

# Nova Notes

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

PO Box 31011, Halifax, Nova Scotia, Canada B3K 5T9 [www.halifax.rasc.ca](http://www.halifax.rasc.ca) [halifax@rasc.ca](mailto:halifax@rasc.ca)



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**JAN / FEB 2026**

**VOL 57 NO 1**



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### Cover Images:

#### Main Image:

NGC2244 and the Rosette Nebula.

Lower Sackville, Nova Scotia

December 28, 2025

ZWO SeeStar S30 EQ mode

[Focal length 150,

Aperture 30 mm, f/5]

More info [here](#)

by Jerry Black

#### Thumbnail:

St. Croix Observatory

drawing by Mary Lou Whitehorne

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

# From the Editor

When I first joined the RASC, I did so as an “Unattached Member” - meaning I was not affiliated with a particular centre. After all, I didn’t really know anyone “in real life” but joined because I was enjoying the amazing certificate program learning sessions being offered online during the pandemic. The sessions, hosted by Jenna Hinds and John Read (who started this whole journey for me), offered an overview of information needed for Explore the Universe (and later Explore the Moon.)

I think I was two or three sessions in when Dave Chapman asked what centre I was a member of, and when I mentioned I was not a member of any particular centre, he encouraged me to join Halifax Centre because it is “the best Centre there is!”

Clearly I did so, and haven’t looked back since. As for Dave’s claim, well, I may be biased, but I think he was right!

If there is any question about it, just take a look at our members’ accomplishments in print:

In the 2026 Observer’s Handbook alone, 12 members have contributed articles: Roy Bishop, Judy Black, Larry Bogan, Randall Brooks, David M.F. Chapman, Tiffany Fields, Michael Gatto, Paul Gray, Patrick Kelly, Blair MacDonald, Douglas Pitcairn and David Turner.

In 2025, six members of Halifax Centre contributed to The Journal of the Royal Astronomical Society of Canada (or JRASC.) They include: Roy Bishop, Judy Black, David M.F. Chapman, Michael Gatto, Bruce Hamilton, Blair MacDonald and Tony Schellinck.

*(Many thanks to James Edgar, FRASC for this list.)*

These accomplishments are for current editions alone. The list goes on and on if you look beyond the current editions and add in those centre members who served as past editors and contributors to the Observer’s Calendar and even beyond RASC media.

To those who have set the bar high for Halifax Centre’s “best centre” designation, THANK YOU! And Cheers! To those who will help retain that title! I look forward to seeing all your contributions!

With continued gratitude,

Lisa

## Upcoming Meeting Dates

March 7- Blair MacDonald "An Astrophotographer's Skies - Summer Astrophotography 2025"

April 11- Members' Presentations

May 9 (Note date change due to RASC GA)  
Chris Gainor (Victoria Centre)  
How Engineers from Avro Canada helped put Astronauts on the Moon.

June 6 (tentative: Starfinder Program)

September 12

October 3

November 7- Finding Exoplanets (Blair MacDonald)

December 5 & AGM

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

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

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

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

## St. Croix Observatory

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

Enjoy dark pristine skies far away from city lights and the company of like-minded observers searching out those faint "fuzzies" in the night. Most clear Moon-free nights, you will find our keen observers out there! Announcements of members visiting SCO are made on the Centre's Discussion List. If you are not a key holder and would like to become one or need more information, please contact the SCO Manager, 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	Gerry Brosky
Director	Matthew Dyer
Director	David Hoskin
Director	Frank Logan
Director	David McMullin
Director	Vincent Vallee
Appointed	
Honorary President	Patrick Kelly
Auditor	David Chapman
Communications Committee, Chair	VACANT
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	VACANT
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 2026!

Dark-Sky Weekend  
August 7-9, 2026

New Moon August 13, 2026

Nova East Star Party  
August 14-16, 2026



# A Message from the President

Hello fellow RASCals and Happy New Year!

It has been a cold and snowy winter so far...here's hoping that with the increasing hours of sunlight perhaps the cold weather will begin to moderate.

I am delighted to congratulate Judy Black on receiving the Society's Service Award. This is a major honour, presented in recognition of outstanding service given over an extended period — it is hard to imagine a more deserving recipient. Over her twelve years of membership, Judy has consistently demonstrated exceptional leadership, organization, and dedication in all that she does. The RASC Halifax Centre owes a great deal to her commitment, generosity of spirit, and steady willingness to step up whenever needed. We are truly fortunate to count her among us! Presentation of the award shall occur at a future Public meeting with details to be announced prior to the meeting. Please join me in extending Congratulations to Judy!!!

I am also very pleased to welcome new board members Frank Logan and Gerry Browksi. We are grateful that they have stepped forward to serve, and look forward to the energy, ideas, and perspectives they bring. A strong and engaged board is essential to a healthy Centre, and their willingness to contribute their time and talents speaks well of the future of RASC Halifax Centre. We are delighted to have them join the team.

The St. Croix Observatory Property Endowment [SCOPE] fund concluded its 12 month drive at the end of December, and Michelle Lane very graciously presented the matching funds at the February Meeting. The fund is now valued at \$25,170.00. A big thank you to all who donated!

Stephen Beddington	Michael Gatto	Blair MacDonald	Tony Schellinck
Roy Bishop	Paul Gray	Dave McCarter	David Turner
Jerry Black	Karen Hamblin	Tony McGrath	Gary Weber
Dave Chapman	Peter Hurley	John McPhee	John Williamson
Matt Dyer	Mark Kaye	Betty Robinson	
James Edgar.	Michelle Lane	Bob Russell	

Also thank you to the following members who made donations to RASC Halifax Centre in 2025:

Tim Doucette	Thomas Kelly	Ms. Yongmei Wang
Andrew Frank	John McPhee	Robert Warren
Karen Hamblin	Allan Murphy	
Anthony Hillman	Bob Russel	

Volunteers - there are a number of small projects coming up at St. Croix Observatory, and I will be looking for some volunteers to help. I will post the information on the Announce list, so keep an eye on your email 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.

# Finding Exoplanets from Your Driveway

By Blair MacDonald

A friend and fellow Halifax RASC Centre member joined me on December 9, 2025 to see if we could observe a transit of HD189733b in front of its parent star. As this was the first attempt to observe the exoplanet transit, it was treated as a bit of an experiment. The first lesson, everything takes longer than expected so start early. Due to an alignment star being in the trees, it took longer to get the system aligned and the start of the transit was missed by several minutes!

Despite observing from a less than ideal urban location, the exoplanet transit was clearly detected meeting the experiment's primary goal. In addition, using the data collected, other aspects of HD 189733b were explored such as the existence of an atmosphere.

## The Star System

HD189733 is a 7.8 magnitude yellow-orange star in Vulpecula with a transiting exoplanet known as HD189733b, approximately 63 light years from Earth.

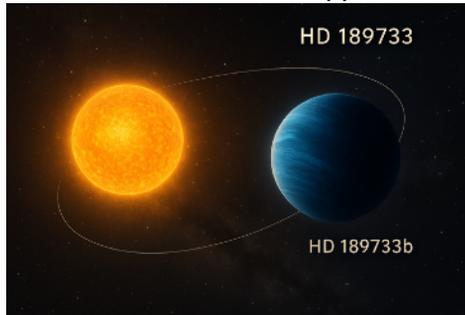


Figure 1 - Graphical representation of the HD189733 system.

The brightness of the star, and the relatively large mid-transit dip, puts it within the range of the equipment used.

## Equipment



Figure 3 - DEO set up at a dark sky site

HD189733b is a hot Jupiter type gas giant and orbits approximately 4.6 million km from its star. It completes one orbit every 2.2 days and the light curve dips about 2% at mid transit. The star is in the centre of the image below, with M27 to the right. The field is 1.5 degrees by 1 degree.

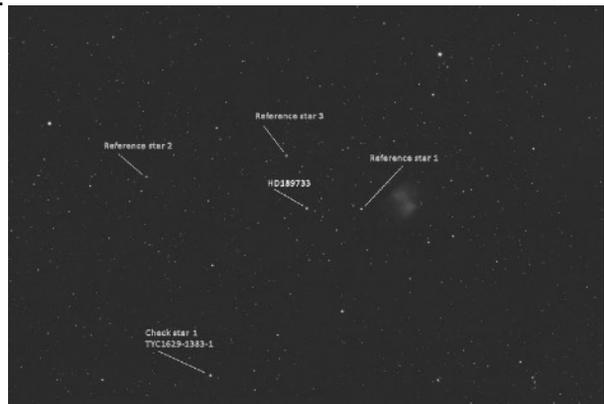


Figure 2 - The field surrounding HD189733 showing the location of the star relative to M27 as well as the locations of the reference stars and a star used to check for systematic errors.

The equipment used for the observation consisted of a Zwo ASI2600MC Pro colour camera coupled to a SkyWatcher Esprit 120 telescope riding on a Celestron CGX-L mount. During the data acquisition, the system was guided by an Orion Star Shoot Autoguider (SSAG) coupled to a 400mm refractor. Since the equipment usually operates at the end of a driveway, either at home or the cottage, it has been named the Driveway's End Observatory (DEO).

The Zwo camera is a modern CMOS one shot colour (OSC) camera based on the Sony IMX-571 colour sensor and was cooled to  $-10^{\circ}$  C during data acquisition. It has very low dark current and uses a 16 bit analog to digital converter (ADC).

## Observing Site

All data was gathered under less than ideal conditions from an urban driveway in Bedford, Nova Scotia. Light pollution from street lights and bright urban Bortle 6 to 7 skies limit the photographic stellar brightness to about magnitude 17.



Figure 4 - Urban observing site where the data was captured. In addition to the lights shown in this picture there were Christmas lights as well. By the end of the observing session the target was setting between the two houses almost at the tree line.

The bright sky causes a lot of photon noise and an experiment was carried out about four weeks earlier to determine the longest exposure that could be used without saturating any stars in the frame. It was found that a 1.5 second exposure produced an output of about 28000 out of a maximum of 65535 for the target star. Care was taken in selecting the reference stars to avoid any saturation while keeping the signal to noise ratio as high as possible.

## Data Collection

Using the Swarthmore College exoplanet transit calculator, (Jensen E. L. N. 2013. Tapir: A Web Interface for Transit/Eclipse Observability, Astrophysics Source Code Library ascl:1306.007) transit times for December 9, 2025 were found with a favourable transit starting just before 6:30 PM AST.

Only 1 target matches your constraints (on name, V mag, depth, etc.). Searching for observable transits over 7.0 days...

Upcoming events for the next 5 days and the past 2 days from 12-09-2025; start/end given in timezone UTC.

Night starts/ends at nautical twilight.

Results shown for Other Site latitude = 44.71096, longitude = -63.68678930378416.

Column text indicates a part of the transit that is during daylight, or a transit at elevation less than the user-specified limit, or that the Moon is relatively full and close to the target.

Click on column headers to sort the table by that column. Click again to reverse the sorting order. To sub-sort, first click one column (e.g. the left-hand one to sort by right), then *shift-click* another column to sort further within the first category. For example, to sort by priority within a given night (when multiple nights are displayed), first click the "Local evening date" header, then *shift-click* the "Priority" header. The highlighted column shows the current sorting.

The buttons can be used to toggle the visibility of columns, and the column order can be rearranged by clicking and dragging the column header.

Search:  Show if visible transit % = baseline % > 0  V<sub>max</sub>:  Depth<sub>max</sub>:  ppt  Overlap:  as  Other Site

Local evening date	Name	V <sub>er</sub> Color mag	Start—Mid—End	Duration	RHD <sub>1205</sub> start mid end	Elev. at start, mid, end at hrs	% of transit (baseline) observable, Suggested obs. start, end	Az. at start, mid, end at hrs	HA at start, mid, end at hrs	RA & Dec (J2000)	Period (days)	Depth (ppt)	Comments
Tue. 2025-12-09: Nautical twilight 2025-12-09 21:44 — 2025-12-10 10:30 local time / 2025-12-09 21:44 — 2025-12-10 10:30 UTC													
Tue. 2025-12-09	HD 180731 b	5.7	21:22—22:22—23:17	1:49	11019.4302 11019.4081 11019.5060	50° 44° 34°		214° 259° 209°	+2.3 +3.4 +2.2	20 00:43.71 +22:42:35.19	2.22	24.9	Explanets from Sokoski et al. 2023.

Showing 1 of 1 entries  
Script took 1 second for 1 events.

Figure 5 - Output of the exoplanet transit calculator at <https://astro.swarthmore.edu/transits/>.

The data was collected then flats, darks, and flat darks were obtained after the transit was complete. During the transit, HD189733 descended between the two houses visible in Figure 4 ending up at the tree line by the end of the transit. This increasing air mass, the amount of Earth's atmosphere through which the starlight must pass, had an impact on the data quality, reducing the signal to noise (SNR) during observing run as shown.

### Data Reduction & Results

In all, 783 images were obtained and each image calibrated with darks, flats, and flat darks. Following de-Bayering, the colour images were split into red green and blue monochrome images. The photometry script in *PixInsight* was used to conduct aperture photometry on each image producing red and blue flux tables in comma separated variables (CSV) format. The table contains the timestamp of the image, the V and B magnitudes, as read from the Tycho2 catalog, the position, catalog number, and the measured ADC output for each star found in the image.

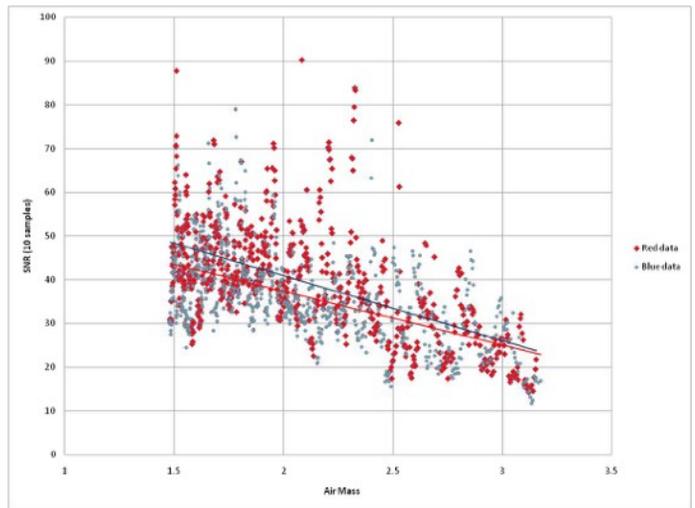


Figure 6 – HD189733 SNR versus air mass during the observation. The lowering SNR impacted the data during the later stages of the transit. The red data is simply the red channel of the OSC camera while the blue data is the blue channel.

As there was very little information on the red magnitude of the stars used in the data reduction, the R magnitude was estimated from the V and B values. A simple web search will turn up a host of mathematical formulae, all in the same form with different constants, and the formula used was chosen as it best fit the limited red data available on several stars in the image field. It should be noted that the accuracy of this empirical formula drops off as B-V becomes greater than 1.2.

Initial checks were carried out to validate the data and to look for any indication of the transit. The raw data, measured in ADC counts (simply the value of the ADC from 0 to 65535) from the camera, represent the values captured directly by the camera and extracted using the *PixInsight* photometry script. For those interested in more correct units, the camera gain was 0.25 e/ADU, its quantum efficiency is about 0.8 and each exposure was 1.5 seconds. The collected data clearly shows the effects of atmospheric extinction as the air mass was steadily climbing throughout observation causing the collected starlight to decrease in intensity during the data collection as shown in Figure 7.

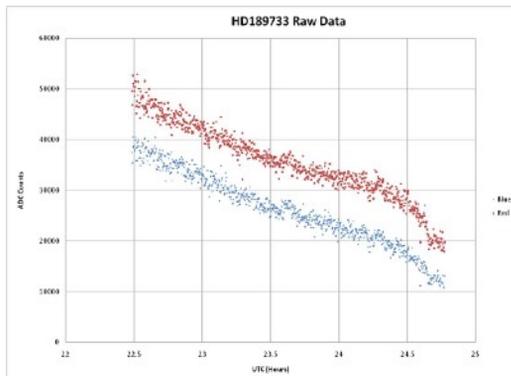
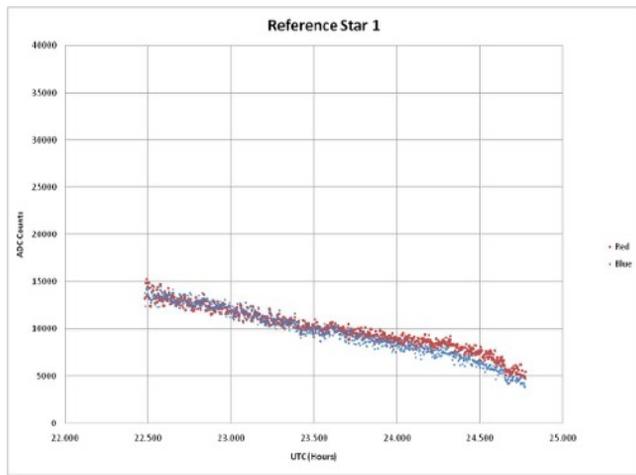


Figure 7 - Raw data from the target star collected during the observation. The downward slope is caused by atmospheric extinction.

These effects of atmospheric extinction could be corrected by applying the appropriate first order extinction corrections to the data; however, as differential photometry was used, the first order effects of loss due to extinction are cancelled out when the ADC value of the target star is divided by the ADC value of the reference star. The plot shown in Figure 8 shows the ADC counts received from the first reference star, note that it also shows a slope due to extinction effects.



Differential photometry was used to calculate the brightness of HD189733 by using three reference stars and averaging the results.

Figure 8 - Raw data from the first reference star collected during the observation. The downward slope is similar to that seen in Figure 7.

The moving average of the red channel differential data shows the transit ending around 00:20 UTC (the hour count was allowed to exceed 24 for purposes of the plotting program). The data also shows that the start of the transit was missed by a few minutes. The moving average filter, used to smooth the data in Figure 9, is less than optimal as it puts an n sample delay in the output, where n is the number of samples used in the moving average. The data was re-smoothed using an adaptive symmetric nearest neighbour linear least-squares fit algorithm that gives better smoothing with minimal delay. In addition, three estimates of the brightness, each using different reference stars were averaged to reduce the noise in the data resulting in the plot shown in Figure 10

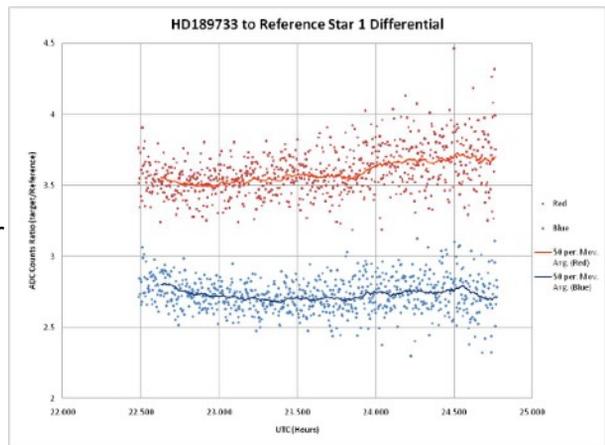


Figure 9 - Differential data easily showing the transit in the red channel.

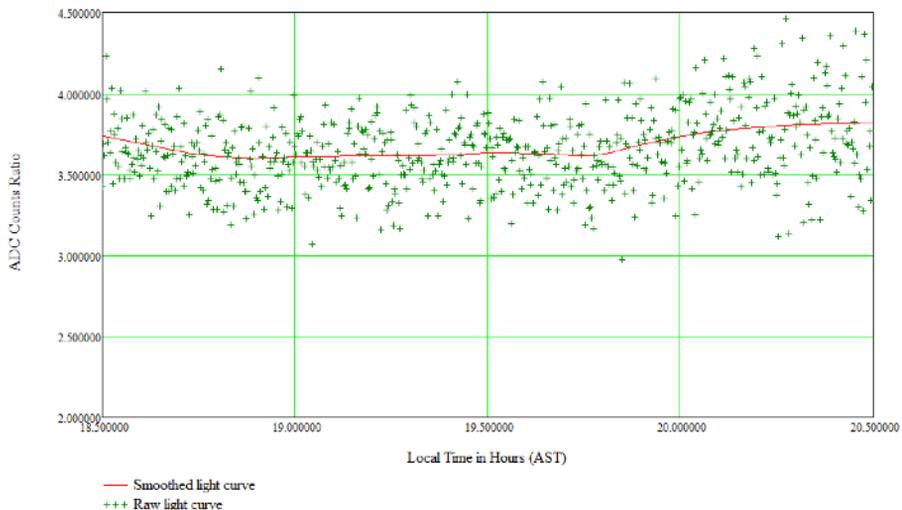


Figure 10 - Averaged data with an adaptive smoothing filter makes the transit clearly visible.

This approach is clearly superior to the simple moving average and is used for all smoothed data plots unless otherwise noted. With the data verified, and knowing that it contains the transit, the rest of the data reduction was carried out.

Atmospheric extinction affects blue stars more than red stars as noted in *The Cepheid impostor HD 18391 and its anonymous parent cluster* by **D.G. Turner, V.V. Kovtyukh, D.J. Majaess, D.J. Lane, and K.E. Moncrieff** published in *Astronomical Notes* in 2009. There are also differences caused by where the starlight falls within the bandpass of the colour filter. These effects are not corrected using differential techniques and need to be removed from the data. The second order extinction coefficients  $k_{sb}$  and  $k_{sbr}$ , were measured using the technique outlined in the *Workbook for Astronomical Photoelectric Photometry (ISBN 0-9628592-1-4)* and used to complete the correction for atmospheric extinction. Tracking a red and a blue star throughout the observing session and plotting the observed colour index against the colour index times the air mass allowed the calculation of the required coefficients to remove extinction effects. Note that the colour index coefficient is  $k_{sbr}$ , not  $k_{bv}$ , as the colour filters were not standard UBV filters. The filters were, in fact, the Bayer RGB filters of the Zwo OSC camera. Because of this, and because it was not necessary for the purpose of obtaining evidence of the transit, no effort was put toward transforming the data to a standard system, short of removing the extinction effects. The approximate combined QE and filter response of the Zwo camera is shown in Figure 11. Although not an exact match for proper photometric filters, it is not too far off.

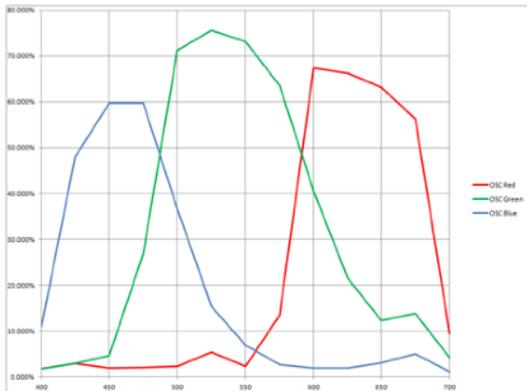


Figure 11 - Zwo camera colour filter response. This plot takes the quantum efficiency and the optical window of the camera into account.

After the coefficients were determined, the red and blue magnitudes of the target star were calculated and represent the corrected instrumental magnitudes as measured above the Earth’s atmosphere. Finally the data was converted back to a linear brightness and both the red and blue channels normalized to their respective maximums, then the plot of the transit was produced.

The data plotted in Figure 12 agrees well with measurements published by Gardner-Watkins et al. - *A Six Year, Low-resolution, Multibroadband Transit Photometry Study of HD 189733b* published in *The Astronomical Journal*, 165:5 (18pp), 2023 January

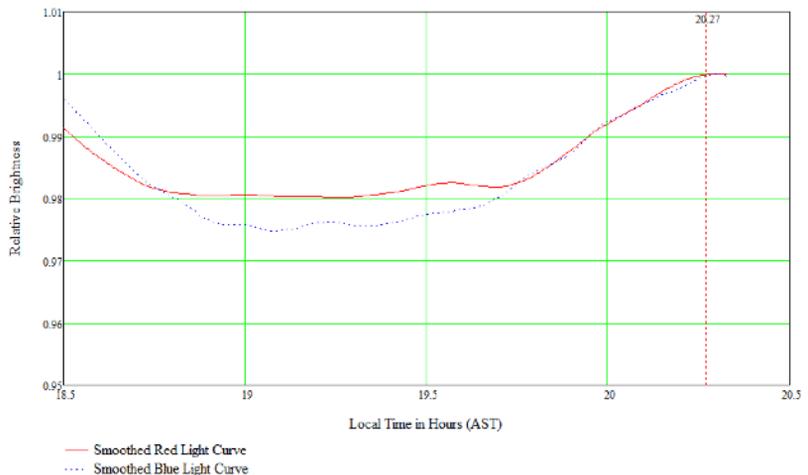


Figure 12 - Red and blue normalized light curves for HD189733 after correction for atmospheric extinction. The end of the transit is marked by the dashed red vertical line.

Table - DEO data compared to Gardner-Watkins Study

Colour	Gardner-Watkins	DEO Data
Red depth	0.025	0.020
Blue depth	0.028	0.024
$\Delta$ ( Blue- Red)	0.003	0.004

The authors would like to thank Dr. David Turner (RASC Halifax) for suggesting that corrections for atmospheric extinction be applied to the data. This substantially improved the agreement with the Gardner-Watkins results.

If a planet has an atmosphere Rayleigh scattering due to particulates in the clear upper layers attenuate blue light more than red. This is one of the key detectable indicators that an exoplanet has an atmosphere. Since the camera used is a one shot colour unit, red and blue light are captured simultaneously. This opens up an interesting possibility of using very broad band spectroscopy for planetary atmosphere detection. Examining the plots of Figure 12 shows this technique can be useful as there is clear evidence that blue light has been attenuated more than red, indicating that HD189733b does indeed have an atmosphere.

As a final check on the data, the same exercise was carried out on the check star shown in Figure 2 to see if it also showed any sign of the transit. If it did then there may have been a problem with the reference stars chosen, calling the transit detection into question. Figure 13 shows the check star light curve has a residual variation that does not match that of HD189733.

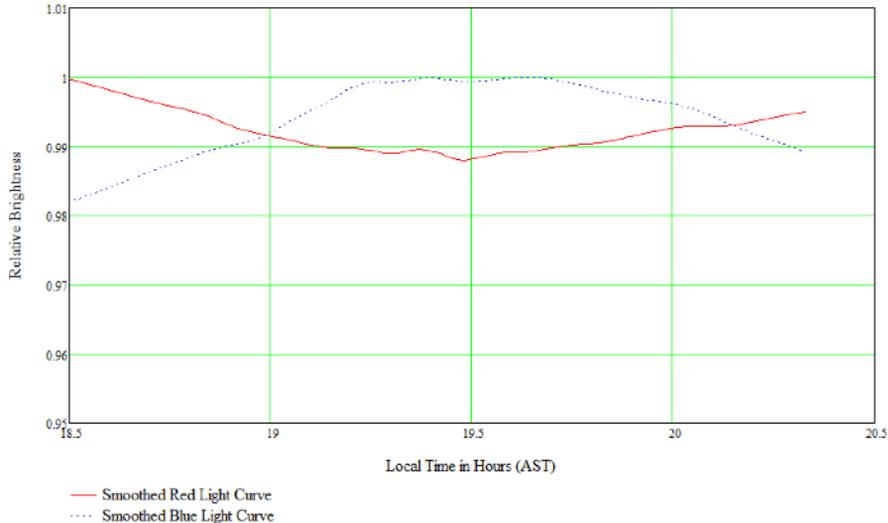


Figure 13 - Normalized light curves for the check star.

Using the end of transit (EOT) time, shown in Figure 12 and the barycentric Julian EOT time from Figure 5 it is possible to estimate the distance from Earth to the Sun on the date of the observation.

Figure 14 shows how the problem is set up.

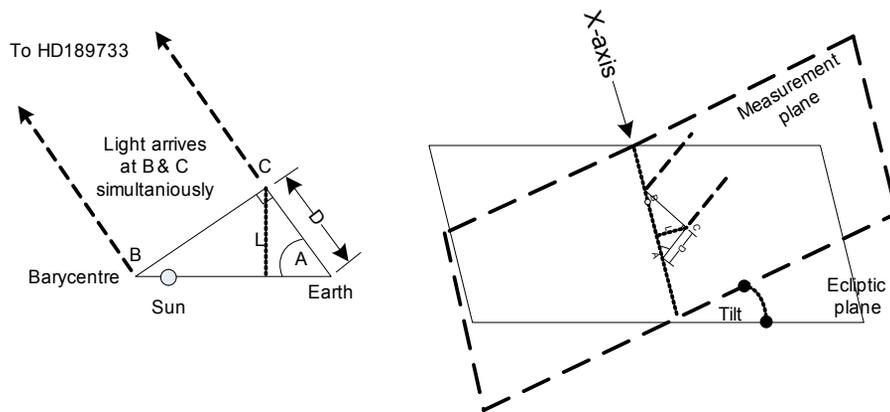


Figure 14 - Calculating the Earth-Sun distance.

The general idea is that the angle  $A$  and distance  $D$  can be used with some simple trig to calculate the Earth to barycentre distance. Since the barycentre lay beyond the Sun, as seen from Earth during December, the Sun to barycentre distance can be subtracted to give the Earth Sun distance.  $A'$ , the angle between the Sun and HD189733 as seen from the Earth, is measured along the equatorial plane, not the plane in which the distance  $D$  is measured. This angle is 43.42 degrees (*courtesy of the ECU planetarium program by the late Dr. David J. Lane*) and must first be projected on the ecliptic plane using simple spherical trig. The tilt of the ecliptic relative to the equatorial plane is 23.4393 degrees yielding an angle  $A' = 45.886$  degrees. Next, the plane of the distance measurement is defined with its X-axis being the Earth-Sun line on the ecliptic and tilted around the Earth-Sun line by the ecliptic latitude of HD189733 which is 42.175 degrees. This plane contains the Sun, the Earth, the barycentre and HD189733 and is the plane along which the transit timing is measured as it contains the direct light path from the star to the Earth. Figure 14 shows this arrangement, but the angle  $A'$  now needs to be projected from the ecliptic to this tilted measurement plane using the same approach as the projection from the equatorial plane, yielding a final angle  $A$  of 54.302 degrees. The distance,  $D$ , is calculated from the EOT time predicted at the barycentre, from Figure 5, and the measured EOT time as read from Figure 12. Taking the difference of these two times and multiplying by the speed of light in a vacuum yields the distance  $D = 89,637,944.94$  km. Applying some high school trigonometry to this using the projected angle gives the Earth to barycentre distance of 153,618,081 km. Finally the barycentre to Sun distance of 820,000 km is subtracted, as the barycentre was behind the Sun from the Earth's perspective, giving an Earth-Sun distance of 152,798,081 km. The actual Earth-Sun distance was found using the solar distance calculator (<https://dqydj.com/solar-distance-calculator/>) to be 147,338,091 km, an error of just 3.7%.

## Conclusions

An experiment was conducted to determine if it was possible to detect the transit of an exoplanet with a small telescope and a commercially available amateur CMOS camera from a very light polluted urban environment. Not only is it possible, but the data is of high enough quality to gain insight into the exoplanetary system. The transit timing measurement allows the estimation of the Earth Sun distance to a surprising accuracy of better than four percent. The measurement seems to be resistant to noise in the data even though the EOT time happens when the measurement SNR is at its lowest. Indeed the biggest source of error is likely the reading of the EOT time from Figure 12.

The detection of an exoplanet, the detection of an exoplanet atmosphere and a measurement of the Earth Sun separation, not bad for a five inch telescope under urban skies!

# SCO In The Snow

Local Photographer **Mark Davidson of NewTrailsOutThere Photography** shared this stunning recent photo of SCO in the Snow. Additionally, he has a video posted to his Facebook page which can be viewed [here](#).



## 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 2026 are below.

March	Fri, Mar 20, 2026
April	Fri, Apr 17, 2026
May	Fri, May 15, 2026
June	Fri, Jun 12, 2026
July	Fri, Jul 17, 2026
August	Fri, Aug 14, 2026
September	Fri, Sep 11, 2026
October	Fri, Oct 9, 2026
November	Fri, Nov 6, 2026
December	Fri, Dec 11, 2026

Check the email discussion list or our website ([halifax.rasc.ca](http://halifax.rasc.ca)) for changes in schedule.  
<https://halifax.rasc.ca/index.php/observing/observe-with-us>

# Moonscapes: Mare Orientale

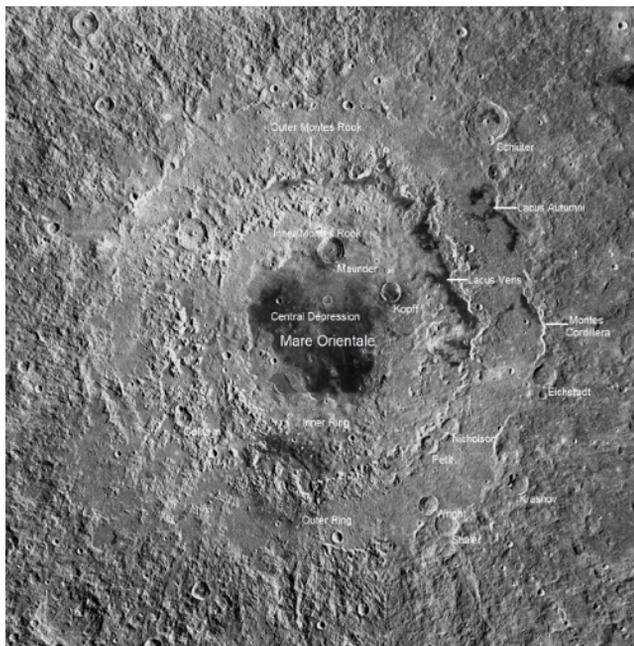
By David Hoskin

Have you ever observed or imaged Mare Orientale? Chances are that your answer to this question will be “No” if you are following RASC’s Explore the Universe or Explore the Moon observing programs. Even the RASC’s Isabel Williamson Lunar Observing Program, which lists 135 lunar features as required observations to complete the program, notes that Mare Orientale is an optional challenge feature.

Mare Orientale (“Eastern Sea”, circled area in the above image), most of which is on the lunar far side, straddles the southwestern limb of the Moon. However, Mare Orientale is visible to Earth-based observers anytime after the full moon when orbital effects cause the Moon to wobble (known as libration), bringing this spectacular lunar feature into an Earth-friendly position for a short period of time.



Interestingly, the “Eastern Sea” lies in the west because the mare was named early in the 20th century prior to adoption of the astronomical convention by the International Astronautical Union in 1961. Mare Orientale is the Moon’s youngest impact basin. It was created about 3.8 billion years ago by the impact of a large asteroid with an estimated 64-kilometre diameter and speed of 15 kilometres per second. The tremendous energy released by the impact caused partial liquification of the lunar crust, creating concentric waves of molten rock that spread outwards from the epicentre and later solidified in distinct rings of rugged terrain.



The photograph to the left, which was taken by Lunar Orbiter 4 in 1967, shows the unique bull’s-eye structure of Mare Orientale. The entire impact basin, which consists of a central depression and three nested, raised rings, spans about 930 kilometres. The Montes Cordillera mark the edge of the impact basin and border the lava-filled lowlands of the outer ring’s Lacus Autumni (Lake of Autumn). The rugged peaks of the Outer Montes Rook separate the outer ring from the inner ring and rise above the thin thread of darker basalt that is Lacus Veris (Lake of Spring). The rugged terrain that marks the Inner Montes Rook surrounds the central depression of the impact basin, which was later filled by lava. A roughly circular, 54-kilometres wide, impact crater, Maender, that is younger than the impact basin lies at the northern edge of the mare. Maender has terraced inner walls and a double central

peak that rises above the crater floor. The smaller Kopff crater is located southeast of Maender. In contrast to most other lunar impact basins, the Mare Orientale basin shows relatively little basaltic flooding, the probable depth of which is less than 1 kilometre. Limited flooding by lava following the impact event means that much of the basin structure remains visible. Like many other lunar seas, the centre of Mare Orientale contains a mascon (mass concentration/gravitational high) that was identified by lunar orbiter spacecraft in 1968.



The above image was captured by the author during the early morning hours of 6 June 2025, using a ZWO ASI290MM camera and Celestron 150mm f/5 Newtonian telescope. Lunar libration in longitude to the west on this date was  $-5.80^\circ$ , resulting in fair visibility of the western limb of the Moon. In this image, the structures of the mare are greatly foreshortened, with only short lengths of ring arcs being visible. Nevertheless, the dark basalt of Lacus Autumni and Lacus Veris is clearly apparent, with just a hint of the dark basalt in the mare's central depression. There will be an opportunity for an even better view of Mare Orientale on 9 June 2026. On this date, western lunar libration in longitude will be near its most extreme at  $-7.80^\circ$ . However, for Earth-bound observers to see the maximum extent of Mare Orientale, lunar libration to both the west (longitude) and south (latitude) must be at extreme values, which only occurs about every six years.

Mare Orientale is without doubt one of the one of the Moon's most spectacular geological features. The view of its vast multi-ringed impact basin would rival that of Tycho if it was more favorably placed for Earth-bound observers. In addition, its pristine structure provides scientists with invaluable insight into planetary impact processes. For avid moon-gazers, Mare Orientale is a challenging but worthwhile target to pursue.

### Sources

"How To See the Moon's Tricky Mare Orientale Region" by Pete Lawrence, *BBC Sky at Night Magazine* – December 28, 2023

"Mare Orientale" - *Wikipedia*, en.wikipedia.org

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

*Observer's Handbook*, RASC

"Set Your Sights on This Lunar Bull's-Eye" by Bob King, *Sky & Telescope* – January 19, 2022

*21st Century Atlas of the Moon* by Charles Wood & Maurice Collins, West Virginia University Press

# ...and here's the latest news!

**Judy Black**, here, Reporter and Secretary of the RASC Halifax Centre. Today, I am reporting some exciting news from somewhere outside of Halifax regarding our Centre's newsletter. Dear Readers, it is my hope that you will find the following of interest.

A few months ago, Michelle Lane gifted the late David Lane's collection of previous newsletter editions, including the full set of missing 1981 *Nova Notes*. Also included were editions of the previous Centre newsletter – *Galaxy* – that have been scanned and are now included in the RASC Halifax Centre website in the [Nova Notes Archive](#). They are a very interesting read! Thank you, Michelle, for sharing them. Electronic versions will also be forwarded to the RASC for inclusion on the national website.



To give you some background, the first edition of *Galaxy* was written by Editor Bert Allen in January 1960. The February 1960 edition was created by Editor W.F. Take and Associate Editor Bert Allen. The March 1960 *Galaxy* was cited as “the third edition of the 1959-1960 Society year but is not the first publication of a newsletter by the Society. That honour must go to those members associated with the society in 1954.” Was this during the time when our ‘Centre’ was known as the Nova Scotia Astronomical Society (NSAS)? In January 1955, NSAS became the Halifax Centre of the RASC. This reporter has not been able to find newsletters published between 1955 and 1960. Were there any, dear Reader? Given the timeframe, these may only be in the hands of those who collect them and not the hands of members of that time.

There is a gap in the *Galaxy* between the three 1962 issues and January 1964. An article in the latter edition stated there had not been a newsletter “for close to 4 years.... This month, it is hoped, the *Galaxy* will come to life once again. This first issue is intended only to start things rolling again. At present, it is unknown whether the publication will be monthly, as in the past, or bi-monthly.” Dear Readers, please notify this reporter if you know of any 1964 editions besides the one cited, or if any existed in 1965.

There was one issue of *Galaxy* in 1966 and nothing thereafter. I discovered our Centre was inactive 1967-1970 until Barry Matthews re-activated the Centre (refer to <https://halifax.rasc.ca/index.php/about-us/history-of-the-rasc-halifax-centre>). Among the 37 in attendance at its first meeting in September 1970 were Father Burke-Gaffney, David Levy, Roy Bishop and Sherman Williams. Recognize these names?

We have one edition of the ‘new’ publication *Nova Notes* from the year the Centre was revitalized – December 1970 Vol 1 No 2. The 1970 (month unknown, maybe October or November) Vol 1 No 1 is missing.

## .... and we observed where?

As astronomers, we are always looking for dark sites to look up. These early newsletter editions did provide some insight as to where our members gathered.

- It was announced in April 1960 and published in June 1960 the Centre was granted a 10-year lease by the provincial government on 1.3 acres of land at the south end of Long Pond on the Herring Cove Road. More details and a map of the grant can be found in [Galaxy](#). This reporter could not find any reference to observing at that site or what happened to the lease during the time the Centre was inactive (honestly, she didn't look).
- On August 1, 1960, there was “a very successful public viewing night at the “Horse Field”; one assumes it's the Wanderer's Grounds adjacent to the NS Museum of Science (as it was known then). More than 250 attended. It should be noted this was the only one of the very, very few public observing sessions cited that included a location.

### Did you know that back then....

- Member wedding announcements were made in 1960? This reporter knows of only one instance where an engagement was announced in a later edition of *Nova Notes*.
- In 1960, RASC Halifax Centre was “the only Centre east of Québec City thus was considered as representing the Atlantic Provinces as far as amateur astronomy was concerned”? Future newsletters showed maps of the Atlantic region indicating our Centre’s location and logo. It was also noted that Saint Mary’s University (SMU) under Father Burke-Gaffney taught only “basic astronomy”. This is certainly not the case now!
- In 1960, our Centre had groups for observing meteors & asteroids and for aurorae (even provided aurorae report forms in 1961)? These two groups reported regularly in the *Galaxy*. Fireball Reports was a common mini-article in the newsletters.
- It was noted numerous times that cloud and/or fog prevented observations of the above groups. After all these years, this reporter can safely say our readers report these observing challenges even now.
- The Centre even had a mirror grinding and telescope making group!
- There was a *Naked-Eye Sun-Spot Group* (of seven)! In 1961, the name of this group was changed to **Visual Eye Sunspot**. Note: There was never any mention of binoculars or other protective eyewear and, yes, the newsletter did use bold font to indicate the name change.
- For many years, the newsletter included members’ names and mailing addresses (and sometimes phone numbers). The RASC plus Provincial and Canadian privacy legislation now prevents this.
- In November 1961, it was announced the Halifax Centre had completed arrangements with the Halifax Mail-Star to publish monthly star maps? WOW!

### Did you know we report Society ‘firsts’?

- The June 2, 1961, statement from the RASC Editorial Committee was published in the [Galaxy \(July 1961\)](#) edition. The article cited the purpose of the Journal of the RASC (JRASC) and provided a statement of general policy regarding the JRASC they thought would be of interest to the RASC membership at large. The RASC has editions of the [Journal of the RASC](#) from 1998 forward on their site.
- The RASC started national observing programs in an effort to bring the different Centres in touch with each other and to centralize observation reports. Coordinators were selected for the different fields of work, with sections formed for comet and novae (1961) and for planets (1962). The [March-April-May Galaxy](#) even provided detailed information regarding discovery of a comet or nova, how to observe them and a copy of the RASC report form plus the same information for the planetary group. This reporter has not delved into the evolutionary tails tales of the comet-novae group nor the planetary group.

### Can you help find these?

If any of our Readers have any issues not already on our website, we would be happy to receive them – hard copy or scanned and sent via email. It would help us round out our knowledge of RASC Halifax Centre history.

#### .... **missing Novae (Nova Notes):**

- 1970: Vol 1 No 1

#### .... **missing Galaxies:**

- 1960: January, May (maybe)
- Any others you may have

That is all to report in this report for now, dear Reader. Should we find other RASC hysterical historical happenings, we shall bring them to your attention.

Reporting from just outside of Halifax, Judy out. Back to you, *Nova Notes* Editor.

# Members' Universe

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

### Red Eye Watching

We looked from the Cave  
The light rising, a brightening  
Red Eye watching.

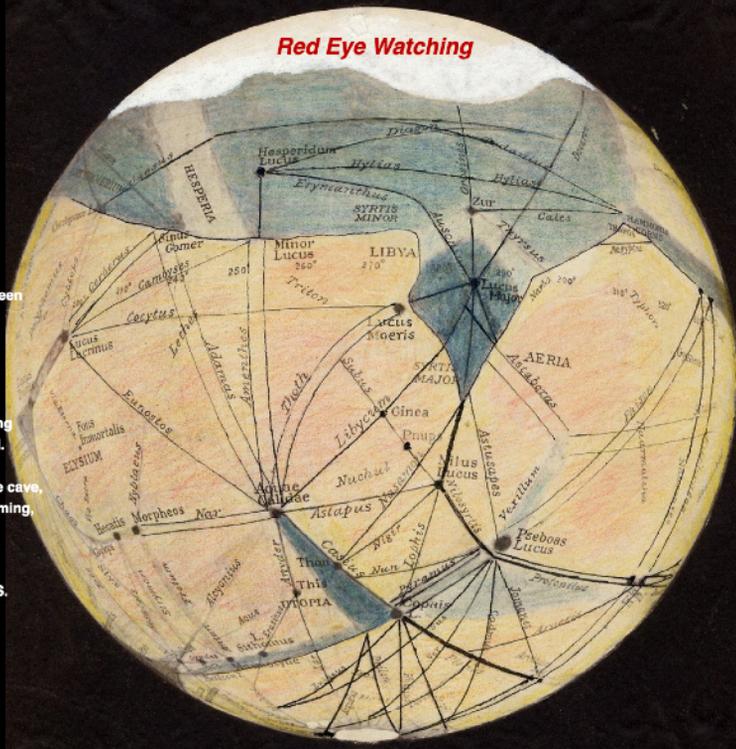
We gathered chariots, as  
Red Eye brightened  
The God of War watching.

With polished glass eyes  
The brightening light, markings seen  
A World revealed,  
A Red Eye watching.

An Expert with exacting care  
Within Red Eyes brightening,  
Sketched global, a pattern exacting  
Civilization beyond ours declared.

We remembered, looking from the cave,  
The bright light, brightening, dimming,  
brightening.

Stories grew from unease  
An ancient people holding on,  
A Red Eye Watching, watching US.



We wrote their story,  
Upon our pages, upon our minds  
With hope, with wonder, with unease.  
A civilization, anclant, wondrous, desperate.  
The Red Eye Watching.

We grew, the light brightening, dimming  
Grand plans, a copy of the stories sketched  
We grew through global trials, then sent a  
messenger.  
A hope of joining, of rising, of proving worth.

Desolation found, no watcher, no joining.  
But the Red Eye had served us well,  
From the cave we'd stepped,  
Beyond the Red Eye, we now were watching.

~ Paul Heath

### The Long Dance

It began,  
A thousand, million, billion, trillion  
Motes drifting upon the void.

The dance began,  
With slow spins, wide skirts outflung,  
Motes swept up till with speckled, glowing spun.

With dervish spins,  
The dancers swept across the void,  
Motes accrued, feeding lanterns brightening glow.

They spin in clusters and alone,  
Swiftly outflung across the void,  
Their skirts wide, sweeping motes, agelessly through time.

A subtle ever-changing dance,  
Slight touches of skirts, patterns realigned,  
Too close, arms entwined to solitary redness are slowed.

Large groups draw other dancers close,  
Loose pairings outflung, to spin alone,  
The motes amassed, as glistening gems on spinning skirts.

For Eons the dance, will be a dervish spin,  
Until the last mote, from the void is swept,  
Till the last spin, in fading redness slows,  
Until Times last quivered note has stilled

~ Paul Heath

# Members' Universe:

## Paul Heath Outreach Musings From Booker School

The drive on Thursday was not good but the time at Booker School in Port Williams was. There were 10 Grades 2/3 students with lots of great questions and enthusiastic participation in demonstrations: Does the Moon Rotate? / Walk to the Moon / Moon Crater Formation (including killing dinosaurs!) / Weight on Moon. The students fell within these parameters :



0.45 KIL



1.0 KIL



1.5 KIL



1.8 KIL



1.9 KIL



2.5 KIL



2.27 KIL



3.6 K



3.9 K



6.2 KIL



6.37 KIL

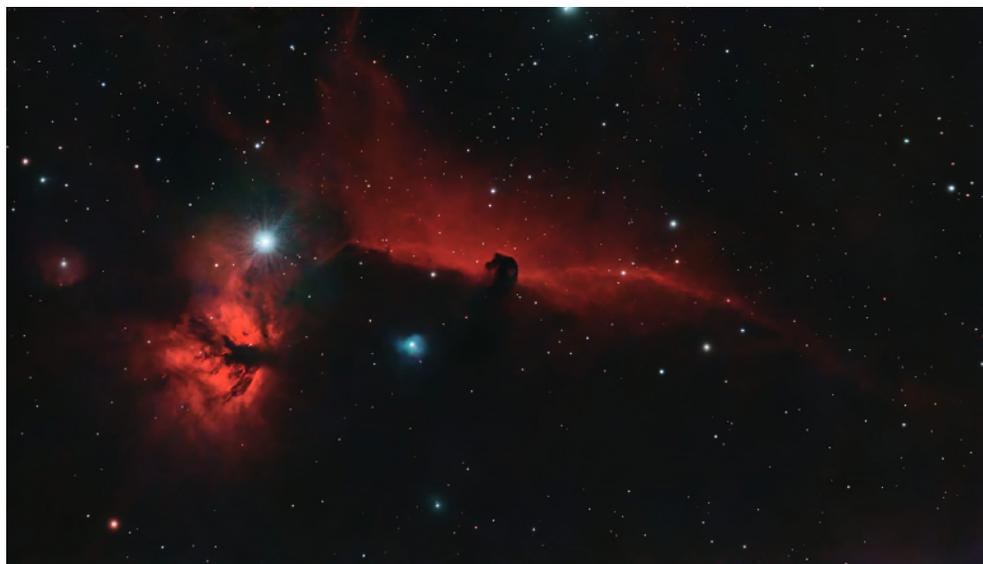
A group of 15 students in Grades 7/8 reviewed how astronomers measure the sky, looked at the solar system with models that showed planetary sizes to scale and indicated the Life Zone of the Sun and other stars. We also discussed dwarf planets, planetary systems and stellar systems (multiple stars). As well we defined the size of the solar system with the "Toilet Paper Solar System Demo," reviewed the history and future of the Sun, did a demonstration on the Sun's life cycle using scaled balloon models of star classifications (M, K, G, F, A, B and O) and reviewed stellar size, temperature and colour. We focused on stars in Orion, showed 3-D images of the constellation to relate and compare stellar type and spatial relationship, and demonstrated the conservation of angular momentum that helped form solar systems and galaxies.

Paul Heath

# Members' Universe:

## Jerry Black's SeeStar S30

**Jerry Black** continues to enjoy his new ZWO SeeStar S30 that he won as a door-prize in St. Andrews. He has been making some great captures!



The Horsehead Nebula (Barnard 33) and the Flame Nebula (NGC 2024)  
by **Jerry Black**

ZWO SeeStar S30 EQ mode [Focal length 150, Aperture 30 mm, f/5]

Total image time was 40 minutes after culling 1 hr of exposures.

Exposure  
240 x 10 sec

Click [here](#) for more info



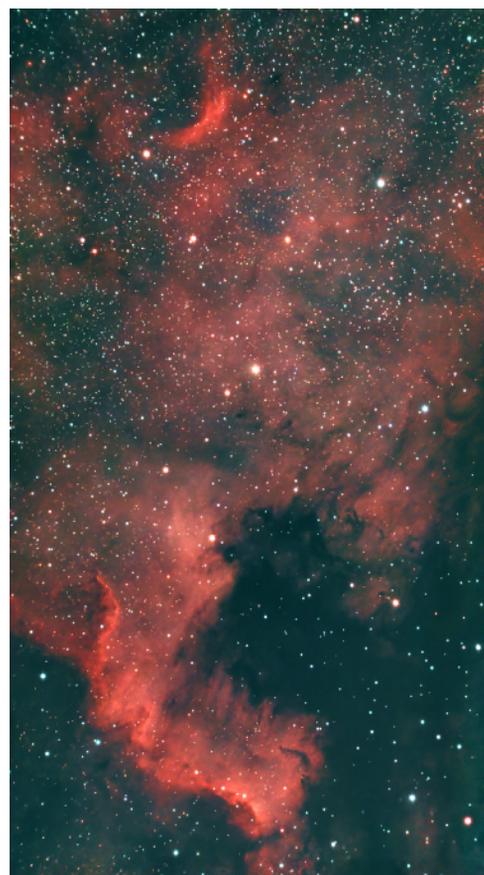
(Left) M42 Orion Nebula  
by **Jerry Black**  
187x10 sec subs  
= 31 min.  
Processed in PixInsight.

(Right) NGC 7000  
The North America Nebula  
by **Jerry Black**  
January 2, 2026  
Lower Sackville,  
Nova Scotia.

ZWO SeeStar S30 EQ mode [Focal length 150, Aperture 30 mm, f/5]

Total image time was 3.95 hours

More details [here](#)



# Members' Universe: David Hoskin's Universe



## **Filtered Sun (6 Feb 2026):**

Touptek ATR2600C camera with Baader Solar Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount

Best 200 frames stacked with AstroSurface, post-processing with Photoshop and Microsoft Photo.

Photo by **David Hoskin**



## **Waning gibbous Moon (6 Feb 2026):**

Touptek ATR2600C camera with Optolong L-Pro Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount

Best 175 frames stacked with AutoStakkert, post-processing with Photoshop and Microsoft Photo.

Photo by **David Hoskin**



## **Arcturus with Napoleon's Hat asterism:**

Touptek ATR2600C camera with Optolong L-Pro Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount

13 3-minute subs plus calibration frames stacked with DeepSkStacker, post-processing with Siril, Photoshop, and Microsoft Photo.

Photo by **David Hoskin**



## **Messier 44 – the Beehive Cluster in Cancer:**

Touptek ATR2600C camera with Optolong L-Pro Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount

16 3-minute subs plus calibration frames stacked with DeepSkStacker, post-processing with Siril, Photoshop, and Microsoft Photo.

Photo by **David Hoskin**



## **Messier 31 – the Andromeda Galaxy in Andromeda:**

Dwarf 2 smart telescope  
29 15-second subs plus dark frames stacked with the Dwarf 2, post-processing with Stellar Studio, Photoshop, and Microsoft Photo.

Photo by **David Hoskin**

# Members' Universe: David Hoskin's Universe



**Messier 48 open star cluster in Hydra:**  
Touptek ATR2600C camera with Optolong L-Pro Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount  
12 5-minute subs plus calibration frames stacked with DeepSkStacker, post-processing with Siril, Photoshop, and Microsoft Photo.  
Photo by **David Hoskin**

## **Messier 67 – the Golden Eye Cluster in Cancer:**

Dwarf 2 smart telescope  
76 15-second subs plus dark frames stacked with the Dwarf 2, post-processing with Stellar Studio, Photoshop, and Microsoft Photo.  
Photo by **David Hoskin**



## **NGC225 – the Sailboat Cluster in Cassiopeia:**

Touptek ATR2600C camera with Optolong L-Pro Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount  
42 4-minute subs plus calibration frames stacked with DeepSkStacker, post-processing with Siril, Photoshop, and Microsoft Photo. Photo by **David Hoskin**

## **NGC 4168 elliptical galaxy with SN2026acd (type Ia supernova) in Virgo:**

Touptek ATR2600C camera with Optolong L-Pro Filter, Orion ED80T-CF 80mm f/6 apo refractor, SkyWatcher EQ6R mount  
22 6-minute subs plus calibration frames stacked with DeepSkStacker, post-processing with Siril, Photoshop, and Microsoft Photo. Photo by **David Hoskin**



# PUZZLE CORNER – SPRING IS COMING

## WORD SEARCH

By Lisa Ann Fanning

Solution will be in the next edition of *Nova Notes*.

D	S	X	K	V	B	B	'	V	S	Y	Y	B	A	E
W	B	S	P	I	C	A	X	V	N	A	R	'	K	Z
'	P	J	W	I	Z	P	U	E	X	B	T	D	S	A
X	*	I	L	'	E	S	U	R	U	T	C	R	A	R
O	M	D	U	E	'	U	N	N	A	T	A	X	*	D
N	S	X	Q	Z	O	E	X	A	V	H	N	D	J	Y
I	'	C	L	A	V	I	*	L	N	Y	C	W	L	H
U	P	J	X	I	L	U	G	A	H	V	E	I	A	I
Q	G	W	H	V	S	U	L	U	G	E	R	*	'	O
E	N	E	S	E	*	F	S	L	R	J	Y	S	S	F
Y	E	O	T	C	I	T	P	I	L	C	E	L	P	X
B	O	O	Q	'	T	O	E	M	Q	B	*	H	R	'
O	O	O	G	U	V	I	R	G	O	Y	C	X	I	C
B	S	I	W	K	E	W	I	K	U	'	S	R	N	R
T	Z	R	O	J	A	M	A	S	R	U	T	I	G	O

Words to find:

- ARCTURUS
- BEEHIVE
- BOOTES
- CANCER
- ECLIPTIC
- EQUINOX
- HYDRA
- LEO
- REGULUS
- SIWKEWIKU'S
- SPICA
- SPRING
- URSA MAJOR
- VERNAL
- VIRGO

## Answers to Last Edition's Puzzle

A	B	K	M	N	O	O	O	O	_	R	S	T	Y		ASTRONOMY BOOK
A	D	E	_	E	E	H	R	T	W						DEW HEATER
D	E	G	_	H	I	L	R	T							RED LIGHT
C	E	E	E	L	O	P	S	T							TELESCOPE
A	D	E	E	E	G	_	H	L	O	S	T	V			HEATED GLOVES
B	C	I	I	N	O	P	R	S	S	T	U				SUBSCRIPTION
A	B	C	E	_	E	H	I	M	M	P	R	R	S	S	RASC MEMBERSHIP
A	C	C	F	H	_	I	M	O	R	Y					COMFY CHAIR
A	C	D	F	_	G	I	R	T							GIFT CARD
A	B	C	I	L	N	O	R	S	U						BINOCULARS
C	E	E	F	F	G	_	M	O	U						COFFEE MUG
A	C	K	M	_	O	R	S	S	W						WARM SOCKS

# January 10, 2026 RASC Halifax Centre Meeting:

(38 attendees)

To watch a replay of the meeting, please visit: [https://www.youtube.com/watch?v=uuNO\\_6-f1VU](https://www.youtube.com/watch?v=uuNO_6-f1VU) on the RASC Halifax YouTube Channel.

## Welcome - David Hoskin

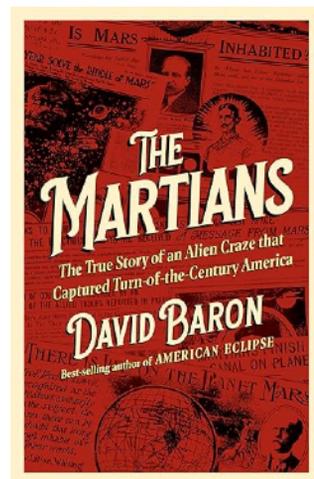
RASC Halifax Director, Observing / EPO Chair and program emcee David Hoskin welcomed everyone to the monthly meeting, shared the Indigenous Land Acknowledgement and read the Centre's inclusivity and diversity statement and reviewed the Agenda.

## David Hoskin - Photo Montage

David presented photographs from Centre members Jerry Black, Michael Boschat, Jeff Donaldson, Tim Doucette, David Hoskin, John McPhee and Kathy Walker.

## Special Guest - David Baron - *The Martians*

A mere century ago, Martians were thought to be real—not fictional—creatures. “Mars is inhabited by a highly civilized and intelligent race of beings,” proclaimed Alexander Graham Bell after astronomers discovered what looked like irrigation canals on the red planet. When Nikola Tesla, in 1899, detected radio signals believed to have come from Mars, an all-out craze swept society. Best-selling author David Baron spent seven years investigating this strange case of mass delusion. In his fast-paced, highly illustrated talk—filled with period photographs and depictions of the putative Martians themselves—he reveals what the episode says about the human mind: the fallibility of our senses, the power of belief, and the lure of sensationalism. It is a tale both cautionary and uplifting. Although the Martians never were real, the excitement about them was genuine and world-changing, for it sparked a new genre called science fiction and helped launch us into space—toward Mars.



David Baron, an award-winning journalist and broadcaster, is author of *The Martians: The True Story of an Alien Craze that Captured Turn-of-the-Century America* that has been named a “Top Read of 2025” by Science News and a “Must-Read Book of 2025” by TIME. A former science correspondent for NPR and Chair in Astrobiology at the Library of Congress, he has written for the New York Times, Wall Street Journal, Washington Post, and other outlets.

## Paul Heath - Food for the Soul - *Red Eye Watching*

Paul presented his latest poem, *Red Eye Watching*, which can be read on page 17 of this edition of Nova Notes. His poems are based on the topic of the day - this one was based on Mars, and our need for the search for life on other planets.

## David Hoskin - Upcoming Outreach Opportunities

Annual Urban Star Party at Atlantic Photo Supply on Monday February 23 (rain date February 24) it will begin around 7PM.

Stargazing event with the Cobequid Young Naturalists Club at Parrsboro on February 15 at Glooscap Park starting at 6:30 PM.

If you would like to help out, please contact David Hoskin.

## News from the Board presented by Tony McGrath, President of RASC Halifax Centre

- Tony is completing his second year as President, and has been reflecting on how things are going.
  - The Halifax Centre is steady, but static, with many of the same people who continue to volunteer. There is a lot of continuity and experience, but new volunteers are encouraged to come forward. Tony would like to encourage everyone to feel like Halifax Centre belongs to all of us.
  - There are opportunities to get involved with:
    - Small, specific roles - one-time opportunities
    - Leadership shadowing - Board, outreach
    - Member-led projects - observing night, workshop, outreach
- The SCOPE Fund fundraiser was completed with over \$20,000 raised. Thank you to Michelle Lane and Tony Schellinck for matching funds.
- Astrophoto Sale in support of SCOPE, the Halifax RASC has Astro Images for sale through Atlantic Photo Supply with shipping or pickup at Atlantic Photo in Burnside. 8x12" or 16x24" prints may be ordered. Images may be viewed and ordered through [this link](#).

## More News from the Board presented by Judy Black, Secretary of RASC Halifax Centre

- The November / December edition of *Nova Notes* is posted featuring the Aurora (an article by Tiffany Fields and photos by centre members,) a feature on Mare Tranquillitatis by David Hoskin and poetry by two poets (Paul Heath and MaryLou Whitehorne) and more!
- The Deadline for the January / February edition is February 15, 2026. Email content to [novanoteseditor@halifax.rasc.ca](mailto:novanoteseditor@halifax.rasc.ca)
- Dark-Sky Weekend is coming up August 7-9, 2026 at Kejimikujik NP & National Historic Site. Note, camping bookings open February 11th. If you would like to volunteer, contact Peter Hurley, Vice President.
- Nova East Star Party is August 14-16 at Smileys Provincial Park. Suggestions for sessions are welcome, please reach out to Judy Black, Secretary.
- Reminder of Public Outreach opportunity at Atlantic Photo Supply - contact David Hoskin for details or to volunteer.
- Introductory Stellarium Training - Allan McCue will be leading the session on Tuesday March 10, 2026 at 7PM Atlantic / 7:30 PM NL. Registration information will be sent via email.
- Reminder: RASC Awards deadline for submission for 2027 is December 31, 2026. Visit <https://rasc.ca/rasc-awards> for more information.
- Don't forget to review the available Observing and Astroimaging certificate programs as well.
- Information for Observing Programs can be found at <https://rasc.ca/certificate-programs> and for information on the Astroimaging Certificate, visit <https://rasc.ca/astro-imaging-certificate>.
- Governance:
  - RASC Halifax Centre Board of Directors meeting - February 3, 2026
  - RASC National Council meeting February 22, 2026

- The next member and public meetings:
  - February 7, 2026 featuring Devin Williams - Building Galaxy Outskirts: The Role of Galaxy Mergers and Cosmic Environment.
    - Also, a donor has donated a telescope to be raffled off at the next meeting. Winner must be present at the meeting. An email will be sent with details.
  - March 7 - Blair MacDonald will present *Summertime Photography*
  - April 11 - *Members' Presentations*
  - 2026 Public Meeting dates are on the homepage - Mark your calendar!

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

David reviewed highlights of the January sky. The days are getting longer but there is still a lot of darkness (almost 12 hours through this month.)

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), meteor showers and deep sky objects.

Each month, you can find David's presentations on the homepage at <http://halifax.rasc.ca>.

## February 7, 2026 RASC Halifax Centre Meeting:

(44 attendees)

To watch a replay of the meeting, please visit: <https://www.youtube.com/watch?v=wPUMbGfZCfY> 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 and reviewed the Agenda.

### David Hoskin - Photo Montage

David presented photographs from Centre members Jerry Black, Michael Boschat, Barry Burgess, Paul Gray, David Hoskin and Norman Schneiderman

### Special Guest - Devin Williams - "*Building Galaxy Outskirts: The Role of Galaxy Mergers and Cosmic Environment*"

Galaxies do not grow exclusively in isolation. Interactions with neighboring galaxies or dense intergalactic gas can alter a galaxy's population of stars and overall shape. Understanding how this externally driven evolution varies over cosmic history and across different environments is essential for connecting galaxy evolution to the universe's large-scale structure. One powerful tracer of environmental influence is a galaxy's stellar halo—a faint, extended cloud of stars and gas surrounding a galaxy. Models suggest that stellar haloes may grow primarily from stars added through galaxy mergers, and observations studying their buildup across large galaxy populations can reveal how environmental interactions shape galaxy evolution.



Devin Williams delivers his talk "*Building Galaxy Outskirts: The Role of Galaxy Mergers and Cosmic Environment*"  
Photo by **David Chapman**

In this talk, Williams presents results on the evolution of galaxy stellar haloes over ~6 billion years, based on hundreds of thousands of galaxies ranging from the most massive to one-tenth of the Milky Way's mass. Deep imaging from the CLAUDS survey on CFHT and the HSC-SSP survey on the Subaru Telescope enables the detection of faint stellar halo emission down to less than 0.05% of the night sky's brightness. Williams demonstrates how stellar halo growth depends on galaxy mass, cosmic time, and whether a galaxy is actively forming stars, revealing the relative contributions of stars formed inside galaxies versus those acquired from others. He also examines whether galaxy cluster environments—the densest regions in the universe— promote stellar halo growth through more frequent galaxy interactions, or suppress it through harsh environmental conditions.

Devin J. Williams is a PhD candidate in astronomy at Saint Mary's University, working under Dr. Ivana Damjanov and Dr. Marcin Sawicki in the Department of Astronomy & Physics. He earned his MSc in Astronomy in 2023 and his BSc in Astrophysics in 2021, both from SMU. His research uses deep imaging from large-area ground-based surveys to study the physical processes driving galaxy evolution over cosmic time. In addition to his research, he works as a telescope operator and tour guide at the Burke-Gaffney Observatory in Halifax, Canada.

### **Update on the SCOPE Fund - Tony McGrath and Michelle Lane**

Tony provided an update on the conclusion of the fundraising efforts that wrapped up with year-end. With that, Michelle Lane presented her matching contribution of \$5,000 that was donated. Tony Schellinck's generous contribution of \$5,000 was acknowledged. This brings the total to around \$25,000 raised. She acknowledged the opportunity to grow the fund even more with the astrophoto sale led by Blair MacDonald and Jerry Black, with the partnership of Atlantic Photo.



Michelle Lane presents a check for \$5,000, her matched pledge for the SCOPE Fundraiser. Photo by **David Chapman**

Michelle shared a few words about Dave Lane's feelings for the importance of SCO.

She shared a certificate that she found in Dave's office that he was awarded as a "Galactic Supporter" for his contribution for a fundraiser to build St. Croix Observatory back in February, 1997.

Michelle offered to come back to the Centre to talk about efforts to continue support in recognition of the fifth anniversary of Dave's passing.

She also gave an update on the Star Finder program at SMU to continue outreach and education. A book was compiled with lesson plans to facilitate teaching astronomy. She acknowledged Ben O'Toole who is a teacher at Parkview Education (where Dave was inspired to further pursue astronomy) and has relaunched the Astronomy Club and is fundraising to build an observatory. Tiffany Fields was acknowledged for her work on the Starfinder program as well.

### **Paul Heath - Food for the Soul - *The Long Dance***

Paul presented his latest poem, *The Long Dance*, which can be read on page 17 of this edition of Nova Notes. His poems are based on the topic of the day.

### **David Hoskin - Upcoming Outreach Opportunities**

Annual Urban Star Party at Atlantic Photo Supply (Burnside) on Monday, February 23 (rain date February 24) it will begin around 7 p.m.

Stargazing event with the Cobequid Young Naturalists Club at Parrsboro on February 15 at Glooscap Park starting at 6:30 PM.

If you would like to help out, please contact David Hoskin.

### **News from the Board presented by Tony McGrath, President of RASC Halifax Centre**

- Tony opened his segment with a “special announcement.” He announced Judy Black as winner of the Society’s Service Award. The Service Award is a major award presented in recognition of outstanding service delivered to the Society over an extended period. Judy was recognized for her service over the past 12 years. Presentation of the award will occur at a future event.
- There is opportunity for everyone to get involved and learn more about roles in the centre:
  - There are opportunities to get involved with:
    - Small, specific roles - one-time opportunities
    - Leadership shadowing - Board, outreach
    - Member-led projects - observing night, workshop, outreach



Service Award winner, Judy Black and Tony McGrath, President Photo by **David Chapman**

- SCOPE Fund - earlier, the check was presented by Michelle Lane matching \$5,000 in funds.
- Astrophoto Sale in support of the SCOPE Fund - Blair MacDonald talked about the sale in support of the SCOPE Fund.
  - The Halifax RASC Centre has Astro Images for sale through Atlantic Photo Supply with shipping or pickup at Atlantic Photo in Burnside. 8x12" or 16x24" prints may be ordered. Images may be viewed and ordered through [this link](#).

### **More News from the Board presented by Judy Black, Secretary of RASC Halifax Centre**

- The November / December edition of *Nova Notes* is posted featuring the Aurora, a feature on Mare Tranquillitatis by David Hoskin and poetry by two poets (Paul Heath and MaryLou Whitehorne) and more!
- The Deadline for the January / February edition is February 15, 2026. Email content to [novanoteseditor@halifax.rasc.ca](mailto:novanoteseditor@halifax.rasc.ca)
- Dark-Sky Weekend is coming up August 7-9, 2026 at Kejimikujik NP & National Historic Site. Note, camping bookings open February 11th. If you would like to volunteer, contact Peter Hurley, Vice President.
- Nova East Star Party is August 14-16 at Smileys Provincial Park. Suggestions for sessions are welcome, please reach out to Judy Black, Secretary.
- Reminder of Public Outreach opportunity at Atlantic Photo Supply - contact David Hoskin for details or to volunteer.
- Introductory Stellarium Training - Allan McCue will be leading the session on Tuesday March 10, 2026 at 7PM Atlantic / 7:30 PM NL. Registration information will be sent via email.

- Reminder: RASC Awards deadline for submission for 2027 is December 31, 2026. Visit <https://rasc.ca/rasc-awards> for more information.
- Don't forget to review the available Observing and Astroimaging certificate programs as well. Information for Observing Programs can be found at <https://rasc.ca/certificate-programs> Information on the Astroimaging Certificate, visit <https://rasc.ca/astro-imaging-certificate>.
- Governance:
  - RASC Halifax Centre Board of Directors meeting - March 3, 2026
  - RASC National Council meeting February 22, 2026
- Save the Date for the RASC General Assembly - May 2 - 3, 2026. It will be virtual once again.
- The next member and public meetings:
  - March 7 - Blair MacDonald will present *Summertime Photography*
  - April 11 - *Members' Presentations*
    - Some ideas:
      - Solar observing - flares, sunspots, safety
      - Conjunctions
      - Your favorite image (equipment, processing)
      - One of the RASC observing certificates
      - Observing session report (neighbourhood, group of which you're a member, friends/family, etc.)
      - Travel - (Observatory outside of NS, Visited another RASC Centre or Astronomy Club, Visited another Star Party, Witnessed a space launch, Attended special lecture here or further afield)
      - Equipment (telescope challenges, "fixes", reviews, "how to")
      - Method of observing (Radio, Binocular, Infrared, Large or Small Telescope)
      - Reviews - Book Review, Magazine article(s), A chapter in the OH, Astroimage sequence (sunset, sunrise, aurora, occultations, etc.)
- The May 2 Public meeting is rescheduled to May 9 (due to the RASC GA)
- June 6 (tentative: Starfinder Program)
- September 12
- October 3
- November 7 - Finding Exoplanets (Blair MacDonald)
- December 5 (AGM)

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

David reviewed highlights of the February sky. The days are getting longer, though sunrise is getting earlier and sunset later. There is, however, still plenty of time for observing.

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), meteor showers and deep sky objects.

Each month, you can find David's presentations on the homepage at <http://halifax.rasc.ca>.

# 2025 Annual General Meeting (AGM) Reports

## 2025 Annual Report: President

### Membership

The membership in RASC Halifax has been stable throughout the year. Year over year membership has shown a slight decline from 146 members in October 2024 to 133 members in October 2025. It is difficult to understand exactly what is happening because of the way RASC national office categorizes membership. A member who does not renew their membership on time and renews late causes the statistics to show a decline in membership at one point and then an increase in membership when the renewal takes place when in reality nothing changed. Whether this decline in membership is real or just an artifact of the membership categories is impossible to tell.

### RASC Halifax Centre Plan

Two years ago, we surveyed the membership and developed a plan. Membership feedback on this plan was requested however none was received. Without membership feedback the Board of Directors is left guessing on what the priorities should be. One item which is clear is that our membership is not growing. Based on this reality the Board has prioritized attracting new members as the primary initiative for the upcoming year.

### RASC Halifax Laser Pointer Certificate Program

On behalf of all members of RASC Halifax Centre I would like to extend a big thank you to Peter Hurley and Dave Robertson for the work they have done on this program. It all culminated at Nova East this year where training was completed for all members who were interested. A total of 13 cards were issued at Nova East.

### SCO BBQ

With the lifting of the Woods Ban in Hants county on 18 September, we were fortunate to be able to hold our annual SCO BBQ on 26 September. Things came together on very short notice and the event was attended by a small but hardy group who enjoyed not only the output from BBQ chefs Chris Young and Peter Hurley and treats provided by Judy Black and Mary Lou Whitehorne but also some lovely dark skies. As is usually the case at SCO, there were both visual observers and imagers exploring dark skies with telescopes, cameras and binoculars. It was great to be back at SCO in the company of observers.

### Acknowledgements

Thank you to Pat Kelly for taking up the mantel of Honorary President of RASC Halifax Centre. Pat has a long and distinguished history with the RASC Halifax Centre as well as RASC's national organization. I am very happy to have Pat with us to offer guidance, perspective and counsel.

Respectfully Submitted,

Tony G. McGrath, President  
RASC Halifax Centre

<p><b>Board of Directors</b></p> <ul style="list-style-type: none"> <li>• President: Tony McGrath</li> <li>• Vice-President: Peter Hurley</li> <li>• Secretary: Judy Black</li> <li>• Treasurer: Gregg Dill</li> </ul>	<ul style="list-style-type: none"> <li>• Directors: Jeff Donaldson, Matthew Dyer, David Hoskin, David McMullin, Vincent Vallee</li> </ul>
<p><b>Appointed Positions</b></p> <ul style="list-style-type: none"> <li>• Honorary President: Mary Lou Whitehorne</li> <li>• Editor, Nova Notes: Lisa Ann Fanning</li> <li>• Copy Editor, Nova Notes: John McPhee</li> <li>• Communications: not filled</li> <li>• Governance Review Committee: Judy Black</li> </ul>	<ul style="list-style-type: none"> <li>• Editors, Nova Notes: Lisa Ann Fanning, John McPhee</li> <li>• National Council Representative: Judy Black</li> <li>• Observing Chair: David Hoskin</li> <li>• Education &amp; Public Outreach (EPO) Chair: David Hoskin</li> <li>• SCO Manager: Tony McGrath</li> <li>• Webmaster: Jerry Black</li> </ul>
<p><b>Auditor 2023-2024</b> Dave Chapman (appointed Dec. 7, 2024)</p>	<p><b>Nominating Committee</b></p> <ul style="list-style-type: none"> <li>• Board of Directors served in this role</li> </ul>
<p><b>Governance Review Committee</b></p> <ul style="list-style-type: none"> <li>• Chair: Judy Black</li> <li>• Members: Patrick Kelly, Gregg Dill</li> </ul>	<p><b>Nova East Planning Committee (NEPC)</b></p> <ul style="list-style-type: none"> <li>• Co-Leads: Chris Young, Judy Black</li> <li>• Members: Gregg Dill (Treasurer), Dave Chapman, Lisa Ann Fanning, Tony McGrath (Registrar), Jerry Black (webmaster)</li> </ul>
<p><b>Halifax Centre Astroimaging Contest</b> Adjudicators: Blair MacDonald</p>	<p><b>Website Maintenance &amp; Updates</b> SMU: Tiffany Fields RASC &amp; Nova East: Judy &amp; Jerry Black</p>
<p><b>Education &amp; Public Outreach (EPO) Committee</b></p> <ul style="list-style-type: none"> <li>• Chair: David Hoskin</li> </ul>	<p><b>Observing Committee</b></p> <ul style="list-style-type: none"> <li>• Chair: David Hoskin</li> </ul>
<p><b>Dark-Sky Preserve Committee</b></p> <ul style="list-style-type: none"> <li>• Co-Chairs: Peter Hurley, Tony Schellinck</li> <li>• Assisting Members: Judy &amp; Jerry Black, Gerry Brosky, Dave Chapman, Matt Dyer, Paul Gray, David Hoskin, Wayne Mansfield, Andrea Misner, Kevin Mogk, Daphne Thelemlis, Gary Weber, Chris Young</li> </ul>	<p><b>Nova Notes</b></p> <ul style="list-style-type: none"> <li>• Editor: Lisa Ann Fanning</li> <li>• Copy Editor: John McPhee</li> </ul>

## 2025 Annual Report: Vice-President

As Vice-President, my primary responsibility was to support the President and the Board, stepping in when necessary. I fulfilled this role by presenting Board updates at Members meetings during the President's absence. Our Board operates effectively, and my involvement was primarily focused on participating in Board and Centre activities.

I attended all Board and Members meetings and contributed to various committees, including serving as co-chair of the Dark-Sky Preserve Committee and participating in the Nominating Committee. Additionally, I collaborated with the Education and Public Outreach (EPO) Committee chair to plan and facilitate outreach events, such as those at the Halifax Discovery Centre, York Redoubt, and Harry Dewolf Park.

One ongoing objective is to revive the Centre Communication Committee and update the Centre Communication Plan, with the aim of improving member recruitment and retention.

I encourage members to become more engaged in Centre activities, share ideas, and participate in outreach events. Our observatory in St. Croix (SCO) offers excellent facilities and a welcoming community of observers. The site features a 16" Sky Watcher Dobsonian telescope and the Howard Celestron Edge HD 8" telescope for astroimaging.

The RASC Halifax Centre is a real gem; it shines because of its dedicated members.

Respectfully submitted,

Peter Hurley, Vice-President  
RASC Halifax Centre

## 2025 Annual Report: Secretary

The principal duty of the secretary is to provide minutes, agendas, and meeting announcements to the Board of Directors and members of the Centre. We were welcomed back at Saint Mary's University for another year and are grateful to SMU for their very significant support related to meetings and special speaker events held at their institution.

Meetings of the Board of Directors were held on the Tuesday evening preceding the Member / Public meeting. A total of 10 Board meetings were held in 2025 using the video conferencing application Zoom to conduct its meetings. No meetings were held in July or August. Board [meeting minutes](#) can be found on the Centre website.

Member's meetings were held on the first Saturday of the month from January to June and September to December. The Annual Centre BBQ at SCO was delayed to the end of September due to the extreme drought condition and the consequent province-wide woods ban. Meetings generally consisted of a welcome and introductions, a photo montage of astrophotography images posted by members during the preceding month presented by David Hoskin, a monthly installment of *Food for the Soul* by Paul Heath, *What's Up?* for the coming month presented by David Hoskin, *News from the Board*, a guest speaker, other news items and announcements, and discussion of upcoming Centre events. Presentations by our special guest speakers included:

- January: Charles Ennis, Sunshine Coast Centre (*World Asterism Project*)
- February: David Chapman (*Celestial Birds, their Lore and Wonder*)
- March: Robyn Foret, Calgary Centre, RASC Awards Chair (*RASC Awards*)
- April: Dr. David Turner (*The Indian Point Meteor Crater*)
- May: Blair MacDonald (*Black Holes*)
- June: Tony Schellinck (*Women in Astronomy*)
- September: David Hoskin (*All-in-one Smart Telescopes*)
- October: Dr. Sara Seager (*From the Lab to Space*)
- November: Patrick Kelly (*Telling Time in Scotland: from stones to sundials*)
- December: Paul Gray (*Starmus 2025*)

Members meetings were again "hybrid meetings" held in person in SMU AT101 and streamed simultaneously using the video conferencing application Zoom so that those choosing not to attend in-person or unable to travel from a remote location could participate.

Recordings of the Members meetings can be streamed from our [RASC Halifax Centre YouTube channel](#) and minutes can be found in [Nova Notes](#). Thanks to Jerry Black, Bob Russell and Peter Hurley for applying their skills in computer and audio-visual technology to make these hybrid meetings happen. Thanks to Lisa Ann Fanning and John McPhee for the meeting minutes.

Motions were made with a quorum of the Board of Directors to provide direction on policy, activities, support of the observatory at St. Croix, our budget, and definition of any spending not covered in the budget. Motions made this past year included:

- Approval of annual meeting dates and the 2025 AGM agenda
- Adjustments to reinvestment of the Centre's GICs, regular budget preparations for the Centre and for the Nova East Star Party
- Increase the funds donated to the Clear Sky Chart (CSC) to \$100.
- Increase the funds donated to the International Dark-Sky Association (IDA) to \$100.
- Approval of the following Halifax Centre appointments:
  - Honorary President: Patrick Kelly (January)
  - Vice-President: Peter Hurley (January)
  - NC Representative: Judy Black (January)
  - Auditor, 2024-2025: David Chapman (January)
  - EPO Chair: David Hoskin (January)
  - Governance Review Committee Chair: Judy Black (January)
  - Observing Chair: David Hoskin (January)
  - SCO Manager: Tony McGrath (January)
  - Dark-Sky Preserve (DSP) Committee: Co-Chairs Peter Hurley, Tony Schellinck (January)
  - *Nova Notes* Editors: Lisa Ann Fanning, John McPhee (January)
  - Webmaster: Jerry Black (January)
  - Communications Chair: Jeff Donaldson (February)
- Approval of the following newly developed Halifax Centre policies and recommendations:
  - G15: Policy Regarding Document Retention (April 29)
  - G16: Policy Regarding Education and Public Outreach (EPO) Events Personal Expense Reimbursement (September 30)
- Approval of modifications to policies and recommendations:
  - PD6: Position Description – National Council Representative (September 30)

No amendments to the RASC Halifax Centre By-Law No. 1 are recommended at this time. The [By-Law and all related policies](#) can be found on our website.

I had the honour of being Secretary previously in 2016-2019. This is the first year of my second term serving as Secretary of the Centre. I would like to thank the Board for being such a wonderful team to work with, and to thank them and Centre members for their support. It has been an honour working on your behalf as Secretary.

Stay safe. Stay curious. Starting at your feet, look up. The skies are open!

Respectively submitted,

Judy Black, Secretary  
RASC Halifax Centre

## **2024 Annual Report: RASC Halifax Auditor's Report (FY October 2024 – October 2025)**

### **Preamble**

This is my third year as auditor. I reiterate that I have no training in accounting or auditing beyond balancing my personal cheque book. What follows is more of a "reality check" on the RASC Halifax Treasurer's report to be presented in December at the 2025 AGM. I trust this fits the need.

## Statement

**I have reviewed the Treasurer's Report and find that it is a faithful account of the Centre's financial dealings in the time period.**

Luckily, I recalled enough of previous audits so that I was not starting "from scratch." There were no unusual circumstances to complicate the accounts. FY 24/25 was a "quieter" year. One new activity was the successful drive for donations to the SCOPE initiative to create an endowment to fund maintenance and improvements to the Centre's Saint Croix Observatory and associated inventory. I have encouraged the Treasurer to account for that independently of the usual Centre finances.

## Depreciation of Assets

The annual depreciation of assets is acceptable, based on previous practice, but I continue to be disappointed that there has been little progress on reviewing and freshly revaluing the assets. This is particularly important now that we have a plan and fund to manage the maintenance and update of SCO. My recommendations:

- The current Capital Equipment Depreciation document should be discontinued and archived.
- In spring 2026, a subcommittee consisting of the SCO Manager, the Treasurer, and other members should perform a fresh inventory and valuation of the assets. This would be the starting point for the 2026 Financial Report with no depreciation in 2026; in following years the depreciation rate should be 10%.
- Systems or items no longer in use or not expected to be used should be liquidated.
- The various SCO eyepiece collections should be consolidated and inventoried. Surplus eyepieces should be liquidated; the remainder should be stored properly at SCO for the use of members on site. Perhaps individual eyepieces should be identified as RASC-owned to prevent accidental disappearance.

Respectfully Submitted,

*DMF Chapman*

David M F Chapman, FRASC  
2025 November 30

## 2024 Annual Report: Treasurer

Royal Astronomical Society of Canada, Halifax Centre  
Comparative Income Statement  
Years Ending September 30, 2024 and September 30, 2025

	Years Ended September 30		Amount of Increase or (Decrease) during 2025
	2025	2024	
<b>Revenue</b>			
Membership Fees	\$3,241.41	\$3,463.88	(\$222.47)
Donations	\$817.29	\$704.00	\$113.29
Observatory Donations	\$275.00	\$140.00	\$135.00
Education & Outreach	\$75.00	\$0.00	\$75.00
Interest	\$483.58	\$449.81	\$33.77
Sales of Merchandise	\$475.00	\$1,325.00	(\$850.00)
Nova East (Net)	\$1,443.58	\$430.38	\$1,013.20
National Processing Fees (Income)	\$0.00	(\$12.87)	\$12.87
Miscellaneous	\$2.40	\$122.00	(\$119.60)
<b>Total Operating Revenue</b>	<b>\$6,813.26</b>	<b>\$6,622.20</b>	<b>\$191.06</b>
SCOPE Fund donations	\$19,320.00	\$0.00	\$19,320.00
<b>Total Revenue</b>	<b>\$26,133.26</b>	<b>\$6,622.20</b>	<b>\$19,511.06</b>
<b>Expenses</b>			
Meetings	\$266.98	\$411.51	(\$144.53)
Depreciation and write offs	\$860.34	\$951.18	(\$90.84)
Equipment and Supplies	\$0.00	\$0.00	\$0.00
Purchase of merchandise	\$321.79	\$675.73	(\$353.94)
Office Administration	\$511.56	\$329.33	\$182.23
Educational Activities	\$36.52	\$0.00	\$36.52
Insurance	\$1,321.00	\$1,966.00	(\$645.00)
Awards and Donations	\$200.00	\$120.00	\$80.00
National Office Processing	\$105.89	\$96.92	\$8.97
Operating Expenses SCO	\$126.69	\$30.15	\$96.54
Miscellaneous	\$62.30	\$70.00	(\$7.70)
<b>Total Expenses</b>	<b>\$3,813.07</b>	<b>\$4,650.82</b>	<b>(\$837.75)</b>
<b>Operational Surplus (Deficit)</b>	<b>\$3,000.19</b>	<b>\$1,971.38</b>	<b>\$1,028.81</b>
<b>Total Surplus (Deficit)</b>	<b>\$22,320.19</b>	<b>\$1,971.38</b>	<b>\$20,348.81</b>

Royal Astronomical Society of Canada, Halifax Centre  
Comparative Balance Sheet  
Years Ending September 30, 2024 and September 30, 2025

September 30, 2025 Activity to: September 30, 2025	Years Ended September 30		Amount of Increase or (Decrease) during 2025
	2025	2024	
<b>Assets</b>			
Cash	\$34,270.52	\$11,783.33	\$22,487.19
Investments	\$8,000.00	\$8,000.00	\$0.00
Accounts Receivable	\$361.69	\$485.97	(\$124.28)
Library Estimated	\$1,113.18	\$1,147.61	(\$34.43)
Observatory Equipment	\$7,435.19	\$8,263.10	(\$827.91)
Miscellaneous Estimated	\$0.00	\$13.00	(\$13.00)
<b>Total Assets</b>	<b>\$51,180.58</b>	<b>\$29,693.01</b>	<b>\$21,487.57</b>
<b>Liabilities</b>			
Accounts Payable	\$160.87	\$1,013.33	(\$852.46)
<b>Capital</b>			
Nova East Working Equity	\$5,000.00	\$5,000.00	\$0.00
Common Equity	\$46,019.71	\$23,679.68	\$22,340.03
<b>Total Capital</b>	<b>\$51,019.71</b>	<b>\$28,679.68</b>	<b>\$22,340.03</b>
<b>Total Liabilities and Capital</b>	<b>\$51,180.58</b>	<b>\$29,693.01</b>	<b>\$21,487.57</b>

## 2025 Annual Report: National Council

National Council met six times in 2025 – February 9, April 13, June 8, September 7, October 19, and the upcoming December 7. In June 2025, I was re-elected as Chair of the National Council (NC).

As Chair, I thank my fellow officers, Charles Ennis (Vice-Chair) of the Sunshine Coast and Adriana Stone (NC Recorder) of Calgary Centre, for their support and dedication to ensure the National Council business goes forward.

National Council no longer meets in person in conjunction with the General Assembly; both are now held independent of each other via Zoom. In collaboration with my fellow National Council Representatives, we have worked on the following projects in 2025.

- The draft revisions to the *RASC Policy C11: National Council Terms of Reference* were approved by the NC in 2024. The RASC Board approved them and Policy C11 was approved at the 2025 RASC AGM.

### **Clarification of the National Council Role with the RASC**

The National Council and the RASC Board of Directors continue to work to improve the working relationship between them, and to continue strengthening the three pillars – communication, collaboration, and transparency. Financial updates, reports from national committees (especially the Education and Public Outreach (EPO) Committee) and concerns raised by Centre representatives have ensured a vibrant committee with positive decision making and outcomes.

### **Work with the RASC Board of Directors**

The RASC President (Michael Watson followed by Brendon Roy), Treasurer (Stuart Heggie followed by Michael Watson), RASC Executive Director (Jenna Hinds) and other Board members have attended meetings to provide guidance when needed and to update on Board activities for which they requested input.

The Board has 40 to 60 minutes of every 2-hour meeting to present the RASC financial statements and other updates (such as the *RASC Observer's Handbook* and the *RASC Observer's Calendar* publication and mailout timelines and challenges). NC Representatives asked questions and provided suggestions at the meeting and, after presenting the information to their Council/Board, were invited to provide further comments. It should be noted that thanks to an NC suggestion made last year, the financial statements are reviewed by the Board every month at their meetings. It should also be noted there will be no fee increase in the coming year.

### **Work with the RASC Committees & Task Forces**

Collaboration with Board committees and task teams continued into 2025. The need to reprint education/outreach materials was identified. Task Forces are being formed to address office space, to investigate membership management programs and to simplify the *RASC Policy Manual*. NC input and participation are ensured.

### **Centre Operations Manual (COM)**

The Centre Operations Manual (COM) was completed and published on the RASC website <https://rasc.ca/centreopsmanual>. It is a highly recommended read for all RASC Centre Council/Board members and serves as a guide for all Centres.

### **Laser Pointer Training**

Laser Pointer training was developed through the work of NC member Dennis Lyons (Winnipeg Centre) and Jenna Hinds with much input from fellow NC members. A training program comprising a PowerPoint slide deck, complementary print materials, course completion cards, and multiple choice exams had input from the NC in the course of the program development. A RASC Board member, Dennis Lyons, arranged for an updated letter of authorization from Transport Canada that allows us to run our laser pointer program.

### **2024/2025 Priorities**

Priorities for 2024/2025 were determined at the September meeting.

- Ongoing consultation with the RASC Board of Directors regarding the RASC financial position.
- Our three pillars are transparency, collaboration and communication. We want to make sure the

- mechanisms are in place for these to occur, especially communications with the Board. Improved communication mechanisms will be addressed and includes ongoing revision of the NC welcome package (when needed) and an improved communication strategy for the NC.
- RASC Committee consultation will continue.
- Other business would be prioritized as it arises.

Respectfully submitted,

Judy Black  
 NC Representative, RASC Halifax Centre  
 Chair, RASC National Council

## 2025 Annual Report: Dark-Sky Preserve Committee

Tony Schellinck and Peter Hurley served as co-chairs of the RASC Halifax Centre Dark-Sky Preserve (DSP) Committee in 2025. Activities involved interacting with Kejimikujik National Park staff, planning and delivery of the annual Kejimikujik Dark-Sky Weekend (DSW), reviewing activities within the Park that might impact the Park's Dark-Sky Preserve designation, preparing for and conducting a lighting audit of the Park, and corresponding with the RASC Light Pollution Abatement Committee and the RASC Dark-Sky Sites Program. Planning and scheduling of DSW events and other DSP activities were assisted by Judy Black, Jerry Black, Gerry Brosky, Dave Chapman, Matt Dyer, Paul Gray, David Hoskin, Wayne Mansfield, Andrea Misner, Kevin Mogk, Daphne Themelis, Gary Weber, and Chris Young. Not everyone was able to attend DSW this year but their assistance with planning was very much appreciated.

### Lighting Audit Activities

Tony and Peter conducted a lighting audit of the Park on October 1, 2025, and discussions of changes in lighting within the Park occurred in planning meetings and during the Dark-Sky Weekend. Some areas of concern were identified and will be discussed with Park staff. We concluded that lighting audits should be conducted earlier in the year; the Canteen at Merrymakedge, for example, was closed for the season and lighting that would normally be present had been turned off.

### Maintenance of Park Telescope

During DSW last year when we borrowed the Park's 10" Sky-Watcher Synscan Dobsonian telescope, it was discovered that there were a number of issues with the function of the telescope. Dave Chapman and Chris Young took the telescope back to Dartmouth with them and worked on the telescope over the winter to fix both physical and electrical problems with the telescope. In the spring, the telescope was delivered back to Park staff. Instructions were included outlining better maintenance and care of the telescope and about aligning the finder scope. There was a call from the Park in early July for assistance with the Park telescope. Tony traveled to the Park to check out the telescope and to meet with the Park Interpreters who conduct the evening sky programs. The telescope was in good condition and operating fine; Tony discussed with the interpreters how to plan evening programs and stayed to participate in the program that evening.

### Partnering Agreement with Kejimikujik Park

A Partnering Agreement was signed in 2019 between Kejimikujik National Park and RASC Halifax Centre that formalized the working arrangement between the Park and our Centre with respect to the Kejimikujik Dark-Sky Preserve. The Agreement expires this year and we are working with the Park to renew this Agreement by year-end.

### Laser Pointer Training for Park Interpreters

The Park Interpreters often use laser pointers for their stargazing activities. It was unclear whether the Authorization that RASC had obtained from Transport Canada to use laser pointers up to 5mW could include Park staff, so we worked with Park staff to obtain an Authorization from Transport Canada specifically for their staff.

### August 15 – 17, 2025: 16th Annual Dark Sky Weekend

This year presented us with a waning gibbous Moon that rose at 11:18pm on Friday evening and 11:57pm on Saturday. On Friday evening, the sky was clear and the seeing was exceptional and an SQM reading of 21.6 was measured in the Sky Circle field. The seeing wasn't as good Saturday evening but an SQM reading of 21.2 was measured. It began to cloud over on Sunday afternoon and the forecast was for 100% chance of rain starting early in the evening with a chance of thundershowers. As a result, the decision was made Sunday afternoon to cancel the evening program.

With the peak of the Perseid meteor shower on August 12, many meteors were spotted throughout the programs on Friday and Saturday evenings to thrill the audiences. Saturn rose shortly after 10pm and cleared the trees before we finished for the evening.

Because we were using laser pointers for the evening programs this year, we had spotters when a laser pointer was in use. There was a presentation by Chris Young at the beginning of the program each night about the regulation of laser pointers in Canada and the reasons for the regulations. He explained that we would be using laser pointers under an Authorization from Transport Canada and that we had been trained to use them safely. He also explained about our use of spotters.

- **Friday, August 15**

10:00 pm – 10:30 pm (Sky Circle): Park interpreters Alex Balkam and Jonathan Riley presented the *Muin and The Seven Bird Hunters* story in a new and truly imaginative and participatory performance that involved children from the audience carrying glow-in-the-dark painted cardboard props around the Sky Circle. The introduction was in English, French and Mi'kmaq and the narration of the story was in English and Mi'kmaq. The program was similar to last year and was an amazing experience.

Afterward Chris Young introduced the evening RASC program and explained to the audience that we would be using laser pointers under an Authorization from Transport Canada. He also explained about our use of spotters.

10:30 pm – midnight (Sky Circle field): Jerry Black, Judy Black, David Hoskin, Peter Hurley, Wayne Mansfield, Andrea Misner, Kevin Mogk, and John Read were in the field with a variety of telescopes. Tony Schellinck was at the binocular table and Chris Young was his laser pointer spotter. Tony's audience had listened to Chris' earlier introduction and helped Chris with his spotting duties, pointing out aircraft to him. Tony did two sessions and signed many *Ace Amateur Astronomer* certificates. There were a number of meteors spotted to the delight of our audience. It was a wonderful night, and we were all packed up by 12:30am.

- **Saturday, August 16**

1:00 pm – 4:00 pm (Merrymakedge Beach): The Park staff had set up our canopy for the Astronomy Drop-in closer to the Canteen this year and we all agreed that this location was better than the one used in previous years, providing more room for interaction with the public and closer to the telescopes on display. Wayne Mansfield, Jerry Black and Peter Hurley had set up telescopes for solar observing (Wayne's setup used projection method, Jerry and Peter used solar filters). Judy Black, David Hoskin, Andrea Misner, Kevin Mogk and Daphne Themelis staffed the Drop-in table. It was a great afternoon, and we interacted with approximately 100 people.

4:00 pm – 4:45 pm (Sky Circle field): *Walk the Solar System* with David Hoskin. David had a great turnout.

10:00 pm – 10:30 pm (Sky Circle): *Tour the Night Sky* with Chris Young who introduced the RASC to the audience and explained about the Park's Dark-Sky Preserve designation. He also explained about our use of laser pointers and spotters. Chris then conducted a tour of the night sky and provided sky lore associated with many of his targets. Peter Hurley spotted for Chris.

10:30 pm – midnight (Sky Circle field): Telescope & binocular observing. The same volunteers were involved as on Friday night. The seeing deteriorated over the evening and we were packed up by midnight.

- **Sunday, August 17**

1:00 pm – 4:00 pm (Merrymakedge Beach): *Astronomy Drop-in* table crewed by Judy, David, Andrea, Kevin and Daphne. Solar observing with Wayne, Jerry and Peter. Tony set up a second table and explained to visitors how to use binoculars. We agreed that this was a great addition to the Drop-in Table experience and a great complement to the Binocular table in the Sky Circle in the evening. There was further discussion about adding mini-workshops in the future.

4pm – 4:45pm (Sky Circle field): *Walk the Solar System* with David Hoskin. Turn-out wasn't great but it had started to cloud over.

9:30 pm – 10:00 pm (Sky Circle): We cancelled the evening program because rain and thunderstorms were forecast. Last year, when it clouded over for the evening program, we changed the program to Plan B and we still set up telescopes and talked about our telescopes; those of us that had a means to display astroimages talked about images and how they were captured. We were prepared to do this again this year, but the forecast of rain and thunderstorms resulted in the program being cancelled. There has been discussion about a Plan C for a similar situation with rain in the future. Stay tuned.

Despite the clouds and rain on Sunday, it was a very successful Dark-Sky weekend with great attendance.

The final attendance numbers tabulated with assistance from the Parks staff are listed below.

<b>Friday, August 15</b>	
Sky Circle	330
<b>Saturday, August 16</b>	
Astronomy Drop-in	100
Walk the Solar System	40
Sky Circle	300
<b>Sunday, August 17</b>	
Astronomy Drop-in	70
Walk the Solar System	5
Sky Circle	n/a
<b>Total</b>	<b>845</b>

We want to recognize the amazing work put in by Parks staff, particularly Vanessa Bastarache, in organizing this event on behalf of Parks Canada and the RASC Halifax Centre. This involved months of preparation and planning, numerous meetings, and lots of emails to make this happen as smoothly as it did. Other Parks Canada staff including Colleen Anderson, Ashley Moffat, Alex Balkam, Malaika Joudrey, Marlene LeBel, Jonathan Oickle, Jonathan Riley, Sam Shepard, and Nick Whynot also assisted, and we thank them all for their efforts on our behalf.

Thank you to all the RASC volunteers who made this happen. Twelve volunteers participated in the weekend. Their names are mentioned above and we apologize if we have forgotten anyone. We hope you enjoyed this weekend event and will consider participating again next year. And we encourage anyone else interested in participating in the 2026 Kejimikujik Dark-Sky Weekend to let us know.

Photographs and a time-lapse video (see below) were taken by Jerry Black. Here is a link to a video produced by Jerry Black to highlight the 2025 Kejimikujik Dark-Sky weekend.



Respectfully submitted,

Peter Hurley, DSP Committee Co-chair

Tony Schellinck, DSP Committee Co-chair

Link to time lapse video by Jerry Black:

<https://vimeo.com/1111651113?fl=pl&fe=sh>

Photo from 2025 Kejimikujik Dark-Sky Weekend by Jerry Black

## 2025 Annual Report: Education and Public Outreach (EPO)

2025 was an active year for education and public outreach by over 20 RASC Halifax Centre members.

Dark-Sky Weekend on August 15-17 at Kejimikujik National Park was a great success. Over 2 nights there were 630 registrants for Sky Circle events that included Night Sky Tour and Sky Lore presentations by Chris Young, guided binocular tours with Tony Schellinck, eyepiece observing, and electronically assisted astronomy that allowed registrants to view several celestial objects on a tablet screen. Sunday evening observing was cancelled due to poor weather. The Astronomy Drop-in sessions on Saturday and Sunday afternoon at Merrymakedge Beach engaged with a total of 175 interested individuals for each day. Unfortunately, *Walk the Solar System* on Saturday and Sunday afternoon attracted a total of 40 campers. Program delivery was provided by 12 volunteers from RASC Halifax Centre.

February 12: David Hoskin provided 9 students and staff at Halifax Independent School with eyepiece views of the full Moon and crescent phase of Venus using a small Cassegrain telescope.

February 19: Ten members of the Halifax Centre set up telescopes at Atlantic Photo Supply's Dartmouth location for an urban star party that attracted 40-50 members of the public who enjoyed eyepiece views that included Jupiter, Mars, and the Orion Nebula.

February 28: Peter Hurley and David Hoskin led 40 enthusiastic members of the Young Naturalists of Canada (mostly family groups) in an exploration of the night sky at York Redoubt. Attendees viewed the double star Mizar and Alcor, Venus, Jupiter and its Galilean moons, Orion Nebula, and open star clusters M45 and M41 through a 102mm refractor and enjoyed a colorful image of the Orion Nebula obtained with Peter's SeeStar S50.

April 4: Dave Chapman gave a presentation on stars and constellations at Every One Every Day! There was a small but enthusiastic audience, about 12 all told.

April 9: Pat Kelly presented to a group of 12 Sweets Corner Beavers, as well as leaders and several parents. Topics included distance in space, constellations and the path solar system objects take through the sky. The session concluded with telescope eyepiece views of the Moon and Jupiter.

April 11: Jeff Donaldson talked about lunar and solar eclipses, as well as the planets, with about 60 grade-6 students in Milford.

April 23: David Hoskin hosted a stargazing session at York Redoubt for 4 members of the Association of Dalhousie Retirees and Pensioners. Mars and several brighter stars were viewed through binoculars and telescopes between breaks in the cloud cover.

May 1: David Hoskin, Peter Hurley and Jerry Black used solar telescopes and a SeeStar S50 to show white light and hydrogen-alpha views of the Sun to Discovery Centre visitors. Many were surprised by the presence and size of several active sunspots.

May 3: At the Discovery Centre as part of International Astronomy Day, Jerry and Judy Black, Michael Boschat, Matt Dyer, Wayne Harasimovitch, David Hoskin, and Peter Hurley engaged with more than 100 visitors, many in family groups. Many astronomy-related questions were answered and RASC starfinders and Moon Gazer Guides were distributed.

May 28: Dave Chapman and David Hoskin talked about the Sun, its features, the effect of space weather on the Earth, and how to safely observe the Sun to about 50 students and 3 teachers at Woodlawn High School. Students were treated to white light and hydrogen-alpha views of the Sun, followed by a Q and A session.

July 14, 15, and 17: David Hoskin was a presenter at Space Camp held at Halifax Independent School. Walk the Solar System, solar observing, eclipses and phases of the Moon, starfinder use and constellations were among the activities involving 14 campers and 4 staff members.

July 26: Paul Heath used his solar telescope at his local church to provide 36 adults and 9 youth with views of the Sun. Attendees showed a lot of interest in the Sun and observing in general.

August 10: At the Discovery Centre as part of Space Day, David Hoskin and Lauren Westhaver engaged with more than 100 visitors, many in family groups, answering space-related questions and promoting the Halifax Centre.

Weekend of August 22-24: Nova East, held at Smiley's Provincial Park, allowed numerous campers to experience talks on astronomy and telescopes, as well as a binocular sky tour and eyepiece views of deep sky objects.

September 8: David Hoskin led a stargazing session for a group of 5 from Halifax Independent School. He used his 200mm SCT to provide this enthusiastic group with eyepiece views of M8, M13, M22, M31, the Double Cluster and Saturn.

September 15: David Hoskin used his 200mm SCT to show M8, M22, M31, the Double Cluster, and Saturn to a group of 20 enthusiastic grade 10-11 students and 5 adults from Bridgewater Education Centre. Star finders were distributed to the students and used in conjunction with stories from Greek myth.

September 27: Members of RASC Halifax Centre (Jerry Black, Dave Chapman, David Hoskin, Peter Hurley, Jeff Leger, Frank Logan, and Blair MacDonald) set up several telescopes near the boardwalk at Harry DeWolf Park in Bedford for a free urban star party. Between 40 and 50 passersby were treated to eyepiece and tablet views of the setting Moon, Saturn, the Eagle Nebula, and Andromeda Galaxy.

October 3: Rob and Lisa Fanning celebrated International Observe the Moon Night (InOMN) early with 34 participants, including 14 children, at Bayshore Waterfront Park (Port Monmouth, New Jersey). All were treated to views of the waxing gibbous Moon through the eyepiece of a spotting scope. Those that stayed late were able to view Saturn.

November: David Hoskin plans to host a solar observing session for Bridgewater Education Centre students and stargazing sessions for the Cobequid Young Naturalists of Canada and Bedford Beavers. No EPO events are planned for December at the time of submission.

Respectfully Submitted,



David Hoskin, EPO Chair  
RASC Halifax Centre

## 2025 Annual Report: Governance Review Committee

I would like to thank my fellow members on the Governance Review Committee, Patrick Kelly and Gregg Dill, for the work accomplished in the past year, and for the interesting discussions we had during our deliberations.

*PD6: Position Description (appointed) - RASC National Council Representative* was reviewed by the Committee based on concerns raised by the Board. Minor changes regarding term limits were proposed and approved on September 30, 2025.

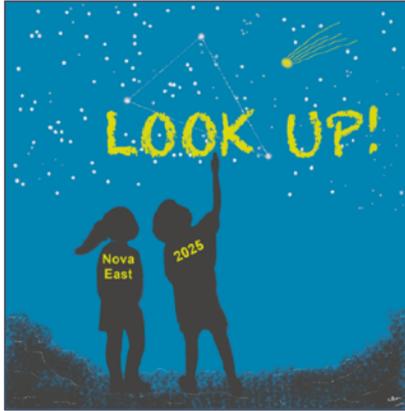
Two new policies were developed at the request of the Board.

- *G15: Policy Regarding Document Retention* was approved on April 29, 2025 This was a significant issue for some officers, especially the Treasurer, who had been given several large boxes with financial records, etc., extending back for many years. This policy relates to both current and future documents.
- *G16: Policy Regarding Education and Public Outreach (EPO) Events Personal Expense Reimbursement* was approved on September 30, 2025. It provides clarification regarding volunteer reimbursement.

The Committee determined no changes were required to our Centre By-Law No.1 at this time. The Governance Committee will continue to review all Halifax Centre policies and position descriptions annually and when situations dictate a change.

Respectfully Submitted,

Judy Black, Chair  
Governance Review Committee  
RASC Halifax Centre



### ***LOOK UP! - The Stars Belong to Everyone!***

was the theme for our star party held at Smileys Provincial Park during the weekend of August 22 to 24, 2025. This was the 37<sup>th</sup> Nova East Star Party (NE). The Theme *Look Up!* was chosen to capture the intent of our weekend to promote visual, binocular and telescope viewing.

Many thanks to Lisa Ann Fanning for the 2025 logo design for printing on the Nova East t-shirt, and to Gregg Dill for setting up the printing of the t-shirts at Pro Design Cresting Ltd. in Truro.

### **2025 NE Planning Team (NEPT):**

Members included The Team Co-Leads were Judy Black, Gary Weber, & Chris Young Members were Tony McGrath (Registrar), Gregg Dill (Treasurer), Lisa Ann Fanning (logo designer), David Chapman, Patrick Kelly, Vincent Vallee with valuable support from Jerry Black (website) and Paul Gray. Meetings were on Zoom over several planning meetings held in the spring and early summer. A wrap-up meeting will be held in October. The success of Nova East 2025 was because of the dedication, imagination and work done by each of the members during the planning and implementation phases of this event. Like the 2024 NE, the Team planned this event as an observing weekend and a social event. All activities and decisions considered for previous NE's were reviewed and updated.

### **Smileys Provincial Park**

Smileys was more than welcoming and permitted our use of the shelter even though it was an operating shop and storage area for the Park since the flood. They were very trusting giving us full access of the building and they parked their equipment outside for the duration of our stay. Many thanks to Mark Moore of Nova Scotia Parks and his staff who made us welcome and arranged access to the building. The building was well used each day for Registration, the Astronomers' Breakfast, presentations, the flea market and the "Red Light District" (aka astronomer lounge with red lights suspended to retain members' night vision).

### **Task Chart:**

The NE Task Charts of earlier years acted as a detailed guide for the Nova East Planning Team and provided the timeline and checklist for planning the event. This document was used throughout the planning process and revised as required. Many thanks to Judy Black for making our planning easy with her schedules, minutes and task lists from NE gone by! Much of the preparation for Nova East 2026 is already drafted.

The Team was able to carry on using their earlier work for Blomidon by rebranding it to Smileys, with many thanks to Jerry Black and Dave Chapman for their work on this. Insurance from the national RASC was in effect for the event.

### **Weather:**

The Friday was wonderfully clear and Saturday night started fair, got murky and then cleared after midnight. The *Look Up!* observing events occurred both nights although the southern sky was a challenge Saturday night until after midnight. Sunday night weather predicted cloudy skies and most members packed up Sunday with a few optimistic souls staying through to Monday. Overall the weather and seeing was considered good – especially if you stayed up late Saturday night!

### **Speakers and Events:**

The weekend events all proceeded as planned indoors and outdoors:

**Friday evening – Beginner Mini-Talks: Telescopes and Observing** - David Hoskin described the various types of telescopes commonly available and their mountings. Gerry Brosky described how the eye works in astronomical observing. Dave Chapman explained exit pupil and how it pertains to the observer's eye and eyepiece selection in field.

**Friday Night - Public Observing** - Using the Centre's *Nova East 2025 Observing and Imaging List*, a coordinated series of presentations was given:

- Presenters Gary Weber & Chris Young provided a tour of the constellations and stories associated with them. Individual stars and stellar objects were pointed out.
- This was followed by the Binocular Event where Tony Schellinck and Judy Black showed how to find the same targets in greater detail through binoculars.
- The Telescope Event (5 telescopes) showed those select items, seen previously at low power but now visible under high magnification. Telescope operators included Dave Chapman, Jerry Black, Kathy Walker, Karen Hamblin and Paul Gray.

**Dark Sky Observing / Imaging in the Field** took advantage of the excellent seeing conditions.

**Saturday Morning Family Activity: *Walk the Solar System***: Presenter David Hoskin was prepared to provide a tour through a Solar System model to scale in the observing field; this was unfortunately cancelled.

**Saturday Morning Workshop: *Laser Pointer Training*** was provided by trainer Peter Hurley. This training included the regulations and procedures on the safe legal use of laser pointers as an instruction tool by RASC presenters during outreach events. Participants receive a Certificate of Laser Pointer Use that meets the Authorization that RASC has received from Transport Canada. Certificate holders are certified to use a laser pointer and to spot for another user.

**Saturday Noon** – Michelle Lane hosted *Lane's Book Mart: Books for sale from Dave Lane*, and at the same time the members had a *Nova East Swap: Equipment and Books* took place.

**Saturday afternoon Workshop: *Make your Own Sundial*** - Dave Chapman explained how a sundial works and led a workshop where participants assembled their own sundial by cutting and folding a printed card.

**Saturday Night - RASC Observing Certificates & Awards & Door Prizes**: Judy Black announced this year's RASC Certificate and Award Winners. The draw for Door Prizes followed. Dave Chapman and Chris Young, supported by the Centre and other donors, had collected Door Prizes. Twenty-four prizes were given away plus a grand prize - a SkyWatcher Heritage 150P collapsible tabletop Dobsonian Telescope donated by Allen Sutherland at Atlantic Photo Supply (APS). John Read won the telescope and without hesitating gave his prize to a new observer – a 12 year old from New Glasgow who was at NE with her grandfather from the RASC Ottawa Centre. John capped this off by donating his book *110 Things to see with a Telescope* to get the new observer well started.

**Saturday Night Public Talk**: Keynote speaker John Read presented ***Stories in Space***. These were stories behind the astounding fleet of telescopes current and planned that deliver the amazing science we come to expect from the frontier of astronomy. John gave us a very engaging presentation punctuated with chocolate bars delivered overhead to the audience for correct answers to his questions.

**Saturday Night - Public Observing** – was a repeat of the well-received Friday night guided observing using naked eye, binoculars and telescopes based on following the Centre's *Nova East 2025 Observing and Imaging List*.

**Dark Sky Observing / Imaging in the Field** took advantage of the available seeing conditions which became excellent after midnight.

**Sunday Morning - Sherman Williams Memorial Walk** – Pat Kelly led the walk sharing birding and natural plant lore with us as we walked along the wooded roads serving campsites as the Park trails were off limits due to the fire ban. The poison ivy patch was very notable.

**Sunday afternoon** – Most of the members packed up and headed home as the forecast was not promising for observing.

**Sunday night**: A small group of RASC members stayed the extra night, hoping to get a few more images, a few more views of the night sky. Smoke from the fires affected the early evening and then partial cloud made for interesting observing through sucker holes. This cool evening shut down just before midnight when cloud cover completely removed all hope of observing.

## Other Highlights:

An **Astro Breakfast**, always popular, was provided Saturday and Sunday mornings with coffee, tea, juice, muffins, donuts and fresh whole fruit.

The **Astronomer's Lounge** was back, with tea, coffee and hot chocolate, fruit and cookies always available in the shelter into the early morning hours.

## Date of 2026 Nova East:

As approved by the Board of Directors, Nova East 2026 will be held the on August 14-16, 2026. The date of the new moon is Wednesday, August 12, 2026. The expectation is that we will return to Smileys. This will be confirmed by the new Nova East Planning Team in the New Year.

## Finances

A profit of \$1,443.58 was realized this year from Nova East. A summary of Nova East finances are as follows:

	<u>Revenue</u>	<u>Expense</u>
Camping	\$960.00	\$263.40
Astro breakfast/snacks		\$398.86
Registration	\$1,240.00	\$100.30
T-shirts	\$525.00	\$310.30
Prizes		\$171.00 (+\$180.12 spent in 2024)
Miscellaneous (A/V)		<u>\$37.56</u>
Total	\$2,725.00	\$1,281.42

**Profit \$1,443.58**

I would be pleased to discuss any part of this Report at the AGM.

Respectfully Submitted,

Chris Young, Co-Lead  
2025 Nova East Planning Team  
RASC Halifax Centre

## 2025 Annual Report: Nova Notes

To date, four issues of *Nova Notes* have been published, with the fifth and final issue (Vol 56 No 5) for 2025 to be published at the end of December (content deadline is December 15, 2025.)

*Nova Notes'* editorial staff consists of Lisa Ann Fanning (Editor) and John McPhee (Copy Editor). Additional review is provided by Judy Black. Jerry Black assists with posting to the Halifax Centre website. Once posted, editions are promoted with a Member Announcement (via email), and announcements on the RASC Facebook page and Listserv.

Edition Sizes:

- Jan/Feb 2025 (Vol 56 No 1) issue was 41 pages total
- March/April 2025 (Vol 56 No 2) issue was 25 pages total
- May/June 2025 (Vol 56 No 3) issue was 22 pages total
- Sept/Oct 2025 (Vol 56 No 4) issue was 29 pages total
- Nov/Dec 2025 (Vol 56 No 5) is TBD

Regular features (appearing in three or more editions) include:

- *From the Editor* (Lisa Ann Fanning or John McPhee)
- Halifax centre Information page
- *From The President* (Tony McGrath)
- *Food for the Soul* (poetry by Paul Heath)
- *Puzzle Corner* (Lisa Ann Fanning)
- *Member News* (Members being featured in other media)
- *Members' Universe* (member news and submitted work)
- RASC Halifax Centre Meetings reports
- *Moonscapes* is a feature where David Hoskin highlights a region or feature on the Moon.
- *Asteroids with a Nova Scotia Connection*, by Dr. Roy Bishop and Judy Black (installments two through six)

## Highlights:

January /February 2025 edition:

*Support the SCOPE Fund* by Blair MacDonald  
2024 Annual General Meeting (AGM) Reports  
RASC Halifax Centre Auditor's Report FY October 2023 - 2024

March / April 2025 edition:

Theme: the Solar / Lunar Eclipse  
Paul Gray – a Jolly Good Fellow!

May / June 2025 edition:

2025 Nova East Star Party  
Support SCO with the SCOPE Fund by Michelle Lane and Judy Black  
Featured: Halifax Centre Members Present at RASC GA

September / October 2025 edition:

2025 Nova East Start Party by Chris Young  
SCO BBQ by Judy Black

Book Reviews:

- *50 Things to See with Binoculars (In Space)* by John A. Read (review by David Hoskin)
- *Black Hole: How an Idea Abandoned by Newtonians, Hated by Einstein, and Gambled On by Hawking Became Loved* by Marcia Bartusiak (review by Tony McGrath)

Main cover photos were provided by: Jerry Black (M81, Bodes Galaxy and M82, the Cigar Galaxy), David Hoskin (Lunar eclipse March 14, 2025), Mary Lou Whitehorne (Painting: "Summerville Moonrise"), Barry Burgess (Lupines and Milky Way).

In 2025, contributors of articles, features, photos and paintings include: Dr. Roy Bishop, Jerry Black, Judy Black, Michael Boschat, Barry Burgess, David Chapman, Jason Dain, Jeff Donaldson, Tim Doucette, Lisa Ann Fanning, Tiffany Fields, Paul Heath, David Hoskin, Jeremy Kuzub, Michelle Lane, Blair MacDonald, Tony McGrath, John McPhee, Bob Russell, Tony Schellinck, Gary Weber, Mary Lou Whitehorne and Chris Young.

Once again, we extend our sincerest thanks to the many folks who help make *Nova Notes* a success!

Respectfully Submitted,

Lisa Ann Fanning and John McPhee

Editors, *Nova Notes*, RASC Halifax Centre

## 2025 Annual Report: Observing Committee

The Chair of the Observing Committee is David Hoskin. Committee members consist of Dave Chapman (past Chair), Melody Hamilton, and Stephen Payne. Melody Hamilton and Dave Chapman are past members of the Society-wide RASC Observing Committee, which is involved in reviewing applications and guiding policy. Stephen Payne organizes Planetarium events at Dalhousie University.

RASC Halifax Centre was actively involved in several observing events over the past year. RASC Halifax Centre members who volunteered at the 16<sup>th</sup> Annual Kejimikujik Dark Sky Weekend on August 15-17 offered eyepiece views of diverse night sky wonders to over 600 campers on Friday and Saturday evening. Sky tours and binocular viewing were highlights of the evening sessions. Unfortunately, poor weather resulted in the cancellation of Sunday evening observing. The Astronomy Drop-In at Merrymakedge on Saturday and Sunday afternoon was well attended, with many astronomy-related questions being answered and star finders distributed. Solar observing at these Drop-In sessions was popular with campers. On September 27, an urban star party was held on the boardwalk at Harry DeWolf Park in Bedford. Over 40 passersby were treated to eyepiece and table views of the Moon, Saturn, and Andromeda Galaxy.

Nova East 2025 was held at Smiley's Provincial Park on the weekend of August 22-24 with a focus on Look Up! Friday evening saw a crystal-clear sky while the sky on Saturday evening started out fair due to wildfire smoke to the south but improved after midnight. Public observing sessions featured a sky tour by Gary Weber and Chris Young. Binocular observing sessions were hosted by Tony Schellinck and Judy Black. On Saturday evening binocular observing was paired with telescope observing of selected celestial targets.

Unfortunately, activity at the Halifax Centre's Saint Croix Observatory was temporarily halted at the start of August through the middle of September due to increased wildfire risk associated with drought conditions. However, before the woods ban and following lifting of the woods ban, SCO saw consistent use by Centre members for observing and imaging. The annual Fall SCO BBQ was held on September 26. Clear skies after sunset allowed for eyepiece observing of Saturn and several show-piece deep sky objects, as well as astrophotography. Fewer than normal members attended the event, which was unfortunate considering the delicious food and wonderful weather.

David Hoskin prepared and presented *What's Up?* at monthly members' meetings to showcase observing opportunities for the coming month. *What's Up?* presentations for 2025 are available on the Halifax Centre's You-Tube Channel and the Halifax Centre's website.

Observing Certificates were awarded to David Chapman and Michael Gatto, both of whom completed the Explore the Moon Program.

Respectfully submitted,



DAVID HOSKIN  
Observing Committee Chair  
RASC, Halifax Centre

## 2025 Annual Report: SCO Manager

### Observing Nights

There were several successful observing nights hosted at SCO this past year. Unfortunately, several had to be cancelled due to the restriction on travel and activities in wooded areas which was in effect for Hants County from August 5 to September 18. The observing nights that did occur were well attended and by members and guests.

### Repairs and Maintenance

405mm Telescope - This telescope has been in operation at SCO since 2014. In October the telescope was given a thorough going over by Dave Chapman. The primary mirror was found to be clean and in good shape. The secondary mirror required cleaning. Dave fabricated and installed a new cover for it. Some minor corrosion was removed and the telescope collimated and tested.

### Building Scrape & Paint

The building fascia boards and doorways were scraped and painted.

### Electrical Upgrades

Storage Building: 120 Volt AC Electrical Power was extended to the storage building and the installation of 120 Volt receptacles and lighting was completed.

Install Panel Mounted GFCI breakers: We have been experiencing problems with the GFCI receptacles installed in the Roll Off Observatory. These problems were traced to ants and insects making nests inside the receptacle boxes. In October I removed all the GFCI receptacles and replaced them with standard receptacles. New GFCI breakers were installed in the electrical panel in the Warm Room to feed these receptacles.

### SCO Maintenance & Development Plan

A start was made on a Maintenance and Development Plan for SCO. The intention of this document is twofold: first to provide guidance as to the maintenance activities required to maintain the facilities and equipment, and secondly to provide a place to catch ideas from SCO users as to potential projects and upgrades which would enhance the facility and ensure its relevance to users. When completed, this document will be available to all members.

### Inventory

A new inventory was taken of the buildings and equipment at SCO. This inventory is being evaluated so that the insurance coverage for the facilities and equipment can be reviewed to ensure that the proper coverage is in place.

Respectfully Submitted,

Tony G. McGrath, SCO Manager  
RASC Halifax Centre

## 2025 Annual Report: Webmaster

Our websites (Halifax RASC and Nova East) hosted by St. Mary's University have been based on the Joomla content management system for some time.

Since the last report, Joomla4 has been updated version 4.4.13. Although Joomla5 has been released, neither website has been migrated to Joomla5. This would provide additional features and security. **Support for Joomla4 ends/ended 16 October 2025.** Upgrading requires SMU staff to perform the update, for which time constraints have made this difficult.

PDF Indexer was installed on the Halifax RASC site and has enabled indexing of the pdf documents on the site, e.g. Policy documents.

The website is generally not updated as frequently as might be beneficial. Meeting notices and *What's Up?* and *Nova Notes* are updated when available.

### Recommendations:

1. Upgrade to Joomla5 for both websites when time permits; Tiffany Fields is the person able to do this.
2. Review the content informally and update web content where appropriate. Anyone noticing errors or omissions in the content is encouraged to contact the Webmaster with the details.

Respectively submitted,

Jerry Black, Webmaster  
RASC Halifax Centre

## 2025 Annual Report: Nominations

The Board of Directors comprised the Nominating Committee this year. The following is the list of nominations being put forward to all members as of November 7, 2025, through the Announce List. The call for further nominations will be made at the AGM on December 6, 2025.

President	Tony McGrath
Vice-President	Peter Hurley
Secretary	Judy Black
Treasurer	Gregg Dill
Director	Gerry Brosky
Director	Matthew Dyer
Director	David Hoskin
Director	Frank Logan
Director	David McMullin
Director	Vincent Vallee

The following appointments will be made by the newly elected Board at their meeting in January 2025. The call for further nominations to the appointed positions will be made at the AGM on December 7, 2024.

Honorary President	Patrick Kelly
National Council (NC) Representative	Judy Black
Dark-Sky Preserve (DSP), Co-Chairs	Peter Hurley, Tony Schellinck
Education & Public Outreach (EPO), Chair	David Hoskin
Governance Review Committee, Chair	Judy Black
Nova East Planning Committee/Team	Chris Young, Judy Black, Gary Weber, Dave Chapman, Gregg Dill, Tony McGrath, Michael Gatto
<i>Nova Notes</i> , Co-Editors	Lisa Ann Fanning, John McPhee
Observing, Chair	David Hoskin
St. Croix Observatory (SCO) Manager	Tony McGrath
Webmaster	Jerry Black
Auditor 2025-2026	<b>TBD</b>
Communications Committee	<b>VACANT</b>
Nominating Committee	<b>VACANT</b>

**Policy G6: Procedures regarding Nominations, Elections and Appointments** can be found on the RASC Halifax centre website ([https://halifax.rasc.ca/images/documents/G6\\_Nominations\\_Elections.pdf](https://halifax.rasc.ca/images/documents/G6_Nominations_Elections.pdf)).