.rasc.ca. Login with your personal email address and password to validate your mailing address, email and phone number.

David Hoskin (EPO/Observing Chair) - Outreach opportunity
The centre has been invited to have a display at the Discovery Centre for International Astronomy Day on May 3. There will be a table set up with telescopes, and folks available to answer questions from 10 a.m. - 3 p.m. Weather permitting telescopes will be set up for observing starting at 8:30 p.m. If you are interested in participating, reach out to David Hoskin or Peter Hurley.

David Hoskin (EPO/Observing Chair) - What's up in the Night Sky?
David reviewed highlights of the April 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.