

# Nova Notes

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

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## FEATURING:

2025 NOVA EAST STAR PARTY

6

SUPPORT SCO WITH THE SCOPE FUND

7

ASTEROIDS WITH A NOVA SCOTIA CONNECTION  
BY DR. ROY BISHOP AND JUDY BLACK

8

MOONSCAPES: MARE FECUNDITATIS BY DAVID HOSKIN

13

PLUS ALL YOUR FAVOURITE REGULAR FEATURES!



## In this issue:

From the Editor	2
Save the Dates!	3
Centre Information	4
A Message From the President	5
2025 Nova East Star Party	6
Support SCO with the SCOPE Fund	7
Asteroids with a Nova Scotia Connection by Dr. Roy Bishop and Judy Black	8
Moonscapes: Mare Fecunditatis by David Hoskin	10
Member Mentions	12
Food For the Soul: The Poetry of Paul Heath	13
Members' Universe	14
Puzzle Corner	18
May & June Meetings	19

## Cover Images:

### Main Image:

"Summerville Moonrise"

The rising full moon is embedded in the Earth's shadow, which is also climbing higher in the sky. 10 X 10 inch acrylic.

by **Mary Lou Whitehorse**

September 2024

### Thumbnail:

St. Croix Observatory drawing by

**Mary Lou Whitehorne**

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# From the Editor

By John McPhee

A first-quarter Moon, slightly hazed by wildfire smoke from afar, hangs conveniently low in the sky over Portland Hills on this spring evening.

As usual when there's a "good" Moon out there, I'm on the balcony with a telescope and camera. We have a nice view of the southern horizon, which comes in handy at this time of year when the summer constellations rise into view.

I do have to contend with the light pollution that increasingly blights our night sky. The plaza next door is a particular challenge as it comes equipped with an array of security lights that would fit right in on the East German border when the wall still existed.

As a result, I've erected my own wall of artificial trees in the corner of the balcony. If I adjust my viewing chair appropriately, I can block most of the glare and enjoy the stars bright enough to penetrate the suburban sky glow.

Much of astronomical observing has been limited to my "balcony sessions" in recent years as the result of ill health. So I've been doing a lot of lunar and planetary observing, although a newly purchased light pollution filter provides decent views of the bright deep sky objects such as the Lagoon and Orion nebulae.

My go-to scope these evenings is also a new purchase, at least new to me. It's the definition of a bittersweet experience. The sweet: The TeleVue Pronto is a lovely scope. The bitter: It belonged to Dave Lane.

As most members are aware, Dave, who died in March 2024, was a dedicated member of the Royal Astronomical Society of Canada. Beginning in the 1980s, he served in many roles, including national and local president, despite a busy work schedule as system administrator in the astronomy and physics department at Saint Mary's University.

He automated SMU's Burke-Gaffney Observatory so it could be used remotely from around the world, and he created Earth Centered Universe, a planetarium and telescope-control program that allows institutes the ability to operate their own educational astronomy platforms.

*(Continued on next page)*

On top of all that and more (his resume would fill pages), Dave was instrumental in the design and construction of the Halifax Centre's St. Croix Observatory, which opened for members' use in 1997.

Among several endowment and legacy funds in Dave's memory, partly supported by an auction last year of Dave's astronomical equipment, his wife Michelle has created the St. Croix Observatory Property Endowment (SCOPE) Fund. There are \$10,000 worth of matching funds available thanks to Michelle and Tony Schellinck.

You can find details on how to support this important project on the Halifax RASC website (<https://halifax.rasc.ca/index.php/observing/85-st-croix-observatory-property-endowment>).

As I put Dave's scope on the tripod, I try to put the bitter aside. He was only 60 when he died from an aggressive brain cancer. In a just universe, Dave would be still using this scope.

But as a scientist he'd likely agree with one of my favourite science fiction writers, Iain M. Banks, who incidentally also died too young from cancer.

"The universe does not have our own best interests at heart, and to assume for a moment that it does, ever did or ever might is to make the most calamitous and hubristic of mistakes."

I point the Pronto toward the first-quarter Moon. There's an interesting terminator region to explore and the clear sky may not last that long.

- John



## 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 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](https://halifax.rasc.ca)) for changes in schedule.



## Upcoming Meeting Dates

(No meetings July / August but come see us at Dark-Sky Weekend and Nova East!)

**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) Paul Gray - STARMUS 2025**

*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](mailto: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
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 RASCals!

I hope that things are going well as we move towards summer and those longer days and shorter nights. Despite the shorter nights, summer does offer some wonderful advantages for observing: pleasant weather, rich Milky Way views and those summer constellations and the famous celestial objects they contain. It is also a great time to start the pursuit of an RASC Observing certificate.

I would like to take this opportunity to congratulate the newest Fellow of the RASC, Paul Gray. The award of a fellowship is the Society's most senior award and the highest honour the Society can pay to a member. It recognizes service and contributions to the Society over an extended period. Well done and thank you Paul!

Summer is also the season for **Nova East** and this year we return to Smileys Provincial Park August 22 - 24. The Nova East planning team has been hard at work and has developed an exciting program with activities and presentations that I am sure will be of interest to all. Be sure to check the Nova East website for the full details and registration instructions. I look forward to seeing you there.

The **Dave Lane Memorial St. Croix Observatory Property Endowment (SCOPE)** Fund continues to grow, and we are just over 30 per cent of the way to our objective, with six months to go. A big thank you to all those who have donated so far. Halifax Centre is truly fortunate to have this observatory and SCOPE is the means by which we shall maintain and further develop the site. Please give some thought to donating to the fund, no donation is too small, and every donation is matched dollar for dollar. Visit the Centre's home page where you will find a link that will take you to a document providing the full details.

One of the current initiatives of the Board of Directors is the creation of a maintenance and development plan for St. Croix Observatory. This is intended to be a document that will help the centre maintain SCO in good condition and guide its future development. If you have any thoughts about maintaining or developing SCO, please do not hesitate to contact me with your thoughts and suggestions.

Finally we are in the last stages of setting things up for the sale of astro images. These are images taken by RASC Halifax members and the proceeds from the sale of these images will go to the **Dave Lane Memorial St. Croix Observatory Property Endowment** fund. Stay tuned for the details.

All the best  
Tony McGrath  
President RASC Halifax Centre

Email the Centre Executive:  
[president@halifax.rasc.ca](mailto: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.

# 2025 Nova East Star Party

August 22-24, 2025

Smileys Provincial Park

<https://novaeast.rasc.ca>

Come **Look Up!** with us.

Light the spark of your curiosity fire!

Highlights:

- Make a sundial
- Telescopes and how our eyes affect what we see
- Sky Tour & Guided Observing sessions
- Laser pointer training
- Flea market (sell, trade, swap books & equipment)
- **Keynote:** *Stories in Space* – John Read will tell the stories behind the amazing fleet of telescopes that deliver the amazing science we come to expect from the frontier of astronomy.
- Sherman Williams Memorial Walk



I am hoping this short article will convince you to join us at the 2025 Nova East Star Party.

I am reading a very enjoyable book that I would recommend to you - *Starlight Nights* by Leslie C. Pelletier. He takes us on his journey from learning about the night skies as a child discovering Vega, Altair and Deneb to his studies throughout his life. You can sense his astronomical excitement on every page. However, there was one paragraph to which I took exception.

"To me, the least satisfactory way of all to learn the stars would be through the eyes of another. The organized "star-party", or the constellation study groups in which someone points out the various stars and constellations are pleasant social affairs but they make it all so effortless that the lesson seldom sticks. It is like having a guided tour to see some wonder of nature when one could, just as well, have the incomparably greater thrill of being its discoverer."

I had zero interest in and knew nothing about 'astronomy' prior to attending the 2013 Nova East Star Party at Smileys. This introduction was post-retirement and in less than 24 hours of that introduction I had fallen in love with what was above my head in the night skies. Is there value in attending a star party? Unequivocally YES!! What Nova East did for me was to create a spark from which the fire of curiosity was lit.

Yes, pointing out the stars, etc., was effortless but the lessons stuck and what didn't stick was questioned, read about, and repeated visually explored. This one weekend that Pelletier identifies as the "least satisfactory way of all to learn the stars" gave me the introduction and the encouragement I needed to continue exploring the skies and being wowed. Yes, star parties have social aspects and, yes, there are tours and introductions made by a guide. However, there are several opportunities for new-to-you discoveries regardless of your level of experience. The energy from fellow observers is felt and further feeds your love of astronomy and its many aspects.

If you have never attended a star party, I encourage you to do so this summer. I invite long-time attendees to join us again. Come to our annual **Nova East Star Party** being held at Smileys Provincial Park to socialize, to observe, and maybe learn new skills and observing techniques! You won't want to miss the opportunity to **Look Up!**

Submitted by Judy Black  
Member, 2025 Nova East Planning Team

# Support SCO with the SCOPE Fund

Submitted by Michelle Lane and Judy Black

***“Get outta the city, you owe it to yourself!”***

When the comet Hyakutake passed by Earth in March 1996, RASC members of the Halifax Centre pointed their cars for the Club’s observatory in search of clear skies to see the phenomenon. And what a sight they found. After tumbling out of their cars and looking up, we’re told that the sight that awaited them was so dazzling, the expletives emitted were not fit to print. The next day, then President Dave Chapman emailed all he could reach with the plea: “Get outta the city, you owe it to yourself!”



The Club’s St. Croix Observatory (SCO) was officially opened at solar noon (13:18 ADT) on the day of the 1997 summer solstice – Saturday, June 21. Funded, built and maintained by members, on land made available by Scotia Investments Limited, SCO has been a jewel of an observatory for all who visit. Club members and visitors alike love this site and recognize the incredible value it represents. It is under the dark skies of SCO that we make friends and discoveries, furthering our education through our searches in the horizon.

## ***Maintain SCO in Perpetuity!***

David Lane was one of the leaders in the inception, site selection, design, fundraising and construction of the [St. Croix Observatory \(SCO\)](#), a place where we have gathered for over 28 years to observe, to explore, to contemplate and to wonder. Knowing that Dave wished to ensure that other observers could continue to enjoy SCO long into the future, Dave’s wife, Michelle, announced the creation of the David Lane Memorial St. Croix Observatory Property Endowment (SCOPE) Fund on December 7, 2024, with an initial gift of \$10,000. Funds raised will be invested and future SCO maintenance and improvements can be made with the interest accrued.

## ***Double Your Gift***

In addition to the original \$10,000 donated by Michelle Lane, another \$10,000 has been pledged to the SCOPE Fund (5000 each from Michelle Lane and Tony Schellinck) as matching donations for every additional dollar donated to the SCOPE Fund to a maximum of \$10,000 during the 2025 calendar year. This means your contributions will have double the impact in supporting our observatory’s ongoing maintenance and operations.

This is our observatory. With your help we can ensure it thrives well into the future, allowing us to share knowledge, observing skills and stories under a magnificent night sky. Please consider a gift to the SCOPE Fund. Remember that doing it now means you can double your gift! Here is the link that explains how you can donate: [Dave Lane Memorial SCOPE Fund](#)



# Asteroids with a Nova Scotia Connection

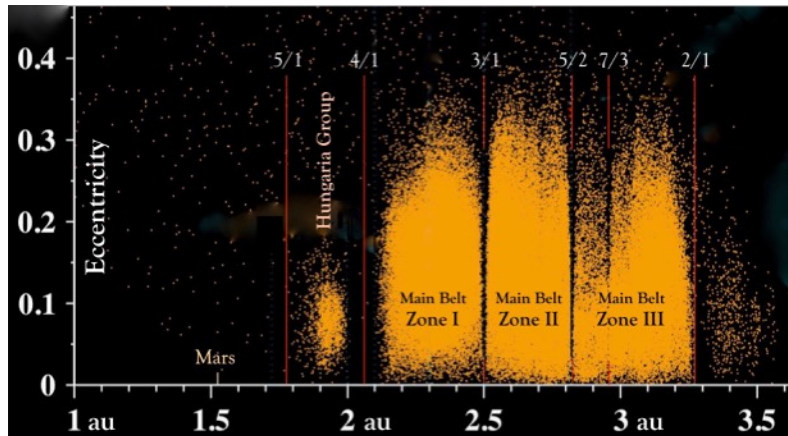
By Dr. Roy Bishop & Judy Black

## 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 fifth 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.

## Instalment 5 of 6 — The Main Belt, Zone II



Six of the fifteen Nova Scotia Asteroids (NSAs) are distributed across Zone II of the Main Belt, bounded by the Kirkwood gaps at the 3/1 (2.50 au) and 5/2 (2.82 au) resonances with Jupiter:

	a	e	i	T	diameter
(246913) Slocum	2.540 au	0.220	12.15°	4.05 y	~ 2 km
(5547) <del>Acadiau</del>	2.615 au	0.123	12.72°	4.23 y	9 km
(22421) <del>Jamesedgar</del>	2.662 au	0.158	3.55°	4.34 y	~ 4 km
(6898) Saint-Marys	2.665 au	0.123	14.19°	4.35 y	8 km
(117032) Davidlane	2.716 au	0.140	11.58°	4.48 y	~ 3 km
(516560) Annapolisroyal	2.771 au	0.148	17.07°	4.61 y	~ 2 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.

In the text *Solar System Dynamics* by Murray and Dermott (Cambridge 1999), a prominent family of asteroids (apparently the result of a collisional breakup) is the Eunomia family, having semi-major axes between 2.6 and 2.7 au, eccentricities near 0.15, and inclinations near 13°. Four of the six NSAs in Zone II — ~~Acadiau~~, Saint-Marys, Davidlane, Annapolisroyal — are clustered in that region of three-dimensional “aei” space. Thus, they must be members of the Eunomia family (named after (15) Eunomia, its largest member, having a diameter of 232 km and “aei” parameters 2.64 au, 0.187 and 11.75°).

The other two NSAs in Zone II might also be members of the Eunomia family. Slocum has the appropriate inclination, but his eccentricity is high; indeed he is the most eccentric of all fifteen NSAs (no wonder he sailed around the world alone)! Jamesedgar is eccentric enough to be a member of the Eunomia family, but his inclination is very low, the second lowest inclination of all fifteen NSAs, almost flat on his back on the ecliptic! Perhaps Slocum and Jamesedgar received especially violent kicks during the collision that produced the Eunomia family.



## Asteroids (con't)

Another feature of the NSAs in Zone II is notable: the close similarity of the two university asteroids, Acadiau and Saint-Marys. Their semi-major axis differs by less than 2%, their inclinations by less than 1.5°, and their eccentricities by less than 0.1%!

Yet another remarkable coincidence is that not only are Saint-Marys and Davidlane in the middle of the Eunomia family, but they are also next to each other in the sequence of semi-major axes. David Lane made tremendous contributions to Saint Mary's University during his career there. In January 2024, the university conferred an honorary doctorate on him. With profound sadness we record Dave's death on March 24, 2024.

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

### **(246913) Slocum** (discovered 1998, named 2012)

Joshua Slocum (1844 – 1909) was the first person to circumnavigate the world alone. He sailed *Spray*, his rebuilt sloop, from Boston in April 1895, and returned three years later after a 74,000-km journey. His book *Sailing Alone Around the World* is a first-hand account of his remarkable voyage.

[*Minor Planet Circ.* 80329]

As for (3314) Beals, the above citation for (246913) Slocum is silent concerning Slocum's connection to Nova Scotia. In brief: Slocum was born on the North Mountain in Annapolis County, Nova Scotia and grew up in Westport, N.S.

### **(5547) Acadiau** (discovered 1980, named 1995)

Named in honour of Acadia University, Wolfville, Nova Scotia. Founded in 1838, Acadia U. has become one of Canada's finest liberal arts institutions. It is located near the Minas Basin, which boasts some of the most dramatic tides on Earth, and it is also located under some of Canada's darkest night skies. Acadia's academic excellence and small student population provide a fertile environment for a good undergraduate education. Name proposed and citation prepared by D. H. Levy.

[*Minor Planet Circ.* 24918]

### **(22421) Jamesedgar** (discovered 1995, named 2016)

James Somerville Edgar (b. 1946) spent 40 years as a Locomotive Engineer and rail Supervisor. He became President of the Royal Astronomical Society of Canada in 2014. Name suggested by R. and P. Jedicke.

[*Minor Planet Circ.* 102253]

### **(6898) Saint-Marys** (discovered 1988, named 2002)

Saint Mary's University, Halifax, N.S., is Atlantic Canada's primary center for instruction, public relations and research in astronomy and astrophysics. The university, founded in 1802, is the site of the Burke-Gaffney Observatory, used for the detection of supernova 1995F, the first such discovery of an all-Canadian nature.

[*Minor Planet Circ.* 46101]

### **(117032) Davidlane** (discovered 2004, named 2008)

David Lane (b. 1963) is the author of *The Earth Centered Universe*, a brilliantly easy-to-use planetarium and telescope-control program. With Paul Gray, Lane has discovered three supernovae — SN1995F, 2005B and 2005ea. He is scheduled to assume the presidency of the Royal Astronomical Society of Canada in June 2008.

[*Minor Planet Circ.* 62931]

### **(516560) Annapolisroyal** (discovered 2006, named 2018)

The Town of Annapolis Royal, Nova Scotia, is recognized as the cradle of the Canadian nation for its prominent role in the country's early origins and remains influential as a leader in heritage stewardship and preservation.

[*Minor Planet Circ.* 111804]

Next instalment: The Main Belt, Zone III

# Moonscapes: Mare Fecunditatis

By David Hoskin

Mare Fecunditatis (Sea of Fecundity/Sea of Fertility – the circled area in the image to the right), near the eastern limb of the Earth-facing side of the Moon, is a vast dark plain with a rough diamond shape that covers about 325,000 square kilometres. This lunar “sea” spans 900 kilometres in the north-south direction and 600 kilometres east-west at its widest point. Mare Fecunditatis formed over 3.9 billion years ago when basaltic lava flooded the Fecunditatis impact basin during a period of heavy volcanic activity. Interestingly, unlike many other maria, Mare Fecunditatis lacks a clearly defined basin rim, and its centre does not harbour a mass concentration (mascon), also known as a gravitational high.



The best times to view Mare Fecunditatis in its entirety are four days after new Moon and three days after full Moon. Although the mare is easily visible to the unaided eye, 10X binoculars or a small telescope will provide a more detailed and enjoyable view. To find Mare Fecunditatis, look south of oval Mare Crisium and southeast of Mare Tranquillitatis, which is separated from Mare Fecunditatis by the low ridges of Montes Secchi. The southwestern border of Mare Fecunditatis is delineated by another mountain range, Montes Pyrenaeus, which also borders the eastern edge of Mare Nectaris. To the south, Mare Fecunditatis merges with a large unnamed bay to the west of Petavius crater, the southernmost of three large impact craters on the eastern coast of the mare. The northeastern part of Mare Fecunditatis flows into Sinus Successus (Bay of Success), an irregular bay with a diameter of 132 kilometres. Illumination of Mare Fecunditatis when the Sun is at a high angle reveals rays from several impact craters, including a ray from distant Tycho crater, while illumination by a low Sun brings into view a network of wrinkle ridges (dorsa) located in the mare's northern and eastern regions.

The close-up image of Mare Fecunditatis shows the mare's major features, including sinuous rilles and grabens, wrinkle ridges, and a number of prominent craters. Taurantias, on the northern shore of Mare Fecunditatis, is a 56-kilometre-wide impact crater with a low but well-defined rim and small central peak rising from a relatively flat interior floor. This crater's ramparts, which are veined and complex, are at the centre of a ray system that stretches for over 300 kilometres. Located to the south of Taurantias are two small but fascinating craters named Messier and Messier A. These elongated craters, which are only six kilometres apart, are believed to have been formed by the very low angle impact of a small asteroid that initially created Messier before rebounding and striking the lunar surface again to create Messier A.

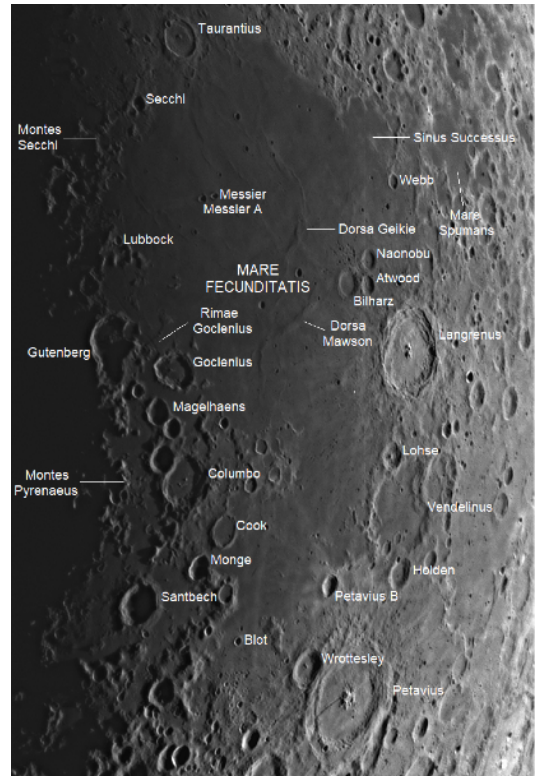
Ejecta from this impact formed a pair of easily seen broad, linear rays that extend from the western edge of Messier A to the western shore of the mare. Nearby Lubbock (14 kilometres in diameter) and, to the south, much larger worn and eroded Gutenberg (74 kilometres wide), are examples of low-walled, lava-flooded craters that are common features of Mare Fecunditatis.

## Moonscapes (con't)

Two prominent wrinkle ridges, Dorsa Geikie (240 kilometres long) and Dorsa Mawson (180 kilometres long), wind their way across the eastern central region of Mare Fecunditatis. Additional wrinkle ridges extend south from the region around Taurantias. Wrinkle ridges form in maria when tectonic forces act on the lava sheet when it is still somewhat pliable.

The western shore of Mare Fecunditatis has several interesting features, one of which is Rimae Goclenius, a long narrow fissure that extends from the northwest wall of Goclenius crater for 150 kilometres.

The wall of Goclenius is worn with an irregular shape that spans 51 by 62 kilometres. Other noteworthy craters in this part of Mare Fecunditatis include Columbo and Cook. Columbo, which spans 76 kilometres with a depth of 2.4 kilometres, has a circular and slightly eroded rim with a small group of central peaks. Cook, which lies to the southeast of Columbo, is 47 kilometres in diameter with low walls projecting above the mare due to the crater being flooded with lava in the past. Located in the southern part of Fecunditatis is Blot, a small bowl-shaped impact crater (13 kilometres in diameter) with a sharp rim and wide inner wall characterized by a relatively high albedo.



The eastern edge of Mare Fecunditatis features three large craters (Langrenus, Vendelinus, and Petavius) arranged in a straight line north to south. Petavius is a magnificent sight with its width of 177 kilometres, terraced walls, sprawling mountain massif composed of several individual peaks, and a prominent rille (Rimae Petavius) that cuts across the crater floor. Vendelinus (147 kilometres wide) is an excellent example of an ancient crater with eroded and heavily cratered ramparts. Langrenus is the smallest of these three craters, having a diameter of 132 kilometres, but is still an impressive sight with its pair of towering central mountains and complex terraced inner walls. To the northwest of Langrenus lies an interesting close formation of three relatively small craters: Bilarz, Naonubu, and Atwood with diameters of 43, 35, and 29 kilometres, respectively. All are smooth-floored because of resurfacing with basaltic lava.

Mare Fecunditatis is notable for being the landing site of the Soviet Union's Luna 16 probe, which returned a sample of lunar soil to the Earth in September 1970. For Earth-bound observers, science-rich Mare Fecunditatis is a veritable treasure trove of interesting lunar features that are suitable for viewing with a small telescope.

### Sources

*A Guide to the Moon's Mare Fecunditatis* by Pete Lawrence, BBC Sky at Night Magazine

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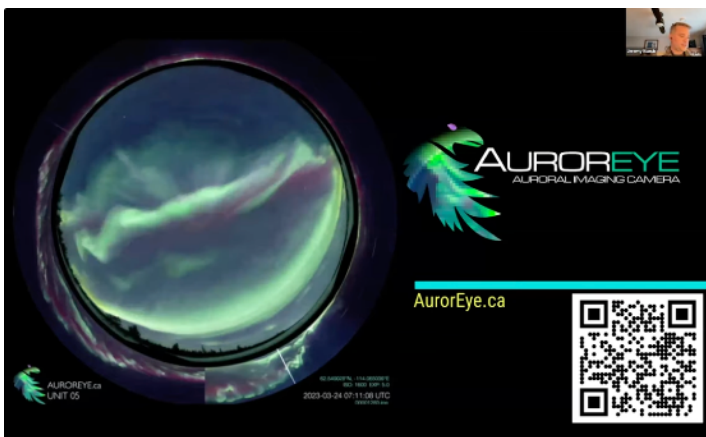
*Virtual Moon Atlas 7* by Christian Legrand and Patrick Chevalley, 2020

# Member Mentions

## Halifax Centre Members Present at RASC GA

The [2025 RASC General Assembly \(GA\)](#) was held virtually Saturday, April 26 - Sunday, April 27. It was a weekend of talks, workshops, speakers and observatory tours. The theme for this year's General Assembly was astro-tourism and protecting our night skies.

On Saturday, April 26, centre member **Jeremy Kuzub** presented *Citizen Science: Capturing the Aurora with AurorEye*.



- New astrotourism products arise



Later that evening, centre member **Tim Doucette** (along with New Brunswick Centre member Stéphane Picard) presented *Astro-Tourism in Nova Scotia and New Brunswick*.

On Sunday, April 27, Halifax Centre's own **Tiffany Fields** presented *Tourism at Home: the Burke-Gaffney Observatory*.



If you registered for the GA, you can catch a replay of all the presentations [in the Attendee Hub](#).



# Members' Universe

## Food for the Soul: The Poetry of Paul Heath

### *Hidden Star*

*By Paul Heath*

There is a hole upon the sky,  
That pulls our Wonder near.  
A maelstrom lost to sight  
That gathers all, with a grip so tight.

A blinding flash that pierces Time  
For Eons outward racing, even  
As it steps back, from Time.

Trapped by a hidden might  
That delays Time's passing,  
Its glowing disc out spins the clock  
Until with sudden darkness, is lost to sight.

Lost to sight, its hidden strength still holds sway,  
Pulling even, passing, rushing light astray,  
Unlocking distant sights, from far, far away.

In family games, the larger Sib betrays  
Upon his spinning, maelstrom's glowing disc  
He pulls his lesser Siblings flowing tresses,  
For she cannot dispel his hidden strength.  
A hidden strength, with teasing, now displayed.

For Ages and Eons  
The hidden strength, with growing force, gathers all  
Who unknowing, too close do stray.  
Yet strength, even hidden, Times ending cannot delay.

For into distant Ages and Eons,  
Even the greatest hidden strength,  
Time, will slowly ebb and fade away.

### *Unnamed Rungs*

*By Paul Heath*

Look up in wonder,  
The glimmering canvas full of mystery,  
Upon the shimmering, they drew their Myths  
But understanding of the glimmering eludes.

We built the ladder of understanding  
Each glowing Rung proclaimed,  
But too often  
The stronger, wider Rungs remained, unnamed.

Tasked but to polish, her fame  
Only a fiery sword, the King proclaimed.  
Yet by a thousand candles light  
His findings, did with patience list and organize.

A task, much too exhausting was declared,  
She with patience led, and from off the glass  
Individual identity was found,  
Each glimmering light, in sequence now was named.

Then within the named, strange pulsing's a puzzle masked  
She with patient focus, insight and understanding drew,  
Her insights, the Shutters wide thrown,  
To show the vastness beyond.

She, a sidestep made,  
And from the unnamed Rungs reached high,  
Showing to all,  
The makeup of the glittering gems above.

Another, again with patient search,  
From screen to screen to screen,  
Set clear, the steps of life and growth and death,  
Of those mirid distant clustered gems,  
While yet another, within their living motion,  
Unmasked a hidden mass, their motion cast.

Then with Challenge, Chalk and Pencil fast upon the page,  
The unseen, unacknowledged few,  
Help lift man out amongst the stars.

The time had come,  
The unnamed Rungs, their names, now to be sung.  
Caroline, Annie, Henrietta, Cecilia, Sandra, Beatrice,  
Jocelyn, Vera, Helen, Mary, Katherine and Dorothy.  
And those that led the modern search, the newest Rungs  
Margaret, Nancy, with so many more yet unnamed,

But let us not forget to look within our house,  
To name the Rungs,  
Who without those Names, once Unnamed before  
Could not now be sung.  
Kathy, Mary Lou, Andrea and Judy too.

# Members' Universe: A Visit With Stellar Friends

**Mary Lou Whitehorne**, FRASC, Past President RASC writes: "I thought a few Halifax RASCals would appreciate seeing this photo from a wonderful afternoon visit with Roy and Gertrude Bishop. We talked about tides, fireflies, stars, the Milky Way, observatories, good food, and many other things. Mostly it was a rare treat to be together with treasured friends, and to revisit memories of many shared experiences across the decades of our lives."



Rear L to R: Mary Lou Whitehorne, Paul Gray, Michelle Lane  
Front L to R: Roy Bishop, Gertrude Bishop



# Members' Universe: Bob Russell

**Bob Russell** has been enjoying his SeeStar 50 recently. He shares:

"I've been using my SeeStar50 on-and-off since I acquired it shortly after these automated small aperture telescopes devices became available... they were as I expect you know, somewhat limited in functionality (mounted on a horizontal base and using alt-az tracking) - fun, but not quite as useful as its larger and more capable relatives. SeeStar50 and SeeStar30 have recently been upgraded from atl-az mode (best image exposure time of 10s) to equatorial mode (now allows image capture for longer exposure times - 30s, even 60s) without the need for guided tracking... one can now actually capture and process SeeStar data for DSOs (among other objects) and, with additional processing, produce reasonable images.

A number of Halifax Centre members have acquired and use these automated telescopes (David Hoskin, Peter Hurley, and Jerry Black, to name a few).

To that end, I have recently captured some data (SeeStar50) and processed it with Frank Marek's [Seti Astro Suite](#) and Pleiades Astrophotographers S.L.'s [PixlInsight](#) to bring out some of the image detail... it always seems to be a work-in-progress, doesn't it?"



(Above) Messier 51

(Left) NGC7023 (Iris Nebula)

(Below) M109 (67Mly +/- 23Mly in Ursa Major)

Images by **Bob Russell**



Let's see your SeeStar / Dwarf II or III) images. Send them to [novanoteseditor@halifax.rasc.ca](mailto:novanoteseditor@halifax.rasc.ca)



# Members' Universe: David Hoskin's Universe



**David Hoskin** captured the First Quarter Trees Fully Leafed Moon on 2 June using his Orion 102mm f/13 MCT, Player One Apollo-Mini M camera, Celestron SLT mount.

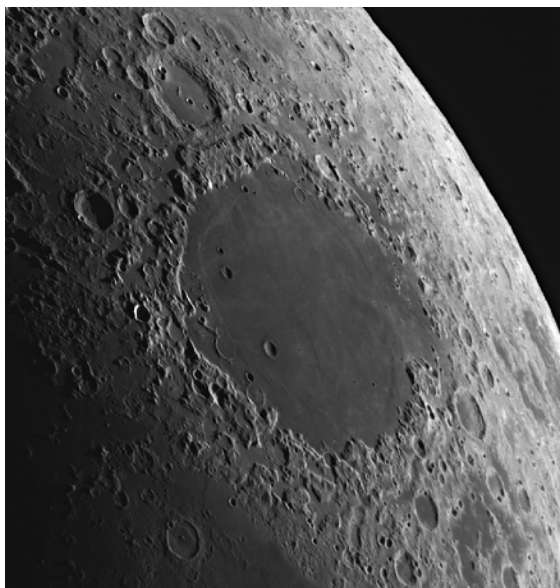


M87 and friends: Taken with SkyWatcher 200mm f/5 newtonian telescope, ZWO ASI533MC camera with Optolong L-Pro filter, SkyWatcher EQ6-R mount

Inset shows plasma jet caused by the supermassive black hole at the centre of M87 galaxy. Several additional galaxies are also visible. Photo by **David Hoskin**



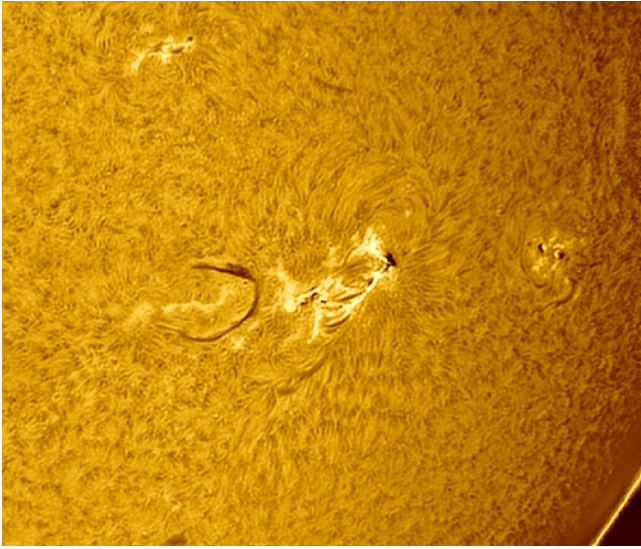
Trees Fully Leafed Moon on 11 June captured by **David Hoskin** using a Canon T3i DSLR with 50-250mm lens @250mm on a tripod: ISO-400, f/5.6, 1/320 sec



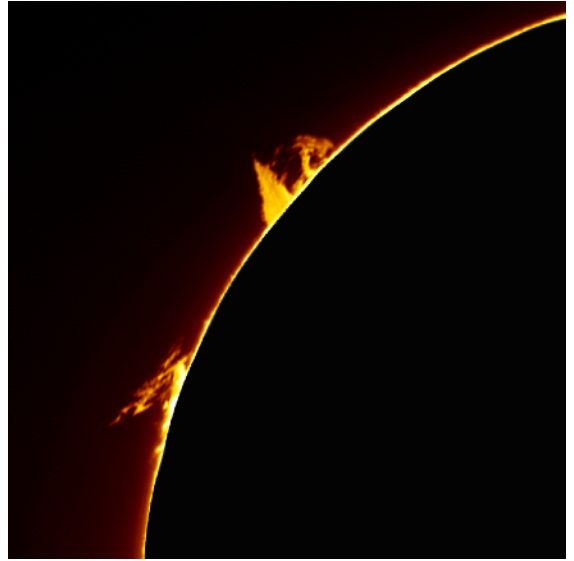
Mare Crisium captured by **David Hoskin** using an Orion 102mm f/13 MCT, Explore Scientific 2x focal extender, Player One Apollo-Mini M camera, Celestron SLT mount.



# Members' Universe: David Hoskin's Universe



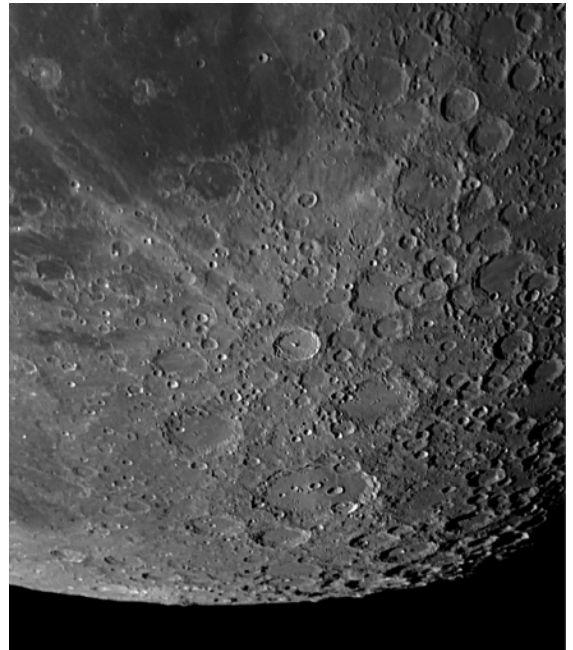
Sunspot group AR4105 on 11 June:  
Lunt 40mm f/10 solar telescope, Explore Scientific  
2x focal extender, Player One Apollo-Mini M camera,  
Celestron SLT mount. Photo by **David Hoskin**



**David Hoskin** captured solar prominences  
on 11 June using his Lunt 40mm f/10 solar  
telescope, Explore Scientific 2x focal  
extender, Player One Apollo-Mini M camera,  
Celestron SLT mount.



Mars and Regulus: RedCat51 and Canon T3i  
DSLR on a tripod (1sec exp, ISO-1600)  
Photo by **David Hoskin**



South lunar highlands: Orion 102mm f13 MCT,  
Explore Scientific 2x focal extender, Player  
One Apollo-M Mini camera on Celestron SLT  
mount. Photo by **David Hoskin**

# PUZZLE CORNER – Space Exploration

## Unscramble

By Lisa Ann Fanning

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

A	L	L	O	O	P														
A	N	R	S	T	U														
A	A	A	C	D	M	N	R												
A	A	B	B	D	E	N													
A	C	E	E	H															
A	E	E	H	K	O	R	S	T	V										
A	D	E	L	L															
I	K	N	P	S	T	U													
A	B	D	I																
A	C	D	D	E															
A	A	C	E	I															
A	D	E	I	L															

## Answers to Last Edition's Puzzle

A	B	E	M	N	P	R	U												
A	A	L	N	N	R	U													PENUMBRA
A	C	N	O	O	R														ANNULAR
A	C	N	O	O	R														CORONA
A	C	C	I	L	N	O	O	T	T	U									OCCULTATION
A	C	E	E	I															LUNAR ECLIPSE
A	I	L	O	T	T	T	Y												TOTALITY
A	D	D	G	I	I	M													DIAMOND RING
A	B	M	R	U															UMBRA
A	C	C	F	I															FIRST CONTACT
A	C	E	E	I															SOLAR ECLIPSE
A	D	H	O	S	W														SHADOW
A	A	B	D	E	F														BAADER FILM

# May 10, 2025 RASC Halifax Centre Meeting:

(25 attendees)

To watch a replay of the meeting, please visit: <https://www.youtube.com/watch?v=DEpGnllcMtc> 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, Michael Boschat, Dave Chapman, Jason Dain, Jeff Donaldson, Tim Doucette, Lisa Ann Fanning, David Hoskin, Blair MacDonald, Bob Russell, Darren Talbot, Gary Weber.

## **Special Guest - Blair MacDonald (Halifax Centre) - Black Holes - A Layman's View**

Blair presented an updated version of a presentation he did years ago. He presented the theory behind what we believe Black Holes are, how they are formed, the birth and death of stars and relativity.



Blair MacDonald presents Black Holes.  
Photo by **Dave Chapman**.

## **Paul Heath - Food for the Soul - Hidden Star**

Paul presented his latest poem, *Hidden Star*, which can be read on page 13 of this edition of Nova Notes.

## **Update from the Board presented by Tony McGrath, President**

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. Tony is also now the SCO manager. Join him for a SCO observing night. SCO observing nights are posted on the RASC Halifax website. Click on "Observing" > "Observe With Us."

The annual BBQ & Observing session is planned for September 19 (Rain Date September 20.) If both are rained out, the next rain dates will be the following week.

Reminder the March/April edition of *Nova Notes* has been posted. The deadline for the May/June edition is June 15. Send your content to [novanoteseditor@halifax.rasc.ca](mailto:novanoteseditor@halifax.rasc.ca).

## **Dark-Sky Weekend and Laser Pointer Training presented by Peter Hurley, Co-Chair, Dark Sky Preserve**

Dark-Sky Weekend (DSW) will be held August 15-17 at Kejimikujik National Park— all welcome! Free campsites for volunteers!

The programs will feature discussions on the partnership of RASC Halifax's partnership with Parks Canada, the use of laser pointers (which will be used during the weekend,) a sky tour, an observing session after dark and a binocular table, a table at Merrymakedge Beach for people to stop and ask their astronomy questions, Solar observing (conditions permitting,) as well as various workshops. Walk the solar system (Sky Circle) will also be presented. The Saturday program: Muin and the Seven Bird Hunters will be presented in English, French and Mi'kmaq. The public is welcome to join.

### **Laser Pointer Training:**

Transport Canada rules and regulations are found within the Canadian Aviation Regulations and are enforceable. Under those rules, “no person shall project or cause to be projected a directed bright light source into navigable airspace in such a manner as to create a hazard to aviation safety or cause damage to an aircraft or injury to persons on board the aircraft.” Additionally, according to Health Canada and Transport Canada, it is illegal to carry lasers above 1 mW unless you have a permit to do so.

The RASC has applied and received written authorization from Transport Canada to use handheld laser pointers under certain conditions for astronomy. This renewed every three years.

A training session will be held this year at Nova East.

For more information, visit <https://halifax.rasc.ca/index.php/activities/green-laser-pointer-training>

### **Nova East and National Council Update presented by Judy Black, National Council Chair, RASC National Council and Halifax Centre Secretary**

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

The theme this year will be “Look Up!” (Visual astronomy)

Sessions include: pros and cons of various telescopes; how the eye works and exit pupil; how to make a sundial; laser pointer training; *Walk the Solar System* with David Hoskin; Sherman Williams Memorial Walk with Pat Kelly; and buy, sell or barter at the flea market; public observing and more!

For more information and to register after June 6, visit <https://novaeast.rasc.ca/>

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

### **Certificate Opportunities:**

- RASC Observing Certificates <https://rasc.ca/certificate-programs>
- Astroimaging Certificates <https://www.rasc.ca/astro-imaging-certificate>

### **Upcoming Meetings:**

- Next Board of Directors meeting June 3, 2025
- The Next Public Meeting is June 7. Tony Schellinck will be presenting “*Women in Astronomy*”
- The Next National Council Meeting is June 8, 2025
- RASC Annual Meeting - Sunday, June 22, 2025 (more information is forthcoming.)

National Council (Centres have one representative for every 200 members. It is the linkage among all 30 centres and the RASC)

Annual Meeting program recordings are now available for those who registered (see April 30th email.).

May 3, Stars Across Canada - 170th Global Star Party - Centres across Canada are showcased for International Astronomy Day - view here: <https://www.youtube.com/watch?v=2MlgQap7eqM>

New Outreach materials have been reprinted - if you are participating in an outreach program and need materials to use, contact David Hoskin at [outreach@halifax.rasc.ca](mailto:outreach@halifax.rasc.ca).

A new observing program was announced at the RASC Annual Meeting. The Seasonal Novice Observers Program was developed by Halifax Centre Member, Tony Schellinck

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

David reviewed highlights of the May 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>.



# June 7, 2025 RASC Halifax Centre Meeting:

(22 attendees)

To watch a replay of the meeting, please visit: <https://www.youtube.com/watch?v=HN97uOgUxEQ> on the RASC Halifax YouTube Channel.

## Welcome - David Hoskin

RASC Halifax Centre 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, Dave Chapman, Jeff Donaldson, Tim Doucette, David Hoskin, Blair MacDonald, Tom McIntyre, Bob Russell, Norman Schneiderman and Kathy Walker.

## Special Guest - Tony Schellink (RASC Halifax Centre) - Women in Astronomy

Dr. Tony Schellinck, a member of the RASC Halifax Centre presented *Women in Astronomy*. Tony gave this talk at last year's Nova East Star Party and he agreed to present this again for the membership and public who couldn't attend.

Tony has always had an interest in astronomy, but it wasn't until age 55 that he became active as an amateur astronomer. A former Dalhousie professor, he knows that the best way to learn a topic is to teach it. He therefore participates in public viewing sessions around Nova Scotia, has become a regular presenter at the Halifax Planetarium, and has given lectures at parks and libraries around the province. His most recent innovation is his flat screen planetarium show held at the Astor Theatre in Liverpool and the Osprey Arts Centre in Shelburne where he shows people how to observe the night sky using binoculars.



Tony Schellink presenting the contributions of Women in Astronomy  
Photo by **Dave Chapman**.

## BGO T-Shirt Interest - Tiffany Fields

Tiffany Fields was gauging interest in whether people would like to purchase a Burke-Gaffney Observatory T-Shirt if one was created. Contact Tiffany for more information.

## Paul Heath - Food for the Soul - Unnamed Rungs

Paul presented his latest poem, *Unnamed Rungs*, which can be read on page 13 of this edition of Nova Notes.

## News from the Board presented by President Tony McGrath

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. Current donations are at \$3200. The final details are being worked out for a fundraising astroimage sale, for which details will be announced shortly.

Tony is also now the SCO manager. Join him for a SCO observing night. SCO observing nights are posted on the RASC Halifax website. Click on "Observing" > "Observe With Us."

Reminder the March/April edition of *Nova Notes* has been posted. The deadline for the May/June edition is June 15. Send your content to [novanoteseditor@halifax.rasc.ca](mailto:novanoteseditor@halifax.rasc.ca).

### **More News from the Board presented by Secretary, Judy Black**

The annual BBQ & Observing session is planned for September 19 (Rain Date September 20.) The next rain dates will be the following week (Friday, September 26 or Saturday, September 27.)

Nova Notes wants your articles, book reviews, photos & more! Send them to [Nova Notes Editor](#).

The 16th Annual Dark-Sky Weekend (DSW) will be held August 15-18 at Kejimikujik National Park- all welcome! Details to follow. Free campsite for volunteers - for more information, contact [the DSP](#).

The RASC has applied and received written authorization from Transport Canada to use handheld laser pointers under certain conditions for astronomy. Renewable every three years, a training session will be held this year at Nova East. For more information, visit [the webpage](#).

Nova East will be held August 22-25 (the new Moon is August 23) at Smileys - all welcome! The theme this year will be "Look Up!" (Visual astronomy) Public Talk - Stories from Space - John Read. This year's T-shirt was designed by Lisa Ann Fanning, depicting two children to represent the childlike curiosity in all of us looking up at the Summer Triangle and a comet (to represent "excitement.") Jerry Black created a video to promote the event, and can be found, along with more information and registration details at <https://novaeast.rasc.ca/>.

Deadline to submit for 2026 RASC awards is December 31, 2025. Visit [RASC awards](#) for more information.

Don't forget, RASC offers some Certificate Opportunities - visit [RASC Observing Certificates](#) [RASC Observing Certificates](#) and [Astroimaging Certificates](#) for more information.

#### **Upcoming Meetings:**

- The next RASC Halifax Centre Board of Directors meeting is scheduled for September 2, 2025
- The next Member & Public Meeting will be September 6, 2025 and will feature speaker David Hoskin talking about All-in-One Smart Telescopes.
- RASC National Council meets June 8, 2025 and then again on September 7, 2025.
- The RASC Annual Meeting will be held Sunday, June 22, 2025. Details at [rasc.ca/am-2025](https://rasc.ca/am-2025)

The Centre's Astroimaging contest deadline for submission is November 11, 2025. The three categories for entry are Wide Field, Solar System and Deep Sky. Winners to be announced at our Centre's AGM in December.

On March 1, Paul Gray was announced as the newest Fellow to the Centre. At this meeting, Paul was presented with his official plaque. 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."

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

David reviewed highlights of the June 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>.



Paul Gray receiving the Fellowship award from President Tony McGrath at the June 7th Meeting.  
Photo by **Jerry Black**